CONSTRUCTION MANAGEMENT PLAN

THE MERCANTILE HOTEL

25-27 GEORGE STREET

THE ROCKS, NSW 2000

2ND DECEMBER 2017

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1. Introduction

This Construction Management Plan (CPM) has been prepared to accompany the development application for the proposed Mercantile Hotel Project located on 25 George St, The Rocks Sydney.

This CMP is a live document, intended to be updated by the contractor as this Project develops.

This CPM is intended to describe the Project's following significant construction characteristics;

1. define the Project phases
2. explain communication and consultation strategies,
3. clarify site establishment details
4. establish the preliminary construction methodology,
5. propose a suitable site management plan,
6. site safety management requirements,
7. waste management objectives,
8. vibration and noise mitigation approach during construction,
9. environmental management procedures

The proposed work involves demolition of the existing structures to the Southern end of the site and Construction of new Ground Floor Amenities, Courtyard, Bistro Area and Gaming Area. The Amenities area will be a new structure with a Green Roof over.

A new a lift connecting Ground Floor to Roof Level will be constructed to the North of the existing Fire Stair and to the North end of the site a new Fire Stair connecting Level 1 to the Roof area.

To Level 1 works include new BOH Food Preparation Areas and refurbishment of all accommodation including the addition of Ensuites to each room. Similarly, Level 2 includes internal refurbishment and the addition of Ensuites to each accommodation room.

Rooftop works include the Construction of a new Rooftop Bar and Restaurant as well as amenities an open Roof Terrace and Plant Room.

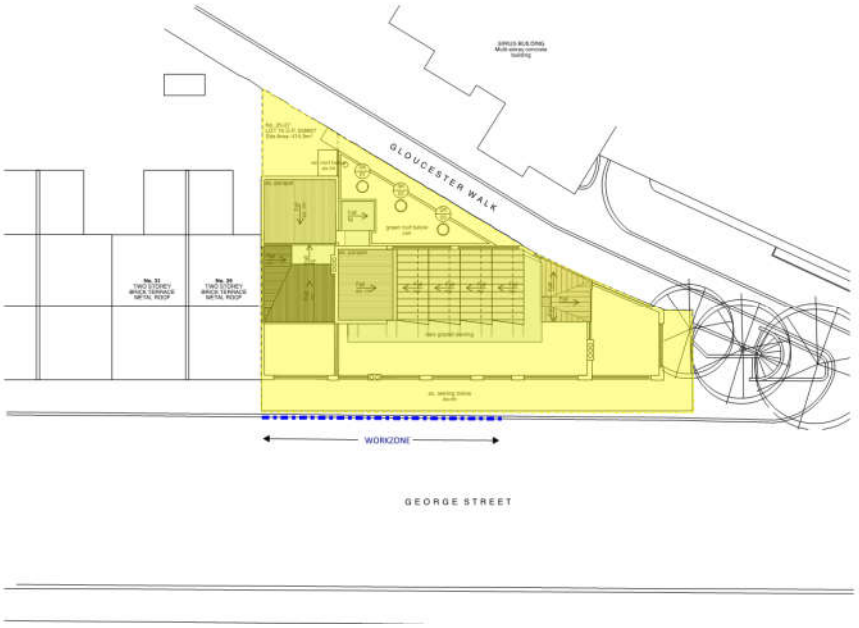
Beyond the scope of this CMP are the following construction activities which are expected to occur in the vicinity or nearby the proposed works;

1. GTA Consultants have considered local construction activities in their appraisal of Construction Traffic Impacts (Refer GTA Consultants Traffic Management Report).

2. The Site

The site is located at 25-27 George Street The Rocks at the Northern end of George Street. The site currently has access only via the George Street frontage.

Figure 1: Site Location and Proposed Works Overview



The proposed building footprint area is approximately 453m2

3. Project Phases

The Project is planned over three phases

1. Demolition and Excavation
2. Structural Works and Services Rough In
3. Fitout and Rooftop works

Phase 1 includes, site establishment, services disconnections, demolition of existing structures and internal stripout, excavation and rough in of inground services. As well as the procurement of long lead-time items.

Phase 2 includes construction of the lift pit, ground slabs, New Fire Stair, 1st Floor Green Roof & New Roof Terrace Structure.

Phase 3 includes the fitout of all areas, commissioning and site demobilisation

4. Communication and consultation Strategy

For an optimal consultation and liaison process, a Community and Stakeholder Management Strategy has been developed. The Strategy will be developed from the contractor's previous experiences on similar prominent Projects and will deliver a useful communication system for the Project duration.

The consultation objectives will include the following:

1. Establish and maintain relationships with key stakeholders,
2. Develop public awareness and knowledge of the Project
3. Ensure key stakeholders are kept informed and satisfied of, upcoming activities, Project status, impacts arising from unforeseen events and arrangements to mitigate the impact as needed,
4. Mitigate the impact of the construction activities on the surrounding areas,
5. Manage objections by understand the main stakeholders' needs and take necessary actions for their effective management.

The key stakeholder groups will include the following:

1. SHFA
2. NSW Environment & Heritage
3. Special event bodies
4. Contractor and sub-contractors
5. Pedestrians and users of the public domain
6. Authorities

After identifying and prioritising stakeholders as per their concern and influence, a stakeholder management plan can be created to notify important stakeholders, and keep them satisfied with the Project and avoid misunderstanding and fulfil everyone's needs in a satisfactory agreement. The general stakeholder engagement strategies are provided in the following map.

Likely issues of concern to stakeholders may include the following:

1. Containments,
2. Noise,
3. Dust,
4. Vibration caused from construction,
5. Environmental remediation,
6. Construction vehicle traffic,
7. Construction staff,
8. Restrictions / alterations to pedestrian & vehicle traffic flow,
9. Protection of the existing Mercantile Hotel building fabric
10. Protection of existing trees
11. Protection of surrounding Heritage Significate structures

The Contractor will allocate liaison personnel particularly for communicating prospectively with the stakeholders on planned works or activities that require explanation and solutions to alleviate issues that may arise during the Project's construction phase.

The stakeholder management process will involve the following;

1. An initial consultation session will be held before the commencement of construction and letters of introduction will be sent to the surrounding properties, advising Project specifics, including commencement date, duration, contact details, site safety and public protection,
2. Contractor developed monthly reports will be issued to key stakeholders advising of imminent activities
3. A register of all stakeholder contact information and concerns will be developed and reviewed at the monthly meetings
4. Regular communication and cooperation with City of Sydney Council in relation to the site management and impact on surrounding areas.

5. Construction

5.1 Site Establishment

5.1.1 Trees, Dilapidation Report, Existing Services Survey

Prior to commencing work on site, a full Pre-Construction Dilapidation Report will be completed by a Dilapidation Survey Consultant. This detail survey will encompass current structural, architectural, services and heritage conditions of the existing Mercantile Hotel premises, construction zones and infrastructure. The dilapidation report will cover all areas where the construction certificate applies and adjacent areas.

Services locaters will survey the site and surrounding areas to plot the locations of existing services. Tree protection will be carried out complying with AS 4970 Protection of Trees on Development Sites and undertaken in accordance with the City of Sydney tree protection specifications including, inductions, hold points, notifications, tree protection zones etc and any project Arborist or City nominated tree management coordinator's requirements. Additional geotechnical investigations of existing footings will be carried out progressively.

5.1.2 Site Fencing, Hoarding and Shedding

Temporary B-Class hoarding, will be installed to the George Street Elevation directly in front of the Workzone. Site accommodation will be established subject to the amount of personnel working on site. Temporary hoarding and signage will be adopted in all working areas at all times.
Temporary A-Class hoarding will be installed to the base of the scaffolding to the Gloucester Walk

5.1.3 Temporary Power and Services

To provide the site with appropriate services requirements, temporary services and power will be required. Reticulated power and lighting installations will comply according to the requirements of the WH&S Regulations, Electricity Supply Authority and the Code of Practice for Temporary Electrical Installations on Building and Construction Sites. All General Purpose Outlets (GPO's) shall be provided with earth leakage protection.

Air and vibration monitoring units will be established to manage air quality and vibration movement during the construction of the Project.

5.1.4 Vehicle Access

The site offers one location via George Street for construction vehicle loading and unloading. All vehicles will follow the same travel path by approaching the site via George Street in a North Bound direction then existing via George Street and Lower Fort Street, no reversing will occur on George Street.

During loading and unloading pedestrian access would be restricted directly in front of the Hotel, during these times Pedestrian Management would be in pace and divert Pedestrians to the opposite footpath.

Acknowledging the site is in a central CBD location, a Traffic Management report has been prepared to outline the proposed methods of Vehicle and Pedestrian Management.

5.1.5 Construction Staff Access

Construction Staff shall access the site via the existing entry points to George Street. No construction staff parking is available on site, only loading and unloading of materials will be permitted from the Workzone.

5.1.6 Craneage

It is intended that the mobile crane(s) be used throughout the structural phase of the Project. A 30T Truck Crane or larger would be used to deliver Construction Materials to the rear of the site and rooftop areas.
The proposal may also include the installation of a Potain Igo 50 Self erecting crane to the rear of the site to minimise traffic flow disruption to George Street.

Lifting will mostly be from construction delivery vehicles located in the George Street Workzone.

Refer to Appendix 2 indicating the proposed crane positions.

5.1.7 Material Handling

Demolition and Excavation material disposal and delivery of small items will be undertaken by hand from the existing site entry on George Street (Existing Café Bar). It is envisaged 3T to 6T Tippers and Bin Trucks would be utilised due to physical loading restrictions.

If found, Soil Containments will be isolated and disposed of appropriately as detailed in section 7 of this report.

Concrete delivery will be undertaken via Trucks parked in the George Street Workzone. Placement would be via Line Pump for Ground Floor Slabs and Boom Pump for the 1st Floor Slab and New Fire Stair.
Delivery of Structural Steel, Roofing Materials and Roof Terrace Glazing would be via Crane unloaded from the vehicles stationed in the Workzone.

The majority of fitout components would be manually unloaded from vehicles parked within the Workzone and carried into the site by hand.

5.1.8 Construction Schedule

The Construction duration is expected at 12 months. A detailed Construction Program will be developed to provide a more accurate Project Duration prior to commencement on site.

5.1.9 Construction Hours of Operation

The proposed hours of Operation of the site are as per the Construction Noise & Vibration Management Plan (Prepared by Acoustic Dynamics):

Activity	Permitted Work Hours
All building, demolition and site work, including site deliveries (except as detailed below)	• Monday to Friday – 7:00am to 5:00pm • Saturday – 7:00am to 3:00pm • Sunday & public holidays – No work permitted
Excavating of rock, use of jack-hammers, pile-drivers or the like	• Monday to Friday – 8:00am to 5:00pm • Saturday – No work permitted • Sunday & public holidays – No work permitted
Additional requirements for all development (except for single residential dwellings)	• Saturdays and Sundays where the preceding Friday and/or the following Monday is a public holiday – No work permitted

5.1.10 Key Procurement – Long lead time Items

The key items that will require long lead-times, therefore we must properly prepare for these orders through Microsoft project demonstrating each step of this construction. Some key procurement items are as follows;

- Lift
- mechanical plant and equipment
- Electrical equipment including switchboards
- Roofing and Roof Glazing
- Specialised finishes

6. Construction Methodology

6.1 Construction Phases

6.1.1 Phase 1

Following the dilapidation and services surveys, site establishment will commence with erecting B-Class hoarding, signage, site security and lighting. The existing building will be hoarded off and made safe for staff and public. It is then proposed, that (including):

1. Site accommodation will be delivered and temporarily connected to existing services.

2. Protection ply (or similar) will be placed onto the existing floors, stairs, walls, protecting existing heritage and other elements from vibration or damage.

3. Demolition and strip out works would be carried out by hand including the existing structures to the rear of the site and internal strip out.

4. Excavation machinery will be craned into the site for excavation of footings and lift pit. Some excavation work close to the existing building will be carried out by hand. This minimises construction risk by exposing and inspecting the unknown existing areas, to design and construct what is required around the existing building to cater for the new works.

5. In accordance with the Heritage Impact Statement, an historical archaeologist will be present for initial excavation of the area to record the sub-surface profiles and determine the extent of any ongoing archaeological monitoring.

6. Prior to excavation, existing services will be diverted, and connections made for temporary amenities, required for replacing the existing underground amenities during construction.

6.1.2 Phase 2

Following the demolition and excavation phases construction of the new structure to the rear of the site would commence including:

1. Construction of the new lift pit, rough in of inground services and pouring ground slabs.

2. Services Rough in throughout the existing structure.

3. Erection of the Site Crane

4. F/R/P of the New Green Roof Structure

5. Structural works to the Roof Terrace

6. Construction of the new Fire Stair to the North of the Site from L1 to Roof Level.

7. Construction of the new Lift Shaft

8. The Erection of Scaffold to the West Elevation of the Building

9. In accordance with the Heritage Impact Statement consultation with the relevant Authorities including the nominated Heritage Architect would be undertaken to ensure the integrity of all Heritage items is maintained.

6.1.3 Phase 3

Following the Structural Works stage the Fitout works would commence including:

1) Fitout of all accommodation areas

2) Fitout of Ground Floor amenities

3) Fitout of BOH Areas and Food Preparation Areas

4) Fitout of the Roof Terrace and Bar

5) Fitout of the Ground Floor Bistro, Courtyard and Gaming Area

6) Lift Car Installation and Commissioning

7) Services Commissioning

8) Site Demobilisation.

9) Obtain Occupancy Certificate.

7. Site Management Plans

7.1 Traffic

A traffic management plan has been prepared for the Project by GTA Consultants. The contractor will update the traffic management plan prior to obtaining a construction certificate. Long term road closures are not envisaged however authorised short term lane closures may be required for cranage. If required, the contractor will liaise and apply to the appropriate authorities to obtain permits as needed.

The contractor will monitor and coordinate all vehicles delivering to the Project. The contractor shall ensure all vehicles have secure loads and mesh covers to prevent debris falling from the vehicles when departing. The contractor shall maintain the workzone and pedestrian path free from any building materials or debris.

7.2 Vibration and Noise

For further details relating to the proposed Construction Noise and Vibration Management refer to the Construction Noise & Vibration Management Plan prepared by Acoustic Dynamics Document Reference: 4142R001.JC.170727 Rev.1

Noise and vibration from the construction process may impact on surrounding building tenants, public premises. Vibration could also potentially affect the heritage fabric of the adjacent structures.

To help meet the noise and vibration requirements of the site, baseline testing will be carried out and existing operational levels identified. The identification of baseline levels will enable subcontractor's methodologies to be specifically tailored to ensure benchmarks are not exceeded. Noise and vibration monitoring will be installed on site and monitored throughout the project.

The Contractor will develop these management plans to manage the construction caused vibration and noise that will occur during the Project, including mitigation strategies. Vibration and noise activities that will occur during construction include the following:

1. quick cut saws,
2. excavation equipment, rock hammers
3. hammer drills
4. angle grinders
5. air compressors,
6. generators
7. concrete pumps
8. mobile and static crane

The noise mitigation strategies that will be employed are as follows:

1. excavation, piling, shoring and retention works will be undertaken using non-percussive methods where achievable given the subsurface conditions,
2. plant used intermittently during construction activities such as, trucks, excavators, cranes, piling machines will be turned off in periods between works activities rather than left idling,
3. adherence to permitted working times;
4. hoarding to the existing building as an acoustic barrier,
5. avoid concurrent loud activities, by scheduling activities at different times
6. vibration and noise awareness training for all site staff including subcontractors as part of general site induction and tool-box meetings,
7. through regular reviews of the program and construction methodologies during PCG meetings, the duration of noise-intensive works will be minimised.
8. Flexible working hours to avoid noisy work during sensitive hours
9. plant and equipment selection to reduce noise where possible
10. plant and equipment fitted with silencers where possible
11. acoustic testing of proposed methodologies
12. erection of temporary screens to encapsulate dust and noise

Regular and effective plan/equipment maintenance will be completed and documented throughout the Project period and documentation will be maintained on site demonstrating completion of maintenance logs and associated checklists to ensure all machinery is in good working order and use does not generate excess noise / vibration.

Plant, equipment and vehicles will not be operated if excessive noise is produced at start up as a result of maintenance being required. All plant, machinery and works vehicles will have an efficient muffler design in accordance with the manufacturer's specifications. The mufflers will be well maintained and regularly tested with the results documented in the maintenance logs

The following regulations and guidelines will be adhered to during Construction:

- The City of Sydney Code of Practice Construction Hours/Noise 1992
- Australian Standards 2436-2010 Guide to Noise Control on Construction, Maintenance and Demolition Sites
- British Standards 6472-1992 Guide to evaluation of human exposure to vibration in buildings.
- Assessing Vibration, a Technical Guideline (February 2006) NSW EPA
- British Standards 7385: Part 2-1993 "Evaluation and measurement for vibration in buildings Part 2 – Guide to damage levels from ground bourne vibration"
- EPA NSW Guidelines

7.3 Site Safety Management

A site-specific safety management plan will be developed by the Contractor to demonstrate the commitment of the Project to Work Health & Safety (WH&S). The plan is required to identify the scope of work to be undertaken, the hazards associated with the work and the risk assessment processes and risk control measures to be used in the execution of the plan.
The objectives of the Site Safety Plan include the following:

1. maintain lost time injury reporting and review positive performance indicators, 2. report all incidents and near misses and develop corrective action plans,
3. conduct Senior Management and WH&S Group reviews,
4. develop required WH&S resources,
5. formalise regular senior management reviews of WH&S systems and implement relevant improvements,
6. continually develop WH&S systems, policies, procedures and WH&S Plans to comply with statutory requirements and industry best practice,
7. maintain an Audit Programme to comply with system's requirements,
8. ensure all corrective actions and Non-Conformances are closed out,
9. meet or exceed the requirements of AS 4801 certification and Federal Safety commission accreditation,
10. adopt a zero-tolerance safety philosophy,
11. provide Safety Awareness and other appropriate WH&S training,
12. continue to implement ongoing induction procedures on all Projects,
13. hold regular Consultative Committee meetings, maintain minutes and record actions,
14. issue Safety Alerts to all staff and other stakeholders according to requirements,
15. conduct weekly toolbox talks on site,
16.maintain a data base of all toolbox talks.

The plan requires that the Project ensure that the key responsibilities are addressed by the Contractor to attain the above objectives. A statement of responsibilities by the Contractor will identify who will be responsible for the following:

1. undertake audits to ensure appropriate implementation of the WH&S Plan occurs,
2. coordinate WH&S training,
3. establish, implement and maintain procedures for controlling all relevant documents and data required,
4. implement WH&S matters in construction design and planning,
5. make all reasonable endeavours to ensure that the WH&S management system is established, implemented and maintained on the Project,
6. monitor and constantly review risk management to the site,
7. ensure all Work Method Statements have been received on site prior to the commencement of work.

The plan will also address the following:

1. WH&S training – identification of WH&S training needs of all personnel, induction training, refresher training, attendance of WH&S committee personnel at consultation training etc;
2. incident management – identifies who will be available during and outside normal working hours to prevent, prepare for, respond to and recover from illness/ injury and incidents;
3. site safety rules – As a minimum will include induction and safety training, PPE, Site access and security, emergency procedures, illness and injury, protection of personnel and the public, work at elevated areas, safe working, hazardous materials and dangerous goods etc;
4. safe Work Method Statements – All activities assessed as having WH&S risks require a SWMS to be prepared and implemented

7.4 Environmental Management and Waste Management

An environmental management plan (EMP) will be developed and executed by the contractor in accordance with relevant authorities' conditions, standards or specifications prior to the Project's site commencement. The existing hazardous materials associated with the disposal of the demolished and excavated items will be addressed in the geotechnical and contamination reports.

The EMP will include the following items;

1. erosion and sediment control
2. water discharge from the site
3. recycling
4. noise control,
5. dust reduction,
6. waste reduction,
7. organising material removal.
8. odour Control
9. vegetation Protection

The Waste Management Plan is required to:

1. minimise waste from site activities;
2. establish the site-specific waste management requirements and improve efficiencies via waste separation, recycling and re-use measures,

3. hazardous materials - identification, separation, collection and disposal of environmental waste,

Where possible, Virgin excavated natural material (VENM) will be reused by the contractor on site. Prior to disposal, a waste classification of the soils to be excavated will be provided. Waste will be sorted on site and care will be taken to avoid cross contamination with recyclables. If there are unexpected Finds or unidentified contaminants encountered during the project, the contractor will adopt the protocol specified in the EMP, WHS / OH&S Acts, Regulations and Codes of Practice.

If Asbestos is found, then the contractor will ensure the following;

1. In accordance with the National Occupational Health and Safety Commission's Guide to the Control of Asbestos Hazards in Building and Structures [NOHSC:2002(1988)], appropriate warning signs will be placed on the asbestos materials identified. 2. All asbestos-containing materials will be removed prior to any renovation, demolition or work taking place in an area.

3. All removal procedures should be undertaken by an experienced appropriately licensed removal contractor in accordance with the National Occupational Health and Safety Commission's Code of Practice for the Safe Removal of Asbestos [NOHSC: 2002 (2005)].

4. Monitoring for airborne asbestos in accordance with the Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres [NOHSC:3003(2005)] will be carried out during any removal operations in accordance with Clause 50 and 51 of the WorkCover 2001 OH&S Regulation requirements.

5. At the end of removal operations all surfaces in the subject area, such as frames, floor/ ground, etc., will be vacuumed then wet wiped. An industrial High Efficiency Particulate Air (HEPA) vacuum cleaner will be used. Spreading of dust into clean areas or outside the subject areas will be prevented.

6. A clearance inspection should be carried out after the removal operations are completed in accordance with WorkCover and NOHSC requirements.

The contractor will provide skips primarily for metal cardboard, concrete and masonry. Recyclables to be recovered are likely to consist of off cuts of materials such as stone, pipes, timber, steel, plasterboard, tiles and miscellaneous packaging.

The main goal in construction will be to reduce the total volume of waste produced, which will be achieved by effective materials procurement, management and supply. Project managers, engineers, builders and subcontractors will play a key role in achieving on-site waste reduction targets on a day-to-day basis.

As required under *SEPP (Exempt and Complying Development Codes) 2008 Part 5, Division 2* conditions in Schedule 8 of the code must be implemented or adhered to prior to works commencing. This includes but is not limited to a Waste Management Plan being in place.

To facilitate waste management and reduction, Council requires on-site sorting and storage of waste products pending reuse or collection.

The applicable sections of this table must be completed and submitted with your Complying Development Application.

This table is to identify the type of waste that will be generated during demolition, construction and when the premises is in use on an on-going basis and how it is intended to reuse, recycle or dispose of the waste.

This development achieves the waste objectives set out in the DCP. The details on this form are the provisions and intentions for minimising waste relating to this project. All records demonstrating lawful disposal of waste will be retained and kept readily accessible for inspection by regulatory authorities such as council, DECCW or WorkCover NSW.

SECTION 1 – Demolition Stage

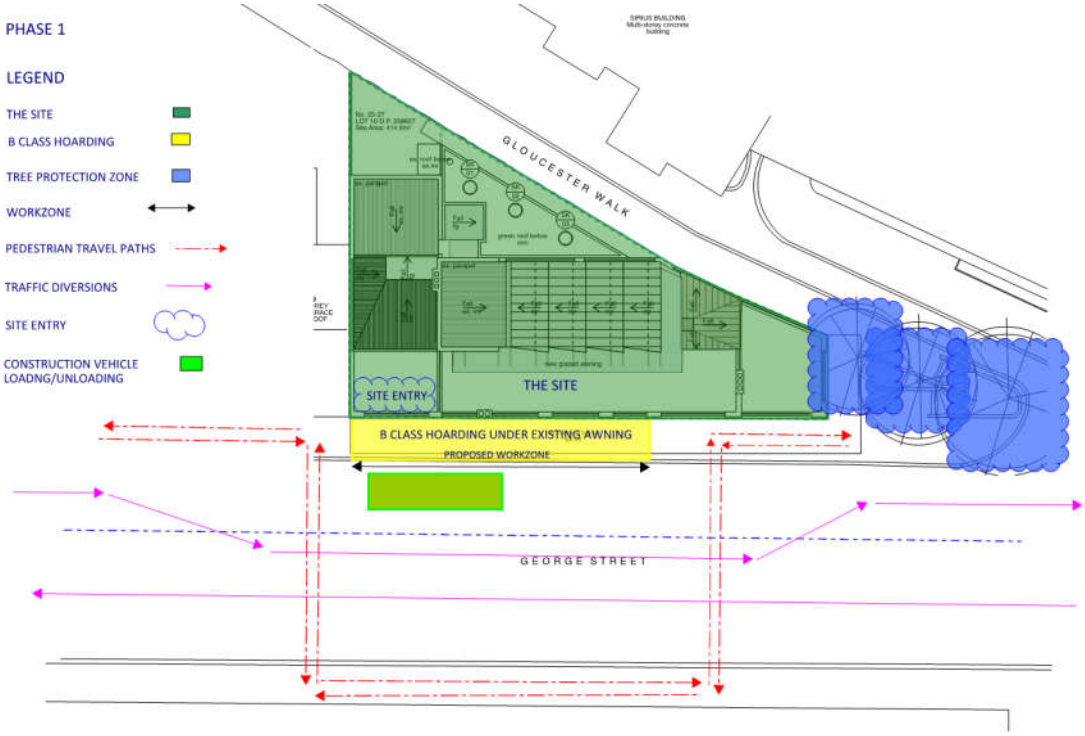
Note: Details of onsite waste management facilities should be provided on the plan drawings accompanying your application.

	Reuse	Recycling	Disposal	
Type of waste generated	Estimate volume (m^3) or weight (t)	Estimate volume (m^3) or weight (t)	Estimate volume (m^3) or weight (t)	Specify method of onsite reuse, contractor and recycling outlet and/or waste depot to be used
Excavation material	N/A	NA	150m3	General rubbish disposal at Bingo, Military Road, Botany
Timber (specify)	5t	NA	12t	General rubbish disposal at Bingo, Military Road, Botany
Concrete	NA	NA	25m3	General rubbish disposal at Bingo, Military Road, Botany
Bricks/pavers	N/A	NA	7t	General rubbish disposal at Bingo, Military Road, Botany
Tiles	N/A	N/A	1.8t	General rubbish disposal at Bingo, Military Road, Botany
Metal (specify)	N/A	7t	N/A	Metal Recycling at North Shore Artarmon
Glass	-	-	2t	Port Botany Transfer Station
Furniture	N/A	N/A	N/A	
Fixtures and fittings	-	-	.9t	Port Botany Transfer Station
Floor coverings	N/A	N/A	1.5t	General rubbish disposal at Bingo, Military Road, Botany
Packaging (used pallets, pallet wrap)	NA	N/A	2t	General rubbish disposal at Bingo, Military Road, Botany
Garden organics	N/A	NA	1t	General rubbish disposal at Bingo, Military Road, Botany
Containers (cans, plastic, glass)	N/A	N/A	N/A	
Paper/cardboard	NA	NA	NA	
Residual waste	N/A	N/A	N/A	
Hazardous/special waste e.g. asbestos (specify)	NA	NA	NA	
Other (specify)	N/A	N/A	N/A	

SECTION 2 & 3 – Construction & Refurbishment Stage

	Reuse	Recycling	Disposal	
Type of waste generated	Estimate volume (m^3) or weight (t)	Estimate volume (m^3) or weight (t)	Estimate volume (m^3) or weight (t)	Specify method of onsite reuse, contractor and recycling outlet and/or waste depot to be used
Excavation material	NA	NA	NA	
Timber (specify)	4t	0.10t	2t	General rubbish disposal at Bingo, Military Road, Botany
Concrete	N/A	N/A	5m3	PumperDump
Bricks	NA	NA	1.5t	General rubbish disposal at Bingo, Military Road, Botany
Tiles	N/A	N/A	0.10 t	General rubbish disposal at Bingo, Military Road, Botany
Metal (specify)	N/A	N/A	N/A	Metal Recycling at North Shore Artarmon
Glass	N/A	N/A	N/A	
Plasterboard (offcuts)	-	-	2.0t	Port Botany Transfer Station
Fixtures & fittings	N/A	N/A	N/A	
Floor coverings	NA	NA	NA	
Packaging (used pallets, pallet wrap)	NA	NA	3t	Port Botany Transfer Station
Garden organics	NA	NA	NA	
Containers (cans, plastic, glass)	-	-	1t	Port Botany Transfer Station
Paper/cardboard	-	-	1.5t	Port Botany Transfer Station
Residual waste	-	-	2.4t	Port Botany Transfer Station
Hazardous/special waste e.g. asbestos (specify)	NA	NA	NA	
Other (specify)				

8. Appendix 1 – 2D Phase 1 Preliminary Site Management Plan



8. Appendix 2 – 2D Phase 2 & 3 Preliminary Site Management Plan