
# PRELIMINARY CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Library Retrieval System and Storage Building and Thomas Street Building Bulk Excavation

University of Technology, BROADWAY

Project No: 02078-S-09

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UNIVERSITY OF TECHNOLOGY SYDNEY

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# 1 INTRODUCTION

This Preliminary Construction Environment Management Plan (CEMP) has been prepared by University of Technology, Sydney (UTS) for the UTS Library Retrieval System (LRS) and Storage Building and the Thomas Street Building Bulk Excavation located on the UTS Broadway Precinct at the corner of Jones and Thomas Streets. This Preliminary CEMP has been prepared to identify the relevant standards and regulations that would be adhered to and identifies the management processes and mitigation measures that would be implemented in order to ameliorate adverse construction impacts.

The 4,680 square metre site is bounded to the north by Thomas Street and to the west by Jones Street.

The LRS building is an underground building which will be coverd by turf until final landscaping is undertaken on the completion of the Thomas Street Building.

It is currently anticipated that construction would take approximately three years. The mobilisation of works is likely to commence in September 2011 with the completion of the building by April 2013.

This Preliminary CEMP forms part of the Project Application and has been prepared to cover construction management of the site during demolition, bulk excavation and construction works. A more detailed CEMP will be prepared by the Building Contractor once appointed and prior to Construction Certificate (CC) being issued.

# 2 OBJECTIVES

The objectives of the CEMP are to:

- Ensure that the works are carried out in accordance with appropriate environmental statutory requirements;
- Ensure that works are carried out in such a way as to minimize impact to the neighbouring areas;
- Ensure that works are carried out in such a way as to minimize potential environmental degradation by the implementation of best environmental practice;
- Ensure that all personnel engaged in the works comply with the terms and conditions of the CEMP;
- Ensure that no change is made to the CEMP without written permission of the Project Manager;
- Respond to changes in environmental and physical conditions during the proposed works through review and monitoring and control programmes in consultation with the Project Manager or their nominated representative(s); and
- Ensure that corrective actions are completed in a timely manner.

# 3 BUILDING DESCRIPTION

This Preliminary Construction Environment Management Plan (CEMP) has been prepared by University of Technology, Sydney for the UTS LRS and Storage Building located under Alumni Green and the excavation associated with the basement levels of the Thomas Street Building on the Broadway Precinct site at the corner of Jones and Thomas Streets. The 4,680 square metre site is bounded to the north by Thomas Street and to the west by Jones Street.

The LRS and Storage Building is an underground building which will be turfed over until final landscaping is undertaken with the completion of the proposed Thomas Street Building. The proposed building will incorporate a library automated book storage and retrieval system, associated plant and loading areas to serve the facility and two levels for UTS general storage.

The building is located to the north of UTS Building 2 which will be refurbished in the future to accommodate the new library when the existing Blake Library is relocated from the Haymarket Precinct. The LRS facility will serve as a book vault for the new library.

Bulk excavation will be undertaken for the Thomas Street Building to the north of the LRS Building. Type B hoardings will be installed on the Thomas Street and Jones Street elevations. Other hoardings will be installed on the eastern and southern elevations. These hoardings will prevent unauthorised persons from entering the construction site. All hoardings will be structurally certified by an appropriately qualified practising structural engineer. Treatments of hoardings will be in accordance with the design approved (D/2010/2139) by the City of Sydney Council on the 28 January 2011 (as indicated in **Error! Reference source not found.** of the Environmental Assessment). Pedestrian access to the campus will be maintained in accordance with the approved Concept Plan.

# 4 DESCRIPTION OF WORKS

## 4.1 Early Works

The existing site for the LRS and Storage Building on the Thomas Street boundary is currently used by Lipman Builders as a construction site office and staging area for the multipurpose sports hall now nearing completion. It is proposed that the excavation of the future Thomas Street Building is undertaken concurrently with the LRS and Storage Building excavation, as early works to minimise construction disruption and potential damage to the LRS and Storage Building from later building works.

## 4.2 Excavation & Construction Scope

The proposed excavation and construction works associated are summarised as follows:

- Perimeter bored piling, removal of existing sub-structures, bulk excavation of basementl.
- Construction of basement
- Construction of building
- Public domain works and adjacent footpaths

A specific CEMP will be created by the contactor for these works.

## 4.3 Site Establishment and Security

Site establishment will include the establishment of site contractor's offices, mess and toilet facilities, vehicle access, vehicle loading and unloading, lay down areas, establishment and maintenance of on-site work areas. Exclusion zones, including fenced exclusion zones to protect the adjoining buildings, will be set up. Site establishment will be constrained to the site and if required to gantries over the footpath.

The Contractor will ensure the security of all active work areas, heritage buildings and vacant buildings to ensure the safety of the public and protection of the works.

### 4.3.1 Tree Protection

There is a stand of trees along the northern Thomas Street boundary between the two ramps with another two trees adjacent to Ramp CB01 and central to the site. These trees have been approved for removal under the subject Concept Plan Approval.

Street trees along Jones Street and Thomas Street adjacent to the site are to be retained and appropriate protection measures will be implemented.

## 4.4 Environmental and Safety Controls

Environmental and safety controls shall be installed by the Contractor prior to the commencement of the bulk excavation and construction works.

These will include but not be limited to:

- Development of a construction methodology;
- Security measures (fencing and gate access);
- Occupation health and safety measures (personal protective equipment, first aid supplies, signage and barriers if needed); and
- Environmental management measures (spill kits, booms, storm water control, dust control).

## 4.5 Protection of Existing Buildings

Barriers/fencing is to be placed around the existing buildings and structures to create protection and/or exclusion zones as required.

The location of the fencing will be submitted by the Contractor and approved by the Project Manager prior to the works commencing.

Site induction and tool box talks will be held by the Contractor to inform site personnel and visitors of the location and requirements for the protection of the existing structures. Work Method Statements shall be developed by the contractor for works in close proximity to the existing structures.

## 4.6 Disconnection and Blocking of Site Services

After consultation with the appropriate utility companies, services will be disconnected/made safe as necessary prior to the commencement of any demolition and recycling works; comprising:

- Disconnect gas supply and provide for future re-connection;
- Disconnect existing ‘house services’ sewers and protect existing sewer trunk main;
- Disconnect most existing stormwater connections and implement new temporary stormwater strategy, for management of stormwater run-off during the period of demolition and recycling, bulk excavation and construction; and
- Disconnect existing communications services and implement protection to existing services transiting the site.

## 4.7 Removal of Material from Site

A Stage 1 environment site assessment concludes that there are no hazardous materials on or below the site. There will be no Hazardous Waste. Waste from the site classified as General Solid Waste (non –putrescible) and will be disposed of at a suitable NSW DECCW (EPA) licensed landfill in accordance with the criteria in the Waste Classification Guidelines 2009. Virgin Excavated Natural Material (VENM), which is suitable for reuse, will be reused on site or relocated to another site for reuse. Details of location of excavation materials to be transported will be provided when contractor appointed.

## 4.8 Bulk Excavation

The contractor undertaking the excavation must comply with OHS Act 2000, OHS Regulations 2001, and associated Codes of Practice.

The bulk excavation will be undertaken using equipment in accordance with the contractor's work methods and safe work method statement.

## 4.9 Construction

Once the excavation works are complete, the contractor will commence construction. Cranes will be used to handle materials for the installation of the structure, services, and roofs. The crane locations are currently unknown and will be developed further by Building Contractor in a more detailed CEMP with a Proposed Material Handling Schematic and strategy. Temporary perimeter screens and or scaffold will be installed around the building perimeter for safety as the excavation progresses.

## 4.10 Materials Handling

It is envisaged that the majority of materials unloading and loading during demolition and excavation will occur on site however a street construction zone on surrounding streets will be required. Loading zones required to be established on existing roads, will require separate approval from the relevant Authorities.

The Construction Zones will be used to park trucks for the purpose of:-

- Unloading materials required for the works.
- Load up surplus materials including waste, from the works.
- Standing a concrete pump and concrete trucks required for the works.

To alleviate congestion to the Construction Zones and streets, once a permanent basement is constructed and stripped of formwork, trucks that can be marshalled into the basements will be directed there for unloading and or reloading of materials. Some of these activities will be:-

- Delivery of concrete trucks
- Pick up of rubbish bins
- Delivery of finishing materials such as bricks, blocks, gyprock, light fittings and generally anything else which can practically be hoisted by hoist or builders lifts rather than the tower crane to the designated floor.

## 4.11 Work Program and Working Hours

Construction working hours are to comply with any Authority approvals and with any hours stipulated in the Construction Contract. For the purpose of the construction programme the working week shall be six (6) days per week. Non working days are Sundays and NSW Public Holidays.

The anticipated working hours of construction and work on the development would be as per City of Sydney (CoS) standard conditions, and are quoted below for clarity:-

*"The hours of construction and work on the development must be as follows:*

*(a) All work, including demolition, excavation and building work, and activities in the vicinity of the site generating noise associated with preparation for the commencement of work (e.g. loading and unloading of goods, transferring of tools, etc) in connection with the proposed development must only be carried out between the hours of 7.00am and 7.00pm on Monday to Fridays, inclusive, and 7.00am and 5.00pm on Saturdays, and no work must be carried out on Sundays or Public Holidays.*

*(b) All work, including, demolition, excavation and building work must comply with the City of Sydney Code of Practice for Construction Hours/ Noise 1992 and Australian Standard 2436-1981 'Guide to Noise Control on Construction, Maintenance and Demolition Sites'."*

With these hours, the following is a summary of the Works Program:-

- Excavate for Basements – 6 months
- Construct Structures – 8 months
- Finishing works to buildings – 6 months
- Hard and soft landscapes – 2 months

Some work activities noted above will be occurring concurrently, and it is anticipated that the construction period will be approximately 24 months. Construction is currently anticipated to commence in September 2011.

# 5 ENVIRONMENTAL MANAGEMENT PLANS

## 5.1 Heritage and Archaeology Plan

GML has prepared an Aboriginal and Historical Archaeological Assessment (AHAA) and a Heritage Impact Statement (HIS) and these are provided in Appendices G and H of the Environmental Assessment. Whilst the potential for Aboriginal objects is very low , there is potential for historical archaeological objects. Therefore an investigation will be undertaken in accordance with the recommendations of the AHAA and HIS by GML.

## 5.2 Noise and Vibration Management Plan

Acoustic Logic recommend the following construction noise control measures.

With regard to construction activities, reference will be made to AS2436 – 1981: Guide to noise control on construction, maintenance and demolition sites, which offers detailed guidance on the control of noise from demolition and construction activities. In particular, it is proposed that various practices be adopted during construction, including:

- limiting the hours during which site activities likely to create high levels of noise or vibration are permitted;
- establishing channels of communication between the contractor/developer, Local Authority and Neighbouring properties;
- appointing a site representative responsible for matters relating to noise;
- monitoring typical levels of noise during critical periods and at sensitive locations; and

- All site access roads will be kept even so as to mitigate the potential for vibration from trucks.

Furthermore, it is envisaged that a variety of practicable noise control measures will be employed. These may include:

- selection of plant with low inherent potential for generation of noise;
- erection of barriers as necessary around items such as generators or high duty compressors; and
- siting of noisy / vibratory plant as far away from sensitive properties as permitted by site constraints and the use of vibration isolated support structures where necessary.

Acoustic Logic recommends the following construction vibration control measures.

In order to minimise potential vibration impacts during demolition and construction, it is proposed that various practices be adopted, including:

- limiting the hours of operation of site activities likely to create high levels of vibration;
- monitoring typical levels of construction vibration during critical periods and at sensitive locations; and
- selection of plant and methods with low inherent potential for generation of vibration.

The final CEMP will details noise and vibration mitigation measures when the exact excavation and construction techniques are known.

## 5.3 Air Quality Management Plan

A detailed Air Quality Management Plan shall be prepared by the Contractor prior to the commencement of works. The following air quality management measures will be adopted during the construction works:

- Dust emissions will be controlled by the use of water spraying when required;
- Concrete decks to be kept clean to reduce dust emissions;
- All motorized equipment used on the site will be selected on the basis of its noise performance and will comply with regulatory standards for noise generation;
- High efficiency mufflers are to be installed for major plant items particularly those that would be used for long periods on the project to reduce construction noise;
- Equipment will be operated in a proper, efficient and correct manner which includes proper Odour emissions from the site which could adversely affect air quality or the amenity of the local area to be monitored;
- No materials will be burnt on site; and
- Maintenance in order to control noise and associated exhaust emissions.

## 5.4 Erosion and Sediment Control

An Erosion and Sediment Control Plan is to be prepared by the contractor in accordance with the recommendations in the Statement of Stormwater Drainage in Appendix C of the Environmental Assessment.

## 5.5 Traffic Management Plan

Construction traffic will be managed in accordance with the Construction Traffic Environmental Management Plan by Arup, presented in Appendix L of the Environmental Assessment.

## 5.6 Health and Safety Management Plan

A detailed Health and Safety Management Plan (HASP), which will include a health and safety risk assessment for the planned construction works shall be prepared by the Contractor prior to the CC being issued. The HASP shall include, but not be limited to:

- Name key personnel responsible for site safety;
- Emergency contact details and procedures;
- Identify and describe the risks associated with each operation conducted;
- Describe actions to be taken to mitigate risks and hazards;
- Confirm that on-site personnel are adequately trained to perform their job responsibilities; and
- Describe personal protective clothing and equipment that will be worn by personnel.

## 5.7 Waste Management Plan

A detailed Waste Management Plan (WMP) is to be prepared by the contractor/s associated with the proposed excavation and construction works. The WMP shall include, but not be limited to:

- Name key personnel responsible for waste;
- Name of recycling outlet or site for disposal
- Details of all materials to be excavated and volumes.
- Details of materials and volumes to be discarded associated with the construction stage of the development.
- Identification of materials to be reused or on-site recycling methods.