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CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

REFERENCE NO. S11164-CEMP-R01-A1

SYDNEY OPERA HOUSE WESTERN RENEWAL PROJECT | 13 FEBRUARY 2020

Construction Environmental Management Plan

Sydney Opera House
Bennelong Point,
Sydney NSW 2000

Prepared for

Taylor Construction Group Pty Ltd

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by

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Abbreviations

Term	Description
ACM	Asbestos Containing Materials
ARA	Appropriate Regulatory Authority
Asbestos	The fibrous form of the mineral silicates belonging to the serpentine and amphibole groups of rock-forming minerals, including: actinolite, amosite (Brown Asbestos), anthophyllite, chrysotile (White Asbestos), crocidolite (Blue Asbestos), tremolite, or any mixture containing one or more of these.
CAQMP	Construction Air Quality Management Plan
CEMP	Construction Environmental Management Plan
CNVMP	Construction Noise and Vibration Management Plan
CPTMP	Construction Pedestrian and Traffic Management Plan
CWMP	Construction Waste Management Plan
DA	Development Application
DEE	Department of Environment and Energy (Cwth)
DPI&E	Department of Primary Industries and Environment
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act
EPL	Environmental Protection Licence
GPT	Gross Pollutant Trap
HMMP	Hazardous Materials Management Plan
HSE	Health, Safety and Environment
IBC	Intermediate Bulk Container

m	Metres
NSW	New South Wales
OEH	Office of Environment and Heritage
PCB	Polychlorinated Biphenyl
PEMP	Project Environmental Management Plan
POEO	Protection of the Environment Operations Act 1997
POEO Act	Protection of the Environment Operations Act 1997
PPE	Personal Protective Equipment
Risk	The probability that damage to health may occur. Risk = Hazard x Exposure
RMS	Roads and Maritime Service
SDS	Safety Data Sheet
SOH	Sydney Opera House
SOHT	Sydney Opera House Trust
SSD	State Significant Development
SWMS	Safe Work Method Statement
TfNSW	Transport for New South Wales
WMP	Waste Management Plan
w/w	Weight per weight (used where the weight of each chemical is used and not the volume).

1. Introduction

1.1 Background

Sydney Opera House Trust (SOHT) is in the process of commencing the western renewal Project (the Project) at Sydney Opera House (SOH) located at Bennelong Point, NSW, 2000 (the site). The project, which is part of the Stage 1 renewal and categorised as State Significant Development (Ref: (DA3 - SSD8663), will include the following projects:

- renewal of the concert hall,
- entry foyer
- creative learning centre.

SOHT has engaged Taylor Construction Group Pty Ltd (Taylor) to carry out the proposed renewal works.

To support the State significant development (SSD) application for the renewal works at SOH, an Environmental Impact Statement (EIS) was prepared under section 4.38 of the Environmental Planning and Assessment Act 1979 (EP&A Act) and approved under Ministerial development consent (Ref: SSD 8663, 2019).

1.2 Purpose of CEMP

This construction environmental management plan (CEMP) has been developed in accordance with the specifications outlined in the development consent conditions issued by the NSW Government Department of Planning, Industry and Environment (NSW DPI&E).

The CEMP will be maintained as a live document and updated as necessary to respond to specific requirements during different construction stages of the Project. It will also be reviewed and certified by the Taylor, SOHT and crown certifier prior to the commencement of construction works.

This CEMP is prepared in accordance with:

- The Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004)
- AS/NZS ISO 14001
- The Development Consent Application number SSD8663

1.3 Objectives of the CEMP

The objective of the CEMP is to provide a pre-planned and structured approach to the management of any potential environmental issues during the site establishment, demolition works and construction phases of the development. Specifically, the CEMP includes the following:

- Description of the project in detail, site location, work schedules, demolition and construction activities.
- Identifies environmental impacts and provides appropriate measures and controls to mitigate or eliminate these impacts.
- Provides mechanisms for compliance with the applicable policies, approvals, licenses, development consent and agreements.

- Establish a framework for environmental management to ensure implementation of mitigation measures and assign the roles and responsibilities of the key personnel
- Develop a monitoring and auditing program to ensure appropriate implementation of mitigation measures and regulatory compliance
- Regularly evaluate construction activities to identify any changes to the construction programme and the need to update the control plans (if required)
- Maintain high levels of environmental awareness amongst the contractor and subcontractors and
- Ensure that the construction works comply with all relevant environmental regulations and standards.

1.3.1 Development Consent Conditions

The requirements of development consent issued by NSW DPI&E (Ref: SSD 8663, 2019) pertaining to the CEMP are set out in Table 1.1. The table also shows where, in this document, the requirements are addressed.

All the requirements of the consent condition B31 have been addressed in this CEMP, without any exception, and as such compliance has been achieved.

Table 1.1 Development Consent Conditions (SSD 8663, 2019)

Development Consent Conditions	CEMP Reference
B31. Construction Environmental Management Plan	
a. Describe the relevant stages and phases of construction including work program outlining relevant time frames for each stage/phase	Section 4.1 and Appendix H
b. Describe all activities to be undertaken on the site during site establishment and construction of the development	Section 4
c. Clearly outline the stages/phases of construction that require ongoing environmental management, monitoring and reporting	Sections 7 and 8
d. Detail statutory and other obligations that the applicant is required to fulfil during site establishment and construction, including approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies	Section 5.5
e. Be prepared in consultation with the Council, EPA, tfNSW and Tf NSW (RMS) and include specific consideration of measures to address any requirements of these agencies during site establishment and construction	Section 5.4
f. Describe the roles and responsibilities for all relevant employees involved in the site establishment and construction of the works	Section 5.7
g. Details how the environmental performance of the site preparation and construction works will be monitored, and what actions will be	Section 8

Development Consent Conditions		CEMP Reference
	taken to address identified potential environmental impacts, including but not limited to noise, traffic and air impacts	
h.	Document and incorporate all relevant environmental management plans, control plans, studies and monitoring programs required under this part of the consent	Sections 1.4, 8.2 and 10
i.	Include arrangements for community consultation and complaints handling procedures during construction	Section 5.10
j.	Address air quality management through the preparation of a Construction Air Quality Management Plan (CAQMP), prepared by a suitably qualified person, which includes the monitoring and management of air quality and dust (including dust emissions on the site and dust emissions from the site) to protect the amenity of the neighbourhood	Section 7.5 and Appendix F
k.	Address the management of water quality, including any relevant mitigation measures such as 'wet-vacuuming'	Sections 7.1 - 7.3
l.	Address the management of erosion and sediment controls to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the subject site	Section 7.1 - 7.4
m.	Address the management of construction waste	Section 7.8 and Appendix E

1.4 Reference Documents

This CEMP has been prepared based on the following documents.

i. Taylor's Construction Management Plan (Taylor 2017)
ii. Sydney Opera House Trust's Draft Construction Management Plan (SOH 2018)
iii. Keylan's Environmental Impact Statement (Keylan 2018)
iv. Taylor's Site Waste Management Plan (Taylor 2020)
v. Taylor's Project Environmental Management Plan (Taylor 2019c)

1.5 Limitations

The recommendations and control measures contained in this document are based upon information provided by Taylor and upon the assumption that all provided information is correct and that all relevant information has been provided. Information obtained from third parties has not been independently verified by Hibbs, unless otherwise stated in this CEMP.

This CEMP does not relieve the contractor or any other party involved in the project from their specific legal responsibilities with respect to compliance with safety, health and environmental regulations and standards. Where there are conflicts or differences stipulated in Taylor, sub-contractors or applicable legal requirements, the more stringent will prevail.

1.6 Structure of the CEMP

The remainder of this CEMP is structured as follows:

- Section 2 describes the location of the Project and site details
- Section 3 describes the scope of the Project
- Section 4 describes the scope of construction and demolition activities and the project schedule
- Section 5 describes the basis for environmental management of the construction works including environmental policy statement, roles and responsibilities, communication, awareness and training, auditing and environmental commitments
- Section 6 describes the potential environmental impacts arising from the construction and demolition works
- Section 7 describes the committed mitigation measures or management actions to minimise or lessen potential impacts on sensitive receptors
- Section 8 describes the required environmental monitoring program as well as internal and external auditing requirements
- Section 9 provides the requirements for updating this CEMP during the construction phase
- Section 10 presents references to this CEMP and list of appendices

2. Site Details

Table 2.1 Site details

Site Address	Bennelong Point, Sydney NSW 2000
Lot / Deposition No,	Lot 5 DP775888 and Lot 4 DP7879333
Current Owner	Sydney Opera House Trust
Local Government Authority	City of Sydney
Council Zoning	B8 - Metropolitan Centre
Current Land Use	Entertainment
Site Area (Approx.)	38,337 m²

2.1 Site Location

The site is located on Bennelong Point, a peninsula situated on the eastern side of Circular Quay in Sydney Harbour. The proposed renewal works will be carried out in the following areas of the SOH:

- The Concert Hall on the western side of the site
- Creative Learning Centre – located on the northern end of the western side of the site

2.2 Site Setting and Sensitive Receptors

South of the primary structures are the podium steps and the forecourt. South and East of the forecourt is the Royal Botanic Gardens and Circular Quay is situated South West of the site. Approximately 500 metres to the North West of the site is the Sydney Harbour Bridge, and 500 metres South West is the Rocks and the International Cruise Terminal. Kirribilli point is located on the opposite shore of the harbour 500 metres to the North. Bennelong apartments are about 260 m South West of the concert hall.

Figure 2.1: Site setting and Sensitive Receptors

3. Project Description

The planned renovation works are being carried out in anticipation of the SOH fifty-year anniversary in 2023. The renovations seek to maximize the cultural, economic and heritage values of the SOH and maintain its status as the premier performing arts centre in NSW and Australia. The renovations also seek to improve the operation, safety and construction compliance of the SOH.

This CEMP has been developed to support the following projects which are subject to SSDA (DA3-SSD8663).

- Concert Hall Projects
- Creative Learning Centre
- Entry Foyer Project

This package of works will provide:

- Acoustic, technical and accessibility upgrades to the Concert Hall
- Dedicated facilities within the Opera House for creative learning

The proposed upgrade of the Concert Hall seeks to improve several issues currently present in the facility. These include:

- The improvement of patron access to the Concert Hall auditorium and foyers
- Improve performer and operational staff access to the back-stage areas and performer dressing rooms
- To improve the acoustic performance of the Concert Hall for both acoustic and amplified music performances
- To improve the technical and operational capability of the Hall to accommodate a greater diversity of performance modes, improve safety for SOH staff and visiting hirers, & reduce the time required for set-up
- To improve patron and performer comfort.

The proposed creation of the Creative Learning Centre seeks to create an interactive space dedicated to allowing children and young people the opportunity to explore, experiment and learn through creativity and innovation. The centre will be used for hosting workshops, creative-play activities, talks and performances, and will include a digital classroom.

4. Construction Details

4.1 Work Program

The proposed time frames for the works is available in Appendix H. A brief summary of the work program is outlined below:

- Design Phase (01 July 2019 - 13 Jan 2020)
- Subcontractor Engagement (12 June 2019 - 22 January 2020)
- Procurement (2 Sep 2019 - 25 Sep 2020)
- Early Works Construction (25 Nov 2019- 12 June 2020)
- Construction of concert hall (03 Feb 2020 - 09 Nov 2021)
- Construction of creative learning center (29 Apr 2020 - 19 Feb 2021)

4.2 Working Hours

All construction activities, including the delivery of materials to and from the site, may only be carried out between the following hours:

- Monday to Friday: 7:00 a.m. to 6:00 p.m.
- Saturday: 8:00 a.m. to 1:00 p.m.
- No work to be carried out on Sundays or public holidays
- Activities may be undertaken outside of these hours where:

- works are internal and carried out within the enclosed building; or
- delivery and removal of vehicles, plant or materials is via the underground loading dock within the subject site (in which case it may be undertaken on 24 hours a day, 7 days a week basis during the construction of the development); or
- delivery and removal of vehicles, plant or materials not via the underground loading dock under the previous point is required outside these hours by the police or other public authorities, or it is determined that it would be hazardous to the general public (i.e tourists, patrons or events in the forecourt/boardwalks), provided it is undertaken outside scheduled performance times at the SOH (including not within 30 minutes before or after scheduled performance); or
- required in an emergency to avoid the loss of life, damage to property or to prevent environmental harm.

- Notification of such activities must be given to affected residents before undertaking the activities or as soon as it is practicable afterward.
- Rock breaking, rock hammering, sheet piling, pile driving, and similar activities may only be carried out between the following hours:
  - Monday to Friday: 9:00 a.m. to 12:00 p.m.
  - Monday to Friday: 2:00 p.m. to 5:00 p.m.
  - Saturday: 9:00 a.m. to 12:00 p.m.

4.3 Construction activities

4.3.1 Site Access

Vehicular access to the site will be facilitated by approaching the SOH via Macquarie Street. Numerous zones are proposed to receive vehicles these include:

- Western Crane site along the Western Broadwalk;
- Northern Crane site, located on the Northern section of the public Boardwalk;
- Vehicular Concourse, under the monumental steps; and
- B4 Basement Loading Dock.

Access to the western crane, northern crane, vehicular concourse and loading dock is by agreement with SOH.

Traffic controllers will direct vehicles entering and exiting and ensure safe interaction with local traffic and other vehicles.

The majority of the vehicle movements are expected to occur via the B4 loading dock, where A section has been put aside for construction activity. As such all subcontractors and construction vehicles will adhere to the existing safety procedures in place for the SOH.

Pedestrian access will be possible through the Site Office pedestrian entrance on the Western boundary of the Concert hall as well as through the Main Works Compound site office located under the monumental steps.

There will be some situations where construction vehicles will require access to the crane sites mentioned above. This can only be done via the pedestrianised Broadwalk and Forecourt respectively. To ensure safe truck movements these will be conducted at night where practicable.

Vehicular and pedestrian site access is illustrated and explained in greater detail in the Construction Pedestrian and Traffic Management Plan (PTC 2018) which is available in Appendix D.

4.3.2 Site Establishment

A site office and facilities for the Taylor project team (30 persons) will be provided by SOH. These facilities will be in the Northern Foyer, as this area requires minimal works. This area also provides direct access from the street level allowing the workers to avoid interaction with SOH staff and visitors. The existing level 3 bathrooms will be utilised for workers and temporary showers will be installed within the bathrooms.

A breakroom area with food and coffee facilities will be created in the existing bar and separated from the site boundary. This will mean that the workforce can remain on site and avoid interactions with SOH staff and visitors.

Waste will be stored at the following 2 designated locations (refer to Appendix A for location map):

i. B4 Loading Dock

ii. Podium Level Compound

4.3.3 Existing Utilities and Providers

a. Power

Power to the SOH has recently been upgraded inclusive of a new 11kva substation and main switchboard. The chamber substation is owned by Ausgrid and power reticulation is managed and operated by SOHT. The reticulation within the SOH precinct is managed by SOHT and metered to all of the various tenants. The existing power supply capability is sufficient for the intended scope of works inclusive of temporary works.

b. Water

The incoming main is owned by Sydney Water. The reticulation of water supply is managed and operated by SOHT.

c. Sewer

The outgoing sewer main is owned by Sydney Water. The discharge of sewer and trade waste is managed and operated by SOHT. The existing sewer system goes to a number of pumping stations.

d. Stormwater

The outgoing stormwater main is owned by Sydney Water. The discharge of stormwater to the main is maintained by SOHT. The existing building rainwater system drains to a central gross pollutant trap (GPT) and then into Sydney Harbour.

e. Gas

The incoming main is owned by Jemena. The reticulation of gas supply is managed and operated by SOHT within the SOH precinct and is metered to all of the various tenants.

In the event that any service is required to be shut down or is damaged, the direct contact for these is the SOH Building Operations who are available 24/7 on 02 9250 7979.

4.3.4 Construction and Demolition Equipment

The following is the list of the equipment that may be used during construction:

- Jackhammers
- Bin trucks/delivery trucks
- Scaffolding
- Back propping
- Hazardous material skip bins
- Remote operated demolition robot: Brokk B1, B2 160
- Concrete saws
- Core drill
- Quick cut/ring cut/flush cuts saw/wall saw/wire saw
- Scissor lift/boom lift
- 2.5 tonne electric forklifts
- Mobile cranes:
  - 130t all-terrain mobile crane
  - 40t mobile crane
  - 22t mobile city crane
- Semi-trailers
- Dump trucks
- Concrete trucks
- Concrete pumps
  - Concrete will be pumped horizontally and vertically using a mobile line.
- Concrete vibrators
- Cherry pickers and elevated work platforms
- Hand power tools

4.3.5 Hoarding Plans

Class A hoarding will be installed in line with current drawings and SOH expectations. The hoardings will separate the external compounds from the general public and engineered to the required standards. Internally hoardings will be installed to separate work zones from main accessways, accommodation and office areas. All internal hoardings have been reviewed and approved by the SOH fire engineer (Arup).

All work zones will be surrounded by acoustic hoardings that are sealed at all sides to prevent dust and noise from escaping the work zones. Secondary hoardings may be installed around messy work areas within the hoarding lines. Wet cutting of concrete will be used where possible and industrial vacuums will be used at all times.

Hoardings will be locked, and access controlled by Taylor and SOH where entrances lead to SOH occupied areas.

4.3.6 Protection of Surfaces and Services

The preservation of the heritage finishes currently on the SOH is of the utmost importance to Taylor. As such protection measures will be taken prior to commencing work to ensure that all surfaces are kept in the condition in which they are found. Impact resistance and acoustic testing have been carried out to determine the best product for preserving heritage finishes. A surface protection supplier calls Skudo Group has provided a written statement claiming that their products will not damage timber or concrete finishes.

Taylor will also deploy barricades, guards, fencing, temporary roads, footpaths, warning signs, lighting, watching, traffic flagging, PPE, removal of obstruction, protection of services in order to:

- protect people and property
- avoid unnecessary interference with the passage of people and vehicles
- prevent nuisance and unreasonable noise and disturbance
- ensure works do not obstruct or damage roadways or footpaths and drains on or adjacent to the site.

Services will be located and verified prior to commencing construction. If required the services will be diverted, marked or removed depending on if they are active.

In the event that any service is required to be shut down or is damaged, SOH building operations will be contacted (refer to Section 5.11 for emergency contacts).

4.3.7 Demolition

Demolition works will be carried out by NASS Services Pty Ltd. (NASS). The scope of demolition works is summarized in Table 4.1. The complete demolition plan is available in Appendix G.

Table 4.1 Demolition Works Summary

Area	Demolition Scope of Works
Creative Learning Centre	• Remove, label, catalogue, transport and insure all retained items are required • Soft strip out • Temporary propping installation • Saw cut and create an opening in existing concrete walls • Demolish masonry walls and concrete floor topping • Remove mechanical ductworks • Loadout the waste for offsite removal

Area	Demolition Scope of Works
Multimedia Suite	• Remove, label, catalogue, transport and insure all retained items are required to disconnect and remove services • Remove carpet, timber floor, door, wall lining, gyprock IT wall, ceiling, existing mechanical ductworks • Remove waste or storage material from the site
Assembly Orchestra Room and Locker Room	• Remove, label, catalogue, transport and insure all retained items as required • Remove existing wall finish and retain timber for re-use • Remove lockers and single doors and place in storage • Demolish existing joinery unit • Remove/demolish carpet, glazed partition wall, solid partitions, ceiling, mechanical duct works • Notch out edge of concrete stair tread to accommodate new timber stair framing from orchestra assembly room • Remove waste or storage material from the site
Anteroom and Adjacent BOH	• Remove, label, catalogue, transport and insure all retained items as required • Remove and store existing doors for re-use • Demolish sliding doors to ante room, plasterboard walls, timber wall lining, • Demolish existing door/opening head in partition or masonry wall to allow for doors to be raised to new floor level in ante room • Remove and dispose of existing plantroom ladders and handrails • Demolish lift doors, sill and reveal • Demolish sanitary fixtures • Remove carpet floor finishes, floor ramp, timber floor finishes, tile floor finishes and plasterboard ceiling • Demolish existing raked suspended plasterboard ceilings and bulkheads in the rack rooms • Remove existing mechanical duct works • Demolish concrete stairs L2.S01, L2.S02 & L2.S90A to Anteroom • Demolish existing concrete wall under choir stalls • Remove waste or storage material from site

Area	Demolition Scope of Works
Choir Stalls	• Remove, label, catalogue, transport and insure all retained items as required • Protect and prop the tie beam • Install temporary bracing in one structural bay. • Install temporary props and install permanent lateral restraints assemblies on all choir stall columns • Demolish section of sloping plenum lid suspended slab level 3 to choir stalls • Demolish plenum lid suspended slab below exiting tie beam to choir stalls • Demolish plenum concrete walls below choir stall tie beam structure • Demolish existing reinforced concrete choir stall beams • Demolish existing reinforced concrete stub columns • Saw cut around and protect section of isolated slab around choir stalls column to be retained • Cut, demolish and remove concrete topping slab, raking beams and columns as required. • Removal of propping once structural stell installation is completed • Removal of any waste from site
Main Stage	• Remove, label, catalogue, transport and insure all retained items as required • Demolish existing timber wall lining and sub-structure, retaining brushbox • Remove existing stage/prompt platform and sub-framing including stairs/steps etc • Remove existing mechanical duct works • Install unispan catch deck • Demolish stage column below beam and retain reinforcement at junction with level 1 slab • Demolish isolated precast slab using Brokk 160 over structural slab • Demolish structural stage slab • Remove existing nib to tie beam being retained • Scabble face of beam and slab edge in preparation for beam encasement works • Demolish post tensioned stage beam, wire cut into segments and provide temporary lateral restraints • Remove waste from site

Area	Demolition Scope of Works
East and West Stage Wings	• Remove, label, catalogue, transport and insure all retained items as required • Remove existing doors at east and west accessible theatre entries for re-use • Demolish floor finish to sound control rooms and ABC control room • Demolish existing stair and landing to sound control room • Demolish existing ramp, stairs and floor finishes at east and west wing accessible theatre entries on level 2 • Demolish racked ceiling to sound control rooms • Remove existing mechanical duct works • Saw cut and core hole existing wall B,D and E and treat with zinc rich epoxy primer to expose the reinforcement • Demolish existing concrete wall D and E once temporary propping is installed • Scabble back existing wall B and E, cut and bend existing reinforcement • Demolish reinforced concrete column below existing tie beam • Demolish suspended slab for construction of new slab • Remove waste from site
Northern Foyer Lift 30	• Remove, label, catalogue, transport and insure all retained items as required • Remove carpet and duct work • Demolish acoustic timber veneer panels and framing • Demolish concrete plinth under acoustic timber wall panels • Install custom beams, props, platforms, scaffolds, protection decks for demolition and remove upon completion of works • Demolish reinforced concrete wall on level 1 saw cutting • Saw cut, core hole and jackhammer sections of slab and staircase prior to the full extent of demolition level 2,3 and 4 • Demolish concrete stair at L2 to L3 and L3-L4 • Saw cut, core hole and jackhammer upstand beam at L2, L3 and L4 • Removal of any waste from site
Northern Foyer Column	• Remove, label, catalogue, transport and insure all retained items as required • Demolish mirrors, carpets and ceiling in L3 amenities lobby • Remove door and frame to L3 amenities lobby for re-use • Temporary propping installed to remove existing RC column • Demolish small section of wall at male amenities lobby below existing tie beam • Demolish existing concrete column of male amenities lobby on level 3 once the new RC column is constructed • Removal of any waste from site

Area	Demolition Scope of Works
East Finger Wall Penetration	• Remove, label, catalogue, transport and insure all retained items as required • Demolish small section of the concrete wall to form new penetration • Patch up exposed edges of the wall • Removal of any waste from site
Eastern Tunnel	• Remove, label, catalogue, transport and insure all retained items as required • Demolish and remove carpeted wall cladding • Remove and retain doors and frames for re-use • Demolish and remove floor finish and plasterboard ceiling from stair lobby • Demolish existing plasterboard ceiling in room 1529A, 1529D and corridor on level 1 • Remove existing mechanical duct works • Install temporary propping • Demolish portion of existing L3 slab and stair supporting structure • Demolish reinforced concrete walls • Demolish masonry walls • Scabbling of stair faces, beam top/slab, RC walls and slab edges • Removal of any waste from site
Technical Zone Level 8	• Remove, label, catalogue, transport and insure all retained items as required • Remove mechanical duct works • Alter catwalk balustrade • Demolish existing walls, handrails, ladders and acoustic skin, retaining doors for re-use • Removal of any waste from site
Plantroom 21 Demolition	• Remove, label, catalogue, transport and insure all retained items as required • Demolish non-structural ceiling • Remove mechanical duct works • Demolish non-structural walls, access stair, existing catwalk/platform to the roof, emergency drop chutes and acoustic skin • Create an access panel in the slab • Removal of any waste from site
Portal Frame Strengthening	• Demolish concrete casing and expose steel portal frame • Demolish acoustic skin • Supply and install protection during demolition • Removal of any waste from site
Cannon Ports and Fire Escapes	• Demolish catwalks, stairs/ladder • Removal of any waste from site

Area	Demolition Scope of Works
Lift 30 Façade	• Glazing removal works • Demolish and remove 90mm dia CHS framing to existing external glazing • Removal of any waste from site

4.3.8 Concert Hall Upgrades

The Concert Hall Upgrades project primarily focuses on the renewal of the overhead theatre machinery system and acoustic upgrade to the hall. This is further broken down below:

- Acoustic upgrades (unamplified)
  - Adjustable over stage and downstage reflectors
  - Adjustable side wall reflectors
  - Profiled stage surround, box fronts and circle front
  - Upgrade to air conditioning within the Concert Hall to provide quieter background acoustic levels and improved thermal comfort to the audience and musicians.
- Acoustic upgrades (amplified)
  - Automated absorption (curtains/drapes) over the stage, and box fronts, and manually applied to the stage surround, the side walls and to the rear walls.
- Concert Hall stage and backstage
  - Lowered stage height and alignment of stage and rear stage floor level
  - Enlarged stage area
  - Automated and adjustable stage risers
  - Enlarged prompt and off-prompt wings
  - Additional downstage wing entries
  - Enlarge rear stage assembly area
  - Removable stalls level to stage stair access
  - Part removable and part automatic stair access from stage to choir stalls
  - Automated removal and under stage storage of forestage seating (rows A and B)
  - Creation of two new musician rehearsal rooms at Ground mezzanine level.
- Concert Hall accessibility
  - On-grade access from Level 2 Southern foyer to level 2 Northern Concert Hall foyer via a new passageway within the Eastern foyer stairs
  - Wheelchair accessible lifts from the east and west at level 2 of the Northern Foyer to Level 4 Concert Hall entries including the access to the intermediate levels of the Northern Foyer (Levels 2A, 3 and 3A) (Lift 30)
  - Increased number of available wheelchair positions (up to 34 in total) within the Concert Hall located at stalls level (up to 14), rear of the circle (up to 6) and rear of side boxes A, B, C, U, V and W (up to 14).

- Introduction of two new accessible toilet facilities at Level 3 in the Northern Foyer

- Concert Hall technical upgrade
  - Expansion and consolidation of the available winching capacity within a dedicated winch room above the concert hall ceiling
  - An expanded theatre technical zone above the Concert hall ceiling to allow improved and safer access to implement and adjust technical equipment required to operate the greater variety of performance modes.
  - All new winches, theatre equipment and control systems
- Regulatory improvements
  - Upgrade of the smoke exhaust capacity for the concert hall
  - Refurbishment of some of the existing seats to ensure compliance with statutory fire indices
- General builders work
  - Works to the following areas including removal of hazardous material, demolition, removal of redundant services, temporary structural propping, modifications to existing structure and installation of a new structure, alteration of existing services and installation of new services and making good finishes:
  - Upgrade of existing steel structure above the ceiling and conversion of existing Plant Room 21 into the new winch room to support and house the new theatre machinery and relocated HVAC equipment;
  - Reconstruction of the existing stage, stage winches and choir stalls;
  - Creation of the Level 2 Eastern tunnel and Northern foyer lifts
  - Miscellaneous areas such as toilets, dressing and rehearsal room upgrades. The majority of the upgrades must be completed within the closure "dark" period for the Concert Hall. It is acknowledged that it may be beneficial for some works to be carried out during an Early Works period prior to closure and certain elements of the theatre system commissioning may continue post "dark" period.
- Access and Establishment
  - Materials access into the work area for the Concert Hall will be primarily via the B4 loading dock to lift 22.
  - Secondary material access will be via the western podium and northern cleavage area.
- Materials Handling Access
  - Currently, it is planned to have the following external material handling access:
  - Crane Lift Zone - North and West within agreed locations lifting to the upper podium (L2), cleavage area (L2) and northern loading platforms (L3 and L4).
  - Existing internal lifts 22, 09, 07, 01
  - Electric forklifts, electric pallet trolleys to all areas.
  - New bespoke materials hoists on both the eastern and western sides accessing from Level 2 foyers up to the Plantroom 21 level utilising existing guide rails.
  - Full birdcage scaffold within the auditorium and technical zone

- Conveyor belts to remove demolition materials to external areas for removal

4.3.9 Creative Learning Centre

The construction of the creative learning centre project is broken down into the following works:

- Typically, medium/light demolition works will be undertaken to remove the internal dividing walls within existing office spaces. This also includes the introduction of set downs in concrete slabs for the inclusion of wet areas.
- Any existing heritage items, such as the Peter Hall 'wobblies', will be retained in order to be re-used as part of the fit-out works and other renewal projects.
- Typically, light construction of new space locations, therefore, no heavy machinery required
- Services will be required to penetrate the structure to service re-configured wet areas however this is generally small in nature and low impact.
- The existing entry lobby on the western façade will be retained however the granite pavers regraded and doors relocated to create an entry lobby.
- Existing fit-out items and original structure will be retained or reused to take into consideration heritage requirements.

4.4 Materials Handling, Cranage and Concrete Pumping

Due to the unique layout and accessibility of this project, Taylor has developed customized and bespoke materials handling strategies. A mobile crane will be established on the western Broadwalk to enable vertical movement of material to the Podium Level. This crane will be based on-site full time and moved around the SOH precinct as required. The crane will be stowed within the Western Broadwalk hoarding when not in use.

From the Podium Level the material will be skated through the Western, Southern and Eastern Foyers and if required to be moved to the over ceiling spaces it can be moved via funicular hoist in the Eastern and Western Foyers. The funicular hoist in the Eastern Foyer will be a permanent installation and commissioned for SOH use post-completion.

A loading platform will facilitate vertical material handling to the Northern Foyers and Lift 30. Mobile cranes will be utilised from the Northern Broadwalk to get material to the loading platform. The Foyer Level 3 balcony can also be utilised from the Broadwalk below.

Lift 22 will be available to Taylor exclusively for construction activities for moving smaller and light weight material into the site.

Concrete pours will be scheduled for outside busy hours in the forecourt, likely between 4am and 9am. Concrete delivery to the work areas will be via boom pumps to the required level and lines to the precise work front. Static lines may at times be installed prior to pour days in preparation for the larger pours.

5.

5. Environmental Management System

5.1 Environmental Policy

Taylor maintains an Environmental Policy (Appendix I) in which they regard the appropriate and correct management of environmental issues as an integral component of their business. Taylor has developed an environmental management system that addresses all aspects of the International Standard ISO 14001:2004: "Environmental Management Systems - Requirements with guidance for us".

In addition to this Taylor is also committed to:

- Work proactively with their clients, regulators, and other community stakeholders to enable environmental issues to be addressed at an early stage of development
- Take local community views into consideration and ensure that they inform, listen to and respond to reasonable concerns relating to Taylor projects.
- Undertake construction activities in a manner that is consistent with the principles of ecologically sustainable development.
- Prevent pollution and reduce adverse environmental impacts of construction activities on the natural, built and cultural environment.
- Promote the efficient use of natural resources and reduce waste through the use of the waste hierarchy - avoid, reduce, re-use, recycle and dispose of.
- Set realistic environmental objectives and targets at all relevant levels within the company and continually monitor performance.
- Promote environmental awareness among all employees and subcontractors to achieve our environmental objectives.
- Continually improve their environmental performance through periodic review and evaluation of policy and management systems to ensure they remain suitable, adequate and effective.
- Encourage a sense of personal responsibility for environmental issues amongst employees and subcontractors through effective communication, training and positive organisational culture.

5.2 Planning

5.3 Environmental Risk Assessment

The methodology for risk assessments is based on the requirements described AS/NZS 4360 (Risk Assessment) and HB203 (Environmental Risk Assessment).

Taylor Construction procedure requires an initial Project Risk Assessment to be undertaken at the commencement of each project. The Risk Assessment is to be conducted in the form of a workshop and is to include the project/ site manager, HSE manager, key members of the project team and, to the extent required, key subcontractors, and is to be recorded on form HSE-R-01 HSE Risk Register.

The HSE Risk Register is to be developed to address both legal and other requirements covered in this plan and is to be referenced to implement systems and work practices that will eliminate or minimize the likelihood of injury, illness or incident occurring.

When developing the Project HSE Risk Register, members of the workshop will take into consideration available information which is relevant to the works and is contained in any published copies of the HSE Acts; WHS regulation; Australian/ National Standards; codes of practice; available internal and external industry bulletins/ alerts and industry reports to identify and document any known or foreseeable hazards associated with that tasks.

The completed Environmental Risk Assessment can be found in Appendix J.

5.3.1 Safe work method statement

Taylor's site managers or their nominees are responsible for ensuring that subcontractors include environmental issues in their task-specific SWMS by using SE-F-14.

5.4 Consultation for the CEMP

Throughout the development application process, the SOHT has been in consultation with numerous stakeholders. The NSW Department of Planning posted the EIS and later the Draft Conditions of Consent for all stakeholders and the general public to make submissions and raise concerns. Responses were received from NSW EPA, Department of Environment and Heritage (OEH), Botanic Gardens Trust, Transport for NSW (TfNSW), Roads and Maritime Service and Sydney City Council. SOHT responded to these submissions and was granted Development Consent by the Minister for Planning and Public Spaces. This CEMP is therefore based on the Development Consent and the submissions from the stakeholders listed.

Whilst writing the CEMP Hibbs reached out to the NSW EPA, Sydney Council and TfNSW to provide any further input into the development of the CEMP.

The response received from the EPA advised that they do not provide feedback or advice on environmental management plans for reasons of maintaining regulatory 'arm's length'. They, however, referred us to their submission on the EIS whereby they expressed their concerns regarding the need for a detailed assessment for potential site contamination, construction phase noise impacts, construction phase dust control and management, erosion and sediment control and management, and operational noise impacts on noise sensitive receivers.

Sydney Council responded via telephone conversation in which they maintained their stance that was provided in the EIS whereby "The City has reviewed the information submitted and does not object to the proposed works".

TfNSW provided no response to emails, therefore we referred to their submission on the EIS where they did not express any concerns outside of the requirement to prepare the Construction Pedestrian and Traffic Management Plan in consultation with the Sydney Coordination Office within TfNSW. This CEMP was made with reference to the Construction Pedestrian and Traffic Management Plan prepared by PTC.

All of the responses from the relevant regulatory authorities are provided in Appendix L.

5.5 Regulatory Compliance and Approval Requirement

During site establishment and construction, the will ensure that the following legislation and policies are adhered to:

- Protection of the Environment Operations Act (POEO act)
  - Prohibition of the Pollution of Waters prohibits all forms of water pollution unless specifically authorised through the environment protection license (EPL).
  - Duty to report: If spills enter drains or waterways it is the duty of the company responsible to report to spillage to the regulatory authority (local council) as soon as possible.
- Heritage Act 1977
  - The SOH is a National and World heritage property it is, therefore, necessary to protect the heritage value of the site by complying with all heritage protection measures. An application for approval for the proposed works will be made to the NSW Heritage Council under section 57(1) of this Act and to comply with development consent conditions B17-B19.

The primary approval that must be complied with is the development consent approval provided in SSD 8663 by the Minister for Planning and Public Spaces and all studies/plans approved thereunder.

5.6 Environmental Objectives and Targets

Environmental objectives and targets are set by Taylor at a corporate level and will be monitored throughout the construction work to ensure that their key performance indicators are met and to maintain a high environmental performance. The objectives and targets are outlined in Table 5.1.

Table 5.1 Environmental objectives and targets

Objective	Target
Effective site environmental Controls	• Achieve alignment with Taylors and Client expectations in relation to best practice control measures. • Fulfil environmental obligations.
Increase amount of waste being recycled, reduce waste disposal cost	• Eighty percent (85%) of waste to be recycled
Environmental performance	• Zero major environmental incidents and no breaches. • Zero infringement notices. • All environmental spills to be reported to Taylor within 2 hours of occurrence. • Environmental inspection completed weekly, when required (refer to Appendix N).
Reduce the environmental impact of operations	• Environmental issues identified and controlled prior to causing negative impacts on the project or on the environment.

Objective	Target
Effective implementation of the environmental system	• Eighty percent (85%) or better internal audit results. • Full compliance with planning approval requirements.
Carefully handling community issues	• Zero valid complaints. • All complaints reported to a Taylors representative.

5.7 Roles and Responsibilities of the Project Team

The key roles and responsibilities for Taylor's team responsible for the delivery of the project are listed in Table 5.2 below. An organisational chart displaying the hierarchy of the positions is available in Appendix O.

The project will be managed by the following personnel from SOH:

- Lou Rosicky - Project Director
- Daniel Filetti - Construction Manager

Table 5.2 Roles and Responsibilities

Role and Contact Information	Responsibilities
General Manager - Tim Christie 0404 812 124	• Provide a visible commitment to a safe and healthy work environment by ensuring regular review, participation and consultation regarding workplace health and safety matters; • Encourage and promote safety within the company by participating and openly consulting with employees with respect to their health and safety
Construction Manager - Ben Folkard 0414 705 457	• Attend sites on a regular basis to ensure compliance with workplace health, safety, quality and programming requirements of both the head contract and the companies' systems; • Provide visible commitment to a safe and healthy work environment by ensuring regular reviews are undertaken, and by participating in safety and health meetings and consultation regarding WHS matters; • Ensure that project/ site managers have developed and implemented systems, which will ensure subcontractors/suppliers engaged by the company comply with the health and safety management systems and the relevant WHS legislation; • Support the HSE manager in ensuring project/ site managers have developed and implemented systems which will ensure subcontractors and suppliers engaged by the company comply with the health and safety management systems and the relevant workplace health and safety legislation; • Facilitate a systematic approach of workplace health and safety to the identification, assessment, control and monitoring of related risks that may arise through both normal and adverse operating conditions.

Role and Contact Information	Responsibilities
Project Managers - **Adam Vassallo** **0438 785 036** **&** **Peter Salib** **0431 268 987**	• Provide visible commitment to a safe and healthy work environment by ensuring regular reviews are undertaken, and by participating in safety and health meetings and consultation regarding WHS matters; • Facilitating the process to ensure the project team and the HSE manager are consulted and participate in the development of the project specific HSE Risk Assessment. This is to be done prior to such activities commencing; • Developing, implementing and reviewing, in consultation with the site manager and HSE manager, the specific site safety plans; • Identifying, planning and ensuring all safety training required for personnel is undertaken to support project needs, whether on or off-site. This task may be done in liaison with the HSE manager; • Ensuring incidents are investigated and appropriate action taken as required by Taylor's site safety plan requirements in consultation with the HSE manager; • Ensuring safety notices issued and/ or visits made to the project by industrial representatives and/ or SafeWork NSW are reported to both managing director and HSE manager; • The project manager is required to carry out at least one formal site safety inspection per month on every site under their control; • Reporting back to Taylor's senior managers the project HSE incidents, external authority visits and/ or notices issued.
HSE Manager - **Andrew Andreou** **0404 492 614**	• Overseeing the implementation of Taylor's Health, Safety and Environmental Management System throughout all Taylor Construction Group activities; • Ensuring the System is maintained and continuously improved; • Planning and delivering training in safety management and/ or arranging for the appropriate internal or external trainers/ facilitators to conduct the training; • Identifying hazards, assessing risks and selecting risk control measures for site-specific situations; • When required, acting as the lead investigator in workplace incidents/ accidents, liaise with external authorities in managing them and report back to managing director and/ or sector managers on outcomes of investigations;

Role and Contact Information	Responsibilities
Project Safety Advisor - Damian Fisher 0421 239 997 & Brent Kendall 0488 022 764	• Providing visible commitment to a safe and healthy work environment by ensuring regular reviews are undertaken, and by participating in safety and health meetings and consultation regarding WHS matters; • Assisting the HSE manager and project teams in implementing Taylor's health, safety and environmental procedures, policies and project systems in line with best practice and the relevant statutory legislation; • Reporting any serious incident or near miss immediately to the HSE manager; • Assisting project teams and subcontractors in meeting their workplace health and safety obligations; • Ensuring compliance to this project Workplace Health and Safety Plan; • Monitoring sub-contractor's compliance with the site Safety Plan, and subcontractor compliance to their Safe Work • Method Statements by conducting regular task observation/ audits; • Where requested, assisting the project/ site manager with completing site inductions, project reports and daily diary entries; • Undertaking workplace inspections to identify hazards and unsafe/ unhealthy workplace conditions and practices; • Assisting the site manager/ area foreman in the management and supervision of subcontractors; • Reporting incidents and/ or identified hazards and appropriate risk control measures to line managers; • Assisting the project team in obtaining and auditing subcontractor's workplace health and safety documentation; • Coordinating or conducting site toolbox talks and ensure subcontractors regularly consult with their employees on matters relating to HSE; • Liaising with the project/ site manager to implement controls on hazards identified; • Completing Safe Work Method Statement checklists for the site (task observation);

Site Managers - **Damian Fisher** **0421 239 997** **&** **Brent Kendall** **0488 022 764**	• Provide visible commitment to a safe and healthy work environment by ensuring regular reviews are undertaken, and by participating in safety and health meetings and consultation regarding WHS matters; • Unless otherwise nominated, undertaking the role of site safety advisor for safety issues and control of the site. This role is supported by the project manager and the HSE manager; • Implementing, through consultation with the project manager, the Site Safety Plan in accordance with WHS legislation, regulations, codes of practice, Australian Standards and/ or other statutory requirements; • Ensuring all workers and, if required, visitors, are site-specific inducted and aware of any compliance obligations; • Ensuring site security and site-specific signage is fixed to key access, internal and perimeter areas including 24-hour project contact details, attendance details for visitors, PPE requirements and construction zone signage; • Implementing and undertaking formal and proactive consultation measures between the project team and subcontractors; • Ensuring items identified by safety or systems audits are rectified within specified timelines in consultation with the project manager, HSE manager and subcontractors; • Consulting with all persons on safety issues, including changes to the workplace, and encouraging the involvement of all personnel in achieving a safe and healthy site; • Managing any site-specific workplace health and safety issue in the first instance and discussing these with the project manager and/ or HSE manager as required; • Developing, planning, implementing and reviewing site-specific emergency and evacuation procedures; • Monitoring subcontractor's compliance with the Site Safety Plan, subcontractor's compliance to their Safe Work Method Statements, by conducting regular task observation/ audits; • Identifying any hazards and assessing any risks on site and implementing risk control measures; • Prior to commencement, reviewing subcontractor's WHS Plan/ SWMS with regard to the specific site task using forms SE-F-14 Safe Work Method Statement Review Form and SE-F-14.1 Contractor's HSE Plan Review; • Ensuring that requirements contained in SE-F-14 Safe Work Method Statement Review Form and SE-F-14.1 Contractor's HSE Plan Review are met prior to works commencing on site; • Periodically throughout the contractor's works, reviewing compliance with SWMS and signoff on the SWMS checklist; • Leading or participating in formal site safety inspections weekly and record results using SE-F-02 HSE Inspection Checklist. Daily Informal inspections should be noted in site diary; • Utilizing experience and judgement to shut down and/ or evacuate any part of the site if a major health and safety risk occurs; • Investigating, recording and reporting incidents and initiating corrective and action plans by relevant personnel. Reporting any serious incident immediately to the project manager and HSE manager; • Providing support and assisting with rehabilitation of employees who have been injured at work by encouraging their early return to normality through work-based rehabilitation programs; • Completing site diaries as per project administration requirements and forwarding that data to the HSE manager;

Role and Contact Information	Responsibilities
	• Reviewing, coordinating and implementing emergency evacuation procedures and participating in drills at specified intervals (quarterly); • Ensuring that all plant and equipment used on Taylor's sites are safe, correctly maintained and that the operator is correctly licensed or qualified for manipulating that equipment; • Safeguarding compliance and maintenance of the company's third-party accreditations.
Site Foreman - TBC	• Implementing, through consultation with the project manager, the Site Safety Plan in accordance with WHS legislation, regulations, codes of practice, Australian Standards and/ or other statutory requirements; • Assisting with the review and monitoring of subcontractor's Safe Work Method Statements (SWMS) in consultation with the senior site manager and site safety officer. • Review and SE-F-14 Safe Work Method Statement Review Form are met and implemented on site; • Ensuring that site personnel comply with the Taylor's Project Safety Plan; • Ensuring all workers and, if required, visitors, are site-inducted and aware of any compliance obligations; • Assisting with implementing and undertaking formal and proactive consultation measures between the project team and subcontractors; • Ensuring items identified by safety or system audits are rectified within specified timelines in consultation with the project manager, site manager, site safety advisor and subcontractors; • Consulting with all persons on safety issues, including changes to the workplace, and encouraging the involvement of all personnel in achieving a safe and healthy site; • First response in managing site-specific workplace health and safety issues in the first instance, and discussing these with the project manager, site manager and/ or site safety advisor as required; • Assisting with developing, planning, implementing and reviewing site-specific emergency and evacuation procedures; • Identifying any hazards and assessing any risks on site and implementing risk control measures; • In consultation with the project manager and the senior site manager, and utilizing experience and judgement, shutdown and/ or evacuate any part of the site if a major health and safety risk occurs; • Investigating, recording and reporting incidents, and initiating corrective action plans by relevant personnel. • Reporting any serious incident immediately to the project manager, the senior site manager and the HSE manager; • Completing site diaries as per project administration requirements; • Ensuring that all plant and equipment used on Taylor's sites are safe, correctly maintained and that the operator is correctly licensed or qualified for operating that equipment;

Role and Contact Information	Responsibilities
Building Cadet **Jordan Papoulias** **0434 890 344** **&** **Kristian Golub** **0430 055 329**	• Provide administrative assistance in managing site safety, quality assurance and environmental management systems; • Assist with on-site supervision; • Assist the project/ site manager to ensure the Site Safety Plans and associated documentation, including standard forms, procedures and templates, remain current and up to date; • Complete site diaries as per project administration requirements.
First Aid Officers **TBC**	• Provide first aid to persons ill or injured on site • Recording all such assistance provided • Liaising with the site manager and/or site foreman to achieve first aid obligations.
PCBU and Workers **TBC**	• Ensure implementation of this CEMP under guidance and training from the site manager

5.8 Competence, Training and Awareness

Taylor will ensure that all staff working on this site are provided with the environmental training required to competently carry out their work.

Taylor will also ensure all site staff and contractors are project inducted by the site manager or other relevant personnel prior to commencing work. A training/induction register will also be maintained in the site office.

As per the Taylor Project Environmental Management Plan (Taylor 2019c) as a minimum site induction must include the following environmental information:

- Community issues;
- Hours of operation;
- Noise and vibration;
- Dust Management;
- Traffic access;
- Storage and handling of chemicals;
- Waste management: recycling, disposal and litter;
- Soil and water issues: controls, tracking of mud off-site

If any significant environmental issues arise, these must also be incorporated into the site-specific induction. These might include the following:

- Environmentally sensitive areas of the site;
- Contamination issues;
- Environmental controls and management;
- Noise emissions;
- Plant emissions;

- Archaeology and heritage management.

Taylor utilize an Induction Form and Agenda (SE-F-11) and an Induction Register (SE-F-11a) for keeping the records.

5.9 Communication

Taylor HSE Manager will be the point of contact for specific environmental management issues both internally and externally. The CEMP will be available for review by all relevant stakeholders.

5.9.1 Internal

Essential information relating to project environmental management will be communicated through toolbox talks and inductions.

Environmental alerts will periodically be prepared and sent to sites for posting on notice boards. Key changes to environmental legislation will be sent by email to all project managers and site managers.

5.9.2 Regulator Site Visits and Written Communications

If an authorised officer (Council, DPIE, WorkCover, EPA, OEH or DEE representative) visits the site, the HSE manager or construction manager should be contacted for assistance or advice. While a worker can request that a manager can assist them, they cannot refuse to answer questions. An authorised officer must show their identification on request and has the right to ask any person on site questions relating to environmental issues.

Any penalty infringement notices or official warnings from regulators are to be treated as 'incidents' and reported in the incident report form, investigated and corrective actions assigned and completed to address the root cause of the infringement.

Any communication from a regulator must be notified to the HSE manager. Records of all communications must be retained and appropriately filed.

5.10 Community Complaints

All community complaints will be treated as 'incidents' and will be communicated to SOH via a 24 hours contact number (1800 382 692) or email (constructionfeedback@sydneyoperahouse.com) which will be available to the public.

Each complaint will be investigated by the HSE manager and reported on SharePoint and documented in site diary entries.

As per the development consent section C32. Taylor will ensure that a 24-hour contact telephone number is continually attended by a person with authority over the works for the duration of the development.

Taylor utilize three different forms/procedures for handling community complaints these include:

- SE-F-21 Incident Report Form
- SE-F-22 Incident Investigation Form
- SE-F-23 KPI Monthly Report

5.11 Emergency Planning

An Emergency Response Plan has been developed for this site based on a template provided in the SE-P-07 Project Emergency Control Management Plan. Additional information for the management and control of emergency situations can be found in the Project Safety Plan (WHS-PLAN-02) and a spill response procedure flow chart is contained in Appendix B.

Emergency response posters and flow charts will be posted in the site and induction office, WHS notice boards in crib rooms and other areas of the site as required.

In case of any emergencies, the contact details are listed in Table 5.3.

Table 5.3 Emergency contact details

Service	Contact Phone Number
Fire and Rescue	000
Ambulance	000
Police (emergency)	000
Local Police (non-emergency)	02 9265 6499
SES	132 500
EPA	131 555
Department of Planning and Environment	1300 305 695
Office of Environment and Heritage	1300 361 967
Sydney Opera House Building Operations	02 9250 7979
Sydney Council	02 9265 9333
SafeWork NSW	13 10 50
Poison Information Centre	13 11 26

5.12 Incident and Investigation Reporting

As per the Taylor PEMP (Taylor 2019c), any environmental incidents that occur must be reported to the project/site manager as soon as possible. In addition, any major environmental incidents must also be reported to the HSE manager in accordance with the Incident Reporting and Investigation Procedure QSE-OP-05. The priority is to ensure that the situation is controlled as soon as possible and to avoid further or environmental impacts. Reporting shall not delay any immediate incident response.

Incident reports must be completed and forwarded to the HSE Manager within 24 hours and must be kept for a minimum of five (5) years.

Environmental incidents that cause or threaten to cause, material environmental harm must be reported to the Appropriate Regulatory Authority (ARA) as soon as possible. In this project, the ARA is the City of Sydney Council. This would include any spillage or lead of substances that cause water or land pollution. Material environmental harm means harm that is not trivial and/or costs more than $10,000 to clean up. The phone number for the ARA will be included in the Emergency Response Plan.

If the site manager believes that the incident may be reportable to the ARA, contact the HSE manager for further advice prior to making an investigation report.

All environmental incidents that cause or could potentially result in environmental harm are to be investigated, and corrective actions implemented following the investigation. Depending on the severity of the incident, key site personnel, the HSE manager, witnesses, etc should be consulted on the investigation and in determining appropriate corrective or preventative actions.

The forms and procedures mentioned are listed below:

- QSE-OP-05 Incident Reporting and Investigation Procedure
- SE-F-21 Incident Report Form
- SE-F-22 Incident Investigation Form

6. Environmental Impacts

The renovations are primarily being carried out internally within the structure of the SOH, therefore there are projected to be fewer environmental risks. The potential environmental impacts identified during the construction stage of the project are outlined in Table 6.1.

Table 6.1 Construction impacts

Aspects	Impacts
Safety and Public	The Opera house will remain functional and open to the public during the construction. Much of the work will be confined within the interior of the building envelope. In areas where work must be completed in public areas the work site will be sealed off through the construction of hoardings.
Circulation Impacts	Most of the works will have no impact on the foot traffic and circulation of the general public. Vehicular movements on the Broadwalk will be conducted at times where pedestrian traffic is low.
Pedestrian Access	The works are primarily internal and therefore there should be minimal interface with pedestrians. There will most likely be some stages to the construction that will require closing access to pedestrians. During the installation of the western entry door into the creative learning centre hoardings will be erected to prevent pedestrian interface. It is also anticipated that the Northern and Western boardwalks will potentially be closed for safety reasons at some stage in the construction. Closures will primarily be done at night to facilitate public access around the building during the day.
Noise and Vibration	Impacts from noise and vibration were assessed by Arup (2018). The assessment has shown that construction noise as a result of the proposal is not likely to have any adverse impact on noise sensitive receivers around the site as construction noise levels will not be excessive and are below the relevant noise level criteria. These impacts and mitigation measures are explored more in the Construction Noise and Vibration Management Plan () which states that the predicted noise emissions are at least 30 dB and 12 dB below the warning NMLs for Kirribilli and Bennelong Apartments, respectively.
Access and Traffic	The impact of traffic to and from the site will be limited to construction deliveries and removals. There will be no contractor parking provided on site, with contractors directed to public transport of the Opera House carpark. There will be no standing or idling vehicles along Macquarie Street. All deliveries and removals from the site will be via the underground loading dock, accessed from Macquarie Street, except for oversized items. These will be delivered at night-time and times pre-arranged and agreed with the contractor and SOH. The Construction Pedestrian and Traffic Management Plan (Appendix K) details vehicle movements, and delivery areas and procedures.

Aspects	Impacts
Air Quality	The main air quality impacts that may arise during demolition and construction activities of the SOH Western Renewal Project are dust generation and to lesser extent odour emission and air emissions (such as CO_2, NOx, CO, HC and SO_2) due to exhaust emission from equipment/machinery used during work and volatile organic compounds (VOCs) from the solvent paints and sealant materials. Where there is a potential impact on local air quality the contractor will implement dust control measures. The control measures applicable are available in the Construction Air Quality Management Plan (CAQMP) located in Appendix F.
Water Quality	The proposed renewal and refurbishment works are largely internal with only limited works to the exterior of the SOH. Water hoses will be used for demolition works for dust suppression reasons during concrete cutting. This poses a risk of causing runoff of concrete slurry. All works will be carried out in a manner that ensures the protection of the water quality objectives and environmental values for Sydney Harbour estuarine waters. The runoff or sedimentation that would impact on the water quality of Sydney Harbour would be negligible considering the controls recommended in Section 7.1 are fully implemented.
Waste	The following waste is anticipated to be generated during construction works: • Bricks/concrete • Steel • Lighting, fittings and electrical equipment • Redundant control equipment, plant and electrical boards • Services waste such as wiring, pipe cut offs and sheet metal cut offs • General waste from construction activities such as packaging, scraps and paper. • The waste will be managed in accordance with the principles of the waste management hierarchy set out in the NSW 'Waste Avoidance and Resource Recovery Strategy 2014-21'. • Further information on the waste impacts is available in the Waste Management Sub-plan available in Appendix E.
Hazardous Materials	SOH maintains an Asbestos Management Procedure and Hazardous Material Register which documents all asbestos containing materials (ACM), hexavalent chromium and lead paints within the building. A Hazardous Materials Management Plan has been prepared for the project by Hibbs and is attached in Appendix M. All the hazardous materials will be removed from the building prior to the commencement of demolition works.
Heritage	SOH is a world heritage site and therefore it is imperative that all heritage items are identified, and procedures put in place to ensure their protection.

7. Mitigation Measures

The mitigation measures outlined in Table 7.1 will be implemented to minimise the environmental impacts during the proposed demolition and construction works which are based on the documents outlined in Section 1.4.

Table 7.1 Environmental Controls

Environmental Factor	Controls
7.1 Erosion and Sedimentation	For the most part, the works are internal and carried out within the enclosed building. Taylor is determined to minimize the environmental impacts of sedimentation and erosion on the surrounding environment including the harbour, surrounding land and stormwater drainage system. To achieve this Taylor will install extensive sedimentation controls throughout the site prior to commencing work. Controls include: • Remove demolished materials, rubbish and debris offsite as soon as practicable to minimise risk of run-off into adjacent areas and Sydney harbour. • No chemicals, fuels or wastes will be stored within 50 m of any stormwater drainage lines. All such substances will be contained in sealed vessels of appropriate volumes and stored appropriately. • All stormwater inlets are to be covered with geotextile fabric in a roll or other format to ensure that no sediment enters the stormwater system. The rolls will not only be placed directly at the inlets but should also be placed upstream from the inlets to create multiple barriers where required. • Minimum weekly inspection and after rainfall greater than 10mm in a 24-hour period rain events cleared of collected sediment if required. • Any silt accrued in sediment and erosion control devices will be disposed of in accordance with all other relevant codes and standards. • Vehicular access will be controlled to prevent sediment being tracked to external roads. This will be done by inspection of truck wheels and cleaning however the presence of sediment in the loading dock is unlikely. • If the need arises, a shaker grid will be installed to the main access by Taylor during the construction works.

Environmental Factor	Controls
7.2 Water Quality	**7.2.1 Groundwater** • For the most part, the project is going to be internal and has no impact on the groundwater systems. **7.2.2 Surface Water** • To prevent the environmental impacts from erosion and sedimentation, the controls proposed in Section 7.1 will be implemented. • Potentially hazardous activities, including washing out of concrete delivery vehicles and washing down of construction plant, are not permitted on site except in specially constructed bays that retain high Ph water. Washing out of concrete delivery vehicles offsite is only permitted at locations approved for that purpose by the appropriate authority. Drains will be labelled to reduce the likelihood of misuse. • Washing of paint brushes must avoid any paint wash-water entering drains or waterways. Wash-water must be removed from the site and appropriately treated and/or disposed of. The chemicals, acids or residue from any 'wet trades' such as brick cleaning must also be prevented from entering drains and waterways. • All liquids and materials that cause water pollution must be stored in areas with secondary containment. • Pumping of stormwater: If a sediment basin is required and stormwater is required to be pumped out of the site, the pump intake is to be located no more than one metre below the surface of the collected water to reduce the amount of settled silt being pumped out for further treatment. • Stormwater treatment: There are two treatment options for stormwater collected on site, flocculation and/or filtration.
7.3 Wastewater Management	• Any wastewater generated on site which cannot be treated must be disposed of offsite in accordance with NSW EPA Waste Classification Guidelines (NSW EPA 2014). • Wet cutting of concrete will be used when slurry can be contained, and industrial wet vacuums used at all times.

Environmental Factor	Controls
7.4 Spill Prevention and Response	• Ensure all staff are aware of the spill management procedures during induction. • Ensure all chemicals are stored in accordance with the manufacturer's instructions and the safety data sheets (SDS). • Store chemicals, fuel and lubricants suitably located and bunded areas to minimise the impact of any spillage or contamination on the site and adjoining areas. Do not locate these storage areas near stormwater drainage inlets. • Position spill kits throughout site. • Minor spillages must be cleaned up immediately. If any material is cross contaminated, it is to be removed and placed into a bag or designated waste drum and disposed of appropriately. • Major spillages must be notified immediately, and all efforts made to contain the spill and prevent escape into stormwater drains and waterway, provided it is safe to do so. If the spill is beyond the capacity of the site personnel to contain and clean up, specialist services must be employed. If the spill enters drains or waterways, the incident may be required to be reported to the appropriate regulatory authority (local council) as soon as practicable, in accordance with the duty to report under the POEO Act. • Do not refuel or maintain plant and equipment or carry out any other activity which may result in spillage of a chemical, fuel or lubricant at any location which drains directly to the Sydney Harbour. Do not leave refuelling operations unattended and without appropriate controls. • Spill kits, chemical storage locations drainage points are to be debris protected.

Environmental Factor	Controls
7.5 Air Quality and Odour Management	**7.5.1 Dust (demolition and construction works)** • Barricade the dust emission sources areas with physical barriers erected at right angles to the prevailing wind direction. • Fitting power tools with dust collection devices or water spray, where practicable; • Materials that have the potential to generate dust will be removed as soon as possible unless being re-used on the site. All materials to be covered with a geotextile (or similar) material and surface dampened using water sprays if being re-used; • The wet suppression of materials shouldn't result in any run-off generation • To minimise the amount of time the site is left cut or exposed, the activities will be properly scheduled to avoid dust generation • Hazardous materials such as asbestos-containing material, lead-based paints, SMF will be bagged and safely removed before start of demolition works • Dry sweeping will be avoided • Grinding or sanding will be minimised to prevent dust which may contain respirable crystalline silica • During moderate to high wind velocity periods, potential dust-generating activities at external demolition works will be stopped • Breakers and crushing equipment fitted with dust filtration equipment or water sprayers to control dust emission will be used, where practicable • Heights from which materials are to be dropped to be minimised as far as practicable to minimise the fugitive dust arising from unloading/ loading and water spray will be used wherever appropriate • Dust suppression generated by demolition activities will be minimized using: – Zip Wall – HEPA negative air units – Exhaust fan with geo fabric filter bag and filters – Handheld mist sprayers

Environmental Factor	Controls
	• The filters will be regularly inspected and checked and be kept in good condition to ensure efficient dust removal • All site personnel will be fully trained to understand activities that generate dust and measures to be undertaken to reduce dust emissions **7.5.2 Dust (from skips)** • Removed materials will be stored in the allocated skips and will be covered with geotextile (or similar) material at all the time **7.5.3 Dust (from transport and deliveries)** • Signpost for the vehicle speed limit will be imposed on-site • Vehicle corridor will be clearly identified and restricted to control vehicle access on-site • the vehicle carrying out rubble will not be overfilled and covered to prevent the escape of material and dust generation during transportation • Ensure any fine powder materials/chemicals will be delivered in a covered truck and will be stored in designated areas • Where required, vehicles leaving the site will be cleaned to minimize mud or dust on public roads and other sealed pavements. Removal of mud from the wheel and bodies of the plant will be done either through rumble grids, dry brushing or wheel wash using manual or automated sprayers • Where required, water assisted dust sweepers will be used periodically to clean public roads where dirt has been deposited • Cleaning of footpaths will be carried out regularly, if required. **7.5.4 Gaseous emissions (construction plant/machinery and vehicles)** • Engine running will be minimized when the machinery is not in use • All plant, equipment and vehicles used during the demolition and construction work are maintained in accordance with their maintenance schedule

Environmental Factor	Controls
	• Daily inspection to identify any visible smoke emissions (there should be no continuous visible vehicle/plant/equipment emissions for longer than 10 seconds (POEO (Clean Air) Regulation 2010) • Local exhaust ventilation will be supplied to the confined work area, as required • All the vehicles used for the deliveries/transport from the site will be effectively planned to limit inefficient transport (i.e. limit vehicle movements to designated entries and exits, haulage routes and parking areas) • Ensure all construction vehicles/ plant comply with their relevant emission standards such as emission from trucks that are used for transportation purpose during work will be regulated in accordance with requirements prescribed in the National Environmental Protection (Diesel Vehicle Emission) Measure, 2001 **7.5.5 Air emissions (paints)** • Low solvent paint will be used as a priority • Areas will be properly ventilated **7.5.6 Odour emissions (paints / chemicals / organic waste)** • Odorous materials (such as paints, chemicals, sealants, silicones, caulking compounds, adhesive) will be sorted, handled, covered and stored as per the safety data sheets (SDS) requirements and applicable regulations • Organic waste generated will be covered and emptied regularly through an approved waste contractor • Spillages to be cleared and associated waste materials disposed of lawfully.

Environmental Factor	Controls
7.6 Noise and Vibration	• General – Where possible, position and orientate noisy plant and equipment away from sensitive receivers. – Ensure all construction activities are undertaken during approved working hours – Prevent vehicles and plant queuing and idling outside the site prior to the morning start time. – Prevent vehicles and plant idling when not in use. • Complaints – If a noise or vibration-related complaint is received, report and investigate in accordance with the incident reporting and investigation procedure. – Feedback on resolution of a complaint should be provided to the complainant where requested. • Temporary opening in the façade for access to the Concert Hall – Provide a solid timber or steel door to close off the temporary opening in the façade for access to the Concert Hall. – Provide oor with gasket seals around the perimeter and a mechanism to hold the door closed – Ensure that the door is kept closed except when needing to be open for access for plant and materials. • Reversing signals – Onsite plant and equipment in long-term use to have suitable broadband movement alarms.

Environmental Factor	Controls
7.7 Hazardous Materials	• In 2013 Hibbs conducted a comprehensive hazardous materials survey of the SOH to identify the locations and applications of hazardous materials. The register was updated further in 2017 for the concert hall. • SOH maintains a detailed register of asbestos, PCB's, lead and chromate paint, which is updated regularly for WHS and compliance purposes. • The works in the concert hall are expected to encounter some of the hazardous materials identified in the surveys including asbestos and lead or chromium paint. Samples will, therefore, be collected to determine the presence of these contaminants in dust that has settled on surfaces. • A Hazardous Materials Management Plan has been prepared for the project by Hibbs and is attached in Appendix M. All the hazardous materials will be removed from the building prior to the commencement of demolition works. • SOH will subcontract Pure Contracting for the disposal and transportation of asbestos waste in compliance with the 'Protection of the Environment Operations (Waste) Regulation 2014, Part 7 ‘asbestos wastes'. • The asbestos waste will be handled and transported as per Clause 79 of the Protection of the Environment Operations (Waste) Regulation 2014 which requires: – waste transporters to provide information to the EPA regarding the movement of any load in NSW of more than 10 square meters of asbestos sheeting, or 100 kilograms of asbestos waste. To fulfil these legal obligations, asbestos waste transporters must use the EPA on-line system WasteLocate. Waste producers are responsible under the legislation for ensuring that wastes are transported only after all the necessary documents and checks have been completed. – Before transporting waste from the site, the following must occur: Ensure the waste has been correctly characterised. Ensure the waste transporter is legally allowed to transport the waste. Ensure the landfill facility accepting the waste is licensed to accept asbestos waste. The NSW Protection of the Environment Operations (Waste) Regulation 2014 (POEO Waste Regulation) requires Special Waste (Asbestos) to be: • within a covered, and leak-proof vehicle during its transportation, and • wetted down during its transportation.

Environmental Factor		Controls
7.8	**Waste Management and Resource Recovery**	• To achieve 85% diversion from landfill for all waste generated during the project, waste will be managed in accordance with the following waste hierarchy priorities: – Waste generation is to be avoided – Where avoidance is not reasonably practicable, waste generation is to be reduced – Where avoiding or reducing waste is not possible, waste is to be reused, recycled, or recovered on site or off site – Where waste reuse, recycling or recovery is not possible, waste will be treated and/or disposed of at a waste management facility or premise lawfully permitted to accept the materials or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste. • All staff and subcontractors will receive site induction and ongoing toolbox talks that will detail waste and resource management measures (including the waste management hierarchy). • Construction waste will be minimised by accurately calculating materials brought to the site and limiting materials packaging. • All waste generated during construction will be classified in accordance with the Waste Classification Guidelines (EPA 2014). • Suitably licensed waste contractors will be used for the collection and transport of all non-domestic, retail and commercial wastes for either off site processing and/or disposal to an appropriately licensed facility. Receipts for waste transfer and disposal will be checked to ensure all details are correct and retained for audit purposes. • Asbestos and Hazardous Materials handling and management will be undertaken in accordance with Hazardous Materials Management Plan (Hibbs, 2020). • Taylor will monitor and record the volumes of waste (by weight/tonnes), the methods and locations of disposal, and submit a progress report every month, with a summary report before completion of the project. This should include the total quantity of material purchased, the quantity purchased with recycled content, the total quantity of waste generated, the total quantity recycled, the total quantity disposed of and the method and location of disposal. Waste disposal certificates and/or company certification confirming appropriate, lawful disposal of waste should also be recorded.

Environmental Factor	Controls
	• Waste will be removed daily by each Sub-Contractor by use of plastic bins via the B4 loading dock & skip bins via the Level 2 podium & dropped onto waiting trucks with the crane. • Concrete waste will be stored with a cover on top, in a designated storage area barricaded with hoardings • Washing out of concrete delivery vehicles and washing down of construction plant, will not be permitted on site except in specially constructed bays that retain high PH water.
7.9 Existing Heritage	• Educate the site workforce on the significance of Heritage Items and the SOH World Heritage Listing and how this may affect construction. • Identify Heritage significant items that may be disturbed and follow the SWMS put in place to manage. Not damage any Heritage items during the project works. All new installations to be considerate to the World Heritage Listing.

8. Monitoring and Auditing

8.1 Inspections, Monitoring and Targets

Environmental inspection of the site is to be carried out by means of a routine monitoring programme, which will identify non-conformances and areas for improvement. A formal audit programme should also be implemented at the site, refer to Section 8.2.

Key aspects of the monitoring programme includes:

- Daily site inspections undertaken by the site manager to review and document environmental management performance including environmental mitigation strategies. SM to review site environmental performance, non-conformance and identify areas for improvement weekly.
- Weekly site inspections undertaken by the SM to review performance against the KPIs and monitoring outlined in the respective Environmental Management Sub-Plans. Records of inspection findings, recommendations for improvement and non- conformances are to be maintained.
- Environmental management issues as identified by site personnel, sub-contractors and management are to be discussed during toolbox meetings
- Identify any other activities that have, or may cause an adverse impact on the environment, or non-conformance to regulation.
- Environmental management issues identified through toolbox talks and site audits are to be directed to the SM.
- SM to provide recommendations regarding any practical measures that can be made to improve the effectiveness of environmental management.

The monitoring and inspection checklist is provided in Appendix N. All inspection, monitoring and non-conformance records are to be maintained for the purposes of audit and overall compliance monitoring for the construction phase of the project.

8.1.1 Key Monitoring Areas

The key areas for inspection and monitoring include, yet are not necessarily limited to the following:

- Visually monitor the effects of dust, odour, and emissions generated during the project.
- Visually monitor the effects of waste generated (for example, spills, housekeeping, etc.) and cleaning of work areas
- Monitor traffic impacts from the site.
- Monitor the efficiency of waste removal from the site.
- Record complaints.
- Monitor the noise levels.
- If a complaint arises, undertake monitoring if requested by regulatory authorities.
- Record and monitor the storage of hazardous substances.

- Monitor stormwater and sediment control devices.
- Monitor mud deposition on roads and footpaths.
- Inspect the sediment and erosion control devices after more than 10mm of rain in a 24-hour period.

An Environmental controls checklist is provided in Appendix N.

Objectives and targets for the project are specified in Section 5.6. Data relating to these targets will be documented daily using site diaries, reviewed by project/site managers on a monthly basis and forwarded to the HSE manager for reporting to senior management.

The KPI Monthly Report captures information on lag and lead indicators. The current indicators are:

Lag indicators:

- Number of environmental incidents;
- Number of penalty infringement notices (pins) or clean-up notices;
- Number of community complaints.

Lead Indicators:

- Number of toolbox talks (combined with WHS and environmental issues);
- Number of environmental inspections undertaken;
- Waste and recycling volumes (initially to set benchmark, then track improvement)

8.2 Auditing

Audits of the Environmental Management System will be conducted regularly to ensure that the system has been implemented correctly. Audits will also be undertaken on project sites for compliance with the requirements of the CEMP and PEMP.

The project will have the first internal audit against the PEMP and CEMP after six months. Afterward, the project will be audited at least once per year. This will generally be undertaken as an integrated audit in conjunction with the Project Safety Plan and Project Management Plan (Quality). If the project will perform poorly in the initial audit or high risk are identified, it may be audited more frequently. The HSE manager is responsible for organizing project audits.

No later than one month before the commencement of construction or within another timeframe agreed with the planning secretary, a program of independent environmental audits must be prepared for the development in accordance with AS/NZS ISO 19011-2014: Guidelines for Auditing Management Systems (Standards Australia 2014) and submitted to the Planning Secretary for information.

The independent environmental audits will be conducted by Wolfpeak in line with conditions B12- B16 of development consent condition (SSD 8663, 2019).

8.3 Environmental Non-Conformity, Corrective and Preventative Actions

Taylor employs a non-conformance and corrective action process to address all non-conformances across the business. Typically environmental non-conformances are identified as a result from an audit, inspection and observations by the site manager of poor environmental practices including but not limited to incorrect waste disposal (liquid waste, poor storage of hazardous substances, oils, chemicals and damage to existing environmental controls such as sediment fencing). Non-conformances may be issued for serious breaches or repeated minor breaches. The process is defined in the Reporting Non-Conformance, Corrective and Preventative Actions Procedure QSE-OP-29.

8.4 Reporting

A monthly report shall be prepared by an appropriately qualified consultant engaged by the Construction Manager. Reports shall contain:

- outcomes of daily monitoring and weekly site inspections.
- occurrence of any incidences and non-compliance.
- corrective actions that have taken place (including any additional environmental awareness training).

9. Review of CEMP

This CEMP is a living document and, as such, is subject to review. This CEMP must be reviewed by the project manager in consultation with the project team and HSE manager whenever any major change occurs on the site that may have an impact on the environment, when the proposed environmental controls are outdated or at least biannually (every 6 months) during construction. The project team and the subcontractors will be notified of the changes made in the CEMP.

10. References

ARUP (2018) *Sydney Opera House Building Renewal Noise Impact Assessment for DA3-SSD8663*. R07 Issue (Rev A)

Hibbs, 2020, Construction Air Quality Management Plan, S11164-CAQMP-A01

Hibbs 2020, Construction Noise and Vibration Management Plan , S11164-CNVMP-A01

Hibbs 2020, Construction Waste Management Plan, S11164-CWMP-A01

Hibbs 2020, Hazardous Materials Management Plan, S11149-HMMP V1

National Environmental Protection Council (2001) *National Environmental Protection (Diesel Vehicle Emission) Measure*.

NSW EPA (2014) *Waste Classification Guidelines: Part 1: Classify Waste*

NSW Government (1997) *Protection of the Environment Operations Act 1997*. No.156

PTC (2018) *Construction Pedestrian and Traffic Management Plan: Sydney Opera House Renewal Stage 1*.

Keylan 2018, Environmental Impact Assessment - Sydney Opera House Building Renewal, EIS-Concert Hall and Creative Learning Centre.

Taylor 2017, Construction Management Plan - Western Renewal Project at Sydney Opera House, Taylor Construction Group Pty Ltd.

Taylor 2020, Site Waste Management Plan, Western Renewal Project, Taylor Construction Group Pty Ltd.

Taylor 2018, Hazard Identification Risk Assessment and Control (HIRAC), SOH Western Renewal Project, Rev 2.

Taylor 2019a, Hazardous Substances and Dangerous Goods Procedure (SE-OP-01).

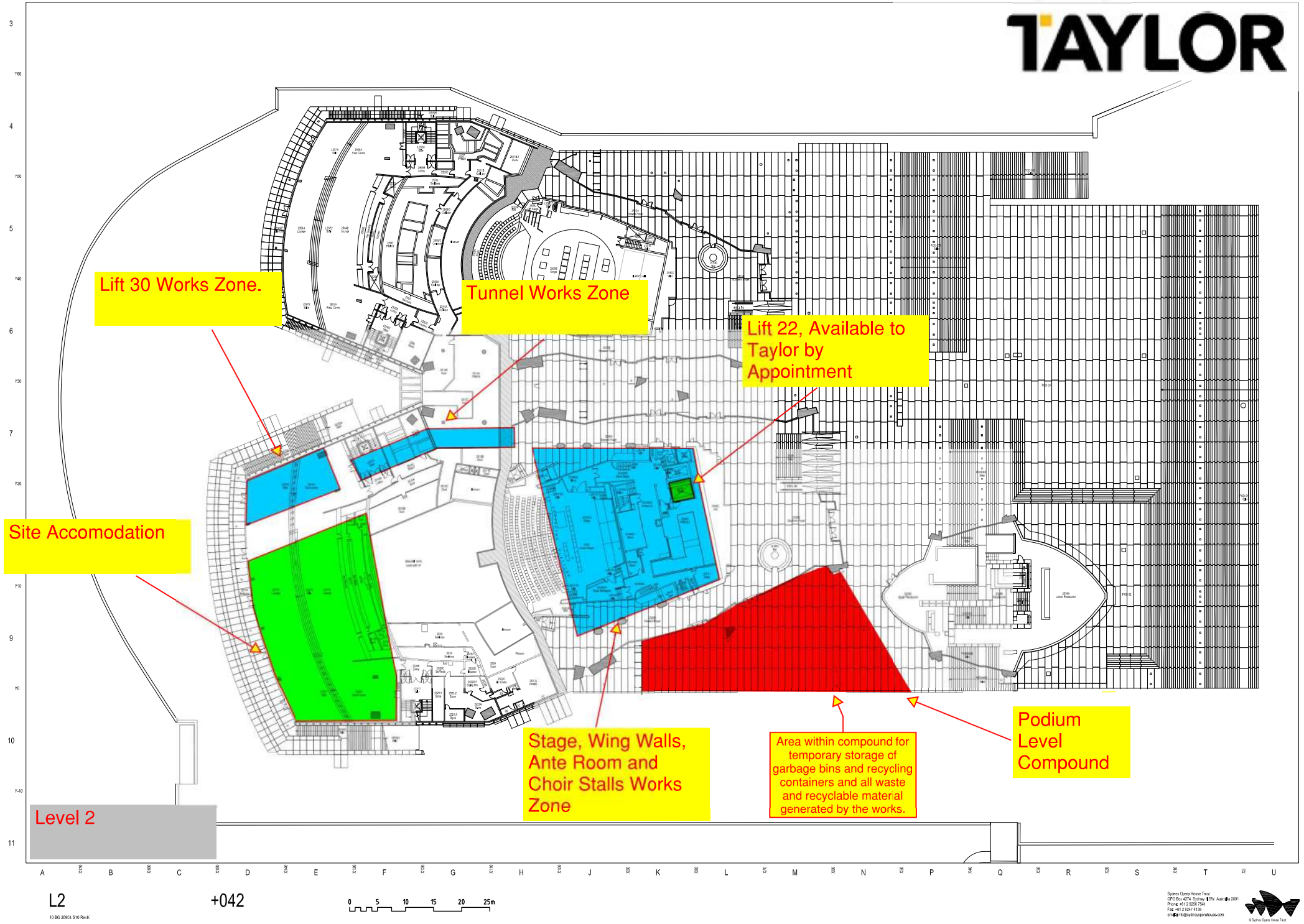
Taylor 2019b, Incident Reporting and Investigation Procedure (QSE-OP-05), Taylor Construction Group Pty Ltd.

Taylor 2019c, Project Environmental Management Plan (PEMP), Sydney Opera House Western Renewal Project.

Taylor 2019d, Reporting Non-conformance, corrective & Preventive Actions (QSE-OP-29), Taylor Construction Group Pty Ltd.

SOH 2018, Draft Construction Management Plan, Concert Hall and Creative Learning Centre

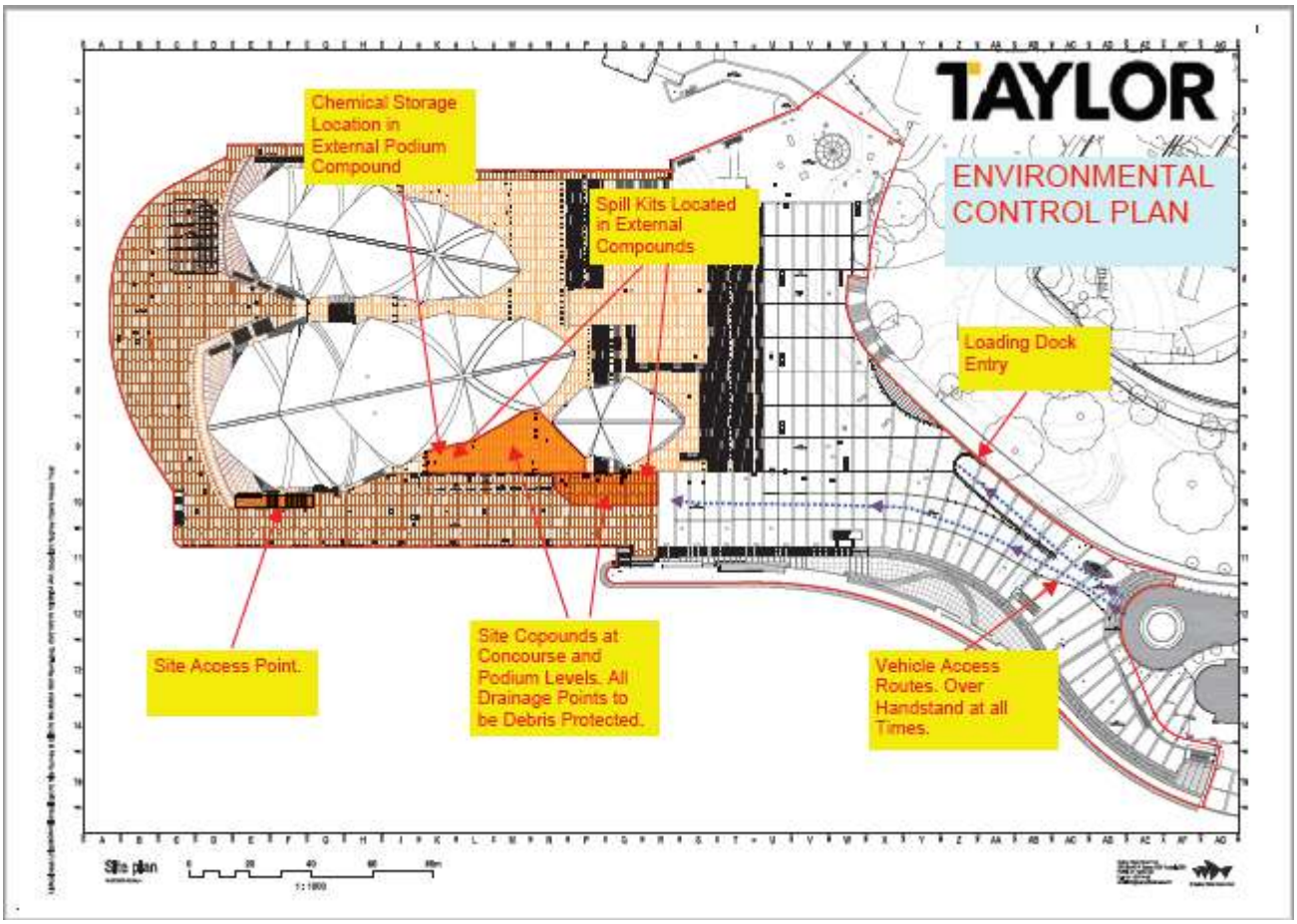
Appendix A Site Location Plan



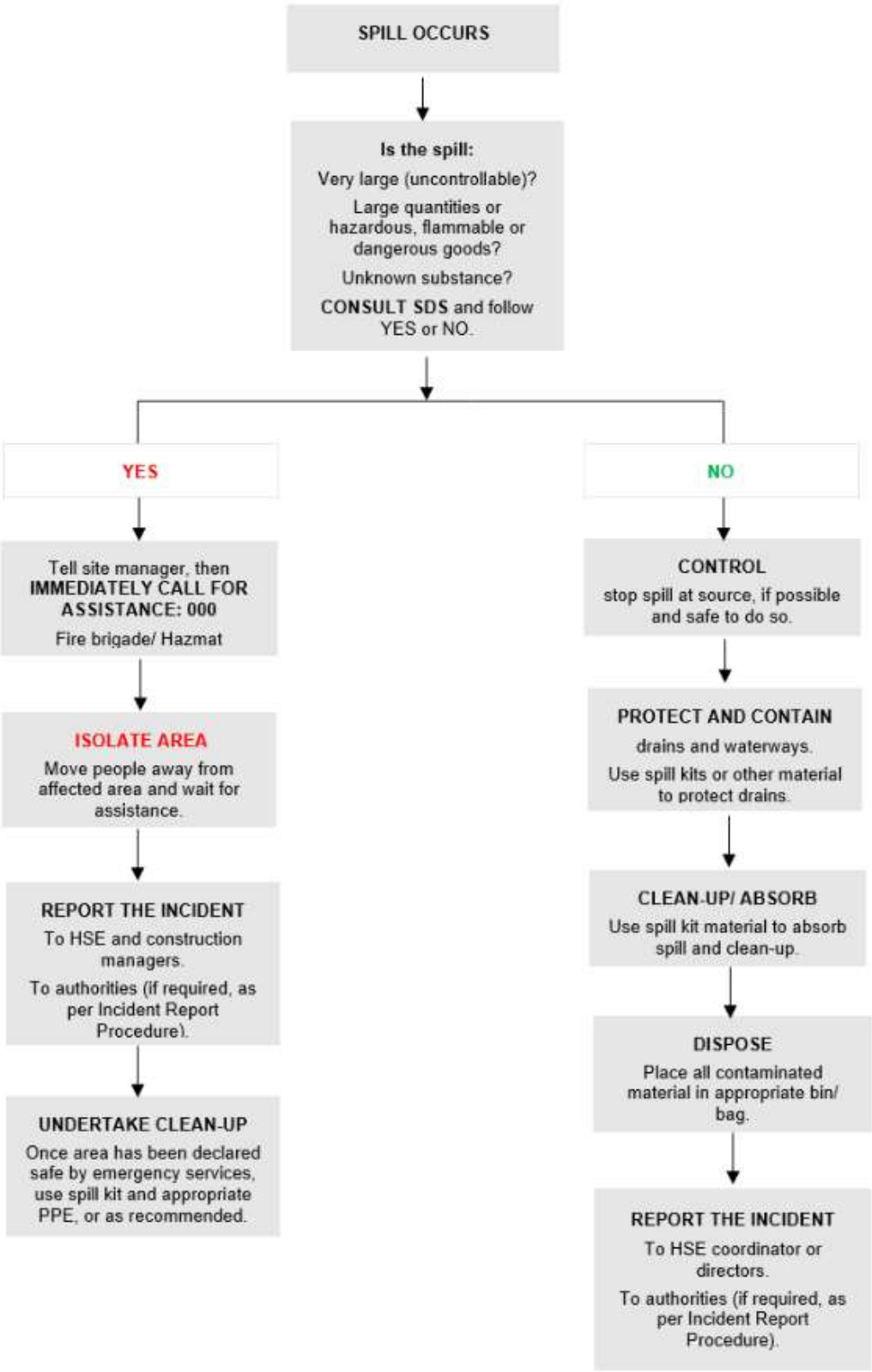
Discovery of contaminated material on site (e.g. underground fuel storage tanks).	Fence-off the area as 'no go' zone and contact the site manager or project manager immediately for further action.	Site manager Project manager

APPENDIX 5: SITE MAP – ENVIRONMENTAL REQUIREMENTS

- SSD approvals/conditions not issued at development of this plan. Plan to be added when conditions issued.

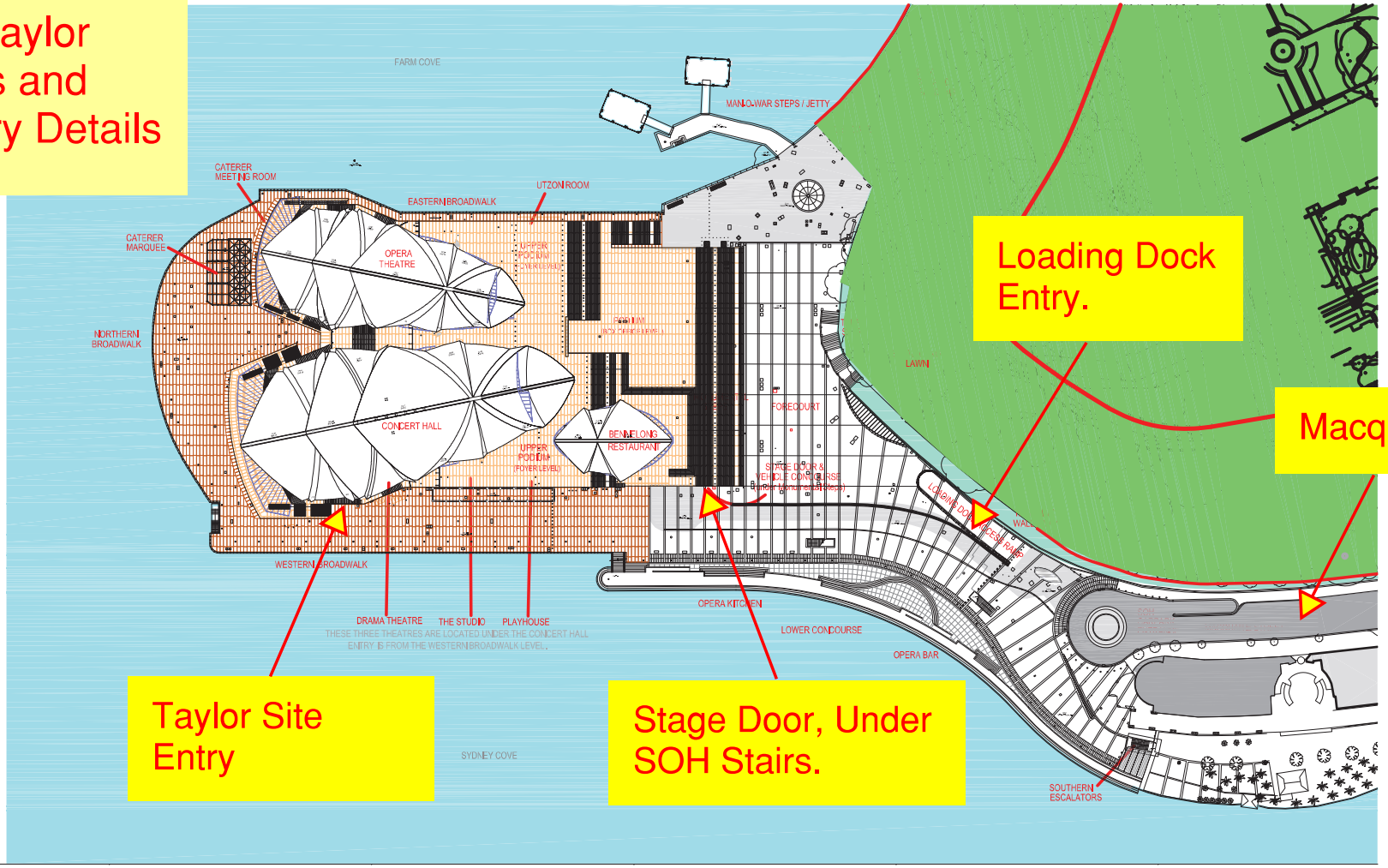


Appendix B Spill Response Procedure Flow Chart


SPILL OCCURS
Is the spill:
Very large (uncontrollable)?
Large quantities or hazardous, flammable or dangerous goods?
Unknown substance?
CONSULT SDS and follow YES or NO.
YES
NO
Tell site manager, then IMMEDIATELY CALL FOR ASSISTANCE: 000
Fire brigade/ Hazmat
ISOLATE AREA
Move people away from affected area and wait for assistance.
REPORT THE INCIDENT
To HSE and construction managers.
To authorities (if required, as per Incident Report Procedure).
UNDERTAKE CLEAN-UP
Once area has been declared safe by emergency services, use spill kit and appropriate PPE, or as recommended.
CONTROL
stop spill at source, if possible and safe to do so.
PROTECT AND CONTAIN
drains and waterways.
Use spill kits or other material to protect drains.
CLEAN-UP/ ABSORB
Use spill kit material to absorb spill and clean-up.
DISPOSE
Place all contaminated material in appropriate bin/ bag.
REPORT THE INCIDENT
To HSE coordinator or directors.
To authorities (if required, as per Incident Report Procedure).

Appendix C SOH Access and Delivery plan

SOH Taylor Access and Delivery Details



Appendix D Construction Pedestrian and Traffic Management Plan

Appendix E Waste Management Sub-Plan

Appendix F Construction Air Quality Management Sub-Plan

Appendix G Demolition Plan

Appendix H Contract Program

Appendix I Taylor Environmental Policy

Environmental Policy

Taylor regards appropriate management of environmental issues as integral to our business. We are committed to the protection of the environment and ecologically sustainable practices in all aspects of our operations.

We will comply with all relevant legislation governing the protection of the environment. Our environmental management systems will address all aspects of the International Standard, ISO 14001:2004: "Environmental Management Systems – Requirements with guidance for use".

Environmental Management · ISO14001

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IN MANAGING OUR BUSINESS, WE MAKE A COMMITMENT TO:

- Work pro-actively with our clients, regulators, and other community stakeholders to enable environmental issues to be addressed at an early stage of development.
- Take local community views into consideration and ensure that we inform, listen to and respond to reasonable concerns relating to our projects.
- Undertake our activities in a manner that is consistent with the principles of ecologically sustainable development.
- Prevent pollution and reduce adverse environmental impacts of our activities on the natural, built and cultural environment.
- Promote the efficient use of natural resources and reduce waste through the use of the waste hierarchy –avoid, reduce, re-use, recycle and finally dispose.
- Set realistic environmental objectives and targets at all relevant levels within the company and continually monitor performance.
- Promote environmental awareness among all employees and subcontractors to achieve our environmental objectives.
- Continually improve our environmental performance through periodic review and evaluation of our policy and management systems to ensure they remain suitable, adequate and effective.
- Encourage a sense of personal responsibility for environmental issues amongst employees and subcontractors through effective communication, training and positive organisational culture.

This policy will be reviewed in December 2019.

Clive Wickham
Chief Operating Officer

TAYLOR

Appendix J HSE Risk Assessment

Hazard Identification Risk Assessment and Control (HIRAC)

The **Project / Site Manager** in consultation with the project team and any relevant stakeholders and the WHS Manager shall develop a site-specific safety HSE risk assessment for major tasks prior to the commencement of the project using **Taylors template HSE-R--01**, THE Risk assessment shall be regularly reviewed and if require up dated to include any new work processes or hazards. Once completed this risk assessment is to be included in **Appendix 13 – Project Health and Safety Plan**

Under the WHS Regulations, a Risk Assessment is not mandatory for construction work however it is required for specific situations
A Risk Assessment is not necessary if the risk and how to control it is already known

The **Project / Site Manager** shall be responsible for ensuring that relevant sections of the *Risk Assessment* are made available to the successful subcontractor performing the nominated works, and Uploaded onto the preferred document management system for access by engaged subcontractors

-BUILDING ELEMENT/ LOCATION

This column nominates typical activities that may be relevant to each project,

-PROJECT HAZARDS IDENTIFIED

The first step in the risk management process is for the project team and stakeholders to identify the hazards associated with construction work. Examples of hazards include. **The construction workplace itself, including its location, layout, condition and accessibility the use of ladders, incorrectly erected equipment, unguarded holes, penetrations and voids, unguarded excavations, trenches, shafts and lift wells, unstable structures such as incomplete scaffolding or mobile platforms, fragile and brittle surfaces such as cement sheet roofs, fibreglass roofs, skylights and unprotected formwork decks falling objects, for example tools, debris and equipment, collapse of trenches, structural collapse, the handling, use, storage, and transport or disposal of hazardous chemicals, the presence of asbestos and asbestos-containing materials, welding fumes, gases and arcs, hazardous manual tasks, the interface with other works or trade activities the physical working environment, for example the potential for electric shock, immersion or engulfment, fire or explosion, slips, trips and falls, people being struck by moving plant, exposure to noise, heat, cold, vibration, radiation, static electricity or a contaminated atmosphere, and the presence of a confined space.**

-APPLICABLE TO THE PROJECT

Each building element is to be reviewed by the Project Manager in consultation with the Site Manager / Foreman, Leading Hand and the WHS Manager and if applicable to the project nominate by placing **Yes or No** in the column shaded grey. If at the time of first review the listed building elements are not relevant to the project do not delete **Rows**

-ASSESS THE RISKS

Assessing the risk includes considering the severity of any injury or illness that could occur, for example is it a small isolated hazard that could result in a very minor injury or is it a significant hazard that could have wide ranging and severe affects, and the likelihood or chance that someone will suffer an illness or injury, for example consider the number of people exposed to the hazard.

-THE HIERARCHY OF CONTROL MEASURES >ELIMINATING THE RISK > SUBSTITUTION >ISOLATION > ENGINEERING CONTROLS > ADMINISTRATIVE CONTROLS > (PPE)

In this column there are nominated controls that need to be implemented by Taylor and or the subcontractor performing the task to eliminate / control or minimise the risk when determining suitable and effective controls prior project experience industry knowledge and recourses are to be considered, Project specific controls may be added to this column

- COMBINATION OF CONTROL MEASURES

In many cases a combination of control measures may be implemented to control a risk. When selecting and implementing a combination of control measures it is important to consider whether any new risks might be introduced as a result and, if so, whether the combination of the control measures should be reviewed.

-RESPONSIBILITY

THE FINAL COLUMN WILL NOMINATE WHO SHALL BE RESPONSIBLE FOR IMPLEMENTING THESE CONTROLS AND CAN BE ALLOCATED TO MULTIPLE PERSONS.

1: Taylor Construction 2: Subcontractor/ s Nominate by Name 3: ARCHITECT / OTHER

HSE-R-01 Hazard Identification Risk Assessment and Control (HIRAC) & ENVIRONMENTAL REGISTER	PROJECT HEALTH SAFETY & ENVIRONMENTAL RISK REGISTER	TAYLOR Version – August 2018

DATE OF REVIEW:	4th December 2019
PROJECT NO:	2001 – SOH Western Renewal Project
VERSION NO.	2
PROJECT NAME AND ADDRESS	Sydney Opera House - Western Renewal Project Bennelong Point NSW 2000

INFORMATION / REPORTS PROVIDED,
MONTHLY WHS REPORT,
LTI REPORTS,
KPI REPORTS,
INDUSTRY SAFETY ALERTS (EMAIL & SERVER)
INTERNAL ALERTS
NEW OR AMENDED ACT'S STANDARDS, REGULATIONS, COP

RISK REVIEW	PARTICIPANTS NAME	SIGNATURE
GENERAL MANAGER	Tim Christie	
CONSTRUCTION MANAGER	Ben Folkard	
PROJECT MANAGER	Mark Reynolds, Adam Vassallo, Daniel Pribadi, Peter Salib, Kyle Robertson	
SITE MANAGER	Damian Fisher, Brent Kendall	
FOREMAN	TBC	
WHS MANAGER	Andrew Andreou	
WHS ADVISOR	Damian Fisher, Brent Kendall during the Pre-Construction phase	
DISTRIBUTION	As above	

REFERENCE DOCUMENTS
PROJECT HSE PLAN
WORKPLACE HEALTH SAFETY ACT 2011
WORKPLACE HEALTH SAFETY REGULATION 2011
AUSTRALIAN STANDARDS
INDUSTRY APPROVED CODES OF PRACTICE
NATIONAL CODES OF PRACTICE
WORKCOVER NSW PUBLICATIONS/SAFETY ALERTS
SAFETY IN DESIGN RISK ASSESSMENT
ANNUAL REPORTS, LTI & MTI FREQUENCY RATES, INTERNAL, INDUSTRY

PROJECT DESCRIPTION DETAILS

Major refurbishment and renewal of the SOH main concert hall building, Creative Learning Centre and Entry Foyer including;

- Essential Services upgrades and reconfiguration.
- Structural Steel strengthening.
- High Level Plantroom extension/construction.
- Stage and Choir stalls demolition and re-construction.
- Wing Wall demolition and re-construction.
- DDA lift construction and access tunnel.
- Major renewal of staging, prop and theatre aids.
- Construction of a Creative Learning Centre and upgrades to the Studio.
- Installation of new finishes to the Lower House and Main Concert hall.

The above works will involve development and implementation of bespoke and innovative access, material handling and safety systems to suit the SOH building fabric and limitations.

This revision of the Project Risk Register has been developed for the Construction Phase of the project and will be updated and revised as required.

Risk Score	Description of risk	Management Action
20 - 25	**Extreme**	Immediate Action required. Stop work or process if possible &/or, introduce immediate risk controls. Must not continue without robust controls in place
13 -16	**High**	Actions required to further mitigate the risk. Additional management attention may be required including detailed research and planning at senior levels to reduce or manage risk.
5 -12	**Moderate**	Manage using standard controls and SWMS/JSEAs. May require specific attention or allocation of resources.
< 5	**Low** **Very Low**	Follow routine procedures or normal work practices. Unlikely to require specific allocation of resources. Accept risk where adequate controls are in place.

When undertaking the risk assessment, the assessor should follow the guidelines within the risk assessment matrix below

Likelihood Multiplied -----By Consequence	5 Almost Certain	4 Likely	3 Possible	2 Unlikely	1 Rare
5 Catastrophic **S: Fatality, long term illness** **E: Long term perm damage**	**Extreme (EXT) 25**	**Extreme (EXT) 20**	High (H) 15	Moderate (M) 10	Moderate (M) 5
4 Major **S**: Extensive injury **E**: Med effect/off site release	**Extreme (EXT) 20**	High (H) 16	Moderate (M) 12	Moderate (M) 8	Low (L) 4
3 Moderate **S**: Medical treatment **E**: Mod effect/off site emission	High (H) 15	Moderate (M) 12	Moderate (M) 9	Moderate (M) 6	Low (L) 3
2 Minor **S**: First Aid **E**: Min off site impact	Moderate (M) 10	Moderate (M) 8	Moderate (M) 6	Low (L) 4	Very Low (VL) 2
1 Insignificant **S**: Pain, inconvenience **E**: No offsite impact	Moderate (M) 5	Low (L) 4	Low (L) 3	Very Low (VL) 2	Very Low (VL) 1

Project - Hazard Identification Risk Assessment and Control (HIRAC) Considered:

			Potential Consequences				
			Class 3	Class 2	Class 2	Class 1b/1c	Class 1a
			Minor injuries or physical discomfort. Short-term psychological impact (isolated or one-off event).	Injury or illness requiring medical treatment and/or short-term impairment (less than 2 weeks). Psychological impact requiring support.	Injury or illness requiring hospital admission and/or temporary impairment (less than 6 months). Psychological impact requiring medical treatment.	Injury or illness (physical or psychological) resulting in long-term or permanent impairment (more than 6 months). Injury or illness resulting in temporary impairment to multiple people.	One or more fatalities. Injury or illness resulting in long-term or permanent impairment to multiple people.
			Insignificant	**Minor**	**Moderate**	**Major**	**Severe**
Likelihood	Expected to occur regularly under normal circumstances	**Almost Certain**	**Medium**	**High**	**Very High**	**Very High**	**Very High**
	Expected to occur at some time	**Likely**	**Low**	**Medium**	**High**	**Very High**	**Very High**
	May occur at some time	**Possible**	**Low**	**Medium**	**Medium**	**High**	**High**
	Not likely to occur in normal circumstances	**Unlikely**	**Low**	**Low**	**Medium**	**Medium**	**High**
	Could happen, but probably never will	**Rare**	**Low**	**Low**	**Low**	**Medium**	**Medium**

Risk Identification							Risk Response Plan			
#	Status	Risk Category	Risk Event	Cause	Risk Criteria / Class	Trigger	Preventative Mitigation Strategy	Regular Prevention Actions	Interval or Milestone Check	Date
1	Active	Fall From Heights	Fall from Overhead Plantroom Area	23m Fall & Illusion of safety from Existing Ceiling	Class 1A	Commencement of Techzone Works	Full Scaffold Catch Deck	Design and Regular inspection by engineer	Weekly	1/12/2019
2	Active	Fall From Heights	Fall From Stage Area	Demolished Structure Presents 4m fall	Class 1A	Hand Demolition of Stage	Fixed 1.2m fences & Exclusion xones from all Demolition	Regular Inspection of Exclusion Zones	Weekly	1/12/2019
3	Active	Fall From Heights	Cannon Port Works	Fall from work Platform with Cannon Ports	Class 1A	Demolition & Construction of Cannon Port Platforms	Full Scaffold to Area	Regular inspection of net system & scaffold by engineer	Weekly	1/12/2019
4	Active	Fall From Heights	Lift Glazing Works	Fall from Extenal Edge of Building	Class 1A	External Glazing Removal	Edge Protection Scaffold	Regular inspection of scaffold by engineer	Weekly	1/12/2019
5	Active	Restricted Space	Suffication / Unable to Retrieve Workers in Overhead Zone	Ovehead Stage Area & Cannon Port Works	Class 1A	Commencement of Techzone Works	Gas Monitoring / Temp Exhaust / Safe Access Provisions	1. Digital Canary Gas Monitors 2. Full Time Temporary Construction Exhaust 3. Dual Funicular Hoists 4. Dual Access Scaffolds	Weekly	1/12/2019
6	Active	Confined Space	Suffication / Breathing Difficulting During Stage Demolition	Isolated Workface	Class 1A	Blue Lagoon area under CLC	Temp Exhaust / Regular Respite	1. Full Time Temporary Construction Exhaust 2. Dust Masks 3. Regular Demolition Respite Periods	Weekly	1/12/2019
7	Active	Extremes of Temperatue	Collapse / Unable to Retrieve Workers in Overhead Zone	Ovehead Stage Area & Cannon Port Works	Class 1A	Commencement of Techzone Works	Temp Exhaust & Conditioning / Safe Access Provisions	1. Full Time Temporary Construction Exhaust 2. Dual Access Scaffolds	Weekly	1/12/2019
8	Active	Temp Support	Structural Alterations & Temporary Supports - Failure	Incorrect Installation / Insufficient Engineering	Class 1A	Chior Stall Demolition	1. Demolition Method Statement 2. Isolation of Demolition Site 3. Temp & Consulting Engineering Signoff	1. Demolition Method Statement to be prepared by contractor, signed off by workcover, Taylor & SOH 2. Temporary Supports to be Fully Engineered 3. Isolation of Demolition Site 4. Temp & Consulting Engineering Signoff prior to commencing & prior to demolition once propping measures are installed	Weekly	1/12/2019
9	Active	Temp Support	Installation of Overhead Protection Gantry & Failure of Temporary Support	Incorrect Installation / Insufficient Engineering	Class 1A	Overhead Gantry Installation	1. Installation Method Statement 2. 3rd Party Engineer Review 3. Isolation of Site 4. Temp & Consulting Engineering Signoff	1. Installation Method Statement to be prepared by contractor, signed off by Taylor & SOH 2. Temporary Supports to be Fully Engineered & 3rd Party Engineer Reviewed 3. Isolation of Site During Installation 4. Temp & Consulting Engineering Signoff	Weekly	1/12/2019

								prior to commencing & prior to demolition once propping measures are installed		
10	Active	Temp Support	Tower Crane, Gin Pole & Brick Hoists Failure	Incorrect Installation / Insufficient Engineering	Class 1A	Crane Installation	1. Installation Method Statement 2. 3rd Party Engineer Review 3. Isolation of Site 4. Temp & Consulting Engineering Signoff	1. Installation Method Statement to be prepared by contractor, signed off by Taylor & SOH 2. Temporary Supports to be Fully Engineered & 3rd Party Engineer Reviewed 3. Isolation of Site During Installation 4. Temp & Consulting Engineering Signoff prior to commencing & prior to use once support measures are installed	Weekly	1/12/2019
11	Active	Temp Support	Scaffold Failure	Incorrect Installation / Insufficient Engineering	Class 1A	Scaffold Installation	1. Installation Method Statement2. 3rd Party Engineer Review3. Isolation of Site4. Temp & Consulting Engineering Signoff	1. Installation Method Statement to be prepared by contractor, signed off by Taylor & SOH2. Temporary Supports to be Fully Engineered & 3rd Party Engineer Reviewed3. Isolation of Site During Installation4. Temp & Consulting Engineering Signoff prior to commencing & prior to site Works once scaffolds & supports are installed	Weekly	1/12/2019
12	Active	Moving Plant	Public Hit By Truck On Promanade	Trucks Driving on Promenade	Class 1A	Commecement onsite	1. Full Time Truck Escort 2. Minimise Deliveries 3. Fixed A Class Enclosure	1. Full Time Truck Escort for every delivery by qualified traffic controller. 2. Minimise Deliveries by using the loading dock & only undertaking AM deliveries 3. Fixed A Class Enclosure to both upper podium & Lower Promenade Parking zone 4. No overhead lifting	Weekly	1/12/2019
13	Active	Moving Plant	Funicular Hoist Hit Workers	Works Close to Funicular Hoist	Class 1A	Truss Sterengthening	1. Cage around Funicular Hoist 2. Close Hoist to Undertake Strengthening Works 3. Full Time Funicular Hoist Driver 4. Hoist Automatic Stop measures	1. Funicular Hoist to be fully caged at all times 2. Close Funicular Hoist during site works in area (note 2 hoists installed) 3. Full Time Hoist Driver 4. Immediate Automatic Stop Safety Measures to be Integrated into hoist	Weekly	1/12/2019
14	Active	Moving Plant	Crane Hit Workers	Works Close to Crane Boom	Class 1A	Podium Deliveries	1. Cage around Crane zone 2. No Access to Crane Zone During Lifting Hours 3. Full Time Crane Driver / Rigger	1. Cage around Crane zone & locked 2. No Access to Crane Zone During Lifting Hours (6am-11am) 3. Full Time Crane Driver / Rigger operating crane	Weekly	1/12/2019
15	Active	Electrical	Electrocution by Existing Services	Demolition & Site Works Near Existing Services	Class 1A	Commence Strip Out	1. Full Services Audit & Labelling 2. No Demolition without Existing Services Isolation / Signoff 3. Strip out & Isolation Where Possible by incumbent contractors	1. Full Services Audit & Labelling to be done as part of early works 2. No Demolition without Existing Services Isolation / Signoff by all incumbent services contractors & Taylor prior to commencing 3. Strip out & Isolation Where Possible by incumbent contractors 4.Only qualified electrician to cut any existing electrical service. Always assume the service is Live.	Weekly	1/12/2019

16	Active	Electrical	Electrocution While Working on Boards	Existing High & Low Voltage Elements alterations	Class 1A	Commence Strip Out	1. Full Services Audit & Labelling 2. No Works to boards without Services Isolation / Signoff 3. Qualified Electricians only	1. Full Services Audit & Labelling to be done as part of early works 2. No Works to boards without Existing Services Isolation / Signoff by all incumbent services contractors & Taylor prior to commencing 3. Qualified Electrician only to undertake works on boards	Weekly	1/12/2019
17	Active	Fire	Fire from Welding	Welding in Ceiling Cavity near & above combustable materials	Class 1A	Strengthening works	1. Lowe Spark Welding Equipment 2. Temporary Fire Strategy 3. Full time welding spotter 4. Local contaiment of welding 5. Nets to be non-combustable & blankets above nets to protect ceiling	1. Lowe Spark Welding Equipment to be used where possible 2. Temporary Fire Strategy to be created prior to commencing onsite (note all sprinklers removed to prevent ceiling flooding) 3. Full time welding spotter for all works 4. Local contaiment of welding as part of works 5. Nets to be non-combustable & blankets above nets to protect ceiling at all times	Weekly	1/12/2019
18	Active	Traffic	Loading dock incident	Workers hit by trucks in dock	Class 1A	Loading dock deliveries	1. Dock sign in required 2. Packing & unpacking within site	1. All workers to sign into SOH Loading Dock 2. All deliveries to be packaged to ensure packing & unpacking is undertaken within site only - not in the SOH controlled loading dock	Weekly	1/12/2019
19	Active	Asbestos	Exposure to Asbestos	Building constructed in 60s	Class 1A	Commence Onsite	1. Early works Audit & Removal 2. Onsite Sampling Station	1. Early works Audit & Removal to be extensive & completed after hours 2. Onsite Sampling Station to be setup & managed 24/7	Weekly	1/12/2019
20	Active	SEC	SEC Safety Breach	SEC Independently Operating from MC	Class 1A	SEC to follow all MC Rules & Regulations	1. SEC to be inducted & managed as a subcontractor2. Additional Supervision & Management	1. SEC to be inducted & managed as a subcontractor2. Additional Supervision & Management	Weekly	1/12/2019

21	Demolition of Load Bearing Elements	Collapse of a Structure or Load bearing Element	Complex Sequence of Demolition and Re-Construction of Load Bearing Elements	Class 1A	Wing Wall Demo, Lift 30 Demo, Tunnel Demo	Arup Sequencing to be reviewed and discussed with wider team and sub-contractors. Propping plans and temp works to be reviewed by Arup and temp works engineers. ITP's to be developed and followed during all demo and hold points signed off	Arup to be onsite during removal of critical elements frequently during demo. Daily consultation on works method and sequence, Detailed handover procedure and consultation between shifts	Daily	1/12/19
22	Installation of Structural Elements that require stressing	Failure of stressing cables or temporary installations	Complex construction methods of load bearing elements and post stressed concrete and steel	Class 1A	Stage Beam and Slab Construction, De-Stressing of existing slabs for removal.	Arup Sequencing to be reviewed and discussed with wider team and sub-contractors. PT contractors and engineers to review. ITP's to be developed and followed during all demo and hold points signed off	Arup to be onsite during the stressing of Load bearing elements and deflection to be surveyed and results issued to Arup for review prior to moving sequence forward.	Daily	1/12/19

	IDENTIFICATION			UNTREATED RISK RANKING			RISK MITIGATION	RESIDUAL RISK RANKING			RESPONSIBILITY
No.	Building Element/ Location	Project Hazards Identified	Applicable to project	Likelihood	Consequence	Risk Ranking (Class)	Controls	Likelihood	Consequence	Risk Ranking	Taylor (1) SUBCONTRACTOR Nominate by Name ARCHITECT / other (3)
SECTION- A - SITE ESTABLISHMENT/GENERAL:			Y/ N								
1	*DESIGN AND BUILD ABILITY*	Hazards are to be identified on a project by project basis in consultation with the Project Manager, HSE Manager and project stakeholders (client, architect, consultants).					▪ Project Management plan been developed ▪ Project team including any stakeholders required have completed a design Risk assessment using QSE-F-03b ▪ Method nominated to communicate changers in design during the construction phase ▪ Project Manager to be responsible for obtaining the design risk assessment from the designer ▪ No input into the design for construct only project review and make documented comment/s on the design risk assessment				
3.	ESTABLISH SITE SPECIFIC WHS PLAN ESTABLISH OHS CONSULTATION PROCESS	Potential site risks Not identified Failure to comply with legal requirements Not complying with legislative requirements	Y	3	3	9	PREPARE SITE SPECIFIC SITE HSE PLANS THIS WILL INCLUDE ▪ 1 - **QSE-PLAN-01** - Project Management Plan (PMP) template ▪ 2 - **WHS-PLAN-** Project Workplace Health and Safety Plan (PWHSP) ▪ 3 - **E-PLAN-03** Project Environmental Management Plan (PEMP) template ▪ Emergency response plan ▪ Traffic plans Revisions to be undertaken at intervals not exceeding 6 months. Or as the need arises ▪ Establish a WHS Consultation process using **S-F-04** OHS Consultation Statement as soon as practically possible	2	2	4	1
5.	*SITE SPECIFIC INDUCTION*	Site personnel unaware of site-specific requirements	Y	4	3	12	▪ All personnel to work on site are to attend the site-specific induction prior to commencing work on site ▪ All personnel to work on site are to complete Hammertech induction prior to commencing work on site ▪ Visual check to be made of individual's qualifications ▪ All workers must have a valid construction industry Induction card. ▪ Taylor's Site induction to our system ➢ Site Rules & Emergency Procedure ➢ Consultation arrangements on site ➢ Location of amenities ➢ Location of first aid facilities ➢ Reporting procedures ➢ Any site-specific hazards ➢ Specific requirements and expectations of site workers when working in the SOH All workers are to be inducted by their respective supervisor into their Site-Specific SWMS. Employees must read, understand and where possible give inputs to add value to their task/site specific SWMS. prior to commencing works ➢ All personnel attending site specific induction to provide photo ID ➢ Workers to have copy site rules made available to them. ➢ Workers identification and qualifications to be registered. An induction sticker/card that gives evidence to their Site-Specific induction to be on the worker always. Daily Pre Start meetings will be held to advice site workers of upcoming works and associated risks or hazards including controls to be implemented.	3	3	9	1

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SECTION- A - SITE ESTABLISHMENT/GENERAL:			Y/ N								
	SUBCONTRACTORS TO PROVIDE SITE-SPECIFIC High-Risk SWMS FOR REVIEW	Subcontractors SWMS fails to meet the site-specific requirements Subcontractor not inducting employees into the requirements of the employer's safety plan	Y	3	2	6	■ All subcontractors to be made aware of HSE requirements prior to commencing, contract administrator to issue all successful tenderers standard Taylor Form HSE 15.23 for completion and sign off ■ Site specific SWMS submitted 10 days prior by the subcontractor and reviewed by Taylors prior to subcontractor commencing ■ SWMS to be accurate and specific to the project including expectations and requirements when working in the SOH. ■ SWMS to be reviewed by and signed off by Taylor's site management prior to the subcontractor commencing on site. ■ All employees inducted into – Site Induction, Industry Induction & SWMS ■ Taylor's to provide subcontractors with Access to Site HSE plan ■ Employees are to be inducted by their respective supervisors into their companies Site Safety Plan, and task specific SWMS prior to commencing work on site ■ Taylor's to provide subcontractors access to relevant sections of the project risk register	3	2	6	2
6.	LOCATION, LAYOUT, CONDITION AND ACCESSIBILITY	QSE concerns with neighbours, adjacent to site a member of the public Interaction with members of the public, • Tenants • Visitors • Trespassers, • school children etc • Impact with construction processes, inside boundary fencing	Y	4	4	16	■ Ensure public safety through securing the boundary of the site with security fencing. Fencing to be erected and maintained by competent contractor. ■ All mandatory signage to be prominently displayed at all access/egress points Contact details of Project Manager to be identified. ■ Erect signage directing unauthorised personnel to keep out ■ Where the risk has been identified, drop zones will be barricaded off within public areas, using physical barriers and or spotters engaged ■ Taylor's to maintain regular consultation with neighbours, adjacent sites in relation to protection of their staff, visitors and assets. Taylor's to maintain complaints register ■ All works that may have an impact on neighbouring sites/public areas must have controls nominated in specific SWMS ■ Taylor's to notify neighbours, adjacent sites that may be impacted by major works prior to their commencement. Taylor's to ensure that the impact of site works on the public are kept to a minimum. ■ Erect signage directing unauthorised personnel to keep out ■ Boundary fence to be maintained and inspected during safety walks ■ Gates to be closed and locked at the end of each day and kept locked during no work on site. ■ Traffic and or pedestrian control may be required during periods of heavy traffic or pedestrian flow	3	2	6	1
7.	EMERGENCIES PREPAREDNESS EVACUATIONS)	Site Emergency Response plan/s not developed	Y	3	4	12	Emergency Response plan to be established using SE-P-07 Emergency Response Plan for the site ■ Emergency management plan to be developed for the project and those assigned with responsibilities to be trained in its contents and their role ■ Procedures to be outlined for ➢ Medical Emergencies, ➢ Breach of Utility/Service ➢ Fire or Explosions	2	3	6	1

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SECTION- A - SITE ESTABLISHMENT/GENERAL:			Y/ N								
							➢ Contaminated Material ➢ Chemical, Biological or Radiological Emergency ➢ Bomb Threat ➢ Structural Collapse including during earthworks ➢ Any applicable wildlife issues ➢ Recovery using crane ➢ Natural disasters ➢ Plant Failure / Collapse ■ Emergency equipment to be tested at regular intervals and details recorded Evacuation drills to be held at least once every 6 months with details recorded. ■ Include details in site induction ■ Display emergency signage and names of key roles ■ Training to be provided in accordance with Australian Standard AS 3745 ■ Reviewed and, where applicable, updated after any major incident and or as a result of 6 monthly evacuation drill results				
8.	IN GROUND SERVICES	Damage to utilities Personnel injuries Plant damage	Y	3	4	12	GAS / WATER / ELECTRICITY/ DATA / STORM WATER SEWAGE ■ Identify power supply and source. ■ Have power turned off by Energy Supply authority ■ Services search completed i.e. Dial Before You Dig ■ Isolate services where possible when working around or within close proximity ■ Employees inducted into – Site Induction, Industry Induction, & Safe Work Method Statements for work around inground services ■ All temp in ground HV to be signposted and concrete encased ■ Spotter required where earthmoving machinery is used and whilst services are uncovered ■ Hand excavates and exposes services that may be affected ■ Underground services. Subcontractor carrying out the work should allow for inaccuracies and the possibility of other unknown or hidden services. ■ Dial before you dig documents to be kept on file for reference and use by Subcontractors ■ If Dial Before You Dig are not clear or available for area of concern/s ground penetrating radar may be required to locate any known services	2 2 2	4 5 4	8 10 8	1, 2, 3 1,2 1,2
9.	TEMPORARY SERVICES	Contact with temporary services – Electrical Fire Contact with temporary services - water, sewer.	Y	4	5	25	■ No live work permitted to electrical services ■ Subcontractor / s to verify electrical works are performed and comply with all relevant sections of the applicable Australian Standard AS 3000, AS 3012 and Electrical requirements applicable to the State where the work is being performed ■ Sufficient task lighting to all work areas is to be provided ■ All temporary electrical installs to be have identifiable signposting. ■ All temporary wiring to be protected from mechanical damage, by use of protective shroud etc. ■ Temporary services to be located in areas that do not interfere with construction works ■ Fire extinguishers to be located at each Temporary power board ■ All temporary water and sewer services to be located away from high traffic areas. ■ Temporary services to be located in areas that do not interfere with construction works. ■ Temporary boards to be certified and signed off by subcontractor	2 2	5 3	10 6	1 1, 2

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No.	Building Element/ Location	Project Hazards Identified	Applicable to project	Likelihood	Consequence	Risk Ranking (Class)	Controls	Likelihood	Consequence	Risk Ranking	Taylor (1) SUBCONTRACTOR Nominate by Name ARCHITECT / other (3)
SECTION- A - SITE ESTABLISHMENT/GENERAL:			Y/ N								
10	FIRST AID 	Insufficient / inappropriate First Aid Facilities Communication / contacting first aiders Insufficient number of Trained first aid personnel on site during working hours Causing further injury/s to worker due to sudden movement and or transport to first aid facility for further treatment	Y	4	3	12	First aid requirements and facilities established need to comply with the local requirements and Safe Work Australia Code of practice 2016 ▪ At the commencement of the project a suitably trained first aid in consultation with the PM/SM/PSO will conduct an assessment for EMERGENCY PREPARATION @ the WORKPLACE Using Taylor form SE-F-04 emergency preparation workplace ▪ First aid equipment and facilities should be located at convenient locations and in areas where there is a higher risk of an injury or illness occurring ➢ At the commencement of the High-Risk Construction sites at a type (R3 minimum) or an R4 wall mounted first aid Kit will be required, ➢ Each project which 25 or more workers are engaged shall also have available a soft pack mobile Kit that can be easily be transported on site if required ➢ Primary first aider is to conduct regular inspections of each kit to ensure the contents are in date and available ➢ Access to first aid kits must remain clear of any obstruction ➢ All first aid Kits must remain unlocked during hours of operation ➢ The primary first aider attending to the injured worker need to assess the situation and determine the extent of injuries and what first response treatment is required, he /she needs to determine if the injury is of a nature that will require off site treatment or if emergency service need to be called, ➢ if the injury is of a nature that the injured worker/s are unable to leave the area without any major assistance and will need to be carried from the location, then the emergency services will be immediately called to take over the treatment and removal of worker from the incident location, ➢ Taylor first aiders will only remove the injured worker from the location if the injured worker/s are in immediate danger In accordance with COP 2016 section 3.4 A first aid room is recommended for: ➢ HIGH RISK WORKPLACES WITH 100 WORKERS OR MORE If a first aid facility is established on site, then; The following items need to be included in the room: ➢ a first aid kit appropriates for the workplace ➢ hygienic hand cleanser and disposable paper towels ➢ a cupboard for storage ➢ a container with disposable lining for soiled waste ➢ a container for the safe disposal of sharps ➢ a bowl or bucket (minimum two litres capacity) ➢ electric power points ➢ a chair and a table or desk ➢ access to a telephone and/or emergency call system ➢ the names and contact details of first aiders and emergency organisations ➢ a sink with hot and cold water	1 1 2	3 3 3	3 3 6	1 1,2 1,2

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No.	Building Element/ Location	Project Hazards Identified	Applicable to project	Likelihood	Consequence	Risk Ranking (Class)	Controls	Likelihood	Consequence	Risk Ranking	Taylor (1) SUBCONTRACTOR Nominate by Name ARCHITECT / other (3)
SECTION- A - SITE ESTABLISHMENT/GENERAL:			Y/ N								
							➢ first aid room needs to be well lit and ventilated ➢ have an entrance that is clearly marked with first aid signage. ➢ Maintained clean and free from any unrelated construction material, The PM /SM in consultation and or HSE committee need to consider if the following items are required when establishing a first aid facility ➢ automated external defibrillator Adequately trained first aid personnel to be on site at all times whilst construction work is in being carried out. ➢ HIGH RISK WORKPLACES – ONE FIRST AIDER FOR EVERY 25 WORKERS ➢ The person nominated to MAINTAIN the first aid room should be an OCCUPATIONAL FIRST AIDER all additional first aiders need to hold a nationally recognised Statement issued by a Registered Training Organisation (RTO) ➢ “PROVIDE FIRST AID” (MINIMUM REQUIREMENT) ➢ First aid treatment and reporting must be included in site induction and regularly covered in Toll Box talks ➢ All incident reports must only be documented if reported by the worker on the day of incident ➢ An effective communication system needs to be adopted on site so workers can advise of injuries, this may include any combination of a Nurse call system, alarm, two way radios or air horns, the system adopted and locations must be discussed with workers during site induction ➢ Name Photo and contact number of each Taylor first aider must be displayed adjacent to the first aid Kit, induction room and notice board if available.				

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SECTION -B GENERAL CONSTRUCTION ACTIVITIES/CONDITIONS			Y/ N								
1.	CONSTRUCTION VEHICLE SITE ACCESS / VEHICLE MOVEMENTS TO AND FROM SITE	Vehicles/Mobile Equipment/ Machinery collision Unauthorised access to site Impact with pedestrians Collision with workers	Y	4	5	20	■ Traffic management plan to be developed by an accredited and authorised person prior to commencement on site and were required by DA consent conditions submitted to the relevant authorities for review ■ The requirements of the traffic management procedure QSE-OP-39 are adopted and adhered to by those responsible when setting up and removing Traffic management devices and equipment ■ All persons controlling traffic and escorting vehicles through the SOH Concourse are to be qualified Traffic Controllers. ■ Traffic Control Set-Up Check Sheet S-F- 21 to be completed were traffic and or pedestrian management is required to manage / minimise the impact on the public ■ High visibility clothing to be worn by all site personnel during all works ■ Site Map showing gates, roads, unloading and storage areas to be communicated at site induction, TMP to be sign posted in an applicable area i.e. at main entrance and induction/ meeting room. ■ High visibility vests to be worn when controlling traffic. ■ Vehicles to travel only on approved roadways, loads secured and covered ■ Plant/equipment not to be floated on/off site unless Taylor's Management representative is present ■ Pedestrians to have the right of way always. ■ Plant movements to be controlled by competent personnel only ■ Spotters to be used in areas of compromised visibility i.e. reversing ■ Plant delivered to site to be inspected by Taylor's Management and registered to site all mobile plant delivered to site is not to be used until it has been established that the Plant is compliant to Taylors legislative maintenance / inspections requirements. ■ Access gates to be securely closed when not in use and locked when site is not operational ■ TMP to be sign posted in applicable areas i.e. at main entrance and induction/ meeting room. ■ Were possible traffic to enter and leave from designated access /egress point/s in a forward motion ■ All drivers are to remain with vehicles always unless they are escorted by a site inducted person	2 2 2	4 3 5	8 6 10	1, 2 1, 2 1,2

	IDENTIFICATION		UNTREATED RISK RANKING				RISK MITIGATION	RESIDUAL RISK RATING			RESPONSIBILITY
No.	Building Element/ Location	Project Hazards Identified	Applicable to project	Likelihood	Consequence	Risk Ranking (Class)	Controls	Likelihood	Consequence	Risk Ranking	Taylor (1) SUBCONTRACTOR Nominate by Name ARCHITECT / other (3)
2	FLAMMABLE LIQUID HAZARDOUS GOODS (USE, HANDLING AND STORAGE)	Fire / Explosion Spills Chemical dust Contaminated soil Personal contamination Public exposed to chemical exposure	Y	3	4	12	Flammable material not to be stored on site where possible. ▪ All hot works within ceiling spaces and in vicinity of timber cladding to be only completed after permits and risk assessments have been reviewed and signed off by Taylor, SOH operations and representatives to also be advised of any hot works in the Concert hall ▪ All flammable liquids are to be identified and relevant notification and SDS to be issued to Taylor prior to products being brought to site ▪ Fire extinguisher to be kept in close proximity to storage area ▪ All containers to be clearly labelled. No storage of flammable liquids in non-ventilated containers and lunch shed ▪ Store Oxygen and Acetylene cylinders separately, at least 4 metres apart ▪ Flashback arresters to be installed on all oxy/acetylene equipment ▪ Restrain cylinders upright by the use of chain or other suitable means. ▪ SDS to be available and accessible to the first aid person/s and the users of products ▪ Flammable storage to be located away from high traffic areas. ▪ Warning signage to be displayed prominently. ▪ Storage of Hazardous substance/ flammable materials to be kept to a minimum. Hazardous Substances to be substituted with less hazardous items where possible ▪ All hazardous items to be isolated and signposted. ▪ All Hazardous Substances/Dangerous Goods are to be identified and relevant notification and SDS to be issued to Taylor prior to products being brought to site ▪ Were required a Risk assessment is to be completed or provided by the user on the hazards associated with the use of product/ chemicals ▪ All Hazardous Substances/Dangerous Goods to be stored as per Local Statutory Authority requirements and AS1940. e.g. lockable cages, bunds with appropriate signage displayed ▪ Designated storage area to be defined and shown on Site Map where required ▪ A Hazardous Substance/ Dangerous Goods/ MSDS Register is to be established and located were they easily accessible to the first aid person/s ▪ Spill kits to be available on site and person/s trained in their application ▪ Control measures nominated in the products SDS are to be implemented and monitored for use by the subcontractor ▪ employees are to be familiar with the SDS, their location and application to their task. ▪ Keep others away from hazard, install barricades and warning signs	2 2 2	4 3 3	8 6 6	1,2 1,2 1,2

	IDENTIFICATION		UNTREATED RISK RANKING				RISK MITIGATION	RESIDUAL RISK RATING			RESPONSIBILITY
No.	Building Element/ Location	Project Hazards Identified	Applicable to project	Likelihood	Consequence	Risk Ranking (Class)	Controls	Likelihood	Consequence	Risk Ranking	Taylor (1) SUBCONTRACTOR Nominate by Name ARCHITECT / other (3)
3	HOT WORKS	Fire - Explosion, Property damage - Personnel hazards including burns - Eye damage - Chemical hazards -	Y	3	4	12	■ Were possible Hot works are be completed off site ■ All hot works within ceiling spaces and in vicinity of timber cladding to be only completed after permits and risk assessments have been reviewed and signed off by Taylor, SOH operations and representatives to also be advised of any hot works in the Concert hall ■ Isolate hot work activities from other trades and public ■ Hot works activities to be signposted ■ SWMS to be task specific and incorporate the immediate environment. ■ Hot works permit to be used (site specific requirements) ■ Keep flammable materials away from other worker's/work activities ■ Maintain good housekeeping ■ Sparks / slag to be contained to the same level that task is being completed on. If working near a drop area, ensure barricades / spotter and signage is installed ■ Provide fire extinguishers and ensure they are within easy reach of users ■ Welding works to have screens erected ■ Work areas to be adequately ventilated ■ Good ventilation to be maintained throughout the activity	2	4	12	1, 2
4	HOUSEKEEPING & WORKING ENVIRONMENT	Slips, trips, falls Emergency Control Property damage Material falling from height Materials becoming airborne Materials or person/s falling other level Inclement Weather Conditions Adverse temperatures Rain Dust Wind Lightning Thunder Slippery surfaces	Y	4	4	16	■ Work area cleaning to be completed daily at a minimum, Dust control measures to be advised and approved by Taylor and SOH prior to dusty works commencing. Extraction aids to be used at all times when using dust generating tools and equipment. ■ Materials that have no packaging or waste material to be selected for use on sit were possible ■ Regular removal of material to be coordinated ■ All materials to be stacked and stored in a secure manner that will have minimal impact on other trades. ■ Access ways to be kept clear and well lit. the lighting to be ■ Adequate to allow employees to work safely. ■ Does not create excessive glare or reflection. ■ Is adequate to allow persons who are not employees to move safely within the place of work and facilitates safe access to and egress from the place of work, including emergency exits. ■ Regular Safety walks to highlight any problem areas and ensure responsible parties to remedy. ■ Regular clean up and removal of trade debris and excess material on site ■ Placement of waste and construction debris to be kept clear of all designated access and egress points of the project this incudes site entry and exits points and include all completed levels of the project including emergency exits are maintained. ■ Excess concrete is not to be lifted by reo, stressing cable etc put into it and lifted by crane, ■ No material to be stored on scaffold or building edge ■ Conduct regular formal and informal Inspection of work areas ■ No mobile scaffold or free-standing ladders to be used during periods of extreme conditions, (i.e. strong winds, lightning heavy rain) ■ Penetrations to be covered over and highlighted ■ Intermediate and temporary hand rails to be progressively installed ■ Vertical protruding reo bars to have bar caps fitted and maintained ■ Appropriate PPE to be issued to personnel dewatering, i.e. Gum boots, rain coats ■ Materials to be secured (tied down) from windy conditions ■ Taylor's Management and/or Site WHS Consultative process have the	2	4	8	1, 2 1, 2 1, 2

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		Flooding Exposure to UV Noise / vibration Dehydration/Heat stress Cold Exposure					authority to close works areas due to the impact of rain/weather. ■ Works to be staged in a manner that will minimise the impact of weather on workers where possible. ■ Regular Inspection of work areas during inclement weather ■ Pumps / squeegees / brooms to be used to remove water ■ Appropriate PPE to be issued to personnel dewatering, ■ Works to be staged in a manner that will minimise the likelihood of flooding and adverse weather on workers where possible. ■ Works to rotated to minimise exposure of high UV hours (middle of the day) where ever possible. ■ Provide SPT 30+, safety helmet brims, sleeved shirts, pants, tinted eye wear gloves to be provided by employers for the use and application by employees. ■ Noise and Vibration plans to be made available to all site workers and referenced during site inductions. ■ Where there is a potential for exposure to noise in excess of 85 dB(A) continuously for eight hours or a daily noise dose of 1.0 or where there is a potential for exposure to vibration to arms/ hands from tools for greater than 4 hours in a 24-hour period, or where there is a potential for whole body vibration in excess of exposure levels nominated for machinery or plant by the manufacturer documented procedures outlining the control to be provided. ■ Wear appropriate ear protection and take note of signage and restricted areas ■ Subcontractor SWMS to address the control of noise during their activities. ■ Plant and equipment to be maintained i.e. exhausts ■ Community complaints register to be maintained by Taylor's ■ Use methods to suppress dust i.e. water spray, dust barriers ■ Subcontractor SWMS to identify the requirement for frequent clean ups ■ Subcontractors to control the dust created during their tasks in SWMS. ■ Cool drinking water to be provided at work areas where strenuous activities are being completed ■ Provision of site amenities with Air Conditioning ■ Contractor SWMS to identify and control heat stress exposure in their activities where applicable and control accordingly. ■ Provision of amenities that are of sound construction and weather proof ■ Provision of heating equipment for food ■ PPE and the staging of works that will reduce or eliminate the exposure of workers to cold.				
5	MANUAL HANDING	Personal injury	Y	4	4	16	■ Construction methods to be developed to allow material and rubbish to be removed using trolleys and forklifts etc, Temp access ways to be made in areas where there is only stair egress ■ Activities requiring prolonged manual handling task to be eliminated in works procedures where possible ■ Mechanical aids to be used where possible ■ SWMS to nominate the use of mechanical aids available on site to be utilised i.e. site tower crane, hoist, and fork lift. ■ Materials to be selected that negate the use of manual handling ■ Materials over 20kgs are not to be carried by one person. Items such as	2	4	12	1, 2

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							tiles (25kgs) to be carried via team lifting techniques. ■ Materials storage to be staged in a manner that reduces the amount of manual handling as possible ■ All SWMS are to address the task specific Manual handling issue in their tasks. ■ All employees to be educated in the correct manual handling techniques by their employer. Evidence of which is to be made available by subcontractor upon request. ■ Personnel required to perform task that require prolonged periods of manual handling task should be consulted in this requirement ■ Manual handling tasks to be completed in a manner that reduces the likelihood of repetitive strain. ■ All workers to be encouraged to only Lift within a person's capacity				
6.	MATERIALS HANDLING	Manual Handling	Y	3	3	9	■ Stage and coordinate works that will eliminate the requirement for repetitive materials handling ■ Reduce the amount and distance that material will need to be handled. ■ Isolate areas around movements ■ Modes of mechanical use implemented by the subcontractor is to nominated and effectively controlled in SWMS ■ Options include, but not limited to – Forklift, pallet trolleys, Telehandler, Mobile Crane, and hoists ■ SWMS's reviewed for installation, use of scaffold loading platforms SWL signage to be displayed ■ All loads to be secured ■ Modes of mechanical use implemented by the subcontractor is to nominated and effectively controlled in SWMS ■ Inspection and maintenance of plant to be nominated in SWMS. ■ Applicable tickets/licenses to be provided at induction. ■ Site HSE Plan to identify the inspections to be completed by TCG upon delivery. ■ SWMS to identify that loading platforms are to be kept free of rubbish and trip materials. ■ Subcontractor SWMS to identify the Safe Working Load of platforms and ensure material is less than the prescribed. ■ Signpost and clearly isolate movement corridors ■ Options include, but not limited to – Forklift, pallet trolleys, Telehandler, Mobile Crane, and hoists ■ Loads to have designated lift points with current engineer's certificate ■ Loads to be rigged by appropriately certified and competent persons only. ■ High vis clothing to be worn by all onsite	2 3 2	3 3 4	6 9 8	1, 2
		Use of mechanical devices	Y	3	3	9					
		Use of loading platforms Crush/collision	Y	3	4	12					

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7.	MOBILE PLANT	CRUSH / COLLISION POOR CONDITION OF PLANT UNAUTHORISED USE OF PLANT FUMES NOISE ROLLOVER STRUCTURAL COLLAPSE CROSS CONTAMINATION MOBILE PLANT COMES INTO CONTACT WITH OVERHEAD POWER LINES ELECTROCUTION	Y	4	5	20	■ Isolate plant movements from other pieces of plant and persons ■ SWMS to outline and address controls for where mobile plant will be used on suspended slabs. SWMS to provide documented evidence that the total gross weight of the plant will not exceed that of the engineered weight to be carried by the structure. ■ The keys must not be left in the cabin or item of plant if the machine is un attended ■ Taylor Project / Site Manager or nominated site representative will conduct a review of plant and required documents using S-F-18 Plant pre-start assessment prior to the plant been permitted on site, this shall be conducted irrespective of the duration or frequency the mobile plant is to be operated on site ■ Taylor Project / Site Manager or nominated site representative will register all items of mobile plant bought to site using S-F-12 Plant Register ■ Subcontractor/ sole trader is to provide a register of mobile plant to TCG prior to operating the plant ■ SWMS to identify and control when works are to be completed in the vicinity of mobile plant ■ Plant/Maintenance records to be submitted prior to use ■ Mobile plant risk assessment to be available for type of plant prior to use and is currant <5 years old ■ SWMS to acknowledge the inspections that will be carried out by TCG Management upon delivery to site. ■ Mobile plant is to be used in well-ventilated area , if this is not possible use of extractor fans to manage any toxic emissions, or replace with gas powered or electric operated plant, ■ All mobile plant operators shall be responsible for inspecting the area that they are to operate in ensure that the plant is suited for the purpose and location and stability of ground its working in ■ If plant is working in enclose are with excessive toxic emissions air monitoring may be required ■ If mobile plant is required to be used on a suspended slab , permissions needs to be obtained by the operator from a TCG site manager on the load capacity of the slab engineers confirmation may be required in certain circumstances , at no stage is the load capacity to be exceeded without the prior written consent of an engineer ■ If operations of mobile plant are emitting prolonged elevated noise levels , the Project manager will be responsible for real time monitoring of noise to be conducted and recorded using QSE-F- 21 Noise Map and Register ■ Daily pre-use inspections to be carried out and documented on all mobile plant by operator ■ Subcontractors to have task specific SWMS for use of mobile plant ■ Operators of mobile plant to have appropriate certification issued by a statutory authority or training records acceptable to TCG subcontractors to complete relevant section of site induction record form for each employed operator. ■ All operators of EWP to be trained and have a certificate issued by a Registered Training Organisation is a minimum requirement for the use and operation of any EWP where a certificate of competency (over 11 metres) issued by a Statutory Authority is not required	2 2	5 5	10 10	1, 2 1,2 1, 2

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8							■ Operators require a certificate of competency for booms over 11 metres ■ Full Safety harness to be worn in all Boom lifts ■ Access to/from mobile plant whilst it is in motion or elevated is prohibited unless in the event of an emergency ■ Certificate issued for a scissor lift type EWP is not acceptable for use of a boom type EWP under 11m or vice versa ■ Check mobile plant not to work in proximity of overhead power lines, refer local requirements ■ SWMS to nominate the location of any overhead power lines located on site. ■ SWMS to adequately nominate who is completing the work, the controls and minimum distance that must be obtained during the activity and training completed by persons completing the task. ■ Subcontractors to have task specific SWMS for use of mobile plant ■ Check mobile plant not to work in proximity of overhead power lines, refer local requirements ■ If mobile plant has been operated in a contaminated area of the project , the plant must be cleaned and washed prior to leaving that area				
9	PENETRATIONS AND WALL OPENINGS	Penetration covers not adequate to take loads imposed	Y	3	4	12	■ Design to minimise the need for penetrations where possible ■ All floor penetrations to have fixed, suitable coverings ■ All penetrations are to be constructed or protected in such a manner that eliminates the risk of man and material falling through ■ Penetrations over 150mm in diameter to have mesh cast in and covered in accordance with Industry Practice ■ Column, beam penetrations in formwork to be covered and secured with F81 mesh or handrails ■ Large mechanical penetrations to have temp handrail fitted, completed with mesh and kickboards ■ Signpost penetrations and coverings ■ Penetration coverings to be monitored during site inspections. ■ Penetration coverings in high, plant traffic areas to be constructed in a manner that will hold the gross weight of the plant and be securely fixed. ■ Trades who remove penetration coverings are nominate in their respective SWMS the controls implemented to ensure the safety of self and other trades on site i.e. replacing covers, cutting minimum space out of mesh to put their services through etc. ■ All wall penetrations are to be constructed or protected in such a manner that eliminates the risk of material falling through ■ Large wall penetrations to have temp handrail fitted, completed with mesh and kickboards ■ Lift openings to be securely covered until such times as lockable lift gates are fitted ■ Lift cages to be inspected during safety walks ■ Lift cages to display applicable signage	**2**	**4**	**12**	1,2
		Persons / materials / plant falling through penetrations	Y	3	5	15		**2**	**5**	**10**	1, 2
		Persons / material / plant falling through wall penetrations									
10	PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT (PPE),SUPPLY AND USE OF APPROPRIATE	PPE not complying to applicable Australian Standard or Personal injury due to inappropriate PPE being provided	Y	2	2	4	■ Work activities to be employed that could eliminate the requirement for workers to be reliant PPE ■ PPE used to comply with appropriate Australian Standard ■ Engineering solutions to be employed where ever possible i.e. Guards on machinery, extraction vacuums etc. ■ Mandatory PPE requirements to be sign posted in common areas and at main entrance.	2	2	4	1, 2

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		Personal injury due to PPE being worn / used incorrectly					■ Taylors and subcontractors to monitor PPE's usage and application. ■ PPE to be selected that do not limit or hinder the operator from performing the task safely. ■ Work activities to be employed that eliminate the requirement for PPE where possible ■ Provide sunscreen, safety helmet brims as required.				1,
11	STAIRS AND ACCESS CONDITION AND ACCESSIBILITY	Slips, trips and falls Insufficient lighting	Y	4	3	12	■ Ramps and low risk access methods to be incorporated in the build ■ Designated access ways to be identified on the site plan ■ Isolate plant from pedestrian movements ■ Access ways to be well illuminated ■ Access/egress ways/directions to be sign posted and enforced by TCG management. ■ Materials not to be stored along designated access ways ■ Access ways to be maintained and inspected on a regular basis. ■ Handrails to be fitted to stairs prior to stripping of formwork ■ Ladders to only be used as a last resort and for access only, ladders can only be worked from where it is not reasonably practicable to use other means as covered in the site HSE plan. ■ Where Ladders are to be used, they must be tied off at the top, footed at the bottom with a minimum 1 m past platform step off ■ Lighting to be fitted to stairs and access/egress ways as work proceeds ■ Subcontractors to provide task lighting ■ Emergency lights to be fitted to areas where necessary to allow safe access/egress in the event of power loss and insufficient day light ■ Access/egress ways/directions to be sign posted and enforced by TCG management.	2	3	6	1, 2
12	STRUCTURAL COLLAPSE	Personal injury Collapse of structure Off site pollution	Y	2	5	10	■ Engineer / Geotech to sign off structural elements , including load bearing capacity of any existing concrete slabs or load bearing surface ■ Engineer to inspect formwork in accordance with Australian Standard 3610 requirements ■ Temporary structures such as formwork to be isolated from other trades access whilst under construction ■ Temporary Supporting structures to be signposted, (i.e., temporary columns, props, frames, beams) ■ Subcontractor erecting temporary structure to have the isolation procedures nominated in SWMS. ■ Engineer sign off for all structural elements ■ Engineer to inspect and sign off crane base prior to pouring of the concrete pad ■ Engineers documentation showing ➢ formwork setup i.e. table form, bondek, conventional etc ➢ Concrete pouring techniques (i.e. kibble or pump) and sequence ➢ requirement for further bracing/ back propping (if required) ➢ Concrete strength at time of stripping for both conventional and post tension slabs ➢ Bracing required for raking formwork	1	5	10	1, 2 1, 2

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							➢ Engineers report is not to be issued more than two working days prior to pour. ■ Engineer to inspect formwork in accordance with Australian Standard 3610 requirements. A certificate to clearly state that formwork meets the requirements of Australian Standard 3610				
13	USE OF/WORKING WITH ELECTRICAL EQUIPMENT/ INSTALLATIONS	Electrocution Damage to supply boards, Poor or damaged wiring Access to boards Fire	Y	4	5	20	■ Substitute electrical power tools with battery operated tools where possible ■ All temporary electrical installs to have adequate warning signage displayed ■ All temporary distribution boards to be tested upon installation and periodically tested thereafter as required by local legislation. ■ Temporary boards to have compliance certificate issued by licenced contractor prior to use ■ Live power supply to main switchboards not covered by earth leakage protection should be adequately protected and sign posted. ■ Works undertaken after permanent power supply has been installed and ELCB does not exist will require persons to use portable earth leakage devices ■ Temporary electrical carried out in accordance with AS/NZS 3000 & AS 3012 and local legislative requirements Permanent electrical to be carried out in accordance with AS/NZS 3000 ■ Switchboards to be fitted with Class 2RCDs ■ All electrical equipment to be inspected tested and tagged prior to use in accordance local and Taylor's requirements i.e. Regulations and/or codes of practice ■ Distribution boards to be located where extension leads when used they do not exceed the maximum lengths specified by the local statutory authority ■ Extension leads to be elevated on insulated hooks or stands Leads to be set up leaving clear access and are not to be trip hazards ■ Working on live power is not permitted, unless process is signed off by Taylor's Project Manager and is performed in accordance with electrical requirements applicable to the Local Statutory Authority ■ Temporary electrical carried out in accordance with AS/NZS 3000 & AS 3012 and local legislative requirements Permanent electrical to be carried out in accordance with AS/NZS 3000 ■ Power to be supplied from the same level as it used. (Formworkers only to use power from level below)	2	5	10	1, 2 1,2
14.	*WORKING ABOVE OTHERS*	Struck by falling objects material /tools	Y	3	4	12	Unrelated Work is not to be completed above others. Without suitable and effective controls been implemented ■ Areas below workers above needs to be cordoned off with barrier tape and appropriate signage ■ Custom crash deck to be installed to keep workers on stage safe from overhead hazards from works in tech Zone and ceiling, Deck to be designed and engineered to suit site limitations. ■ Kick boards or equivalent to be erected along perimeter or slab edges ■ No loose materials to be used or created in areas of work that are above others. ■ Protective barriers or "Catch" decks to be erected ■ Perimeter scaffolding to be erected. ■ Mesh and shade cloth to be installed around perimeters.	1	4	4	1, 2

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							■ Installation of fencing to prevent objects falling ■ Hand tools, equipment to be fitted with approved lanyards, if personnel working directly below, i.e. roof works, cladding ■ Safety Helmets to be worn. ■ Access ways to be diverted away from workers above. ■ Hoarding or overhead protection is to be erected where public is exposed to workers above.				
15	*WORKING AT HEIGHT*	Workers fall from height Incomplete scaffolding, Works in the roof space of the Concert hall Works/demo to lift shafts and stage Access and rigging to stage prop/aid areas Mobile scaffold use.	Y	4	5	20	■ Safe Work Method Statement that addresses the specific task and the risks which are associated with the work where a person is exposed to a fall from height above 2 metres is required to be submitted by the subcontractor and employees trained prior to commencement of the activity ■ CH ceiling access induction to be completed prior to access to certain High risk areas. ■ Bird cage and crash deck scaffolds to be installed, ■ Suitable access to all work faces to be planned and implemented early and subbie education on requirements to be completed during tender ■ Fall restraint/arrest equipment i.e. safety harnesses are only to be used as a last resort and only then after consultation with TCG Site Management and a permit has been issued, except where it is a legislative requirement i.e. Boom Lift ■ Subcontractors are to ensure that works are sequenced in a manner that eliminates or reduces employee's exposure to a fall from height ■ Perimeter of building to be protected using scaffolding, fencing, or screens ■ Protection from a fall from height must be in place at all times. Trades working at "live "edges are to nominate their controls of the risk in SWMS. ■ Site Manager in consultation with the subcontractor will access the integrity of existing roof sheets prior to works commencing on the roof, workers to be instructed were possible to walk on beams or purlins, if doubt exist on the integrity of the roof sheets alternative fall protection measures are to be adopted prior to the works i.e. harness , catch scaffold , works to be conducted working off EWP ■ As per the Site Rules, no person is to be alter / remove / erect any part of the perimeter scaffold unless directed by TCG and has suitable scaffolding accreditation. ■ Handrails to be installed asap after concrete floor slab has been poured, and prior to stripping formwork where possible ■ Handrails erected as fall protection are to meet Australian Standard specification and be nominated by the trade erecting the protection. ■ Penetrations over 150mm in diameter to have mesh cast in and covered in accordance with best Industry Practice ■ Column, beam penetrations in formwork to be covered and secured with mesh or handrails ■ Large mechanical penetrations to have temp handrail fitted, completed with mesh and kickboards ■ Perimeter scaffolding is to be inspected by a suitably certified scaffolder and the inspection to be registered and repeated monthly or after alterations is made. ■ Lift openings to be fully meshed, until such times as lockable lift gates are	2	5	10	1, 2,3

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							fitted ■ Access to the working platform of the mobile scaffold may be by means of a temporary stairway, scaffold stairs / ladders				
16	***USE OF SAFETY HARNESS AND ATTACHMENTS***	**WORKERS FALL FROM HEIGHT** **PRODUCT FAILURE**	Y	3	5	15	■ All safety harness and attachments used on site shall comply with the requirements of AS/ NZS 1891.4 industrial fall arrest devices selection use and maintenance ■ All fixing points to be approved ■ All safety harness and attachments used on site MUST be inspected and certified by an authorised person at periods not exceeding 6 months ■ Harness register to be issued to Taylor nominating all harness and attachments to be used and date of last maintenance inspection ■ Employees required to use a safety harness shall be required to have successfully completed a registered training course “working @ heights” ■ SWMS for works using harness issued to Taylor ■ TCG standard document “use of safety harness” to be completed and signed off prior to use of harness and attachments ■ Proposed Height Rescue method to be documented in safe work Method statements “if use of safety harness is required as a control ” , SWMS is to include a step by step procedure, equipment and training required for performing a height rescue ■ All fixed static point to be signed off by competent person/s prior to use	2	5	10	1, 2
17	*ASBESTOS & HAZARDOUS BUILDING MATERIALS*	Damage or works to buildings or structures containing asbestos, PCBs in lights and/ or lead-based paints, •Disposal of asbestos and other hazardous building waste;	Y	3	4	12	■ Works will be conducted in accordance with SE-OP-02 Asbestos Management Procedure ■ All SOH asbestos management procedures to be followed and unexpected finds prompting immediate notification. ■ All hazardous materials removed by licensed contractor prior demolition commencing; ■ Independent clearance survey performed on areas following removal of hazardous materials; ■ Contractor to provide SWMS for removal works and be appropriately licensed; ■ Real time Air monitoring to be conducted and reports made available to the project manager and communicated to site employees; ■ If real time monitoring has highlighted that employees have been exposed to above recommended levels Medical surveillance may be required, the project manager in consultation with the HSE manager and a senior manager will be consulted and the requirements of TCG procedure SE OP 35 Health Monitoring will be implemented ■ Unexpected finds protocol to be included in site plan and site induction; ■ Any wastes removed to be segregated and stored in a safe manner pending disposal; ■ Hazardous materials transported and disposed off-site in an appropriate manner by licensed contractor prior to demolition; ■ Employees involved in the removal / management process to adhere to PPE requirement ■ Area/s effected to be signposted and barricaded warning others and members of the public of potential dangers ■ All hazardous materials disposed off site to DECC licensed landfill; ■ All waste dockets (both truck and tip) are to retained;	3	3	9	1,2

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18	*CONTAMINATED SOIL & WATER*	Conducting works in areas of unidentified contamination;	Y	2	3	6	▪ Preliminary Contamination Assessment (PCA) performed for work areas; ▪ Contaminated areas identified, segregated & appropriate controls measure and safe guards adopted; ▪ Correct contamination soil water handling /storage and disposal procedures followed; ▪ All contaminated groundwater entering service trenches or excavation to be removed, treated and re-used/disposed appropriately	2	3	6	
19	***CONFINED SPACE ENTRY*** ***A confined space is identified when the following criteria are met:*** *1. Is the space enclosed or partly enclosed?* *2. Is the space at atmospheric pressure during occupancy?* *3. Is the space designed primarily as a place of work?* *If questions 1 and 2 are answered YES, and question 3 NO, determine if the space may at any time:* *4. Have an oxygen deficiency or excess* *5. Have an atmosphere which contains potentially harmful levels of contaminants* ***6.** Cause engulfment* *If any one of the items from 4 to 6 is answered YES, then it is a confined space.* *Assessments that answer YES to questions 1 and 2 and NO to questions 3 will be kept in a register maintained by the relevant Taylors Site employee.*	➢ **No training** ➢ **Drowning** ➢ **Sprains strains** ➢ **Unconscious** ➢ **Entrapment / collapse of structure / excavation / trench** ➢ **Unauthorised entry by others** ➢ **Falling down open penetration**	Y	3	3	9	▪ All confined spaces will be clearly sign posted and secured at all times ▪ All employees required to enter any area deemed a confined space shall be required to inform TCG Site Manager and confined space entry permit Must be issued ▪ Testing of atmospheric gases within confined space must be conducted by suitably qualified person/s prior to permit been issued and employees permitted to enter area ▪ Monitors used to test for atmospheric cases to be calibrated and included in calibration register ▪ All employees entering the confined space Must be trained and hold the relevant competency requirement ▪ SWMS shall be developed and employees consulted prior to any entry ▪ Stand by person must be available always whilst person/s are within confined space ▪ Confined space Rescue kit must be available always ▪ **SPOTTER MUST BE IN PLACE ALWAYS WHILST EMPLOYEES ARE WORKING IN A CONFINED SPACE OR IF A DANGER OF ENTRAPMENT EXIST FROM EXCAVATION OR TRENCH**	2	3	6	1, 2

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No.	Building Element/ Location	Project Hazards Identified	Applicable to project	Likelihood	Consequence	Risk Ranking (Class)	Controls	Likelihood	Consequence	Risk Ranking	Taylor (1) SUBCONTRACTOR Nominate by Name ARCHITECT / other (3)
	CONSTRUCTION WORKPLACE										
1	*CRANE OPERATION INCLUDING MOBILE CRANES*	Cranes not operated and/or directed by qualified, authorised personnel Cranes not maintained in accordance with manufacturers and/or supplier's specifications Injury to person from impact with crane or suspended load	Y	3	5	15	Australian Standards AS 2550, AS 1418, AS 1353.2, AS 1380.2, AS 3775 ■ Crane including mobile cranes to have current Risk assessment available ■ All craneage is to be of adequate size and type to safely complete the given task/s. Expert advice to be obtained if required to ensure compliance ■ Adequate area/s is to be zoned off as deemed necessary for the safe execution of the works ■ All crane drivers and dogman are to hold relevant certificates of competency which are to be sighted and recorded by TCG prior to operating the crane on site ■ Crane Maintenance to comply with the requirements contained in Australian standards 2550.1 & 2550.4 ■ All workers are to be inducted to the specific work procedures for the tasks to be undertaken. ■ SWMS must identify all site-specific hazards and their controls for lifts completed on site. ■ Crane crew to conduct tool box with operators of any other plant that may impact on their lifting area i.e. Concrete boom pumps. ■ Cranes are to carry maintenance logs and must comply with Plant and Equipment Checklist prior to use on site ■ Crane sitting subbase strength to be determined if on suspended slab or made up ground. ■ All lifting equipment to be inspected and tested as per Australian Standard, maintenance records to be supplied to TCG upon delivery and each daily inspection weekly thereafter. ■ Demarcation of walkways around mobile crane operations ■ SWMS must identify all site-specific hazards and their controls for lifts completed on site. ■ All loads to be secured *i.e. timber bundles strapped.* ■ The SWL of the crane and chains /slings used not to be exceeded ■ Crane not to be used during lightning / Storms ■ Crane to cease operation when wind loads exceed recommended standards ■ If Mobile cranes is used ensure were possible that set up is in a well-ventilated area, and is set up in a manner that any exhaust fumes are not drifting back towards other site employees ■ If mobile crane is to be used for prolonged periods of the day and is located within close proximity to other site employees that the noise level generated is at an acceptable recommended level/s monitoring of this may need to be conducted monitoring, to verify compliance . ■ Traffic control and road closure to be in place were required ■ Fire extinguisher to be installed on crane/s	2	5	10	1, 2
		Insufficient sole plates for outriggers on mobile cranes Unstable base for crane Environmental Storms, Lightning, Wind /Dust Noise , fumes	Y	3	5	15		2	5	10	1,2

2.	*CONCRETE PLACEMENT & FINISHING* *CORE HOLE DRILLING / CONCRETE CUTTING*	Impact with mobile plant / machinery Flying objects Environmental Storms, Lightning, Wind /Dust Noise, fumes Cutting existing services / stressing tendons Others working below	Y Y	3 3	4 3	12 9	▪ WorkCover registration of pump to be verified by TCG site management prior to commencing ▪ Mobile plant Risk assessment to be provided to TCG prior to use on mobile boom pump ▪ Subcontractor to submit SWMS which nominates the use **of other mobile** plant on site i.e. Tower crane, excavation equipment etc. and the controls to be implemented to eliminate the risk of collision with concrete placement equipment. ▪ **Required Plant inspections / pipe testing to be undertaken monthly. A receipt of which is to be provided to TCG upon delivery. Pipes inspected are to be clearly marked and referenced in the engineer's inspection.** ▪ Static line delivery line to be installed by appropriately ticketed personnel ▪ Only trained / competent appropriately ticketed personnel to operate concrete boom pump ▪ Exclusion zones to be erected and maintained around concrete placement boom and agitators. ▪ Contractor SWMS to nominate the use of Spotters being required for backing up agitators to pump ▪ Rubber final delivery hose is not to have metal coupling on end. ▪ Concrete washout area to be established or waste tray removal. ▪ When setting up pump ensure were possible that set up is in a well-ventilated area, and is set up in a manner that any exhaust fumes are not drifting back towards other site employees ▪ If pump is to be used for prolonged periods of the day and is located within close proximity to other site employees that the noise level generated is at an acceptable recommended level/s monitoring of this may need to be conducted monitoring, to verify compliance ▪ Area specific SWMS to outline the barricading and isolation procedure that will eliminate the risk of persons being hit by cores is to be documented and applied on site ▪ Slurry to be cleaned up immediately by subcontractor ▪ Spotter may be required or area below works to be barricaded off ▪ Coordinate with TCG and trades on site to ensure there are no existing services. ▪ Sign off to confirm services have been terminated /isolated ▪ Spotter may be required or area below works barricaded off ▪ If concrete saw cutter or core hole drill is to be operated for prolonged periods of the day or in enclosed areas of the project and is located within proximity to other site employees that the noise level generated is at an acceptable recommended level/s monitoring of this may need to be conducted and documented using noise map register	2 2	3 3	6 6	1, 2 1, 2
3	DEMOLITION	Hazardous substances Live services Structural collapse Noise, fumes Stability of existing /surrounding structures	Y	3	5	15	▪ Demolition work is not to commence until Attachment A of Taylor procedure QSE-OP-40 have been completed and signed off by responsible PCBU ▪ Structural Engineer to be notified of intent to demolish an element and be notified when any hidden structure is exposed for verification of design assumptions ▪ Demolition Plan including SWMS to be prepared by the PCBU and reviewed by the Taylor Site manager prior to commencement ▪ All demolition work to be carried out in accordance with Australian Standard AS 2610; and the Code of practice for demolition 2015 ▪ Subcontractor to provide Taylors with sequence and methodology that will be implemented during demolition phase ▪ Where the potential exist that the stability of adjoining buildings, walls, or other structures may be impacted or compromised by the proposed	1	5	5	1,2,3

							demolition operations, works will not commence until such time that the PCBU has commissioned licensed professional to -Determine that surrounding structures are sufficiently removed from the demolition influence zone and as such will be unaffected by the demolition activity; ■ Barricades and signage to be installed around area/s under demolition or entire area is to be isolated from other workers and the public ■ Asbestos Clearance certificate to be provided by certified person ■ Contractor to provide TCG with all relevant licences and permits required prior to commencement ■ obtaining a copy of the asbestos register for the workplace before demolition work is carried out ■ If asbestos is found to be present prior or during the demolition process any asbestos found is to be removed by a licensed subcontractor (were quantity is above 10 square metres or any friable quantity) and ensure removal compliance with all authority & code requirements. SWMS if there is no asbestos register, you must ■ not carry out the work until the structure or plant has been inspected to determine whether asbestos or asbestos containing materials (ACM) are fixed to or installed in the structure or plant ■ Before starting any demolition work, the PCBU is to conduct a work through inspection all areas of the workplace, including basements for evidence of any hazardous substances have been stored or are present on site, if present remove or organise for the safe removal prior to demolition work commencing ■ 3ensure that the determination is undertaken by a competent person ■ All plant and equipment is to be inspected and recorded in the plant and equipment register and regularly inspected during the works ■ Only trained / competent appropriately ticketed personnel to operate mobile plant. ■ All services to be disconnected and verified as isolated prior to commencement ■ All employees inducted into Site, - Industry and task specific SWMS ■ Use PPE, Hard Hat, High Viz Clothing, Safety boots/shoes, appropriate eye protection; ■ Excessive dust generated from demolition is to be managed by way of wetting down area ■ the noise level generated is at an acceptable recommended level/s monitoring of this may need to be conducted and documented using noise map register				
4	*ERECTION/DISMANTLING, ALTERING AND USE OF HOIST*	Use of incomplete / inadequate hoist Structural integrity for ties Falls Overloading of hoist System failure Operation of hoist	Y	3	4	12	■ Hoist to be erected in accordance with Australian Standard requirements ■ Documented information, written in plain English shall be provided on the hoist equipment. The documentation shall include; ➢ Supplier and the means of product identification ➢ A list of all components with descriptions from which each can be identified ➢ Instructions for erection, dismantling, use, transportation and storage ➢ Guidance for servicing and inspection of the equipment and the rejection of damaged components ➢ Nominal weight in kilograms ➢ Details giving sufficient information to determine; duty loadings, max heights, max location of ties, ■ Handover certificate to be issued by company installing hoist contractor prior to hoist being used, ■ Hoist to have daily pre-use inspection completed by a competent person with details recorded in daily log book; ■ Periodic inspections in accordance with manufacturers/supplier's specifications; ■ SWL to be clearly displayed; ■ All landings to be secured by lockable gates, gate is not to open until hoist cart is at the same level	2	4	8	1, 2

							▪ All hoists erected, altered and/or dismantled by licensed riggers; ▪ Hoist to be installed as per reviewed drawings and modified and maintained in a safe manner ▪ The location and tie systems shall be in accordance with the engineer's requirements; ▪ Hoist enclosure to be installed in accordance with Australian Standards AS 2550.7 & AS 1418; ▪ Steel fixing wire shall not be used to secure the enclosure; ▪ Regular visual inspections to be completed by TCG foreman and Site OHS Consultative process; ▪ Incomplete hoists are to display appropriate signage and have measures erected or in place that will stop unauthorised use. ▪ Hoist to only be operated by competent / experienced person ▪ Hoist operator to continually lookout for obstructions and notify supervisor of any foreseeable problems; ▪ Operator to secure hoist to prevent unauthorised use;				1,2
5.	*ERECTION/ DISMANTLING AND ALTERING SCAFFOLDING*	Use of incomplete / inadequate scaffold by site employees Poor design of scaffold Mix and match components Unauthorised Removal of scaffold ties Overloading of planks Scaffold collapse Impact or effects to scaffold by Mobile plant used on site Stability of ground surface Overhead / underground assets Erection / dismantle by unauthorised person/s	Y	3	5	15	▪ Scaffolds erected in accordance with Australian Standard requirements ▪ Documented Scaffold Plan written in plain English shall be provided on the scaffolding system/equipment. **The scaffolding plan should include a site layout plan and detail the elevations and sections of the scaffold address the following issues** ➢ basis of design & the type of scaffold required ➢ foundations (including ground conditions required) ➢ the weight bearing capacity of the surface where the scaffold is to be erected. ➢ size and weight of the scaffold (for example, dead, live and environmental loads) ➢ supporting structure & any bracing required ➢ access and egress ➢ tying and anchors (that is, where anchors will be placed on the supporting structure; and types of anchors to be used) ➢ the type of edge protection to be used ➢ Details giving sufficient information to determine; duty loadings, max heights, max number of working platforms. ▪ Handover certificate issued by scaffolding contractor prior to scaffold being used and/or after each 30-day inspection or when scaffold is altered (raised / lowered). ▪ Scaffold is to be categorised by the scaffolder; Light, Medium or Heavy Duty ▪ All scaffolds where item and/or object can fall 4m or more to be erected by licensed scaffolders. Scaffold to be installed as per design drawings and modified and maintained in a safe manner ▪ The location and tie systems shall not obstruct clear access along the full length of any working platform or access way. ▪ All platforms shall be capable of supporting their design loads. ▪ Steel fixing wire shall not be used to secure planks. ▪ The minimum unobstructed access of any working bay shall not be less than 450mm, regardless of the shape. ▪ Edge protection shall be provided at the open ends and sides of all platforms, landings and along temporary stairways from which a person or object could fall a distance exceeding 2m. ▪ Guard rails shall be set at a height of not less than 900mm above the platform and no greater than 100mm outside the edge of the platform ▪ Toe boards shall not extend less than 150mm above the working platform surface. ▪ Edge protection shall be comprised of one of the following; ➢ Guard rails, mid rails and toe boards ➢ Guard rail panels ➢ Guard rail and in fill panels	2	5	10	1, 2 1, 2

							■ The clear width of an access platform shall not be less than; ➢ 450mm for persons and hand tools only. ➢ 675mm for persons and materials ➢ 900mm for emergency access ■ Safe Work procedures and or training for trades utilising the scaffold to access their activity are to nominate that no scaffold is to be altered or erected unless by it is completed by a certified scaffolder with applicable training for the task and with permission given from Taylor's Management ■ Regular inspections to be completed by Taylor's foreman and Site WHS Consultative process ■ Base of scaffold that may be potentially exposed to impact by mobile plant or construction vehicles is to be guarded using physical barriers or barricades are to be installed keeping plant and vehicles a safe distance from base of scaffold ■ Incomplete scaffolds are to display appropriate signage and have measures erected or in place that will stop unauthorised use. ■ Handrails, midrails, kickboards to be in place ■ Ladders to be inspected regularly for defects and clearly labelled for industrial use ■ Handover certificate issued by scaffolding contractor prior to scaffold being used ■ Scaffold to be installed as per reviewed drawings and modified and maintained in a safe manner ■ Scaffold to be adequately tied or racked as per engineers design ■ Scaffold to be set on firm footing and protected from plant movements. ■ Incomplete scaffolds are to display appropriate signage ■ Engineers design is to be followed on site for the erection and dismantle of scaffold. ■ Loading bays to be signposted with the engineered Safe Working Loads and is not to be exceeded				
6.	*EXCAVATION & TRENCHING*	Contamination of land and surrounding environment Mobile plant Collapse of existing buildings or excavation Collapse of trench Injury to persons	N				■ Site Safety Plan including SWMS reviewed prior to commencement ■ Obtain Geotech report on ground conditions ■ Where the stability of adjoining buildings, walls, or other structures is endangered by excavation trenching operations works are not to commence until a competent person approves works ■ Project plan and emergency control plan to include procedures / plan for managing emergency situation caused by a collapse of excavation and or trench, all parties involved in this process are to be made aware of this and include controls in work practices ■ Contractors performing excavation works on site are to submit SWMS that incorporate the information outlined in the project risk register, ■ Obtain Dial before You Dig report, if no clear or available ground searches to be conducted using ground penetrating radar. ■ Traffic Management plan reviewed and applicable to reduce the frequency that plant movements impact on other trades and the public ■ Taylor Project / Site Manager or nominated site representative will conduct a review of plant and required documents using S-F-18 Plant pre-start assessment prior to the plant been permitted on site, this shall be conducted irrespective of the duration or frequency the mobile plant is to be operated on site ■ When mobile equipment is operated adjacent to an excavation or trench a Warning system shall be utilized such as barricades, hand or mechanical signals, or wheel stops blocks. If possible, the grade should be away from the excavation / trench ■ Measures to be implemented to minimise noise and dust, monitors / suppression techniques to be nominated in contractor SWMS and implemented as required ■ Effective Sediment controls to be in place and maintained throughout the works ■ Barriers that will control excavation material on site and to be installed and star pickets to have bar caps ■ Air quality and noise monitoring to be undertaken as required ■ Stormwater treated and release in line with Statutory Authority				

							requirements/guidelines ▪ Wheel wash or cattle grid / shaker to be installed in order to minimise mud / slurry been transported on surrounding roads ▪ All pits, pier holes, manholes to be highlighted and barricaded to prevent persons and or plant falls into excavation. ▪ All trenches deeper than 1.5m to be battered stepped or raked in accordance with local statutory authority and/or code requirements; ▪ Suitable access shall be established to allow safe egress of plant and workers into and out of the excavation or trench ▪ Ladder access to be provided in accordance with local requirements; ▪ All temporary supporting structures to be provided with engineers certificate for the application on site. ▪ Stormwater to be collected and diverted away from excavations. ▪ Traffic Management plan reviewed and amended to keep plant movements away from excavations and persons who are designated observers during excavations. ▪ SWMS to nominate the selected control to be undertaken during activity ▪ Stormwater to be collected and diverted away from excavations. ▪ Flooding to be controlled in subcontractor SWMS.				1, 2
7.	***FORMWORK ERECTION AND REMOVAL***	Collapse of structure Falls from heights Unauthorised entry to formwork decks	Y	3	5	15	. ▪ Prior to the commencing the installation of any supports for suspended formwork decks and 'engineer' such as a suitably qualified civil engineer experienced in structural design, is responsible for overseeing the safe design and certification of the complete formwork structure. This includes the design of the formwork support structure, the formwork deck and connection details, and certification that the formwork drawings and other formwork documentation have been completed. ▪ High risk activity SWMS are required to cover formwork method and controls for convention formwork, decks, walls, columns, stairs, lift or stair cores, stripping formwork, ▪ Formwork erected above 2 frames to have full catch deck installed ▪ Lazy joist to extend a minimum of 1.5m in each direction if these are to be used to control persons and materials from falling below ▪ Formworker to perform as much of the erection from the ground as possible minimising the risk of falls from leading edges ▪ Leading edges to be maintained to a minimum do not open up multiple work faces ▪ Joist to be places at 450mm centres and secured in place ▪ Barricades, fencing, signage, bunting to be progressively installed to restrict access by others, ▪ Access and egress to new decks walls, lift or stair shafts should be adequate and acceptable and secured in place ▪ Temporary hand rails to be installed progressively and be constructed in an industry approved manner, ▪ All formwork to be erected and removed / stripped to the requirements of the local statutory authority / AS 3610 as a minimum standard and Taylors' requirements. ▪ Penetrations and deck openings to be covered and secured progressively ▪ Engineers report is not to be issued more than two working days prior to pour. Not to pour without certificate been available on site ▪ SWMS to be periodically reviewed for suitability as per risk categorisation. ▪ Secure all materials against possible windy conditions ▪ Suitable and correctly constructed work platforms are to be used by workers, working on columns, blade walls, lift shafts etc to be used at all times ▪ Taylor with the assistance of the subcontractor to enforce un authorised entry to decks under construction ▪ All timber / ply to be strapped before being craned	2	5	10	1. 2, 3
		Incomplete formwork decks	Y	3	5	15		2	5	10	1, 2

8	***STRUCTURAL STEEL ERECTION***	Falls structural collapse, inclement weather transport Mobile Equipment / Machinery Tools, Manual Handling, Temperature, Fire /Explosion, Electrical;	Y	4	5	20	▪ Safe methods of installation to prevent falls are to be established. Including the use of mobile cranes, scissor lifts, boom lifts; ▪ Safety harness permit to be issued by Taylor's ▪ Footings for support of columns during erection should be checked by a competent person to ensure adequate structural capacity for the erection conditions, such as wind loadings on columns to prevent rotation of column in the footing During erection, the stability of the structure should be verified a certified engineer or a competent person who has been nominated in the WHS management plan, in the following circumstances: ▪ At the end of the workday or during temporary cessations of work. The effectiveness of temporary guys, bracing and supports should also be inspected at the beginning of each shift ▪ When fastenings may be incomplete, for example, during lining up and adjustment of level procedures ▪ During high winds or when high winds are forecast ▪ When the structure or parts of it may be subject to construction loads. For example, the stacking of parts and lifting or freeing of components which may have become inadvertently wedged in position ▪ Where required by design, erection should start in a nominated braced bay in order that the structure can be plumbed and made self-supporting ▪ Loadings of concrete slabs to be approved prior to landing plant /equipment; ▪ All plant and equipment is to be inspected and recorded in the plant and equipment register and regularly inspected during the works; ▪ Only trained/competent appropriately ticketed personnel to operate mobile plant; ▪ Lifting gear to be inspected and certified and listed on register; ▪ Area below to be barricaded off & warning signage displayed; ▪ Ticketed Riggers to erect and install; ▪ Welding masks, screens to be used; ▪ All employees inducted into – Site Induction, Industry Induction & SWMS; ▪ MSDS's to be submitted for all products / chemical / substance; ▪ All roofs to have restricted access;	2	5	15	1,2
8 B	***POST TENSIONING***	• Dead / live end failure during stressing • Mechanical failure • Overloading of deck • Hazards to other trades working in the vicinity • Falls from heights •	Y	3	4	12	▪ SWMS to be completed by contractor controlling the isolation procedure for tensioning ▪ Stressor foreman to check with Taylors Site Manager prior to landing new coil & Bri-pack onto deck under construction ▪ All workers to remain 2 metres back from leading edge or perimeters if fall protection is not in place i.e. scaffold temporary hand rails etc. ▪ Jacks to be calibrated, cable pushers, grout pumps to be tested and tagged ▪ Only trained / competent personnel to operate jacks / strand pusher ▪ Backing board to be in place when final stressing ▪ Stressors Forman to obtain confirmation from Taylors Site manager that concrete has reached required strength prior to initial and finals stress commencing ▪ Area to be barricaded while stressing or installing ▪ Stressing cable to run through separate ducting/conduit where it is not possible to set coil up in close proximity to cable pusher to minimise whipping when passing through other work areas ▪ Exposed cable ends to have bar caps taped on ▪ Where possible use mechanical lifting device ▪ Install safety signage to inform workers of risks / dangers Ref: WorkCover NSW Code of Practice Mono-strand Post- tensioning of Concrete Buildings;	2	3	6	1,2
8 C	***REINFORCEMENT***	Falls Access Manual Handling, Temperature, Electrical, Noise, Environmental, wind, rain lightning dust Equipment / Machinery Tools, Waste Minimisation;	Y	3	4	12	▪ Site Safety Plan including SWMS reviewed prior to commencement; ▪ access to area of works or new decks shall only be through designated access ways or scaffold stairs ▪ Safety mesh to cover deep beams once reo is in place in beam thickenings; ▪ Works to be monitored during extreme conditions, and employees transferred to unaffected areas of the project during inclement weather conditions ▪ Reo required to be scheduled and placed on area of slab / new deck which shall minimise the requirement for employees to carry and transport	2	3	6	1,2

							required reo to desired location ▪ Steel fixer not to access new deck until perimeter scaffold and or temporary hand rails are installed ▪ SWMs to detail access requirements and systems required to be used when tying steel to walls, columns, stairs ▪ Bar caps to be installed to all starter bars or bars cranked; ▪ All column penetration to be covered if left unattended ▪ Power tools to be tested and tagged monthly, use only RCD protected supply; ▪ MSDS for epoxy; ▪ All employees inducted into – Site Induction, Industry and SWMS; ▪ PPE to be used. Safety Helmet, High Viz Clothing, Safety footwear, hearing protection, gloves & sunscreen				
9.	***PRECAST PANEL INSTALLATION (AFS)***	Panel failure Crane lifting failure Falls from heights man and materials Panels falling, causing personal injury and property damage Unauthorised entry to area	Y	3	5	15	▪ Site Safety Plan including SWMS reviewed prior to commencement ▪ All Precast- tilt up panels and erection requirements to comply with the requirements contained in the NATIONAL CODE OF PRACTICE FOR PRECAST, TILT-UP AND CONCRETE ELEMENTS IN BUILDING CONSTRUCTION 2008 ▪ Taylor's pre –cast *Hold Point* to be completed prior to any pre-cast installation ▪ Engineer to certify ground bearing capacity prior to erection of any precast panel ▪ All lifting chains, shackles, lifting clutches and lifting inserts to be certified prior to any lifting of panels ▪ Crane crew to be trained and competent in the erection of pre-cast panels ▪ Methods of fixing and positioning of panels to be identified in contractor SWMS ▪ No work to be occurring below panel erection areas ▪ Ensure crane operator is made aware of panel weight and crane load limit is not exceeded ▪ **Barricading and warning signage to be in place** ▪ Bracing installed as required and locked in place ▪ All required engineer's certification and signoff to be available prior to commencement ▪ Installers exposed to falls of greater than 2 metres are to be trained in working at heights and secured by safety harness ▪ Bracing plan to be signed off by engineer prior to commencement of installation	2	5	10	1, 2
10	Installation of tower crane /including Self erecting cranes	Legal requirements not met Crane failure / including support base Personnel falling whilst installing, relocating, and/or removing Hazard to Unrelated trades and public Overhead hazards Material falling Poor servicing of tower crane	Y	3	4	12	**before selecting a crane for a particular application, the PM shall obtain the following prior to determining the type of crane** ▪ The rated capacity of the crane. ▪ Classification of the crane considering the application, including the: ▪ type of loads to be lifted; ▪ mass of loads to be lifted; and ▪ Frequency of lifts. ▪ The Project / Site Manager shall ensure that prior to the erection of the crane a competent person (s) shall design, inspect and certify that the loads imposed by the crane can be sustained by the crane base, in piles & capping beam, ground or any other means of support relied upon ▪ Tower crane erection permit to be obtained from TCG and Council **ERECTION, COMMISSIONING AND DISMANTLING** 1. The name and competency of the person assigned to supervise the erection, commissioning or dismantling of the crane. 2. Any special transport conditions (permits) or project access or loading requirements for the delivery, storing and dismantling of the crane. 3. Copies of procedures policy and SWMS for the assembly or dismantling of the crane, also required for any additional Mobile Plant or equipment and tools that may be required as part of the erection / dismantle of the crane. 4. Provide evidence or written statement confirming that all parts and components used on the crane comply with the manufacturer's performance and strength requirements.	1	4	4	1,2,3

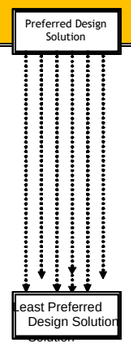
							5. Nominate Persons responsible for obtaining Statutory or council Permits required for the erection operation, or dismantling of the crane. 6. Traffic control requirements. **Maintenance and Thorough Examination** Prior to installation and operation of the crane the supplier shall provide to Taylor's • Evidence that the crane has undergone a periodic third party inspection to provide independent advice on whether the level of maintenance and repairs are in accordance with **AS2550.1-2011 (mandatory)** • Evidence that the crane has been thoroughly examined by a competent person before being commissioned for the first time, after any substantial alteration or repair • Evidence that the crane has been maintained in accordance with the manufacturer's instructions at intervals which consider the intensity of use, operating environment • ONE THE CRANE HAS BEEN ERECTED AND IS CERTIFIED BY 3RD PARTY FOR USE , THE CRANE IS NOT TO BE OPERATED UNTIL SUCH TIME AS THE **HSE MANAGER / CONSTRUCTION HAS** ISSUED APPROVAL FOR ITS OPERATION TO THE SITE TEAM				
11	PILING	Falls , Vehicles/ Mobile Equipment /Machinery/ Tools, Manual Handling, Electrical, Chemical/ Substance, Noise, & Temperature; Striking underground assets	N				▪ Prior to piling a geotechnical report of ground conditions needs to be included in risk assessment to ensure ground stability when machinery is on top of surface. I.e. ▪ Prior to piling a geotechnical report of ground conditions needs to be included in risk assessment to ensure stability of surrounding structures including walk ways and road ways ▪ Sufficient compaction to take load of equipment on the surface; ▪ All plant and equipment is to be inspected and recorded in the plant and equipment register and regularly inspected during the works; ▪ Only trained/competent appropriately ticketed personnel to operate mobile plant; ▪ Prior to commencing any piling works contractor is to ensure NO LIVE SERVICES are located directly below on in close proximity of the impact zone ▪ Subcontractor is to provide to Taylor's a detailed SWMS for activity 5 days prior to commencing works, SWMS is to include details of plant to be used list equipment to be used types of training required by workers performing the task ▪ Barrier to be in place around auger when boring pile; ▪ All bore holes to be immediately covered over if not immediately filled in				
12	ROOF and FACADE INSTALLATION INCLUDING SOFFIT, SERVICES, INSTALLATION AND METAL ROOF SHEETING, BOX GUTTERS, ROOF ACCESS/FALL PROTECTION SYSTEM	Falls Manual Handling, Temperature, Electrical, Noise, Equipment / Machinery Tools, Waste Minimisation, Chemical/ Substance;	Y	3	5	15	▪ Deck and Guardrail roofing edge protection to be installed prior to lifting roof sheets into place; ▪ Minimum two square lap(300mm) on roof safety mesh and stapled as per Taylor construction requirements and tied off as per code; ▪ Roof Installation safety sign off to be developed by Subcontractor; ▪ Height Mitigation Plan to be issued to Subcontractor; ▪ All plant and equipment is to be inspected and recorded in the plant and equipment register and regularly inspected during the works; ▪ Only trained/competent appropriately ticketed personnel to operate mobile plant; ▪ Installation of permanent roof access/fall protection system to be under taken prior to guardrail being removed ▪ All workers are to be inducted to reviewed work procedures prior to commencing works on site; ▪ Harnesses only to be used as a last resort and only then after consultation and approval from Taylor. ▪ Taylor Harness permits to be obtained and signed off. ▪ Working in fall restraint where possible; ▪ Welding masks, screens to be used and fire extinguisher to be near; ▪ All employees inducted into – Site Induction, Industry Induction & SWMS; ▪ .S.D.S's to be submitted for all products/chemical/ substance;	2	4	8	1,2

13	***HYDRAULIC INSTALLATION /DRAINAGE***	Falls Manual Handling, Temperature, Electrical, Noise, Kinetic, Equipment / Machinery Tools, Waste Minimisation, Chemical/ Substance, Pollution to Land/Water/Air, Waste Minimisation;	Y	3	3	9	▪ Site Safety Plan including SWMS's reviewed prior to commencement; ▪ All plant and equipment is to be inspected and recorded in ▪ the plant and equipment register and regularly inspected during the works; ▪ Only trained / competent appropriately ticketed personnel to operate mobile plant; ▪ Use only earth leakage protected supply; ▪ Use insulated lead stand or hooks to elevate leads. Inspect and test and tag monthly; ▪ All employees inducted into – Site Induction, Industry Induction & SWMS; ▪ PPE to be used, Safety Helmet, High Viz Clothing, Safety boots/shoes, appropriate safety hearing protection and sunscreen; ▪ MSDS's to be submitted for all products / chemical / substance; ▪ All waste to be placed in appropriate bins;	2	2	4	1,2
14	***MECHANICAL INSTALLATION***	Falls Vehicles / Mobile Equipment / Machinery Tools, Manual Handling, Temperature, Fire /Explosion, Electrical, Chemical/ Substance, Noise;	Y	3	3	9	▪ Site Safety Plan including SWMS's reviewed prior to commencement; ▪ All plant and equipment is to be inspected and recorded in the plant and equipment register and regularly inspected during the works; ▪ Only trained/competent appropriately ticketed personnel to operate mobile plant; ▪ Use only earth leakage protected supply; ▪ Use insulated lead stand or hooks to elevate leads. Inspect and test and tag monthly; ▪ Lifting equipment to be regularly inspected; ▪ All employees inducted into – Site Induction, Industry Induction & SWMS; ▪ SDS's to be submitted for all products / chemical / substance; ▪ PPE to be used, Safety Helmet, High Viz Clothing, Safety boots/shoes, appropriate safety hearing protection and sunscreen;	2	2	4	1,2

15	1. PLASTERBOARD / 2. CLADDING 3. BRICKWORK/ BLOCK WORK 4. FACADE INSTALLATION/ LOUVRES 5. FIRE SYSTEM INSTALLATION 6. RENDERING 7. TILING (wall, floor) & TERRAZZO/PAVING 8. PAINTING 9. JOINERY/FIT-OUT	Falls Material falling Manual handling Cuts and abrasions Mobile Equipment / Machinery Tools, Temperature, Electrical, Chemical/ Substance, Noise; Working in confine space Heat Use of ladders Use of mobile plant Poor aces to work face Storage of materials and dangerous goods Environmental hazards	Y	3	4	12	▪ All plant and equipment is to be inspected and recorded in the plant and equipment register and regularly inspected during the works; ▪ Only trained/competent appropriately ticketed personnel to operate mobile plant; ▪ Mobile platform to be erected in accordance to manufactures requirements (above 4 metres scaffolder) ▪ All employees inducted into – Site Induction, Industry Induction & SWMS; ▪ Laser in use signage to be displayed. ▪ All Brickies scaffold erected to be braced and sitting on staple surface ▪ Only experience operators to use Brick saw ▪ Brick saw to be set up in a manner to avoid runoff, and guarded against unauthorised use by others ▪ Exclusion zones to be installed in areas around and below work zones Mobile scaffold and or scissor lifts to be used when working at heights ▪ Employees competent in use of mobile plant to only operate plant ▪ Only platform ladders to be used for working off. extension ladders for access use only, if step ladders are to be used ladder permit to be issued by Taylors ▪ If painting on roof or painting work on split levels requiring the use of a step ladder ,step ladder to be used to be platform ladder , ladders shall not be used within 2 metres of fall area/s or open penetrations ▪ Work in well-ventilated area, if natural ventilation not possible use artificial ventilation or required PPE ▪ Paints and any chemicals required to be stored in lockable well-ventilated area ▪ When washing rollers & paint brushes do not allow water runoff into stormwater of site drainage system ▪ SDS's to be submitted for all products / chemical / substance; ▪ Mechanical lifting devices and trolleys to be utilised; ▪ PPE to be used. Safety Helmet, High Viz Clothing, Safety boots/shoes, appropriate safety hearing protection & sunscreen; ▪ Mixing buckets /mixer wash out to be disposed of appropriately; ▪ **Woking platforms / scaffold / EWP to be installed and operated by competent person/s only** ▪ Preference is not to have any No MDF Particle Board cut on site. If minor cuts are required, all cutting will only be done in well ventilated isolated room using a saw fitted with vacuum away from other trades or members of the public ▪ Mechanical lifting devices to be utilised to move heavy material ▪ Suitable industrial strength working platforms to be used at all times	2	3	6	1,2

Environmental Risk Matrix

WHEN THE RISK IS NOT REASONABLY PRACTICABLE TO ELIMINATE WORKPLACE HEALTH AND SAFETY LEGISLATION REQUIRES THE HIERARCHY OF CONTROL MUST BE IMPLEMENTED

	Hierarchy of Controls	The Measure of what is Reasonably Practicable
	**1) Eliminate the hazard altogether, e.g. design change;** **2) Substitute the hazard with a safer alternative ,e.g. use alternate materials, substances;** **3) Isolate the hazard from anyone who could be harmed, e.g. provide an enclosure, or fencing;** **4) Use Engineering controls to reduce the risk, e.g. provide guards to machinery;** **5) Use Administrative controls to reduce the risk, e.g. provide adequate training and documented procedures;** **6) Use personal protective clothing & equipment (PPE), e.g. provide hand, ear, and eye protection**	Something is *practicable* if is capable of being done. Whether it is also *reasonable* must take into account: • the severity of any injury or harm to health or the environment that may occur • the predictability of the risk and the likelihood of the injury or harm occurring as a result • how much is known about the risk and the methods of reducing, eliminating or controlling it and the availability, suitability and cost of the safeguards. The risk and its potential severity of injury or environmental harm must be weighed against the overall cost and feasibility of the controls needed to remove it. Common practice and knowledge throughout a relevant industry is taken into account when determining whether a control is 'reasonably practicable'. Individual employers could not claim that they did not know what to do about certain hazards if those hazards are well known and documented for their industrial sector and controls are readily available. While cost is a factor, it is not an excuse for failure to provide appropriate controls, particularly where there is risk of serious, or frequent but less severe, injury or environmental harm.

Likelihood Multiplied -----By Consequence	5 Almost Certain	4 Likely	3 Possible	2 Unlikely	1 Rare
5 Catastrophic **S: Fatality, long term illness** **E: Long term perm damage**	**Extreme (EXT) 25**	**Extreme (EXT) 20**	High (H) 15	Moderate (M) 10	Moderate (M) 5
4 Major **S**: Extensive injury **E**: Med effect/off site release	**Extreme (EXT) 20**	High (H) 16	Moderate (M) 12	Moderate (M) 8	Low (L) 4
3 Moderate **S**: Medical treatment **E**: Mod effect/off site emission	High (H) 15	Moderate (M) 12	Moderate (M) 9	Moderate (M) 6	Low (L) 3
2 Minor **S**: First Aid **E**: Min off site impact	Moderate (M) 10	Moderate (M) 8	Moderate (M) 6	Low (L) 4	Very Low (VL) 2
1 Insignificant **S**: Pain, inconvenience **E**: No offsite impact	Moderate (M) 5	Low (L) 4	Low (L) 3	Very Low (VL) 2	Very Low (VL) 1

ENVIRONMENT SIGNIFICANCE:

EACH ENVIRONMENT ASPECT SHALL BE ASSESSED AND GIVEN AN IMPACT STATUS

E = Significant in Emergency Situations;
S = Significant in Routine Operations;
M = Minor significance in Routine Operations;
N = No significant impact in Routine Operations

Activity	Environ-mental Aspect	Environ-mental Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Risk Rating	Signifi cance	Monitoring Required			
							Resp.	Type	Freq.	Record
SECTION D: ENVIRONMENTAL ASPECTS ***E*** **= Significant in Emergency Situations;** ***S*** **= Significant in Routine Operations;** **M** **= Minor significance in Routine Operations;** **N** **= No significant impact in Routine Operations**										
Demolition Excavation Construction	Dust Generation Particulate Emissions (General)	Air pollution	NSW - POEO Act (Sections 124-126)	• Adhere to dust control methodology and maintain all work areas and ensure each task has controls in place • Install shade cloth on perimeter fencing • Vehicle corridors will be clearly identified and restricted to control vehicle access onsite. • Limit vehicle speed onsite to 40km/hr • Fixed and mobile (water tanker) water sprays • Reduce work activities /stop work during moderate to high wind velocity periods. • Maintain equipment. Smokey plant to be stopped until repair works completed.	9	S	SM	Visual Inspection	Daily	Diary Site Inspection Checklist
Demolition	Dust Generation (Demolition)	Air pollution	NSW - POEO Act (Sections 124-126)	• Breakers and crushing equipment to be fitted with dust filtration equipment or water sprays to control dust emissions. • Adhere to dust control methodology and maintain all work areas and ensure each task has controls in place • SOH procedures and processes to followed at all times	9	S	SM	Visual Inspection	Daily	Diary Site Inspection Checklist
Construction Excavation	Dust Generation (Construction)	Air pollution	NSW - POEO Act 1997 (s 124-126)	• Minimise areas of site disturbed and stage works where possible. • Dust suppression strategies to be used, i.e. water sprays, soil binders, hydro mulching, controlled speed onsite, roadbase + shaker grids. • Stockpiled topsoils and rubble will be restricted to 4m high. Stabilise if insitu for >4-6months. • On site drilling or coring operations will be undertaken by equipment fitted with air filtration equipment.	9	S	SM	Visual Inspection	Daily	Diary Site Inspection Checklist
Demolition Excavation Construction	Odour	Air pollution Odour	NSW - Protection of the Environment Operations Act 1997, s 129; Common law of nuisance; Local Government Act 1993, s125	• If odorous materials uncovered, recover immediately. • Seek advice from consultant regarding soil /materials management.	9	S	SM	Visual	Daily	Diary
Demolition Excavation Construction	Emissions to Air	Air pollution	NSW - Protection of the Environment Operations Act 1997, s 124-125, s 139	• Ensure machinery is maintained correctly • Ensure ventilation and exhaust is supplied to work areas as required	9	S	SM	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist
Construction Fitout	Greenhouse	Resource use Air pollution Global warming	AGBR Greenstar	• Ensure purchased electrical products/whitegoods products comply with specification for CFCS & energy ratings • Low solvent paints to be used as a priority • Building to conform to AGBR or Green Star performance criteria • Deliveries / transport from site effectively planned to limit inefficient transport, assist back loading etc	4	M	SM			
Demolition Excavation	Stormwater (Discharge from sedimentatio	Water contamination	NSW - Protection of the Environment Operations Act 1997, s 120, 122; Protection of the Environment Operations (General) Regulation 1998,	• Water quality to meet ANZECC Water Quality Guidelines. → **PH 6.5- 8.5, Turbidity <50NTU, No visible oil & grease** • Obtain advice for use of flocculants to settle sediment from water. • Sedimentation pond to be maintained at low levels to ensure capacity	9	S	SM	Visual Inspection	Daily	Diary Site Inspection

Activity	Environ-mental Aspect	Environ-mental Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Risk Rating	Signifi cance	Monitoring Required			
							Resp.	Type	Freq.	Record
Construction	n basins, flooding)		cl 55; Local Government Act 1993, s 638ANZECC Water Quality Guidelines NSW Department of Housing's Managing Urban Stormwater (2004)	during rainfall event. • DO NOT DISCHARGE IF CONTAMINANTS SUSPECTED. Obtain advice.						Checklist
Demolition Excavation Construction	Adjoining waterways (dewatering, soil erosion & runoff)	Water contamination, Erosion	NSW - POEO Act 1997(s 120, 122), PEO (General) Regulation 1998,cl 55; Local Government Act 1993, s 638] ANZECC Water Quality Guidelines NSW Department of Housing's Managing Urban Stormwater (2004)	• Site is in close proximity to Sydney Harbour and run off from site to the harbour would be a major environmental hazard • Temporary drainage systems will be established to divert clean waters around the land development areas as appropriate. • Erect silt fences, bunds and construct swale drains. • Inspect at least weekly & after rainfall • Maintain and/or replace as required. • Street sweepers will be employed on regular basis • Install erosion and sediment controls before work starts. • Leave as much vegetation as possible. • Install temporary fences to define 'no go' areas in those areas that are not to be disturbed. Include the area under the canopy of trees so that tree roots will not be damaged by soil compaction. • Divert run-off from upslope away from the site, but ensure that you do not flood your neighbours. For example, dig drainage channels (catch drains sized to accommodate the upslope catchment). • Install sediment controls downslope of the site to catch sediment. • Leave or lay a kerbside turf strip (for example, the nature strip) to slow the speed of water flows and to trap sediment. • Limit vehicle entry and exit to one point, and lay geotextile and blue metal to stabilise it for all-weather access. • Clearly mark the access point and give an access map to all suppliers. • Protect all drains with a gravel sausage made from geotextile filled with blue metal. • Save the topsoil and stockpile it for use later in revegetation. Never place it around trees as this will kill them. • Store all stockpiles and building materials behind sediment fences. Cover them with plastic to prevent erosion by wind. • Get council approval before placing stockpiles or other materials on the nature strip or footpath. • Connect downpipes from the guttering to the stormwater drain as soon as the roof goes on.. • Surround the wash-out area with a sediment fence that slows down the water flow. Site this area upslope of another sediment control. • Fill in all trenches immediately after services have been laid. • Spread the topsoil back when the work is finished and revegetate the site as soon as possible to control erosion. • Remove the sediment and erosion controls only after this is done. • Sweep the road and footpath regularly. Washing down is not a preferred method • Never place any materials in the gutter or on the road. You will be fined for this. • Filter or settle-out all water pumped off the site. The water must be clear before it enters the stormwater system or creeks. Gypsum can be applied to muddy (turbid) water to help clay particles settle	9	S	SM	Visual Inspection	Daily	Diary Site Inspection Checklist

Activity	Environ-mental Aspect	Environ-mental Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Risk Rating	Signifi cance	Monitoring Required			
							Resp.	Type	Freq.	Record
Construction Fitout	Sewer (Trade waste)	Water pollution	NSW - Protection of the Environment Operations (General) Regulation 1998, cl 55; Sydney Water Act 1994, s 49; Hunter Water Act 1991, s 31; Local Government Act 1993, s 68 (cl 4 of Part C of the Table)], Consent to Discharge Industrial Trade Wastewater, Special Conditions Schedule 6 paragraphs 1-2	• No paints or other chemical to be poured down drains. • If required, obtain trade waste licence for discharge or local council approval	6	S	SM	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist
Excavation	Land (Acid sulphate soils, contaminated soils, imported fill)	Contaminated waterways Soil contamination	NSW - Contaminated Land Management Act 1997, s 60; Contaminated Land Management Regulation 1998, cl 3 Acid Sulphate Soils Management Advisory Committee	• Potential for **acid sulphate soils** will be assessed based on the sites proximity to low-lying coastal areas eg. Coastal plains, wetlands and mangroves where the surface elevation is less than five metres above mean sea level. • Stop work if unexpected potentially **contaminated soils** are encountered. • Obtain waste classification from consultant in accordance with DECC guidelines Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-Liquid Wastes (June 2004) www.environment.nsw.gov.au/waste/envguidlns/index.htm. • Where required a Remediation Action Plan will be developed and implemented. • Sign off by Site Auditor may be required to validate cleanup. • Any groundwater or ponded rainwater will be tested and classified by consultants prior to disposal. • Check geotech requirements. Ensure soil classification suitable for land use ie. Schools, residential, commercial etc.	6	M	SM			
Demolition Excavation Construction	Land	Contaminated waterways Soil contamination	NSW - Contaminated Land Management Act 1997, s 60, Contaminated Land Management Regulation 1998, cl 3, Protection of the Environment Operations Act 1997, s 142A-E ANZECC Publication: Organochlorin Pesticides Waste Management Plan (1999)	• If odorous soils (rotten egg gas) or grey/yellowed mottled soils encountered, stop work. • If suspected, consultant to prepare Acid Sulphate Soil management Plan (ASSMP). • Excavation and neutralisation to be supervised by consultants as per ASSMP. • The requirements to **import fill** will be minimised by utilising on site cut material wherever possible. • All analysis certificates shall be handed over as part of the completion documents to the client. • Record all imported fill on FormHSE-066 Product Identification & Traceability. • Mark up locations where fill compacted in site plan. Survey if required	6	M	SM	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist
Design Procurement	Resources – water, materials, energy	Resource use Landfill Air pollution		• For design and construct jobs, refer to the design specification for ESD requirements and product choices. • Buy local wherever possible to reduce impacts of transport on environment	6	M	SM	Design review	As per review schedule	Design meeting minutes, purchase orders/contracts
Demolition Excavation Construction	Noise	Community complaints	NSW - POEO Act (Sections 139, 140)	• Refer to DA for noise restrictions and working hours. • Use hoarding or acoustic mats as required. • Situate generators and plant away from sensitive receivers. • Turn off machinery. Maintain equipment and stop noisy plant until repaired. • No early deliveries.	9	S	SM	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist

Activity	Environ-mental Aspect	Environ-mental Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Risk Rating	Signifi cance	Monitoring Required			
							Resp.	Type	Freq.	Record
Demolition Excavation Construction	Vibration	Community complaints, Damage to structures	NSW - POEO Act (Sections 139, 140)	• Conduct dilapidation report prior to work starting. • Limit the use of vibratory rollers, rock breakers, impact piling etc adjacent to buildings (>7m). • Regenerated noise may also transfer through bedrock and building structures. • Obtain advice if required	9	S	SM	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist
Demolition Excavation Construction	Community	Community Concerns Noise Restricted access		• Provide information (eg. Signage, letterbox drops) to community on programmed works • Provide contact name for inquires. • Advice locals of “noisy” work. • If required in noise sensitive areas and/or in response to complaints, engage consultants to undertake monitoring at nominated receivers. • Vehicles will not be permitted to queue outside the site or in residential areas unless a defined area is established which does not adversely impact on neighbours.	9	S	SM	Visual	Daily	Diary, Community Feedback form/Non-conformance report
Demolition Excavation Construction	Flora	Destruction of flora Erosion	NSW - State Environmental Planning Policy No 14 - Coastal Wetlands, s 7(1, 5), 7A; Native Vegetation Act 2003, s 12; Forestry Act 1916, s27(1); National Parks and Wildlife Act 1974, s 117(1), 118(1)]	• Review planning documentation to determine the presence of any protected, threatened or significant flora. Obtain approvals as required. • Engage aborist to develop tree management plan or refer DA and aborist reports. • Education and training at site toolbox meetings and induction. • Report all sightings to the site manager. • Fence or barricade protected flora at the drip zone. Erect Keep Out signage. • Do not stack materials under/against trees. • The potential for reuse of vegetative wastes by mulching, chipping or on-site placement of trunks or limbs shall be reviewed for each project.	6	M	SM	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist
Demolition Excavation Construction	Fauna	Destruction of fauna	NSW Environmental Planning and Assessment Act 1979, s 5A, 78A(8))(b), 79B, 111 & 112-112E Threatened Species Conservation Act NSW 1995; National Parks and Wildlife Act 1974, Part 8A	• All native animals protected. • Review planning documentation to determine the presence of any protected, threatened or significant fauna. Obtain approvals as required. • Site rules/induction to include information regarding of the • For injured animals, to relocate call WIRES	6	N	SM	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist
Demolition Construction	Waste Litter	Landfill Contamination of waterways Soil contamination	NSW - POEO Act 1997, s 116, s 142, s 143, 144-146NSW - Waste Avoidance and Resource Recovery Act 2001, NSW Crown Lands Act 1989, s 155, Management of Waters and Waterside Lands Regulations - N.S.W., cl 13;, PEO (Waste) Regulation 2005, cl 49 12, 16, 17, 23	• Hazardous materials surveys to be completed. • Materials to be removed prior to demolition • Registers and waste disposal requirements as per WorkCover and DECC/EPA requirements for removal, storage, transport and disposal. • General site wastes –use one bin system and sort in contractors yard to produce quantities of material for recycling, reuse, disposal etc. • Empty drums are to be taken off-site for disposal. • Do not overfill skip bins. Provide plenty for use. Cover where potential for windblown litter.	9	S	SM	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist
Pre-construction	Landfilling	Landfill Contamination of waterways Soil	NSW - POEO Act s 116, 142	• Reduce, reuse and then dispose • Dispose of hard construction wastes for recycled gravels and sands • Do not send soil to landfill until alternatives for beneficial reuse have been explored as per consultants advice.	9	S	SM	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist

Activity	Environ-mental Aspect	Environ-mental Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Risk Rating	Signifi cance	Monitoring Required			
							Resp.	Type	Freq.	Record
		contamination		• Consideration should be given to chipping of the vegetation and reuse • Reuse packaging to protect works						
Construction	Chemicals	Contamination of waterways Soil contamination Fumes Worker safety	NSW - POEO Act s 116, s 142, NSW - Occupational Health and Safety Regulation 2001, Consent to Discharge Industrial Trade Wastewater, Special Conditions Schedule 6 paragraphs 1-2	• Chemicals to be **stored** in bunded areas (impervious + 110% of largest container) away from stormwater drains & pits. • Refer Workcover Code of Practice for Storage & Handling of Dangerous Goods, DECC Guidelines for Bunding & Spill Management. Appropriate chemicals storage is in conformance with: → AS 1940 The Storage and Handling of Flammable and Combustible Liquids → Storage and Handling of Dangerous Goods WorkCover Code of Practice 2005– refer p. 86 • DEC requirements *http://www.environment.nsw.gov.au/mao/bundingspill.htm* • Ponded water within **bunds** will not be discharged to stormwater. • **Fuel and hydraulic leaks** to be cleaned up immediately. • **Drilling muds** to be contained within bunds and reused. • **Liquid paints** NOT to be poured down drains. Spread on waste cardboard or similar and leave to dry. Paint brushes to be rinsed and paint solids allowed to settle. Container of paint solids to be disposed to liquid waste facility. • Construct **concrete washout** pit for washout, away from stormwater drains. Send back to batch plant where possible. • **Concrete cuttings** to be contained and wetvac to prevent runoff into stormwater drains. • Storage of **bulk fuels** (>200L) on site is prohibited. All refuelling shall be undertaken by a mobile facility with appropriate spill control and containment control equipment. • SDS's must be provided to the Foreman prior to a chemical being received on site and by subcontractors using chemicals/products.	9	S	SM	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist
Demolition Excavation Construction	Traffic	Site access restrictions Community safety Pollution	Local Government Requirements	• Develop and implement traffic management plans. Submit to local council as required. • Signage and notices regarding disruptions. • Use crushed concrete, mulches etc along site access roads. • Install shakers and wheel wash as required. • Organise regular street sweeping. • Haulage routes and rules will be provided to subcontractors prior to commencing on site. • All loads of soil, demolition wastes, general wastes etc are to be tarped	9	S	SM	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist
Demolition Refurbish-ment	Hazardous Materials (Lead paint)	Air contamination Contaminated waterways Soil contamination	NSW - POEO Act s 142	• If disturbing or removing dust or paint that could contain lead, wear a respirator or dust mask and protective clothing. • Seal the rooms with plastic. • Do not use open-flame torches on lead paint as they create lead fumes. If you must use a heat gun, use it on the lower setting to keep the paint temperature below 370 degrees C. • Avoid using dry-sanding techniques: keep the surface wet to minimise dust. • Don't sweep or use a domestic vacuum cleaner to clean up; lead dust will pass right through it. Use a high-efficiency particulate air (HEPA)	9	S	SM			

Activity	Environ-mental Aspect	Environ-mental Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Risk Rating	Signifi cance	Monitoring Required			
							Resp.	Type	Freq.	Record
				vacuum cleaner. These can be hired. • When finished, wipe all surfaces with a damp cloth and high-phosphate detergent. • Wash face and hands before eating, drinking or smoking. • Refer to **Lead Safe: A Renovator's Guide to the Dangers of Lead** and the Australian Standard AS4361.2 Guide to Lead Paint Management: Part 2 Residential and Commercial Buildings 1998						
Demolition Fitout	Hazardous Materials (Asbestos)	Workers health Air contamination Contaminated waterways Soil contamination	NSW - POEO Act s 142, NSW PEO (Waste) Regulation 2005, cl 42 Asbestos removal code	• A licence subcontractor must be used to demolish, remove, repair or disturb asbestos. • A WorkCover asbestos licence is required to remove 10 square metres or more of bonded asbestos • A Workcover licence is required to remove, repair or disturb friable asbestos	12	S	SM	Visual Inspection	Daily	Diary
Demolition Excavation Construction	Aboriginal heritage	Destruction of heritage items	NSW - Heritage Act 1977, s 146, National Parks and Wildlife Act 1974, s 90-91	• Education and training at site toolbox meetings and induction. • **It is illegal to destroy heritage items.** • Review local or regional environmental plans, or on the State Heritage Register is to be consulted prior to work starting onsite. • Obtain excavation permit issued by the Heritage Council of NSW if required. • Any heritage relics or sites discovered during construction shall be reported to the NSW Heritage Office. • Work in the subject area to cease until specialist advice is obtained. • The area will be fenced and signs erected to restrict access. • Heritage consultants may be required to provide advice on demolition/construction processes and finishes.	9	S	SM	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist
Demolition Excavation Construction	European heritage	Destruction of heritage items	NSW - Heritage Act 1977	• Education and training at site toolbox meetings and induction. • **It is illegal to destroy heritage items.** • Check the DECC Aboriginal Heritage Information Management System (AHIMS). • Also check the register of the National Estate. • Obtain approval from NPWS (Section 90 consent). • Any evidence of Aboriginal relics discovered during construction shall be reported to the National Parks and Wildlife Service. • Local land Land Council representatives may be required to monitor stripping/excavation. • Work in the subject area to cease until specialist advice is obtained. • The area will be fenced and signs erected to restrict access	9	S	SM	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist
Demolition Excavation Construction	Emergency Preparedness	Worker health Air contamination Contaminated waterways Soil		• Spill kit onsite. • Refer to the SDS for advice and procedures. • All spills must be reported to the Site Manager & cleaned up. **Complete TCG Accident /Incident report.** • Sediment pond pumped out regularly to maintain capacity in case of emergency • Ensure you know where stormwater drains are and have materials to block them in case of a fire	9	S	SM	Inspection	Weekly	Site Inspection Checklist

Activity	Environ-mental Aspect	Environ-mental Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Risk Rating	Signifi cance	Monitoring Required			
							Resp.	Type	Freq.	Record
		contamination								
Demolition Excavation Construction	Notifiable pests - Fire Ants	Destruction of native species		• Notify a DPI inspector within 24 hours if you see a fire ant (a notifiable pest)	6	N	SM		Weekly	Diary

Appendix K Noise and Vibration Management Plan

Appendix L Consultation with Relevant Authorities

From: Sarah Thomson <Sarah.Thomson@epa.nsw.gov.au>
Sent: Monday, 13 January 2020 2:14 PM
To: Luke Wadsworth <luke.wadsworth@hibbs.com.au>
Cc: Anna Timbrell <Anna.Timbrell@epa.nsw.gov.au>
Subject: FW: Sydney Opera House - CEMP Requirements

Dear Mr Wadsworth

I refer to your email to Environment Line about refurbishment works at the Sydney Opera House and the preparation of the Construction Environmental Management Plan.

As a matter of policy, the EPA does not provide comment on environmental management plans as it is important to maintain regulatory arm's length from matters for which the EPA is the appropriate regulatory authority.

You may wish to refer to the EPA's submission on the environmental impact statement for information about site specific concerns identified by the EPA for this project. I have attached a copy of this submission for your assistance.

Regards

Sarah

Sarah Thomson
A/Manager Regional Operations - Metropolitan Infrastructure
Metropolitan Branch, NSW Environment Protection Authority
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Report pollution and environmental incidents 131 555 (NSW only) or +61 2 9995 5555

---------- Forwarded Message ----------
From: Luke Wadsworth [luke.wadsworth@hibbs.com.au]
Sent: 8/01/2020 3:10 PM
To: info@epa.nsw.gov.au
Cc: rizwan.javed@hibbs.com.au
Subject: Sydney Opera House - CEMP Requirements

Good afternoon,

I am writing to you on behalf of Hibbs and Associates Pty Ltd, we have been contracted by Taylor Construction Group Pty Ltd (construction contractor) to prepare a Construction Environmental Management Plan (CEMP) for the upcoming refurbishment works at the Sydney Opera House.

The planned development involves the refurbishment of the following:

? Concert Hall

? Creative Learning Centre

? Entry Foyer Project

This project is designated as a State Significant Development by the NSW Minister for Planning under the following development application: DA3-SSD8663. As such an Environmental Impact Statement (EIS) has been carried out to support the application. Development consent has been granted and therefore further management plans are required.

As a requirement of the development consent we are obliged to contact the NSW EPA to confirm whether there are any specific environmental measures or requirements we must considered during site establishment and construction;

If you could please provide us with any specific requirements that you might have for the construction and site establishment phase we will then be able to address them in the CEMP.

We would also be happy to provide you with any additional information to inform your requirements.

Kind regards,

HIBBS
Excellence in Risk Management

Luke Wadsworth

Environmental Consultant

BSc, GDipEnvMgt

Suite B/255 Rawson Street

25TH ANNIVERSARY

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Appendix M Hazardous Materials Management Plan