Modification Report

Tweed Valley Hospital SSD-10353: Changes to Multi-deck Carpark

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GeoLINK
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GeoLINK Consulting Pty Ltd

PO Box 119
Lennox Head NSW 2478
T 02 6687 7666

PO Box 1446
Coffs Harbour NSW 2450
T 02 6651 7666

PO Box 1267
Armidale NSW 2350
T 02 6772 0454

PO Box 229
Lismore NSW 2480
T 02 6621 6677

info@geolink.net.au

Prepared for: NSW Health Infrastructure

Certification	Name	Signature	Date
Prepared by	Jacob Sickinger Senior Environmental Planner *BUrbEnvPlan (Hons 1), MPIA*		04/03/2022
Reviewed by	Sean Cochran Senior Environmental Planner *GradDip (Urb&RegPlan)*		25/02/2022

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Statement of Validity

Submission of Environmental Assessment (Modification Report)

Prepared under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act)

Modification Report prepared by:		**Reviewed by:**
Name	Jacob Sickinger	Sean Cochran
Qualifications	*BUrbEnvPlan (Hons 1),* MPIA Senior Environmental Planner	*GradDip (Urb&RegPlan)* Senior Environmental Planner
Address	GeoLINK PO Box 1446 COFFS HARBOUR NSW 2450	

In respect of

Applicant and Land Details

Proponent	Health Infrastructure
Subject Site	771 Cudgen Road, Cudgen NSW
Lot and DP	Lot 11 DP 1269398
Project Summary	Tweed Valley Hospital – Modification to Stage 2 Consent and Approved Plans

Environmental Assessment

Modification Report pursuant to Part 4, Section 4.55 of the EP&A Act.

Declaration

I certify that the contents of this Modification Report has been prepared in accordance with the requirements of the *Environmental Planning and Assessment Act 1979* and the Regulation, including having due regard for the *State Significant Development Guidelines – Preparing a Modification Report* (DPIE 2021).

The Modification Report contains all available information that is relevant to the environmental assessment of the proposal, and that, to the best of my knowledge, the information contained in this report is not false or misleading.

Signature		
Name	JACOB SICKINGER	SEAN COCHRAN

Executive Summary

Purpose of Report

This report supports a request for modification, pursuant to Section 4.55 of Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), of State Significant Development (SSD) consent SSD-10353 for the Tweed Valley Hospital (the Project). This report has been prepared for Health Infrastructure (HI) (the applicant) in support of the modification request to the Department of Planning, Industry and Environment (DPIE). It identifies the proposed modifications to SSD-10353 (Stage 2 of the Project) and assesses the potential associated impacts from the modifications pursuant to section 4.15(1) and Section 4.55(1A) of the EP&A Act.

The Project Site

The Project site is a 19.38 ha single lot described as Lot 11 DP 1269398 (formerly Lot 11 DP 1246853) and located at 771 Cudgen Road, Cudgen NSW (the Site). The land is owned by Health Administration Corporation (HAC). It fronts Cudgen Road immediately west of the Kingscliff urban area and has proximal access to Tweed Coast Road, which connects to the Pacific Motorway (M1) in the north. The Site is approximately 13.5 km south of Tweed Heads. The Site is primarily zoned SP2 Infrastructure (Health Services Facility). Environmental areas, including mapped Coastal Wetlands, occur along its northern boundary. The surrounding land use context comprises a mix of urban, rural, and environmental areas. This context is unchanged since approval of the Project.

The Approved Development

Stage 2 of the Project (comprising detailed design, construction and operation of the Tweed Valley Hospital) was approved (SSD-10353) under delegation of the Minister for Planning and Public Spaces on 12 June 2020. All documents relating to the approval can be found on the project website at https://www.planningportal.nsw.gov.au/major-projects/project/14746

The Project has been subsequently subject to two modifications since approval. These can also be viewed at the above link.

Proposed Modification 3 to SSD-10353

In summary, this third application to modify SSD-10353 proposes changes to the multi-deck carpark that forms part of the Stage 2 approval, including:

- Façade material changes involving substitution of the pre-cast concrete panels with a lightweight perforated aluminium sheet/panel, in comparable colour.
- Addition of rooftop solar photovoltaic (PV) installation, including supporting structures (which will also act as a car parking shade/weather protection structure) on the roof level of the multi-deck carpark. It is noted that the Stage 2 EIS outlined that the multi-deck carpark would be constructed in stages, with the first stage being to 8 levels (identified as Level 05 on the plans), and the final (second) stage being to a total of ten levels (identified as Level 07 on the plans). The rooftop solar and associated structures would be installed to the upper/roof level of each stage at those relevant points in time. Staging is further discussed in Section 3.
- Minor lowering of the carpark building further into the ground by 100mm, including minor additional earthworks, and adjustment to lower finished floor levels (B1 and B2).
- Minor internal refinements, alterations, and rearrangements.
- Adjustment to Green Spine pathway to reflect most recently approved landscape plans.
- A 1590mm wide and 38000mm long extension (including minor additional earthworks, as required) to Basement 2 to include mechanical ventilation and provide reticulation of the mechanical exhaust duct work.

- Floor plate reductions for material and cost savings.

Assessment Summary and Conclusion

The proposed modifications are a result of design progression/refinement, naturally and mechanically ventilated carpark requirements, further construction and cost analysis, and the desire to introduce renewable energy to complement the Project and its energy and sustainability credentials.

The modifications do not constitute a transformation of the development and the Project remains substantially the same. There is no change to the number of parking spaces provided within the multi-deck carpark. The modifications are relatively minor and inconsequential in the context of the overall Project and approved built form/scope of works. The multi-deck carpark façade material changes have been well considered and the design response and overall appearance would be generally consistent with the original approval and remains appropriate for the site context.

The modifications reflect detailed design progression and are logical and practical. They would benefit the Project, and in turn staff, stakeholders, and the wider community. The modifications would effectively integrate into the overall Project and will continue to provide an acceptable and quality development outcome, along with enhanced sustainability outcomes through the addition and use of renewable energy. Potential impacts of the modifications are assessed as being minimal. The proposed modifications warrant approval by the Minister for Planning and Public Spaces or delegate.

1. Introduction

1.1 Purpose of this Report

On behalf of NSW Health Infrastructure (HI) as the applicant, GeoLINK has been engaged to prepare a Modification Report under Section 4.55(1A) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) for a modification to the State Significant Development (SSD) consent for Stage 2 of the Tweed Valley Hospital (SSD-10353).

The purpose of this Modification Report is to describe the proposed modifications and provide an assessment of the relevant matters contained within Sections 4.55(1A) and 4.15(1) of the EP&A Act. The assessment of the proposed modifications includes assessment against the existing planning provisions applying to the Site and any potential environmental impacts and key issues. This report has had regard for the *State Significant Development Guidelines – Preparing a Modification Report* (DPIE 2021).

1.2 Existing Consent and Proposed Modification Context

The Tweed Valley Hospital Project broadly consists of:

- Delivery of the Tweed Valley Hospital; a new 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 Project consists of two main stages (both approved, and subsequently modified) as follows:

- A Concept Proposal and Stage 1 Early and Enabling Works package approved under SSD-9575 on 11 June 2019 and last modified on 28 April 2020. This development consent is 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 approx. 65,000 square metres for the hospital and health hub building on the site*
  - *the site layout, internal roads, site access arrangements and car parking provisions*
  - *a landscape masterplan, concept public domain treatments and stormwater strategy; and*
  - *Tweed Coast Road and Cudgen Road intersection upgrade works.*

  Concurrent Stage 1 Early and Enabling Works comprising:

  - *site preparation and bulk earthworks to establish site levels*
  - *identification of the construction compound with temporary car parking areas, laydowns and internal roads*
  - *new vehicular access points from Cudgen Road*
  - *improvements to the roundabout intersection of Turnock Street and Cudgen Road*
  - *utility augmentation and connection of permanent services for the future hospital*
  - *construction of retaining walls*
  - *stormwater drainage works and soil and water management measures*

- *site remediation works*
- *piling works associated with the future hospital.*

- Stage 2 of the Tweed Valley Hospital was approved under SSD-10353 on 12 June 2020. This development consent is for:

  Detailed design, construction, and operation of the Tweed Valley Hospital, in five construction sub-stages, comprising:

  - *a new hospital building with rooftop helipad.*
  - *three buildings for support services (Health Hub) and a substation.*
  - *a temporary building (Tweed Skills Centre) accommodating a skills centre during the construction phase.*
  - *car parking areas including the detailed design and construction of a multi-deck car park.*
  - *internal road layouts, landscaping, wetland rehabilitation, services and signage.*
  - *operation and use of the hospital and the ancillary buildings.*
  - *public domain works, external roadworks including upgrade to the intersection of Tweed Coast Road and Cudgen Road and a new signalised intersection on Cudgen Road.*

Stage 1 Early and Enabling Works are complete and Stage 2 construction works are progressing on-site.

Since approval of Stage 2 (SSD-10353) and the most recent modification, ongoing detailed design development and analysis has identified necessary and cost-effective changes to the approved design of the multi-deck carpark, as well as the opportunity for rooftop solar to complement the sustainability credentials of the development. The modified Stage 2 proposal remains consistent with the relevant aspects of the Concept Proposal (as discussed in **Section 4.1**). The proposed modifications to Stage 2 (SSD-10353) are described in **Section 3**.

Given the nature and scope of the proposed modifications described in this Modification Report, there is no change to the overall Project Description (including no change required to the development description in Schedule 1 of Development Consent SSD-10353), and as such there is no need to provide a modified Project Description.

1.3 Cadastral Description

The Site is a single lot located at 771 Cudgen Road, Cudgen NSW. It is legally described as Lot 11 DP 1269398 (formerly Lot 11 DP 1246853).

1.4 Land Ownership

The Site is owned by the Health Administration Corporation (HAC) and this Modification Application is made by HAC's Health Infrastructure (HI) division.

1.5 Site Context

The Site context remains consistent with the description and figures provided previously in the Stage 2 EIS.

1.6 Site Analysis

Although works are progressing on site and this has resulted in landform changes and construction works, the overall general site characteristics, biophysical features, constraints and surrounding environmental context have otherwise not notably changed since approval of Stage 2 (SSD-10353). **Plate 1.1** below is an aerial image of the Site under construction in December 2021.

Plate 1.1 Photo showing the Tweed Valley Hospital under construction in December 2021 (source HI).

2. Strategic Context

The Project's strategic context, including the delivery of improved and vital health services for the Tweed-Byron region, consistent with State and strategic plans/policies, has not materially changed since preparation of the Stage 2 Environmental Impact Statement (EIS) and previous Modification Report.

The modified Project remains consistent with relevant Premier and NSW Government plans and policies, including priorities, regional and local plans/policies. It will deliver significant investment in and the construction of critical infrastructure, add to the creation of construction related and long-term operational jobs, and will greatly improve health facilities and services for the community of the Tweed-Byron region. The modified development, including minor design/material changes and addition of rooftop solar to the multi-deck carpark which provides the bulk of the supporting on-site parking infrastructure for the new hospital, continues to be consistent with the land objectives of the SP2 Infrastructure zone (health services facility) and with the approved Concept Proposal. The design response and development outcomes would continue to be acceptable and aligned with the aims and objectives of key relevant strategic policies as outlined in the Stage 2 EIS.

3. Description of Modifications

3.1 Overview

Pursuant to Section 4.55(1A) of the EP&A Act, HI proposes modifications to Stage 2 of the Tweed Valley Hospital associated with development consent SSD-10353. In summary, this application to modify SSD-10353 proposes changes to the multi-deck carpark that forms part of the Stage 2 approval, including:

- Façade material changes, including substitution of the pre-cast concrete panels with a lightweight perforated aluminium sheet/panel, in comparable colour.
- Addition of rooftop solar photovoltaic (PV), including supporting structures (which will also double as a car parking shade/weather protection structure) on the roof level of the multi-deck carpark. It is noted that the Stage 2 EIS outlined that the multi-deck carpark would be constructed in stages, with the first stage being to 8 levels (identified as L05 of the plans), and the final (second) stage being to a total of ten levels (identified as L07 of the plans) – this remains unchanged. The rooftop solar and associated support/shade structure would be installed to the upper level of each respective stage at those relevant points in time. Staging is further discussed in **Section 3.3.1**, and would subject to the Project's Staging Report that will be updated as required in accordance with the conditions of consent.
- Minor lowering of the carpark building by 100mm, including minor additional earthworks, and adjustment to lower basement finished floor levels.
- Minor internal refinements, alterations, and rearrangements as a result of detailed design.
- Adjustment to Green Spine pathway to reflect most recently approved landscape plans.
- A 1590mm wide and 38000mm long extension (including any required additional earthworks) to the footprint of Basement 2 to accommodate mechanical ventilation requirements and provide reticulation of the mechanical exhaust duct work.
- Floor plate reductions for material and cost savings.

These proposed modifications are discussed in more detail in the following sections, with a compressive breakdown of the drawing changes outlined by MODE Architects attached at **Appendix D**.

3.2 Multi-deck Carpark Façade and Lower-level Adjustments

The main change from the approved design is the substitution of the originally proposed precast concrete solid structure with a lightweight perforated aluminium panel system.

The currently approved façade design does not provide the ability to meet the necessary open area (minimum 50%) to achieve the requirements for a naturally ventilated carpark and thus would have triggered the need for a mechanically ventilated system to be introduced. The lightweight perforated aluminium panel system adequately addresses ventilation requirements and avoids the need for mechanical ventilation (except for Basement 2 as discussed at Section 3.6), whilst also being more cost efficient.

While this change in material is necessary to achieve a naturally ventilated carpark, the change in materials would not be easily distinguishable from the approved design as the building form, colour palette and panelisation remains consistent with the approved design.

The lightweight aluminium façade systems would have a powder coat finish with either a matte or satin sheen to minimise sunlight reflectance (refer to the revised External Finishes Schedule).

Additionally, in order to gain adequate space to fit in the necessary services and maintain compliance with the minimum 2.2m clearance height for cars, the multi-deck carpark building has been dropped/lowered a further 100mm into the ground to a level of RL17.850 (was RL17.950). As a result, the two lower levels have had their finished floor levels (FFL) marginally changed and a minor extent of additional earthworks would be required to facilitate site levels for construction. There is no change to the overall height of the carpark's main facade above existing ground level (remains at RL44.650) or lift overrun (remains at RL46.150).

Figure 3.1 and **Figure 3.2** provide a sample comparison of the approved and modified southern elevations of the multi-deck carpark. Architectural renders showing the similarity between the original and modified multi-deck carpark appearance are at **Figure 3.3** and **Figure 3.4**. Refer to modified plan set for full details and all plans/elevations, including the updated render of the multi-deck carpark.

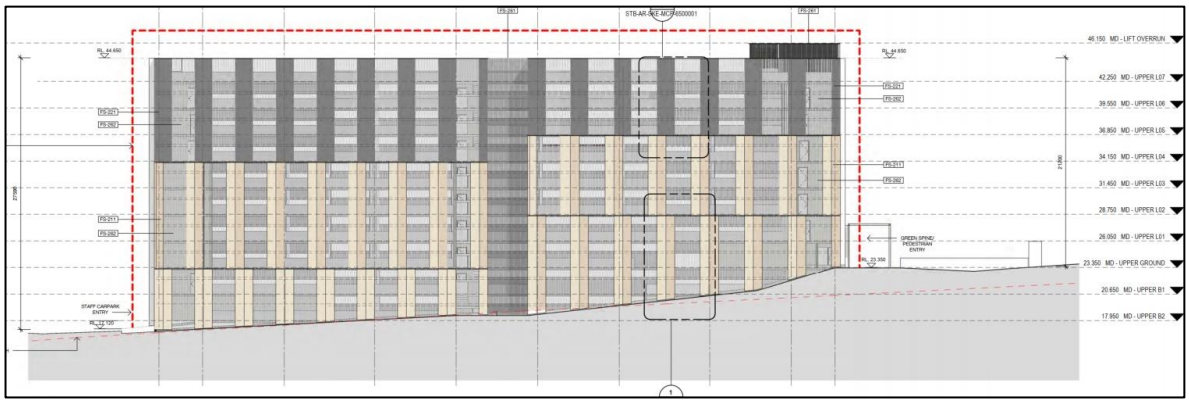

Figure 3.1 Approved south elevation of the multi-deck carpark.

Figure 3.2 Modified south elevation of the multi-deck carpark.

Figure 3.3 Originally submitted architectural render of multi-deck carpark.

Figure 3.4 Updated architectural render of modified multi-deck carpark.

3.2.1 Design Principles and Benefits

The design strategy for the multi-deck carpark façade and the change to an aluminium ventilated façade system was to enhance the original design and to achieve a more cost-effective structure while keeping the original design intent for the building and maintaining its relationship to the design of the hospital. The main change from the original design is to substitute the precast concrete solid structure with a lightweight perforated aluminium panel system which would give the same overall building composition and keep the strong visual ties with the hospital. The perforated panels would provide visual interest when viewed nearby yet give the appearance of being solid from a distance, whilst providing the necessary open area to achieve adequate natural ventilation.

Key modified design principals include:

- Retain design intent and borrowing from the architectural language of the main hospital building
- Multi-level expression
- Concrete structure and metal materiality.

Benefits of the proposed façade modification include:

- Cost savings due to the removal of precast concrete panels resulting in a lighter structure and the deletion of perimeter columns
- Additional ventilation provided by perforated areas to achieve the 50% naturally ventilated car park; avoids need for mechanical ventilation.

3.3 Addition of Rooftop Solar System/Shade Structure to Multi-deck Carpark

The multi-deck carpark provides a key opportunity to accommodate a rooftop PV solar system which can also double as a shade/weather protection structure for parked vehicles.

The provision of a PV solar system would complement the site-wide strategy to provide environmentally sustainable design in the Tweed Valley Hospital precinct. The proposed system would have a total power generation capacity of 507.6 kWp (kilowatts peak). Power generated from the solar system would be fed back into the hospital grid and support the energy and sustainability credentials of the Project for its long-term operation.

The solar panels would be installed atop an elevated steel structure that would be constructed over the upper-level car spaces (at each respective stage as outlined in **Section 3.3.1**). The solar structure would be a maximum of 4.015m high above the carpark floor level and result in the overall building height of the multi-deck carpark marginally increasing from RL46.150 to RL46.265. The entire multi-deck carpark structure, including solar structure installation, would remain well within the approved concept building/planning envelope associated with development consent SSD-9575. Sample elevations and an example image of the solar/shade structure are provided in **Figure 3.5**. Refer to modified plan set for full details.

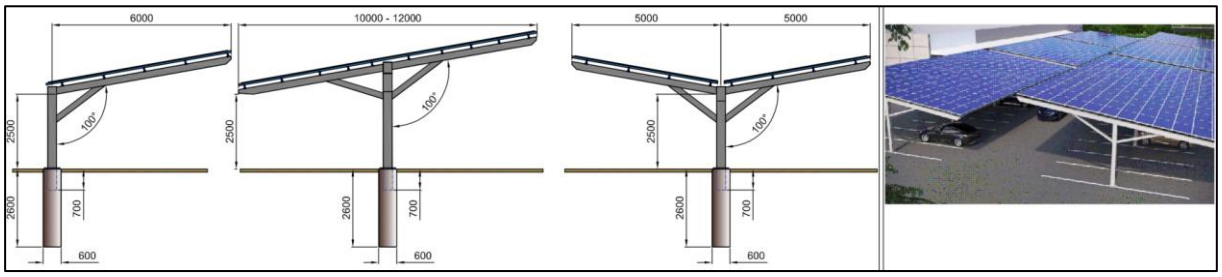

Figure 3.5 Sample elevations and example image of rooftop solar system/shade structure to be installed over car parking spaces.

Whilst no changes are required to the approved electrical infrastructure and associated Infrastructure Management Plan (submitted with the Stage 2 EIS) to incorporate the solar system and connect into the hospital infrastructure, some electrical infrastructure (including cabling and protection from the solar system to the hospital main switchboard, and the switchboard itself) will need to be uprated to suit the increased load.

There is no change to the overall function of the multi-deck carpark, and no change to the number of parking spaces to be supplied (at either the time of hospital opening or based on the ultimate supply provision as outlined in the Stage 2 EIS).

3.3.1 Construction Staging

As outlined in the Stage 2 EIS, Stage 2 works would comprise five key components (defined as sub-stages). The construction of the multi-deck carpark forms one of these and will be delivered as a separate construction package to the main hospital building.

Approval was originally sought, and consent granted for, a multi-deck carpark comprising up to 10 levels, with a minimum of eight levels to be constructed first and concurrently with the main hospital building.

Subsequent addition of the top two levels to the multi-deck car park, up to the maximum proposed/approved height and parking supply, would be staged subject to further demand assessment and funding, and as per the approved Staging Report prepared (and updated as required) in accordance with the conditions of consent.

Given this staging of the multi-deck carpark, the addition of rooftop solar and associated structures would be installed to the upper/roof level of each stage at those relevant points in time. That is, the solar system and associated structure would be installed on top of Level 05 of the multi-deck carpark, and then dismantled and reinstalled at Level 07 (as identified on the plans) of the multi-deck carpark when these upper two levels are constructed in the future. The following provides an outline of the expected dismantling and re-installation methodology.

Solar System Electrical Dismantling

The electrical system consists of solar panels, inverters, switchboards, DC and AC cable routes. The methodology of decommissioning and removing the electrical system, to enable construction of additional levels to the multi-deck carpark and then reinstallation, would be as follows:

- Physical disconnection of the solar submain to de-energise the Solar Distribution Board and all downstream equipment
- Disconnection of all panel connections to reduce DC voltage to safe ELV level
- Removal of all DC cable from inverters to solar array
- Removal of all solar panels from structure by removing four securing bolts per panel. Elevated Work Platform (EWP) (scissor) would be used for access. Panels are stacked on pallets, wrapped, and stored onsite in a shipping container.
- Re-installation would be for the structure, panels, lighting, in-slab DC conduit only.
- The inverters and Solar Distribution Board can remain in the original location. DC conduit can be installed to the new structure location. This method allows for the original AC and communications cabling to remain unchanged. If the inverters and switchboards are moved to a higher level, then larger AC cable would need to be installed to account for volt-rise.

Solar System Support Structure Dismantling

The structural support consists of three main parts: a column, a beam and purlins that connect the structures together and hold the panels. The methodology of deconstructing the structures/arrays (once panels are removed) would be as follows:

- Removal of the bolts for each section of racking system and stacking of this racking onto pallets; placing nuts, bolts and washers into storage containers
- Removal of the main purlin bolts where they attached to the beams and storage of them in containers and placing the purlins onto pallets in a numbered order
- Use forklift to hold the main beams and remove the bolts connecting these to the columns, again containerise the nuts and bolts and stack the beams on pallets
- Use the forklift to hold the columns and remove the nuts and washers from the bolts set in the concrete slab. Then stack on pallet marked for location
- Have pallets and container boxes moved to storage location on or off site.

Reinstallation at Ultimate Upper-Level Following Future Construction up to Level 07

Reinstallation of the solar system and supporting structure on top of Level 07 (10th floor) of the carpark would require new bolts to be installed on the upper floor and then the installation can be completed as per above in reverse.

3.4 Minor Internal Refinements, Alterations, and Rearrangements

Due to detailed design progression and further analysis a range of minor internal refinements, alterations and rearrangements have been made to the multi-deck carpark, including:

- Rearrangement of bicycle parking (with same number of racks/spaces) and end-of-trip facilities
- Minor adjustments to lift and stair cores
- Minor adjustments to entry and exit lane widths
- Addition/rearrangement of ancillary infrastructure and associated rooms/cupboards (e.g. switch room, comms, electrical, EBD)
- Operators office and fitout adjusted to include Comms Room as part of design development
- Minor adjustment to ramps and grades
- Minor amendments to services (e.g. hydrants, hose reels, EDB)
- Relocation of two parking spaces from Basement 2 to accommodate mechanical exhaust (one of the spaces has been relocated to Level 1 and another to Level 2). Overall total number of parking spaces is maintained, and car space dimensions are also unchanged (as shown on the modified plans)
- Minor column and grid adjustments
- Wall between carpark ramps removed and replaced with crash barrier and balustrade
- Minor internal level adjustments
- Section of Basement 1 slab to be suspended in lieu of slab on ground to allow for fresh air supply for mechanical exhaust.

A detailed breakdown of the changes by level/plan is provided in the drawing amendment register at **Appendix D.**

3.5 Adjustment to Green Spine Pathway to Reflect Approved Landscape Plans

The Green Spine pavement arrangement/pathway shown on the ground floor plan has been adjusted to match the approved and stamped landscape plans.

3.6 Extension (below ground level) and Mechanical Ventilation of Basement 2

The original design for the Basement Level 2 did not accommodate the impact of queuing vehicles generating emissions within the ventilation design. To ensure suitable air quality in accordance with Australian Standard AS1668.2 it has been necessary to mechanically exhaust Basement Level 2 parking and queuing areas. The associated ductwork could not be accommodated within the floor plate with the required parking bays being retained. In order to accommodate the ductwork, the rear wall, between grids C7 and C8, has been extended under the Basement Level 1 by approximately 1590mm wide and 38000mm long. This extension would require some minor additional earthworks, however it is below finished ground level and would not result in a visual change to, or affect the exposure/massing of, the multi-deck carpark.

3.7 Floor Plate Reductions

Cost and material efficiencies can be achieved through a minor reduction in the widths and lengths of the multi-deck carpark floor plates. Accordingly, the multi-deck carpark floor plates have been reduced/trimmed by between 100mm to 980mm as identified on the modified plans. This results in an overall slight reduction to the length and width of the multi-deck carpark, with no change to the layout or operation.

3.8 Schedule of Plan Revisions

A set of the relevant amended architectural plans (prepared by Mode Design) showing the previously described proposed modifications is included with this Modification Report (**Appendix A**). Additionally, a detailed breakdown of the changes made to each level/drawing sheet is provided in a drawing amendment register at **Appendix D**.

Table 3.1 provides a list of the revised plans (including numbers and title) that would supersede the currently approved plans.

Table 3.1 Updated Drawing/Plan Register

Approved Drawing/Plan Number and Title		Modified Drawing/Plan Number and Title	
STB-AR-SKE-MHB-4000000 Rev 2	Key Plan Elevations & Sections	STB-AR-SKE-MHB-4000000 Rev 3	Key Plan Elevations & Sections
STB-AR-SKE-MHB-4000001 Rev 1	Contiguous Elevations Cudgen Road and Turnkock Street	STB-AR-SKE-MHB-4000001 Rev 2	Contiguous Elevations Cudgen Road and Turnkock Street
STB-AR-SKE-MCP-20B2001 Rev 1	Multi-Deck Carpark Basement 2	MDD-AR-SKE-MCP-20B2001 Rev 4	Multi-Deck Carpark: Floor Plan Basement 2
STB-AR-SKE-MCP-20B1001 Rev 1	Multi-Deck Carpark Basement 1	MDD-AR-SKE-MCP-20B1001 Rev 4	Multi-Deck Carpark Floor Plan Basement 1
STB-AR-SKE-MCP-2000001 Rev 1	Multi-Deck Carpark Ground Level	MDD-AR-SKE-MCP-2000001 Rev 3	Multi-Deck Carpark: Floor Plan - Ground
STB-AR-SKE-MCP-2001001 Rev 1	Multi-Deck Carpark Level 1	MDD-AR-SKE-MCP-2001001 Rev 3	Multi-Deck Carpark: Floor Plan – LVL 01
STB-AR-SKE-MCP-2002001 Rev 1	Multi-Deck Carpark Level 2	MDD-AR-SKE-MCP-2002001 Rev 3	Multi-Deck Carpark: Floor Plan – LVL 02
STB-AR-SKE-MCP-2003001 Rev 1	Multi-Deck Carpark Level 3	MDD-AR-SKE-MCP-2003001 Rev 3	Multi-Deck Carpark: Floor Plan – LVL 03
STB-AR-SKE-MCP-2004001 Rev 1	Multi-Deck Carpark Level 4	MDD-AR-SKE-MCP-2004001 Rev 3	Multi-Deck Carpark: Floor Plan – LVL 04
STB-AR-SKE-MCP-2005001 Rev 1	Multi-Deck Carpark Level 5	MDD-AR-SKE-MCP-2005001 Rev 3	Multi-Deck Carpark: Floor Plan – LVL 05
N/A	N/A	MDD-AR-SKE-MCP-2005002 Rev 2	Multi-Deck Carpark: Lift Overrun – LVL 5 / Roof Plan (first construction stage)
STB-AR-SKE-MCP-2006001 Rev 1	Multi-Deck Carpark Level 6	MDD-AR-SKE-MCP-2006001 Rev 3	Multi-Deck Carpark: Floor Plan – LVL 06
STB-AR-SKE-MCP-2007001 Rev 1	Multi-Deck Carpark Level 7	MDD-AR-SKE-MCP-2007001 Rev 3	Multi-Deck Carpark: Floor Plan – LVL 07

STB-AR-SKE-MCP-2500001 Rev 1	Lift Overrun	MDD-AR-SKE-MCP-2500001 Rev 4	Multi-Deck Carpark: Lift Overrun - LVL 07 / Roof Plan (second construction stage)
STB-AR-SKE-MCP-4000001 Rev 1	Multi-Deck Carpark Elevations 1 and 2	MDD-AR-SKE-MCP-4000001 Rev 4	Multi-Deck Carpark: Elevations
STB-AR-SKE-MCP-4000002 Rev 1	Multi-Deck Carpark Elevations 3 and 4	MDD-AR-SKE-MCP-4000002 Rev 4	Multi-Deck Carpark: Elevations
STB-AR-SKE-MCP-5000001 Rev 1	Multi-Deck Carpark Sections A & B	MDD-AR-SKE-MCP-5000001 Rev 4	Multi-Deck Carpark: Sections
STB-AR-SKE-MCP-5000002 Rev 1	Multi-Deck Carpark Section C	MDD-AR-SKE-MCP-5000002 Rev 4	Multi-Deck Carpark: Sections
STB-AR-SKE-MCP-6500001 Rev 1	Multi-Deck Carpark Façade Types FS-221/ FS-212/ FS-262	MDD-AR-SKE-MCP-6500001 Rev 4	Multi-Deck Carpark: Façade Types
STB-AR-SKE-MCP-6500002 Rev 1	Multi-Deck Carpark Façade Types FS-211/ FS-212/ FS-262	MDD-AR-SKE-MCP-6500002 Rev 4	Multi-Deck Carpark: Façade Types
STB-AR-SKE-MCP-6500003 Rev 1	Multi-Deck Carpark Façade Types FS-212/ FS-263/ FS-211	MDD-AR-SKE-MCP-6500003 Rev 4	Multi-Deck Carpark: Façade Types
STB-AR-SKE-MCP-6500004 Rev 1	Multi-Deck Carpark Façade Types FS-261.	MDD-AR-SKE-MCP-6500004 Rev 4	Multi-Deck Carpark: Façade Types
N/A	N/A	SCH_001	Multi-deck Carpark: Exterior Finishes Schedule

4. Statutory Planning Context

4.1 Consistency with Existing Approvals

4.1.1 Consistency with Approved Concept Proposal (SSD-9575)

Section 4.24(2) of the EP&A Act requires that further development applications cannot be inconsistent with an approved/in force Concept Proposal. The Tweed Valley Hospital Project is subject to an approved Concept Proposal (SSD-9575).

Overall, the proposed modifications are consistent with the relevant aspects of the approved Concept Proposal and do not conflict with the conditions of consent (i.e. Schedule 2 of the SSD-9575 consent).

Specifically, the proposed modifications to the multi-deck carpark are consistent with the approved Concept Proposal as they occur within the approved building/planning envelope and do not conflict with the setback or maximum height requirements of the consent.

4.1.2 Consistency with SSD-10353 (Stage 2) Conditions of Consent

The proposed modifications are not inconsistent, nor do they conflict, with any conditions of the SSD-10353 consent.

4.2 Section 4.55 of EP&A Act- Modification of Consents

Modification of development consent SSD-10353 is sought pursuant to Section 4.55(1A) of the EP&A Act. The proposed modifications are considered to be relatively minor in the context of the existing approval and potential environmental impacts would be minimal (as demonstrated in the assessment at **Section 6**). The following sections address the relevant statutory context and compliance matters appliable to the Modified Project.

This modification would not result in a transformation of the development. The development remains substantially the same and continues to be for the purpose of a health services facility, with supporting car parking infrastructure (including a multi-deck carpark). The overall design response remains generally consistent with the approved Stage 2 design and within the scope of the Concept Proposal. The modification can reasonably be defined as being of minimal environmental impact, as evidenced by the nature of the proposed changes and the impact assessment undertaken. As such, the proposal would suitably fall within the provisions of Section 4.55(1A) of the EP&A Act. An assessment against the relevant provisions of Section 4.55(1A) are provided below.

Subsection 1A

"(1A) Modifications involving minimal environmental impact

A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if:

Subsection 1A(a)

(a) It is satisfied that the proposed modification is of minimal environmental impact, and"

Comment: as outlined in **Section 6**, the proposed modification involves generally minor and low-impact refinements, adjustments, and additions to the approved development (multi-deck carpark), with no new disturbance outside of the approved development footprint. The potential environmental impacts of the proposed modifications are negligible to minor and therefore are suitably defined as minimal. The proposed modifications will not result in any significant change to the scale of the development, the appearance of the multi-deck carpark, visual or environmental amenity, parking function/provision, aviation safety, nor any other amenity or environmental impacts.

Subsection 1A(b)

(b) "It is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all), and,

Comment: The proposed development remains substantially the same development that was approved. This is evidenced in that:

- It retains the same use as the approved development, providing for a hospital and supporting infrastructure (including at-grade and multi-deck car parking) on a site zoned SP2 Infrastructure (Health Services Facility).
- The form and function of the development remains substantially the same, with the modification involving relatively minor alterations and additions to the multi-deck carpark.
- The public health benefits, and provision of on-site car parking, delivered by the development remain unchanged and positive.
- The overall environmental impacts are similar, if not the same, as the approved development. There would be no significant additional or altered environmental impacts because of the modifications, yet there would be improved cost-efficiencies and energy/sustainability/resource outcomes.

Subsection 1A(c)

(c) "It has notified the application in accordance with:

(i) The regulations, if the regulations so require, or
(ii) A development control plan, if the consent authority is a council that has made a development control plan that requires the notification or advertising of applications for modification of a development consent, and,"

Comment: The proposed modifications are relatively minor and of minimal environmental impact, hence notification of this modification is not considered necessary. However, this would be subject to DPIE's interpretation and discretion.

Subsection 1A(d)

(d) It has considered any submission made concerning the proposed modification within any period prescribed by the regulations or provided by the development control plan, as the case may be.

Comment: Given the proposed changes would not increase or notably alter impacts associated with the development, it is anticipated that no submissions would be received. Nonetheless, if submissions were received, they would be considered by DPIE as required. No significant agency, Council, or public concern is expected given the relatively minor changes and justification provided.

Subsection 3

"(3) In determining an application for modification of a consent under this section, the consent authority must take into consideration such of the matters referred to in Section 4.15(1) as are of relevance to the development of the subject application. The consent authority must also take into

consideration the reasons given by the consent authority for the grant of the consent that is sought to be modified:

Comment: According to Section 4.55(3), the consent authority must take into consideration the relevant matters under Section 4.15(1) of the EP&A Act. The matters for consideration under Section 4.15(1) of the EP&A Act have been considered and are addressed in **Table 4.1** below. Overall, the modification would not alter the development's existing compliance with relevant planning instruments.

Table 4.1 Assessment Matters under Section 4.15(1) of the EP&A Act

Section 4.15 'Matters for Consideration - general'	Complies	Comment
Section 4.15 (1)(a)(i) – Provisions of any environmental planning instrument	Yes	As detailed in this report, the proposed modifications are consistent with the applicable planning framework and do not alter the previous assessment of the development against the applicable environmental planning instruments, including the LEP and State Environmental Planning Policies (SEPPs) as outlined further below. On the 1 March 2022, 45 SEPPs are being consolidated into 11 new thematic SEPPs. This is an administrative change, and the regulatory content/legal effect of the respective SEPPs remains unchanged. Hence the commentary provided in this Modification Report and Table 4.2 about the SEPPs that are relevant to this modification remains valid, and no further/other consideration is required in the context of this SEPP consolidation.
Section 4.15(1)(a)(ii) – Provisions of any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority	Yes	The proposed Design and Place State Environmental Planning Policy (Design and Place SEPP) is being developed into a final draft form for public exhibition. The Design and Place SEPP will use a five principle-based approach to guide the design and assessment of new development proposals. The Tweed Valley Hospital project has been through a rigours and detailed design process to ensure quality building, public realm, and place design, coupled with positive outcomes for the environment and community. The proposed modifications are minor in the context of the approved project and do not materially alter the architectural or urban design response. The project would continue to achieve high quality building and public realm outcomes and would be consistent with the intent and principles of the draft Design and Place SEPP. There are no other proposed/exhibited instruments applicable to the Site or modification.
Section 4.15(1)(a)(iii) – Provisions of any development control plan	Yes	Being SSD, DCPs are not directly applicable to the Project, however, can be used as a general guide. Notwithstanding the applicability to SSD, the proposed modifications are not inconsistent with the Tweed DCP 2008 or the original Stage 2 assessment and approval.

Section 4.15 'Matters for Consideration - general'	Complies	Comment
Section 4.15(1)(a)(iiia) – Provisions of any planning agreement that has been entered into under section 7.4 , or any draft planning agreement that a developer has offered to enter into under section .4, and	N/A	There are no planning agreements relevant to the approved development, or the development as modified.
Section 4.15(1)(a)(iv) – Provisions of the regulations	Yes	The proposed modification is consistent with the EP&A Regulations.
Section 4.15(1)(b) – The likely impacts of the proposed development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,	Yes	As per the assessment and evaluation of merits in this report (**Sections 6**), the proposed modifications are not expected to result in any significant additional or altered environmental impacts. The modifications involve necessary design refinements and benefits for the project and sustainability outcomes.
Section 4.15(1)(c) – Suitability of the site for the development	Yes	The proposed modifications would have no impact/influence on the suitability of the site.
Section 4.15(1)(d) – Any submissions made in accordance with this Act or the regulations,	Yes	Any submissions would be considered by DPIE as required.
Section 4.15(1)(e) – The public interest	Yes	The proposed modifications are in the public interest and support the delivery of this important health facility for the region. The development, as modified, remains consistent with the objectives of the land use zone. It enables necessary and practical alterations and incorporates on-site renewable energy generation that will benefit the hospital, stakeholders, and broader environmental considerations in the context of reducing energy related emissions. The modifications are reasonable and acceptable in terms of amenity and environmental outcomes, consistent with the public interest.

4.3 State Environmental Planning Policies

The following table addresses relevant State Environmental Planning Policies (SEPPs) with regard to the Project in light of the proposed modifications.

On the 1 March 2022, 45 SEPPs are being consolidated into 11 new thematic SEPPs. This is an administrative change, and the regulatory content/legal effect of the respective SEPPs remains unchanged. Hence the commentary provided in **Table 4.2** about the SEPPs that are relevant to this modification remains valid and no further/other consideration is required in the context of this consolidation of SEPPs.

Table 4.2 Relevant State Environmental Planning Policies

Policy	Comment/Compliance
State Environmental Planning Policy (Koala Habitat Protection) 2021	The proposed modifications would not affect Koala habitat.
State Environmental Planning Policy No. 55 – Remediation of Land	The modifications occur with the approved/disturbed development footprint. Contamination was previously assessed, and localised remediation approved to be undertaken as part of the Stage 1 Works, in accordance with a Remediation Action Plan (RAP) and conditions of consent. The modifications would not affect contamination or related considerations. No further assessment is required.
Draft Remediation of Land State Environmental Planning Policy	Refer to above response.
State Environmental Planning Policy (Coastal Management) 2018 (Coastal Management SEPP)	The Coastal SEPP applies to part of the Site, with a mapped proximity area associated with the northern adjacent Coastal Wetland extending into the Site and part of the approved development footprint. There is no significant change to the extent or type of development within the proximity buffer. The proposed modifications would not affect relevant considerations under the Coastal Management SEPP, nor change the assessment or conclusions provided in the Stage 2 EIS. The modified development would continue to be acceptable and not adversely affect/alter the biophysical, hydrological, or ecological integrity of the northern adjacent Coastal Wetland. No further consideration is required.
State Environmental Planning Policy (State & Regional Development) 2011	The Project remains SSD as declared by this SEPP.

4.4 Local Planning Controls

4.4.1 Tweed Local Environmental Plan 2014

The proposed modifications occur with the SP2 Infrastructure zone (health services facility) under the TLEP 2014 and are permissible with consent. An overview of relevant local provisions (in relation to the modifications), including consideration of their objectives, has been provided in **Table 4.3**.

Table 4.3 Consideration of Relevant TLEP 2014 Clauses

Local Planning Instruments and Controls		
TLEP 2014	Clause 4.3 Height of Buildings	No height control applies to the SP2 zone on the Site. The addition of the solar system/structure to the upper level of the carpark would result in the overall building height of the multi-deck carpark marginally increasing from RL46.150 to RL46.265. This is an inconsequential change. The addition of rooftop solar and the associated structure would be deemed an ancillary element and effectively integrates into the scale and design of the multi-deck carpark. This addition would not change the main massing, nor result in any adverse visual bulk. The change/addition is acceptable in the Site and Project context.

Local Planning Instruments and Controls		
	Clause 7.1 Acid Sulfate Soils (ASS)	The multi-deck carpark footprint occurs within Class 5 ASS. Given the Site elevation, disturbance of ASS is not expected as outlined in the Stage 2 EIS, and no further consideration is required.
	Clause 7.2 Earthworks	Earthworks associated with Stage 2 would occur within existing disturbed areas. Lowering of the carpark building by a further 100mm into the ground and extending Basement Level 2 would require a minor amount of additional earthwork, however this is inconsequential in the context of the approved multi-deck carpark and overall Project.
	Clause 7.10 Essential Services	The modifications do not affect the serviceability of the development and all essential services/utilities would be provisioned/connected. The necessary electrical infrastructure (including cabling and protection from the solar system to the hospital main switchboard, and the switchboard itself) will be uprated to suit the increased load as required.

4.5 Environmental Protection and Biodiversity Conservation Act 1999 (Cth)

The proposed modifications do not change the considerations relevant to Matters of National Environmental Significance (MNES) and Commonwealth land, and the modifications to the Project would be consistent with the assessment's original findings (i.e. no significant impacts are likely).

As no significant impact to MNES is expected in relation to approval of the proposed modifications, referral to the Australian Government Department of Agriculture, Environment, Heritage and Water is not required.

5. Engagement

Consultation was held with the Local Health District (LHD) and the relevant project team stakeholders with regard to the proposed modifications and design refinements. Due to the minor nature of the changes and the size/look of the multi-deck carpark building essentially remaining the same, other/further consultation was not considered necessary.

6. Assessment of Impacts

6.1 Built Form and Design

The proposed changes to the multi-deck carpark relate to substituted façade material, introduction of rooftop solar which will also double as a parking shade/weather structure, minor adjustments to the lower finished floor levels, extended footprint of Basement level 2 (below ground), and other minor internal and external refinements and alterations, including a minor reduction to floor plates. There would be no notable (other than a slight reduction) change to the multi-deck carpark's overall massing, scale, or form. The following table provides commentary comparing the current approved architectural design response and the proposed modified design, identifying key changes and that which remains unchanged/consistent.

Table 6.1 Design commentary comparing current approved built form to proposed modifications

Current SSD-10353 Approval Design Comments	Proposed Modification to SSD-10353 Design Comments
Conceptual Framework and Relationship to the Main Building:	
■ Borrowing from the architectural language of the main hospital building ■ Multi-Level Expression.	■ The conceptual framework and relationship to the main building is to be maintained ■ Multi-Level expression to be maintained.
Articulated Mass:	
■ The massing for the precinct provides a series of clustered objects as an extension to the hospital across the Site ■ A close relationship to the main hospital podium.	■ The massing and relationship to the main hospital podium is to be maintained.
Architectural Language:	
■ Borrowing from the language of the main hospital building ■ Building materiality of pre-cast concrete and metal cladding construction ■ Metal louvres and mesh introduced for natural ventilation and re-enforcing the verticality reminiscent of the hospital forms ■ Multi-level façade expression defines a scale in proportion to the main hospital.	■ Design intent of borrowing from the architectural language of the main hospital building is to be maintained ■ To meet the required natural ventilation requirements pre-cast concrete elements are to be replaced with a lightweight perforated aluminium panel system. The perforated panels would give the appearance of being solid from a distance, yet provide the necessary open area to achieve the natural ventilation requirements for a carpark. ■ Metal louvers and mesh elements to be maintained ■ Multi-level façade expression maintained to define scale and proportion.
Ground Planting and Green Spine:	
■ Planting at ground level to enhance the connection between the carpark structure and the surrounding landscape. ■ The Ground Level design proposes a strong pedestrian connection to the hospital along the 'green spine'. End-of-trip facilities are located within the carpark at ground level off the Green Spine. The Green Spine continues	■ The plantings at ground level and green spine connection is maintained. ■ Canopy tree plantings around the Site to aid in visual screening / reduce visual impact is to remain unchanged as per the previous approval conditions.

west beyond the multi-deck carpark serving as the main cycle route off Cudgen Road.	
Floor Plates	
■ The floor plates of the multi-deck carpark influence the width and length (horizontal size) of the overall structure.	■ The proposed floor plate reductions of between 100mm to 980mm would be minor and inconsequential. The reductions would result in material/resource and cost efficiencies, through a minor reduction to the multi-deck carpark overall length and width.

The proposed material change from precast concrete panels to a lightweight perforated aluminium panel system would not be easily read as a notable change (particularly from a distance) from the approved design as the overall building form, colour palette, and style/pattern of panelisation remains generally consistent with the approved design.

Addition of the rooftop solar and associated support/shade structure comprises an ancillary addition to the carpark that has been designed to integrate with the roof level (at both construction stages). It would provide support for the solar panels and offer shade/weather protection to parking spaces, with relatively minimal built form and visual change. The design of the structure is acceptable and minimalist when viewed in the context of the scale of the multi-deck carpark. It is open sided and does not result in any significant height, bulk, or massing change.

The minor internal refinements, alterations, and rearrangements, including adjustment to the lower floor levels, are inconsequential and have no effect on the building height or appearance above ground level. The floor plate reductions are inconsequential and result in a minor reduction to the multi-deck carpark overall length and width, with no adverse impact to amenity or operation of the carpark.

Overall, the built form of the carpark as modified would be perceived as comparable, if not basically the same, to the approved version. The minor changes/additions would effectively integrate into the approved built form, character/purpose, and associated urban design response. The modifications are inconsequential from the perspective of built form and design response considerations and align with the design principles and outcomes of the approved version. On this basis, the modifications are acceptable and of minimal consequence.

6.2 Environmental Amenity

Environmental amenity considerations relevant to the proposed modifications are addressed in the following subsections. No other environmental amenity matters would be affected.

6.2.1 Visual Impact

As outlined in **Section 6.1**, the proposed modifications would not be perceived as a notable change, particularly from a distance or from surrounding properties, including dwellings on Kingscliff Hill that look out toward/over the Site. The changes carry over the design strategy and principles that underpin the approved design and the overall massing, appearance, colour palette, style/pattern of panelisation and vertical expression has been maintained. All these elements, and the way in which the building would be viewed in the local landscape context, remains coherent and consistent with the approved design.

Up close, the perforated lightweight aluminium panels will provide additional visual interest and solid to void rations, whilst from a distance the visual perception of the façade finishes and materiality is expected to be visually comparable, if not the same, as the approved version.

Addition of the rooftop solar and associated structure results in a negligible change to building height, however there would be no change to the overall primary massing. The structure is open-sided, partly concealed by the carpark parapets, with the upper part limited in exposure and having a height similar to the approved height of the lift overrun. All elements remain well within the Concept Proposal building/planning envelope approved under SSD-9575.

Additionally, as per the conditions of consent, landscaping and canopy tree planting throughout the Site will further screen and minimise visual impact.

As discussed in **Section 6.2.2**, reflectivity associated with the material substitution and addition of rooftop solar has been addressed by selecting a suitable matte of stain powder coat finish and solar panels that have very low potential reflective levels. The proposed modifications would therefore not create adverse glare or reflectivity impacts, and the selected materials/finishes would remain compliant with the relevant reflectivity condition of consent and amenity objectives.

The footprint of Basement 2 has been extended to provide reticulation of the mechanical exhaust duct work by approximately 1590mm wide and 38000mm long. The extension has no adverse impact visually and the look and feel are maintained as this part of the building is below ground.

The riser for the carpark mechanical exhaust from Basement 2 is located behind the façade screening as per the approved version and will not be directly visible externally. The visual impact would be perceived as comparable if not the same as the approved version. It is proposed for the riser duct work to be painted black for it to recede behind the façade.

The minor floor plate reduction of the multi-deck carpark would translate to a small reduction to the overall horizontal size of the structure. The scale of the change is inconsequential compared to the overall structure's size and it is unlikely that this would result in a perceivable visual change. If it were to be noticed, the visual change would be a slight reduction in building scale/size, meaning a slight improvement to visual impact.

Overall, none of the proposed modifications amount to a significant or unreasonable visual change that could be experienced from surrounding public or private viewpoints. The modifications would not result in a substantially altered visual appearance nor introduce new/additional potentially detrimental impacts. The modifications are inconsequential and acceptable from a visual amenity perspective.

6.2.2 Reflectivity

6.2.2.1 Building Reflectivity

The below condition of the SSD-10353 consent applies to building reflectively:

Reflectivity

B11. The building materials used on the facades of all buildings will be designed so as not to result in glare that causes discomfort or threatens the safety of pedestrians or drivers. A report / statement demonstrating consistency with this requirement will be submitted to the satisfaction of the certifier prior to commencement of construction of the above ground works for the new hospital building, multi-deck carpark or the Health Hub.

To minimise potential reflective/glare impacts, semi-gloss/satin or matte products should be chosen for facades as opposed to high gloss finishes. The materiality of the multi-deck carpark is to utilise lightweight aluminium façade systems with a powder coat finish with either a matte or satin finish to satisfy this requirement and minimise potential sunlight reflectance.

The powder coat finishes to the aluminium façade systems would be suitable to minimise glare and reflectivity to ensure reasonable comfort and amenity for users of the public realm, drivers, pedestrians, and dwellings that look toward to the Site.

Refer to the External Finishes Schedule accompanying this modification submission for further detail on the powder coat finishes nominated.

Canopy tree plantings as conditioned in the previous approval would also aid to reduce potential visual and reflectance impacts.

In conclusion, no adverse or unreasonable building reflectivity is expected, and this will be confirmed to the satisfaction of the certifier prior to commencement of construction of the multi-deck carpark. The built form, amenity, and visual impact of the carpark as modified would be perceived as comparable, if not the same as the approved version.

6.2.2.2 Potential Reflectivity from Solar Panels

The proposed solar panels would be installed on the upper level of the multi-deck carpark (subject to staging as outlined previously), with no direct interface or immediate proximity to sensitive receivers. Nonetheless, the matter of possible glare and reflectance from solar PV panels and the potential effect on neighbours, road and air traffic have been considered. **Appendix C** provides a technical summary on levels of glare and reflectance from PV systems and explains that PV systems are notably less reflective than typical building materials, window glass, or natural reflective surfaces. The technical summary concludes that both standard solar glass, and particularly solar panels that use an anti-reflective glass or coating, have very low levels of sunlight reflectance, typically below 10%. This combined with the installation location and angle of the panels (i.e. not directly facing or proximal to a sensitive receiver) means that no adverse or unreasonable reflectivity is anticipated to affect amenity, comfort, or safety.

Additionally, as outlined in **Section 6.3**, the installation of the solar panels would not adversely affect aviation nor present a flight hazard.

6.3 Aviation

AviPro, the project's aviation consultant, has provided advice regarding the proposed solar installation to the upper level of the multi-deck carpark. This advice is attached as **Appendix B** and relates to aviation safety, including the following three key issues that need consideration when installing solar PV panels in the vicinity of a Helicopter Landing Site (HLS), such as the HLS located on top of the main hospital building. These are:

- Shine, glare, and reflection potentially affecting pilot's vision
- Structural considerations i.e. whether the panel attachment points can withstand the forces of compressed rotor downwash, and
- Electromagnetic interference from the cabling connecting the photovoltaic cells to their inverters/batteries/storage and the potential to effect the helicopter's electronic flight control mechanisms.

The AviPro advice provides the following conclusions in relation to each of the above considerations:

- The shine, glare, or reflection from solar PV panels to be installed on the multi-deck carpark will not be a hazard to aviation activities within the Tweed Valley Hospital campus and will not represent a risk to aviation safety. If anti-reflective (AR) glass is used in the PV panels (which is confirmed by the technical summary at **Appendix C**), risk will be minimised so far as is reasonably practicable.

- Structural considerations: Insecurity of the PV panels on the multi-deck carpark will not be a hazard to aviation activities within the Tweed Valley Hospital campus and will not represent a risk to aviation safety. After installation, and with a rigorous inspection and maintenance regime, risk will be minimised so far as is reasonably practicable.
- Electro Magnetic Interference (EMI): The solar PV panels, cabling and inverters/battery comprising the solar electricity system on the multi-deck carpark will not be a hazard to aviation activities within the Tweed Valley Hospital campus and will not represent a risk to aviation safety. If the inverters are positioned at least 150 feet or approximately 50 metres away from the HLS, risk will be minimised so far as is reasonably practicable.

Overall, the proposed modifications are acceptable from an aviation perspective. Refer to **Appendix B** for the full assessment discussion provided by AviPro.

6.3.1 Safeguards

Although no helicopters will operate in the vicinity of the multi-deck carpark, it is still recommended that a rigorous inspection and maintenance regime for the panel mounts is implemented. This would form part of the hospital's operational management/maintenance regime.

6.4 Ecologically Sustainable Development (ESD)

The Stage 2 EIS (and supporting Architectural and Urban Design and Ecologically Sustainable Design (ESD) reports) outlined that the Project has had regard for a range of sustainability strategies and measures to minimise consumption of resources, water and energy, as well as providing better environmental quality outcomes in the design of the facility and operational procedures.

Addition of a solar PV system will complement the Project's ESD strategy and further minimise resource/energy demands by enabling on-site renewable energy generation that will service and supplement the long-term energy needs of the hospital. This is a positive initiative that will reduce energy related greenhouse emissions, demand on the wider grid, and lower long-term operational electricity costs. These outcomes provide an environmental benefit and public/socio-economic good.

The modified Project also remains consistent with the principles of ecologically sustainable development as outlined in Schedule 2 of the EP&A Regulation 2000 and as assessed in the Stage 2 EIS.

6.5 Noise and Vibration

The proposed modifications are for changes to approved elements/infrastructure and relatively minor additions (in the context of the overall Project) that do not amount to substantial new/additional scope of works for Stage 2. The addition of mechanical ventilation to Basement 2 would add to operational plant noise, however this would not be significant, and all operational plant would comply with relevant noise criteria as outlined in the Stage 2 EIS and conditions of consent. Therefore, there would be no notable change to the outcomes of the previously assessed construction and operational noise criteria/conditions and the originally proposed noise minimisation and management measures continue to be adequate and would be implemented.

6.6 Soils, Sediment and Erosion Control, and Dust

As a result of the multi-deck carpark building extending a further 100mm into the ground to achieve necessary floor to ceiling height clearances and extension of the Basement 2 footprint, a minor extent

of additional earthworks would be required to refine and facilitate site levels for construction as reflected on the modified architectural plans.

The multi-deck carpark footprint occurs within Class 5 ASS. Disturbance of ASS is not expected given the elevation of the proposed earthworks (well above 5m AHD which is the typical threshold for Class 5 ASS) as outlined in the Stage 2 EIS, and no further consideration is required.

Overall, these proposed changes are minor in the context of the approved works and would not introduce any new or altered impacts. All earthworks would continue be managed in accordance with the Project's Construction Environmental Management Plan, including dust minimisation, spoil management, and sedimentation and erosion controls.

6.7 Bicycle and Car Parking

The rearrangement of the bicycle parking and end-of-trip facilities within the multi-deck carpark is inconsequential and acceptable. There would be no change to their accessibility nor to the number of staff bicycle racks/parking (52) provided, consistent with condition D20.

There would be no net change to the total number of car parking spaces provided in the multi-deck carpark, maintaining compliance with condition B30. The multi-deck carpark floor plate reductions effectively translate to the trimming of excess footprint/material from the periphery of the carpark floors, and this has no effect on the layout or operation of the carpark or parking spaces.

The modified plans, inclusive of the solar array addition to the appliable upper parking level (Level 5 at stage 1, and Level 7 at stage 2), would be compliant with relevant Australian Standards, as per condition B29 (Operational Car Parking and Service Vehicle Layout). As depicted on the sample elevation of the solar array structure at **Figure 3.5**, the structure's support posts have a minimal footprint and would be positioned in locations that would not interfere with or hinder manoeuvrability into/out of parking spaces. The design of all parking spaces and entry/egress remains consistent with the originally provided traffic engineering advice/assessment (prepared by Bitzios Consulting dated 01/05/20) and relevant standards. The previously provided Bitzios Consulting sweep path analysis illustrates compliance with B29(a) and B29(b) and remains valid. Furthermore, as per condition B29, prior to the commencement of construction of each car parking / bicycle parking areas or facilities (including provisions of access / driveways), compliance with the applicable requirements/Standards will be verified and submitted to the Certifier.

6.8 Cumulative Impacts

Given the nature of the modifications (being changes to already approved elements/infrastructure and relatively minor additions) and that they would effectively integrate into the design response and construction delivery of the Project, they are not expected to result in any new, additional, or altered cumulative impacts.

7. Conclusion & Justification of Modified Project

This Section 4.55(1A) Modification Report and supporting documentation demonstrates that the proposed modifications to the approved Tweed Valley Hospital (SSD-10353 – Stage 2) are appropriate and suitable for the Site when tested against the relevant heads of consideration detailed within Sections 4.55(1A) and 4.15(1) of the EP&A Act.

Changes to the multi-deck carpark are necessary to achieve design refinements/adjustments, adequate clearances, and ventilation requirements. A number of the changes also result in material and cost savings. The addition of rooftop solar, that will double as a parking shade/weather protection structure, will benefit users of the hospital/carpark and have energy and sustainability benefits. Overall, the proposed modifications are relatively minor and do not alter the parking provision/operation nor the predicted environmental impacts of the Project. The modifications will enable refinements and improvements to the Project, whilst maintaining the standard of design and positive ESD, amenity, and environmental outcomes.

This report has established that there are no significant matters affected by, or resulting from, the modified development outcome, with the identified considerations being of minimal consequence.

Given the nature of the modifications and the minimal environmental impact (if any), the existing Project mitigation measures are adequate, and an updated table of the approved mitigation measures for the Project is not required.

The application is consistent with the objects of the EP&A Act and continues to be consistent with strategic directions for the State and statutory context. The modifications are acceptable and in the public interest.

Copyright and Usage

Appendix A

Proposed Modified Plans (Multi-deck Carpark)

Appendix B

Aviation Advice

Appendix C

Photovoltaic Systems: Technical summary on levels of glare and reflectance

Appendix D

SSD2 Drawing Changes/Amendment Register