

# REF Design Statements

15 June 2024

<b>Project Name</b>	Batemans Bay Community Health
<b>Subject</b>	REF Design Statements

## 1. Civil Plans

*To capture any civil works, such as earthworks, car park, road or stormwater works, erosion and sediment controls etc*

*An Erosion and Sediment Control Plan, or a Soil and Water Management Plan may be required during construction, depending on the area of ground that will be disturbed. Civil advice is recommended.*

Plans relating to civil works (per above) are provided as part of the REF package in attachment 1.

## 2. Civil design statement

*Describe civil works, similar to design report. Provide justification for civil works, including earth movement, car park design matters, stormwater, water quality, erosion and sediment etc.*

### 2.1 Site observations

The existing health site is located on a localised crest with the terrain generally falling towards Pacific Street to the West and existing neighbouring properties to the north, east and southeast. There is extremely steep terrain resembling a cliff that borders the site to the northeast and east, which is heavily vegetated and assumed to not to be altered as part of this project. The localised crest of the site has been utilised for the building, with some areas of the structures using a pole construction method to account for the site slope.

Survey shows the cliff to the east of the site drops of at a 1 in 2 slope. The area where the proposed building is to be sited, falls at approximately 1 in 6 from the west to the east.

There is no formal stormwater drainage in the proposed area to be developed. One sump with two (2.no) 100 mm outlet pipes discharge stormwater directly on to pacific street immediately north of the existing driveway access.

### 2.2 Stormwater

Existing stormwater for the main hospital appears to connect into Council's pit and pipe network on Pacific Street north of the main hospital.

There is no stormwater infrastructure on the road reserve in the vicinity of the proposed development. Stormwater that drains from the existing site discharges via 100 mm pipes onto Pacific Street. From here stormwater runs as overland flow down Pacific Street where it is captured by the existing stormwater infrastructure further north.

As part of the development the existing stormwater pit, which discharges onto Pacific Street via (2.no) 100 mm outlet pipes, will need to be relocated as it is currently located in the proposed new driveway.

This Technical Memorandum is provided as an interim output under our agreement with Health Infrastructure (NSW Government Health Infrastructure). It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

Further survey is required to inform where this can be located to. Currently the exact location of incoming and outgoing pipes and their invert levels are unknown.

The majority of the site falls towards the East and Southeast of the site. As such overland flows and the proposed stormwater network also falls in this direction. The Stormwater from the proposed development is directed towards the southeastern extent of the property and will discharge via a level spreader towards Lot1, DP1135117 and connect to stormwater infrastructure on Bavarde Avenue. Further investigation and survey are required of the existing stormwater infrastructure on the existing site as well as further survey of the site to the southeast. Understanding the current stormwater discharge regime for the site will better inform the proposed stormwater design.

## **2.3 Flood**

The Batemans Bay Urban Creeks Flood Study commissioned by ESC examine flood behaviour around seven urban creeks in the Batemans Bay area. The reports produced by Rhelm provide the results of their flood study for the Batemans Bay area. A project specific flood study by Southeast Engineering and Environmental confirms the hospital and BBCH are clear of predicted flood zones.

## **2.4 Traffic and pedestrian access**

The site is currently accessed by vehicles from Pacific Street. The proposed design intends to utilise the same driveway access from Pacific Street.

The proposed onsite carpark layout allows for:

- 7 patient spaces
- 8 staff /fleet vehicle spaces
- 2 accessible spaces

The carpark design at Schematic design allows for:

- Ambulances: As needed for emergency purposes. No permanent designated space has been provided.
- 8.8 m Refuse truck: Waste collection and turning on the eastern side of the carpark.
- Linen supplied by Healthshare will not be delivered by a truck.

It is anticipated that short term deliveries vehicles such as pathology collection will utilise the parking bays in the carpark.

Space restrictions in the site do not allow a 12 m refuse/waste truck to access the site which is not a concern for the final site usage.

New pedestrian access is proposed to allow connectivity between the new BBCH building, new onsite carparking, the existing hospital buildings and Pacific Street.

### **2.4.1 Car park grading**

The current carpark design allows for passenger vehicles and an 8.8 m service vehicle. The proposed location of the driveway into the site is over terrain too steep to comply with AS2890.2 for the 8.8 m service vehicle. The modified driveway access is therefore in cut to allow the southern side of the carpark to achieve a level close to the proposed ground floor level of the building and allow for DDA compliant access from the carpark to the building.

The grading for the site is designed to work with the building level, create DDA compliant walkways and achieve compliance with the design vehicles. It is understood that post construction, access to the existing emergency department will no longer be required.

Staging of the construction works will permit continued access for Hospital service vehicles to the loading back, as such the carpark will be constructed after the Hospital is decanted.

To create the required pathway and interconnectivity between the proposed and existing hospital buildings regrading of the south and southwest of the existing emergency department is required. Work is also required to connect new pathways to existing. As such, two large eucalypt trees to the west of the emergency department are expected to be impacted by the work due to the encroachment and excavation required under the tree canopy.

0.5m to 1.5m of cut is anticipated underneath the canopy of the trees to the proposed design surface. Additional excavation 150mm is required for the construction of the new footpaths.

## 2.4.2 Maintenance access

Infrequent access (once per month) to the southeastern side of the new BBCH building is required by maintenance vehicles to service generators and mechanical plant equipment housed underneath the building.

To facilitate the required maintenance, formalisation of an existing access track is proposed to the south of the new BBCH building, running along the boundary of the hospital site and 9 Pacific Street. Works will also include the construction of a single lane driveway entrance off Pacific Street. The access way is proposed to be 4m wide in line with Eurobodalla Shire Council Infrastructure Design Standards table 2. A drop kerb shall replace the kerb and gutter along Pacific Street at the driveway entrance.

The proposed maintenance access encroaches on existing bus shelter. As such it is proposed that the bus shelter is relocated approximately 5.5m further North. The bus stop is located on the adjacent property.

An existing Telstra pit is located on the proposed maintenance access. The lid of this pit shall be replaced with a trafficable class D lid.

## 3. Air Quality Assessment

*Will the works have any adverse impact on air quality?*

*Could the works result in dust generation?*

*Could the works generate odours (during construction or operation)?*

*Will the works involve the use of fuel-driven heavy machinery or equipment?*

*Are the works located in an area or adjacent to land uses (e.g. schools, nursing homes) that may be highly sensitive to dust, odours or emissions?*

*Consider the cumulative air quality impacts, the surrounding sensitive receivers and the potential adverse effects that the activity may have on air quality. An air quality assessment may be required if appropriate.*

*Note: if impacts are general/standard then they can be mitigated in the construction management plan.*

The NSW DPE Air Quality Monitoring Stations (AQMS) located nearest to the site are located at Goulburn, Cooma and Merimbula, providing limited value for determining local conditions. Bushfire particulate detection is located at Merimbula.

The site is located directly adjacent residential properties and the Batemans Bay Hospital.

Construction phase activities have the potential to generate short-term emissions of particulates with local effects. Generally, these are associated with uncontrolled (or 'fugitive') emissions and are typically experienced by neighbours as amenity impacts, such as dust deposition and visible dust plumes, rather than associated with health-related impacts.

Localised engine-exhaust emissions from construction machinery and vehicles may also be experienced, but given the scale of the proposed works, fugitive dust emissions would have limited potential to give rise to continual downwind air quality impacts.

Modelling of dust from construction Proposals is generally not considered appropriate, as there is a lack of reliable emission factors from construction activities upon which to make predictive assessments, and the rates would vary significantly, depending upon local conditions.

It is considered that any relevant mitigation measures to manage potential construction phase impacts would be outlined in a site-specific Construction Environmental Management Plan (CEMP) developed for the Project

Potential air emission sources from the BBCH would be expected to include toilet exhaust outlets and emissions associated with road traffic, in line with a typical urban environment. There are no major sources of potential air pollutants expected, such as those resulting from industrial or manufacturing processes.

As such, appropriate design in accordance with the relevant guidelines and Australian Standards would be appropriate to manage any potential impacts of these future sources of air emissions resulting from within the Proposal site. Air intakes to the Hospital, particularly the theatre wing, are provided with filters. During construction the maintenance of the filters may be required to maintain suitable air pressures for the HVAC systems.

## **4. Services design statement**

*Describe the relevant services design statements (what is proposed, why it is needed, capacities available or needed, connections needed, consultation with service providers, broader headworks, confirm Australian Standards to be complied with, any mitigation measures needed).*

### **4.1 Electrical Services**

#### **4.1.1 Power Supply**

The hospital is provided with an existing substation on the southern side of the site. SUB 21676 located near the driveway is 500 kVA. The Hospital is connected by a 240 mm<sup>2</sup> Al cable. The cable route to the main switch board (MSB) is nominally through the centre of the loading dock. The MSB is located to the rear of the site on the lower ground floor within the workshop area.

The ANU building is provided with a dedicated supply, its MSB located externally near the site boundary. It is supplied from a private pole to pole CE97848 from across Pacific Street.

To provide a degree of isolation from the existing Hospital a new MSB will be provided within the new building to serve the BBCH only. This will permit the remaining site to be reutilised or divested without effecting the BBCH. Works to the existing Hospital MSB and internal reticulation are not required as part of this project. A separate master planning process is being undertaken by the LHD for site feasibility once the Hospital is decanted.

A new dedicated submain is proposed from the existing substation to simplify the works. Confirmation has been provided from Essential Energy that this is permissible. Minor works may be required to facilitate an additional fused connection which is being investigated during the current design phase.

No new generator is proposed for the new building. A connection will not be made to the existing generator. Therefore, in the event of a power outage, the facility will be without power.

The BBCH will be fully electric as such will not be provided with a gas supply.

#### **4.1.2 Lighting**

External perimeter lighting will be coordinated with security and the carpark layout to AS 1158.3. Full cut-off luminaires will be provided to avoid light spill to adjacent residential boundaries.

Building mounted lighting will be provided around entryways for wayfinding and security.

Controls will be via timeclocks and photoelectric cells.

### 4.1.3 Communications

The Hospital is serviced from the street via the Telstra pits in the verge. There are several noted connection paths shown on the Telstra BYDA however a single MDF is located on the wall at the rear of the Gym. A Telstra pit is located directly in front of the ANU building, and it has been advised that the site is fully independent from the Hospital campus.

A Telstra pit is located just south of the bus shelter at the southern end of the site possibly able to permit a direct street connection for the new building, however, to be confirmed through the LHD, Telstra and the application for a new connection. The new external connection from the Telstra pit will require new pit and pipe connected to the new building comms room.

A new combined Equipment Room/ Telecommunications Room will be facilitated within the new building. Final sizing has been agreed by the LHD as 3.7 m x 3.7 m with a three-rack configuration due to the smaller demand on the community health services compared to a hospital. As the building is less than 980 m<sup>2</sup> only one room will be provided, located at the centre of the building.

### 4.1.4 Dry Fire

The Fire Indicator Panel (FIP) for the hospital has been recently upgraded from an old non-addressable system. Located to the northern side of the main entry, the FIP is reasonably central to the site.

The BBCH will be provided with a dedicated sub-FIP connected to the hospital FIP. The fire brigade will attend the panel at the hospital entry for alarms in either building. This arrangement will also permit future separation with limited additional works.

## 4.2 Hydraulic services

### 4.2.1 Sanitary drainage

The BBCH will be connected to the existing sewer drainage serving the hospital. A sewer manhole located near the mortuary is the closest point of connection.

The approach is to provide a localised sewer pump station located within the lower ground services area. The waste discharge from the pump station shall enter the existing sewer manhole adjacent the mortuary via an assisted pumped drainage rising main.

### 4.2.2 Roofwater drainage

The design intent is to capture the roof rainwater and store within a dedicated rainwater tank for re-use. Where roof rainwater does not enter the rainwater tank, the building downpipes shall discharge into the site stormwater system. The rainwater tank is sized to maximise roof water collection during a rain event.

### 4.2.3 Water Supply

The site potable water supply meter is located on the eastern side of the site connected to the authority main on Pacific Street. There is a services easement located on the southern boundary of the site which includes an Authority water main running from the west to the east of the site.

A new water connection will be provided off the authority mains. The water supply shall serve as a dedicated water supply to the building. Incoming water supply shall run in-ground.

Non-potable water reticulation shall be provided from the buildings rainwater harvesting system. The non-potable water supply shall serve toilet flushing and hose taps (internal and external) throughout the building.

#### 4.2.4 Wet Fire

The site fire water connection is located adjacent the potable water supply on the western side of the site on Pacific Avenue. The site is currently protected by a fire hydrant system and fire hose reels. The fire hydrant system has a booster arrangement adjacent the site water meter arrangement.

The new building will be protected by fire hydrants and fire hose reels. The approach is to provide sufficient coverage with external fire hydrants located around the building. Where coverage cannot be achieved, internal fire hydrants will be provided in egress paths.

It is intended to minimise the number of fire hydrants within the new building. To achieve this, providing an external hydrant in a central location is proposed and would remove the requirement for fire hydrants within the building.

Due to site spatial constraints, the external hydrant would require a protective barrier to achieve compliance.

### 4.3 Mechanical services

Heating and cooling to the various rooms in the facility shall be largely provided by several reverse-cycle, heat-pump type variable refrigerant flow (VRF) systems in addition to several small reverse-cycle split systems. All indoor units will be located inside the building, either concealed in the ceiling space or present in rooms themselves (i.e. ceiling-mounted cassette units and wall-mounted units). Louvres for outdoor air intake and exhaust air removal will be located in both soffits on the northern face of the building or at high level on southern and eastern facades. Some roof cowls are needed for exhaust ventilation.

Outdoor units for the VRF and split systems are horizontal discharge type to allow them to be installed in the undercroft of the new building, and are to be located under the eastern end of the building (between grid lines 7 & 8 on the design drawings). The location has been considered with regard to noise impacts on the adjacent residences. Reticulation of refrigerant pipework between the outdoor and indoor units will be via risers internal to the building.

### 4.4 Oxygen and LPG tanks

The existing liquid oxygen and liquid petroleum gas (LPG) tanks, which are both located where the new building is to be constructed, will be removed. The oxygen tank will be replaced by a series of 4x4 bottled oxygen packs (to be located near the existing linen room). This will be a temporary measure until the hospital is decanted to the Eurobodalla regional Hospital.

The LPG tank will be replaced by a new tank on the north of the site (close to the existing hospital's main heating hot water boilers). As the hospital building will remain and there are no current plans for electrification, the installation will be permanent.

Regards

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Attachment 1: Civil layouts