TWEED VALLEY HOSPITAL NSW

ARCHITECTURAL AND URBAN DESIGN RESPONSE TO EIS AND SSD STAGE 1 APPLICATION SUBMISSIONS

24 JANUARY 2019

STH BATESSMART™

CLIENT

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Note: All area calculations are advisory only.

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1.0. INTRODUCTION

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

On the 22nd October 2018, Health Infrastructure (HI) NSW submitted a State Significant Development Application (SSDA), for the Tweed Valley Hospital (Concept Proposal and Stage 1 Works) on the site at 771 Cudgen Road, Cudgen NSW.

The application pathway for the Project consists of a staged SSDA under section 4.22 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

This Report is to be read in support of the submitted SSDA and Environmental Impact Statement (EIS) and accompanying Appendices (application number SSD 18-9575), in particular Appendix C, Built Form and Urban Design Report and Appendix B, Concept Proposal drawings and SSD Stage 1 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 and Environment submissions. This Report and accompanying drawings are to be read in conjunction with the collective consultant discipline response submissions.

2.0. STATE GOVERNMENT AGENCIES

2.1. Department of Industry – Lands and Water Division

2.1.1 ***5. Comment and Recommendation***

DPI Agriculture considers that greater integration of local agriculture within the built form and environment of the hospital will assist with meeting the 'community asset' project aspiration outlined on page 28 of the EIS. DPI Agriculture considers that a Statement of Commitment to utilise local produce as part of the hospital's food procurement would assist in maintaining agricultural production in the region. Hospital grounds could also be designed to include edible gardening opportunities for rehabilitating patients."

The regions rich agricultural history is understood to be a key corner stone of local community and industry. This value is to be celebrated and will play a significant role informing the architectural and landscape design response to the site and urban context. Opportunities for incorporating edible plant varieties within the landscape design as well as gardening opportunities will be considered as part of the landscape design development process, which subject to feasibility will be detailed and submitted as part of the Stage 2 SSD application.

2.1.2 ***7. Comment and Recommendation***

DPI Agriculture requests the hospital design factor in possible changes in land use (intensification of use) on the block of land on the western boundary of the hospital site. The consultants in their various reports only consider how it has been used in the past, not how it could be used in the future with a change in ownership or enterprise."

The proposed 10m agricultural buffer to the sites west title boundary abutting, Lot 6, DP727425 has been reviewed and justified in the EIS application Section 5.6.1 and Appendix J and as further validated by the Land Use Conflict Risk Assessment consultant (refer to response by Tim Fitzroy and Associates included in the Response to Submissions Report).

Should the neighbouring land owner (located west of the site) intensify agricultural activity there is adequate spatial capacity available to widen the vegetated buffer to a maximum width ranging from 22m to 30m along the abutting title boundary.

2.2. Government Architect NSW

The below list of design recommendations has been raised by the Government Architect NSW (GA NSW) Panel, Session–01, formalized in a submission letter to Health Infrastructure NSW dated 12th December 2018, following the first review project consultation session held on Wednesday 3 October 2018.

Detailed feedback on the main project has been provided and will be responded on further prior to next session. The below items are design recommendations as part of the EIS

The panel makes the following design recommendations:

1. *Further consideration of the visibility and urban impact of the hospital precinct at both local and regional level.*
2. *Prepare landscape strategies, including:*
   - *a ground level plan that identifies and prioritises a hierarchy of open space.*
   - *the Cudgen Rd setback zone as an amenity for the community, workers and visitors alike.*
3. *Review vehicle and pedestrian circulation and access to address considerations outlined above:*
   - *a coherent and connected street network that creates a framework for future development*
   - *priority given to pedestrian amenity*
   - *accommodates multiple modes including pedestrian, bicycle and public transport movements*
4. *Proposed engagement with the GA NSW, should occur at the following design stages:*
   - *site concept plan, including the original concept options as well as options evaluation and the rationale for the preferred envelope option.*
   - *concept plan for the hospital*
   - *schematic design, including sections and elevations*
5. *further engagement and consultation with the local aboriginal community to incorporate site specific histories and narratives into the design as it develops.*
6. *A brief report which outlines a clear response to all issues raised by the SDRP*

In reference to point 6 above, below is a summary response to the GA NSW list of 5 principle design recommendations;

2.2.1 *1. Further consideration of the visibility and urban impact of the hospital precinct at both local and regional level*

Having regard for the prominence of the site we note the need for the design to sensitively consider visual impact on surrounding neighbourhoods and within the site explore design opportunities for civic placemaking to enhance local community amenity.

In response to feedback the Maximum Planning Envelope has been modified to further reduce the visually perceivable bulk associated with the upper levels, refer AR-SKE-50-501. The Maximum Planning Envelope is further articulated as grouped floor levels of diminishing density, illustrated in drawing AR-SKE-50-101, 201, 301 and 401 appended. This will ensure the resulting hospital form reduces with height, an example of which is illustrated in Building Section A drawing AR-SKE-51-003 which reflects a work in progress block form.

The development of the building form will be undertaken in consultation with the GA NSW and an updated visual impact prepared for inclusion in the Stage 2 SSDA.

2.2.2 ***2. Prepare landscape strategies, including:***
- ***a ground level plan that identifies and prioritises a hierarchy of open space.***
- ***the Cudgen Rd setback zone as an amenity for the community, workers and visitors alike.***

Concept Landscape strategies have been developed since the initial Consultation Session on October 2018, which have been illustrated in the appended revised Landscape Zonal Plan and fig.01 Proposed Indicative Pedestrian Network drawings, as part of the Architectural and Urban design Response to Submission Report.

The zonal plan identifies areas of open space that are prioritised within a hierarchy as:
1. Retained, undisturbed forest
2. Low maintenance native landscape and buffer planting
3. Hospital landscape
4. Farm landscape
5. Vegetation buffers

The Landscape Zonal Plan further defines the Hospital Landscape as a range of complementary purposes including; gardens, breakout spaces, open lawns, plazas and feature entries. The Landscape Zonal plan is to be read in conjunction with the fig.01 Proposed indicative Pedestrian Network plan appended which illustrates a hierarchical network of pedestrian routes linked to civic, gathering and social spaces which are to be designed during Schematic Design stage. The Maximum Planning Envelope has been set back 75m to establish a landscape focused pedestrian friendly forecourt relationship with Cudgen Road. The Support Building located in the forecourt zone to the hospital, accommodates a combination of complementary health, education and retail functions. The Support Building signals the hospitals entrance location and is intended to support and activate the public forecourt space encountered on the journey to the hospitals main entrance.

Further details of these concepts will be developed in consultation with GA NSW and included as part of the Stage 2 SSDA.

2.2.3 ***3. Review vehicle and pedestrian circulation and access to address considerations outlined above:***
- ***a coherent and connected street network that creates a framework for future development***
- ***priority given to pedestrian amenity***
- ***accommodates multiple modes including pedestrian, bicycle and public transport movements***

Vehicle and pedestrian circulation and access has been reviewed in conjunction with the development of the Landscape strategies noted above.
The street network is designed to be functional and coherent based the following framework (refer to drawing AR-SKE-10-007 and 008):
- Separation of service and ambulance traffic flows to the north service road using dedicated site entrances A and D.

- Public traffic flows utilise the main entry (supported by intuitive wayfinding strategies) to the main hospital street that runs east-west along the site.
- A single decision point at the main hospital entrance to direct public flows either to the west, for Emergency visitors, or to the east for ambulatory and day patients.
- The main public hospital street can be extended east to accommodate a future connected campus structure.

Priority is given to pedestrians as described in the Landscape Pathway Network drawing, refer fig.01 appended, which include connection with a conceptual network of complementary public spaces. This plan identifies the following pathway networks;

- Main pedestrian route from site entry (public bus stop) to hospital entry
- Secondary pedestrian route along public hospital street
- Dedicated pedestrian route/spine running east to west through the site connecting all carparks and hospital entrances. This access spine can be extended to the east to support future complimentary program development.
- Connector Pedestrian paths connecting the above routes
- Informal pedestrian trail along the landscaped northern part of the site.

Multiple modes of transport are accommodated as described in the Landscape Pathway Network drawing, including the integration of bus stop and cycle routes.

2.2.4 ***4. Proposed engagement with the GA NSW, should occur at the following design stages:***

- ***site concept plan, including the original concept options as well as options evaluation and the rationale for the preferred envelope option.***
- ***concept plan for the hospital***
- ***schematic design, including sections and elevations***

Acknowledged. An initial consultation session has been held on 3rd October 2018 to describe the opportunities and limitations of the project. The next session is scheduled for February 2019 at which the Concept Options of the preferred envelope will be evaluated, and the schedule and dates of future meetings will be agreed.

This will include:

- a workshop to review the Developed Option and responses to initial feedback prior to Stage 2 SSDA SEARS request
- a workshop on the Resolved Option aligned with the preparation of the EIS for the Stage 2 SSDA
- final review sessions will be held to discuss and inform the panel on the EIS responses.

Additional sessions will be held as required.

2.2.5 ***5. Further engagement and consultation with the local aboriginal community to incorporate site specific histories and narratives into the design as it develops.***

As outlined in the EIS Appendix H Consultation Report, ongoing engagement and consultation with the local Aboriginal and Torres Strait Islander communities will occur throughout the Project. The Community Reference Panel also includes members of the Aboriginal community. This Panel is supporting the Project through the planning and design phases.

2.3. Transport for NSW

2.3.1 ***Bus Stop Design***

Comment
The EIS notes two new bus stops will be provided on Cudgen Road, to the east of the primary signalized intersection. The Master Plan (Drawing No: AR-SKE-10-006) indicates the location of these bus stops. As the proposal seeks approval for the concept plan and Stage 1 works, detailed design of the bus stops have not been provided at this stage, however, should be provided in subsequent stages. Pedestrian access between the hospital and the proposed bus stop within the indented bay on Cudgen Road will need to be provided in accordance with the relevant disability access standards and guidelines.

Recommendation
Detailed design of the bus stop and a site plan indicating the location of the bus stop and the lay-up zone should be provided in future stages. These designs should include consideration of distance and grade requirements to comply with disability access standards/guidelines and be carried out in consultation with TfNSW and the local bus operator to ensure operational safety, accessibility and feasibility.

Noted. The design of the proposed new bus stop, kerbs and walkways are to be developed in accordance with the relevant disability access standards, guidelines and good practice in consultation with the TFNSW. Design consideration will be given to the travel distance from bus stop to the hospital front door, the route of which will include the provision of seating and shelter. The design currently reflects feedback from the local bus operator, however the opportunity to integrate bus routes on the campus would be further investigated in the Stage 2 SSD application.

2.3.2 ***Active Transport***

Comment
It is noted that 14 visitor and 29 staff bicycle staff parking spaces are required based on the Tweed Development Control Plan. The EIS states the concept plans do not show the bicycle parking and that secure bicycle barking, storage and end of trip facilities will be further considered in Stage 2.

Recommendation
Future design iterations should illustrate the location bicycle facilities in secure, convenient, accessible areas close to the main entries incorporating adequate lighting and passive surveillance and in accordance with Austroads guidelines and the relevant Australian Standards.

Acknowledged. The provision of appropriate and convenient staff and public cycle routes and bike storage, including end of trip facilities are to be accommodated during the Schematic Design stage which will be submitted for approval as part of the Stage 2 SSD application.

3.0. LOCAL GOVERNMENT

3.1. Tweed Shire Council (Reference Letter dated 7th December 2018, Council Reference: DA 18/0685 LN40120.)

3. Urban Design – The Master Plan process should adopt the provisions of the State Design Review Panel having regard to the character of the area.

3.1.1 ***Recommendation K – SDRP Findings***

It is recommended that the findings of the SDRP are considered in the context of the sites master planning and to inform subsequent stages of the hospitals design and procurement.

We acknowledge this recommendation and note that the findings of the GA NSW will be considered in the context of the sites master-planning, to inform subsequent stages of the hospitals design and procurement and will be submitted to the relevant Planning Authority for review and approval at the appropriate time, commensurate with the content and stage of design development submitted.

The consultation process with the GA NSW has been outlined in the submitted EIS under section 4.2.1.1., which submits that a comprehensive consultation plan for engaging the Government Architect NSW has been prepared, and further a tracking and response mechanism will be established to have regard for all recommendations and incorporate these to the design where deemed advantageous and feasible.

As further outlined in the EIS, the first consultation, Session-01 took place on the 3rd October 2018. Response to the GA NSW submission, which echoes the findings of Session-01 have been addressed in section 2.2 of this Report. Development of design resolution exceeding the scope and intent of the submitted EIS Concept Proposal and SSD Stage 1 application including all future GA NSW findings will be provided as part of the Stage 2 SSD application.

3.1.2 ***Recommendation L – Design Principles and Design Response***

It is recommended that the master plan respond more closely to the locality character and the subtropical climatic context by:
Devising a suite of site-specific urban design principles to inform subsequent stages of the hospital and sites design including principles of sustainable design;

- *Addressing the site's threshold position between the locality's rural hinterland and urban settlement through site landscape, appropriate setbacks, building form, building materiality and visual analysis;*
- *Address the site's edge fronting Cudgen Road in terms of landscape, pedestrian access and visual amenity;*
- *Address the building envelope, height, form, mass and scale in the broader topographic context; and*
- *Address the site's interface with the low-density urban interface to the east in terms of land use, site access, building form and visual impact.*

The current application is for a Concept Proposal and Stage 1 early/enabling works for the Tweed Valley Hospital. The future site masterplan considers both hospital expansion and renewal, and future complimentary allied-health program accommodating functions for example; additional health, education, training and research facilities to support the Tweed Valley Hospital health service. Retail functions will be integrated as necessary to support and activate the public realm. Development time frames and delivery sequencing of the full masterplan is currently unknown, however approval for all future development phases on site will be sought via separate Planning applications.

We acknowledge Tweed Shire Council's recommendations to provide greater site masterplan resolution to inform the urban response of future development, in particular to address the main boundary interfaces with the adjacent urban context and having regard for integrating climate appropriate design principles. The proposed location of the hospital building, which has deliberately been placed on the central deepest zone of the developable plateau, facilitates use of the sites ridge topography to accommodate 3no. habitable levels below the main public entrance level, concealed from street view. The proposed 75m Cudgen Street setback is intended to ameliorate the perceived scale of the hospital building, providing foreground capacity to receive a combination of tree grove (agricultural buffer) and low 2-4 storey buildings which will provide the urban interface with the hospital. It is further intended to return this principle on the east boundary interface, stepping down further in scale to 2-3 storey structures, being more scale responsive the adjacent residential suburb. The residential suburb which extends up a west orientated hillside is fronted by the Kingscliff Swimming Centre (civic function), refer EIS, Appendix C, section 5.4, fig.33 and therefore, minimal direct residential interface with the hospital campus occurs.

In regard to the hospital building design, the Concept Proposal submission illustrates a Maximum Planning Envelope form within which the hospital will be designed. The visual impact of the planning envelope has been further considered, by reducing the upper level volume density to minimise visual impact from surrounding areas (refer to drawing AR-SKE-50-501). The reducing floor plate density accommodates the progressive integration of form articulation and the integration of internal courtyards within the proposed hospital building ensemble. The current EIS submission assesses the Maximum Planning Envelope form which does incorporate the proposed hospital building form.

The ongoing multi-disciplinary design process for the hospital and campus grounds will inform further development of the hospital, site and masterplan designs which when complete will respond to Recommendation L raised by Tweed Shire Council, to be submitted for approval with the Stage 2 SSD application in due course.

3.1.3 ***Recommendation M – Building Form***

It is recommended that the master plan explore additional building envelope typology configurations which represents a stronger landscape / linear rather than compact tower response. This could include distributing the buildings bulk across the site reducing the overall height, mass and scale by stepping the building forms aimed at reducing building height at both the rural (western) and urban (eastern) thresholds and interfaces (see indicative diagrams).

The Stage 1 EIS, Appendix C, Section 4.2 Building Typology, describes the component parts of a hospital and at high level describes a range of complex considerations that help define the final typological response. The EIS application notes that the building typology has been studied and the selected typology established as most advantageous being best positioned to support an efficient, modern level 5 healthcare service. The options study considered the following criteria;

- Capacity for growth and flexibility. Hospitals are planned on a "nucleus concept", meaning expansion distances relate to the core clinical service capacity and are proximity restricted in their relationship to patient ward areas (IPU).
- Circulation efficiency. Horizontal typologies are more highly dependent on general circulation area, resulting in less efficient internal planning – longer hospital street.
- Clinical and patient transfer efficiency. Doctors and other medical staff capacity via lifts and stairs to circulate quickly and with minimal effort between vertically stacked departments. Planning long travel distances between surgery and ward areas pose high risks to medically vulnerable patients. Vertical typologies are dependent on lifts, and therefore dedicated medical and separate public use lifts are provided to ensure reliable response times, with minimal cross-over resulting.
- Building services efficiencies. Vertical Typologies rely more on services risers for distribution. Horizontal typologies rely more heavily on ceiling voids which can be very complex and result in servicing and floor to ceiling compromises to realize.
- Site use efficiency (future development, future expansion and complimentary uses) Vertical typologies are more sustainable. They impact a smaller footprint on site initially preserving more ground for landscaping and public open space, and maximizes available land for future growth and renewal, future proofing the hospitals capacity to remain on site.
- Medical planning and service efficiency. The vertical stacked model affords greater support department efficiencies offering opportunities for shared functions and facilities, as well as centralized logistics departments.
- Site topography response. Both the horizontal and vertical typology designs were tested taking advantage of the sites natural ridge topography. The horizontal typology resulted in greater clinical area being embedded in the ridge (backing onto the ridge) which demands excavation to achieve day light access to service floor plates.
- Urban visual impact. The horizontal typology was identified as having the lowest urban visual impact when viewed from key local vantage points. When viewed from Cudgen Road the horizontal typology however gave rise to a long 4 storey building form which failed to achieve the view permeability to the environmental area to the north of the site.

Notwithstanding the greater visual prominence of the selected vertical typology, the project team including Health Infrastructure NSW endorse this approach as providing a superior and more efficient hospital outcome.

The options review study and preferred typology justification were presented to the GA NSW on the 3rd October 2018.

The design team are currently developing a building massing composition which will consider the (bulk and scale) interface with the adjacent urban context. For example, this may include expressing the hospital as a cluster of smaller forms. Further design development will be presented to the GA NSW at the next Consultation Session which once resolved will be submitted in the Stage 2 SSD application.

3.1.4 ***Recommendation N – Circulation & Movement***

It is recommended that the master plan more clearly articulate internal roads and streets which organise and structure the site's future building envelopes, vehicular circulation, car parking as well as clearly delineated pedestrian (shaded) and cycle movements across the site, open space and public domain areas. Similarly, a location for public transport access (bus stop) should be nominated and relate to the surrounding context (residential and TAFE). It is further noted that the location of the car parking areas, which dominate a substantial portion of the site's area are a substantial uncovered walking distance from the main hospital access points. Given the site's slope, there is good opportunity to locate car parking in building envelopes under croft areas and provide vertical circulation to access different hospital and health services.

The site access and internal road network design engineering justification has been provided with the submitted EIS and accompanying Appendix L Traffic Impact Assessment. An indicative pedestrian pathway plan has been provided at fig.01 appended. Design provision of sheltered walkways providing access from the surface carparking to the hospital entrance will be included and documented in the Stage 2 SSD application.

3.1.5 ***Recommendation O – Future Stages***

It is recommended that the master plan more closely address future stages of the development and recognise the potential for a substantial mix of land uses including health and allied health services as well as a range of retail, community, and public domain which would also be used and relevant to the existing surrounding community

Acknowledged. An important site selection consideration was the significant reciprocal advantages associated with locating the hospital in close proximity to established community areas and local civic functions. In the case of the development site there are valuable functional relationship benefits gained from siting the hospital adjacent to the Kingscliff TAFE (tertiary education with medical education programs) to the south of the site. Further and of equal importance is establishing a community interface with the residential suburb to the east (Kingscliff Hill) refer EIS application, Appendix C, figure 28. The proposed masterplan future community interface could include a diverse range future complimentary functions and civic focused landscaping, parkland and walking trails. The submitted EIS application proposes a Concept stage framework strategy for developing the campus, refer Appendix C, section 5.4 p.65, and Landscape Zonal Plan which illustrates the following;

- Hospital building located to "anchor" future development on site, establish a formal urban interface with Cudgen Road and the adjacent TAFE campus, refer EIS, Appendix C, figure 30.
- Future development to occur layered from Cudgen Road expanding to the east and west respectively along a linear spine, responding to the site ridge topography and Cudgen Road being the primary urban interface for the campus
- On-site vehicle and pedestrian principle circulation axis will follow the east west expansion spine, refer EIS, Appendix C, figure 34 and appended Figure-01.
- Future complimentary development which subject to function may demand a greater public address to be located on Cudgen Road, with the more discrete support or

functions set-back along the sites northerly ridge line taking advantage of views to the environmental area beyond.

- Hospital renewal development and future complimentary program expanding to the east and west flanks of the hospital, with functions located appropriately to address the neighbouring land-use and urban interface e.g. locating residential-related functions to the sites east boundary interface with the Kingscliff Hill suburb.
- Develop an integrated future landscape concept. This may include providing greater visual permeability from Cudgen Road to the tree canopy of the environmental area beyond between future expansion sites. These radiating view corridors represent landscape design opportunities, as illustrated reference EIS, Appendix C, figure 32

The above principles that form the Conceptual Framework for future expansion on campus will be further developed and validated during Schematic Design stage, the detail of which will be provided for approval with the future Stage 2 SSD application.

7. Community Services – The application is lacking in detail in regard to accessibility, transport, public safety, onsite linkages and linkages external to the site, accommodation and housing, the relationship with other ancillary social service providers in the area and whether existing State social providers will relocate form Council's assets.

3.1.6 ***Recommendation W – Accessibility, Transport and Public Safety***

It is recommended that the Department of Planning request additional information to clarify the considerations used in determining the impact as "low" and include demographic considerations, benefits to active and public transport linkages, accessible parking options for people with limited mobility.

The proposed hospital development including the wider campus and associated public realm modification and/or proposed new facilities will have regard for best practice design giving consideration to the provision of accessible footpaths, cycle paths and new public bus stops. Accessible car parking, complimented with accessible footpaths located in close proximity to hospital entrances will also be provided, included in the Stage 2 SSD application.

3.1.7 ***Recommendations X – Public Safety***

It is recommended that the Department of Planning request additional information to clarify how hospital related violence and anti-social behaviour associated with hospitals will be mitigated in relation to surrounding facilities.

Within the submitted EIS, Appendix C, section 3.3. outlines how the objective of the Crime Prevention through Environmental Design (CPTED) guidelines under section 4.15 of the EP&A Act 1979 as a multi-disciplinary approach will be implemented to deter criminal behaviour through environmental design, design of buildings and places. This objective will be reviewed and solutions developed through the course of Schematic Design which will be submitted for approval as part of the SSD Stage 2 application.

14. Other Miscellaneous – additional items for consideration

3.1.8 ***Recommendations III – Air Quality and Dust***

It is recommended that the Department of Planning and Environment (DP&E) require that For the Concept proposal and Stage 2 of the development, where hospital site is smoke free, designated onsite smoking areas shall be identified to prevent second-hand exposure to tobacco smoke and potential pollution of neighbouring properties and public areas.

Modern hospital and healthcare environment policy typically supports and promotes the objective of a “no smoking” campus environment.

The development will be in compliance with the Smoke-free Environment Act 2000 and the NSW Health Smoke-free health care policy [PD2015_003] with NSW health Buildings, grounds and vehicles to be smoke-free.

3.1.9 ***Recommendations QQQ – Mosquito / Midge***

Where required, detailed design and measures to ameliorate the potential impact of these species on staff, patients and visitors will be developed as part of the Stage 2 design. This will include considerations of measures to prevent mosquitos entering hospital buildings, minimising mosquito breeding, and awareness of mosquito risks.

The Cudgen and Kingscliff are located between the Tweed River and Cudgen Creek. There are many local lakes and tributaries which network in nearby proximity to the development site, giving rise to areas prone to flood inundation during peak rain seasons and flood events. This feature of the region has contributed to its natural beauty, with low-lying, flood prone lands supporting nature and flora reserves remaining undeveloped. Due to the extensive coastal waterways and estuarine wetlands and other factors, mosquito and biting midge nuisance requires consideration as defined in Tweed Shire Council, Planning Control Document A-6, which is to be considered during schematic design stage of the landscape and hospital buildings (stage 2).

Design consideration will be given to minimize the impacts of these species on the users of the hospital, having regard for recommended propagation mitigation guidelines which are relevant to earth works and landscaping affecting ground water drainage, landscape design proposals, the planning and design of usable outdoor space as well as the introduction of fine meshed fly screens where openable windows are proposed. Further, at operational stage the hospital will need to implement a range of maintenance and control procedures to limit future species propagation opportunity and safe guard the wellbeing of its users including, patients, staff and public alike.

4.0. NEW SOUTH WALES GOVERNMENT

4.1. Department of Planning and Environment (Reference Letter dated 18th December 2018, DPE Reference: SSD 9575)

Attachment 1

4.1.1 ***1. Concept Building Envelope***

The EIS indicates that the lowest level of the envelope is RL +19. The Department seeks clarification of this RL as the basement level is located below the lower ground floor and the basement is located well above the existing ground level in certain areas (such as the north- western section) comprising a storey. Please confirm the basement level RL and the height datum (i.e. AHD or other).

Given that the concept proposal seeks approval for the maximum building envelope, the depth of the envelope below the ground should be specified which includes the maximum depth of the basement level.

Please provide the indicative maximum gross floor area that would be facilitated by the concept building envelope. This should include the maximum indicative basement floor area.

The EIS application and supporting Concept Proposal drawings, specifically AR-SKE-50-101, 201, 301 and 401 identifies a building Ground Level of RL +28.00 and Lowest Point of Envelope of RL +19.00. For clarity, the annotation “Ground Level” is to be interpreted as Main Public Ground Level Entrance, being nominally level with the site entry level off Cudgen Road. Further, the “Lowest Point of Envelope” is to be interpreted as the Lowest Habitable Floor Level of the building. Additionally, levels have been annotated as RL’s (relative level). These levels should be read as Australian Height Datum (AHD) levels, measured in metres above sea level e.g. RL +28.00, meaning +28m above sea level (or +28.00 AHD).

Since submission of the EIS, design development has occurred which has included seeking to achieve a more efficient hospital / site interface relationship. The purpose of this is to take advantage of the sites natural topography and limit the need for excessive earthworks (cut and fill). As a consequence the Main Public Ground Level Entrance AHD (RL) has been slightly lowered to +27.75 AHD. Further, an additional level has been inserted under part of the previous lowest habitable floor level to take advantage of the available unplanned zone identified by DPE above the existing Natural Ground Level (NGL) in order to limit the need for substantial earthworks (fill). The lowest habitable floor level within the proposed amended planning Envelope is +14.25 AHD – refer to the appended amended Concept Proposal drawings.

Where the NGL still remains lower than the lowest habitable floor level, it should be interpreted that the Maximum Planning Envelope continues extending down to intersect with the ground plane (and to include below ground substructure). The surrounding ground level to the hospital will either remain at the existing NGL AHD or be modified by bulk earthworks as part of the site design.

The sloping topography of the project sites' ridge line has at the early site selection stage was identified as an advantageous feature, which could accommodate the design of substantially on-grade lower ground levels (minimal basement and excavation) which serve to conceal views the full hospital scale from the main access road interface. The design team have sough to locate the proposed hospital building on the ridge which has enabled accommodation of 3no. lower habitable building levels, below the Main Public Ground Floor Level.

The maximum potential gross floor area accommodated by the proposed Maximum Planning Envelope based on applying the maximum envelope density percentages illustrated in drawings AR-SKE-50-101, 201, 301 and 401 (including lower ground and roof plantroom levels) totals 85,688 sqm. However, it is expected that the aggregate result (i.e. some zones at upper end of range of densities and some at lower) will be limited by clinical planning requirements and project budget constraints to a GFA of approximately 65,000sqm, which is consistent with the original EIS submission.

4.1.2 ***2. Visual Impact***

Concept Proposal

It is noted in the submitted section that the lower ground floor in the north-western corner of the concept building envelope would be 7m 8m above the natural ground level (RL + 11.9). Unmitigated, this has the potential to result in detrimental visual impacts on the neighbouring properties and the wider area due to the anticipated high retaining walls on the northern side, the sloping topography in this part of the site and the potential lack of vegetation screening due to Asset Protection Zone requirements. Details of potential mitigation strategies should be provided.

The levels (RL) of the staff car parking on both sides of the concept building envelope are needed to ascertain the level of these areas when compared to the proposed building envelope and the levels at the site boundaries. The ancillary areas (such as proposed car parks or other) with associated levels have not been included in the sections submitted with

Sections should be provided through the site including the car park and service road levels along with the concept building envelope to ascertain the potential visual impact of these areas and associated retaining walls on the surrounding properties. Details of the proposed mitigation measures, to minimise any potential detrimental visual impact due to the concept building envelope and the ancillary areas must also be provided.

The road and surface carparking designs have been undergoing further design development since the EIS SSD Stage 1 application. This has occurred to position the proposed new road and surface car parking levels as close to natural ground level as possible in order to mitigate excessive earth cut and fill requirements. In accordance with the proposed revised Concept Plan AR-SKE-10-006, the logistics yard located at the north-west corner is to be set at 1.2m below the basement 1 level of the hospital (loading dock) resulting in a finished logistics yard ground level of +17.55 AHD. Based on the immediately adjacent natural ground level at the closest west title boundary interface of +11.9 AHD this reflects a relative level differential of approximately 5.6m. Resultantly provision of a 10m wide Vegetated Buffer at natural ground level and an elevated roadway incorporating 2.5m wide footpath, accommodates a 30deg. angle embankment (batter).

From the neighbouring property assuming the agricultural buffer is maintained at a minimum height of 3m, only 2.6m height receding embankment will be visible, which when set-in over 20m from the title boundary would impose minimal visual impact on the amenity of the neighbours land to the west. The design team will give further design consideration to this boundary interface and develop appropriate visual impact mitigation measures as part of the landscape design proposal which will be submitted with the Stage 2 SSD application. It is expected in time that the agricultural buffer will entirely conceal views of the raised north service road from the adjacent property. Should the neighbouring land owner in the future intensify agricultural activity, there is capacity to widen the vegetated buffer to a maximum width ranging from 22m to 30m.

A new Masterplan, Proposed Site Levels drawing AR-SKE-10-009 has been appended with this report which includes both existing and proposed site level information. This has also been coordinated in the revised Building Elevation/Section drawings, provided accompanying this report.

Visual Impact of Retaining Walls

The visual impact of retaining walls on the surrounding properties will be mitigated using a combination of techniques. Banking of landscape areas to the top and toe of walls (at appropriate maximum grades), will minimize total wall heights. Walls will also be terraced where possible to further reduce bulk and scale. The materiality and texture of walling will also be carefully considered to mitigate visual impact. Gabion walling is currently being considered, using local natural stone with hues that complement the natural landscape, and reference the local historic stone wall construction by South Sea Islanders. The walling will then be masked with vegetation. Generous zones of planting will be provided to the foot of retaining walls wherever possible, and cascading planting to the top of walls where appropriate. Within Asset Protection Zones, planting will remain an important technique to mitigate visual impacts, albeit the species mix and distribution in these areas will be designed in accordance with APZ requirements, including planting in clusters (rather than rows), maintaining gaps in canopies, and low flammability plants. Incorporation of tree species of a height to visually mask the building is proposed.

4.1.3 ***3. Cut and Fill and Retaining Walls***

Stage 1 works

It noted that fill is proposed along the western section of the site as part of the Stage 1 works. The cut and fill details within Drawing number C011 Rev P4 is unclear and does not provide complete details of the proposed fill depth. However, it appears that up to 8m fill is proposed on the western side. It is anticipated that this fill is required to support the service road and the proposed car parking areas identified in the concept proposal. This should be clarified.

The extent of cut and fill should be over laid on the survey plan and the areas of cut / fill should be hatched identifying the resultant levels after the landform modification.

The Response to submissions should also identify whether retaining walls or any form of batters are anticipated to be built in the future (or part of the Stage 1 works) to support the filled areas, especially on the western section, so that the extent of the proposed works (both for Stage and Concept Proposal) are clear. Should retaining walls be proposed as part of the Stage 1 works to support the filled areas in the western section of the site, then the details of the visual impacts of the retaining walls on the surrounding properties should be provided.

The Stage 1 works include benching of the site with a number of retaining walls. RLs of the top of the walls and sections through the site identifying the height of each of these retaining walls should be provided. Please clarify whether these retaining walls are required to accommodate the car parking areas in the future.

Concept Proposal

It is also noted that the concept proposal includes a vegetative buffer along the western edge to prevent any adverse impacts due to the proposed land use and the adjoining agricultural land. However, given that the proposed access road is located close to the boundary and the fill (in Stage 1) is proposed to support the infrastructure within the site, it is unclear as to how this vegetative buffer would be maintained or the width of the buffer as part of the future application.

Additional landscape plans with details should be provided to confirm the ability to maintain this vegetative buffer and the extent of the buffer in the future.

The submitted Masterplan Concept Plan AR-SKE-10-006 (amended), indicates the proposed north service road west kerb edge at its closest point to the west title boundary measures 22m. As outlined in response to 4.1.2 above, a 30-degree angle land embankment is achievable at this boundary interface. Some minor service road realignments have also been applied to optimize the north service road relationship with the sites' existing topography. This is illustrated in the revised EIS and Stage 1 SSD drawings, which accompany this report.

Note that it is the design objective to adopt battered land embankments (which can be planted) in favour over retaining walls. Both embankments and retaining walls will be well integrated within the landscape design to be included in the SSD Stage 2 application.

Maintaining the Vegetative Buffer

In accordance with Agricultural Impact Assessment advice, a minimum 10m wide vegetative buffer is required for this portion of the western boundary. The proposed access road is set-in minimum 22m from the west title boundary, therefore local modifications to ground levels will have minimal impact on the integrity of the buffer zone, ensuring the vegetated buffer can be maintained in perpetuity. Furthermore, the curved alignment of access road through the vegetative buffer and additional buffer width at the south west corner of the site assists to maintain minimum buffer integrity. The landscape design will provide a resolved strategy that addresses the west boundary interface the details of which will be submitted with the SSD Stage 2 application. As outlined in section 4.1.2, should intensification of agricultural activity occur on the adjacent lot, the masterplan has capacity to accommodate the widening of the vegetated buffer from 10m to a maximum width range of 22-30m, as required.

Attachment 2

4.1.4 ***2. Sediment Basins***

The EIS indicates that the sediment basins are to be constructed on the site as preliminary works (not part of this application). However, the Review of Environmental Factors (REF) indicates that the location and volume of the sediment basins approved as part of the REF are not the same as the sediment basin diagrams that are provided the "Stage 1 drawings" in the EIS

Should the required sediment basin diagrams not match those determined by the REF process, then these should be included in the Stage 1 works and the plans should be amended to include the basins.

The SSD Stage 1 drawings reflected an early civil engineering design iteration of the works required along the base of the site ridge located immediately south the environmental area. The principal civil design concept remains unchanged however further design development of the road network, surface car parking and landscape since submitting the Stage 1 SSD has informed necessary revisions to the design of the proposed sediment basins. Revised Stage 1 SSD drawings have been provided to support this report.

4.1.5 ***3. Replacement Planting***

Section 3.2.2 notes that several trees would be removed including some of moderate retention value. In this regard please provide details of replacement planting with an offset ratio that would be proposed in Stage 2.

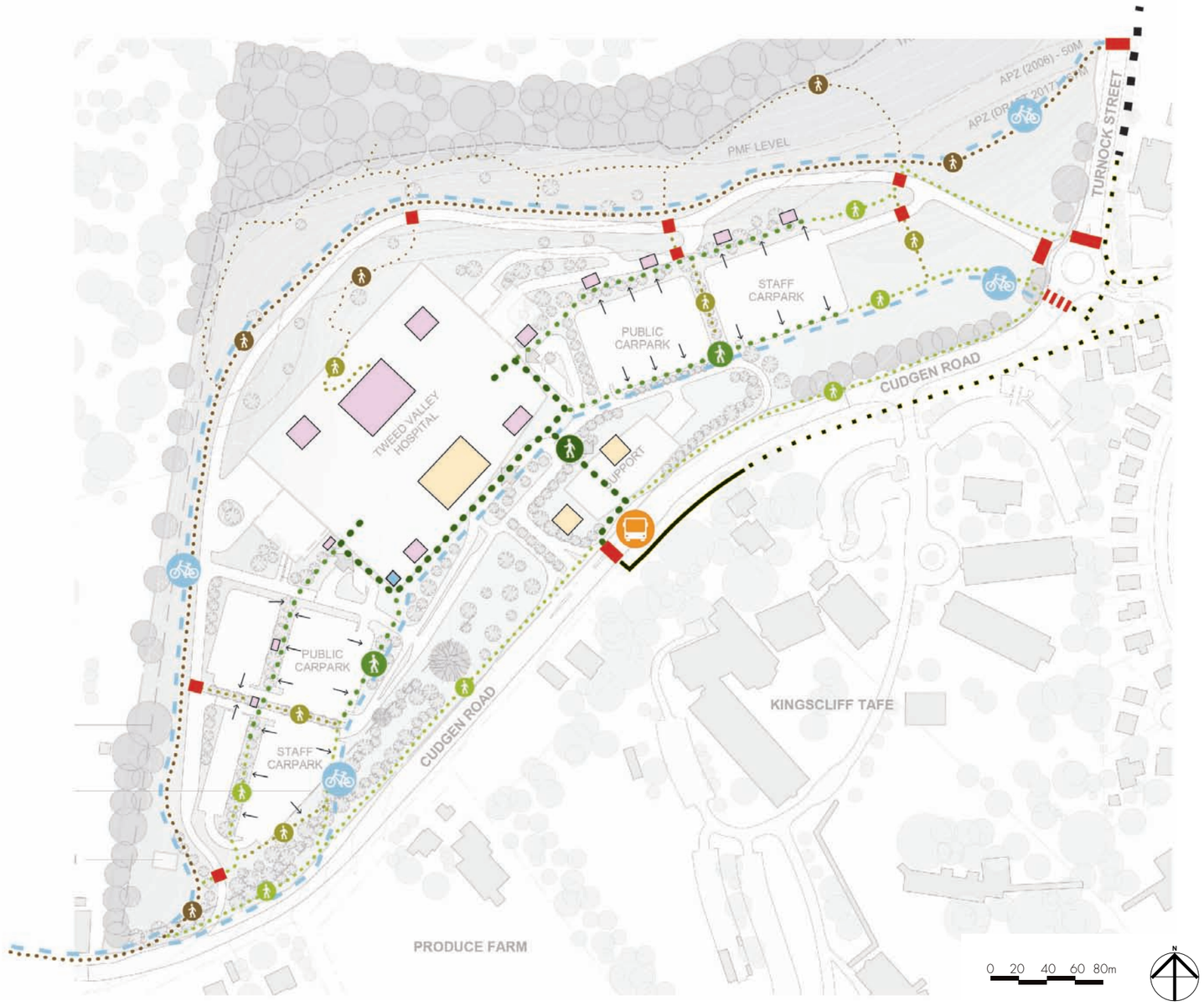
It is intended that all trees with moderate to high retention value will be retained wherever possible as the design develops. 2 trees of moderate retention value are currently proposed for removal. The current landscape proposal being developed will see a significant net increase in total trees on the site, including several hectares of native landscape areas, which will include a diverse mix of native tree species at densities appropriate to landscaping requirements (including APZ, agricultural buffers, sight lines). The detail landscape design will be developed and be submitted for approval as part of the SSD Stage 2 application.

LANDSCAPE PROPOSAL

PATHWAY NETWORK

LEGEND

- Existing On-road Shared Path
- Existing Off-road Shared Path
- Proposed Off-road Shared Path
- Existing Crossing
- Proposed Crossing
- Cycle Route
- Main Pedestrian Route
  Drop-off + Bus Stop to Entry
- Secondary Pedestrian Route
  Car Parking to Entry
- Pedestrian Route
  Street to Entry
- Connector Pedestrian Route
  Connections between paths to form loops
- Pedestrian Through Route
- Informal Pedestrian Trail
- Access from Car Parking
- Civic Spaces
- Gathering & Social Spaces
- Cycle End of Trip
  Bike Storage
- Bus Stop



EIS APPENDIX - LANDSCAPE DRAWINGS
TWEED VALLEY HOSPITAL
771 Cudgen Road, Cudgen

FIGURE 01 - PROPOSED INDICATIVE PEDESTRIAN NETWORK

DWG. L-EIS-3 | Rev B - 17.01.2019
Prepared for: NSW Health Infrastructure | Prepared by: Turf Design Studio

NSW Health Infrastructure | Health Northern NSW Local Health District