
Outline Construction Management Plan

Blacktown Hospital
Redevelopment Stage 2 –
Main Building Works

State Significant Development

June 2016

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1. Introduction

This report has been prepared as part of the Blacktown Hospital Redevelopment Stage 2 – Main Building SSD application.

In preparation for the construction of the Stage 2 Main Building which is the subject of this application, several early works packages have commenced to prepare the site for the commencement of the Stage 2 development. The Early Works packages have been the subject of separate planning application.

- The Early Works Package 2: Services and Road Diversions was the subject of a Review of Environmental Factors (017/2015 dated 13 Oct 2015). Works are due to be completed November 2015.
- Early Works Package 3: Bulk Excavation and Shoring was the subject of the Stage 1 State Significant Development Application (SSD 7058, dated 5 April 2105). Works are scheduled to be completed February 2017.

The focus of the Stage 2 expansion is a new Acute Services Building (ASB) containing a new Emergency Department, Operating Theatres, Intensive Care Unit, Birthing / Special Care Nursery and new Surgical and Medical beds, and refurbishment works to the existing Main Building.

2. Proposed Works

2.1. Background

The Blacktown & Mt Druitt Hospitals Stage 2 project aims to complement the Blacktown Hospital Stage 1 development which was completed in early 2016.

The Final Business Case for Blacktown Hospital Stage 2 Development was completed in early 2016.

Several areas form part of the Stage 2 – Main Building development, these include:

- Construction of the Acute Services Building; and
- Refurbishment to existing hospital areas.

The Stage 2 –Main Building is the subject of this Construction Management Plan, which supports the SSD.

2.2. Scope of works

The Stage 2 expansion at the Blacktown Hospital campus comprises:

- Construction of a new 9 storey Acute Services Building (ASB) (approximately 36,000 m²), including the following critical services:
 - Emergency
 - Intensive Care Unit
 - Operating Suite
 - Sterile Supply
 - Birthing Suite
 - Newborn Care
 - Maternity & Women's Health Inpatient Units
 - Paediatric Inpatient Unit
- New entry atrium to connect the existing hospital building and Stage 1 Clinical Services Building (CSB) to the new Stage 2 ASB. This will include a new patient drop off and forecourt area as the main entry point;
- Provision of new patient drop-off and ambulance bay at entry to Emergency Department;
- Bridge link and tunnel connections to existing building, Stage 1 CSB and Multi Story Car Park; and
- Provision of engineering services connected to the infrastructure completed under Stage 1 Early Works Package (Road and Service Diversions).

The following engineering services will be provided within the ASB:

- Hydraulic services such as stormwater, subsoil and roof drainage, sewer connections, water pumps, pipework, fire hydrant and domestic cold water storage tanks and gas meters;
- Fire services such as sprinkler systems, isolation valves, pipework, fire alarm monitoring network and alarm signaling equipment;
- Mechanical and medical gas services such as air handling, smoke management, pneumatic tube system, medical gas, medical breathing and oxygen services;
- Electrical services such as MSBs, building switchboards, distribution boards, generators, lighting, power, nurse call systems and new UPS; and
- New Endeavour Energy 3x 1500kVA transformer substation located south of the Stage 2 ASB.

The Stage 2 expansion also involves refurbishment to existing hospital areas (approximately 4,700m²), including:

- Conversion of the existing Emergency Department into Ambulatory Care;
- Refurbishment of the existing medical imaging;
- Refurbishment of the existing inpatient dialysis unit;
- Conversion of 50 per cent of the existing Operating Suite into an Endoscopy Procedure Suite; and
- Refurbishment of pathology into an administration unit.
- Any other works that are required to ensure the works are undertaken in a safe manner and staged to ensure minimal disruption to the Hospital / LHD.

3. Phasing Program and Key Milestones

The key milestones for the Stage 2 Redevelopment include:

<i>Key Milestones</i>	<i>Date</i>
<u>Stage 2 Acute Services Building</u>	
Construction commence – Stage 2 Acute Services Building	February 2017
Construction Complete - Stage 2 Acute Services Building	Mid 2019
<u>Refurbishment of Existing Building</u>	
Construction commence – Refurbishment works	Mid 2019
Construction Complete – Refurbishment works	Mid 2020

4. Construction Management Plan Components

The Plan covers the following areas of management:

- a) The operations of site management when undertaking the works:
 - Legislative requirements
 - Hours of construction works
 - Public fencing
 - Disruption
- b) Mitigation to minimise amenity and environmental impacts:

- Noise
 - Vibration management
 - Dust Management
 - Odour control
 - Protection of trees
 - Stormwater management and soil erosion
- c) Traffic/pedestrian management in the duration of the works;
- d) Waste management:
- Construction
 - Storage of dangerous goods
 - Hazardous materials management
- e) Services disconnections.

5. Operations of Site Management

The Works will be undertaken under by a Principal Contractor.

All statements and proposals documented in this Construction Management Plan will be reviewed at the time of contract award for the Works to ensure alignment with the proposed methodologies and construction staging of the preferred Contractor.

5.1. Legislative Requirements

The Works will be undertaken in accordance with the following legislative requirements and any others that must be complied with in carrying out of the works as required:

- Protection of the Environment Operations Act and Regulations;
- Approved Methods for the Modeling and Assessment of Air Pollutants in NSW (EPA)
- Environmentally Hazardous Chemicals Act 1985;
- Protection of the Environment Administration Act and Regulations;
- Occupational Health and Safety Act 2000 and relevant codes of practice and Standards;
- Occupational Health and Safety Regulation 2001 and relevant codes of practice and Standards;
- Australian Standard 2601-2001: Demolition of Structures;
- Code of Practice for the Safe Removal of Asbestos (NOHSC:2002 (1998));
- Guide to the Control of Asbestos Hazards in Buildings and Structures (NOHSC:3002 (1998));
- Resource and Recovery Act 2001;
- Environmental Planning and Assessment Act 1979;
- Heritage Act 1997;
- Local Government Act 1993;
- Applicable aviation standards eg CASA requirements;
- Occupational Health and Safety Act 1983;
- Soil Conservation Act 1983.
- Australian Standard 4970-2009: Protection of Trees on Development Sites.

5.2. Hours of Operation

The following hours of operation apply to the Stage 2 Acute Services Building, consistent with the Stage 1 approval for the Package 3 Early Works (Bulk Excavation and shoring):

- Monday to Friday: 7:00am to 6:00pm
- Saturdays: 7:00am to 5:00pm
- Sunday and Public Holidays: No work

5.3. Public and Property Protection

The general principle is to separate construction areas of work from hospital staff and visitors. Where there is a cross-over this will be managed to insure safety of all persons and equipment.

The construction phasing was developed to ensure continued hospital operations and distinct / isolated construction zones which maximise separation between the hospital operation and construction work.

Appropriate hoarding/fencing (as specified in Australian Standards and Workcover requirements) will be installed to prevent public & staff access and to maintain security for the various areas of the works. Access to the Hospital's public & staff car park areas and on-site Childcare Centre will be maintained during the works.

Construction vehicles will initially use the Marcel Crescent access point and the internal hospital road to access the construction control point located near the former Renal and Oncology buildings. The Blacktown Road entry will be used as a secondary entrance as required by the construction works (but will not be used for convenience). Traffic controllers will be used to manage the interface of construction vehicles with pedestrians, and staff/visitor/patient vehicles.

Pedestrian access along Blacktown Road and Marcel Crescent will be maintained for the hospital. This will be monitored during construction.

Staff/public/visitor Vehicle entry to the hospital will be maintained from Marcel Crescent and Blacktown Road. Further, a new entry will be constructed from Panoramas Parade (this is currently the subject of a separate application and does not form part of this SSD).

These public and property protection measures will be reviewed at the time of contract award for the works to ensure alignment with the proposed preferred methodologies and construction staging and to ensure that the safety of the public & staff is maintained at all times during the works.

5.4. Disruption Notices

Any planned Disruptions to Hospital operations and services will be managed through the process of Disruption Notices (DNs). For such stoppages, the DN will describe the applicable works, timetable, issues and contingency plans.

DNs are submitted by the contractor to the project manager and Hospital stakeholders for approval. Depending on the nature of the works these may be required between 48hrs and 6 weeks prior to commencement of works.

6. Environment and Amenity

The contractor undertaking the Works will be required to submit for approval to the Principal a comprehensive Environmental Management Plan (EMP) to ensure that all elements of the plan meet all statutory requirements as well as NSW Health's requirements.

As a minimum, the erosion and sediment controls for the Works shall be designed, installed and maintained in accordance with the requirements of Managing Urban Stormwater: Soils and Construction "The Blue Book" 2004 (4th edition) and/or details provided by the project engineering consultants.

The environmental performance of the contractor will be monitored throughout the Works.

The following specific environmental management principles will be implemented on site:

6.1. Noise and Vibration

Note: This section is to be read in conjunction with the Noise and Vibration Impact Assessment Report prepared by *Acoustic Logic*.

Noise from the Site shall not exceed the limits set out in the EPA's Interim Construction Noise Guidelines and Australian Standards such as AS:2436 and a Construction Noise Impact Statement has been prepared which will specify requirements for the contractor. No machine work will occur outside the normal working hours set unless approval has been given through the DN process.

The noise and vibration from the use of any plant equipment and/or building services associated with the premises shall not give rise to an offensive noise as defined under the provisions of the Interim Construction Noise Guidelines, EPA and Australian Standards.

As part of the noise mitigation treatment for the project, the contractor will be responsible for the management, checking of compliant maintenance regimes and statutory supervision of all equipment, such as making sure all trucks and machinery involved in the Works will be checked for defective exhaust systems and general servicing.

6.2. Dust

To control dust generation water will be sprayed where necessary at the source of origin and surrounding areas to prevent airborne dust particles migrating into the surrounding environment.

Management of dust prevention is to be developed by the contractor and agreed by the project stakeholders.

Additional precautions that will be implemented during the Works include the covering of all haulage trucks with tarpaulins and monitoring of weather conditions (including wind). Management and contingency plans will be developed to prevent any foreseeable impacts from dust.

6.3. Odour Control

The scope for demolition activity for the Site will be minor and odour problems will be minimal. All plant and machinery involved in the Works will be regularly serviced and checked for exhaust emissions and catalytic converters.

6.4. Protection of Trees

Note: This section is to be read in conjunction with the Flora and Fauna Report prepared by *Abel Ecology*.

The contractor undertaking the Works will be required to comply with Australian Standard 4970- 2009: Protection of Trees on Development Sites to include tree management guidelines for the proper care and protection of trees retained and integrated into construction projects.

While the primary tree removal activities is occurring as part of the Early Works Package 2 (previously approved in a separate SSD), the contractor undertaking the Works will be required to maintain the use tree protection measures such as barriers and protectors.

Where trees are required to be retained and are close to the works, the contractor will be required to maintain procedures to for their protection at every stage of the development process.

6.5. Stormwater Management

Note: This section is to be read in conjunction with the Integrated Stormwater Management Report prepared by *Robert Bird Group*.

Measures will be employed on each stage, and on the site overall, to control soil erosion during construction. These measures will be in accordance with currently accepted principles, as described in Managing Urban Stormwater: Soils & Construction (4th edition, Landcom, 2004).

Appropriate elements of the drainage system on the Site will be cleaned out to remove sediments prior to commencing the Works on site.

The site will be continually cleaned of rubble to minimise possible sediment flow during rainfall periods.

Stormwater kerbs and drainage lines will have sediment controls in the form of hay bales, sedimentation socks or similar (to be approved by project civil engineer).

Stormwater grate inlets surrounding works areas will be covered with geotextile fabric to allow water to enter into drains whilst retaining sediments.

Should external surface run-off flow into works areas, it may need to be diverted to reduce sediment transportation by the use of using hay bales or similar (to be approved by project civil engineer).

All drainage control devices will be regularly checked particularly during heavy rainfall periods.

7. Traffic Management / Construction Entry & Exit

Note: This section is to be read in conjunction with the Traffic Management Plan prepared by Arup Traffic Engineers.

As part of the contractors Construction Management Plan, the contractor will be required to submit a Traffic and Pedestrian Management Plan for approval to the Principal prior to commencement of the works.

Construction vehicles will use Marcel Crescent access point and the internal hospital road to access the construction control point. Blacktown Road Entry will be used as a secondary construction entrance in exceptional circumstances only.

Traffic controllers will be used to manage the interface of construction vehicles with pedestrians, and staff/visitor/patient vehicles.

Pedestrian access along Blacktown Road and Marcel Crescent will be maintained for the hospital. This will be monitored during construction.

Staff/public/visitor Vehicle entry to the hospital will be maintained from Marcel Crescent and Blacktown Road. Further, a new entry will be constructed from Panoramas Parade (this is currently the subject of a separate application and does not form part of this SSD).

Details of construction vehicles per day including likely arrival and departures have been assessed within the transport and traffic report prepared by Arup Traffic Engineer for the Development Application.

It is likely the following construction equipment will be used:

- Articulated vehicles for delivery of excavation machinery;
- Heavy and medium rigid trucks for construction material delivery;
- Heavy rigid tankers for fuel delivery for compacting and excavation machinery;
- Rigid trucks for removal of excavated material;
- Mobile cranes; and
- Concrete delivery trucks & concrete pumps.

A vehicle wash-down will also be placed at vehicle entry points to prevent construction vehicles tracking dust onto public roads

There will be an allocation of 220 parking spaces for contractor parking made available at Blacktown Bowling Club. This allocation will cater for the construction staff demand and therefore not impact carparks available for staff, patients or visitors. However, it is anticipated that a significant number of construction associated personnel will use car-pooling and public transport options to travel to and from the site. In addition to these measures, construction staff will be instructed not to use hospital parking or the surround street parking.

Construction worker access (via foot) will be via the existing hospital road entrance off Marcel Crescent.

7.1. Pedestrian Protection

Pedestrian and vehicular passage to and around the site will be maintained, or alternate routes determined where necessary, and be defined by clear signage.

Construction vehicles will use the existing site access and observe all pedestrian controls. The pedestrian footpaths along Blacktown Road and Marcel Crescent are to be maintained with appropriate signage to warn pedestrians of construction activity.

At times it may be necessary to direct pedestrians onto temporary footpaths, in which case adequate warning signs and barricades would be provided.

Temporary hoarding appropriate to the interaction between pedestrians and construction works (as per Workcover requirements and Australian Standards) will be constructed to prevent unauthorized access to the Site. These hoardings and fences may be staged to allow access to in-use areas during the Works.

8. Waste Management / Recycling Principles

Note: This section is to be read in conjunction with the Waste Management Plan prepared by Coffey Environments Australia.

The contractor will be required to recycle and reuse where possible. The contractor will be required to arrange for the sorting and recycling of waste materials and packaging to ensure maximum recycling is achieved. The contractor will be committed to achieving compliance with the EPA guidelines.

The Contractor will be required to prepare a Waste Management and Recycling plan specific to the Works. This will be in line with the Waste Management Plan prepared by Coffey.

Once the new sections of the hospital are commissioned, operational waste will be managed in accordance with the Sydney West Area Health Service Waste Management Policy. This policy will be reviewed and updated by the hospital as required to suit the operation of the new Stage 2 Acute Services Building.

8.1. Storage of Dangerous Goods & Hazardous Materials

Dangerous goods (such as petrol, diesel, oxy-acetylene, oils etc.) will be stored in a lockable compound with sufficient ventilation in accordance with relevant codes of practice and standards.

Material safety data sheets on all of these flammable and potentially harmful liquids will be provided by the contractor undertaking the Works.

Geotechnical and Site Contamination reports have been undertaken by JK Geotechnics, Environmental Investigation Services and JBS&G respectively. These reports have indicated little to no issues of contamination on the site.

These reports will be used as the basis for identifying and managing the removal of any contaminated materials identified during the Works. An 'Unexpected finds' protocol will be implemented to manage any materials identified during works.

9. Service Disconnections

As part of the Stage 2 Acute Services Building, some service disconnections to the existing campus services will be required.

In general terms the following principles will be adopted when disconnecting services; Services impacts on the existing Blacktown Hospital Campus facilities will be done with full coordination; development and input with relevant hospital and authority stakeholders and will only proceed with approval from same, via a Disruption Notice process.

All Service authorities will be consulted prior to the Works commencing to ascertain lead times and correct termination locations.

All termination works will be undertaken in accordance with project design engineers' specifications and instructions.

All termination works will be undertaken by suitably licensed contractors.