APPENDIX J

Preliminary Construction Management Plan

NSW GOVERNMENT Health Infrastructure

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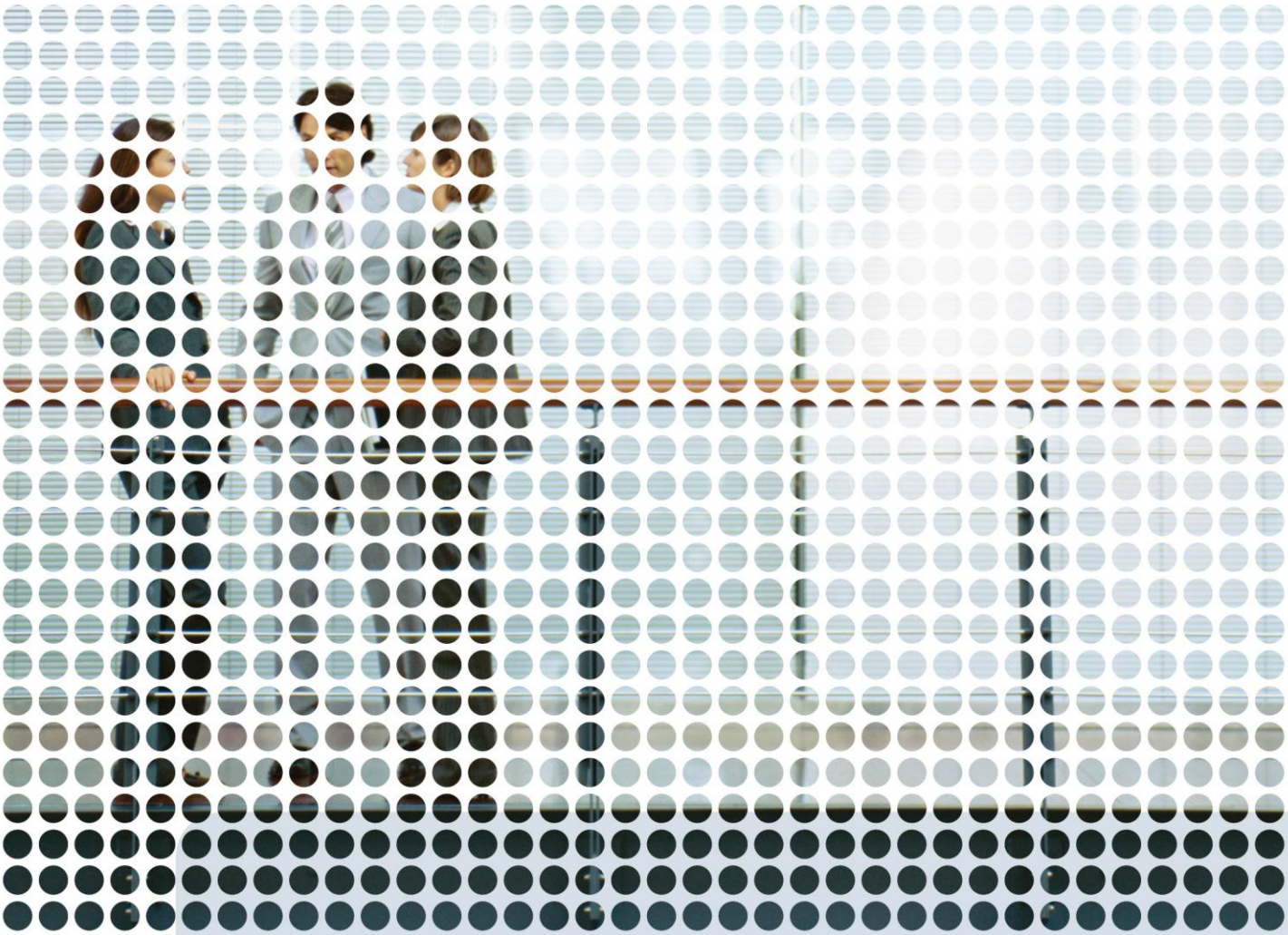

St George Hospital
Acute Services Building Redevelopment
Preliminary Construction Management Plan

Version Control

Version	Date	Issued to	Remarks	Issued by
1.0	2/12/2014	HI and LFA	Draft for comment	Aurora
2.0	29/1/15	HI and LFA	Final for inclusion in EIS report	Aurora
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Contents

1. Preliminary Construction Management Plan

1.1 Distribution

The preliminary Construction Management Plan (CMP) is distributed within the project team as required by the project governance structure. The distribution list will be updated by the principles representative who will ensure that revisions are issued to appropriate persons.

This document informs project stakeholders of the proposed construction management strategy and associated interfaces until such time the appointed Principal Contactor provides a detailed Construction Management Plan aligned with the adopted method/s of construction delivery.

2. Definitions & Abbreviations

The following definitions and abbreviations have been used in this preliminary Construction Management Plan.

Further definitions and abbreviations are provided in referenced and supporting procedures and plans.

HI	Health Infrastructure
SGH	St George Hospital
SESLHD	South Eastern Sydney Local Health District
CMP	Construction Management Plan
RTA	Roads & Traffic Authority
REF	Review of Environmental Factors
OH&S	Occupational Health & Safety
EMP	Environmental Management Plan
SSD	State Significant Development
EPA	Environment Protection Authority
HLS	Helicopter Landing Site

3. Site Management

3.1 Purpose

This preliminary CMP has been prepared to inform the Acute Services Building Redevelopment State Significant Development (SSD) planning application and the associated Environmental Impact Statement (EIS) for the proposed project being undertaken by Health Infrastructure (HI) on behalf of South Eastern Sydney Local Health District (SESLHD).

The purpose of this document is to outline the key intentions and constraints for construction activities of the Acute Services Building redevelopment project at St George Hospital (SGH).

The preliminary CMP is used to set the ground rules for integrating and managing the Construction process within an active metro hospital campus, and ensuring minimal disruption is made to the day to day hospital operations that could affect public, staff and patients.

3.2 Project Description

3.2.1 The Project

SGH is a 626 bed major teaching hospital of the University of New South Wales and is a tertiary referral hospital situated in Kogarah within the SESLHD. It is the Level 1 Trauma Centre to the SESLHD and has one of the busiest Emergency Departments in the state. The redevelopment of the hospital, once complete will align the Hospital's facility requirements to the projected SGH Services Statement activity projections to 2027.

The main works project comprises of the construction of a new Acute Services Building above the new Emergency Department on Gray Street, and subsequent internal refurbishments and expansion of on-site multi deck car parking.

Enabling works which commenced on site mid November 2014 will be completed under separate Review of Environmental Factors (REF) ISEPP planning documents.

3.2.2 Project Phasing

The phasing of the Acute Services Building redevelopment project is broadly defined below.

Phase 1: Enabling Works

1) Demolish old ED building
    a. Make good to facades adjoining old ED building and cap off or divert associated services
    b. Construct new north car park and drop-off with associated civil works
    c. Construct new Kensington Street entry foyer façade and canopies
2) FIP dry fire upgrades and installation of new panels in Main Entry
3) Modify doors to existing ground level link corridor between new ED and CSB to enable passage of excavation equipment through to the courtyard between the new ED, CSB and TWB and carry out associated service diversions
4) Diversion of existing in-ground services to enable construction of the new Acute Services Tower lift core retaining piling in the courtyard between the new ED, CSB and TWB
5) Roadwork's to realign and improve drop-off traffic flows and car parking capacity at Gray Street main entry forecourt.

Phase 2: Main AST construction

1) Gray Street Substation augmentation works and cable installation between AST and Gray Street transformers
2) Construct New AST including link bridges and connections into existing buildings including any associated making good or refurbishment
3) Commission new rooftop helipad
4) Expand and refurbish Kitchen Area in existing hospital building (Ground Level)
5) Decant staff from existing hospital buildings into AST

Phase 3: Partial Refurbishment of Existing Hospital

1) Refurbish existing ICU in part to facilitate decant of SSU onto Level 2 TWB.
2) Decant Short Stay Unit into existing ICU to enable Level 2 CSB refurbishment
3) Refurbishment of CSD as Store / Linen (Ground Level)
4) Construct new MRI (cold shell) in existing courtyard adjacent Radiology Building (Level 1)
5) Refurbishment of existing Operating Theatre Day Surgery zone, including area vacated by SSU to accommodate expanded Day Surgery Unit including recovery spaces in existing CSB (Level 2)
6) Create opening in existing Level 1 slab of TWB for new access stair, install stair and carry out associated refurbishment works
7) Construct new Gray Street main entry enclosure (Ground Level)
8) Refurbish Gray Street main entry foyer and lift lobby (Ground Level)
9) Services Diversions to Gray Street main entry forecourt if required

Phase 4: Extension of Multilevel Car Park

1) Extension of Gray Street multi-level car park by one additional level including associated new vehicle ramps, with the top two levels fitted out as car parking

4. Legislative Requirements

The works will be undertaken is accordance with the following Legislative Requirements:

- National Construction Code 2011 comprising the Building Code of Australia
- Protection of the Environment Operations Act and Regulations
- Environmentally Hazardous Materials Act 1985
- Protection of the Environment Administration Act and Regulations
- Work, Health & Safety Act 2011 and relevant codes of practice and standards
- Australian Standard 2601-2001: Demolition of Structures
- Code of Practice for Safe Removal of Asbestos (NOHSC: 2002 (2005))
- Guide to the Control of Asbestos Hazards in Buildings & Structures (NOHSC: 3002 (1988))
- Resource & Recovery Act 2001
- Environmental Planning and Assessment Act 1979
- Heritage Act 1997 and current amendments
- Local Government Act 1993
- Work, Health & Safety Regulations 2011
- Soil Conservation Act 1938

5. Hours of Operation

The following hours of Operation are proposed for the works:

- Monday – Friday 7.00 a.m. to 5.30 p.m.
- Saturdays 7.30 a.m. to 3.30 p.m.
- Sundays & Public Holidays: No Work

No works will occur outside the hours nominate above unless prior approval is granted by the local consent authority.

Delivery of heavy machinery or excavating equipment may be required outside the proposed hours of operation to conform to the requirements of the Roads & Traffic Authority (RTA).

6. Contractors Site Amenities & Compound

The Principal Contractor will establish a site compound(s) that will accommodate the following for use, for the duration of the project; lunch, change facilities and site offices. The site compound location is to be on the SGH campus agreed and approved by key stakeholders and local authorities as required.

7. Site Fencing and Public Protection

All works are to be undertaken in accordance with the public protection measures as required in the Australian Standards.

As a minimum, it is proposed to erect a 2.4m high solid “A” Class fence around the construction zone on Gray Street (or such hoarding / protective site fencing / scaffolding screens / catch screens as required) and within the hospital property boundary as necessary, to prevent both public and hospital staff access to the area of works, and to maintain site security.

Temporary fencing with shade cloth will be erected where works will occur directly in front of and between the Main Entry drop-off area and existing multi-deck car park building.

Temporary bollards, road and pedestrian barriers with signage will be erected where works impede on the roadway/parking zones on Gray Street.

Vehicular access & egress will be maintained during the works and any site activities associated with these works, deliveries etc. A detailed methodology will be developed by the Principal Contractor, in consultation with the local traffic authority as required and followed to minimise disruption to the existing main entry access roadway and enable free access to the hospital buildings by patients and all hospital staff.

All agreed public and property protection measures will be reviewed at the time of contract award and prior to various works commencing to ensure alignment with the proposed preferred methodologies and sequencing developments to ensure that safety of the general public, hospital patrons and staff is maintained at all times.

8. Dilapidation Report

Prior to commencing works onsite the Principal Contractor will complete and submit a Dilapidation report. The report should cover at a minimum the following areas:

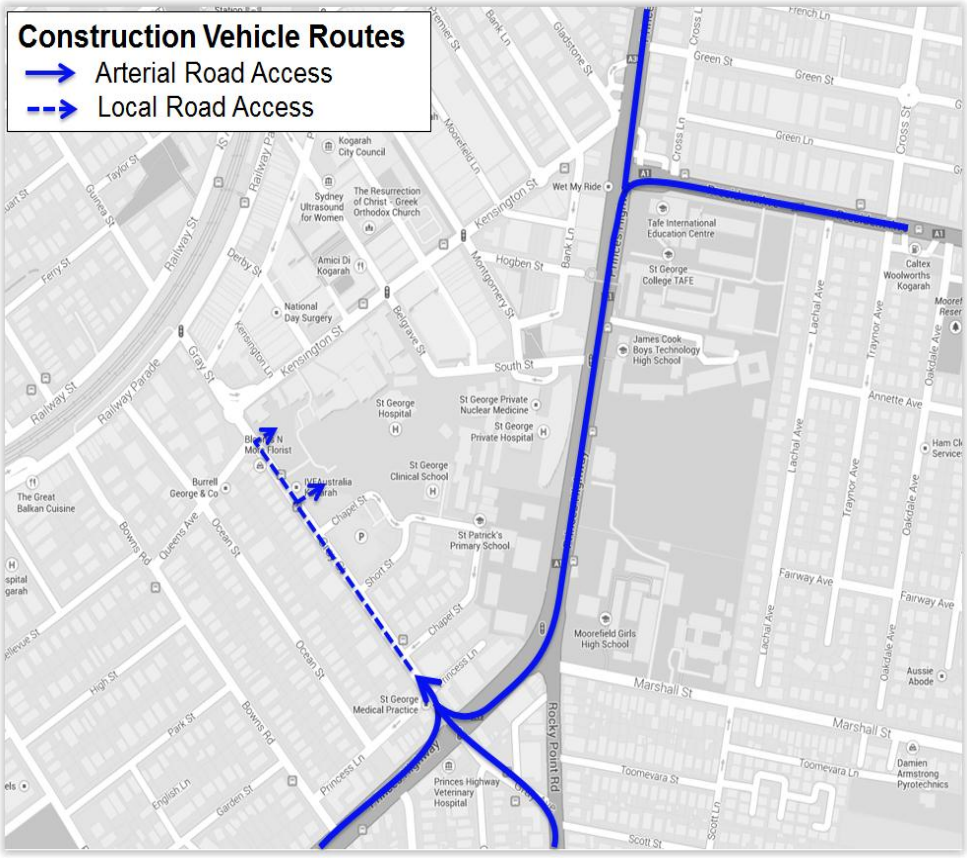
- Existing Roads
- Existing Footpaths
- Trees to be retained
- Existing stormwater systems
- Adjoining hospital buildings
- Adjoining properties e.g. Fire Station
- Adjacent properties on Gray Street
- New Emergency Department
- Public assets at risk of being affected by construction activity

9. Traffic Management

The following section provides an assessment of the construction traffic impacts associated with the proposed development. Construction activities are estimated to occur over a two year period and the project is in its preliminary stages, hence this timeframe will be updated once a Principal Contractor is appointed.

9.1 Construction Traffic Routes

Construction vehicles would be restricted the state road network and vehicles will likely originate from this network, with movements along local streets prohibited. It is envisaged the key traffic routes for construction vehicles would be via the Princes Highway, President Avenue and Rocky Point Road. Gray Street and Kensington Street would form the local access roads. This is shown illustrated in the figure below.



9.2 Construction Traffic

Heavy vehicles including Articulated Vehicles (AV) such as precast delivery trucks and Heavy Rigid (HR) such as concrete trucks are expected to access the site. These different types of vehicles may access the site at the same time. Other heavy machinery plants such as cranes will be delivered to site in the early stages of site establishment. All heavy goods such as girders or machinery plants are likely to be delivered outside of peak traffic hours.

Workers will generate additional traffic to the site. Road network impacts will be mitigated by the fact that construction workers generally start earlier and finish earlier than the commuter peak periods, and would likely not coincide with the hospital peak periods. Construction workers driving to sites in constrained parking environments such at SGH with a nearby train station typically carpool – further reducing the impact on the road network.

The impact of construction traffic will be further developed once a Principal Contractor has been appointed, however volumes are expected to be low and in the order of 100 vehicles per day. The traffic generation of this magnitude is less than the amount of trips generated and assessed for the operational phase of the development and therefore the potential temporary impacts are anticipated to be minimal.

9.3 Parking

Parking opportunities have been identified as the following:

- Minimal (if any) on-site parking will be provided for construction traffic due to physical site constraints for amenities, scaffolding and materials handling.
- Non-dedicated Off-street parking opportunities in the area have also been identified; however these are not for exclusive use by construction traffic.

9.4 Driver Code of Conduct

Traffic Controllers will be used to stop traffic on the public street(s) to allow trucks to enter or leave the site. Where possible, vehicles must enter and exit the site in a forward direction. They must wait until a suitable gap in traffic allows them to assist trucks to enter or exit the site. The Roads Act does not give any special treatment to trucks leaving a construction site - the vehicles already on the road have right-of-way. Vehicles entering, exiting and driving around the site will be required to give way to pedestrians at all times.

9.5 Measures to ameliorate impacts

Mitigation measures would be adopted during the construction phase to ensure traffic movements have minimal impact on surrounding land uses and the community in general, and would include the following:

- Truck loads would be covered during transportation off-site
- Establishment and enforcement of appropriate on-site vehicle speed limits
- (20km/h), which would be reviewed depending on weather conditions or
- safety requirements
- Neighbouring properties would be notified of construction works and timing.
- Any comments would be recorded and taken into consideration when planning
- construction activities.
- All activities, including the delivery of materials would not impede traffic
- flow along local roads
- Materials would be delivered and spoil removed during standard construction
- hours
- Avoid idling trucks alongside sensitive receivers
- Deliveries would be planned to ensure a consistent and minimal number of
- trucks arriving at site at any one time

9.6 Construction Traffic Management Plan

Prior to the commencement of construction, a Construction Traffic Management Plan (CTMP) is to be prepared by the Principal Contractor to ensure the safest possible management of construction access. The CMTP would address:

- The likely construction vehicle numbers and frequency;
- Approach and departure routes;
- Anticipated special out of hours or escorted deliveries;
- Parking access arrangements during construction; and
- Provision of acceptable pedestrian management measures.

10. Crane Management

It is proposed that as a minimum a single tower crane will be established on site, positioned within the location of the proposed lift core.

Other mobile cranes will be required from time to time to facilitate construction activity. It is envisaged that mobile cranes will be positioned from time to time in agreed loading zones fronting Gray Street.

Crane planning and operations need to be coordinated with the requirements of the adjacent Helipad on site atop the existing Gray Street Multi Deck car park.

The site crane strategy will need to be coordinated with the “Helicopter Management Plan” outlined in the section below.

The Principal Contractor will confirm the site crane strategy when appointed.

11. Helipad Management

The existing SGH Helipad Landing Site (HLS) is located on top of the existing Gray Street Multi Deck car park directly adjacent to the Stage 2 redevelopment works zone.

SGH is a Level 1 Trauma Hospital hence maximising continued operation of the existing HLS is a priority.

A “Helicopter Management Plan” will be established between SGH and the Principal Contractor to outline the site construction works planning (cranes, hoardings, scaffolding and materials handling parameters) to clearly manage the interface between construction site works and HLS operations. Being a Level 1 Trauma metro Hospital, it is desirable to maintain existing HLS operations throughout the works until such time the new HLS on the new Acute Services Building is commissioned, it is acknowledged that HLS operation may be affected during adverse weather, or site specific construction activities which the “Helicopter Management Plan” will outline including the alternate measures to be adopted between all parties during such times.

In the event that the existing HLS on the Gray Street car park is unavailable for use, operational plans will be activated by SESLHD to direct Helicopter presentations to either Sydney Airport or to a local oval for landing and transfer of the patient(s) via road Ambulance to SGH.

12. Programme

Key milestone dates are estimated as follows:

Milestone / Activity	Completion Date
Preliminary Business Case and Strategic Gateway Review	August 2014
Final Business Case and Gateway Review	December 2014
Commencement of Construction (Enabling Works)	November 2014
Completion of Schematic Design (Scheme Design Report)	February 2015
Completion of Project Definition Plan	March 2015
Submission of Town Planning Documentation (Main Works)	April 2015
Town Planning Approval Received (Main Works)	September 2015
Contractor Procurement (Main Works)	February 2015 – September 2015
Completion and Commissioning (Enabling Works)	August 2015
Completion and Commissioning (Main Works)	September 2017
Completion and Commissioning (Refurbishment Works)	June 2018
Completion and Commissioning (Car Parking Works)	June 2018

The above milestones will be updated upon appointment of a Principal Contractor and adjusted as required during the works.

13. Disruption Notice Process

The Principal Contractor will be required during the construction period to plan and organise its work activities to minimise disruption to the existing building and services. To ensure this position the Principal Contractor will develop a disruption notice process in line with the SESLHD disruption policy that will ensure the key project stakeholders are aware of any works that may impact their services and enable any preparation and consultation to be effected.

14. Weekly Site Meetings

Weekly site meetings will be conducted at an agreed time and attended by key project stakeholders. Weekly meetings will be held by the Principal Contractor to discuss and minute current progress on site, upcoming works/disruptions and any project related issues encountered. Minutes will be distributed to the project team following each meeting.

15. Environmental Management

The Principal Contractor undertaking/managing the works will be required to provide an Environmental Management Plan (EMP) to ensure that all elements of the plan meet all statutory requirements as well as NSW Health requirements.

As a minimum, the erosion and sediment controls for the works shall be designed, installed and maintained in accordance with the requirements of the Managing Urban Stormwater: Soils & Construction, as described in “The Blue Book” 2004 (4th edition).

The environmental performance of the contractor(s) will be monitored by the Principal Contractor through-out the works.

The following specific environmental management principals are to be implemented on the site:

- Noise & Vibration
- Dust Mitigation
- Odour Control
- Storage of Dangerous Goods
- Stormwater Run-off

15.1 Noise & Vibration

Noise from any of the site areas will not exceed the limits set-out in the Noise Control Act 1975. No machine will works outside the normal working hours previously described, unless prior approval has been granted by the local consent authority.

Demolition and excavation works shall comply with Australian Standard 2436-1981 “Guide to Noise Control on Construction, Maintenance and Demolition Sites”.

The noise and vibration from the use of any plant or equipment, or other building services associated with the hospital premises of enabling /early works scope of works, will not give rise to an offensive noise as defined under the provisions of the Noise Control Act 1975.

As part of the noise mitigation strategy for the project, all trucks, excavating equipment and machinery will be checked for defective or operationally noisy exhaust systems.

Prior to commencement of the works, liaison will take place with occupants from the neighbouring departments within the hospital site.

15.2 Dust Mitigation

Dust control, minimisation and where possible, mitigation, will occur at the source of dust and where dust occurs, during construction activities to prevent airborne dust particles transferring to the hospital campus and environs within proximity to the hospital.

15.3 Odour Control

It is not expected to have extraordinary issues with odour associated with the works. Plant and machinery involved in the works will be serviced regularly and checked for emissions.

15.4 Storage of Dangerous Goods

Works will require the use of flammable fuels such as petrol, diesel and oxy-acetylene etc. Storage of such items will be in a secure, lockable compound with sufficient ventilation in accordance with relevant codes of practice & standards.

Material Safety Data Sheets for all flammable or potentially harmful liquids or gases will be provided by the Principal Contractor prior to works commencing on site

15.5 Stormwater Run-off

Drainage of surface water run-off will be allowed to flow along the existing contours of the site surface water infrastructure which includes kerb-lines, gutters, gully-pits and stormwater run-off drains.

The site areas associated with the project will be continually cleaned of rubble to minimise possible sediment flow during rainfall periods. Stormwater kerbs and drainage lines will have sediment controls in place.

Stormwater grate inlets surrounding the demolition areas will be covered with a selected geotextile fabric to allow water to enter the drains and retain the sediment generated by the works.

All drainage controls will be frequently checked, particularly during heavy rainfall periods.

15.6 Complaint Procedure

A procedure for dealing with complaints regarding noise dust and other environmental nuisance will be established and a register will be maintained at the project office.

16. Waste Management / Recycling Principles

The Principal Contractor is committed to achieving compliance with the Environment Protection Authority (EPA) guidelines.

Prior to any structural subterranean activities taking place, additional site geotechnical investigations may be carried out if the information is not adequately covered in available geotechnical investigations for the purposes of waste / recycling classifications. All medical and/or hazardous materials will be removed and disposed of at licenced waste facilities and certificates will be provided by the Principal Contractor, who is required to provide all trucking and disposal documentation in accordance with their contract.

The key to maximising recycling opportunities and minimising landfill bound waste is to effectively separate demolition materials during the demolition process.

All waste material generated from the works will be recycled and repurposed where possible, with the exception of soft demolition materials and hazardous materials such as asbestos and the like.

The following table sets out the materials likely to be encountered during the works and the general waste management principles that will be adopted through the construction process:

Material	Source	Recyclable	End Usage (%)
Asbestos	Subterranean Material Fire Doors etc.	No	Certified Landfill – 100%
Concrete	Suspended and ground floor slabs, walls, beams & columns	Yes	Road base, pipe bedding, sub-grade – 95%
Bitumen	Road Surface	Yes	Road base, sub-grade – 95%

17. Hazardous Materials Management

17.1 Identification

Existing Hazmat Report(s) for the St. George Hospital Campus Buildings identifies possible locations of hazardous materials. However, not all areas are covered in the existing Hazmat Reports or in the details required prior demotion / construction works and as such, detailed Hazardous Materials investigations will be undertaken by the Principal contractor and it sub-contractors prior to any demolition works commencing on site.

Established safe work method strategies must be in place prior commencing any work.

The management and removal from site of any/all hazardous material will be undertaken in accordance with the Australian Standards.

17.2 Air Monitoring

In accordance with all codes and standards; air monitoring will be carried out by a registered occupational hygienist if asbestos removal or removal of other designated hazardous materials works are undertaken.

The daily monitoring results will be assessed by a hygienist consultant and distributed daily to the principal and the client.

17.3 Removal

Removal of any hazardous material will be carried out by a registered WorkCover licensed contractor supervised by both the Principal Contractor and monitored by a registered occupational hygienist.

All works will occur and comply within the requirements of relevant codes and standards.

17.4 Disposal

Asbestos and other hazardous materials will be sealed and loaded prior to transport in accordance with relevant codes and standards.

All asbestos materials will be bagged, wrapped and placed in plastic lined disposal containers.

All asbestos and hazardous materials will be disposed at a registered EPA landfill with full accountability and traceability of transport and disposal monitoring enforced and monitored through-out the works contract.

18. Occupational Health and Safety

18.1 Project OH&S Management

The Principal Contractor will develop, implement and manage a Project Management Plan that will provide a framework for managing OHS on the site. The Principal Contractor will appoint a specific Site OHS Supervisor and all construction personnel will be required to hold the Construction Industry Induction identification.

All individuals entering the site will be required to undertake a site induction to be conducted by the Principal Contractor OHS Supervisor.

Principal Contractor will ensure that all Work Method Statements are complete for those parts of the works identified as being hazardous.

19. Services Disconnections

The Principal Contractor will notify the management of St. George Hospital in advance of works commencing on site through consultation with services consultants if there is to be any disruption to services. Should shutdowns be required; these will be prearranged and programmed in advance for coordination with hospital management via agreed Disruption Notices.

Services that may be subject to disruption are:

- Waste Water
- Water Supply
- Electricity
- Stormwater
- Telecommunications
- Gas

In general; the following principles are adopted when disconnecting services:

- Where applicable, all service authorities will be consulted and appropriate application for consent forms submitted prior to works commencing, confirming lead-times, authority requirements, approved termination locations and programme.

- All termination works will be undertaken in accordance with design engineer's specifications and instructions.
- All termination works will (if required) be undertaken out-of-hours and by suitably qualified & licensed contractors.
- All/any termination works that impact on adjoining owners/departments will be notified.

20. Site Emergency Contacts

An emergency contacts list will be established prior to works commencing. This will include contacts from the Principal Contractor, SGH, the Project Manager and the Client.

A site board will be erected by the Principal Contractor in a location agreed prior to works commencing on site. The site information board will display as a minimum the key site contacts, after hour's contacts relating to the site works.

Information regarding site safety will be displayed along the site boundary and through-out the site area.