

TWEED VALLEY HOSPITAL NSW

ARCHITECTURAL AND URBAN DESIGN RESPONSE TO
EIS / SSD STAGE 2 APPLICATION SUBMISSIONS

26 FEBRUARY 2020



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Infrastructure



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Northern NSW
Local Health District

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1.0. INTRODUCTION

STH-BS (Silver Thomas Hanley – Bates Smart) has been engaged by Health Infrastructure NSW to provide Architectural Services for the new Tweed Valley Hospital Project.

On the 23rd of September 2019, Health Infrastructure (HI) NSW submitted a State Significant Development Application (SSDA), for Stage 2 of the Tweed Valley Hospital Project (- Main Works and Operation) on the site at 771 Cudgen Road, Cudgen NSW.

This report is to be read in support of the submitted SSDA and Environmental Impact Statement (EIS) and accompanying Appendices (application number SSD 10353), in particular Appendix C, Architectural and Urban Design Report and Appendix B, proposed Plans and Drawings.

This report has been prepared in response to State Government Agency, Local Government (Tweed Shire Council) and New South Wales Government, Department of Planning, Industry and Environment (DPIE) submissions. This Report and accompanying drawings are to be read in conjunction with the collective consultant discipline response to submissions.

2.0. LOCAL GOVERNMENT

2.1. Tweed Shire Council (TSC) (Reference Letter dated 8th November 2019, Council Reference: DA 19/0683 & DA18/0681.01 LN 84310) – Modification

2.1.1 TSC Comment

“The main element of the modification that Council wants the Department to further investigate is the introduction of the 10 storey multi-deck carpark on the western side of the development site. This will be the first element of the site for anyone visiting the Hospital from the main Tweed Coast Road and M1 Highway. To date the application has not demonstrated a western photomontage of the multi-deck carparking area” ...

STH – Bates Smart response:

The application has provided more distant western photomontages of the development site to give a clear demonstration of the visual impact of the development including the multi-deck carpark from viewpoints identified in the submitted Visual Impact Assessment. The Visual Impact Assessment September 2019, located in the EIS Appendix J, conducted by Urbaine includes three viewpoints taken from key locations from the western approach. Viewpoint No.15 taken from the location of the junction of Cudgen Road and Tweed Coast Road (Visual Impact Assessment Scale of 6), Viewpoint 18 at the driveway of 740 Cudgen Road (Visual impact assessment scale of 3) and Viewpoint 19 taken from the boundary fence of 748 Cudgen Road (Visual Impact Assessment scale of 6) . The visual impact assessment scale No.6 is classified in the lower range of medium negative impact on the pre-existing visual quality of the view, No.3 is classified as a minor negative impact on the pre-existing visual quality of the view.

Additional western photomontages, near to the western site boundary have been provided along with an updated Visual Impact Assessment, please refer to this document for further clarification of this response.

Additional western photomontages, including from Tweed Coast Road (west site boundary) have been included in an updated visual impact assessment as part of the response to submission report by Urbaine.

2.1.2 TSC Comment cont.

...” or suggested sufficient mitigation measures to soften the impact of this structure. The multi-deck carpark appears to represent a solution for onsite parking however it could be better incorporated into the site” ...

STH – Bates Smart response:

The size of the multi-deck carpark is in direct response to the 2023/24 demand study which outlined the numbers of car spaces across the TVH development site. The inclusion of a multi-deck carpark of this size was needed to ensure safe, secure and accessible means to access the main hospital building and allow for future development zones to the west. The location of the multi-deck carpark to the western side of the main hospital building is:

- In response to the hospital's future expansion strategy to the east.

- Utilising the topography of the western embankment to ‘embed’ basement levels of parking whilst minimizing the visual impact from the southern main public entry.
- The adjacency to the main staff entrance off Cudgen Road.
- Utilising the existing windbreak in the south west corner and along part of the western side of the site (refer to submitted landscape plans) as an effective visual screening device that will help to soften the visual impact through filtering views toward the multi-deck carpark. (see Viewpoint 15/18/19 Appendix J, Visual Impact Assessment)
- The multi-deck carpark façade has been designed to have a direct relationship to the main hospital building, drawing on the concept of a collection clustered forms defined by contrasting materiality which intends to breakdown the mass of the building. The colouration of the precast and metal cladding creates a link to the main hospital building. The relative openness of the façade is carefully managed to ensure the carpark is naturally ventilated and the visual impact of the ramping and internal lighting is minimised.

2.1.3 **TSC Comment cont.**

“with softer design elements (green walls),”...

STH – Bates Smart response:

Irrigated in-ground planting to the screened sections of the carpark has been included in the design to reinforce the green spine concept which denotes the main east west pedestrian circulation network. This strategy has been employed to ensure the multi-deck carpark is integrated into the landscape creating a softer natural interface with the public and staff at low levels.

2.1.4 **TSC Comment cont.**

“an air bridge connecting to the main hospital, and further site consideration for additional covered awnings throughout the site”.

STH – Bates Smart response:

The circulation path from the multi-deck to the hospital is covered and level and activated through high quality public space negating the need for an air bridge connecting ground level of the main hospital building to the multi-deck.

Access to the on grade western entry of the hospital is enhanced with landscaping and has high levels of public amenity with multiple rest points, open level recreational green space, opportunities for retail and pet visitation areas for patients.

This external circulation network provides excellent accessibility for all users and staff and an intuitive wayfinding strategy that reinforces nature and quality public realm to draw visitors to the entry of the main hospital building.

2.2. Tweed Shire Council (TSC) (Reference Letter dated 8th November 2019, Council Reference: DA 19/0683 & DA18/0681.01 LN 84310) – Urban Design – Site Master Planning

2.2.1 TSC Comment 31. Site Master Planning

“Whilst it is acknowledged the development application is limited to the proposed building and site configuration as documented in the application, reference is made to previous TSC comments made (SEARS, DA Stage 01) highlighting the need to master plan the entire hospital site. Whilst it is recognised that the Architectural and Urban Design Report includes a section on potential future stages, a whole of site master plan as part of a development application would provide a greater degree of certainty in terms of the ultimate site road and pedestrian network and future development blocks particularly across the eastern side of the site and configuration and interrelationship of different land uses within this health precinct more holistically. Importantly this would also provide an understanding of how the hospital site will integrate with the surrounding urban fabric including TAFE and low density residential on the opposite side of Cudgen Road.”

STH – Bates Smart response:

Potential future development and consideration of master planning on the site have been adequately addressed previously, demonstrating capacity for future development as required, and informing a suitable development layout. The Concept Proposal and Stage 1 early works have been approved under SSD 9575. This approval (subject to the proposed minor modifications) confirms the hospital’s development envelopes and associated infrastructure layouts, which have been further defined and designed in the Stage 2 application. As such, there is no formal requirement or condition requiring further master planning. Any future development applications would integrate with the health precinct. Any future development applications would integrate with the health campus and be required to consider all relevant design and environmental factors, and any required mitigation measures. Such applications would be assessed on their merits. **Please refer to section 5.4.7 of the SSD EIS report for further clarification.**

2.2.2 TSC Comment 32. Site Master Planning Recommendation

- a. That a holistic and hospital site master plan should be prepared which nominates future development stages and demonstrates how the overarching site configuration;*
- b. Has been designed as an extension of the existing urban structure (rather than separate from) to consider ultimate road and pedestrian networks, development blocks, activity nodes, connections, areas of public domain, landscape corridors, legible access and egress points that will inform current and future stages of development across the site;*
- c. Acknowledges the surrounding land use interfaces and nominate appropriate building form and envelopes which will be of a compatible scale with regard to character and view sharing; and*
- d. Identifies opportunities for street edge and interface land uses which will have mutual benefits for the hospital and surrounding residential and education precinct catchment. This may include ease of access to small retail convenience stores, pharmacy, food and beverage outlets and public domain areas which may service hospital users as well as the TAFE and immediate residential areas within the hospital’s walkable catchment.*

STH – Bates Smart response:

Potential future development and consideration of master planning have been considered in Section 4.12 of the Architectural and Urban Design Report by STH-BS for the EIS Stage 2. This section demonstrates the capacity for future development as required and informing a suitable development layout. The Concept Proposal and Stage 1 early works have been approved under SSD 9575. This approval (subject to the proposed minor modifications) confirms the hospital's development envelopes and associated infrastructure layouts, which have been further defined and designed in the Stage 2 application. As such, there is no formal requirement or condition requiring further master planning. Any future development applications would integrate with the health campus and be required to consider all relevant design and environmental factors, and any required mitigation measures. Such applications would be assessed on their merits.

2.3. Tweed Shire Council (TSC) (Reference Letter dated 8th November 2019, Council Reference: DA 19/0683 & DA18/0681.01 LN 84310) - Site Planning and Floor Plate Configuration

2.3.1 TSC comment 33.

The submitted design report alludes to site and building planning being ordered largely around the creation of strong visual (and physical) connections across the site and from the building to the surrounding landscape and views beyond.

However, based on the submitted site and floor plans the central north facing axis appears to be the only strong physical and visual axis that has been established.

STH – response:

The planning allows for views and connection in a north south and east west orientation, reinforcing the key circulation axes which form the ordering principles of the building. Visual and physical permeability through the building has been consolidated to reinforce the reading of main entry points for visitors connecting the boulevard/site entry with the landscape to the north. The singular north facing civic axis creates a hierarchy of space to achieve this key design principle.

Whilst built form was always a consideration, The briefed departmental adjacencies and relationships necessitate a consolidated, rather than fragmented, built form.

2.3.2 TSC comment 34

“Whilst this strong north-south formal entry axis has been strongly incorporated, there is less legible east-west access along public entry corridors. The corridors currently appear to be internalised, not adjoining any landscape courtyards and thereby with no access to natural light or way points to break the relatively long circulation routes.”

“To enhance the physical and legible connection between the car park and main hospital there is opportunity to include a sky-bridge connection.”

STH – response:

The public entry corridor which connects the main lobby and the eastern entry, serving the specialist drop off from Cancer and Renal, is reinforced by an adjoining 25m north facing landscaped courtyard and additional voids connecting Level Ground to Mental Health waiting areas on Lower Ground.

The inclusion of a light well on the western side of the hospital was considered as a key design feature of the public realm experience but deemed unfeasible due to the need for a continuous floorplate to accommodate the Level 1 Perioperative Department clinical workflows. The public entry on the Lower Ground western entry has been widened and the corridor is broken down to a series of episodic journeys interspersed with areas to rest and gather outside key community-based departments.

The inclusion of light voids and courtyards was considered as part of this process. One of these within the Western podium occupied by the Emergency Unit and Perioperative Service. However, through consultation with the clinical staff it increased critical travel distances between time sensitive clinical zones and was unable to provide the relevant clinical adjacencies for high acuity zones in these departments, thus provided a sub-optimal clinical outcome.

It is noted that all other light wells and courtyards remain, in particular a number within the eastern podium which accommodates lower acuity clinical spaces such as Inpatient Units.

Whilst it is noted that the opportunity does exist for a sky bridge to be incorporated in the future, reinforcing the on-grade connection to the hospital entry on Lower ground with quality landscaping and providing high quality public realm was agreed to be the preferred direction.

Please refer to Section 9.5 of Turf's Landscape Report for SSD Stage 2.

2.3.3 TSC comment 35

"In relation to the hospital floor plate configurations, due to the depth of the lower levels, lack of larger internal courtyards or light wells only a relatively small proportion of floor areas would have access to natural light and views. It is however, conceded that there are substantial components of a hospitals operational program which are more conducive to or require internalised spaces."

STH – Bates Smart response:

The main hospital building has incorporated courtyards where operationally and clinically appropriate. Where possible the design has incorporated in the lower levels of the main hospital building, courtyards to enhance the access to natural light for the patients, visitors and staff.

Impacts of helicopter downdraft, agriculture activity from the south, bushfire from the north and west and the critical clinical travel distances internally have resulted in the designed outcome.

Please refer to Section 9.9 of Turf's Landscape Report for SSD Stage 2, and to Section 4.3 of the Architectural and Urban Design SSD 2 Report. Also please see the response to comment 34 above for further clarification.

Courtyards are required for external green space when patients may be in the hospital for long periods of time. Mental Health is an example of this with an average length of stay (ALOS) of 14 days. Therefore, courtyards are scheduled as an integral part of the design. The Intensive

Care Unit and Special Care Nursery are areas that have a scheduled terrace as part of the design to allow patients and families access to outdoor space

However, by 2031, we note the service statement indicates limited growth in inpatient services due to new models of care being developed and implemented to: keep people well for longer in the community; reduce demand for inpatient services; and provide effective alternatives to inpatient treatment. The ALOS anticipated to be 2.8 days in 2031.

Therefore, as there is green space available externally for patients and families, and ALOS is reducing, there is no requirement for internal courtyards in the Tweed Valley Hospital.

2.3.4 TSC comment 36

“The quadrant floor plate configuration of the upper levels would open up floor plates to multiple view and natural light opportunities, there is also a significant western and south western elevation surface area which would be subject to significant heat load. The relative flat elevation finish would provide little shading opportunity.”

STH – Bates Smart response:

The main hospital building is rotated approximately 45 degrees from true north resulting in no southerly or westerly facing windows for a more even natural light exposure across all windows. A suitably low overall glazing percentage has been targeted to ensure good access to natural light without excessive solar heat gain. North-east and south-west oriented staff workspace facades with greater glazing requirements are located centrally within the hospital and will be shaded by adjacent building forms depending on the time of day. Glazing selection and specification will ensure the required performance requirements are met while providing a low maintenance façade which maximises views out to nature.

2.3.5 TSC comment 37

“It is also noted that on some floor plates (ground, level 02, level 03) service plant areas have been nominated to the north / north-eastern edges of the building which would have the optimum opportunities for solar aspect and views towards the ocean.”

The plant areas were positioned in response to the clinical planning requirements and demand for certain departments i.e. CSSD and the requirement for Medical Imaging to be collocated as close to the clinical lifts as possible.

The location of the plant was also considered in terms of their vertical and horizontal proximity to the areas they are serving i.e. the demands of the Perioperative, Maternity and Emergency departments. These plant areas require high levels of air intake meaning they are required to be placed on the exterior of the building.

The clinical design has ensured, where possible the optimum positioning of spaces for solar aspect and views including placing all windows at the termination of corridors, orientating patient beds towards the views and ensuring that public lift lobbies are orientated towards distant views as part of the wayfinding strategy.

2.3.6 TSC comment 38

“Site planning and floor plate configuration recommendation:

a. Incorporation of additional opportunities to open up visual and physical connections across the site and buildings floor plates to the surrounding landscape and views in keeping with the original design intent.

b. Create more legible east-west axis for pedestrian circulation considering width of circulation, height/volume, integration of landscape and natural light along its route(s).

c. Consider the incorporation of a sky-bridge link between the car park and main hospital building.

d. Review floor plate configurations to incorporate greater opportunities for courtyards and light wells which will draw in natural light and ventilation opportunities as well as open up more external and internal views.

e. Review location of service plant areas which currently on some floors would occupy the best access to views and solar orientation.”

STH – response:

- a. As per response #37 above
- b. As per response #34 above
- c. As per response #34 above
- d. An optimal number of courtyards have been provided in line with the requirements of the Functional Brief. Strategic opportunities to provide access to external spaces and natural light could be achieved without compromising operational effectiveness. Advice from the agricultural consultant recommended that courtyards and decks to the south of the Main Hospital were not recommended due to agricultural activity of adjacent farms and to minimise any potential for land use conflict. During extensive consultation with the LHD and hospital staff including clinicians, a number of layouts were tested for each of the departments. In particular, the Emergency Unit and the Integrated Perioperative Service underwent a number of iterative options to determine the “best fit” that would provide the necessary clinical flows and adjacencies to deliver their models of care.

Also refer to Section 2.3.2
- e. As per response above #37

2.4. Tweed Shire Council (TSC) (Reference Letter dated 8th November 2019, Council Reference: DA 19/0683 & DA18/0681.01 LN 84310 - Built Form and Design Response)

2.4.1 TSC comment 39.

“The submitted Architectural and Urban Design Report discusses the design response drawing influence from the region’s rich agrarian tradition and connection to place and land.”

STH – Bates Smart response:

This design embodies the community's close relationship with the land, reflecting the site's historic use as farmland to create a highly site-specific and contextual response.

The architectural response refers to the site's agrarian past in several ways. The strong linear lines of the land inspired a legible pattern language which can be read in the architecture, landscape and interior spaces, providing a unified design response which can be experienced throughout the site. This pattern language is embodied in the quadrant anchor form facades as linear vertical and horizontal lines, creating a layered patchwork at varying scales. A palette of lightweight metal cladding was selected as a reference to the region's architectural vernacular, a familiar material which has a long history with the Australian landscape and features prominently in the existing farm buildings on the site. The grounded architectural forms clustered around the quadrant anchors utilise a palette of pigmented concrete that is reminiscent of the site's ground core samples, further embedding the hospital's connection to the land.

Considerations have also been made for the *Kingscliff coastal subtropical context* by selecting coastal planting species as part of the landscaping strategy.

The design concept has the support of the community following multiple consultation workshops with the Community Reference Group and also presented to the Council Reference Group.

2.4.2 TSC comment 40

"How rather than pursuing a more landscaped style campus configuration, the proposed hospital presents as a more compact and vertical floor plate configuration in a four-quadrant arrangement which would total nine storeys. In this regard it is noted that the proposed building envelope would now exceed the proposed building envelope by way of height and as nominated as part of SSD Stage 1 proposal and approval."

STH – Bates Smart response:

An application to amend the approved SSD9575 Concept Proposal maximum planning envelope was submitted to allow for some adjustment to the envelope, however the maximum planning envelope height was not altered - refer to drawing AR-SKE-50-501 Rev.04 dated 11/09/2019, issued as part of the EIS concept modification package. The proposed hospital remains within this modified maximum planning envelope – refer to page 39 of the SSD Stage 2 Architectural and urban design report.

2.4.3 TSC comment 41

"Given the more compact tower configuration, the proposed massing presents as a series of intersecting and stacked volumes (refer submitted renders and elevations). These volumes are in turn articulated with materials which are predominantly set out in a strong vertical alignment. With little horizontal or 'landscape' reference across the building's elevations, the combination of the proposed stacked volumes, verticality of materials and no capping roof form accentuates the buildings overall visual perception of height, scale and mass. This in turn presents the building as a 'heavier' volumetric form and one which could be interpreted as having a more distinct urban character rather than regional north coastal character."

STH – Bates Smart response:

The hospital form has been conceived as a collection of objects in the landscape, incorporating a distinct hierarchy to differentiate built form and aid with wayfinding (refer to pages 41-52 of the SSD Stage 2 Architectural and urban design report).

The quadrant anchor form principal lightweight metal facades along the 'north-south' axis of the hospital takes on a more civic scale, expressing the built form as a singular gesture in a warm and earthy material palette, drawing people toward the heart of the building (Page 45 & 50). Quadrant anchor form facades in the 'east-west' axis take on a secondary patchwork expression with lightweight metal cladding applied in both a horizontal and vertical direction. The double-height expression which can vary between expressed levels results in a strong horizontal reading of stacked forms (Page 44 & 46).

The lower levels of the hospital are expressed as smaller scale granular forms, establishing a streetscape rhythm and employing a palette of earthy pigmented concrete, separated by recessive breaks to create a more human scale interface which avoids long continuous expanses of façade (Page 49).

Overall, building forms diminish in size towards the periphery of the hospital, creating a collection of objects that move with and into the landscape (Page 55), while a diverse material palette of earthy precast, lightweight metal cladding of varying scales and finishes continue a strong dialogue with the land (Page 52). This comes together to create a calm and healing environment which is informed and inspired by the local agrarian context, resulting in a contemporary, functional and site-specific design response which reflects the community's relationship with the land.

2.4.4

TSC comment 42

"It is also noted that apart from some reduced landscaped courtyards on the ground floor, the overall design has moved away from incorporating external areas, and landscaped terraces at the upper level. Incorporation of landscape areas vertically would serve to improve the overall amenity of the various hospital users in alignment with the proponent's original biophilic design intent."

"Integration of larger external and landscaped areas across upper levels would also serve to soften the buildings elevations and more strongly articulate the integration of built form and landscape. This would significantly improve contextualising the building with its Kingscliff coastal subtropical context."

STH – Bates Smart response:

In addition to the points made in the response to comment 38, the key driver in the reduction of green space to the outer courtyards is the bushfire risk (refer to advice from Bushfire Consultant as part of this Response to Submission). For similar reasons it has also been advised not to incorporate elevated sky and roof gardens in most locations around the hospital, consequently the architects and landscape architects have instead focused on other features such as the green spine, northern terrace, main entrance forecourt, boulevards, central hospital views to the north, and the remaining feasible courtyards that integrate with the hospital.

2.4.4 TSC comment 44

“In terms of building finishes and materials it will also be important to maintain design intent and consistency between approved elevations and material palette and how the building progresses to construction stages. Images attached below of the Northern Beaches Hospital illustrate that submitted photomontages and nomination of building materials at development application stage can be substantially value managed to the point of the overall building form and material palette being substantially different.”

STH – Bates Smart response:

Noted.

2.4.5 TSC comment 45 - Built Form and Design Response Recommendation

“There is an opportunity to explore architectural forms and material finishes to be more reflective of the Kingscliff coastal subtropical context. This could include:

a. Greater diversity in elevation articulation and material finish. This could include more layered and or screened elevations relating to solar orientation aimed at reducing heat loads on elevations which would also introduce an additional layer of design detail.

b. Exploration of a stronger horizontal rather than vertical elevation composition to further break down the buildings overall mass, scale and height and more fully explore the topographic and landscape relationship between the site and building. This could include cantilevering floor plate edges to create shaded overhangs and further articulation of the glazed facades transom and mullion configuration.

c. Revisiting previous ideas of integrating external landscape terrace and large balcony areas to upper floor areas to improve hospital user amenity and soften the buildings overall volumetric form and elevations.

d. Updating photomontages with locational photographs to give a greater sense of scale and relationship between the building form, material finish, site and streetscape.

e. Include a montage of the western approach to include the multi-story car park and any landscape screening proposed.

f. Proposed Tweed Valley Hospital (below): Presents as a series of stacked volumes with strong vertical alignment of elevation and materials which accentuates overall height, mass and scale. This could be interpreted as having a ‘heavy’ visual presentation and not overly reflective of the subtropical coastal character.”

STH – Bates Smart response:

- a. Refer to **TSC comment 36** response and **TSC comment 39** responses
- b. Refer to **TSC comment 41** response
- c. Refer to **TSC comment 42** response
- d. Refer to **2.1.1 TSC Comment** response
- e. Refer to **2.1.1 TSC Comment** response
- f. Refer to **TSC comment 41** response

From an agricultural perspective the main concern with the multi-deck carpark is that it will remove the opportunity to increase the western boundary vegetation buffer should intensive agriculture occur in the future on the parcel to the west. The proponent should be providing some form of additional screening in that side of the carpark. The carpark itself provides some additional screening to the hospital but even users of the carpark can be a sensitive receiver.

STH – Bates Smart response:

As referenced in the Land Use Conflict Risk Assessment by Tim Fitzroy & Associates in SSD Stage 2 EIS submission, the design incorporates a 10m wide vegetation buffer along the western and south western boundary coupled with a multi-deck carpark adjacent to the Hospital. The open screening which is required for the natural ventilation of the multi-deck carpark can be redistributed to the east, south and north facades to mitigate the effects of future agricultural activity on the adjacent site to the west. The combination of the 10m agricultural buffer and difference in levels to the adjoining site will contribute to increased buffer effectiveness.

2.4.6 TSC comment 46

It is acknowledged the Architectural and Urban Design Report presents an overlay of pedestrian as well as vehicular circulation, however proportionally the site plan is substantially more car centric than pedestrian orientated. This is most evident with the concentrated vehicular access point off Cudgen Road which is also the public transport drop-off and main pedestrian access point. Pedestrian routes in this regard are less direct (longer), often needing to cross multiple roads and mostly uncovered.

STH – Bates Smart response:

The internal road network design is the result of a number of factors that were considered together during the masterplan and concept design phases. A key consideration was the requirement to consider walking distances for elderly patients, patients with disabilities and visitors. This requirement applies to all public entry points – the main entry and eastern entry on ground level, and the western entry adjacent to the emergency department on lower ground.

The design team was requested to test a number of road layouts and set-down options at the main entry, including bringing the road network right up to the entry itself. The design team was able to demonstrate acceptable walking distances from the set-down to the lift cores, resulting in the retention of the south entry plaza as an important civic space offering relative calm away from vehicular traffic and a legible connection to the internal spaces.

At the eastern and western entries, the set-down areas were required to be close to the building to minimise walking distances to outpatient renal and cancer services, and the emergency department respectively. At each of these entries, direct pedestrian pathways have been provided, integrated with the green spine concept, to separate pedestrian and vehicular flows and provide a legible, high amenity journey from the carpark to the hospital.

The main entry road and roundabout configuration provides the required queuing distances for traffic entering and exiting the site and allows for rapid reticulation of high traffic flows (such as to and from the carparks) as well as providing the required redundancy for emergency vehicle alternative access paths, including at times of high traffic volumes and congestion.

The resultant pedestrian routes from the bus stops and site entry are as direct as possible, and a high level of amenity is proposed along these routes in the form of landscaped spaces, seating, shelter and activation of the space through connection with the proposed health hub buildings. The extent of shelter proposed, from the main entrance to the health hub, means the majority of the journey from the bus stops is undercover. At the eastern and western entries, shelter is proposed from the set-down zones to the entries.

2.4.7 TSC comment 49

"Pedestrian and cycle pathway recommendations:

- a. That additional public domain areas be included within the site plan as high outdoor amenity areas of retreat and relaxation to enjoy the view and aspect.*
- b. Consider all pathways linking car parks to the main building to be covered walkways."*

STH – Bates Smart response:

- a. Please refer to Section 9.7 - Key Spaces, of the Landscape Architectural Report.
- b. Covered awning walkways are located on the primary public entry points to the building and connections to key public transport hubs. Please refer to the diagram below in Fig. 01

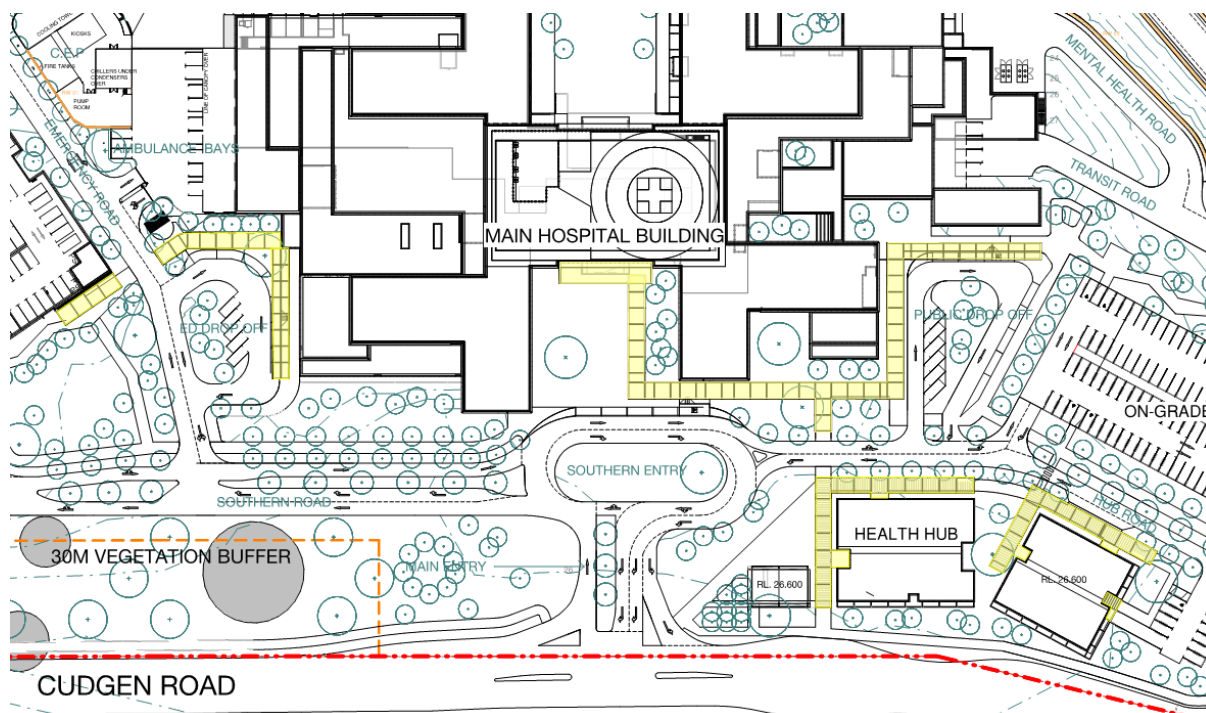


Fig. 01 Covered walkway location

3.0. STATE GOVERNMENT

3.1. Transport for New South Wales - Attachment A – Comments and recommendations on SSD 9575 MOD 2 and SSD 10353

3.1.1 *TfNSW comment 1*

Condition B22 (e) and (f) in Schedule 2 of the Concept Approval requires the Stage 2 application to provide:

- *details of pedestrian access between the hospital and the proposed bus stop within the indented bus bay on Cudgen Road in accordance with the relevant disability access standards and guidelines.*

STH – Bates Smart response:

We can confirm that pedestrian access between the hospital and the proposed bus stop is in accordance with relevant accessibility standards and guidelines.

Hardstands and distance to the bus shelter have been captured. Details of pedestrian access between the hospital and the proposed bus stop will be included in the RtS (Response to Submissions) pack.

3.2. Department of Planning Industry and Environment - Attachment 1 – Response to submissions on SSD 9575 MOD 2 and SSD 10353

3.2.1 *Built form and landscaping*

a. The design of the proposed hospital building requires further refinements to improve the visual impact of the development on the surrounding areas and the internal amenity of the patients / visitors / staff.

STH – Bates Smart response:

The hospital form has been conceived as a collection of objects in the landscape, incorporating a distinct hierarchy of form and materiality to diminish mass and aid with wayfinding (refer to pages 41-52 of the SSD Stage 2 Architectural and urban design report).

The tallest L-shaped in-patient units form a quadrant setting up a clear and intuitive wayfinding strategy and two very clear east-west and north-south axes from which to enter the building (Page 45 & 50). Quadrant anchor form facades in the 'east-west' axis take on a secondary patchwork expression with lightweight metal cladding applied in both a horizontal and vertical direction. The double-height expression which can vary between expressed levels results in a strong horizontal reading of stacked forms (Page 44 & 46).

The lower levels of the hospital are expressed as smaller scale granular forms, establishing a streetscape rhythm and employing a palette of earthy pigmented concrete, separated by recessive breaks to create a more human scale interface which avoids long continuous expanses of façade (Page 49).

Overall, building forms diminish in size towards the periphery of the hospital, creating a collection of objects that move with and into the landscape (Page 55), while a diverse material palette of earthy precast, lightweight metal cladding of varying scales and finishes continue a strong dialogue with the land (Page 52). This comes together to create a calm and healing environment which is informed and inspired by the local agrarian context, resulting in a contemporary, functional and site-specific design response which reflects the community's relationship with the land.

The current design of the proposed hospital building responds to the functionality of the hospital, the clinical needs, the site, and maximises access to the exceptional views. The building fabric is of high quality and the conceptual strategy and design outcome has had continued support from the local community through the numerous reference group workshops conducted throughout the concept and schematic design phase.

b. The proposed landscaping on the site should also address the amenity of the users and improve the legibility of the "Green Spine" within the building as well as the carparks, consistent with the Concept Proposal.

STH – Bates Smart response:

The landscaping, which integrates with the design of the building and the Green Spine is a key design element. The east-west orientation of this axis through the hospital street continues as a tree-lined footpath offering views, sheltered seating, and amenity. This has been highlighted in the architectural and urban design report EIS SSD2 (Section 4.2) and should be read in conjunction with Turf's response to submission.

The public entry corridor which connects the main lobby and the eastern entry, serving the specialist drop off from Cancer and Renal, is reinforced by an adjoining 25m north facing landscaped courtyard and additional voids connecting Level Ground to Mental Health waiting areas on Lower Ground. The position of this courtyard extends the green spine concept internally by reinforcing the east west axis with natural light and intensive planting

The inclusion of a light well on the western side of the hospital was considered as a key design feature of the public realm experience but deemed unfeasible due to the need for a continuous floorplate to accommodate the Level 1 Perioperative Department clinical workflows. The public entry on the Lower Ground western entry has been widened and the corridor broken down to a series of episodic journeys interspersed with areas to rest and gather outside key community-based departments.

c. Having regard to the above, the Department considers that the internal layout of the hospital building should be amended to address the following concerns that were raised by the State Design Review Panel, prior to the lodgement of the application:

- *absence of courtyard at the Basement Level.*
- *absence of an internal courtyard on the north-western side of the Lower Ground Floor.*
- *absence of light voids on the Ground Level and Level 1.*
- *overly long and narrow corridors on the Lower Ground Floor and Ground Floor with no provisions for natural light.*

- *inadequate size of the internal courtyard on the north-eastern side of the Lower Ground Floor.*
- *no presence and legibility of the 'Green Spine' within the building.*

STH – Bates Smart response:

The inclusion of a light well on the western side of the hospital was considered but deemed not feasible due to the need for a continuous floorplate to accommodate the Level 1 Perioperative Department workflows.

The main hospital building has incorporated courtyards where operationally and clinically appropriate. The resultant access to natural light has always been the intent but impacts of helicopter downdraft from above, agriculture impacts from the south and bushfire impacts from the north and west and the restriction of critical clinical travel distances internally have resulted in the designed outcome. Please see the response to comment 34 above for further clarification.

The building has been designed to maximise the visual connection to the surrounding landscape from a range of key vantage points within the hospital. The orientation and shape of the L-shaped in-patient blocks has allowed for the highest proportion of uninterrupted views lines to the coast and surrounding hinterland. Please refer to drone photos provided within this report Fig.02 and Fig.03 that illustrate the extraordinary views from levels where the most critical patients will spend most of their time.

d. The proposed multi-decked carpark should introduce further articulation through changes in massing, greater variation in materials and / or additional use of green walls.

STH – Bates Smart response:

Refer to the Irrigated in-ground planting to the screened sections of the carpark described under item 2.1.3

In addition, the proposed multi-deck carpark façade intends to retain the solid elements and metal facade compositions which borrow from the language of the main building. The colours of the hospital have been selected to mirror and portray an earthy and durable materials palette that references the site. Refer to Section 4.4 of the Architectural SSD2 report for details on materiality selection, the distinction between elements, granular forms and finishes.

e. As recommended by the State Design Review Panel, the Department considers that the following elements should be introduced to connect the building with outdoor spaces and contribute towards a landscaped appearance of the building:

- *sky gardens to the north-west / north-east of the shared administration area on Level 2.*
- *increase in the size of the Level 2 sky gardens catering for the 'Child & Adolescent' and 'Older Persons' in-patient units (a minimum of 50% increase above the proposed size).*
- *sky gardens to the north-west of the shared administration zone on Level 3.*
- *multiple sky gardens on Levels 4 and 5.*

- use of shared stairs between floor levels in lieu of the current emphasis on lifts.
- additional planting / canopy trees and landscaped elements to offset and mitigate the visual impacts of the hospital building, roads and carparks.
- additional landscaping at the ground level improved outdoor amenity areas for patients, staff and visitors.
- a feasible walking loop within the site.

STH – Bates Smart response:

Refer to advice from Bushfire Consultant as part of this Response to Submission.

The use of shared staircases relates to the use of central circulation stairs have been provided.

Additional landscaping at the ground level is not proposed as there needs to be a balance between the visibility of the main entries, signage, and coordinated landscaping.

The pathways and covered ways within the site have been defined.

Letter from PPiE/ DPI is response to the Modification 2 to New Tweed Valley Hospital (SSD-9575)

"I refer to the above matter that was distributed to the Department of Primary Industries (DPI) for comment on 9 October 2019.

DPI has reviewed the modification and has the following comments and recommendations.

DPI notes the proposed modification for a multi-deck car park on the western boundary of the hospital development. As indicated the condition of consent requires a 10m vegetated buffer along the western boundary which will not be altered as a result of this modification. The previous concept plan allowed for the potential to increase this buffer to between 22-30m should future intensification of agricultural production occur on the adjoining land. It is understood that the inclusion of the multi-deck car park will reduce this potential distance for part of the western boundary.

As such, DPI recommends that consideration be given to include some form of screening within the car park design that will assist with reducing any potential land use conflict risk with agricultural activities on the adjoining land parcel in the future."

STH-BS response:

The civil design of the essential road network which allows emergency, service and staff vehicles access to the site reduces the ability to plant additional vegetated buffer zones in this location. The topography of the western boundary is extremely steep allowing for a very effective vegetated buffer to exist in order to mitigate the farming activity on the adjoining property.

Introducing additional screening to the multi-deck carpark will restrict the carpark from being naturally ventilated, therefore requiring a redesign of the other three facades to accommodate the open area needed. Under the Building Code of Australia (BCA) carpark buildings may be naturally ventilated providing a minimum open area to ensure adequate ventilation crossflow. The alternative is for a mechanical ventilation system running full time.

The open screening can be redistributed to the east, south and north facades to mitigate the effects of future agricultural activity on the adjacent site to the west. This can be investigated in Design Development.



Fig.02 View North



Fig. 03 View West