Preliminary Construction Management Plan

Dexus Property Group

North Shore Health Hub - Cnr Westbourne Street and Reserve Road, St Leonards

November 2017

savills project management

Controlled Document Register

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contents

1. introduction

1.1. Description of the Works

Purpose of the Project

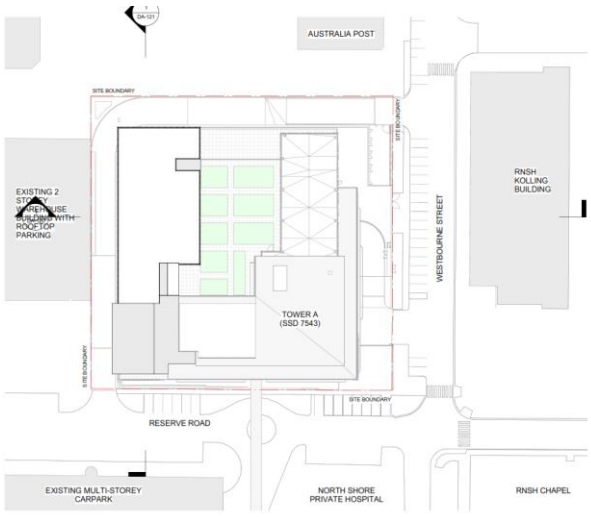
DEXUS is seeking to deliver a world class specialist healthcare facility providing a range of complementary medical services associated with the existing St Leonards health precinct. The development will consist of two integrated towers, together the towers comprise the proposed North Shore Health Hub.

Tower A will comprise of the private hospital (SDD 7543). Further, Tower A includes a first floor pedestrian bridge over Reserve Road to provide direct access between the health hub and the existing private and public hospitals and the transfer of patients between buildings for treatment and aligning of hospital medical and surgical services.

Tower B is physically integrated with Tower A, being constructed on the podium of Tower A with a common lobby to enable transfer of patients between the two towers. Tower B will be used for health and medical purposes associated with the proposed health hub and ancillary to the Royal North Shore Hospital and North Shore Private Hospital, including medical specialist suites and associated allied health uses such as: urology, cardiology, physiotherapy and osteopath.

Location

The proposed development is located at Cnr Westbourne Street and Reserve Road, St Leonards. Dexus will develop and construct a new health care building located directly opposite Royal North Shore Hospital and North Shore Private Hospital, with key retail amenities included on site.



Current Site

The site is currently vacant, with vehicular access from Frederick St.

1.2. Purpose of this Plan

This Preliminary Construction Management Plan (CMP) is written to communicate to the NSHH project construction management objectives, strategies, methodologies and actions for the execution of the works. This CMP has been prepared as part of the Secretary's Environmental Assessment Requirements (SEARs) submission.

A detailed construction management plan is not possible at this point of the project programme as:

- At the time of submission of the development application, no building contractor has been appointed;
- It is inevitable that the various tendering contractors will have differences in preferred methods and sequencing;
- The successful contractor for the works is best placed to determine and implement a detailed construction management plan.

It will be a requirement of the construction contract for any contractors engaged to prepare a detailed construction management plan which will address the key considerations contained within this document and also encompassing the relevant environmental laws, occupational health and safety regulations and appropriate conditions of approval.

After contract award, this CMP will be reviewed and updated on a regular basis to reflect design development, and the developing construction methodology.

This CMP is to ensure the construction team and other project stakeholders understand the objectives and the procedures and processes in place as necessary for the successful execution of works under the Contract.

2. authority approval

2.1. Licenses and Permits

The Contractor will submit applications as necessary for Works Zones, Road openings and Hoarding applications to Willoughby City Council.

2.2. Hours of Work

Once the Planning Project Approval is received the Contractor will work in accordance with those hours, it is anticipated that the standard construction hours may be:

Working Day	Working Hours
Monday to Friday	07:00 to 18:00
Saturday	08:00 to 13:00
Sunday and Public Holidays	Not permitted unless approved by Council

3. regulations and legislative requirements

3.1. Legislation and Regulation

All work shall be conducted, as appropriate, in accordance with (but not limited to) the following environmental regulatory and legislative requirements:

- Environmental Planning and Assessment Act 1979 and Regulations
- Protection of the Environment Operations Act 1997 and Regulations
- Environmental Protection and Biodiversity Conservation Act 2000 (Cth)
- Heritage Act 1997 and Regulation
- Heritage Amendment Act 2001 and Regulation;
- Australian Heritage Commission Act 1975 (Cth)
- Contaminated Land Management Act 1997 and Regulation
- Soil Conservation Act 1939 and Regulation
- Threatened Species Conservation Act 1995 and Regulation
- Endangered Species Protection Act 1992 (Cth)
- Noxious Weeds Act 1993 and Regulation
- Native Vegetation Conservation Act 1997
- Companion Animals Act 1998
- Dangerous Goods Act 1975 and Regulation
- Environmentally Hazardous Chemicals Act 1985 and Regulation
- Sydney Water Act 1994 and Regulation
- Water Act 1912 and Regulation
- Water Management Act 2001 and Regulation;
- Waste Avoidance and Resource Recovery Act 2001
- Local Government Act 1993
- Worker compensation legislation
- Work Health and Safety Act 2011
- Work Health and Safety Regulation 2011
- Building Code of Australia

3.2. Codes of Practice and Australian Standards

All work shall be conducted, as appropriate, in accordance with (but not limited to) the following environment and construction-related codes of practice and Australian Standards:

- Australian Standard AS 2436-1981: Guide to Noise Control on Construction, Maintenance and Demolition Sites;
- Australian Standard AS 2601 – 2001: Demolition of Structures;
- Australian Standard AS 4576 – 1995 Scaffolding
- Australian Standard AS 2601 – 2001 Demolition
- Australian Standard AS 3610 – 1995 Formwork
- Australian Standard AS 3600 - 2001 Concrete Structures
- Australian Standard AS 2865 - 2009 Safe Working in a Confined Space
- Australian Standard AS 4839 – 2001 Safe Use of Portable & Mobile Oxy-Fuel Gas Systems
- Australian Standard AS/NZS 3012- 2003: Electrical Installations - Construction and Demolition sites
- Australian Standard AS2436 – 1981: Guide to Noise Control on Construction, Maintenance and Demolition Sites;
- BS6472 – 1992: Evaluation and Human Exposure to Vibration in Buildings (1 to 80 Hz);
- BS7385 Part 2 – 1993: Evaluation and measurement of Vibration in Buildings Part 2;
- Manual Handling NOHSC: 1001 – 1990
- Synthetic Mineral Fibres NOHSC: 1004 – 1990
- Management and Control of Asbestos NOHSC: 2018 - 2005
- Department of Conservation and Land Management, CALM (1992): Urban Erosion Control and Sediment Control;
- NSW DEC (2007): Noise Guide for Local Government;
- National Environment Protection Council (1998): National Environment Protection Measure (NEPM) on Ambient Air Quality;
- NSW Department of Housing (1998): Managing Urban Stormwater – Soils and Construction;
- NSW DEC (2004): Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes;
- DEC, NSW (2005): Approved Methods for the Modelling and Assessment of Air Pollutants in NSW.
- DEC, NSW (2007): Approved methods for the Sampling and Analysis of Air Pollutants in NSW;
- Code of Practice – How to Manage Work Health & Safety Risks
- Code of Practice – Work Health & Safety Consultation, Co-ordination and Co-operation
- Code of Practice – Excavation Work
- Code of Practice – Formwork
- Code of Practice – Labelling of Workplace Chemicals
- Code of Practice – Moving Plant on Construction Sites
- Code of Practice – Mono-strand Post – Tensioning of Concrete Buildings

- Code of Practice – How to Safely Remove Asbestos
- Code of Practice – How to Manage & Control Asbestos in the Workplace
- Code of Practice – Work in Hot or Cold Environments
- Code of Practice – Amenities for Construction Work
- Code of Practice – Overhead Protective Structures
- Code of Practice – Electrical Practices for Construction Work
- Code of Practice – Pumping Concrete
- Code of Practice – Cutting & Drilling Concrete and other Masonry Products
- Code of Practice – Safe Handling of Timber Preservatives and Treated Timber
- Code of Practice – Safe Use of Synthetic Mineral Fibres
- Code of Practice – Confined Spaces
- Code of Practice – Managing the Risk of Falls at Workplaces
- Code of Practice – Hazardous Manual Tasks
- Code of Practice – Managing the Work Environment & Facilities
- Code of Practice – Managing Noise & Preventing Hearing Loss at Work
- Code of Practice – Work Near Overhead Power Lines
- Safe Erection, Altering & Dismantling Scaffolding – Industry Safety Standard

4. project team

4.1. Project Delivery Team

The structure of the Project Delivery Team shall be confirmed by the construction contractor, identifying each person's role within the Project and the hierarchy of the Project.

4.2. Key Contacts & Responsibilities

The key personnel proposed for the project are to be defined, however not limited to:

Key Personnel			
Name	Role	Responsibilities	Reports To
	Project Director	↘ Be the senior point of contact to the Principal's Representative ↘ Ensure project schedule and budget ↘ Provide overall team leadership ↘ Develop a high performance culture ↘ Drive a safe working culture ↘ Develop and maintain an effective working relationship with client and all stakeholders ↘ Mentor and guide the Management Team ↘ Ensure the Project Team is adequately qualified ↘ Approve expenditures, milestone schedules, valuation and other matters related to the overall project execution ↘ Identify the need for specific procedures or amendments necessary to fulfil the objectives of the Project	Managing Director
	Project Manger	↘ Be a point of contact to the Principal's Representative on a day to day basis ↘ Develop and maintain an effective working relationship with client and all stakeholders ↘ Provide team leadership ↘ Develop and monitor the program to ensure milestones are being achieved	Project Director

Key Personnel			
Name	Role	Responsibilities	Reports To
	Project Manger	↘ Allocate sufficient resources to complete works under the contract ↘ Allocate adequate resources to implement workplace health, safety and environmental controls. ↘ Promote safety and environmental awareness in site meetings ↘ Verify progress payments and variations under the contract ↘ Advise risks to the contract and available mitigation measures ↘ Responsible for the implementation of all management plans and to ensure resources are available to allow the management plans to be implemented ↘ Provide contract support to the Project Manager ↘ Review and engage in contracts with consultants and subcontractors ↘ Manage the contracts with subcontractors and consultants ↘ Prepare progresses payments and variations advice	Project Director
	Site Manager	↘ Provide buildability advice on the design and construction phases of the Project ↘ Lead the Construction Team in the execution of the physical works ↘ Ensure all workplace health and safety issues are adequately controlled ↘ Develop and monitor the contract program ↘ Create target program for the site teams ↘ Advise the Community Liaison Manager of up and coming construction activities ↘ Ensure all requirements under the WHS Act and ↘ Regulations are being met on the sites. ↘ Ensure compliance with all management plans	Project Manager
	WHS, Environmental & Sustainability Manager	↘ Co-coordinate staff training in the implementation of the Contractor's Safety & Environment System and specific safety topics. ↘ Assist the Project Manager in the implementation and monitoring of the Project Safety & Environment system.	Project Manager

Key Personnel			
Name	Role	Responsibilities	Reports To
	WHS, Environmental & Sustainability Manager	↘ Assist management personnel in meeting their obligations under the relevant WHS legislation / Regulation, Codes of Practice and Australian Standards. ↘ Inform management personnel of changes in the relevant WHS legislation / Regulations, Codes of Practice and Australian Standards. ↘ Maintain a library of safety data sheets (SDS) at Head Office, which are to be provided to sites on request. As required by legislation, the SDS library will be updated regularly to ensure that SDS's are replaced every 5 years. ↘ Collate and report on monthly Safety & Environment ↘ System records from site. ↘ Manage and track corporate sustainability goals and metrics for the business. ↘ Ensure compliance with all relevant legislation and standards. ↘ Advise on how to find environmental benefits and manage social issues. ↘ Outlines a monitoring program that includes the frequency of monitoring and maintenance and includes a check lists of equipment/components that should be inspected ↘ Identify an appropriate response to rectify systems that are working outside of the target that includes life cycle cost analysis of existing conditions and improvement options ↘ Setting and tracking the targets for local and sustainable material procurement	Project Manager

4.3. 24 Hour Contact

The 24 hour contact person for the Project will be confirmed upon engagement of the Contractor.

5. pre construction planning

5.1. Communication

Good Communication

Success for the Project will rely on good and effective communication between all parties. This means rapidly sharing and exchanging information with all project stakeholders and developing cooperative relationships with the Principal's Representative, DEXUS Property Group, Ramsay Health Care, the Local Health District and the relevant consultants.

Systems for both formal and informal communications are to be agreed. The Construction Team will commit to ensuring communications are timely and any surprises are minimised. The Team will ensure NSHH and its representatives are comfortable with the information provided to make timely and appropriate decisions.

Construction Communications Plan

A Construction Communications Plan (CCP) may be developed to provide details of the coordination and management of communications activities that will be undertaken during the construction phase of the NSHH project. This CCP provides the framework for communication between the stakeholders.

Avoiding Disruption to the Local Community

As the site is located near a public hospital and local medical facilities, specific measures will be implemented to minimise local community disruption surrounding the Hospital.

To ensure a harmonious relationship with the local community, the client and the construction activities, the Construction Site Management Team will liaise with the surrounding stakeholders, conduct regular meetings during which any issues will be discussed and undertake public education exercises such as letter drops to mitigate the impact of the construction process on the area.

The purpose of community meetings and notices is to inform the community of the progress of the works, upcoming activities and any changes to previous issue of plans.

The notices will provide the community with an opportunity to provide comment on the construction activities.

5.2. Adjoining Properties

Construction Liaison

Due to the proximity of the site to the adjoining properties, public areas, public transport options, the Contractor will carry out the project in a manner designed to cause minimal disruption to the activities of others.

The Contractor will have an allocated resource within the project team structure who will be the central point of contact for all neighbour related issues. This person will be responsible for all Contractor inputs and representation at stakeholder and communication meetings.

Access to the site, material movement and hours of work will be in accordance with the Development Application approved working hours. The construction programme will be based on these hours.

Dilapidation Surveys

A dilapidation report of the site, adjoining properties and neighbouring properties will be procured prior to the commencement of any piling/structural works.

A final series of dilapidation surveys is to be conducted for all the surrounding neighbouring buildings and adjoining structures in accordance with the requirements of the DA consent conditions.

Copies of these reports will be submitted to the Private Certifying Authority (PCA), Willoughby Council and adjoining neighbours prior to any work commencing on the site.

Existing Service Location, Disconnections and Disruptions

Existing services will be located prior to the commencement of structural works to ensure all services are identified. This survey record in conjunction with any existing site information will be used to ensure services to adjoining buildings are not lost as a result of construction works.

All service disconnections will be carried out prior to any demolition works commencing. Temporary supplies to the proposed site office and amenities areas will be established.

It is not expected that service disruptions will occur to surrounding properties during these disconnection works. If any further service works are required a notification will be issued to the affected neighbours/owners to agree a strategy for those works.

5.3. Public Safety and Amenity

The safety of the general public is paramount. The Contractor will ensure that the general public is protected from activities occurring on the site. If not managed correctly, construction sites can create risk to the general public who move around the site or who adjoin them. Examples of the hazards that need to be managed include:

- Changes to the surface level
- Excavations, holes and trenches
- Falling material and debris
- Plant and equipment
- Dust, vapours or other hazardous substances
- Noise
- Vibration
- Movement of vehicular traffic

The construction site will be kept neat and tidy to maintain public safety and local amenity. Where activities occur outside of the site boundaries such as works to local authority assets, steps will be taken to ensure the impact of the work is kept to a minimum.

5.4. Work Health *&* Safety

The Contractor will develop a Workplace Health and Safety (WHS) Management Plan that complies with the WHS Act 2011 and WHS Regulations 2011. The 'For Construction' WHS Management Plan will be submitted prior to construction work commencing on site. Further to the WHS Management Plan, the Contractor will complete a WHS Management Monthly Report in accordance with the Contract documents.

As evidence of commitment to WHS Management, the Contractor will:

- Carry out all activities in compliance with the Workplace Health & Safety Act 2011, and the
- Workplace Health & Safety Regulation 2011
- Hold and maintain an accredited occupational health and safety & rehabilitation management system by a NSW Government agency that complies with the WHS&R Guidelines, for as long as any activities are carried out
- Carry out all activities in compliance with the NSW Government Code of Practice for Procurement
- Comply with all WHS policies, procedures and measures implemented or directed by the Principal
- Create a safe working environment for all activities, ensure the safety of all authorised personnel on the Site and other work sites, and ensure no unauthorised individuals gain access to the site or other work sites
- Regard and ensure the safety of the public especially at all sites

A draft of the WHS Management Plan will be provided prior to construction by the Contractor.

5.5. Environmental Management

The Contractor will develop an Environmental Management Plan (EMP) that complies with environmental legislation.

The EMP will describe the environmental strategy, methods, controls, and requirements for the execution of the NSHH Project. The EMP should be read in conjunction with the WHS Management Plan. In accordance with the contract documents, the 'for construction' EMP will be submitted before commencing work on the site.

The primary objective of the EMP is to provide a framework of procedures to minimise the impacts of the construction of the Project on the environment.

The secondary objectives of the EMP are to provide certainty of delivery of the prescribed environmental outcomes during all phases of the Projects' construction and to implement a system for compliance with all applicable requirements, obligations and commitments for the Project to ensure:

- The Contractor is compliant with all obligations and commitments from the pre-construction environmental assessment process
- The Contractor is compliant with the Conditions of Approval
- The Contractor meets all relevant legislative requirements
- All licenses, approvals and/or permits required to construct and/or operate the Project have been granted
- Compliance with other non-legislative requirements and commitments including:
    - Australian Standards and Guidelines
    - Best practice environmental management
    - Section 4 of the NSW Environmental Management System Guidelines 1998
- ESD Measures

Noise & Vibration Management

The construction works will be completed in a manner so as not to cause undue damage to adjoining infrastructure and property.

Noise control measures for the project will be established during the demolition and excavation stages of the project. These measures will generally be in accordance with the following guidelines:

- AS 2436-1981 "Guide to Noise Control on Construction, Maintenance and Demolition Sites",
- Guidelines from the Environmental Protection Authority,
- and generally in accordance with Willoughby City Council Development Application Consent Conditions to be advised

A pre-construction noise and vibration monitoring programme will be undertaken to provide information on the existing ambient noise and vibration environment of the construction zone and adjacent areas, plus help to determine the likely noise and vibration impacts of key construction activities prior to works commencing on site. The objectives of the noise and vibration testing will be to:

- Provide a noise climate of pre-construction noise and vibration levels

- Provide baseline data for comparative assessment of pre- and post-construction noise and vibration levels
- Determine the relevant assessment criteria to be based on pre-construction noise and vibration levels
- Provide information for noise and vibration modelling, including:
    - Noise levels likely to be generated by key construction activities - to assist with setting / validating appropriate noise assessment criteria, plus establishing appropriate noise impact management strategies to be implemented for activities which are expected to potentially exceed the assessment criteria.
    - Vibration levels likely to be generated by key construction activities - to assist with setting / validating appropriate vibration assessment criteria, plus establishing appropriate vibration impact management strategies to be implemented for activities which are expected to potentially exceed the assessment criteria.

5.6. Dust Management

The management of construction activities is important to ensure dust and exhaust emissions of plant and equipment are controlled to an acceptable level. The Contractor will develop a strategy for dust control, which will be included in the EMP. This strategy will include control measures and document how these measures are to be implemented and monitored. The Contractor will need to understands the importance of adequate dust control with consideration to the operation of the adjoin properties.

5.7. Soil & Water Management

A comprehensive Soil & Water Management Plan (SWMP) will be developed and will be contained within the EMP. The Contractor will need to ensure that no works significantly impact soil and water in and around the construction sites.

The objective of the Soil & Water Management Plan is to:

- Ensure that construction works do not significantly impact on the movement of sediment and soil across the site in the form of erosion
- Ensure that construction works do not significantly impact on the quality of site run-off, causing potential turbidity and chemical contamination in stormwater and local waterways

5.8. Waste Management

A Waste Management Plan may be developed if deemed necessary (WMP). This plan will be submitted prior to commencement of work.

The Waste Management Plan should outline how the Contractor will handle the waste management on the NSHH project.

The Contractor should ensure they implement appropriate methods of waste minimisation, recycling and disposal and spoil management.

The objectives of any Construction Waste Management Plan (CWMP) are as follows:

- Comply with the ESD Initiatives;
- Ensure that waste generation is avoided as a priority;
- Ensure that environmentally sensitive work practices are followed within waste minimisation programs;
- Ensure that, wherever practicable, waste materials are recycled/re-used;

  Ensure that the disposal of all liquid and non-liquid wastes is in accordance with regulations;
- Ensure that spoil from sites is managed appropriately to minimise environmental and health risks;
- Ensure that the air quality surrounding sites is appropriately managed;
- Ensure that all spoil is disposed of to prevent contamination of any lands; and
- Identify the major waste streams on the Project.

5.9. Quality Management

A project-specific Quality Management Plan (QMP), which stipulates the processes and procedures to be implemented in order for the works and services to meet the project requirements.

The Contractor's management system should be accredited to AS/NZS ISO 9001:2000 (Quality), which will be the basis for development of the project-specific Quality Management Plan.

The plans will include the processes and activities that determine quality policies, objectives and responsibilities so that the Project will satisfy the level of quality required.

The primary quality processes to be established and implemented for the Project are as follows:

- Quality Planning
- Quality Assurance
- Quality Control

5.10. Traffic & Pedestrian Management Plan

A Traffic and Pedestrian Management Plan (TMP) will be developed which details how traffic and pedestrian access will be managed on the NSHH Project, this may be in addition to GTA Consultants current TMP.

Key issues for traffic and pedestrian management during the construction include:

- Ensure maximum safety of on-site personnel, pedestrians, cyclists, commuters, residents and drivers;
- Minimise environmental nuisance and impact as a result of construction traffic;
- Ensure construction traffic does not interrupt existing traffic flows on the local road network;
- Safe operation of buses and other transport services during construction;
- Establish strict scheduling of vehicle movements to ensure there are no vehicles waiting off the site;
- Have no vehicles arrive at the site outside the site working hours;
- Encourage site workers to utilise local public transport system and car sharing wherever possible;
- Timely and effective implementation of traffic management measures; and
- Fulfilling Council requirements.

The Contractor will liaise with Willoughby City Council to obtain endorsement of the Traffic and Pedestrian Management Plan.

5.11. Commissioning

In order to ensure compliance with all the requirements of the Project, the Contractor will implement the Commissioning Management Plan which will embrace all activities under the contract, specifically relating to inspections and the testing necessary for commissioning.

The Commissioning Management Plan will be developed as systems are specified and design details are refined.

The Commissioning Management Plan will provide:

- Detailed commissioning programme in gannt format detailing to integrated activities of all services contractors and including witness points;
- Presentation of commissioning procedures detailing the methodology for the project installations to the Principal's Representative;
- Identification of systems to be commissioned;
- Verification of installed system performance and compliance with the specified design for each installation as defined within the Contract;
- Certification as required by the Contract;
- Test Record Sheet management process;
- Implementation of corrective processes and action, where this is deemed necessary under the Contract;
- Acceptance criteria;
- Confirmation of the roles and responsibilities of key owner/operator stakeholders in the commissioning process and procedures;
- Confirmation that completed building works complies with all requirements of the Building Code of Australia (BCA), the Fire Strategy and Safety Assessment Report (FSSAR) and applicable Australian Standards;
- Compliance with Greenstar requirements; and
- Appropriate training to all owner/operator staff before handover.

To assist with the planning and verification of the Commissioning Management Plan for the NSHH Project, the Contractor may engage an Independent Commissioning Agent (ICA). The Commissioning Management Plan may be developed in consultation with the Contractor, the Advisor and Services subcontractors.

6. site management strategy

6.1. Survey and Set out

A registered surveyor will be engaged to set out the works and verify its location to the property boundaries and the approved alignment levels.

At the completion of the Project, the Contractor will provide a final survey, completed by a Registered Surveyor, which will document the relationship of the works to any relevant property boundaries and easements.

6.2. Safety

Induction

All employees and sub-Contractors must undertake a site induction prior to their commencement of their works on the site.

The site induction will cover the following:

- Objective and purpose of the Project
- Site details, including working hours, deliveries and parking
- General safety requirements
- Equipment, plant and tools
- General environmental requirements
- First aid and emergency procedures
- Fire and evacuation emergency procedures
- Discrimination
- Site specific requirements, including community liaison, media, adjoining neighbours etc.

At completion of the site induction, all personnel must complete a site induction attendance record and provide a copy of their general industry induction card and any other certificate of competency they hold. By completing the induction attendance record, personnel declare their acknowledgement of the site rules and their responsibilities towards them.

The site induction will be updated to reflect changes in the site conditions or the introduction of new procedures and controls.

Regular toolbox meetings will be used to advise site personnel of changes to the induction.

All personnel completing the site induction will be issued with an induction sticker that is to be placed on their hard hat. The induction sticker will record the site, their induction number and date of induction.

The Contractor will align their site induction with any site-specific contractor induction related to interface works with operational buildings.

Incident Reporting

Incidents are to be reported and recorded in accordance with the following management plans:

- Health and Safety incidents are to be reported in accordance with the Project Work Health and Safety Plan;
- Environmental incidents are to be reported in accordance with the Project Environmental
- Management Plan; and
- Community related incidents are to be reported in accordance with the Project
- Management Plan.

Incidents may fall under more than one of the above categories and the reporting of such incidents will need to comply with all of the relevant plans.

Safe Work Method Statements

A Safe Work Method Statement (SWMS) will be completed. The Contractor will complete an internal review of each subcontractors SWMS. The Contractor will periodically check a subcontractor's compliance with their SWMS, and direct action as necessary.

Personal Protective Equipment

Use of Personal Protective Equipment (PPE) by all subcontractors and visitors to the site is mandatory. PPE is to be worn in accordance with WHS Legislation and Contractors SWMS.

All PPE must comply with the relevant Australian Standards. Mandatory Personal Protective equipment includes:

- Hard hats
- Steel capped boots
- Hi-Visibility clothing

Other PPE must be worn as identified in the associated safe work method statement.

Drug and Alcohol Policy

A total ban on the possession and consumption of alcohol and drugs on the construction site. The Contractor will implement this policy on the NSHH Project.

The main objective of the policy is:

- The Contractor's Site Manager and subcontractors are to enforce a total ban on the possession and consumption of alcohol and drugs during working hours and shall ensure that all persons in the work place who appear to be affected by drugs or alcohol are immediately removed from risk of danger to themselves, others and then counselled.

6.3. Temporary Works

Temporary works will be designed, planned, engineered and implemented to ensure they are suitable for the application and coordinated with the ongoing construction activities.

Temporary works may include:

- Propping / strutting
- Formwork design
- Specialised lifting equipment
- Scaffolding
- Loading platforms
- 3rd party verifications

It is currently envisaged that temporary works will be needed where construction activities are undertaken within or adjacent to existing buildings. The temporary works will be planned with the Principal's Representative and the operating facility.

6.4. Signage

Site Notices will be erected at the boundary of the site. The Site Notices may include the following details:

- Private certifier details
- Contractors' details
- Name of the Site Manager and 24 hour contact number
- Approved hours of work

Safety related statutory signage will also be erected on the boundary of the site in accordance with WorkCover requirements.

For works within public areas, signage related to pedestrian traffic, vehicular traffic etc. will be addressed in the Traffic and Pedestrian Management Plan.

6.5. Identification of Services

Services shown on drawings can be indicative. The Contractor will complete a Dial Before You Dig Survey (www.1100.com.au) to understand the extent of services in the immediate area.

If services are identified within the works area, a services location consultant will be engaged to identify the location of the services onsite. Once the services have been identified, a surveyor will survey the location of the services and provide a drawing which will be issued to the relevant subcontractors.

When undertaking excavation works near an asset, information will be obtained from the asset provider regarding safe digging practices.

Not all services are members of Dial Before You Dig, and therefore the possibility exists that services within the site are not documented on the Dial Before You Dig Survey.

A visual inspection of the site will be undertaken to identify any risers, manholes, pits, poles, drains etc., that are not identified on the Dial Before You Dig Survey. In addition, the contractor will obtain specialist utility locations services to identify underground pipes and cables using such technology as ground penetrating radar, flexible tracer rods and the like.

6.6. Existing Services Shutdowns

The Contractor in collaboration with the Stakeholders will develop an existing services shutdown schedule which will provide information and instruction to all project stakeholders about the intended shutdown of existing services.

The schedule will accompany a notification procedure which will be developed in collaboration with the building managers.

When shutdowns are required, the Contractor will issue an Notice of Impacting Activity/Interruption to Building Services Permit to the building manager or Principal's Representative where required, and obtain Authority Approval where required.

The permit will include:

- Details of the service to be disrupted
- Date and time that the disruption will commence
- Estimated duration of the disruption and when the service will resume operation
- The possible, the impact of the disruption
- Any other relevant information

The notification period for existing services shutdown will need to be negotiated with building management and the Principal's Representative.

6.7. Security

Control of people and vehicles during the construction stages is critical to the safety and smooth delivery of construction and the security of the works.

The Contractor will maintain the site in a safe and secure manner. The site is permanently fenced (or hoarded) and sign-posted in a manner, which will assure the safety of the public and those working on the Project.

Safety lighting will be provided throughout the Project, to provide a visible means of identifying trespassers.

The Contractor's supervision staff will also monitor the effectiveness of the site security and safety measures on a daily basis, via the Survey of Hazards inspection process, implemented by the Site Manager.

A Security Management Plan will be developed during the early stages of the Project. This plan will cover security risks throughout the entire duration of the Project.

6.8. Visitor Control

Casual visitors to the site will not be permitted due to safety considerations. All visits will need to be scheduled and arranged through the Site Manager or their appointed assistant.

The Contractor will maintain a visitor log book, and all visitors will be required to complete a visitor's induction, sign the register. The Site Manager will ensure that visitors wear appropriate personal protective safety equipment during their visit.

All visitors will be escorted by the Contractors personnel.

6.9. Media Enquires

High profile projects can attract media attention. If handled poorly, adverse media attention can result. The Contractor must understand that all media enquires must be directed to the Principal's Representative.

As part of the site induction all site personnel will be advised that any media enquiries should be directed to the Contractor's Management Team who will advise the Principal's Representative accordingly.

The Principal's Representative may provide written consent for the Contractor to respond to media enquiries.

7. project administration, program and time management

7.1. Document Management

Aconex

Aconex is to be used as the document management system for the Project. Aconex provides a platform for the transfer of all correspondence, design documents and Contractor documentation. All correspondence must be issued via Aconex.

Operation and Maintenance Manuals

Operational and maintenance manuals will be provided to the satisfaction of Dexus and relevant stakeholders. The information contained in the manuals will indicate the operating sequence, the operation and function of all plant and equipment under both automatic and manual control, and will be supported by all necessary plant and system lay-out drawings, key diagrams of the services, controls, circuits and wiring diagrams applicable.

7.2. Meetings

Meeting Schedule

The Contractor will coordinate, minute and attend weekly/fortnightly meetings with the Principal and other representatives as required. The meeting agenda will be developed in collaboration with the Contractor and the Principal. The Contractor will prepare and issue the minutes within 48 hours of the site meeting.

Coordination Meetings

A number of meetings will be required to ensure the construction activities are progressing in accordance with Dexus and any relevant stakeholder requirements. The Contractor will provide a representative at these meetings, who will provide a co- ordination interface with the Construction Team.

These meetings may include:

- Enabling Works Meetings
- Communication Meetings
- Commissioning Meetings
- Logistics Meetings

7.3. Construction Program

A construction program will be further developed based on the tender construction program submitted with the tender.

The program is the primary tool to identify the key procurement activities, design and construction activities on the Project. Regular discussions and workshops with the design team, subcontractors and suppliers will be used to adjust and monitor the construction program to ensure the project objectives are achieved.

The Site Manager will actively review the program on a weekly basis and implement strategies to ensure the project objectives are met or improved upon.

The Contractor shall provide a fortnightly look ahead programme weekly.

Items for Inclusion in Construction Program

The construction programs will identify the following activities but will not be limited to the following:

- Authority Approvals
- Appointment of major subcontractors
- Commencement and completion dates for design activities
- Commencement and completion dates of construction activities
- Dated for milestones and contractual completion dates
- Provision and approval of shop drawings, samples or other product data
- Submission and review periods to the Principal's Representative
- Install and removal of noise / vibration / air quality and other construction monitoring devices or equipment
- Any approvals, certificates and restrictions imposed by Authorities
- Any off-site activities such as fabrication, manufacture, shipping and delivery
- Procurement of major plant
- Identify when samples will be provided for Principal approval
- Logical relationships between activities
- Lead times and Lags
- Critical path activities
- Supply of furniture and equipment
- Key interface points including works outside the building line (including roadworks or cross overs)
- Commissioning, final inspections and handover dates and durations
- Existing services shutdowns
- Supply of draft and final operating and maintenance manuals and instructions
- Supply of as-built and installed information
- Principal training
- Contractor's rectification of defects

Submission to the Principal's Representative

The construction program will be issued to the Principal's Representative within 14 calendar days of contract award. The program will be submitted in the following formats;

- Adobe PDF

On a monthly basis or whenever directed by the Principal's Representative, the construction program will be updated. The revised will take into account any changes or instruction from the Principal's Representative. These changes may include the following;

- Significant change in scheduling
- Instruction from the Principal's Representative
- Extensions of time granted by the Principal's Representative,
- Actual progress made,
- Variations,
- Any other changes to the activities.

The revised program will be issued after receiving any such instruction. Detailed programs for specific activities will be submitted to the Principal's Representative for review, as required.

7.4. Site Diary

A site diary will be maintained by, which will record;

- General progress and significant events
- Subcontractors and number of personnel on site
- Temperature and weather conditions
- Meetings, visits and inspections
- Delays
- Unusual events
- Accidents and near misses

7.5. Works as Executed Drawings

Works as executed drawings will be progressively produced as works are completed. The drawing print size will match that of the contract drawings and be submitted in both CAD and PDF format.

The format of the drawings will need to be agreed with NSHH.

8. project specific requirements

The following has been identified as site specific requirements to this Project, further methodology may be required to address each issue.

8.1. Mobilisation

After the award of Contract:

- Submit site-specific Work Health and Safety, Quality Assurance and Environmental/Waste
- Management Plans as detailed in this Construction Management Plan
- Liaise with Council and local stakeholders to brief them on the upcoming works and program
- Let primary subcontract trades and advise the Principal's Authorised Person of all subcontractors to be engaged
- Prepare a Dilapidation Survey, as detailed in this Construction Management Plan
- Confirm Site Representatives and 24 hour contact person
- Confirm location of site facilities and amenities
- Submit to the Principal's Authorised Person complete compliance documentation including
- WorkCover Certificate of Currency

8.2. Traffic Management

Traffic management of the site will be implemented and monitored.

8.3. Site Facilities

A site office and workers facilities/amenities will be established within the site, in accordance with WorkCover requirements. Quality facilities will set a standard and level of expectation for the workforce on site. The expectation will be that accommodation and amenities for the construction workforce will be provided in demountable site sheds and will include;

- Construction Workers site accommodation;
- Male & Female ablution facilities;
- Multi-purpose induction, training and meeting room;
- First Aid facility; and
- Covered walkways and access stairs.

The capacity of the above site accommodation and amenities will be further expanded as construction progresses and workforce numbers increase on site and to suit the construction sequence. The contractor may lease and establish a project office in a commercial space in close proximity to the site. The commercial space may also be used as a separate area for the Principals representative, employees and consultant's office requirements.

8.4. Temporary Fencing and Hoardings

Upon possession of the site, the Contractor will review and adjust/replace the perimeter hoarding to secure the site in accordance with WorkCover requirements.

The Contractor will establish a daily inspection regime of the hoardings.

It will be a contractor requirement that all graffiti is removed within 24 hours.

8.5. Parking

The contractor is to allocate a location for contractor parking that aligns with the specific project requirements and staging.

For construction vehicles entering the site, it will be clearly stated in the site induction that vehicles must not obstruct roads, driveways and escape routes from the building or fire protection equipment.

All speed limits must be strictly obeyed.

8.6. Noisy or Disruptive Works

Although this is only an isolated requirement, the Contractor will implement best practice for reducing noisy and disruptive works throughout the entire construction duration.

Noise and Vibration Management Plan details how the works will be managed to fall within the maximum noise level.

During the methodology development, no activities have been identified which may breach this criterion. Should any activities arise that may be noisy or disruptive, the Contractor will liaise with Dexus and the relevant stakeholders to coordinate the best times to compete the works.

8.7. Disruption to Local Business

The Contractor will consider local businesses when completing the works on site. It is important to understand the importance of maintaining business continuity for local businesses. The Contractor will liaise with the local businesses if they believe the works will affect their operation.

8.8. Dust and Airborne Contaminants Control

Construction dust can increase the threat of infection that exists for patients within a hospital and also effect critical research projects, as they can be more susceptible due to their illness.

Some of the infections which can be caused from construction dust include:

- Aspergilla
- Bacilli

The Contractor will develop a Dust Management Plan to identify all potential hazards of dust generation and detail mitigation measure to control the production, distribution and migration of construction dust. The Dust Management Plan will be developed in consultation with criterion. Should any activities arise that may be noisy or disruptive, the Contractor will liaise with Dexus. The contractor is responsible for the management and minimisation of air-borne dust and contaminants associated with:

- Wind borne (exposed surfaces & stockpiles);
- Vehicles and associated Movements; and
- Construction actives including, demolition, site preparation and construction activities and alike.

The contractor will be responsible for managing the dust and air borne contaminates control and suppression which could include the following;

- If possible, the prevention of air-borne contaminants via utilization of alternative equipment & processes
- Locating equipment away from fresh-air intakes and openings to the building
- If possible, the minimization of dust & air-borne materials via physical barriers
- Use of water suppression during demolition, cutting & removal of materials from site
- Covering of stockpiles & using water to prevent dust.
- Utilisation of full perimeter screens/scaffolding with shade cloth, or filter media.
- Existing ground covering & hard stands to be left sealed and maintained by the Contractor
- Utilisation of mobile water points, when there is the potential for air borne dust and contaminates.
- Continual review and improvement of site processes undertaken
- Maintain a clean and safe work site.
- Utilisation of tarpaulins on trucks arriving and leaving the site
- Tarps on any stockpiles to be employed when not in use
- Utilisation of enclosed truck staging areas when loading & unloading materials.
- Correct maintenance of diesel and petrol equipment. This includes but is not limited to generators, cranes, and forklifts, plant and alike.

8.9. Non Smoking Policy

It is expected the Contractor willintroduce a non-smoking policy on the site. The non-smoking policy will be part of the site induction.

8.10. Principal Access

Works around occupied portions of the existing hospitals buildings will be kept clean and clear to minimise nuisance to the occupants and ensure their safety.

Prior to undertaking works around these areas, the Contractor will liaise with Dexus and Local Business and Residents as required.

The Contractor will provide the Principal's Contractors with access to complete maintenance works where access is required though the site. During this time, the Contractor will need to comply with any WHS requirements.

8.11. Helicopter Management

Due to the proximity of the Royal North Shore Hospital, the Ambulance Service New South Wales (ASNSW) may need to be contacted prior to the positioning of any cranes. Red obstruction lights may need to be placed at the extremities of the boom and at the highest point.

An aviation report may also need to be prepared, with any conclusion of the report documented in a Helicopter Management Plan if deemed necessary.

9. site layout and logistics

A detailed study of the proposed building design will need to be undertaken to further develop and define a practical, efficient and cost effective construction methodology. In most circumstances, conventional and well-established construction methodologies can be adopted for this project. Based on the initial planning, sequencing, programming and development of materials handling strategies, on the concrete framed building with a façade, the methodology should take into consideration the time allocated to deliver the Project.

The key focus of the construction methodology should revolve around the notion of constructing the concrete structural frame expeditiously and clearing the floors to allow the services and partition installation to commence at the earliest possible time. The façade installation will closely follow the formwork removal to provide early weatherproofing to the building and allow the fit out activities to continue at pace.

A developed programme and methodology around this objective will need to be applied to provide a balanced approach to the aspects of time vs. cost to arrive at what can be considered to be the optimum construction strategy and methodology.

9.1. Site Accommodation

Initially the site office and amenities will be established within the confines of the site. This accommodation will cater for a site crew of what could be expected during the piling and bulk earthworks activity.

The site accommodation will be kept tidy with a cleaning regime and daily disposal of food scraps to designated bins to prevent pest infestations.

9.2. Hoarding

Once the Contractor takes possession of the site, the Contractor will establish a perimeter hoarding to secure the site in accordance with WorkCover requirements. A hoarding plan will be developed for the project and gantry locations further investigated by the appointed contractor.

During the piling works, a temporary chain wire or similar will be employed to secure the site. The nature and staging of these works may require numerous fencing relocations, which a temporary type fence is most suited to.

Prior to the excavation progressing, a fixed Class B hoarding will be installed around the perimeter of the site, to provide overhead protection for pedestrians while lifting materials onto the site from within work zones. The hoarding will be designed and installed to take vehicle impact should a vehicle crash into the hoarding.

This will have signage and provide minimal impact to the public and will be regularly maintained and repaired as required during the works. Daily inspection regime of the hoardings will be implemented. All graffiti shall be removed within 24 hours.

9.3. Materials Handling and Cranage

As with all major construction projects the setup of efficient materials handling processes for the development is key to reducing the overall construction timeframes, therefore minimizing the impact on surrounding properties and the road network.

The materials handling and cranage principles may require modification once contractor input and commercial constraints are applied. A detailed cranage analysis will be undertaken by the contractor to determine the type, size, position and quantity of cranes required for the most efficient material handling solution for the development.

The following are general materials handling principles proposed during construction works;

- The contractor may require tower crane/s throughout the development. The possible locations of each crane include the lift core or outside the tower perimeters;
- Tower crane/s may service the unloading of construction materials including concrete, reinforcement steel, cabling, electrical and mechanical plant, ductwork, façade panels, roof structures, fit out materials and other general materials;
- Materials will need to be unloaded from vehicles located in allocated construction zones along the boundary. The construction zones will need to maintain access to existing roads and car parks;
- It is likely a concrete pump may be located within the construction zones and within the building structure to pump concrete to constructed core and slabs;
- A materials hoist is likely to be erected to service access and egress for the workforce and minor materials to upper floors.

9.4. Materials Storage

Materials storage is valuable space on all construction projects. For the NSHH Project, there are limited storage areas available, which can create planning and logistical issues. Development and implementation of detailed construction delivery programs and staging of the works in a way to optimise the available space will be carried out.

During the early phases of the Project, the site fence will be established at the extreme boundaries of the site to allow the major plant to operate safely and efficiently within the site. These major items of plant include piling rig, anchor rig, excavators, trucks and concrete trucks, etc.

Materials will be staged and stored in such a way to promote a clear and safe work site. As the Project progresses storage areas could become a premium and will require detailed planning by the Site Manager. At all times, materials are to be stored within the confines of the site.

9.5. Rubbish Removal

A waste management strategy will be implemented in accordance with a Waste Management Plan. The contractor will be responsible for maintaining a clean and safe work area on site. Rubbish bins will be provided to all works areas and will be regularly removed to a central skip bin or other location for collection and transport from the site. Bins may be removed via the material hoists or by crane, depending on the phase of the project.

Towards the completion of the Project and during internal works, wheelie bins may be used to remove materials from the floors.

10. construction risks and mitigation measures

10.1. Early Risk Identification and Mitigation

The approach to risk management is to identify, at the earliest possible opportunity, risk and governance issues that could impact the NSHH Project and seek innovative solutions to minimise them. The risk management process will be consistent with processes that are embedded in management activities throughout the Project.

The Contractor will provide oversight and give assurance that all prudent risk management measures are taken. Senior managers will be responsible for risk management and assurance activities within their spheres of control. Specialist advisers will be appointed where required to support managers and provide additional assurance to the Project Team.

10.2. Risk Management Strategies

The critical objective of a risk management strategy is to minimise the risk exposure of the Principal and other stakeholders to the NSHH Project.

Various risk management strategies will need to be considered to assist in achieving this objective, consisting of the following:

- Identify risks to the Project before they occur; that is, events or circumstances that may have an impact on one or more of the project objectives
- Treatment plans for the key risks are developed and implemented
- Accountability for the management of the key risks is allocated to an appropriate Manager
- Eliminate risks wherever possible or reduce the likelihood of their occurrence through proven mitigation strategies
- New and/or emerging risks are identified and considered
- Assess cost and program effect of any agreed risk

An important aspect of the Risk Management Plan is that it will provide the necessary framework needed to continuously identify, assess and minimise risks throughout the various stages of the Project. This framework also aligns people, processes and interoperates with other organisational systems required for the Project, namely procurement, delivery, program management, stakeholder management, design management, safety and environmental management.

To ensure the successful execution of risk management, a broad level of commitment will be required by all parties and stakeholders to NSHH Project to ensure the effective management of risk is achieved within a collaborative environment.