

Review of Environmental Factors Architectural Design Statement

Muswellbrook Hospital Redevelopment Stage 3
Community Health Relocation Project.

Brentwood St, Muswellbrook NSW 2333



Health Infrastructure
1 Reserve Road
St Leonards NSW 2065

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Acknowledgement of Country

We acknowledge the Traditional Custodians of the Country upon which we live and work throughout Australia, and in relation to this project dwp acknowledges the Wanaruah/ Wonnarua people and we pay our respects to Elders, past, present, and emerging. We recognise and respect their cultural heritage, beliefs, and relationship to the land. We are committed to our reconciliation journey. We proudly support The Uluru Statement from the Heart and encourage our colleagues and partners to join the support for the statement.

Control

Issue	Date	Author	Description	Check	Authorised
1	7/10/2022	DC/AW	Draft issued for comment		
B	25/10/2022	AW	Comments incorporated	DC	DC
C	27/10/2022	AW	_Planning comments incorporated	DC	DC
D	17/11/2022	DC	HI Comments incorporated	AW	DC
E	16/02/2024	AW	Scope redefined	AW	DC

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Abbreviations

Abbreviation	Description
AEC	Area of Environmental Concern
AHIP	Aboriginal Heritage Impact Permit
AHIMs	Aboriginal Heritage Information Management System BC Regulation
ASP	Asset Strategic Plan
CMP	Construction Management Plan
CSP	Clinical Services Plan
CSSD	Central Sterile Supply Department
ESD	Environmentally Sustainable Design / Ecologically Sustainable Development
Ha	Hectares
HI	NSW Health Infrastructure
HNELHD	Hunter New England Local Health District
IPU	Inpatient Unit
LEP	Local Environmental Plan
LGA	Local Government Area
MHS	Muswellbrook Health Service
MoH	Ministry of Health
MPS	Multipurpose Service
MSC	Muswellbrook Shire Council
Proponent	NSW Health Infrastructure
PUG	Project User Group
REF	Review of Environmental Factors

Executive Summary

The Proposal

The proposal is designed to partially meet the requirement of the Stage 3 Muswellbrook Hospital Redevelopment and address future redevelopments to 2031 as outlined in the Clinical Services plan and Functional Design Brief.

The relocation of Community Health from Weidman wing to the stage 2 lower ground floor undercroft forms the scope of work described in this REF.

Need for the Proposal

Muswellbrook Hospital has ageing buildings and infrastructure built to support outdated care models that impact the efficient and effective operation of the hospital. The principles for placemaking, as outlined in HI's draft Design Guide for Healthcare are not able to be met with these dated buildings. Particularly in relation to; design for dignity, design for well being, design for efficient and flexible delivery of care and design for equity.

In May 2021, the NSW government announced \$45 million for Stage 3 of the Muswellbrook Hospital Redevelopment (MHR) and confirmed funding in the NSW Budget FY21/22. The announcement aligns with Hunter New England Local Health District's (HNELHD) Asset Strategic Plan (ASP) which identifies Muswellbrook Hospital as one of the top five priorities for the district.

This is in line with the Clinical Services Plan (CSP) which is supported by the integrated policy and planning framework and aligns with the Australian Government, NSW Government, NSW MoH, and Local Health District's strategic directions.

As detailed in the Clinical Services Plan, the need is driven by the requirement for:

- a sustainable health service,
- equitable access to local health services,
- addressing poorer health outcomes in rural and remote areas,
- the need for innovation and incorporation of technology to facilitate the delivery of telehealth
- mitigating the impact of inadequate transport links to major health care facilities in larger centres, leading to delayed interventions.

Proposal Objectives

Consideration has been given to key aspirations and objectives in the development of the proposal and options explored, namely:

- Enhance functional relationships through the collocation of related services.
- Continue the hospital's role as a district level health facility providing services to meet the needs of the residents of the Muswellbrook and Upper Hunter Shire.
- Enhance and provide culturally inclusive, contemporary patient, family and carer centred facilities.
- Enable contemporary models of care and facilitate efficient and sustainable service delivery in alignment with government and District-wide policies and guidelines.
- Provide capacity to meet projected demand and the ability to respond to changes in service demand and new models of care whilst recognising the challenges of a regional hospital.
- Enhance environmental sustainability of capital assets, in line with government policy and support HNELHD's Sustainable Healthcare aspirations.

1. Introduction

In May 2021, the NSW government announced \$45 million for Stage 3 of the Muswellbrook Hospital Redevelopment (MHR) and confirmed funding in the NSW Budget FY21/22. The announcement aligns with Hunter New England Local Health District's (HNELHD) Asset Strategic Plan (ASP) which identifies Muswellbrook Hospital as one of the top five priorities for the district. The redevelopment of Muswellbrook Hospital will occur on the existing hospital site and this phase of work will focus on the fit out of the future development spaces created during stage 2.

1.1 Proposal Identification

The proposal is designed to meet the requirement of the Stage 3 Muswellbrook Hospital Redevelopment.

Community Health is currently housed within the Weidmann Wing. This building was completed in 1980 and is in reasonable condition; however, it is undersized to enable all community health services to be provided for in one location. The Stage 2 lower ground floor undercroft has been identified as a suitable location for the relocation of Community Health, which will facilitate efficient service delivery in alignment with government and District-wide policies and guidelines.

1.2 Site location

The Muswellbrook Hospital site is bordered by Bowman Street, Brecht Street, Brentwood Street, and Doyle Street, with the main entry and access to the Hospital on the southern aspect facing Brentwood Street. The site is divided into numerous separable portions. The overall area of the site is approximately 5.396ha and includes a 3 metre wide easement for a rising main. A helicopter landing pad is located on Lot 26 DP752484. An Early Learning Childcare Centre occupies Lot 21 DP1090311 on Brentwood Street, which is not part of Muswellbrook Hospital.

1.3 Purpose of the report

The purpose of the Architectural Design Statement is to satisfy the project objectives and project needs with a design that satisfies the health standards requirements.

Muswellbrook is located in the Upper Hunter Region of New South Wales about 243km North of Sydney and 130km North-West of Newcastle. The Muswellbrook local council area is the Muswellbrook Shire Council.

Before European settlement the Wanaruah/ Wonnarua People occupied most of the Hunter Valley region. The European settlement of the area was in the 1820s. Prior to this, the Hunter and Goulburn Rivers were the meeting place for the Indigenous community.

The Hunter New England Health (HNE Health) provides a range of public health services to the Hunter, New England, and Lower Mid North Coast regions. Hunter New England has the highest proportion of Aboriginal or Torres Strait Islander people of all Local Health Districts in NSW. The population of Muswellbrook LGA is 16,086 (Males 8,243, Females 7,837) (Census 2016). Aboriginal and/or Torres Strait Islander people made up 9.3% of the population.





Figure 2.2 - New South Wales Health District Map - NSW Health

The hospital is located in a low rise residential area, approximately 1.5 km from the town centre.

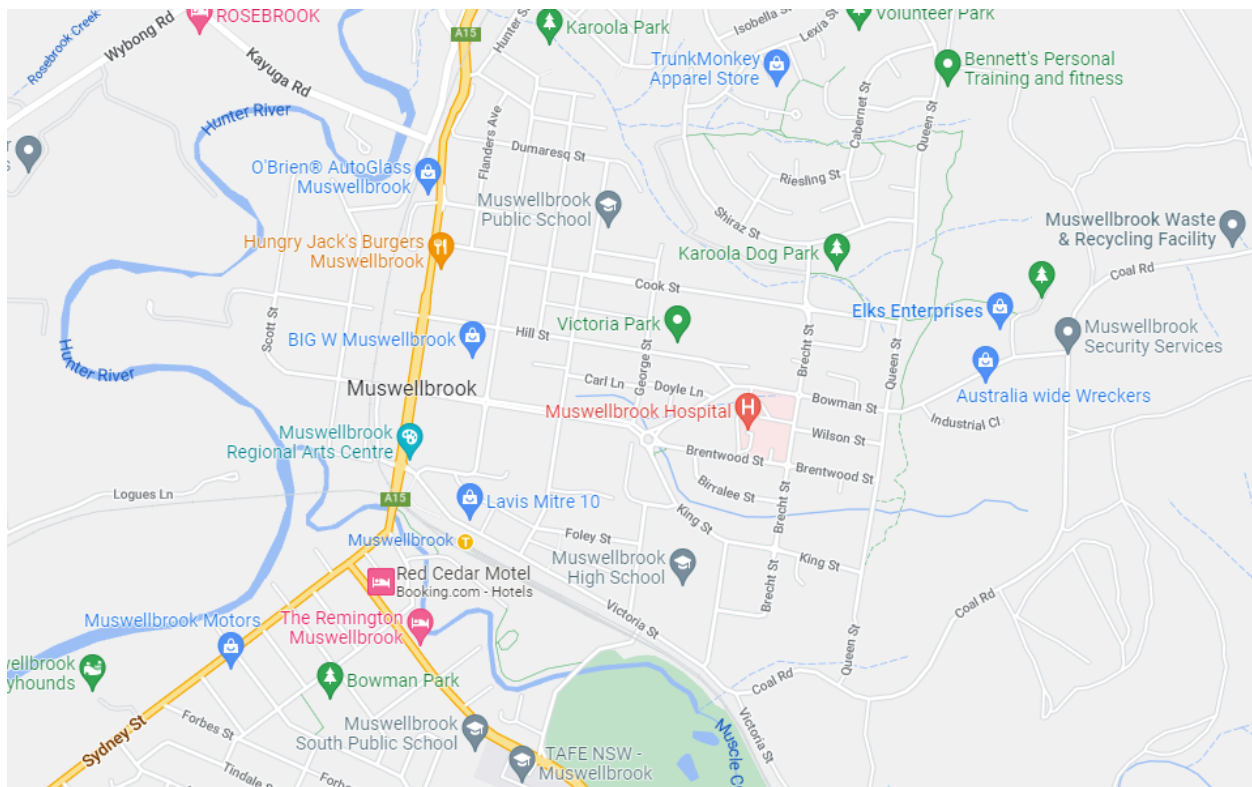


Figure 2.3 - Google maps extract showing location of the hospital relative to the town centre.

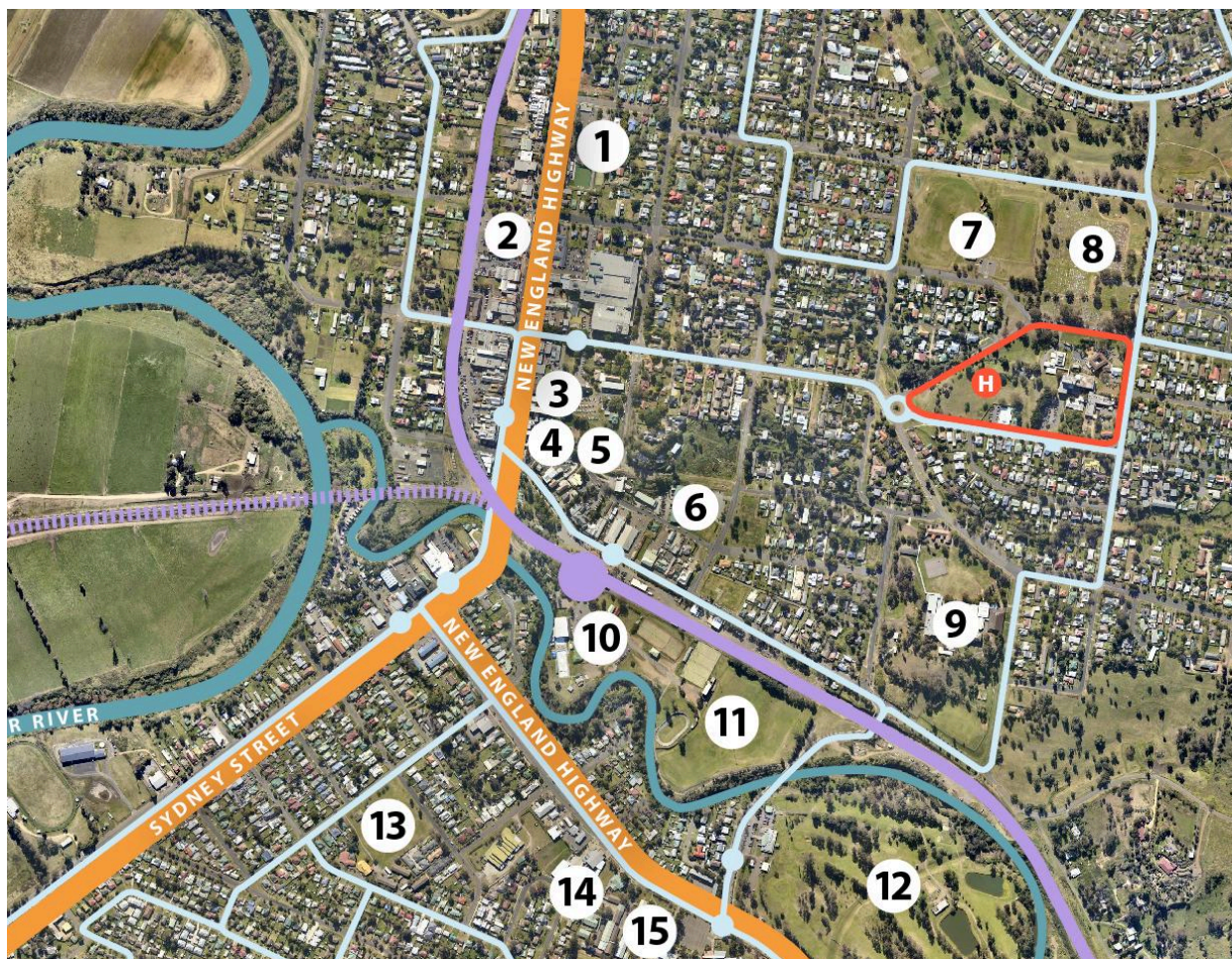


Figure 2.4 - Aerial Photograph showing the hospital and surroundings.

- Muswellbrook Hospital Site
- Major Roads
- Main North Railway Line
- - - - - Merriwa Railway Line
- Hunter River
- Bus Routes
- H Helipad
- 1 Bowling Club
- 2 Library
- 3 Courthouse
- 4 Regional Arts Centre
- 5 Police Station
- 6 PCYC
- 7 Victoria Park
- 8 Cemetery
- 9 High School
- 10 Aquatic and Fitness Centre
- 11 Olympic Park
- 12 Golf Club
- 13 Bowman Park
- 14 Public School
- 15 TAFE

The site is serviced by local and regional road networks, the Hunter Railway line, and local bus connections. Muswellbrook provides a range of local cultural and social services and public amenities, as illustrated in the context diagram above. The New England Highway passes through the town, the major inland route linking to Newcastle, Sydney, and Brisbane.

Brentwood Street to the south of the hospital site provides:

- the link road to town centre, to the New England Highway and the residential and community areas,
- vehicle access to car parks and to the service areas including to the Main Hospital and Emergency Departments along with the Early Learning Centre located within the site.

Brecht Street a cross street to the east of the hospital site provides:

- vehicle access to the hospital's back of house and plant areas,
- vehicle access to the staff accommodation.

Bowman Street to the north of the hospital site provides:

- vehicle access to the Community Centre vehicle access to fleet car parking and back of house areas.

Title/ Ownership/ Site Lots

The Muswellbrook Hospital site is bordered by Bowman Street, Brecht Street, Brentwood Street, and Doyle Street, with the main entry and access to the Hospital on the southern aspect facing Brentwood Street. The site is divided into numerous separable portions. The overall area of the site is approximately 5.396ha and includes a 3 metre wide easement for a rising main. A helicopter landing pad is located on Lot 26 DP752484. An Early Learning Childcare Centre occupies Lot 21 DP1090311 on Brentwood Street, which is not part of Muswellbrook Hospital. A cemetery is on the opposite side of Bowman Street.

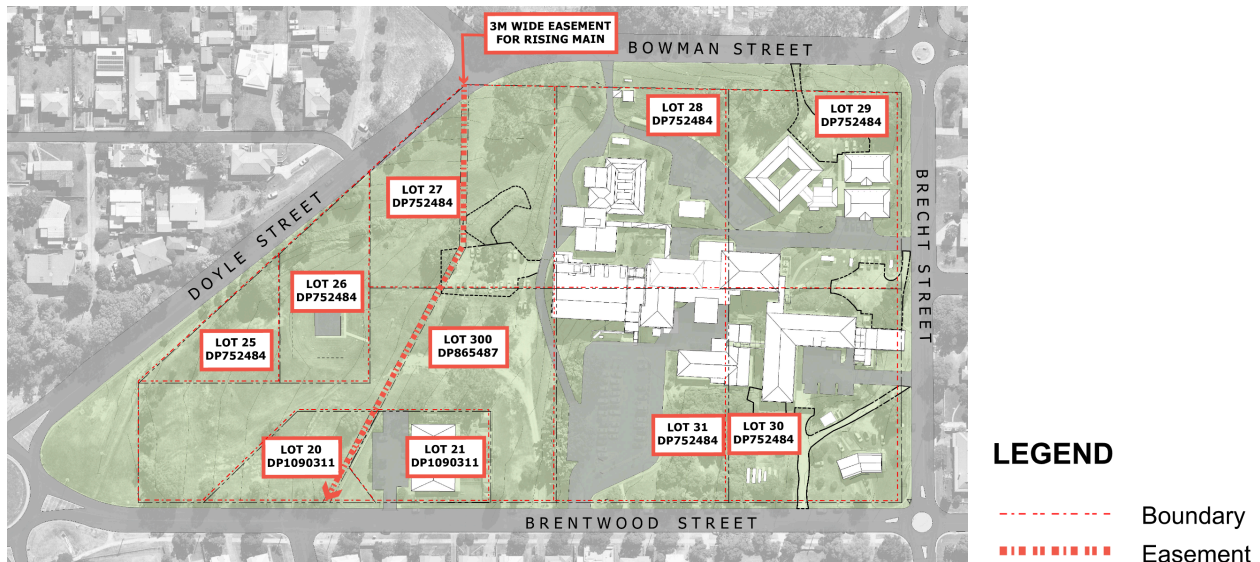


Figure 2.5 - Site plan showing lots.

Topography

The indicative site contours shown below illustrate the sloping Hospital site. The high point of the site is from the corner of Brentwood Street and Brecht Street. The low point is the corner between Doyle Street and Brentwood Street. The level change from the western corner to the eastern corner of the site is an approximately 26 metre fall. The constant changes of the levels between adjoining and adjacent buildings are significant. The site topography provides views to the west across residential area to the commercial centre of Muswellbrook

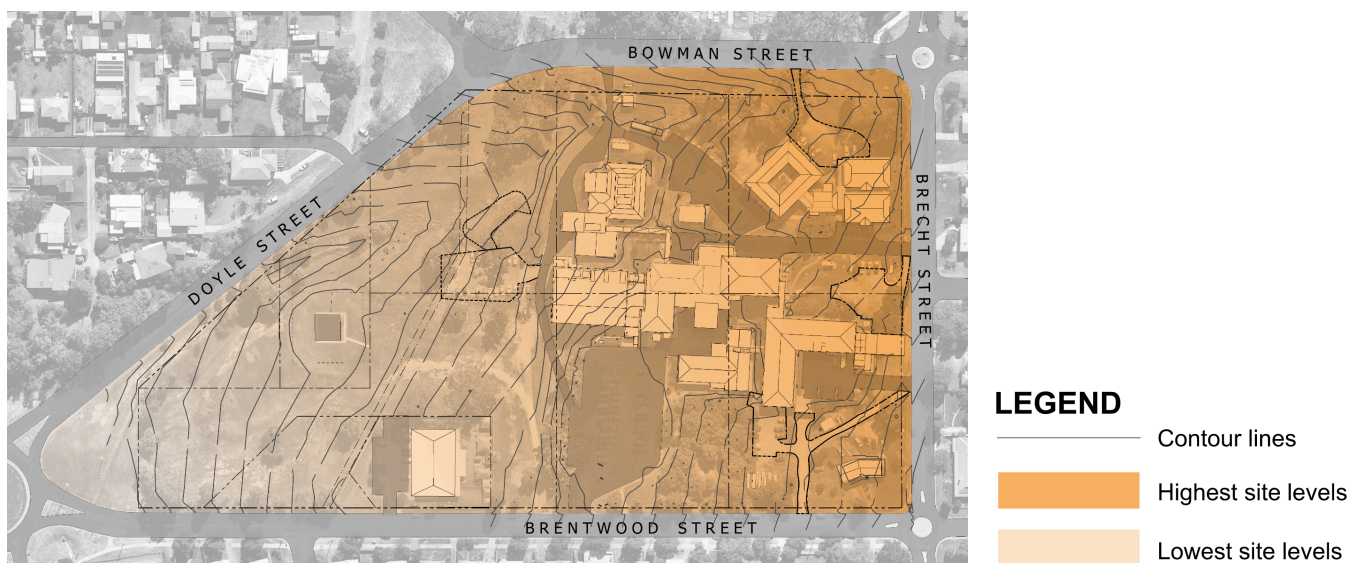


Figure 2.6 - Site plan showing contours: darker shading indicates higher elevations.

Zoning

The site is within the Muswellbrook Shire Council and is governed by Muswellbrook Local Environment Plan (2009) and Development Control Plan (2009). The site zoning is SP2 infrastructure. The Hospital, as a Health Service Facility, is a permitted use within the zone, as identified on LEP map LZN_008A. The zoning maps identify the following:

- No heritage listings,
- No floor space ratio restrictions,
- No land application,
- No land reservation application,
- No additional permitted uses,
- No acid sulphate soils.

The area surrounding the site accommodates a mix of land uses, including residential, public open space, child care services, and health services. The majority of commercial activities are concentrated along the New England Highway and Main Street of Muswellbrook town centre. Industry in the area includes agriculture, viticulture, equine industry, power generation, and coal mining. While mining and related activities are the predominant employers, there are community concerns about the cumulative impacts of continued mining expansion upon competing land uses and specifically the impacts on other rapidly expanding and more sustainable industries such as the equine industry, eco-tourism and agribusiness. The pressures of mining have also had a flow on effect on housing affordability and availability, environmental impacts, and increased demands on local infrastructure. These issues are seen as critical factors affecting the rural community and its sustainable long-term economic prospects.

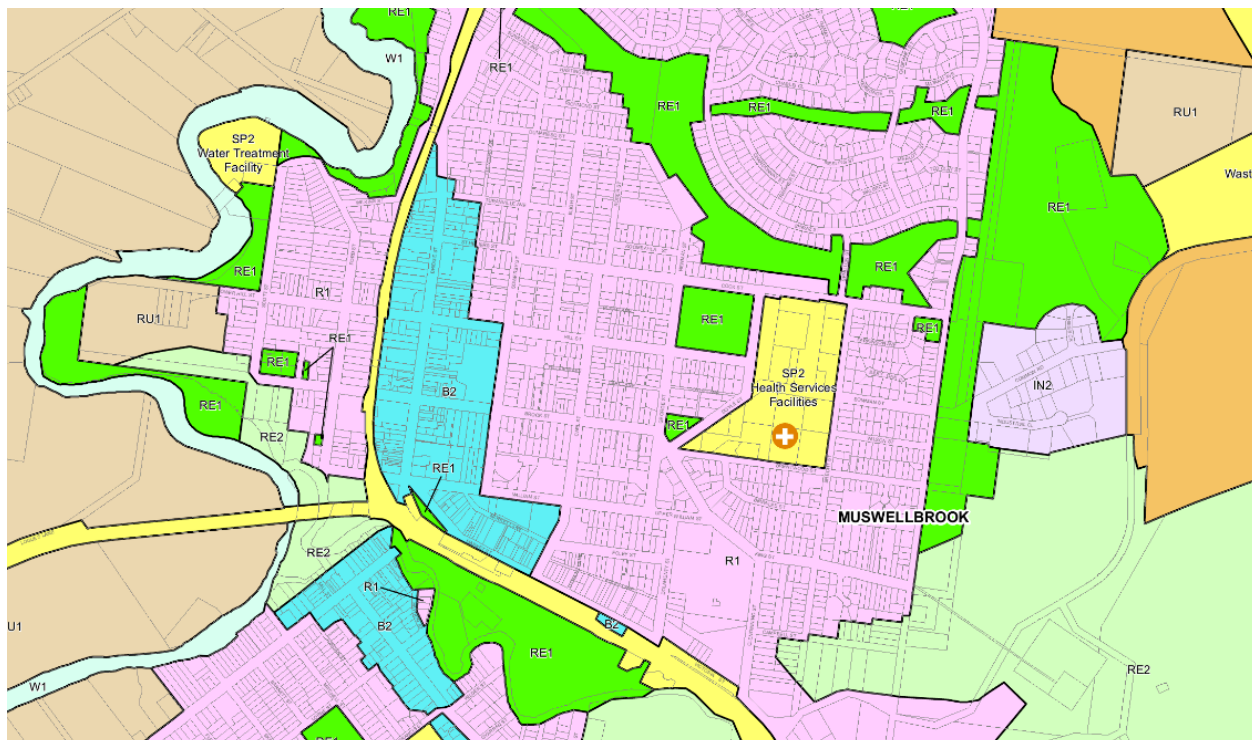


Figure 2.7 - Zoning map extract - Hospital site special purpose 2

There are no relevant setback controls under the LEP or DCP. The DCP will operate as guidance. The REF setback controls are 5m to any property boundary however, it can be 1m if the building does not exceed 1 storey or 5 metres in height, and the land on the other side of the property boundary is not in a residential zone or the Zone E4 Environmental Living or a land use zone that is equivalent to Zone E4.

The LEP height control is 13m.

Layout

The hospital site has multiple building structures of varying age and sizes spread over a large footprint responding to the sloping topography from Brecht Street in the east to Doyle Street in the west.

The main hospital building completed in 1970 was partially renovated in 2015 as Stage 1 to deliver a new Emergency Department with ambulance entry at ground level, behind the maternity building. Level 1 houses a 33-bed inpatient unit, while the hospital administration unit is located on level 2.

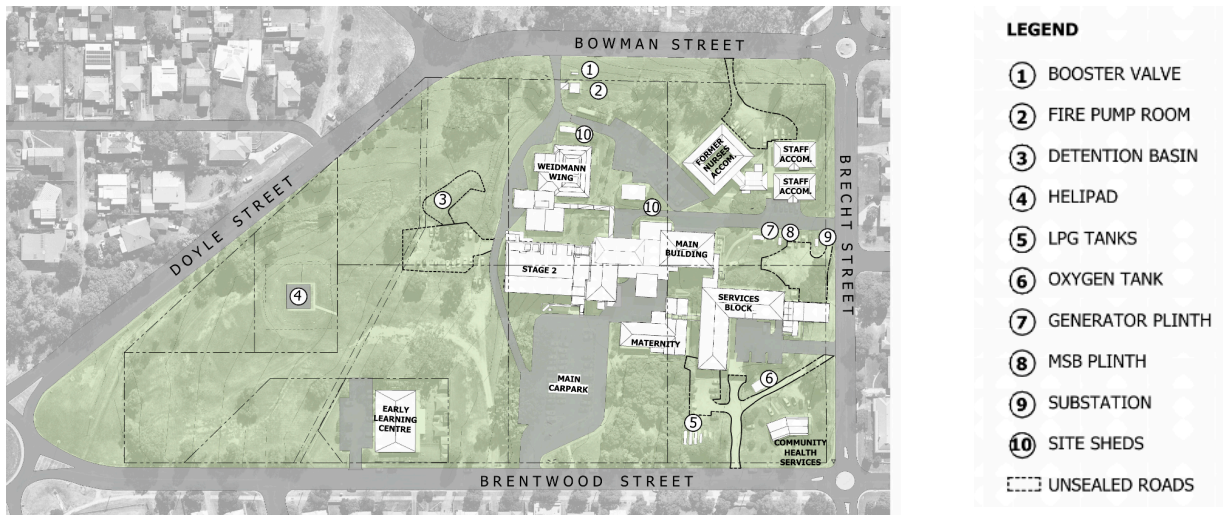


Figure 2.8 - Site layout showing existing buildings

Existing Vegetation

The site is a brownfield site and there is no impact on existing vegetation.

The stormwater overland flow path and the stormwater discharge from the site remain unchanged. The site is accessible in minor and major rainfall events and is operational in extreme rainfall events.

Orientation

The climate of Muswellbrook is characterised by hot summer days often relieved by evening 'southerly busters' and cool, dry winters. Summer temperatures often reach over 40°C for several days in January and February. Winter temperatures can result in frequent frosts in the coldest months. Prevailing breezes in summer and winter are from the north west or the south west.

The existing main Hospital building has views to the North over the cemetery and other elevations and over residential streets to the East.

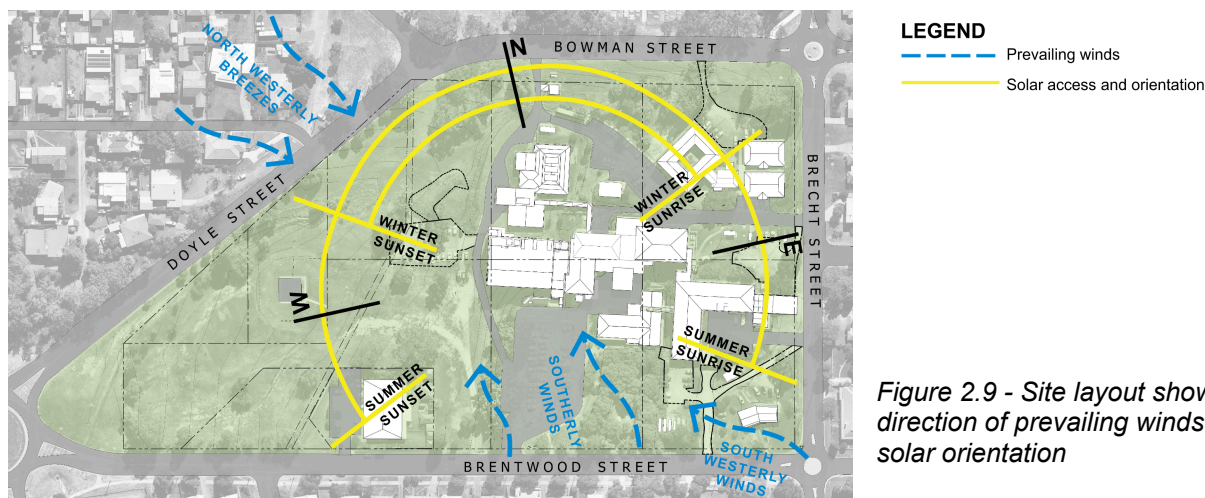


Figure 2.9 - Site layout showing direction of prevailing winds and solar orientation

Mine Subsidence

The Hospital site has been impacted by the underground mining which commenced in the Muswellbrook Shire in the late 1800's and continues today although with open cut mines.

As the scope of works is limited fitting out the existing stage 2 lower ground floor undercroft, notification as part of the planning approval pathway for the works will not need to be undertaken with Mine Subsidence NSW. Preliminary parameters were provided by the geotechnical engineer to estimate structural loads expected from a possible mine subsidence event, with a maximum subsidence of 150mm.



Figure 2.10 - Site layout showing first workings in red and external workings in pink.

2.2 Existing Development

The main hospital block is a framed four storey masonry clad building dating to the 1970's. The ground floor of the building was redeveloped in 2015 to house a new emergency department and ambulance entry. The works undertaken were the first stage in the hospital redevelopment.

The second stage in the redevelopment was completed in 2019 with the construction of a four storey extension to the south. The extension included an undercroft area on the lower ground floor and a shell space on the first floor where envisaged stage 3 works would complete the hospital redevelopment. The existing building areas not addressed in the redevelopment works to date require refurbishment/ redevelopment to upgrade to current hospital facility standards.

The Weidmann Wing to the north, completed in 1980, is a single-storey building and houses Community Health. The building is in reasonable condition, however it is undersized to enable all community health services to be provided for in one location.

The north-east corner of the site contains a two-storey former Nurses Accommodation building, a masonry framed building (construction date not determined) partially occupied on the lower levels with allied health services. The building is in poor condition with the upper levels water damaged. The building's age, layout configuration, condition and site location suggest that its useful age has been reached and that demolition would enable the campus consolidation and redevelopment to expand to the north east.

Stage 2 was completed in 2019 and included new renal and infusion services, improved space for medical imaging and pathology collection, refurbished outpatient areas, oral health services, an enhanced space for patients attending day surgery, and improvements to the main entry, reception and admission areas. Stage 2 also provided lower ground level and Level 1 shell space for future fit-out and use.

The Services block to the south-east includes a kitchen along with back of house facilities including maintenance and engineering. A high-level link connects the Level 1 Theatre to the maternity building located to the south of the main hospital. The maternity department is housed in a stand-alone building constructed in 1930.

Two new single storey Staff Accommodation buildings completed in 2012, occupy the eastern sector of the site addressing Brecht Street.



Figure 2.11 - Weidmann Wing, Community Health entrance



Figure 2.12 - Stage 2 lower ground undercroft



Figure 2.13 - Existing staff accommodation buildings



Figure 2.14 - Main hospital building (NE cnr)



Figure 2.15 - Emergency Department entrance



Figure 2.16 - Services block and yard



Figure 2.17 - Main Hospital Entry (stage 2)



Figure 2.18 - NW Corner (stage 2)

Pedestrian Circulation

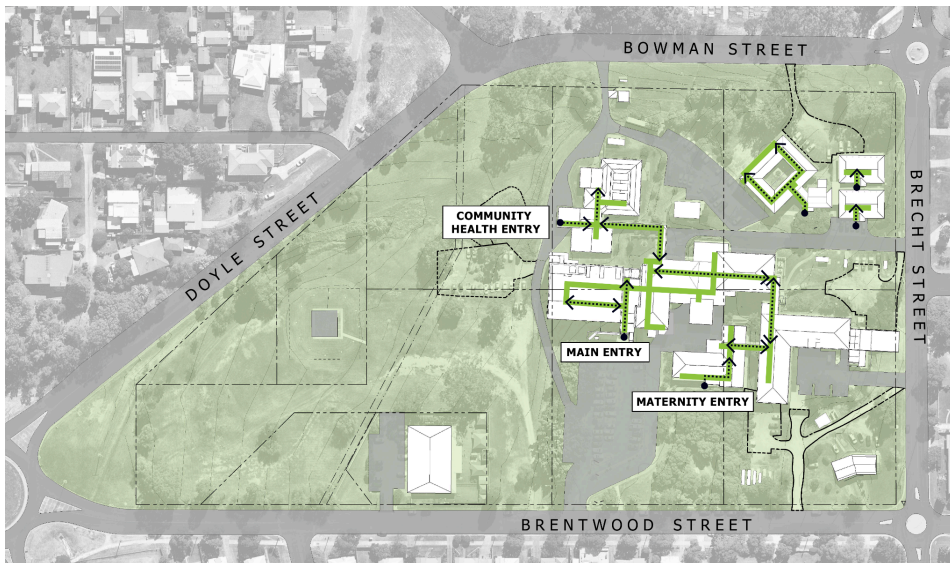


Figure 2.19 - Existing entrances

The scattered car park arrangements and building entrances and exits across the site create difficulties in managing staff, patient and visitor access and in providing a safe and secure environment to the Hospital. Access to the main entrance of the hospital from Brentwood street is clear although pedestrian access via the carpark with the associated conflicts with vehicles including Ambulances is problematic.

The majority of Community Health services are located in the Weidmann Wing behind Stage 2 if accessing from Brentwood street and also within the former Nurses Home on the eastern part of the site and within the Community Health cottage at the corner of Brecht and Brentwood Streets. This appears to be disjointed and without clear wayfinding or direct links to the main Hospital Building. As a result, staff and public have issues with transversing the site topography and the distances between the separate buildings.

The pedestrian circulation issues identified to be:

- the number of building entries across the site coupled with unclear signage and wayfinding information,
- the spread of buildings and clinical services contained within them, requires the public and staff to transverse the site with multiple changes in levels and degrees of accessibility,
- the isolation of maternity and birthing services in a stand alone building from the main hospital coupled with the external link through the car park,
- the access to the Emergency Department and the close proximity to the ambulance set-down area,
- the access pathway through the building to the inpatient unit,
- the back of house service paths to the various levels and separated buildings.

Traffic Circulation

There are three street access points to the site. The Main Entry is accessed from Brentwood Street. Service entry is mainly from Brecht Street, and rear site access is from Bowman Street. Emergency Vehicles access is via the main entry off Brentwood Street, however, there is a separate route around the main car park to provide access to the Ambulance only drop-off area.

Access from Brecht Street, between the former Nurses Home and Weidmann Wing, includes steep inclines and narrow accessways.

The main parking locations include existing sealed car parks adjacent to the Primary and Community Health building (Weidmann Wing) and the main Hospital entry. In addition, there is poorly formed parking between the main building/ former Nurses home building and adjacent to the Service Block accessed off Brentwood Street. A culture of informal car parking exists at the site, particularly relating to the rear of the Weidmann Wing/ former Nurses Home and the internal access off Brecht Street. Public and off-street parking is available around the perimeter of the site in the surrounding streets.

The main traffic routes through the site are indicated in the plan below.

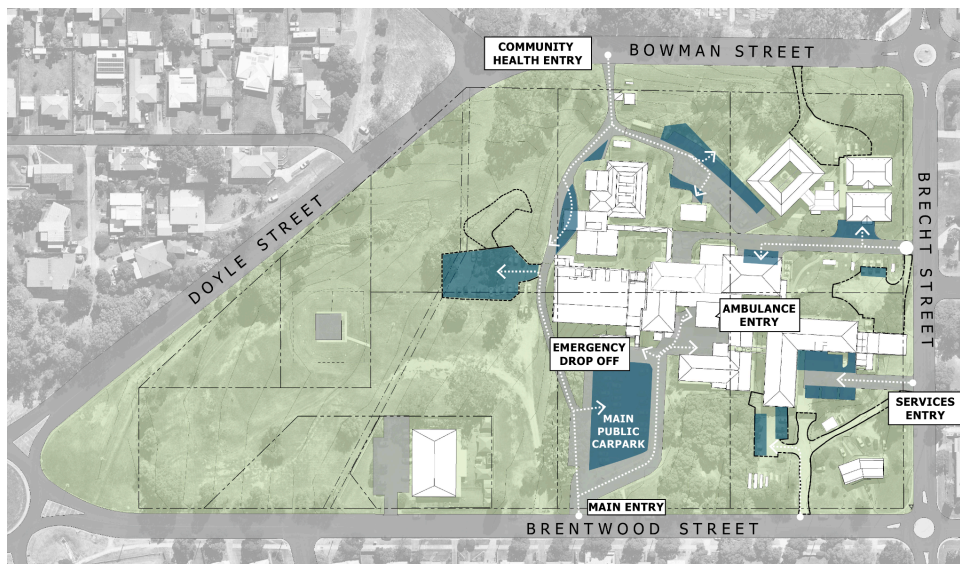


Figure 2.20 - on site car parks

Helicopter access to the site is to a helipad on the western side of the site between Doyle and Brentwood Street and is considerably dislocated from the main buildings on the site. Patient transfer to and from the helipad to the Emergency Department is not ideal as it is reliant on an ambulance to achieve the transfer.

Site Services

The following is an overview of the major infrastructure servicing the site.

Electrical Services:

- substation is located off Brecht Street,
- main switch board and generator located off an internal service road accessed off Brecht Street,
- solar panels are located on the roof of the services block and the main hospital building.

Hydraulic Services:

- water service is provided off Brecht Street with water filtration occurring in the lower ground plant area of the main building,
- reverse osmosis plant is located in the lower ground plant area of the stage 2 building,
- sewer connection is off Brecht Street, with a private sewer network across the campus,
- an overland flow detention basin is located in the north-west corner

Fire Services:

- a booster valve and fire pump room are located off Bowman Street
- a fire booster is also located off Brentwood Street.

Medical Gas Services:

- medical gas is located in an external compound to the north of the main hospital building,
- medical air and compressors are located in the lower ground plant of the main building,
- oxygen tanks are located to the south of the services block.

Gas Services:

- the hospital is serviced by LPG with supply tanks located off Brentwood Street.

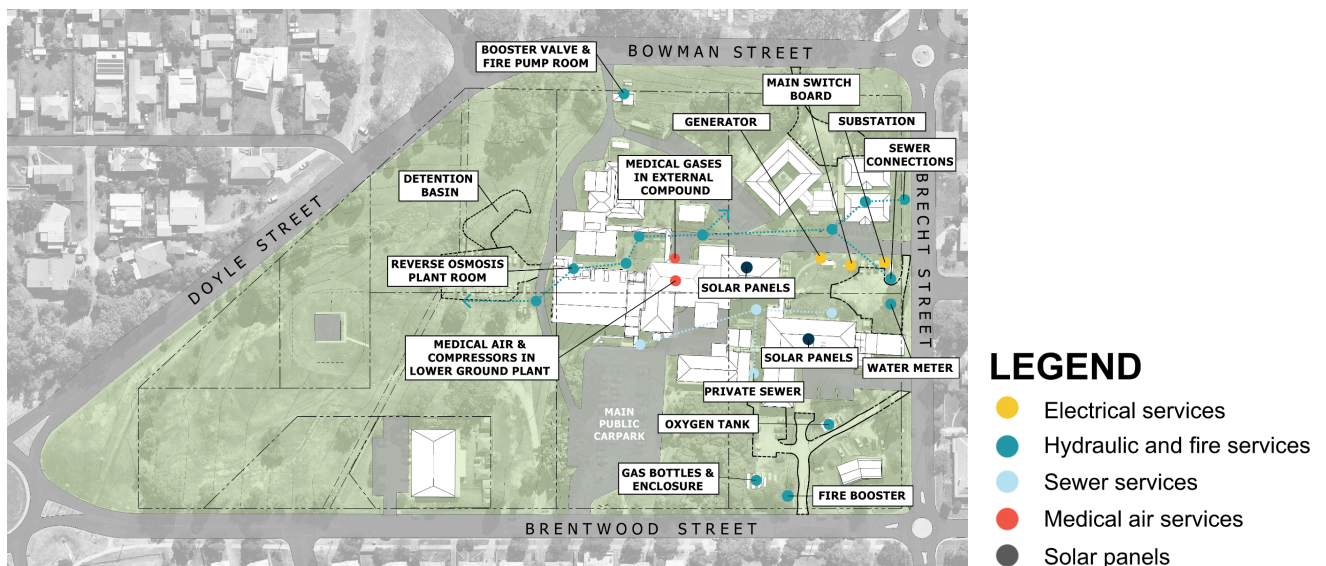


Figure 2.21 - Site services

3. Proposed Development, Need and Alternative

3.1 The Proposal

The use of the proposed development is an extension of a Class 9a Healthcare facility. Muswellbrook Hospital delivers a range of clinical services including emergency medicine, acute medical care, surgery, maternity, limited paediatric and outpatient services.

The proposal is designed to meet the requirement of the Stage 3 Muswellbrook Hospital Redevelopment as outlined in the Clinical Services plan and Functional Design Brief. Stage 3 will deliver the following scope of work.

- Community Health will be relocated to the refurbished stage 2 lower ground floor undercroft.

3.2 Need

Muswellbrook Hospital has ageing buildings and infrastructure built to support outdated care models that impact the efficient and effective operation of the hospital. The principles for placemaking, as outlined in HI's draft Design Guide for Healthcare are not able to be met with these dated buildings. Particularly in relation to; design for dignity, design for well being, design for efficient and flexible delivery of care and design for equity.

In May 2021, the NSW government announced \$45 million for Stage 3 of the Muswellbrook Hospital Redevelopment (MHR) and confirmed funding in the NSW Budget FY21/22. The announcement aligns with Hunter New England Local Health District's (HNELHD) Asset Strategic Plan (ASP) which identifies Muswellbrook Hospital as one of the top five priorities for the district.

This is in line with the Clinical Services Plan (CSP) which is supported by the integrated policy and planning framework and aligns with the Australian Government, NSW Government, NSW MoH, and Local Health District's strategic directions.

As detailed in the Clinical Services Plan, the need is driven by the requirement for:

- a sustainable health service,
- equitable access to local health services,
- addressing poorer health outcomes in rural and remote areas,
- the need for innovation and incorporation of technology to facilitate the delivery of telehealth
- mitigating the impact of inadequate transport links to major health care facilities in larger centres, leading to delayed interventions.

3.3 Proposal Objectives

The following key aspirations and objectives were considered in the development of the proposal.

- Replacement of ageing assets with contemporary infrastructure.
- Continue the hospital's role as a district level health facility providing services to meet the needs of the residents of the Muswellbrook and Upper Hunter Shire.
- Enhance and provide culturally inclusive, contemporary patient, family and carer centred facilities.
- Enable contemporary models of care and facilitate efficient and sustainable service delivery in alignment with government and District-wide policies and guidelines.
- Provide capacity to meet projected demand and the ability to respond to changes in service demand and new models of care whilst recognising the challenges of a regional hospital.
- Enhance environmental sustainability of capital assets, in line with government policy and support HNELHD's Sustainable Healthcare aspirations.

These objectives were underpinned by Hunter New England Strategic Priorities

Community:

- Deliver disease prevention, early intervention and health promotion across the lifespan.
- Support a healthy start to life.
- Empower communities to engage as partners in health.
- Close the gap between Aboriginal and non-Aboriginal health.

Service:

- Improve equity of access and service delivery.
- Enable a culture of clinical care that promotes positive patient outcomes and includes families and carers.
- Drive innovation and translational research through clinical engagement and networking to improve service delivery.

Patient safety quality and experience:

- Improve the patient's experience of care.
- Deliver safe, effective and appropriate healthcare.

Resources:

- Make the most effective use of available resources and ensure that costs are kept under control to promote sustainability.
- Work with our partners to meet agreed health needs.

Positioning for the future:

- Plan and invest in infrastructure to meet clinical needs.
- Encourage sustainable information technology to support clinical needs.
- Plan and implement environmentally sustainable strategies.

Staff and workplace culture:

- Attract, develop and retain competent staff with the right cultural fit.
- Ensure a safe and supportive working environment

3.4 Crime Prevention through Environmental Design

Security measures that provide an appropriate level of security and control will be maintained and based upon the principle of 'Crime Prevention through Environmental Design' (CPTED). CPTED is an approach to preventing crime and improving overall security by limiting criminal opportunity through the use of natural barriers and natural surveillance.

Where possible, CPTED will be used in conjunction with electronic, mechanical, and structural crime prevention techniques. CPTED considerations that apply to the relocated Community Health are based on the concepts detailed below.

- **Territoriality**

Hospitals provide very clear delineation between patient, staff and visitor spaces, based on clinical, and non-clinical functional relationships.

Ownership is assigned to the intended users of the space, which in turn reinforces the sense of safety and security of the inhabitants while creating an environment where 'strangers' or 'intruders' are more easily identifiable.

The following territorial reinforcement measures are in place:

- Community Healthalone will occupy the majority of the lower ground floor undercroft. Existing services spaces to the north west will be accessed externally.
- Clear signage is provided to identify the functional use of the spaces.

- **Natural Surveillance and Lighting**

Good surveillance means that people can see what others are doing. People feel safe when they can easily see and interact with others. Natural surveillance increases the probability of an offender being seen. Natural surveillance has been achieved in the following instances:

- The relocated community health waiting area is in direct view of the staff reception and will be monitored by staff. This provides the opportunity for staff to overlook spaces where visitors/public gather and mingle thereby ensuring the safety from intruders.
- The fire egress door leading past the waiting area is also overlooked from the staff reception.

- **Natural Access Control**

Natural access control limits the opportunity for crime by taking steps to clearly differentiate between public space and private space. By making it clear where people are permitted to go or not go, it becomes difficult for potential offenders to reach and victimise people.

Effective access control has been achieved with the following:

- Community health has a single main entry point, via the lift from the ground floor.
- The fire egress door leading out past the waiting room is controlled by staff access and does not permit entry into the space.
- The door leading out from the staff room is controlled by staff swipe access..

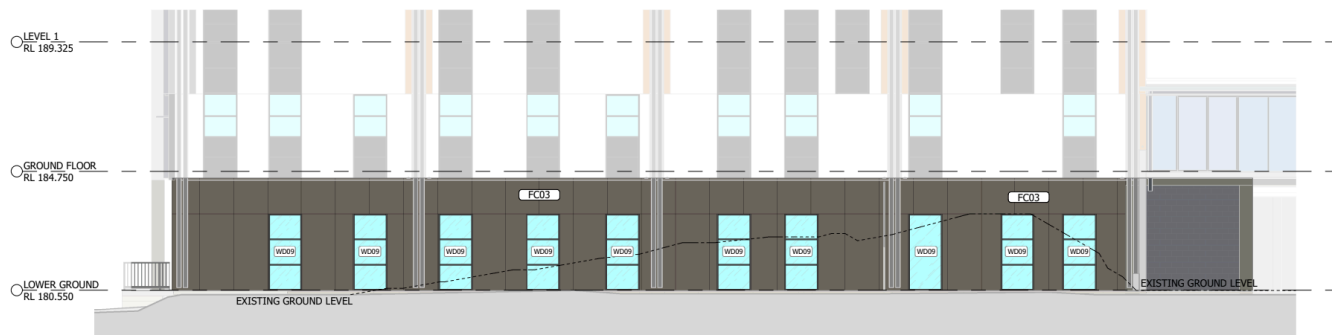


Figure 3.2 - South Elevation



Figure 3.3 - North Elevation

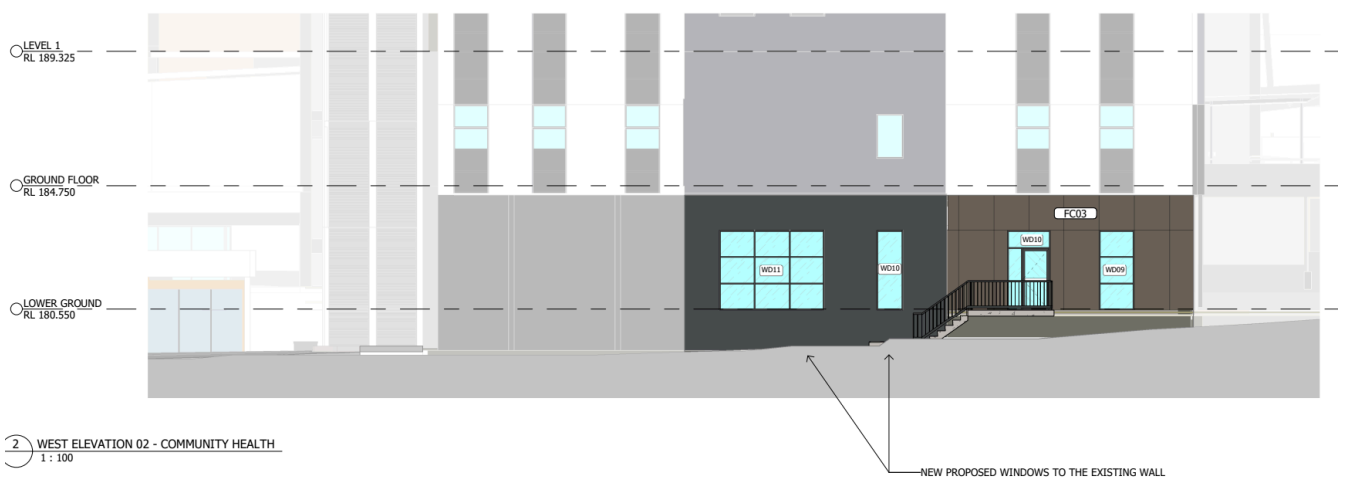


Figure 3.4 - West Elevation

3.5.2 External 3D renders



Figure 3.5 - View of stage 2 building with Community Heath facing existing Weidman Wing

FC panels with a linear grooved surface have been selected for the community health facade to complement the existing metal cladding facade of the stage 2 building.

3.5.3 External Finishes

CODE	LOCATION	DESCRIPTION	IMAGE
FC03	New build facade ground level, refer to architectural drawings.	Product: Fibre Cement panels of 3 standard panel sizes Brand: Swiss Pearl or equal approved Finish: Largo Gravial	
LV01	Stage 2 Lower ground floor, refer to architectural drawings.	Sun shading to match existing	
BLK01	New external pathway between Community Health and Weidman building	Product: split face 190mm Blockwork Brand: Boral Colour: Charcoal	
PC01	External Windows, refer to external window schedule	Product: Double glazed window system with low E coating Brand: Capral or equal Colour: powder coated colour TBC Windows to all habitable rooms to include built in venetian blinds with manual control.	

4. Sustainability

The following sustainability features have been incorporated in the relocated COMMUNITY CENTRE. This information has been extracted from the draft Ecologically Sustainable Development Framework prepared by Stantec Australia.

• Sustainable Products	-	the potential of incorporating recycled products is currently being explored.
• Management of Operational Waste	-	an operational waste management plan is currently being formulated for implementation within Community Health and the wider hospital.
• Commitment to Performance	-	To achieve performance targets as outlined in DGN 058
• Shading and blinds	-	solar shading provided.
• Glazing	-	double glazed windows with low E coatings provided to meet Greenstar requirements.
• Photovoltaic System	-	roof-mounted PV system proposed to offset the high energy demands of the hospital.
• Water efficient fixtures and fittings	-	all fixtures and fittings will be minimum 4-star rated.
• Efficient lighting systems	-	high efficiency LED with lighting controls including timers and occupancy sensors provided.
• Environmentally friendly material	-	specify low VOC products (paints, adhesives, sealants) and low formaldehyde emission wood.
• Improving on benchmarks	-	specify ultra low VOC paints and exceed fabric performance for efficiency and user comfort.

Table 5.1 - Sustainability features incorporated within the relocated Community Health

6. Conclusion

The redevelopment of Muswellbrook Hospital will improve and enhance the existing healthcare services in this regional town that will benefit the local community. While there are compromises across various facets of this healthcare facility design, due to existing site conditions, budget constraints, competing brief requirements, support services and infrastructure requirements, the proposed option seeks to balance these aspects in order to provide the most favourable outcome within the constraints.