# APPENDIX U

## Preliminary Construction Management Plan

# The Northern Beaches Hospital (Stage 2)
# State Significant Development Infrastructure SSI_6792 (Stage 2)
# Environmental Impact Statement
# Appendix U: Preliminary Construction Management Plan

Prepared by: **Thiess Pty Ltd**

Date: **13 November 2014**

Rev: **EX**

## Table of contents

# 1. Executive Summary

This Preliminary Construction Management Plan (the plan) has been prepared for the proposed Stage 2 works for the Northern Beaches Hospital development to support the Stage 2 planning approval application to the Department of Planning and Infrastructure.

## 1.1. Planning pathway

In October 2013, a Staged Infrastructure Application (SSI_5982) was lodged by Health Infrastructure (HI) for this project. The application was divided into two parts:

**(i) Concept Proposal and Stage 1**

- Concept Proposal for the site; and
- Stage 1 - Site clearance and preparatory works.

**(ii) The proposed Stage 2 NBH development**

- Bulk excavation works
- Construction of a nine storey Hospital building
- Staff, patient and visitor car parking, including construction of an eight storey multi-deck Car Park
- Site works including internal roads, pathways and landscaping
- Utility amplification works

The Director General's Requirements (DGRs) for environmental assessment were issued by Department of Planning and Infrastructure (DP&I) on 19 June 2013 for both parts of the application.

A State Significance Infrastructure Application (SSIA) and Environmental Impact Statement (EIS) was prepared to address the DGRs associated with the Concept Proposal and Stage 1 and submitted in October 2013.

Public exhibition of the SSIA and EIS closed on 28 November 2013 and a significant number of submissions were received.

A Submission Report / Preferred Infrastructure Report was subsequently prepared and lodged with DP&I in February 2014 in response to the submissions received and to seek approval for additional services diversion works.

The Stage 1 SSIA and EIS was approved by Department of Planning and Environment (DP&E) on 22 June 2014.

The DP&E advised on 10 November 2014 that the Stage 2 NBH SSIA and EIS should be lodged under project title reference 'SSI 6792'.

The objective of the Preliminary Construction Management Plan is to address the following:

- pre site establishment investigations
- site establishment
- site accommodation and amenities
- traffic and pedestrian management
- materials handling
- environmental protection
- Forest High School Consultation
- emergency management
- site cleanliness and rubbish removal.

## 2. Pre site establishment

Thiess will prepare a dilapidation survey pre and post the development works of surrounding assets which are considered within the 'zone of influence' of the works. This will detail photographically and in writing, the conditions within the site and adjacent sites which may include the Forest High School, roads, and adjacent residential properties.

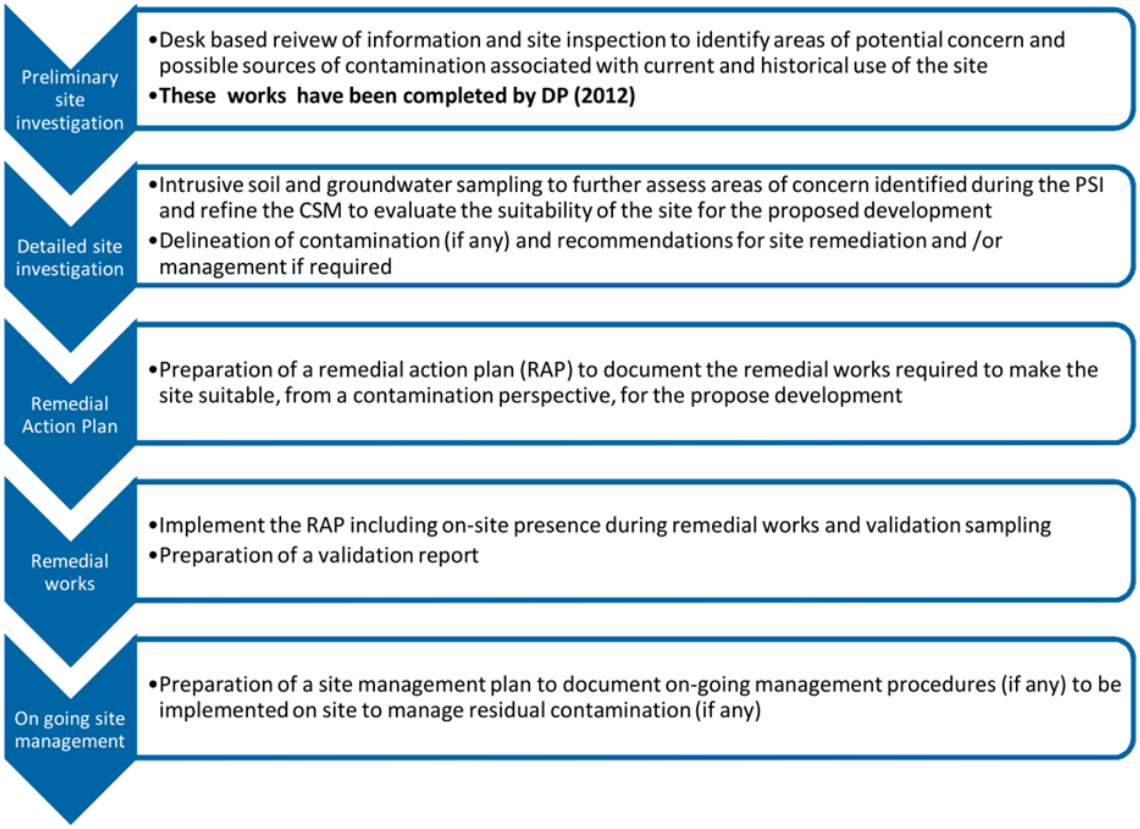
Sediment and erosion controls will remain from the Stage 1 works and upon site possession and will change to suit the various phases of the project i.e. bulk earthworks, structure and external works. Sediment and erosion measures will be implemented in accordance with the requirements of the Soil and Water Management Plan which forms part of the construction Environmental Management Plan (EMP), refer to Appendix P of this EIS.

In-ground services investigations will be undertaken to identify live services within the development area. Any live services identified will be reviewed against the services design and any terminations or diversions will be coordinated with the service utility provider if required.

A Phase 2 contamination assessment will be prepared, having regard to recommendations provided within the Phase 1 Contamination Assessment by Douglas Partners dated 2012. This Phase 2 Contamination assessment will include;

- An unexpected finds protocol
- Confirmation of appropriate identification, removal and remediation of previous development

.



Further baseline acoustic testing will be undertaken during site establishment and acoustic and vibration monitors will be set-up in accordance with the recommendations of the acoustic consultant. Acoustic and vibration mitigation measures will be set and form part of the Noise and Vibration Management Plan which forms part of the EMP.

# 3. Site establishment

## 3.1. Hoardings and fencing

Site fencing and hoardings will be installed around the entire perimeter of the site and will be a mixture of chain wire fencing and timber hoardings (Attachment A). The timber hoardings will be painted white and maintained for the duration of the development works. The locations of the hoardings will be:

- **Timber hoardings** on the north, south and western elevations. These will provide higher security and privacy measures for the site and will act as noise barriers to the residential properties across Frenchs Forest Road and The Forest High School. Elements of this timber hoarding will be finished with a graphic design providing information about the project
- **Chain wire fencing with shade cloth** on the east elevation. The chain wire fencing will located directly adjacent to the eastern retained vegetated area and both will act as security barrier to the retained vegetation. The chain wire fencing will be securely fixed into the ground and have shade cloth to minimise dust transfer to west side of the side.

Any graffiti, vandalism or damage to the fencing will be repaired as soon as practically possible.

## 3.2. Project signboard

Four signboards will be erected to advertise the NBH project to the public. The signboards will be at least 6m x 6m and will be located:

- to the north along Frenchs Forest Road
- to the west along the shared Pedestrian Pathway
- to the south along Warringah Road

Healthscope and the Local Health District will have equal representation on the signboards. Thiess, as Principal Contractor will also have representation on the signboards.

Other signboards will include project and contact details of site managers as required by the approving authority.

## 3.3. Temporary services and utilities

Temporary services and utilities will be installed to site shedding as required for lighting and amenities on the site. Temporary services trenches will be installed during the site establishment phase following site levelling and prior to the construction of the haul roads. The main lead-in services include:

- **Electricity** – Power will be provided from the substation which will be installed in the Stage 1 works in the north-west corner. A secondary power substation may be installed on the south west side should there be insufficient power supply from the north-west substation
- **Water** – Water will be provided from the main water line running along the south side of Frenchs Forest Road
- **Sewer** – Sewer will be connected into the permanent sewer infrastructure adjacent to the existing Bantry Bay Road
- **Temporary gas –** will use the future gas connection for the co-gen plant.

## 3.4. Nurse call system

A wireless nurse call system will be installed throughout the site. This will eliminate the risk of vandalism associated with hard wired systems. The nurse call system will incorporate an immediate response capability to incidents on-site during construction.

This nurse call system will be connected to the staffed first aid shed, with a remote pager system installed should the first aid officer be out on site.

### 3.5. Hours of Operation

The following hours of operation are proposed for the works:

- Monday to Friday ..... 7:00am to 6:00pm
- Saturdays ..... 7:00am to 5:00pm
- No works Sundays or public holidays

Discussion on proposed hours of operation is provided in the Stage 2 Noise and Vibration Report (refer to Appendix E)

## 4. Site accommodation and amenities

### 4.1. Site Compound

Shedding will be provided for the workforce over two stages while the site is being set-up for construction and during construction works. Upon site possession, temporary shedding will be located on the future Hospital Road entry between the contractors compound and carpark . Following the site levelling works, the site compound will be located to the Non-Development Site on the southern side of the site (as shown in Attachment A). The location of the site compound on the Non-Development Site has been selected for the following reasons:

- **Safety** - Traffic and pedestrian clashes is considered a major safety risk on all construction sites - the location of these sheds provides a clear separation between the workforce pedestrian walkways and construction haul roads.
- **Efficiency** - It is a short distance from the site village to the Hospital hoists.
- **Program** - The immediate proximity of the sheds to the hospital site allows covered walkways to be readily set-up, thus allowing fitout activities to proceed during wet weather.

Site amenities and facilities will be provided in accordance with the requirements of Workcover Code of Practice. Generally, the site compound will comprise of a mixture of facilities which includes but is not limited to the following:

- Dining rooms
- Toilets
- Showers
- Change rooms
- Drinking fountains

### 4.2. Contractors Site Office

A temporary site office will be constructed adjacent to the contractors' compound to accommodate up to 60 site staff. Meeting rooms, offices, open work areas and amenities will be contained within the site office and will comply with the requirements of the BCA. The site office will be demobilised and removed following completion of the works.

It is anticipated the site office will be a timber structure with a sheet metal and glazed façade or demountable sheds.

## 5. Traffic and pedestrian management strategy

The proposed primary access to the site during construction will be located along Warringah Road, initially using Bantry Bay Road access during bulk excavation while the southern entry to Hospital Road is being constructed. Once constructed, the southern entry into Hospital Road will be the main access for construction, refer to Attachment A.

The southern entry is consistent with the construction access from the Stage 1 works and it is noted that in the Stage 1 consultation with community stakeholders, this entry was identified as the preferred option.

Access gates will be set back from Warringah Road to allow construction vehicles to queue within the site and minimise impact on through traffic on Warringah Road. Full time ticketed traffic controllers will be manage pedestrians at the site access locations for vehicles entering or leaving the site

On site construction access routes have been established, within the construction boundary, along the western, northern and eastern boundary of the site and mainly according to the proposed layout of the internal road network to facilitate materials handling for tower/crawler cranes and forklifts. Hoists will transport personnel and lighter materials within each building structure.

The site will permit stand-by traffic to wait on the eastern Haul road which will mitigate construction traffic from parking on surrounding roads.

Site personnel will access the site through turnstiles placed along the southern hoarding line. These are activated via an electronic security pass which are allocated after personnel are inducted into the site safety procedures. Pedestrian paths for the workforce will be identified within the site with a view to causing the least disruption during construction works

In summary, possible mitigation measures identified for the duration of the construction works include:

- appropriate signs warning of trucks entering will be erected on the approach to any access point as per requirements of the certified Traffic Control Plan.
- promoting car-pooling and utilise site car-parking more efficiently
- waiting construction traffic such as concrete or haulage trucks to be confined within the site boundary or sent back to original point of departure if not booked in for delivery.
- appropriate signs erected to warn vehicle drivers and, in particular , vulnerable road users such as cyclists and pedestrians, of restricted road and shoulder spaces due to construction activities
- implementation of effective arrangements including advance warning signs and emergency access arrangements for any closure to surrounding road
- vehicles transporting material to and from the construction site will be covered immediately after loading (prior to traversing public roads) to prevent wind-blown dust emissions and spillages
- in the event of a spillage of materials from construction vehicles, spilled material will be removed as soon as possible and spill kits will be available on the site.
- access being maintained to neighbouring properties and other land users throughout the construction phase
- haulage vehicles being filled to capacity to minimise vehicle movements
- the preparation of Traffic Control Plans.
- Minimise construction traffic impacts on Warringah Road by allowing queuing within the site.

Traffic Control Plans will be produced for specific road construction staging scenarios and submitted to Roads and Maritime Services (RMS) for approval.

## 5.1. Internal roads and traffic methodology

Haul roads and sediment and erosion controls will be constructed and put into place during the site establishment works to allow construction vehicles to travel around the site safely. The haul roads will be constructed on the east, north and western sides of the site to provide access to the entire site.

## 5.2. Maintaining pedestrian access

The Stage 1 pedestrian access between Frenchs Forest Road West and Warringah Road along the boundary of the Forest High School will be maintained throughout the duration of the works and will be protected with a timber hoarding with a graphic design providing information about the project.

Vehicular construction access from Warringah Road will managed by full time-traffic controllers who will also be responsible for pedestrians and students crossing the site entry points. This will mitigate the risks associated with construction traffic entering or leaving the site.

## 5.3. Parking

Construction car parking will be made available inside the site boundary as shown in Attachment A. Thiess will incentivise subcontractors to provide car-pool and shuttle bus services for their workforce through car space allocations. During the peak construction periods, vehicles with less than their designated carrying capacity will not be permitted to park on-site and shuttle buses will have priority over normal vehicles. Parking allocation privileges will also be limited to those who do not live in the vicinity of the construction site. Workforce personnel who live in the northern district will be encouraged to utilise the public transport system or bicycle travel.

The site will provide up to 100 car-spaces for the construction workforce, construction contractor and client representative. The car-pooling parking scheme can potentially allow up to 500 people to serve the site.

# 6. Materials handling

## 6.1. Deliveries

All deliveries to the site will be managed by a materials coordinator and who will book all deliveries 24 hours in advance. Traffic controllers will control vehicle and delivery access into the site by checking bookings on the delivery schedule. Deliveries which were not scheduled will be directed to go back to their original place of departure to prevent vehicle congestion within the site.

Delivery vehicles within the site will be directed to laydown areas around the perimeter of the buildings during the bulk excavation and structure stages. The (future) loading dock in the basement level will primarily be used for fitout deliveries.

## 6.2. Laydown and platform areas

Laydown areas will be strategically located around the site to minimise multiple handling of materials or equipment as well as horizontal or vertical travel transfer distances. All laydown areas will be within reach of the tower cranes and within a short distance to material hoists.

## 6.3. Craneage

The tower cranes selected for the hospital are two electric tower cranes with 70 metre jib lengths. These cranes have been selected for the following reasons:

- **Noise** – these are electric cranes that are virtually noise free and will limit the noise impact to the adjacent school and surrounding residents. They have been selected because diesel-

powered tower crane noise is typically the most common source of noise complaint on large projects.

- **Speed** - the cabin will be fully manned improving the speed of the crane. Tower cranes also have no daily setup time which improves daily lifting rates.
- **Crane base** – the base of excavation will allow the installation of a shallow pad footing that will provide suitable bases for each crane.
- **Relibility** – Both these cranes have been used on past projects of similar size and nature and have proven to be efficient.

Minimal support cranage will be required for the Hospital building as both cranes have 100% coverage over the building footprint and external laydown areas. Mobile craneage may be required to lift large plant/heavy equipment or provide supplementary support when the tower cranes are at peak use.

Mobile craneage will also be used for the Car Park and civil infrastructure works

## 6.4. Loading platforms

A combination of retractable and fixed platforms will be installed on suspended slabs to allow formwork to be transferred and allow large fitout items to be installed on the floors i.e., mechanical duct and plasterboard sheets. External balconies or roof areas on the Hospital building will be used for laydown areas in lieu of platforms as the building steps in on the higher floors.

Platforms will also be used for the Car Park structure and fitout.

## 6.5. Hoists

Hoists will be installed on three building structures; the hoist type for each structure will be:

1. **Hospital** – Two twin man hoists and two twin material hoists. The material hoists have been strategically located to permit access to the plant room and helipad on the higher floors. The material hoists are also located adjacent to the roads, permitting the forklift to easily access either hoist. One of the two twin man hoists will also provide access into the basement Loading Dock. All three hoists will be substituted with builders' lifts in the lift core as they become available.
2. **Car Park** – a material and man hoist will be located on the southern end of the western elevation. The location of these of hoists will not interfere with façade works as there are no façade screens on the western elevation. The hoists will be used until the internal lifts become available.

The size of each hoist will allow sufficient lifting capacity and size to serve the building and thus reducing crane dependency for material transfer.

# 7. Environmental protection

An Environmental Management Plan (EMP) will be developed which details how Thiess will manage environmental compliance on The Northern Beaches Hospital Project during the construction works through the application of the Thiess Environmental Management System (EMS). The Thiess EMS is accredited to AS/NZS ISO 14001 (Environment), AS/NZS ISO 9001 (Quality and AS/NZS 4801 (Safety).

Implementation of the EMP will:

- identify the environmental obligations attached to the project and the hazards and risks associated with the works
- assist in the prevention of environmental harm
- delivery compliance with all relevant environmental legislation

- minimise negative impacts on the community that relate to the Project's environmental impacts
- identify and implement feasible opportunities to reduce the environmental impact of the Project that are beyond contractual and compliance requirements
- fulfil the Thiess EMS requirements enabling continued certification to ISO14001.

## 7.1. Dust control

Prior to the commencement of construction activities, an Air Quality Management Plan will be prepared as part of the construction Environmental Management Plan. The following management strategies shall be implemented;

- Techniques for managing air quality shall be included in staff and contractor project inductions;
- Plant and equipment emissions shall be monitored to check adherence with relevant regulations and standards;
- Areas of exposed soil shall be minimised and long term stockpiles shall be stabilised;
- Site compound areas and haul roads shall be capped with gravel or kept damp by having a water cart available;
- Mud tracking onto public roads shall be avoided as far as practicable via minimising site access points, and removing any deposited materials regularly;
- All truck movements onto public roads shall be covered and tailgates securely fastened; and
- Burning of materials shall not to be permitted at any time.

## 7.2. Noise and vibration

Noise and vibrations controls and measures will be setup and undertaken respectively as per the requirements in the Noise and Vibration Report and construction Noise and Vibration Management Plan (refer to Appendix E of this EIS).

# 8. Consultation with the Forest High School

Consultation with the Forest High School will commence during the site establishment phase. Healthscope will establish a consultation protocol to provide regular updates and a forum to discuss and resolve preferred strategies to manage impacts on the school during various phases of construction.

A dedicated representative of the Construction Contractor will also be made available to the school to address any issues which may arise during the construction period in a diligent manner.

Awareness campaigns will be undertaken in consultation with the school, to ensure practical information regarding construction works are made available to staff and students.

# 9. Emergency management

An emergency response plan will be developed. In developing the plan, these events will be categorised into those that can be dealt with locally and those emergencies that would require a full site evacuation

First aid assistance will be provided during construction hours of operation with a nurse call system set-up on each floor of the building and external areas. Site rules will also be established to not permit equipment or material to be placed along emergency egress pathways or obstruct firefighting equipment.

## 9.1. Emergency exits and evacuation

Emergency exits will be provided in both buildings via internal stairs or external scaffold stretcher stairs. Emergency stairs and evacuation routes will be communicated to all personnel through the on-site induction prior to undertaking any works on-site.

Changes to the evacuation procedure will be communicated to all personnel through daily pre-start meetings or weekly toolbox talks. Evacuation plans will also be put on display adjacent to fire stairs.

Random emergency evacuation drills will also be undertaken to train and test the workforce during the unlikely event of an emergency evacuation. Every person during an emergency evacuation will be accounted for at the muster point by the subcontractors' safety representative and will be ticked off against the daily emergency evacuation report which is generated through the electric swipe card system at the turnstile entry which records personnel entering and leaving the site.

### 9.2. Emergency vehicle access

Emergency vehicle access will be permitted into the site through the main gate entry and the safety coordinator or manager will be responsible for coordinating emergency crew to the First Aid shed or point of emergency. The traffic controllers will be responsible for maintaining clear access to the first aid shed for any emergency vehicle/s.

## 10. Site cleanliness and rubbish removal

Rubbish will be removed from the floors using both craneable construction bins and wheelie type bins that fit in the hoist. The disposal subcontractor will recycle material where possible and record waste volumes.

## 11. Attachment A – Construction Management Plan