

BMDH STAGE 1 EXPANSION

URBAN AND ARCHITECTURAL DESIGN REPORT

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Context

Blacktown and Mount Druitt Hospital campuses are located in the Greater Western Area Health Service. The two campuses are located approximately 8km from each other. This report covers only the proposed new Stage 1 Clinical Services Building at Blacktown Hospital.

Blacktown City Centre, including significant landmarks such as the Blacktown Rail Station, Technical College and Westfield Shopping Centre are located approximately 1km to the north-west.

The original main hospital building was built at the centre of the site in 1965, but in the late 1990s it was demolished and rebuilt closer to Blacktown Road where it is located today. The number of buildings and carparking spaces across the campus has significantly increased over the years and now cover the majority of the campus.

Site Analysis

Blacktown Hospital is accessed from the roundabout intersection of Marcel Crescent and Panorama Parade with major frontage to Blacktown Road.

The site is predominantly land locked on 3 sides by low residential scale buildings to the east, west and south with Blacktown Road to the north. The site abuts private church grounds to the south.

Access

The site currently provides pedestrian access along Marcel Crescent past the existing Ambulance Station and University of Western Sydney building.

The site has a total of 1031 car spaces across 4 main carparks (including 3 staff carparks and 1 visitor carpark). Outer buildings are serviced by smaller individual carparks. Refer to the separate Traffic Report.

All the carparks located across the site are on various levels which require gradient access ramps to and from each carpark. Disabled access is achieved only by vehicle movement across the site to each building.

Site access for ambulances (as all vehicles) is from the roundabout intersection of Marcel Crescent and Panorama Parade. This creates queuing issues and wait times for vehicles entering and exiting the campus. The main hospital entrance is not visible from the site entry due to an existing site ramp. This prevents immediate visual way-finding to the hospital front door.

Staff car parking is located across the campus in 3 main locations, with the southern carpark (3) being the greatest travel distance to the main hospital building and it also has the greatest change in level across the campus. A dedicated pedestrian access from this carpark to the main hospital is via the Admin and Education building, apart from direct road access.

All carparks require staff to traverse the campus and various site levels to access the main hospital building.

The main visitor carpark is located within good proximity to the main hospital building and is accessed by paid parking.

The helipad at the south of the site is currently uncommissioned.

Services

Refer to Separate Engineering Reports.

All site engineering services currently have little or no spare capacity to support additional infrastructure across the entire site.

The site currently has only central plant supporting the existing hospital building. All surrounding buildings are serviced by individual plant.

Approximately 60% of site water is collected by the retention basin located adjacent to Blacktown road. The basin has no spare capacity for a typical 1/100 year storm event.

There are a number of easements across the campus, which include transmission lines, electrical and water.

Urban Design

A Site Review identified the following Urban Design Issues:

1. The site requires a clear structured urban framework which will enable it to grow and adapt to future service delivery needs.
2. Clinical services are dispersed throughout the hospital campus resulting in duplication of functions.
3. Access onto the hospital campus is via a single entry/exit point. Hospital Expansion will increase vehicular movements across the campus. A new vehicular and pedestrian access point from Blacktown Road is sought to meet the vehicular capacity for Stage 1. The preferred option is to create an access point to the eastern side of the existing hospital. This will create a clear and legible way-finding solution for both. Refer to the Traffic report for further details.
4. The existing site contours vary significantly within the campus creating varied access points into the existing buildings. The site levels provide opportunities and constraints to resolve the proposed building levels for Stage 1. The level difference between Platform 1 and 2 is approximately 12m, whilst the level difference between the existing hospital Ground Floor (Level 3) and Platform 2 is 4m.
5. The existing helicopter landing pad is located at the highest point on the southern side of the site. The helipad is currently uncommissioned and is not a requirement for the Stage 1 expansion, however Stage 2 proposes to relocate the helipad to the roof of Stage 2.
6. A need to improve the identity of the Blacktown campus and enhance its relationship with the local community.

Refer to the site analysis plans and diagrams in the appendices.

Elements of the Urban Design

The Master Plan and Urban Design Principles listed below aim to create a legible hierarchy and connectivity across the Campus for both Stage 1 and Stage 2 of the hospital expansion.

The principles set out in this section of the report provide a site strategy that identifies a number of key ideas based on existing site constraints, opportunities for future expansion and the Clinical Services Plan.

Each principle reinforces the Master Plan and provides a development framework for the hospital expansion. Each principle acknowledges the next and is seen as essential to the appropriate evolution of the Hospital campus.

The Master Plan seeks to provide the functional capacity for the Hospital Expansion in 2 stages and integrate engineering infrastructure, ESD principles, community zones and green landscape zones.

The key components of the Master Plan are:

- An east/west development zone is located to the south of the existing hospital.
- Stage 1 is located to the east of the site and Stage 2 to the west.

—A new entry road is proposed off Blacktown Rd to enhance vehicle access and egress to the campus. This will help create a clear and legible way-finding strategy for Stage 1 and Stage 2 of the hospital expansion.

—A new multi-storey carpark is proposed to the south of the Stage 1 New Build and Stage 2 multi-storey car park adjacent to the west, south of the Stage 2 New Build

—A new Mental Health building and associated car parking is proposed adjacent the existing mental health precinct.

Key aspects of Stage 1 of the development are:

—The masterplan locates Stage 1 to the east of the site to facilitate appropriate departmental adjacencies for both Stage 1 and a future Stage 2 development.

—Site circulation for Stage 1 will allow Outpatients and BCCC patients to enter from the new access road from Blacktown Road, whilst Inpatients and emergency will enter from the existing Marcel Crescent entry.

—A transit bus will connect the hospital to the local Blacktown CBD and railway station and circulate through the site from the new access point from Blacktown Road.

—Facility deliveries will remain accessed from Blacktown road in its current location and an underground service tunnel will connect the existing loading dock to Stage 1 New Build.

—Due to the undulating nature of the existing site and the original 1950's hospital footings being left in the ground provides the opportunity to lower the existing platform level and connect to the existing hospital over 2 levels rather than 1 level.

—Introduction of a community zone to unify the existing and new hospital by creating a "Hospital Street". This will also create opportunities to link to the Stage 2 expansion. The concept of the "Hospital Street" is to connect the existing and proposed buildings as one unified hospital with the Hospital Street as the central connecting element. It is to be programmed with a diverse range of interactive spaces including patient and staff collaboration spaces, learning spaces, retail and recreational spaces; the aim is to create a health and well-being hub for the Blacktown Hospital Campus and the broader Blacktown community.

Development Framework Site Principles

The site analysis and resulting site strategy identify a number of key ideas based on the existing site constraints, opportunities for future expansion and the Clinical Services Plan. These principles establish the framework against which detailed design directions and ideas have been tested and developed. The principles are as follows:

01 Define Development Site (Stage 1 & 2)

The development site for the Stage 1 and 2 building expansion has been defined at the centre. This location is a response to the existing site conditions, context, proximity to the existing hospital, accessibility and to ensure the highest level of acuity is established at the centre of the site.

02 Establish north-south route and site separation

An important north-south route is intended to separate the development site to create two building envelopes. This separation establishes a visual and physical route through the site and provides an opportunity for public space between the buildings. Due to significant level changes across the campus, site accessibility has been carefully considered.

03 Create "Hospital Street" as east/west civic route

The Hospital Street will be the most significant public domain space on the campus. It will link old and new development and provide an important way-finding route defining entries for the hospital buildings

04 Set up a hierarchy of public routes and open spaces

A series of secondary public routes and open spaces will link to the primary spaces: north-south link and the Hospital Street. This clearly defined hierarchy will improve way-finding across the site and establish entry points for buildings. These routes contribute to the development of future building envelopes.

05 Create links through new buildings and establish new entries

By reorientating the western end of the site a new entry forecourt will be created. A series of linkages into and through the new building will improve accessibility and the new building relationship with the existing hospital.

06 Recognise solar access and reduce overshadowing

Solar access has been considered for winter sun at 9am, 12pm and 3pm to minimise overshadowing as well as maximising solar access into buildings, courtyards and the public domain. The impact of overshadowing on surrounding residential properties was been identified as a key issue and has been avoided.

07 Ensure optimal solar access to public domain and primary open spaces

Setting back the building envelopes in response to solar access planes will ensure that an ideal amount of sunlight is achieved in the public domain particularly the three new entry forecourts: east, west and central. These setbacks also recognise the importance of achieving shaded areas particularly through summer when the highest level of solar gain is possible.

08 Provide good solar access and high quality public domain in the Hospital Street

Hospital Street will be a high quality public domain space which will be enclosed with good solar access.

09 Redefine access points to site, establish clear vehicle routes and drop off zones

A number of access options to the site have been explored during the design process. A new route onto Blacktown Road has been defined to achieve the most ideal access. This new route will

dramatically improve vehicle access across the site and provide defined routes for emergency, staff and visitor parking.

10 Define building envelopes for future development across the site.

Development envelopes have been prepared for Stage 1 and 2 development zones, new hospital multi-storey car parks and a nominated Mental Health Precinct. These development zones are identified between the public routes and are well accessed by the movement hierarchy and respond to the solar access planes which recognise the impact on the public domain spaces, existing buildings and adjacent properties.

The Blacktown Master Plan sets out to achieve best and highest use of the site and realise the Clinical Services Plan. The proposal seeks to achieve good hospital identity and clear way-finding whilst acknowledging existing site levels with an appropriate building response.

Built Form

The form of the building is led primarily by the clinical requirements.

To allow for the expansion necessary to serve the community over coming decades, the hospital masterplan allows for development of buildings that are taller than the existing.

The Stage 1 development comprises a new building of approximately 32,000 m² and a refurbishment of approximately 8,000 m² of the existing buildings. This provides:

- Approximately 120 inpatient beds (coronary care, cardiology, respiratory medicine, acute aged care, cancer, surgical day only, renal dialysis)
- Comprehensive Cancer Care Centre (2 linear accelerators (with 3 bunkers + expansion), radiation therapy, medical oncology, outpatient clinics and clinical trials)
- Emergency department capacity (urgent care centres, etc.) and a collocated PECC
- Additional outpatient clinics
- 8 additional intensive care beds
- Expansion of pharmacy and pathology

The building is arranged over 8 levels, 2 of which are below ground. The new building consists of a two storey outpatient podium with three storeys of inpatient units above. There is an additional uppermost storey comprising 5 plant enclosures and two storeys below ground devoted to plant, storage and non-clinical support facilities.

The refurbishment of the existing building includes an extension for the PECC and the addition of new canopies to the existing building for a new covered discharge loading bay at the east of the building and for a new covered ambulance bay adjacent to the Emergency Department.

The outpatient podium is deep-plan with two central courtyards providing daylight to the centres of the floor plates. The inpatient floors consist of an east-west wing along the northern side of the building, referred to as the 'service bar', and 3 'ward fingers' extending south from the service bar on either side of the courtyards.

Between the new and existing buildings is the 3 storey Hospital Street, an 8 metre wide atrium with high level glazing providing plentiful daylight.

Refer to the shadow diagrams and views analysis in the appendices.

Architectural Design

The existing campus is an ad hoc mix of buildings of varying sizes, ages and styles. The suburban vernacular of the smaller buildings around the perimeter of the campus blends well into the surrounding housing and these are retained by this scheme.

The existing hospital building and the UWS building are the largest buildings on the site and are of good architectural quality. These buildings conform to a strict orthogonal layout. They use clean simple rectilinear forms with roofs hidden behind parapets and an emphasis on the horizontal east west axis. The existing hospital is predominantly beige with highlight bright coloured walls, projecting white forms and dark grey elements to offset the white and beige walls. Walls are mostly rendered and fenestration is a combination of small windows 'punched' through the facade and long horizontal strip windows. Landscaped courtyards allow light into the middle of the floor plates.

The new CSB responds by incorporating positive aspects of this architectural vocabulary into the new design, providing a linkage between old and new. The new building maintains the same orthogonal layout and uses clean simple rectilinear forms with projecting white forms to break down the scale of the building.

However, rather than the architectural surroundings, which do not reflect the interesting and significant history of Blacktown, the most important immediate 'context' for the hospital is the diverse people of the Blacktown community, their lives and their history. Uniquely Blacktown has a sizable representation of both Australia's oldest inhabitants and its newest arrivals both with cultural backgrounds quite distant from 'Anglo-Australians norms'.

Central to the hospital's identity is the definition of the entrance to the campus and the creation of a focal point of activity at the centre of the campus. Rather than making the new building appear to be an extension of the old, it is more appropriate for the new building to demonstrate the transformation of Blacktown Hospital with an updated identity. This will be defined by the new 'Hospital Street' and the new Clinical Services Building at the heart of the new campus.

The Arts and Cultural program associated with this development will address the community context, but this is also supported by the architectural design. The material and colour concept aims to be bold and colourful. Rather than copying the clinical off-white colour scheme of the existing hospital, the proposed new facades are darker and more earthy with highlights of bright rose coloured glass. Together the new and existing buildings will create a campus of varying character, rather than homogeneity. The coloured glass will reflect the diversity of the community and connect the interior and exterior of the hospital through the fenestration with positive healing emotions.

The new building will sit behind the existing hospital and therefore has limited scope to deal with the issue of lack of an address to Blacktown Road. Site constraints require the main pedestrian entrance

of the hospital to be in the middle of the campus. Although this may not provide a clearly readable gateway or front door, it has the bonus of making the main entrance very convenient to most facilities. Glimpses of the new building from Blacktown Road and the Blacktown CBD will be made more apparent by the proposed materials and colours, helping to communicate the location of the main entrance.

Refer to the sample board and schedule of materials in the appendices.

Design Evolution

The design concept has evolved by introducing “key design drivers” into the clinical planning solution to create a cohesive whole which will provide operational efficiencies and be responsive to the Clinical Services Plan. They represent best-practice ideas for the delivery of contemporary health care buildings and the Blacktown Mt Druitt Hospital Expansion, and provide key aspirations for the design of the new building and reinforce the vision for the new hospital campus.

The “key design drivers” are:

1. Models of Care

—Meet the facility requirements and Models of Care in the CSP

—Provide appropriate health care adjacencies

2. Patient Focused Care

—Designed around the needs of the patient

—Create better experience for patient’s accessing health services

—Privacy and dignity

—Short patient journeys

3. Intuitive Way-Finding Strategy

—Establish clear departmental zones and circulation paths

—Provide good hospital identity and clear way finding

4. Separation of Flows

—Establish clear departmental zones and circulation paths

—Provide safe and secure environment for Staff/Patients, Visitors and Logistics

5. Flexibility & Adaptability

—Provide flexible and adaptable facilities and services

—Create development zones for Stage 1 and Stage 2 expansion

6. Operational Efficiencies

- Enable services to be provided efficiently

7. Site Constraints & Opportunities

- Be responsive to the site and maximise opportunities

- Create renewal and buffer zones

8. Environmental Sustainable Design

- Integrate ESD principles, access to natural light

- Establish “Green Zones” and access to landscaped areas

9. Links & Connections

- Identify a long term strategy for circulation for Stage 1 and Stage 2

10. Collaboration and Interaction

- Provide flexible and shared space for patients, public & staff

- Establish social and/or community zones

A number of feasible alternatives to the proposed designs have been considered during its evolution and these are set out in the Masterplan Options Summary Report in the Appendix.

Arts and Cultural program

An Arts and Cultural program is being integrated with this development that will address the unique context of the Blacktown community. A specialist consultant has recently been appointed and their initial responsibility is to coordinate a 12 week program of consultation with stakeholders and community groups.

The results of the consultation will inform the implementation of the arts program in and around the new and refurbished buildings. This will include the commissioning of artists to create works that will be integrated with the architectural design of the building.