HEALTH INFRASTRUCTURE

Mitigation Measures

Westmead Hospital Early Works Project

Version Number 1.0

NSW GOVERNMENT

1. Overall Construction Management

- A final Construction Management Plan shall be prepared by the contractor and endorsed by HI addressing all the necessary requirements of construction that form part of this REF approval. This shall include the preparation of:
  - A Noise and Vibration Management Plan which includes measures to minimise the effect of noise and vibration during construction.
  - A comprehensive Soil and Water Management Plan to include measures to control dust, sediment and erosion and how they will be implemented and monitored.
  - A Traffic and Pedestrian Management Plan which will detail how traffic, pedestrian and cyclist access will be managed during the construction works.
  - A Waste Management Plan detailing the procedures for the disposal and classification of waste.
  - A Construction Waste Management Plan prepared in accordance with the EPA guidelines.

2. Community Consultation

- Prior to commencement of work, the Proponent must notify the Council and occupier of any land within 40 metres of the property boundaries of the project site, providing a project description and the expected dates for commencement and completion of construction works and details of the construction program.
- Complaints received shall be recorded and attended to promptly. On receiving a complaint, works shall be reviewed to determine whether issues relating to the complaint can be avoided or minimised. Feedback shall be provided to the complainant explaining what remedial actions were taken.
- The Proponent shall develop a complaints management system and record details of all complaints received and the means of resolution of those complaints. The Complaints register shall be made available to Council on request.
- A site notice board must be located at the main entrance to the site in a prominent position and must include the following:
  - 24-hour contact person for the site.
  - Telephone and facsimile numbers and email address.
  - Site activities and time frames.
- The site notice must be erected no less than 2 days prior to the commencement of works.

3. Construction Work Site

- All relevant legislation and associated regulations must be complied with.
- Best management practices would be implemented as specified by any codes of practice or guidelines that are recognised by the Office of Environment and Heritage.
- Traffic during construction would be managed in accordance with AS 1742.3 - 1996 “Manual of Uniform Traffic Control Devices Part 3: Traffic Control Devices for Works on Roads”.
- Protective site safety fencing would be installed around the construction sites. Vehicle and workforce access points to the construction compounds would be controlled.
- The hours of demolition or construction, including delivery of materials to and from the site, shall be restricted as follows:

  - Between 7:00am and 6:00pm, Monday to Friday, inclusive.
  - Between 8:00am and 1:00pm Saturday
  - No work or deliveries on Sunday and/or public holidays.
- The worksite would be left tidy and rubbish free each day prior to leaving site and at the completion of the works.
- No hazardous materials or dangerous goods would be used or stored on site.
- No plant and equipment storage areas or bunded areas for storage of petroleum, distillate and other chemicals would be permitted within the site.
- The Principal Contractor would meet all workplace safety legislation.
- All materials on-site or being delivered to the site must be contained within the site. The requirements of the Protection of the Environment Operations Act 1997 are to be complied with when placing/stockpiling loose material or when disposing of waste products or during any other activities likely to pollute drains or watercourses.
- The public way must not be obstructed by any materials, vehicles, refuse, skips or the like, under any circumstances.

4. Plant and Equipment

- In accordance with WorkSafe all plant and equipment used in construction work must comply with the relevant Australian Standards and manufacturer specifications.
- No vehicle maintenance would be permitted in the demolition and construction areas except in emergencies.
- All plant/equipment would be inspected daily to avoid leakage of fuel, oil or hydraulic fluid to the work sites. Machinery found to be leaking would be repaired or replaced.
- All machinery would be secured against vandalism outside working hours.
- No batching plant would be permitted on site.

5. Construction

- A copy of the approved and certified plans, specifications and documentation shall be kept on site at all times and shall be available for perusal by any officer of Council.
- The use of any rock excavation machinery or any mechanical pile drivers or the like is restricted to the hours of 8:00am to 5:00pm (maximum) on Monday to Friday only, to minimise the noise levels during construction and loss of amenity to nearby residents.
- If asbestos is encountered, a standard commercially manufactured sign containing the words “DANGER ASBESTOS REMOVAL IN PROGRESS” measuring not less than 400mm x 300mm is to be erected in a prominent visible position on the site. The sign is to be erected prior to demolition work commencing and is to remain in place until such time as all asbestos containing material has been removed from the site to an approved waste facility.
- After excavation, the site is to be left free of debris that may harbour vermin.

6. Erosion and Sediment

- An Erosion and Sedimentation Control Plan would be prepared and implemented as necessary and would incorporate appropriate erosion and sediment control measures e.g. socks around inlets, silt fences etc, in accordance with Landcom’s “Managing Urban Stormwater, Soils & Construction Guidelines (The Blue Book)”.

Where over 2,500m^2 of soil is being disturbed as a result of the works, a Soil and Water Management Plan would be implemented.

- Erosion and sedimentation control measures would not be removed until disturbed areas have stabilised.
- Disturbed areas would be stabilised during construction works where necessary and revegetation would be undertaken after works are complete, in line with Landcom's "Managing Urban Stormwater, Soils & Construction Guidelines (The Blue Book)".
- Any excess spoil following construction would be seeded to minimise the likelihood of it being transported offsite through wind or water action. Alternatively, it would be removed off site for disposal in accordance with DECCW, Council and legislative requirements.
- Any damage from construction to the ground surface shall be restored to pre-construction condition on completion of works.
- Any loose material stockpiles would be located within the temporary construction compounds and be protected from possible erosion.

7. Water Quality

- All reasonable and practical measures will be implemented to prevent pollution material entering drain inlets or waterways.

8. Noise and Vibration

- All reasonable and practical steps shall be undertaken to reduce noise and vibration from the site
- The Principal Contractor would use appropriate techniques not entailing excessive cost to meet the Office of Environment and Heritage construction noise and vibration requirements as far as practicable. Reference should be made to the Office of Environment and Heritage "Interim Construction Noise Guideline (July 2009)".
- Construction noise would be attenuated with the use of screening, acoustic enclosures, engine silencing and substitution by alternative processes to reduce noise emission levels from typical construction equipment. In addition to these physical noise controls, the following general noise management measures would be followed.
- Plant and equipment would be properly maintained.
- Equipment would be checked and calibrated to the appropriate design requirements and to ensure that maximum sound power levels are not exceeded.
- Where possible, plant would be strategically positioned on site to reduce the emission of noise to the site, surrounding neighbourhood and to site personnel.
- Unnecessary noise would be avoided when carrying out manual operations and operating plant.
- Any equipment not in use for extended periods during construction work would be switched off.
- Good communications with people living and working in the vicinity of the construction site would be established at the beginning of the project and be maintained throughout the project.
- A Noise Complaints Register would be maintained for the duration of the project. Any complaints would be registered, and then addressed seriously and expeditiously.
- Safe working distances should be observed where possible. Where work is required to take place within these distances, the Principal Contractor shall consult with the affected community member to establish appropriate periods when this work will occur.

- A trial test should be conducted where vibration levels are measured near each vibration sensitive equipment when using construction and demolition equipment. These measured vibration levels should be assessed against the equipment criteria, and operational procedures should be investigated.
- Undertake a thorough review of vibration sensitive instruments within and adjacent the facility and determine the vibration criteria for each of the sensitive instruments, preferable from the instrument manufacturer.
- Vibration monitoring should be conducted for the duration of an earthworks at the nearest hospital receiver and within (or directly adjacent) the most sensitive space.
- Vibration monitoring results would be assessed against the nominated vibration goals and compiled into a report to be provided by the Principal Contractor to the project manager.
- Vibration impacts would be attenuated through the implementation of clearly visible signage including contact details for the Principal Contractor, consultation with relevant occupants of nearest affected buildings and the provision of respite periods where necessary.
- Manage construction program so as to minimise heavy machinery operating concurrently.
- Prepare dilapidation reports on adjacent structures and monitor the effects.
- As far as practical, locate heavy machinery away from nearby sensitive receivers.

9. Air Quality

- Spraying of materials with the potential to become air borne particulates would only be undertaken in still or light wind conditions.
- Community notification would be undertaken where appropriate.
- No burning of vegetation or other materials would be permitted on site or at the construction compound.
- Management of dust prevention strategy is to be developed by the Principal Contractor, detailed in the Construction Management Plan and agreed by the project manager.
- Dust generation during construction activities would be controlled by regular control measures such as on-site watering.
- Areas of open excavation would be kept to a minimum.
- Use of mesh and shade cloth fences would be used around open excavation areas as required to reduce wind velocity and also trap any wind born objects.
- Construction vehicles and equipment would be suitably serviced within the six-month period prior to commencement of construction activities and all necessary maintenance undertaken during construction period. In addition, where practicable, the excessive use of vehicles and powered construction equipment would be avoided.
- Exposed areas would be progressively revegetated as soon as practical.
- Vehicle wash down areas would be established to ensure all mud and soil from construction vehicles is not carried onto public roads.
- All vehicles involved in the excavation and/or demolition process and departing the property with demolition materials, spoil or loose matter must have their loads fully covered before entering the public roadway.
- Mud deposited on the road network due to truck movements to and from the site would be either prevented or cleaned up immediately.

10. Waste Management

- All waste generated by the project, shall be beneficially reused, recycled or directed to a waste facility lawfully permitted to accept the materials in accordance with the Office of Environment and Heritage “Waste Classification Guidelines (2008)” and the Protection of the Environment Operations Act 1997.
- Where available, recyclable site and construction waste would be recycled in accordance with the NSW Government’s “Waste Reduction and Purchasing Policy (WRAPP guidelines)”. Waste oil would be sent to approved recyclers.
- The type and volume of all waste materials (e.g. excavation material, green waste, bricks, concrete, timber, plasterboard and metals) would be estimated prior to demolition and construction with the destination specified either for on-site re-use or recycling, or off-site re-use or recycling and as a last resort disposal at a licensed waste facility.
- Where possible non-contaminated excavated material would be incorporated in the earthworks for the proposed development.
- No burning or burying of wastes would be permitted on site.
- Cleaning out of batched concrete mixing plant would not be permitted within the construction area.
- Non-recyclable waste and containers would be regularly collected and disposed of at a licensed landfill or other licensed disposal sites in the area.
- Any bulk garbage bins delivered by authorised waste contractors would be placed and kept within the property boundary.
- Waste management practices for the Proposal would follow the resource management hierarchy principles embodied in the Waste Avoidance and Resource Recovery Act 2001. These practices include: avoid unnecessary resource consumption; recover resources (including reuse, reprocessing, recycling and energy recovery); and dispose (as a last resort).

11. Heritage and Archaeology

- Should any heritage relics or sites be discovered during construction they shall be reported to Health Infrastructure. Any proposal to disturb any suspected relics or heritage sites may require consultation with the Office of Environment and Heritage.
- Should any evidence of Aboriginal relics be discovered during construction they shall be reported to Health Infrastructure. Any proposal to disturbance suspected relics or Aboriginal heritage site may require consultation with the Office of Environment and Heritage. All work is to cease on site until the relevant permit is received or advice is provided by Health Infrastructure that work can recommence.
- Excavation along the western border of the study area should be monitored by a suitably qualified archaeologist for evidence of the 1902 tramline. If any such evidence is uncovered work should cease in the vicinity of that evidence whilst it is being recorded by the archaeologist. A s140 permit will not be required as such monitoring can be undertaken under a 139(4) Exception and a recording of the results of the monitoring maintained.
- An historical archaeological induction should be provided to all employees, contractors and subcontractors engaged on the project on the significance of relics and that it is an offence under the NSW Heritage Act 1977 to disturb or excavate a relic without a permit.

12. Utilities and Services

- Prior to commencement of construction activities, any services near the building site which may be impacted by the works would be accurately located.

13. Contamination

- The proposed works should be undertaken in accordance with the conclusions and recommendations of the Contamination Assessment, Remediation Action Plan and Hazardous Building Materials Survey prepared by JBS&G.
- Should any new information come to light during construction works which has the potential to alter previous conclusions about site contamination then the Principal Contractor must be immediately notified, and works must cease in the affected area and any exclusion zone. Works must not recommence on the affected area until the affected area is remediated in accordance with an approved Remedial Action Plan, and a Validation and Monitoring Report together with a notice of completion of remediation that has been submitted to and approved by DECCW.
- Contamination of the site during construction works would be avoided.
- If any contaminated materials or hazardous substances (for example, asbestos, polychlorinated biphenyls, synthetic mineral fibre, lead dusts, paint containing lead and ozone depleting substances) were encountered during demolition and construction then safe work method statements and appropriate documented practices would be implemented.
- Any contaminated materials or hazardous substances would be classified first and then stored, transported and disposed of in accordance with DECCW requirements at a DECCW licensed waste facility.
- Asbestos removal and management in NSW is regulated under the Work Health and Safety Act 2011 and the Work Health and Safety Regulation 2017. The handling of asbestos and asbestos work must be carried out in accordance with the following documents published by the NOHS Commission in August 1988, as in force from time to time (Clause 259):
  - “Guide to the Control of Asbestos Hazards in Buildings and Structures [NOHSC: 3002 (1988)]”.
  - “Code of Practice for the Safe Removal of Asbestos [NOHSC: 2002 (1988)]”.
- Monitoring of the capping and gas ventilation systems by a suitability qualified environmental consultant should be undertaken prior to, during and following the construction works. The monitoring works should be documented in a report to demonstrate ongoing compliance with the EMP and document rectification works to enable revision of the EMP following completion of the construction works.
- A Licensed Class B asbestos supervisor should inspect soil for the presence of asbestos.
- The Regulation requires licensed contractors to contact SafeWork NSW of each bonded asbestos removal project of 10m^2 or more.
- Any contaminated material (i.e. lead paint) would be classified first and then stored, transported and disposed of in accordance with DECCW requirements at a DECCW licensed waste facility.
- An Unexpected Finds Protocol would be established as part of the detailed Construction Management Plan and include appropriate responses to report and manage the discovery of unexpected contaminated materials.

14. Traffic

- The Principal Contractor is to prepare a Traffic and Pedestrian Management Plan. Traffic control personnel will be provided by the Principal Contractor during operating hours, or as advised by the Principal Contractor within their Traffic and Pedestrian Management Plan. The Plan is to:
  - Provide safe and uninterrupted access for pedestrians and vehicles accessing the construction site and hospital site.
  - Ensure maximum safety of site personnel, pedestrians, cyclists, commuters, and drivers.
  - Minimise environmental nuisance and impact as a result of construction traffic.
  - Ensure construction traffic does not unduly interrupt existing traffic flows on the local road network.
  - Safe operation of buses and other transport services during construction on adjacent roads.
  - Have no vehicles arrive at the site, without prior arrangement, outside the approved working hours.
  - Encourage site workers to utilise local public transport system and car sharing wherever possible.
  - Timely and effective implementation of traffic management measures.
  - Maintain access at all times for hospital and stakeholder's deliveries.
  - Fulfilling the Council and the Roads and Maritime Services requirements.
- Vehicles operating to, from and within the site shall do so in a manner which does not create unreasonable or unnecessary noise or vibration.
- Public roads and access points will not be obstructed by any materials, vehicles, refuse skips or the like, under any circumstances.
- Construction workers are to be instructed not to park within Hospital grounds.
- Pedestrian and vehicular passage to and around the site will be maintained, or alternate routes determined where necessary, and be defined by clear signage.
- Temporary hoarding appropriate to the interaction between pedestrians and construction works (as per SafeWork requirements and Australian Standards) will be constructed to prevent unauthorised access to the Site.

15. Tree Protection

- Undertake appropriate management measures during demolition to reduce risk of harm to any potentially roosting bats, if present. Dismantling the buildings gradually, including removal of roof tiles to expose the roof cavity to render them undesirable as roosting habitat for microbats, thereby encouraging them to re-locate.
- The proposed works should be undertaken in accordance with the conclusions and recommendations of the Arboricultural Impact Assessment prepared by Tree Management Strategies.
- The Project Arborist must confirm with spray paint and or florescent tape the trees to be removed.
- Tree protection fencing is to be erected to ensure their preservation throughout construction. The fence needs to be erected throughout construction and may be dismantled when landscaping begins. The Project Arborist must certify the protection measures are installed in a practicable location to the specifications prior to commencement of construction.
- The Project Arborist must inspect all trees to be retained bi-monthly to ensure tree protection measures are being adhered to and the health of all trees is not being adversely affected.

- The Project Arborist must be notified in the event any disturbance within the TPZ of trees to be retained is required.
- Upon completion of construction the Project Arborist will certify that the health and condition of all trees to be retained have not been adversely affected by the development.
- Tree removal work to be undertaken in accordance with the relevant Australian Standard for the Pruning of Amenity Trees, using a qualified Arborist (minimum Australian Qualification Framework (AQF3) Level Arborist).
- Plant 37 trees on the Westmead Campus

16. Other Requirements

- Works-as-executed drawings are to be forwarded to Health Infrastructure and City of Parramatta Council for information purposes at the completion of the project.