



Blacktown Mount Druitt Hospital Expansion Stage 2 - New Acute Services Building

Health Infrastructure

SSD Architect's Report

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1. Introduction

Blacktown Mount Druitt Hospital is in the middle of a large expansion process. The recently completed Stage 1 Clinical Services Building (CSB) focussed on provision of the clinical priorities that were experiencing the highest growth. A separate Sub-acute Mental Health Facility and Multi-level Carpark were also completed as part of Stage 1.

The focus of the Stage 2 expansion, and this application, is a 9 storey new Acute Services Building (ASB) containing a new Emergency Department, Operating Theatres, Intensive Care Unit, Birthing / Special Care Nursery and new Maternity and Paediatric beds.

The first stage of the SSD application sought approval for the bulk excavation and the indicative form of the ASB, including the Hospital Street.

Other works covered by this application are:

- An extension to the existing 3 storey Stage 1 'Hospital Street' public atrium
- Extensive interior alterations and refurbishment to the existing main hospital buildings to complement the new buildings with integrated services, including Ambulatory Care, Allied Health, Day Medical, Support Services, etc.
- Provision of a new Main Entry Forecourt between the Stage 1 and Stage 2 buildings
- Site landscaping providing an integrated landscape plan for the whole campus
- Associated building services
- Carpark link bridge

Stage 2 works not covered by this application and for which approval has or is currently being sought through other planning mechanisms comprise:

- Refurbishment of Level 2 of the existing Administration Building as the new Regional Renal Dialysis Centre, including construct of a new loading dock (already completed)
- Road and civil works including services diversions and deepening of the stormwater retention basin. (currently underway)
- Demolition of the existing Regional Renal Dialysis Centre and Oncology buildings (currently underway)
- Extension of the existing multi-level carpark
- Acquisition of 8 existing houses on Panorama Parade and replacement with a new entrance road, on-grade carpark and associated landscaping

2. Built Form and Urban Design

A Masterplan (below) has established clearly defined zones for structured development of the campus over time.



Zonal Masterplan

Key features of the masterplan are:

- A new Acute Precinct located to the South of the existing hospital, at the centre of the site, comprising the recently completed Stage 1 CSB to the East and the proposed Stage 2 ASB to the West
- An East - West 'Hospital Street' public atrium
- A North - South pedestrian link connecting the Hospital Street to other precincts
- Optimised re-use of the existing hospital for predominantly outpatient functions
- A new multi-level carpark extension to the West of the Stage 1 multi-level carpark
- Potential for Education / Research expansion above the stormwater retention basin *
- Provision for a parallel provider development zone to the Northwest *
- Capacity to relocate and expand Acute Mental Health, possibly in conjunction with other development *
- Expansion of the campus west to Panorama Parade to provide better vehicular and pedestrian access to the hospital from the west (not shown above)

(* Not covered by the Stage 2 redevelopment)

The Schematic Design covered by this application is illustrated in the architectural drawings (refer Appendix A). To allow for the expansion necessary to serve the community over the coming decade, the Stage 2 design proposes development of buildings that are taller than the existing hospital and the Stage 1 building.

This SSD application covers:

- A new building of approximately 36,500 m²
- An extended 'Hospital Street' public atrium (area included in new build above)
- Refurbishment of approximately 5,400 m² of the existing buildings.
- Provision of a new Main Entry Forecourt between the Stage 1 and Stage 2 buildings
- Site landscaping providing an integrated landscape plan for the whole campus
- Associated building services

The recently completed 3 storey Stage 1 'Hospital Street' atrium between the Stage 1 building and the existing hospital will be extended in the Stage 2 expansion, linking both stages with the existing building. It will be a unifying element, providing a simple, intuitive wayfinding structure. The 'Hospital Street' will be a high quality public domain enclosed space with good solar access, which will 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 broader Blacktown community.



Proposed Site Plan

3. Architectural Design

3.1 Context

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.

Before the Stage 1 CSB was constructed, the existing hospital building and the UWS building were the largest buildings on the site and are both of good architectural quality. These buildings have an orthogonal layout - clean simple rectilinear forms with roofs hidden behind parapets - emphasizing a horizontal east-west axis, which has become an important part of the masterplan.

The existing hospital is predominantly beige with projecting white forms and dark grey elements to offset the 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.

However, 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 outside the 'Anglo-Australian norm'.



Stage 1 CSB east facade

3.2 Strategy

The proposed design:

- is geared to patient-focused Models of Care
- creates connections, facilitates interaction, and keeps wayfinding intuitive
- targets both environmental and social sustainability
- maintains flexibility for an unpredictable future

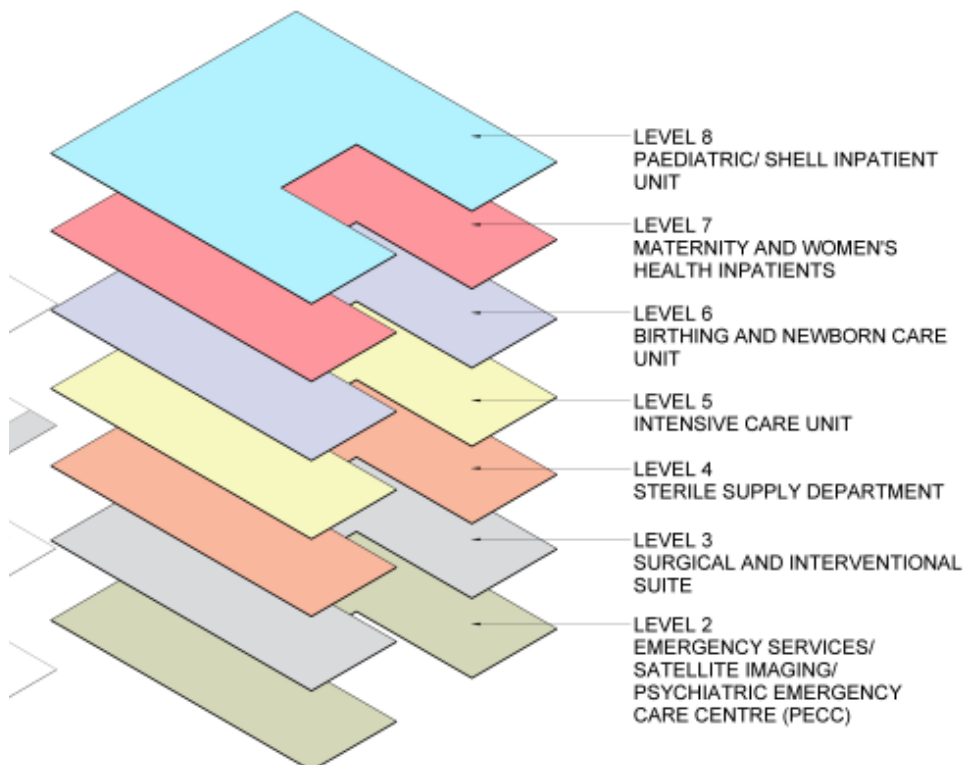
The design strategy for the ASB is a continuation of that developed for the Stage 1 CSB. That is, the ASB design will continue to build a distinct transformative identity for the hospital and enhance its relationship with the community. Together the ASB, the CSB and the existing buildings create a new hospital of varying character, rather than homogeneity.

The ASB facades will use the same varied materiality developed for the Stage 1 CSB.

The massing strategy acknowledges that the centre of the campus is currently being transformed from a suburban to an urban typology and that the development has a responsibility to give character and sufficient quality to the new urban fabric.

3.3 Configuration

The form of the ASB is derived primarily from clinical planning considerations, especially the need to achieve adjacency between the key clinical acute services. The design concept has evolved from the same 'key design drivers' established for Stage 1, providing a clinical planning solution that is operationally efficient and responsive to the Clinical Services Plan. The design represents best-practice ideas for the delivery of contemporary health care buildings and reinforces the hospital's vision for the campus.



Stage 2 ASB blocking and stacking diagram

The ASB is arranged over 9 levels, 2 of which are mostly below ground, as follows:

Level 1	Plant and staff-only tunnel links to Stage 1 CSB and existing hospital
Level 2	Emergency Department, Ambulance Bay, public ED Entrance and staff-only tunnel links to Stage 1 CSB and existing hospital
Level 3 (Ground Level)	Operating Theatre Suite, Main Entrance and Atrium connecting to Stage 1 CSB and existing hospital
Level 4	Central Sterilising Department and staff-only atrium bridge links to Stage 1 CSB and existing hospital
Level 5	Intensive Care Unit and atrium bridge link to Stage 1 CSB
Level 6	Birthing Unit and Special Care Nursery
Level 7	Inpatient Units
Level 8	Paediatric Inpatient Unit and shell inpatient unit
Level 9	Plant

3.4 Massing

A rectangular deep plan podium rises to Level 3. The podium is topped with a U-shaped form extending up to Level 8. As the floor area of each storey decreases progressively up the building, the void between the north and south wings enlarges, resulting in a series of stepped roof terraces open to the west. The terraces provide a conveniently located protected outdoor space for each of the clinical functions.



Aerial view from the northwest of the proposed Stage 2 ASB

The building has been designed to be capable of being extended vertically in future with clinical functions on future Levels 10 and 11 with some plant on a future Level 12. However, this application does not cover that potential future expansion since it may never be required.

The principle architectural articulation of the building is the creation of a solid masonry 'brick' tower at each corner of the building with windowed facades between. The towers contain services risers, fire stairs and the structure required for lateral restraint. The windows and glass fins on the façade between the towers are full floor to ceiling height wherever possible to maximise the apparent proportion of the 'open' glazing band to the 'closed' spandrel.

The bulk of the building is articulated with a number of smaller linear forms on all sides clad in white composite aluminium with timber veneer cladding to their underside:

- the ambulance bay canopy
- the atrium perimeter canopies
- the link bridge to the multi-storey carpark
- the associated cantilevered walkway at the east edge of Level 5

In addition a number of smaller scale 'interventions' in coloured glass provide detailed articulation to the west façade of the building which will be prominent to the public approaching the hospital:

- the elevated circular Paediatrics outdoor balcony at Level 8
- the conical skylight on the ICU terrace at Level 5
- the prismatic skylight on the canopy above the Level 2 ED public entry

The design has been improved since the Concept Proposal and Enabling Works SSD application was approved, with considerable user consultation and refinement of the design.

Whilst the proposed design remains consistent with the approved Concept Proposal, resolution of the architectural articulation better addresses the hospital to Marcel Crescent / Panorama Parade, which will remain the main vehicular and pedestrian entrance to the campus.

The principal refinements in massing since the Concept Proposal SSD application was approved comprise:

- Level 5 Link bridge to the multi-storey carpark extension, and the associated walkway cantilevered from the east façade of the ASB, have been added.
- Link bridges to the Stage 1 CSB above the proposed Atrium / Hospital Street extension have been removed.
- Location of the Level 9 roof top plantroom is now over the southern wing rather than the northern to achieve desired clinical adjacencies in the event of future vertical expansion.
- An increase in the area of the Level 9 roof top plant enclosure is required to accommodate actual plant requirements and to facilitate construction of any future vertical expansion.

The overall height of the building is unchanged from the Concept Proposal approval.

3.5 Materiality

Another means of ameliorating the large scale of the building is the use of a rich materiality. Like the Stage 1 CSB, the rose coloured glass fins projecting from the building break up the flatness of the facades, making them highly responsive to the diurnal variations in natural light, casting coloured light and shadows back onto the façade, and providing a distinctive architectural identity that is responsive to the diverse culture of the community. Public opinion on the Stage 1 CSB design (which can be found easily online) is very positive especially in relation to natural light, colour and materiality.

The black aluminium cladding is the base of the new multicultural identity and white aluminium 'ribbons' tie the old and new buildings together. The key ingredient of the façade design is the rose-coloured glass fins, which reflect the diversity of the community.

Brick snaps are factory precast into concrete cladding panels with a one third stretcher bond pattern. Brick references the surrounding housing and the former State Brickworks, providing an earthy contrast to the slick glass and aluminium.

Refer to the Schedule of Exterior Materials and sample board in Appendix F.



Stage 1 CSB west façade



Stage 1 CSB façade materials

3.6 Atrium / Hospital Street



View from the main entry forecourt to the new Main Entry Atrium / Hospital Street

Central to the hospital's identity is the definition of the entrance to the campus and the creation of a focal point at the centre of activity. The Stage 2 works will continue what was commenced with Stage 1, adding a new Main Entrance Atrium to the western end of the 'Hospital Street'.



View from the main entry forecourt to the new Main Entry Atrium / Hospital Street

4. Staging

The staging strategy for the works will maintain the hospital as fully operational throughout construction.

The construction of the new ASB is contingent on the prior completion of a number of enabling and early works, particularly services diversions and road works and the relocation of the Regional Renal Dialysis Centre and Oncology Department which formerly occupied the site. All of these works are covered by other separate application procedures.

Excavation and demolition works approved by the first stage of this application are already underway. The entire footprint of the Stage 2 building, including the ASB and Hospital Street atrium extension, will be excavated down to the existing Level 2 (RL 54.8) to enable construction of the new Emergency Department at Level 2, which is the ground floor level of the building on its Western side and the level at which ambulances will access the building. Further partial excavation down to Level 1 (RL50.6) is required to accommodate plant, supporting functions and links with the existing and Stage 1 buildings.

The work covered by this second stage of the application is, subject to approval, expected to commence in January 2017.

The detail of the staging strategy is subject to further consultation with stakeholders and contractors.



Stage 2 ASB west facade

5. Site Analysis

Refer to the attached Appendix B: Site Analysis Plan.

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 buildings to the East, West and South with Blacktown Road to the North. The site abuts private church grounds to the South.

The campus has a clear structured Masterplan which will enable it to grow and adapt to future service delivery needs.

5.1 Services

Refer to the separate Engineering Reports for details of existing and proposed services.

There is an easement along the Western side of the campus for an overhead Sydney Trains 33kV power line. It is expected to re-route that line off the hospital campus at some point in future, but for the purpose of this application, the power line will be retained and the easement is a constraint that has been considered in the design of the scheme.

No building structures will encroach on the HV easement. Civil works comprising road works and services diversions are currently taking place within the easement and beneath the power line, all within the requirements of Sydney Trains.

6. Pedestrian and Vehicle Circulation

Refer to the specialist consultant's Traffic Report and the attached Appendix C: Pedestrian and Vehicle Circulation Plan.

A new vehicular and pedestrian access point from Blacktown Road has been constructed as part of the Stage 1 works and is expected to open imminently. This will greatly improve vehicular circulation by providing a ring road through the campus, accessing the parking and drop-off facilities. However, the left in / left out access restriction on the new Blacktown Road vehicle entry requires access to be retained to and from the western side of the campus.

The site has a number of on-grade carparks in addition to a multi-level carpark at the centre of the campus which has good proximity to the main hospital buildings. Outer buildings are serviced by smaller individual carparks.

An extension to the existing multi-level carpark with over 400 additional carparking spaces, is not covered by this application, but will be linked by the new link bridge from Stage 2, which is included in this application.

Access for ambulances is currently from the roundabout intersection of Marcel Crescent and Panorama Parade via the existing vehicle access ramp on the South side of the UWS building. This arrangement will stay in place until the ASB is complete and the new ambulance bay is commissioned.

Works not covered by this application are intended to increase the size of the campus to the west through the acquisition of 8 houses on Panorama Parade. This will provide an additional vehicular access route linking directly to the main entrance drop-off and multi-storey carpark. This will allow the existing access route to be dedicated to the new Emergency Department. The additional area will also accommodate a new Emergency Department carpark and associated landscaping that will provide a more appropriate public face to the hospital, with the new ASB set back considerably from Panorama Parade.

Pedestrian movement around the campus will also be improved and simplified by the Stage 2 works. The 'Hospital Street' public atrium will be extended to the West linking with the proposed ASB at Level 3 (Ground). The existing vehicle ramp and ambulance bay at the top of the ramp will be converted to a landscaped public outdoor space linking to the Hospital Street atrium at Level 3 (once the new ambulance bay is commissioned), which in turn provides access all the way to the eastern end of the campus.

This East-West pedestrian route links with the main North-South access route in the Stage 2 Atrium / Hospital Street extension, which will become both the main entrance and the public 'heart' of the Hospital.

7. Shadow Diagrams

Refer to the attached Appendix D: Shadow Diagrams for details of shadows cast by the proposed building.

The diagrams illustrate that the period of greatest impact, during the morning at the winter solstice. It can be seen that all adjacent residential properties maintain at least 3 hours of sunlight between 12 noon and 3pm throughout the year.

8. View Analysis / Photomontages

The Stage 1 works have addressed a need to improve the identity of the Blacktown campus and enhance its relationship with the local community. This has been achieved through the architectural design and the artworks program and especially the extensive community consultation that drove both of these efforts. The proposed Stage 2 works will further complement and enhance the identity of Blacktown hospital.

Refer to Appendix E for 'before and after' photomontages that illustrate the impact of the massing of the proposed ASB and on views towards the hospital.

Like the Stage 1 CSB, the new ASB will sit behind the existing hospital and UWS building, with those buildings and the open space fronting Blacktown Road all providing a transition to the taller Stage 1 and 2 buildings behind, which together with signs on the new building, will better communicate the location of the main entrance.

Appendix A. Architectural Drawings

Appendix B. Site Analysis Plan

Appendix C. Pedestrian and Vehicle Circulation Plan

Appendix D. Shadow Diagrams

Appendix E. View Analysis Photomontages View Analysis Photomontages

Appendix F. Schedule of Exterior Materials

- A Precast concrete panels faced with grey brick slips
- B Black aluminium composite cladding panels
- C White aluminium composite cladding panels
- D Dark grey powdercoated vertical aluminium louvres over windows and dark grey horizontal aluminium louvres
- E Dark grey powdercoated vertical aluminium louvre screen over open walkway
- F Interspersed dark grey and silver powdercoated vertical aluminium louvres
- G Dark grey Colorbond sheet steel cladding
- H Dark grey powdercoated horizontal aluminium louvres
- J Timber veneered exterior cladding panels.
- K Neutral grey tinted windows with dark grey powdercoated aluminium frames.
- L Dark grey opaque colourback glazing
- M Coloured transparent glass projecting fins with dark grey metal brackets
- P Grey Colorbond sheet steel roof
- Q Dark grey painted concrete columns

