



Powerhouse Museums Discovery Centre Expansion SSD Application

CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

Revision: 1.1 (For SSD DA Submission)

Date: August 2020

Table of Contents

1.	Introduction	4
1.1	Background	4
1.2	Site Description	5
1.3	Overview of Proposed Development	6
1.4	Assessment Requirements	7
1.5	Construction Environment Management Plan Introduction	7
2.	Construction Methodology	8
2.1.	Introduction	8
2.1	Construction Delivery Approach	8
2.2	Early Works Package – Demolition and Carpark Construction	9
2.3	Main Works Package - Excavation.....	9
2.4	Main Works Package – Building J Construction and Landscaping	10
2.5	Completion and Handover	11
2.6	Programme and Staging.....	11
3.	Environmental Management	11
3.1	Environmental Introduction	11
3.2	Responsibilities of the Contractors’ Environment Manager.....	11
3.3	Pre-construction - Hazardous Material Plan	12
3.4	Demolition and Tree Removal Phase -Environmental Management.....	12
3.5	Environmental Records	14
3.6	Construction Waste Management Plan	14
4.	Stakeholder Management.....	15
4.1	Stakeholder & User Group Management.....	15
4.2	Construction Liaison.....	15
4.3	Dilapidation Surveys.....	15
5.	Construction Site Boundary & Fencing.....	16
6.	Site Access.....	16
5.1	Site Access Control	16
7.	Site Establishment & Materials Handling.....	16
8.	Pedestrian Management.....	17
9.	Traffic Management Plan.....	17
8.1	Heavy Vehicle Management	18
8.2	Truck Movements Forecast.....	18

8.3	Street Closures	18
10.	Work Programme & Working Hours	18
11.	Workplace WHS Management Plan	18
12.	Emergency Response Procedure	19
13.	Environmental Management Plan.....	19
14.	Noise & Vibration Management Plan.....	19
15.	Completion Plan.....	20
16.	Conclusion.....	21
	Table 1. Mitigation Measures	21
	Appendix A – Proposed Construction Site Boundary Plan	22

Amendment Record

Revision	Description / Details	Date
1.0	DRAFT for internal review and approval	30/07/2020
1.1	For SSD DA Submission	07/08/2020

1. Introduction

The report supports a State Significant Development (SSD) Application for the proposed construction and use of a new building to facilitate the expansion of the Museums Discovery Centre (MDC) site at 2 Green Road, Castle Hill.

The primary objective of the SSD Application is to provide expanded facilities to accommodate the Powerhouse collection including spaces for storage, conservation, research and display and spaces to facilitate increased public access to the collection through education, public programs, workshops, talks, exhibitions and events. The expansion of the existing MDC facility within the site at 2 Green Road Castle Hill will integrate with the existing MDC site located at 172 Showground Road, Castle Hill and its operations on a permanent basis.

The proposal is a type of *“Information and Education Facility”* with a Capital Investment Value (CIV) in excess of \$30 million and is classified as SSD under Schedule 1 Clause 13 of the State Environmental Planning Policy (State and Regional Development) 2011 (State and Regional Development SEPP).

Create Infrastructure is the proponent of the SSD Application.

1.1 Background

The MDC is owned and operated by the Museum of Applied Arts and Sciences (MAAS) and features exhibitions and displays in collaboration with Australian Museum and Sydney Living Museums, who also maintain collection storage and conservation facilities on the site. The MDC is located at 172 Showground Road, Castle Hill. There are six buildings primarily providing collection storage as well as areas for displays and education and public programs, accessible to visitors (Building E). During 2017-2018 a total of 17,481 persons visited the MDC site.

The MDC Expansion is part of the renewal of the Museum of Applied Arts and Sciences, known as the Powerhouse Program, that includes:

- **Powerhouse Parramatta:** A new benchmark in cultural placemaking for Greater Sydney that will be a symbol of a new approach to creative activity and engagement.
- **Powerhouse Ultimo:** The NSW Government recently announced that the Museum’s Ultimo site will be retained, and the Museum will operate over four sites across the Greater Sydney area.
- **Powerhouse Collection Relocation and Digitisation Project:** The relocation of the Powerhouse collection and digitisation of around 338,000 objects, enhancing the collection’s accessibility for local, national and international audiences.

The MDC expansion is an integral component of the Powerhouse Program and will provide the opportunity to increase visitation to the site, forming an important and significant cultural institution within The Hills Shire. In addition to the storage component of the proposal, the expansion will increase access to the Powerhouse collection through a range of spaces for visible storage, research and viewing of the collection, as well as flexible spaces for education and public programs, workshops, talks, exhibitions and events.

1.2 Site Description

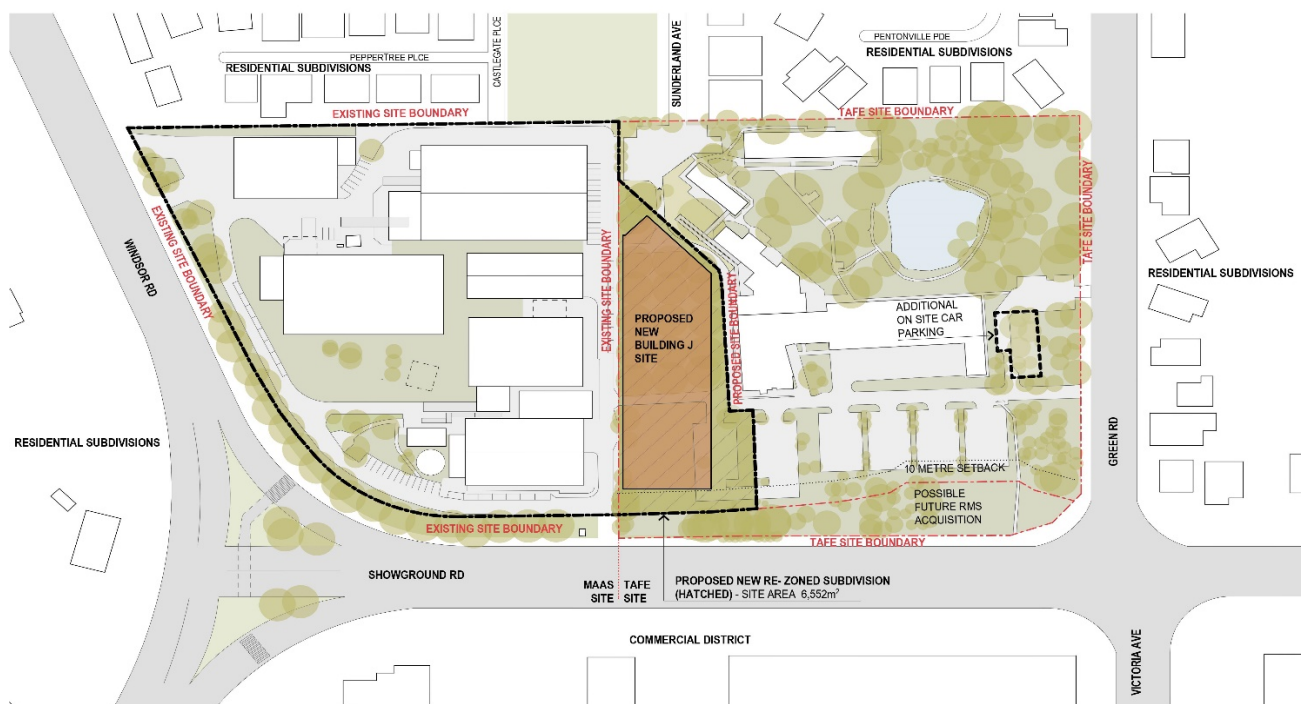
The proposed Building J site is located within the property known as 2 Green Road, Castle Hill which comprises a single lot legally described as Lot 102 DP 1130271. The site is generally square in shape with a splay corner to the intersection of Green Road and Showground Road and a total area of approximately 3.8ha. The site has a primary frontage of approximately 183m to Green Road and a secondary frontage of approximately 186m to Showground Road. Refer to Figure 1. The location of the proposed new MDC building (to be known as “Building J”) is located on the western end of the site and is marked on Figure 1 in a dashed yellow line (referred as the Building J Site). The overall site contains large institutional buildings set within a landscaped setting featuring a high tree canopy.

The overall site is a TAFE campus that caters for approximately 400 enrolled students, and provides courses on business and financial services, hospitality, general education, community services, health, nursing, carpentry, building and retail. The site currently includes TAFE buildings, car parking and vegetated open space areas. A dam is situated in the north eastern part of the site.

The MDC site is located immediately west of the existing TAFE site at 172 Showground Road, Castle Hill. A subdivision application (included within this SSD Application) will consolidate the site of the proposed Building J with the existing MDC site. The main public vehicle access to the MDC site is via Windsor Road. There is also a vehicular access point to the MDC on Showground Road. The MDC and TAFE have a longstanding arrangement, that permits vehicle access to the MDC site from Green Road, allowing vehicles to traverse across the TAFE site to access the MDC site.

Figure 1: Existing site layout plan and proposed development site

Source: Lahznimmo Architects



Development surrounding the site to the east, and north consists of established residential neighbourhoods generally comprising two storey detached dwellings. Opposite the site to the south east and south west are a mix of warehouses, industrial units, and large format bulky goods retail premises. Views into the TAFE and MDC site from the surrounding roads is obscured by dense trees and vegetation along the perimeter of the sites.

A public park and children's playground is adjacent to the north of the site that is bound by Sunderland Avenue to the east and Castlegate Place to the west. The dwellings along Sunderland Avenue and the southern side of Pentonville Parade are the nearest residential properties to the proposed Building J site.

1.3 Overview of Proposed Development

The successful delivery of this SSD project supports a priority cultural infrastructure project and is a NSW Government 2019 election commitment (Powerhouse Precinct at Parramatta). This application will deliver a significant cultural institution for Castle Hill and The Hills Shire.

The proposed Building J will offer many opportunities for public engagement as part of a desire to increase public access to the Powerhouse collection. The renewal of the site offers a range of opportunities to increase public access including visible storage facilities, booked tours, Open Days, public and education programs, workshops, talks and other events. The facilities in Building J will serve the needs of a variety of user groups including staff, volunteers, education groups, researchers, artists, scientists, industry partners and the general public.

The SSD Application seeks consent for the delivery of the MDC expansion as a single stage, comprising:

- Site preparation works, including the termination/relocation and installation of site services and infrastructure, tree removal (337 trees in total), earthworks, and the erection of site protection hoardings and fencing.
- Demolition of existing car park and vehicle accessway along the eastern and north eastern parts of the site. A new at-grade car park is proposed to be constructed on the eastern side of the TAFE site and will accommodate 24 car parking spaces removed from the Building J site.
- Construction of the proposed new Building J. The proposed new Building J will cater for the following uses:
- Storage for the Powerhouse collection and archives (both collected archives and institutional archives).
- Flexible spaces for education and public programs, workshops, talks, exhibitions and events.
- Suites of conservation laboratories and collection work spaces.

- Photography, digitisation and collection documentation facilities.
- Work space for staff, researchers, industry partners and other collaborators. This will include amenities, meeting and storage rooms, collection research and study areas as well as other ancillary facilities.
- Components of the image and research library.
- Object and exhibition preparation, packing, quarantine and holding areas.
- Construction of new vehicle accessways to maintain connectivity to the MDC and TAFE sites.
- Subdivision of the proposed Building J site from the TAFE site including creation of right-of-carriageway easement to facilitate access over the new realigned accessway by TAFE vehicles and consolidation to form a single lot with the existing MDC site.

1.4 Assessment Requirements

The Department of Planning, Industry and Environment have issued Secretary’s Environmental Assessment Requirements (SEARs) to the applicant for the preparation of an Environmental Impact Statement for the proposed development. This report has been prepared having regard to the SEARs as follows:

SEAR	Where Addressed
5. Integration with existing MDC and TAFE site The EIS shall:	
<ul style="list-style-type: none"> - address any impact on the existing TAFE site operations (during construction and operation) and potential future TAFE expansion 	<i>Construction impacts to TAFE outlined at Sections 4 and 5.</i>
11. Construction	
<ul style="list-style-type: none"> - The EIS shall address potential impacts of the construction on surrounding buildings and the public domain, including noise and vibration, air quality and odour impacts, dust emissions, water quality, stormwater runoff, groundwater seepage, soil pollution and construction waste, and details of measures to mitigate any impact. 	<i>Noise and vibration is addressed in Section 14, air, quality, odour and dust is addressed at Section 3.4, water quality and stormwater runoff is addressed at Section 3.4, waste is addressed at Section 3.6.</i>

1.5 Construction Environment Management Plan Introduction

This Construction Environment Management Plan (CEMP) has been prepared to support and communicate the management strategies that will be utilised on the Powerhouse MDC Expansion project. It describes the construction methodologies, processes, and procedures from site establishment through to practical completion. Specifically, this document addresses the following items:

- Work Health and Safety

- Site Location, Hours of Work and Site Interface
- Site Establishment and Site Access
- Pedestrian and Traffic Management
- Programming and Planning
- Stormwater and Erosion Management
- Construction Methodology:
 - Site clearing
 - In Ground Works
 - Main Building Works
- Materials Handling
- Environmental Management Plan
- Noise & Vibration Management Plan
- Completion Plan
- Emergency Response Procedures

This CEMP is **PRELIMINARY** and for purposes of SSD Application and to inform DPIE on the issues to be resolved during the design and construction of the proposed Powerhouse MDC Expansion project. This plan will be updated and finalised by the Contractor appointed to construct the project.

2. Construction Methodology

2.1. Introduction

Consideration within this plan has been given to the following;

- The management of construction documentation to ensure efficient and effective construction methodologies be implemented.
- Pedestrian and traffic management, inclusive of interface with the existing MDC and TAFE sites.
- The Health and Safety of all personnel within the site and the public within the immediate areas.
- Property, both within the construction site boundary and adjacent areas.
- The impact construction activity has on neighbours, authorities and the public
- Impact of additional traffic on the existing road network during construction.
- The Contractor's approach to the management of typical construction disruptions and environmental management issues such as noise and vibration, dust air quality, water quality, stormwater runoff, construction waste and outlines details of measures to mitigate impacts.

2.1 Construction Delivery Approach

2.1.1 Preconstruction Phase

Prior to construction works being undertaken on site, the following investigations will be undertaken to mitigate and control impacts arising from the works:

- a. Existing Condition & Dilapidation Survey
 - Roads, kerb & gutter, footpath.
 - Street signs, street furniture, light poles, trees etc.
 - Infrastructure installations (pits, bollards etc.).
 - Adjoining properties including facades, visible structure, and important features.
- b. Existing Infrastructure Due Diligence and investigations including:
 - Location of services in ground (including marking of location).
 - Capacities of infrastructure to understand amplifications, upgrades etc. which may be required.
 - Establish dialogue and liaise with authorities to make relevant applications.
- c. Authority Approvals (aside from planning requirements) may include:
 - Work Zones.
 - Hoardings.
 - Crane permits (including road closures if required).
 - Footpath crossover permits (if required – eg connection of new HV substation to street mains).
 - Design and approval of new electrical substation.

2.2 Early Works Package – Demolition and Carpark Construction

It is likely that an Early Works Package will be developed to include the removal of all trees required from the site development areas and the construction of a new 24 space carpark to be located on the TAFE site as shown above in Figure 1 Site Layout. Both the Early Works Contractor and the demolition subcontractor will develop and implement specific plans to ensure works adequately deal with safety and environmental issues specific to the works to be undertaken. All works will be completed in accordance with the Work Health & WHS Act 2011 and Work Health & WHS Regulations 2011. The scope of demolition works is generally limited to tree removal, minor civil works such as the removal of on-grade carparking and paths, landscaping, fencing and potential inground services relocations.

Plans will be produced by the contractors including:

- Demolition Management Plan.
- Site Management Plan.
- Pedestrian and Traffic Management Plan
- Safework NSW notification of demolition works as required.
- Hazardous Materials Management Plan.
- HSE Management Plan.

2.3 Main Works Package - Excavation

The excavation subcontractor will develop and implement specific plans to ensure works adequately deal with safety and environmental issues specific to the works to be undertaken. All works will be completed in accordance with the Work Health & WHS Act 2011 and Work Health & WHS Regulations 2011.

These include but are not limited to:

- Excavation Management Plan.
- Site Management Plan.
- Safework NSW notification of excavation works.
- Hazardous Materials Management Plan.
- Materials Management Plan.
- WHS Management Plan.
- Erosion and sediment control plan
- Construction waste management plan

All material removed from site is to be sorted and disposed of in accordance with best practice waste minimisation strategies. Any contaminated and nonrecyclable materials will be loaded and transported to EPA approved landfill sites in accordance with the Waste Management Plan to be developed by the Contractor.

All loads departing the site shall be covered with tarpaulins to prevent any debris from escaping the truck or bin body.

As excavation continues geotechnical and civil engineers will carry out regular inspections to determine the requirement for additional rock anchors, rock pins and shotcreting if required to ensure the structural adequacy of the remaining rock, as well as the safety of the workers on site. The Contractor will put in place an Unexpected Finds Protocol which will be followed in such instances.

2.4 Main Works Package – Building J Construction and Landscaping

The Main Construction Package involves the construction of Building J, a new 3 storey facility to be used for museum storage, laboratories, staff areas and other associated uses. The building will be built using standard construction methods for excavation, concrete slabs and columns, structural steel and metal deck roofing and precast façade panels. It is envisaged that craneage will be through the use of mobile cranes positioned within the construction site boundary.

All works will be carried out in line with management plans developed by the Main Works Contractor and their specialist subcontractors as part of their Construction Management Plan including but not limited to:

- Pedestrian and Traffic Management
- Environmental Management (noise and vibration, dust, stormwater and sediment control, waste, ground conditions, etc)
- WHS Management
- Services interruption management
- Authorities management
- Site management

2.5 Completion and Handover

The Contractor will ensure that all works are complete, commissioned, working and are effectively integrated at practical completion with the final building defects rectification carried out during the defect's liability period.

Progressive site inspections will be undertaken to ensure that works are carried out in accordance with the design documentation. Monthly inspections will be carried out by the Architect and the Design Consultants. Consultants will issue reports outlining findings, reoccurring issues, potential design issues and required rectification and reinspection if required. Progressive inspections and sign-offs will be conducted so to ensure minimal defects at handover.

The Contractor will ensure that the project is completed and handed over on time with all Operations and Maintenance Manuals, as built documents, warranties and required approvals, commissioning data, certifications and training in place.

2.6 Programme and Staging.

It is envisaged that construction of the project works will be undertaken through two packages of works. An Early Works Package involving tree removal and the construction of a 24 space carpark to be located on the eastern portion of the TAFE site and a Main Works Package for all other works. The two works packages will likely overlap on site and effectively be one continuous flow of construction works over a period of approximately 18 months. This scope breakdown and program duration is subject to tendering outcomes, contractor confirmation and inclement weather impacts. Key programming and staging considerations include minimisation of any impacts to the day to day operations of the TAFE site and the existing MDC site, in particular, pedestrian and traffic movement and safety, noise and dust impacts and any impacts to TAFE and MDC operations.

3. Environmental Management

3.1 Environmental Introduction

The purpose of this Construction Environment Management Plan (CEMP) is to set the framework to put the appropriate measures in place to ensure the environmental hazards are identified and prevention measures in place to mitigate any effect on the environment due to construction activities. This section will outline the responsibilities for the Contractor to ensure that the CEMP is implemented from the outset of the project and regularly reviewed and updated through the construction phase.

3.2 Responsibilities of the Contractors' Environment Manager

An environmental manager will be appointed by the Contractor to ensure that the Construction Environment Management Plan is developed, implemented and maintained in line with the Contractors procedures. They will also:

- Provide a point of contact for all environmental related matters relevant to the development.
- Review and assess the environmental performance of all subcontractors.

- Undertake environmental audits of the project and site as works progress and at key stages of the project.
- Assist in the identification of any training needs or certification.

3.3 Pre-construction - Hazardous Material Plan

A Hazardous Material Plan will be prepared by the Contractor to address the findings of a Detailed Site Investigation Report prepared by environmental consultants Alliance Geotechnical. As there are no buildings proposed for demolition, the Detailed Site Investigation Report and the Contractors' Hazardous Materials Plan is specific to ground conditions. The Contractor's Hazardous Materials Management Plan will identify the arrangements for the removal and disposal of potentially hazardous materials from the site. Suitably licensed contractors will be used for any hazardous materials removal, and approved facilities will be used for disposal.

The Detailed Site Investigation Report undertaken by Alliance Geotechnical (AG) dated 17 September 2019 makes the following summary of site conditions:

"Based on AG's assessment of the desktop review information, fieldwork data and laboratory analytical data, in the context of the proposed redevelopment scenario, AG makes the following conclusions:

- *The detected concentrations of all other identified contaminants of potential concern in the soils assessed are considered unlikely to present:*
 - o *an unacceptable direct contact human health exposure risk; or*
 - o *an unacceptable inhalation / vapour intrusion human health exposure risk;*
- *The detected concentrations of identified contaminants of potential concern in the soils assessed are considered unlikely to present a petroleum hydrocarbon management limit risk;*
- *No asbestos was detected within the soil materials analysed; and*
- *The detected concentrations of identified contaminants of potential concern in the soils assessed are considered unlikely to present an unacceptable ecological contamination risk.*

Based on the assessments undertaken as part of this investigation, AG has concluded that the site is deemed suitable for the proposed land use setting. AG can conclude that no further investigation should be required for this development to proceed."

3.4 Demolition and Tree Removal Phase -Environmental Management

The following issues will be addressed prior to demolition commencing:

Dust Minimisation

Dust control caused by ground works will be via the use of high-pressure water sprayer / gurneys, hoses, street sweeping of the area adjacent the site and the streets will occur when required. Tarpaulins will cover truck trailers and bogies to ensure containment of material during transit.

Mist spraying will be implemented during demolition works to suppress the migration of dust.

Vehicle Tyres

All roads surrounding the site are hard surface roads. The demolition / excavation subcontractor will install appropriate wheel washing measures (cattle grates, wheel washers, hose down bays) to ensure that road surfaces are kept clean at all times. This will be supplemented by manually sweeping when needed.

All vehicles will be loaded from concrete or sealed hardstands and any minor spillages will be swept up immediately by the traffic controllers.

Sediment & Stormwater Control

The demolition subcontractor will ensure that sediment controls measures such as drain socks, geofabric and sandbags or the like are installed at critical locations around the site to divert, dam and remove, filter or catch water containing sediment from entering storm water or sewerage systems.

Wastewater derived from demolition and excavation activities (when using mist spray for dust suppression) will be filtered before entering the storm water system.

Any ground water or storm water entering into the excavation area shall be collected into a sump excavated within the excavation. The water in the sump shall be allowed to settle and then pumped out into the existing storm water systems pending assessment of water quality.

Should groundwater require dewatering, further advice will be sought from the geotechnical engineers and dewatering systems will be designed and implemented under the direction of the relevant engineers and authorities.

Waste Transport and Disposal

All contaminated and non-recyclable materials to be loaded and transported to an EPA approved landfill sites. All loads departing the site shall be covered with tarpaulins to prevent debris escaping the truck or bin body.

All materials suitable for recycling will be disposed of at the closest and relevant recycling depot. Details of the recycling depots will be described in the site Waste Management Plan.

Noise and Vibration Management

The Contractor will finalise a Noise and Vibration Management Plan in line with the Noise and Vibration Management Plan developed by Northrop Engineers and submitted as part of the project's EIS. This plan will focus on minimising any impacts to the existing MDC operations, TAFE operations and the residential neighbours.

3.5 Environmental Records

Details of some of the documents that need to be held on site are listed below:

Environmental Records	Action by/ Owner
CEMP	Civil and Main Works Contractor
Waste Transfer Notes	Civil and Main Works Contractor
Method Statements	Civil and Main Works Contractor
Risk Assessments	Civil and Main Works Contractor
Hazard Materials	Civil and Main Works Contractor
Environmental Advisor visitor reports	Civil and Main Works Contractor
Controlled Water Discharge Permits	Civil and Main Works Contractor

3.6 Construction Waste Management Plan

On-site construction waste shall be managed and properly disposed of off-site. Appropriate measures shall also be implemented to ensure that material brought to site is free from contaminants, and any dangerous/ hazardous goods are managed appropriately.

The Contractor shall prepare a Waste Management Plan prior to the commencement of works. The Waste Management Plan shall include such things as:

- Size and location of waste bins
- Frequency and time of waste collection
- Recyclables and any chemical waste
- During the excavation works, the contractor must not unreasonably allow any rubbish, refuse, debris or other materials to collect or accumulate within the site or surrounding areas
- Hazardous and dangerous goods will be primarily stored offsite, however where necessary, the storage and containment of dangerous and hazardous goods onsite will be in accordance with Material Data Sheets and EPA regulations.

Liquid storage and handling areas will be located away from storm water drain entrances, work area entrances and exits, and drainage overflow routes. Bunding will be constructed where necessary in accordance with EPA guidelines. All spills will be reported to management. In the event a spill enters the storm water system; the EPA and Council will be contacted.

4. Stakeholder Management

4.1 Stakeholder & User Group Management

The Contractors Project and Site Managers will have key roles in maintaining relationships with project stakeholders to ensure that the project objectives are achieved with minimal disruption to the adjoining owners' operations and the authorities and service providers that we interact with.

They will seek to achieve a workable balance between maintaining project momentum in accordance with the construction programme and the needs and expectations of stakeholders. Some of which are listed below:

- Castle Hill TAFE
- Powerhouse Museums Discovery Centre existing site
- DPIE
- Residential neighbours
- The Hills Shire Council
- Transport for NSW / Traffic Management Centre
- Fire & Rescue NSW
- Endeavour Energy
- Sydney Water
- Jemena
- Telstra
- NBN

4.2 Construction Liaison

Due to the proximity of the site to neighbours (TAFE site), The Contractor will carry out the project in a manner designed to minimise disruption to the activities of others to the extent practical.

Access to the site, material movement and hours of work will be in accordance with the approved working hours and pedestrian & traffic management plan. The construction programme has been based on these working hours.

The Contractor will nominate someone from the site management team to act as a liaison officer, enabling ongoing communication of upcoming works and providing a contact point in the event of any issues requiring clarification or resolution.

4.3 Dilapidation Surveys

Dilapidation surveys are to be conducted for all the surrounding pavements, adjacent buildings, infrastructure etc. Copies of these reports will be submitted to the Project Manager / Principal's Authorised Person for records and periodic review

5. Construction Site Boundary & Fencing

The location of the site is contained within the existing Powerhouse MDC site, with minor works to be undertaken within the adjacent TAFE site. The proposed construction site boundary plan is included as **Appendix A** of this CEMP. It is proposed that chain wire fencing be installed to delineate the site and ensure the safety of site workers, the TAFE site and the existing MDC site. The construction site boundary between the site and the existing MDC site will be arranged and managed to ensure all pedestrian exit paths of travel are safely maintained from the existing MDC site and operations.

6. Site Access

5.1 Site Access Control

Signage will be placed at the site entrance clearly stating that access is for authorised persons only. The construction workforce will be required to undertake site specific WHS induction training and will be issued with project specific identification to confirm this has been completed.

Daily sign-in registers will be kept at the main entrance to the site, and each subcontractor company will be required to advise their numbers of personnel on site each day. Only those workers who have completed site specific inductions will be allowed to enter the site and undertake works.

Visitors to the site will need to attend to the site office, sign in, always wear PPE and be escorted by authorised site personnel, and sign out at the end of the visit.

When MDC staff require access to roller doors in buildings adjacent to the work site, prior arrangements will be made with the contractor to allow access and escort vehicles along the existing eastern driveway. This driveway will form part of the construction site and will be used for site sheds, access and materials handling. Pedestrian egress paths will be maintained for all MDC buildings without requiring access through the construction site.

7. Site Establishment & Materials Handling

In conjunction with the main contractor and as the design develops the Construction Environment Management Plan will be developed in greater detail and will provide further clarity relating to site establishment and strategy for material handling.

As a minimum, this section will contain:

- Overview of the site establishment principles including truck movements and average daily site staff
- proposed site shed, amenities and storage sheds.
- Permanent & temporary services to be established and or maintained including but not limited to sewer, water, stormwater, telephone, power (high Voltage and Low Voltage), fibre optic, communication, fire services, hydrant services.

- Detailed construction work zones and sequencing for site activities impacting adjoining properties visual and acoustic amenity.
- concrete pumping and placement work zones
- mobile craneage locations
- materials handling zones

8. Pedestrian Management

Pedestrian safety is of utmost importance to all stakeholders and the plan to safeguard their protection is to detail with specific input from the main contractor and their site safety personnel. The Contractor will provide temporary signage where necessary to direct the MDC and TAFE staff and the public and to warn them of any potential hazards. The content and position of the signs will be in accordance with statutory and council requirements. Temporary crossovers will also be constructed so as to divert pedestrian traffic if footpaths are closed for the cut in of new HV cables from the street to the proposed new electrical substation.

9. Traffic Management Plan

JMT Consulting have prepared a preliminary DRAFT Transport Assessment Report inclusive of a Preliminary Construction Pedestrian Traffic Management Plan, assessing the proposed access and operation of construction traffic associate with the proposed development with respect to safety and capacity.

Traffic will generally be managed at the site in the following way:

- Designated construction vehicle access through existing entrance on Showgrounds Road with an alternate secondary access from Windsor Rd if required
- Designated transport routes shall be communicated to all construction personnel
- Strict scheduling of vehicle movements is to occur to minimise vehicles waiting off the site
- Site workers are to utilise local public transport and car sharing wherever possible

No tracked vehicles will be permitted or required on any paved roads. Public roads and access points will not be obstructed by any materials, vehicles, refuse skips or the like, under any circumstances. It is anticipated that all works will be carried out within the construction site, with the exception of the 24 space carpark in the eastern side of the TAFE site which will be separately fenced for the duration of those works (less than 2 months). A appropriate method of site fencing will be provided by the contractor to ensure safety to construction works, MDC and TAFE staff and students and the public.

If there is a requirement to operate any material handling machinery on public access roads, the Contractor will be required to seek Council or police approval prior to the event occurring. All associated requirements and regulations relative to such work will be satisfied.

8.1 Heavy Vehicle Management

There will be some heavy vehicles arriving and departing the site each day during the site clearing, excavation and construction stages of the works. All vehicles transporting loose materials will ensure the entire load is covered by means of a tarpaulin or similar impervious material. The vehicle driver will take all precautions to prevent any excess dust or dirt particles depositing onto the roadway during travel to and from the site. The respective trades will be inducted by the Contractor into the above procedures and will monitor their trucks entering and exiting the works zones to ensure the procedures are met.

The appointed contractors and suppliers within the site will ensure that the entry and exit points will be kept free from material that has been deposited by any site vehicles. The Contractor will monitor the roadways leading to and from the site on a daily basis and take all necessary steps to have rectified any adversely impacted roads pavements caused by site vehicles.

The roads will also be cleaned on a regular basis when required to minimize dirt particles depositing externally from the site. Vehicles operating to and from and within the site shall do so in a manner which does not create unreasonable or unnecessary noise or vibration. No vehicle will cause interference to any adjoining property.

8.2 Truck Movements Forecast

To be developed in consultation with Contractor and traffic engineer and contained within a site-specific Construction Traffic Management Plan. It is anticipated that in the order of 40-50 construction vehicles a day at the peak would be experienced.

8.3 Street Closures

To be developed in conjunction with Main Contractor and coordinated with Council and all impacted stakeholders if this is required during the course of construction for safety to the public. It is not anticipated to require any street closures to undertake the works.

10. Work Programme & Working Hours

The working hours will be 7.00am to 5.00pm weekdays and 7.00am to 3.00pm weekends.

The entire construction of this development is expected to take approximately 18 months and be undertaken in one continuous stage of work.

11. Workplace WHS Management Plan

Work Health and Safety (WHS) is the highest priority and is essential that the Contractor will be aligned with this objective.

Safety in Design reviews will be undertaken at relevant key milestones including prior to commencement on site and will involve the building contractors once they are engaged. A detailed and thorough WHS Management plan will be prepared by the contractor, prior to commencement of construction activities.

12. Emergency Response Procedure

In the event of an emergency in relation to an accident on site, the Project Manager will be notified immediately. The allocated First Aid site personnel will also be notified and where possible assist with the incident. The relevant external services will be contacted, and arrangements will be made for access to the area of concern. Emergency vehicles will be able to access the site from Showgrounds Rd, with additional secondary access points from Windsor Rd and through the TAFE site from Green Rd.

The existing MDC Site Evacuation Plan will be continually updated throughout the construction works.

A detailed Emergency Management Plan will be developed prior to site establishment works in consultation with required parties.

13. Environmental Management Plan

A detailed Environmental Management Plan will be prepared by the construction contractor for the project prior to commencement of construction. As a minimum this plan will address the following:

- Sediment and erosion control measures
- Potential stormwater runoff from stockpiles
- Stormwater collected in excavations and requiring disposal
- Groundwater entering excavations and requiring disposal after dewatering
- Vehicles leaving the site depositing dirt/mud on public roads after rain periods
- Removal of bulk materials off site escaping from vehicles and polluting roadways
- Debris and litter collecting along roads and in catch drains
- Site contamination through the potential for contamination from equipment and plant repair areas.
- Dust, noise and vibration monitoring and minimisation.

14. Noise & Vibration Management Plan

- The Contractor shall provide a Noise and Vibration Management Plan prior to the commencement of the works. All works will comply with The Environmental Protection Authority guidelines for noise emissions from construction/ demolition works and the provisions of the Protection of Environmental Operations Act. A Preliminary Noise and Vibration Management Plan has been undertaken by Northrop Engineers and is included as part of the project's EIS.

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

- The Contractor shall set up noise and vibration monitors around the site at locations identified by the Acoustic Consultant as sensitive areas and high-risk areas.
- Works on site will only be carried during approved hours

- The Contractor will be responsible for scheduling activities that generate high noise to short term duration wherever possible and practical.
- Establishment of site practices and strategic positioning of processes on site
- Establishment of direct communication with affected Parties

Vibration monitoring will be used:

- At the commencement of a new activity near a sensitive structure, establish and confirm safe working distances from the sensitive structure.
- When activity identified as producing significant ground vibration is occurring within the safe working distance established, continuously record vibration levels at sensitive structures using unattended vibration loggers. These will also provide a visual/audible alarm when vibration limits are approached
- When operating very close to sensitive structures, attended monitoring is to ensure that any preventative action is taken immediately to prevent the targets from being exceeded.

Where a monitor alarm is activated, the following actions shall be undertaken:

- All vibration producing works in the site of the alarm shall cease immediately
- Cause of the exceedance shall be investigated immediately.
- If the cause of the event is likely to be caused again, or if another alarm is triggered, then the acoustic specialist should be advised, and further action taken place before works recommence.

One of two courses of action can then follow:

- If attended monitoring is established the activity can continue with the attended monitoring confirming that even if the alarm level is exceeded the works can proceed provided the vibration limits are not exceeded.
- Work practices are modified and attended monitoring used to confirm the vibration limits are being achieved, before returning to unattended monitoring

Site clearing and excavation will be carried out with the use of heavy plant equipment. Where possible all plant will have necessary noise suppression equipment fitted. During site clearing and excavation, noise and vibration monitoring will be carried out by an Acoustic Consultant where required.

The Contractor's construction workers will undertake an induction program, which will include policies of minimising noise during construction, respecting neighbours and being mindful of the environment.

15. Completion Plan

The Contractor will implement a plan for testing, pre-commissioning, commissioning, performance testing and training for the works leading up to Practical Completion. Particular emphasis will be placed on mechanical services commissioning.

The Contractor will work with the Principal to ensure works such as racking and any other specialist equipment and fittings are able to be installed by the client to specific area prior to full completion of the works.

16. Conclusion

This report supports a State Significant Development (SSD) Application for the proposed construction and use of a new building to facilitate the expansion of the Museums Discovery Centre (MDC) site at 2 Green Road, Castle Hill. This report sets the high level methodology for which the construction of the proposed works will be carried out under. Experienced and professional construction companies will be engaged to manage and carry out the works outlined in this report. As such, detailed Management Plans will be prepared by these contractors to ensure the works are carried out to the highest levels of safety to site workers, staff and visitors to the existing MDC site, staff, visitors and students of the adjacent TAFE site and members of the public.

These detailed Management Plans will form the overarching principles and methodologies for all works on site to ensure the impacts of construction are professionally managed and the potential impacts of construction are minimised. These Management Plans will include details to address and mitigate and minimise potential impacts of the construction on pedestrian and traffic movement, surrounding buildings and operations, the public domain, including noise and vibration, air quality impacts, dust emissions, water quality, stormwater runoff, groundwater issues, soil pollution and construction waste.

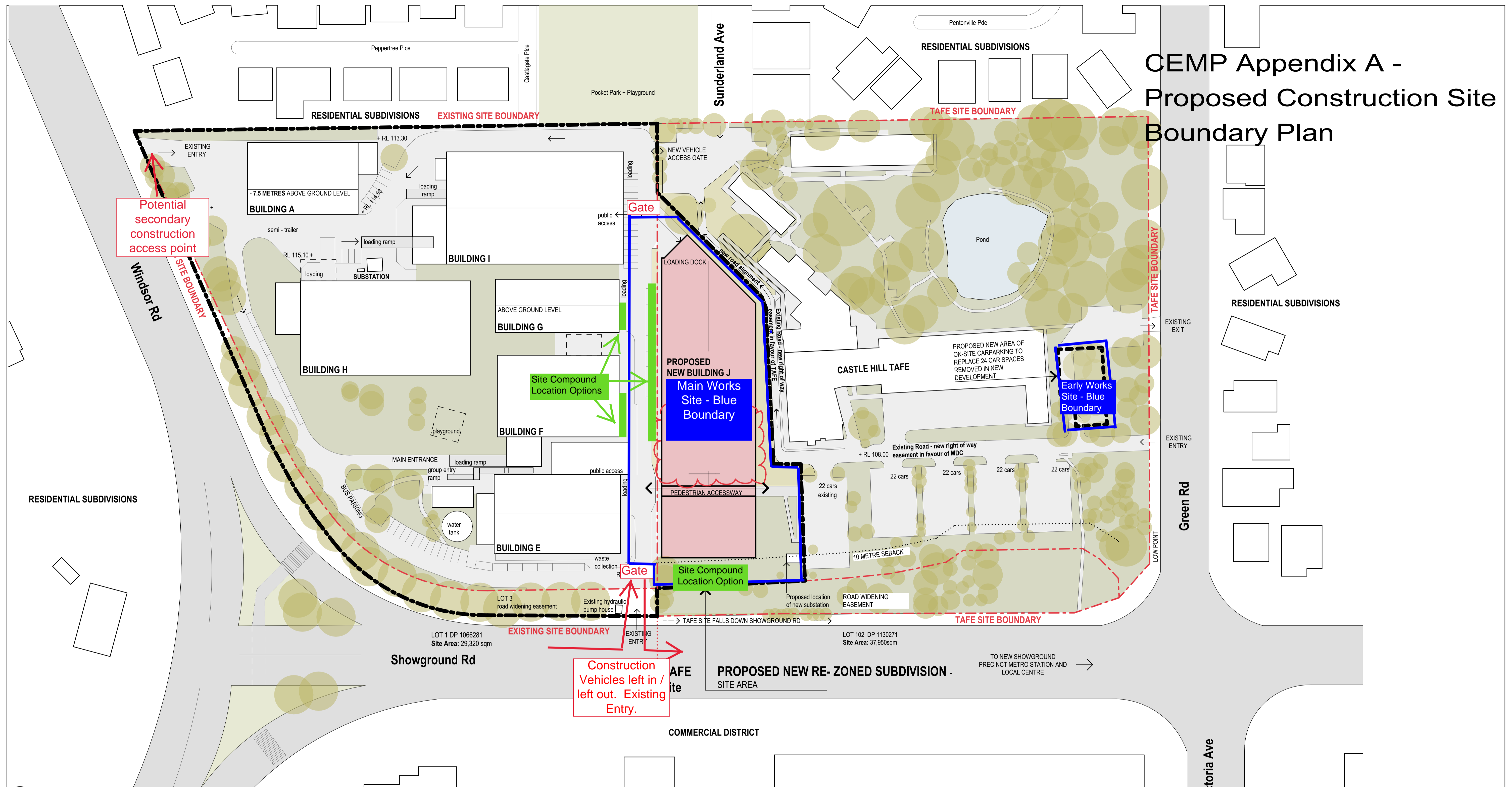
Mitigation of construction impacts will be addressed in the Management Plans to be produced by the building contractors in line with this overarching Construction Environment Management Plan as listed below in Table 1. Mitigation Measures.

Table 1. Mitigation Measures

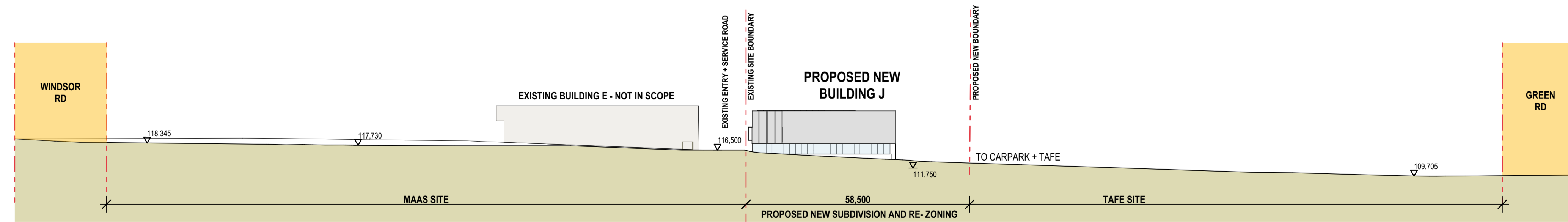
Proposed Measure	Timing
Contractor to prepare a Construction Noise and Vibration Management Plan	Prior to commence of construction
Contractor to prepare a Pedestrian and Traffic Management Plan	Prior to commence of construction
Contractor to prepare and Environmental Management Plan	Prior to commence of construction
Contractor to prepare a detailed Construction Management Plan	Prior to commence of construction

Appendix A – Proposed Construction Site Boundary Plan

CEMP Appendix A - Proposed Construction Site Boundary Plan



1 SITE PLAN
1:750



2 STREET ELEVATION
1:750

REV	DESCRIPTION	DATE	REV	DESCRIPTION	DATE	TITLE	TITLE	TITLE	TITLE	LEGEND	NORTH	PROJECT SPONSOR	PROJECT TITLE	lahznimmo architects	TITLE
01	OPTION 3E - Preliminary Issue	23/01/19				STRUCTURAL / CIVIL / SERVICES CONSULTANTS						NORTH	Premier & Cabinet	Museum Discovery Centre Expansion	PROPOSED SITE PLAN
02	OPTION 3E - Updated Site Plan	05/02/19													
03	OPTION 3E - Consultant Issue	08/02/19													
04	OPTION 3E - Costing Issue	13/02/19													
05	PRELIMINARY PLANNING APPLICATION ISSUE	08/05/19													
06	PLANNING APPLICATION ISSUE	30/07/19													
07	OPTION 05 - Issue For Information	20/02/20													
08	OPTION 06	14/05/20													
09	PRELIMINARY SSDA DRAWING ISSUE	15/05/20													
10	Updated for SSDA Submission	10/07/20													

REVIEW	DIRECTOR SIGNATURE	DATE	DRAWN	PLOT DATE	SCALE @A1	SCALE @A3
TENDER			HC / PL	10/07/2020	1:750	
CHECKED			PROJECT NO.	18-14	DRAWING NO.	REV. NO.
AN					A-S-K-1101	10