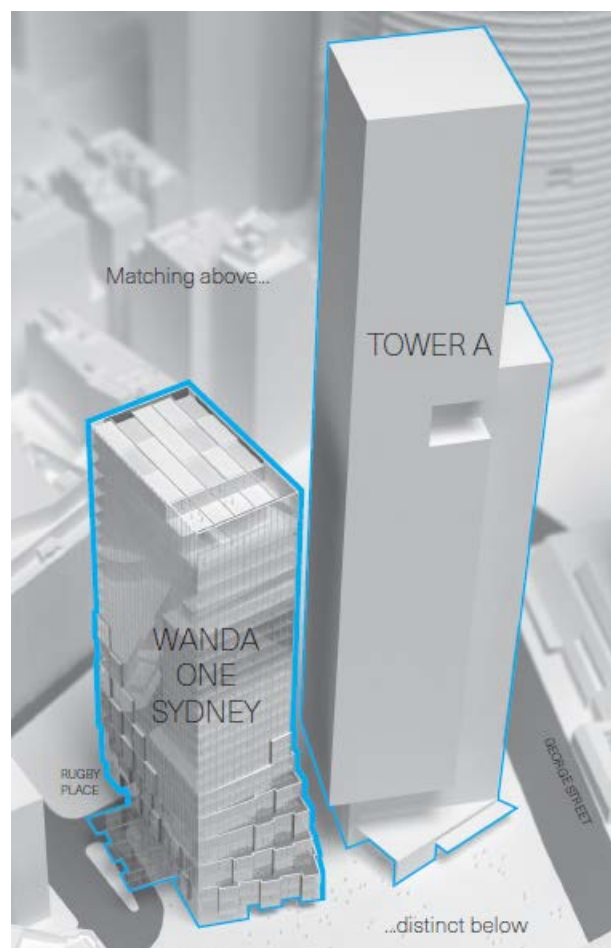




CONSTRUCTION MANAGEMENT PLAN

WANDA SYDNEY PROJECT



Prepared for: Wanda Group
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1 INTRODUCTION

This Construction Management Plan has been prepared to accompany the proposed Stage 2 Development Application for the redevelopment of the parcel of land in circular Quay currently occupied by Goldfields House, Fairfax House and Rugby House. This document has been prepared in conjunction with a number of technical reports. [Appendix 1](#) includes a list of these referenced documents. It serves to outline the key construction issues and address the following aspects of the project.

- To ascertain an appropriate construction methodology;
- Propose a suitable construction site layout;
- The site safety management system requirements;
- The waste management objectives;
- The environmental management practices and codes to be observed in the removal of any contaminated materials;
- Outline the community consultation and neighbour liaison process, and;
- Present a noise mitigation strategy during construction.

It is noted that this is an indicative plan only. Methodologies include potential access ways and construction zones within Council and adjacent owner's land, and as such, are subject to approval and a formal agreement.

2 THE SITE AND PROJECT WORKS

2.1 The Site

The site is located on the northern edge of the Sydney CBD, within the City of Sydney Local Government Area (LGA).

The site is located at the western end of the Circular Quay precinct, south of Alfred Street.

The site's locational context is illustrated in Figure 1 below.



Figure 1 - Location Map

2.2 Existing Site Configuration

Wanda Group (Wanda) has acquired a number of adjoining properties in the area of land that is bounded by Pitt Street (East), Herald Square adjacent to Alfred Street (North), George Street (East) and Rugby Place (South) in Circular Quay, Sydney, NSW. The acquired properties include:

1. 1 Alfred Street referred to as 'Goldfields House', a 26 storey commercial office tower located across the northern end of the site. The existing Gold Fields House office building was completed in 1964 and is constructed primarily of a reinforced concrete core with a structural steel column and beam arrangements supporting the tower floors and facade. The facade is a precast concrete panel system with aluminium windows. The building has been refurbished several times during its life and was the subject of an asbestos removal program during the late 1990's. The building owner is in possession of asbestos clearance reports in respect to that removal work.
2. 19-31 Pitt Street known as 'Fairfax House', a 15 storey commercial tower located at the south eastern end of the site and constructed in the early 1970's. Fairfax House is constructed primarily of a reinforced concrete core, columns and slabs supporting the tower floors and glazed facade.
3. 31A Pitt Street known as 'Rugby House', a 6 storey, brick and timber commercial building at the southern end of the site.

The site is irregular in shape and occupies an area of approximately **4,040m²**. A diagram depicting the consolidated site is shown in below in Figure 2:

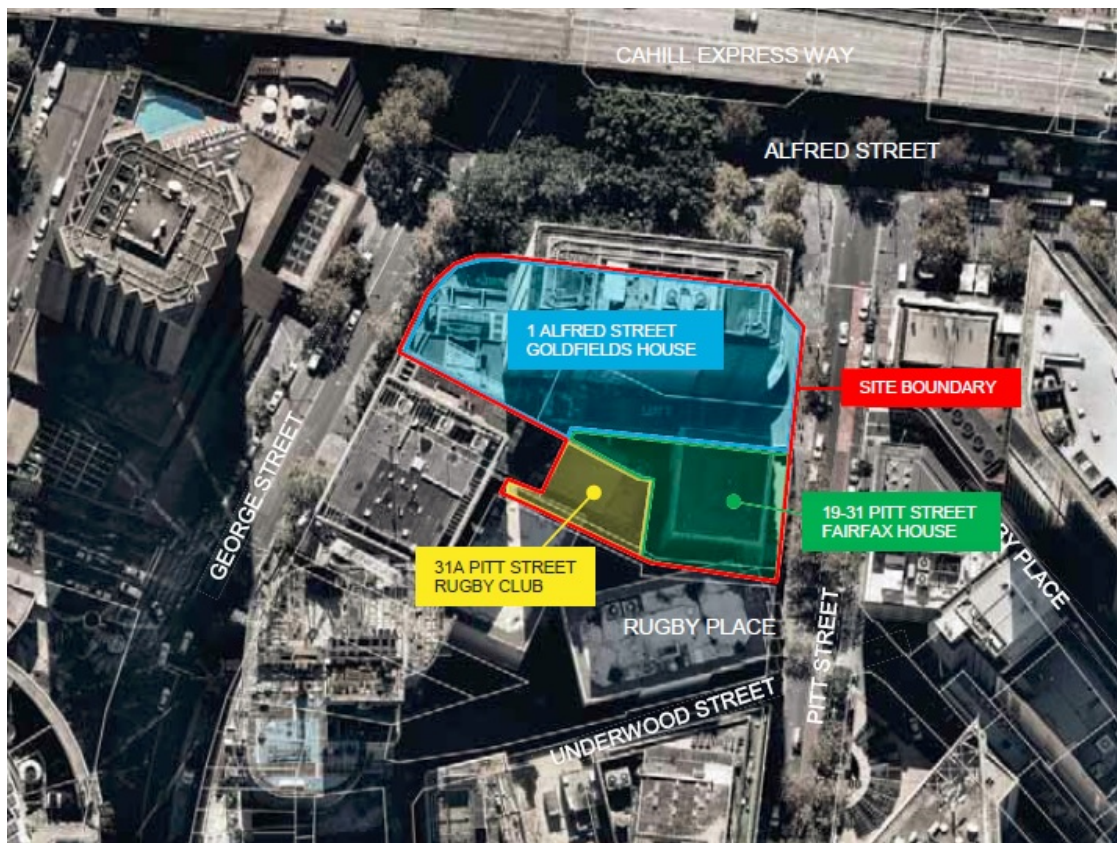


Figure 2 - Consolidated Site

2.3 Site Area

The site address, legal description and area of the consolidated site are shown in Table 1.

Table 1 - Site Address and Legal Description

Site Address	Legal Description	Site area (approx.)
1 Alfred Street	Lot 1 DP217877 and Lot 1 DP220830	2,686sqm
19-31 Pitt Street	Lot 1 DP537286	916.5sqm
31A Pitt Street and Rugby Place	Lot 180 DP606866	437.5sqm
	Total Site Area	4,040sqm

2.4 Proposed Development

Wanda proposes to demolish all existing structures (above and below grade) within the consolidated property boundary and construct:

- A 61 storey residential tower at the western side of the site of the site known as Tower A;
- A 27 storey hotel tower on the eastern side of the site known as Tower B;
- A 6 storey basement including services, car parking, storage and hotel functions across the site to service both Tower A and B..

This is reflected in Figure 3 below.

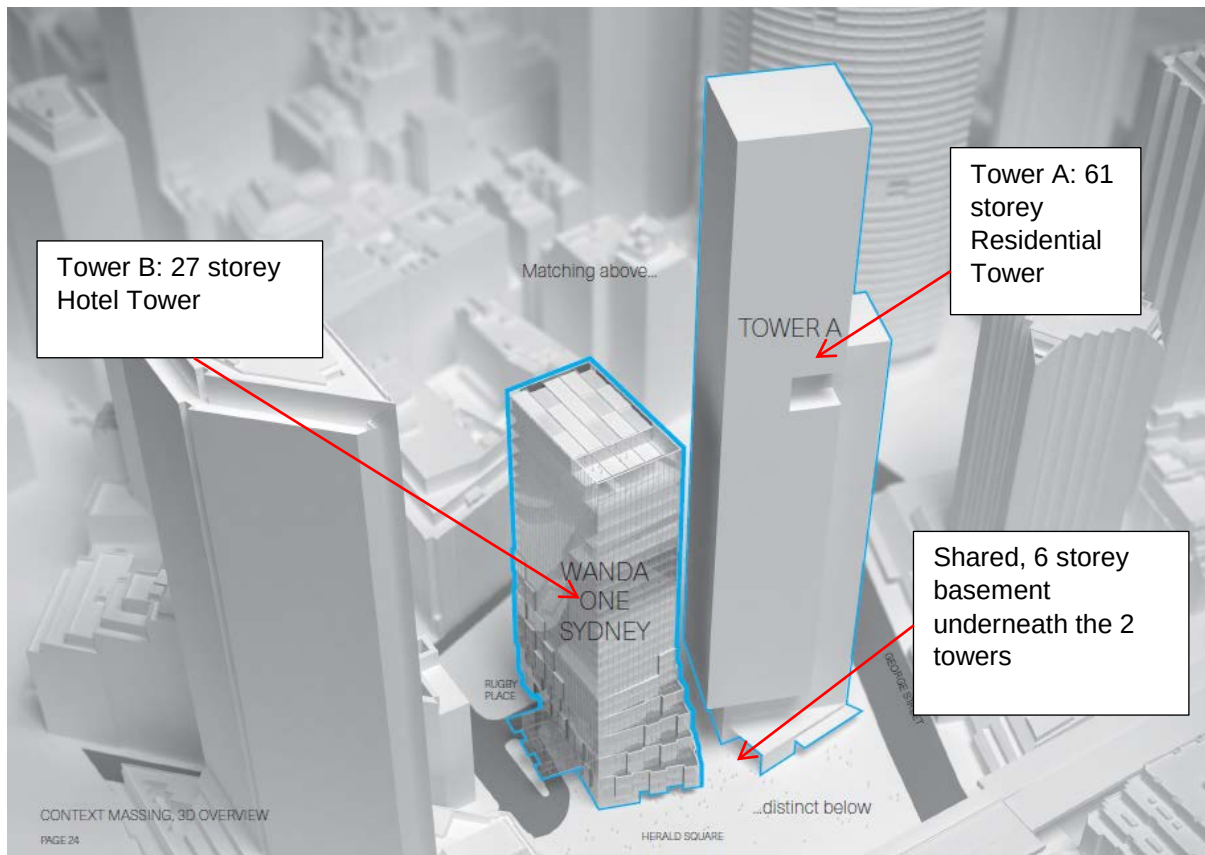


Figure 3 - Proposed Development

2.5 Project Works

2.5.1 Overall Vision

Wanda's vision for the consolidated site is to create a new residential and hotel precinct within Circular Quay which has no equal. It is envisaged that this development will contribute to the renewal of Circular Quay as a premier tourist destination in Sydney.

2.5.2 Tower A

Tower A is a 61 storey, residential tower that will be constructed towards the western side of the site adjacent to George Street. Tower A includes an innovative structural design that incorporates a cantilevered tower section connected from level 6 of the main structure. Tower A was approved under DA/2015/882 to the lower ground level only.

2.5.3 Tower B

Tower B is a 27 storey, 5 star hotel complex located on the eastern side of the site above the main vehicle entrance off Pitt Street. Tower B will incorporate a fanning floor plate arrangement with a back of house facilities, a ballroom, and a swimming pool on the lower levels and hotel room keys on the upper levels.

2.5.4 Public Spaces

The redevelopment will strengthen the connections between Circular Quay and the CBD's main financial district via a construction of new public spaces and pedestrian corridors in and around the 2 towers. The public domain will also incorporate a public access way between Tower A and Tower B to

facilitate better through access from the adjacent southern site which is also currently scheduled for redevelopment. The public domain area will also assist in the reactivation of Herald Square through an increase in public space, pedestrian circulation improvements and inclusion of significant public art in this area. The ground floor spaces of both towers will incorporate active frontages to the public domain.

2.5.5 Shared Basement

Both towers will be connected by a shared, 6 storey basement which incorporates:

- Lift pits for both towers;
- Plant rooms;
- Car parking for both towers;
- Storage areas for the residential towers;
- Vehicle access driveways; and
- Hotel back of house functions.

The shared basement will be constructed by excavating further down from:

1. the ground level under the existing the Rugby Club;
2. the bottom of the existing 2.5 level Goldfields House basement carpark; and
3. the bottom of the existing single level Fairfax House basement carpark

to a total of 6 levels below the ground plane and consolidating these 3 areas into a single, car park, storage and back of house facility.

3 PHYSICAL CONSTRAINTS OF THE SITE

A summary of the physical constraints that impact on the Wanda site are described in this section.

3.1 Proximity to Ferries, Buses, Rail, Light Rail and Cahill Expressway

The Wanda property is located within close proximity to many transport corridors and nodes in and around Circular Quay including ferries, buses, trains and the Cahill Expressway. Further, there will be the requirement to coordinate the site works with the construction of the new Sydney light rail network extension on George Street which will be terminating on Alfred Street directly in front of the property. In addition, the Roads and Maritime Services (RMS) will be closing off access to Pitt Street from Alfred Street, as part of the light rail project, further impeding vehicle access both during construction and operation.

Works on the Wanda project will be carefully coordinated to ensure there will be minimal affect to traffic arterials, other transport modes within the vicinity or pedestrian movements around the site.

The Contractor will liaise with the City of Sydney and transport authorities throughout the period of construction and keep all stakeholders informed of any changes to existing conditions.

3.2 Proximity to Heritage Listed Tank Stream

The heritage listed tank stream is of high historical and technical significance. Prior to European settlement, the tank stream was an important water source for local indigenous communities. It was also one of the first fresh water supplies to the original settlement around the head of Sydney Cove from 1788 and later. The Tank Stream runs underneath Pitt Street and is enclosed within an archeologically significant, stone arch, as shown in **Error! Reference source not found.** and **Error! Reference source not found.**. The proposed basement retaining wall system at the eastern end of the site will be designed and constructed in such a way as to maintain the integrity if this heritage listed structure. Refer to Section 6.3.1.



Figure 4 - Heritage Listed Tank Stream

3.3 George Street Access Way

Due to the upcoming works on the Light Rail and potential disruption on George Street, a Works zone for the project on George Street is unlikely to be feasible and access for materials handling will be primarily undertaken from Pitt Street. Further detailed review of a possible future work zone on George Street would need to be undertaken on completion of the Light Rail works subject to approval.

3.4 Adjoining and Neighbouring Properties

3.4.1 Jacksons on George

Jacksons on George (JoG) is an existing, 4 storey, licensed, food and beverage premises located on the south western boundary of the proposed development site. JoG incorporates restaurant and

public bar facilities on the internal levels of the building as well as a roof top bar. JOG sits adjacent to the existing retaining wall of the Goldfield House basement. Careful consideration will be given during both the demolition and construction phases of the project to minimise impacts to the operation of this venue.

3.4.2 Rugby Place

The southern boundary of the development site is defined by an existing laneway known as Rugby Place which connects George Street and Pitt Street. Rugby Place currently provides shared vehicle and pedestrian access to Fairfax House, Rugby House and Jacksons on George. Rugby Place will be dedicated to City of Sydney Council upon completion of the development.

3.4.3 182 George Street and 33 – 35 Pitt Street

The office towers immediately to the south of Rugby Place are known as 182 George Street to the west and 33-35 Pitt Street to the east. The office towers are owned by Lend Lease and are the subject of a planning proposal to enable the construction of a large office tower and public spaces. It is anticipated that the demolition and construction activities of the 2 redevelopments (Wanda and Lend Lease) may overlap at some stage. Coordination of these activities will be required to minimise impacts to the public.

3.4.4 Four Seasons Hotel

The Four Seasons Hotel is a 5 star hotel located to the west of the Wanda redevelopment site. It is anticipated that this property will be most impacted via demolition and construction noise generated by the development. Noise impacts to the Hotel will be mitigated during the development.

3.4.5 Herald Square

Herald square is a paved, flat, heritage listed, public space to the north of the development site. The square is owned by City of Sydney Council. It contains some mature trees as well as public art works. This Construction Management Plan seeks to utilise a strip of the square to the north of the Wanda Site for use as a construction staging area. Care will be taken during the demolition and construction phases to avoid damaging existing trees and hardscape surfaces within Herald Square. Public access to the northern section of the square will be maintained at all times for the duration of the development.

3.4.6 Gateway Building

The Gateway Building is a 47 storey office tower located to the east of the proposed development site. Gateway has recently undergone a refurbishment of the ground floor and plaza level food courts. It is anticipated that this property will be most impacted via demolition and construction noise and traffic generated by the development. These impacts will be mitigated during the development.

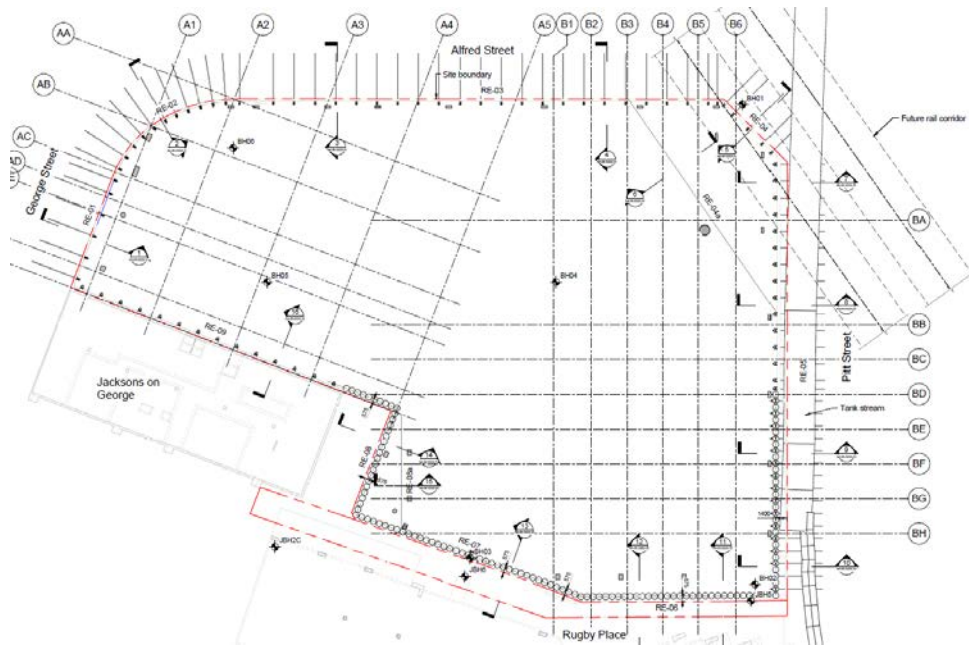


Figure 5 - Retention Layout (Indicative Only - Not for Construction)

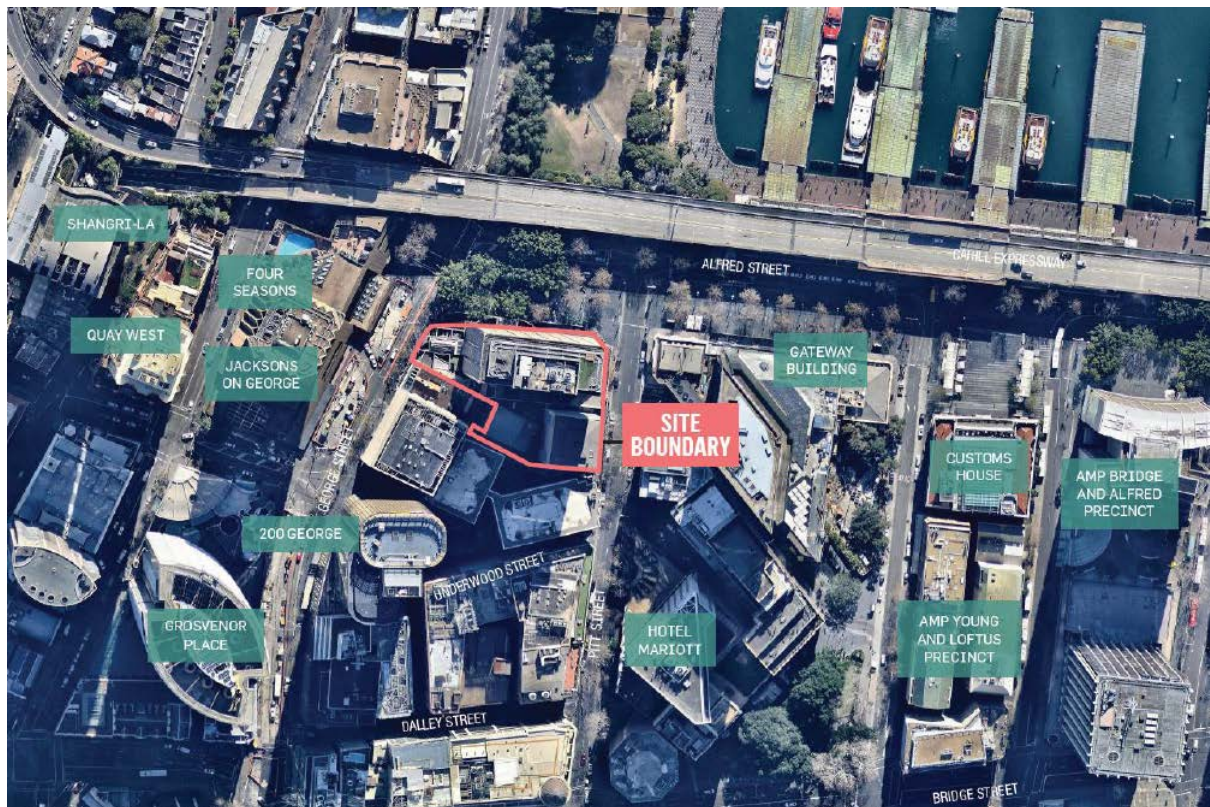


Figure 6 – Site in relation to neighbouring properties

4 STAKEHOLDER CONSULTATION & COMMUNICATION

4.1 Community & Stakeholder Management Strategy

A Community and Stakeholder Management Strategy will be developed to ensure an open, systematic consultation process with involved stakeholders. The objectives of the consultation will include:

- The creation of public and general awareness in regards to the development;
- The creation of a working relationship with the key stakeholders;
- Gaining an understanding of key stakeholder issues;
- Keeping the key stakeholders informed of project progress, upcoming activities, impacts arising from unforeseen occurrences and actions to mitigate the impact as necessary;
- Mitigation of impacts from construction and demolition activities;
- Management of any complaints and concerns of the stakeholders and resolution in an expedient manner.

The stakeholder groups will include the following:

- Adjoining property owners;
- Statutory and Utility Authorities including City of Sydney Council; the Heritage Council of NSW; Transport for NSW;
- Pedestrians and users of the public domain and infrastructure;
- Contractor (Demolition and General Contractor) and sub contractors;
- Other parties including community, environmental, business groups who demonstrate an interest in the project;

Foreseeable issues of concern to stakeholders may include the following:

- Noise and dust;
- Vibration from construction activities;
- Environmental remediation;
- Generation of pedestrian and vehicle construction traffic;
- Encroachment into air space over the adjoining properties;
- Protection of adjacent properties;
- Restrictions to pedestrian traffic flow etc and associated management.

To address the issues that may arise during the development and delivery phases of the project, and in a manner that reflects the criticality of this activity, the Project Team will allocate personnel to act as Liaison Officers to communicate with the stakeholders on upcoming works or on issues that require clarification or resolution.

In order to meet the objectives of the Consultation and Communication Strategy, The following activities will be undertaken:

- Letters of introduction will be sent to the adjoining property owners and initial consultation session will be held early in the development phase of the project before the commencement of construction, advising of the key details of the project including commencement date, duration, contact details, safety programme, site protection etc.;

- Monthly project progress reports will be issued to the representatives of the adjoining property owners identifying upcoming activities;
- Correspondence with stakeholders as necessary to address enquiries. A register of all contact and correspondence with any stakeholders will be established and reviewed monthly at the Project Control meetings;
- Community and tenant meetings to provide a forum in which to discuss concerns and issues in an open manner.

4.2 Construction Liaison Committee

Prior to commencement of work, a Construction Liaison Committee will be established by the developer to communicate and manage demolition and construction related impacts (including construction noise and vibration, loading issues associated with construction workers and vehicles, traffic issues and management of the construction site) in an expeditious and cooperative manner.

Representatives of potentially affected parties adjacent to and surrounding the site will be invited to attend meetings. Council representatives will also be invited to attend. The committee will meet prior to the commencement of works on the site to address initial areas of concern and then at quarterly intervals throughout the demolition and construction phases.

5 CONSTRUCTION

5.1 Introduction

The Wanda Sydney development will be delivered in the following stages:

- Demolition
 1. Demolition of Goldfields House in accordance with the relevant conditions approved under DA/2010/2029;
 2. Demolition of Fairfax House and Goldfields House
 3. Demolition of Basement Structures
- Excavation and shoring;
- In ground services and footings;
- Tower A above ground structure, services, fit-out and facades;
- Tower B structure, services, fit-out and facades; and:
- Public art, domain and landscaping work.

The construction staging presented in the Section 5.2 below has been prepared in advance of the developer carrying out a detailed procurement strategy for both major works packages of demolition and new building works. As such, the following document is subject to change dependent upon:

1. Agreements to be negotiated with adjoining landowners/occupants;
2. Development Approvals; and
3. The preferred methodology of the delivery partner for demolition and new building works.

5.2 Construction Staging

The following section provides a brief overview of the construction staging. A more detailed methodology is provided in Section 5.4 below.

5.2.1 Demolition of All Remaining Structures on Site

The first stage of the project will involve the demolition of the existing structures on the site down to the basement level. Demolition works will be subject to Work Cover approvals which will be lodged by the demolition contractor. The demolition contractor will be responsible for erection of all hoardings and safety devices prior to demolition commencing.

The Demolition Phase of this project has 2 key phases, A and B, which are as follows:

- A. Phase A Demolition to Ground Level; and
- B. Phase B Demolition and Retention to Basement Level 2

5.2.2 Excavation and Shoring

Following the completion of demolition, the contractor will then commence excavation and shoring for the additional 4 levels of the 6 storey basement. Careful consideration will be required to implement this stage due to:

- A. The interactions with the nearby Heritage Listed Tank Stream,
- B. The proximity of the JOG premise adjacent to the excavation and

C. Any construction activities in the adjacent property by Lend Lease.

A combination of the existing basement retaining wall, rock anchors and propping will be employed to stabilise the cut areas and ensure the integrity of the surrounding structures on adjacent lands.

5.2.3 In Ground Services and Footings

The development will include typical in ground basement services such as lift pits and stormwater drainage. The details of these are yet to be designed. The current main footing element involves columns extending from the uppermost of the existing retaining wall to approximately 2.5 levels below. At this point in time, it is anticipated that the local sandstone will have a bearing capacity such that the lowest basement level can be a slab on ground, with minimal to no additional footing supports.

5.2.4 Basement Structure, Services and Fit-out

The permanent, 6 level, basement structure will service both Tower A and B, with a 2 way, vehicle access ramp located at Pitt Street. The basement will include services listed in Section 2.5.5 above. The basement fit-out works should be able to commence following the completion of the access ramp.

5.2.5 Above Ground Structures, Services, Fit-out and Façades – Towers A and B

Following the construction of the basement back up to the ground plane, the project will then proceed with the construction of the 61 storey residential Tower (Tower A) and a 27 storey, 5-star hotel Tower (Tower B), as described in Section 2.5. Key scope elements include:

- Ground floor retail and hospitality areas (both Towers);
- Pools on suspended slabs (both Towers);
- In house hotel restaurant and rooftop bar (Tower B);
- Hotel ballroom(Tower B);
- High quality, innovative finishes (both Towers), and
- Winter gardens (Tower A).

Both towers have unique and innovative facades. The Tower A facade incorporates sandstone, performance glazing, and anodised aluminium window framing. Tower B's façade incorporates a combination of square 'pixels' consisting of vegetation, glass and sandstone.

5.2.6 Public Art, Domain and Landscaping Work – Towers A and B

As part of the Voluntary Planning Agreement (VPA) for the development, the corridor between Towers A and B will become a public thoroughfare which will be transferred to CoS for the purpose of public access. This thoroughfare, as well as the areas adjacent to Herald Square, George Street and Pitt Street, will require integration into the existing public domains. These areas will also include landscaping, following Council approval of the design. The VPA also includes a \$3.5m Public Art Strategy to be incorporated into the public domain.

5.3 Site Establishment

5.3.1 Site Signage

The Contractor will erect a site notice board at eye level at the main entrance to the site. As a minimum, the board will be 841mm x 594mm with 30 point type size text. The site notice board will include the following information:

- Site Manager including telephone and facsimile numbers and email address;
- the responsible managing company;
- 24 hour contact phone number for enquiries and complaints;
- site activities and time frames;
- approved hours of work;
- contact address and certification details of the Principal Certifying Authority; and
- state that unauthorised entry to the site is not permitted.

5.3.2 Hoardings and Overhead Protection

Hoardings will be installed to establish a secure barrier between the construction site and the general public.

Prior to the installation of hoardings onsite, the following will take place:

- Services will be protected or relocated where necessary;
- Access provision made for emergency or maintenance access;
- Locations will be coordinated and confirmed with City of Sydney Council and other relevant stakeholders; and
- Final locations and wall types will be detailed on revised plans and approved.

5.3.2.1 External Hoardings

During the site establishment and mobilisation period, external hoardings will be erected on all external street frontages, following approval from the City of Sydney Council.

An 'A' class hoarding, of standard plywood type construction, complying with the requirements of the City of Sydney Council hoarding policy, will be installed to establish a secure barrier between the construction site and external frontages. The extent of hoarding will mirror the extent of construction zone required.

Class 'B' Load Bearing/10kPa Overhead Protection Structures will be located along Rugby Place and Pitt Street in instances where overhead protection of public spaces, tenants and work force is required (subject to adjacent owner's and Council approval). Some specialised cantilevered class B hoardings may be utilised in Rugby Lane to facilitate better access to the site and to the adjacent Lend Lease property.

Refer to Appendices 2, 3, 4, 5, 6, 7 and 8.

The load bearing/overhead protective structures will be:

- Designed and constructed using specialised modular scaffold type components;
- Installed where appropriate to allow for aesthetic cladding if required;
- Treated to accommodate acoustic requirements for the operational spaces; and
- Used on council property to protect pedestrians using the footpaths.

5.3.2.2 Internal Site Hoardings

Internal hoardings will be installed taking into consideration;

- Aesthetic suitability;

- Acoustic, vibration and dust nuisance;
- Operational requirements;
- Construction access for out of hours work;
- Customer and tenant access pathways;
- Existing structural capacities;
- Effect on surveillance;
- Compliance with BCA and fire engineering requirements; and
- Temporary waterproofing from external and internal conditions.

5.3.2.3 Internal hoardings

Construction works zones within the construction development area shall be demarcated via the use of internal hoardings and the like as required to identify and control the works.

Internal hoardings of various types will typically be used in:

- Basement Areas;
- Street level Construction Zones;
- Separation between trades on specific levels where required; and
- Protection of Heritage fabric.

5.3.2.4 Scaffold and Screens

Edge protection, utilised for the structures above the ground floor, will be a combination of a perimeter screen system and scaffold. The screens will provide perimeter protection coverage for approximately 4.5 levels and will progress upward with the structure.

5.3.3 Crane, Hoists and Loading Platforms

It is anticipated that luffing tower cranes will provide the most effective craneage solution for the site. Mobile cranes will be introduced as required. The exact types and locations of the tower cranes are yet to be determined; however indicative layouts are shown on Appendices 5, and 6. Crane types will be selected due to their lifting capacity, reach and speed. The tower cranes will be installed and removed via a mobile crane on Pitt Street or George Street and applications for associated road closures will be submitted to council 4 weeks prior (for full road closures), and 48 hours prior (for partial). The mobile cranes operating from the road(s) will not be utilised for building demolition or construction. Mobile cranes will not be delivered to site prior to 7:30am, unless approved by Council. Throughout the construction period, tower and mobile cranes may have the capability to swing over adjacent properties however no loads will ever be swung over adjoining properties.

The tower crane installation will provide safe:

- Removal of structural demolition elements and existing plant for Tower B Stage 1;
- Erection of new structure in Stages 5 and 2 for Towers B and A respectively;
- Loading in of new structure and finishing materials required for the project;
- Trade waste removal via rubbish skips; and
- New plant installation.

5.3.4 Vertical Transport During Demolition

During demolition, a luffing tower crane with approximately 55 metres of boom, located near the centre of the site, will be used to transport equipment, materials and demolition waste between the site and the load out areas. All materials will be lifted directly from the existing floor and into awaiting trucks in the construction zone(s). Lifting of demolition materials will be carried out, where possible, using crane lifted rubbish skips. Appendices [2](#) and [3](#) illustrate the crane, hoist and loading platform requirements during Tower B's Stage 1.

Man and Material hoists will be located on the northern face of the existing Goldfields office tower during the Demolition Stage.

5.3.5 Craneage during construction

Man and material hoists will be required to service all levels of the existing and new buildings. The exact sizes and locations of the hoists are yet to be determined. Use of existing lifts as man hoists will also be investigated, particularly at the early stages of site establishment.

Loading platforms will progressively be erected on each floor for the handling of materials, plant and equipment. These will be removed as façade works progress up the building.

After demolition, it is expected that the project will require a minimum of 3 luffing tower cranes.

Appendices [5](#) and [6](#) all illustrate the possible locations for the crane, hoist and loading platform for the remaining project stages.

5.3.6 Accommodation

Throughout demolition, site accommodation would be located on the Lower Ground.

On completion of the demolition to the existing ground floor, it is anticipated that the site accommodation would then be installed along the northern boundary. This location is deemed the most appropriate based on the heavy loading zone requirements of Pitt Street, the tight boundary and access restrictions of George Street and Rugby Place.

It is expected that the site accommodation would be relocated to the lower basement levels following the completion of the subgrade concrete super structure above ground level and remain there until the completion of the project. Another option, subject to the Adjacent Owners Agreement, is to utilise Jacksons On George for the site offices and accommodation. Appendices [2](#) to [6](#) all show the potential locations for site accommodation.

5.3.7 Site Induction

The Contractor will prepare and operate a site specific induction for all visitors and employees working on the project, and ensure that every individual on the project attends a site-specific induction before he or she is allowed to start work. This induction will be a requirement under the Occupational Health and Safety Plan to be formulated by the Contractor for the project. The site induction sessions will be held on a regular basis and where possible, subcontractors will be requested to attend the week prior to the date they are due to start.

The site induction will include specific commentary on the Disruption Shutdown Application (DSA) and Permit to Work (PTW) processes.

All employees will be educated on the behavioural and security requirements for the project. Any employee found to be repeatedly disregarding these requirements will be removed from site.

5.3.8 Site Security

A licensed security provider will be engaged on the project. Preliminary details of the proposed site security methodology for the Wanda project are detailed below:

- Static Guarding – A fully compliant and professional static security officer will be located at all entry and exit points during construction working hours.
- Compliance Management – The security subcontractor will provide a compliance operator to operate the electronic compliance system that will be commissioned onsite.
- Access Control – Security guards stationed at the entry points to the site provide access control to the site. Each individual entering the site will have their ID vetted.
- Occupational Health and Safety – The security guards at the entry gate control the entry of subcontractors and check that those entering site are wearing the appropriate PPE for working on a construction site.
- Regular Patrols - The security guards will also complete regular patrols of the site and will contact the Site Manager should any issues of concern be identified.

5.4 Construction Methodology

The current construction methodology is based around the premise that once demolition is completed, the new works will proceed immediately and is presented below

5.4.1 Demolition of All Remaining Structures on Site – Tower B

5.4.1.1 Phase A Demolition to Ground Level

The demolition contractor will be responsible for erection of all hoardings and safety devices prior to demolition commencing. Due to the location of the existing structures relative to the boundary, 'B' Class hoardings (with sheds) will be required on some footpaths and applications for these will be made to Council. Class A hoardings will be erected in areas along the construction boundary where there is no risk of materials falling on public land. The demolition contractor will also be responsible for the installation and maintenance of plant and equipment and site accommodation for their workforce.

Some areas of Herald Square may be required to accommodate aspects of site establishment, material and equipment, and could continue during the reconstruction works (subject to Council's approval).

The process of demolition of the 3 buildings will take in the order of 12 months to complete to Ground Level once the building has been vacated and hoardings erected. The building will be demolished using conventional industry methods.

A demolition plan will be prepared to maximise the re-use and re-cycling opportunities for all items embedded in the existing building. Please refer to [Appendix 2](#) for the proposed layout.

The key steps to the demolition of this building are as follows:

- Establish Site Facilities on the Lower Ground Floor.
- Site Establishment of Protection Hoardings and Scaffold.
- Hazmat Removal (including certification of removal by an industrial hygienist) on the upper floors and ground floor.
- All pieces of existing major plant will be decommissioned and removed. Including services isolations required to facilitate demolition.

- Enabling Works to establish Tower Crane approx. in the middle of the site.
- Enabling Works to install temporary chutes utilising existing vertical shafts.
- Crane Base will be anchored into basement 2 level foundation.
- Installation of Tower crane which will be tied to existing concrete structure.
- Demolition of Existing Structures to Ground Level Slab at George Street height.
- A sub-station located in the basement of the existing Gold Fields House will be decommissioned and removed by the supply authority prior to demolition commencing.
- The building will be stripped internally and externally with perimeter scaffolding and temporary chutes.
- Hydraulic excavators and bobcats will be hoisted to the roof to commence the process of demolishing the concrete elements. Temporary propping of existing structures may be required as directed by the structural engineer.
- Demolished material may be lifted to the street via the tower crane or through the temporary vertical chutes running down into Lower Ground slab and loaded onto trucks. Structural steel items will be removed by oxyacetylene cutting and lifted to an area within the site directly onto awaiting trucks for transport offsite. During this phase of work, all materials handling will be undertaken within the site with trucks entering and exiting in a forward direction off Pitt Street. In addition a work zone may be required in Pitt Street and application will be made to Council at that time if required.
- Dust and noise suppression systems will be employed by the demolition contractor. Waste water filtration and collection systems will also be employed for all water used in association with the site. As floors are progressively demolished, scaffolding will be removed and the crane will self climb progressively down along side of the Gold Fields tower.

Ten (10) wheeler trucks will enter and exit off Pitt Street during the demolition phase along with short semi trailer tippers with a total length of 15m (subject to Council approval). Access for heavy rigid trucks to enter off George Street (subject to Council's approval) as a secondary access into the site during demolition works would be required to assist with the logistics of moving large amounts of demolition material off site.

To accommodate the initial focus of enabling truck access from Pitt Street, perimeter scaffold will be placed around the lower ground floor and ground to level 2. This will facilitate demolition of external canopies and slabs. Installation of temporary shoring will then commence along George Street and the western end of the project as part of the first phase of the Demolition Stage (subject to Council's approval).

Rugby Place access will be required to accommodate aspects of site establishment, gantries and perimeter scaffold works to continue the demolition works. This will be subject to the Adjacent Owners Agreement.

A class 'B' hoarding (or equivalent) will be installed along Rugby Place (subject to adjacent owner's approval). The perimeter of Fairfax House and Rugby House will have a scaffold to the entire building. The demolition contractor will be responsible for the erection of all hoardings and safety devices prior to demolition commencing.

A man and materials hoist would likely be located on the North elevation of the existing Fairfax Building along with a stretcher stair.

Notes:

- The ground level slab of the existing Gold Fields House intersects the ground plane at the George Street frontage and projects at level one over Pitt Street due to the west to east sloping nature of the site.
- Fairfax House and the Rugby Club will be demolished to Ground level during Phase A demolition.

The hold point on the demolition from each phase in Stage One is at existing ground floor level at the Western boundary on George Street.

5.4.1.2 Phase B Demolition and Retention to Basement Level 2

The Demolition Phase will now enter into Phase B – Demolition and Retention Works to Basement Level 2. See [Appendix 3](#). Works are likely to proceed as follows:

- Back propping and enabling works of existing suspended Ground Floor and Basement Slabs will be fixed in place to support plant and equipment that will install bored piles and retaining wall structures along the boundaries of the existing basement.
- Enabling demolition works will be undertaken to facilitate installation of a capping beam to retain perimeter piles and anchoring work.
- All vertical struts and retention piles will be installed and anchored.
- Jacking along the Pitt Street end will be undertaken to maintain the integrity of the existing tank stream.
- The demolition of the Ground Level suspended slab will continue down to the existing Basement 2 slab on ground, which will then be removed.
- The Demolition Phase Tower Crane will then be removed.

5.4.2 Excavation and Shoring – Tower B

Once demolition has been completed, excavation of the floors below the existing basement levels will commence. Large excavators with rock saw, bucket and hammer attachments will be employed for basement floor excavations. Large bulldozers with ripping and rock cutter attachments may also be deployed to break up low strength rock material. Depending on the rock strength encountered, the walls to the excavation may need to be supported by combined structural systems of rock bolting and shotcreting. Spoil from the excavation will be removed from the site by covered trucks.

As the site is relatively close to Circular Quay, ingress of water will be monitored. If leakage is incurred, pumping systems will be employed to keep the site drained. The removal and/or discharge of water from the site will be strictly controlled. Silt traps will be put in place as part of the overall management plan to ensure contaminants do not enter the environment.

The proposed removal of spoil from the lower levels will require loading platforms and hoisting equipment located within the site boundary.

Trucks will mainly enter and exit in a forward direction from Pitt Street. The presence of the work zone on Pitt Street is likely to continue throughout the majority of the construction period (subject to Council approval). Please refer to [Appendix 4](#) for the proposed site layout.

The other proposed secondary access is for heavy rigid trucks to enter off George Street into Blue Anchor Lane and then Rugby Place and be loaded on site and exit into Pitt Street. This proposed access would be subject to approval by Council, TfNSW and the adjacent owner.

Temporary load out structures and platforms may be deployed to support excavation equipment which will transfer material from the excavation pit to the trucks at ground level. These structures will be the subject of specialist engineering designs and Work Cover control.

5.4.3 In Ground Services and Footings – Towers A and B

At the completion of the basement excavation, Tower Crane 1 will be constructed in the Tower A area, followed by Tower Crane 2 and 3.

As discussed in Section 5.2.3, it is anticipated that the bearing capacity of the local sandstone will allow a simple footing design to be adopted. Formwork, falsework and steel reinforcement will be delivered via the Pitt Street Access, unloaded by Tower Crane 2 and stored in the northern laydown area (subject to Council approval). The concrete boom pump(s) and concrete trucks will access site from Pitt Street and possibly establish a pumping zone along the eastern boundary (see [Appendix 5](#)). This should allow an efficient and safe concrete pour for the slab on ground at level 6 and the integrated services and drainage.

5.4.4 Basement Structure, Services and Fit-out – Tower B

The core foundation raft slabs will be the first primary works to commence for the structure. The main lift core structure will commence utilising a self climbing hydraulic jump form system that will be assembled onsite. The core walls, along with the lift lobbies, will progress upwards ahead of the horizontal slabs.

Construction of the basement structure will require access from 2 separate locations. The primary construction vehicle access will be from Pitt Street. Secondary access for smaller construction vehicles will be off George Street subject to Council, TfNSW and adjacent landowner approval. Refer to [Appendix 5](#).

On completion of the horizontal basement slabs to ground level, the project will then commence construction of Tower A and B. During this time, fit-out of the basement services can also commence.

5.4.5 Above Ground Structure, Services, Fit-out and Façade – Towers A and B

Following completion of the structure to the Ground floor podium, the project will then split into the 2 separate work faces of the residential Tower A and the Hotel Tower B.

The Construction sequence for Towers A and B will likely proceed as follows:

- Completion of shared concrete basement structure for Tower A and B.
- Lift cores will be extended from the basement and constructed utilising a Hydraulic Self Climbing Jump form system. Tower columns, slabs and ancillary structures will then follow.
- Perimeter screens at a minimum of 4 and half levels high will provide protection to adjoining properties and public.
- Tower Cranes, man hoists and materials hoists will be fixed to the concrete structure externally. These devices will be progressively extended up the structure as the tower construction progresses.
- The following elements of Tower A and B will then progress up the building behind the main structure components:
 - Facades;
 - Services rough in;
 - Partitions and internal walls;

- Fit off; and
- Finishes.
- External Works completion for Tower A and B.

The structures comprising the new development are designed as reinforced concrete. The basement levels, all cores, columns and floors are designed as reinforced concrete. The facades are predominantly comprised of panelised glass sections and site fitted glass pieces such as sliding windows, doors and louvre sections.

Tower A and B will each be serviced by separate, dedicated:

- concrete pumping and placing infrastructure;
- tower crane(s); and
- materials delivery / load out areas

to manage the movement of materials and waste produced during the construction process. Again, all loading will be contained:

- A. within the site;
- B. from the Pitt Street work zone entry (subject to Council approval); and
- C. Rugby Place work zone entry (limited use, subject to the adjacent owner's approval).

Man and material hoists will also be provided to facilitate safe and efficient vertical transport. [Appendix 6](#) shows the location of major pieces of plant required for the works.

5.4.5.1 Façade completion for Hotel and Residential Tower

Façade installation will generally progress some 6 floors below the level of the current concrete structure and be undertaken via the use of floor cranes from 2 levels above the installation floor.

The opportunity to install façade behind perimeter screens will be developed. This would be based on an increased length of perimeter protection screens for the concrete structure and access to be able to install façade from behind the screens. Sequencing for façade installation will be determined on whether or not the development proceeds with a Window Wall or Curtain Wall facade system.

5.4.5.2 Services completion for Hotel and Residential Tower

Provision of access for services rough-in to operate new plant and equipment will commence once floors are sufficiently clear of back propping for concrete floors above. Placement / installation of large pieces of plant and equipment will be appropriately sequenced with the construction of the new structures. This will be of particular importance in the basement structure levels.

Emphasis will be placed on establishing mains power (via the placement and commissioning of 2 new sub stations in accordance with Ausgrid requirements) as early as possible for the project.

Vertical riser work for primary services will be co-ordinated with the concrete structure systems as a priority.

5.4.5.3 Finishes completion for Hotel and Residential Tower

Access to vertical transportation of materials for the finishes trades is critical to the timely completion of the project. Finishes materials will be brought up the towers via the following vertical transport systems

- A. Tower Crane onto loading bays fixed to the concrete structure:

- B. temporary external materials hoists fixed to the concrete structures,
- C. internal lift cores/systems which may be temporarily adapted for materials hoists during construction, prior to conversion to passenger lift cars,

The above vertical transportation systems will all require access to and exit out of the construction site via the following proposed lading and unloading points.

- A. Pitt Street (primary and subject to Council approval),
- B. George Street into Rugby Place loading zone (secondary and subject to Council and adjacent owner's approval),
- C. via the basement structure once completed.

5.4.5.4 External Works completion for Hotel and Residential Tower

The majority of these works will be scheduled towards the later phase of this construction stage.

Access will be needed into Rugby Place from George Street along with the primary entry and exit off Pitt Street and will be undertaken in a coordinated manner with the adjoining owners (subject to approval).

Due to its size, the construction of Tower A will continue after Tower B has been completed. As a result, the external to the site, particularly around Tower A will be impaired until Tower A has been completed.

5.4.6 Public Art, Domain and Landscaping Work – Towers A and B

The commencement of the public domain and landscaping works will be dictated by the construction progress of Tower A. Public domain works will commence in the construction areas adjoining Herald Square, George and Pitt Street once:

- A. they are no longer required for loading and laydown, and
- B. Tower Crane 1 has been removed.

The thoroughfare between the 2 towers and Rugby Place will remain as an unsealed construction access thoroughfare until work is completed. Following this, the public domain and landscaping works can be completed.

The public art installation will be the final activity. The art installation(s) will be unloaded and installed following discussions with the art consultant, and Council approval.

The contractor will be responsible for initially maintaining the landscaping to ensure its successful growth and development. The maintenance period will be determined following recommendations received from the landscaping consultant and discussions with Council.

6 HERITAGE ITEMS AND SURROUNDING DEVELOPMENTS

6.1 Heritage items and artefacts

The heritage report prepared for the site indicates there are no other known heritage items within the site other than:

- The Tank Stream; and
- The sculptures in Herald Square

that will be impacted by the works.

It is not anticipated that heritage artefacts will be discovered underneath Goldfield's House and Fairfax House as is it likely that any existing objects of heritage value would have been disturbed and/or removed when the basements for these buildings were excavated. There is a possibility that artefacts may be discovered in and around the at-grade foundations or Rugby House, given that:

- A. The Circular Quay area is a known site for both indigenous and early Colonial Settlement; and
- B. Numerous artefacts were discovered during the excavation of the nearby 200 George Street Site.

Historical Artefacts uncovered during excavations will be identified, catalogued, removed and stored in an appropriate manner.

Suitable hoardings, protective coverings and exclusion zones will be implemented around the Herald Square sculptures to protect these heritage items during construction (subject to Council's approval).

Site inductions and tool box talks will be held by the Contractor to inform site personnel and visitors of the location of heritage items and the requirements for their protection. Work method statements will be developed specifically for works in close proximity to heritage items.

6.2 Aboriginal Cultural Heritage Assessment Report

There is potential for Aboriginal objects to be present within the footprint of the Gold Fields House, Rugby Club, Fairfax House sites and immediate surrounds. On this basis a full Aboriginal Cultural Heritage Assessment Report with Community consultation in line with current OEH Guidelines has been prepared and submitted as part of the relevant Stage 2 Development Application.

6.2.1 Avoidance of harm to aboriginal cultural heritage through design

Avoidance of harm will be considered in the design of the new development where Aboriginal objects may be impacted by the proposed buildings. Design options and mitigation measures will be identified in a heritage impact statement supporting the relevant Stage 2 development application. This heritage impact statement will also demonstrate impact mitigation where harm cannot be avoided.

6.2.2 Avoidance of harm to aboriginal cultural heritage during demolition and construction

All demolition and construction works will be undertaken in accordance with the recommendations of the aboriginal cultural heritage assessment.

6.3 Tank Stream

6.3.1 Tank Stream Conservation Methodology During Redevelopment Works

The Tank Stream is located immediately adjacent to the site on Pitt Street. Its' western extremity is located below the footpath level approximately 0mm to 175mm east of the site's legal boundary, with an additional 1.0 metre offset to the inside wall of the existing basement car park. The tunnel base is 2.44 metres below the footpath level, and a 3.0 metre curtilage extends beyond the existing Gold Fields and Fairfax House basement retaining walls. The base transitions from brick lining adjacent to the existing Fairfax House, to a stone arch beside Goldfield's House.

There is a risk that the development works may cause ground vibration and induce ground settlements that may impact on the Tank Stream drainage structure. Sydney Water Corporation Limited (2005) does not provide nominated conservation engineering criteria for vibration, subsidence, structural instability and other engineering impacts for The Tank Stream. The following strategies will be implemented to eliminate the risk of damage to the tank stream during the redevelopment works

- Develop Tank Stream specific conservation engineering criteria considered appropriate to address vibration, subsidence, structural instability and other engineering impacts, so as to reduce the risk of detrimental impacts on the Tank Stream both during and post redevelopment works,
- Undertake a Dilapidation survey and structural assessment (or review of existing survey information) of the Tank Stream adjacent the site prior to commencing demolition. Vibration monitoring would be carried out prior to demolition (to assess existing vibrations experienced by the Tank Stream) and during proposed development works (to assess vibrations induced by the works).

6.3.2 Conservation Methodology Concept

The proposed redevelopment will involve the removal of existing localised basement slabs, excavation of fill, soil and rock below existing basement levels. There is a potential risk that such works impact on the Tank Stream.

The following retention system concept has been developed to minimise vibration, subsidence and instability risks to the Tank Stream during construction such that nominated conservation criteria can be achieved.

6.3.2.1 Demolition

Plant and equipment used in the demolition of existing slabs, footings and piles should not cause vibrations of peak particle velocity greater than 3mm/s at any location immediately adjacent to the Tank Stream fabric.

Existing structural foundations are expected to comprise pad footings and reinforced concrete piles. Demolition of existing slabs, footings and piles should be conducted with lateral in - ground support in place. The support should be equal or greater to that provided by the structure being demolished.

A Risk Assessment will be undertaken by the demolition contractor and methodologies will be adopted to reduce the potential impact of demolition on ground vibration and in - ground structural support such that vibrations of peak particle velocity are less than 3mm/s within the Tank Stream curtilage. The peak particle velocities should be able to be managed successfully utilising industry standard demolition techniques.

The existing basement car park structure provides lateral support to the basement retaining walls, including the retaining wall adjacent to the Tank Stream. As the car park structure is progressively removed during demolition there will be a need to replace the lateral support with a new retaining structure which is likely to be comprised of horizontal whaling beams held in place by temporary rock anchors.

The temporary retaining structure for the retaining wall adjacent to the tank stream will be constructed in accordance with the Council approved design shown in the figure below.

The installation of the proposed retaining system will be monitored by a suitably qualified engineer whilst the existing car park structure is demolished.

To avoid further impacts to this important historical artefact, the Wanda development will implement the necessary, temporary protection and stabilisation measures as described in condition 116 of Development Application 2010/2029 and detailed in Figure 7, below subject to further structural analysis by a suitably qualified engineering consultant



Project **ALFRED ST**
Subject **TEMP SUPPORT ADJACENT
TANK STREAM**

Job No

By *RW*

Page No

Date **28/5/07**

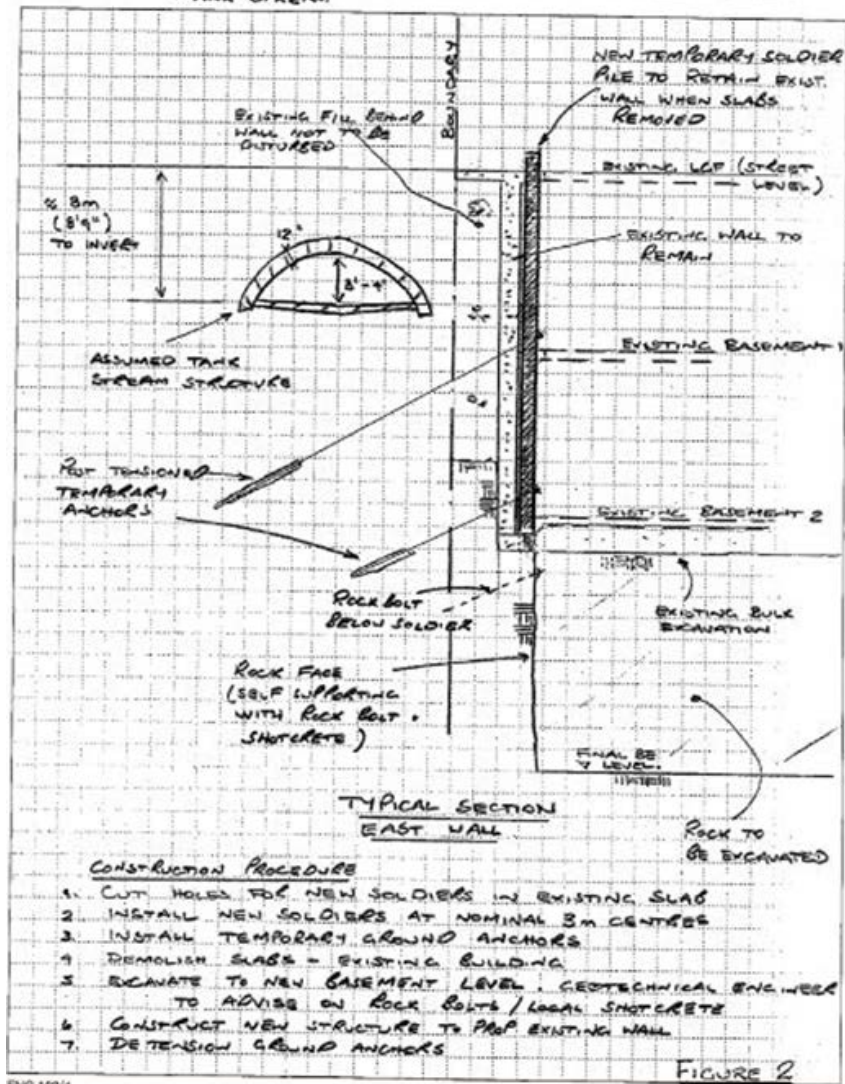


Figure 7 - Tank Stream Temporary Support Design

6.3.2.2 Excavation

Bulk excavation of the soil units is unlikely to cause vibration beyond that of vehicle movements, however where excavation of the sandstone bedrock is required, careful consideration of the excavation methods will be given prior to removal. Excavation of the sandstone bedrock should use methods chosen to limit vibrations. The Tank Stream lies between 1.0 to 2.0 metres lateral distance from the proposed rock excavation area and subsequently the following industry standard excavation methods should be considered to avoid excessive vibration.

1. Within 25 metres lateral distance of the Tank Stream (i.e. within 24 metres of the basement eastern walls) rock hammers over 1,000kg should not be used without vibration monitoring coupled with an automated visual alarm apparent to the machine operator, notifying the operator of any breach of vibration acceptance criteria which would trigger an immediate cessation of the works.

2. At lateral distances greater than 10 metres of the Tank Stream (i.e. greater than 9.0 metres from the eastern wall) rock hammers of up to 1,000 kg may be used in conjunction with vibration monitoring as noted above in item 1.
3. At lateral distances within 10 metres of the Tank Stream (i.e. within 9.0 metres from the eastern wall) rotary rock grinders and the use of rock saws or splitting should be adopted.

During excavation, the integrity of the rock face will be monitored by a suitably qualified engineer.

6.3.2.3 Construction

A monitoring plan will be implemented to validate performance during construction and to provide an early warning of ground movements. This will be undertaken by the main contractor and methodologies will be adopted to reduce potential impact on the Tank Stream fabric.

6.4 Dilapidation Survey

Prior to commencing work onsite, a full Pre-Construction Dilapidation Report will be completed for adjoining buildings as listed below. This detailed survey will encompass current structural, architectural, services and heritage conditions of the existing adjacent neighbouring properties, construction zones, infrastructure and roads. The dilapidation report will cover all areas where construction works are occurring and to which the construction certificate applies. These surveys together with the accompanying photographs will be issued to all adjoining neighbours and lodged with the Certifying Authority and the Council prior to the issue of a Construction Certificate. A post completion survey will also be compiled for comparison. Dilapidation reports for 182 George Street and 33 – 35 Pitt Street will be undertaken subject to this being a requirement of landlord given that these buildings will be demolished in the short term.

6.5 Adjoining and Adjacent Neighbours

Careful site management, which will minimise disruption and inconvenience to neighbouring buildings and their occupants, is of the highest importance. The Contractor will provide a Community Liaison Officer to work with neighbours, understand their needs and requirements, and, where possible, adjust construction works methodologies accordingly. The adjoining properties and neighbours specifically identified for consultation are identified below.

- Jacksons on George;
- Rugby Place;
- 182 George Street and 33 – 35 Pitt Street;
- Four Seasons;
- Herald Square; and
- Gateway Building.

As construction progresses, protection of neighbouring building roofs may be required to the buildings directly adjacent to and within the development. The method of protection will vary and will be resolved with direct communication with each neighbour.

6.6 Adjoining Owners Management

6.6.1 Communication

Prior to commencement of works, the Contractor will undertake a communication meeting with the stakeholders and surrounding tenants. This briefing will involve an outline of the construction

sequence, together with an overview of the staging and timing of the works. This initial meeting will provide an opportunity for input from the stakeholders before finalising methodology, including:

- Definition of lines of communication and appoint a single point of contact for neighbours;
- Times for site inspections within the leased premises;
- Specific dates for regular communication meetings; and
- Implementation of the Disruption Shutdown Application (DSA).

It is essential that the stakeholder team is aware of current and future activities within the development site and how these could impact on tenants and customers.

Points of contact between the Contractor's project team and stakeholders will be agreed for various scenarios, with stakeholders provided with 24 hour contact numbers.

Weekly and/or daily inspections of areas that interface with the tenant and customers will be organised so potential issues can be identified early and addressed.

Key personnel from the Contractor's project team will be available to attend stakeholder internal briefings if required to communicate details of the proposed works to their respective team members.

6.6.2 Services Interruptions and Impairment

Prior to any services being impaired or work being carried out within an active operational environment, a Disruption Shutdown Application (DSA) will be made. This process will be implemented on the project to provide advance agreement for specific work activities to be carried out. DSA's will typically be made a number of weeks in advance of proposed work and in line with the agreed project notification durations. Depending on the risk profile of the proposed work, the agreed notification durations may be required months in advance.

The DSA process will be of particular value on the project in relation to the following elements:

- Activities in the general public realm.
- Works that may affect local traffic flow.
- Works within the basement carpark area.
- Works that may exceed the agreed noise and vibration criteria.
- Major services changeovers or shutdowns.

The benefits to all parties of the DSA process include:

- Proposed works are planned in detail.
- Stakeholders are briefed on the proposal.
- Stakeholders are empowered and become active participants in the project.
- Early dissemination of this information effectively to relevant team members.
- Works are undertaken in a more controlled and diligent manner.

6.6.3 Adjoining Owners agreement

Lend Lease is the owner of the adjacent sites to the south of the Wanda Project being 33 – 35 Pitt Street and 182 George Street. It is understood that the adjacent owner wishes to undertake a redevelopment of these 2 properties as a consolidated site.

Wanda and Lend Lease will work together in good faith and endeavour to ensure that the works undertaken to the 2 sites:

- A. Minimise impacts (where possible) to the surrounding neighbours, public domain and environment in general;
- B. Are undertaken with a high level of coordination and communication.

6.6.4 Complaints Response Process

The complaints response process for the Wanda project will be outlined in the Communication Plan when it is developed. This plan will describe the Contractor's approach and procedures for communication with internal and external stakeholders, necessary territory authorities, and the public.

6.6.5 Emergency Contact

The initial point of contact for complaints will be the Project Manager and the Site Manager.

Project Manager: TBC

Site Manager: TBC

As other key personnel commence onsite, further names and contact numbers will be issued and displayed prominently on sign boards.

7 PUBLIC AMENITY SAFETY AND PEDESTRIAN MANAGEMENT

7.1 Hours of Work

General demolition and construction works has been undertaken within the hours permitted under the development approval. In some cases after-hours permits will be sought from the relevant authorities where special requirements exist, for example oversized deliveries.

Working hours are foreseen as follows:

- Between 7am and 7pm Monday to Friday.
- Between 7am and 5pm Saturday.
- No working Sundays or public holidays.

7.2 Noise and Vibration Management

7.2.1 Noise Management

A Demolition, Excavation and Construction Noise and Vibration Management Plan has been prepared and will be submitted with the relevant Stage 2 development application.

Detailed plans will be developed by the Contractors to address the construction generated noise and vibration that will occur during the project and the measures to mitigate these occurrences.

Some of the noise and vibration generation activities that may occur during construction include the following:

- Static Concrete Pump;
- Excavators;
- Excavator Hammer;
- Rigid Trucks
- Electrical Tower Crane
- Concrete Saw
- Mobile Crane
- 12t Excavator with Pulverisor
- 13t Excavator with Pulverisor hammer grapple
- 5t Excavator with whipper & grapple
- Skid steer Loader
- Tipping Semi Trailer
- 30t Excavator with hammer grapple
- 20t Excavator with grapple

The following noise mitigation measures may be adopted during site project activities:

- Staging of site works to maximise use of the existing building enclosure/ facilities as acoustic barriers where possible;
- Where possible, it is recommended to concentrate high noise activities in one location and move to another as quickly as possible. This will help to minimise the duration of noise disturbance to any given receiver. Equipment should be turned off when not in use.

- The equipment shall be well maintained and a noise monitoring audit program should be put in place to confirm that high noise intrusive appliances remain within specified limits.
- Consideration shall be given to the use of non-“beeper” reversing/movement alarms such as broadband (non-tonal) alarms or ambient noise-sensing alarms.
- When construction low levels and transfer floors, consideration shall be given to staging of construction of the various buildings to maintain as much shielding as possible to neighbouring receivers.
- Noise barriers at the site boundary are recommended.
- Regularly train workers and contractors (such as at toolbox talks) to use equipment in ways to minimise noise.
- Site managers to periodically check the site and nearby residences for noise problems so that solutions can be quickly applied.
- Avoid the use of radios or stereos outdoors.
- Avoid the overuse of public address systems.
- Avoid shouting, and minimise talking loudly and slamming vehicle doors.
- Turn off all plant and equipment when not in use.

7.2.2 Noise Monitoring

Once a detailed construction programme is developed an environmental noise monitoring plan will be developed by the successful contractor to coincide with potentially noisy activities and determine noise levels experienced on site. This can be via a combination of either operator attended or unattended noise monitoring.

Selection of monitoring locations will take into account the locations of the local noise sensitive receivers. Additional attended noise monitoring at other locations and plant and equipment monitoring on-site should also take place as and when necessary.

7.2.3 Complaints Handling

Active communication with nearby noise sensitive receivers will be key in managing potential noise impacts.

A communications register will be established to record incoming complaints. The registration of a particular item shall remain open until the complaint has been appropriately dealt with. It will be the responsibility of the successful contractor to develop an appropriate communications strategy for excavation and construction works, the following sections are provided for information.

7.2.3.1 Communication and Complaints

Throughout the construction period, Building Managers/occupiers of the main adjoining noise sensitive properties likely to be most affected by site works and the operation of plant/machinery particularly during the excavation and construction phases will be notified of impending noisy activities, any changes to the works, and reports on progress.

A contact telephone number for the project will be established and be clearly stated in the communication to nearby receivers. The person who answers this number should have a ‘noise complaints’ pro-forma specifically developed for the project. The complainant will be asked specific questions in order to get all the relevant information that will allow the complaint to be dealt with expediently and effectively.

When a complaint is received, the complainant will be notified when they can expect a follow-up call after their lodging of the complaint. This call should give details of the proposed or actual resolution to the complaint.

If actions have not been taken to resolve the complaint within the specified time period, the complainant will be notified on completion of the actions in addition to the acknowledgement call to advise progress with the complaint.

Upon completion of the proposed actions to resolve the complaint the complainant will be notified and asked whether the complaint has been resolved to their satisfaction and/or whether the complaint now meets the relevant project criteria.

Upon receipt of a complaint in relation to noise it is the responsibility of the successful contractor to coordinate the project team to:

- Ascertain from the complaint what appliance / activity is causing the problem.
- Establish, by way of monitoring, if the allowable noise level has been exceeded for specific plant and general site noise.
- Terminate activity or offending item of plant / machinery if the allowable levels have been exceeded, or take other acoustic remedial action to reduce noise levels to within allowable limits.

Where stopping the activity would create a safety issue the contractor should permit the activity to continue only as long as is necessary to make the area safe. The activity should then be directed to cease.

Any activity that is directed to cease due to excessive noise should not recommence until the contractor is satisfied that the requirements of this plan can be met and has given permission to recommence the activity.

The contractor should ensure that a report of any incident is included in the site records and provided to any relevant stakeholders.

7.2.3.2 Dispute Resolution

Should any complaint not be resolved satisfactorily and results in a dispute, the offending activity of the works should be stopped and not allowed to continue until at least one of the following conditions has been met:

- The complaint has been resolved and communicated to the complainant.
- It has been demonstrated that the relevant noise criteria is met.

7.2.4 Vibration Management

The following guidance provides recommended minimum working distances for vibration intensive plant. These are based on international standards and guidance and reproduced in Table 2 below for reference.

Table 2 - Recommended minimum working distances for vibration intensive plant (Reference - Construction Phase Noise and Vibration Management Plan)

Plant Item	Rating / Description	Minimum working distance	
		Cosmetic damage (BS 7385)	Human response (OH&E Vibration Guideline)
Vibratory Roller	< 50 kN (Typically 1-2 tonnes)	5 m	15 m to 20 m
	< 100 kN (Typically 2-4 tonnes)	6 m	20 m
	< 200 kN (Typically 4-6 tonnes)	12 m	40 m
	< 300 kN (Typically 7-13 tonnes)	15 m	100 m
	> 300 kN (Typically 13-18 tonnes)	20 m	100 m
	> 300 kN (> 18 tonnes)	25 m	100 m
Small Hydraulic Hammer	(300 kg - 5 to 12t excavator)	2 m	7 m
Medium Hydraulic Hammer	(900 kg – 12 to 18t excavator)	7 m	23 m
Large Hydraulic Hammer	(1600 kg – 18 to 34t excavator)	22 m	73 m
Vibratory Pile Driver	Sheet piles	2 m to 20 m	20 m
Pile Boring	≤ 800 mm	2 m (nominal)	N/A
Jackhammer	Hand held	1 m (nominal)	Avoid contact with structure

Note: More stringent conditions may apply to heritage or other sensitive structures

Mitigation will therefore need to be considered where sensitive receivers are located closer to the construction work zone than these 'safe working distances'. It is noted that focus is on mitigating cosmetic damage.

7.3 Public Safety

Works will be undertaken with public safety as a significant consideration. Class A and B type hoardings will generally be erected around the site perimeter and where construction is occurring over or adjacent to public thoroughfares.

Formwork screens will be utilised to secure leading edges during construction of structural elements.

General safety measures will be undertaken as standard practice such as scaffolding around demolition works, adequate lighting, safety signage, provision of site security, flashing lights at vehicle cross overs, physical barriers between construction works areas, and public access areas.

The various methods and extent of the public and tenant access protection has been considered. Key elements of protection access provided to comply with the City of Sydney Hoarding Policy guidelines are:

- Erection of an “A” class hoarding of standard plywood type construction
- Installation of a “B” class hoarding where tower-crane-lifting is proposed to take place.

7.4 Pedestrian and Cyclist Management

To allow for continuous public access, materials handling and management of pedestrian safety, diversions of existing pedestrian and cycling routes will be required for large periods of the work.

George, Alfred and Pitt Street are all classed as bicycle-friendly roads by Sydney Cycle ways. There is also a separate dedicated cycleway at the northern end of Pitt Street (refer to Figure 8). Furthermore, CoS's Cycle Strategy and Action Plan includes a future bicycle route along Pitt Street from Circular Quay to Mascot. The Contractor will manage the associated cyclist and pedestrian activity through measures such as temporary pathways, signage and specialised traffic controllers at vehicle crossings. The installation of way finding signage and lighting will be professionally managed to ensure clear pedestrian and cyclist understanding and preservation of safety and amenity.

Further measures will be detailed in the site specific Traffic Management Plan.

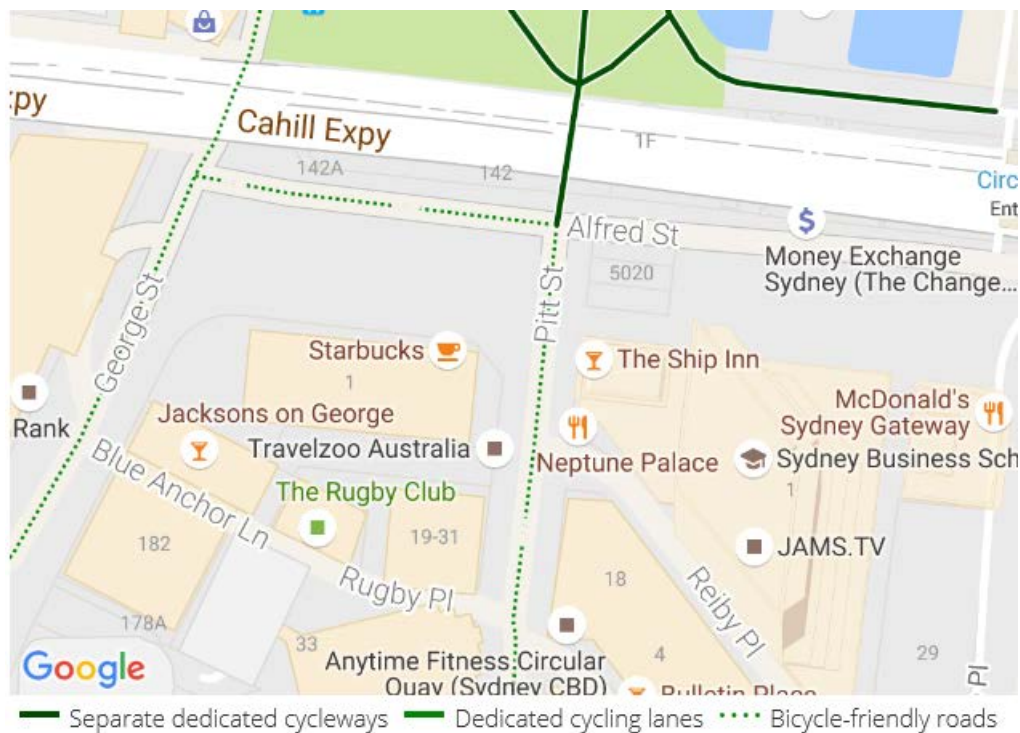


Figure 8 - Screenshot of Sydney Cycleways Map

8 TRAFFIC MANAGEMENT

The Contractor will prepare a detailed Traffic Management Plan prior to the issue of a Construction Certificate. Traffic will generally be managed in the following way:

- Designated transport routes will be communicated to all personal, and enforced.
- Designated peak hour and non-peak hour delivery vehicle waiting areas.
- Strict scheduling of vehicle movement will occur to minimise off site waiting times.
- On-site parking will not be provided, and site workers will utilise public transport and car sharing wherever possible.

- Vehicle movements will be compliant with conditions of consent and broader road-use regulations, particularly with regard to hours of work, materials loading and unloading, and over size deliveries and installation.
- Stakeholder feedback.

8.1.1 Traffic, Cyclist and Pedestrian Management

- A site specific Traffic, Cyclist and Pedestrian Management Plan will be produced then updated for each phase of the Wanda project works to ensure vehicle movements to, around and from the site do not affect traffic arterials within the vicinity of the project or pedestrian movements around it.
- The contractor will manage traffic associated with the site to minimise the impact on the local area. The Traffic, Cyclist and Pedestrian Management Plan will be incorporated in subcontractor agreements and the key points communicated to the workforce through the site induction procedures.

8.1.2 Traffic, Routes and Volumes

The nature of the proposed traffic routes and volumes are a preliminary estimate only and will be subject to a degree of change and refinement as the design develops along with contractor involvement.

The estimated demolition stage truck movements are:

- Approximately 3900 truck loads total
- Approximately 20 truck movements per day

The estimated excavation stage truck movements are:

- Approximately 3200 truck loads total
- Approximately 23 truck movements per day.

The estimated construction stage truck movements are

- Approximately 16 truck movements for deliveries per day.
- Approximately 112 concrete agi truck movements per day.

8.2 Site Access

As previously described, the site is bounded by Pitt Street to the east and George Street to the west. Herald Square separates the site from Alfred Street to the north.

Approved driveways will be constructed for all vehicular access to the construction site in accordance with the requirements of Council's "Driveway Specifications" to the satisfaction of Council.

All vehicles involved in the excavation and/or demolition process and departing the property with demolition materials, spoil or loose matter will have their loads fully covered before entering the public roadway.

As per Section 9.3.2 of this document, there will be truck wash facilities on site to prevent silt and debris being transferred from site to public roadways.

8.2.1 Deliveries

The predominant means of delivering materials to the site will be via construction loadings zones. The extent of the construction loading zones will be varied throughout the project to suit project needs for each phase of the demolition and construction.

It is foreseen that the following construction zones will be required throughout the individual phases of the works:

8.2.1.1 Pitt Street Loading Zone

This zone will act as the primary loading zone for all phases of the project. Trucks will enter and exit in a forward direction off Pitt Street. The installation of a work zone on Pitt Street will be required due to the limitations of access North, East and South sides of the project. This will be subject to Council's approval.

Refer to Appendices [5](#) and [6](#).

8.2.1.2 George Street Access Way

Subject to Council's approval, a provision for an access gate to allow Heavy Rigid vehicles to enter the site in a way one direction from George Street would assist construction activities.

Access to come through this gate with a Heavy Rigid Truck would be dependent upon the timing of the rail project works and the intended traffic management procedures to be adopted.

As Tower A has very restricted access, an alternative second access for Heavy Rigid vehicles only will be required. This may include an entrance from George Street, subject to approval.

Due to the constraints of having the major access and egress from one location in Pitt Street, the project would require a concrete pumping plant to be temporarily located within the site road on Pitt Street (subject to Council's approval).

To minimise the impacts of these loading zones, trained traffic controllers will be stationed within the loading zones at all times during construction hours to ensure that the traffic management plan is complied with.

8.3 Street Closures

At present, it is not anticipated that any full street closures will be necessary for the demolition and construction stages. However, some partial street closures may be required subject to integration with the Light Rail Works program and permanent closure of lower Pitt Street. In the event that a partial street closure is necessary, applications will be submitted to Council at least 48 hours prior.

8.4 TfNSW

The Developer will design and construct the development in accordance with the "Development near rail corridors and Busy Roads – Interim Guideline 2008 prepared by the Department of Planning and Environment. Careful consideration of subsidence vibration and structural instability will be incorporated into the design and construction.

The Developer and Contractor will liaise with TfNSW, Sydney Buses and other relevant government agencies to devise a strategy and plan in regard to:

- Potential impacts to bus routes along George Street, Alfred Street and Pitt Street prior to any street closures as a result of the CBD Light Rail Project.

- Impacts to and from the construction activities associated with the CBD Light Rail Project which commenced key infrastructure works in May 2015 and is due to be completed for operation by 2020.
- Access alterations associated with the proposed Light rail Terminus proposed for construction to the north of Herald Square.
- Ensuring that the structure is designed to withstand vibrational and structural effects from the proposed underground rail corridor that will run underneath Pitt Street.
- Ingress and egress of vehicles to the Site.
- Construction programme.
- Predicted construction traffic movements, types and routes.
- Construction impacts on the road network and the safety of pedestrians/cyclists.
- Pedestrian and traffic management measures.

A detailed plan will be developed in consultation with the relevant transport authorities to minimise disruption to commuters and to maximise efficiencies for all parties.

A regime shall be prepared for consultation with, and approved by TfNSW/Sydney Trains for the excavation of the site and the construction of the building foundations (including ground anchors) for the approved development, which may include geotechnical and structural certification in the form required by TfNSW.

Due to the nature of these works, detailed coordination will be required to be undertaken with the Contractor and Sydney Light Rail for the purposes of road closures, deliveries and the like.

9 ENVIRONMENTAL MANAGEMENT

9.1 Work Health and Safety

The Contractor will be the nominated “Principal Contractor” as required under the HSE Act. This role will require the careful and controlled management of worker and public safety. Detailed methodologies are yet to be developed, however typical approaches include job training, toolbox talks, and implementation of emergency management plans, safe work method statements, weekly Work Health and Safety (WHS) meetings and audits to confirm compliance.

The Contractor will be required to report on WHS on a regular basis.

9.2 Hazardous Materials

Consultant survey works are required in order to establish existing site conditions and identify any remediation works that may be required. This investigation would include:

- Hazardous material (Hazmat) survey of the existing structures
- Any additional requirements for soil classification, sampling and analysis works
- Community liaison plan to be established and contact made with relevant authorities.

In the event that hazardous materials are uncovered once site works have commenced, the following procedures and principles will be followed; this would be consistent for expected and unexpected hazardous materials:

- Notification to client and project stakeholders;
- The contractor shall develop a remediation management plan specific to the Hazard identified;
- Advise the client of the most cost and time efficient solutions whilst adhering to industry best practice standards
- Agree strategy and commence implementation.

With asbestos for example, all employees need to be trained in the recognition of asbestos and synthetic mineral fibre (SMF) as part of their employers Safe Work Method Statements (SWMS). Employees would cease work on discovering any Hazmat not identified in the report and then inform their supervisor who would arrange for the appropriate action to be taken.

General procedures for hazardous materials removal (including asbestos) will usually be carried-out as follows, but often specific details and procedures will be developed upon material identification. Detailed work method statements will be produced identifying processors such as:

- The area to be decontaminated to be bunted off at a minimum 10 metre radius
- Asbestos warning signage to be erected to inform people of the nature of the work being carried out
- ‘No unauthorised access’ signage to be erected
- Water points to be established
- Personal Protective Equipment (PPE) including but not limited to Hard Hat, Safety Boots, Disposable Coveralls, Gloves, Masks and Glasses to be worn at all times when in the Hazmat removal zone
- All personnel involved in the removal of asbestos to have attended and completed the approved Work cover courses and to be the holders of valid, Work Cover approved asbestos removal licenses

- Tools and equipment appropriate to the type of asbestos containing material to be used for its removal in order to minimise the disturbance of the material thus preventing the release of fibres
- Where appropriate, water to be used to keep the material slightly damp thus minimising the chances of dust and fibres being released
- All asbestos waste to be wrapped in 200µm plastic and tightly secured
- All asbestos waste to be removed from site and disposed at a licensed EPA asbestos disposal facilities
- Asbestos waste to be removed at the end of each shift. Stockpiling of asbestos will not be permitted
- Clearance certificates to be provided on completion of Hazmat Removal.
- The protection of all council infrastructure including trees, overhead cables, and existing services will be managed to ensure that all infrastructure is maintained, and in the same condition at the completion of the project.
- The following protection procedure will be adopted:
 - Ensure all existing services are identified, and terminated or diverted as appropriate
 - Ensure movement or placement of construction plant does not damage infrastructure
 - At the beginning of construction we will advise adjoining and nearby properties of commencement date, possible disruptions and approximate construction time.

9.2.1 Site Remediation and Hazardous Materials

Consultant survey works have already been carried out to establish existing site conditions and to identify any remediation works that may be required. As hazardous materials have already been identified procedures and principles have been developed. These procedures and principles will be consistent for expected and unexpected hazardous materials. They are outlined below:

- Notify client and project stakeholders
- Develop a Remediation Management Plan
- Advise the client of efficient solutions according to industry best practice standards
- Agree strategy and commence documentation of DSA (Disruption Shutdown Applications)
- Communicate DSA to all stakeholders
- Validation of Remediation Action Plan upon completion of hazardous material removal.

Hazardous substances supplied to the project will be approved for use and accompanied by a current Material Safety Data Sheet (MSDS). All hazardous substances will be registered, correctly stored, decanted, used and disposed in accordance with the MSDS and regulatory requirements. Employees will be trained in the Safe Work Method Statement (SWMS) based on the MSDS and provided with the appropriate Personal Protective Equipment (PPE).

9.3 Site Discharge

Any discharges from the site will be strictly controlled to ensure hazardous materials and contaminants are contained to authority requirements and do not pollute the council storm water system. The contractor will have within its standard procedures, the requirement of spill kits for hazardous materials also including environmental audits that review the usage and storage of hazardous materials onsite.

9.3.1 Dewatering

Prior to any dewatering, a bore licence may be required from the NSW Office of Water (NOW) under the provisions of Part V of the Water Act 1912. The Contractor will liaise with NOW prior to commencing works to confirm if this is a requirement for this project.

The Developer and Contractor are committed to the management of water discharge from the site throughout the duration of the project. To ensure effective management, a 'Water Quality Management Plan' as a sub-plan to the Environmental Management Plan will be implemented.

Key management strategies include:

- Objective – Avoid the release of contaminants to waterways / drainage systems
- Target – All water discharged complies with the Healthy Waters State Planning Policy
- Measure – Water Quality records confirming compliance with pre-discharge limits. These and other water quality aspects at Wanda site will be controlled by:
 - Weekly environmental inspections
 - Water quality recording
 - Training for responsible staff
 - Tool Box talks for trade staff
 - Subcontractor Environmental Work Method Statements.

9.3.2 Truck Wash Facilities

As the project consists of redevelopment of the existing premises, with trucks being confined within the construction zones rather than a new build work which requires vehicle movements within the site boundaries, a truck wash facility will be required onsite at truck access/egress points. Construction zones will be kept clean at all times to ensure tyres of trucks and vehicles exit in the same condition that they have entered.

9.3.3 Silt Protection Maintenance of Adjoining and Access Roads

A Stormwater and Sediment Control Plan will be submitted as part of the stage 2 DA application to ensure that stormwater from the project does not enter adjoining properties, access roads, etc. and that no minimise silt or other contaminants in site based storm water entering the council stormwater systems.

Prior to the commencement of any works on site, the Stormwater and Sediment Control Plan will be submitted to the Principal Certifying Authority for approval.

The Stormwater and Sediment Control Plan includes but is not limited to providing further detail to the following:

- Existing site contours;
- Location and diagrammatic representation of all necessary erosion and sediment control systems or structures used to mitigate or prevent pollution to stormwater;
- Location and engineering details with supporting design calculations for all necessary sediment basins, constructed wetlands, gross pollutant traps, trash racks or bio-filtration swales (as relevant)
- Extent/location of silt protection to be installed
- Extent/location of sediment basin to be installed

- Regular weekly checks of silt fences, banks and the like
- Specific checks after any significant storm event to ensure integrity and performance of silt protection
- Sediment fences to be repaired as required and excessive sediment deposits should be removed
- Water quality samples must be taken and analysed prior to the release of any water from the sediment pond/catchment
- All water quality data including dates of rainfall, testing and water releases must be maintained in an onsite register
- Maintenance and cleaning of adjoining/surrounding access roads.

9.4 Dust Control

Dust control will be implemented in areas of all active demolition and construction. Dust control will also be implemented within the construction zone as determined by the Contractor, and as required for the health and safety of employees.

All works will be undertaken in accordance with a 'Construction Air Quality' sub-plan as part of the Environmental Management Plan. Dust control measures will be implemented as required, and in accordance with Protection of the New South Wales Environment Operations Act. Dust management will be most critical during the demolition and excavation phases of the project. All subcontractors involved with these works will be required to provide Environmental Work Method Statements that specifically address dust management.

Methods of reducing dust that will be implemented are:

- Reduce quantum of demolition "breaker" work by cutting structural demolition elements into larger sections for removal by tower crane
- Encapsulating work zones through the construction of engineer designed full height dust proof structures / hoardings
- Reviewing tool and plant selection in an attempt to select plant with superior acoustic performance
- Utilising concrete saw cutting techniques to reduce dust generation
- Continuous cleaning throughout dust generating work activities
- Ensuring demolition debris skips are covered at all times.
- Site perimeter – Solid panel hoarding will be provided on the boundary during the overall construction phase and perimeter scaffolds clad in shade cloth will be provided during demolition to minimise the escape of dust
- Demolition and excavation – Working surfaces will be watered down as required with stock piling of material minimised
- Plant movement within the basement will be minimised with all loads covered before exiting the site and a stabilised driveway maintained
- Construction – A high level of housekeeping to minimise the likelihood of windblown dust and the banning any dry grinding will be maintained.

9.5 Waste Management

The Contractor will prepare a detailed Waste Management Plan (WMP) incorporating a Waste Minimisation Plan prior to the issue of a Construction Certificate. It will be developed in accordance with the Contractor's Environmental Management System to ensure optimum waste management initiatives are implemented. Preliminary Waste Minimisation and Waste Management Plans are shown in Appendices [9](#) and [10](#), respectively.

It will be part of the Contractor's philosophy that a tidy site is a safe site, and this principle will be maintained throughout the construction duration. Rubbish bins/skips will be provided at strategic positions around the site, where all subcontractors will be required to clear their rubbish as it accumulates. These bins will be brought down the building in the construction hoists / builders lifts and loaded via forklift into the large skips for removal from site.

The aim of the WMP will be to reduce the amount construction waste going to landfill. The (WMP) will meet regulatory requirements compliance with potential Green Star benchmarks set for the Wanda projects.

The Contractor's project team will be trained in the WMP and the subcontractors informed on variations to the required changes from the industry 'business-as-usual' approach.

All rubbish will be removed from site on a daily basis via wheelie bins and deposited in bins/skips which will be provided at strategic positions onsite. Where space permits, the Contractor will also provide specifically labelled recycling bins for materials such as, cardboard and plasterboard to maximise the amount of material able to be recycled.

In addition, all subcontractors are responsible for removing their own packaging and other re-usable items such as pallets from site. Adopting this policy:

- Promotes recycling by subcontractors and suppliers
- Removes unnecessary packaging at the source rather than at site
- Reduces the amount of rubbish being sent to land fill.

Monthly reports detailing the overall percentage of rubbish being recycled will be provided by the Contractor. This information will enable the effectiveness of the implemented waste management strategies to be monitored and appropriate steps to be taken if necessary to improve.

Communal garbage areas will be provided with a suitable outlet which discharges directly to the sewer to allow for the discharge of waste water used in the process of washing down bins or the surrounding area.

Prior to the exportation of waste (including fill or soil) from the site, the waste materials will be classified in accordance with the provisions of the Protection of the 'Environment Operations Act 1997 and the NSW DECC Waste Classification Guidelines, Part1: Classifying Waste (April 2008)'.

9.6 Recycling

Further to Section 9.5 Waste Management, detailed recycling programs will be developed for both demolition and construction phases of the works. The site subcontractors will be required to report on extent of recycling achieved and be subject to Environmental Audits.

The collection of waste and recycling will only occur between 7.00am and 8.00pm weekdays and 9.00am and 5.00pm weekends and public holidays to avoid noise disruption to the surrounding area.

9.7 Acid Sulfate Soils Management Plan

The geotechnical report prepared for the development indicates there is a small potential that acid sulfate soils are present at the site. An Acid Sulfate Soils Management Plan has been submitted in with the Stage 2 Development Application.

Should the An Acid Sulfate Soils Management Plan determine that Acid Sulfate soils do not need to be treated, then a suitable report confirming such will be obtained from a suitably qualified Environmental consultant in accordance with the 'Acid Sulfate Soils Assessment Guidelines' (ASSMAC August 1998).

9.8 Ecologically Sustainable Development - Demolition & Construction

Throughout the development of this CMP, there has been ongoing consideration of the ESD principles and how they will be incorporated into the construction stages of the development. This section summarises the main measures that have been identified to maintain an Ecologically Sustainable Development during the demolition and construction stages.

9.8.1 The Precautionary Principle

It is considered that through the adherence to the mitigation measures outlined in Section 9, the proposal should not result in serious impact to the environment during the demolition and construction stages. This is in line with previous environmental studies and technical reports, which are addressed in more detail in the Environmental Impact Statement (EIS).

9.8.2 Conservation Of Biological Diversity And Ecological Integrity

The proposal does not require the removal of significant vegetation, and due to its location within the Sydney CBD, the proposal is unlikely to impact any endangered or vulnerable species surrounding the site.

9.8.3 Inter-Generational Equity

A Sustainability Statement has been prepared to confirm the sustainability aspirations of the subsequent stages of development to ensure that as a result of the development, adverse impacts will not be unreasonably imposed on future generations. The following ESD initiatives are being considered for the demolition and construction stages of this project:

- High levels of construction & operational waste recycling.
- Recycled content in structural cement and timber.
- The mix water for all concrete used in the project contains at least 50% captured or reclaimed water (measured across all concrete mixes in the project).
- Vehicles will not be left turned on or idling at the site for longer than minimum amount of time required to complete the work activities.
- Erosion and Sediment Controls.
- Water monitoring.
- Safe handling and removal of hazardous materials.
- Efficient methods to minimise double handling.

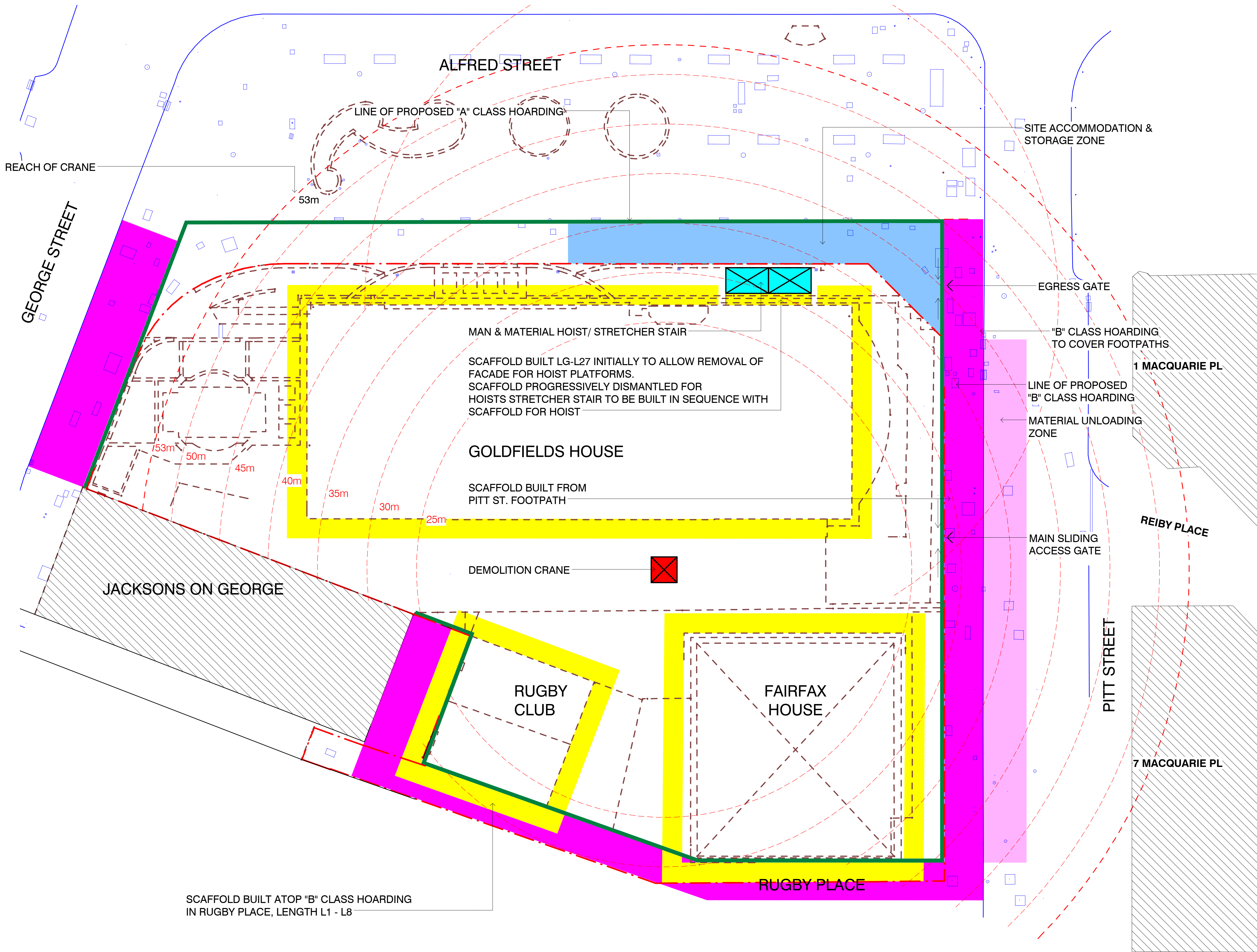
APPENDICES



Appendix 1 – Referenced Documents

Document	Author
Wanda Sydney - Construction Noise and Vibration Management Plan	Arup
Wanda One Sydney – Tower B ESD Report	Arup
Wanda One Sydney – Tower A ESD Report	
Wanda Sydney - Traffic and transport assessment	Arup

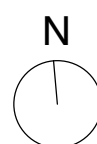
Appendix 2 – Stage 1 Phase A Demolition Plan: To Ground



LEGEND

- A CLASS HOARDING
- B CLASS HOARDING
- SCAFFOLD
- SITE ACCOMMODATION & STORAGE ZONE
- CONSTRUCTION ZONE
- CONCRETE BARRIER

STAGE 1 - PHASE A DEMOLITION PLAN - TO GROUND



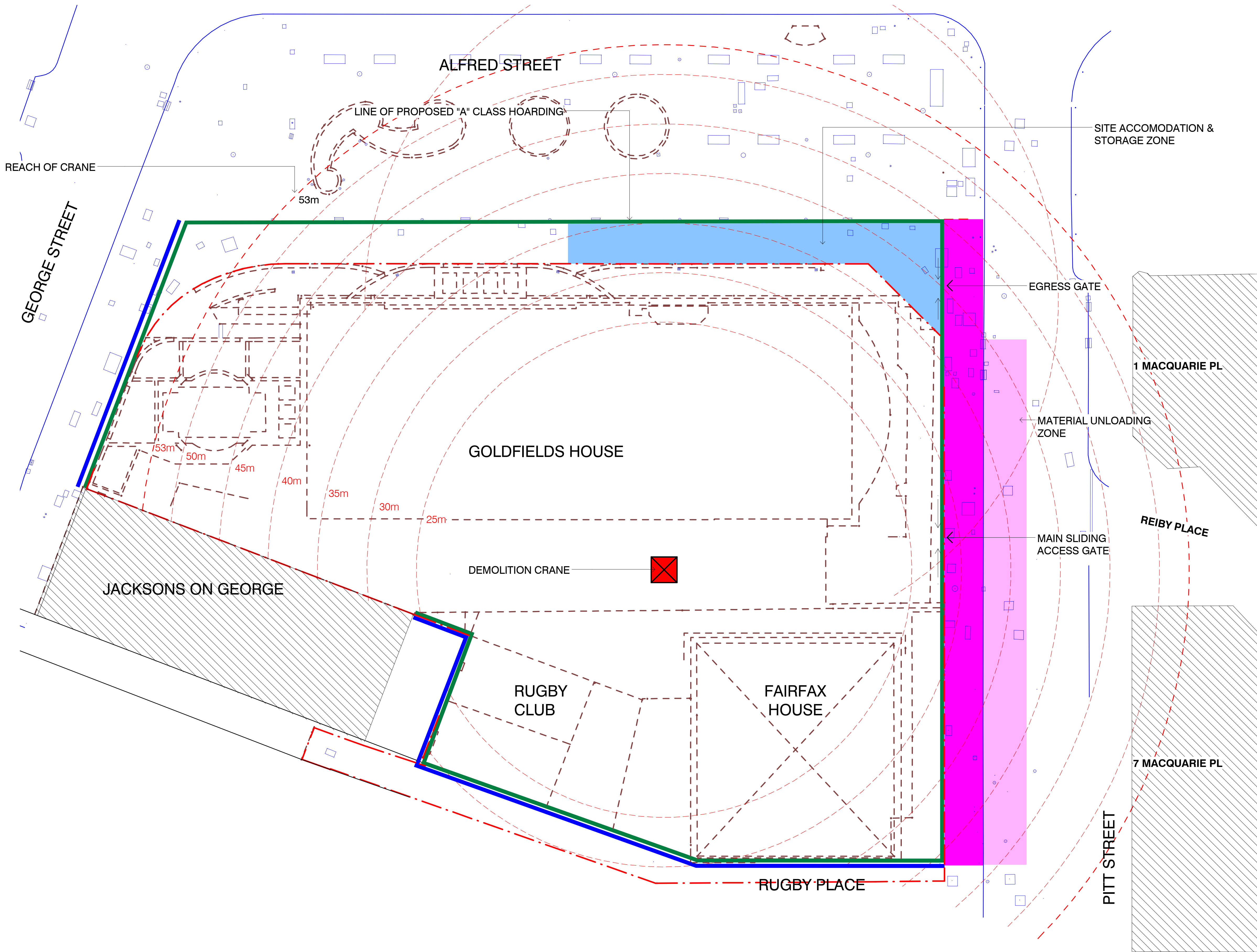
CONSTRUCTION MANAGEMENT PLAN
PT- AR- AA-SK-4000
DEMOLITION PLAN - TO GROUND FLOOR
1:200 @ A1
WANDA SYDNEY PROJECT
09/16/16

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Appendix 3 – Stage 1 Phase B Demolition Plan: Basement



STAGE 1 - PHASE B DEMOLITION PLAN - BASEMENT



CONSTRUCTION MANAGEMENT PLAN
PT- AR- AA-SK-4001
DEMOLITION PLAN - BASEMENT

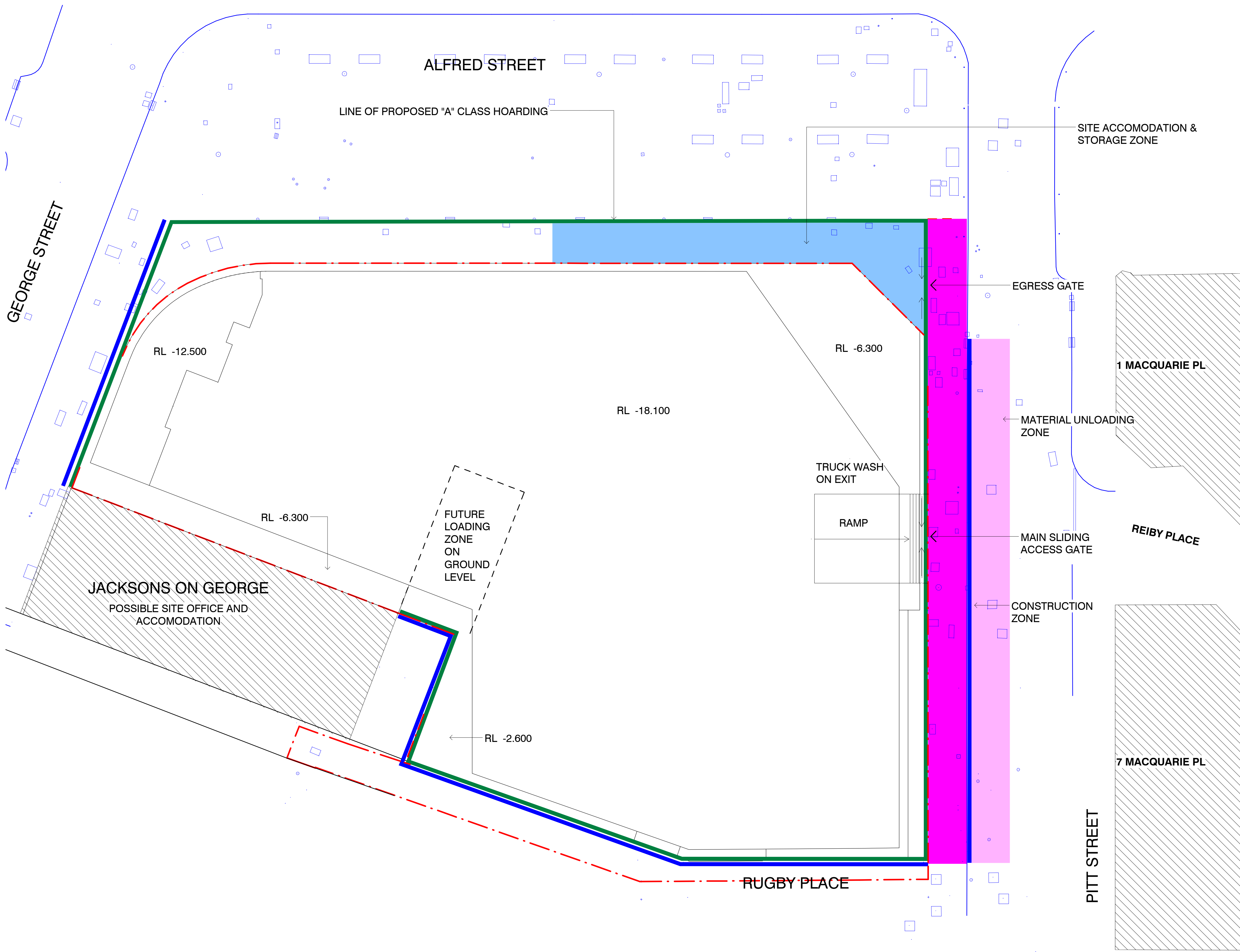
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Appendix 4 – Stage 2 Excavation Plan



LEGEND

- A CLASS HOARDING
- B CLASS HOARDING
- SCAFFOLD
- SITE ACCOMMODATION & STORAGE ZONE
- CONSTRUCTION ZONE
- CONCRETE BARRIER

STAGE 2
EXCAVATION PLAN

N

CONSTRUCTION MANAGEMENT PLAN
PT- AR- AA-SK-4002
EXCAVATION PLAN - BASEMENT
1:200 @ A1
WANDA SYDNEY PROJECT
09/16/16

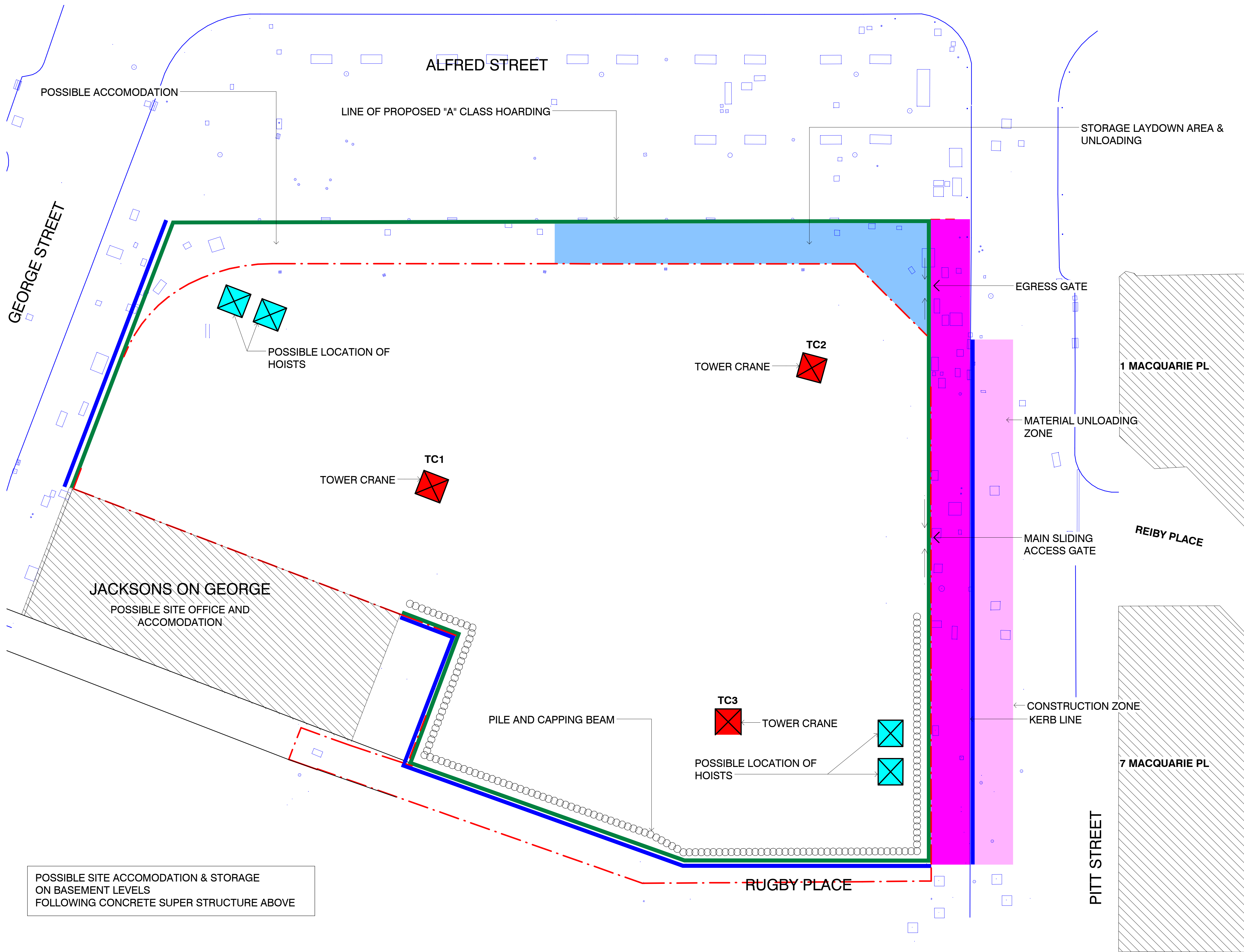
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Appendix 5 – Stages 3 & 4 Construction Plan: Basement to Ground

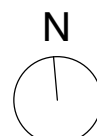


LEGEND

- A CLASS HOARDING
- B CLASS HOARDING
- SCAFFOLD
- SITE ACCOMMODATION & STORAGE ZONE
- CONSTRUCTION ZONE
- CONCRETE BARRIER

STAGE 3 & 4

CONSTRUCTION PLAN - BASEMENT TO GROUND



CONSTRUCTION MANAGEMENT PLAN
PT- AR- AA-SK-4003
CONSTRUCTION PLAN - BASEMENT-GROUND

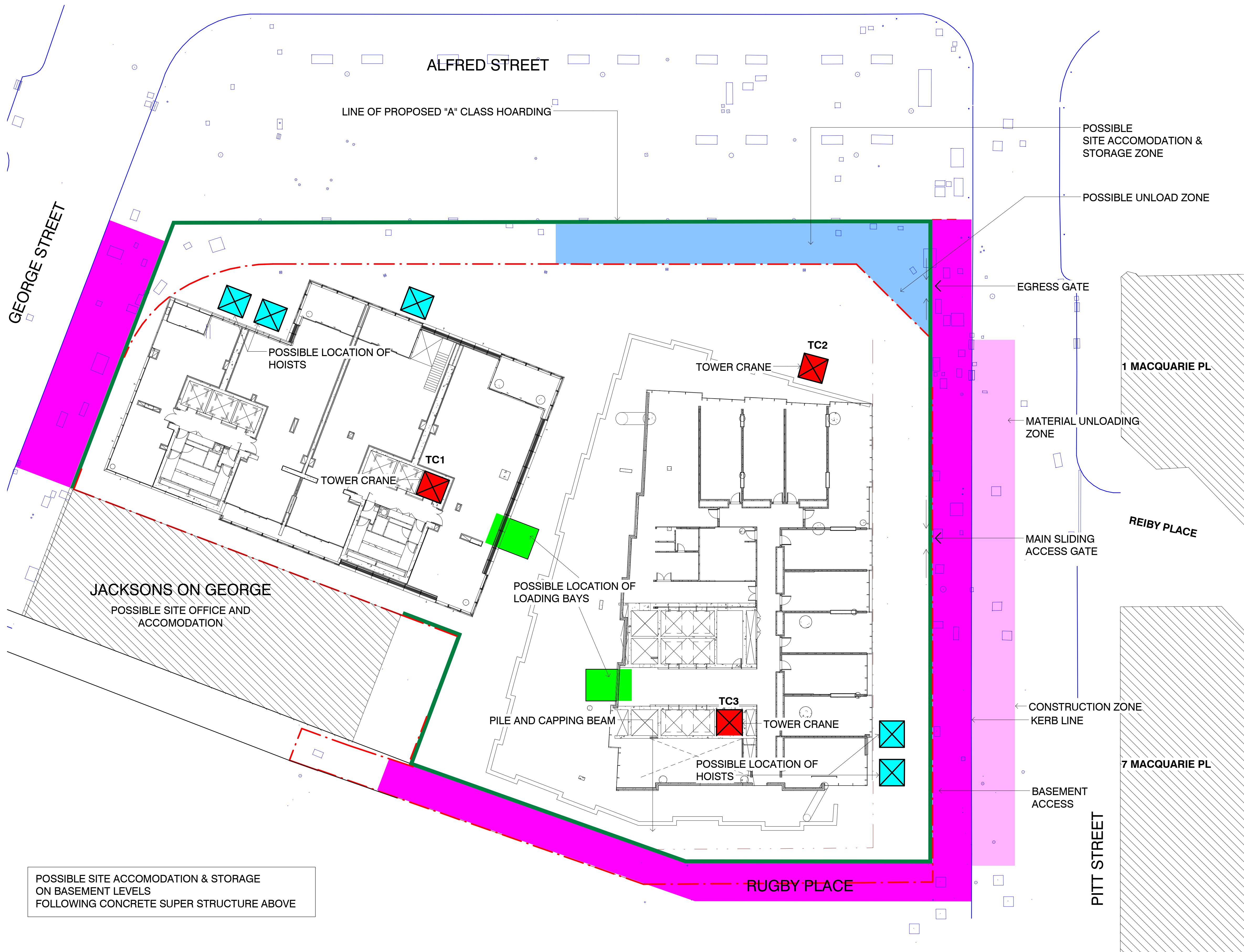
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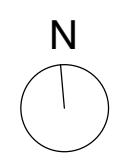
Appendix 6 – Stage 5 Construction Plan: Above Ground



LEGEND

- A CLASS HOARDING
- B CLASS HOARDING
- SCAFFOLD
- SITE ACCOMMODATION & STORAGE ZONE
- CONSTRUCTION ZONE
- CONCRETE BARRIER

STAGE 5 CONSTRUCTION PLAN - ABOVE GROUND



CONSTRUCTION MANAGEMENT PLAN
PT- AR- AA-SK-4004
CONSTRUCTION PLAN - ABOVE GROUND
1:200 @ A1
WANDA SYDNEY PROJECT
09/16/16

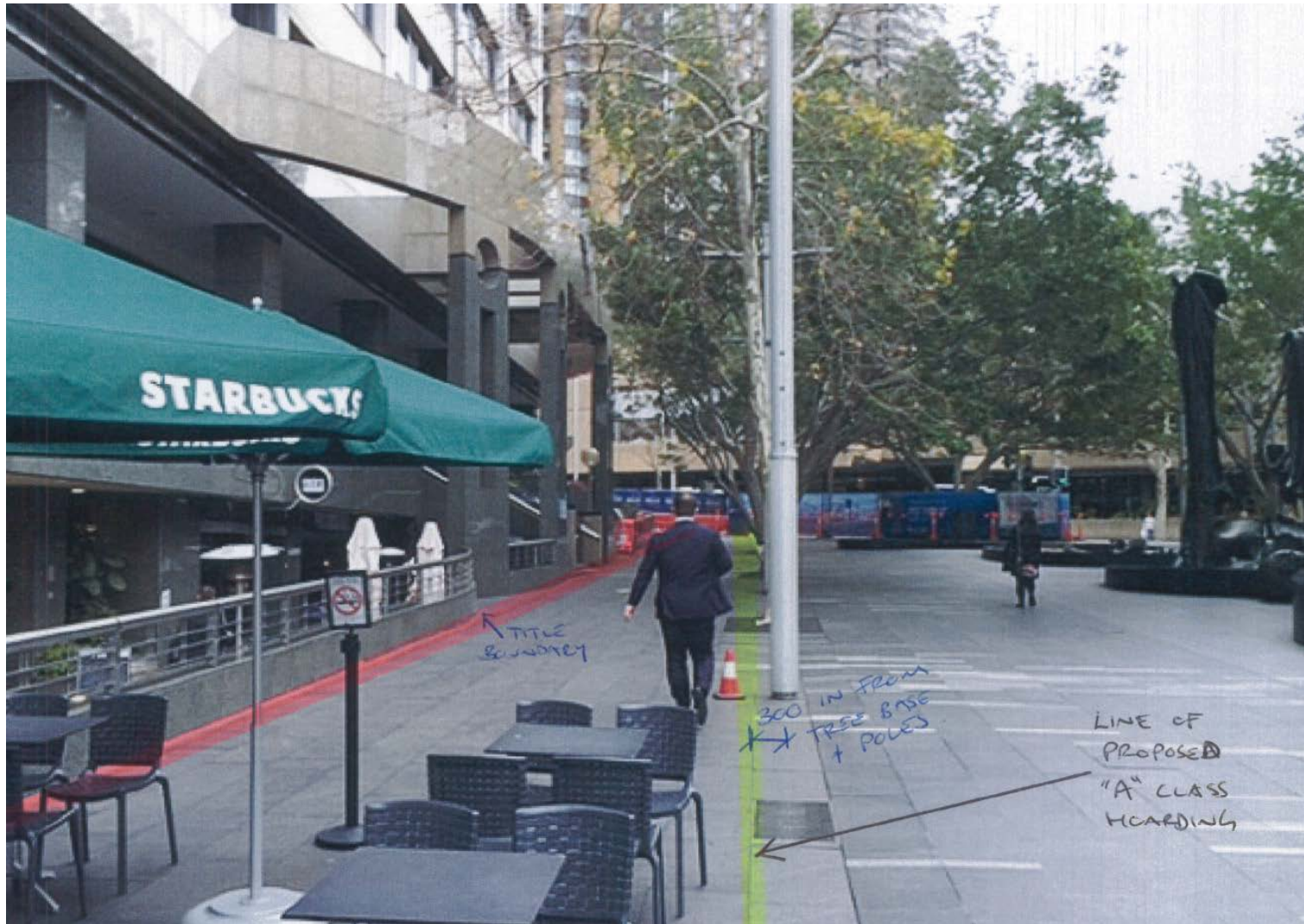
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PTW

Appendix 7 – Photo of Pitt Street Boundary



Appendix 8 – Photo of Herald Square Boundary



Appendix 9 – Waste Minimalisation Plan

Objectives and Targets

Objective	Target	Key Performance Indicator
Waste is to be classified prior to disposal.	All waste to be disposed of by a licensed waste contractor.	Waste Classification Report
Solid and liquid waste to be disposed of as per Regulatory requirements.	All waste to be disposed of by a licensed waste contractor.	Onsite waste disposal facilities confirm and documented.
Contractor aim to maximise landfill diversion.	Recycle up to 90% of demolition and construction waste.	Waste reporting by waste contractors

Management Strategies

Parameter	Action	Timing	Responsibility
Waste Management Plan	Waste subcontractors will be required to develop a Waste Management Plan for their Scope of Work detailing the type of waste generated, waste avoidance/reduction/reuse/recycling strategies.	Establishment	Demolition and General Contractors
Storage Area	A storage area allocated for the separation, collection and recycling of wastes shall be established and located to ensure safe storage, handling and collection of waste and recycling.	Establishment	Contractor
Waste Classification	All waste is to be classified. All soil areas that may have asbestos or lead based paint are to be tested to provide a NATA certified waste classification for waste disposal purposes.	Establishment	Contractor, Environmental / Contamination Consultant
Waste Contractors	Licensed contractors shall be engaged to remove construction waste. An agreement shall be entered into requiring reporting on quantities diverted from landfill including approx. diversion rates of 90%. Waste disposal documentation will be required as proof of disposal to a landfill that can accept the waste.	Establishment	Contractor
Equipment	Waste skips will be provided by the waste contractor. Size will be determined by the stage of work in hand and will be subject to change. Wheeled waste bins will initially be removed each day via the existing lifts to the waste collection point on the upper ground loading dock level. As construction progresses, waste skips will be utilised and removed via crane and or hoist to be deposited in a main skip at the waste collection point.	Establishment	Contractor
Organic Waste	All organic waste to be placed in a lidded bin and removed separately.	Establishment	Contractor
Demolition / Construction	Waste skips will be provided by the waste contractor .and stored onsite	Establishment	Demolition and General Contractors
Site Office	The site office shall implement the following office waste minimisation techniques: - Organising recycling paper bins in the office for waste paper. - Recycle toner cartridges pick-ups. - Using electronic storage to reduce use of paper. - Purchasing products in bulk to reduce packaging.	Establishment	Contractor
Hazardous Waste	All waste classified as hazardous or special waste such as lead based paint or asbestos is to be disposed to a landfill that can legally accept the waste. All waste contractors are to provide delivery dockets for the waste.	Establishment	Contractor Waste Contractor
Package Minimisation	Subcontractors shall be required to minimise the packaging they bring onto the site and to reuse off-cuts of materials where possible.	Construction	All Subcontractors
Pallets and Reels	Pallets and reels shall be separated and stored by subcontractors for return to the suppliers with the other reusable packaging.	Construction	All Subcontractors

Monitoring and Reporting

Type of Monitoring/Reporting	Timing	Responsibility	Record
Percentage of diversion from landfill	Monthly	Waste Contractor	Monthly Landfill Diversion Report
Waste Budget	Monthly	Contractor	Waste Budget Report
Organic Waste to be Separated and Placed in a Lidded Bin	Weekly	Contractor	Weekly Environmental Inspection
Segregated Waste and Appropriate Waste Placement	Weekly	Contractor	Weekly Environmental Inspection

Appendix 10 – Waste Management Plan

Waste Management Plan

Type of Material	Vol	Onsite Reuse and Recycling Methods	Offsite Reuse and Recycling Outlet	Disposal
A) DEMOLITION				
Concrete	TBA	Separate in designated bin.	Transfer for re-use and re-sale/Demolition Contractor	TBC – approx. 90% diversion from landfill.
Tiles	TBA	Separate in designated bin.	Transfer for reprocess or recycle/Demolition Contractor	TBC – approx. 90% diversion from landfill.
Masonry, Brick & Tile	TBA	Separate in designated bin.	Transfer for re-use and re-sale/Demolition Contractor	TBC – approx. 90% diversion from landfill.
Stone flooring	TBA	Separate in designated bin.	Transfer for re-use and re-sale/Demolition Contractor	TBC – approx. 90% diversion from landfill.
Timber	TBA	Separate in designated bin.	Transfer for re-use and re-sale/Demolition Contractor	TBC – approx. 90% diversion from landfill.
Glass	TBA	Separate in designated bin.	Transfer for re-use and re-sale/Demolition Contractor	TBC – approx. 90% diversion from landfill.
Metal	TBA	Separate in designated bin.	Transfer for reprocess or recycle/Demolition Contractor	TBC – approx. 90% diversion from landfill.
Mixed waste	TBA	Separate in designated bin.	Transfer for Landfill/Demolition Contractor	TBC – approx. 90% diversion from landfill.
Asbestos	TBA	Special handling necessary. Separate in designated bin.	Transfer and disposal at hazardous landfill/Demolition contractor.	Hazardous Landfill
Carpet	TBA	Separate in designated bin.	Transfer for re-use and re-sale/Demolition Contractor	TBC – approx. 90% diversion from landfill.
Lead based paint	TBA	Special handling necessary. Separate in designated bin.	Transfer and disposal at hazardous landfill/Demolition Contractor	Hazardous Landfill

Type of Material	Vol	Onsite Reuse and Recycling Methods	Offsite Reuse and Recycling Outlet	Disposal
Plasterboard	TBA	Separate in designated bin.	Transfer for re-use and re-sale/Demolition Contractor	TBC – approx. 90% diversion from landfill.
Bitumen	TBA	Separate in designated bin.	Transfer for reprocess or recycle/Demolition Contractor	TBC – approx. 90% diversion from landfill.
B) EXCAVATION				
Clean Fills		Assess, excavate and remove.	Transfer for reprocess or recycle/Waste Contractor	Nil
C) CONSTRUCTION				
Concrete	TBA	Co-mingled waste bin.	Transfer for reprocess or recycle/Waste contractor	Nil to Landfill
Masonry, Brick and Tile	TBA	Co-mingled waste bin.	Transfer for reprocess or recycle/Waste contractor	Nil to Landfill
Timber	TBA	Co-mingled waste bin.	Transfer for reprocess or recycle/Waste contractor	Nil to Landfill
Metal	TBA	Metal waste bin.	Transfer for reprocess or recycle/Waste contractor	Nil to Landfill
Plasterboard	TBA	Co-mingled waste bin.	Transfer for reprocess or recycle/Plasterboard Contractor	Nil to Landfill
Cardboard	TBA	Co-mingled waste bin.	Transfer for reprocess or recycle/Contractor to be confirmed.	Nil to Landfill
Pallets	TBA	Separate on site.	Transfer for Re-use/Re-Sale/All Subcontractors	Nil to Landfill
Glass	TBA	Separate on site.	Transfer for reprocess or recycle/Contractor to be confirmed.	Nil to Landfill
Plastic	TBA	Separate on site.	Transfer for reprocess/Contractor.	Nil to Landfill

Type of Material	Vol	Onsite Reuse and Recycling Methods	Offsite Reuse and Recycling Outlet	Disposal
Polystyrene	TBA	Co-mingled waste bin.	Transfer for reprocess or recycle/Contractor to be confirmed.	Nil to Landfill
Insulation	TBA	Separate on site.	Transfer for reprocess or recycle/Contractor.	Nil to Landfill
Reels	TBA	Separate on site.	Transfer for Re-use/Re-Sale/All subcontractors.	Nil to Landfill
Mixed waste	TBA	Separate in designated bin.	Transfer for reprocess or recycle/Waste contractor.	Up to 90% Recycling

Appendix 11 – Indicative Delivery Programme

