# **CONSTRUCTION MANAGEMENT PLAN**

**BLOCK 11 Wonderland** 

Revision 3 May 2017

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# **Contents**

| 1.       | Introduction      |  | 1  |
|----------|-------------------|--|----|
|          | 1.1               | Purpose  | 1  |
|          | 1.2               | Scope of this Plan   | 1  |
|          | 1.3               | Abbreviations  |    |
|          | 1.4               | Precedence   |    |
|          | 1.5               | Interface with other Project Plans and Procedures                          |    |
|          | 1.6               | Document Control   |    |
| 2.       | Construction Ma   | nagement Approach and Framework  |    |
|          | 2.1               | Approach to Construction Management  | 3  |
|          | 2.2               | Management System Framework  |    |
| 3.       | Peenoneihility ar | nd Accountability  |    |
| 3.<br>4. |                   | n Planning   |    |
| ₩.       |                   | <u> </u>   |    |
|          | 4.1               | Site Working Hours   |    |
|          | 4.2               | Out of Hours Procedures  |    |
|          | 4.3               | Dilapidation Survey  |    |
|          | 4.4               | Surveys  |    |
|          | 4.5               | Heritage Requirement   |    |
|          | 4.6               | Services Identification, Connections and Diversion                         |    |
|          | 4.7               | Traffic and Pedestrian Management  |    |
|          | 4.8               | Public and Property Protection   |    |
|          | 4.9               | Protection of New Work   |    |
|          | 4.10              | Authority/ External Conditions and Approvals                               |    |
|          | 4.11              | Adjoining Owners / Stakeholders  | 8  |
| 5.       | Site Layout and   | Logistics  |    |
|          | 5.1               | Hoardings and Overhead Protection  |    |
|          | 5.2               | Site Access and Egress   |    |
|          | 5.3               | Site Security  |    |
|          | 5.4               | Temporary Waterproofing  |    |
|          | 5.5               | Emergency and Site Communications  | 10 |
|          | 5.6               | Construction Zones, Material Lay Down and Storage Areas                    | 11 |
|          | 5.7               | Site Accommodation and Amenities   |    |
|          | 5.8               | Truck Wash Facilities  |    |
|          | 5.9               | Concrete Placement Methodology   |    |
|          | 5.10              | Exclusion Zones  |    |
|          | 5.11              | Tower Cranes   |    |
|          | Crane             | removal will be the reverse of the process detailed above for installation |    |
|          | 5.12              | Hoists   |    |
|          | 5.13              | Rubbish Removal  |    |
|          | <i>5.14</i>       | Loading Platforms  |    |
|          | 5.15              | Scaffolding, Screens & Edge Protection                                     |    |
|          | 5.16              | Temporary Hydraulics   |    |
|          |                   | Wash-down facility for construction vehicles                               |    |
|          | 5.17              | Temporary Electrical   |    |
|          | 5.18              | Fire Control Measures  | 14 |
| 6.       | Construction Me   | thodology  | 14 |
|          | 6.1               | Staging  | 14 |
|          | 6.2               | Demolition   | 15 |
|          | 6.3               | Excavation   | 15 |
|          | 6.4               | Structure  | 15 |
|          | 6.5               | Façade   | 15 |
|          | 6.6               | Services and Finishes  |    |
|          | 6.7               | External Works   |    |
|          |                   |  |    |

| 7. | Programme  |   | 17 |
|----|------------|---|----|
|    | 7.1        | Head Contract Programme   | 17 |
|    | 7.2        | Construction Programme  | 17 |
|    | 7.3        | Short-term Programmes   | 17 |
| 8. | Appendices |   | 19 |
|    | 8.1        | Appendix 1 – Site Access and Egress (Emergency Evacuation Plan) | 19 |
|    | 8.2        | Appendix 2 – Site Establishment Plans                           | 20 |
|    | 8.3        | Appendix 3 – Materials Handling Plan                            | 26 |
|    | 8.4        | Appendix 4 – Temporary Services Plan                            |    |
|    | 8.5        | Appendix 5 Site Accommodation Plan                              | 50 |
|    | 8.6        | Appendix 6 – External Hoarding Plan                             |    |
|    | 8.7        | Appendix 7- Environmental Controls Plan                         |    |
|    | 8.8        | Appendix 8 – Scaffold Plan                                      |    |

#### 1. Introduction

### 1.1 **Purpose**

The purpose of this Construction Management Plan (Plan) is to describe how the Project Management team shall implement and conduct its allocated site management responsibilities during the Construction phase of the [Insert Project Name] (the Project) to ensure all construction is properly facilitated, integrated and coordinated so as to deliver certainty to the objectives of the Project.

This plan forms part of Multiplex Internal Control Framework and Management System which is accredited to:-

- AS/NZS ISO 9001:2008 Quality Management System,
- AS/NZS ISO 14001:2004 Environmental Management System, and
- AS/NZS 4801:2001 Occupational Health and Safety Management System.
- » Federal Safety Commission Accreditation Scheme

Copies of these certifications can be found on the Multiplex Operating System (BOS) 'Document and Forms Library'

#### 1.2 Scope of this Plan

This Plan provides a holistic approach that:

- Advises how the project management team will comply with the requirements of the contract relating to construction
- Defines the project objectives and targets of particular relevance to the construction phase
- Describes constraints specific to the construction phase and the project in general
- Describes the process for the identification and control of risks specific to the construction phase
- Details the proposed strategy for the construction phase, with particular regard to establishment resourcing, site organisation and construction controls.

#### 1.3 **Abbreviations**

The abbreviations used in this Plan are outlined in the table below.

| ABBREVIATION | DESCRIPTION                              |
|--------------|--|
| AEG          | Australasian Executive Group             |
| BM           | Multiplex                                |
| BOS          | Multiplex Operating System               |
| MSOP         | Management System Operational Procedures |
| PCG          | Project Control Group                    |
| WBS          | Work Breakdown Structure                 |

Figure 1 Abbreviations

#### 1.4 **Precedence**

Where ambiguity is detected between the procedures and requirements in this plan and the MSOPs located on BOS, then the procedures nominated in this Plan will take precedence.

### 1.5 **Interface with other Project Plans and Procedures**

This Plan should be read in conjunction with the MSOP and Management Plans detailed in Section 2.2 of this Plan.

The MSOP referenced in this Plan are confidential documents, and as such, will not be issued outside of Multiplex. However, they will be made available, for the purpose of surveillance and audit.

#### 1.6 **Document Control**

This Plan will be monitored and necessary changes will be identified in the table over the page and communicated to all relevant personnel. Amendments and updates to this Management Plan will be made if the strategies and actions described in the plan no longer meet desired outcomes, or if improvements to existing measures can be made.

Electronic distribution of this Plan will be made to those detailed on the distribution listing on Aconex.

| REVISION | DATE     | DESCRIPTION                        | PAGE | REVIEWED BY | APPROVED BY |
|----------|----------|------------------------------------|------|-------------|-------------|
| 0        | 26/09/16 | Draft                              | ALL  | SL          | DM          |
| 1        | 7/10/16  | Methodologies and appendices added | ALL  | SL          | DM          |
| 2        | 03/11/16 | Appendices amended                 | ALL  | SL          | DM          |
| 3        | 4/05/17  | Minor Updates                      | ALL  | YG          | DM          |

Revision Table Figure 2

### Construction Management Approach and Framework 2.

### 2.1 **Approach to Construction Management**

Multiplex works with its clients to integrate quality controls and strategies at the earliest opportunity.

Multiplex's approach to construction management is underpinned by a mature and disciplined culture which is embraced by its people and driven by what its leaders do and say, Multiplex encourages its people to learn from each other's experiences and share best practice.

We take enormous pride in the buildings that we construct. Our teams are made up of highly skilled and enthusiastic individuals, who all want to produce an outcome that satisfies and where possible, exceeds the Client's requirements. We are judged by the quality of our product, not just on the day of completion, but in the years that follow, so getting it right is essential

Because our reputation rests on the quality and ongoing functionality of our buildings ensuring that they operate at a high level of quality in the years following completion is an imperative, not only for our clients' business but also for our business.

### 2.2 **Management System Framework**

Multiplex has a management framework which is applied throughout the business and on all projects it undertakes. The construction management documentation forms part of this System Framework and maintained in electronic format on BOS.

The structure of the overall Management System is explained below.

| ELEMENT                    | CONTENT  |  |
|----------------------------|--|--|
| Internal Control Framework | <ul><li>» Operating Environment</li><li>» Risk Assessment</li><li>» Control Activities</li></ul>   | <ul><li>» Information and Communication</li><li>» Monitoring Activities</li></ul>  |
| Polices                    | <ul><li>» Work Health and Safety</li><li>» Environmental</li><li>» Quality</li><li>» Risk</li></ul>  | <ul><li>» Drugs and Alcohol</li><li>» Injury and Rehabilitation</li><li>» Indigenous Engagement</li><li>» Diversity</li></ul>  |
| Operational Procedures     | <ul> <li>» Risk Management</li> <li>» Integrated Management</li> <li>» Quality Management</li> <li>» Design Management</li> <li>» Construction Management</li> <li>» Health and Safety Management</li> </ul> | <ul> <li>Environmental Management</li> <li>Project Administration</li> <li>Bid Management</li> <li>Human Resources Management</li> <li>Planning and Programming</li> </ul>   |
| Management Plans           | <ul> <li>Project</li> <li>Quality</li> <li>Design</li> <li>Work Health and Safety</li> <li>Environmental</li> <li>Emergency</li> </ul>   | <ul> <li>Construction</li> <li>Stakeholder and Communications</li> <li>Risk</li> <li>Commissioning and Testing</li> <li>Traffic Management Plan</li> <li>Construction Noise And Vibration Management Plan</li> </ul> |
| Risk Management            | <ul><li>» Project Risks</li><li>» Trade/Element Risks</li></ul>  | » Management and Trade Action Plans  |
| Forms and Guides           | » As per BOS Document and Forms  | Library  |

Management Framework Figure 3

### Responsibility and Accountability 3.

The management structure and associated roles and responsibilities for Project are outlined in the Project Management Plan.

Similarly, specific roles and responsibilities pertaining to other management disciplines, such as health and safety and the like, are contained in the respective Management Plans.

### **Pre-Construction Planning** 4.

#### 4.1 **Site Working Hours**

Monday to Friday 7:30 am to 5:30 pm Saturday 7:30 am to 3:30 pm No work on Sundays or Public holidays.

#### 4.2 **Out of Hours Procedures**

The "City of Sydney Code of Practice for Construction Hours/ Noise 1992" allows extended working hours subject to the approval of an application in accordance with the Code and under Section 96 of the Environmental Planning and Assessment Act 1979. An application will be put to the council for the extended hours under these codes.

Proposed Extend Hours Subject to authority approval

Monday to Friday 7:00 am to 7.00 pm

Monday to Friday 7:00 pm to 7.00 am (limited to fit out works only)

### 4.3 **Dilapidation Survey**

Prior to commencement on site the Project manager will engage a suitably qualified person to prepare a Pre-Construction Dilapidation Report detailing the current structural condition of all retained existing and adjoining buildings, infrastructure and roads (including the public domain site frontages, the footpath, kerb and gutter, driveway crossovers and laybacks, kerb ramps, road carriageway, street trees and plantings, parking restriction and traffic signs, and all other existing infrastructure along the street) within the 'zone of influence'. Any entry into private land is subject to the consent of the owner(s) and any inspection of buildings on privately affected land shall include details of the whole building where only part of the building may fall within the 'zone of influence'.

#### 4.4 Surveys

A qualified survey team will be utilised throughout the project to ensure works are completed to within building tolerance. "As built" surveys will be completed for all components of the projects structure. These will be kept as a record for the project management team.

#### 4.5 **Heritage Requirement**

MPX will carry out works both within and adjacent to a number of heritage listed structures. Accordingly all works will be carried out as per the requirements of the development consent and in consultation with Urbis in its role as heritage consultant and City Plan Services as the PCA on the Project.

Multiplex have engaged the services of JK Geotechnics who will provide geotechnical assessments prior to commencement of detailed excavation and FRP of building footings and excavation of public domain areas.

#### Services Identification, Connections and Diversion 4.6

#### 4.6.1 **Existing Services**

A number of investigations have been carried out to locate existing services to ensure overall design coordination. Existing services have been over-laid onto a series of drawings which are filed on Aconex. These include MMD-286054-C-DR-00-XX series of drawings on Aconex. Various services providers drawings and MOTT MACDONALD. Before any in ground works commence a service locater will ensure that all services have been identified.

#### 4.6.2 Water

The permanent water supply for the site has already been provided to site from a centralised plant system. There are valve connections located on the northern side of the site ready for connection. There is an existing temporary supply to the site which was previously used by the early works contractor. Degotardi Smith and Partners have provided a Well Point survey- As Built of Ground Water treatment works on drawing 33761WAE04. There has also been a Dial Before you dig (DBYD) survey completed on drawing B11-DBYD-005.

There is an existing water supply to the site which was setup by the early works contractor. This will be adequate during construction activities, Appendix 4- Temporary Services Plan.

#### 4.6.3 Gas

The permanent gas supply for the site has already been provided to site from a centralised plant system. There are valve connections located on the northern side of the site ready for connection. This is shown in B11-DBYD-007.

#### 4.6.4 Sewer

Sewer connection point is as noted on Dial Before you dig (DBYD) survey completed on drawing B11-DBYD-005.

#### 4.7 **Traffic and Pedestrian Management**

#### 4.7.1 Pedestrian

The management of pedestrian traffic in and around the site during the construction process is of critical importance to all parties involved in the Project. Vehicles entering the construction zones must do so with minimal disruption to local traffic. Pedestrian routes will be maintained through the various areas by means of construction hoarding and overhead protection. These hoardings are identified in Site Establishment Plans in Appendix 2 - Site Establishment plans Stage 1,2 and 3.

#### 4.7.2 Vehicular

A Construction Traffic Management Plan (CTMP) has been prepared by Parking & Traffic Consultants in conjunction with MPX to cover the various construction zones, the different stages of construction and their interface with the public and public roads. A number of materials handling plans have also been created that relate to the CTMP. The CTMP is currently with COS for approval; once approval is received on the overall plan MPX will commence preparation of specific Traffic Control Plans (TCP's) for each element of work. These individual TCP's will then be submitted to the relevant authorities for approval prior to works commencing. The materials handling and traffic management plans will identify vehicle entry points, turning circles, lay-down areas, vehicle loading and unloading and vehicle exit points. The CTMP is located separately in project plans folder and the materials handling plans are located in Appendix 3.

#### 4.7.3 **Emergency Access**

Emergency egress routes will be as noted on the site access and egress plan with the site muster point on Chippendale Green the green space on the other side of O'Connor street. All information on emergency egress in the event of an emergency will be issued to Construction Workers (CW's) during the site induction. Ambulance access will be appropriately marked on the Emergency Access and Egress plan and updated periodically as the site develops throughout the Project. Please refer to the Emergency Access and Egress plan in Appendix 1.

#### 4.7.4 Car Parking

Strictly NO PARKING is allowed on the site. All car parking will be on street parking following council parking rules and signs. The use of Public transport or carpooling will be encouraged to minimise impact on parking and the local traffic network.

### 4.8 **Public and Property Protection**

#### 4.8.1 Footpaths, Adjoining Infrastructure and Buildings

There are a number of stages and impacts to the various footpaths surrounding the Block 11 Central Park development. The below is a list of the impacts and safety measures in place by area.

Multiplex will retain the existing A-Class hoarding established around the site boundary with only minor modifications as noted on the attached hoarding plan. All Footpaths that surround the project will be monitored during construction. Any cross over works to the footpaths will be rectified immediately and efficiently to ensure public safety. Any use of temporary ramps will be in accordance with relevant regulations. Any closure of footpaths will be subject to approval from Council via a Permit.

O' Connor St - Multiplex will establish and maintain a construction zone which will be managed by licensed traffic controllers with overhead protection for pedestrians. Multiplex are currently awaiting Council approval for this construction zone.

Wellington St & Regent - At a later stage in the project Multiplex will establish hoarding around Castle Connell to carry out remediation works which will impact pedestrians on Wellington and Regent St, a combination of B-Class and A-Class hoardings will be employed to ensure adequate protection to pedestrians and all works will be subject to COS approval.

In the latter stage of the project Multiplex will be carrying out public domain works to the footpath surrounding the site, these works will be staged to minimise disruption to the public and all works will be subject to COS approval

Adjoining infrastructure and buildings will be protected as required during the construction period and monitored, with site visits from the project's Structural Engineer. Adjacent walls, structures, buildings will be monitored as required via survey points.

#### 4.8.2 Gantries

B-Class Hoarding will be erected along majority of O'Connor Street to ensure public safety. These hoardings will be rated to 10KPa in accordance with WorkCover requirements. They will be installed to protect from overhead activities and properly illuminated for night access. Hoardings will be erected in accordance with the requirements of City of Sydney including submitting documentation and fees necessary for approval prior. Please refer to the Site establishment plans for further information on location ref appendix

#### 4.8.3 **Temporary Works**

Temporary services will be required throughout the project period. These included temporary water, electricity and firefighting measures.

#### 4.9 **Protection of New Work**

MPX will manage the subcontractors to ensure new works are protected until completion of the relevant portion of works.

#### 4.10 **Authority/ External Conditions and Approvals**

### 4.10.1 Council Permits

Multiplex and its Subcontractors will be responsible for obtaining all permits as stipulated under the Council Requirements. These may potentially include footpath closures; permit to stand plant, temporary works, hoisting activity over a public road and the like. Sufficient notice will be given to council to ensure permits are received prior to being required to carry out the works onsite.

### 4.10.2 Road and Transport Authorities

RMS will be consulted on any issues associated with their assets including approvals required prior to any works commencing.

### 4.10.3 Environmental

In accordance with DA requirements, environmental authority approvals for the Project are sought from the Department of Environment, Climate Change and Water (DECCW). All approvals will be verified by the PCA.

Multiplex will implement environmental controls as per the environmental controls mark-up located in Appendix 6 and as noted in the Environmental Management Plan.

### 4.10.4 Other Authority and External Approvals

Multiplex and the Client will actively consult with any other authority that is affected by the Development.

### 4.11 Adjoining Owners / Stakeholders

### 4.11.1 Adjoining Owners Approval

Prior to commencement of works, letterbox drops will be done to keep neighbours informed as required.

### 4.11.2 Services Interruptions and Impairment

To enable the Project to be completed and integrated with the existing central plant systems, a number of project works will require connection to existing systems, including:

- Works on or affecting the substations
- Mechanical systems upgrades
- Communications and security systems
- Wet and dry fire systems upgrades
- Hydraulics systems connections
- Demolition works
- Drilling of piles in the vicinity of existing operating services such as utilities infrastructure.

### 5. Site Layout and Logistics

### 5.1 **Hoardings and Overhead Protection**

In accordance with the Site Establishment Plan, Appendix 2, the site will perimeter will be secured with 2.4m Aclass hoarding on all site boundaries. B-Class hoardings will also be located along O'Connor Street where the site construction zone is established and around the Castel Connell Hotel .

### **External Hoardings**

Hoardings erected will comply with all authority requirements of RMS, or the City of Sydney Council hoarding policy.

### B-Class - Load bearing/10KpA Overhead Protection Hoardings

Overhead protection hoardings (B-Class Hoardings) are identified in Appendix 8. These will allow crane lifting and façade works to occur overhead whilst pedestrians and/or traffic travel beneath.

A number of hoardings will be required to provide 10kPa overhead protection and in some instances load bearing support. Some of the reasons for this are described below:

- Protection/catch-deck on all work face elevations of the Project
- Allow lifting from nominated construction zones with little disruption to public footpaths

### A-Class - External Hoardings

External A-Class hoardings are documented in Appendix .. and consist of a mixture of painted Plywood hoardings, jersey kerbs with plywood lining on top along with ATF panels. Wherever there is a hoarding erected adjacent to a live roadway, jersey kerbs have been selected to separate pedestrians from vehicles. These hoardings will be adjusted in accordance with the particular stage of construction and the activities being performed.

### 5.2 Site Access and Egress

In accordance with the Site Establishment Plan, site entry points are shown clearly at the Gate locations. Main access for all construction workers via Wellington Street pedestrian access point gate 4, shown in Appendix 4- Site Accommodation Plan.

### 5.3 **Site Security**

#### 5.3.1 Site Security Resources

Access to the site will be monitored by security guards who will ensure that no unauthorised person gains access and that all people who are permitted on site are registered and records kept of site attendance.

Multiplex will employ a licensed security firm to provide 24 hour security services on site. This will include the following:

Static Guarding - A fully compliant and professional static security officer will be provided 24 hours a day, seven days a week on the site. Guards will be located at the site entry and exit points on Slip Street and vehicular entry points on Wheat Road, thus providing a controlled and secure site.

Compliance Management - The security subcontractor will provide a compliance operator to operate the SMARTEK compliance system that is commissioned on all MPX sites. The operator inputs all induction paperwork for each person entering the site and provides an ID card with passport style photograph once the person has been inducted. This card carries all their company and personal details including insurances, industry green card and induction details. This card is to be presented each time that person enters the site allowing MPX to have a record of who has come to the site. It also acts as a way of preventing personnel from entering the site without the

necessary insurances. Plant and equipment is also documented in the same way and insurances and maintenance records entered in the system to ensure that all plant is suitable for working on the site.

Access Control – Security guards will be stationed at the open entry gates to provide access control to the site. Each individual entering the site will have his/her ID card scanned by the SMARTEK system hand held scanner, those without an ID card will have to provide an alternate form of ID to verify their identity prior to entering site. Visitors will be required to provide identification and sign the visitors' register at the main site entrance.

Workplace Health & Safety - The security guards at the entry gate control the entry of contractors and check that those entering site are wearing the appropriate PPE for working on a construction site. The security guards will also complete regular patrols of the site and will contact MPX staff should they identify any issues for concern.

Refer to Appendix 1 - Site Access and Egress and Appendix 7 - Materials Handling plans for security guard location points.

#### 5.3.2 Site Fencing

The development site will be fully secured in accordance with the requirements of City of Sydney at all times. Refer to Site Establishment (attached Appendix 1) which indicates the proposed perimeter security proposals.

#### 5.3.3 Site Personnel Access and Egress

Main access for all construction workers into the site will be via Wellington Street.

#### 5.3.4 Lighting

The perimeter of the site is to be illuminated adequately for security. This includes provision to light certain sections of the B-Class and A-Class hoardings. Multiplex will provide access lighting to perimeter scaffolding and scaffold stairs, entry gates etc

Lights in access ways and stairs are to be emergency lights, maintaining safe light levels for exit in case of black out.

#### 5.3.5 After Hours Security

The appointed licensed security firm providing 24 hour security services on site will be responsible for after hours security.

#### Completion 5.3.6

On completion of each area, Multiplex will be locking all doors and implementing a sign in system where any person that wishes to walk into the completed area, must sign in and out via a security guard. This will ensure that if any damaged is caused by the person Multiplex can potentially issue costs to the subcontractor for rectifying damages.

### 5.4 **Temporary Waterproofing**

During the construction phase, various areas will be required to be temporarily waterproofed as to allow the completion of early handover areas or areas affected below.

Most of the temporary waterproofing will occur during the structure stage to assist with the finishing stages.

#### 5.5 **Emergency and Site Communications**

Site communications will be via a 2-way digital radio system. Channel 1 is for general communications, Channel 2 is for Materials Handlings, and Channel 3 is an analogue frequency connected to the push to talk system of the first aid nurse call.

First Aid Nurse Call Stations - A temporary Construction Nurse Call system will be installed as site is established at excavation stage and as the new structure is completed a new call button will be added to each floor. The call buttons are a push to talk type so the worker can talk to the first aider directly, and area supervisors will hear the call over the radio.

Evacuation Alarms - these will be mounted to a number of Nurse call points. These can be set off by anyone but it will be encouraged that workers contact a supervisor prior to hitting evacuation button so Supervisors and Emergency Warden can evaluate the need to evacuate depending on the situation.

### 5.6 **Construction Zones, Material Lay Down and Storage Areas**

#### 5.6.1 **Construction Zones**

In accordance with the Site Establishment Plan (attached Appendix 2) and subject to council approval, the Workzone of the project will be located along O'Connor Street.

The Work Zone will be managed at all times during operation by certified Traffic and Pedestrian controllers. Any Oversize vehicles using the Work Zone will be permitted to obtain a Permit

#### 5.6.2 Material Lay Down Areas

There will be various areas across the site that will be noted as Material Laydown Area, and will be clearly identified to the Subcontracting companies; these areas will change as the project develops. At no stage throughout the project will laydown areas occur outside of the site boundary.

#### 5.6.3 Storage Areas

There will be storage areas on each floor level as the structure is completed. These will be mainly for finishes trades.

#### 5.7 Site Accommodation and Amenities

In accordance with the Site Establishment Plan (attached Appendix 2), the Site Accommodation is located on Wellington Street South West corner for Stage. The sheds are to be installed in stages to accommodate site personnel numbers. Stage 2, will require sheds to be installed to the top of the Stage 1 sheds by utilising the "double decker" gantry. Lastly, ground floor and basement sheds will be built to assist with the numbers and trades shown in Appendix 5 - Site Accommodation Plan.

#### 5.8 **Truck Wash Facilities**

Truck Wash facilities will be established as per the Environmental Controls plan in Appendix 7.

#### 5.9 **Concrete Placement Methodology**

Preliminary concrete pumping zones have been developed by MPX and are noted on the attached materials handling plans for the convention and tower works; however MPX will need to further develop these plans based on the equipment being used by the appointed subcontractor for this trade package. Refer to the Materials Handling Plan attached in Appendix 7 Materials Handling & Vertical Transportation

Materials handling on the project will be via tower crane(s), mobile cranes and man-mateirals hoists Refer to Materials Handling Plans in Appendix 3 for a detailed description and plan of all material handling methods, routes and the like including cranes, vertical transportation, hoists and concrete placement.

#### 5.10 **Exclusion Zones**

Exclusion zones will be put in place whilst tower booms are in operation, and any mobile plant such as scissor lifts and mobile cranes are in operation.

#### 5.11 **Tower Cranes**

# 5.11.1 Equipment Selected

Crane 1 –M860D with 70m jib free standing on eight towers.

### **5.11.2** Position

For crane position please refer to the material handling plan.

## 5.11.3 Timing

| CRANE | ERECTION DATE | DISMANTLE DATE |
|-------|---------------|----------------|
| TC 1  | 15-01-2017    | 10-04-2018     |

Figure 4 Cranes

### 5.11.4 Erection

Tower crane erection will be completed from O'Connor Street utilising a Grove 400T with a full road closure and appropriate approvals and traffic and pedestrian diversions in place. The works will be completed over the course of one day, date TBC pending authority approvals.

## 5.11.5 Removal

Crane removal will be the reverse of the process detailed above for installation.

Various mobile cranes will be used throughout the project. These mobile cranes will be set up on O'Connor Street and in a number of locations within the site boundaries, to assist in materials handling requirements. All authority requirements and approvals will be received and all WHS paperwork completed prior to the erection of any mobile cranes. Services investigations and surveys will be carried out on the street before a mobile crane is set up. Some typical mobile crane setup locations can be found in Appendix 3.

#### 5.12 **Hoists**

### 5.12.1 Position

Site will utilise 4 hoists. Hoist 1 will service the South Western portion of the project, whilst Hoist 2 and 3 will service the North Eastern area.

# 5.12.2 Timing

| HOIST | ERECTION DATE | DISMANTLE DATE |
|-------|---------------|----------------|
| 1     | 10/04/17      | 13/11/17       |
| 2     | 06/05/17      | 15/12/17       |
| 3     | 06/05/17      | 15/12/17       |

Figure 5 Hoists

### 5.12.3 Selection Criteria

Hoist 1 Alimak Scando single 20-32 will service levels Basement 1 to Level 10 with a single gate to each level. Add details on capacity

Hoist 2 Alimak Scando twin 20-32 will service levels Basement 2 to Level 14 with twin gates to each level Add details on capacity

Hoist 3 HEK TPM3000T2 is the material hoist which will service levels Basement 2 to Level 14. Add details on capacity

### 5.12.4 Erection

Erection of the Hoist will be conducted via tower crane located on the project

### 5.12.5 Removal

Removal of the Hoist will be conducted via tower crane located on the project

#### 5.13 **Rubbish Removal**

Multiplex will provide 2 bins, with a capacity of 27m3, which is co-mingled rubbish and later sorted by a Waste Management Bin Company. There will be several crane lift able 2m3 bins that are then carried by Fork lift to the larger bin and tipped during structure phase. Subcontractors will provide their own bins for both Structure and fit out, which will be emptied into the main site bins. As structure develops, the same size bins with wheels will be used to push around floors and manage waste. These are then able to be loaded down the hoist or via landing decks and brought down by the Tower Crane.

#### 5.14 **Loading Platforms**

Loading platform locations will be as per materials handling plans- Appendix 3. (Please note final position of loading platforms is TBC and drawings are indicative only) Typically loading platforms will be retractable platforms with a capacity of 4T and internal dimensions of 3m x 4.5m

#### 5.15 Scaffolding, Screens & Edge Protection

### 5.15.1 Scaffolding

Scaffolding will be used on the block 11 project at many stages. Outlined below are the different uses of the scaffold throughout a number of the stages of the Project.

### Site Establishment

Scaffold will be installed in the following areas:

» Access scaffold to site amenities and to the already completed excavation.

### Castle Connell Hotel Demolition and façade remediation works

During the demolition MPX will install scaffold as access and edge protection to Castle Connell Hotel

### Construction

See Appendix 8 for a detailed explanation of various scaffolds to be erected throughout the construction phase.

### 5.15.2 Screens

Current construction methodology does not include the use of construction screens however this is to be reviewed in conjunction with the façade and formwork sub-contractors post tender.

### 5.15.3 Edge Protection

All edge protection will be installed to each part of the perimeter and all slab penetration edges in accordance with WorkCover practices and regulations.

#### 5.16 **Temporary Hydraulics**

The Temporary Hydraulics Subcontractor will supply, install and maintain temporary hydraulic services to the site for the duration of works in accordance with the temporary services layout included within the subcontract documentation. Temporary hydraulic services will include:

Pump out and water treatment facility for ground and stormwater on site

Connections to site temporary sheds and lunch rooms (noted in Appendix 5- Site Accommodation Plan)

Drinking fountains at areas nominated throughout the site

Water points at areas nominated on the temporary services mark ups

An ice machine to be located at the first aid shed

Washout drums are drainage at locations agreed and approved with MPX and adhere to all relevant standards, Environmental Management Plans etc.

### 5.17 Wash-down facility for construction vehicles Temporary Electrical

The Temporary Power Subcontractor will design, install commission and regularly test temporary power, lighting, and nurse call as per layout in Appendix 4. The temporary services are to service site accommodation, demolition and construction works and will be subject to change from time to time. In addition to the temporary power boards identified, accessway lighting will be required at all times.

#### 5.18 **Fire Control Measures**

The scope for the provision of fire control measures is outlined in the subcontractor agreement, and includes the following:

- Supply varying types of temporary fire extinguishers at all required work faces throughout the Project to the satisfaction of BM
- Include for signage, brackets, regular maintenance and testing, tagging, refurbishing, delivery, removal and occasional relocation to suit changing site conditions
- Active fire hydrant lines during construction phase as per code requirements

Existing hydrants to be used and maintained within the site to use in the event of an emergency

### **Construction Methodology** 6.

### 6.1 **Staging**

The sequence of construction will be:

- Detailed excavation
- Structure
- Services

- Façade
- Fitout
- Landscaping and public domain works

#### 6.2 **Demolition**

Minor demolition works and façade remediation works to the Castle Connell Hotel are a provisional sum item in MPX's scope of works and further detail on methodology will be provided when scope extent is agreed.

#### 6.3 **Excavation**

Excavation will be carried out via approximately 3x 15 tonne machines with supporting bobcats and trucks for spoil removal. Excavation will commence on the Western side of the project and progressively work east. Load out of spoil will take place from the Eastern side, near the Connor Castle Hotel. Order of events for excavation will be as follows:

- 200 tonne crane parked near the Connor Castle Hotel to load excavation machinery into the hole.
- Excavation machinery commences dig working West to East.
- Stock pile of spoil is made at eastern end, in the hole.
- Excavators work together with long reach excavator at ground level to remove spoil from hole.
- Trucks and trailers will enter the site from Kensington St to remove spoil.
- 200 tonne crane parked near the Connor Castle Hotel to load out excavation machinery.

#### 6.4 **Structure**

The structure will be predominantly built via insitu concrete with conventional formwork. Horizontal concrete will be post tensioned and conventional reinforced slabs. 3x jump forms will advance the lift cores. All other vertical concrete will insitu concrete. Concrete will be pumped via 2x concrete placing booms and trailer or line pumps which will be parked in the Eastern construction zone within the site boundary. Tower crane/s and hoist/s will support the formwork reticulation and loading of material. Structure sequencing will be as per the below;

- Footings and thickenings will chase out the excavation, working West to East.
- 3x jump forms will be erect and commence self-climbing promptly after the core bases have cured.
- Basement 2 slab on ground will be poured in 3x pours. West, central & east.
- Vertical elements immediately follow the slab pours and will be poured independently to slabs.
- Basement 1 slab will be divided into 6x separate pours. 2x north-south running permanent movement joints will divide the structure into 3 zones, each of those will be divided by a construction joint running East-West.
- Ground floor will be constructed in a similar fashion to basement 1, however due to the profile which includes numerous steps and folds, some additional pours maybe required.
- L1 through to the roof will be built with 3 pours, broken by 2x permanent movement joints running North to South.

#### 6.5 **Façade**

The façade consists of numerous elements. This includes a typical tower curtain wall on all elevations Levels 3 to Roof. In addition to this aluminium sliding shading screens and terracotta cladding.

#### **Services and Finishes** 6.6

Fit out works will typically commence with services rough-ins and wall partitions. Following this, more detailed areas including bathrooms and kitchens will be completed before finishing trades such as carpet layers and painters follow through. The corridor and common area finishes will be the last areas to be built to reduce the potential for damages to completed works.

A night shift is proposed to complete relatively silent fitout works these would include plaster work, setting, services fitoff and painting. Any noisy works will be completed between 7.30am and 5.30pm being the current approved working hours.

#### 6.7 **External Works**

Landscaping and public domain works will be staged to minimise disruption to the public and will be planned and staged in accordance with Council requirements

### 7. **Programme**

### 7.1 **Head Contract Programme**

The current program sits at 77 weeks gross.

### 7.2 **Construction Programme**

Construction program has various miles stones that will be a measure on how the project is tracking. BMC have implemented the following milestones as follows:

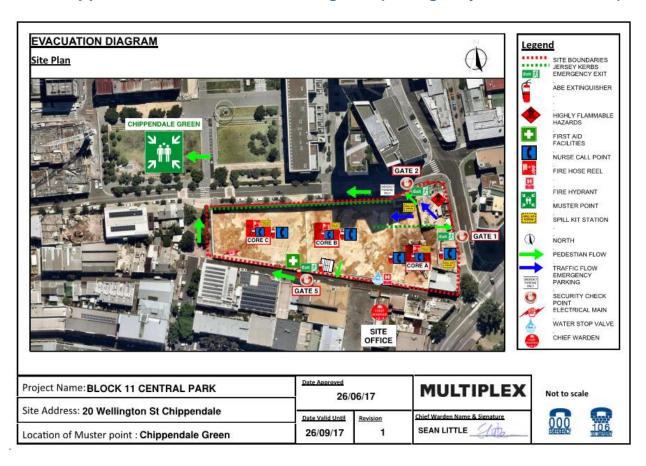
- Site Possession
- Concrete Structure Complete
- Façade Complete
- **Practical Completion**

### 7.3 **Short-term Programmes**

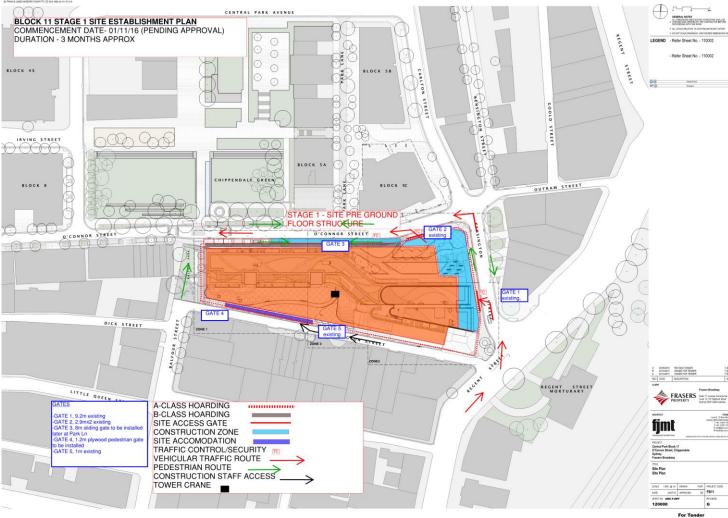
Short term programs will be implemented, monitored and updated each week, month and quarter to ensure that the overall construction program is adhered too. Monitoring of the short term programmes will highlight how the project is tracking, and if any focussed planning is required to be undertaken to certain tasks.

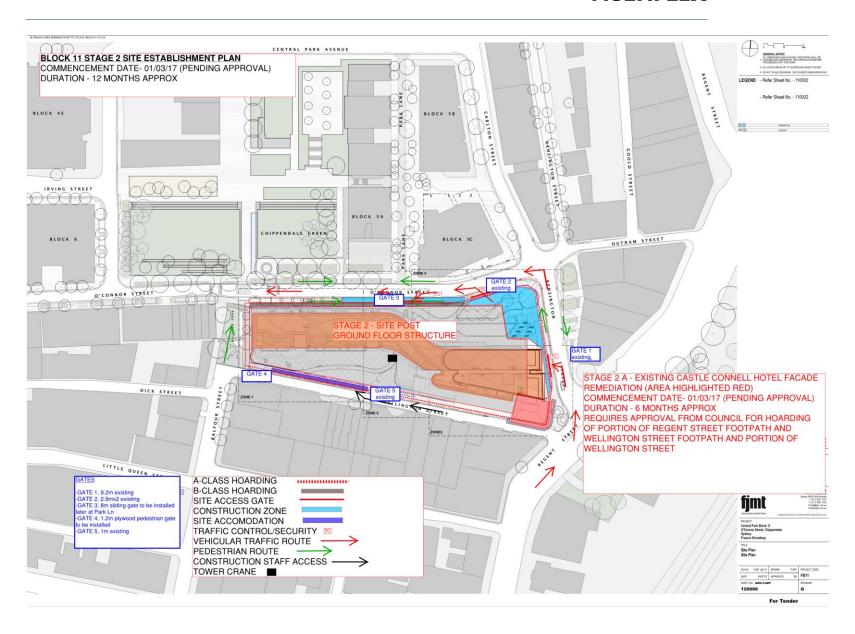
# 8. Appendices

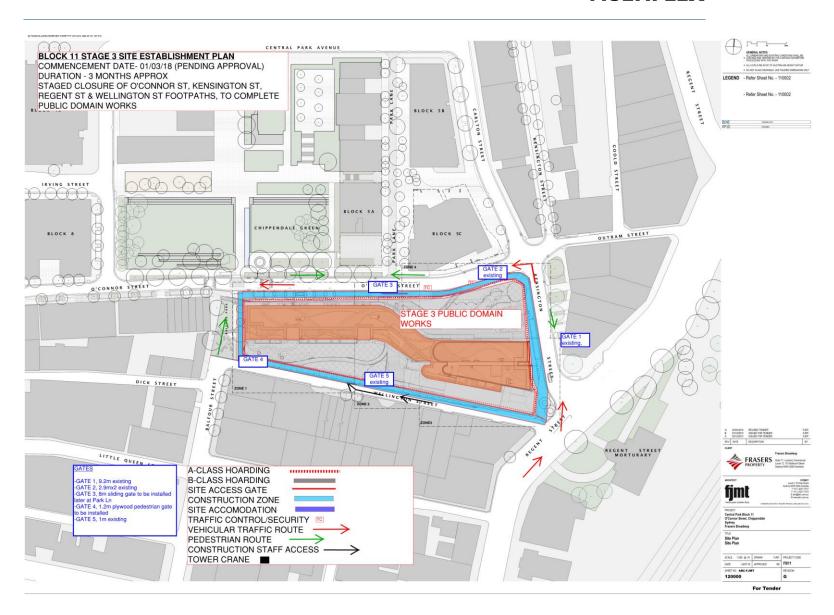
# 8.1 Appendix 1 – Site Access and Egress (Emergency Evacuation Plan)

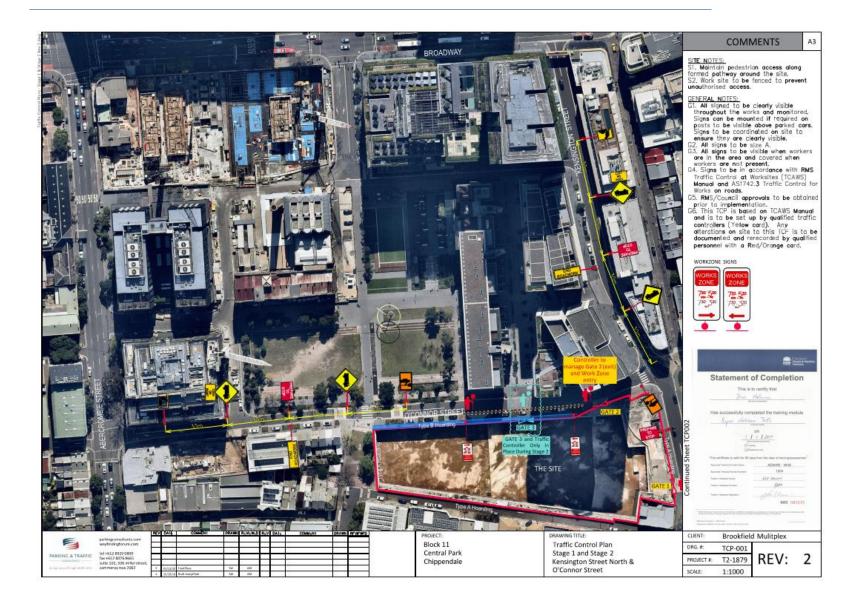


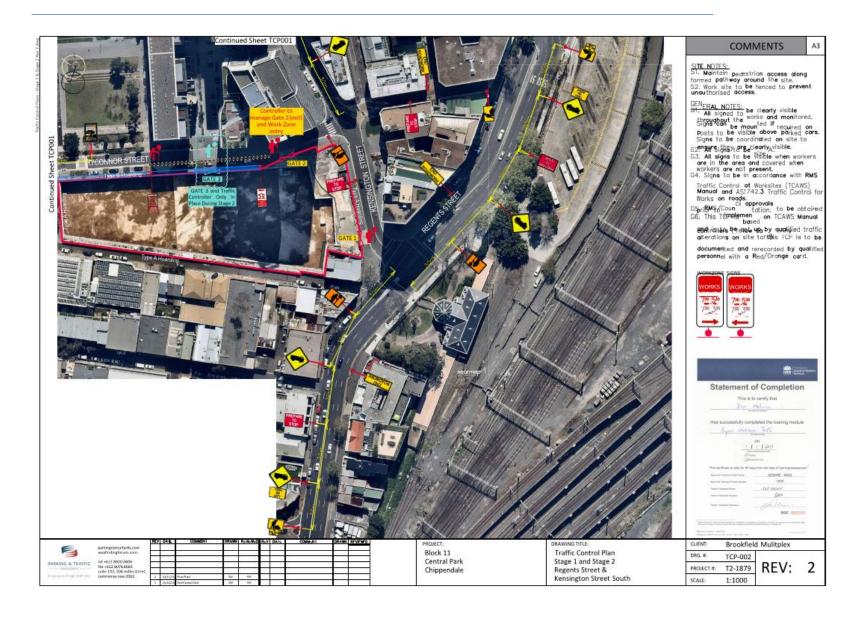
# 8.2 Annandiv 2 - Sita Fetablishment & Traffic Control Plane

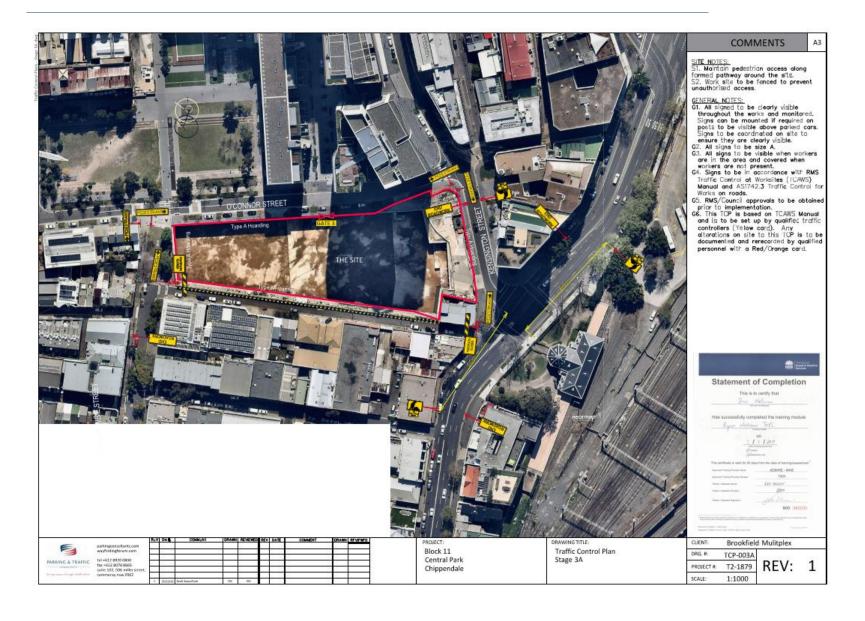




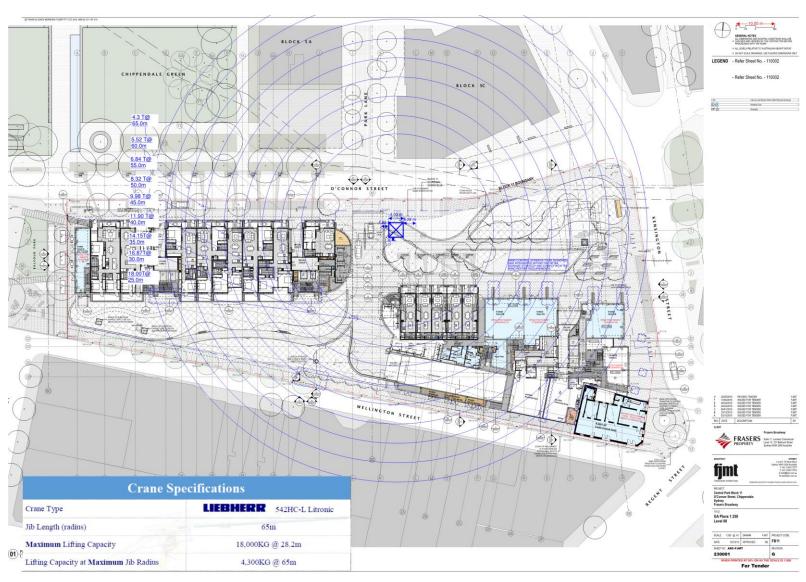


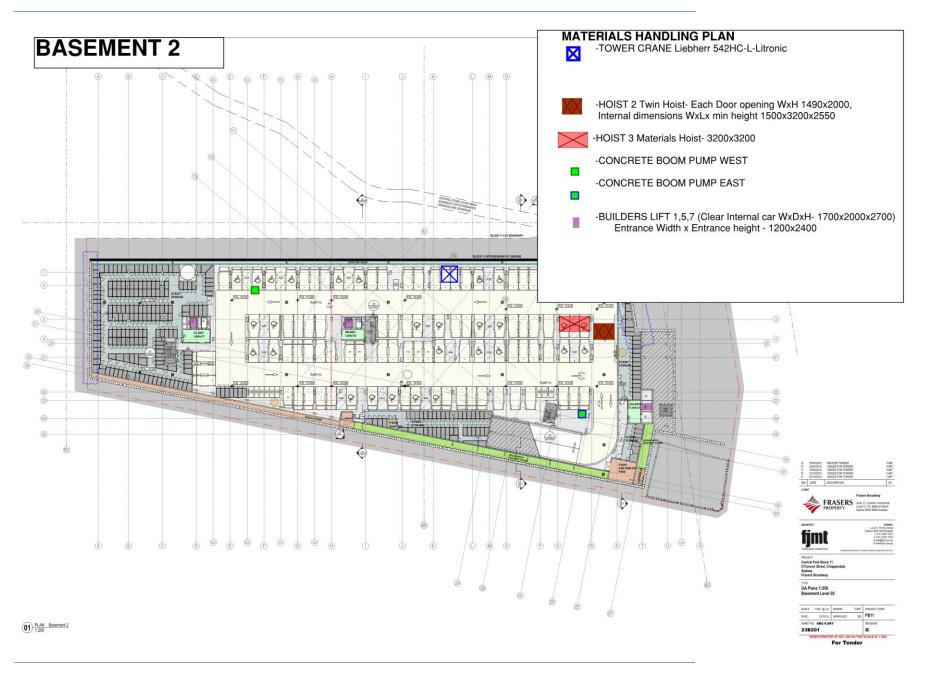


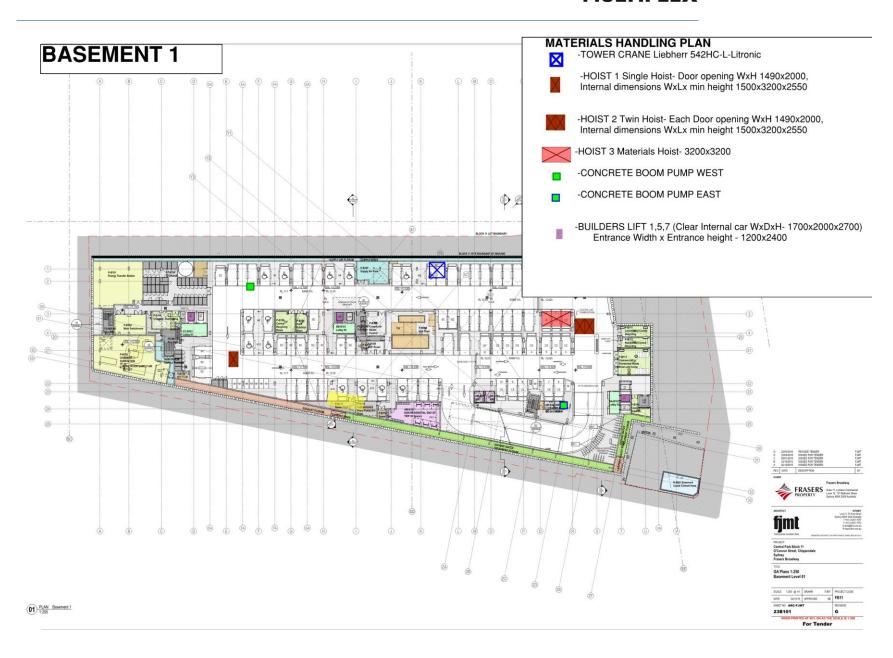


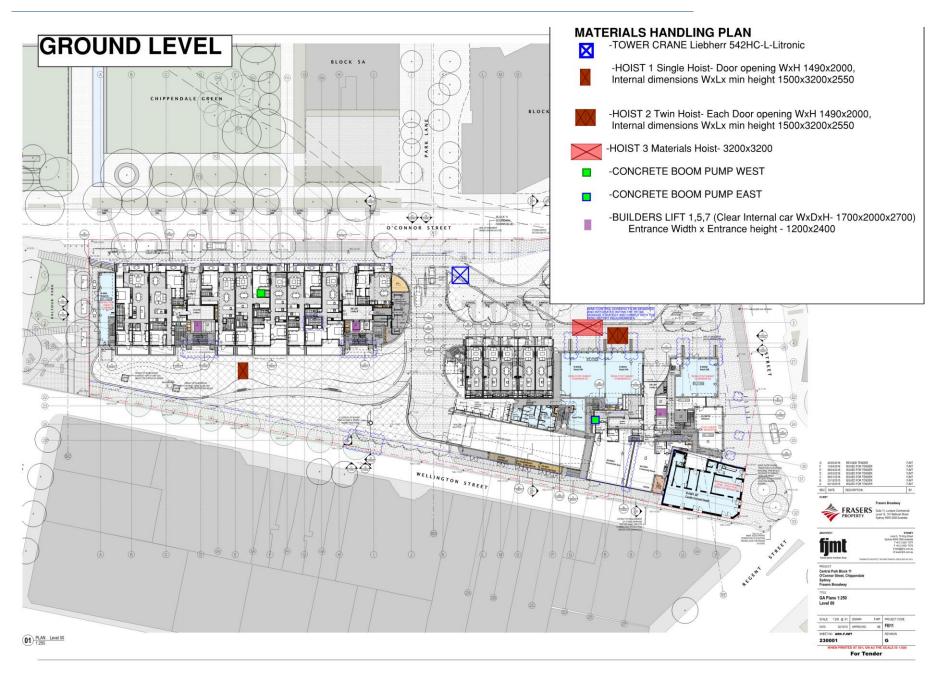


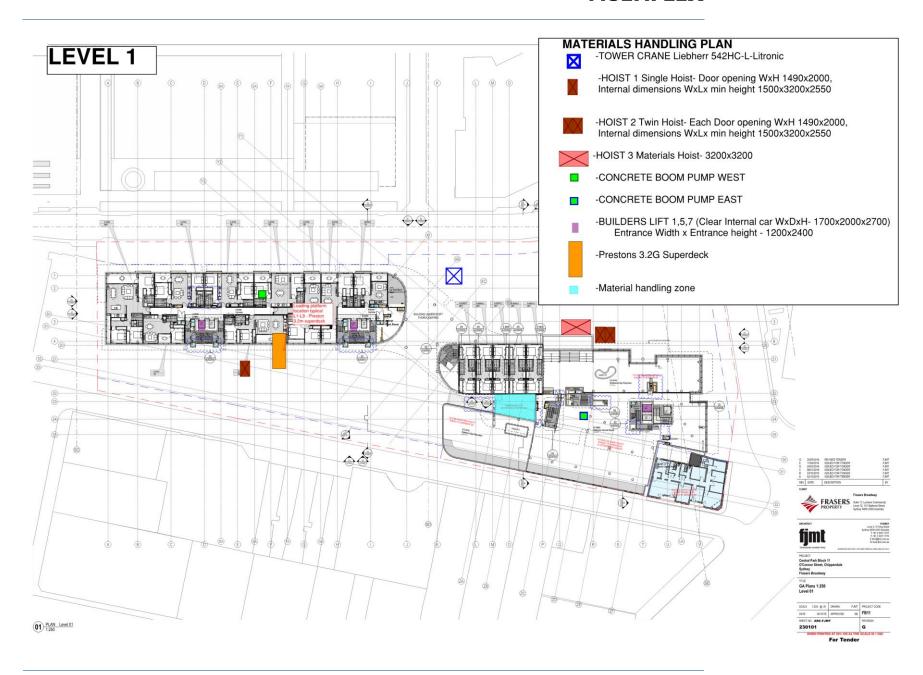
# 8.3 Appendix 3 – Materials Handling Plan

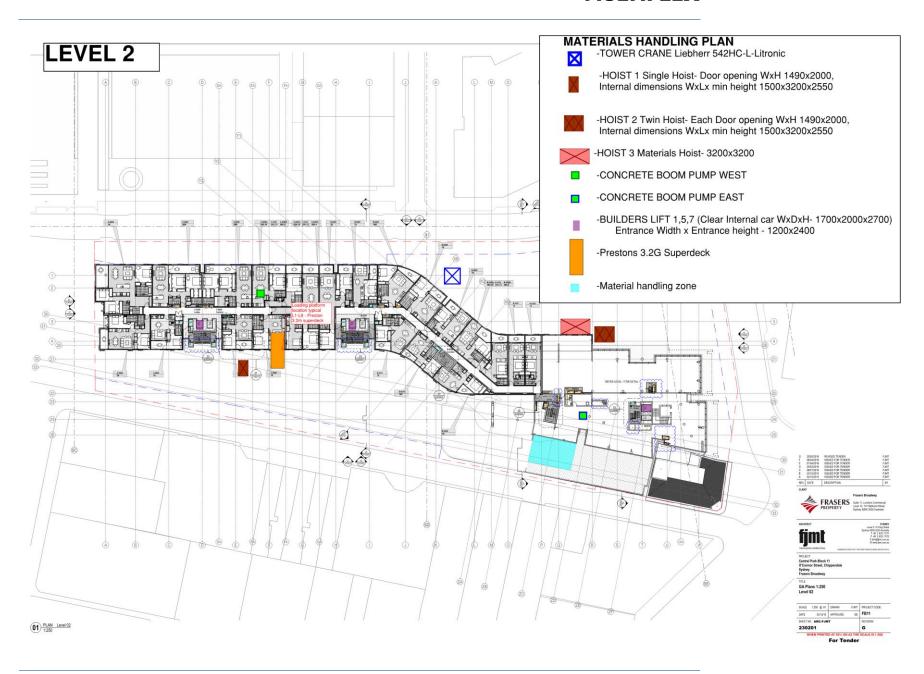


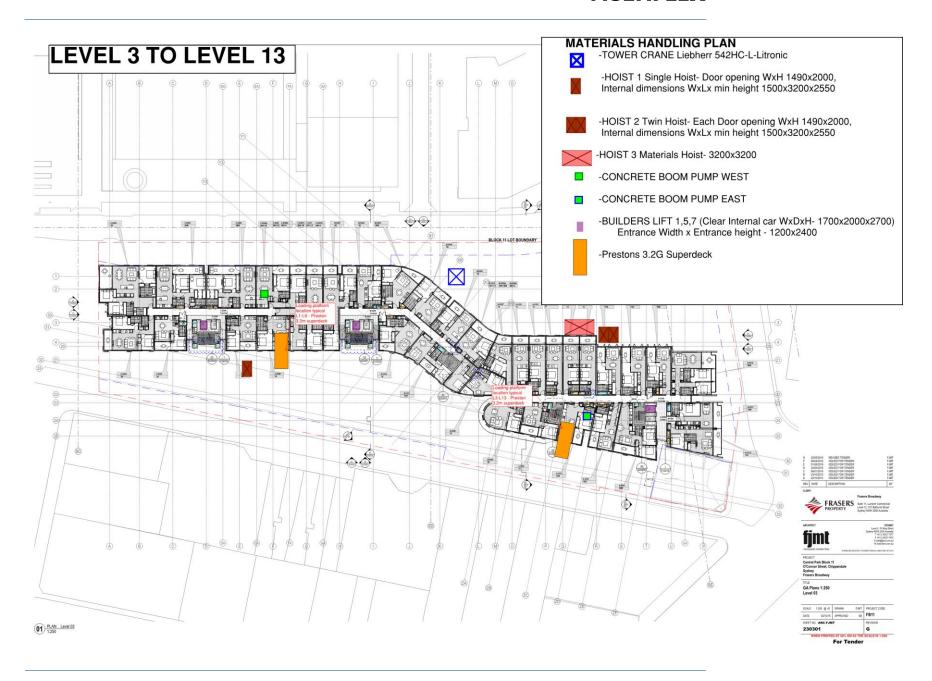








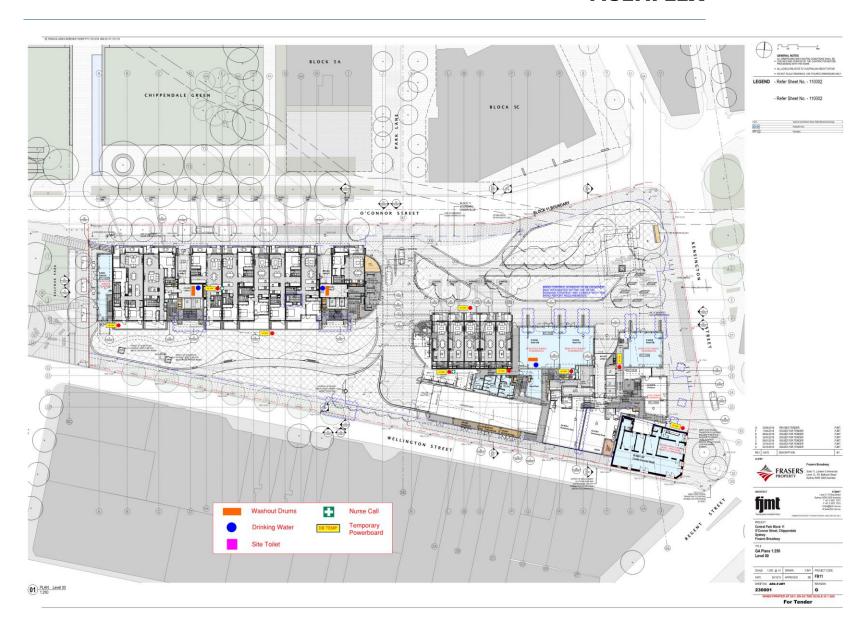


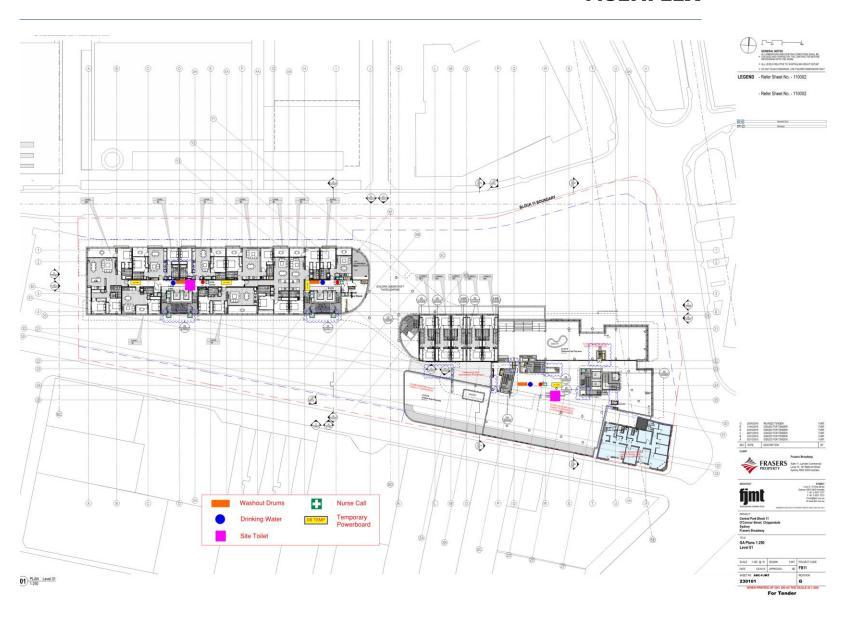


# 8.4 Appendix 4 – Temporary Services Plan















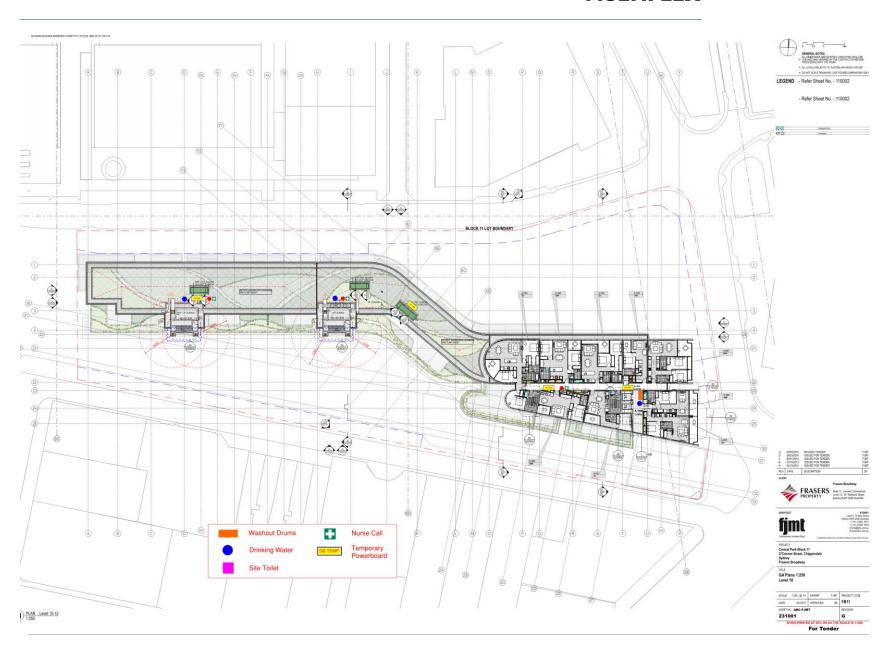






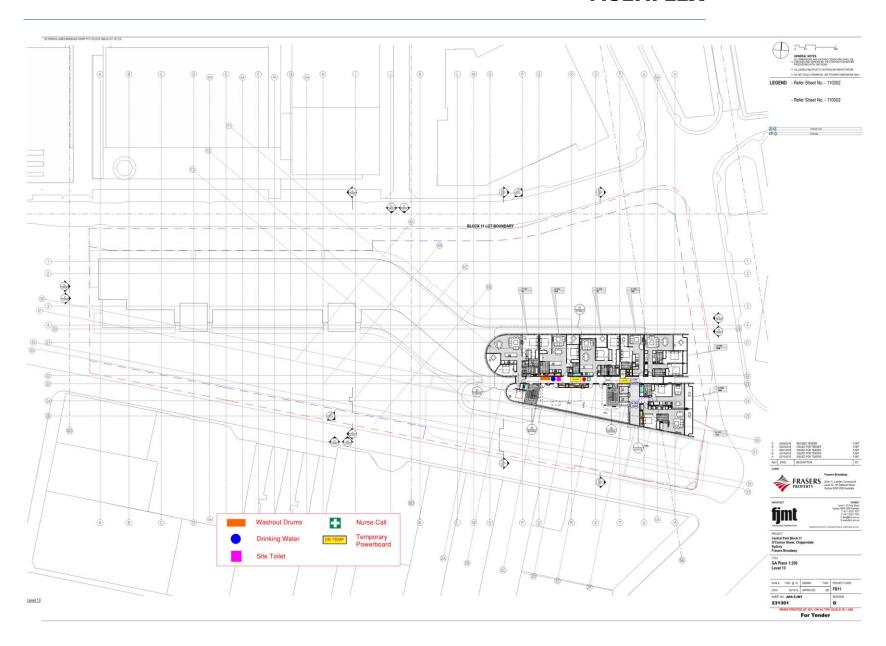


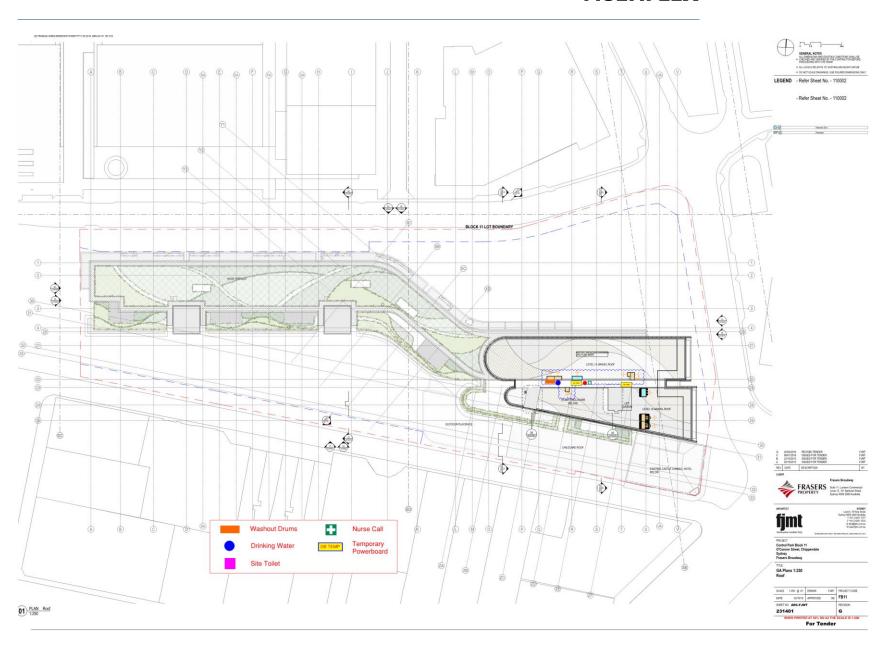




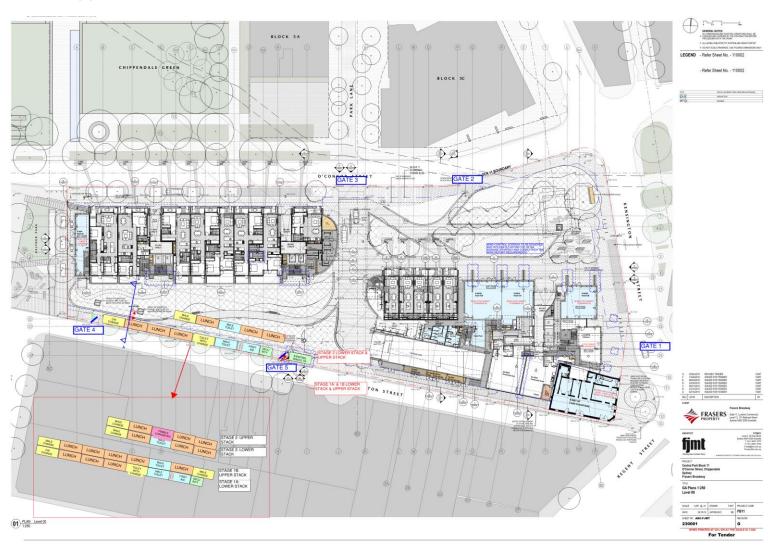


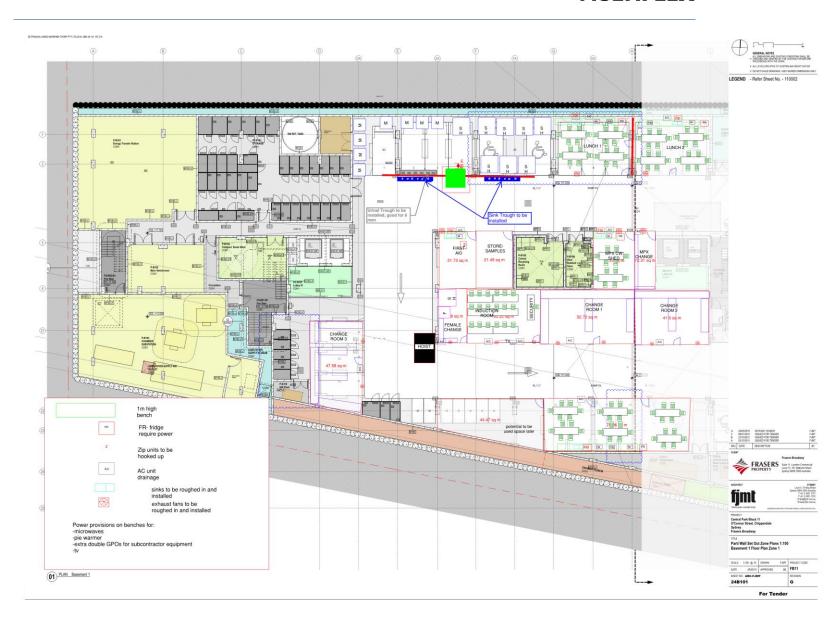






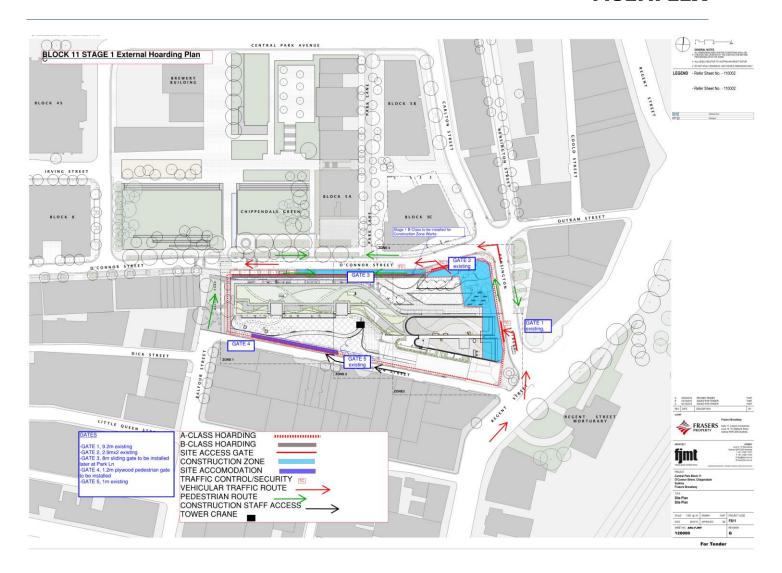
# 8.5 Appendix 5 Site Accommodation Plan

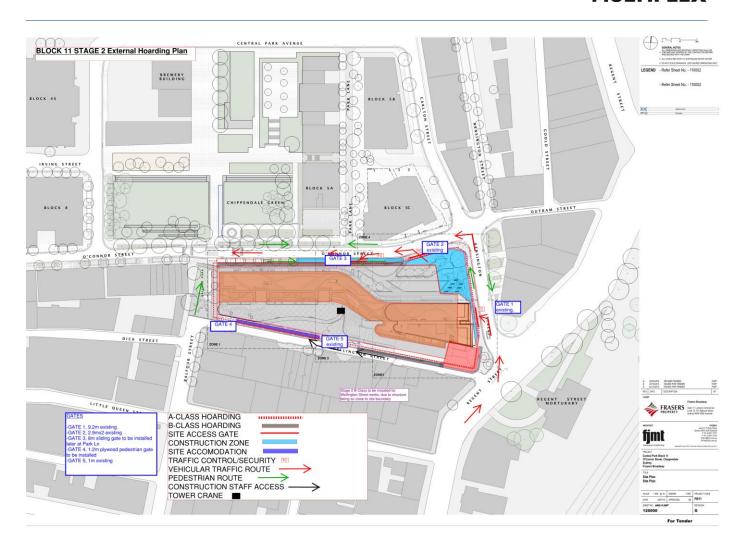


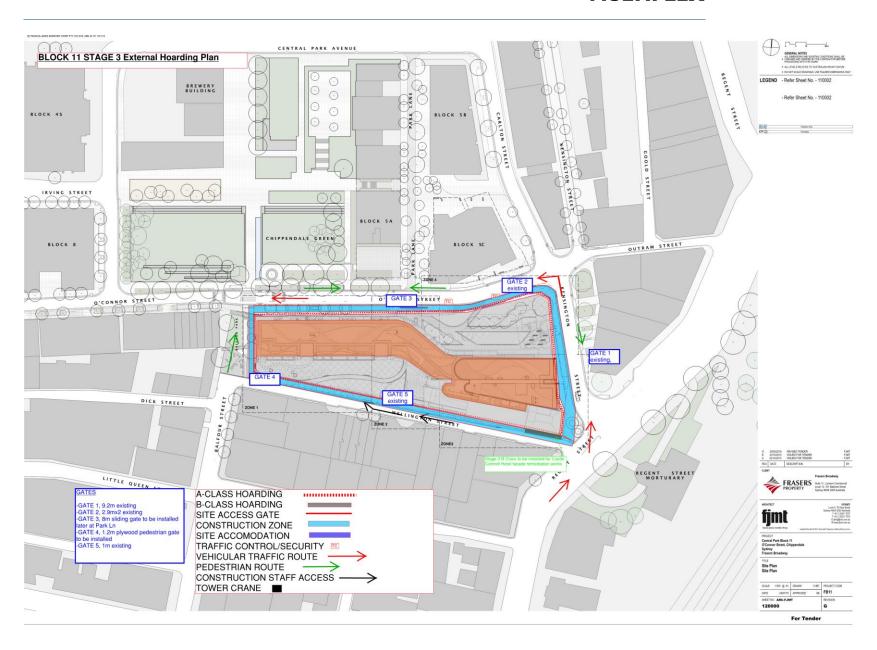




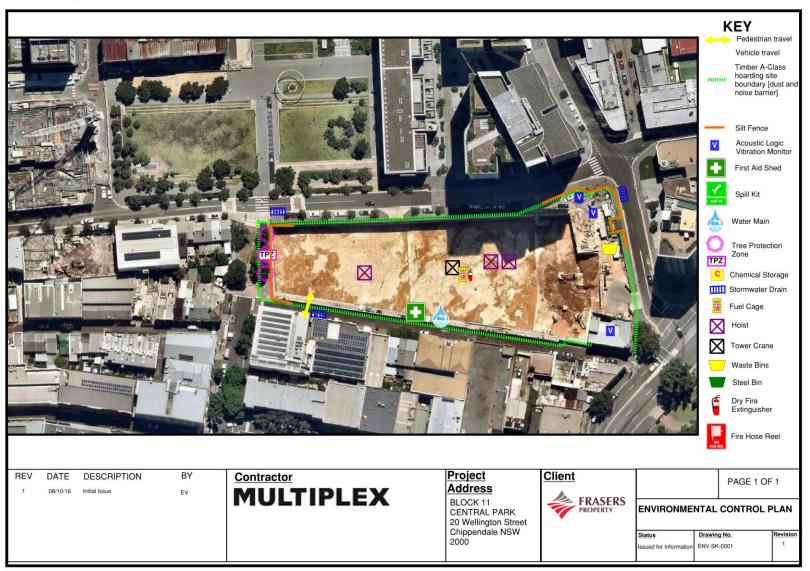
# 8.6 Appendix 6 – External Hoarding Plan







# 8.7 Appendix 7- Environmental Controls Plan



# 8.8 Appendix 8 – Scaffold Plan

