Construction Environmental Management Plan

Kensington Lane Student Accommodation Blocks 3B, 3C & 10

FRASERS BROADWAY PTY LTD

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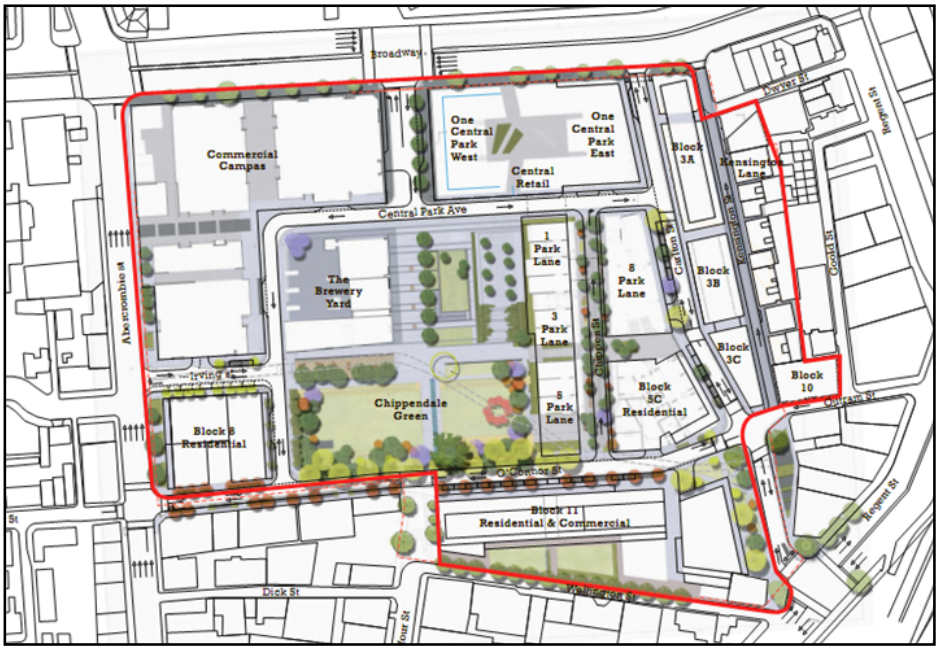
Contents

Introduction

This Construction Environmental Management Plan (CEMP) has been prepared by Frasers Broadway Pty Ltd for Blocks 3B, 3C and 10. The Central Park development site is located on the southern edge of the Sydney Central Business District (CBD). The Kensington Street Precinct is located on the eastern edge of the site and comprises a mixture of building types including the former administration center of the Carlton United Brewery, terraces on Kensington Street and proposed new build elements.

The location of Blocks 3B, 3C & 10 is on the eastern side of the Central Park development site and is generally bound by Carlton Street (west), Outram Street (south), Kensington Lane and Goold Street (east), refer to the site plan below. These Blocks comprise of 3 buildings, 3B (ground plus 7 storey). 3C (ground plus 5 storey) and Block 10 (ground plus 5 storey). Blocks 3B/3C is separated from Block 10 by Kensington Lane.

This CEMP will form part of the Project Application for Block 3B, 3C & 10 and has been prepared to cover the construction management of the site during the excavation and construction works. A more detailed CEMP will be prepared by the Contractor prior to the commencement of the works.



Site plan showing the overall Central Park development site, with Blocks 3B, 3C and 10 shown on the eastern side of the site.

Objectives

The objective of the CEMP is 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 minimise impact to the neighbouring areas, including residents, offices and retail uses.
- Ensure that works are carried out in such a way as to minimise 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 authorisation from Frasers Broadway
- Respond to changes in environmental and physical conditions during the proposed works through review and monitoring and control programmes in consultation with Frasers or their nominated representative(s);
- Ensure that corrective actions are completed in a timely manner.

Building Description

The project involves the construction of 3 buildings for use as student accommodation and retail. Block 3B comprises of a ground plus 7 storey new build building; consisting of 153 beds, ground floor retail, garbage and bicycle storage. Block 3C comprises of a ground plus 5 storey new build building; consisting of 58 beds, ground floor retail and a rooftop external common area for residents. Block 10 comprises the retention of the existing façade plus a new build ground plus 6 storey building, consisting of 56 beds, ground floor retail, garbage and bicycle storage.

There is no basement car parking provided below Blocks 3B, 3C or 10, however a basement electrical substation is proposed to the north west corner of Block 3B. The buildings will be connected in to the heated hot water loop of the site wide Central thermal Plant (CTP). The buildings will also be connected in to the site wide Black Water Treatment Plan (BWTP)

Block 3B & 3C Structural Engineers isometric view as seen from the western elevation

Block 10 Structural Engineers isometric view, including façade retention as seen from the south eastern corner of the site

Description of Works

Excavation and Construction Scope

The proposed excavation and construction works associated with Blocks 3B, 3C and 10 are summarised as follows:

- Site clearance and demolition of any residual in ground building material
- Removal of Block 10 existing roof and retention of existing façade
- In ground excavation for Block 3B substation
- Installation of piles, capping beams and ground floor slab construction
- Construction of new building superstructure, façade, services and fit out
- Public Domain works within and around Blocks 3B, 3C and 10

Site Establishment and Security

Site establishment will include the establishment of site contractor's offices, tea rooms 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 adjacent heritage buildings will be set up.

The fencing for the construction works will be defined in a Fencing and Security Plan to be prepared by the Contractor and approved by Frasers prior to the commencement of the works. The Fencing Plan shall clearly identify all access points onto the site.

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.

Environmental and Safety Controls

Environmental and safety controls shall be installed by the Contractor prior to the commencement of any onsite works.

These will include but not be limited to:

- 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)

Protection of Heritage Buildings

Barriers/fencing is to be placed around and over heritage items to create protection and/or exclusion zones as required.

The location of the fencing will be submitted by the Contractor and approved by Frasers 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 heritage structures. Work Method Statements shall be developed by the contractor for works in close proximity to the heritage structures.

Bulk Excavation

The bulk excavation will be undertaken using equipment in accordance with the contractor's work methods and safe work method statements and OHS Act 2000 and OHS Regulations 2001.

Secant pile walls with temporary anchors may be installed to rock level to form the perimeter of the substation basement walls. Once the secant pile wall is installed, then excavation for the substaion can commence. It is envisaged that the contractor will use excavators to remove any materials other than rock up to the rock level. The rock will then be either saw cut around the perimeter of the excavation using excavators fitted with rock saws or alternatively will be ground back using cutters attached to the excavators. During the latter process there will be dust minimization works be undertaken on an as needs basis. Bulldozers fitted with rippers will rip up the rock to the final level and excavators fitted with hydraulic hammers will break up the rock. Excavators will then load the material onto trucks for transporting off site.

Construction

Once the excavation works are complete, the contractor will set up a tower crane to serve all 3 Blocks. A mobile crane will be deployed on an as needs basis. The cranes will be used to handle materials for the installation of the structure, services, façade, roofs.

Once the construction of the floor slabs rise past the ground level, temporary perimeter screens will be installed around the façade perimeter of each of the buildings for safety while the floor construction progresses.

Materials Handling

It is envisaged that the majority of materials unloading and loading will occur within the site. All other loading / unloading should be via Kensington Lane. If any loading zones are required to be established on existing roads, the contractor will seek approval from the relevant Authorities. There is also the potential to utilise the forecourt of Block 11 (as yet undeveloped) as a vehicle staging area. There may also be an opportunity to utilise Block 7 (new build portion) as a materials storage area during construction of Blocks 3B, 3C and 10.

Work Programme and Working Hours

The working hours will be in accordance with the conditions of the Project Approval which are as follows:

- Monday to Friday, 7.30am – 5.30pm
- Saturday, 7.30am – 3.30pm
- Sunday & Public Holidays, No work

Environmental Management Plans (EMP)

The excavation and construction works will be undertaken in accordance with the CEMP. The following EMPs are provided separately by other Consultants as part of this PA:

- Heritage Impact statement – Paul Davies
- Stormwater and Sediment Control Plan – Mott MacDonald Hughes Truman
- Construction Traffic Management Plan – Halcrow

Prior to the commencement of construction works, a site specific Health and Safety Plan will be prepared by the Contractor and implemented for the site

This document and the associated reports (noted above) provide the generic conditions which will be augmented by more detail by the Contractor.

Heritage Impact Statement (HIS)

To ensure the adequate protection of the Heritage drain, the following activities will be undertaken:

- Work method statements will be prepared by the Contractor to detail works in the immediate vicinity of adjacent heritage buildings
- Archaeological investigation will be undertaken during the ground remediation works

Noise and Vibration Management Plan

The contractor shall provide a Noise and Vibration Management Plan prior to the commencement of the works.

The following noise management measures will be implemented during the construction works:

- The Contractor shall set up noise and vibration monitors around the site at locations identified by the Acoustic Consultant as sensitive areas and high risk areas.
- Works on site will only be carried out during approved hours
- The Contractor will be responsible for scheduling activities that generate high noise to short term duration wherever possible and practical
- Establishment of site practices and strategic positioning of processes on site
- Establishment of direct communication with affected Parties

Activities that have the potential to produce significant ground vibration include:

- Jack hammering during excavation works
- Dropping of heavy structures
- Piling works

Vibration monitoring will be used to:

- At the commencement of a new activity near a sensitive structure, establish and confirm safe working distances from the sensitive structure
- When activity identified as producing significant ground vibration is occurring within the safe working distance established, continuously record vibration levels at sensitive structures using unattended vibration loggers. These will also provide a visual/audible alarm when vibration limits are approached

- When operating very close to sensitive structures, attended monitoring is to ensure that any preventative action is taken immediately to prevent the targets from being exceeded.

Where a monitor alarm is activated, the following actions shall be undertaken:
- All vibration producing works in the vicinity of the alarm shall cease immediately
- Cause of the exceedence shall be investigated immediately
- If the cause of the event is likely to be caused again, or if another alarm is triggered, then the acoustic specialist should be advised and further action taken place before works recommence.
- One of two courses of action can then follow:

    1. If attended monitoring is established the activity can continue with the attended monitoring confirming that even if the alarm level is exceeded the works can proceed provided the vibration limits are not exceeded

    2. Work practices are modified and attended monitoring used to confirm the vibration limits are being achieved, before returning to unattended monitoring

A register of noise complaints should be maintained by the Contractor.

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 maintenance in order to control noise and associated exhaust emissions;
- Odour emissions from the site which could adversely affect air quality or the amenity of the local area to be monitored

Soil and Water Management Plan

Refer to Stormwater and Sediment Control Plan (SSC) prepared by Mott MacDonald Hughes Trueman as part of the Project Application.

The Stormwater and Sediment Control plan is to be updated and revised by the Contractor (with the approval by the Authority) prior to the commencement of the works and shall include measures to ensure compliance with the Protection of the Environment Operations Act (2000), as amended, and other relevant legislation. The SSC shall include a plan showing the location of the sediment controls to be implemented by the Contractor with the following measures to be adopted:
- Provide temporary drainage channels and detention pondage to appropriately manage stormwater
- Stormwater drain grates will be wrapped in filtration medium. The filtration medium will be periodically cleaned and changed as and when required;

- Diversion drains will be constructed to minimise runoff from rainfall flowing into the works area. Stormwater diversion drains are to be constructed in the vicinity of areas to be excavated to minimise water flow into excavations;
- Regular visual inspection of the site drainage system will be undertaken by the Contractor

Waste Management Plan

The Contractor shall prepare a Waste Management Plan (WMP) prior to the commencement of works.

The Contractor shall retain waste records and submit quarterly reports to Frasers. As a minimum, the Contractor shall reuse or recycle 80% (by mass) of the construction waste, or other such quantities as specified with the Planning Approval.

Chemical Management Plan

The Contractor shall prepare the Chemical Management Plan prior to the commencement of works.

Before a product or substance is used for construction activity, the Contractor shall review the Material Safety Data Sheet (MSDS) to determine if the product or substance is classified as hazardous. All workers involved in the use of products classified as hazardous are to be provided with information and training to allow safe completion of the required tasks. As a minimum standard, all safety and environmental precautions for use listed on the MSDS are followed when using the substance and included in their Safe Work Method Statements. No products or substances, including chemicals or fibrous materials, are brought to the workplace without a current MSDS. All products and substances to be brought to the workplace are to be documented.

All storage and use of hazardous substances and dangerous goods is to be in accordance with the MSDS and legislative requirements. Hazardous substances and dangerous goods are not to be stored in amenities, containers (unless properly constructed for the purpose) sheds or offices.

Disposal of chemical substances shall be in accordance with OH&S and legislative requirements.

Traffic Management Plan

The Contractor shall prepare a Construction Traffic Management Plan (CTMP) prior to the commencement of works. The CTMP will be based on the CTMP prepared by Halcrow in support of this Project Application.

Traffic will generally be managed at the site in the following way:
- Traffic Entry and Exit will generally be via Kensington Lane, Outram Street, Regent Street or Carlton Street (the latter depending on the completion of the adjacent Block 5 construction) .
- Designated transport routes shall be communicated to all personnel
- Strict scheduling of vehicle movements is to occur to minimize vehicles waiting off the site
- Site workers are to utilise local public transport and car sharing wherever possible

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 commencement of construction. The HASP shall include, but not be limited to:

- Name key personnel responsible for site safety;
- Emergency contact details and procedures, both during and after site hours;
- 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;
- Describe personal protective clothing and equipment that will be worn by personnel;