PRINCE OF WALES MEDICAL RESEARCH INSTITUTE NEUROSCIENCE RESEARCH PRECINCT

CONSTRUCTION MANAGEMENT PLAN

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January 2009

Contents

1.0 Overview

The Stage 2 works are planned to be constructed in four stages while maintaining retained facilities fully operational for the on going research programs being undertaken and the community services being provided. The construction methods and plant and equipment used must accordingly not only comply with the Part 3A Approval Consent Conditions but must also ensure that the amenity of the existing facilities and the quiet enjoyment of POWMRI's precinct partners, researchers, employees and the public are not affected by the construction contractor's activities during the course of the works.

The proposed staging of the works is shown in the Staging Plans presented with the architectural drawings and included herein. The works will commence with Stage 2A which is being funded by a Commonwealth Government Grant and will generally proceed as indicated, as further funding is confirmed.

The Stage 2A work establishes the Neuroscience Research Precinct presence, focuses its single point of entry, provides easy access for clinical research and imaging and the core facilities and initial amenities for the Stage 2 project as a whole. Stages 2B, 2C and 2D could be undertaken in any sequence following completion of Stage 2A.

This indicative Construction Management Plan will be replaced by the Site Safety Management Plan prepared by POWMRI's selected Construction Contractor, acting as Principal Contractor with respect to all OHSR matters which will be prepared in accordance with all statutory requirements, the SESIAHS's requirements and the Part 3A Approval Consent Conditions. The Site Safety Management Plan will include an Environment Management Plan which shall address:

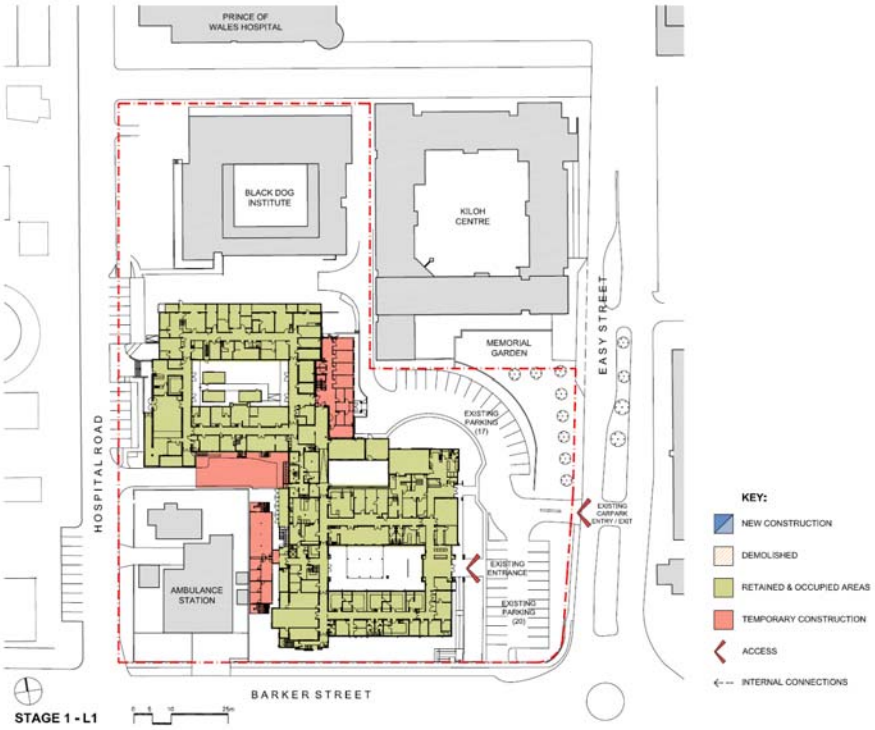
* Waste minimisation and management
* Air quality management
* Water quality, erosion and sedimentation control
* Traffic management
* Noise management

and will be completed before commencing the Preparatory Works.

Indicative Site Management Plans for Stage 2A are included in Attachment A and an outline Demolition and Construction Waste Management Plan is included in Attachment B.

2.0 Preparatory Works

The Stage 1 works, previously approved by Randwick Council, provide additional space for growth during the construction of Stage 2A as well as decanting space into which existing operations can be relocated to allow initial demolition to take place.



The original entrance to the Hospital Road Villa will be re-established concurrently with the fitout and commissioning of the Stage 1 north east extension to allow subsequent demolition of the existing main entrance and south east wing of the Barker Street Villa.

The area between the Hospital Road Villa and the Black Dog Institute will be cleared and paved to provide additional car parking spaces and a one-way traffic through site link from Easy Street. A temporary car park entry ramp will be constructed to the north of the existing two-way access ramp to complete the through site link with the entry off Easy Street. The retaining structures for the temporary entry ramp will be designed to allow subsequent construction of the landscaping for Stage 2C with minimal rework.

Construction of the additional car spaces adjacent to the Black Dog Institute and the additional car spaces recently secured by POWMRI in Hospital Road will substantially replace the car spaces that will be taken over in front of the existing main entrance to the Barker Street Villa and maintain the same level of convenience parking currently available while the Stage 2A works are being constructed and on completion and occupancy of Stage 2A.

Additional parking is available in the Prince of Wales Hospital parking station.

The construction of the through site link will separate operational traffic generated by researchers, clinical research participants and visitors to POWMRI from construction vehicles. Deliveries of operational supplies and removal of operational waste will remain by way of the lane off Hospital Road between the Ambulance Station and the Hospital road Villa during the Construction of Stage 2A

Archaeological pits will be opened up as necessary for visual stratigraphic investigation to validate Aboriginal and European desk top study findings and establish mapping requirements, if any, during excavation of any undisturbed upper Aeolian dune sand horizons.

3.0 Site Access and Site Establishment

On completion of the Preparatory Works, the work site for Stage 2A will be enclosed with security fencing with shade cloth dust control on the site sides of Stage 2A with an A-Class hoarding on the footpath sides and temporary site accommodation will be provided within the security enclosure.

The Bus Stop in Barker Street will be re-located to the East of Easy Street and a construction zone established for the full length of the proposed porte cochère to the new main entry and the full frontage of Stage 2A on Barker Street.

A B-Class hoarding will be constructed along the full frontage of the Stage 2A building on both the Barker and Easy Street alignments to provide overhead protection to the public using the footpaths and the base for erecting construction site shedding and amenities. A high bay entry and exit portal will be provided in the Barker Street hoarding for entry and egress of dump trucks with dog trailers during bulk excavation.

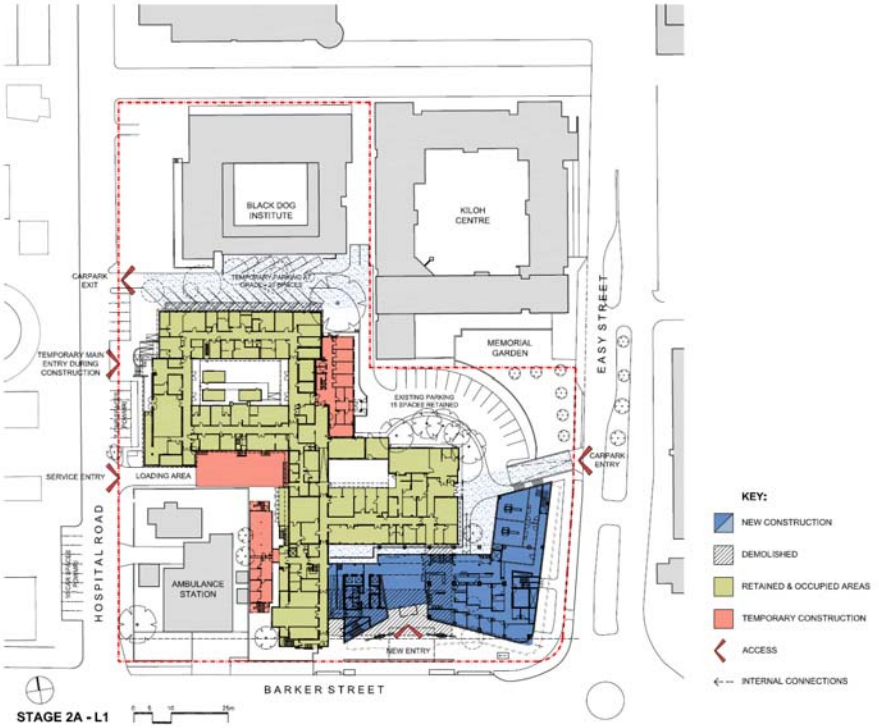
Appropriate traffic and pedestrian signage will be installed at this time. An accessible, non-trip crossover will be constructed over a short length of the Barker Street footpath to cover concrete pumping pipework and any other services need for construction.

As soon as appropriate a single crane will be erected within the site external to the basement area and near the intersection of the Barker and Easy Street wings of the Stage 2A structure. A non-luffing hammer head crane is likely to be preferred to minimise or alleviate the need for Air Services Australia/Sydney Airport's approvals for repeated temporary partial incursions into the Obstacle Limitation Surface for approaches and departures using the East West runway while lifting construction materials, plant and equipment for the Stage 2A works.

Full use will be made of the 6 metre set back of the building from the Easy and Barker Street site boundaries to facilitate construction and minimise construction impacts.

4.0 Stage 2A

On completion of Site Establishment, diversion of services and removal of asbestos sheeting from the eaves of the Barker Street Villa will then be carried out followed by demolition of its south eastern corner wing.



Demolition will be conventional for the type of construction by use of claw breaker and separation of all demolished materials will be carried out for re-cycling in accordance with ESD best practice principles.

The exposed faces and corridors of the remaining south and east wings of the Barker Street Villa will be reconstructed using similar materials and finishes to the retained Villas.

Site establishment and demolition is expected to take 1-2 months.

The 6 metre deep basement retaining wall will be constructed using contiguous bored CFA reinforced concrete piles through the 3 to 4 metre deep sands to be founded 1 to 2 metres below basement level in the sandstone bedrock. Bulk excavation through the sands and weathered sandstone will be carried out by bulldozer and bucket loaders with ripping and breaking as necessary to remove the sandstone bedrock. Spoil removal will be by rigid dump trucks with dog trailers where possible to reduce truck movement numbers to an estimated 2- 3 per hour during the course of the bulk excavation.

A drainage sump and silt trap will be formed as soon as appropriate to allow dewatering as excavation is progressed. Stabilisation of the exposed contiguous bored CFA reinforced concrete piles will be carried out by rock anchoring as excavation progresses.

Column footing pads will be excavated by mini rock picks and mechanical shovels and reinforced and poured progressively as the basement excavation is bottomed out and cleaned up.

Construction of the sub - slab basement ground water drainage system and ground slab will be carried out in parallel with footing pad construction as soon as sufficient area is available to do so.

Construction of the basic structures for the On Site Detention system for stormwater and the rainwater harvesting storage tanks will be carried out in parallel with the retaining wall and excavation work as access allows.

The basement retaining wall, excavation work and ground slab is expected to take 2 – 3 months from completion of demolition to the commencement of structural work.

Concrete columns and core walls to the Level 1 slab will be reinforced, formed and poured in batches progressively and table forms placed for the slab band beam formwork and the intermediate supports for the bond deck slab formwork. Post tensioning cables and normal reinforcement will be placed for both band beams and slabs and the whole of the Level 1 suspended floor plate will be completed and finished off in a single concrete pour.

Concrete columns and core walls to the Level 2 slab will be reinforced, formed and poured in batches progressively following initial curing of the Level 1 slab. Table forms will be placed for the slab band beam formwork and the intermediate supports for the bond deck slab formwork following initial stressing of the Level 1 band beams and slab. Post tensioning cables and normal reinforcement will then be placed for both band beams and slabs. The east, west and bridge sections of the Level 2 suspended floor plate will be completed and finished off in a single concrete pour with appropriate control joints placed between them or in separate pours as necessary.

Concrete columns and core walls to the Level 3 slab will be reinforced, formed and poured in batches progressively following initial curing of the Level 2 slab. Table forms will be placed for the slab band beam formwork and the intermediate supports for the bond deck slab formwork following initial stressing of the Level 2 band beams and slab. Post tensioning cables and normal reinforcement will be placed for both band beams and slabs and the whole of the Level 3 suspended floor plate will be completed and finished off in a single concrete pour or in separate pours as necessary.

The construction of the 24 metre high reinforced concrete feature columns to the main entry atrium will be carried out concurrently with the construction of the main Level 2 and Level 3 slabs. High level table forms will be progressively extended up in parallel with this work to provide the base for forming up the transfer beams spanning the entry atrium to support the Level 4 floor slab. Post tensioning cables and reinforcing steel will placed for pouring of the transfer beams at the same time as the Level 4 floor slab.

Construction of the Easy Street wing slabs of the Stage 2A building will be carried concurrently with this work.

Construction of the Levels 5, 6, Roof and Plant Room and Service Core roof slabs will be carried out in the same manner with each rise above basement level being progressed on 3 week cycle.

Construction of the suspended slabs and structure to top out of the Plant Room and Service Cores roof levels is expected to take approximately 6 months.

External scaffolding with shade cloth cladding will be erected progressively as slab formwork is raised and base building services rough in and blockwork wall

construction will also commence as soon as final stressing of the slab levels above allows the table forms and intermediate bond deck formwork supports to be removed. Installation of a builders hoist will take place at this time.

Facade framing and glazing will be commenced as soon as all significant wet work and any adjacent hot metal work on the floor slabs above the respective façade elements have been completed. By way of example, the framing and glazing to the Barker Street façade element extending from the western corner to beyond the main entry will commence as soon as the wet trades have been completed on Level 6. This will minimise cleaning and mitigate and avoid potential damage through etching of glass or hot metal damage to façade framing and finishes.

Completion of amenities areas, installation of ceiling grids and final finishes will be carried out progressively as the building is water proofed and the facades are enclosed and sealed.

Base building plant room and lift equipment, lifting in and installation will commence as soon as the respective areas are finished to the level required to provide adequate protection. Fit-off and commissioning of plant and equipment will take place as interior spaces are finished off and fitted out.

External site works, landscaping and finishes will be completed as building work is finished off and the crane, builder's hoist and scaffolding is removed.

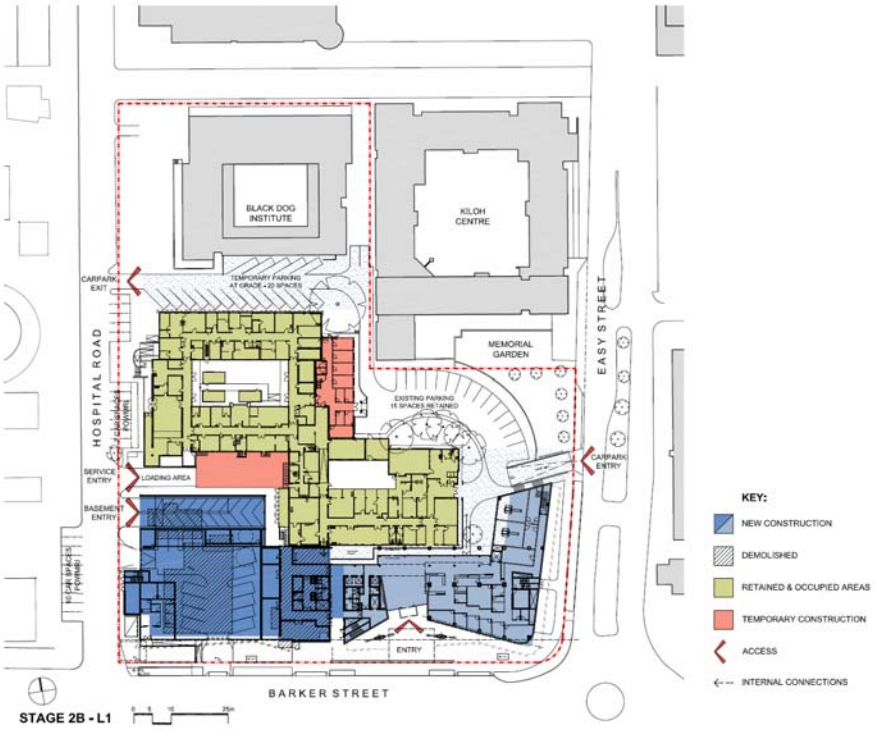
The Stage 2A works are being designed for construction on shell core basis to allow on floor services installation and fit-off and fitout to be carried out progressively as research growth continues. The Stage 2B and 2D are also being designed for construction and fitout in this manner.

Completion of the building works and finishes, installation and commissioning of all plant and equipment and fit-out of the first two laboratory floors and office areas is expected to be completed within 6 months of topping out the building structure.

Decanting of some operations within the existing Villas and Stage 1 facilities will take place on Handover of Stage 2A and this will include the closing of the relocated Main Entry to POWMRI on Hospital Road.

5.0 Stage 2B

Preparatory work for the commencement of Stage 2B will require temporary or permanent relocation of the Ambulance Station operations.



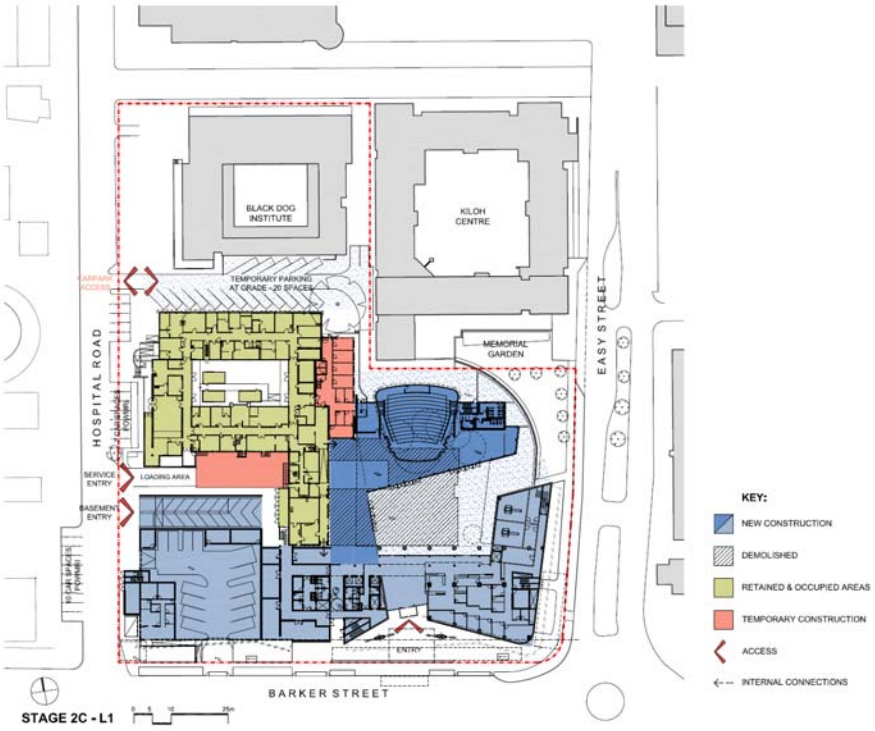
This work will commence with the removal of the low level section of the north wing of the Hospital Road Villa to expand the width of the through site link between the Villa and the Black Dog Institute and provide some additional parking. The area will be paved and the demountable buildings erected during the Stage 1A works will be relocated to this area and reworked as necessary for temporary Ambulance Service operations if that is necessary. Ambulance vehicle parking and garaging will be accommodated at grade below elevated support structures for the re-worked demountable buildings if maintenance of temporary relocation of Ambulance Service operations on site is necessary.

Demolition, excavation and construction will then proceed in a similar manner to the Stage 2A works.

On handover of Stage 2B, the Ambulance Service will be re-established with a Hospital Road vehicle entry and Barker Street vehicle exit and the re-worked demountable buildings removed and sold.

6.0 Stage 2C

Preparatory work for the commencement of Stage 2C will require permanent relocation of the MRI operations into the Stage 2A building and demolition of the remaining single level section of POWMRI's Barker Street Villa and imaging facilities.

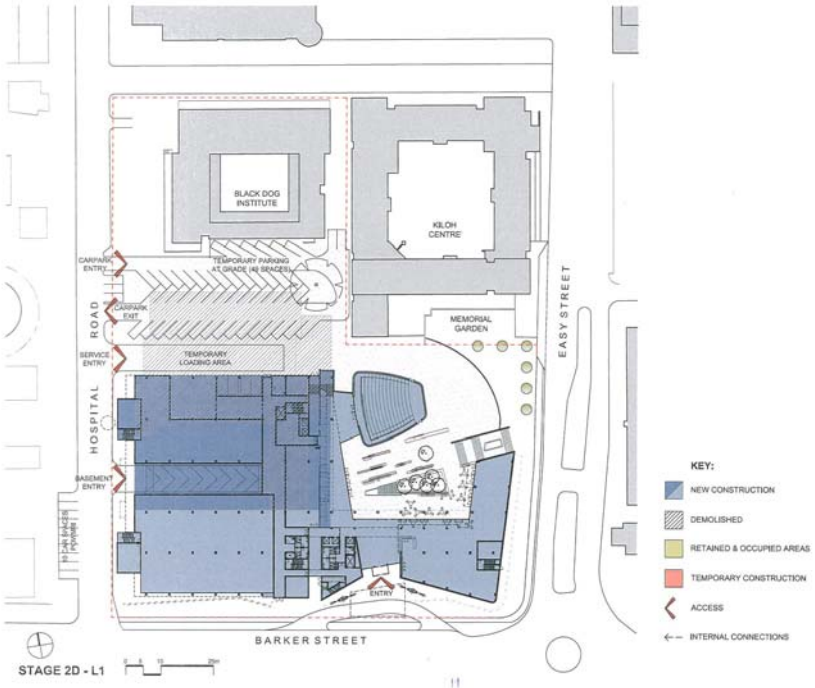


Construction of the basement imaging centre will proceed in a similar manner to the Stage 2A basement works as will construction of the single level auditorium and associated amenities.

Landscape formation and constructed forms will commence as soon as the structural works for the auditorium and amenities have been enclosed and waterproofed. Planting and fit-off of constructed landscape forms will be completed concurrently with finishing and final fit-off of the landscape furniture.

7.0 Stage 2D

Preparatory work for the commencement of Stage 2D will require temporary relocation of the existing POWMRI loading dock operations.



This work will commence with the demolition of the remaining low level section of the north wing of the Hospital Road Villa to further expand the width of the site entry and parking area between the Villa and the Black Dog Institute. The increased area will be paved for delivery and despatch vehicle manoeuvring and parking and the two level building constructed during the Stage 1B works will be reworked as necessary for receivals and despatches.

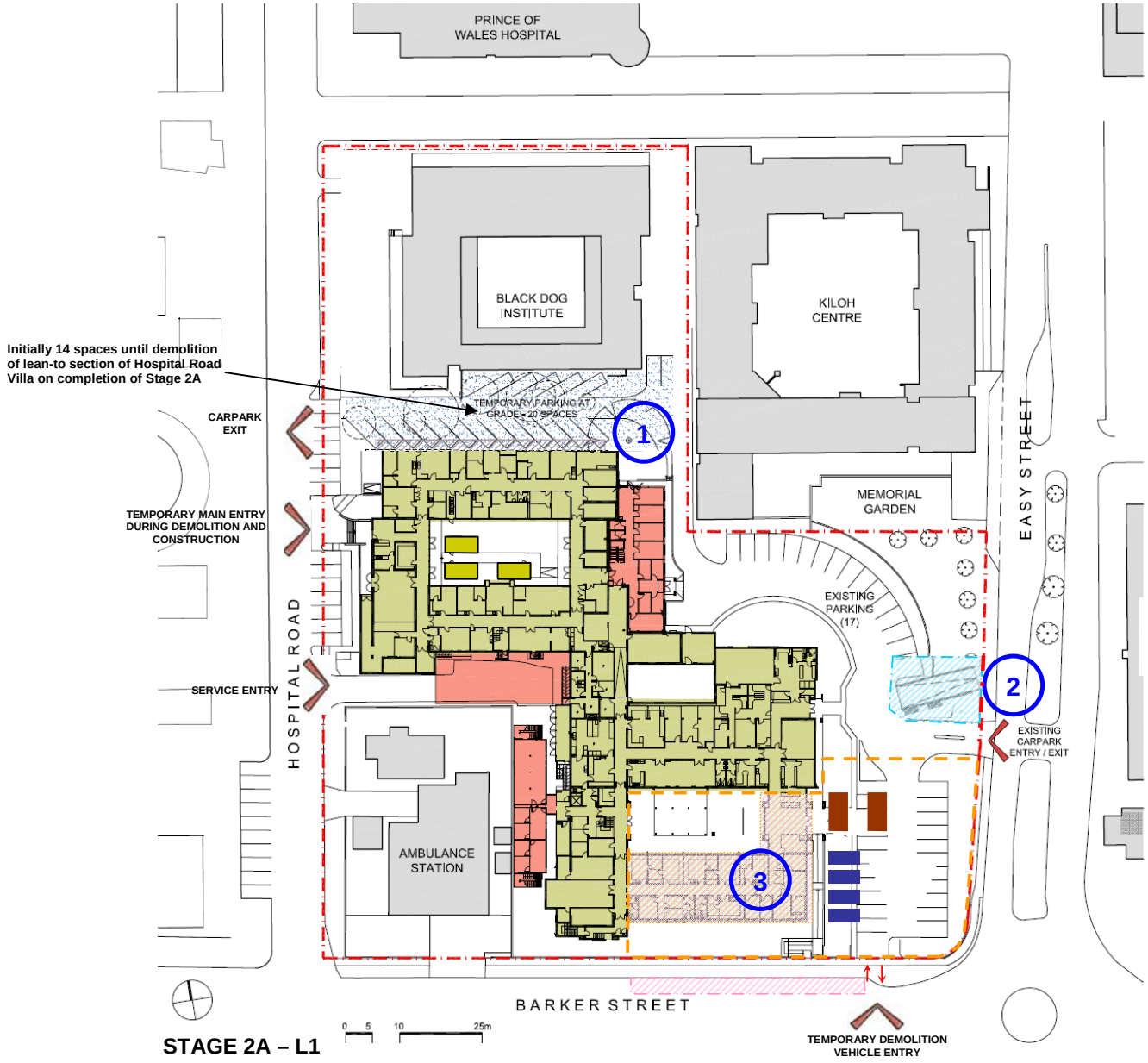
Transfers to and from the goods lifts servicing the Stage 2A and 2B buildings will be by use of battery powered vehicle and pallet handling equipment via the central spine to the auditorium entry area generally outside of normal operational hours.

Demolition, excavation and construction will then proceed in a similar manner to the Stage 2A works.

Loading dock operations will be relocated to the Stage 2D building as soon as the new facilities are available for use with back of house links for deliveries and removals and demolition of the re-worked Stage 1B building will take place and the cleared area finished to complete the Stage 2 project.

Attachment A – Stage 2A Site Management Plans

1. Preparatory Sitework and Demolition
2. Piering and Bulk Excavation
3. Base Building Construction
4. Finish and Fitout



STAGE 2A – L1

CONSTRUCTION SEQUENCE

1. NEW AT GRADE CAR PARK
2. NEW CAR PARK ENTRY RAMP
3. DEMOLITION AND SITE ESTABLISHMENT

KEY

- RETAINED AND OCCUPIED AREAS
- STAGE 1 CONSTRUCTION
- AREA REQUIRED TO BE DEMOLISHED
- CONSTRUCTION ZONE FOR NEW CAR PARK ENTRY RAMP
- TRUCK LOADING ZONE FOR DEMOLITION
- ACCOMMODATION AREA FOR DEMOLITION
- DEMOLISHED MATERIALS STORING BINS
- ACCESS
- A CLASS SECURITY HOARDING

INDICATIVE EQUIPMENT

	Estimated Dimensions – length x width x height
 Tilt Tray Truck	10,600 x 2,500 x 3,400 mm
 Eight Wheeler Truck	9,100 x 2,500 x 3,400 mm 4,600 mm required for rolling bin on and off (at one point only)
 Typical Bin	6,000 x 2,400 x 900 mm Holds 15 tonne, has rear tailgate. Limited to 75% hardcore material

Reference: Dial a Dump Pty Ltd Vehicles and Bins Specifications

Project:	**PRINCE OF WALES MEDICAL RESEARCH INSTITUTE NEUROSCIENCE RESEARCH PRECINCT**
Plan:	**STAGE 2A CONSTRUCTION MANAGEMENT PLAN NO.1 – PREPARATORY SITEWORK AND DEMOLITION**
Date:	**Jan 2009**

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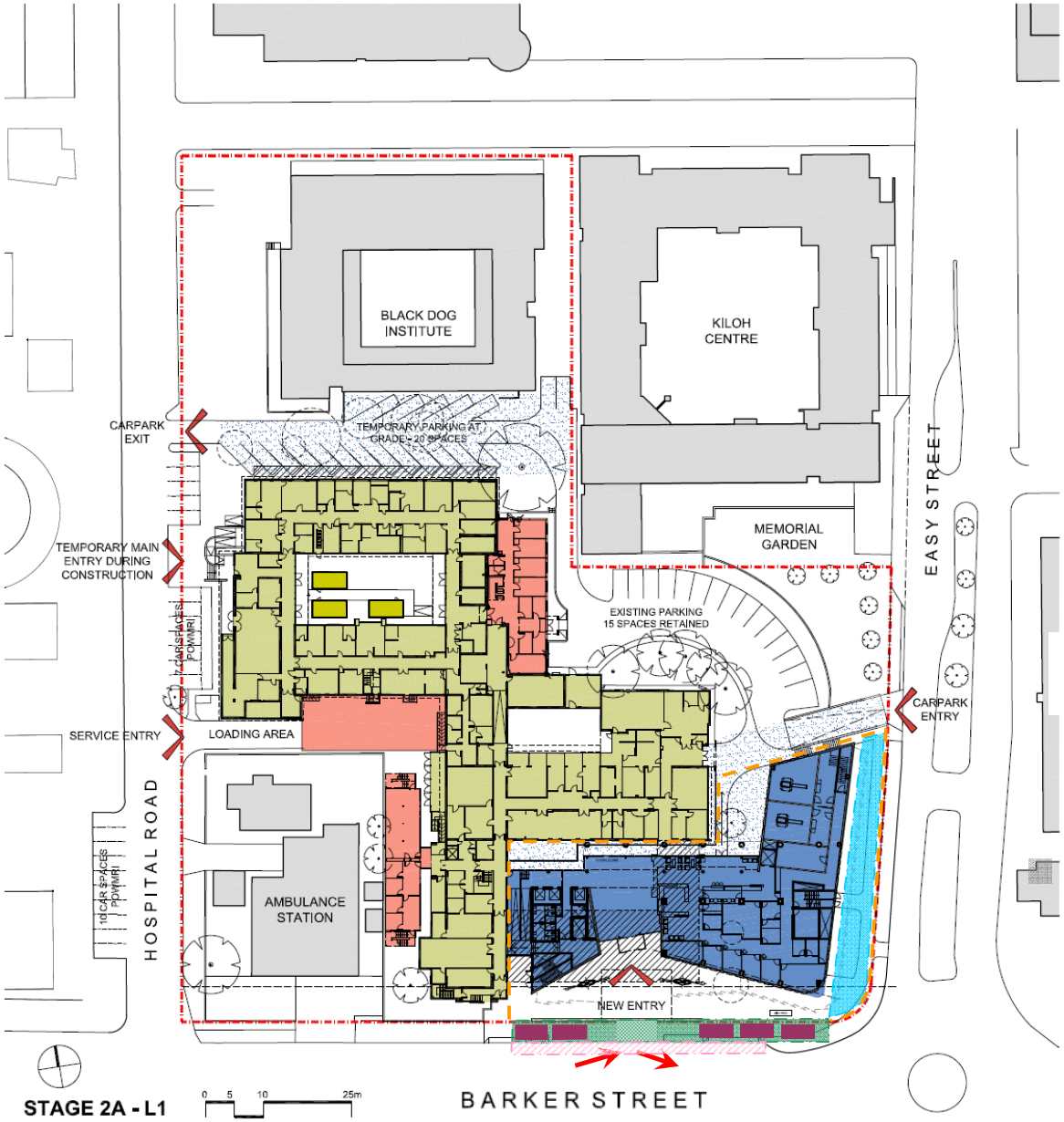

STAGE 2A - L1

KEY

- NEW CONSTRUCTION
- DEMOLISHED
- RETAINED AND OCCUPIED AREAS
- STAGE 1 CONSTRUCTION
- TRUCK LOADING ZONE
- B CLASS HOARDING WITH HIGH BAY PORTAL
- ACCOMMODATION AREA
- SITE STORAGE AREA
- ACCESS
- INTERNAL CONNECTIONS
- PIERING AND EXCAVATION VEHICLES ENTRY / EXIT
- A CLASS SECURITY HOARDING

INDICATIVE EQUIPMENT

	Estimated Dimensions – length x width x height
 Rotary Piering Rig	Working: 6,400 x 3,700 x 17,260mm Transportation: 13,070 x 2,600 x 3,400mm
 Large Hydraulic Excavator	16,230 x 3,840 x 3,620 mm
 Dump Truck	9,077 x 2,496 x 3,453 mm

Reference: Caterpillar Inc. Vehicles Specifications

Project:	**PRINCE OF WALES MEDICAL RESEARCH INSTITUTE NEUROSCIENCE RESEARCH PRECINCT**
Plan:	**STAGE 2A CONSTRUCTION MANAGEMENT PLAN NO.2 – PIERING AND BULK EXCAVATION**
Date:	**Jan 2009**

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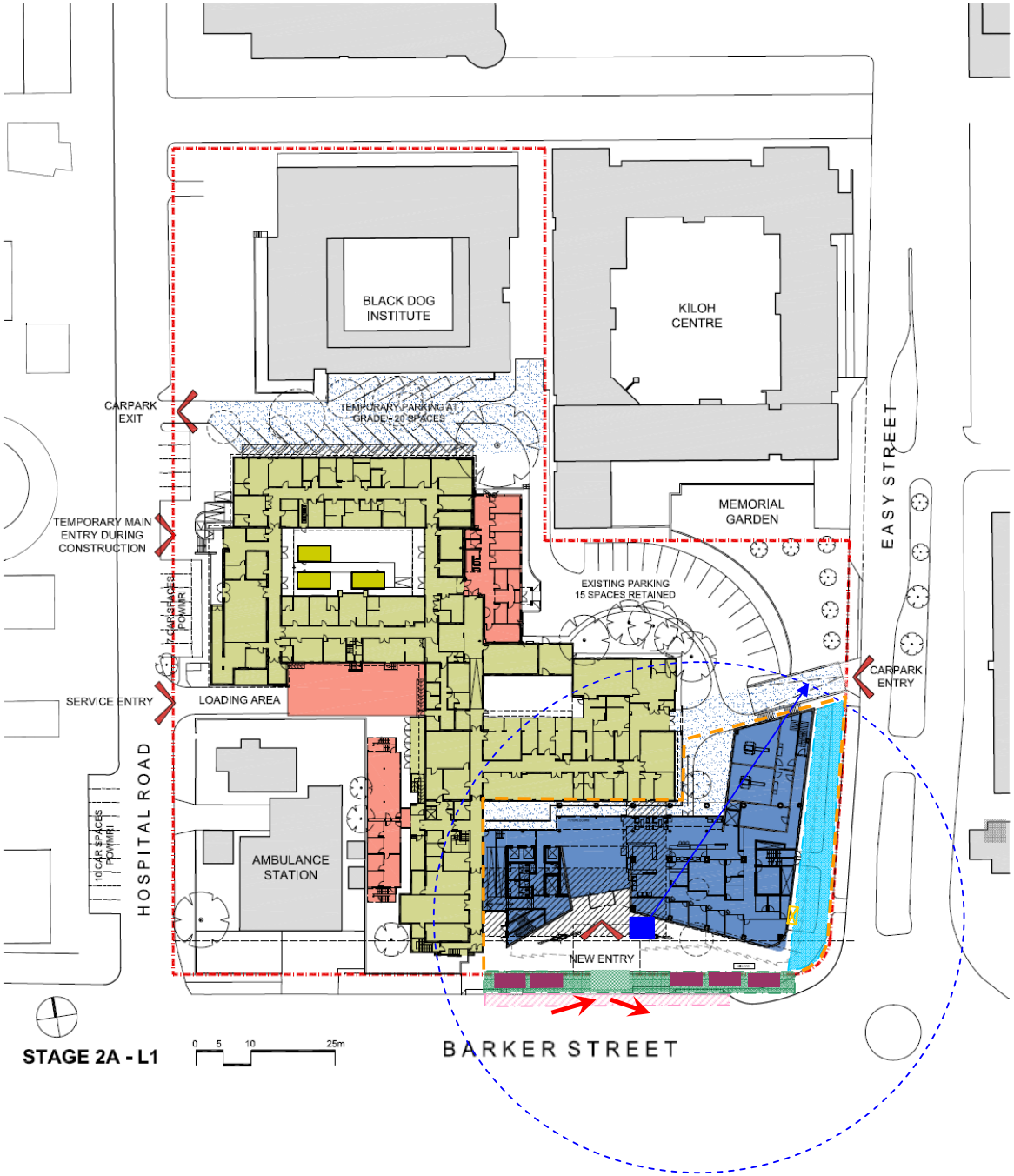

KEY

- NEW CONSTRUCTION
- DEMOLISHED
- RETAINED AND OCCUPIED AREAS
- STAGE 1 CONSTRUCTION
- TRUCK LOADING ZONE
- B CLASS HOARDING WITH HIGH BAY PORTAL
- ACCOMMODATION AREA
- SITE STOREAGE AREA
- PROPOSED CRANE LOCATION (RADIUS – APPROX. 50 m)
- PROPOSED BUILDER HOIST
- ACCESS
- INTERNAL CONNECTIONS
- CONSTRUCTION VEHICLES ENTRY / EXIT
- A CLASS SECURITY HOARDING

INDICATIVE EQUIPMENT

	Estimated Dimensions – length x width x height
 Hammer Head Tower Crane	10 t Capacity 30 – 60 m Boom Length
 Builder Hoist	1,590 x 1,370 x 2,500 mm
 Site Sheds	Timber / steel double story B Class Hoarding with site sheds

Reference: LCR Lindores Group and Total Hoarding Pty Ltd

Project:	**PRINCE OF WALES MEDICAL RESEARCH INSTITUTE NEUROSCIENCE RESEARCH PRECINCT**
Plan:	**STAGE 2A CONSTRUCTION MANAGEMENT PLAN NO.3 – BASE BUILDING CONSTRUCTION**
Date:	**Jan 2009**

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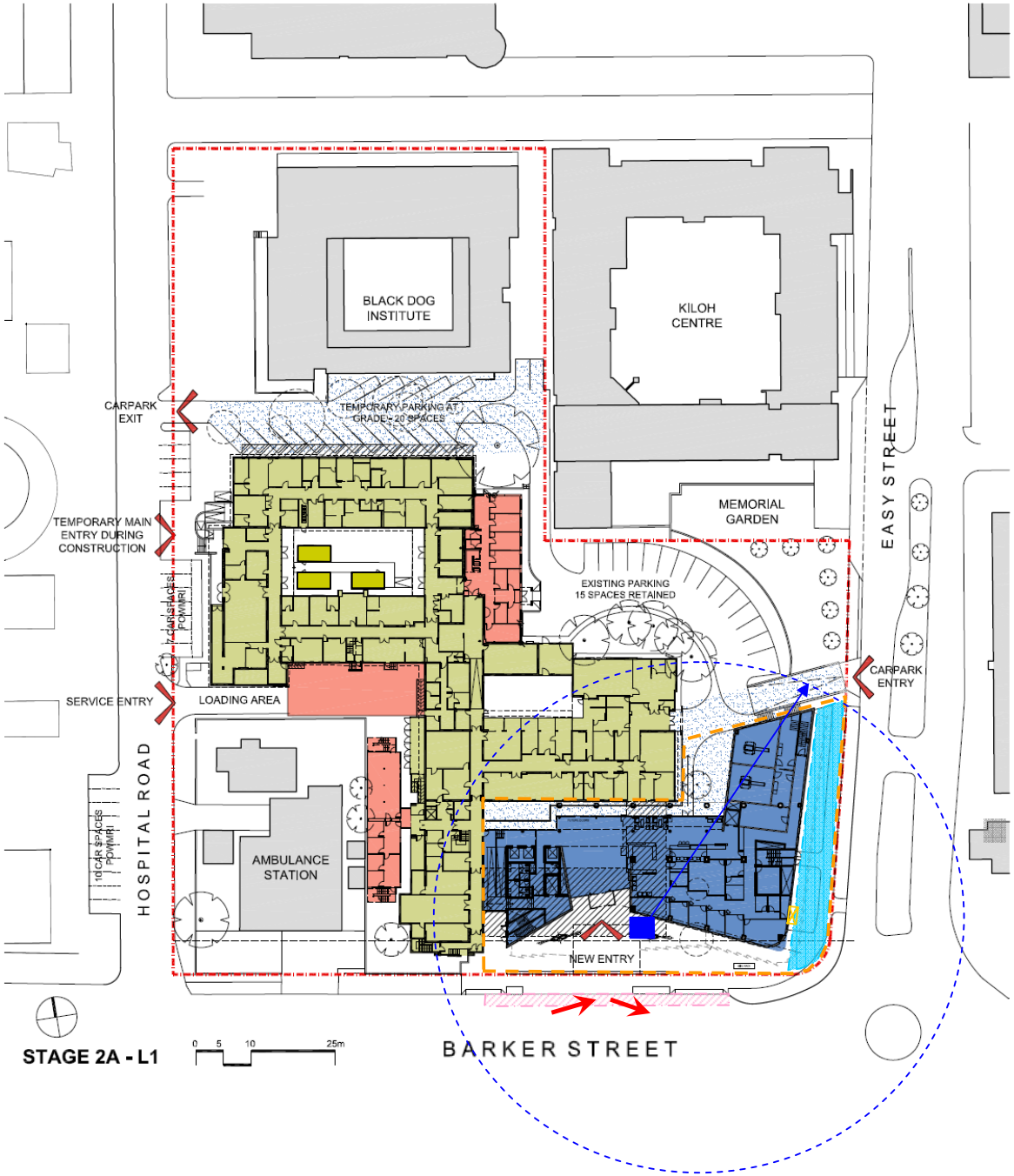

KEY

- NEW CONSTRUCTION
- DEMOLISHED
- RETAINED AND OCCUPIED AREAS
- STAGE 1 CONSTRUCTION
- TRUCK LOADING ZONE
- ACCOMMODATION AREA
- SITE STOREAGE AREA
- PROPOSED CRANE LOCATION (RADIUS – APPROX. 50 m)
- PROPOSED BUILDER HOIST
- ACCESS
- INTERNAL CONNECTIONS
- CONSTRUCTION VEHICLES ENTRY / EXIT
- A CLASS SECURITY HOARDING

INDICATIVE EQUIPMENT

	Estimated Dimensions – length x width x height
 Hammer Head Tower Crane	10 t Capacity 30 – 60 m Boom Length
 Builder Hoist	1,590 x 1,370 x 2,500 mm
 Flatbed Semitrailer	16,000 x 2,600 x 214 mm

Reference: LCR Lindores Group Crane Specifications

Project:	**PRINCE OF WALES MEDICAL RESEARCH INSTITUTE NEUROSCIENCE RESEARCH PRECINCT**
Plan:	**STAGE 2A CONSTRUCTION MANAGEMENT PLAN NO.4 – FINISH AND FITOUT**
Date:	**Jan 2009**

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Attachment B – Demolition and Construction Waste Management Plan

Demolition and Construction Waste Management Plan

1.0 Overview

This plan outlines the expected management of wastes likely to be produced during progressive demolition of the existing villas, construction of the Stage 2 works and on-going maintenance of the retained and new facilities. Practical and feasible management options have been identified and are detailed. The priority of waste management principles for this project include:

• reduce wastes at the source;

• reuse materials, where possible;

• recycle wastes, where practicable;

• remove all waste from the site; and

• dispose of wastes appropriately and responsibly.

Effective waste management is essential for the demolition, construction and maintenance phases of the project.

There are several sources of potential waste during the demolition, construction and on going maintenance phases, including:

• Solid waste (demolition and clearance material);

• Solid waste (‘domestic’ debris);

• Solid waste (putrescibles);

• Hazardous waste (oils and sludges).

These waste streams and potential impacts are discussed below.

1 Potential Impacts

1. Solid Waste - Demolition and Clearance Material

During the construction works, concrete, steel, cabling and scrap metal will be encountered.

In accordance with the principles of waste management, opportunities for re use will be utilised.

Inert material (including steel waste if encountered during the excavations) will be kept in a designated ‘clean’ stockpile area and covered as required with plastic and/or tarpaulins, to minimise potential dust impacts, while awaiting transport off-site. Where possible, the material will be transported to a building waste recycling facility. Alternatively, it will be disposed at a licensed landfill site.

However, excess material, or material unsuitable for re-use as backfill will be recycled at an off-site facility or disposed to an appropriately licensed landfill.

1.2 Solid Waste - Domestic Debris

'Domestic' debris comprises everyday waste such as paper, aluminium cans and other material generated by construction and maintenance workers.

Where possible, collection bins wilt be provided for recyclables (including paper, cardboard, glass bottles and aluminium cans). Other waste generated by on-site staff will be disposed in separate waste bins for disposal by a licensed contractor.

Effluent collected in the site portable toilets will be collected and disposed of by a sub-contractor who will remove the effluent under their own liquid trade waste agreement.

1.3 Solid Waste - Putrescible Waste

Putrescible and green' waste comprises food scraps. These wastes will be collected and stored separately from other wastes produced during construction and disposed off site by a licensed contractor to either a 'green waste' facility or landfill.

Care will be taken to ensure that soil and debris associated with roots is removed prior to off-site disposal.

1.4 Hazardous Waste - Oils and Sludges

Any waste oils accumulated during maintenance of heavy machinery will be disposed off-site by the contractor as part of their own license agreements. Waste oil contractors and maintenance and refuelling contractors will be required to have spill response procedures in place. Refuelling wilt be carried out at designated areas to control potential spill and maintenance issues. Spill response equipment will be stored at the construction sites in the event of unforeseen spills due to hose breaks, etc. Minor waste oil spills will be contained and the impacted soils disposed of according to NSW EPA legislation.

No other hazardous wastes are anticipated on site. Should unexpected materials be discovered during the course of the excavations, work wilt cease immediately and plans for their safe handling, storage and disposal in accordance with relevant statutory guidelines will be developed.

2 Mitigation Measures

2.1 Waste Management Plan

A waste management plan will be developed which will include:

• Designated stockpiles, recycling areas, bins and a clear indication of the waste streams associated with each one;

• Stripped topsoils generated through earthworks would be stockpiled for later use;

• Plans of protection measures for waste storage areas;

• Waste handling, management and storage procedures;

• Disposal procedures for each waste stream;

• Training for on-site staff on the contents of the WMP; and

• Emergency plans and contingency plans.

2.2 Waste Tracking

2.2.1 Waste Management Guidelines

In accordance with the Protection of the Environment Operations Act 1997, and the EPA Environmental Guidelines: Assessment. Classification and Management of Liquid and Non-liquid Wastes, waste tracking requirements apply to the generation, storage, transport, treatment or disposal of certain types of wastes. Wastes generated on site that will require tracking include:

• Waste oils;

• Oil and fuel filters; and

• Oily water.

2.2.2 Waste Register

A register of wastes will be kept throughout the construction project. The register will contain details pertaining to:

• The types and quantity of wastes for each load taken off site;

• The place to which the waste was taken for treatment or disposal;

• The waste contractor used for each waste load; and

• Certification (if necessary) that the waste was taken to an appropriately licensed facility.