



Grocon Constructors (NSW) Pty Ltd
THE RIBBON SYDNEY
Construction Management Plan

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Issue:1
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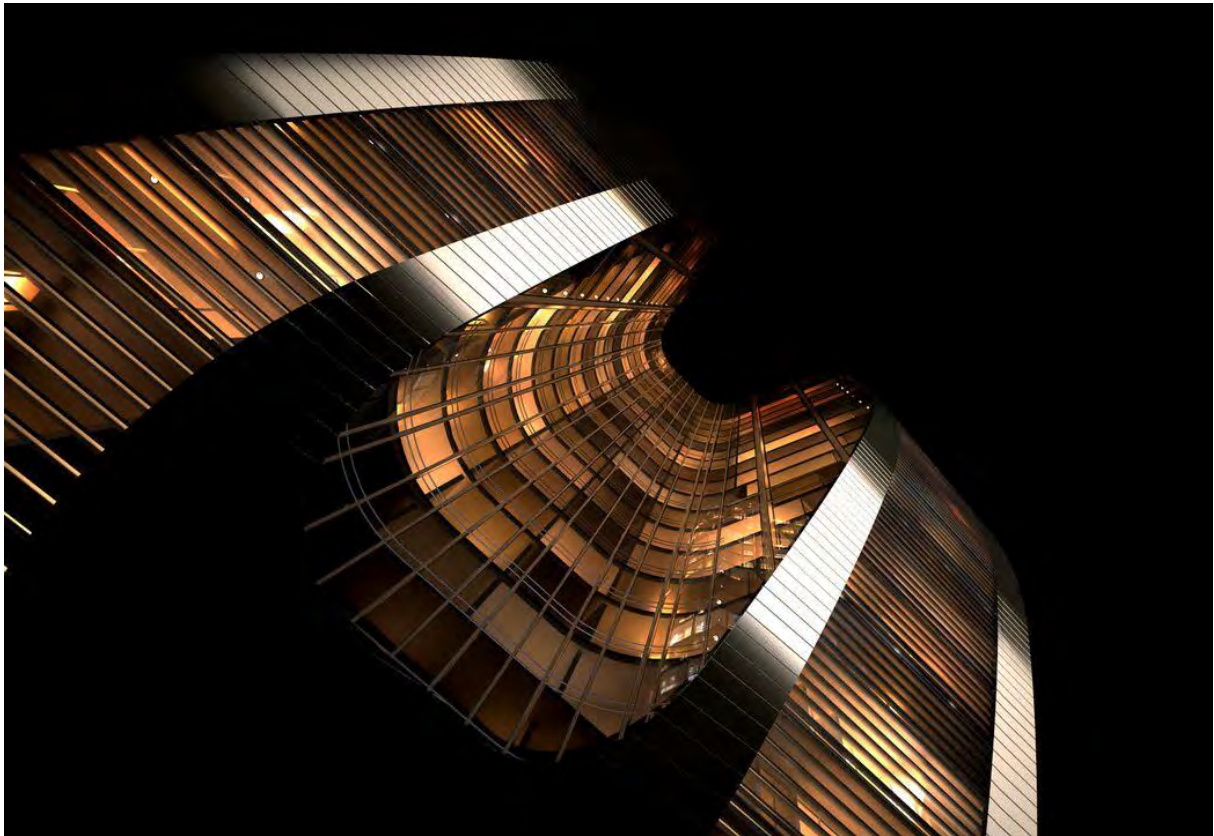


EXECUTIVE PROJECT MANAGER **Authorised (When approved):**

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1. Authorisation, Issue & Review

1.1 Authorisation

The issue and use of this document is approved and it is the responsibility of all Grocon personnel to ensure that work is carried out in accordance with this Construction Management Plan.

Position	Name	Signature	Date
National Construction Manager	Andrew Merriel		8-12-15
Executive Project Manager	Justin Murphy		8-12-15

1.2 Issue and Review

This Construction Management Plan has been developed in consultation with the NSW Construction Management Team and NSW Safety Team.

Revision	Date	Comments	Approved By
1	16th December 2015	New DA submission	Justin Murphy

1.3 Distribution List

The register below identifies the distribution of registered and therefore controlled copies, of this Construction Management Plan. It will form the basis for the distribution of any amendments.

Revisions to this plan will be distributed to all holders of controlled copies. These holders shall be responsible for updating the document held by them and removing the sections that have been revised.

This document is available electronically via the electronic document transmittal system.

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Controlled Copy No.	Issue Date	Registered Holder Name	Registered Holder Position
Master	8th December 2015	Antony Baroni	Structure Manager

2. Introduction

This Construction Management Plan (CMP) has been prepared to communicate the management strategies that will be utilised on The Ribbon. It describes the construction methodologies, processes and procedures from site establishment through to practical completion.

Specifically this document addresses the following items:

- Safety
- Grocon Commitment, Project Overview and Interface and Management & Training
- Project Structure
- Design Finalisation & Procurement
- Site Location, Hours of Work and Site Interface
- Early Works, Site Boundary & Hoardings
- Site Establishment and Site Access
- Pedestrian, Emergency Vehicle and Traffic Management
- Programming and Planning
- Stormwater and Erosion Management
- Construction Methodology – Demolition, Groundwork's & Main Building Works Phases
- Materials Handling
- Perimeter and Overhead Protection Systems
- Environmental Management
- Noise & Vibration Management
- Quality Management
- Completion Plan
- Documentation Management
- Industrial Relations
- Emergency Response Procedures
- Vodafone Communications tower construction
- Demolition
- Infrastructure diversions

The Construction Management Plan will be developed and revised throughout the construction process.

Notes:

1. **THE RIBBON SYDNEY** Development is referred to as "The Ribbon"

3. Safety

Safety is Grocon's highest priority.

Safety is one of Grocon's core values and it is imperative that the health, safety and wellbeing of all The Ribbon Stakeholders including, subcontractors, consultants, Grocon employees and staff, any visitors to the site and most of all the general public, are addressed in all of our design, planning and management decisions.

A comprehensive Workplace Safety Management Plan (Refer Section 30) which addresses how Grocon intends to manage health and safety and compliance with all requirements of Work Health & Safety Act 2011 and Work Health and Safety Regulations 2011 during the construction of The Ribbon has been developed and is included in Appendix A of this Construction Management Plan.

4. Grocon Commitment

The Directors and all staff of Grocon involved in The Ribbon are committed to:

- Implementing responsible and practical management procedures to minimise any impacts and disruptions during the construction process to surrounding infrastructure.
- Complying with all relevant regulation, legislation and authorities to manage the construction process and procedures.
- Managing and implementing a safe system of work for all personnel working on or visiting the site.

5. Project Overview and Interface

The proposed development of The Ribbon, Sydney, represents a landmark project for the city of Sydney. The 24 storey development will compliment Darling Harbour and provide a new hotel ,retail, apartments and commercial hub.

The IMAX theatre will be re-constructed and supported by entertainment, retail and commercial office space.

The site comprises the existing IMAX theatre and is bounded to the north by the elevated Western Distributor Freeway & to the south by the elevated Western Distributor Freeway and the Bathurst Street exits. To the east, the site is bounded by Harbour Street & Wheat Road. The site boundary defines the western elevation.

The proposed development will involve the demolition of the existing IMAX building. The new The Ribbon building will, generally speaking, comprise a reinforced concrete structural steel structure which will cantilever over the public domain, Wheat Road and Harbour Street.

The new development will contain approximately 1,799m² of retail, 3,217m² of entertainment. 450m² of commercial office space, 18,260m² of Serviced Apartments, and 30,820m² of hotel area (all areas are GFA).

6. Management and Training

Each Grocon team member has both general and specific responsibilities regarding the implementation of this Construction Management Plan.

All Grocon staff, consultants and subcontractors are required to undergo a site specific induction which outlines the construction procedures and management framework specific to The Ribbon. The induction is aimed at instilling in each person a common-sense approach to safety, to ensure they employ the responsible environmental practices and awareness needed to deliver the project in accordance with the relevant regulations and standards.

A record of all site inducted personnel will be retained on site.

All site personnel are required to have completed their Workcover OH&S General Induction for Construction Work in NSW ("White Card"). A copy of the White Card, and any relevant qualifications, will be recorded and kept on file on site. This requirement will be confirmed during prior to the site induction.

The Project Manager will ensure that all personnel are made aware of their obligations under this Construction Management Plan and the general compliance with Regulations, Acts and Codes of Practices having jurisdiction over the works.

The Project Manager shall:

- Co-ordinate the implementation of the Construction Management Plan
- Co-ordinate the monitoring and inspection programmes;
- Ensure personnel are trained and aware of obligations;
- Ensure that subcontractors are aware of their safety and environment obligations; and,
- Oversee other day-to-day activities required by the Construction Management Plan.

7. Project Structure

7.1 Resource Structure

The Ribbon resource structure is made up of, but not limited to the following:

Role	Name
Developer / Client	Grocon Darling Harbour
Design & Construction Contractor	Grocon Constructors NSW
Quantity Surveyor	RLB
Architect	Hassell
Documentation Architect	Webber & Associates
Structural Engineer	Bonacci Group
Mechanical Services	Aecom
Electrical Services	Aecom
Hydraulic Services	EWFW
Fire Services	EWFW
Fire Engineering	ARUP
Lift Services	NDY
ESD Consultant	Cundall
Landscape Architect	Aspect Studios
Façade Engineer	Aecom
Traffic Engineers	GTA Consultants
Acoustic Consultants	Acoustic Logic
Planning Consultant	JBA Urban Planning

7.2 Project Organisational Structure

The Ribbon Project Team's Senior personnel are depicted below.

The positions held by the respective personnel have responsibility and authority to ensure that works carried out by Grocon, our Consultants and Subcontractors meet the requirements of the Development Brief, Specifications and Drawings and this Construction Management Plan.

The project team will be responsible for the construction and completion of the project in accordance with the requirements of the Project Agreement. Roles and authorities of the Grocon personnel associated with the project will be further detailed in The Ribbon Work Health and Safety Management, the Project Quality Plan and the Environmental Management Plan.

7.3 Project Contacts/ Structure

Role	Name	Telephone	Email/Facsimile	Company / Address
Client/ Developer Managing Director	Grocon	02 8249 7000		Grocon Developments (NSW) Pty Ltd Level 4, Legion House, 161 Castlereagh Street, Sydney NSW 2000
NSW General Manager	Chris Carolan	02 8249 7000	ChrisCarolan@grocon.com.au	Grocon Developments (NSW) Pty Ltd Level 4, Legion House, 161 Castlereagh Street, Sydney NSW 2000
Project Director	Paul Yousseph	0400 362 287	PaulYousseph@grocon.com.au	Grocon Developments (NSW) Pty Ltd
D&C Contractor	Grocon Constructors NSW	02 8249 7000	Facsimile: 02 9247 7768	Grocon Constructors (NSW) Pty Ltd Level 4, Legion House, 161 Castlereagh Street, Sydney NSW 2000
National Construction Manager	Andrew Merriel	02 8249 7000	andrewmerriel@grocon.com.au	Grocon Constructors (NSW) Pty Ltd
Senior Contracts Manager NSW	Nicholas Baxter	02 8249 7000	nicholasbaxter@grocon.com.au	Grocon Constructors (NSW) Pty Ltd
Grocon The Ribbon Project Office	Emma Scott	02 8249 7000	emmascott@grocon.com.au	Grocon Constructors (NSW) Pty Ltd <i>Interim</i> Level 4, Legion House, 161 Castlereagh Street, Sydney NSW 2000
Executive Project Manager NSW	Justin Murphy	0418 555 049	JustinMurphy@grocon.com.au	Grocon Constructors (NSW) Pty Ltd
Technical Design Manager	Todd Hulbert	02 8249 7000	toddhulbert@grocon.com.au	Grocon Constructors (NSW) Pty Ltd
Services & Environmentally Sustainable Design Manager	Geoff Briggs	02 9849 7000	geoffbriggs@grocon.com.au	Grocon Constructors (NSW) Pty Ltd
Site Manager	Neil George	0488 663 673	NeilGeorge@grocon.com.au	Grocon Constructors (NSW) Pty Ltd
Heath Safety & Environmental Advisor	Joe Brinzi	0419 755 580	joebrinzi@grocon.com.a	Grocon Constructors (NSW) Pty Ltd

8. Design Finalisation & Procurement

8.1 Design Finalisation

The Ribbon design team have been appointed (refer Section 7) and are currently progressing with schematic design. The Technical & Design Manager will manage the design team through the Design Development, Tender, Construction Documentation, and As Built documentation phases. This will typically comprise:

- Further development and agreement of the Site Management and Construction methodology with the design team.
- Input to the design team on the limitations and constraints imposed by the site conditions on the design, and the subsequent considerations.
- Advice regarding Buildability and Value Management initiatives, particularly regarding the detailed development of installation methods for specific elements such as , IMAX, Wheat Road and structural steel, screen and catch deck methodology, facade panel design and installation methodology, large services equipment, car stacking system and the like.
- Suggestions regarding alternative equivalent construction materials and equipment, which will assist installation or improve future maintainability of the facility.
- Monitoring and assessment of the design deliverables against design and procurement programs.
- Continual Cost Planning to ensure that the design meets the development cost plan.
- Management of approvals, samples and presentations

8.2 Design Critical Path

The Development Application approval phase and IMAX theatre demolition works provide the design team with an achievable design documentation program. The program has appropriate float and will enable the completion of all schematic and Approved for Tender (AFT) documentation in line with the Procurement Program.

Following the AFT documentation, the immediate focus of the design team will be to lock in detailed design and Approved for Construction documentation for the structure, in ground services and façade elements, combined with the necessary Authority approvals and procurement process to achieve a start on site in January 2016 with allocated starting up funding

Grocon will develop a trade packages / subcontract procurement letting strategy during the DA approval period.

8.3 Procurement Strategy

A crucial element for the Grocon Project Team will be the development of a detailed Procurement Strategy. The Procurement Strategy will need to consider the design process, the procurement process and the construction program, particularly the critical path.

The Procurement Strategy will divide the Project into logical trade elements. The trade element will be developed to inform the design program and will be based on the following criteria:

- Capacity of the design team
- Capability, capacity and expertise of the sub-contractor market
- The Tender, recommendation, approval and letting process
- Construction sequence and requirements

The aim will be to develop in conjunction with the Design Team, a Procurement Strategy and program that provides sufficient time for the design team to develop trade package documentation, that the Administration team can procure in a timely manner to satisfy the construction requirements.

In the early stages of the project this may mean splitting packages to ensure that construction can proceed while design is being finalised.

8.4 Procurement Methodology

The Ribbon Project Team is responsible for the preparation of tender documentation, the examination and analysis of tenders, and the internal recommendations as to which tender should be accepted.

We propose to commence the tender process with Approved for Tender (AFT) documentation. Subcontractor tender proposals will be firmed-up during the tender period, following the issue of Approved for Construction (AFC) documentation at which point we will finalise our trade package recommendation.

Grocon believe that by considering the following, during the tender period, we will obtain maximum value for money via the subcontractor tender & engagement process.

- Financial capacity of each prospective tenderer
- Comparative analysis of all relevant costs and benefits of each proposal throughout the whole procurement cycle (whole-of-life costing):
- Fitness for purpose;
- Performance history of each prospective supplier;
- Distribution of risk in each proposal;
- Flexibility to adapt to possible change over the lifecycle of the property or service;
- Financial considerations including all relevant direct and indirect benefits and costs over the whole procurement cycle; and
- Evaluation of contract options (for example, contract extension options such as ongoing essential services recertification).
- Encouraging competition by ensuring non-discrimination in procurement and using competitive procurement processes;
- Promoting the use of resources in an efficient, effective and ethical manner,
- Making decisions in an accountable and transparent manner, and
- Provision of documentation that is logical, clearly articulated, comprehensive and relevant
- Develop evaluation criteria which will enable the proper identification, assessment and comparison of the costs and benefits of tenderer's.
- Selection of subcontractors with working procedures and systems that ensure a quality product is safely delivered within the allocated program

10. Hours of Work

It is envisaged that the site planning permit hours will be approved by the City of Sydney and that they will likely comprise.

- 07:00 am to 07:00 pm Monday to Friday*
- 07:00 am to 05:00 pm Saturdays*
- Sunday Work Subject to Out of Hours Permit Approval*
- Shift/ Night Works Subject to Out of Hours Permit Approval*
- 11.00pm to 4.00am Wheat Rd Catch deck installation and removal

* Out of hours work will be subject to Out of Hours Permit approvals from relevant authorities.

The site will be closed down and secured on public holidays and in particular, Australia Day, ANZAC Day, New Year's Eve and other days as agreed with the Sydney Harbour Foreshore Authority. After hours lighting will be minimised to security lighting and the cranes jib tip lights.

During Earth Hour the site will be closed one hour prior so that all lighting can be turned off apart from perimeter hoarding lighting which will be provided for pedestrian safety.

11. Site Interface

11.1 Stakeholder & User Group Management

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

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

- Sydney Harbour Foreshore Authority
- Cockle Bay Property Owners
- City of Sydney
- McDonalds Property Owners
- Commonwealth Bank Property Owners
- RMS, TMC
- Sydney Buses
- Sydney Sightseeing Buses
- Sydney Taxis
- Transgrid ,Ausgrid, Sydney Water, Telstra, Optus, Jemena and other service providers
- Sydney Visitors Centre
- Infrastructure New South Wales
- Darling Harbour Live
- NSW Department of Planning and Infrastructure.

11.2 Construction Liaison

Due the close proximity of the site to neighbours, public areas, and the adjacent public infrastructure, Grocon will carry out the project in a manner designed to cause minimal disruption to the activities of others.

Access to the site, material movement and hours of work will be in accordance with the approved working hours & TMP. The construction programme has been based on these hours. Grocon believe in a collaborative approach & will co-operate with all the relevant regulatory authorities by involving them early in the project and promoting a proactive “hand-in-hand” approach to project delivery. The Development Application (DA) period will provide a suitable time frame to engage with these relevant parties for the early establishment works.

Grocon will immediately liaise with SHFA, City of Sydney and other relevant authorities in order that appropriate Management Plans are lodged in accordance with their requirements. Furthermore, Grocon will undertake dilapidation reports of adjacent buildings and facilities enabling a thorough document for future reference to the condition of the site, all in accordance with perceived DA requirements.

Grocon always have a member of their on site management appointed as liaison officer, enabling ongoing communication of upcoming works and defining a contact point in the event of any issues requiring clarification or resolution. The purpose is to provide a forum for neighbours to discuss issues, project progress and special activities.

11.3 Community Consultation

We will consult with the local community to detail the proposed works and the strategies we propose to minimise any impact on access, amenity, staging and program as well as the impact on surrounding facilities and services. In particular we will advise on the proposed pedestrian & traffic management controls to be implemented

The meetings will be established prior to work starting on site and will meet on a regular basis for as long as required. The following plans will be tabled at these meetings:

- Geotechnical Reports
- Demolition Report
- Construction Management Plan
- Construction Program
- Construction Traffic Management Plan
- Dilapidation Reports
- Noise and Vibration Monitoring Reports
- Plans for any temporary road closures and use of mobile cranes

11.4 Noise & Vibration Management

A draft Noise & Vibration Management Plan has been produced and is included in Appendix B of this Construction Management Plan. The plan outlines the information gathering process, impact statements, control measures and implementation requirements for the site.

All construction works will be completed in a manner so as not to cause undue damage to adjoining infrastructure and property. Appropriate vibration monitoring will be installed if required and neighbouring buildings will be reviewed by the project acoustic consultant during works.

Grocon will also develop (in conjunction with all stakeholders) a Communications / Stakeholder Engagement Plan that will comprise a section dealing with noise, dust and vibration.

11.5 Dilapidation Surveys

Dilapidation surveys are to be conducted for all the surrounding pavements, elevated roadways, neighbouring buildings, infrastructure etc.

Copies of these reports will be submitted to the Private Certifying Authority (PCA), SHFA, CoS and the Neighbours prior to any work commencing on the site.

11.6 Geotechnical Monitoring

Grocon are in discussions and will agree with RMS the monitoring requirements associated with their relevant assets including the elevated roadways.

12. Early Works

There are a number of key activities which are to be completed to enable the major works to commence. These activities are essential to allow the major works to proceed unrestrained by external conditions.

12.1 Authority Approvals

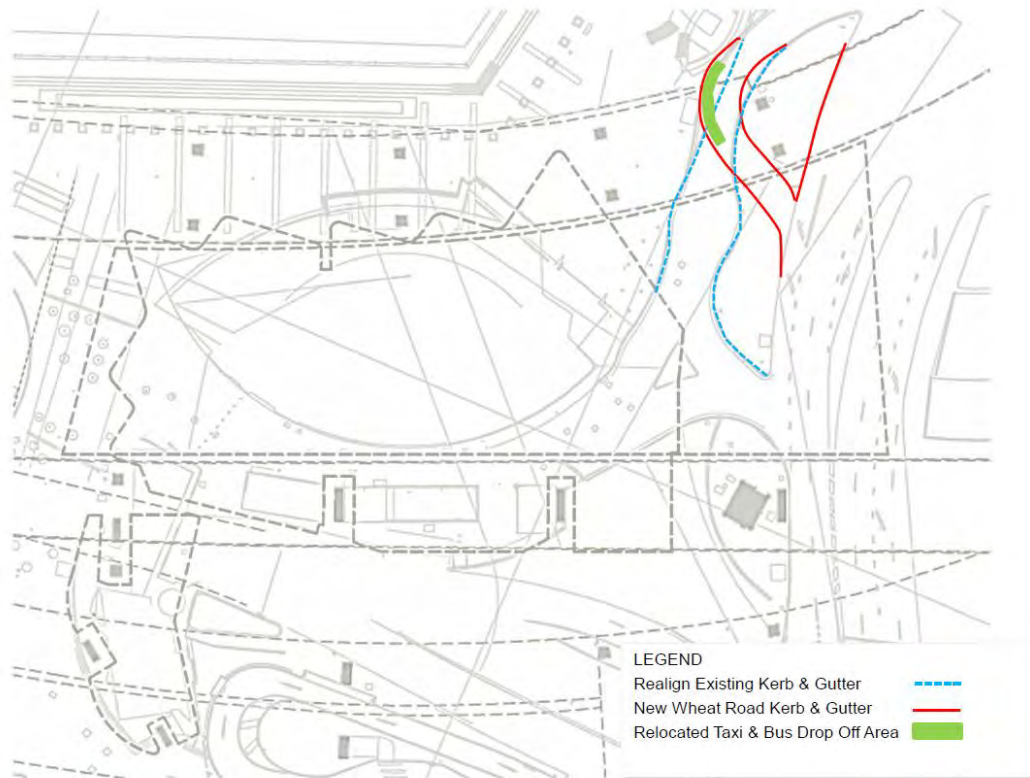
Prior to undertaking any works on site, relevant Authorities will be contacted and where required applications lodged to obtain all necessary approvals and permits. All required notifications and timeframes will be established for any inspections and attendance required by the relevant authority. Such inspections and attendance will be coordinated with Grocon, subcontractor's representatives on site and relevant certifying consultant to ensure continuity of work flow, commissioning, testing and acceptance into service

Authority	Jurisdiction
SHFA & City of Sydney	Gantries, Hoardings, Anchors, Work Zones and Stormwater, Working Hours
Transgrid & Ausgrid	Electrical Infrastructure
Sydney Water	Water & Sewage
Telstra & Optus	Telephone & Data communications
RMS	Roads Infrastructure
Jemena	Gas Infrastructure

12.2 Realignment of Wheat Road

The existing Wheat Road will be realigned as indicated on the following diagram. The realignment of Wheat Road provides construction vehicle access and egress whilst still maintaining service access for the Cockle Bay Retail Tenancies and provides access for the Sydney Sightseeing Bus and Taxi pickup & drop-off areas

Refer diagram – Wheat Road Realignment



Wheat Road Realignment



12.3 Relocation of the Robert Parr Jay Flowers Sculpture

The Jay Flowers sculpture that is currently located between Harbour Street and Wheat Road is to be removed and stored off site for the duration of The Ribbon construction works. The sculpture will be removed from storage and reinstalled during the landscaping and paving phase of the works onto a suitably designed and certified foundation.

Sculpture removal, transportation, storage and relocation methodology will be formulated in consultation with specialist contractors, the artist/ sculptor (Robert Parr, Canberra School of Art), the fabricators (K&G Fabrications, Unanderra) and the relevant authority/ies to eliminate risk of damage and ensure structurally sound re-instatement. Particular attention will be given to the careful slinging, lifting, packaging and transportation of the sculpture.

Methodology formulation and authority approval will be sought when procuring the relevant construction certificate.

12.4 Relocation of street signs, lights, and bollards

A number of street signs, lights, and bollards may need to be removed or relocated to enable access to the construction works zone and installation of the hoardings & gantries. These will be agreed with SHFA, City of Sydney, RMS etc. as required.

12.5 Relocation of the Darling Harbour Carousel

The Darling Harbour Carousel that is currently located at Palm Grove is proposed to be relocated approximately 10 metres south west of its current location and integrated as part of The Ribbon's public domain and playground upgrade works. The Carousel is currently listed as an item of Movable Heritage. The Carousel (including the Band Organ) is intended to be relocated during the south west landscaping and paving phase of the works (Public Domain Stage 4 at approximately month 27 of the development).

The Carousel dismantling (as/ where only deemed necessary) and its relocation should be reasonably simple as the Carousel was originally intended to be mobile, as it frequented many NSW country and urban travelling fairs, shows and special events whilst owned and operated by the Kale family, prior to the NSW Government's purchase and erection at Darling Harbour. The Carousel's transport carriage, shipping enclosure and wheels seem to still be intact and should facilitate its relocation.

A Conservation Management Plan will be commissioned (with reference to the current SHFA July 2012 Carousel & Organ CMP) to facilitate an informed and sufficiently detailed carousel relocation methodology to the satisfaction of all stakeholders. The planning and methodology will be formulated in consultation with the current operators, specialist period contractors, available archival and as built documentation, the CMP and it's author and the relevant authorities to eliminate risk of damage and ensure sound fully operational re-instatement. Particular attention will be given to the careful labelled/ documented dismantling, slinging, lifting, handling, transportation and re-erection of the carousel and its assumed fragile components.

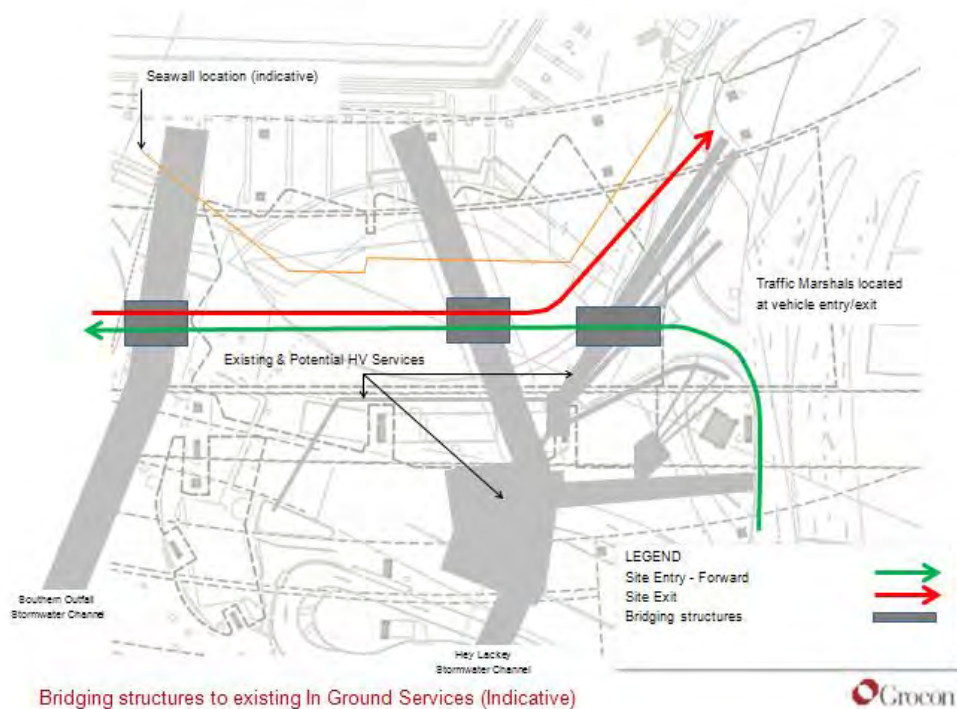
Methodology formulation and authority approval will be sought when procuring the relevant construction certificate.

12.6 Existing Service Disconnections and Disruptions

All service disconnections to the existing IMAX building will be carried out prior to any demolition works commencing.

The existing stormwater, gas, water and sewer services to the IMAX building may need to be re-diverted, out of The Ribbon footprint or encapsulated. The existing Southern Outfall and Hay Lackey stormwater channels will remain. Temporary bridging structures will be constructed to protect these assets yet still enable construction traffic to traverse the site.

Refer diagram – Bridging structures to In Ground Services (Indicative)



The electrical supply kiosk substation to the IMAX building will be temporarily retained to provide power during construction. There are several existing HV conduit pathways which require diverting, encapsulation and/or structurally transferring over; these will be co-ordinated with and/or undertaken by Transgrid/ Ausgrid to prevent any disruptions to the service provided.

It is not expected that service disruptions will occur to surrounding owners during works as these works will be coordinated with and agreed with the relevant Authority. If any further service works are required, a notification will be issued to the affected authority/ neighbours/ owners to agree a strategy for those works.

12.7 Spanish-Steps



1_Alterations to the existing Spanish steps

- Demolition of existing steps
- Retain existing bridge structure
- Reconfiguration of landing
- New glass enclosed lift
- New escalators
- New glass canopy

Grocon will work closely with stakeholders to maintain disabled access and minimise pedestrian disruption at all times through the demolition and rebuild of this important thoroughfare.

13. Construction Temporary Services

Temporary supplies to the proposed project, site establishment and typical floors will be established as follows:

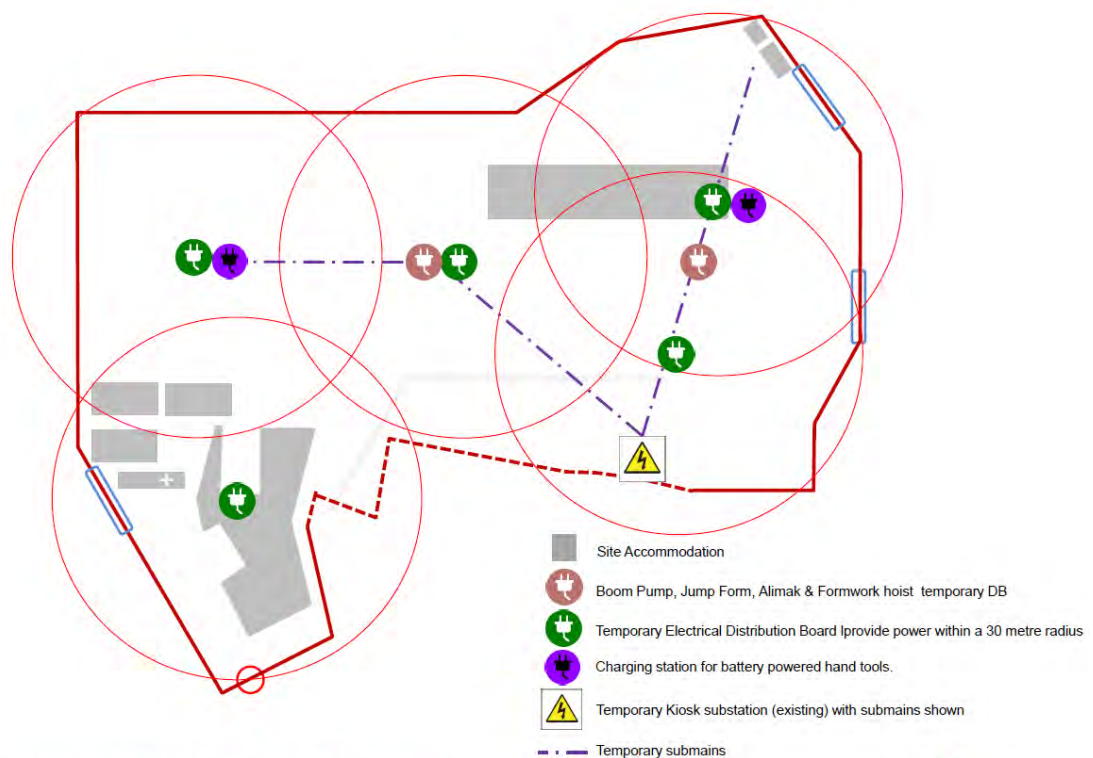
13.1 Temporary Electrical Services

Power supply to the existing IMAX theatre building will be de-commissioned prior to demolition. A temporary power supply will be established on the various floors as required for the demolition process. The existing IMAX kiosk substation located under the southern freeway will be utilized to provide temporary power during construction.

A migration plan will be established with Ausgrid to transfer power onto the new substations to allow this kiosk to be removed.

Our main electrical distribution board will be located on Ground Level adjacent to and connected to the existing Kiosk Substation. The construction site MSB will be separately metered allowing electrical consumption to be monitored and apportioned. The construction site MSB will feed the essential site plant and equipment (tower cranes, man and materials hoists, jump forms, formwork hoists) and temporary distribution boards located on each floor.

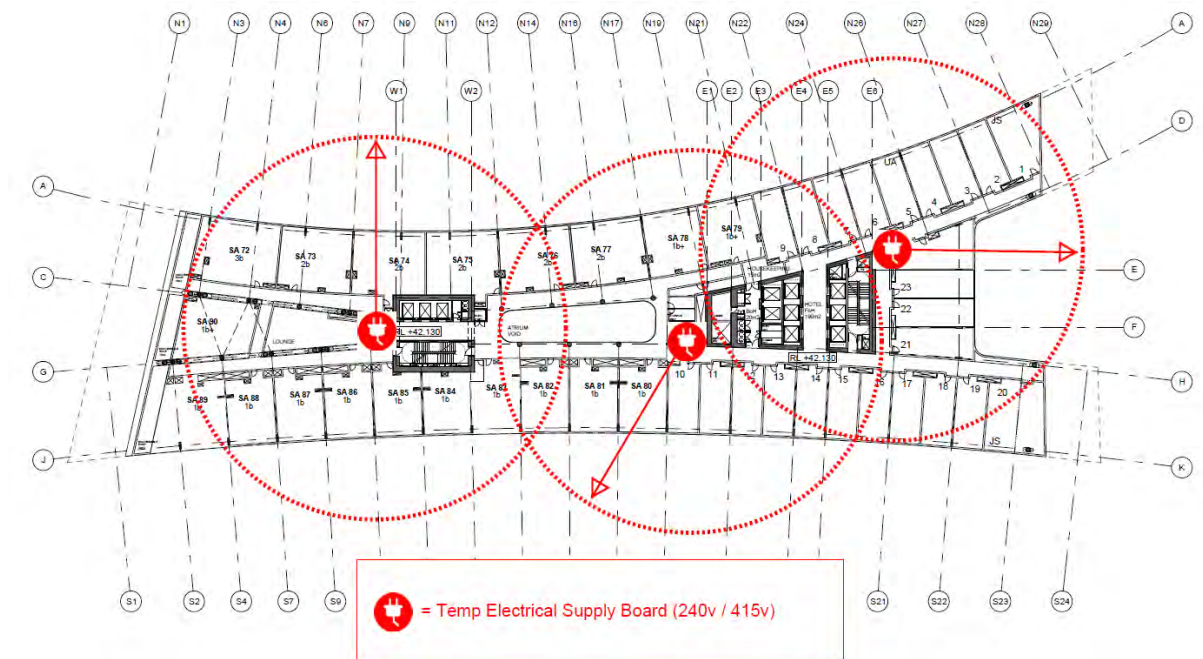
Refer diagram Temporary Electrical Services – Ground Level



Temporary Electrical Services – Ground Level

Based on the floor layout and typical allowance for max 30m leads, Grocon will install three (3) electrical distribution boards on each floor. In conjunction with the temporary distribution boards, two charging stations for battery powered hand tools will be installed on each floor. Construction temporary/ emergency lighting will be provided to comply with relevant requirements of WHS regulation 2011, AS1680 & AS2293 throughout the works. The eastern most electrical distribution board will have capacity to accommodate the growth of the building in the easterly direction.

Refer diagram Temporary Power – Typical Floors



Subcontractors will be responsible for the supply of any power and lighting beyond the description above. This will include the supply of leads, lead stands, spider boards, task lighting etc.

Indicative temporary power requirements are as follows;

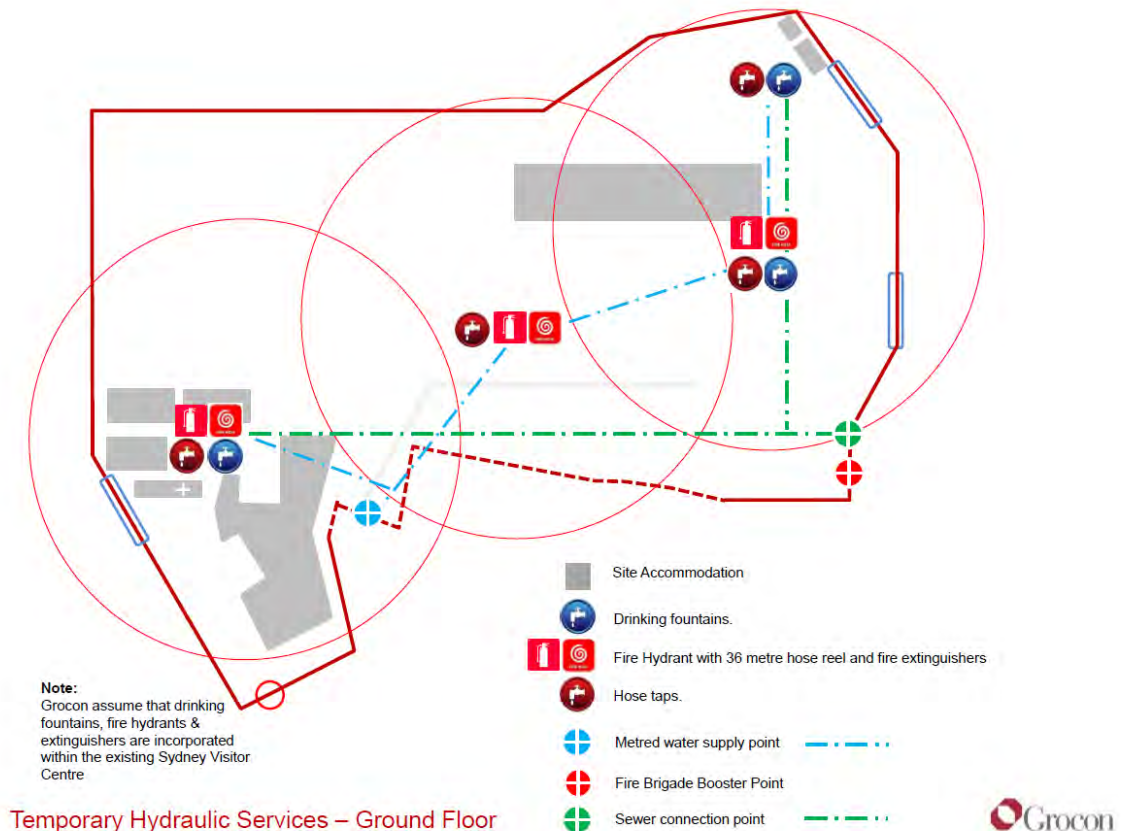
Item	Requirements
Internal twin hoist x 2 (4 of @125 amps each))	500amps
Maber Material Hoist	63amps
High Rise Jumpforms ,Flood Lights and power boards	60amps
Low Rise Jumpforms ,Flood Lights and power boards	60amps
Placing concrete Boom 1	32amps
Placing concrete Boom 2	32amps
Tower Cranes 1- 4 (4 of @320 amps each=1200 amps) powered off diesel generators. Lighting only 25amps each	100amps
Builder amenities and sheds	12amps
Temporary circulation	12amps
Hoarding Lights	50amps
Permanent fit out	20 amps
Wheat Rd Gantry	20amps
Low Rise Builder Lifts (2 of)	36amps
High Rise Builder Lifts (2 of)	36amps
Goods Lift	15amps

Generators will be used some stages during the construction.

13.2 Temporary Hydraulic Services

Existing water mains will be diverted out of the building footprint and temporary water supply will be connected to existing mains take-offs. A metered supply shall feed into the building site (east of the existing Sydney Visitors Centre) and feed site establishment and temporary risers up to each level

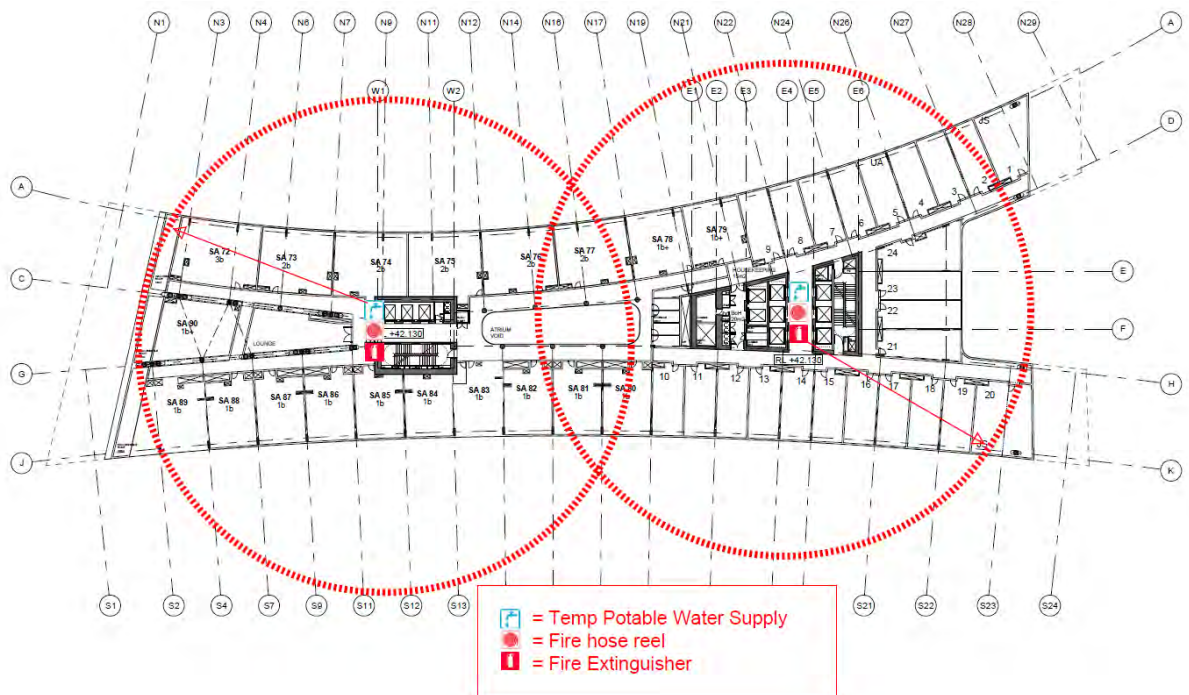
Refer diagram Temporary Hydraulic Services – Ground Floor



Temporary hydraulic services will be provided to the site accommodation areas and the construction site. As the structure progresses two drinking fountains will be provided to the leading decks. Two drinking fountains will also be located on each floor for services, finishes and façade trade subcontractors.

2 hose taps will be provided on every floor and sediment drums on every fourth floor. Hose taps and sediment drums will be located adjacent to the core for ease of maintenance and general access by trades.

Refer diagram Temporary Hydraulic Services – Typical Floors



13.3 Temporary Sewage

Once diverted, the existing sewer mains shall be reused for the temporary connection of builder's construction sewerage. Connection to mains will be via the Harbour Street sewer line and will connect the temporary toilets associated with the main site establishment and the temporary riser that will connect temporary toilet cubicles on every 4th floor of the building.

13.4 Stormwater

Existing stormwater will be diverted out of the building footprint, suitably treated, filtered and/or capped. Stormwater detention and overflow control measures will be implemented to prevent debris from the construction site entering the harbour and this process will be monitored on a regular basis. As construction develops, stormwater control measures will continue until final detention and gross pollutant devices are installed.

14. Site Boundary & Hoardings

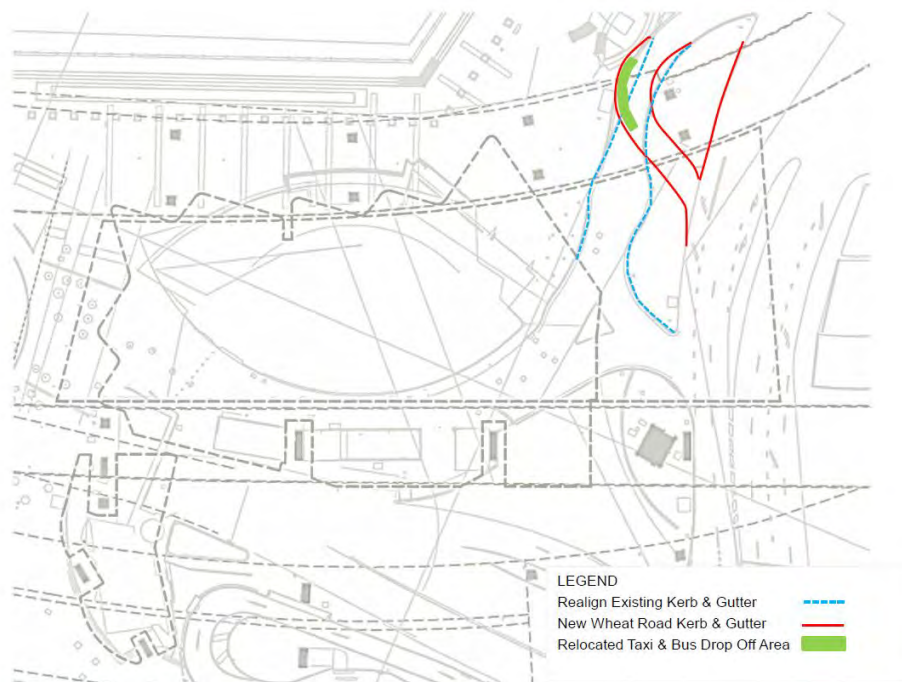
The location of the site is an integral part of Darling Harbour and particularly Cockle Bay. Several boundaries on the development will require hoarding and or other protection structures. Wheat Road will require realignment during the Construction Phase.

A complete listing of road realignments and hoarding and other protection structures required for the appropriate protection of site boundaries and other public interfaces will be as follows:

14.1 Wheat Road Realignment

Wheat Road will be realigned as indicated on the following diagram to enable construction traffic to safely enter and exit the site, yet still provide Sydney Sightseeing Bus and Taxi Drop-off areas.

Refer diagram – Wheat Road Realignment



Wheat Road Realignment



14.2 Northern and Western Elevation Hoarding

The Northern Elevation hoarding will comprise the following:

- Approximately 240 lineal metres of “A” Class hoarding
- Typically the average hoarding height will be a minimum 2.4m to this elevation.
- The hoarding materials will be of a quality commensurate with one of Sydney’s major tourist attractions.
- Graphics and signage will be applied to the hoarding and will be agreed with SHFA.
- Access provisions will be provided for RMS maintenance as required.
- Emergency Access/Egress gates will be located in the Western Hoarding.
- Security lighting will be provided

Refer diagram – Hoarding & Gates

14.3 Wheat Road (Eastern) Hoarding

The Eastern (Wheat Road) Elevation hoarding will comprise the following:

- Approximately 60 lineal metres of “A” class hoarding.
- Double entry and exit gates will be provided.
- Typically the average hoarding height will be a minimum 2.4m to this elevation.
- The hoarding materials will be of a quality commensurate with one of Sydney’s major tourist attractions.
- Graphics and signage will be applied to the hoarding and will be agreed with SHFA.
- Security lighting will be provided
- Access provisions will be provided for RMS maintenance as required.

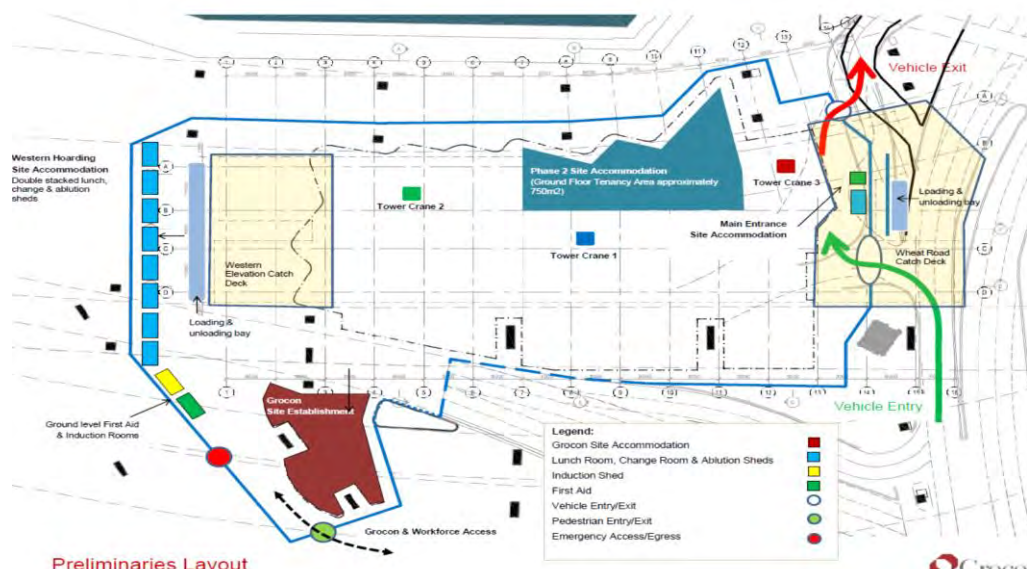
Refer diagram – Hoarding & Gates Sydney Visitor Centre & McDonalds Drive-through Hoarding

The Sydney Visitor Centre & McDonalds Drive-through Hoarding will comprise the following:

- Approximately 40 lineal metres of “A” Class hoarding
- Typically the average hoarding height will be a minimum 2.4m to this elevation.
- The hoarding materials will be of a quality commensurate with one of Sydney’s major tourist attractions.
- Jersey kerb/concrete panel barriers will be installed to the McDonalds Drive-through section of the hoarding.
- Graphics and signage will be applied to the hoarding and will be agreed with SHFA.
- Access provisions will be provided for RMS maintenance requirements.

(Public Domain Hoardings are shown in Appendix B)

CMP



14.4 Cross City Tunnel Exhaust Stack and Bathurst Street Exit Ramp Hoarding.

The Cross City Tunnel Exhaust Stack and Bathurst Street Exit Ramp Hoarding will comprise the following:

- A protective plywood hoarding 2.4m high will be installed to the Cross City Tunnel Exhaust Stack.
- The current access arrangement for Ausgrid will be maintained – i.e. the Bathurst Street Exit ramp wall will be the protective barrier.
- Approximately 55 lineal metres of “A” Class hoarding will be installed from the Bathurst Street Exit Ramp transition to the park adjacent to the existing Sydney Water Pumping station.
- Typically the average hoarding height will be 2.4m to this elevation.
- The hoarding materials will be of a quality commensurate with one of Sydney's major tourist attractions.
- Graphics and signage will be applied to the hoarding and will be agreed with SHFA.
- Access provisions will be provided for RMS maintenance requirements.

14.5 Wheat Road/ Harbour Street Temporary Catch Deck

The Wheat Road Catch Deck will be installed during the ground works phase of the project and will comprise:

- A purpose built structural steel frame with a 10kPa capacity catch deck will be installed below the eastern section of The Ribbon as it cantilevers over Wheat Road and Harbour Street.
- Minimum clearance above all roadways will be a minimum 5.5m (as discussed and agreed with RMS)
- The hoarding will be painted to meet RMS & SHFA and Sydney City hoarding requirements
- Lighting to Wheat Road and Harbour Streets will meet RMS requirements.
- Signage will be agreed with SHFA and RMS
- Independent designed and built crane support structure will be interfaced with the temporary deck and built between the hours of 11.00pm and 4.00am

Refer diagram – Overhead Protection in 14.3

15. Site Access

15.1 Site Access Control- Blue Glue access control

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

Blue Glue electronic access will be used so we are fully aware of site numbers of personnel on at all times.

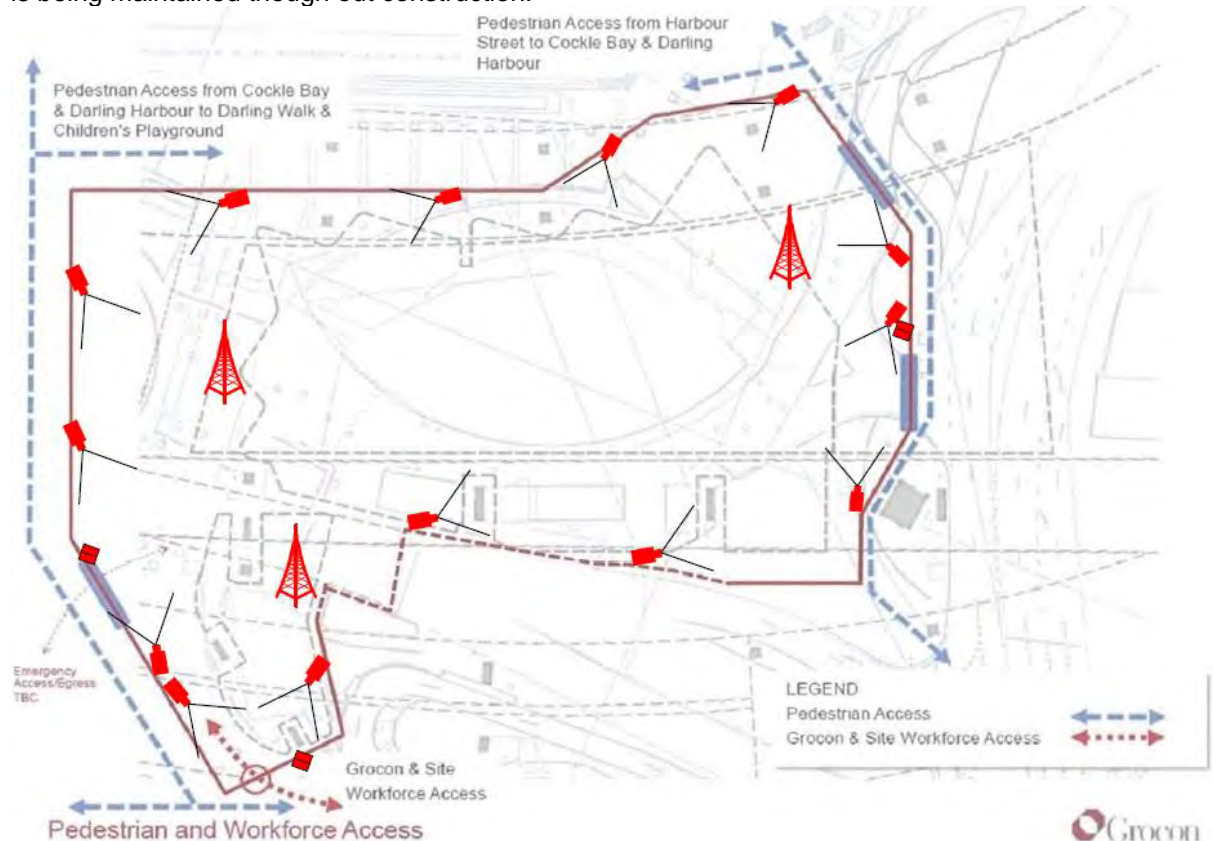
Only those workers or staff who have completed site specific inductions will be issued a card. Visitors to the site will need to attend to the site office, sign in, be issued with a temporary electronic pass, appropriate PPE and be escorted by site personnel at all times.

15.2 Security – I patrol

Grocon will have a combination of electronic motion type systems and mobile 24-hour security presence across the site. This security network will continue to work closely with Grocon and other relative authorities to protect people and property.

Grocon will have a constant live register requiring all visitors to sign in upon entry by virtue of the Blue Glue access system. All visitors are required to wear an identification “visitor” badge and wear appropriate PPE at all times while on site.

All gates are securely locked outside of working hours and patrolled by security staff as required. This security network will continue to work closely with Grocon to ensure that security is being maintained though out construction.

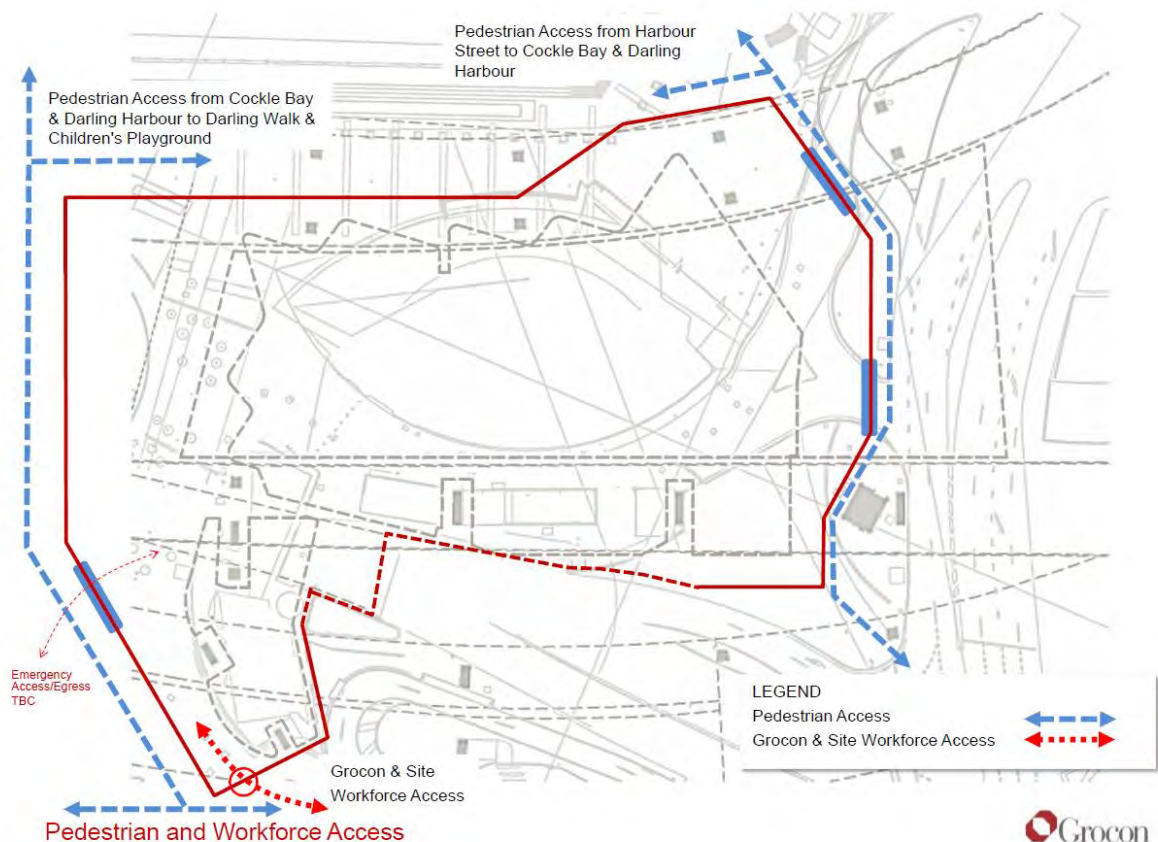


15.3 Construction Workforce

The previous sections described how Grocon will utilise areas adjacent to the Western Elevation Hoarding, the Main Site Entrance and the existing Sydney Visitor Centre for the establishment of both Grocon and the workforce site amenities – lunch sheds, change sheds toilets and showers.

At all times, during the early works and main building works, access to the site for all site staff and workers will be via the gate located adjacent to the Sydney Visitor Centre and the Darling Walk stairs.

Refer diagram – Pedestrian and Workforce Access



15.4 General Public - Pedestrians

The General Public will not be allowed access to the site. Grocon will provide a dedicated pedestrian management team for the construction works zone, to ensure deliveries are received efficiently and safely. The pedestrian management team will be responsible for the management and co-ordination of all pedestrian traffic on Wheat Road and as required adjacent to the existing Sydney Visitor Centre. Due to the nature of the site and the emphasis placed on materials handling, the efficient control and protection of pedestrian traffic is of the utmost importance for this project.

Refer Section 17 - Pedestrian Management

15.5 Vehicle Access - Demolition Phase

During the strip out and demolition phase, construction traffic (single and articulated trucks) will enter the site via Harbour Street and Wheat Road; construction traffic will exit the site via Wheat Road to the north, then Shelley Street and Erskine Street.

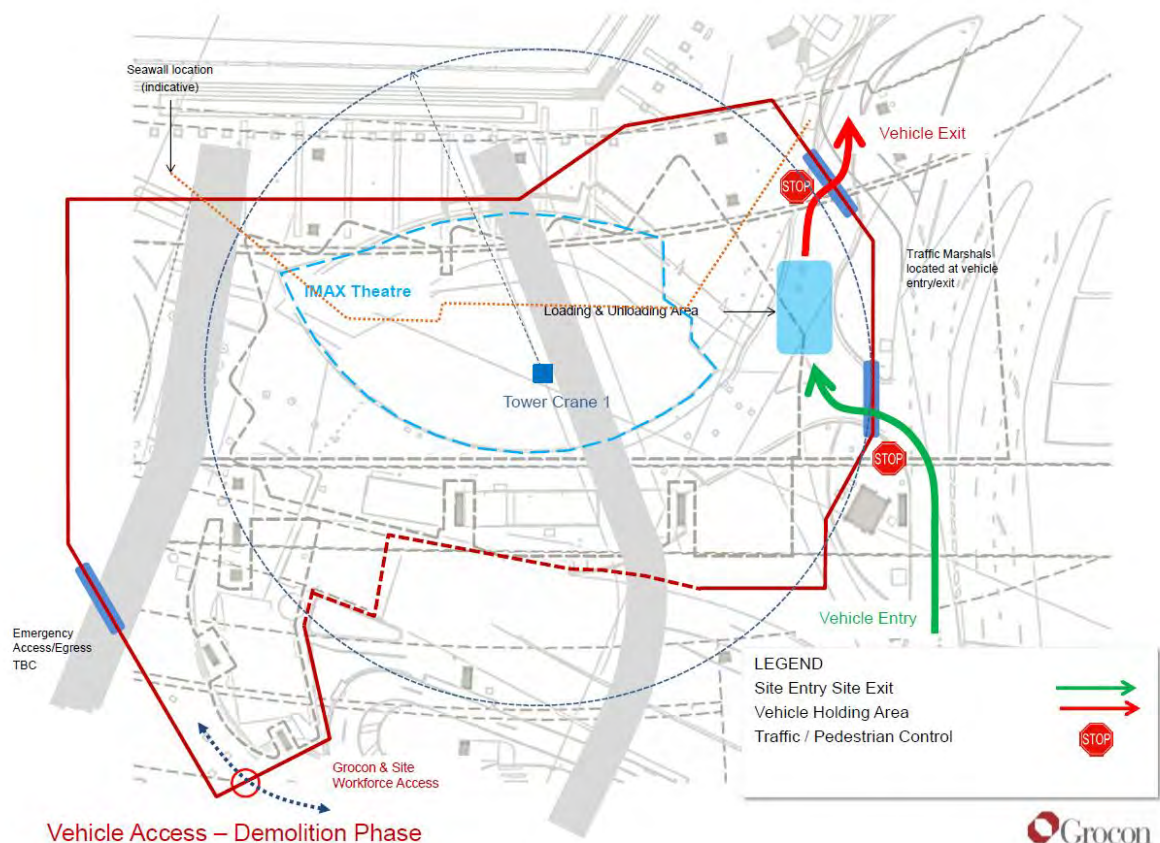
All vehicles will enter the construction site. Vehicles will enter and exit the work area in a forward manner under instruction from authorised traffic controllers

All loading and unloading of materials, plant and equipment will be undertaken within the site boundary (generally to the east of the existing IMAX theatre) - rigid vehicles (up to 12.5m long) and semi-trailers (19m). All trucks exiting the site with demolished material will be tarped and/ or strapped down.

Construction traffic will not be allowed to queue or park within the streets of the surrounding area.

Tower Crane No 4 will be installed to facilitate the demolition of the IMAX. Location under review.

Refer diagram Vehicle Access – Demolition Phase



(note - plan will be amended with simultaneous High Voltage relocation if required)

15.6 Vehicle Access - Groundwork's Phase

Groundwork's can be divided into two discrete elements

1. Structural Works – promenade demolition, bored piling and raft/ground slab construction
2. In ground services – diversion, termination of existing and installation of new services

For all groundwork's, construction traffic (single and articulated trucks) will enter the site via Harbour Street and Wheat Road; construction traffic will exit the site via Wheat Road to the north, then Shelley Street and Erskine Street.

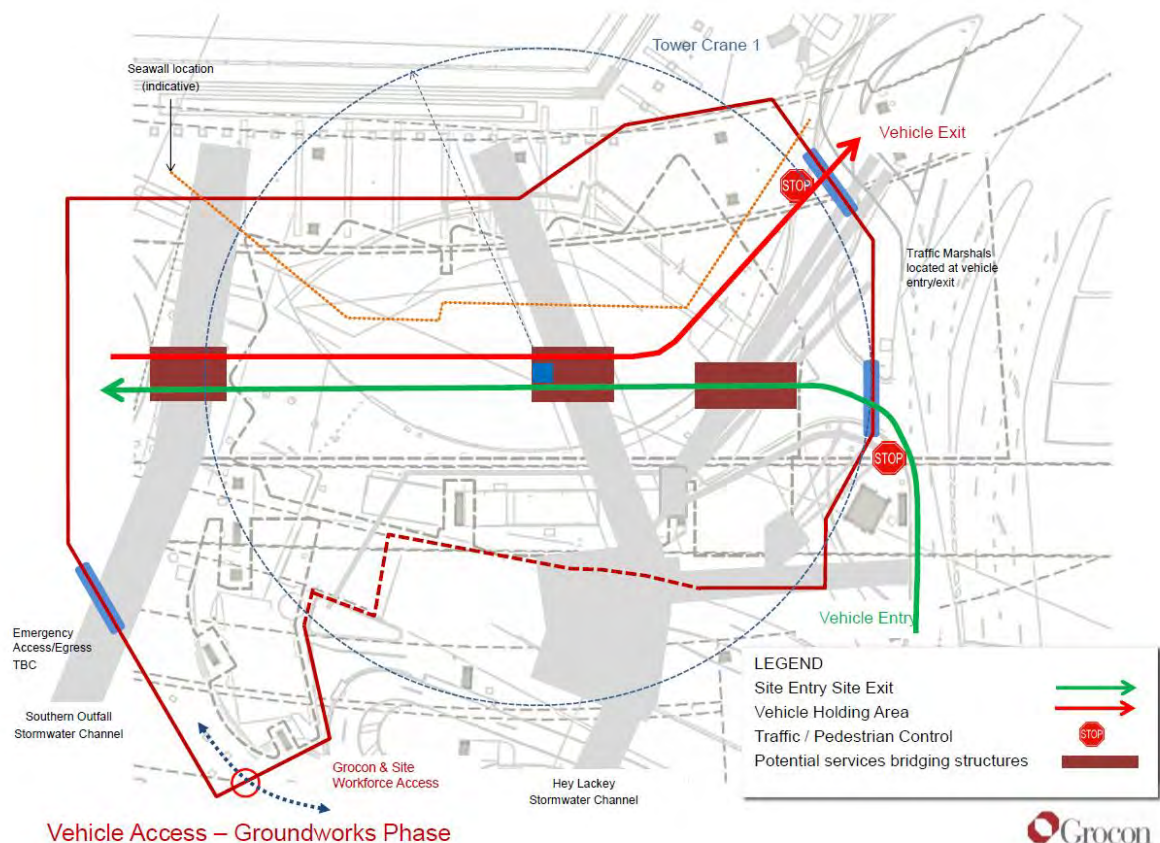
All vehicles will enter the construction site. Vehicles will enter and exit the work area in a forward manner under instruction from authorised traffic controllers

All loading and unloading of materials, plant and equipment will be undertaken within the site boundary (generally to the east of the existing IMAX theatre) - rigid vehicles (up to 12.5m long) and semi-trailers (19m).

Note should the existing stormwater channels not be structurally sufficient to accommodate construction traffic, especially loads associated with piling rigs and chaser cranes, bridging structures will be installed.

Construction traffic will not be allowed to queue or park within the streets of the surrounding area. A dedicated holding area will be agreed prior to commencement of the site establishment works – initial discussions have identified a suitable and available area west of the Anzac Bridge

Refer diagram Vehicle Access – Groundwork's Phase



15.7 Vehicle Access – Main Works Phase

During the Main Works phase, construction traffic (single unit trucks) will enter the site via Harbour Street and Wheat Road; construction traffic will exit the site via Wheat Road to the north, then Shelley Street and Erskine Street.

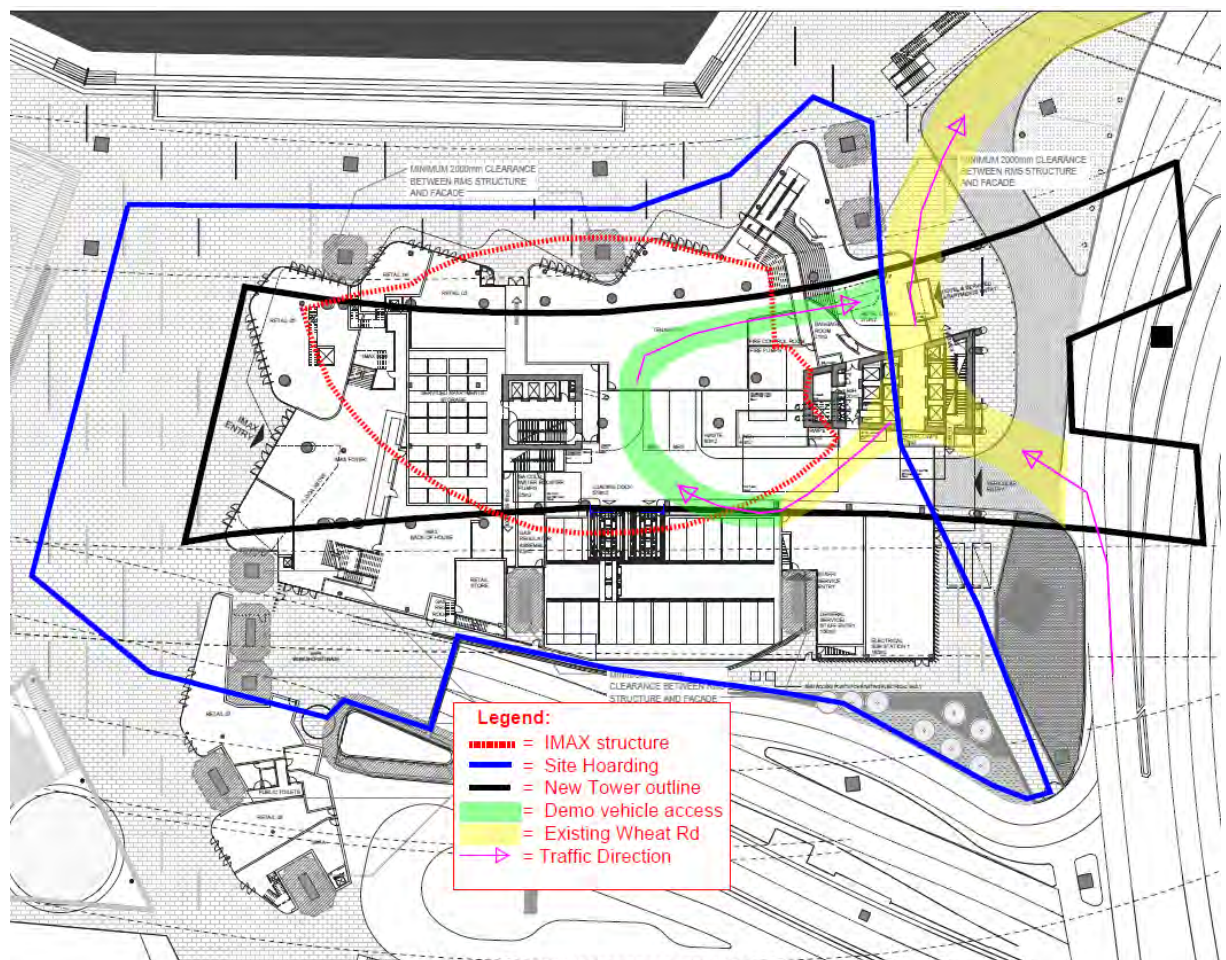
There will also be an operational haul road through the site, entering off Wheat Rd, with a turning circle near crane 4 and the cinema zone, and back across the site on the northern aspect, exiting through the Wheat Rd diversion.

All vehicles will enter and exit the construction site in a forward manner under instruction from authorised traffic controllers

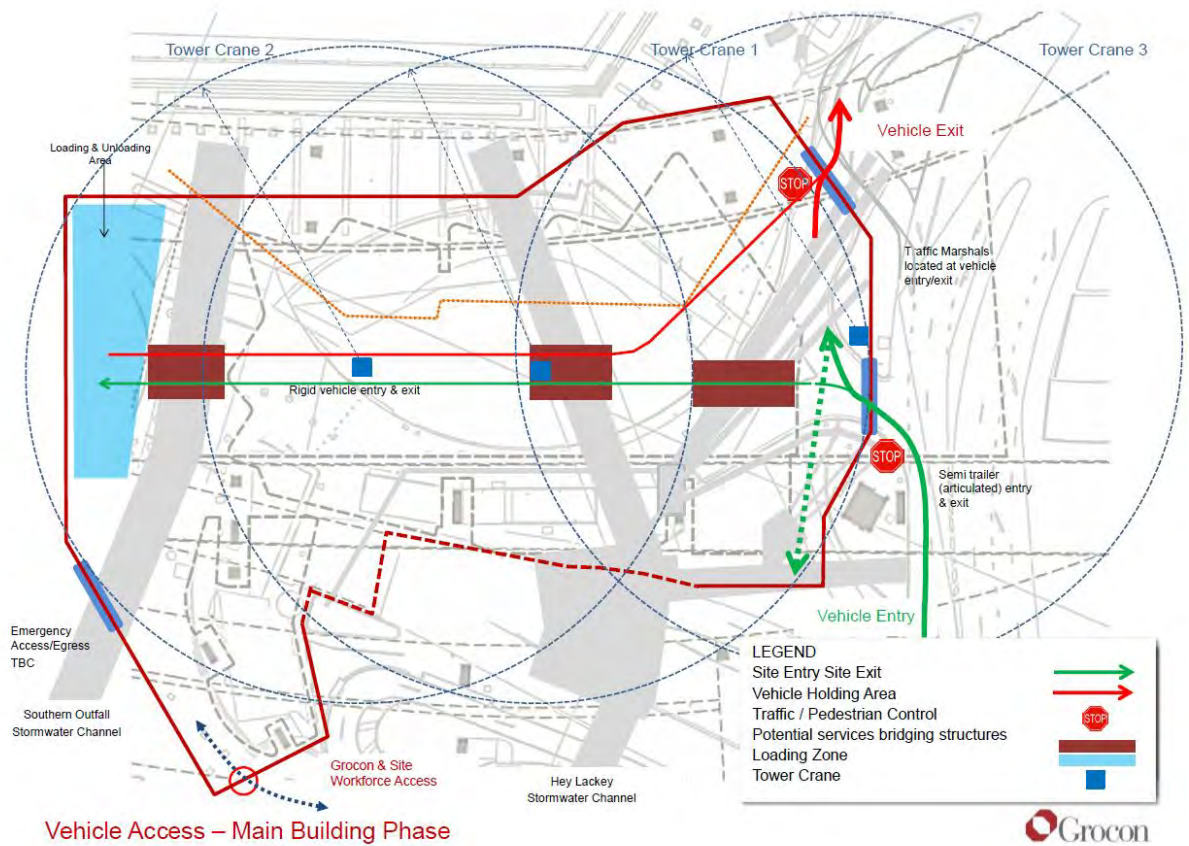
Loading and unloading of materials, plant and equipment will be undertaken as follows.

1. All materials and deliveries will enter site through Wheat Rd.
 2. Attendant at gate will enquire which area the delivery is for, issue a temporary pass and send the delivery to appropriate crane, unloading bay or gantry.
 3. Cranes 1 and 2 will hoist deliveries through an open construction penetration within the site
 4. Cranes 4 will hoist deliveries from a designated area near the east turning circle
- Tower Cranes 1,2 &3 (Refer Section 17 Materials Handling) will be installed to facilitate the construction of the Main Building Works.

Construction traffic will not be allowed to queue or park within the streets of the surrounding area.



Refer diagram Vehicle Access – Main Building Phase



15.8 RMS Access

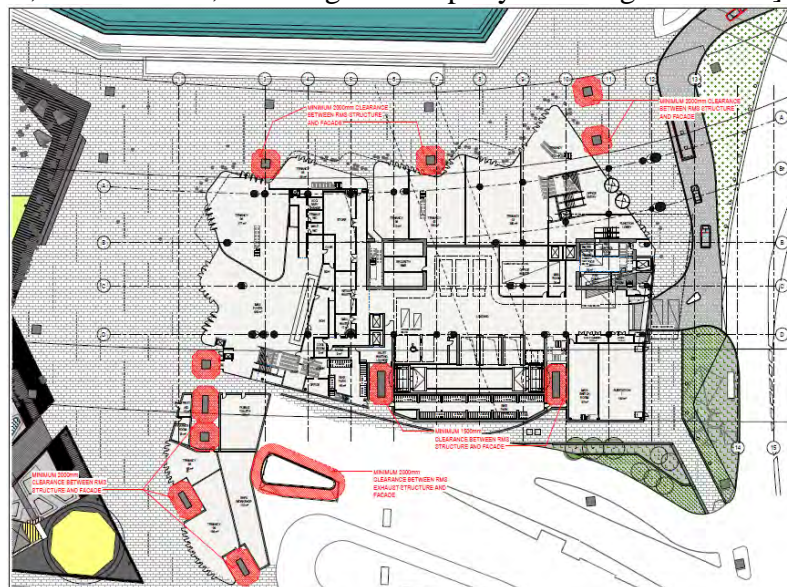
RMS will be provided access to all RMS infrastructure for the duration of the works – from site establishment through to completion & handover. Ranging from 1.5 - 2.0 metre clear openings between permanent structures and the RMS infrastructure will be provided.

All construction access, egress and asset monitoring requirements will be agreed with RMS and provided prior to site mobilisation as per the verifier's requirements.

Example WAD :(to be executed)

<p style="text-align: center;">MAJOR WORKS AUTHORISATION DEED – PRIVATE FINANCING & CONSTRUCTION</p> <p>Roads and Maritime Services ("RMS")</p> <p>The party identified in Item 1 of the Schedule ("Developer")</p>

[This is a Legal Branch precedent document which must only be modified with the approval of the, Environment, Planning and Property Law Legal Counsel]



This drawing is our understanding of agreed areas with verifiers at time of DA lodgement

16. Site Establishment

16.1 Overview

Site Establishment will be provided in two separate phases.

- Phase 1 - Early Works Phase (demolition, HV - Kiosk diversions, service decommissioning, Wheat Rd Gantry , Jemena works , wharf structure, piling works and initial structure).
- Phase 2 - Main Building Works

16.2 Estimated work force and Construction Code of Practice

The estimated work force for each stage of the works is summarised below.

- Phase 1 – Early Works
 - Demolition, HV diversions, service terminations, Wheat Rd Gantry, wharf structure, piling works & initial structure 125 workers
- Phase 2 – Main Building Works
 - Main structure works & services rough-in 200 workers
 - Structure completion, façade, tenancy work & services plus 500 workers
 - Façade completion, roof completion, hotel tenancy fit out & finish workers

	2014										2015												2016											
Month Number/Activity Summary	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov		
Month Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32		
RESOURCE TOTALS	14	23	28	29	34	89	89	120	127	223	223	238	226	259	279	301	341	376	376	421	346	318	318	333	327	317	327	231	176	0	0	0		
Demolition	12	12	12	12																														
Services																																		
Hydraulic	1	1	1	2	6	6	6	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10		
Electrical	1	1	1	1	3	3	3	3	10	15	15	20	20	20	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25		
Mechanical										5	5	15	15	20	20	20	20	25	25	25	25	25	25	25	25	25	15	15	10	10				
Fire										5	5	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	5	5	5				
Lifts																16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16		
Structure																																		
Formwork - Deck					10	10	10			60	60	60	60	60	60	60	60	60	60	60	45	30												
Formwork - core					24	24	24	24	24	24	24	24	12																					
Concrete								10	10	15	15	15	15	15	15	15	15	15	15	15														
Post tensioning												10	10	10	10	10	10	10	10	10	10													
Reo - Deck								10	10	10	10	10	10	10	10	10	10	10	10	10	10													
Reo - Jump form						20	20	20	20	20	20	20	20	20																				
Jump Start								15	15	15	15																							
Structural Steel roof, etc										10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
scaffold										6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Façade																																		
Curtainwall													20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20		
Cladding/Roof																																		
Podium glazing																																		
Finishes																																		
Partitions & ceiling														40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40		
Tiling																6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
Carpet																																		
Misc															15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15		
Paving																																		
Landscape																																		
Fitout Works																																		
IMAX																	20	30	30	30	50	50	50	50	50	50	50	50	50	20				
Tenancies																						80	80	80	80	80	80	80	80	80	40	20		
Preliminaries																																		
Crane		3	3	3	3	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9		
Hoist/Lift drivers						2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4	4	
Traffic controllers		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
first aid		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Carpenter		2	2	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
Labourers		2	2	3	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	

	2014										2015												2016											
Month Number/Activity Summary	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov		
Site set up																																		
Demo																																		
In ground works																																		
Jumpform cores																																		
Slab on ground																																		
Structure - Jump start Steel																																		
Structure																																		
Façade & Finishes																																		
Delay allowance																																		

Base on the above, site establishment has been provided to accommodate a maximum of 500 workers excluding the Grocon site project management and supervision staff.

The Construction Code of Practice site accommodation minimum requirements are typically as follows:

- Lunch sheds 1m² per person
- Toilets 1 pan for 20 people
- Showers 1 shower per 25 people
- Change 0.5 m² per person

16.3 Phase 1: Early Works - Site Establishment

During the Phase 1 works - demolition, wharf structure, piling works and the initial structural works, the main site establishment will be located adjacent to the existing Sydney Visitors Centre/Western Elevation Hoarding and adjacent to the Main Entrance. Site accommodation (minimal) will be located adjacent to the Wheat Road exit gate.

Refer diagram below in blue – Site Accommodation Phase 1

As noted previously, site accommodation will be provided for 125 workers, excluding Grocon site project management and supervision staff.

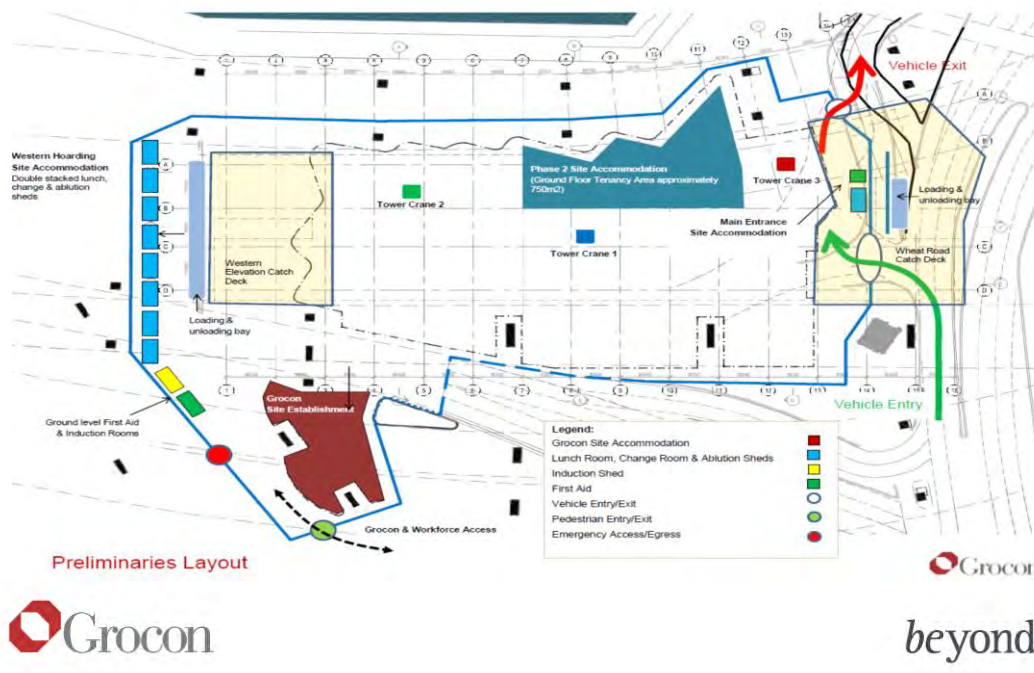
Site Accommodation

- Lunch Rooms: (6m x 3m sheds provides amenities for 18 workers) -- 7 sheds
- Change Rooms: (6m x 3m sheds provides amenities for 31 workers) - 5 sheds
- Ablution Blocks: (6m x 3m sheds provides 2 pans and 2 showers - amenities for 40 workers) - 4 sheds
- First Aid Shed (6 x 3m) – 1 shed
- Induction Room (6m x 3m) – 1 shed
- Dedicated Change Room, toilet & shower facilities for female workers will be included within the Western Hoarding Site Accommodation

Main Entrance Site Accommodation

- Lunch Rooms: (3m x 3m sheds provides amenities for 9 workers) - 1 sheds
- Change Rooms: (3m x 3m sheds provides amenities for 15 workers) - 1 sheds
- Ablution Blocks: (3m x 3m sheds provides 1 pans and 12 showers - amenities for 20 workers) - 1 sheds
- First Aid Shed (3 x 3m) – 1 shed

CMP



16.4 Phase 2: Main Building Works - Site Establishment

During the Phase 2 Works – Main Building Works, the site establishment will be located adjacent to the Western Elevation Hoarding and Main Entrance (as for Phase 1) and within the Ground Floor 1 Tenancy Area.

The maximum number of workers is anticipated to be 500. As noted previously, site accommodation will be provided for 125 workers in the Western Hoarding and Main Entrance Site Accommodation, and accommodation for a further 300 workers will be provided in the Tenancy Areas.

Ground Floor Tenancy Area Site Accommodation

- Lunch Area: 300 workers – 300m²
- Change Rooms: 300 workers – 150m²
- Toilet Facilities: 15 pans
- Shower Facilities: 12 showers
- First Aid Shed (6 x 3m) – 1 shed
- Induction Room (6m x 3m) – 1 shed
- Dedicated Change Room, toilet & shower facilities for female workers will be included within the Ground Floor tenancy Area Site Accommodation

Refer diagram 1.5 in aqua green Site Accommodation Phase 2

16.5 Grocon Site Accommodation

The Grocon Site Team will peak at approximately 40 staff and will be based nearby at Town Hall House on level 18 (subject to availability or alternate off site location), where there is an uninterrupted view of the site.

The Sydney Visitor Centre toilet amenities will be available for the Grocon Site Team and other accommodation for them, workers and an induction room will be set as part of the Western Hoarding Site Establishment.

There will also be some allocated container storage and flammable goods designated areas.

Note: The crane crew's, hoist & lift drivers, First Aid, carpenters & labourers have been included in general workforce site accommodation numbers.

(refer diagram 16.3)

17. Pedestrian Management

The general public will not be allowed access to the site

Grocon will ensure that the proposed hoardings, staged public domain works and signage around the perimeter of the site will provide the general public with access ways that are maintained in a clean, well illuminated and safe manner at all times consistent with SHFA approved plans and specifications.

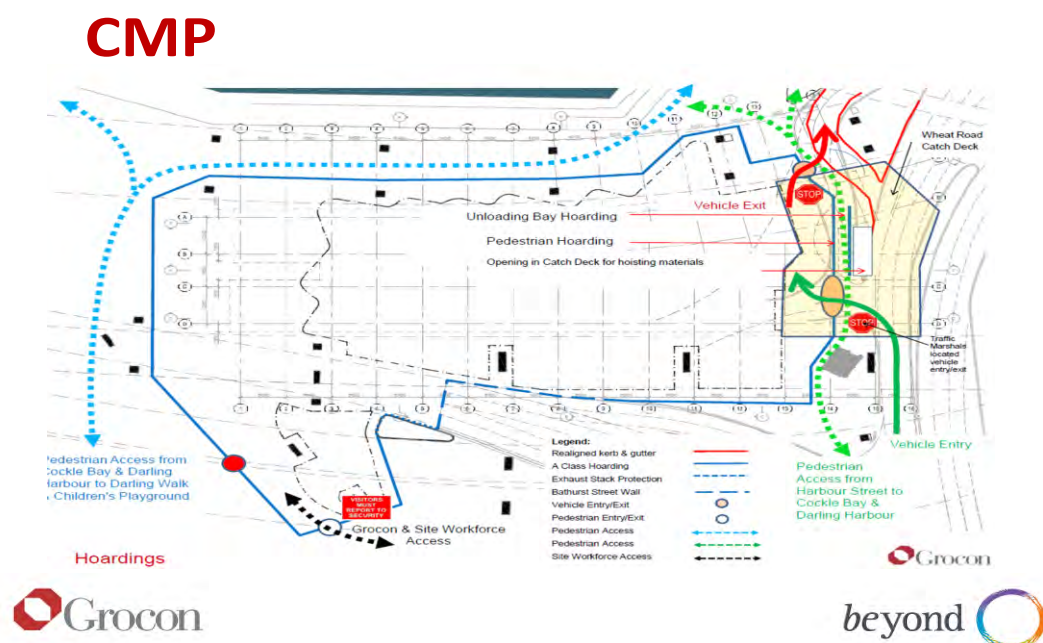
Section 14 described the proposed extent of the hoardings and catch decks to the perimeter of the building. These will be established immediately following site possession, made secure and fitted with appropriate public directional signage, lighting and the like.

Grocon will, in conjunction with SHFA, COS and relevant stakeholders agree the professional graphics and signage that will be applied to the hoardings.

Grocon will provide a dedicated pedestrian & traffic management team for the construction works zone, to ensure deliveries are received efficiently and safely. The pedestrian management team will be responsible for the management and co-ordination of all pedestrian and construction vehicular traffic interfaces including on Wheat Rd, the haul road and as required adjacent to public domain works. Due to the nature of the site and the emphasis placed on materials handling, the efficient control and protection of pedestrian traffic is of the utmost importance for this project.

Due to the extent of time between the original DA approval and construction, we have engaged GTA to review the surrounding works which are significant, to assess and recommend any further additional controls

Prior to any “big event” days at Cockle Bay / Darling Harbour i.e. New Year’s Eve, Australia Day, International Boat and Motor Show etc., Grocon will ensure that all perimeter hoardings have been inspected, secure and are of acceptable aesthetic state that is required and expected for a large scale showcase event.



18. Traffic Management Plan

A draft Traffic and Pedestrian Management Plan has been developed for The Ribbon and is included in Appendix C of this Construction Management Plan. This plan will be finalised upon approval of the Hotel scheme DA.

A full consultative approach will be undertaken when finalising the Traffic and Pedestrian Management. All stakeholders will be engaged including:

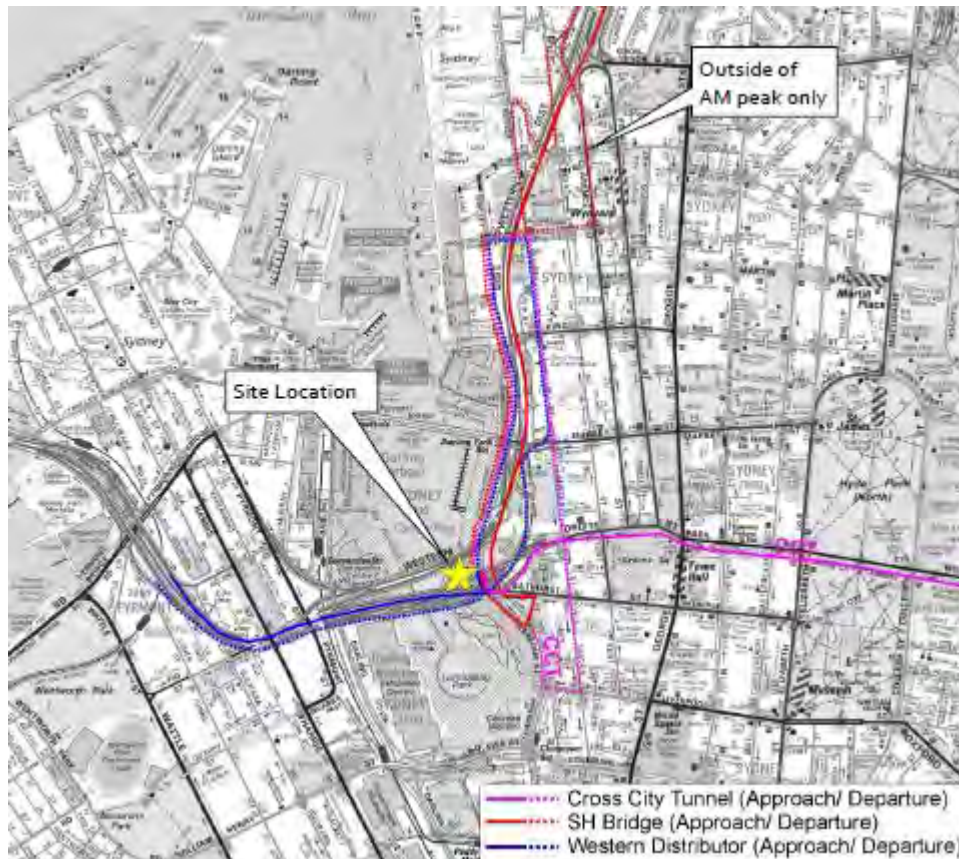
- Sydney Harbour Foreshore Authority
- Cockle Bay Property Owners
- City of Sydney
- McDonalds Property Owners
- Commonwealth Bank Property Owners
- RMS & TMC
- Sydney Buses
- Sydney Sightseeing Buses
- Sydney Taxis
- Transgrid, Ausgrid, Sydney Water, Telstra, Jemena and other service providers
- Sydney Visitors Centre
- Infrastructure New South Wales
- Darling Harbour Live (Destination Sydney)
- NSW Department of Planning and Infrastructure
- The Traffic and Pedestrian Management Plan will ensure the following are implemented during the construction period;
- Maintain full operations and access to adjoining businesses throughout construction – particularly Darling Walk, McDonalds drive through restaurant & Cockle Bay retailers
- Maintain full access to services & infrastructure (Sydney Water, Ausgrid, Telstra etc.) during construction
- Maintain full scheduled maintenance & emergency access to RMS infrastructure during construction
- Maintain Sydney Sightseeing Bus and taxi access to Wheat Road
- Maintain access for Darling Harbour maintenance and service staff
- Maintain pedestrian access to Cockle Bay, Darling Harbour & Darling Walk
- Provide designated safe pedestrian routes around the perimeter of the site
- Ensure the removal of demolished and excavated materials from site is performed in a safe & efficient manner
- Create and maintain a construction zone on the Wheat Road frontage.
- Control all construction traffic to and from the construction zones in Wheat Road
- Ensure suitable traffic control personnel in place at all times along Wheat Road

With the close proximity of public transport, site personnel will be encouraged to make their way to The Ribbon via ferries (King Street Wharf), trains (Town Hall Station), light rail or bus, all of which are readily available within easy walking distance from the project site entrance.

There will be no construction staff or workforce private car parking facilities on site.

As the CBD and Darling Harbour area is a constant congested zone for vehicle movement, a planned approach to vehicles entering the city, arriving on site and leaving the site must be adopted to avoid late deliveries and minimise any confusion or delay for drivers.

Arrivals and departure route plans are proposed to make use of the key streets within the CBD – and to gain access to the main freeways and motor ways as quickly as possible. A strict combination of delivery schedule boards and use of electronic booking will be established with allocated time periods given to each supplier and integrated into the Blue Blue system.



If access to the site is not available on arrival, trucks will be directed to do a loop of the city until access is available.

The final Traffic and Pedestrian Management Plan will reflect the following stages of construction:

- Demolition and HV Diversion Phase
- Groundwork's Phase
- Main Building Works Phase

19. Programming and Planning

Grocon will deliver the project through programming and planning to meet an agreed construction period, within commercial, budgetary and safety constraints. This will be achieved through the active management of all phases of the project from Design through to Construction, by anticipating issues and pro-actively responding.

The initial Design & Construction Program is included in Appendix D of this Construction Management Plan

Our approach to programming and planning will be refined as the design development phase progresses and will take account of and make allowances for the following:

- Design development
- Authority's coordination and approval
- Site and existing services investigation
- Outcomes from consultation with the key design team representatives, subcontractors, stakeholders and tenancy user groups (when required).
- Evolving procurement methodologies
- Options/opportunities including buildability assessments that will allow us to lock-in the optimal timing and extent of options

During the planning phase Grocon adopts the optimum delivery strategy, formulating a construction methodology, and calculating the project's needs in terms of resources. This process takes into account past performance and established techniques, specific external constraints, and seeks to identify any innovations which may assist the project.

An important consideration for successful planning and programme management is the open and collaborative identification of areas of potential quality, safety, environmental, time, and accordingly cost related risks. The measures to be implemented include:

- The establishment of programmes detailing;
 - overall site investigation & identification of constraints
 - site establishment & temporary protection
 - construction activities
 - look ahead or short term activities
 - procurement including the identification of long lead-time risks
 - commissioning and handover activities to identify the processes and timing of actions leading up to delivery of the facilities to the end users
- Periodic and regular program reviews to identify areas of departure and opportunities to increase the rate of activity, such as through re-sequencing, thus allowing expedient attention by the Project Team.
- Periodic and regular reporting to management for tracking and resourcing purposes.
- Periodic and regular site level programming and planning meetings wherein all medium and shorter term site activities are tool boxed and micro managed by our Project Team.

We will further optimise our proposed construction staging / scheduling to take advantage of Darling Harbour busy/quiet periods and construction concurrencies.

A Project Control Group report inclusive of a status programme will be provided regularly (minimum monthly) or as otherwise requested by the PCG in both hard copy and soft copy formats.

Due allowances will be made for resourcing levels to optimise trade flows and hence maximise cost efficiencies and minimise personnel movements, traffic, pedestrian and services disruptions. Adequate allowances will be made for inclement weather delays.

20. Stormwater & Erosion Management Plan

20.1 Environmental Management of Cockle Bay

Grocon understand the sensitivity of the Darling Harbour/Cockle Bay area as one of Sydney's premier water bodies and tourist attractions and as such will ensure the following key Water Quality Objectives are addressed:

- Erosion, contamination and sedimentation will be minimized as part of the construction activities associated with The Ribbon development.
- We will control the quality of stormwater leaving the construction site such that no unacceptable impact occurs to the adjoining watercourses or stormwater drains discharging into Cockle Bay
- Maximise opportunities for stormwater recycling
- Secondary contact recreation (i.e. boating) is not affected.

We recognise that the Sydney Metropolitan Catchment Action Plan (CAP) is expecting ongoing improvements with respect to impacts by the built environment on Sydney Harbour and as such, Grocon will be guided by the intent of "ANZECC and ARMCANZ - 2000 Guidelines" and the "Sydney Metropolitan Catchment Action Plan (CAP)".

Grocon will use an in house Environmental resource to develop a Stormwater & Erosion Management Plan. As a minimum this plan will address the following.

- Promenade demolition and construction works potentially effecting the quality of Cockle Bay
- Sediment laden water from The Ribbon construction site may potentially flow into the stormwater and/or adjacent surface water bodies
- Stormwater with excessively high or low pH values could run-off from potential stockpiles
- Stormwater collected in excavations and requiring disposal
- Groundwater entering excavations and requiring disposal after dewatering
- Site cut off drains eroding and increasing site water sediment loads
- Vehicles leaving the site depositing dirt/mud on public roads after rain periods
- Removal of bulk materials off site escaping from vehicles and polluting roadways
- Debris and litter collecting along roads and in catch drains and consequently effecting the quality of Cockle Bay
- Site contamination through the potential for an overflow of fuel/chemical storage containers and contamination from equipment and plant repair areas.

21. Construction Methodology – Overview

Grocon has developed a construction methodology specifically tailored to the complex requirements of The Ribbon. We believe this methodology will minimise disruption to the Darling Harbour and Cockle Bay operations and allow a successful and smooth project delivery. Specifically, consideration has been given to the following;

- Our role in the timely delivery of design documentation for procurement of works in line with the project requirements
- The management of construction and shop detailing documentation to ensure efficient and effective construction methodologies may be implemented
- Pedestrian and vehicle traffic management, including our approach to co-ordination and co-operation with other relevant projects (Refer Sections 14, 15 & 16)
- The safety of personnel, the public and property, both within the construction site boundary and adjacent affected areas (Refer Sections 3 & 12)
- The impact of construction on our neighbours and the authorities and services that we interact with, particularly the Sydney Harbour Foreshore Authority, Cockle Bay Property Owners, McDonalds Property Owners, Commonwealth Bank Property Owners, RMS, Sydney Buses, Sydney Sightseeing Buses, Sydney Taxis, Ausgrid and Sydney Visitors Centre. (Refer Section 11)Vodafone
- Impact of the additional construction traffic on the already congested CBD street network (Refer Section 18)
- Our collaborative approach to the management of typical construction disruptions such as noise, dust and vibration
- Management of disruptions related to the protection and maintenance of existing infrastructure

22. Construction Methodology - Demolition Phase

22.1 Demolition Management Plan

A Demolition Management Plan (Site Quality Plan, OH&S & Environmental Management Manual) has been prepared and is included in Appendix E of this CMP. During the DA approval period the Demolition Management Plan will be reviewed, finalised and approved.

All works will be completed in accordance with the Work Health & Safety Act 2011 and Work Health & safety Regulations 2011.

The demolition scope of works will comprise the following

(Attached in Appendix E)

22.2 Demolition Subcontractor Site Establishment & Preparatory Works

- Conduct a detailed hazardous materials audit
- Carry out detailed analysis of the Cockle Bay Wharf and existing services assets regarding their structural capacity and the effects that construction impacts may have.
- Carry out any required dilapidation reports and surveys, geotechnical or structural investigation and reporting.
- Confirm designated truck routes into and exiting the CBD
- Establishment of all demolition phase environmental management procedures - sedimentation and environmental controls to the site and surrounding stormwater systems
- Finalise all SWEMS and induct all workers to the site.
- Erect perimeter barricade tape and signage to the immediate work area as deemed necessary by a competent demolition supervisor.
- Secure all entry points to the associated work faces and obtain services sign off.
- Obtain structural and civil certification of all temporary and permanent retaining structures required duration demolition - Hay Lackey stormwater channel, the southern outfall channel, and retained portions of the existing promenade
- Establish protocols for RMS infrastructure inspection and maintenance regimes and potentially modify the RMS infrastructure in the vicinity of the elevated roadway exit ramp near the SE corner of the site

22.3 Hazardous Materials Audit

After the IMAX building has been vacated, a detailed hazardous materials audit will be conducted to determine the extent of possible materials to be removed from site. Hazardous materials will be removed and the works signed off by the hygienist. Demolition works will follow as noted in the following section.

22.4 Geotechnical Investigation, Promenade Wharf Surveys and Dilapidation Reports

Additional geotechnical investigation works (if required), Promenade Wharf Surveys and Dilapidation Reports will be carried out prior to demolition works commencing.

22.5 Demolition Phase - Environmental Management

The following issues will be address prior to demolition commencing:

Dust Minimisation

Dust control caused by groundwork's (excavation) trades will be via the use of gurneys and hoses and street sweeping of the area adjacent the site and Wheat Road will occur when required. Tarpaulins will cover truck trailers and bogies to ensure containment of material during transit.

Mist spraying will be implemented during demolition works to suppress the migration of dust. Vacuum cleaners and water pumps within the works areas shall effectively suck up and treat and contaminated mist spraying water from further contamination of the work site.

Vehicle Tyres

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

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

Cockle Bay Sediment & Stormwater Control

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

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

Any ground water or storm water entering the basement into the excavation area shall be collected into a sump excavated within the excavation. The water in the sump shall be allowed to settle over night with the aid of flocculants and then pumped out into the existing storm water systems pending approval by local council. As a general rule, no water exceeding 60mg/L of sediment will be allowed to enter the cities storm water system.

All demolition and excavation works will comply with:

- The Department of Land and Water Conservation's Erosion and Sediment Control Manual and the Department of Housing Manual Managing Urban Stormwater – Soils and Construction (August 1998)
- NSW Protection of the Environmental Operations Act 1997.

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

Waste Transport and Disposal

A detailed Waste Management Plan will be developed prior to construction commencing. Waste Management procedures on the site will follow the waste management hierarchy (avoid, reduce, re-use, recycle).

All contaminated and non-recyclable materials to be loaded and transported to an EPA approved landfill sites. All loads departing the site shall be covered with tarpaulins to ensure that any sediment does not escape the truck or bin body.

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

Storage of Dangerous Goods

Flammable fuels such as petrol, diesel, Oxy-acetylene, oils, etc. will be stored in bunted and lockable compounds with sufficient ventilation. Material safety data sheets for all of flammable and potentially harmful liquids will be stored on site.

Sludge Water (Demolition Phase Works)

Given the location of The Ribbon to Cockle Bay, Grocon will ensure that all sludge water derived from saw cutting activities will be collected by bunting around existing drain holes to ensure that water does not enter the existing storm-water system and sewer systems.

Water will be continually vacuumed from all floors to ensure that it is captured. Drainage holes will be lined with geotextile fabric as a backup should bunted walls be overflowed. Bunding will be made from sand bags and geotextile.

Water will be emptied from wet vacuums and poured into 200L drums. Water will be allowed to settle overnight and siphoned into the existing sewer systems should the water at the top be acceptable. If settling is not achieved, waste drums will be sealed and loaded onto tipper trucks and taken to an appropriate facility where it will be passed through a triple interceptor and settlement tank.

At all times, waste management activities will be carried out in accordance with the Environmental Protection Waste Management Policy 2000

22.6 Demolition Sequence

Generally the demolition sequence will comprise the following sequence:

1. Soft strip out of the IMAX building.
2. Erect first Tower Crane (may vary subject to successful contractor methodology)
3. Erect external protection scaffold fully encapsulating the building
4. Removal of roof and associated structures.
5. Demolition of building (total demolition).
6. Material handling.
7. Early core piling and raft access

1. Soft Strip Out of the IMAX building;

Soft strip out of building is to be done mechanically utilising certified (by structural engineer) skid steer loaders and mini excavators where possible. The remainder of strip out works are to be performed manually.

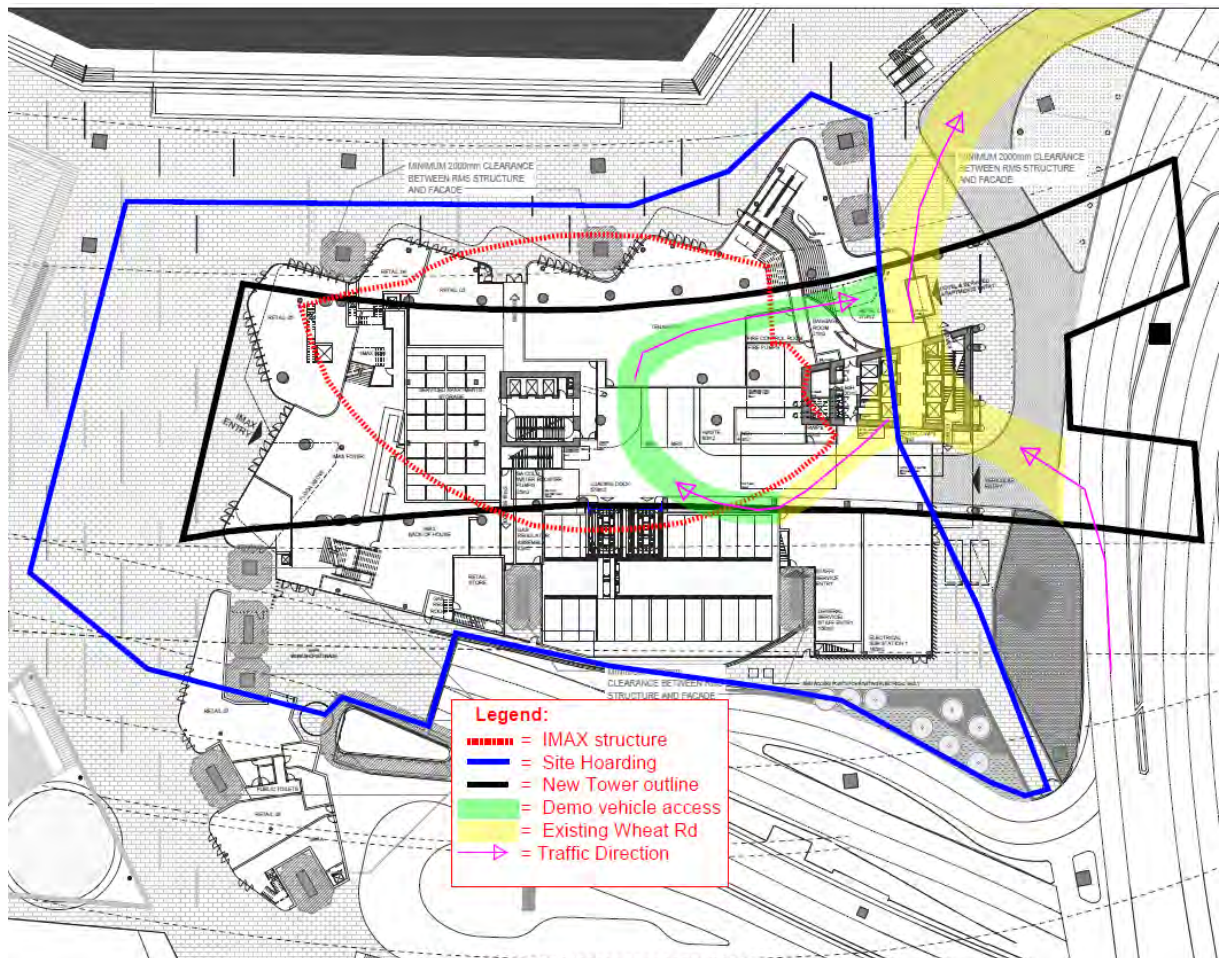
All rubbish and masonry debris derived as a result of the soft strip out are to be loaded out progressively from each floor via a rubbish and masonry debris chute located in the North East corner of the floor plate.

2. **Erect First Tower Crane** (crane no 4)Grocon will install the first of four (4) tower cranes to enable the materials handling associated with the demolition phase of the works, this will be the western most crane as the other cranes cannot be installed prior to earlier critical activities . Whilst Crane 1 is installed upon completion of the Wheat Rd gantry and cranes 2 and 3 are cast into the core raft slabs.

3. **External Demolition Protection Scaffold around IMAX Building** Prior to demolition commencing, the existing IMAX Building will be fully enclosed with a demolition protection scaffold, specifically the north and south faces will be lined with heavy duty mesh to prevent falling objects.

4. Removal of roof and associated structures

Roof sheets to be removed manually, stacked and bundled ready for removal via the tower crane to ground level for progressive load out. Structural steel beams and purlins are to be removed utilising tower crane. Beams and purlins will be slung by the tower crane, then manually unbolted / dismantled. Individual sections will be lowered to ground level for progressive load out. The same process will be implemented for the roof structure that protrudes from the existing IMAX building .A full SWEMS will be provided for all works, in coordination with the demolition contractor.



5. Demolition of building (total demolition)

Upon completion of the strip out and removal / demolition of roof structure, the demolition of building will proceed.

- Install scaffold around the perimeter of the existing IMAX Building.
- Demolition will start from the top floor (Level 7) and each floor will be completely demolished before proceeding to the floor below.
- All masonry walls in the Eastern and Western Cores are to be demolished conventionally utilising a mechanical excavator.
- All walls will be demolished inwards (into the building line) utilising bucket / ripper attachments. As walls are being demolished, skid steer loaders will transfer masonry debris to the proposed masonry debris chute.
- Eastern and Western core walls are to be demolished to slab level before proceeding with walls to Southern and Northern elevations and slab demolition.
- All reinforced concrete walls to the Southern elevation are to be saw cut into panels of approx. 6 metres x 1.2 metres (tower cranes dependant) and lowered down to ground level for progressive load out.
- All slabs are to be demolished conventionally utilising a mechanical excavator with a hydraulic breaker attachment.
- All debris will fall to floor below where the material will be traversed to designated load out chute as marked in attached drawings.
- Upon completion of each floor, machinery used for demolition will be craned down to the floor below.
- The above process is to be repeated for each floor until level 2 is reached.
- Once level 2 has been reached, the remainder of the demolition will be carried out utilising 30 – 40 tonne excavators with hydraulic breaker / and or grab and bucket

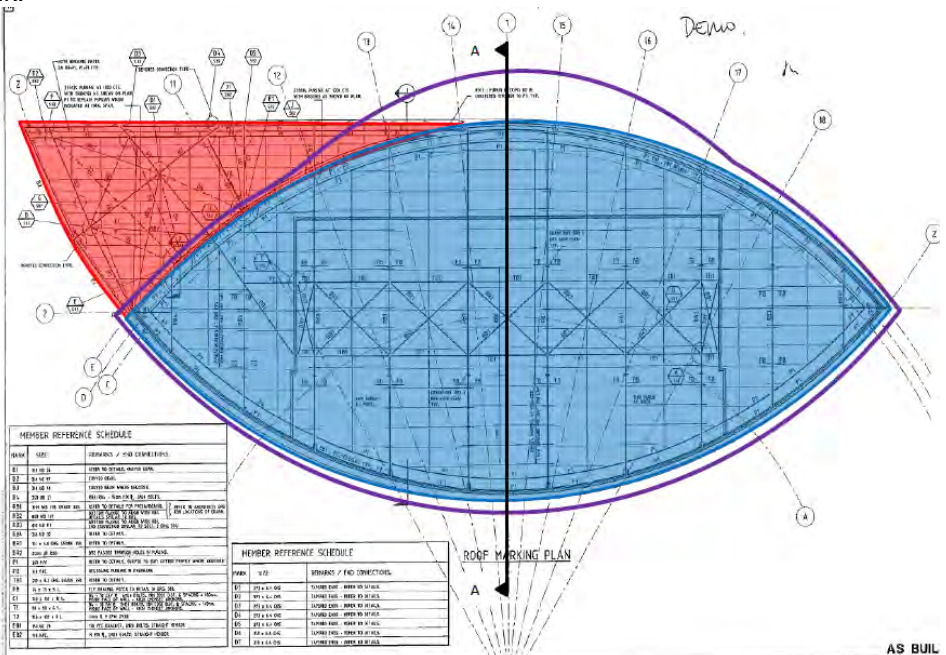
attachments working off Ground Level. This process will include the demolition of the Ultra Floor.

- Excavators will reach up to the top of the Ultra Floor and break up the concrete working east to west and working down to Ground. All demolished materials will be loaded out progressively.

If at any time the works / sequencing is to change or the demolition methodology requires altering, all works are to cease and SWEMS are to be amended and workers will be re-inducted by tool box talk.

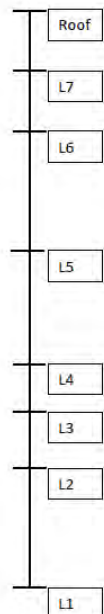
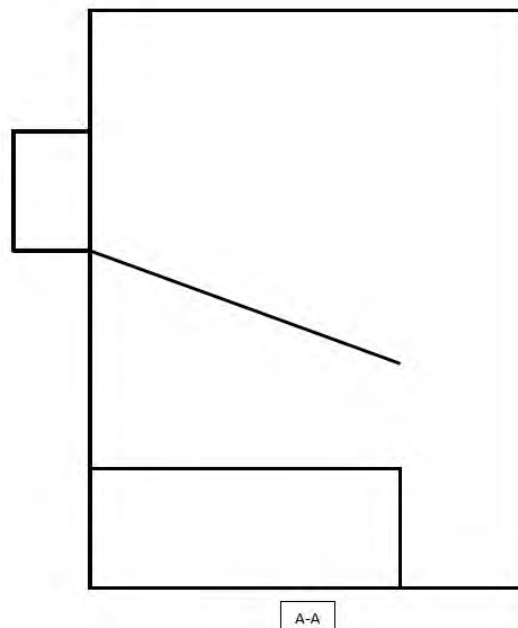
Main Demolition:

- Red Section to be removed first by peeling roof sheets back and cutting and lifting steel members progressively.
- Scaffold to be erected (Shown in purple) to full extent of building.
- Blue Section to be removed by peeling roof sheets back and cutting and lifting steel members progressively.



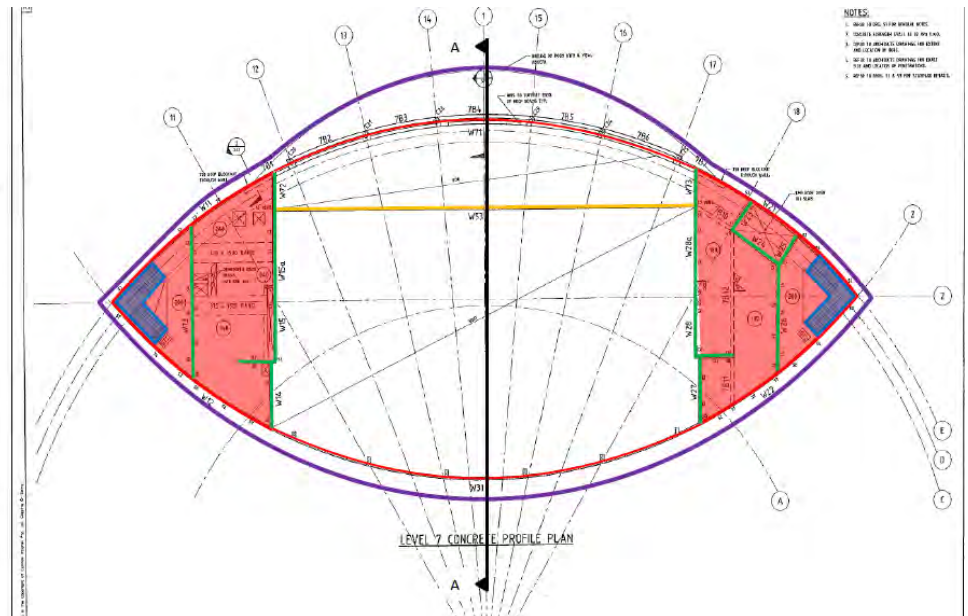
General Notes:

- Demolition will be from top down
- Harnesses to be worn during demolition process to remove roof structure
- Scaffold to be erected after North/West corner removed
- Internal slabs, walls and other structures to be demolished using small machines to level 3
- External walls to be demolished by cut and lift method using tower crane (Assumed 10t blocks) to level 3 (Underside of Western Distributor)
- Remainder of structure to be demolished from level 3 down using 45t excavators



Main Demolition:

- 5 – 12t excavators (pending load rating of slabs) will be lifted onto the suspended slab (Red Shading).
- Machines to break slab away from the middle and head towards the stair cases on the West and East. Walls in green to be demolished progressively.
- Rubble will fall to the level below during this process.
- Stairs to be demolished from top down as the excavators track down to the next level.
- Wall shown in orange to be demolished using crushing jaw to be fitted onto crane. (detailed method shown in *Jaw Crushing Method*)
- Outside walls shown in red are to be cut into 4x4m blocks and lifted down (Detailed method shown in *Cut and Lift Method*)



6. Material Handling

Section 15.5 details specific vehicle access requirements, generally, all demolition materials will be loaded from Ground Floor - refer diagram Vehicle Access – Demolition Phase.

Trucks will enter and exit the work area in a forward manner under instruction from authorised traffic controllers. Trucks are to enter and exit the works zone from the Eastern end. Trucks will be loaded via excavators and or Tower Crane and all trucks will be tarped / strapped prior to leaving site.

22.7 Waste Management & Recycling

In recent years the waste management industry has responded positively to industry pressure and government legislation. As a result Grocon are able to ensure accurate reporting is available and efficient management of waste separation for recycling is assured. Grocon regularly achieve 90%+ recycling rates on all its construction waste.

Waste management facilities will be located adjacent to the site exit gate.

23. Construction Methodology - Groundwork's' Phase

Once the Demolition Phase is complete, the Groundwork's' phase will commence. This will comprise the following:

This will comprise

1. Loading Checks and Temporary Structures, bridges for Hay Lackey channel and southern outfall culverts.
2. Erection of Tower Cranes 4 ,1, 2 and 3
3. Promenade Works
4. Balance of services Relocation
5. Core piling, raft and jump form mobilisation
6. Bulk & Detailed Excavation
7. Piling and Pile Cap Works
8. Raft Slab Construction

23.1 Loading Checks & Temporary Structures

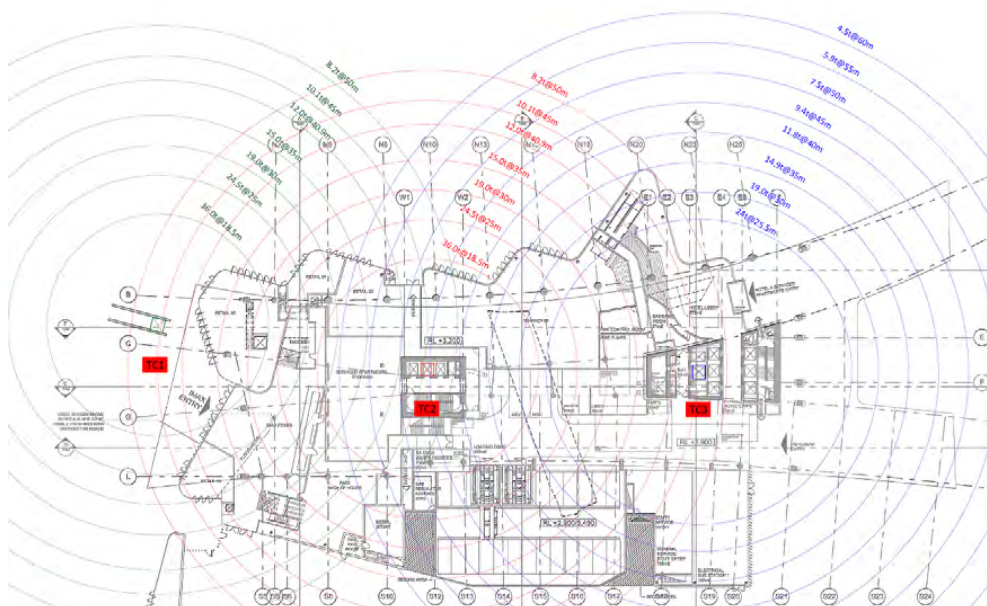
Loading checks and temporary structures will be installed (as required) for materials handling and construction over the existing Hay Lackey stormwater channel, the southern outfall channel, in ground services and retained portions of the existing promenade

Temporary foundations required for tower cranes, man and materials hoists and erection aids for the structural steelwork will be constructed.

A notice of intention to commence excavation, shoring and underpinning will be sent to the PCA and City of Sydney at least 7 days prior to the commencement of those works.

23.2 Erect Tower Cranes No: 1, 2 and 3

During the Groundwork's Phase Grocon will erect the first, second and third tower cranes in order to have the cranes available for the main building works phase and in particular for the erection of the heavy trussed steelwork.



Refer diagram - Tower Crane Locations

23.3 Promenade Works

Removal of promenade finishes and demolition of portions of the existing reinforced concrete promenade structure (constructed over water) to enable the ground floor raft slab to be constructed.

Barges from Cockle Bay will be used (if required) for demolition works and to provide support for new construction works over water. Temporary structures will be constructed on top of promenade for piling works over water.

Temporary formwork systems over water will be installed for the construction of pile caps, raft slab and new promenade structure

23.4 Services Relocation/ Protection As stated in Section 8.2, all service disconnections to the existing IMAX building will be carried out prior to any demolition works commencing.

The existing stormwater, gas, water and sewer services to the IMAX building will need to be re-diverted, out of the construction buildings footprint. Although the existing Southern Outfall and Hay Lackey stormwater channels will remain, procedures will be put in place to protect these assets during and after the construction of the new building.

The electrical supply kiosk substation to the IMAX building will be temporarily retained to provide power during construction. But there are several existing HV conduit pathways (11kV & 33kV) which require diverting out of the buildings footprint, concrete encasement and/ or structurally transfers over same. This will be co-ordinated and/ or undertaken by Transgrid/ Ausgrid to ensure no disruptions to the services provided.

11kV

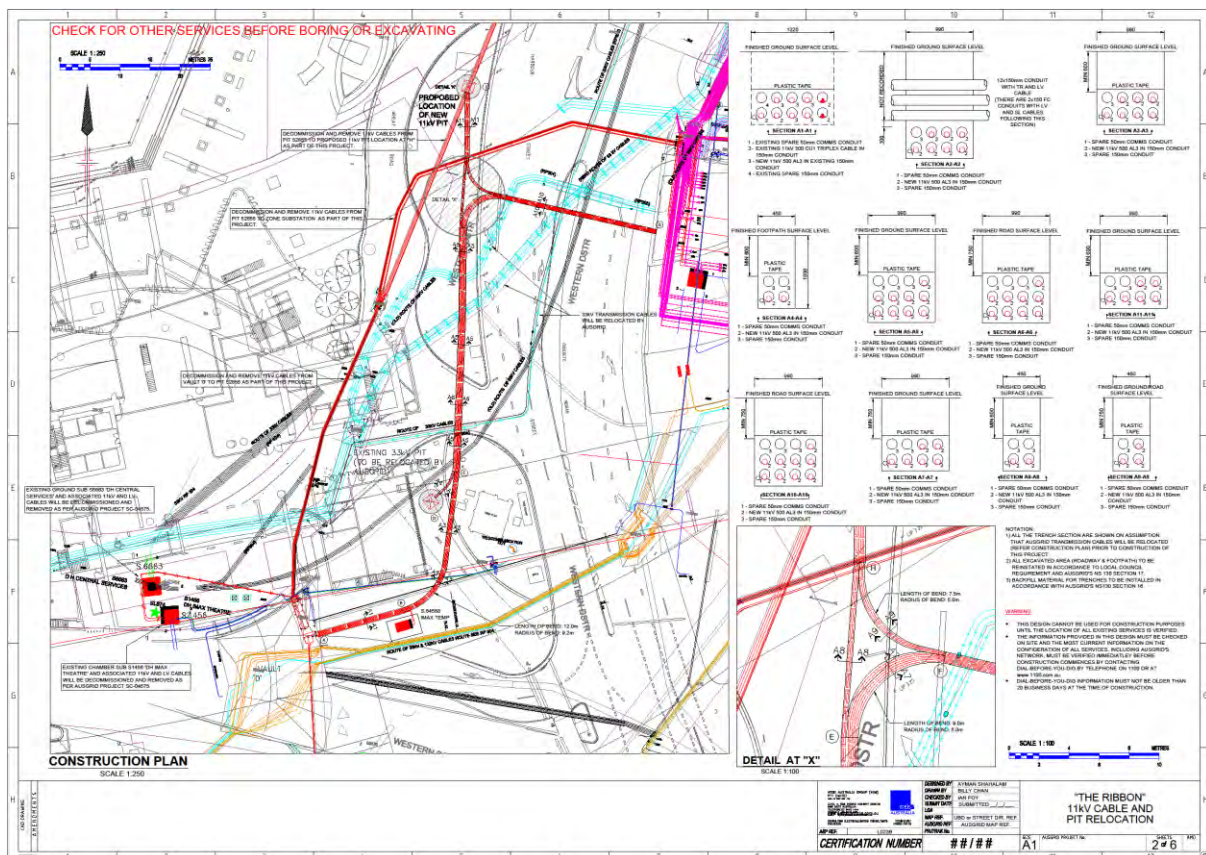
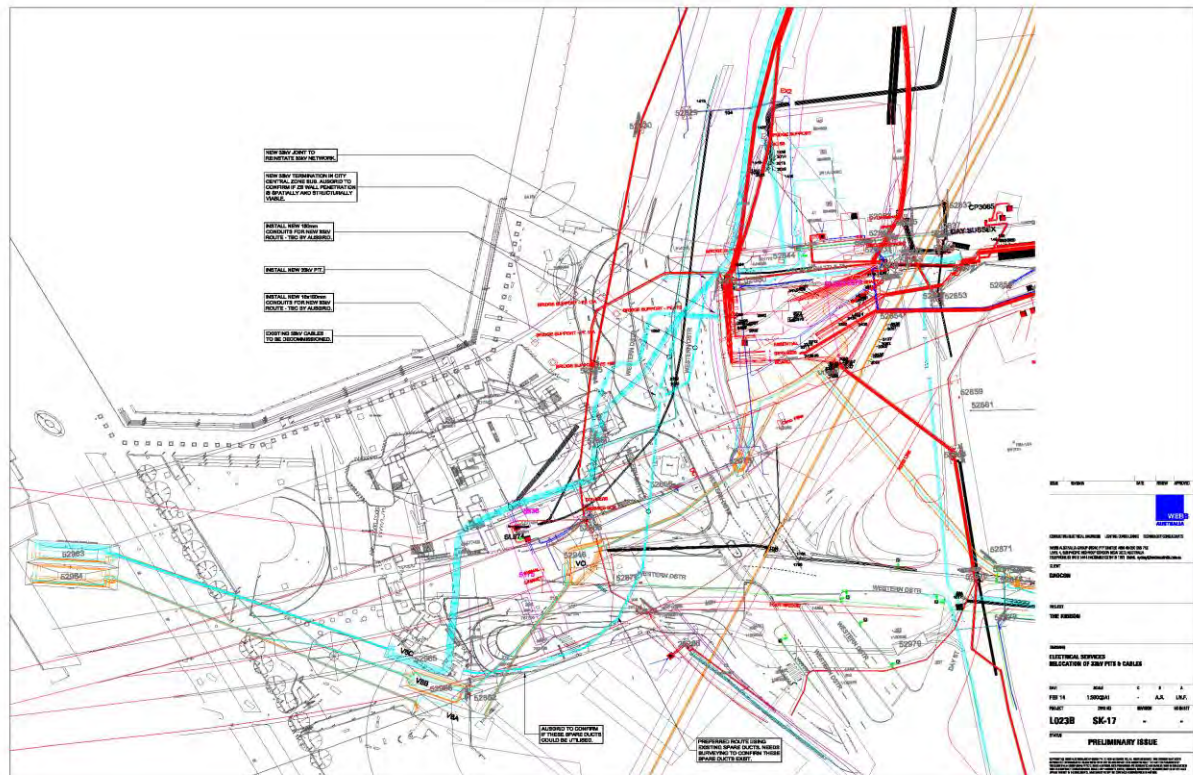
The relocation of the 11kV 'distribution' HV power will supply power to The Ribbon's substation via pit D. The drawing shows the multiple RED lines which are the new conduits which we will install, along with the pits (main pit at G, minor pits at H, F & E). Trenching works take place under the Western Distributor into the Ausgrid zone substation. The major pits are approx. 3 x 4.5 x 2.4H with all conduits trenched and concrete encase. On completion of works, Ausgrid will pull cables, commission and energise.

The old 11kV route is then decommissioned and can be removed in the excavation stage. This has been discussed with electrical contractors and estimates of 2-3 months to undertake these works have been targeted following Ausgrid and RMS approvals.

33kV

Works involve the rerouting of the multiple conduits which carry the HV cables serving Barangaroo. These existing conduits (LIGHT BLUE) start from the main Vault 8C and traverse across the existing site, south of IMAX. These also cross the Western Distributor and go into the Zone Substation as well as continue up the road to serve Barangaroo.

The proposed new route is also shown but it now starts from Vault 0 and runs adjacent to the Western Distributor to a new major pit and then connects to the existing conduits serving across to the Zone Substation (no new conduits are required under the road). It also connects to the existing conduits serving Barangaroo which will need a major pit in the Western Distributor for which trenching is required under the Western Distributor.

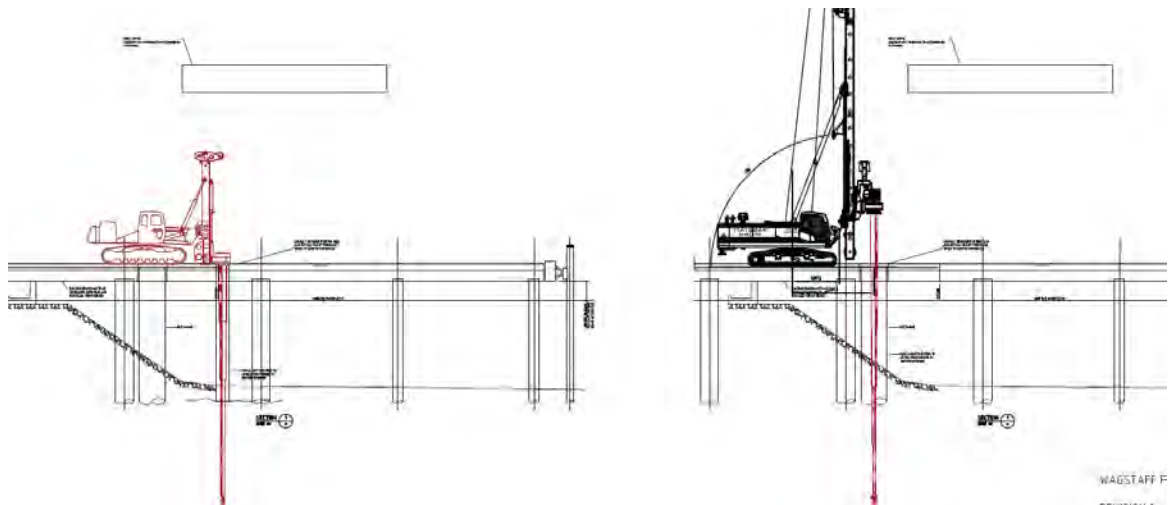


The existing Transgrid / Ausgrid vault will require modification to facilitate the access of future cables. This has been discussed & agreed in principal with the Network Administrators.

23.5 Piling and Pile Caps

Bored piles will support the ground floor raft slab and will be socketed into the sandstone bedrock. Large diameter piles are to be bored with permanent steel casings through water and/or soft soils (mainly along the northern elevation of the building), and using temporary steel casings where piles are located in stable fill.

Sheet piling will be installed to retain water and/or soil at localised deeper excavations for cinema toe and/or lift overruns, at side faces and steps in raft slabs, and at pile caps.



(Images showing different piling rigs for open air space and under bridges.)

23.6 Bulk and Detailed Excavation

Bulk excavation and construction of the raft slab within the building footprint (thickness varying from approximately 0.4m to 1m), and including staged stressed, post-tensioned reinforcement
Detailed excavation for core raft slabs and lift pits

Bulk and detailed excavation of smaller diameter piles, thinner raft slabs, and ground beams for podium structures outside the footprint of the main building will occur.

All material removed from site is to be sorted and disposed of in accordance with the Waste Minimisation and Management Act of 1995. All contaminated and non-recyclable materials will be loaded and transported to EPA approved landfill sites.

All loads departing the site shall be covered with tarpaulins to ensure that any sediment does not escape the truck or bin body.

23.7 Raft Slab Construction

The Ground Floor raft slab will accommodate the approx. 1000mm (with approx. 2000mm @ the lift cores) and 400mm deep slab over the new promenade. The raft slab is likely to be heavily reinforced and post tensioned.

24. Construction Methodology - Main Building Works Phase

24.1 Structure Overview

The structural solution for The Ribbon comprises the following:

- The structural solution is a structural steel and a CF210 steel deck solution.
- The solution also incorporates a “Jump Start” structural steel and composite slab solution which will be implemented from Ground Level to Level 3 between the cinema and eastern foyer.
- “Stadium construction” and hanging IMAX cinema seating and Ball room spans between cores
- Significant transfer structures over the Hay Lackey Channel & HV conduits and the installation of heavy duty shoring towers to support the IMAX structural steel.
- Significant truss structures over the IMAX cinema, ballroom and eastern elevation of the building to distribute loads associated with the changing floor slabs.
- Car stacker (in lieu of basement car parking) housed in a structural steel framed enclosure

The Main Building Works Phase will comprise the following structural elements:

1. Grocon Lubeca Jump Form Systems
2. Jump Start structural steelwork and Hay Lackey Channel transfer structure
3. IMAX and Ball Room trusses ,structural steel and Kingfloor slab construction
4. Wheat Road structural steel and composite slab construction
5. Structural steel slab structure

Descriptions of the structural elements follow and the sequencing is depicted diagrammatically in Section 24.8

24.2 Eastern & Western Core - Grocon Lubeca Jump Form Systems

The Grocon Lubeca Jump Forms / core formwork system will not be established until the raft slab bases are complete. The systems will be set-up and established at Ground Floor level and will see the Eastern jump form setup first followed by the Western jump form.

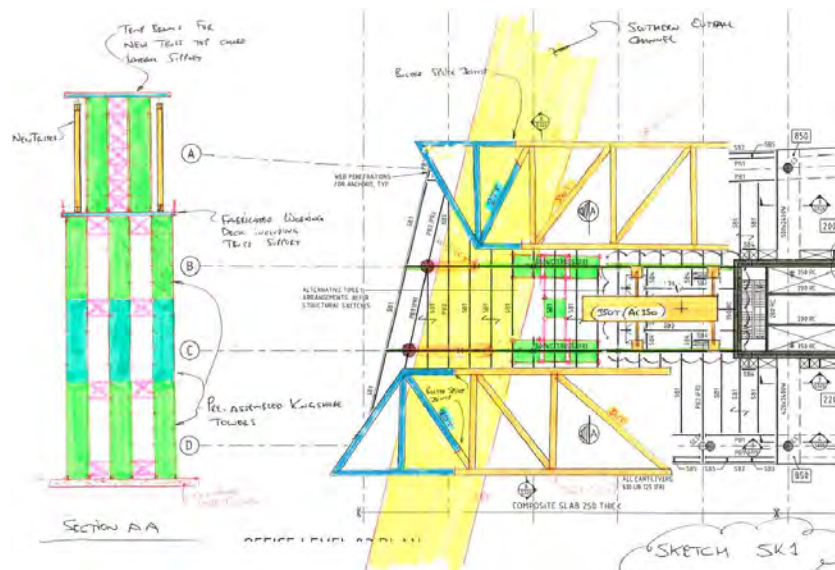
Approximately 21 jumps will be needed to complete the Eastern core and 16 to complete the Western core. This will be followed by dismantling. Typically the core formwork will be progressed a minimum of 3 levels above the leading concrete or structural steel deck.

The eastern jump form will have the kicker/initial pour followed by 3 pours (2 jumps) in order to clear the jump steel that is to be erected between the cores. The western jump form will require to reach level 13 RL 51.730 so there is full connection access to the upper truss members at level 11 RL 45.330. This equates to 12 pours (11 jumps) at approximately 3.9 m high pours in order to clear the IMAX structural steel. Localised connection points / anchoring systems for the principal structural steel wings will be detailed, co-ordinated and cast-in within the required pours.

The western jump form will progress concurrently with the eastern jump form, or lag by, between one to two weeks.

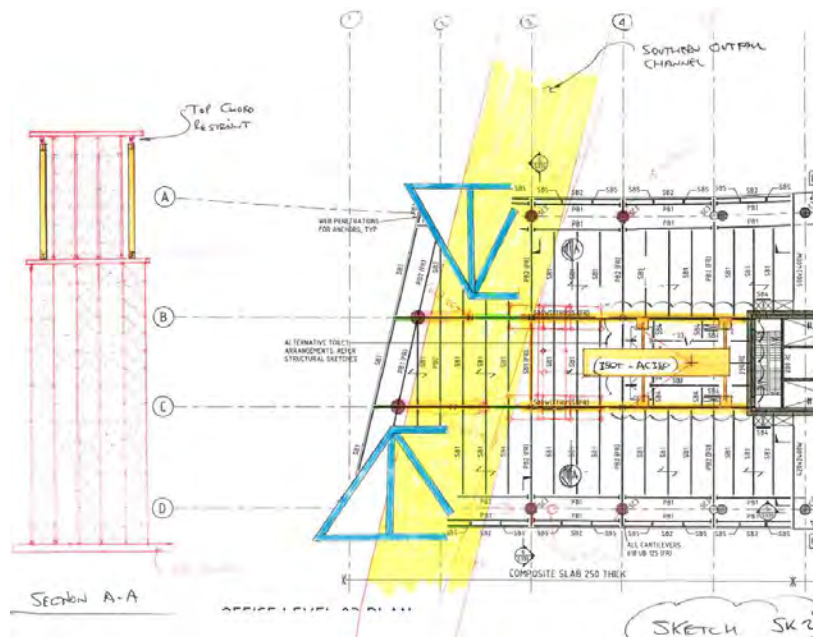
When the core is three to four levels above the leading formwork deck, the core construction cycle will be adjusted to maintain this separation.

Option 1: Proposed methodology



SKETCH - SK1

1. Pre-assemble Kingshore towers off site
2. Pre-assemble trusses on ground (Note:- Bolted splices)
3. Pour strip footings for Kingshore Towers
4. Erect Kingshore towers and prefabricated working deck using Tower crane or mobile crane (Note:- Access tower will need to be provided to outside face of Kingshore)
5. Setup 350T mobile crane and erect Truss portions. Fit top chord restraints prior to crane removal. Utilize tower crane to install set of floor beams from temporary working deck.



SKETCH – SK2

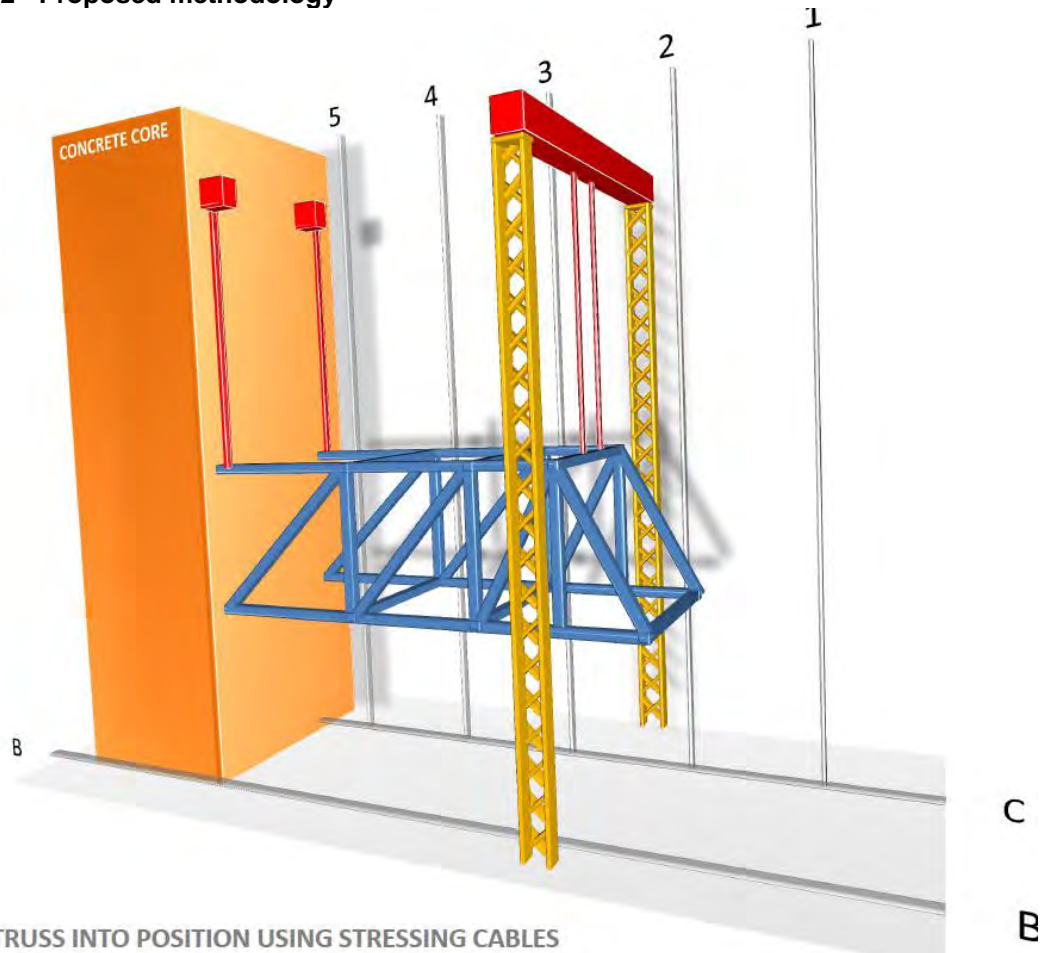
1. Setup mobile cranes. –

1A. Crane 1 - Erect column which has steel reinforcement steel cage already installed and hold stable.

1B. Crane 2 – Erect remaining section of truss and bolt off.

2. Release cranes and adopt same methodology as item 1A & 1B above for second truss.
Utilize tower crane to Install all floor beams between grids B and C

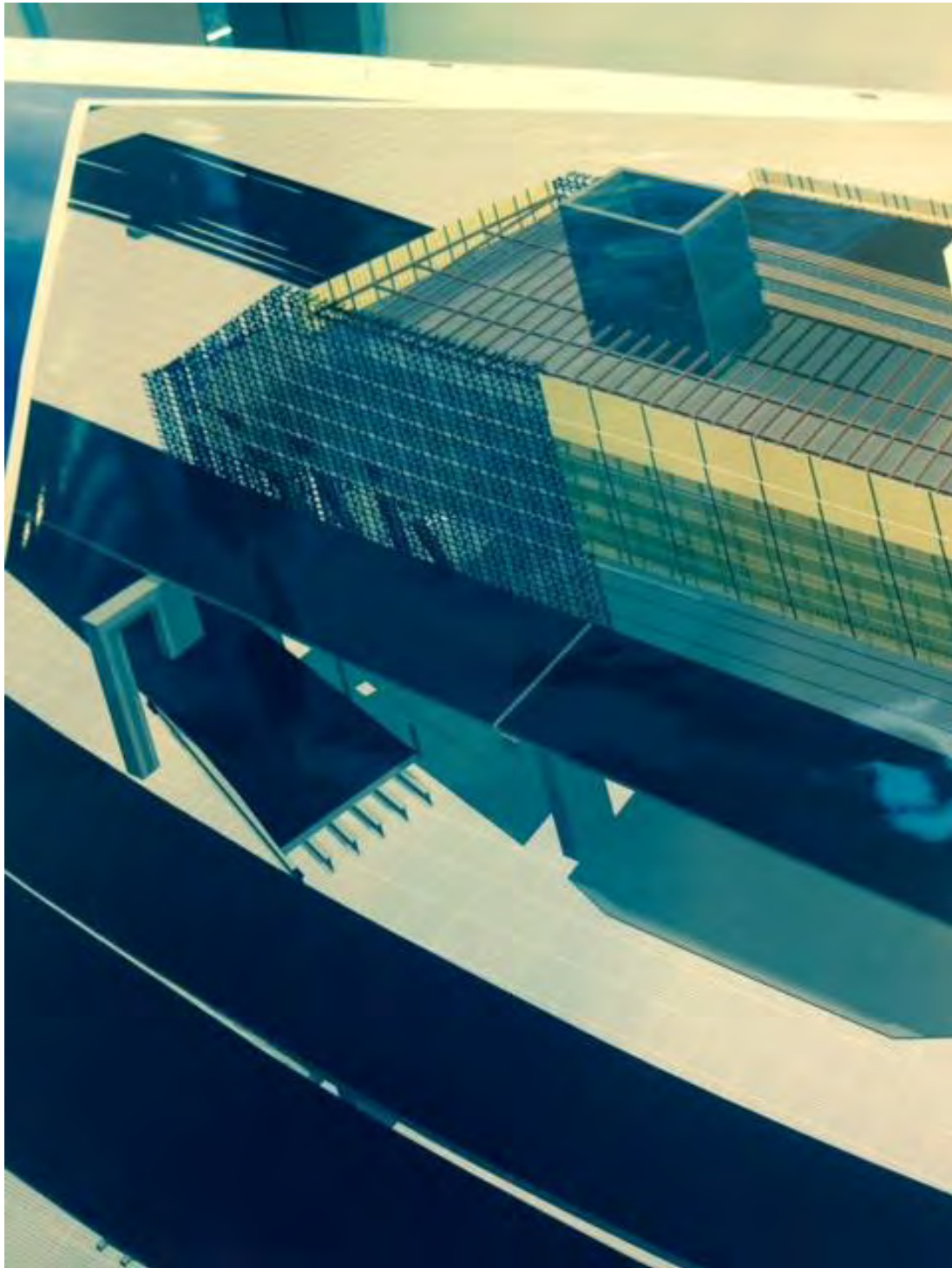
Option 2 - Proposed methodology



JACKING THE TRUSS INTO POSITION USING STRESSING CABLES

The IMAX structural steel and trusses will be fabricated offsite with the largest transportable sizes that can be driven on the road legally and fit within the site haul road. The site logistics and positioning of crane 4 and amenities have been designed upon consideration of this critical construction activity.

Edge protective system for cinema construction:



As with the Jump Start; given the location of the RMS elevated roadways and the safety of workers, pedestrians and vehicles below the structural steel will be installed complete with the following safety initiatives:

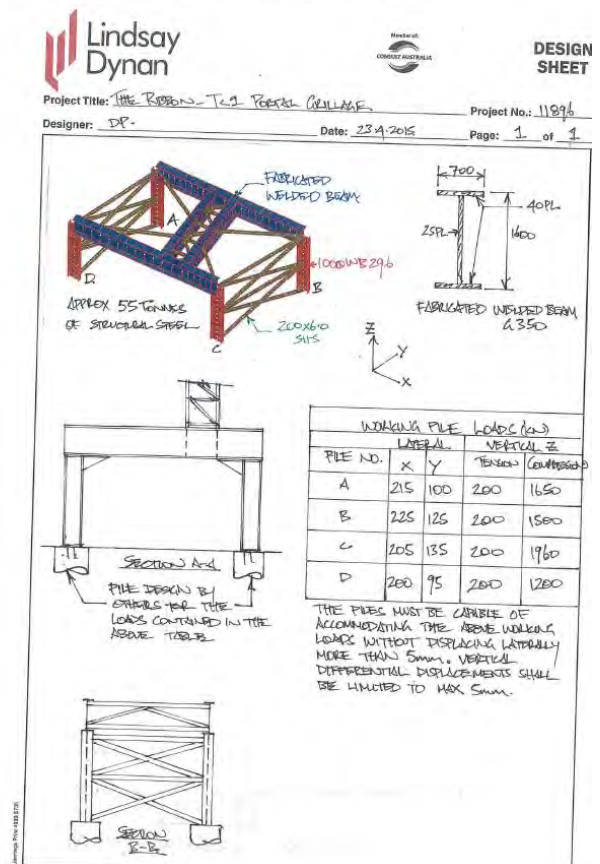
- Preformed edge boards to the Kingfloor formwork deck
- Workright/ ExPanda full height Edge Protection Handrail System
- Encapsulating scaffold for the north and south elevations of the theatre

24.5 Wheat Road Structural Steel and composite slabs

The Wheat Road structural steel erection will be installed with the Jump Start structural steel, and based upon engagement with a leading hoarding company there will be an approx. 3 man crew for 70 shifts to build and remove the catch deck. This is in addition to closures for footings and possible piling that may be needed to support tower crane 1's grillage.



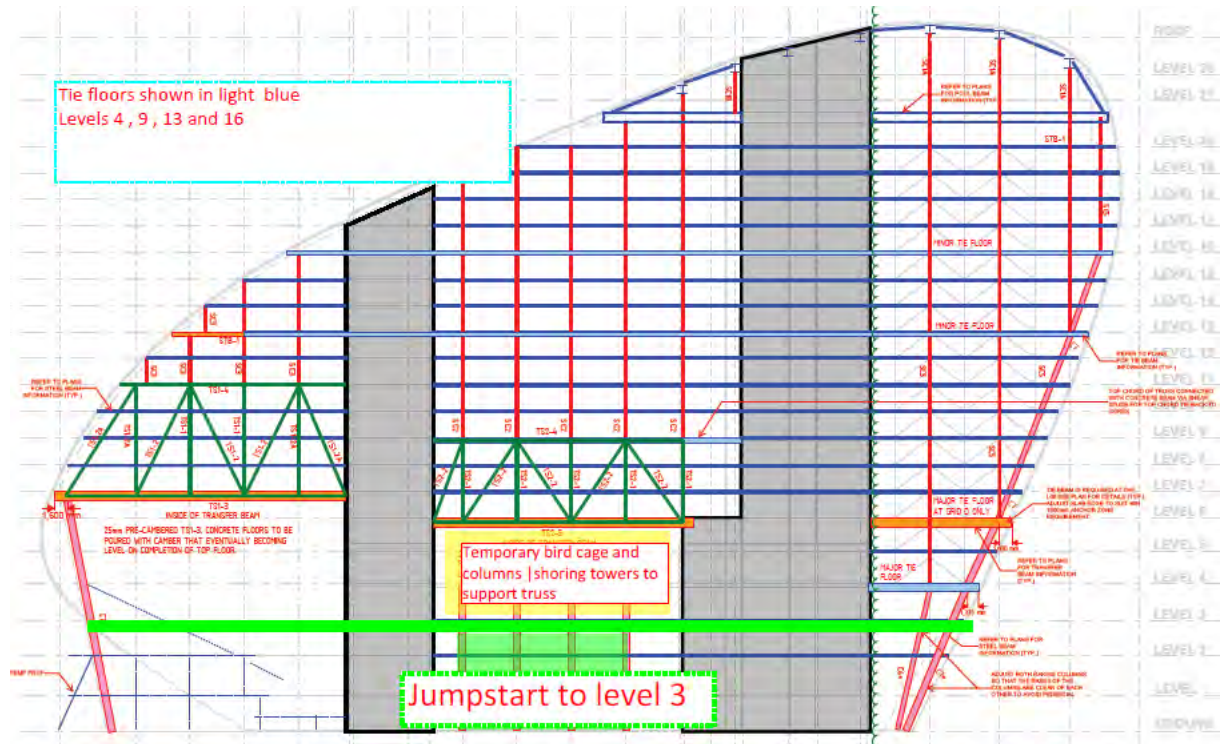
OVERHEAD PROTECTIVE STRUCTURES



(refer crane elevation on page 55)

24.6 Steel structure

The structural steel will be erected in stages of up to 4 floor levels at a time with erection of Structural steel required to each tension tie slab level prior to concrete being poured. Once the tension tie slab is completed the floors below the tension tie can be completed. This process will continue in the several stages as shown in the section “24.8 - Structure Staging Diagrams” They will occur on levels 4, 9, 13 and 16 as shown in light blue below.



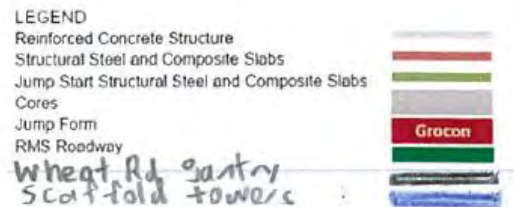
(Refer sketch in section 24. 3)

Slabs will be constructed from structural steel in order to achieve the required cantilevers as the building footprint increases. Level 1 and 2 below the Jump Start level 3 will also be constructed using a structural steel given the restriction imposed by having a completed structure overhead and setting up perimeter screens.

Final erection sequences for the new steel structure will be fully developed in conjunction with the structural steel subcontractor.

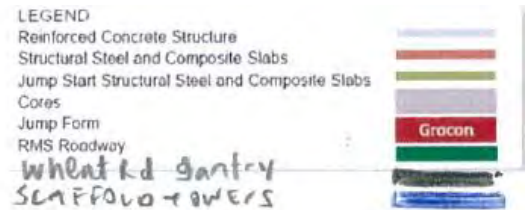
Back propping for all King Floor and Bondek will be performed as per engineering requirements and will comply with AS-3610. Concrete slabs will be back propped until the minimum strength is reached and the propping removal sequence as agreed with the structural engineer.

24.7 Structure Staging Diagrams



- Ground works complete
- Core formwork mobilised with scaffolding
- Raft poured
- Part ground slab poured
- Start Wheat Rd catch deck

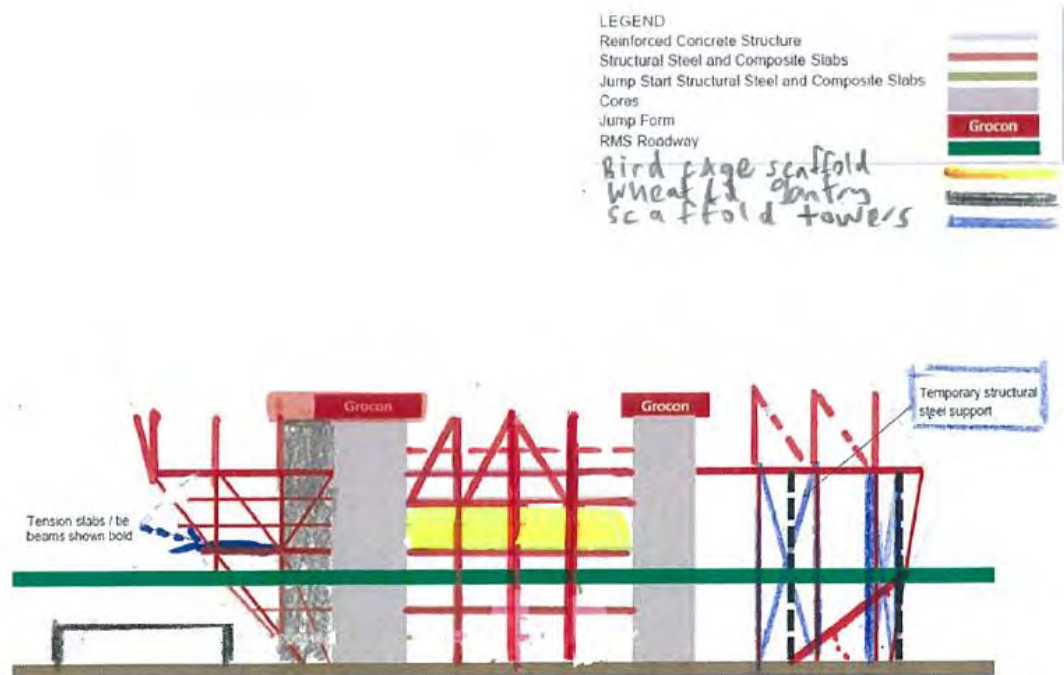
The structure will kick off with both cores whilst the balance of raft slab and car stacker and trolley pits are being completed. Two floor high scaffold will be used to set up each jump form system.



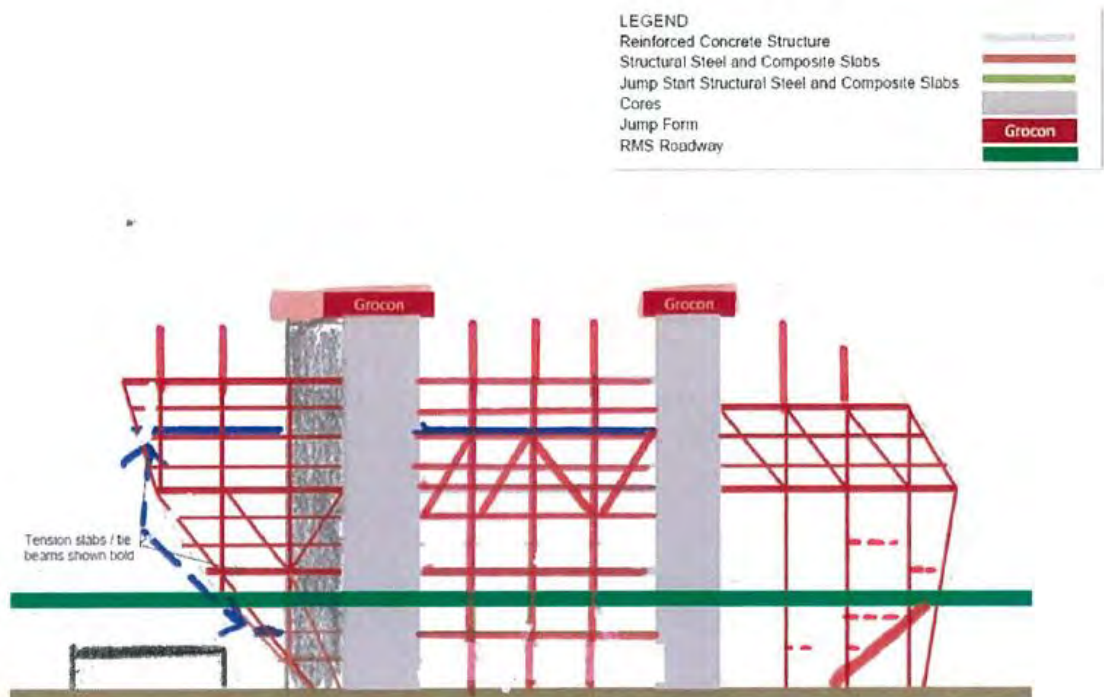
- Jumpform clear of jump start
- Wheat Rd steel complete
- Commence cinema shoring towers
- Commence structural steel erection

The jump start to level 3 will commence with the erection of triple floor height columns braced down to the ground slab and tied back to the cores.

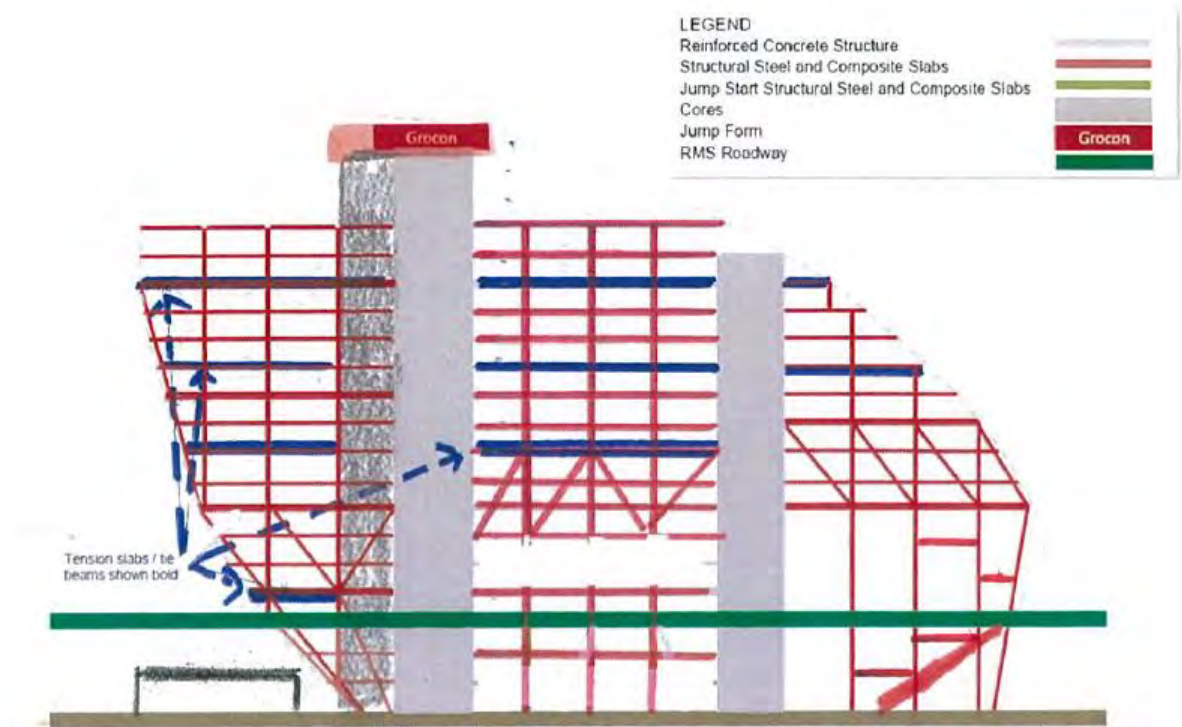
The level 3 jumpstart will have tower foot print construction joints, so the perimeter screens are installed prior to working above the freeways.



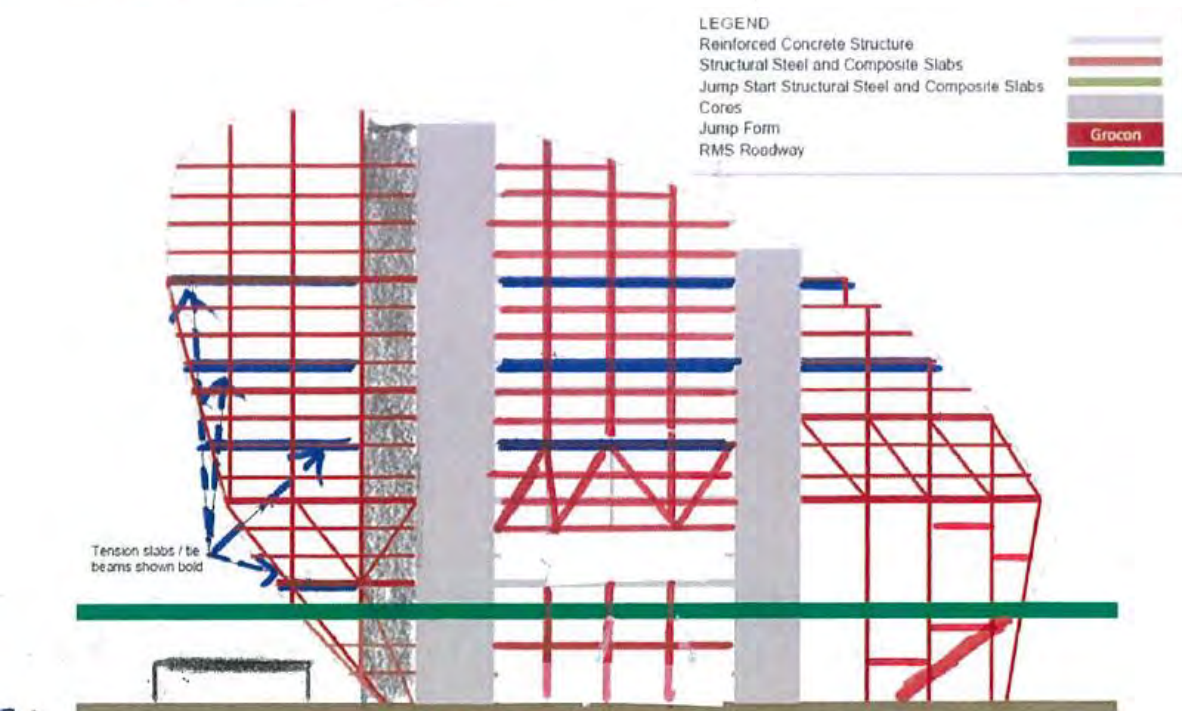
- Cores clear of IMAX structural steel
- First tension tie slab complete
- Shoring towers erected for IMAX truss installation
- Commence cinema and ball room truss



- Cores clear of IMAX truss and ball truss
- Second tension tie slab complete



- Forth and final tension slab complete



- Structural steel and slabs complete to Wheat Rd
- Eastern Jump form removed

24.8 Services

Following the typical structure cycle, high level services rough-in and plant room fitout will commence.

After the equipment is in position in the plantrooms (which also include service risers) the main reticulation of pipework, ductwork and electrics will radiate outwards across the floor. Concurrently services connections within the plantrooms and floor plates will be carried out prior to suspended ceilings being installed.

When the façade is complete the ceilings and services fit-off will commence.

Testing and commissioning will commence on a floor by floor basis following fitout completion.

24.9 Façade Installation

The initial facade set out and installation of fixing brackets for the façade will be conducted inside the perimeter screen system that encapsulates the building. Façade cast ins will also be installed off site at the steel fabrication plant where possible. Safe work practices will be developed in consultation with the façade subcontractor to ensure that the risks of falling objects are eliminated if the preferred option cannot be achieved. Safe work methods such as fall restraint lanyards around the perimeter of the building will be applied.

All façade panels are to be delivered to the floors via crane, vertical materials hoist and dedicated loading areas.

Façade panels are to be distributed across the floor and launched into position through adjustable (above handrail) openings in the proprietary full height perimeter safety fencing system. Typically, façade panels will be installed with the use of a small crawler floor crane or monorail system from the floors above.

Safe work methods, risk assessments and facade safety in design workshops will be developed and implemented in consultation with our in-house façade engineers, OH&S advisors, industry professionals and relevant subcontractors to ensure controls are in place to eliminate risk of falling objects.

24.10 Architectural Finishes

Hotel and serviced apartment finishes will commence following services rough-in and façade installation. This will typically consist of lightweight partition walls, ceiling, joinery, carpet and bathroom fit out.

24.11 IMAX and Tennant Fitout

This Construction Management Plan does not contemplate the early access of Tennant's fitout subcontractor prior to Base Building Practical Completion. If required, an early access strategy will be developed once these conditions are known.

24.12 Landscaping & Ground Plane Works

Ground plane works will commence once low level scaffold has been removed. External street works and promenade make good will commence once hoardings are removed as per public domain staging plans.

24.13 Completion and Handover

Grocon will ensure that all works are commissioned with only minor defects remaining. A detailed Completion Plan will be established 6 months prior to Practical Completion and will be cognisant of all tenant's requirements.

Progressive inspections and sign-offs will be conducted so to ensure minimal defects at handover in line with Grocon's Quality Assurance procedures.

Grocon will ensure that the project is handed over with all Operations and Maintenance Manuals, as built documents, warranties and required certification in place.

We understand the importance of commissioning in that all the building services and functions need to operate at the highest efficiency under all conditions. All services and functions will be witnessed, tested, commissioned (for the pre-occupation condition) prior to handover and effectively integrated with on-going building fine-tuning to ensure efficiency and effectiveness in the occupied and fully operational building.

As part of our handover procedure, training for the facility management team or other nominated people will be programmed and provided before the building is handed over. The training will include the operation of all the services, the function of all the building facilities and any other requirements as needed.

25. Materials Handling

25.1 Concrete Pumping and Placement

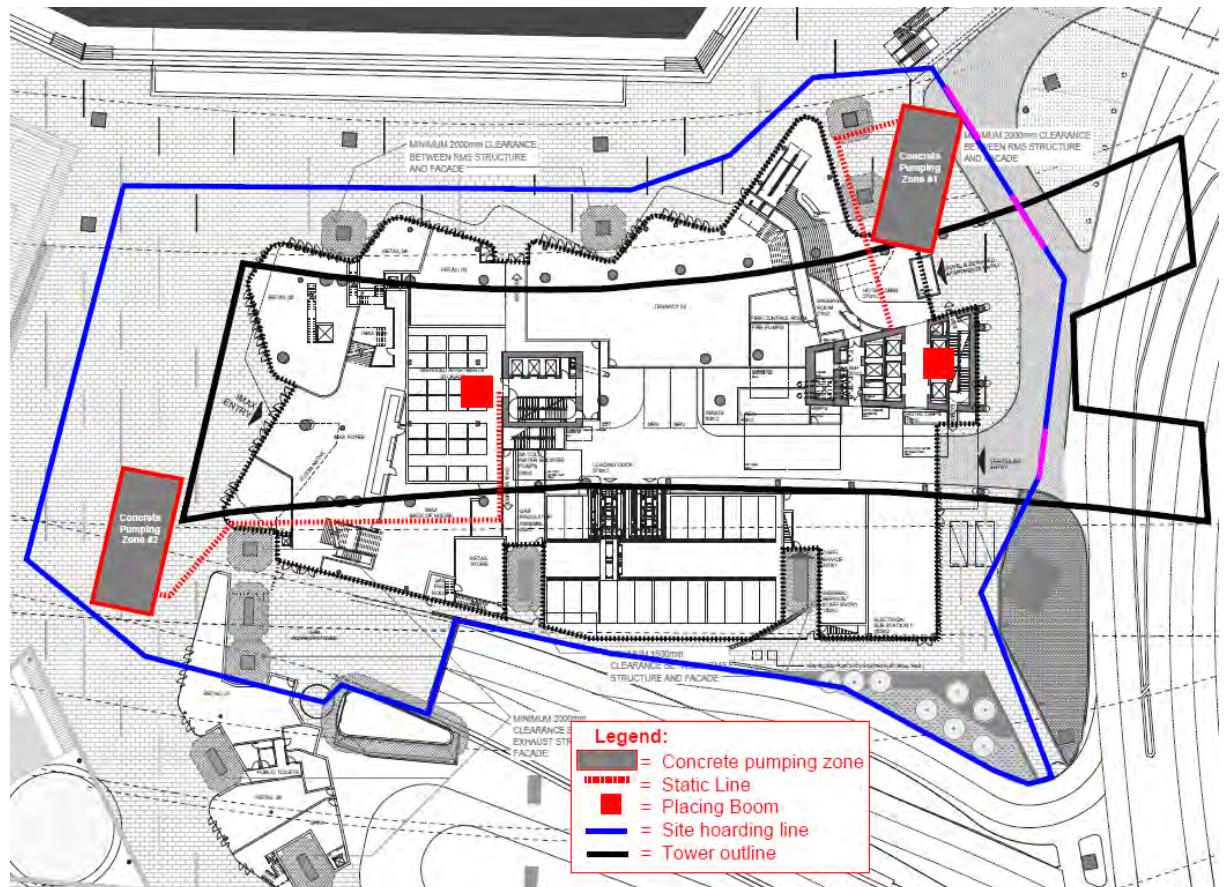
The structure and concrete pour sequence will comprise of 4 pours per floor. The East and West cores will be poured separately.

The concrete pumping zone will be located in the south east corner of the site. There are provisions for two concrete trucks to reverse onto the concrete pump. This location will not block or hinder the flow of vehicles onto or through the Wheat Road loading area.

Concrete will then be pumped via static line to the two tower boom pumps located within the eastern and western jumpform then distributed to the respective pour area.

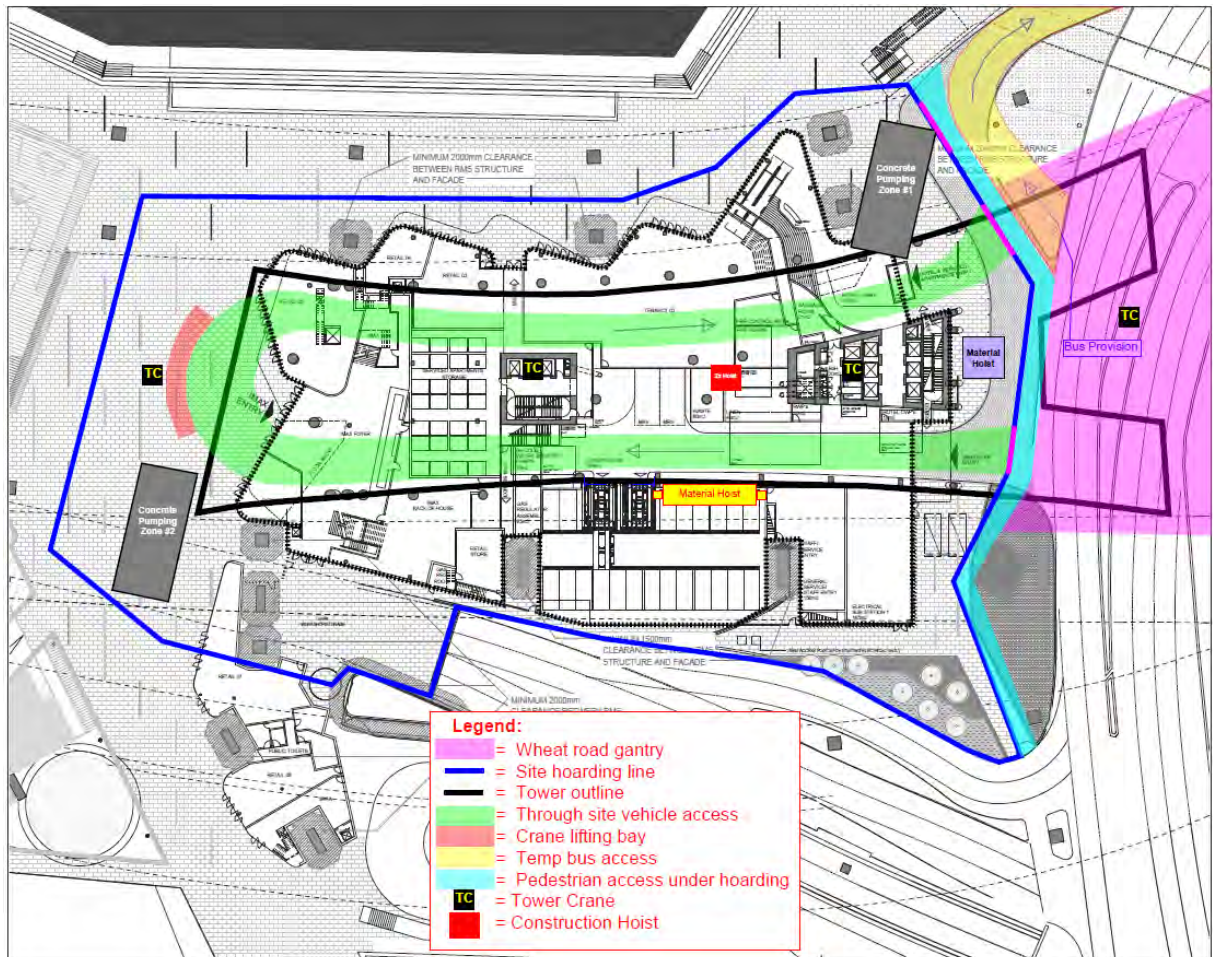
Note: Two tower placing booms will be installed to facilitate the pouring of typical concrete floors.

Refer Diagram – Concrete Pumping



25.2 Loading Zones

Loading zones will be established at the western elevation (adjacent to the hoarding) and to the Wheat Road area.



The Wheat Road loading zone will comprise an overhead gantry which will operate as a material storage area and will provide a clear lift locations on the eastern end of the site.

Refer diagram – Loading and Unloading Areas

25.3 Tower Cranes

Current planning for the project is for the use of three (3) luffing tower cranes for the materials handling of all structure, façade, services and finishing trades. We are aiming to have either electric cranes working off generators or diesel power traditional cranes, but may have a combination based on availability of power supply.

Three (3) tower cranes have been provided to ensure that there is adequate capacity to move materials both vertically and horizontally to the workface from very limited loading & unloading areas.

The tower cranes have been positioned to effectively and efficiently provide materials handling for the project from the Wheat Road gantry, southern and western elevation loading & unloading zones.

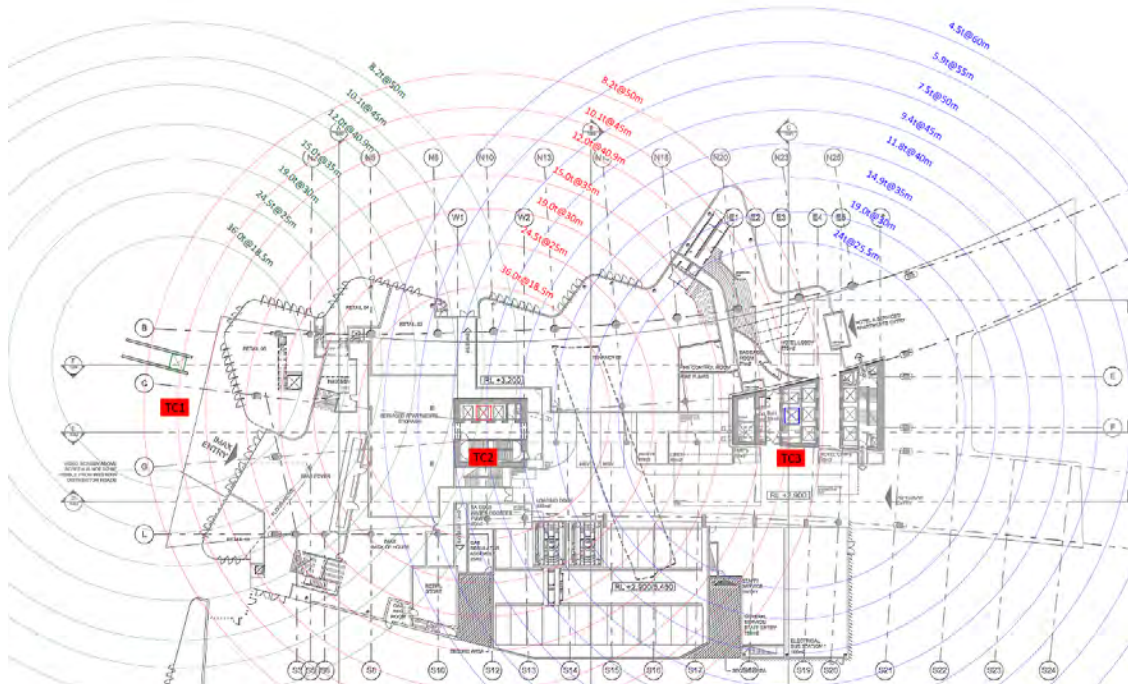
Tower Crane No 1 will be installed on the western elevation away from the southern outfall, at the commencement of demolition. It will be then used for excavation, ground works, and cinema construction and then removed upon architectural cladding completion.

Tower Crane No 2 and 3 will be installed in the cores at the jumpform commencement stage. They will be used primarily for structural steel erection and general materials handling. The cranes will be removed upon completion of the façade and external architectural finishes.

These cranes are sized so that they can perform all forecasted heavy lifts to plant areas. An allowance for the use of a 300 Tonne mobile crane to lift the cinema trusses has been made and will also be used for dual lifting as required.

These cranes will essentially be “the workhorses” for all site deliveries to the project and subsequently have been selected so as to provide both speed and capacity.

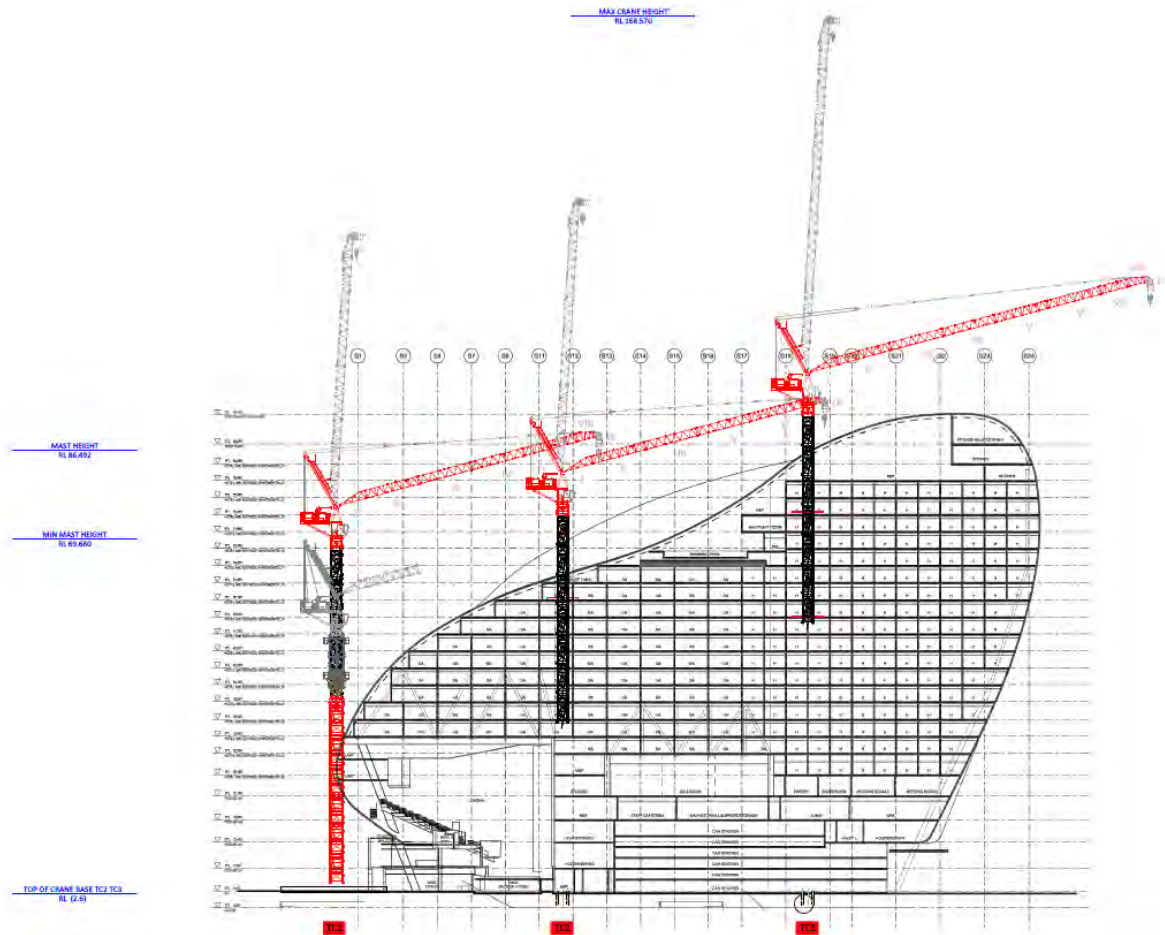
At no time will any loads be lifted over any roadways or public without suitably designed overhead protection gantries. Only time cranes may encroach over roadways is during “after hours weathervane” mode.



Refer diagram - Tower Crane Locations

25.4 Crane removal and movement

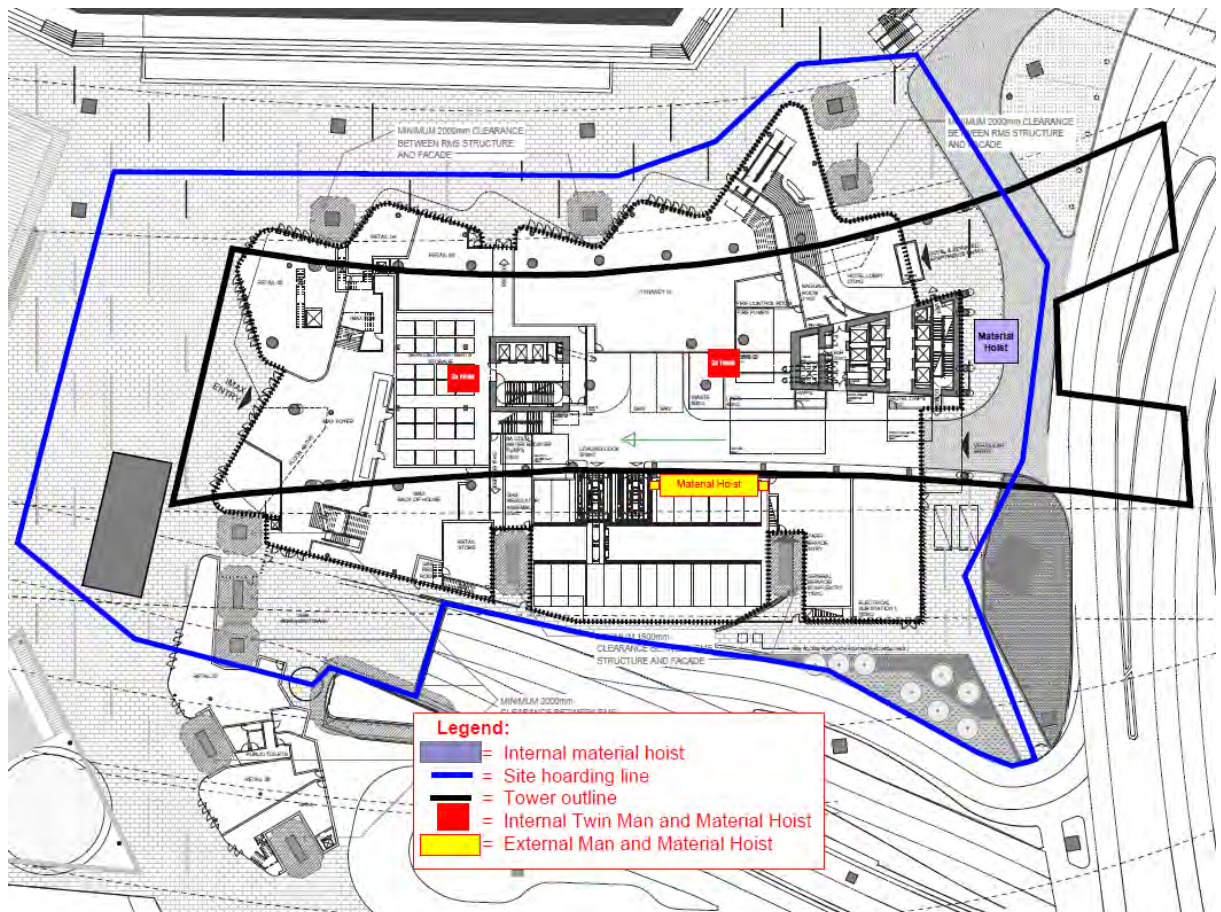
For completion of the roof works and general site works, tower crane 1 will be removed first by crane 2, crane 2 will be removed by crane 3, and crane 3 will be removed by a recovery crane.



25.5 Construction Access and Super Material Hoists

A series of man & material hoists will be installed as an integral part of the logistics for The Ribbon. Each will service the top platform / working deck of the jump form systems. Appropriate penetrations, with perimeter reinforcement “rip” boxes, or similar, will be made to accommodate all temporary penetrations. These will need to be in filled progressively from bottom to top once crane, hoists etc are removed.

- A *Maber* type super material hoist will be installed in the eastern material construction penetration.
- Two (2) twin Alimak type man and materials hoist will be installed internally through the central atrium and a western slab penetration
- A heavy duty hoist will be installed externally off the south façade maintaining RMS required clearances to their assets.



Refer diagram Vertical Materials Handling - Hoist Locations Diagram

25.6 Forklifts

A traditional forklift will predominately be used to unload deliveries while an additional Manitou type forklift will be used to supplement deliveries and also focus on public domain and precinct works.



26.

26. Perimeter Protection Systems

During construction and installation of the façade, fall protection will typically be provided by a perimeter protective screen system.

1. Perimeter Protective Screens
2. Catch Screens and Decks
3. Work Right – ExPanda Fence System

26.1 Perimeter Protective Screens and Cinema Perimeter Scaffold

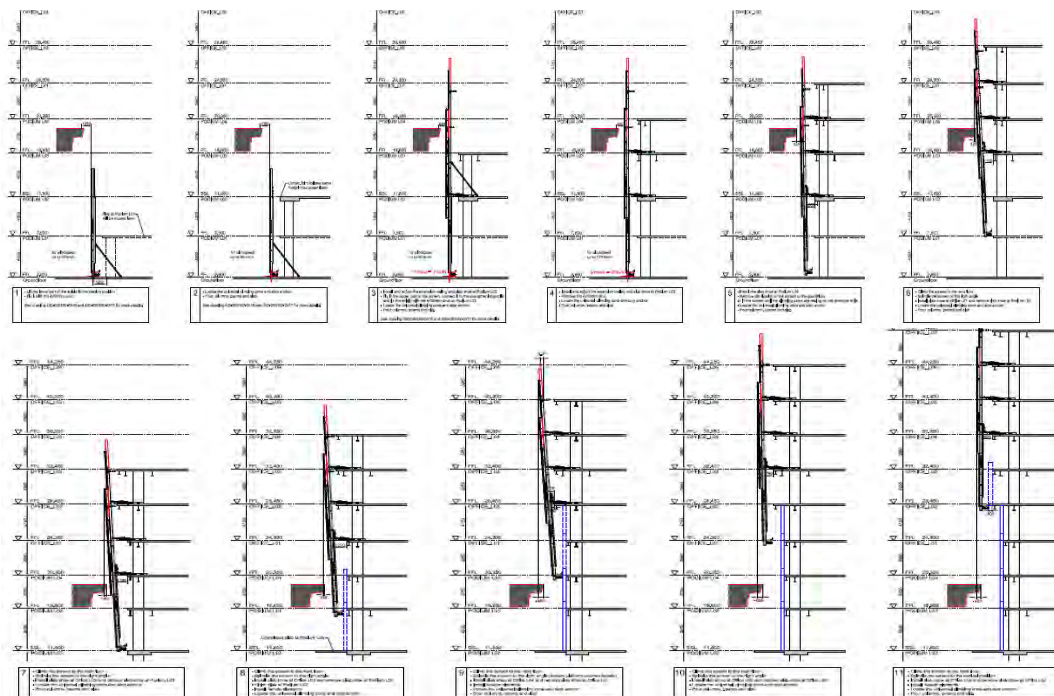
A fully encapsulated perimeter protection screen system will be progressively installed commencing from the Ground floor slab being completed and will be tied into the jumpstart at level 3. Movement and staged planning designs have been developed which clearly identify controls required for climbing adjacent to the freeways. This methodology has been chosen through our extensive SIDR process. All structure above the Jump-Steel will be protected with the perimeter protection screen system.

The system will be an integral part of the tower structure and will encapsulate three to four floors as the building progresses. It will provide protection for all structure trades and protect against falling objects.

In conjunction with the perimeter protection screen system, best work practices will be adopted to eliminate the risk of objects falling from heights by the use of tool and material lanyards.

The perimeter protection screen system will be removed following the completion of all formwork.

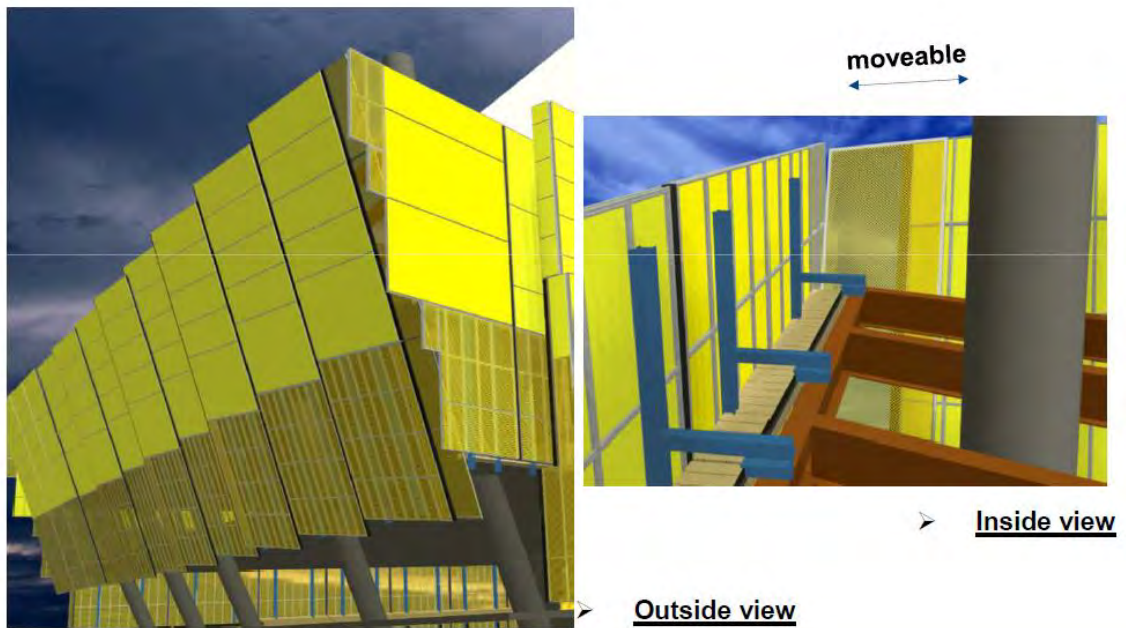
26.2 Actual set up of screens staging sequence

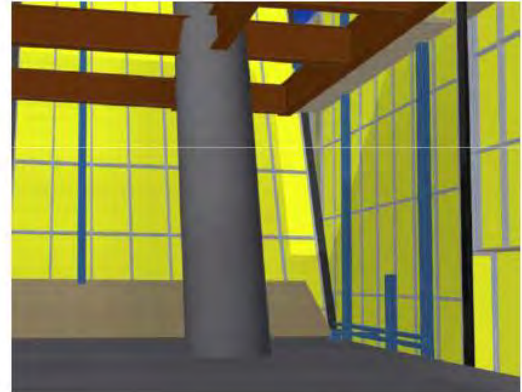
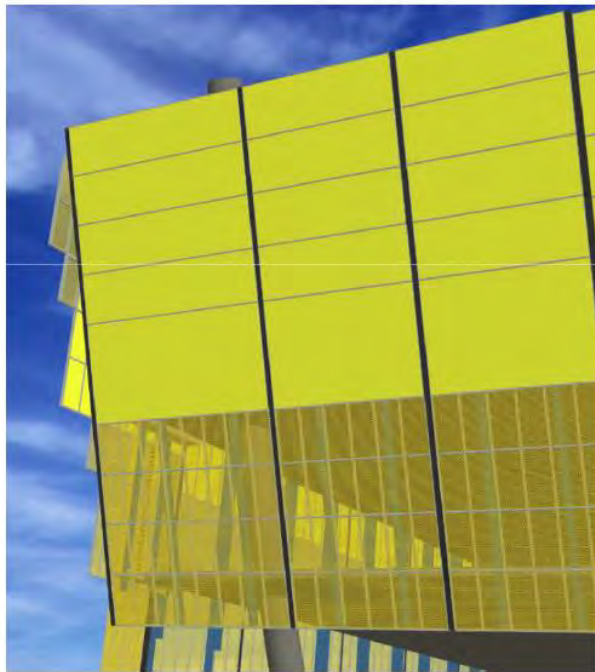


26.3 Catch Screens & Decks

As the building “grows” in floor plate size from Ground Level to Level 4 and 11 respectively, the Wheat Road and the Western Elevation Loading areas will be continually used for the vertical movement of materials, Grocon proposes to install catch decks to these areas to enable worker access around the base of the building.

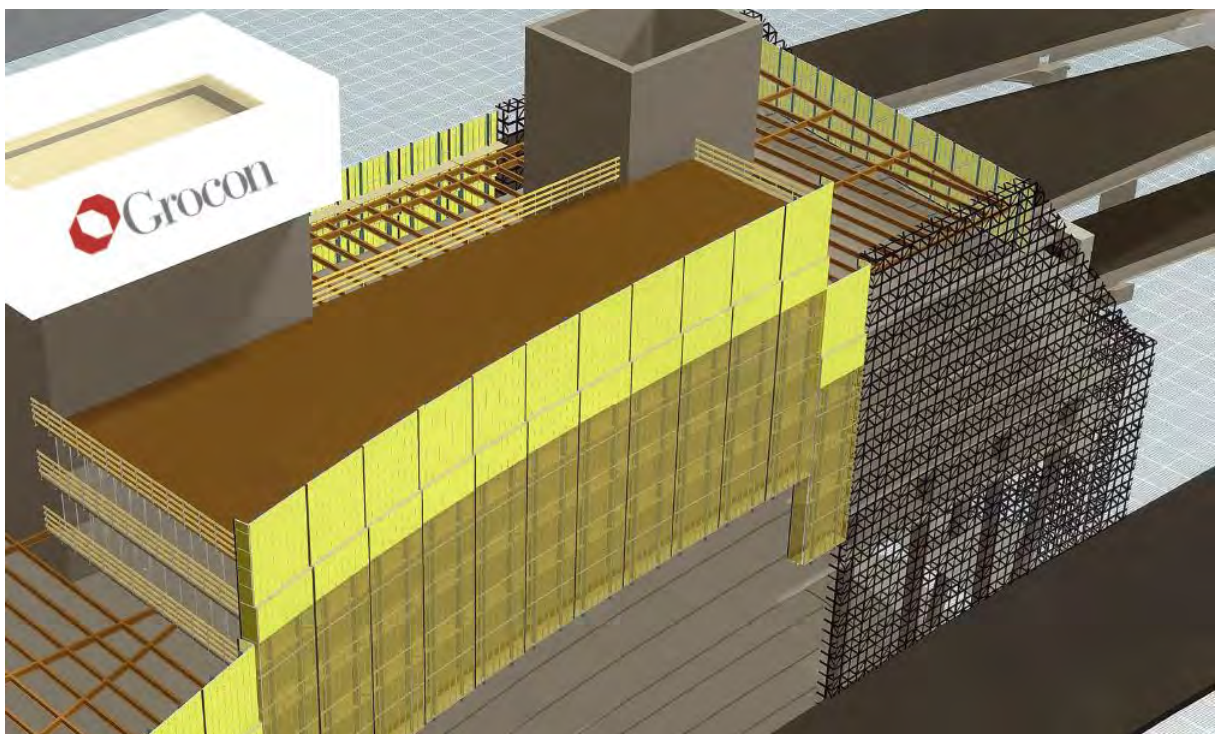
The combination of catch-screens and perimeter protection will be agreed with RMS at a suitable date.





➤ Inside view

➤ Outside view



Safety Fences and Façade Installation (“Workright”/ “ExPanda” Fence System or similar)

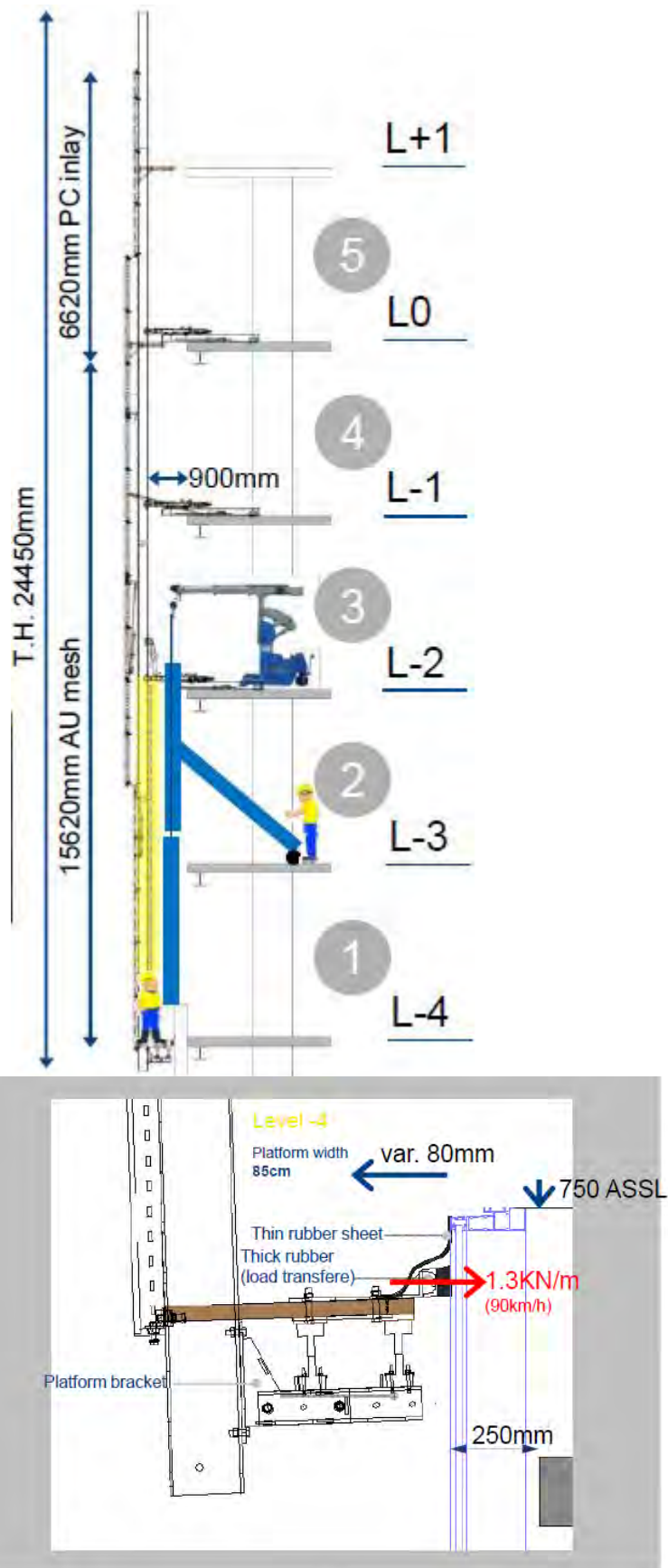
Following the removal of all formwork, the perimeter protection screen system will be removed and replaced by a safety fence screen system that incorporates a full height (slab to slab) screen (similar to the Workright – ExPanda Fence System).

The ExPanda Safety Fence System will be installed prior to the removal of the structure perimeter protection system. As noted, the system is a combination of handrails and full height screens.



The ExPanda Safety Fence System will be removed following the installation of the unitised façade panels.

The sequencing of the perimeter protective screen system and façade installation are detailed in the diagrams below.



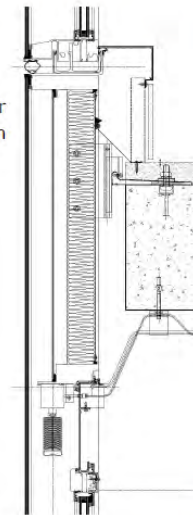
External scaffold to lower level areas will be removed progressively as façade works are finished, defected and rectified.

mfree-S **THE PERMASTEELISA CLOSED CAVITY DESIGN**

>>>> FUNDAMENTAL FEATURES

- A highly transparent yet energy efficient façade.
- Ability to lower the SHGC using the blinds.
- The façade provides excellent thermal protection during winter and summer. Together with highly transparent glazing and good climate control, *mfree-S* Façades meet even the highest comfort requirements.
- Provides the option of continuous external glazing between floors.
- Eliminates the need for external sunshades/ shading features.
(Providing visual benefits and reduced façade maintenance/cleaning).
- Isolated blind access panel. No need to remove glass for access.
- Blind Motor is easily accessible.
- Blinds are able to be controlled by the BMS or a separate Blind control system.

The *mfree-S* Façade has a variety of design elements which make it more appealing to prospective clients over the traditional façade technologies. These are not design essentials but are certainly favourable features.



26.4 Internal Fall Protection

Internal voids will be protected by either the Work Right–Expanda fence system (or equivalent) or internal scaffold.

27. Environmental Management Plan

A detailed Environmental Management Plan has been developed by our in house environmental expert.

As stated in Section 17, the Environmental Management of Cockle Bay will be paramount. During the DA approval period, Grocon will engage an Environmental Consultant who will in conjunction with Grocon, develop a Stormwater & Erosion Management Plan as part of The Ribbon Environmental Management Plan. As a minimum this plan will address the following.

- Promenade demolition and construction works potentially effecting the quality of Cockle Bay
- Sediment laden water from The Ribbon construction site may potentially flow into the stormwater and/or adjacent surface water bodies
- Stormwater with excessively high or low pH values could run-off from potential stockpiles
- Stormwater collected in excavations and requiring disposal
- Groundwater entering excavations and requiring disposal after dewatering
- Site cut off drains eroding and increasing site water sediment loads
- Vehicles leaving the site depositing dirt/mud on public roads after rain periods
- Removal of bulk materials off site escaping from vehicles and polluting roadways
- Debris and litter collecting along roads and in catch drains and consequently effecting the quality of Cockle Bay
- Site contamination through the potential for an overflow of fuel/chemical storage containers and contamination from equipment and plant repair areas.

These activities will be documented within the Grocon Environmental Management.

The following items have been noted as critical to the works and as such have already been reviewed.

27.1 Air Quality Management

Construction of the Project will be undertaken in accordance with the Protection of the Environment Operations Act 1997, which covers a range of environmental offences including the generation of dust. Specifically, Part 5.4 of the Act which details air pollution offences and requirements for the proper and efficient operation, maintenance and handling of plant, equipment and materials. Air Quality Management practices to reduce the risk for the project will be detailed in the Environmental Management Plan.

28. Noise & Vibration Management Plan

As stated in Section 11.4, a draft Noise and Vibration Management Plan has been produced and is included in Appendix B of this Construction Management Plan. The plan outlines the information gathering process, impact statements, control measures and implementation requirements for the site.

The proposed site team are aware of the crucial need for vibration isolation and minimisation. This includes coordinating or restricting the use and timing for rock hammering, percussion drilling or vibration generating activities that could impact the adjoining buildings and stakeholders.

Grocon will finalise the Noise and Vibration Management Plan during the DA approval phase.

29. Quality Management Plan

Grocon's Quality Management System has been developed and documented to satisfy the elements of the AS/NZS ISO 9001:2000 and AS/NZS 4801:2001 Quality Management Systems requirements. It establishes the criteria for carrying out activities associated with the delivery of The Ribbon.

The main objectives of implementing a Quality Management System are to:

- Sustain our current profile as market leaders in the Construction Industry;
- Maintain a consistent approach to the delivery of products and/or services;
- Deliver the product on time, within budget and to achieve complete client satisfaction.

The Quality Management System which will be implemented on The Ribbon will:

- Assure the client and tenants of conformance to the specified quality requirements;
- Provide Grocon with management information derived from the Quality System to analyse defective processes and allow for their subsequent rectification and prevention;
- Facilitate the effective completion of the project within program time and budget;
- Provide the objective evidence necessary to determine the level of compliance with the project documentation;
- Apply control measures to facilitate the active identification of recurring and potential non-conforming works and their subsequent corrective and preventative actions;

A detailed Quality Management Plan has been developed during the DA approval phase of The Ribbon. In summary, it has documented and identified the processes of implementation of the Quality Management System required for The Ribbon, the organisational structure for the project, the responsibilities and authorities of personnel associated with the project and details of implementation procedures.

The Quality Management Plan will be developed and documented to comply with the specific requirements of the project and outlines as a minimum the following elements:

- Project Organisation Responsibilities and Duties
- Subcontractor requirements
- Design Control with respect to Buildability, Value Management and Particular Design Responsibilities.
- Document Control
- Purchasing
- Process Control
- Inspection and Testing
- Control of Inspection, Measuring and Test Equipment
- Corrective/Preventative Action
- Control of Quality Records
- Auditing

The Quality Management Plan will outline the organisational structure for the project, identifies the levels of authority and responsibility and lines of formal communication. It also includes persons responsible for ensuring inspection and monitoring activities are carried out at times which are relevant to maintaining the project program.

The Quality Management Plan which will be implemented on The Ribbon will reflect the management, administration and construction processes to be adopted by Grocon. This will ensure that the works carried out during project delivery conform to the requirements of the project specification and to the high level of workmanship standards established and delivered by Grocon.

30. Workplace Safety Management Plan

As stated in Section 2, it is imperative that the safety and wellbeing of all Ribbon stakeholders, the general public, visitors to the site, subcontractors, consultants and all Grocon staff are addressed in all of our planning, design and management decisions.

A comprehensive Workplace Safety Management Plan which addresses how Grocon intends to manage health and safety during the construction of The Ribbon has been developed and is included in Appendix A of this Construction Management Plan.

This Workplace Safety Management Plan will constantly be reviewed as the design and construction methodology progresses.

31. Completion Plan

Grocon will implement a plan for testing, pre-commissioning, commissioning, performance testing and training for the works leading up to Practical Completion.

A void closure system will be implemented through the site team to ensure testing and inspection to risers, plenums, ceiling voids and the like before they are closed in.

The Developer's Independent Commissioning Agent (ICA) will report directly to the Developer on commissioning and testing matters covering all services on the project. Grocon will liaise closely with the ICA and ensure that a commissioning Inspection and Test Plan is developed and agreed well before commencement of testing.

All of these procedures will be monitored and the addressed with the Quality Management Plan. The void closure and on-site inspections will be implemented to ensure adequate quality control of the works and will be formalised through the project Quality System.

At the completion of different phases of work we will conduct a handover to the client to take possession of different areas. All of the required completed quality assurance information will be submitted to the relevant parties at Practical Completion.

32. Documentation Management

All correspondence in the form of letters, memoranda, various advices, requests for information will be communicated by the Aconex web based community system. Grocon will utilise Aconex to establish the various required mail types. It is envisaged that the mail types will cater for all eventualities, however further mail types may be available upon request to Grocon.

All mail is automatically tagged and numbered for easy retrieval.
Any attachments to mail will be stored on the system however those attachments are only searchable via locating the mail.

Documentation Management is also catered for on Aconex. The document register must include any project information that is likely to undergo revisions or updates.

Documents are registered on Aconex and transmitted via Aconex. The fundamental point of the Aconex document management system is that it tracks these exchanges.

It is important to note that each organisation's document register is private to that organisation. Information in a register is only available to other organisations where it has been transmitted via Aconex. The correct use of the Transmittal process means that each organisation's document register will be up to date with current approved information.

33. Industrial Relations

Grocon's methodology is one of pro-activeness and inclusiveness with all the stakeholders in the industrial arena. Grocon has certified agreements with the major construction unions. Grocon's policy is one of ensuring that all its employees and site management have a full working understanding of all the relevant agreements.

Grocon's philosophy is to ensure that all facets of the business understand the need for constructive cooperation. Its policies in relation to occupational health, safety and environmental requirements are of the highest standards which will result in significantly reducing the incidents of associated industrial disputes. The approach of the Directors, which extends down to line management, is to ensure Safety is foremost in all dealings.

Grocon has involved its employees in training to ensure consultation and that their voice is heard. The "Action employees can take" initiative fully informs the employees of their rights and appropriate measures they can take to have a say in both Safety and Employee wellbeing.

34. Emergency Response Procedure

In the event of an emergency in relation to an accident on site, the Project Manager will be notified immediately. The allocated First Aid site personnel will also be notified and where possible assist with the incident.

The relevant external services will be contacted and arrangements will be made for access to the area of concern.

In the event of a fire or mass evacuation procedure a fixed air horn will be sounded repeatedly. The air horns will be located at the Wheat Road and the main site entrance / project office. The excavation procedure will be outlined during the initial induction and updated with toolbox talks and information boards. Personnel will then vacate in an orderly and controlled manner to the designated assembly areas to be accounted for.

The Evacuation Plan will be continually updated throughout the construction works. Updating the plan will require co-ordination between SHFA and Grocon to maintain a plan that is both functional for both Construction works and the day to day operations of Darling Harbour.

The assembly point will be agreed with SHFA.

A detailed Emergency Management Plan will be developed prior to site establishment works and fully detailed in the Grocon site safety plan.

35. Complaints Procedure

Complaints are deemed to be issues raised from outside sources, not raised by project stakeholders. Issues raised by our clients or stakeholders during the project shall be addressed through normal lines of project communications.

Complaints received from the community during the project, or from any source after the completion of the project, shall be recorded in the Grocon QSE data base with appropriate actions assigned to the relevant members of the project team. The Grocon procedure starts with immediate communication with the complainant to address urgent matters, then to following up with any necessary information as required. The Grocon Site Manager has a specific role with this as well as the designated Grocon community liaison person.

Appendices

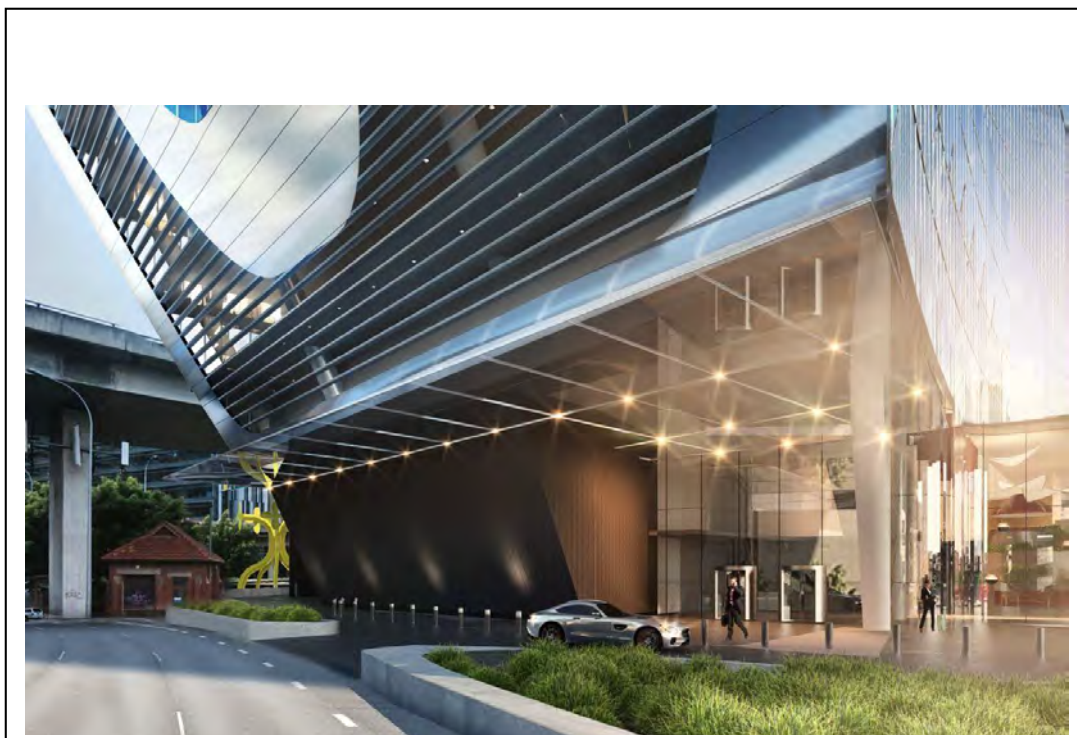
- A. Workplace Safety Management Plan
- B. Noise & Vibration Management Plan
- C. Pedestrian and Traffic Management Plan
- D. Design & Construction Program
- E. Demolition Management Plan
- F. Public Domain Staging Plans

A. Workplace Safety Management Plan

Workplace Safety Management Plan

The Ribbon

31 Wheat Rd, Darling Harbour (including airspace over Harbour St)



Discipline	Document No.	Rev #	Effective Date	Description of Change
Safety	WSMP001	1	10/12/15	New DA

APPROVAL of AMENDMENTS	<i>Health, Safety and Environmental Advisor</i>	<i>Joe Brinzi</i>	<i>10 / 12 / 15</i>
	<i>Project Manager</i>	<i>Justin Murphy</i>	<i>10 / 12 / 15</i>

This Workplace Safety Management Plan (WSMP) is considered an integral part of Grocon's Management System which provides reference to the Organisational Structure, Procedures and Practices of Grocon which are applicable to this Project and has been reviewed and is approved for use by the National HSE Manager. Each WSMP is tailored to meet project specific requirements and is approved for use when the signature panels are completed.

WARNING: No part of this WSMP may be reproduced in any form, without the written authorisation of Grocon.

The Ribbon -Workplace Safety Management Plan

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This document is uncontrolled when printed. Please consult the electronic version for the latest revision.

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1.0 Scope and Application of the WSMP

This WSMP has been prepared to outline the scope of works, services and resources to be provided for the implementation of the Grocon Occupational Health and Safety Management System (OH&S Management System) for this Project.

Overarching the Grocon OH&S Managements System is the Grocon Occupational Health and Safety Policy.

Refer: Section 6 for current OH&S Policy which shall be displayed in all Office.

The WSMP has been developed to reflect the Grocon OH&S Management System's alignment with AS/NZS4801:2001: Occupational Health and Safety Management Systems.

The OH&S Management System implemented on this project shall:

- Assure the client and project stakeholders of conformance of the project works to the specified health and safety requirements;
- Provide Grocon management with information to control conformance and promote continual improvement utilising Lessons Learnt.
- Assist the completion of the project to meet programme, budget, quality and health and safety requirements;
- Provide the objective evidence necessary to demonstrate compliance with the project health and safety legal and other requirements;
- Provide control measures to support a proactive approach for the identification and prevention of hazards and or hazardous conditions that may pose a risk to the health and safety of project stakeholders and the public;
- Provide the process for the identification and control of unsafe conditions and acts and the subsequent implementation of corrective and preventative actions.

This WSMP is documented to outline or reference the resource structure, the responsibilities and authorities of personnel associated with the project and the health and safety procedures to be implemented.

It has been developed to comply with the specific requirements of this project and outlines the following elements:

- Design Development (Safety in Design)
- Workplace Risk Assessment (WRA) development
- Implementing OH&S by Consultants, Subcontractors and Suppliers
- Project Responsibilities and Duties
- Procurement & Purchasing
- Document Management & Record Control
- Inspection and Testing
- Managing Non Conformance, Corrective & Preventative Action
- Inspection, Measuring and Test Equipment
- Auditing

The Workplace Safety Management Plan (WSMP) is one part of the Construction Management Plan (CMP) which lists various other plans that may be required for the management of project activities which may include Design, Environmental, Quality and Traffic management, etc.

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2.0 Project Description

The new project development will incorporate:

• 22 - level premium-grade development	• Engineered catch deck over Wheat Rd
• Traffic Management Plans for Wheat Rd	• New Structural Steel frame system
• Site loading from Construction Zones located on Queen and Adelaide Streets	• 6 Star Green Star and 5 Star NABERS rated
• Public protection to the footpaths public domain Hoardings	

Note: For further details on the sequence of works and content refer to the Construction Management Plan.

3.0 Scope of Delivery for the Project

The scope of this project includes:

- Design and Construction of the project;
- Ensure the Clients OH&S Brief is met;
- Management of all Subcontractors to deliver the trade packages to achieve OH&S Objectives and Targets;
- OH&S Auditing and inspecting;
- Providing all required records to demonstrate OH&S compliance.

4.0 OH&S Management System Implementation

4.1 Commitment to Grocon's OH&S Management System

Included in this WSMP is a copy of the Grocon Occupational Health and Safety Policy which demonstrates our commitment to the delivery of excellent projects and services for our clients and all stakeholders.

In addition to this, the Grocon project team have health and safety responsibilities outlined that through implementation will demonstrates the team's commitment to achieve compliance with the Clients requirements and the delivery of a successful project.

Where Grocon undertakes part of the project works, such as structural, the requirements of this WSMP shall be applied to the Grocon works in the same way as it is applied to Subcontractors and or Design Consultants.

Grocon's OH&S Management System is third party certified to AS/NZS4801:2001 which is comprised of company policies, procedures, plans, work instructions and forms, to ensure the consistent implementation of the company's requirements on all projects.

Note: All Procedures are available in real time via the Grocon Intranet to employees. Procedures may be inspected on request, but copies are not distributed externally due to their confidential nature.

4.2 OH&S Management Systems by Subcontractors & Design Consultants

Third parties such as design consultants, subcontractors and suppliers are used on Grocon projects, and where required shall develop and implement their own OH&S Management Systems to ensure that the

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provision of all the products and services they provide are in compliance with the specified project health and safety requirements.

Design consultants shall be required to complete design documentation in accordance with the workplace health and safety harmonisation legislation.

Subcontractors who operate their own OH&S management system shall be required to provide a project specific Safety Management Plan.

Where design consultants and or subcontractors, do not have a safety management system, they will be required to comply with Grocon's OH&S management system.

Grocon personnel will monitor all third parties' activities and carry out regular checks, which may include reviews, inspection and audits of the third parties OH&S Management Systems. Any checking/monitoring of the third parties work by Grocon will not relieve the third parties from their responsibilities under the contract.

NOTE: In states that have adopted harmonised legislation, a Design Safety Report is to be supplied and incorporated in the WRA process of the project.

4.3 OH&S Management Systems Reporting

- All projects shall monitor and record performance against the OH& S objectives and targets as set out in the Workplace Safety Management Plan (WSMP). These shall be discussed at each month's project team meeting and the results recorded in the meeting minutes and reported in each month's OH&S report.
- The Project Manager, in conjunction with the HSE Advisor, shall ensure that all safety related incidents and information is progressively recorded in the QSE system, so that each project is able to produce safety performance reports on a monthly basis. All data shall be complete and entered into the QSE system within 48 hours of the last calendar day each month.
- All Projects shall review the safety performance at the project Central Safety Committee meetings held each month to identify areas of concern or areas for improvement.
- Each State OHS/HSE manager shall monitor the safety reports from each project to ensure OH&S issues have the appropriate corrective and preventative actions in place.
- The National OHS/HSE manager will compile project and state safety information for inclusion into the monthly Board report, which is presented for review at the Corporate Central Safety Committee.

4.4 Statutory reporting to the relevant Safety Authority

- The HSE advisor is required to report Notifiable Incidents to the relevant state Safety Authority after consultation with the State OH&S/HSE manager. These Incidents shall be reported in accordance with the relevant authorities' requirements which are available from the authority web sites.

<http://www.worksafe.vic.gov.au/safety-and-prevention/health-and-safety-topics/incident-notification>

<http://www.deir.qld.gov.au/workplace/incidents/incidents/notify/index.htm>

<http://www.workcover.nsw.gov.au/injuriesclaims/Reportinganincidentinjury/Pages/default.aspx>

http://www.safework.sa.gov.au/show_page.jsp?id=2542

- Grocon maintains OH&S accreditation with the Office of the Federal Safety Commissioner (OFSC) and is required to produce various reports related to Scheme or Non scheme projects. These reports shall be produced by the National/State OH&S/HSE manager with input from the relevant project managers and HSE advisors. Details are available from the FSC website.

<http://www.fsc.gov.au/sites/fsc/resources/az/pages/whsperformancereportingpack>

Further details of statutory reporting are in section 16.0 Incident Investigation and Notification.

5.0 Legal and Other Requirements

The legal and other requirements associated with the delivery of the project have been identified during the assessment of risks.

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Grocon subscribes to SAI Global, Safety Law and Enviro Law. Relevant stakeholders who require access to changes in legalisation and Australian Standards will be required to register and receive updates by:

- *Electronic notification from SAI Global*
 - <http://bca.sai-global.com/>
- *Safety Law and Enviro Law*
 - <http://www.enviroessentials.com.au/envirolaw/index.php?la=true>

Note: Legislative updates can also be sourced through state or territory WHS/OH&S websites.

Second and third tier Subcontractors will be advised of changes that are relevant to their Safety Plans and SWEMS via notification from Grocon Site Management through:

- Safety Environmental Committee meetings – Grocon and Subcontractors
- Sub-Contractor meetings – Subcontractors
- Aconex notification from site – Grocon and Subcontractors
- Email notification from site – Grocon and Subcontractors
- Site Safety Notice Boards – Grocon and Subcontractors
- Site Safety Management Meetings – Grocon and Subcontractors

Refer: 6010A1 Health Safety and Environmental Legal and Other Requirements Matrix

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6.0 Grocon OH&S Policy



Occupational Health and Safety Policy

Grocon recognises that the wellbeing of people employed at work and people affected by our activities is a major priority and must be addressed during all activities performed by Grocon.

Grocon will drive a Safety culture change to become industry leaders in Safety to achieve our goal of 'ZERO HARM.'

Grocon is committed to the provision and maintenance of a Safe and healthy workplace for all.

In implementing this policy, Grocon is committed to:

- Making Health and Safety an integral part of managerial and supervisory positions and ensuring it is given due consideration in all planning and work activity;
- Actively encouraging employees to embrace the culture of Safe work practices and a Safe working environment at work and beyond.
- Providing a continuous program of education, training and learning in the principles of Health and Safety to ensure employees at work in the safest possible manner and embrace Grocon's core Safety Values;

- Ensuring that all work is undertaken by competent and suitably trained employees;
- Taking appropriate disciplinary action when employees and subcontractors disregard Health and Safety procedures and practices;
- Complying with relevant legal and other requirements;
- Implementing and maintaining an effective Integrated QSE Management system, to ensure that Hazards are identified, associated risks assessed and controlled;
- Measuring Health and Safety performance through regular monitoring of set measureable objectives and targets for each workplace;
- Ensure that resources are available to achieve the objectives of this policy;
- Adopting innovative strategies to assist in delivering a Safe outcome.



Carolyn Viney

Chief Executive Officer
Grocon Group
24 August 2015



WorkSafe Victoria Awards

OHS Management System
of the year.

2011 Finalist



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7.0 Safety Objectives

Grocon recognises that the wellbeing of people employed at work and people affected by our work is our first priority which must be considered and addressed during all work performed by Grocon.

Grocon is committed to the provision and maintenance of a safe and healthy workplace for all. It is the objective of Grocon to have **Zero Lost Time Injuries**.

Incidents and injuries will be investigated dependant on Potential apportioned and corrective actions implemented to prevent recurrences. Site interactions and inspections are prescribed to company positions to assist in the identifications of hazards, namely unsafe conditions and unsafe acts.

Project specific Safety Objectives will be developed in line with the Project WRA, National and State Objectives. Strategic Planning developed and implemented during the course of the Project will be considered for inclusion in this document.

7.1 Grocon Project Safety Objectives Matrix

PROJECT SAFETY OBJECTIVES					
No.	OBJECTIVE	MEASURE - KPI	METHOD	TOOLS or RECORDS	RESPONSIBILITY
1/ Subcontractor Pre Start Meetings					
1.1	CM and PM to meet with each 2 nd Tier subcontractor principals to reinforce safety expectations	Each subcontract let	In house meeting and sign off	Recorded on a meeting form – 6060F5	CM, PM
1.2	Subcontractor site representative to attend site meeting to address specific safety methodology aligned to the scope of work	Each subcontract let	In house meeting and sign off	Recorded on a meeting form – 6060F5	SM, FM, HSEA
2/ SWEMS Sign off					
2.1	Project Manager to sign off on selected high risk SWEMS: <ul style="list-style-type: none"> o Harness work o Special crane lifts o Demolition o Confined space work 	As reviewed prior to work commencing	In house review and sign off	Signed off SWEMS' filed in QSE database	PM, SM, FM, HSEA
3/ KPI - Safety Interaction Position Matrix					
3.1	Project team to complete Safety Interactions	100% return per month, considering absenteeism through personal, annual or other leave. Management review process as agenda item in Project CSC Meeting	Activities on site	Recorded in register	PM
4/ Front Line and Project Team training					
4.1	Foreman to obtain safety competency to Cert IV level OH&S	Certificate of attainment	External training. Site activities for assessment	Records filed on site and nationally with L & D	PM, SM Mentor by OH&S Manager or HSEA
4.2	Foreman and project team members (Front Line Managers) to undertake First Aid training – Occupational or Workplace First Aid as required	Certificate of attainment	External training.	Records filed on site and nationally with L & D	PM
5/ CAR Close Out					
5.1	Project team to close all allocated CAR's	100% monthly. Management review process as agenda item in Project CSC Meeting	Corrective actions carried out	Aconex, hard copy and QSE Database	PM, SM, FM, HSEA

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8.0 Project Stakeholders

Client/Owner:	The owner for this project is (Grocon)	
Project Manager:	Grocon	
Builder and ABN/CAN:	Grocon Constructors Pty Limited	ABN: 32 120 476 495
Project Office:	TBA	

8.1 Communications with Client and all Project stake holders.

Grocon communicate with our Clients and Project stakeholders using various methods including:

- Aconex mail types including; Emails, RFI's, Site Instructions OFI's, etc. (QSE Database System being developed);
- Conference calls;
- At meetings including Safety, PCG, Design, Stakeholder, User groups, Subcontractor etc.
- Written Reports;
- General written correspondence;
- Face to face conversations.

8.2 Compliments and Complaints

Complaints are deemed be issues raised from outside sources, not issues raised by any of the Project Stakeholders. Issues raised by our Clients or Stakeholders during the project shall be addressed through normal lines of project communications.

Complaints received from the community during the project, or from any source after the completion of the project, shall be recorded in the QSE data base with appropriate actions assigned to the relevant members of the project team.

Compliments may be received in the form of letters of commendation or industry awards and are usually communicated via the Grocon intranet.

9.0 Project Personnel & Resources

The delivery of the Project will be carried out by a team under the management of the assigned Project Manager as detailed in the organisational chart, which is located within the Construction Management Plan.

The Construction Manager and or the Executive Project Manager in conjunction with the Project Manager will identify and assign adequate resources to facilitate the effective and efficient management of the works. These resources will include skilled & trained personnel for management, performance of the work and verification activities including site inspections and internal health and safety audits.

The Project Organisational Chart Identifies how the project team functionally interact in order to execute their respective responsibilities and authorities to manage Grocon works, including Consultants, Subcontractors and/or suppliers to achieve contractual requirements.

9.1 Grocon Management Representatives

The Project Manager (PM) has the authority and responsibility for ensuring that the requirements of this WSMP are fully implemented and maintained throughout the duration of the project. The following health and safety related responsibilities are listed for various project positions. The PM is responsible to ensure these responsibilities are communicated to the relevant members of the Project team and ensure that they are covered in the incumbent's Position description.

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The Project Manager's responsibilities are:

- Promoting a proactive safety culture to ensure the highest standard of safety performance;
- Understanding the Grocon OH&S System requirements; and
- Ensuring that the allocation of project resources is adequate to meet those needs;
- Ensuring that relevant elements of the Grocon OH&S System are implemented, monitored and reviewed;
- Initiating and ensuring the implementation of the Workplace Safety Management Plan for the Project;
- Chair the Workplace Risk Assessment workshop and ensure monthly monitoring to maintain control of project risks;
- Ensuring compliance with OH&S Legislation and supporting Codes of Practice and Standards;
- Ensuring that subcontractors' ability to comply with OH&S requirements are evaluated prior to commencing work; and
- Monitored and reviewed during delivery of contracted works;
- Attending project and other safety meetings as outlined in the Central Safety Committee Hierarchy; and
- Attending Toolbox Talks and Pre Start Meetings as required;
- Ensure all project personnel attend project and other safety meetings as outlined in the Central Safety Committee Hierarchy;
- Ensuring that safety is the first agenda item at all management and contractor meetings;
- Ensuring training needs analyses are undertaken to determine any training or competency requirements for the site; and
- Ensuring appropriate safety training or competencies requirements are attained;
- Ensuring all staff are adequately trained and instructed in the Grocon OH&S System;
- Ensuring all staff are fully informed about the hazards associated with their work activities;
- Lead and implement the Safety Interactions program;
- Ensuring all staff undertake Safety Interactions as apportioned in the Safety Interactions Position Matrix;
- Ensuring all staff participate in activities that;
 - Identify hazards;
 - Assess risks;
 - Eliminate where possible;
 - Develop and implement appropriate control measures;
 - Monitor and review the control measures;
- Disseminating OH&S related information to all site personnel;
- Consulting with employees and/or Health and Safety Representatives on all safety issues; and
- Ensuring line management participates in the Issue Resolution process;
- Ensuring line management assists in the establishment of Work Groups where requested;
- Participating in the investigation of OH&S incidents where applicable; and
- Providing team members to assist in the investigation process; and
- Ensuring controls are actioned within the allocated time frames;
- Ensuring all internal and external reporting and notification is carried out;
- Notify the State OH&S / HSE manager of All Incidents which are rated 0, 1, or 2, within 2 hours.
- Providing the OH&S Manager with a review of Workplace OH&S performance on a regular basis.

The Site Manager's responsibilities are:

- Take the lead role in developing and maintaining a safety culture, to ensure the highest standard of safety performance;
- Understanding the Grocon OH&S System requirements; and
- Ensuring that the allocation of resources is adequate to achieve the highest standards of safety performance;
- Ensuring that the Grocon OH&S System is understood, implemented, monitored and reviewed;
- Ensuring the implementation of the line management aspects of the Workplace Safety Management Plan for the Project;
- Ensure actions raised from the Workplace Risk Assessment (WRA) are implemented and continuously reviewed to control risks in line with progress of the works on site.
- Ensuring compliance with OH&S Legislation and supporting Codes of Practice and Standards;

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- Ensuring that subcontractors' ability to comply with OH&S requirements are evaluated prior to contract engagement and prior to commencing work; and
- Regularly Monitored and reviewed during delivery of contracted works;
- Attending project and other safety meetings as outlined in the Central Safety Committee Hierarchy; and
- Attending Toolbox Talks and Pre Start Meetings as required;
- Ensuring that safety is included as the first agenda item at all management and contractor meetings;
- Assist in reinforcement and promotion of good safety performance;
- Ensuring training needs analyses are undertaken to determine any training or competency requirements for the site; and
- Ensuring appropriate safety training or competencies requirements are attained;
- Ensuring all staff under their direction are adequately trained and instructed in the Grocon OH&S System;
- Ensuring all staff under their direction are fully informed about the hazards associated with their work activities;
- Undertaking Safety Interactions as apportioned in the Safety Interactions Position Matrix;
- Ensuring all staff under their direction undertake Safety Interactions as apportioned in the Safety Interactions Position Matrix;
- Ensuring all staff under their direction participate in activities that;
 - Identify hazards;
 - Assess risks;
 - Eliminate where possible;
 - Develop and implement appropriate control measures;
 - Monitor and review the control measures;
- Participate in disseminating OH&S related information to all site personnel;
- Consulting with employees and/or Health and Safety Representatives on all safety issues; and
- Actively participating in the Issue Resolution process;
- Assisting in the establishment of Work Groups where requested;
- Ensuring that Safety Environmental Committee members have the appropriate training to fulfil their roles;
- Participating in the investigation of OH&S incidents where applicable; and
- Providing team members to assist in the investigation process; and
- Ensuring controls are actioned within the allocated time frames;
- Ensuring all internal and external reporting and notification is carried out;
- Providing the Project Manager with a review of Workplace OH&S performance on a regular basis.
- Notify the State OH&S / HSE manager of All Incidents which are rated 0, 1, or 2, within 2 hours.

The Foremen's responsibilities are:

- Actively promoting health and safety;
- Understanding the Grocon OH&S System requirements; and
- Participating in the implementation of the Workplace Safety Management Plan for the Project;
- Ensuring compliance with OH&S Legislation and supporting Codes of Practice and Standards;
- Participating in all management and contractor meetings; and
- Attending project and other safety meetings as outlined in the Central Safety Committee Hierarchy;
- Conducting Toolbox Talks and Pre Start Meetings as required;
- Assist in reinforcement and promotion of good safety performance;
- Identifying training or competency requirements for the site;
- Ensuring all workers under their direction are adequately trained and instructed in the Grocon OH&S System;
- Ensuring all workers under their direction are fully informed about the hazards associated with their work activities;
- Undertaking Safety Interactions as apportioned in the Safety Interactions Position Matrix;
- Ensuring all workers under their direction participate in activities that;
 - Identify hazards;
 - Assess risks;
 - Eliminate where possible;
 - Develop and implement appropriate control measures;
 - Monitor and review the control measures;

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- Participate in disseminating OH&S related information to site workers;
- Consulting with employees and/or Health and Safety Representatives on all safety issues; and
- Actively participating in the Issue Resolution process;
- Participating in the investigation of OH&S incidents where applicable; and
- Ensuring controls are actioned within the allocated time frames;
- Ensuring that subcontractors' ability to comply with OH&S requirements are evaluated prior to commencing work; and
- Monitored and reviewed during delivery of contracted works;
- Participate in the preparation of Grocon SWEMS;
- Participate in audits of Grocon and Sub Contractor SWEMS.

The HSE Advisor's responsibilities are:

- Actively promoting health and safety and implementing the Grocon OH&S system
- Assisting the site team to conduct the Workplace Risk assessment (WRA) and monitor the actions raised to address identified risks during the project;
- Continuously reviewing the Grocon OH&S System to meet OH&S Legislation and relevant Standards;
- Coordinating the site auditing of Workplace Safety Management Plan;
- Providing occupational health and safety expertise to support all personnel;
- Assist in reinforcement and promotion of good safety performance;
- Attending project and other safety meetings as outlined in the Central Safety Committee Hierarchy;
- Chair the site Safety Environmental Committee (SEC) meetings;
- Establish the SEC committee as soon as practicable and to comply with local requirements;
- Advise and provide site based training to personnel (as required) on hazard identification, risk assessment, control implementation and the monitoring and review process;
- Undertaking Safety Interactions as apportioned in the Safety Interactions Position Matrix;
- Continually monitor the quality of site based Safety Interactions; and
- Reporting to the site management team opportunities for improvement;
- Assisting all staff to participate in activities that;
 - Identify hazards;
 - Assess risks;
 - Eliminate where possible;
 - Develop and implement appropriate control measures;
 - Monitor and review the control measures;
- Ensure relevant OH&S information is available to all site personnel;
- Consulting with employees and/or Health and Safety Representatives on all safety issues; and
- Actively participating in the Issue Resolution process;
- Assisting in the establishment of Work Groups where requested;
- Participating in the investigation of OH&S incidents; and
- Assisting team members in the investigation process; and
- Monitoring that controls are actioned within the allocated time frames;
- Assisting in the internal and external reporting and notification process;
- Assessing subcontractors' documentation for relevance with OH&S requirements during the tender phase and prior to commencing work on site; and
- Participating in the monitoring and reviewing process during delivery of contracted works;
- Leading the preparation of Grocon SWEMS;
- Recommending appropriate personnel to participate in the preparation of Grocon SWEMS;
- Review and follow up with audits of Grocon and Sub Contractor SWEMS;
- Reporting on health and safety performance to the Site Manager and the State OH&S Manager.
- Notify the State OH&S / HSE manager of All Incidents which are rated 0, 1, or 2, within 2 hours.

The Design Manager's responsibilities are:

- Implement Grocon's Design Safe requirements as per Design Safe Work Instruction;
- Obtain Design safe reports from all design consultants;
- Understanding the Grocon OH&S System requirements; and
- Ensuring the implementation of the line management aspects of the Workplace Safety Management Plan for the Project;

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- Ensuring compliance with OH&S Legislation and supporting Codes of Practice and Standards;
- Providing the project team with technical advice based on risk management principles where applicable;
- Attending project and other safety meetings as outlined in the Central Safety Committee Hierarchy;
- Ensuring that safety is included as the first agenda item at all DesignSafe and contractor meetings;
- Assist in reinforcement and promotion of good safety performance;
- Ensuring all workers under their direction are adequately trained and instructed in the Grocon OH&S System;
- Ensuring all staff under their direction are fully informed about the hazards associated with their work activities;
- Undertaking Safety Interactions as apportioned in the Safety Interactions Position Matrix;
- Ensuring all staff under their direction undertake Safety Interactions as apportioned in the Safety Interactions Position Matrix;
- Ensuring all staff under their direction participate in activities that;
 - Identify hazards;
 - Assess risks;
 - Eliminate where possible;
 - Develop and implement appropriate control measures;
 - Monitor and review the control measures;
- Participating in the investigation of OH&S incidents where applicable;
- Providing the Project Manager with a review of Workplace OH&S performance on a regular basis.

Project Engineer's responsibilities are:

- Actively promoting health and safety;
- Understanding the Grocon OH&S System requirements; and
- Participating in the implementation of the Workplace Safety Management Plan for the Project;
- Ensuring compliance with OH&S Legislation and supporting Codes of Practice and Standards;
- Providing technical advice based on risk management principles where applicable;
- Attending project and other safety meetings as outlined in the Central Safety Committee Hierarchy;
- Assist in reinforcement and promotion of good safety performance;
- Ensuring all workers under their direction are adequately trained and instructed in the Grocon OH&S System;
- Ensuring all workers under their direction are fully informed about the hazards associated with their work activities;
- Undertaking Safety Interactions as apportioned in the Safety Interactions Position Matrix;
- Ensuring all workers under their direction participate in activities that;
 - Identify hazards;
 - Assess risks;
 - Eliminate where possible;
 - Develop and implement appropriate control measures;
 - Monitor and review the control measures;
- Participating in the investigation of OH&S incidents where applicable;
- Assist in reinforcement and promotion of good safety performance;

First Aid Officer's responsibilities are:

- Maintaining first aid facilities ensuring they are accessible, clean and contain the required components;
- Treating injured persons to the limit of their training, and not beyond that training;
- Arranging for emergency services where there is a risk to life or long-term wellbeing; and
- Arranging for medical treatment as required, including transportation to a doctor or hospital as necessary.

Contract Administrators /Managers responsibilities are:

- Actively promoting health and safety;
- Understanding the Grocon OH&S System requirements;
- Providing relevant OH&S documentation to Subcontractors at the pre tender stage;

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- Assessing subcontractors' ability to comply with OH&S requirements during the Tender phase and prior to being contracted to undertake any work; and
- Updating Subcontractors details in the QSE Database as directed by the Project Manager;
- Participating in the monitoring and reviewing of OH&S requirements during delivery of contracted works;
- Attending project and other safety meetings as outlined in the Central Safety Committee Hierarchy;
- Undertaking Safety Interactions as apportioned in the Safety Interactions Position Matrix;
- Participating in all management and contractor meetings.

Document Controller's responsibilities are:

- Setting up and maintain the document management system, Aconex, in accordance with the Grocon Aconex Project Configuration Document and Best Practice Guide;
- Ensuring all project documentation is submitted via Aconex or scanned onto Aconex;
- Ensure any hard copy documents being used by Grocon are current revisions from Aconex;
- Maintaining copies of superseded documents either electronically or in hard copy for reference;
- Ensuring documents printed from Aconex are identified by a stamp or print on the document, to reduce archiving of hard copy documents when the project is completed;
- Monitor, support and arrange training of project team members, to ensure the correct use of Aconex;
- Ensure that all project records are retained in accordance with Grocon's company procedures, work instructions and Legal department instructions;
- Attending project and other safety meetings as outlined in the Central Safety Committee Hierarchy;
- Undertaking Safety Interactions as apportioned in the Safety Interactions Position Matrix.

All Employees

Employees are all Grocon employees, including managers, supervisors, people with administrative roles and the general workforce plus all subcontractors. They are each responsible for the following:

- Working in a safe manner;
- Taking care for their own health and safety and for the health and safety of anyone else who may be affected by his or her own acts or omissions at the Workplace;
- Co-operating with his or her employer with respect to any action taken by the employer to comply with any requirement imposed by or under the OH&S Legislation;
- Reading, understanding, and complying with the Occupational Health and Safety Policy, safe work practices and procedures and site safety rules;
- Not interfering with or misusing items or facilities including those provided for the health, safety and welfare of employees;
- Reporting potential and actual hazards to their Manager, Supervisor or elected Health and Safety Representative;
- Participating in the Workgroup process;
- Participating in the Issue Resolution process;
- Assisting in the reduction and control of accident and illness producing conditions and suggest ways to eliminate hazards;
- Using the correct tools and equipment for the job;
- Keeping tools in good condition where applicable;
- Using the required safety equipment and protective clothing;
- Reporting defects in workplace equipment;
- Attending induction and any other training provided;
- Reporting any personal injuries and receive first aid treatment as required; and
- Participating in the preparation of Grocon SWEMS.

Off Site Positions**Executive Project Manager and OR Construction Manager have the following responsibilities:**

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- Ensure that Grocon Workplaces under their control implement this WSMP plan.
- Provide adequate resources to identify and manage project QSE and Design risks.
- Ensure that a contract review considering the QSE issues relating to the works is undertaken.
- Ensure that all design impacts are considered and provide suitable resources to undertake a design safety review.
- Ensure that a Risk Assessment/Workshop (WRA) is undertaken at the beginning of the project covering Design Risks, QSE risks and attended by the relevant project team members.
- Ensure the identified risks have the delegated responsibilities assigned.
- Ensure that the risk assessment and assigned actions are regularly reviewed by the Project manager and the project team and recorded at team meetings to maintain control measures for identified risks.

The State OH&S / HSE Manager has the following responsibilities:

- Conduct the initial review and approval of the WSMP for the project;
- Assist the project team to understand the safety responsibilities outlined in the WSMP;
- Provide updates on changes to the OH&S system in a timely manner;
- Ensure the project team conduct and maintain the Workplace Risk assessment (WRA)
- Train the project team in the manner and timing for conducting Safety Interactions;
- Assist the project team in communicating the OH&S System requirements to all Consultants and subcontractors;
- Assist the project team in reviewing the OH&S System requirements to all Consultants and subcontractors, to ensure adequacy and compliance;
- Support the continual improvement of the OH&S System by attending meetings, workshops, audits & reviews with the HSE Advisor, Project manager, Site Manager and Design manager as required;
- Assist the project team to develop, review and communicate Target and Objectives;
- Undertake internal audits on the project against Grocon Procedures or OH&S documents.
- Conduct regular surveillance of all projects and provide support towards achieving the highest industry safety standards;
- Provide assistance, where required, to improve the safety performance of Grocon subcontractors;

The National OH&S Manager has the following responsibilities:

- Oversee and support the national implementation of the Grocon OH&S System;
- Ensure the Grocon OH&S System is being applied, resourced and managed on all projects through the state Construction managers and each Project manager;
- Maintain the Grocon OH&S System certification and compliance to ISO 4801.
- Maintain, Develop and continually improve the Grocon OH&S System;
- Use feedback and input from OH&S System users across the business at all levels to ensure the system continues to meet business and compliance requirements.
- Manage all internal procedure Audits and external certification audits for Grocon.
- Obtain information from third parties to enable the implementation of corrective action and continual improvement.

9.2 Grocon Resources

Grocon is well known for building complex structures and has completed a large portfolio of well-known projects, which were completed using our direct employees. When Grocon directly undertakes the structural portion of a project we utilise our skilled workforce to carry out the work.

9.3 Subcontract & Supplier Resources

Projects are broken down into trade packages and Grocon employs experienced subcontractors & suppliers to undertake each trade package to deliver a completed project.

Each subcontractor or supplier will be engaged through an evaluation process, as described in this WSMP, which shall consider the resources necessary to deliver the scope of works for the relevant package of work being contracted.

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9.4 Consultant Resources

When Grocon is responsible for the Design of the project, we partner with experienced and skilled design consultants who have the necessary resources to complete the Design documentation for each of the disciplines required for the delivery of the project.

Design consultant's novated to Grocon or engaged by Grocon, shall be listed in a project organisational chart which shall be developed during the initial stages of the project.

10.0 Induction and Training

10.1 QSE Training

All project team personnel will be given QSE training as soon as practical to engagement. The training will be consistent with the line management level of the individual. The training may be as a one on one basis or in groups whichever is determined by the Project manager and System manager to effect best time and resource management.

Ongoing training is required given the QSE Database is constantly being upgraded as part of the continuous improvement cycle. Change is driven by the System managers armed with the feedback provided by the end users.

10.2 Safety Cultural Training

Each member of the project team with a line management function will undertake a two day safety cultural training course conducted where possible at the project. On the second day of the training, attendees will separate into small groups and be shown how to conduct onsite Safety Interactions. The Safety Interactions required numbers and timings are defined in **2025A1 Safety Interactions Position Matrix**.

All employees (Grocon and Subcontractors) inducted on the project shall be given training in the Action By Employees (ABE) program and instructed about the location and use of the ABE cards. This training will be incorporated in the Site Specific Induction.

10.3 Inductions

All persons who will undertake work at the site must have a General Construction Induction or interstate equivalent. All persons attending the Site Specific Inductions are required to supply Grocon with copies of their Construction Industry Induction Card and relevant tickets of competencies.

Persons who have previously undertaken a General Construction Induction but have not worked in the Construction Industry in the previous two (2) years will need to undertake the training again prior to commencing work on site.

The site induction process includes the following:

- ***The person arranging the induction/s is to forward to site a Subcontractor Employee Registration Form – 6065F2 at least 48 hours before the day of the induction;***
- ***Between 6:30 and 7:30 am the Subcontractor or Grocon site supervisor will complete a session of SWEMS induction and sign off with all workers;***
- ***Between 7:30 and 9:30 the Site Specific Induction and ABE training will be delivered by Grocon to all new inductees;***

The Site Specific Induction and ABE training is delivered in Power Point Presentation format and updated at regular intervals to capture and communicate the changing nature of the project and associated hazards and risks. Further communication of site related safety issues are addressed with the site workers in pre start and toolbox talk meetings.

The inductions also outline to Grocon workers and others where applicable the important work related safety supports such as:

- **Grocon Employee Assistance Program (EAP)** – critical event response;

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- **GroHealth** – wellbeing;
- **Mates in Construction (MIC) QLD & NSW** – suicide watch training, intervention and support.

Information relative to EAP and GroHealth are accessible through the Grocon Intranet by clicking on >Systems, >People and Culture and finally >Employee Benefits. Hard copy information posters are displayed on site notice boards.

10.4 Operational Training

Competency levels required in the delivery of a specific workplace task will be considered. Where training is required by Grocon employees, training will be supplied in accordance with procedure 6000P of the Grocon QSE management System.

Certain jobs or tasks can only be undertaken by persons recognised as having a demonstrated competence to perform them efficiently and safely. The issue of a relevant licence, Certificate of Competency or permit is the commonly accepted means of both recognizing and demonstrating such competency. Competency requirements should be identified first, either through a training needs analysis or as prescribed by regulation and then appropriate training can be arranged if necessary.

Where workers are engaged in key supportive safety roles, existing training relevance and currency will be verified and where required new or refresher training will be provided, e.g.:

- Fire wardens
- HSR
- Safety Environmental Committee member
- Assessment and Workplace trainer
- Height retrieval

Grocon provide online training to all employees through the intranet hosted **Learning Seat – GroLearn**. Each programs have a built in competency assessment that once completed successfully results in a certificate being generated.

11.0 Hazard Identification, Risk Assessment and Control (HIRAC)

Following on from any corrective actions undertaken in the Development stage of the project and in linking to the outcomes of the DesignSafe process further HIRAC is required for the construction stage.

The DesignSafe process involves facilitated workshops / meetings between appropriate stakeholders and specialists to discuss the safety impacts of the design in a structured way. To stimulate and structure the discussion a series of hazard/risk categories with word prompts and considerations have been developed and form the foundation of the review.

The risk consideration discussed and identified shall be documented, together with any actions and notes considered necessary by the DesignSafe review team. The review is not intended to compromise or change the design performance or architectural detail but to enhance the design buildability, maintainability, operability, end user interactions and disposal of the structure or elements thereof.

Where design changes are implemented during the construction stage, the DesignSafe process will be conducted in accordance with **Managing Quality, Safety and Environmental Risks 6000P and the DesignSafe Work Instruction 2005W1.**

11.1 Hazard Identification – Workplace Risk Assessment

Where hazards associated with the program are identified in the Workplace Risk Assessment (WRA) are unable to be eliminated, each workplace risk will be given a risk score using the matrix contained in **6000A1 Risk Assessment Matrix** a Risk Score will be determined by referring to the matrix on the Risk Assessment System. A risk reduction can be achieved where applicable by implementing a control or combination of control measures from the Hierarchy of Control.

Prior to the commencement of work activities, the Grocon Site Manager, Responsible Foreman and HSEA shall formally review the scope of works for the task to identify and document hazards, eliminate where possible

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and assess the risks using Grocon's *Workplace Risk Assessment (WRA)*. The risk management process will be used to identify high risk plant and activities aligned to the task.

The successful mitigation of hazards is based on the following parameters:

- Identify, assess, eliminate where possible, control, monitor and review;
- Instructing personnel on how to report and document any hazards or potential hazards to the Site Manager and/or Foreman.

The reporting of hazards is the first and critical step in the hazard management process, if this step does not occur there is a potential for hazards to go unchecked. All hazards that are identified and cannot be "See & Fixed", that is easily and safely fixed, must be reported to the Grocon Foreman or another supervisor where appropriate or an OH&S representative or Safety Environmental Committee member. The reporting of these hazards can be done verbally. The supervisor directly responsible for the area and / or task is responsible to ensure that the hazard is:

- Made safe
- Rectified

When hazards or potential hazards are identified, personnel shall attempt to rectify, identify, barricade or isolate the hazard, ***only*** where practical and safe to do so. This should be done before reporting the hazard to the responsible Foreman to ensure others are not exposed to risk of injury or illness.

Any hazard, not able to be controlled or rectified immediately, is to be made safe with barricades, information tags and/or warning signs and reported to the relevant Grocon Site Manager or Foreman. The employee should also advise all personnel in the vicinity of the hazard. The Foreman will immediately initiate the appropriate action to correct the hazard or notify the appropriate management representative and HSEA should it be beyond their control. After the hazard has been rectified, the responsible Foreman shall report the outcomes of the hazard to the employees.

If the hazard is of a serious / complex nature it should be documented in written form on *1005 F1 Hazard Report*. The preferred formal method of documenting hazards is via the QSE database, via hazard reporting function in the Safety Menu or via the Grocon Safety Interaction function, *2025 F1 Workplace Safety Interaction Record Sheet*.

11.2 Control Measures

Control measures must be selected and implemented in the WRA using the Hierarchy of Control as follows:

1. Elimination
2. Substitution
3. Isolation
4. Engineering
5. Administrative
6. PPE/C

NOTE: Elimination is the preferred control, with PPE/C being the least preferred.

The Risk Assessment Matrix has four (4) layer Residual Risk Score indicator that identifies – **Low** (0 to 6, Acceptable), **Moderate** (7 to 14) SWEMS required, **Very High** (15 to 22) SWEMS required and to be **SWEMS Implementation Audited (6000F6)** and **Extreme** (23 to 25) score range where work is not to commence.

11.3 Safe Work and Environmental Method Statements (SWEMS)

Safe Work and Environmental Method Statements (SWEMS) will be developed and implemented for all high risk construction activities, or where identified in the Residual Score indicator as required. The Site Manager, Engineers, Responsible Foreman and HSEA shall formally review the SWEMS using **SWEMS Review (6000F5)** prior to work commencing to ensure they are correct for the task being undertaken. Records of the SWEMS reviews will be filed in hard copy format and electronically in the QSE Database.

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The SWEMS development, implementation, amendment and review process should have employee input where they are engaged in the work activities, those employees are required to be involved in the development process. Specific consideration in relation to the communication of the SWEMS must be given to employees undertaking work outlined in the SWEMS should they move from task to task.

Where changes are required in the WRA through the following actions of review, audit or investigation the changes are to be highlighted in red or italic text.

11.4 Safety Interactions

Safety Interactions conducted in workplaces will be used to assist Grocon and its employees to identify unsafe practices and to utilise skills provided in training to assist in improving safety culture.

The responsibility, timing and number of Safety Interactions required monthly are listed on the **2025A1 Safety Interactions Position Matrix.**

The Safety Interactions are as follows;

- Workplace Safety Interaction
- SWEMS Implementation Audit
- SWEMS Review
- Plant Inspection
- Safety Environmental Committee Attendance
- Safety Environmental Committee Walk Participation
- Project CSC Meeting Attendance
- Incident Investigation Subcommittee Meeting Attendance
- Project Safety In Design Meeting / Review
- Workplace Risk Assessment

A Workplace Safety Interaction is the act of observing people performing their work tasks in their surrounding environment and undertaking behaviour improvement discussions with them or their group.

All employees will be encouraged to eliminate hazards on a “see and fix” basis.

Considerations for identifying hazards:

- Is the equipment / resources used to perform a task suitable?
- Is the equipment / resources appropriately located? If no, how can it be improved?
- Is the method for using the equipment and materials appropriate? If no, how can it be improved?
- Can people be affected by noise, fumes, vibration, lighting etc? If so, how can this be prevented?
- Can people be injured by equipment, machinery or tools? If so, how can this be prevented?
- Can people be injured by chemicals and other hazardous materials used in the work place? If so, can this be prevented?

To assist this process of identification, resources such as the following should be used:

- Workplace Health and Safety Queensland Codes of Practice and other publications, e.g. Safety Alerts;
- Hazard profiles for specific trade groups;
- Workplace experience and training;
- Consultation (e.g. Toolbox Talks) with workers experienced in the task to be undertaken.

All hazards that are identified and cannot be “See & Fixed”, that is easily and safely fixed, must be reported to the Grocon Foreman responsible for the area. Opportunity for Improvement (OFI) can be raised in the QSE Database where the action requires a specific person to take corrective actions, which are then verified as completed by the OFI originator. This method provides a mechanism for closing the loop in relation to the HIRAC process

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11.4.1 2025A1 Safety Interactions Position Matrix.



SAFETY INTERACTIONS POSITION MATRIX	
2025 A1 Form	Safety Management System



This Matrix refers to the Work Instruction 2025W1 Safety Interactions Program. For Positions refer to Company and Project Organisational Charts.

Safety Interactions Program Activities Participation Requirements												
	Position	Abbreviation	Workplace Safety Interaction	SWEMS Implementation Audit	SWEMS Review	Plant Inspection	Safety Committee Meetings Attendance	Safety Committee Walk Participation	Project CSC Meeting Attendance	Incident Investigation Subcommittee Meeting Attendance	Project Safety In Design Meeting/ Review	WRA Review
CORPORATE	SLC Members	SLC	1	1								
	Head of Department	HOD	1	1					As Required**			
	General Manager	GM	1	1					As Required**			
	Construction Manager	CM	2	2			1	1	As Required**	As Required**	As Required**	As Required**
	HSE Manager	HSEM	2	2			1	1	1	1	1	1
	Operations Manager	OPM	2	2			1	1	As Required**	As Required**	As Required**	As Required**
	Corporate Positions	CP	1	1					As Required**		As Required**	
PROJECT	Executive Project Manager	EPM	2	2			1		1	As Required*	As Required**	As Required**
	Project General Manager	PGM	2	2			1		1	As Required*	As Required**	As Required**
	Project Manager (including assistant)	PM	2	2	2		1	1	1	As Required*	1	1
	Design Manager	DM	2	2	2		1	1	1	As Required*	1	1
	Contract Administrator/Manager	CA	1	1			As Required**	As Required**	1			As Required**
	Site Manager	SM	2	4	4		4	4	1	As Required*	1	1
	Foreman/Supervisor	FM	2	4	4	4	As Required**	As Required**	1			As Required**
	HSE Advisor	HSEA	2	4	4	4	4	4	1	1	1	1
	Leading Hand	LH	2	2	1		As Required**	As Required**				As Required**
	First Aider	FA	2				4	2	1	As Required*		
	Project Support Positions	PSP	1	1			As Required**	As Required**	1			As Required**
MAYGAR	Grocon Operations Management	GOM	2	2	2	2	4	4	1	As Required*	1	1
	Grocon Operations Supervisor	GOS	2	2	2	2	4	4	1	As Required*	1	1
		NOTE: As Required* - Applicable when Host Project As Required** - When Invited										

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Ownership: Systems Managers
 Title: 2025 A1 Safety Interactions Position Matrix

Effective Date: 05th April 2013
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Revision No. : 3 / Status: AFU

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Project Document No. WSMP / C001

Effective Date: 10/12/15

Rev no: 1, Status: Draft

12.0 Subcontractor Management

Subcontractors will only be engaged to work in the workplace who have a demonstrated commitment to occupational health and safety and who are committed to complying with applicable OH&S Legislation and Standards.

All subcontractors on Grocon sites are required, as per the Subcontract Deed, to submit a Project Specific Safety Plan to the project Site Engineer. The documents are to be processed as outlined in the **6191F1 QSE tenderers capability statement** available from the intranet.

- Subcontractors and their employees are required to comply with this Workplace Safety Management Plan and the Site Safety Rules;
- Appropriate references and requirements to comply with OH&S Legislative requirements and this Workplace Safety Management Plan, are included in all subcontracts;
- Subcontractors shall submit their site specific SWEMS for review and work will not be allowed to commence until the SWEMS is accepted. SWEMS will be field audited by Grocon personnel for correct implementation at least once, with high risk activities being audited on a more regular basis;
- Subcontractors will be primarily responsible for the health and safety of their employees. Grocon will also undertake monitoring and supervision of subcontractors. The level of monitoring and supervision will depend upon factors such as:
 - the size and expertise of the subcontractor, including in relation to health and safety issues;
 - the complexity of the tasks;
 - the level of risk;
 - the control that Grocon has over the workplace and the particular activity or would ordinarily have in relation to such activity;
 - The interaction of the subcontractors with other site personnel, including Grocon employees, such as:
 - Safety Environmental Committee meeting: and
 - Site Safety Communication meeting attendance.

12.1 Contractual Subcontractor Management including pre-tender evaluation

The Tender package to be issued to the market must include the following documents as a minimum;

Scope of Works:

- Prior to issue this must be approved by the Project Manager, Site Manager and HSEA.

Tenderers Capability Statement 6191F1:

- This document outlines the safety criteria required to be met by the tenderer. Once this information is gathered the Site Management Team must evaluate the information.

Other Documents:

- Grocon General Preliminary Specifications;
- Environmental Management Plan ;
- Project Quality Plan;
- Workplace Safety Management Plan; and
- Supporting safety requisite documents.

Once tenders are received, the Contract Administrator is to evaluate the tenders to gauge those most suited to the successful completion of the package. This evaluation is to include price, programme, previous performance, safety and environmental issues and quality assurance.

Once contracts have been awarded, the subcontractor and Grocon management will meet to discuss Grocon expectations and make arrangements for a site meeting of the project teams to establish the requirements prior to starting work on-site.

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12.2 Sublet Subcontractor Management

Second Tier subcontractors (those with a contract with Grocon) will be responsible for reviewing all their subcontractors' documentation (third tier subcontractors) and ensuring it is in line with Grocon, legislative and other requirements. Prior to the third tier subcontractor starting on site, all documentation (including evidence of the Secondary tier subcontractor's review) is to be made available to Grocon for review.

Subcontractors Safety Plans will be audited by the relevant Grocon Supervisor with assistance supplied by the HSEA as part of auditing as outlined in this WSMP. Where non-conformances are identified the Subcontractor will be issued an OFI which must be closed out in the allocated time frame.

13.0 Workplace Establishment

Obtain information and where applicable provide notification to authorities including, but not limited to:

- Notification / application to Council, WHS / OH&S legislator; Police:
 - Construction Certificate;
 - Hoarding notification;
 - Demolition;
 - Asbestos Removal;
 - Contaminated soil removal;
 - Roadway work zone approval;
 - Traffic Management Plan;
 - Footpath closure permits;
 - Road closure permits;
 - Out of Hours Work.
- Site Clearance:
 - Excavation;
 - Soil removal.
- Environmental:
 - Environmental Protection Agency (EPA);
 - Environmental Impact on neighbouring properties;
 - Environmental Management Plan – WRA.

13.1 Workplace Access and Security

The workplace will be made secure to prevent the entry of general public. This will be achieved by the installation of hoarding or fences, gates and signage. All visitors wishing to gain access to the site are required to contact the Project Manager and/or the Site Manager, prior to entering the Site, otherwise access may be denied. Visitors to the workplace are required to report to the Site Office to sign in when entering and sign out when departing the workplace. Visitors must be accompanied by an authorised person at all times whilst on the Site. A visitor sign in book is located at Reception in the Project Office. Visitor tags are to be visible at all times.

13.2 Parking

No general parking or employee parking is available at the Site.

13.3 Site Entry

Construction vehicle access to the Site is via Queen Street and Adelaide Street after the car park ramp is poured.

13.4 Site Hours

Site hours as approved by the Brisbane City Council are:

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6:30 am to 6:30 pm	Monday to Friday;
6:30 am to 6:30 pm	Saturday;
Sunday Work	Subject to Out of Hours Permit;
Shift/Night Works	Subject to Out of Hours Permit.

Out of hours work subject to permit approval.

13.5 Signage

Signage will be displayed prominently at Workplace entry points and throughout the site. This will include, but not be limited to:

- Safety signs;
 - first aid;
 - evacuation;
 - assembly area;
 - warden identification;
 - Safety Environmental Committee;
 - site rules;
 - safety alerts.
- Additional signage:
 - public restriction signs;
 - personal protective equipment signs;
 - traffic management signs;
 - warning lights;
 - Hazchem signs;
 - signage regarding the requirement for personnel to be inducted;
 - site procedures

13.6 Workplace Amenities

Amenities will be established in line with program requirements, with consideration given to accessibility to services such as electricity, water, sewerage, ventilation and the proximity to work areas. The number, size and types of amenities will be in accordance with the relevant Code of Practice. Overhead protection will be provided where amenities are located adjacent to open building structure or under an area where overhead lifting activities are carried out. Access ways or paths to amenities must be kept clear at all times and be free of stored material, static or mobile plant.

13.7 First Aid and Rehabilitation

The first aid facility will be located in accessible areas and clearly defined on a site plan. An appropriate number of suitably trained First Aid Officers will be available at the Workplace during normal work hours. Any persons with a health problem or chronic illness that requires medication during working hours must inform the First Aid Officer about their condition and the medication. This information will be treated in the utmost confidence and will assist the First Aid Officer in the correct management of an accident or emergency involving that person. All persons who sustain an injury are required to report the matter to their

Foreman, Supervisor, Grocon First Aid Officer or HSEA and seek treatment from the First Aid Officer (if required).

Rehabilitation

Rehabilitation facilitates the safe return of injured persons to meaningful and productive work and includes:

- Nomination of a Rehabilitation Coordinator;
- Development of a program for the injured person in conjunction with the treating Medical Practitioner;
- Coordination of a return to work program; and
- Contact and correspondence with the injured person.

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- Subcontractors will have applicable WorkCover documentation available onsite should an injury occur and the employee needs offsite medical attention, i.e. suitable duties plan.

Employees are informed of Grocon's rehabilitation commitment via the Site Specific Induction. Grocon shall ensure injured workers are treated with respect and offered every level of assistance and provided appropriate suitable duties for full normal working hours in line with applicable medical constraints set by the treating Medical Practitioner, in consultation with the nominated Project preferred Medical Practitioner.

Site based support will be provided to an injured worker that will enable:

- Identify the work that is available within the Employees capabilities, and discuss the nature of such work with the Employee;
- Accompany the Employee to the treating Medical Practitioner if agreed to seek approval of suitable duties;
- Monitoring the injury to ensure any follow up treatment is scheduled and received;
- Provide motivation support to the injured worker to assist with a return to normal duties.

The process of managing the rehabilitation process is outlined in the **2520 F1 Return to Work Interaction Pack**.

Subcontractors are to provide the Grocon team of their company nominated Rehabilitation Coordinator.

13.8 Emergency Management

The Emergency Management Plan will evolve in line with the program requirements. Initially emergency management will be implemented in the early works in the following way:

- Assessing and supplying adequate emergency equipment;
- Ensuring Grocon and Subcontractors have suitable qualified emergency response trained workers;
- Producing evacuation procedures, evacuation signage;
- Installing evacuation alarm equipment;
- Identifying the location for set down of emergency response personnel;
- Recording quantities and storage locations of Hazardous substances and dangerous goods;
- Maintaining currency of MSDS/SDS and filing in a readily accessible location;
- Communicating emergency evacuation procedures and emergency contact / service numbers in the induction process.

On commencement of the structure vertically an Emergency Management Plan will be developed to provide for the following:

- Fire Wardens;
- Nurse call system / two way radio;
- Crane lifted first aid box;
- Fall retrieval equipment;
- Fire drill procedures.

External notification to the WHS/OH&S legislator other authorities will only be via the HSEA in consultation with the PM. Notification of emergency events to the client will be via the Project Manager and Client.

13.9 Safety Environmental Committee

A Safety Environmental Committee will be established at the Site in accordance with relevant WHS/OH&S Legislation and in consultation with site workers. All members of the Safety Environmental Committee will be required to have undertaken training as required under the relevant WHS/OH&S legislation.

Meetings will be conducted weekly (where applicable), with minutes documented and distributed in hard copy format to attendees, site management and site safety notice boards. Electronic copies will be sent to Subcontractors via Project Centre or Aconex, whichever is the chosen system for the project. Minutes of each meeting will form part of the Project CSC meeting agenda for discussion and actions where required.

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Safety Environmental Committee members will be joined weekly (where applicable) by one or more Grocon management representatives in conducting site safety walks.

13.10 Toolbox Meetings, Communication and Consultation

Toolbox meetings will be held weekly by Grocon and Subcontractors/Pre start talks will be held for safety related issues, training, job co-ordination and whenever changes to procedures and SWEMS take place. These meetings will be recorded on the appropriate record in accordance with Grocon's OH&S System.

Where Work Groups are established at the site, each group will be an integral part of the consultancy process. The management team will provide timely site safety information to HSR's for each Work Group to ensure there is a coordinated approach to managing the overlapping work activities required in the program.

Grocon will provide information to second tier subcontractors through:

- Project Centre / Aconex;
- Subcontractor meetings;
- Safety Environmental Committee Meetings;
- Subcontractors tool box meetings.

6060F5 Toolbox Talk Record

Second tier subcontractors are to communicate information to third tier subcontractors. Where tool box talks or other means of communication are used, Grocon will require the subcontractor to provide a copy of the tool box talk documentation or any other correspondence for record purposes.

Records of correspondence relevant to safety issues raised with public authorities will be filed onsite in the standard file directory.

External Communication

Grocon will at the first opportunity communicate with external parties (e.g. clients, neighbours, regulatory authority) regarding safety matters arising at any time during construction of the project. Where regulatory are required to be notified it will be in accordance with regulatory specified time frames. All communication will be recorded electronically in Project Centre or Aconex, with any actions required carried out in the QSE Database.

14.0 Workplace Specific Safety Requirements

Detailed Occupational Health and Safety policy and procedures are set out in Grocon's OH&S System. This WSMP has been developed consistent with the Grocon OH&S System. The policy and procedures in the Grocon OH&S System and the site SWEMS apply throughout the Workplace except where specifically indicated otherwise.

14.1 General

- All personnel must work in a safe manner and in accordance with relevant OH&S Legislation, Codes of Practice, Australian Standards, site policies and procedures;
- Statutory Rules and Regulations are to be taken as a minimum guide only;
- Any workplace injuries (including minor First Aid treatable) or incidents must be reported on the day of occurrence to the Workplace Management or Workplace First Aider; and
- All incidents and injuries require an Incident or Injury report form to be completed.

In conjunction with Grocon, all Subcontractors must ensure compliance with these requirements:

- All personnel are to ensure the safety of the general public at all times and each contractor will be responsible to provide any temporary protection or barriers to ensure public safety;
- All vehicles entering the Site are to obey displayed speed limit of **5kph**. Any driver found to be disobeying speed limits or general road rules will be banned from entering site;
- All reversing plant (including trucks) shall have a spotter and reversing beepers;
- No children are permitted on site, excepting authorised work experience;
- No animals are permitted on site;

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- Grocon reserves the right to carry out searches of bags brought onto site, if required, this procedure would only be conducted in the presence of the owner, and it is a condition of entry to comply;
- Subcontractors are required to submit job specific Safe Work and Environment Method Statements (SWEMS), Risk Assessments and Hazard Identification Procedures for Grocon perusal and review at a minimum of 5 working days prior to commencing on site;
- Employees not inducted in a SWEMS for a task with identified risk, are not to carry out that task; and
- SWEMS implementation and adequacy will be regularly audited throughout the life of the project.

14.2 Safety Requirements

- Designated walkways are to be used when walking around the site. Materials or equipment are not to be stored in designated walkways;
- Dust to be suppressed and fumes must be appropriately ventilated;
- All floor and wall penetrations must be appropriately identified and secured;
- Fall arrest equipment, including safety harnesses, lanyards, shock absorbers and inertia reels must only be used when safe work platforms cannot be used;
- All workers must be trained in their application prior to use. Retrieval systems must be documented and proven for all work conducted with fall arrest equipment;
- All equipment must be registered, correctly stored and inspected;
- Persons engaged in work utilising a fall arrest system must have received training in the previous two years;
- Travel restraint systems must be used in preference to fall arrest systems wherever the risk of impact to a falling person could occur;
- Trenches and excavations must be adequately shored, battered or benched before personnel are allowed access. Safe access shall be provided in all excavations over 1.5 metres in depth;
- Gas cylinders are required to be secured upright at all times to prevent falling;
- Flash back arresters to be used where appropriate and must be on both ends of the hoses, maintenance must be performed in accordance with the applicable Australian Standard;
- Adequate fire protection must be provided as necessary. In particular, a suitable fire extinguisher shall be securely attached to each electric or oxy-acetylene or oxy-LPG welding plant brought on Site; and
- Proper care shall be taken in the use of compressed air. This includes safety glasses, suitable hearing protection and airline safety clips.

14.3 Interference with Safety Installations

Interference with safety installations such as handrails, guardrails, penetration covers, safety lighting, caps over starter bars, and signage etc. will not be tolerated. **Offenders will be instantly removed from site.**

14.4 Personal Protective Equipment and Clothing (PPEC)

PPE and clothing deemed to be necessary will be worn by all Grocon management, supervisors, employees, subcontractors and visitors in designated areas.

Mandatory PPEC at all Grocon sites include:

- Steel capped footwear;
- Safety eyewear for general work and visitors; and
 - Face shield for pressure cleaning;
 - double eye protection for grinding, e.g. face shield worn over safety glasses or goggles;
 - goggles or safety glasses and face shield for overhead drilling;
- Safety Helmet -
- Gloves (task specific / fit for purpose);
- High visibility vest (or clothing);
- Long sleeved shirt, long pants.

All PPE and clothing must conform to the appropriate Australian Standards. PPE requirements are communicated to all staff and subcontractors prior to attending the site specific induction. PPE will be

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supplied to Grocon employees in accordance with Grocon's Occupation Health and Safety Management System.

14.5 Personal Conduct

It is essential that all Grocon Management and employees, subcontractors and others maintain a high personal standard of conduct and a commitment to a safe workplace at all times whilst in the workplace. This is a shared responsibility. The way in which people conduct themselves in the workplace is an important element in maintaining healthy and safe conditions.

- Any person found committing any of the following offences on site shall be disciplined and may be subject to their site access being withdrawn:
 - Horseplay, throwing objects, practical jokes and rowdiness, etc. will not be tolerated
 - Fighting on site;
 - Sabotage, vandalism, graffiti, wilful damage to any appliance or material;
 - Serious misuse of site equipment and amenities e.g. damage to sheds, fire extinguishers, electrical equipment;
 - Not using toilets provided;
 - Theft;
 - Refusing to act on safety instruction;
 - Interfering with safety installations;
 - Skylarking or playing games in a manner that could cause injury or damage.
- The possession or consumption of **alcohol** or **drugs** is prohibited on all Grocon workplaces. Any person who is under the influence of drugs and alcohol must not enter or remain on the site;
- Grocon has implemented a **NO SMOKING** policy which prohibits smoking on site;
- Portable radios, MP3 players, "walkman" type players, and mobile phones are considered to be a safety hazard and therefore the use of this equipment is not permitted on the project. Only supervisors/managers are permitted to use mobile phones, and then only for work purposes, they are not to walk and talk and must position themselves in an area that is isolated from site hazards;
- Good housekeeping on the job is mandatory and every person on site must do their part daily to ensure the job is clean for safety and efficiency;
- Work areas must be kept clean and clear of debris, waste materials and tripping hazards at all times;
- Materials are to be stacked in designated areas;
- Spillage of oil and liquids is to be cleaned up immediately;
- Food is not to be consumed in work zones, only in the lunchrooms; and
- Glass Containers are not allowed on the site other than in the lunchrooms.

Disciplinary action will be applied in accordance with the Grocon Disciplinary Policy and the EBA.

Penalty system for non-conformance being:

- *1st non-conformance – Verbal warning and recorded;*
- *2nd non-conformance – Written warning;*
- *3rd non-conformance – Re-induction and final written warning;*
- *4th non-conformance – Removal from site.*

Any of the above stages are reset after 6 months without a non-conformance.

14.6 Sexual Harassment and Discrimination

Harassment of any form, bullying, or racial discrimination will not be tolerated on this project. All personnel are to refrain themselves from using obscene or offensive language or behaviour. Display of offensive or discriminatory signs or posters is prohibited.

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14.7 Drugs and Alcohol

The possession or consumption of alcohol or drugs of addiction are prohibited on all Grocon work sites. Any person who is under the influence of drugs and/or alcohol must not enter the Site. Any employee reporting to work under the influence of alcohol or illicit drugs will be removed from Site following consultation with his

Supervisor/Foreman, Health and Safety Representative and/or the Safety Environmental Committee.

This position is subject to any drug and alcohol policy that Grocon may implement.

15.0 Issue Resolution

OH&S issues at the site will be resolved in accordance with **Issue Resolution 6660P**. Where a health and safety issue is identified that involves a hazard in the workplace, the person raising the issue with their PCBU Supervisor or HSR will then assist in the completion of the section in the ABE Card. There is provision within WHS/OH&S legislation for work to cease if there is a serious risk to health and safety and also provision for the raising of a PIN by a HSR.

HSR's involved in the issue resolution process will have completed the relevant training as required by WHS/OH&S legislation.

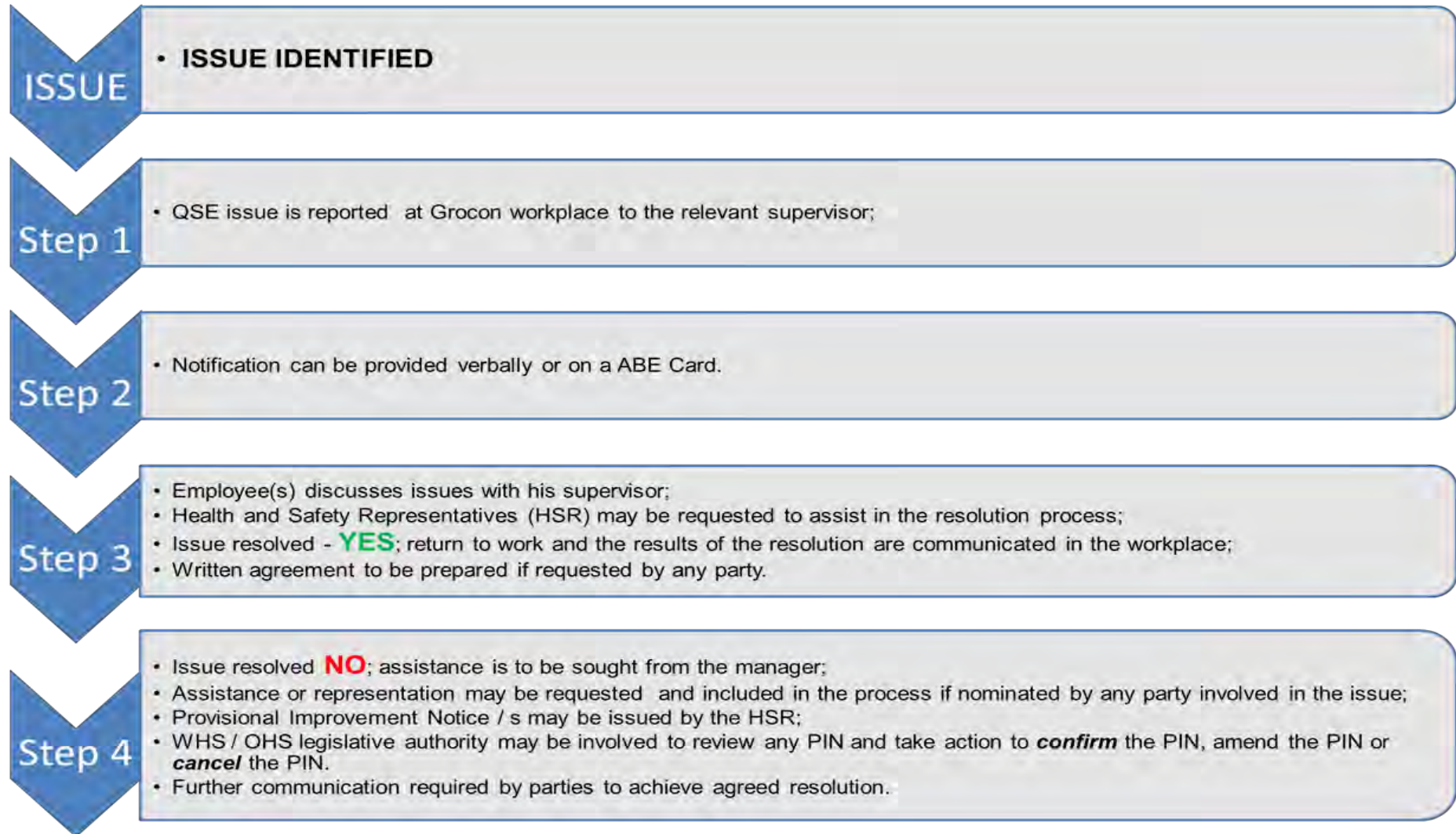
Resolution of issues will be given high priority status and may include in the process to achieve a satisfactory outcome the following persons:

- Site Manager or Line Manager;
- Persons conducting a business or undertaking (PCBU) – Subcontractors included;
- HSR;
- Worker/s;
- Worker/s Representative;
- HSEA.

Where parties cannot reach an agreed position on resolving the issue a request may be made to WHSQ to provide an Inspector to assist in the process.

The HSEA will maintain a register of received Hazard Report Forms / Issue Resolution documents and table the register for discussion at the Safety Environmental Committee Meeting. Hazard Reports (Electronic) are to be managed on the QSE database.

15.1 Issue Resolution Flow Chart



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16.0 Incident Investigation and Notification

Occurrences are to be reported immediately to the HSEA. Other relevant persons at the Workplace should be informed of the incident/accident/dangerous including the Project Manager, Site Manager, Supervisor/Foreman, Health and Safety Representatives and/or Safety Environmental Committee. The HSEA will notify the OH&S/HSE Manager. Persons with responsibilities for incident management at this Workplace have been nominated as:

- Project Manager
- Site Manager
- First Aid

External notification to the WHS/OH&S legislator and other authorities will only be via the HSEA in consultation with the PM and OH&S/HSE Manager.

Notification of safety incidents to the client will be via the monthly PCG Report, and as nominated in the D & C Contract:

Details of any:

- work related illness;
- injury;
- dangerous event;
- direction of any Authority or worker's representative in relation to health and safety; or any other event giving rise to an OH&S Notification Requirement.

NOTE: Only that result in a LTI or MTI will be reported as soon as possible but not later than 24 hours after such occurrence.

Under WHS/OH&S legislation, incident notification requires the following incidents to be reported if any of the following events occur at the workplace;

- (a) the death of a person; or
- (b) a serious injury or illness of a person; or
- (c) a dangerous incident.

Upon becoming aware of any of the incident above occurring, site management will notify the WHS/OH&S legislator by the fastest possible means, e.g. telephone, email, fax or other electronic means. Where notice and details are given by phone, the WHS/OH&S legislator may request a written notice on an approved form within 48 hours. In cases where phone notice is given but WHS/OH&S legislator does not require a written notice, the WHS/OH&S legislator must provide site management with;

- (a) details of the information received; or
- (b) an acknowledgement of receiving the notice.

Grocon will retain a record of all notices given to WHS/OH&S legislator in accordance with the relevant legislation.

- It is a requirement of the FSC that each Grocon site (Scheme or Non-Scheme) will notify the FSC in the following instances and in the manner prescribed:
 - All fatalities irrespective of the project value (notify immediately to 1800 652 500 and provide report within 48 hours);
 - Any incident resulting in a LTI and/or AWI (Alternate Work Injury) where the project value is \$3 million or more (provide report within 48 hours if a notifiable Incident, otherwise provide report within 3 weeks);
 - Any MTI or dangerous occurrence on a Scheme project (provide report within 48 hours if a notifiable Incident; otherwise provide report within 3 weeks).
 - all subcontractor incidents should be included in the reporting process.

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OFSCreporting@deewr.gov.au

External notification to the OFSC will only by the HSEM using the OFSC Reporting Pack.

17.0 Public Protection

At different stages of the program development, public protection will require additional control measures to be implemented for various hazardous locations or high risk activities where applicable such as:

- Traffic management;
 - Roads;
 - Streets;
 - Footpaths;

 - On site.
- Falling objects:
 - Over roads and footpaths;
 - Over adjoining properties;
 - On site.
- Demolition;
- Asbestos removal;
- Dust;
- Noise.

17.1 Traffic Management

At different stages of the project, Traffic Management Plan/s (TMP) will be developed and reviewed in line with project development. Each TMP will address control measures for the movement and protection of the public and site personnel and will incorporate relevant drawings, permits, signage and trained personnel.

All site personnel are to observe all traffic control equipment and signage and use the designated access and egress.

Appropriate signage and / or physical protection to reduce the risk to the public from vehicles from entering the workplace will be implemented. Consideration will also be given to issues such as noise and dust control.

Internal plant and traffic movement will be controlled, where applicable, by licensed traffic controllers or in other cases as outlined in the Internal Traffic Management Plan (ITMP).

17.2 Falling Objects

In all stages of construction, loads will be required to be lifted over footpaths and into and out of the site. To provide protection to the public on the footpaths during lifting operations, the following controls taken from the **"Hierarchy of Control"** will be implemented:

Isolation –

Where possible footpath closure permits will be applied for and hard barriers erected;

- Erect a hoarding along the boundary;
- Erect a gantry along and over the footpath;
- Install warning beacons or sirens;
- Install a retractable barrier system at the footpath crossover location/s and at each end of the gantry when objects are being lifted across. Footpath closure is required under gantries where significant sized or weighted loads are lifted over – applicable to QLD.

Administrative –

- Place qualified Traffic Controllers in the locations required;
- Erect safety signage in conspicuous location for easy public viewing.

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Planning for overhead protection will consider factors such as (but not limited to):

- The duration of the overhead protection;
- Location of areas to be protected;
- Crane lifting, luffing and slewing areas;
- The type of loads to be lifted over the areas requiring protection;
- The type and loading of overhead protection required;
- Materials to be used in the structure;
- Supporting ground conditions;
- Provision of temporary services such as power, lighting, water, drainage and concrete pump lines;
- Overhead electrical assets;
- Location of underground services and access to services;
- Pedestrian and vehicular access;
- Obstructions such as trees, light posts, bus stops, street signs and fire hydrants;
- Whether the structure is to be freestanding or tied to an existing building;
- The use of the structure for storage of materials and equipment or amenities and associated access;
- The use of the structure to support scaffolding or formwork;
- The drainage of storm water;
- Method of regular inspections.

Where overhead protective structures are required to be placed over public footpaths or roads, local council must be consulted in the planning stage. All required permits must be obtained from local councils prior to structures being installed.

Overhead protective structures require an Engineer's Certificate for the design, installation, alterations or additions and documentation must be kept at the workplace. Suppliers are to ensure that the persons erecting, altering or dismantling the structure are adequately supervised and have received appropriate instruction.

Overhead protective structures and hoardings must be designed for dead loads and live loads, including wind loads, in accordance with the relevant WHS/OH&S legislation and Australian Standards.

Additional controls will be provided as the structure grows in height that includes the process of isolating the materials, plant and activities from falling by way of:

- Erecting scaffolding to the perimeter of the structure;
- Erecting or fixing containment screening to the structure;
- Isolating areas below with a hard barrier: and
- Placing a Spotter in the lower area to prevent unauthorised entry.

17.3 Demolition

All demolition work will be undertaken by persons qualified and licensed to undertake such work. Demolition contractors are responsible for ensuring all work involving asbestos removal is carried out in accordance with the WHS/OH&S legislation and relevant Code(s) of Practice. Work that involves demolition will be subject of appropriate hazard and risk assessment prior to any work being performed. SWEMS will be developed and implemented for all work activities involved in the demolition works.

17.4 Asbestos Removal

All asbestos removal will be undertaken by persons qualified and licensed to undertake such work. Asbestos contractors are responsible for ensuring all work involving asbestos removal is carried out in accordance with the WHS/OH&S legislation. Work that may involve exposure to asbestos and/or synthetic mineral fibres will be subject of appropriate hazard and risk assessment prior to any work being performed. SWEMS will be developed and implemented for all work activities assessed as having occupational health and safety risks.

17.5 Noise

Areas assessed as potential noise hazards to personnel shall be surveyed by appropriately trained personnel to determine the level of risk, required corrective actions, exposure dosages and required PPE.

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Maximum Allowable Noise Levels

- Noise equivalent to a continuous level of 85 dB(A) for eight hours ($L_{Aeq8h}=85dB(A)$)
- Steady noise level of 115dB(A)
- Impulse noise level of 135dB(A)
- Peak noise level of 140dB ($1_{peak}=140dB[lin]$)

Management of noise hazards generated from on-site activities will be by addressing the source first to eliminate and where that is not possible controls will be implemented in line with the **"Hierarchy of Control"**. Before PPE is considered as a control against hearing damage, Grocon will require subcontractors to look at alternatives of a higher control. Previous successful controls have included the following:

- Equipment substitution;
- Equipment shrouding;
- Sound blankets or barriers; and
- On-site area isolation.

Education and Training

Education and training in hearing conservation for employees who may be exposed to the noise comprises as a minimum:

- Hazards associated with noise;
- Control of noise hazards;
- Appropriate protective measures; and
- Hearing protectors.

Audiometric Testing

Personnel exposed to noise hazards frequently will be required to undertake audiometry screening conducted by recognised testing personnel or agencies. The relevant PCBU will be responsible for arranging and recording evidence of audiometric testing.

All test results shall be treated as confidential but participants may be asked for clearance to use the results for statistical purposes.

17.6 Dust

Construction operations on-site have a high potential to generate dust during dry weather periods. The activities that may cause problems include traffic movements on unsealed roads and on working areas, vehicles transporting soils and construction materials, excavation works, drilling, earthworks and the movement of soils. Dust control planning should consider seasonal weather conditions.

Early works

Where necessary (i.e. in the event that any visible dust is generated on the construction site), work methods to be applied include the following:

- Work procedures should prioritise the prevention of dust generation over dust suppression techniques. Weather reports can be utilised to forecast and plan for adverse conditions;
- Chemical dust reduction treatment should be applied to all roadways that are constructed with bare soil that is to be exposed for more than 48 hours;
- If visible dust is generated, keeping a water cart on-site to wet down access roads, working areas and exposed soil surfaces as required;
- The water used or additives added to the water to increase the dust suppression properties should have no adverse impact on the environment;
- Covering and / or grass seeding of any stockpiles that are to remain for any extended periods, or if weather forecasts predict strong winds;
- Construction of wind fences where appropriate;
- Attaching shade cloth to open fencing;
- Covering loads of soil and rock during transport to or from site;
- Tailgates to be secured and checked prior to leaving the site;
- Visual surveillance of dust generation;

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- The emission of odorous substances or particulates that create or are likely to create objectionable conditions for the public are not permitted; and
- Dust generated during excavation works by rock sawing and/or trimming/grinding to be controlled by water suppression methods.

Base build and Fit Out

- Substituting materials that release dust when being machined, drilled or sawn;
- Isolating areas where dust generation is being carried out by process;
- Utilising equipment that has dust extraction systems;
- Using wet cutting equipment;
- Erecting barriers and warning signage;
- Identifying and providing the appropriate PPE required to conduct the task.

18.0 Excavation and Trenching

Excavation and trenching contractors are responsible for ensuring excavations and trenching work are carried out in accordance with the WHS/OH&S legislation and relevant Code(s) of Practice. All excavation and trenching is to include access/egress, edge and shoring controls implemented.

SWEMS will be developed and implemented for all work activities involved in the excavation and trenching works.

19.0 Inclement Weather

19.1 Lightning

The 30/30 rule (as per AS1768 – Lightning Protection) is to be implemented on this site. This rule states that people should seek shelter if the 'flash to bang' delay (the length of time in seconds between a lightning flash and its subsequent thunder), is 30 seconds or less, and that they remain under cover until 30 minutes after the final clap of thunder.

19.2 Rain and Wind

During periods of rain and or high wind, any work areas that are identified potentially as unsafe a review of the specific work area including the tasks being performed. The HIRAC process will be conducted to determine the level of risk and required actions to be taken. Directly involved in the review shall be the Supervisor/Foreman, HSEA, HSR/s and if required the Site Manager.

Areas requiring dewatering following rain shall be dewatered by the trades/employees required to work in these areas.

All materials stored on the top deck or lower levels open to the environment are to be secured to prevent movement by wind gusts. Where possible scaffolding will be fitted with screening that provides the least resistance to wind, otherwise where an approaching weather event is identified scaffold will have mesh removed.

20.0 Ultra Violet Radiation

All personnel are advised of the dangers of sunburn and the harmful effects of the sun's UV rays. All personnel are required to wear protective clothing and are required to wear sunscreen at all times. Grocon will provide sunscreen at locations around the workplace, including the First Aid room, toilet and amenities area and the site office.

21.0 Heat and Cold Weather

Workplaces with exposure to UV radiation can adversely affect the health and safety of workers without the implementation of a comprehensive sun safety policy. Ways of controlling exposure to be explored include:

External work controls may include:

- Monitor the weather forecasting agencies to capture forecast weather conditions;
- Rescheduling works where possible across the day to avoid exposure between 10.00am and 2.00pm (heat) and provide internal work where possible;
- Providing and ensuring workers use the appropriate personal protective equipment including appropriate protective hats, clothing (lightweight shirts with long sleeves, collars, close weave, long lightweight trousers), sunglasses and SPF 30+(minimum) water-resistant broad-spectrum sunscreen;
- Provide shade where possible; and
- Provide training and educating staff in weather impact awareness;
- Provide strategically located chilled or bottled water;
- Provide an ice machine for workers;
- In severe cases where work is not stopped at a stated temperature, provide where possible a cool down room (heat).

Internal work controls include:

- Monitor the weather forecasting agencies to capture forecast weather conditions;
- Where possible ventilate the structure to allow natural ventilation and close the openings;
- Identify the area's most likely to be affected by heat and install an adequate number of fans;
- Provide strategically located chilled or bottled water;
- In severe cases where work is not stopped at a stated temperature, provide where possible a cool down room.

22.0 Manual Handling

Manual handling activities shall be assessed for potential risk during the preparation of the task SWEMS. Recommended practices for the prevention of manual handling injuries shall be addressed at time of induction and reiterated during the SWEMS review by the area supervisor and the allocated team. Wherever practical, elimination and substitution methods will be adopted and taken into consideration by all personnel.

Manual handling means any activity requiring the use of force exerted by a person to lift, lower, push, pull, carry or otherwise move, hold or restrain any animate or inanimate object. These activities may stress or strain the body when the force required exceeds the capacity of a person, or the activity is improperly undertaken.

The risks from manual handling shall be assessed for minimisation at the workplace. Construction sites by their nature are constantly changing. The physical characteristics and nature of risks change dramatically during a project. This creates a great deal of difficulty when it comes to redesigning work systems and work tasks. Nevertheless, a number of general principles apply. If employees are educated about how to reduce exposure to risk, and the employer is committed to risk reduction, effective changes can be made.

General principles:

- Use smooth, controlled actions and movement, bend your knees;
- Avoid repetitive bending, twisting and overreaching movements;
- Design the workplace and work station layout to allow employees to use an upright and forward facing posture, to have good visibility of the task and to perform the majority of tasks at about waist height and within easy reach;
- Decrease the frequency, repetition and duration of the manual handling activity where practicable;
- Store frequently used items between knuckle and shoulder height;
- When carrying a load, keep it as close as possible to the body;
- Wear gloves when handling hot materials or objects with sharp or ragged edges;
- For seated work, avoid lifting, lowering or carrying loads above 4.5kg;
- Avoid lifting, lowering or carrying loads above one's personal capabilities, without mechanical or other assistance;
- Where an object requires two (2) or more persons to handle, one (1) person shall give the signals for lifting and lowering the object;
- Persons under the age of 18 should never lift, lower or carry loads in excess of their personal capabilities, (never above 20kg) without mechanical or other assistance;
- Extra care should be taken when lifting, lowering or carrying awkward, large, unbalanced, slippery, soft, hot, cold or sharp-edged loads;

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- Poor housekeeping, inadequate lighting, lack of space, poor walking surfaces, uncomfortable working temperatures, lack of training in manual handling techniques, young or old age, all increase manual handling risks; and
- Round objects must be locked to prevent rolling.

Other Manual Handling Principles

- Change the weights, size or shape of the load;
- Change or rearranging the workplace layout;
- Rearrange the materials flow;
- Using different actions, movement and forces to do the task;
- Modify the task through mechanical assistance or team lifting;
- Provide mechanical handling equipment and appropriate training to use the equipment; and
- Where the previous control options do not reduce the manual handling risk then appropriate instruction, training and/or education shall be provided.

23.0 Dangerous Goods and Hazardous Substances

Specific procedures for the storage, handling and use of dangerous goods and hazardous substances will be implemented at the Site in accordance with the Grocon OH&S System.

Storage, handling and use of dangerous goods and hazardous substances will be in accordance with the relevant WHS/OH&S legislation and relevant Code(s) of Practice.

A hazardous substance register will be established for the project and relevant Material Safety Data Sheets (MSDS/SDS) will be obtained or provided prior to the materials being brought on to site. MSDS's are not greater than 5 years old, will be readily accessible to all personnel and risk assessments as identified.

Appropriate warning (HAZCHEM) and safety signs will be displayed where dangerous goods and/or hazardous chemicals are stored.

Tasks that require working with dangerous goods or hazardous substances will be the subject of an appropriate hazard and risk assessment as identified. SWEMS will be developed and implemented for all work activities utilising a dangerous or hazardous substance. A register of dangerous goods & hazardous substances will be maintained at the Project, this will include the type and quantity of the substance. Each sub-contractor will provide Grocon with a list of dangerous goods or and hazardous substance they are using or storing on site at the end of each week. Grocon will in the event of an emergency provide the register to the relevant emergency response personnel.

24.0 Electrical Safety

All leads, portable power tools and earth leakage devices will be tested, inspected and tagged by a licensed electrician or a competent person as prescribed in legislation before being presented on the site. Whilst on the site all electrical equipment will be subject to regular inspections, including Tagging and Testing in accordance with AS 3012 and AS/NZS 3760.

Site safety requirements relevance to temporary construction wiring include:

- All leads are to be kept off the ground and run on insulated hooks where not restrictive to work processes and not touching Scaffolding, Formwork frames, Fire services etc;
- Logbook records of testing are to be available for review;
- RCDs and switchboards must be tested once a month in accordance with the Australian Standard AS 3012;
- Electric leads shall be of industrial grade
- No leads shall run from one floor to another, except in lift shafts, stair wells – one level and newly completed formwork decks;
- Extension leads must pass through the bottom of switchboards and be tied to the insulated support rail;
- Double adapters must not be used;
- Leads are not to be joined;
- All extension leads must be run from the temporary boards. Orange boxes (EPOD's) can be used to supply power to tools only at the work area;

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- All power to extension leads and power tools must be switched off when not in use;
- Work on or near live electrical circuits or live distribution boards is to be carried out in accordance with the relevant WHS/OH&S legislation;
- All temporary construction cables must be identified as such by the Electrical Contractor; and
- The Red, Green, Blue and Yellow colour code system is to be used on the project for Test and Tag.

25.0 Formwork / Jump Form

All formwork erection and stripping is to be undertaken by persons both experienced and qualified or a labourer/trades assistant under the direct supervision of a qualified form worker.

Site safety requirements relevance to formwork, permanent formwork and jumpform include:

- All formwork shall be designed, erected, altered and dismantled in compliance with the with the relevant WHS/OH&S legislation and engineering specifications;
- All formwork activities are to be compliant with the relevant Code/s of Practice and Australian Standards;
- The use of explosive power tools will only be undertaken by persons trained and experienced;
- Project tasks and specific SWEMS are to be created, approved and implemented;
- A risk assessment must be conducted for all working at heights;
- A documented risk assessment with associated SWEMS must be developed for all works at heights of greater than 2m.
- Scaffolding or edge protection must be in place prior to formwork commencing;
- Access to the formwork decks is to be by secured ladder only and not by frames;
- Access ways are to be implemented, maintained and indicated with the use of safety tape throughout the formwork frames;
- Formwork stripping areas are to be barricaded with flagging or barricading, not tape alone, and have signs posted at all times (FORMWORK STRIPPING IN PROGRESS, KEEP CLEAR);
- Adequate access and task lighting is to be maintained by the Formwork Supervisor in coordination with the Site Manager;
- Housekeeping is to be maintained in the formwork areas with the formwork decks being swept routinely (minimum daily);
- After rain, including overnight, the formwork areas are to be inspected by the Site Manager or Foreman with the Formwork foreman to ensure a safe work area prior to workers accessing the areas;
- Formwork certificates are to be produced prior to concrete pour commencing as per the legislative requirements were applicable.
- Decks barricaded below while placing concrete.

26.0 Concrete Pumping

Site safety requirements relevance to concrete pumping include:

- All concrete pumping will be undertaken by persons qualified and certificated as required by legislation to undertake such work and all work associated with the pumping of concrete shall be in compliance with the relevant Code/s of Practice and Australian Standards;
- Project specific SWEMS are to be created, approved and implemented and must include blow back, cleaning, waste and runoff controls;
- No placement of concrete is permitted on formwork until formwork certificates are completed and forwarded to the site manager as per legislative requirements;
- A documented pre-pour safety inspection is to be completed by the concrete Supervisor;
- The placement of the concrete pump is included in the site establishment drawings
- Consideration of types and capacity has been used and placement to eliminate or reduce the build-up of exhaust gases;
- Clear access to the concrete pump for concrete trucks and personnel is to be implemented and maintained;
- A spotter must be in place for all reversing concrete trucks;
- Daily pre-start inspections are to be conducted and recorded in a logbook;
- Monthly and six monthly maintenance inspections, as per manufacturers specifications, are to be conducted, documented and records maintained and available;
- All signage, including all safety signage, is to be clean and legible;
- Safety grates on pump in feed and safety pins are to be on all line joints and must be in place prior to operation;

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- All equipment associated with concrete pumping must have fixed compliance plates and/or appropriate certification for their use;
- High visibility clothing to be worn at all times;
- All concrete operations must comply with Traffic Controller instructions if working from the street; and
- All concrete washout must occur in the designated washout area.

26.1 Tilt up and Pre-Cast Concrete

Where Pre Cast elements have been designed in the structure of the project, hazard elimination and risk reductions are realised by eliminating much of the work required to construct the elements in-situ. Hazards associated with the on-site unloading, lifting, placing and securing will be managed through the WRA, Subcontractors SWMS and in the review process in Appendix A of the WSMP.

27.0 Working at Heights

This height hazards on this project are residual following the DesignSafe process whose purpose, however there are many areas in all stages of program development where a fall could occur. The most desirable method of construction is to build from a on the ground or on a solid construction.

Falls could typically on the same level or could be from a height associated with the following:

- Early work (excavation and retention);
- Erecting, accessing, servicing, dismantling Tower Cranes;
- Accessing plant;
- Erecting gantries, hoardings and scaffolding;
- Erecting formwork;
- Erecting, altering or dismantling perimeter containment screens;
- Working from access equipment.

There is also a risk of persons falling into shafts, through wall or floor penetration in cases where the most appropriate form of isolation is not implemented.

27.1 Floor and Wall Penetrations

All floor and wall penetrations must be appropriately identified and guarded. Penetrations larger than that which a person could fall through which are unable to be protected by the use of cast in mesh (25mm x 25mm x2.5mm) will be barricaded or secured. Mesh will not be used where there is a risk of objects falling through the mesh onto workers below.

Examples of guarding include (but are not limited to):

- Barriers;
- Guard-rails;
- Para webbing;
- Appropriate secure covers – highlighted with the words Penetration Beneath / Behind.

Lift door openings / overruns will be identified and guarded with plywood or mesh. Lift door openings will have meshed lift guard doors (lockable) installed progressively as required in the lift installation process. Guarding of lift openings will be full heights.

27.2 Ladders / Platform Ladders

Ladders are only to be used when mobile scaffold and/or scissor lifts are not suitable for the work process and must be platform ladders. In cases where ladders are required for access, they must be used in the correct manner, e.g. correct angle, secured and projected at least one metre past the top platform or landing.

Site safety requirements relevance to ladder work include:

- Only those ladders marked “Industrial” to be used on the project;
- Ladders shall always be in good condition and regularly inspected;
- Ladders shall always be placed clear of walkways and traffic ways;
- No Platform Ladder shall be used within three (3) metres of safety barriers/fences unless full enclosure barriers are in use;

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- Platform Ladders should only be used in the fully open position;
- 3 points of contact must be maintained, this means either two feet and one hand, or one foot and two hands on the ladder when ascending or descending;
- Only light duties are to be performed off a Platform Ladder;
- Equipment is not to be carried whilst accessing the Platform Ladder, unless tools are carried on a tool belt, holster or pouch, not in your hands;
- Tools and equipment are not to be stored on the Platform Ladder;
- One Platform Ladder one person;
- Electricians are to use appropriate ladders only; and
- Platform Ladders are not to be used as trestle ladders/tables;
- Trestles must be marked "industrial" have a minimum platform width of 450mm, the platform not exceed 700 in height, and only be used for light work activity.

27.3 Scaffolding

There will be large quantities of scaffolding erected externally and internally throughout the duration of the project. Typically the scaffolding will be modular, with mobile type also utilized in the fit-out.

Site safety requirements relevance to scaffold work include:

- All scaffolding at the site is required to comply with the relevant WHS/OH&S legislation, Code/s of Practice and Australian Standards;
- All scaffolds over 4 metres in height must be assembled by a person who holds a scaffolder's certificate of competence. Any alterations to a scaffold must only be undertaken by a person who holds a scaffolder's certificate of competence;
- Scaffolds should not be used unless, and until, Grocon has been provided with a handover certificate and the scaffold displays a green "scafftag" card;
- Where the "scafftag" card or other system is used, a scaffold plan is to be displayed to identify the locations of each card;
- Duplication of the relevant "scafftag" may be utilised where there are multiple access and egress locations in a permanent scaffolding system.
- All scaffolding, open sided work areas, formwork, floor openings, pits or excavations where persons can fall 2 meters or more, shall have appropriate fall protection, such as guard rails/mesh; and

Mobile scaffolds are to be erected and dismantled by persons suitably qualified to do so.

NOTE: All plastic mesh used on the project must be non-flammable.

28.0 Plant and Equipment

All plant and equipment brought on to site must have a Plant Risk Assessment and a Pre-Start Checklist completed and have both approved by the HSEA five working days prior to use on site. All plant and equipment being brought on to site shall be inspected and approved by Grocon for site access. The inspection will include but not limited to the following:

- All plant and equipment, including forklifts, must comply with the relevant WHS/OH&S legislation, Code/s of Practice and Australian Standards;
- All plant and equipment being brought on to site must comply with the relevant Acts or Regulation;
- No machinery, hand tools or any other type of equipment is to be operated without effective guarding, locking pins, etc;
- No general parking or employee parking is available at the site;
- Walking pace (5kph) shall be observed by drivers within the site at all times;
- Site personnel must not operate cranes, mobile plant or equipment unless they have been trained, are appropriately qualified (Certificate of Competence) and are competent in its use. All tickets must be supplied at induction, be available on site and made readily available upon inspection;
- If seat belts are fitted they must be worn;
- Where applicable, seat belts are to be fitted and serviceable;
- Vehicle safety – No seat NO RIDE;
- All equipment such as front-end loaders, bulldozers, forklifts and backhoes are to have their bucket or blade(s) lowered when not in use;
- All plant and equipment must have:

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- a current log book,
- current Service Maintenance Report,
- Inspection and Commissioning Reports (where applicable) e.g. Hoists, Alimak, Swinging Stages and Mast Climbers
- an operators manual,
- Plant Registration/design Notification (If applicable),
- Certification of Operation (Operator training record),
- Safe Working Loads displayed,
- Warning and operational decals/signs legible,
- Warning devices, fitted and working,
- Fire extinguishers fitted and serviced,
- All associated lifting equipment certified and tagged in accordance with specified time frames.
- Fuel operated plant exhaust clears no greater than 10 seconds after start up.

Inspection, Testing and Servicing

An appropriate process for the inspection, testing and servicing of plant and equipment at the site will be implemented. Records of inspections, tests and servicing will be maintained at the site. The process will include a process for conducting OH&S inspections and testing (and, where relevant, servicing) for incoming products, such as materials, plant and equipment-

29.0 Cranes, Lifting and Rigging

The Ribbon will be serviced by cranes throughout its construction.

The crane(s) will be designed, erected, operated, maintained, inspected and recovered in accordance with the relevant WHS/OH&S legislation, Code/s of Practice and Australian Standards. Hazards identified with the

Crane activities will be assessed in the Workplace Risk Assessment (WRA) and Safe Work Environmental Method Statements (SWEMS) developed as required for high risk activities.

Refer to the Construction Management Plan for Crane location, operational radius, and relevant crane operational diagrams. Safety and Environmental impact on neighbours and businesses will be assessed in Grocons WRA and communicated to affected stakeholders.

Periodically mobile cranes will be used on the Project for the installation of materials and plant as required. Mobile cranes will be set up in accordance with the requirements of the Mobile Crane Code of Practice as applicable to crane sitting and underground services.

Hazards identified with Mobile Crane activities will be assessed using the Grocon Risk management process and documented in the Workplace Risk Assessment (WRA) and Safe Work Environmental Method Statements (SWEMS).

Training and Competencies (Each Project shall include local requirements if any)

All crane associated activities such as Crane Operator, Dogger and Riggers shall be carried out by personnel holding the required certificate of competency. An exception will be made for a person who is undertaking a prescribed training programme who is logbook compliant with legislative requirements and under direct supervision of a holder of a certificate of competencies for the prescribed occupation that the training is being undertaken.

Crane Operators, Doggers and Riggers must undergo refresher training between two and a half and three years after either being issued with their initial certificate of competency, or since attending their most recent refresher training, whichever is the shorter time frame as per legislative requirements or as deemed necessary (QLD Requirement)

Installation and Commissioning

A competent person shall be appointed to coordinate the erection, operation, inspection and dismantling of cranes and hoists. Crane installation includes foundation/standing (Design and Certification), for all tower cranes. All relevant crane design documentation and sign off certificates where applicable, must be completed and records maintained on site. Crane Registration (Workplace Health and Safety Queensland) is to be maintained on site.

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CraneSafe will be engaged to conduct inspections of all project cranes and on completion each crane will display the Green CraneSafe Sticker.

Operation

Safe crane operation is primarily in the control of a competent operator who knows the machine and is able to determine how far a load can be placed based on crane charts. Limiters are only secondary safety device and are to be considered as a backup only.

Known Crane hazards and incidents:

- Falling objects during erection, servicing, jumping, operating and dismantling;
- Power line contact;
- Overloading;
- Operating in poor ground, over underground services and unsupported slab / platforms (mobile);
- Failure to level crane (mobile);
- Failure to use outriggers (mobile);
- Failure to fully extend outrigger beams (mobile);
- Improper blocking beneath outriggers (mobile);
- Machine defects;
- Rope and tackle failure;
- Operating in adverse weather conditions outside manufacturers specifications;
- Incorrect assembly of crane;
- Ignorance of crane capacity;
- Inattention to job;
- Fast slewing and sudden moves causing load to swing out of radius;
- Incidents associated with the process of Tower Crane assembly, jumping, maintenance and dismantling;
- Operating in close proximity to other cranes, plant, equipment and structures;
- Operator error, i.e.: poorly slung loads and falling material;

Electrical Clearance

Electrical clearances to be maintained include:

- 3 m if the voltage is up to 132 Kv
- 6 m if the voltage is up to 330 Kv
- Controls to be considered include:
 - Task specific training.
 - Spotters.
 - Exclusion Zones
 - Operational limits and devices.

Note: Tiger tails are visuals only, they do not isolate.

Crane Maintenance and Inspections

- A scheduled maintenance programme must be developed and implemented for all inspection and maintenance work in accordance with the Manufacturer's recommendation,
- Third party inspections of the Tower Cranes will be undertaken periodically with the Inspection Report handed to the plant supplier to carry out corrective actions as required.
- Damaged plant is to be inspected and repaired by a competent person and recommissioned for operational works.
- The Crane coordinator or nominated person shall maintain a register of all lifting gear on site. All lifting equipment shall be designed marked, used and inspected in accordance with AS 2550 and comply with AS 1418 and any other standard specific to the lifting equipment being inspected. Any equipment found to be defective will be removed from service and tagged for repair or destroyed if repair is not practical. Refer 3.12 Out of Service Tagging. Refer to Appendix A
- Major inspections – 10 years
- Life cycle – 25 years (Major inspection/reports)
- Specific Items to be included in inspections include, but are not limited to:
 - Detached Hydraulic Hoses and oil leaks
 - Structural damage/guarding missing

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- Loose bolts in tower crane base, tower sections or slew
- Rust in structural members
- X-ray of welds

Pre-operational Checks

Pre-operational checks shall be conducted and records maintained (logbooks) on site for:

- Daily Log Books are to be fully completed prior to commencement of operations;
- Any Major operational fault must be reported to the Grocon Site Manager;
- Daily Log books are to be submitted to Grocon at the end of every week;
- Current inspection and testing register maintained and submitted to Grocon;
- Soft fabric slings – used only following risk assessment and consultation with Grocon Management, will be withdrawn from use if damaged or more than 3 months old from first use.

Work Boxes

Work boxes used for lifting persons or materials shall be of a type specifically designed for that purpose. The design and use must comply with relevant legislative, Code/s of Practice and Australian Standards.

30.0 Structural Steel Erection

Steel construction provides the framework for the structure for which other designed components of are added externally and internally in a systematic process to achieve a completed building.

Steel construction is any work to erect assembled portions and single components of structural steel, such as:

- Columns;
- Beams;
- Bracing;
- Rafters;
- Purlins;
- Girts;
- bridging and fly bracing;
- Trusses.

Steel construction by process is generally beneficial in providing less material congestion on site and reduced manual handling when compared to traditional formed concrete structures. On the other hand the steel construction process requires elevated work at heights on the structure and requires additional mobile plant to be placed on slabs during frame erection.

The risks to the health and safety of persons involved in steel construction work are falls from heights, falling objects, collapse of the structure and plant engaged in the steel construction work. Risk management plays an important role in the management of workplace health and safety and the key elements of the HIRAC process are captured in the DesignSafe, Workplace Risk Assessment and relevant SWEMS for high risk construction work.

High risk construction works required in steel construction include:

- Work at heights –
 - On slabs, on permanent formwork, on perimeter screen platforms, on scaffolding, in elevated work platforms, in crane lifted work boxes and as a last resort in harnesses.
- Cranes -
 - Tower and mobile;
- Dogging -
 - Dogging work is the use of slinging techniques including the selection and inspection of lifting gear to safely sling a load, or the directing of a plant operator in the movement of a load when the load is out of the operator's view.
- Basic rigging –
 - The scope of work for basic rigging includes:
 - dogging work;
 - structural steel erection;

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- particular hoists;
 - placement of pre-cast concrete members of a structure,
 - safety nets and static lines;
 - mast climbers;
 - perimeter safety screens; and
 - shutters; and
 - cantilevered crane loading platforms.
- Intermediate rigging -
 - The scope of work for intermediate rigging includes:
 - rigging work in the class Basic Rigging;
 - all hoists;
 - rigging of cranes, conveyors, dredges and excavators;
 - tilt-slabs, demolition of structures or plant; and
 - dual lifts.
- Advanced rigging -
 - The scope of work for advanced rigging includes:
 - rigging work in the class Intermediate Rigging;
 - rigging of gin poles and shear legs;
 - flying foxes and cableways;
 - guyed derricks and structures; and
 - suspended scaffolds; and
 - fabricated hung scaffolds.
- Basic Scaffolding: SB –
 - The scope of work for basic scaffolding includes:
 - modular or prefabricated scaffolds
 - cantilevered hoist with a maximum working load of 500 kg (materials only)
 - ropes
 - gin wheels
 - safety nets and static lines
 - bracket scaffolds (tank and form work).
- Intermediate Scaffolding: SI -
 - The scope of work for intermediate scaffolding includes:
 - scaffolding work included in the class of Basic Scaffolding
 - tube and coupler scaffolds including tube and coupler covered ways and gantries
 - cantilever crane loading platforms
 - cantilever and spurred scaffolds
 - barrow ramps and sloping platforms
 - scaffolding associated with perimeter safety screens and shutters
 - mast climbers.
- Advanced Scaffolding: SA –
 - The scope of work for advanced scaffolding includes:
 - scaffolding work included in the Intermediate scaffolding class
 - cantilevered hoists
 - hung scaffolds, including scaffolds hanging from tubes, wire ropes or chains
 - suspended scaffolds.
- Concrete pumps and placement booms
- Mobile plant –
 - Access equipment, forklifts and slab supported mini cranes for façade erection.

31.0 Confined Spaces and Hot Works

Tasks that require working in confined spaces or carrying out hot works will be managed through the HIRAC process. Each process requires the use of Permits in conjunction with SWEMS.

Confined Space work on this project has been reduced through the DesignSafe process, however in cases where it is required to be carried out, competency of the entry, observer and retrieval workers and knowledge of the process will be linked to the SWEMS and Permit.

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Hot Work and Confined Space work will be carried out in accordance with relevant legislative, Code/s of Practice and Australian Standards.

32.0 Document Management & Record Control

32.1 General

Grocon uses Aconex to manage and control project related documentation & records. The intent is to ensure that all project related documentation & records are managed in a manner that is controlled, accurate, efficient, comprehensive, reliable and systematic.

Grocon also has a QSE system which is used to manage the QSE processes on our projects. This system is also used as a data base to review and store QSE type documents including Safety Plans, SWEMS, Toolbox Talks. These documents shall be transmitted using Aconex.

Whilst Aconex is established for use on individual projects, the QSE system is used as a data base with information, documents and records from current and past projects.

32.2 Document Controller and Aconex set up

The Project Manager will assign a document controller to manage and control all project documents using Aconex. Where Grocon establishes Aconex, the Document controller is usually the Aconex System administrator who provides the relevant access level for all users and relevant support and training.

All documentation used during the project will be maintained and controlled in accordance with the Aconex Project Configuration document and any relevant Grocon Document Control Procedures.

32.3 Site Diary Recording

Grocon records daily site diaries using the QSE database, where the Site manager has the overall responsibility for the collation of daily records. Various project roles are assigned the responsibility for adding information to report on the labour resources of all trades, weather conditions including any delays and any offsite activities, site incident (Near miss, injury or illness) notes for later reference, deliveries and other project information.

The Site Manager will progressively review the entered data in the QSE Site diary for completeness and accuracy. Any anomalies will be addressed with the appropriate responsible person and corrected prior to the weekly diary being closed for editing.

Project diaries can be reviewed by Grocon personnel with appropriate access into the QSE database.

32.4 Completion Documentation

Prior to the project reaching Practical Completion, Grocon will obtain the required documents as listed, but not limited to the following; (each project may add others required under the contract)

- Grocon and Subcontractor Lever Arch hard copy safety documents, the documents must include:
- Incident records
- Rehabilitation Records
- Internal and External Auditing Reports and Action Lists
- Reports to the relevant WHS/OH&S legislative authority
- External Notices issued by the relative WHS/OH&S legislative authority
- Reports to the Office of the Federal Safety Commissioner (OFSC) where applicable
- Internal and External safety meeting minutes.

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32.5 Documentation Archiving

Following completion of the project, the Contracts Administrator and Document Controller shall be responsible for archiving all project documentation & records which shall be maintained in accordance with Grocon's Record Management Procedure and related Work Instructions.

Grocon endeavours to minimise the archiving of hard copy documents and where possible uses electronic methods such as Aconex, the QSE database and Computer drives for archiving of all project records.

Where a hard copy of documentation is required to be archived, it shall be in its original condition or in lever arch files and sent to Grocon's current archive provider.

All Hard copy archiving shall be completed in accordance with the **Work Instruction '6130W2 Archiving'**.

33.0 Managing Non Conformance, Corrective & Preventative Action

33.1 General

Work being carried out that does not conform to specified safety requirements is deemed to be non-conforming and will therefore need to be prevented from occurring again on the project.

All Grocon employees are responsible for identifying and recording any non-conforming work activities and where possible "See and Fix" will be applied. In other cases requiring a higher level of control to be implemented, an Opportunity for Improvement (OFI) is to be logged in the QSE database.

The subcontractor shall also maintain their own register which shall record and manage all safety Non-conformances, including those of any 2nd & 3rd tier subcontractors. Each Non-conformance raised shall require Corrective and Preventative Actions approved by the relevant authority (Grocon raiser), prior to being closed.

34.0 Inspection, Measuring and Test Equipment

34.1 General

Grocon shall maintain a central IMTE register (**form 3101F1**) and copies of calibration certificates for all Inspection Measuring & Test Equipment (IMTE) being used on the project which shall cover Grocon's and all Subcontractor's equipment.

Each subcontractor shall identify and list all Inspection Measuring & Test Equipment (IMTE) to be used for the Project and provide their own IMTE register and copies of calibration certificates for each piece of equipment to Grocon. As equipment is updated or changed, revised IMTE registers shall be issued to Grocon's Site Quality Representative (SQR).

The Site Quality Representative is to maintain a central Inspection, Measuring and Test Equipment Register with copies of all calibration certificates and ensure that all the calibrated equipment is appropriately identified to the IMTE register.

Grocon Foreman & Supervisors will monitor the equipment being used on site for inspection measuring and testing and advise the Site Quality Representative where new equipment has been identified.

This may also be monitored through an agenda item & discussion at subcontractor site meetings.

35.0 Handling, Storage, Packaging, Preservation and Delivery

35.1 General

Grocon will monitor the delivery of incoming goods to ensure proper handling, storage, and packaging, to assist in the preservation of all components or products which will become a part of the completed project.

Generally most products are supplied by our subcontractors as a part of their trade package works and each subcontractor or supplier is ultimately responsible to ensure they manage their products with correct handling, packaging, storage and protection to ensure the products are maintained in good condition until they are incorporated into the project and accepted at handover of the relevant works.

35.2 Materials Handling

Some materials Handling shall be provided by Grocon to assist with unloading deliveries by suppliers and subcontractors which may include Craneage and Forklifts. Materials handling may be described within the Grocon Workplace Safety Management Plan (WSMP) for the project.

Otherwise Subcontractors and Suppliers shall provide the appropriate equipment or resources for the proper handling of all materials delivered to the project.

35.3 Storage of delivered materials

Storage areas will be designated by Grocon to prevent damage or deterioration of delivered products and materials pending use or incorporation into the project. The method of storage employed is determined with due consideration being given to the characteristics of the materials to be stored, e.g. the hazardous nature, and hazard material or dangerous goods class.

Subcontractors will be responsible to maintain adequate protection of products and materials in storage, during use and disposal.

36.0 Auditing

36.1 General

Audits are conducted on the Grocon Integrated QSE Management System for the Construction business, to ensure that all system elements are correctly and effectively applied to achieve compliance with the requirements of the company procedures.

36.2 External Certification Audits

External Certification & Surveillance Audits are conducted annually on our certification for Quality, Safety & Environmental. Grocon's QSE management system is certified by NCSI.

Additional OH&S audits are conducted by the Office of Federal Safety Commissioner (OFSC) either annually or every six months. Grocon maintains OFSC accreditation.

36.3 Internal Grocon Audits

Internal audits on company procedures are scheduled on our construction projects to provide a systematic check of their correct application. These audits are scheduled by the National Quality Manager in consultation with the National and State HSE manager. An annual audit schedule will be prepared for all current projects and updated as necessary to monitor the scheduled audits and to include any new projects.

All internal audits will be carried out in accordance with the Grocon procedures available from the Intranet.

36.4 Internal Subcontractor & Consultant Audits

Audits on Subcontractors and Suppliers Safety Managements Systems (SMS) are established in a project audit schedule developed by the Health, Safety and Environmental Advisor (HSEA) in conjunction with the SQR and Site Manager (SM) and as approved by the Project Manager (PM).

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(Form 6140F1 Project Audit Schedule available from the Intranet)

First round audits shall be scheduled for each of the above, following commencement of work on the project to confirm the proper implementation of their SMS on the project.

Second & subsequent round audits shall be scheduled subject to the outcome of an informal risk assessment, conducted with input from the HSEA, SQR, SM and PM, which shall consider previous audit results and the demonstration of acceptable performance of their SMS.

The HSEA and SQR are to maintain the audit schedule three months in advance and will be continually reviewed and updated, considering the letting of contracts and the projects construction programme.

Project audits shall be conducted to identify compliance with the Project safety requirements, legislative requirements, Codes of Practice, Standards and other requirements.

36.5 Conducting Audits and Documentation

All Internal Audits shall be conducted in accordance with Grocon's Internal Audit procedure and Work Instruction available from the Intranet. Audit documents and forms are available from the Grocon intranet for use in conducting and managing audits on projects.

36.6 Recording and Reporting of Audits

The results of all Audits shall be recorded and entered into the QSE data base including any OFI's raised from the audit. The QSE data base is capable of producing audits reports for use at project and business levels.

37.0 Review, Issue and Authorisation.

37.1 Preparation, Review & Authorisation

The First Issue.

1. The HSEA, assisted by the State OH&S manager will prepare the WSMP template and include the project specific content.
2. The Project Manager will review the WSMP to ensure it meets the project requirements.
3. The State OH&S/HSE manager will review the first draft issue to ensure it maintains Grocon requirements.
4. The Construction Manager will review the WSMP for approval.

Complete these details in the **First Issue Approval table** of the WSMP.

Any major comments shall cause the WSMP to be returned for further revision and recommence the cycle.

Minor Revisions after First issue.

1. The HSEA will create revisions of the WSMP to suit minor changes identified.
2. The Project Manager will review the changes prior to approving the revised WQMP.

Major Revisions or change of Intent

Should the WSMP require major revisions (based on the First Issue and subsequent minor revisions) which alter the intent or scope of the Original issued document, then the Project Manager shall seek further review by the State OH&S manager and approval from the Construction Manager which shall be recorded in the **First Issue Approval table** for that revision.

Approval of Amendments

All approved WSMP shall be signed by the HSEA and by the Project Manager on the front page. Records of the amendments shall be recorded in the 'Record of Amendments' table in the WSMP.

First Issue Approval Table for revision 0

Step	Activity	Name	Position	Signature	Date
1	Preparation	TBC	OH&S Manager		
2	Review	TBC	Project Manager		
3	Review	TBC	OH&S / HSE Manager		
Revision - 1 - was issued with Approval by the Construction Manager.					
4	Approval	TBC	Construction Manager		

(Note: No need to obtain OH&S / HSE Manager Review or Construction Manager Approval after the first issue, subject to Major revisions or change of intent above.)

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37.2 Record of Amendments

The WSMP amendments shall be recorded in the table below. The issue and use of this document must be approved and it is the responsibility of all Grocon personnel to ensure that work is carried out in accordance with this current Workplace Safety Management Plan (WSMP).

Revision	Date	Comments	Approved By

37.3 Distribution List

This document shall be available electronically within the Project Aconex Document Register once approved. All printed copies unless nominated in the distribution list are deemed to be "Uncontrolled".

Approved copies of the all Grocon WSMP shall be loaded onto the QSE database

Appendix A HIRAC Management Matrix

HIRAC MANAGEMENT MATRIX						
High Risk Element	By Whom		Frequency	Method	Grocon HIRAC Tool/s <i>Available in Systems on the Grocon Intranet</i>	Filing location
	Responsible	Approver				
Asbestos	SM, CA, FM	PM	Pre Start During removal On disposal On clearance	Asbestos Register / Report – (Consultant/Hygienist) Asbestos Management Plan Safe Work Method Statements Safety Document Review, Monitoring and Auditing Pre Start Meetings / Toolbox Talks Disposal Dockets Clearance Report	6000P Managing QSE Risks 2005W1 DesignSafe Work Instruction	Aconex Site Lever Arch Folders QSE Database Site Shared Drive
Demolition	SM, SE, CA, FM	PM	Pre Start During demolition On disposal	Dilapidation Report Structural Drawings - (structural loadings) Engineering Report/s - (structural loadings) Services Report – (DBYD / type / location) Demolition Plan Traffic Management Plan (External / Internal) Safe Work Method Statements Document Review, Monitoring and Auditing Pre Start Meetings / Toolbox Talks Disposal dockets	2005F1 DesignSafe Risk Register 2005F2 Design Change Form OH&S Review 6010A1 Health Safety and Environmental Legal and Other Requirements Matrix 6150F2 Plant Inspection 6191F1 Tenderers Capability Statement 6150F1 Plant Risk assessment 6190F2 Monthly Subcontractor Performance Report 6004F1 Safe Work and Environmental Method Statement 6000F5 Safe Work and Environmental Method Statement Review	
Concrete pumps and placement booms	SM, SE, FM	PM	Pre Start Erection Commissioning During use Inspecting / servicing Decommissioning	Design Documentation Pre-Start and Operational Documentation Structural Drawings - (structural loadings) Engineering Report/s - (structural loadings) Traffic Management Plan (External / Internal)	6000F6 Safe Work and Environmental Method Statement Implementation Audit 6000F7 HSE Purchasing Risk Assessment 6060F5 Toolbox Talk Record 6060F6 Daily Prestart Meeting 2025A1 Safety Interaction Position Matrix 2025F1 Workplace Safety Interaction Record Sheet 2025F2 Monthly Safety Interaction Register	
Cranes – Tower and mobile	SM, SE, FM	PM	Pre Start Erection Commissioning During use Inspecting / servicing Jumping Dismantling	Safe Work Method Statements Document Review, Monitoring and Auditing Pre Start Meetings / Toolbox Talks Commissioning Reports Inspection / Servicing Reports CraneSafe Sticker	2025WI Safety Interaction Program	

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HIRAC MANAGEMENT MATRIX						
High Risk Element	By Whom		Frequency	Method	Grocon HIRAC Tool/s <i>Available in Systems on the Grocon Intranet</i>	Filing location
	Responsible	Approver				
Excavations	SM, CA, SE, FM	PM	Pre Start During process	Services Report – (DBYD / type / location) Structural Drawings - (structural loadings) Engineering Report/s - (geotechnical / structural loadings) Asbestos Register / Report – (Consultant / Hygienist) Asbestos Management Plan Traffic Management Plan (External / Internal) Safe Work Method Statements Document Review, Monitoring and Auditing Toolbox Talks Pre Start Meetings Disposal Dockets Clearance Report	6000P Managing QSE Risks 2005W1 DesignSafe Work Instruction 2005F1 DesignSafe Risk Register 2005F2 Design Change Form OH&S Review 6010A1 Health Safety and Environmental Legal and Other Requirements Matrix 6150F2 Plant Inspection	
Mobile plant	SM, SE, CA, FM	PM	Pre Start During use	Design Documentation Pre-Start and Operational Documentation Services Report – (DBYD / type / location) Structural Drawings – (structural loadings) Engineering Report/s - (structural loadings) Demolition Plan Traffic Management Plan (external / Internal) Safe Work Method Statements Document Review, Monitoring and Auditing Toolbox Talks Pre Start Meetings	6191F1 Tenderers Capability Statement 6150F1 Plant Risk assessment 6190F2 Monthly Subcontractor Performance Report 6004F1 Safe Work and Environmental Method Statement 6000F5 Safe Work and Environmental Method Statement Review 6000F6 Safe Work and Environmental Method Statement Implementation Audit 6000F7 HSE Purchasing Risk Assessment 6060F5 Toolbox Talk Record 6060F6 Daily Prestart Meeting 2025A1 Safety Interaction Position Matrix 2025F1 Workplace Safety Interaction Record Sheet	Aconex Site Lever Arch Folders QSE Database Site Shared Drive
Tilt – up and pre – cast construction	SM, SE, FM	PM	Pre Start During erection	Structural / Design Drawings Engineering Report/s - (structural / environmental loadings) Traffic Management Plan Safe Work Method Statements Inspection / Servicing Reports	2025F2 Monthly Safety Interaction Register 2025WI Safety Interaction Program	
Work at Heights	SM, SE, FM	PM	Pre Start During process	Safe Work Method Statements Inspection / Servicing Reports – (Plant and equipment) Commissioning Reports		

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HIRAC MANAGEMENT MATRIX						
High Risk Element	By Whom		Frequency	Method	Grocon HIRAC Tool/s <i>Available in Systems on the Grocon Intranet</i>	Filing location
	Responsible	Approver				
Hoists, builders lifts	SM, SE, CA, FM	PM	Pre Start Erection Commissioning During use Inspecting / servicing	Design Documentation	6000P Managing QSE Risks	Aconex Site Lever Arch Folders QSE Database Site Shared Drive
Mast climber	SM, SE, CA, FM	PM		Pre-Start and Operational Documentation	2005W1 DesignSafe Work Instruction	
				Structural Drawings - (structural loadings)	2005F1 DesignSafe Risk Register	
				Engineering Report/s - (structural / environmental loadings)	2005F2 Design Change Form OH&S Review	
				Safe Work Method Statements	6010A1 Health Safety and Environmental Legal and Other Requirements Matrix	
Swing stage	SM, SE, CA, FM	PM		Document Review, Monitoring and Auditing	6150F2 Plant Inspection	
				Toolbox Talks	6191F1 Tenderers Capability Statement	
				Pre Start Meetings	6150F1 Plant Risk assessment	
				Inspection / Servicing Reports	6190F2 Monthly Subcontractor Performance Report	
Work boxes, first aid cages	SM, SE, FM	PM	Commissioning Reports	6004F1 Safe Work and Environmental Method Statement		
				6000F5 Safe Work and Environmental Method Statement Review		
				6000F6 Safe Work and Environmental Method Statement Implementation Audit		
				6000F7 HSE Purchasing Risk Assessment		
				6060F5 Toolbox Talk Record		
				6060F6 Daily Prestart Meeting		
				2025A1 Safety Interaction Position Matrix		
	2025F1 Workplace Safety Interaction Record Sheet					
	2025F2 Monthly Safety Interaction Register					
	2025WI Safety Interaction Program					

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HIRAC MANAGEMENT MATRIX						
High Risk Element	By Whom		Frequency	Method	Grocon HIRAC Tool/s <i>Available in Systems on the Grocon Intranet</i>	Filing location
	Responsible	Approver				
Rope access equipment / anchors	SM, SE, CA, FM	PM	Pre Start During use	Design Documentation Pre-Start and Operational Documentation Safe Work Method Statements Document Review, Monitoring and Auditing Toolbox Talks	6000P Managing QSE Risks 2005W1 DesignSafe Work Instruction 2005F1 DesignSafe Risk Register 2005F2 Design Change Form OH&S Review 6010A1 Health Safety and Environmental Legal and Other Requirements Matrix 6150F1 Plant Risk assessment 6150F2 Plant Inspection 6191F1 Tenderers Capability Statement 6190F2 Monthly Subcontractor Performance Report 6004F1 Safe Work and Environmental Method Statement 6000F5 Safe Work and Environmental Method Statement Review 6000F6 Safe Work and Environmental Method Statement Implementation Audit 6000F7 HSE Purchasing Risk Assessment 6060F5 Toolbox Talk Record 6060F6 Daily Prestart Meeting 2025A1 Safety Interaction Position Matrix 2025F1 Workplace Safety Interaction Record Sheet 2025F2 Monthly Safety Interaction Register 2025WI Safety Interaction Program	Aconex Site Lever Arch Folders QSE Database Site Shared Drive
Harnesses / Lanyard (Travel restraint)	SM, SE, CA, FM	PM	Inspecting / services	Pre Start Meetings Inspection / Servicing Reports		
Confined spaces	SM, FM	PM	Pre Start During process Process completion	Structural Drawings Engineering Report Confined Space Entry Permit Safe Work Method Statements Document Review, Monitoring and Auditing Toolbox Talks Pre Start Meetings Inspection / Servicing Reports		
Hot works	SM, FM	PM	Pre Start During process Process completion	Hot Works Permit Safe Work Method Statements Document Review, Monitoring and Auditing Toolbox Talks Pre Start Meetings Inspection / Servicing Reports		

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HIRAC MANAGEMENT MATRIX						
High Risk Element	By Whom		Frequency	Method	Grocon HIRAC Tool/s <i>Available in Systems on the Grocon Intranet</i>	Filing location
	Responsible	Approver				
Temporary Structures – Gantries, hoardings, screens, scaffolding.	SM, SE, CA, FM	PM	Pre Start Erection Commissioning During use Inspecting / servicing Decommissioning	Design Documentation Operational Documentation Services Report – (DBYD / type / location) Structural Drawings – (structural loadings) Engineering Report/s - (structural / environmental loadings) Demolition Plan Traffic Management Plan (external / Internal) Safe Work Method Statements Document Review, Monitoring and Auditing Toolbox Talks Pre Start Meetings	6000P Managing QSE Risks 2005W1 DesignSafe Work Instruction 2005F1 DesignSafe Risk Register 2005F2 Design Change Form OH&S Review 6010A1 Health Safety and Environmental Legal and Other Requirements Matrix 6150F2 Plant Inspection 6191F1 Tenderers Capability Statement 6150F1 Plant Risk assessment 6190F2 Monthly Subcontractor Performance Report 6004F1 Safe Work and Environmental Method Statement 6000F5 Safe Work and Environmental Method Statement Review 6000F6 Safe Work and Environmental Method Statement Implementation Audit 6000F7 HSE Purchasing Risk Assessment 6060F5 Toolbox Talk Record 6060F6 Daily Prestart Meeting 2025A1 Safety Interaction Position Matrix 2025F1 Workplace Safety Interaction Record Sheet 2025F2 Monthly Safety Interaction Register 2025WI Safety Interaction Program	Aconex Site Lever Arch Folders QSE Database Site Shared Drive

B. Noise & Vibration Management Plan

MANAGING DIRECTORS

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The Ribbon

Construction Noise and Vibration Management Plan

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0	18/12/2012	20120410.1/1812A/R0/BW	TA		BW
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Appendix One – Unattended Noise Monitoring Results

Appendix Two – Builder’s Operational / Explanation Notes

1 EXECUTIVE SUMMARY

A construction noise, vibration and dust management plan has been carried out for the proposed construction activities to assess whether these activities would impact sensitive receivers around The Ribbon site based on the requirements of the City of Sydney Council. The results of the assessment have been used to develop a construction noise and vibration management plan that will be used to manage impacts from these activities.

The Management Plan outlines the development of controls and safeguards that would be applied to all activity on the site by the construction contractor. The objective of these controls is to ensure that all work is carried out in a controlled and predictable manner that will minimise emissions and protect the amenity of the sensitive receivers surrounding the site.

Further reviews would be undertaken through the construction period, as required, in response to revised methods and equipment, as well as in response to the monitoring and evaluation of actual impacts. This management plan outlines the procedures that would be adopted by the contractor during the detailed construction planning and execution phases.

2 INTRODUCTION

An assessment of noise, vibration and dust associated with construction activities proposed for The Ribbon development located at Darling Harbour is presented within this report. The site is indicated in Figure 1.

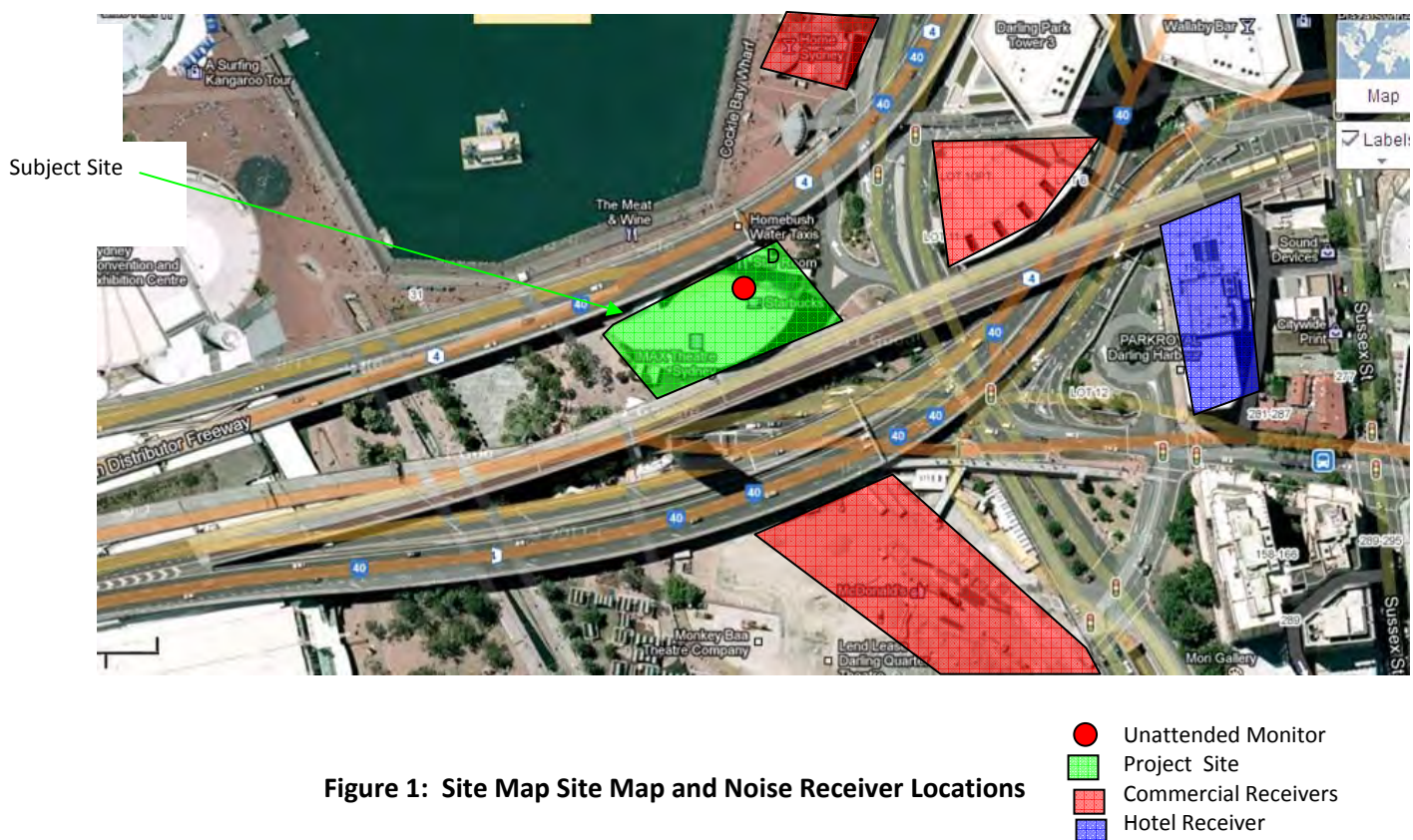
3 PROJECT DESCRIPTION

The scope of work entails the demolition of the existing IMAX building and the construction of the new 18 storey Ribbon development. It is anticipated that demolition will take approximately 6 months followed by a 24 month construction period. All traffic will enter and exit the site as detailed in the Grocon Construction management Plan.

There are no residential receivers within close proximity to the site and all neighbouring areas include external areas of Darling Harbour or roadways.

The nearest potentially affected noise receivers are as below:

- Receiver 1 - Commercial receivers to the north of the site.
- Receiver 2 - Commercial receivers to the east of the site.
- Receiver 3 - Commercial receivers to the south of the site.
- Receiver 4 – Park Royal Hotel to the east of the site



4 HOURS OF WORK

All work would be undertaken during the standard construction hours as defined by the City of Sydney Council which are detailed below:

- 7:00am to 7:00pm Monday to Fridays
- 7:00am to 5:00pm Saturdays.

No work must be carried out on Sundays or public holidays.

5 NOISE, VIBRATION AND DUST OBJECTIVES

5.1 NOISE

The applicable guidelines and standards are:

- Local Authority - City of Sydney "Construction Hours/Noise Within the Central Business District" (1992) which nominates the following noise objectives.
 - 7am to 8am – background + 5 dB(A)
 - 8am to 7pm – background + 5 dB(A) + 5 dB(A)
- Australian Standard 2436-1981 "Guide to Noise Control on Construction Maintenance and Demolition Site". The requirements stipulated in Section 3 of the standard will be followed.

Section 3 of AS 2436 states that care shall be taken in applying criteria that normally would be used to regulate noise emitted from industrial, commercial and residential premises to construction, particularly for those activities which are transitory and of short duration. For the control and regulation of noise from construction sites AS2436 nominates the following:

- That reasonable suitable noise criterion is established.
- That all practicable measures be taken on the building site to regulate noise emissions, including the siting of noisy static processes on parts of the site where they can be shielded, selecting less noisy processes, and if required regulating construction hours.
- The undertaking of noise monitoring where non-compliance occurs to assist in the management and control of noise emission from the building site.

Based on these criteria the following procedure will be used to assess noise emissions:

- Predict noise levels produced by typical construction activities at the sensitive receivers.
- If noise levels exceed "background + 5 or 10 dB(A)" noise goal at sensitive receiver locations, investigate and implement all practical and cost effective techniques to limit noise emissions. For commercial receivers, a background + 10 dB(A) criterion has been adopted at all times given that the buildings are expected to predominantly unoccupied between 7am and 8am and it does not make sense to restrict activity at a time when it would produce minimal impact.
- If the noise goal is still exceeded after applying all practical engineering controls to limit noise emissions investigate management and other techniques to mitigate noise emissions.

5.2 VIBRATION

Vibration caused by construction at any residence or structure outside the subject site must be limited to:

- For structural damage vibration, German Standard DIN 4150-3 *Structural Vibration: Effects of Vibration on Structures*; and
- For human exposure to vibration, the evaluation criteria presented in the British Standard BS 6472:1992 *Guide to Evaluate Human Exposure to Vibration in Buildings (1Hz to 80Hz)* for low probability of adverse comment

The criteria and the application of this standard are discussed in separate sections below.

5.2.1 Structure Borne Vibrations

German Standard DIN 4150-3 (1999-02) provides vibration velocity guideline levels for use in evaluating the effects of vibration on structures. The criteria presented in DIN 4150-3 (1999-02) are presented in Table 1.

It is noted that the peak velocity is the absolute value of the maximum of any of the three orthogonal component particle velocities as measured at the foundation, and the maximum levels measured in the x- and y-horizontal directions in the plane of the floor of the uppermost storey.

Table 1 - DIN 4150-3 (1999-02) Safe Limits for Building Vibration

TYPE OF STRUCTURE		PEAK PARTICLE VELOCITY (mms^{-1})			
		At Foundation at a Frequency of			Plane of Floor of Uppermost Storey
		< 10Hz	10Hz to 50Hz	50Hz to 100Hz	All Frequencies
1	Buildings used in commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40
2	Dwellings and buildings of similar design and/or use	5	5 to 15	15 to 20	15
3	Structures that because of their particular sensitivity to vibration, do not correspond to those listed in Lines 1 or 2 and have intrinsic value (e.g. buildings that are under a preservation order)	3	3 to 8	8 to 10	8

5.2.2 Assessing Amenity

The Environmental Protection Authority "Assessing Vibration: A Technical Guideline" (Feb 2006) is based on the guidelines contained in BS 6472:1992. This guideline provides procedures for assessing tactile vibration and regenerated noise within potentially affected buildings.

The recommendations of this guideline should be adopted to assess and regulate vibration within the construction site

Table 2 - EPA Recommended Vibration Criteria

		RMS acceleration (m/s ²)		RMS velocity (mm/s)		Peak velocity (mm/s)	
Place	Time	Preferred	Maximum	Preferred	Maximum	Preferred	Maximum
Continuous Vibration							
Residences	Daytime	0.01	0.02	0.2	0.4	0.28	0.56
Impulsive Vibration							
Residences	Daytime	0.3	0.6	6.0	12.0	8.6	17.0

5.3 DUST

The air pollutants impact assessment criterion applicable to the site with regards to health concerns is based on the Environmental Protection Authority's criteria for acceptable duct emissions from building sites. The acceptable duct levels detailed within the EPA guideline is detailed in Table below.

Table 3 - Dust Impact Criterion from Building Sites

Pollutant	Averaging Period	Concentration
PM ₁₀	24 hours	50 µg/m ³

6 PROPOSED PROGRAMME & ASSOCIATED NOISE SOURCES

The following sections detail the proposed programme for all stages of the development.

6.1 DEMOLITION

There is no basement excavation required on the project. There may be some demolition of the existing promenade structure over Cockle Bay to construct a new ground slab.

The demolition phase of the project will include removal of part of the existing IMAX structure based on the Grocon management plan and includes the erection of a hoarding for the full length of the property perimeter, setting up of site sheds and services etc. Demolition of the structure using excavators and hydraulic hammers. Internal demolition will be undertaken using jackhammers, angle grinders, electric saws; Bobcat and trucks for loading demolition material and clearing rubble from site.

6.2 ERECTION OF STRUCTURE

Structure will be a hybrid – reinforced concrete between the cores and structural steel wings (east and west of the cores). This involves the construction of new building structure. The processes involved in this activity include the construction of bored piles to support the basement slab and structure, delivery of materials, erection of formwork, pouring of concrete, and stripping of formwork. All materials for form working and structural steel are transported to the work face using the site tower cranes and man/material hoists. Concrete will be pumped using concrete pumps.

6.3 EXTERNAL FINISHES WORKS

This involves installation primarily of façade glazing and brickwork to the exterior of the building. This work will be implemented once the building structure is complete and formwork has been removed.

6.4 INTERNAL FITOUT AND FINISHES

This involves all internal fitout work from the installation plasterboard of ceilings, services installation to painting and joinery. All work covered under this section, will be contained within the building, with the facade providing a barrier to the direct transmission of noise to the exterior.

7 ACTIVITIES TO BE CONDUCTED AND THE ASSOCIATED NOISE SOURCES

Noise impact will be determined from all processes and equipment, which are involved in the activities outlined below by defining the levels of sound, which they generate.

The A-weighted sound power levels for all the component parts of the above-described activities are outlined in the tables below.

Table 4 - Sound Power Levels of the Proposed Equipment

CONSTRUCTION ACTIVITY	EQUIPMENT /PROCESS	SOUND POWER LEVEL - dB(A)
Demolition	Truck	105
	Bobcat	105
	30 Ton Excavator	114
Piling	Piling	111
Construction	Angle Grinders	114
	Electric Saw	111
	Drilling	94
	Hammering	110
	Concrete Vibrator	100
	Cement Mixing Truck	105
	Concrete Pumps	107
	Crane	105

The noise levels presented in the above table are derived from the following sources, namely:

- On-site measurements
- Table A1 of Australian Standard 2436-2010
- Data held by this office from other similar studies.

8 ASSESSMENT OF POTENTIAL NOISE EMISSIONS

8.1 BACKGROUND NOISE LEVELS IN THE VICINITY OF THE SITE

Daytime background noise levels were measured at the site using an unattended noise logger. These were obtained using an unattended noise monitor which was placed at the subject site to measure ambient noise through the period of between from 15th and the 23rd May, 2012. The results of unattended noise logging are included in Appendix 1.

The results of the monitoring and attended measurements are summarised in the following table.

Table 5 - Measured Background Noise

Location	Day Background Noise Level dB(A) L₉₀
The Ribbon	65

8.2 NOISE ASSESSMENT

Noise generated by plant and equipment throughout the duration of the project will be managed to generally comply with the background + 5 or 10dB(A) criterion (as applicable), and where this noise goal may be exceeded noise will be managed in strict compliance with AS2436.

Predictions of the noise levels at the sensitive receivers identified have been made of the construction processes with the potential to produce significant noise.

All predictions were made by taking into account the expected façade reductions, barrier effects (where applicable) distance losses, respite periods of equipment on site, and using the noise levels tabled above.

8.3 PREDICTION TO NOISE RECEIVERS

8.3.1 Noise Receiver 1- Commercial Property to the North

The noise goal for the commercial receiver to the north of the project site complying with Council guidelines 75dB(A) between 8am and 7:00pm. The centre does not operate before 8:00am and therefore, the background + 5db(A) criterion does not apply. The predicted noise levels are presented below:

Table 6 - Predicted Noise Level – Commercial Receivers to the North

Equipment / Process	External Noise Goal dB(A) L_{eq} (15min) (Background+10dB(A))	Predicted Level at Receiver dB(A)	Complies
Angle Grinders	75	75-65 – prior to the construction of building shell 55-45 – after construction of building shell	Yes
Electric Saw	75	72-62 – prior to the construction of building shell 52-42 – after construction of building shell	Yes
Drilling	75	55-45	Yes
Hammering	75	71-61 – prior to the construction of building shell 51-41 – after construction of building shell	Yes
Concrete Vibrator	75	61-51	Yes
Cement Mixing Truck	75	66-56	Yes
Concrete Pumps	75	68-58	Yes
Crane	75	66-56	Yes

8.3.2 Noise Receiver 2- Commercial Property to the South

The noise goal for the commercial receiver to the south of the project site complying with Council guidelines 75dB(A) between 8am and 7:00pm. The centre does not operate before 8:00am and therefore, the background + 5db(A) criterion does not apply. The predicted noise levels are presented below:

Table 7 - Predicted Noise Level – Commercial Receivers to the South

Equipment / Process	External Noise Goal dB(A) L_{eq} (15min) (Background+10dB(A))	Predicted Level at Receiver dB(A)	Complies
Angle Grinders	75	75-65 – prior to the construction of building shell 55-45 – after construction of building shell	Yes
Electric Saw	75	72-62 – prior to the construction of building shell 52-42 – after construction of building shell	Yes
Drilling	75	55-45	Yes
Hammering	75	71-61 – prior to the construction of building shell 51-41 – after construction of building shell	Yes
Concrete Vibrator	75	61-51	Yes
Cement Mixing Truck	75	66-56	Yes
Concrete Pumps	75	68-58	Yes
Crane	75	66-56	Yes

8.3.3 Noise Receiver 3- Commercial Property to the east

The noise goal for the commercial receiver to the east of the project site complying with Council guidelines 75dB(A) between 8am and 7:00pm. The centre does not operate before 8:00am and therefore, the background + 5db(A) criterion does not apply. The predicted noise levels are presented below:

Table 8 - Predicted Noise Level – Commercial Receivers to the East

Equipment / Process	External Noise Goal dB(A) L_{eq} (15min) (Background+10dB(A))	Predicted Level at Receiver dB(A)	Complies
Angle Grinders	75	70-60 – prior to the construction of building shell 50-40 – after construction of building shell	Yes
Electric Saw	75	67-57 – prior to the construction of building shell 47-37 – after construction of building shell	Yes
Drilling	75	50-40	Yes
Hammering	75	66-56 – prior to the construction of building shell 46-36 – after construction of building shell	Yes
Concrete Vibrator	75	56-46	Yes
Cement Mixing Truck	75	61-51	Yes
Concrete Pumps	75	63-53	Yes
Crane	75	61-51	Yes

8.3.4 Noise Receiver 4 – Hotel to the East

The noise goal for the Park Royal Hotel complying with Council guidelines would be 70 dB(A) between 7:00am and 8:00am, and 75 dB(A) between 8:00am and 7:00pm. The predicted noise levels are presented below:

Table 9 - Predicted Noise Level – Park Royal Hotel

Equipment / Process	External Noise Goal dB(A) L_{eq} (15min) (Background+5/10 dB(A))	Predicted Level at Receiver dB(A)	Complies
Angle Grinders	70/75	70-60 – prior to the construction of building shell 50-40 – after construction of building shell	Yes
Electric Saw	70/75	67-57 – prior to the construction of building shell 47-37 – after construction of building shell	Yes
Drilling	70/75	50-40	Yes
Hammering	70/75	66-56 – prior to the construction of building shell 56-36 – after construction of building shell	Yes
Concrete Vibrator	70/75	56-46	Yes
Cement Mixing Truck	70/75	61-51	Yes
Concrete Pumps	70/75	63-53	Yes
Crane	70/75	61-51	Yes

9 VIBRATION - ACCEPTABLE WORK PRACTICES

Vibration during the construction period is not expected to exceed vibration limits.

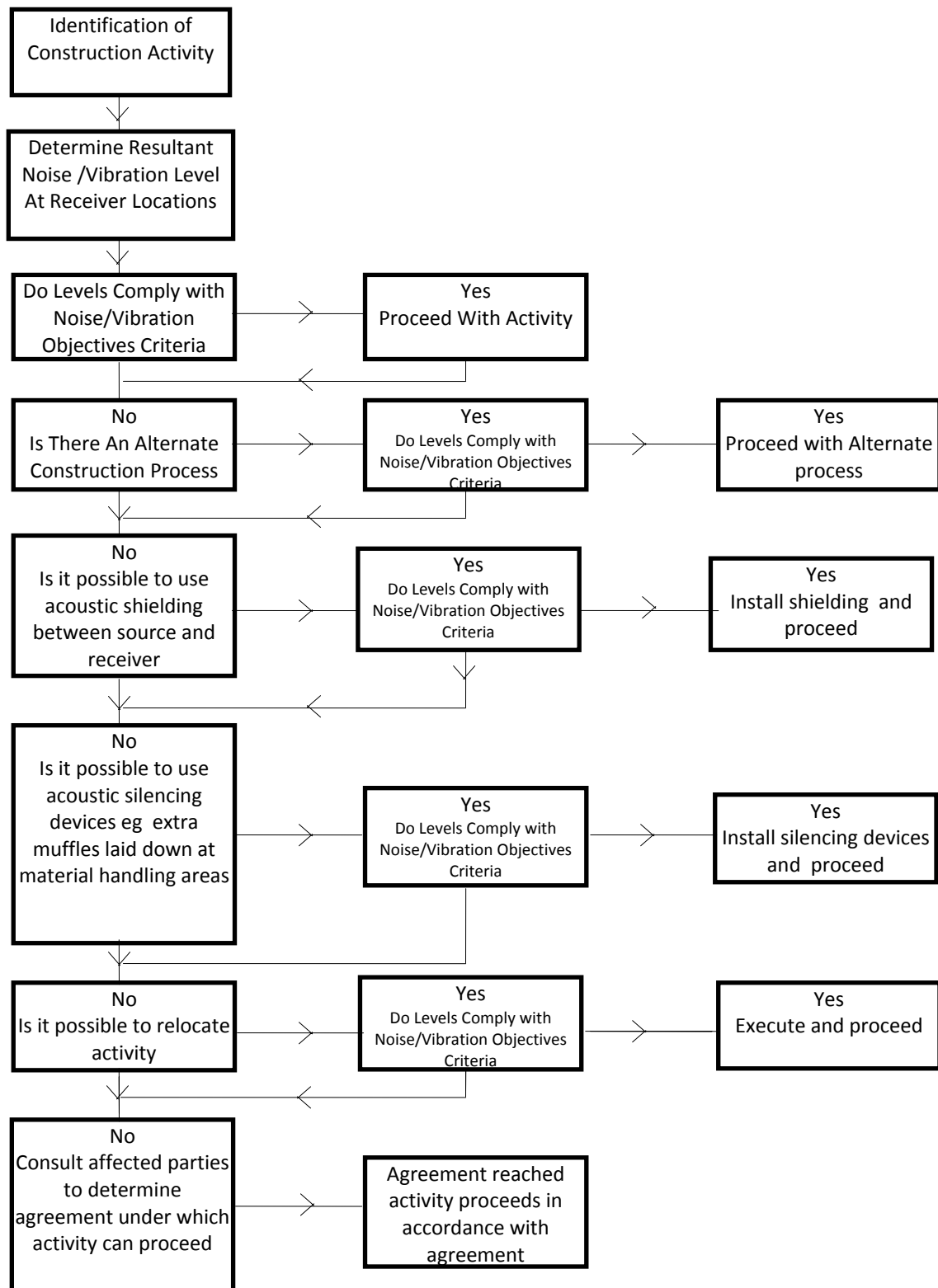
10 CONTROL OF DUST

There is little dust generation associated with construction when compared to excavation and demolition activities (which have already been completed on site). Where complaints are received associated with dust the complaints procedure listed in report will be followed and where required, dust monitoring will be implemented.

11 CONTROL OF CONSTRUCTION NOISE

As a part of the noise management plan a detailed study has been undertaken of each of the proposed activities which will occur as a part of the construction works on this project. This facilitates the formulation of noise control strategies for this project. The flow chart which follows illustrates the process which will be followed in assessing construction activities.

CONTROL OF NOISE AND VIBRATION



12 NOISE CONTROL METHODS

The determination of appropriate noise control measures will be dependant on the particular activities and construction appliances. This section provides an outline of available methods.

12.1 SELECTION OF ALTERNATE APPLIANCE OR PROCESS

Where a particular activity or construction appliance is found to generate excessive noise levels, it may be possible to select an alternative approach or appliance. For example; the use of a hydraulic hammer on certain areas of the site may potentially generate high levels of noise. By carrying this activity by use of pneumatic hammers, bulldozers ripping and/or milling machines lower levels of noise will result.

12.2 SILENCING DEVICES

Where construction process or appliances are noisy, the use of silencing devices may be possible. These may take the form of engine shrouding, or special industrial silencers fitted to exhausts.

12.3 MATERIAL HANDLING

The installation of rubber matting over material handling areas can reduce the sound of impacts due to material being dropped by up to 20dB(A).

12.4 TREATMENT OF SPECIFIC EQUIPMENT

In certain cases it may be possible to specially treat a piece of equipment to dramatically reduce the sound levels emitted.

12.5 ESTABLISHMENT OF SITE PRACTICES

This involves the formulation of work practices to reduce noise generation. A noise plan will be developed for this project outlining work procedures and methods for minimising noise.

12.6 REGULAR NOISE CHECKS OF EQUIPMENT

To determine the requirement for silencing devices on machinery it is proposed to undertake fortnightly noise check. Noise levels of all machines on site will be measured and if they are found to be higher than nominated for that equipment type, items such as mufflers and engine shrouds will be examined to ensure they are in good working order.

A record of these measurements will be kept on a form similar to that shown below.

This measure is expected to maintain noise at constant levels, and prevent any increases.

The Ribbon

Construction Appliance Compliance Certificate

Month

Year

Plant Item

Allowable Noise Level

Measured Noise Level

Complies

Yes

☐

No

☐

Issuing Engineer

Sub-Contractor

Project Manager

13 COMMUNITY INTERACTION AND COMPLAINTS HANDLING

13.1 ESTABLISHMENT OF DIRECT COMMUNICATION WITH AFFECTED PARTIES

In order for any construction noise management programme to work effectively, continuous communication is required between all parties, which may be potentially impacted upon, the builder and the regulatory authority. This establishes a dynamic response process which allows for the adjustment of control methods and criteria for the benefit of all parties.

The objective in undertaking a consultation processes is to:

- Inform and educate the groups about the project and the noise controls being implemented;
- Increase understanding of all acoustic issues related to the project and options available;
- Identify group concerns generated by the project, so that they can be addressed; and
- Ensure that concerned individuals or groups are aware of and have access to the Site Complaints Register which will be used to address any construction noise related problems should they arise.

To ensure that this process is effective, regular scheduled meetings will be required for a finite period, until all issues have been addressed and the evidence of successful implementation is embraced by all parties.

An additional step in this process is to produce a newsletter informing nearby residents of upcoming activities that are likely to generate higher noise/vibration levels.

13.2 DEALING WITH COMPLAINTS

Should ongoing complaints of excessive noise /vibration or dust criteria occur immediate measures shall be undertaken to investigate the complaint, the cause of the exceedances and identify the required changes to work practices. In the case of exceedances of the noise/vibration and dust limits all work potentially producing noise/vibration or dust shall cease until the exceedance is investigated.

The effectiveness of any changes shall be verified before continuing. Documentation and training of site staff shall occur to ensure the practices that produced the exceedances are not repeated.

If a noise complaint is received the complaint should be recorded on a Noise Complaint Form. The complaint form should list:

- The name and address of the complainant (if provided);
- The time and date the complaint was received;
- The nature of the complaint and the time and date the noise was heard;
- The name of the employee who received the complaint;
- Actions taken to investigate the complaint, and a summary of the results of the investigation;
- Required remedial action, if required;

- Validation of the remedial action; and
- Setup vibration monitoring system at the location represents the nearest vibration receiver location with alarm device which can inform the project manager on site if the vibration exceedance happened.
- Summary of feedback to the complainant.

A permanent register of complaints should be held.

All complaints received should be fully investigated and reported to management. The complainant should also be notified of the results and actions arising from the investigation.

The investigation of a complaint shall involve where applicable;

- noise measurements at the affected receiver;
- an investigation of the activities occurring at the time of the incident;
- inspection of the activity to determine whether any undue noise is being emitted by equipment; and
- Whether work practices were being carried out either within established guidelines or outside these guidelines.

Where an item of plant is found to be emitting excessive noise, the cause is to be rectified as soon as possible. Where work practices within established guidelines are found to result in excessive noise being generated then the guidelines should be modified so as to reduce noise emissions to acceptable levels. Where guidelines are not being followed, the additional training and counselling of employees should be carried out.

Measurement or other methods shall validate the results of any corrective actions arising from a complaint where applicable.

14 CONTINGENCY PLANS

Where non-compliances or noise complaints are raised the following methodology will be implemented.

1. Determine the offending plant/equipment/process
2. Locate the plant/equipment/process further away from the affected receiver(s) if possible.
3. Implement additional acoustic treatment in the form of localised barriers, silencers etc where practical.
4. Selecting alternative equipment/processes where practical
5. Setup noise/vibration and dust monitoring devices at locations represent nearest noise receivers and provide noise data for each complain time period. Analysis is required to determine suitable mitigation measures.

Complaints associated with noise /vibration and dust generated by site activities shall be recorded on a Complaint Form. The person(s) responsible for complaint handling and contact details for receiving of complaints shall be established on site prior to construction works commencing. A sign shall be displayed at the site indicating the Site Manager to the general public and their contact telephone number.

15 CONCLUSION

A noise/vibration and dust assessment has been undertaken of the proposed construction activities to identify whether these activities would impact sensitive receivers around The Ribbon, Darling Harbour.

The assessment of construction noise and vibration indicates that management and engineering measures will be needed to limit noise impacts to the surrounding receivers. Noise emissions to the remainder of the buildings surrounding the project site will generally be within the recommended goals.

Minimal vibration impacts are expected as a result of construction activities. Notwithstanding this, safeguards to ensure no adverse impacts at the residential buildings have been recommended in this report.

Dust emission criteria have been set up in this report based on the requirements of the Environmental Protection Authority. Detailed dust mitigation methods have been recommended in this report.

We trust this information is satisfactory. Please contact us should you have any further queries.

Yours faithfully,

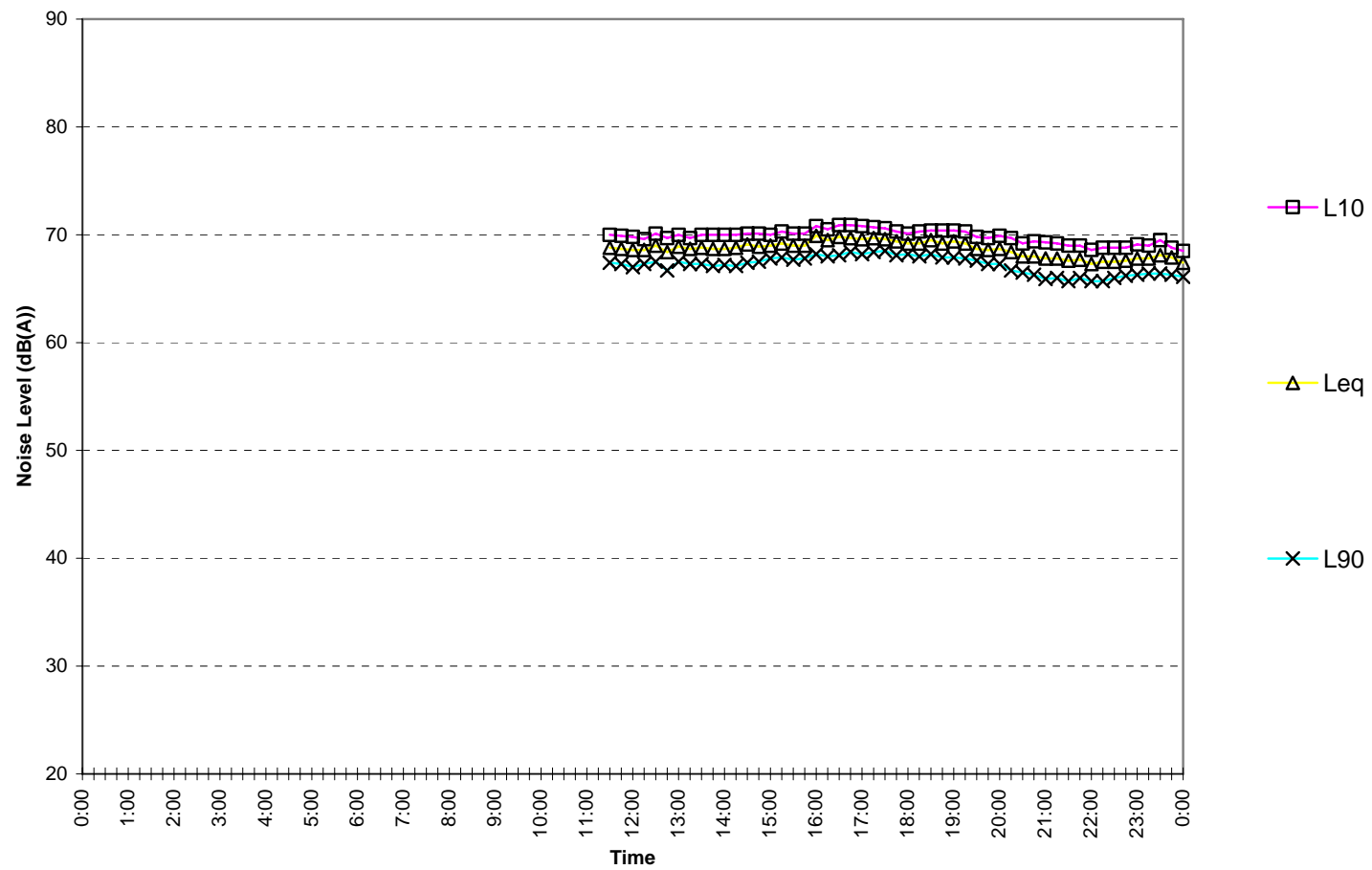
A handwritten signature in dark ink that reads "B.G. White." The signature is written in a cursive, slightly slanted style.

Acoustic Logic Consultancy Pty Ltd
Ben White

Appendix One – Unattended Noise Monitor Results

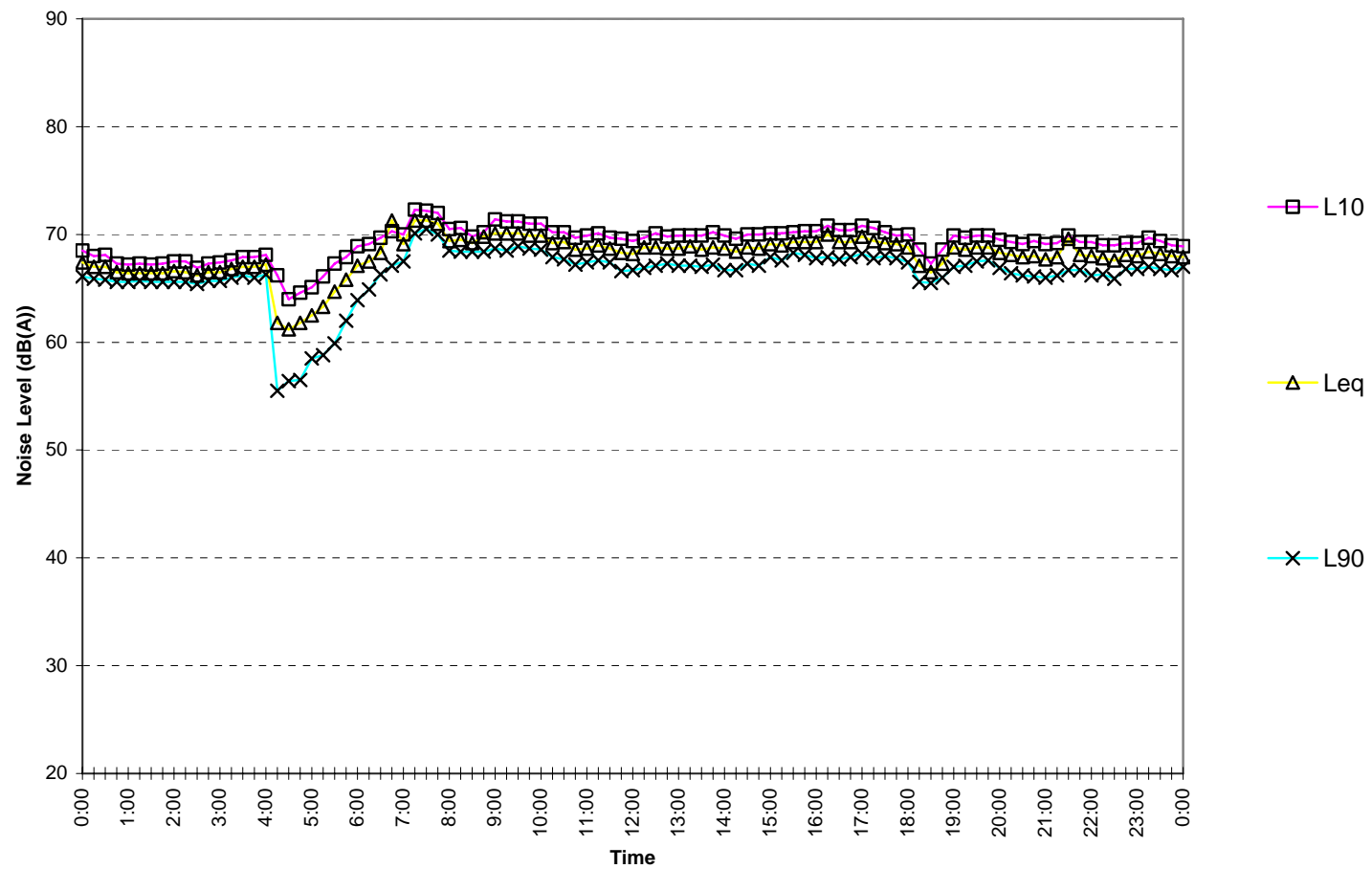
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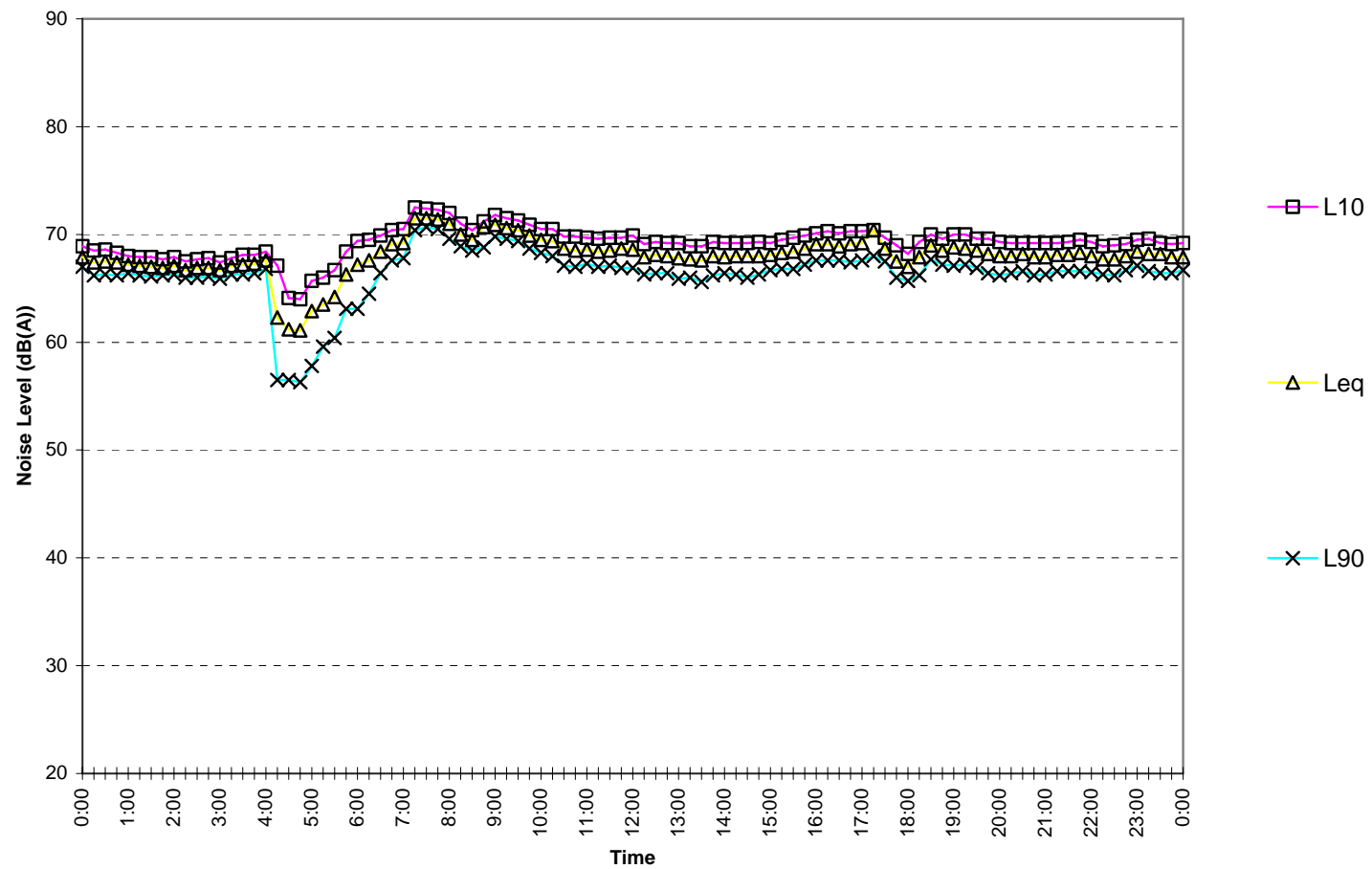
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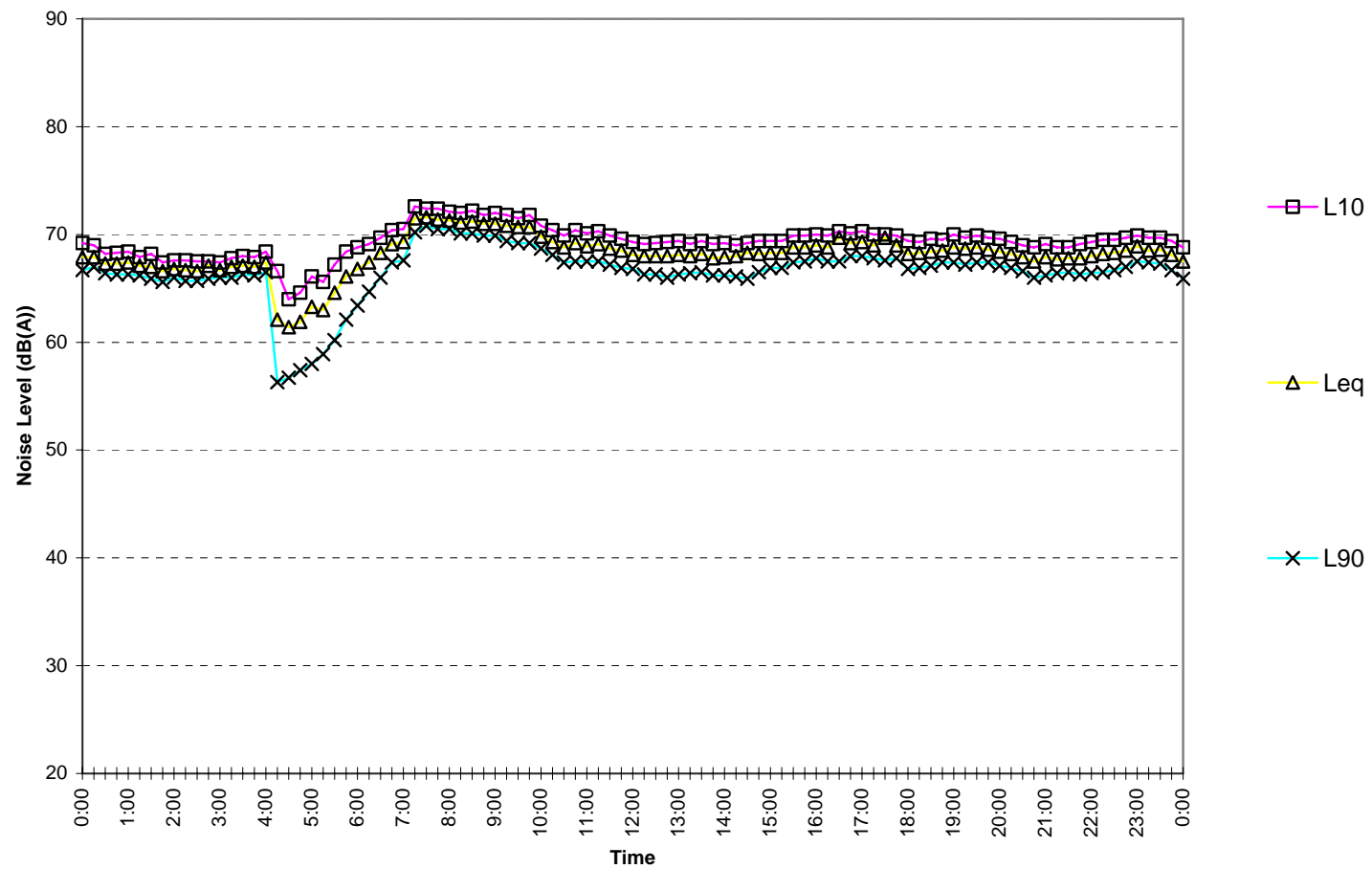
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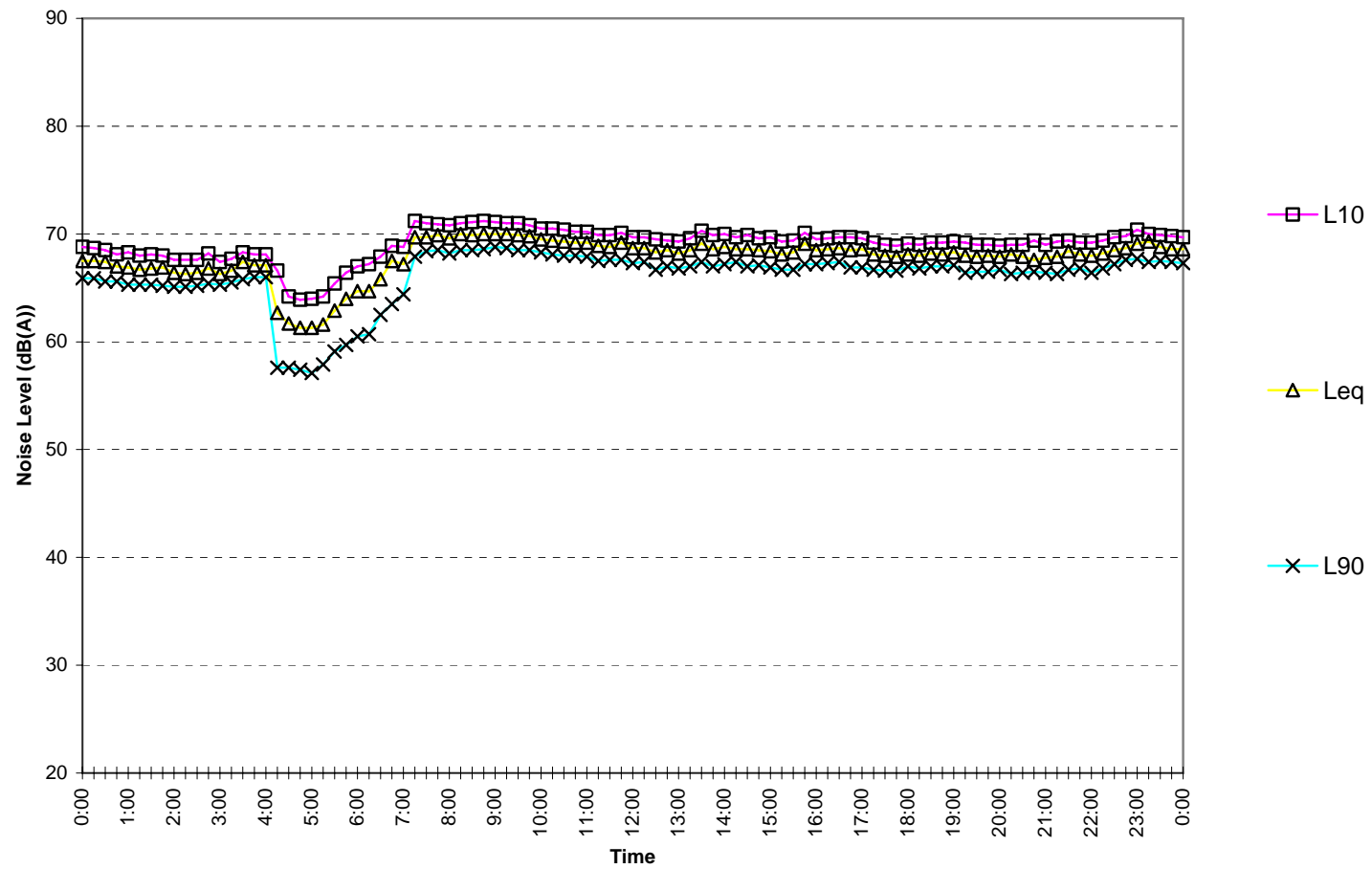
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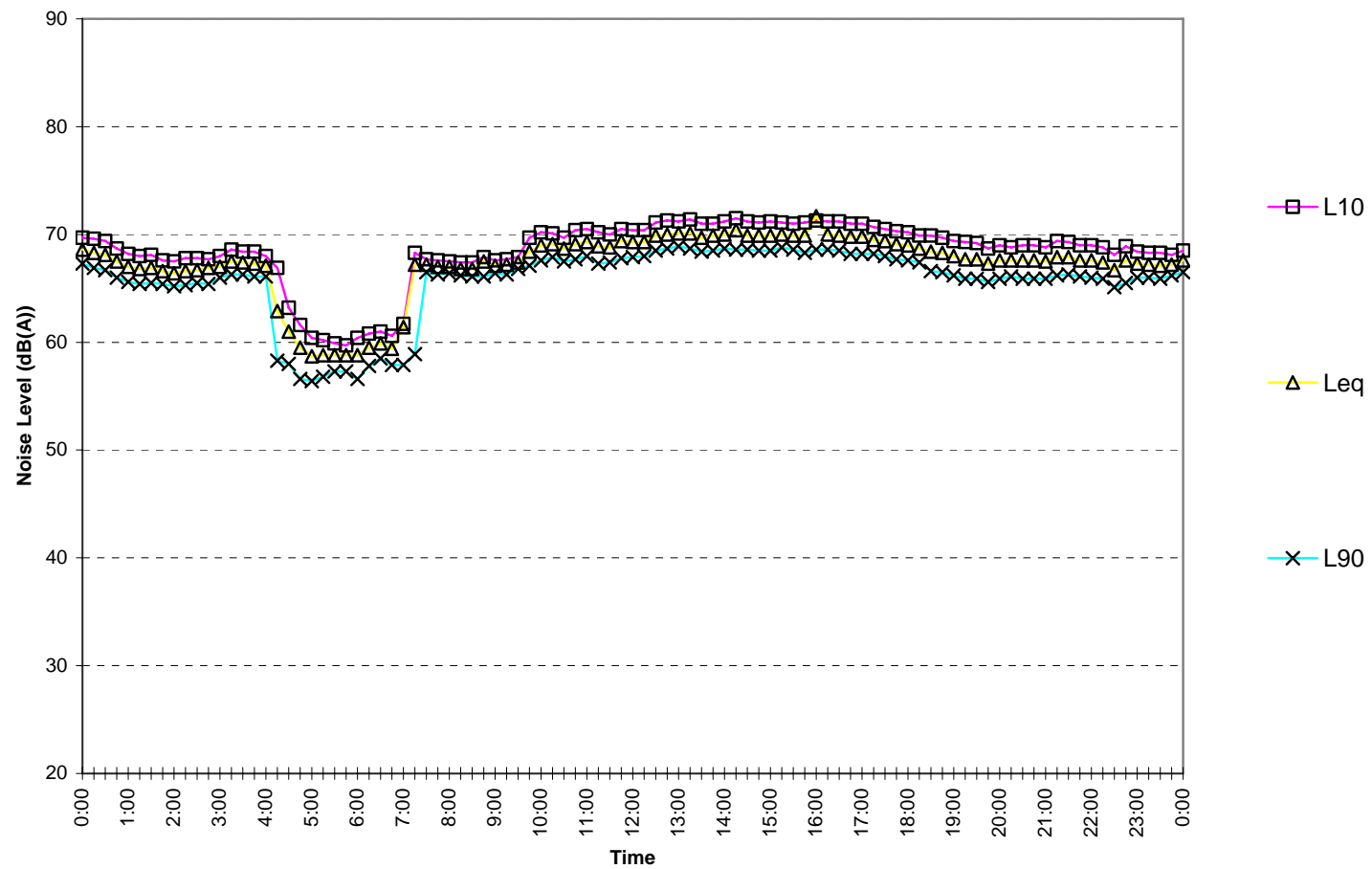
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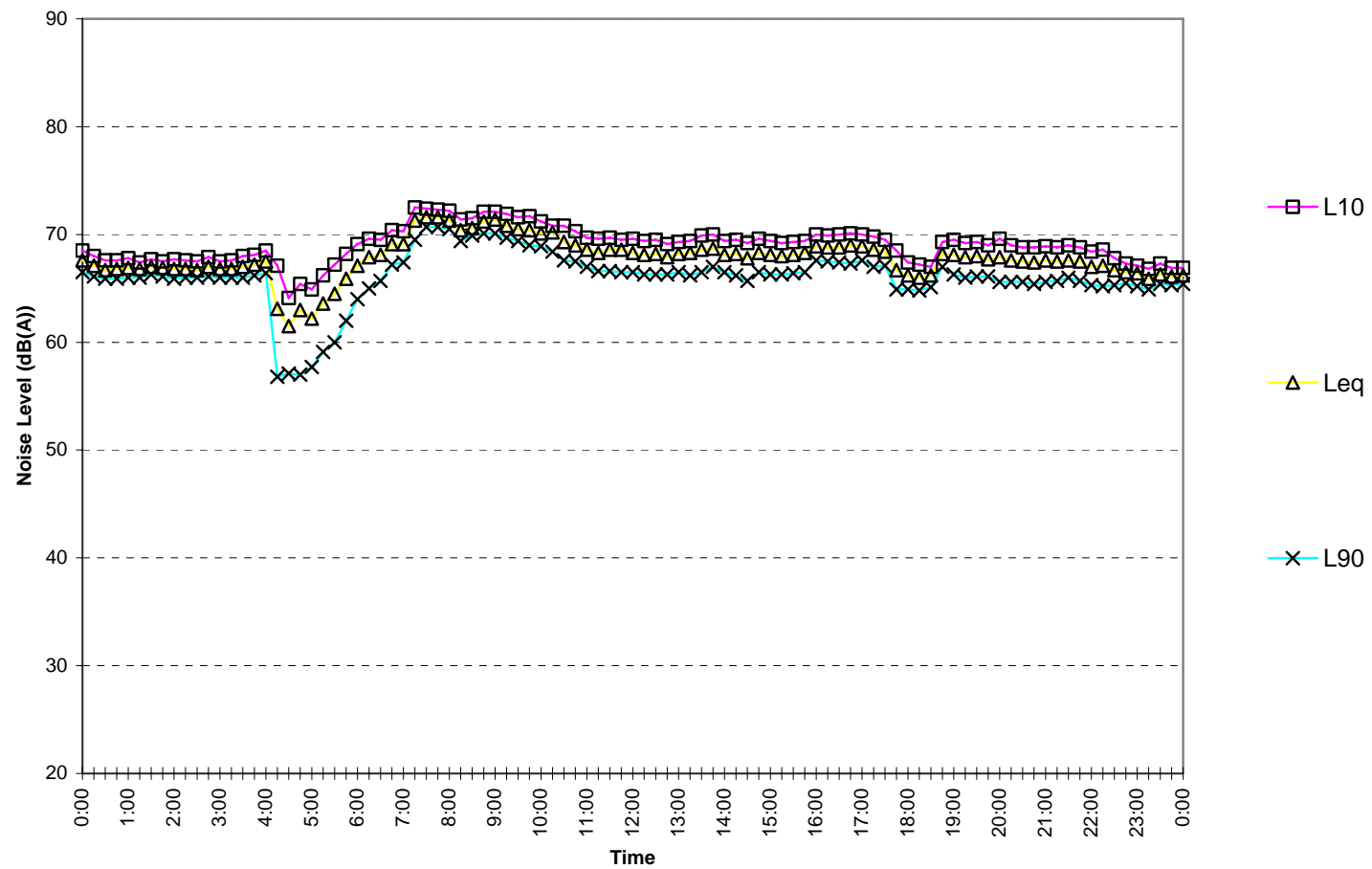
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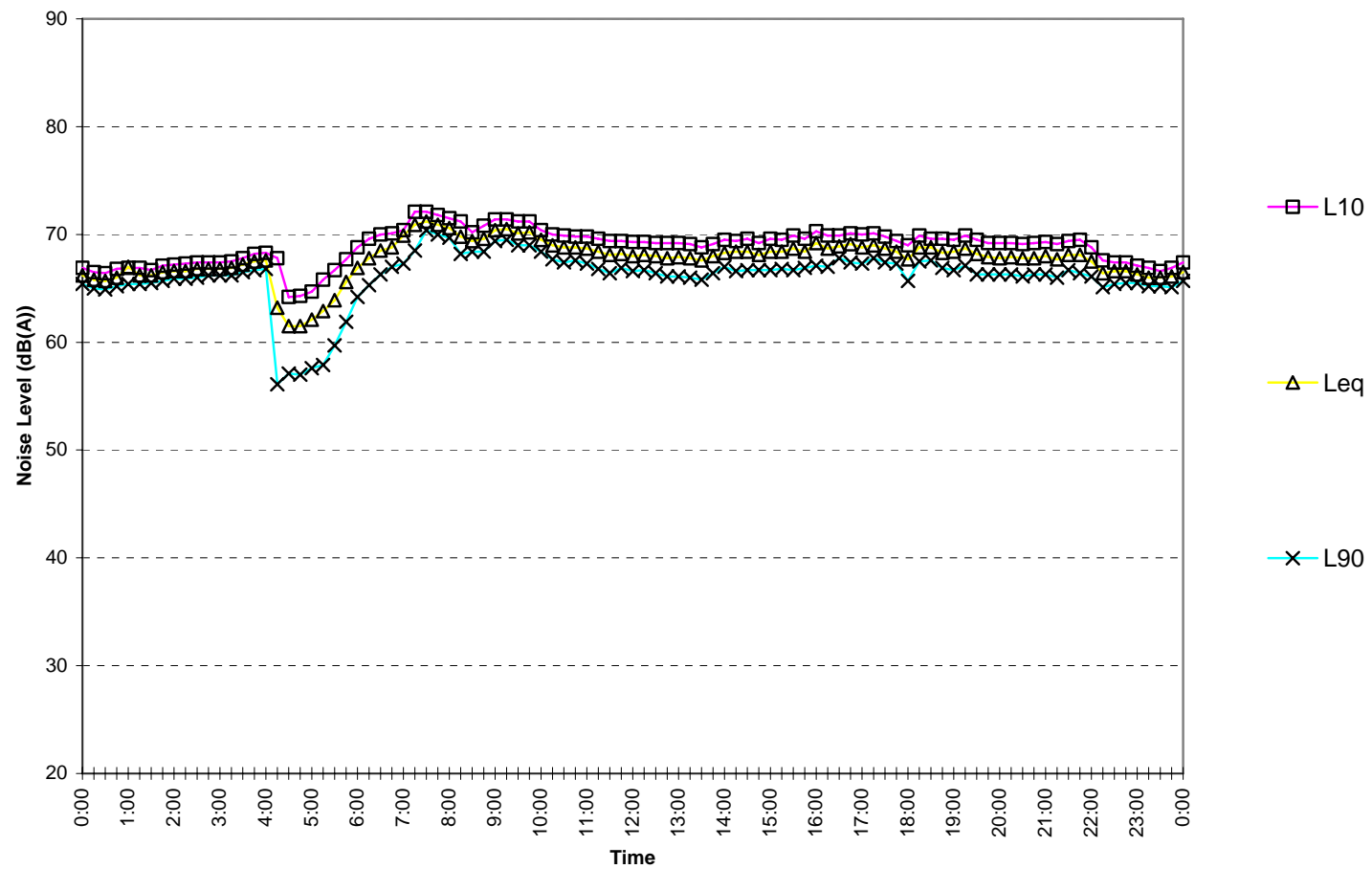
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Monday May 21, 2012



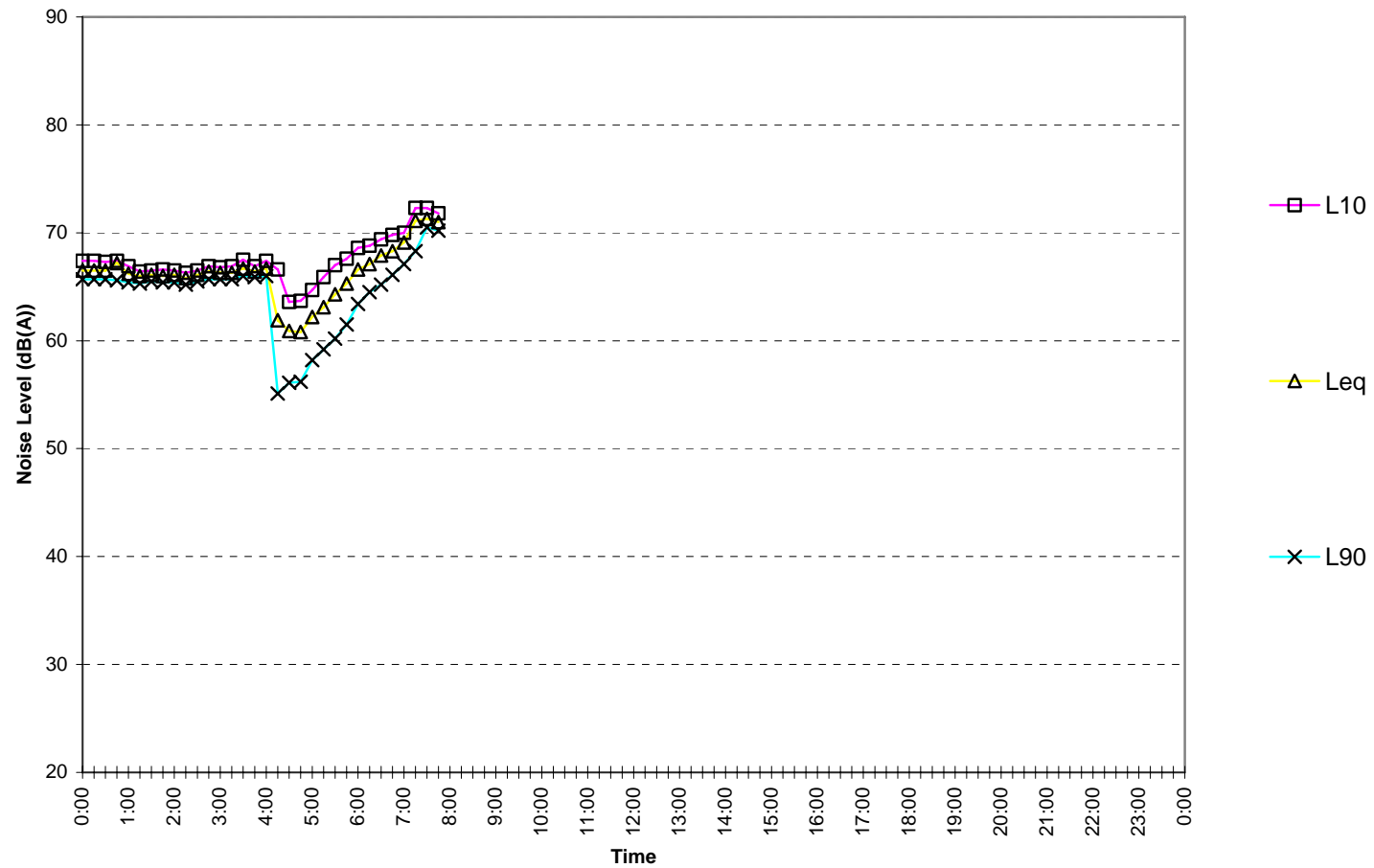
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Tuesday May 22, 2012



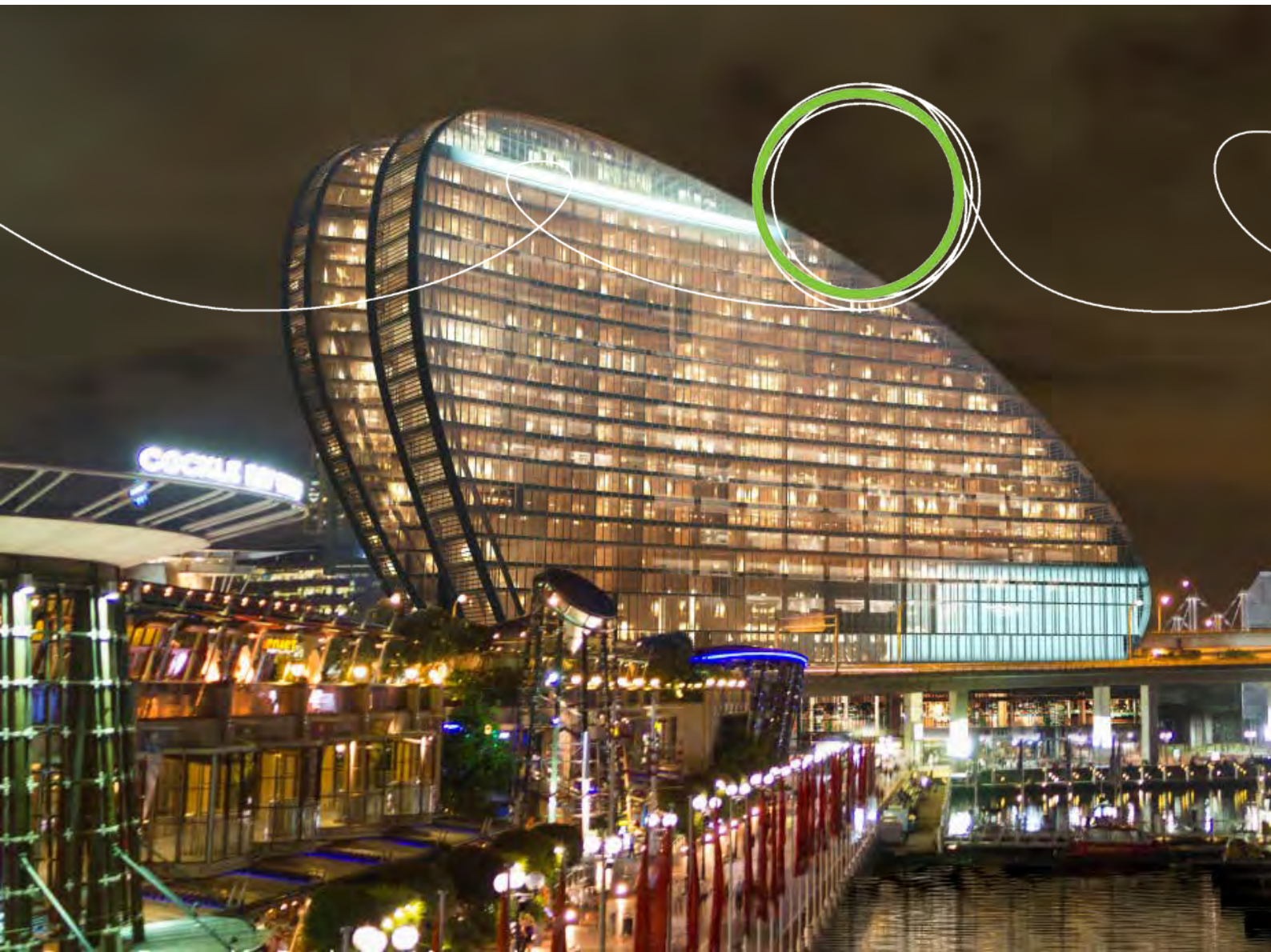
1 Wheat Road, Sydney

Wednesday May 23, 2012



Appendix Two – Builder’s Operational / Explanation Notes

C. Pedestrian and Traffic Management Plan



The Ribbon Mixed Use Development 31 Wheat Road, Sydney Preliminary Construction Traffic

Client //	Grocon
Office //	NSW
Reference //	12S9018500
Date //	18/12/15

The Ribbon Mixed Use Development

31 Wheat Road, Sydney

Preliminary Construction Traffic Management Plan

Issue: B 18/12/15

Client: Grocon
Reference: 12S9018500
GTA Consultants Office: NSW

Quality Record


Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
A	16/08/13	Final	Cameron Ward, Chris Slenders	Rhys Hazell	Brett Maynard	Brett Maynard
B	18/12/15	Amended to include revised construction methodology	Brigette Humphrey- Robinson	Rhys Hazell	Brett Maynard	

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- B: Swept Path Assessment
- C: Traffic Control Plans

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1. Introduction

It is understood that a development application (DA) is to be lodged with NSW Planning and Environment (DPE) for a proposed mixed use development on land located between the Western Distributor elevated roadways and within the Darling Harbour/ Cockle Bay tourist and entertainment precinct in the western fringe of Sydney CBD.

The proposed development includes demolition of the existing IMAX building and the construction of a new 23-storey building and a separate two storey building, incorporating a total Gross Floor Area (GFA) of approximately 54,500m² for hotel and serviced apartments, retail, restaurant, function space and a new IMAX cinema.

Grocon commissioned GTA Consultants in December 2015 to address matters raised in the Secretary's Environmental Assessment Requirements (SEARs), including the preparation of a Preliminary Construction Traffic Management Plan for the proposed development to address the potential construction impacts on the surrounding transport networks.

This preliminary Construction Traffic Management Plan (CTMP) has been prepared to accord with City of Sydney *Standard Requirements for Construction Traffic Management Plans*. The City of Sydney requirements are attached in Appendix A. This CTMP would be updated prior to the issue of the construction certificate.

This study has also considered the SEARs for the Environmental Assessment of the proposed development. The SEARs were issued by the NSW Government Department of Planning and Environment for the redevelopment of the IMAX (SSD 7388) on 11 December 2015. Section 8 of the document addresses the construction impacts, as detailed in Table 1.1.

Table 1.1: Secretary's Environmental Assessment Requirements (SEAR's)

Description	Relevant Section
Details of peak hour and daily construction and servicing vehicle movements and access arrangements, and the likely impacts of this traffic and cumulative impact from surrounding development sites on the local network and potential conflicts with other road users, and measures to mitigate these impacts.	Section 3.2 Section 3.7
Details of vehicle routes, number of trucks, hours of operation, access arrangements and traffic control measures for all demolition/ construction activities.	Section 3.1.3 Sections 3.2-3.4 Section 3.8
Address road safety at key intersections and locations subject to heavy vehicle movements and high pedestrian activity, and details of temporary cycling and pedestrian access.	Section 3.6 Section 3.8
Details of access arrangements for workers to/from the site, emergency vehicles and service vehicles.	Section 3.6

In preparing this report, reference has been made to the following:

- several inspections of the site and its surrounds
- procedures for use in the Preparation of a Traffic Management Plan (TMP), Roads and Maritime Services (RMS), December 2001 (Version 2.0)
- Traffic Control at Work Sites Manual, RMS, June 2010
- Australian Standard AS1742.3 – 2009 Manual of Uniform Traffic Control Devices – Part 3: Traffic control for works on roads
- Grocon Constructors (NSW) Pty Ltd, The Ribbon, Sydney Construction Management Plan, Issue 1, Dated 10/12/15
- other documents and data as referenced in this report.

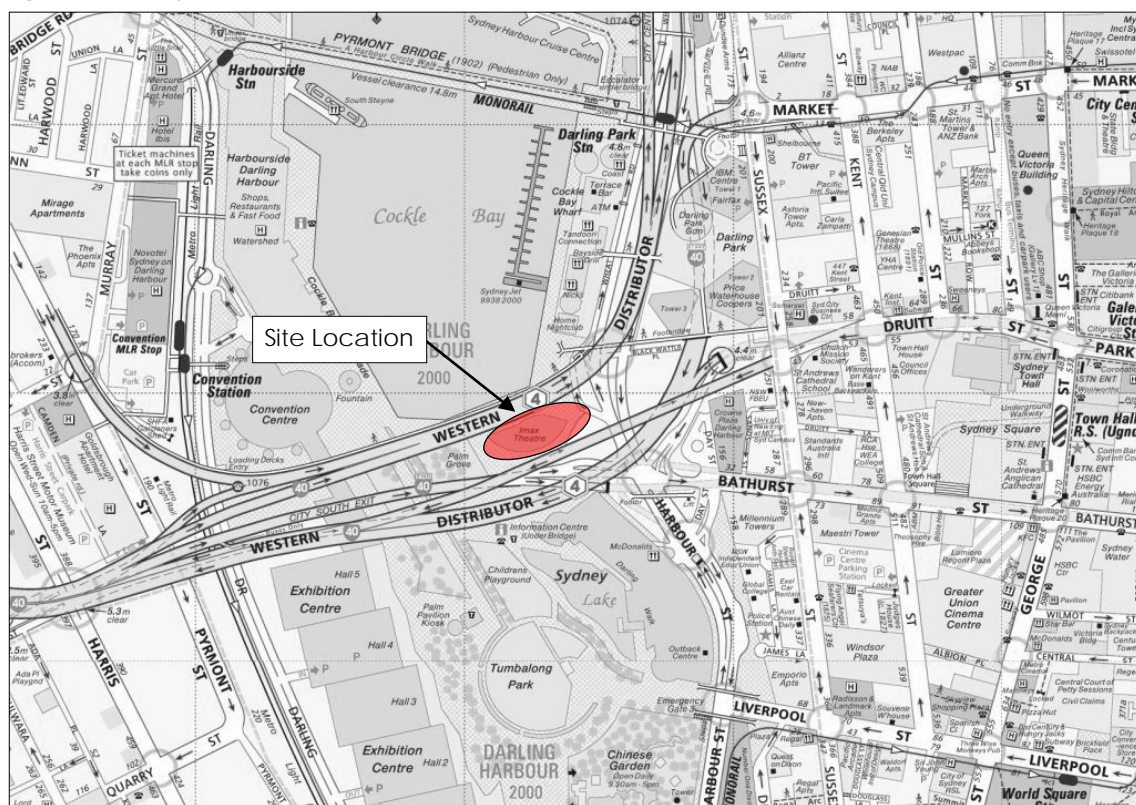
2. Existing Conditions

The subject site is located in a prominent position within Darling Harbour along the western fringe of Sydney CBD. Occupying land between the two Western Distributor elevated roadways, the site of approximately 2,330m² has a frontage primarily north facing to the pedestrian environment of Darling Harbour. The site is under the care and control of the Sydney Harbour Foreshore Authority (SHFA) and is occupied by the IMAX Cinema, function centre and associated restaurants/ cafes.

The surrounding properties predominantly include commercial, tourism and retail uses.

The location of the subject site and its surrounding environs is shown in Figure 2.1.

Figure 2.1: Subject Site and its Environs



Basemap source: Sydway

2.1 Road Network

2.1.1 Adjoining Roads

Harbour Street

Harbour Street is classified as a State Road and is aligned in a north-south direction east of the site. It is a two-way divided road configured with 2-3 lanes in each direction and set within a 55m wide road reserve. Harbour Street is a key road in the area and links Chinatown/ CBD western fringe and Ultimo directly with Cockle Bay/ King Street Wharf, Barangaroo (under construction) and further to the Sydney Harbour Bridge. Additional lanes are provided at most intersections,

particularly where Harbour Street intersects with the Western Distributor off-ramp (eastbound), Bathurst Street and Cross City Tunnel (westbound).

Kerbside parking is not permitted at any time along Harbour Street in the vicinity of the site.

Harbour Street is shown in Figure 2.2 and Figure 2.3 and carries approximately 19,000 vehicles per day¹.

Figure 2.2: Harbour Street (looking south)



Figure 2.3: Harbour Street and Wheat Road (looking north)



Wheat Road

Wheat Road is classified as a local road and in the vicinity of the site is aligned in a north-south direction. It is a one-way northbound road configured with a one-lane, 5m wide carriageway, set within a 10m wide road reserve. Wheat Road runs off Harbour Street adjacent to the site and primarily provides access to taxi, bus and loading facilities located adjacent to the site and north of the site, at the rear of the commercial/ retail properties fronting Cockle Bay.

Kerbside parking is permitted, mostly for buses, taxis and for loading purposes along Wheat Road in the vicinity of the site. A limited amount of time restricted parking is also provided north of the site.

Wheat Road is shown in Figure 2.4 and Figure 2.5 and carries approximately 1,000 vehicles per day, north of the site¹.

Wheat Road also provides access to the loading docks and staff parking areas located immediately south of the site with this access and the intersection with Harbour Street shown in Figure 2.6 and Figure 2.7.

¹ Based on the peak hour traffic counts undertaken by GTA in May 2012 and assuming a peak-to-daily ratio of 8% for arterial roads and 10% for local roads.

Figure 2.4: Wheat Road North of the Site (looking south)



Figure 2.5: Wheat Road Taxi/ Bus Area (looking north)



Figure 2.6: Wheat Road Taxi/Bus Area (looking south)

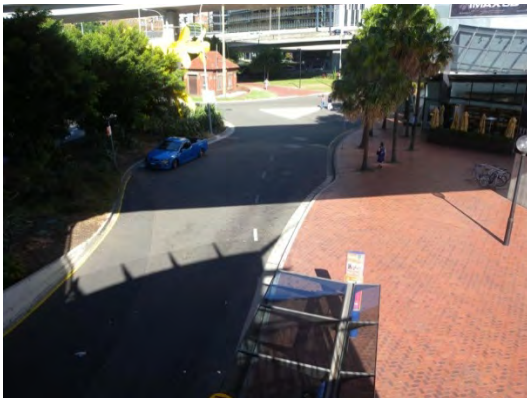


Figure 2.7: Harbour Street/ Wheat Road Intersection



2.1.2 Surrounding Intersections

Harbour Street intersects with Wheat Road at two locations in the vicinity of the site. Both are priority controlled and with movements limited to entry access to Wheat Road from Harbour Street. There is no opportunity to exit Wheat Road to gain direct access to Harbour Street, with the available route via Wheat Road to the north, then using Shelley Street and Erskine Street to filter into the arterial/ CBD road network. The southern Harbour Street intersection is located adjacent to the site and the other is located 60m to the north.

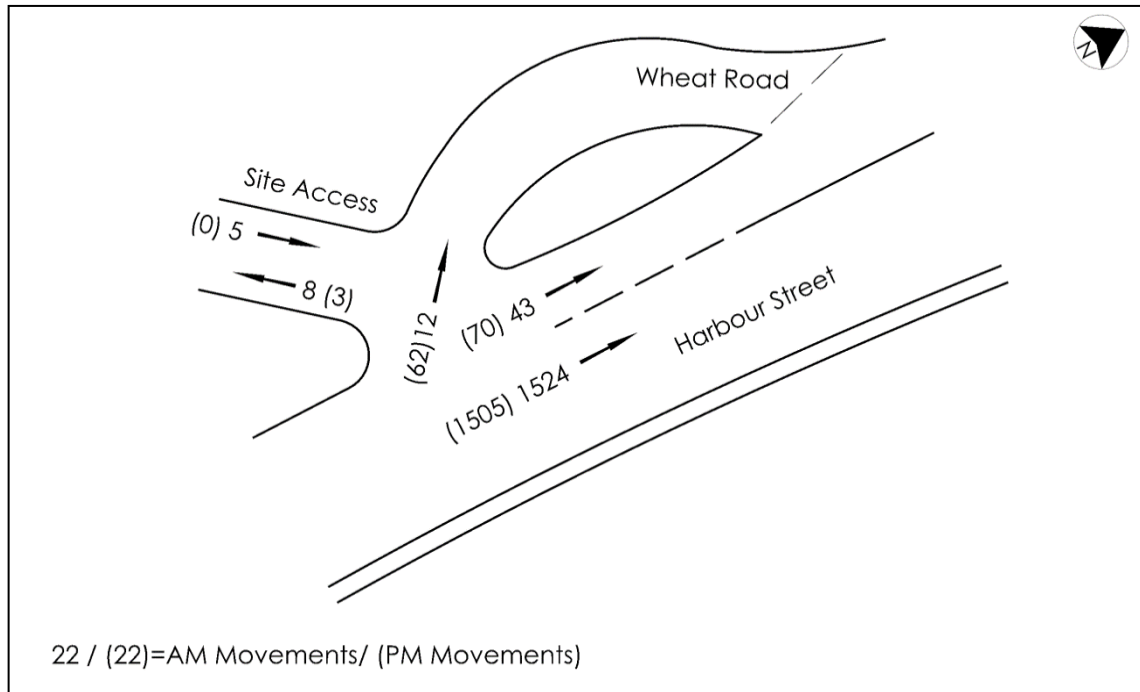
Harbour Street intersects with the Western Distributor off-ramp (eastbound), Bathurst Street and Cross City Tunnel (westbound) where the off-ramps provide exits to an at-grade signalised intersection immediately south of the site.

GTA Consultants completed traffic movement counts on key roads in the immediate vicinity of the site on the 9th May 2012 during the weekday AM (7:30am and 9:30am) and PM (4:30pm and 6:30pm) peak periods. The peak hour traffic volumes are summarised in Figure 2.8.

While it is recognised that the traffic surveys are not strictly current, the operation and function of the area immediately fronting the site has not changed significantly, while also noting that the area is in a constant state of change given the significant construction projects within and surrounding the CBD. This includes the Wynyard Walk and Barangaroo projects which would

further alter 'typical' traffic volumes at present and since 2012. For this reason, the 2012 traffic data is considered an accurate reflection of existing traffic volumes.

Figure 2.8: Existing AM / PM Peak Hour Traffic Volumes



The traffic surveys also identified various transport modes to/ from the local area as detailed in Table 2.1 and Table 2.2.

Table 2.1: AM Peak Hour Local Traffic Summary

Movement	Car	Taxi	Truck	Bus	Total
Site entry	3	0	2	0	5
Site exit	7	0	1	0	8
Wheat Road entry	5	3	2	2	12
Total Movements	15 (60%)	3 (12%)	5 (20%)	2 (8%)	25

Table 2.2: PM Peak Hour Local Traffic Summary

Movement	Car	Taxi	Truck	Bus	Total
Site entry	0	0	0	0	0
Site exit	3	0	0	0	3
Wheat Road entry	4	53	0	5	62
Total Movements	7 (11%)	53 (82%)	0 (0%)	5 (7%)	65

Harbour Street generally carries more than 1,500 northbound vehicles through the local area while Wheat Road provides access to the area immediately east of the site for more than 60 vehicles during the PM peak period. These are mostly made up of taxis picking up or dropping off passengers. Approximately 60 and 130 vehicles use Wheat Road north of the site during the AM and PM peak periods respectively with up to 15 being private cars (during the AM peak). The on-site loading docks and staff parking area generate less than 10 vehicles per hour during any peak hour.

2.2 Pedestrian Infrastructure

The surrounding area experiences high levels of pedestrian activity as a result of the surrounding commercial/ retail and tourist land uses including the site's existing uses, most notably the IMAX cinemas and associated function facilities. As such, the area surrounding the site has well established pedestrian facilities as detailed below:

- Pedestrian Overpass – 5m wide path located 50m north of site, providing access to Town Hall Station.
- Harbour Street – 5m wide path located 10m south of site (and adjacent to the site).
- Pedestrian Overpass – 10m wide path located 150m north of site, linking Darling Harbour (via the 'Spanish steps') with the CBD.
- Bathurst Street Pedestrian Bridge.
- At-grade pedestrian crossings on the western and southern approaches to the Harbour Street/ Bathurst Street signalised intersection.
- Pyrmont Pedestrian Bridge – 15m wide bridge located 300m north of site, linking Darling Harbour and Pyrmont with the CBD.
- Darling Harbour Walk – located 500m north of site providing access to the CBD.

2.3 Cycle Infrastructure

The site is located within close proximity to both on- and off-road cycling facilities. An off-road shared path travels north-south through Darling Harbour connecting Pyrmont Bridge Road in the north-west with the Union Street separated cycleway and Liverpool Street. This route travels within approximately 100m of the site and provides access to the broader cycling network, including via Pyrmont Bridge Road and Kent Street north of the site and Darling Road south-west of the site.

It is also noted that end-of-trip facilities in the form of bike racks, providing capacity for six bikes are provided within the pedestrian areas along the frontage of the site.

3. Traffic Management Plan

3.1 Overview

The proposed development, located at 31 Wheat Road Sydney, includes demolition of the existing IMAX building and the construction of a new mixed use building over 23-levels with 2 levels of retail/ mixed use space, a new IMAX theatre, 21 levels of hotel and serviced apartments together with associated facilities including restaurants and function space. A separate two storey building is included in the development to include retail tenancies and SHFA offices. Upgrades to the surrounding public domain are also proposed.

Construction of the project is scheduled to be carried out in two phases with the overall works estimated to take approximately 38 months.

The preparation of the construction traffic management plan for demolition/ excavation and construction of the proposed development has been completed on the basis of the following:

- overall principles of construction traffic management
- staging schedule
- works zone
- hours of operation
- construction traffic volumes
- truck routes
- pedestrian management
- traffic and parking affects
- Traffic Control Plan (TCP).

3.1.1 Overall Principles of Construction Traffic Management

The overall principles of traffic management during construction activity include:

- providing an appropriate and convenient environment for pedestrians
- minimising the impact on pedestrian movements
- maintaining appropriate capacity for pedestrians on footpaths adjacent to the site within the Darling Harbour precinct and along Wheat Road
- maintaining appropriate public transport access
- retaining, as far as possible existing kerb space for loading, buses and taxis
- minimising the loss of on-street parking
- maintaining access to/ from any adjacent properties
- restricting construction vehicle movements to designated routes to/ from the site
- managing and control construction vehicle activity in the vicinity of the site
- ensuring construction activity is carried out in accordance with City of Sydney's approved hours of works.

3.1.2 Staging Schedule

Construction of the proposed development is estimated to take up to 38 months and would be undertaken through the following phases:

- **Phase 1 Early Works (6 months)**
Site establishment and demolition of all the existing on-site structures including the IMAX Cinema building and associated retail/ restaurants. Construction of piling and initial structure.
- **Phase 2 Main Building Works (32 months)**
Construction of all on-site facilities including the main 23-storey tower and IMAX as well as ground level retail tenancies.

3.1.3 Hours of Operation

Work associated with the proposed development would be carried out between the following hours of construction:

- Monday to Friday 7:00am and 7:00pm
- Saturday 7:00am and 5:00pm
- Sunday no work.

The contractor/ builder would be responsible to instruct and control all subcontractors regarding the hours of work. Any work outside of the approved work hours would be subject to specific prior approval from the appropriate authorities. Such works may include:

- delivery of cranes, large plant or equipment required to the site that requires oversize vehicle access
- non-noise generating activities such as internal fit-out works.

3.2 Construction Traffic Volumes

Construction traffic volumes would generally incorporate 12.5m large rigid vehicles, 17.5m truck and dog combinations and 19m articulated vehicles. There would be up to 20 trucks per day and 120 trucks per week accessing the site.

No on-site parking would be provided for construction workers. The site is located within close walking distance of numerous public transport services including Wynyard and Town Hall Railway Stations and the major bus interchanges of Clarence Street/ York Street and Wynyard. The site is therefore well serviced by public transport and construction workers would be encouraged to use public transport when travelling to/ from the site.

The number of construction workers would vary throughout each works phase and can be broken down into the following estimates:

Phase 1

- demolition, wharf structure, piling works and initial structure 125 workers

Phase 2

- main structure works and services rough-in 250 workers
- structure completion, facade, tenancy work and services 425 workers
- facade and roof completion, tenancy fit-out and finishes 325 workers.

All intersections in the vicinity of the site are expected to continue to operate at existing levels of service during the overall construction period. This includes the major intersection south of the site where Harbour Street intersects with the Western Distributor off-ramp (eastbound), Bathurst Street and Cross City Tunnel (westbound).

3.3 Site Access

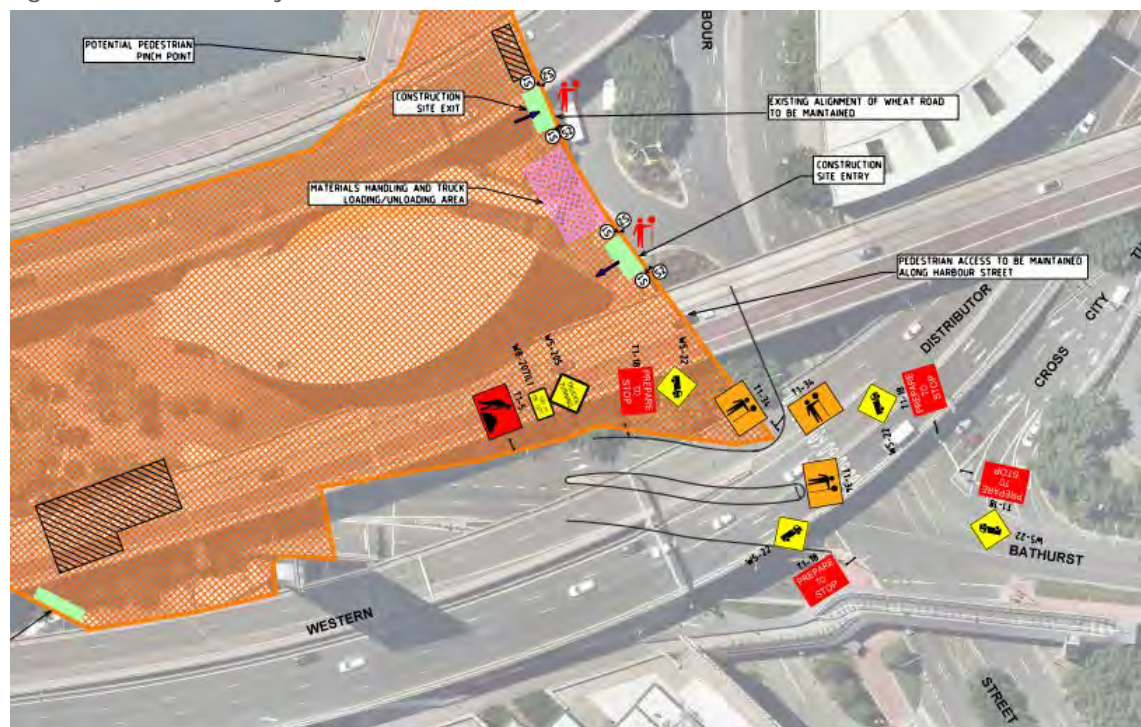
Site access would be provided via dedicated construction site access points on Wheat Road along the eastern boundary and adjacent to Harbour Street. These accesses would generally facilitate forward entry and exit to/ from the site for the duration of all works.

Phase 1 – Early Works

During Phase 1 works, two access points would be provided along the existing Wheat Road frontage, as indicatively shown in Figure 3.1. All construction vehicles would enter and exit the site in a forward direction as instructed by accredited traffic controllers. Loading/ unloading would occur within the eastern section of the site and within a dedicated one way loop.

Swept paths have been completed and are included in Appendix B. They show that truck and dog combinations would be able to enter the site, use the loop section to load/ unload and exit the site in a forward direction.

Figure 3.1: Phase 1 Early Works



Basemap source: Nearmap

Phase 2 – Main building Works

During Phase 2 works, two access points would be provided along the Wheat Road frontage, as shown in Figure 3.2. Temporary pavement would be constructed on the approximate future alignment of Wheat Road, subject to stakeholder consultation and approval.

All construction vehicles would enter and exit the site in a forward direction and travel through the centre of the site to a dedicated loading/ unloading zone within the western section of the work site.

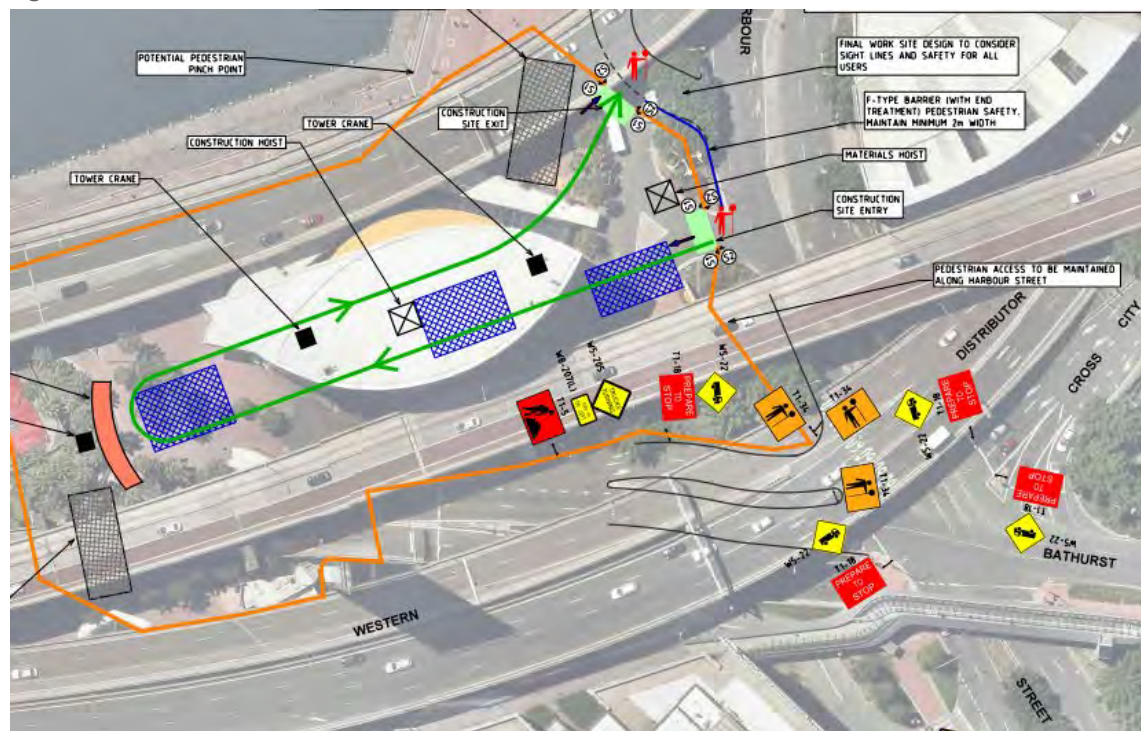
The existing stormwater, gas, water and sewer services to the IMAX building may need to be diverted out of the site footprint or encapsulated. Temporary bridging structures will be constructed to protect these services while still ensuring construction traffic are able to traverse the site.

A secondary access point located in the north-east corner of the site would also be used for concrete pumping, with concrete trucks required to reverse into this area facilitated by accredited traffic controllers.

Construction vehicles will not be permitted to queue or park within the streets along any approach route. Should there be a temporary need for this, initial discussions have identified an area west of Anzac Bridge that is both suitable and available.

Further consultation with the CBD taskforce will be required as would consideration for timing of works associated with surrounding key developments including Darling Harbour Live, The Haymarket, Barangaroo and Wynyard Walk.

Figure 3.2: Phase 2 Construction Works



Basemap source: Nearmap

Swept paths have been completed and are included in Appendix B. They show that construction vehicles would be able to make use of the temporary Wheat Road alignment, enter the site, circulate as required and exit the site in a forward direction.

3.4 Truck Routes

Truck movements would be restricted to designated truck routes and confined to the main road network. Truck routes to/ from the site, as indicated below, have been identified with the aim of minimising the impact of construction traffic on streets in the vicinity of the site.

Although the directional distribution and assignment of traffic generated by the proposed development would be influenced by a number of factors, most notably the origin/ destination of materials, configuration of access points to the site and the configuration of the arterial road network in the immediate vicinity of the site, all vehicles would approach via Harbour Street (south) and exit the site via Wheat Road to the north.

Approach Routes

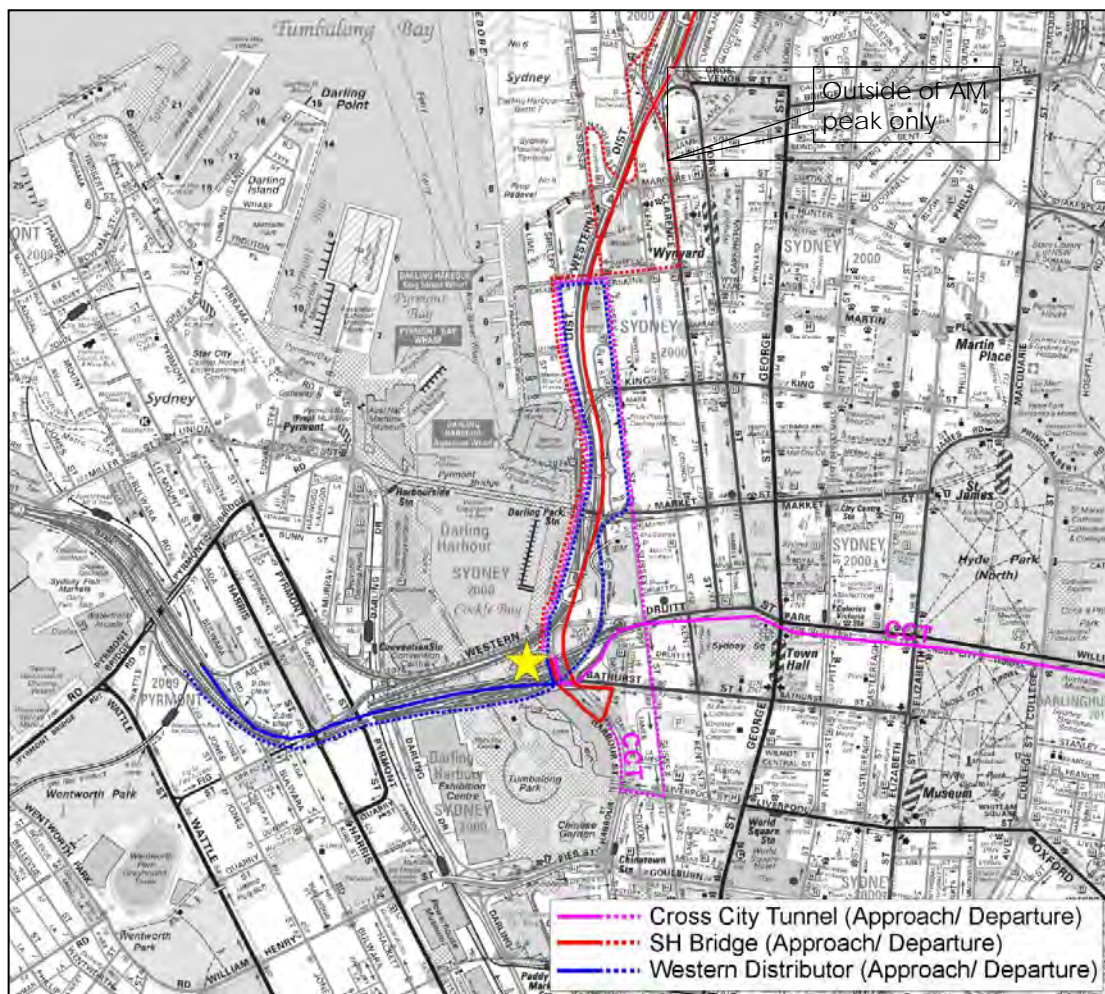
- North approach
 - Sydney Harbour Bridge (southbound), Western Distributor (southbound), Bathurst Street (eastbound), Day Street (southbound), Harbour Street (northbound), Wheat Road.
- East approach
 - Cross City Tunnel (westbound), Harbour Street (northbound), Wheat Road.
- West approach
 - Western Distributor (eastbound), Harbour Street (northbound), Wheat Road.

Departure Routes

- North departure
 - Wheat Road (northbound), Shelley Street (northbound), Erskine Street (eastbound), Sussex Street (northbound), Napoleon Street (eastbound), Kent Street (northbound), Sydney Harbour Bridge (northbound).
 - Wheat Road (northbound), Shelley Street (northbound), Erskine Street (eastbound), Clarence Street (northbound), Sydney Harbour Bridge (northbound). This is possible outside of the weekday AM (5:45am – 9:30am) peak period.
- East departure
 - Wheat Road (northbound), Shelley Street (northbound), Erskine Street (eastbound), Sussex Street (southbound), Liverpool Street (westbound), Harbour Street (northbound), Cross City Tunnel (eastbound).
- West approach
 - Wheat Road (northbound), Shelley Street (northbound), Erskine Street (eastbound), Sussex Street (southbound), Western Distributor (southbound and westbound).

Truck drivers would be advised of the designated truck routes to/ from the site. The truck routes are shown in Figure 3.3.

Figure 3.3: Designated Truck Routes



3.5 Pedestrian Management

During the Phase 2 construction works, pedestrian movements adjacent to the site and in particular those along the eastern boundary and within the Darling Harbour precinct north of the site will be maintained at all times. These pedestrian routes however, would be subject to some modification as a result of the construction activity.

A pedestrian management team would be responsible for the management and coordination of all pedestrian traffic on Wheat Road and as required adjacent to the existing Sydney Visitor Centre. Pedestrian volumes and activity would initially need to be monitored to ensure that the available routes and information is adequate.

Class B hoarding will be provided along the eastern boundary for pedestrian protection along a realigned footpath with minimum 2m widths to maintain amenity throughout Phase 2 construction works.

Scaffolding with Class A construction fencing (with overhead protection where required) would be provided, around the balance of the site.

Should any unforeseen activities require the temporary closure of any pedestrian thoroughfares, a Traffic Control Plan (TCP) should be developed and implemented by the contractor to ensure a safe alternative for pedestrians traversing these routes in the vicinity.

3.6 Traffic and Parking Effects

3.6.1 Public Transport

Temporary alternate bus stop arrangements would be implemented to minimise the overall impact to existing public transport services including the Sydney Explorer bus and coaches using Harbour Street/ Wheat Road. Appropriate arrangements and signage would be installed after approval from the Sydney Buses and RMS has been obtained and in consultation with bus/ coach operators.

Swept paths have been completed and included in Appendix B to illustrate that buses could be accommodated via a temporary Wheat Road alignment.

3.6.2 Cyclists, Emergency Vehicles and Heavy Vehicles

No special provisions are required or proposed for emergency vehicles and/ or cyclists. Construction activity is also not expected to impact on existing heavy vehicle movements in the vicinity of the site.

3.6.3 Traffic Movements in Adjoining Council Areas

No adverse effects are expected from the movement of heavy vehicles through adjacent council areas.

3.6.4 RMS Access

Access to RMS infrastructure would be retained for the duration of the works. All construction access, egress and asset monitoring requirements would be agreed with RMS and provided prior to site mobilisation. 1.5-2.0m clear openings between permanent structures and RMS infrastructure would also be provided.

The construction of the gantry over Wheat Road will be a key construction aspect and will require structure not only above Harbour Street though supporting structure within the road reserve including the central median (consistent with other recent development in the area). Harbour Street is under the management and control of RMS and concurrence will be required to allow for such structures. These site establishment works are key to the Phase 2 construction works and will be required to be completed during non-peak traffic periods (as a minimum) though likely to be conditioned as night-time works to minimise impacts.

The use of any areas within the road reserve will require consultation with RMS and appropriate road safety considerations, including should a tower crane be required within the central median at any time. It is recommended that such consultation be established as a priority in order to minimise any such potential delays associated with obtaining a Works Authorisation Deed (WAD).

3.7 Existing and Future Developments

There are several other CBD construction sites that are currently active and would likely remain active in the vicinity of the site, as shown in Figure 3.4 and includes the nearby Darling Harbour Live project.

The CBD and South East Light Rail (CSELR) project would be the key construction project in the CBD over the next four years. Noting that Transport for NSW has specifically limited the extent of east-west traffic impacts and concurrent intersection works during the construction period to minimise the impact on CBD traffic where possible, the CSELR project is unlikely to result in any changes to the proposed construction routes.

Further to the above, consultation with key stakeholders such as the CBD taskforce and CSELR project team would be key to obtaining agreement on the truck routes and the interaction of the various construction work sites. In addition, any cumulative transport impacts would be addressed through the Central Sydney Traffic and Transport Committee.

Figure 3.4: Sydney CBD Construction Projects

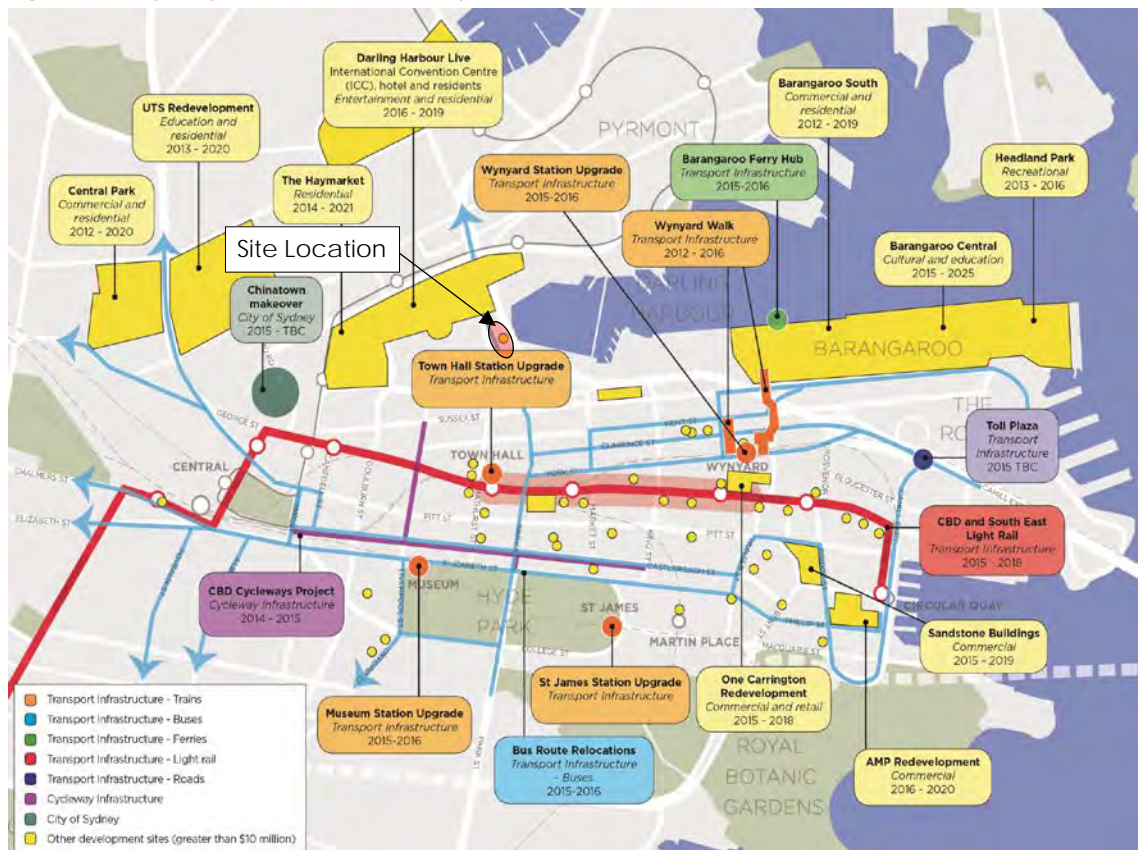


Image source: TfNSW

3.8 Traffic Control Plans

The proposed Traffic Control Plans (TCPs) for the Phase 1 Early Works and Phase 2 Main Building Works are included in this report as Appendix C. The plans present the principles of traffic management and are subject to WorkCover requirements.

Detailed information for work site operations is contained in the RMS Traffic Control at Work Sites manual. The control of traffic at work sites must be undertaken with reference to WorkCover requirements and the contractor/ builders own Occupational Health and Safety Manuals.

The TCPs included as Appendix C detail the following considerations:

- construction vehicle activity, including the loading/ unloading of trucks and materials handling to be provided within the construction site boundaries at all times
- the temporary closure of the southern section of Wheat Road with a temporary access (designed to accommodate a 14.5m long bus) established further north for the duration of the construction works
- the movement of trucks to/ from the construction site is to be managed and controlled by accredited traffic controllers
- pedestrian safety to be maintained at all times, particularly along the eastern boundary and within the public domain
- crane standing areas and reach.

Swept paths have been completed to confirm the construction site layout and appropriateness of the site access points with respect to location, width and layout, as included in Appendix B.

Appendix A

City of Sydney Standard Requirements

The City of Sydney Standard Requirements for Construction Traffic Management Plan

The Applicant or contractor undertakes to follow and abide by the following requirements at all times during the demolition, excavation and construction works at 31 Wheat Road, Sydney

1. Details of routes to and from site and entry and exit points from site – site specific
2. Details of roads that may be excluded from use by construction traffic i.e. roads with load limits, quiet residential streets or access/turn restricted streets – site specific
3. The approved truck route plan shall form part of the contract and must be distributed to all truck drivers.
4. All vehicles must enter and exit the site in a forward direction (unless specific approval for a **one-off occasion** is obtained from the City's Construction Regulation Unit).
5. Trucks are not allowed to reverse into the site from the road (unless specific approval for a **one-off occasion** is obtained from the City's Construction Regulation Unit).
6. The Applicant must provide the City with details of the largest truck that will be used during the demolition, excavation and construction.

NOTE: No dog trailers or articulated vehicles (AV) to be used on local roads (unless specific approval for a **one-off occasion** is obtained from the City's Construction Regulation Unit).

7. Oversize and over-mass vehicles are not allowed to travel on Local Roads (unless approval for a **one-off occasion** is obtained from the City's Traffic Operations Unit). Requests to use these vehicles must be submitted to the City 28 days prior to the vehicle's scheduled travel date. For more information please contact the National Heavy Vehicle Regulator (NHVR) on 1300 696 487 or www.nhvr.gov.au.
8. No queuing or marshalling of trucks is permitted on any public road.
9. Any temporary adjustment to Bus Stops or Traffic Signals will require the Applicant to obtain approval from the STA and RMS respectively prior to commencement of works.
10. All vehicles associated with the development shall be parked wholly within the site. All site staff related with the works are to park in a designated off street area or be encouraged to use public transport and not park on the public road.
11. All loading and unloading must be within the development site or at an approved "Works Zone".

12. The Applicant must apply to the City's Traffic Works Co-ordinator to organise appropriate approvals for Work Zones and road closures.
13. The Applicant must apply to the City's Construction Regulations Unit to organise appropriate approvals for partial road closures.
14. The Applicant must apply to the Transport for NSW's Transport Management Centre for approval of any road works on State Roads or within 100m of Traffic Signals and receive an approved Road Occupancy Licence (ROL). A copy of the ROL must be provided to the City.
15. The Applicant must apply to the City's Construction Regulations Unit to organise appropriate approvals for temporary driveways, cranes and barricades etc.
16. The Applicant must comply with development consent for hours of construction.
17. All Traffic Control Plans associated with the CTMP must comply with the Australian Standards and Roads and Maritime Services (RMS) Traffic Control At Work Sites Guidelines.
18. Traffic Controllers are NOT to stop traffic on the public street(s) to allow trucks to enter or leave the site. They MUST wait until a suitable gap in traffic allows them to assist trucks to enter or exit the site. The Roads Act does not give any special treatment to trucks leaving a construction site - **the vehicles already on the road have right-of-way.**
19. Pedestrians may be held only for very short periods to ensure safety when trucks are leaving or entering BUT you must NOT stop pedestrians in anticipation i.e. **at all times the pedestrians have right-of-way on the footpath not the trucks.**
20. Physical barriers to control pedestrian or traffic movements need to be determined by the City's Construction Regulations Unit prior to commencement of work.
21. The Applicant must obtain a permit from the City's Construction Regulation Unit regarding the placing of any plant/equipment on public ways.
22. The Applicant must apply to the City's Building Approvals Unit to organise appropriate approvals for hoarding prior to commencement of works.
23. The CTMP is for the excavation, demolition and construction of building works, not for road works (if required) associated with the development. Any road works will require the Applicant or the contractor to separately seek approval from the City and/or RMS for consideration. Also WorkCover requires that Traffic Control Plans must comply with Australian Standards 1742.3 and must be prepared by a Certified Traffic Controller (under RMS regulations).
24. Please note that the provision of any information in this CTMP will not exempt the Applicant from correctly fulfilling all other conditions relevant to the development consent for the above site.

Appendix B

Swept Path Assessment

ON 18/12/2015 AT 1:43:33 PM
PLOTTED BY : brendan.klinko

AMENDMENTS						
P1	18.12.15	INITIAL ISSUE		BCK	RMH	BDM
ISSUE	DATE	DESCRIPTION	BY	CHK	APP.	

GENERAL NOTES

1. SKETCH PLAN ONLY. THIS PLAN PRESENTS THE PRINCIPLES OF TRAFFIC MANAGEMENT. TRAFFIC MEASURES PROPOSED ARE CONCEPT ONLY AND ARE SUBJECT TO FINAL DESIGN AND APPROVAL BY WORK COVER.

2. HARBOUR STREET - 50 KM/H SPEED ZONE

DESIGNED C.WARD	DESIGN CHECK R.HAZELL
DRAWN B.KLINKO	DRAFTING CHECK R.HAZELL
APPROVED BY B. MAYNARD	DATE APPROVED FOR INITIAL ISSUE 18 DECEMBER '15
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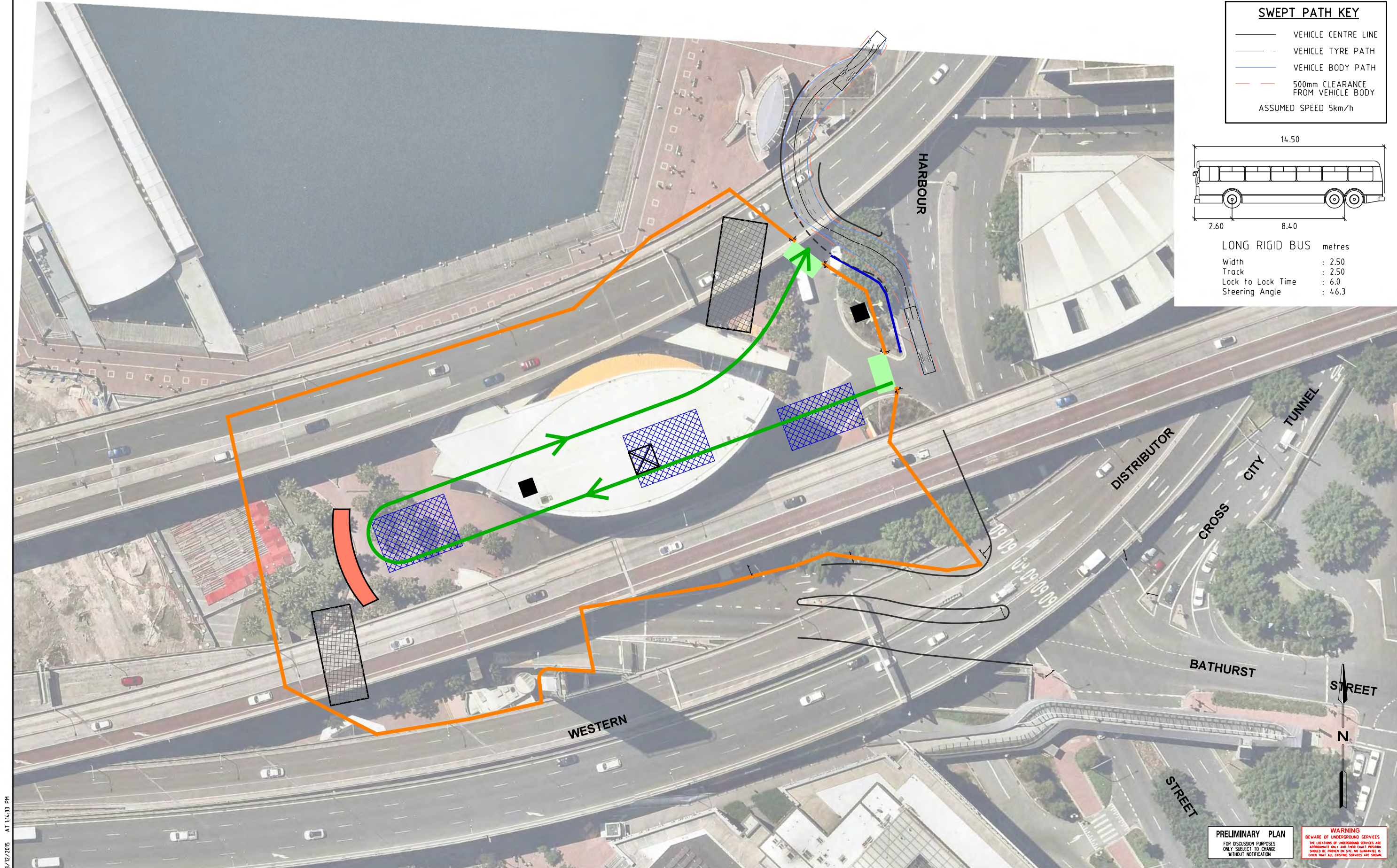
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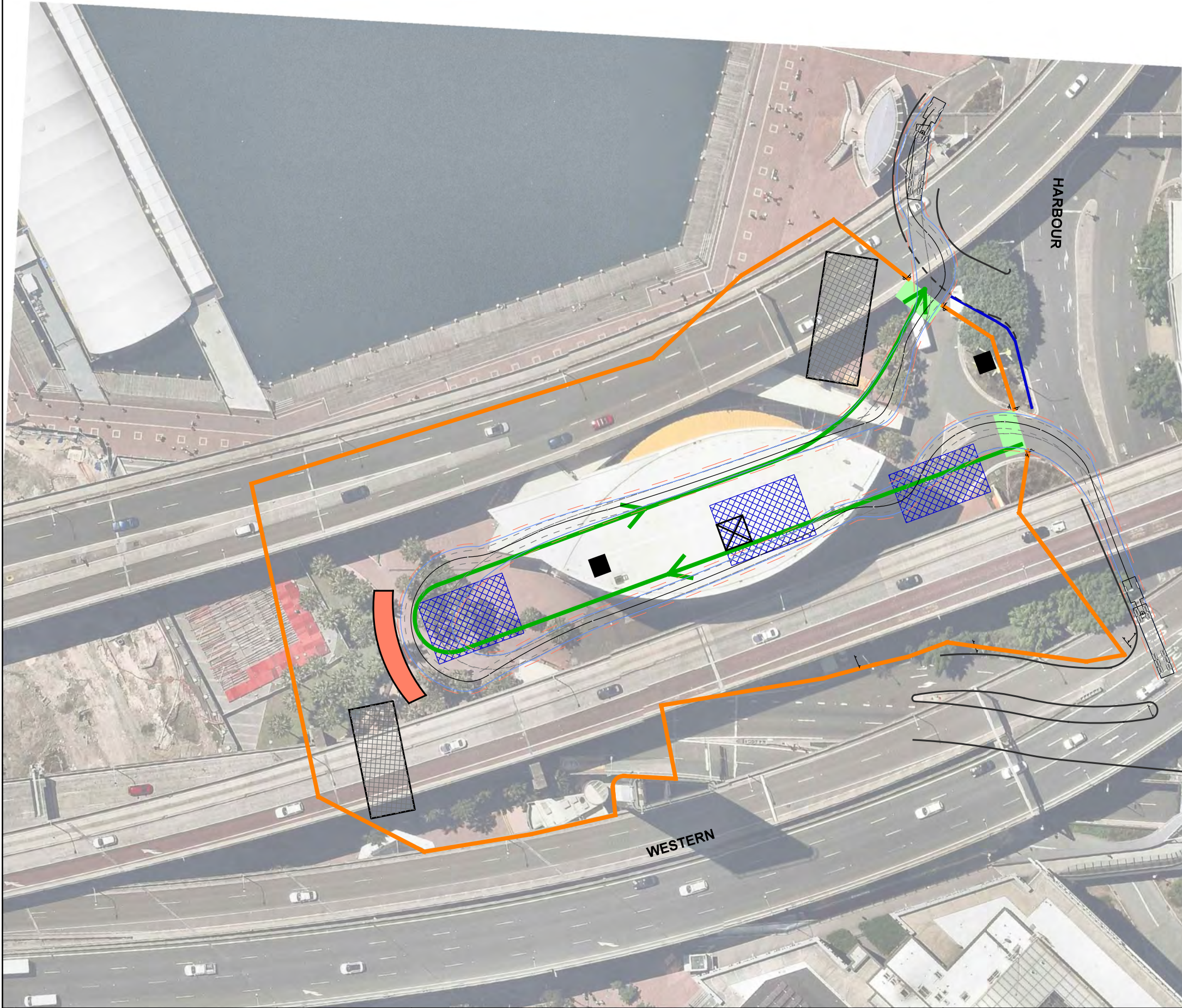
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CLIENT GROCON			
THE RIBBON HOTEL DEVELOPMENT 31 WHEAT ROAD, SYDNEY SWEEP PATH ASSESSMENT 14.5m LONG RIGID BUS PHASE 2 - MAIN BUILDING WORKS			
SDYWAY REF. 25/G20	DRAWING NO. 12S9018400-01-05	SHEET 05 OF 09	ISSUE P1

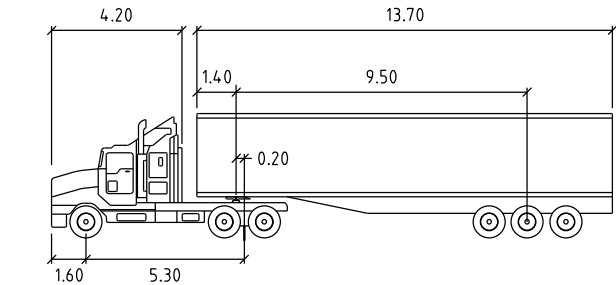




SWEPT PATH KEY

- VEHICLE CENTRE LINE
- - VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 500mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5km/h



PM S 19M	metres		
Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 27.8
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

PRELIMINARY PLAN
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WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE
APPROXIMATE ONLY AND THEIR EXACT POSITION
SHOULD BE PROVEN ON SITE. NO GUARANTEE IS
GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

AMENDMENTS				GENERAL NOTES		
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				2. HARBOUR STREET - 50 KM/H SPEED ZONE		
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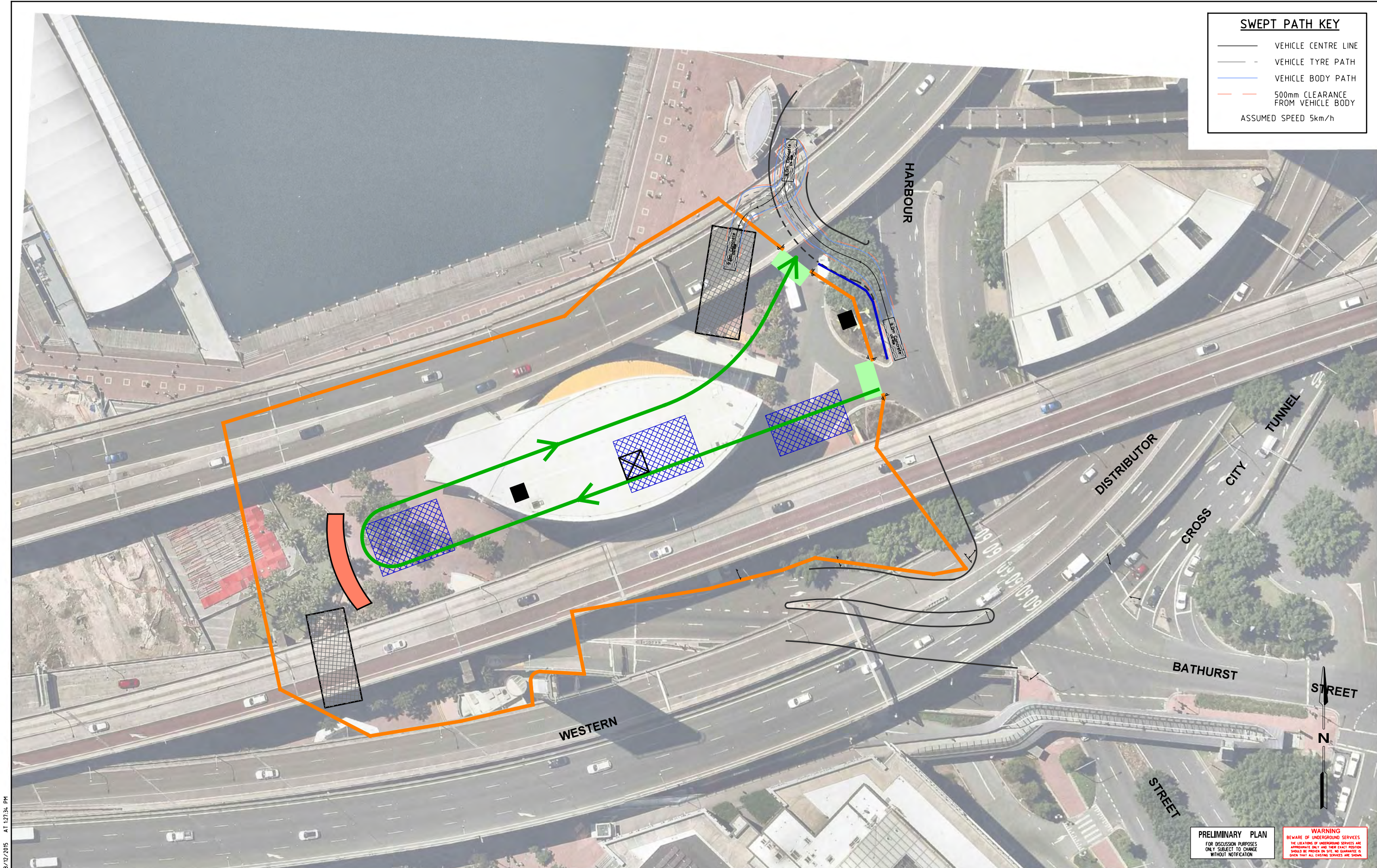
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CLIENT GROCON	THE RIBBON HOTEL DEVELOPMENT 31 WHEAT ROAD, SYDNEY SWEPT PATH ASSESSMENT 19.0m SEMI TRAILER PHASE 1 - EARLY WORKS		
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SWEPT PATH KEY

- VEHICLE CENTRE LINE
- - VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 500mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5km/h

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2. HARBOUR STREET - 50 KM/H SPEED ZONE

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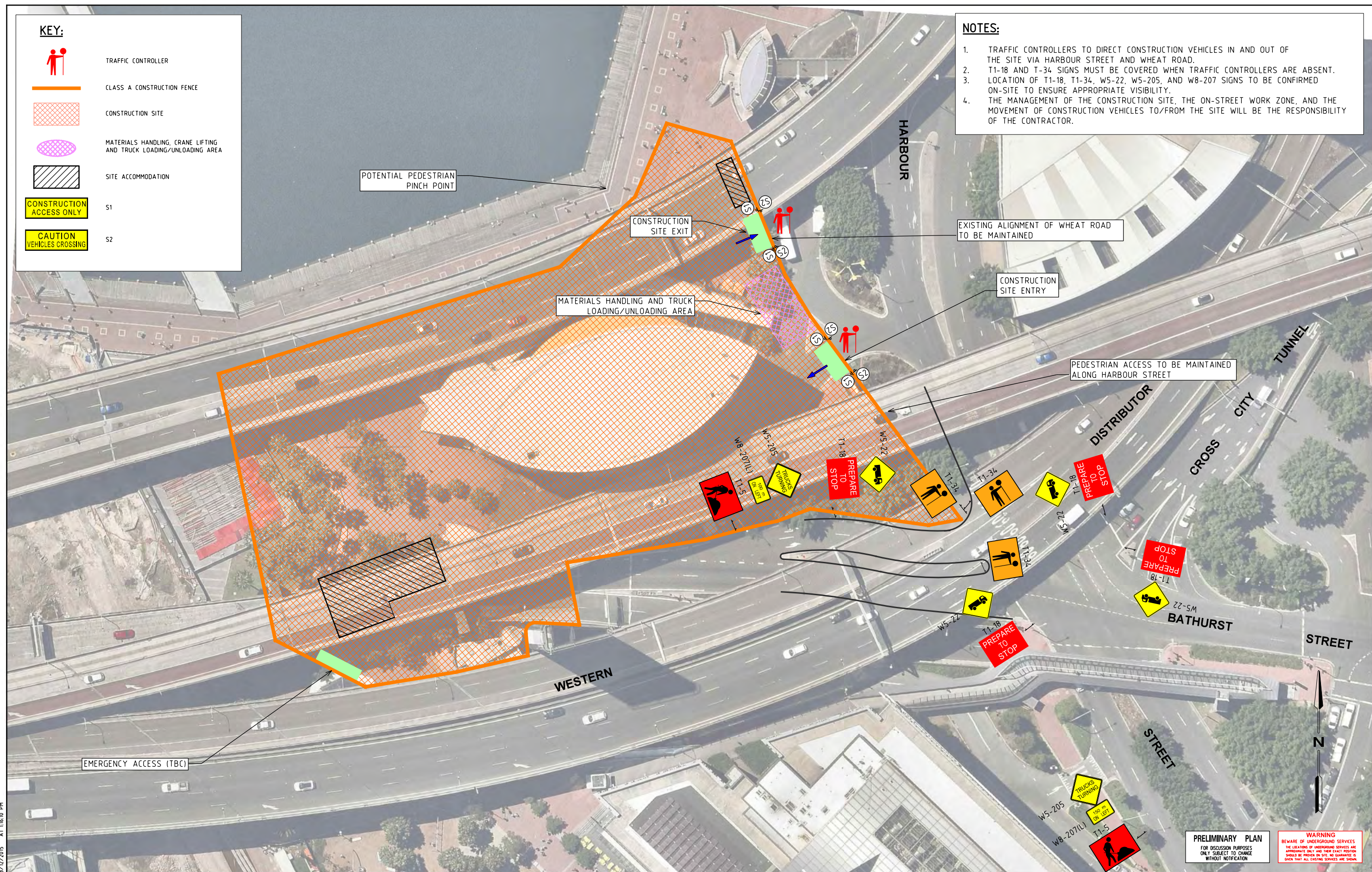
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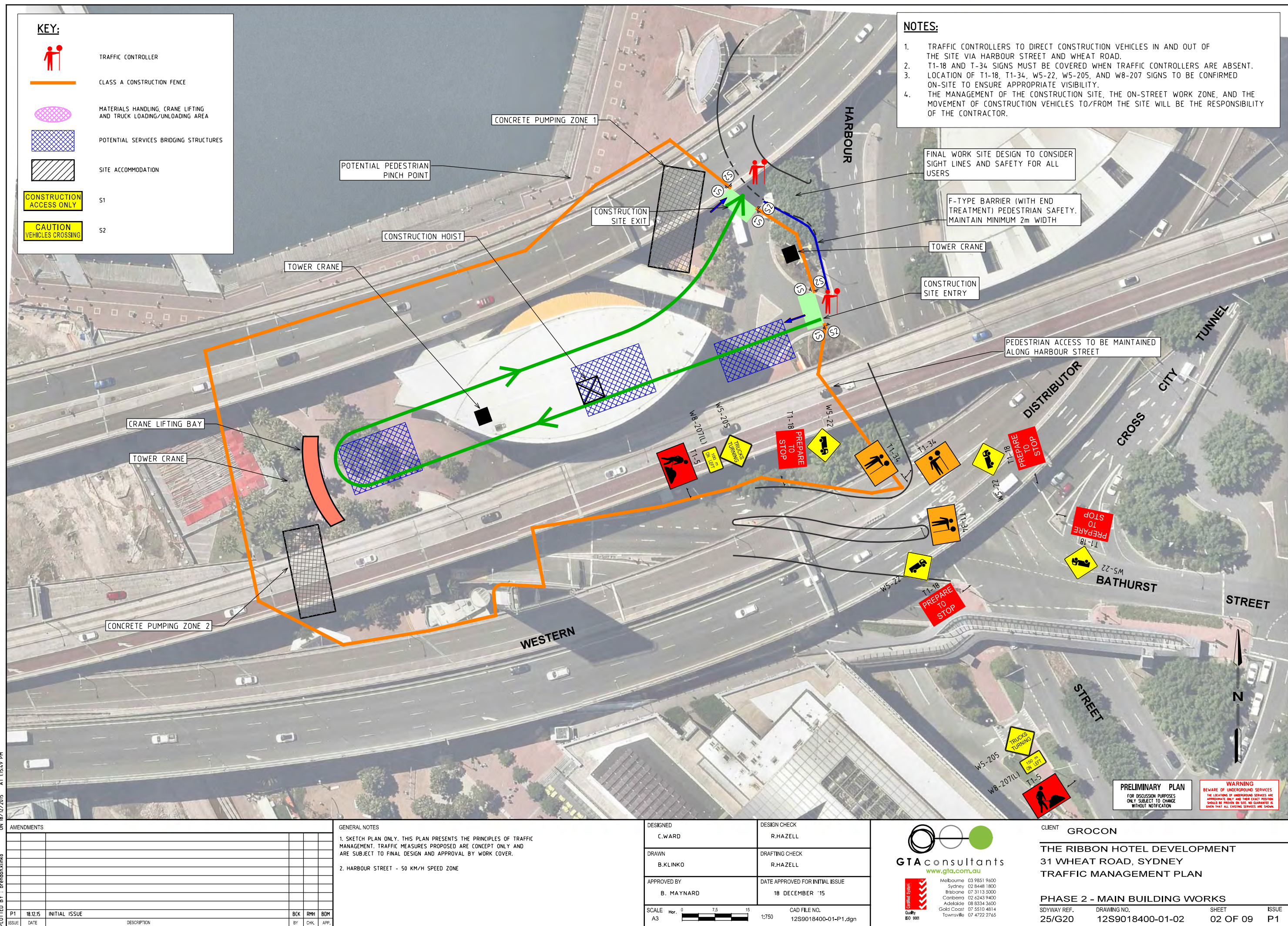
Appendix C

Traffic Control Plans

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GROCON			
THE RIBBON HOTEL DEVELOPMENT			
31 WHEAT ROAD, SYDNEY			
TRAFFIC MANAGEMENT PLAN			
PHASE 1 - EARLY WORKS			
SDYWAY REF.	DRAWING NO.	SHEET	ISSUE
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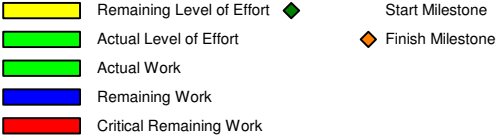
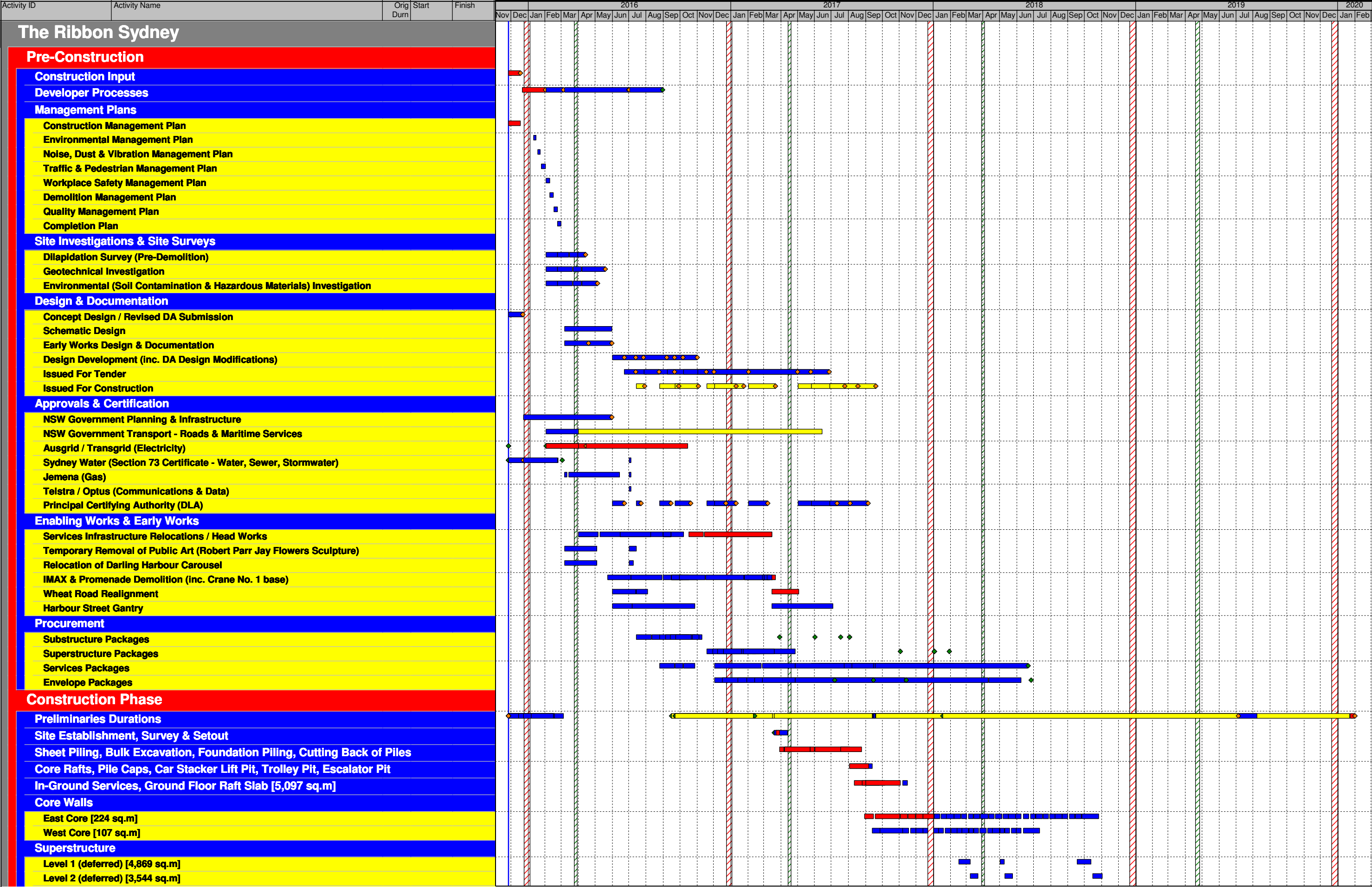
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D. Design & Construction Program

Start MilestoneFinish Milestone

The Ribbon Sydney - Hotel / Serviced Apartment Scheme

Preliminary Design & Construction Program

Project ID: TRS-1; Project Name: The Ribbon Sydney

Layout: Development Program rolled up, TASK filter: All Activities

Data Date 27-Nov-15, Print Run Date: 18-Dec-15, Page 1 of 2

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Remaining Level of Effort Actual Level of Effort Actual Work Remaining Work Critical Remaining Work	Start Milestone Finish Milestone		The Ribbon Sydney - Hotel / Serviced Apartment Scheme Preliminary Design & Construction Program	Project ID: TRS-1; Project Name: The Ribbon Sydney Layout: Development Program rolled up, TASK filter: All Activities Data Date 27-Nov-15, Print Run Date: 18-Dec-15, Page 2 of 2
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E. Demolition Management Plan

Project Management Plan

Demolition Management Plan (Construction Execution Plan)



Delta Pty Limited ABN: 67 007 069 794

**Head Office: 83 Bourke Road
NSW, Australia. 2015
Telephone +61 2 8339 0588**

PROJECT DETAILS

Date

12-05-15

Client Name

Grocon

Address

IMAX - 31 Wheat Road, Darling Harbour NSW 200

Project Description/Scope

THE RIBBON SYDNEY
Demolition of the IMAX Theatre

DISCLAIMER

This document has been developed to assist the Delta Group to manage the project. While every effort has been made to ensure the accuracy of the material in this document, this publication is not meant to substitute for the legislation. For the specific requirements on an issue covered in this document, persons should refer directly to the relevant legislation in their location.

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PMP	Name	Sign	Date
Prepared by:	Yasser Haragli		
Authorized by:	Richard Strong		
Project Manager:	Richard Strong		
Site Foreman:	James Vari		

EMERGENCY CONTACT NUMBERS

AMBULANCE:

FIRE:

POLICE:

DIAL 000

CONTACT	NAME / LOCATION	TELEPHONE
ELECTRICITY	Energy Australia Faults or Emergencies Below Ausgrid	1800 596 517 13 13 88
GAS	AGL - 24 Hour Emergency Below Envestra Jemena Gas Network	13 17 66 Mon to Fri 8am-6pm 1800 676 300 - 24 Hours 131 909 - 24 Hours
HOSPITAL	St. Vincent's Hospital 390 Victoria street Darlinghurst, NSW 2010	000 / (02) 8382 1111
DELTA PREFERRED DOCTOR	Immex - 561 Botany Road, Waterloo NSW 2017	(02) 9319 5999 – Mon to Fri 8am-6pm
CLOSEST GENERAL PRACTITIONER MEDICAL CENTRE	70 Pitt street, Sydney NSW 2000 <u>OR</u> 308 George St, Sydney NSW 2000	(02) 9231 1000 <u>OR</u> (02) 9231 3211
POISONS INFORMATION CENTRE	NSW Poisons Information Centre 212 Hawkesbury Road Westmead, NSW 2145	13 11 26
WORKCOVER	Lvl 10, Centennial Plaza Building C, 300 Elizabeth St, Sydney NSW 2000	13 10 50 / (02) 8260 5877
SECURITY FIRM	N/A	
STATE EMERGENCY SERVICE (SES)	NSW SES – 125 Railway Parade, Erskineville NSW 2043	13 25 00 – Storm and Flood Damage 9439 7766 – General Enquiries
WATER SEWERAGE, DRAINAGE FAULTS	Sydney Water	13 20 90
ENVIRONMENTAL PROTECTION AUTHORITY (EPA)	Department of Climate Change, Environment & Water 59-61 Goulburn Street, Haymarket NSW 2000	(02) 9995 5000
TELSTRA EMERGENCY NUMBER	http://www.telstra.com.au/help/contact-us/faults-technical-support/index.htm	13 2203
CULTURAL/HERITAGE DISCOVERY & INCIDENTS	Department of Climate Change, Environment & Water 59-61 Goulburn Street, Haymarket NSW 2000	(02) 9995 5000
DELTA HEAD OFFICE	83 Bourke Road, Alexandria, 2015, NSW	02 8339 0588

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☐ **PROJECT ENGINEER**

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Mobile No:

0431 501 281

☐ **SITE ENGINEER**

Name:

Alex Wong

Mobile No:

0408 571 085

☐ **OPERATIONS MANAGER**

Name:

Ben Shum

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0423 796 946

☐ **SITE FOREMAN**

Name:

James Vari

Mobile No:

0411 092 785

☐ **HSR/OHS REPRESENTATIVE**

Name:

TBA

Mobile No:

☐ **FIRST AID**

Name:

James Vari

Mobile No:

0411 092 741

☐ **QSE MANAGER**

Name:

Yasser Haragli

Mobile No:

0401 440 279

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1. AUTHORISATION AND CONTROL

a. AUTHORISATION

This Plan is authorised by the State General Manager. All project personnel are to ensure that their work activities and those of Project Consultants, Contractors and Suppliers are carried out in accordance with the requirements of this Plan.

b. DISTRIBUTION

This Plan is a Controlled Document and must be distributed and revised under the guidance of the Project Manager. People who hold Controlled copies are responsible for maintaining their copies up-to-date.

c. REVISION

The Project Manager will monitor the implementation of this Plan and review the need for change or improvements having due regard to:

- Change in work scope, client comments etc
- Internal and external audits
- Suggestions and comments from project personnel
- Incidence and frequency of non-conformance
- Necessity for corrective or preventative action
- Legal Update and Requirements
- Review by Delta Groups Management team
- Annual Review

All changes must be formally approved by the State Manager or Project Manager.

Changes to the recent revision will be highlighted.

The following table provides a record of amendments made to this document

<i>Rev</i>	<i>Date</i>	<i>Description</i>	<i>Page</i>	<i>Developed By</i>	<i>Approved By</i>
0	12-05-15	Document Creation	All	Yasser Haragli	Richard Strong
1					
2					
3					

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<i>Rev No.</i>	<i>Date of Issue</i>	<i>Name of Recipient</i>	<i>Position / Organisation</i>
0	13-05-15	George Araujo / Anthony Baroni	Senior Project Engineer / Structure Manager - Grocon
1			
2			

2. OBJECTIVES & TARGETS

No.	Objective	Target	Evidence
1	Integration	Deliver Project as Per Delta Policies & procedures	Project Audit Performance
2	In Scope	100% Completion of Scope items	Completion of ITP
3	On Time	Deliver Project On Time as per contract	No delay notices issued
		Project Program developed by Delta achieved	Achievement of Weekly Program
4	On Cost	Achievement of Delta Budget and Cost Sheet	Cost Sheet Reports
5	Quality -Project delivered to a high standard -Undertake Quality Assurance & Control - Continual Improvement	Work to a standard that 0 Major (>\$5k) Non-conformances issued,	Issue of NCR requiring work exceeding \$5k
		Positive public Works feedback	Grocon Feedback logged
		Completed at defined intervals as determined by ITP's and Inspection frequency	Inspections/Checklists completed
		All Plant Materials, equipment delivered fit for purpose & on time Inspected, maintained, calibrated	Observations and Internal Notices issued
		Identify areas of Continual Improvement to systems or process	Submission of improvement idea
6	HR - Employee Management - Resource Mgt - Skilled & Competent workforce	Workers follow Deltas Safe work procedures and deliver quality workmanship	Reduced Injuries SINS issued where appropriate
		0 Industrial Disputes - regarding entitlements	Signed EBA Timesheets accurately completed
		4 Week Demand/ Capacity developed for life of project	Delivered to Resource Manager
		All Workers have required ticket, training, competence level to complete works	Delivery of mandatory onsite training requirements
7	Communication -Effective Consultation & Communication	Weekly Toolbox with standards agenda delivered	Toolbox Talks Conducted
		Project Coordination Conducted with standard agenda	Meeting Minutes
		Performance Reports submitted on Time	Submission of Performance Report
8	Risk Management -Provide a safe and incident free work environment	Weekly Site Inspections for duration of works	Site Inspection Reports
		Weekly Safe Work Observations for duration of works	SWO completed
		Corrective Action from Site Inspections/Audits closed out	Outstanding Actions Report
9	Procurement -contract Mgt -Subcontractor	Progress Claims submitted on due date both Contractor & Subcontractor	Timely Payment of claims
10	Environmental Management	Nil environmental breaches	Work as per associated plans and ensure all materials treated and /or correctly disposed of.

3. PROJECT INTRODUCTION AND SCOPE OF WORKS:

Delta has been engaged by Grocon for the demolition and civil works for The Ribbon Sydney Project.

The scope of works includes:

1. Demolition
 - a. Disconnection of services above ground
 - b. Internal strip out
 - c. Structural demolition including internal strip out
2. Civil
 - a. Pile Platform installation
 - b. Foundation piling
 - c. Bulk excavation
 - d. Detail excavation
 - e. In ground concrete construction (footings etc)
 - f. Installation of Wheat Road Diversion

Key issues of completing the project are:

- Safety- within the site and of surrounding receivers;
- Adjacent properties (including the Western Distributor);
- Environmental (Noise, Dust, Waterways);
- Programming;
- Mobile Plant;
- Access and Egress;
- Traffic Management and
- Nearby residents/businesses.

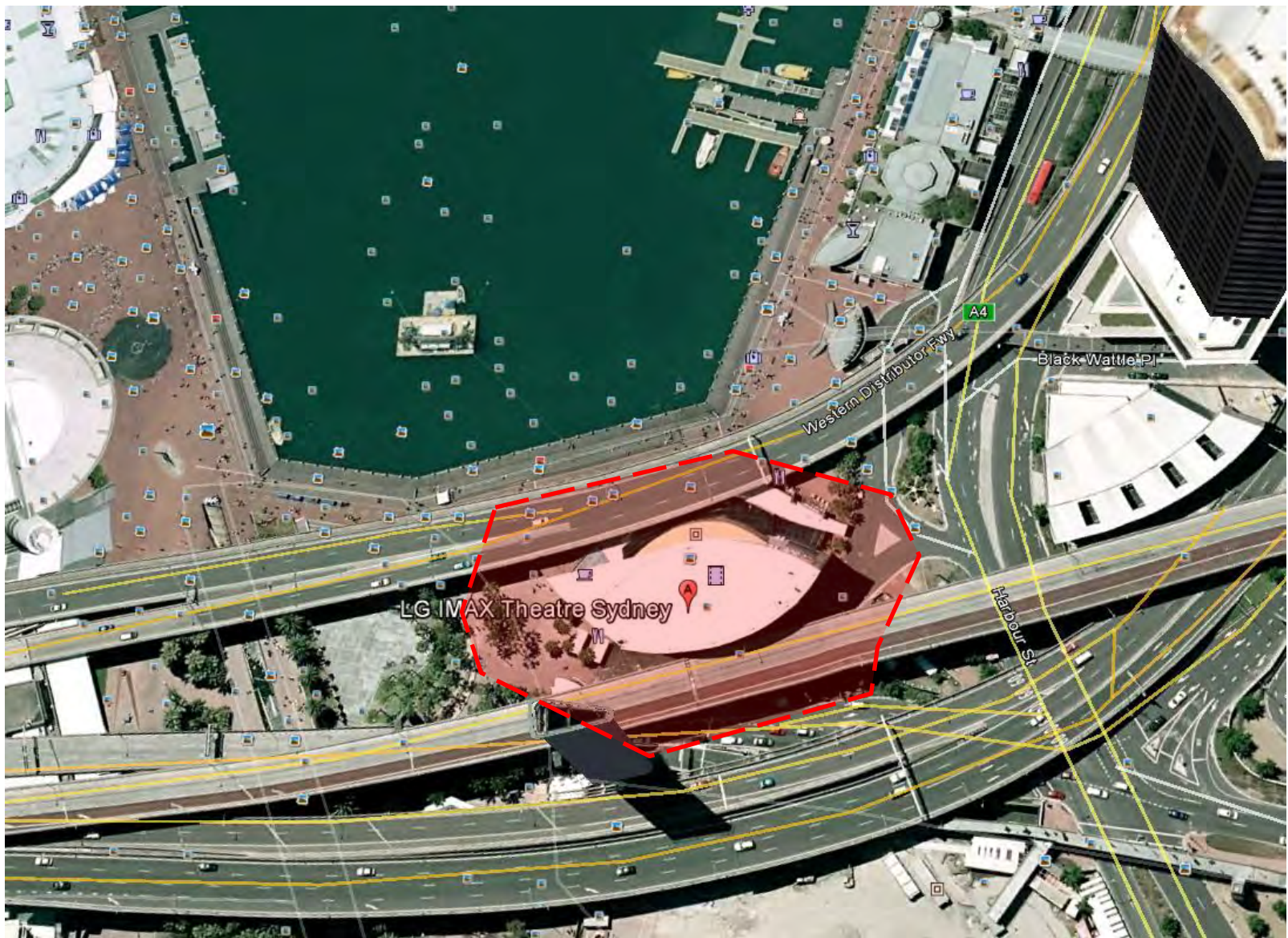
This Project Management Plan has been prepared to provide clients with a plan as to how the Delta will complete and administer the project for the duration of the works and in accordance with the requirements of relevant Australian Standards, Codes of Practice and Workplace Safety and Environmental Legislation.

This document details the procedures that need to be followed to ensure the works are delivered to Clients in accordance with the contract documents.

Delta will maintain its own records as well as comply with principal contractor requirements for the retention of records as per the subcontract, and with any legislative requirements.

This document serves as a road map to supporting documents including Site Safety, Quality and Environmental Management Systems.

4. LOCATION OF SITE



5. SITE INVESTIGATION

Proceeding preliminary investigations, the IMAX structure:

- Is a class 6 building (A shop or other building for the sale of goods by retail or the supply of services direct to the public).
- Has an approximate height of 22m to the peak of the suspended roof (from Level 1 SOG)
- Is approximately 65m in length and 35m at widest point
- Is constructed from a combination of structural steel and conventional concrete columns, concrete suspended slabs and slab on ground, internal masonry walls, external walls are a combination of concrete and cladding.
- Has a suspended roof structure by steel beams with roof cladding
- Does not have any hazardous materials identified
- Requires further clarification regarding the set out of perimeter hoardings and associated working space from boundary to structure.

6. ENGINEERING & DESIGN

Further Engineering investigation is required to:

- To determine suitable slab loads of suspended slabs for nominated plant to be used
- To determine suitability of existing Hay Lackey culvert protection structure as a interim trafficable haul road during initial stages of hand over from demolition to civil and during piling operations
- To determine suitability of Level 1 slab and subsurface geotechnical profile bearing capacity to utilise slab on ground as piling platform.

7. NOTIFICATIONS, PERMITS & INVESTIGATIONS

The following investigations and reports are required for the project:

- Dial before dig drawing
- Hazmat report/contaminated soil report
- Geotech report
- Dilapidation report (by others)
- Engineer report
- Surveyor
- Environmental report
- Service Locator
 - Gas
 - Water
 - Overhead power
 - Sewer
 - Etc.
 - Alarms/ fire service
- Underground Tanks

The following notifications are to be made and permits obtained for the project:

- Notice of Demolition to WorkCover
- Notice of Asbestos Removal to WorkCover (if found)
- Hoarding (By Grocon)
- Council DA/CC

- Occupancy Permits
- Asset Owners- Energy Australia, Trains, Busways
- Neighbours

Hardcopies will be kept in Job Folder

8. WORK METHODOLOGY

1. Site Establishment/mobilisation
 - a. Obtain relevant permits/notifications
 - b. Public Protection and Site Security Established
 - c. Site Amenities and Site Signage Established
 - d. Float machinery to site and equipment
3. Refer to *Appendix A* for Demolition Methodology

9. SEQUENCING & TIMING

Task Sequence	Program Timing(Weeks)
Site Mobilisation	Programme to be provided
Demolition	Programme to be provided
Civil	Programme to be provided
Site Demobilisation	Programme to be provided

10. INSPECTION TEST PLANS (ITP)

The following initial ITP's will be utilised on this project:

1. Demolition
2. Excavation works
3. Concrete Install

Further ITP's will be developed as required.

11. MONITORING REQUIREMENTS

Type	Conducted By	Frequency	Results cc'd to
Noise	TBC	Daily	TBC
Vibration	TBC	Daily	TBC
Water	TBC	Daily	TBC
Air	TBC	Daily	TBC

12. SITE ESTABLISHMENT

a. SITE SAFETY INDUCTION

Delta will provide a Site Safety Induction for all employees, subcontractors and personnel involved on the project.

Prior to induction, subcontractors and employees must provide evidence of all operating tickets or relevant competencies and health surveillance prior to commencement. Delta will maintain a record of competencies for all personnel under their control.

b. WORKING HOURS

Project Working Hours as per DA	
Days	Hours
Monday	7am – 7pm
Tuesday	7am – 7pm
Wednesday	7am – 7pm
Thursday	7am – 7pm
Friday	7am – 7pm
Saturday	7am – 5pm
Sunday	N/A
Noise Respite Period	Mon – Fri 1200 hours to 1300 hours

c. PUBLIC & PROPERTY PROTECTION

The site area will be securely hoarded (A-Class) by Grocon to delineate the work exclusion zone from any public or client areas.

d. FOOTPATHS

Any footpaths around the demolition site will be maintained or diverted. Any disturbance created by Delta will be cleaned or rectified if able to do so.

e. SERVICES & UTILITIES

All temporary power & services is to be completed by the appropriate asset owner, authorised or appropriately competent trades person.

Service sign off must be provided prior to any works or where services are to remain must be clearly identified (tales, spray paint, signs) and communicated to all site personnel through site induction, toolbox talks and site notice boards

Any works on services must follow Grocon or Asset owner Isolation & Tag Out Procedure.

The following services are the responsibility of, in conjunction with asset owner:

Service	Responsibility of
Gas	Grocon
Water	Grocon
Electricity	Delta Group (above ground) / Grocon (below ground)
Communication	Grocon
Alarm Systems	Grocon
Fire Service	Grocon

f. SIGNAGE AND AMENITIES

When working as a subcontractor on the Darling Harbour Live Project, task and area specific signage will be provided unless directed otherwise by the Lend Lease.

Site Amenity	Location	Signage	Location
First Aid Room	TBC	TBC	TBC
Toilets (if principal contractor)	TBC	TBC	TBC
Lunchroom (if principal contractor)	TBC	TBC	TBC

Office	TBC	TBC	TBC
Change Room (if principal contractor)	TBC	TBC	TBC
Chemical Storage	TBC	TBC	TBC
Tool Shed	TBC	TBC	TBC

13. LICENSE/TICKET REQUIREMENTS

1.	Scaffold Erection	Qualified Scaffolder as per NOHSC 1006
2.	Crane Driver	Qualified Crane Drivers as per NOHSC 1006.
3.	Operation of hoist $\geq 11\text{m}$	Hoist operating Certificate
4.	Operator of man hoist	Hoist operating Certificate
5.	Dogman	Dogman's Certificate
6.	Electrical Work	Licensed Electrician
7.	Plant Operator	Certificate of Competency for item of equipment
8.	Vehicle Operator	Relevant drivers licence A, B, C etc.
9.	Welding	Structural
10.	Welding	Certified welder
	Water and Sewer connection and supply	Competent Welder
	General Purpose Licensed plumber/ Licensed Drainer	
11.	Gas plumbing – A/C Decommissioning etc.	Licensed gas plumber
12.	Elevated Work Platform (reach $> 11\text{m}$)	Certificate of competency as per NOHSC 1006
13.	Elevated Work Platform (reach $< 11\text{m}$)	Trained and competent
14.	Fall Arrest / Restraint Equipment	Trained and competent
15.	Confined Space Entry	Confined Space Entry trained and competent
16.	Asbestos Removal	Asbestos Removal Friable/Bonded
17.	Heights	Certificate of Competency – Working at Heights
18.	General Tools Equipment	Training in Delta Standard Operating Procedures
19.	Risk Management	Training in Risk Management
20.	Supervision	Training in Supervision

14. SUPPLIER & SUBCONTRACTOR MANAGEMENT

Required Suppliers & Subcontractors for work on this project site: -

1. Scaffold
2. Asbestos Removal (if friable)
3. Crane
4. Concrete Cutters
5. Steel supply and install
6. Concrete supply
7. Transport
8. Surveyor
9. Plant and equipment hire (if required)

Subcontractors are to provide all documents/procedures and processes as outlined in Delta Subcontractor OHSE Requirements **QF 026**.

All subcontractors are required to submit and maintain a Site Safety Plan that meets Delta minimum requirements as outlined in Delta Subcontractor OHSE Checklist **QF 027** prior to commencing works.
Subcontractors must submit all SWMS for review prior to commencing works. All SWMS must meet the Delta Audit Subcontractor SWMS criteria. **AUD 003.**

All subcontractors are to comply with all Delta Safety, Environment and Quality Procedures for the project.

Subcontractors are to ensure that they provide to Delta copies of all documents developed relating to the project e.g. Safety Plan, Registers, SWMS and provided in relevant job folder.

15. HAZARDOUS MATERIALS

A Hazardous materials survey is to be conducted prior to works commencing.

If found, HAZMAT on the project will be removed as detailed in specific HAZMAT Removal /Control Plan prior to any further works in the immediate area can occur. A clearance certificate must be provided

If further HAZMAT is identified works are to stop immediately in the area and Delta Site Foreman notified immediately, so that further investigation can take place and controls implemented.

Grocon will be notified of any suspected hazardous materials immediately to conduct additional testing if required of the materials. If deemed to be Hazardous, Grocon will give Delta instruction to mitigate the hazardous materials.

Delta will mitigate the hazardous materials accordingly depending on the type and nature of materials that are to be handled. Hygienists will be employed to inspect the hazardous materials once removed and the original location of them. If properly removed, a clearance certificate will be supplied to state that the removal has been completed.

16. RESOURCES

a. **ANTICIPATED MAXIMUM RESOURCES FOR THE PROJECT**

A detailed forecast will be developed at commencement and updated as project progresses.

Task	Type Of Resource	Anticipated Max Quantity
Site Management	Project manager	1
	Project / Site Engineer	1
	Site Manager	1
Operators	Excavator	2
	Bobcat	2
	Water Cart	1
	Crane Operator	1
	Scaffolders	10
Labourers	Labourer (including Riggers)	6

b. **IMPORT**

Imported materials to remain onsite will include steel reinforcement and concrete, and potentially include a recycled road base (i.e. DGB20) product for piling platform

c. **MOBILE PLANT**

1.	Excavators : Ranging from 5-47T
2.	Mobile Crane
3.	Bobcats
4.	Water Cart
5.	Roller

6.	Piling Rig
7.	Concrete Pump

d. EQUIPMENT

1.	Demo Saw	4.	Hammer, sheer, grabs, bucket attachments
2.	Oxy Set	5.	Props
3.	Hand Tools	6.	Laser Level

17. HANDLING AND DISPOSAL OF MATERIALS

It is proposed to use the following methods to handle demolished materials.

1. Excavators and bobcat to process material and stockpile material to maximise recycling
2. Excavators with bucket and grabs attachments to load out material in designated load out areas into trucks/bins
3. Trucks to transport material to approved recycling or waste management facility

18. TRANSPORT AND LOGISTICS

It is proposed to use the following transportation methods to transport materials.

1. Bin Trucks (Demolition Waste)
2. Semi-Trailers (Steel)
3. Truck and Dog (Rubble and Soil)

Materials will be taken to the following facilities:

1. Genesis Eastern Creek (Demolition Waste)
2. SIMS Metal (St Marys)
3. Boral Rydalmere (Rubble)
4. Soil (TBA subject to classification)

19. QUALITY MANAGEMENT

A Quality Management Plan has been developed for this project in conjunction with this project management plan. Refer to QMS Plan

20. SAFETY MANAGEMENT

A Safety Management Plan has been developed for this project in conjunction with this project management plan. Refer to OHSMS Plan

21. ENVIRONMENTAL PLAN

An Environmental Management Plan has been developed as a further reference to this PMP. The Environmental Management Plan is located in the site foreman folders and available upon request from the Delta project team. Refer to EMS Plan

22. HAZMAT MANAGEMENT

Refer to Dangerous Goods and Hazardous Substances Management Plan

An Asbestos Control Plan will be developed for this project if required.

23. TRAFFIC MANAGEMENT AND SITE ACCESS

As per Grocon Traffic Management Plan

24. EMERGENCY MANAGEMENT

A site specific Emergency Response Plan has been developed by Grocon. All site personnel are to be inducted into the Grocon Emergency Response Plan as a part of their site induction and will follow the directions issued by Grocon in the case of an evacuation being required.

Site Key Contacts are posted throughout the workplace

25. PROJECT DOCUMENT CONTROL PROCEDURE

a. DRAWINGS AND SHOP DRAWINGS

Further to issuing and receiving shop drawings (approved, rejected, or approved with comments) and acting on all transmitted information within the time parameters provided, Delta will on a weekly basis undertake a review of all Shop Drawing and Drawings Transmittal Module modules (information types) and ensure that ALL items have been actioned.

b. CORRESPONDENCE

All correspondence with Delta and Grocon will be via Aconex, in accordance with the subcontract requirements.

c. SITE INSTRUCTIONS (SIs)

SIs are submitted to Delta and Grocon via Aconex. ALL fields are completed and the SI is issued to the subcontractor works/project manager (site/project engineer) and the construction manager. SI response and close out are all logged and recorded on Project Web.

d. REQUEST FOR INFORMATION (RFIs)

RFIs are submitted to Delta and Grocon via Aconex. ALL fields are completed and the RFI is issued to the subcontractor works manager (site/project engineer) and the construction manager. RFI response and close out are all logged and recorded on *Project Web*.

e. SAMPLES

Samples will be submitted to Delta and Grocon and logged and recorded on the Project Samples Register. The sample will be presented to the necessary consultant and the client for approval, with Grocon providing written advice as to its approval.

f. RETENTION OF RECORDS

Delta will comply with *Lend Lease's* requirements for the retention of records as per the subcontract, and with any legislative requirements.

26. COMPLAINTS MANAGEMENT

If there is a complaint delta will work in consultation with Grocon to resolve the issue.

27. AUDIT PROGRAM FOR PROJECT

Delta audits its HSEQ procedures on a monthly basis as per its Integrated Management System Audit Schedule to ensure effective implementation and identify areas of improvement.

At a project level, Delta undertakes complete Project Audits to ensure implementation of Project specific management plans and procedures

1 st Audit	within <u>first</u> 2 weeks on site – Project Start Up Audit – AUD 001
Follow Up Audits	Monthly after the Project Start Up Audit

28. ACCEPTANCE OF PROJECT MANAGEMENT PLAN

This Project Management Plan has been developed and viewed in consultation with the workers and it is read and signed by all persons involved in the plan. If a variation occurs to this Project Management Plan then management will communicate and re-induct the change to the work group whilst adjusting the work method methodology accordingly.

I hereby confirm that I have read and understand this Project Management Plan and I will ensure my work process is completed accordingly.

Project Manager Approval	Richard Strong		
Signature			
Date	12/05/15		
Inductee Name	Company/Title	Signature	Date

APPENDIX A: DEMOLITION METHODOLOGY

Methodology

Project: The Ribbon

Job No: TBC

Date – Revision: 12/05/2014 – Rev 1

Developed By: Aaron Gatt

Revision By: Richard Strong

Approved By: Jason Simcocks

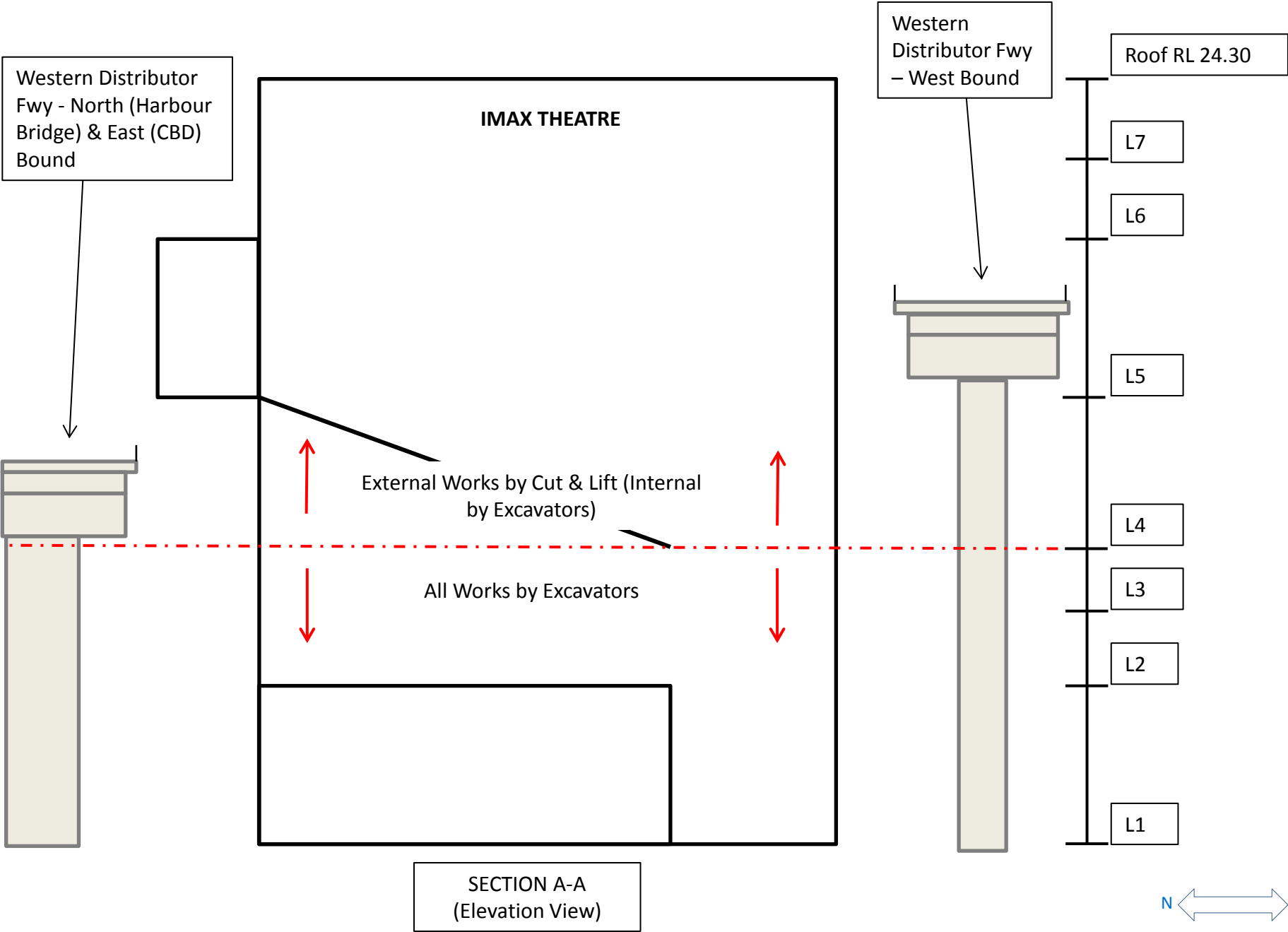
Task: Demolition IMAX

Step	Description	Diagram
GN - 1	<p>General Notes:</p> <ul style="list-style-type: none"> Demolition will be from top down Harnesses to be worn during demolition process to remove roof structure Scaffold to be erected after North/West corner removed Internal slabs, walls and other structures to be demolished using small machines to level 3 External walls to be demolished by cut and lift method using mobile crane (Assumed 10t blocks) to level 3 (Underside of Western Distributor) Remainder of structure to be demolished from level 3 down using 45t excavators 	

Methodology

Project: The Ribbon
Job No: TBC
Date – Revision: 12/05/2014 – Rev 1
Task: Demolition IMAX

Developed By: Aaron Gatt **Revision By:** Richard Strong **Approved By:** Jason Simcocks

Step	Description	Diagram
GN - 2	<p><u>General Notes:</u></p>	

Methodology

Project: The Ribbon

Job No: TBC

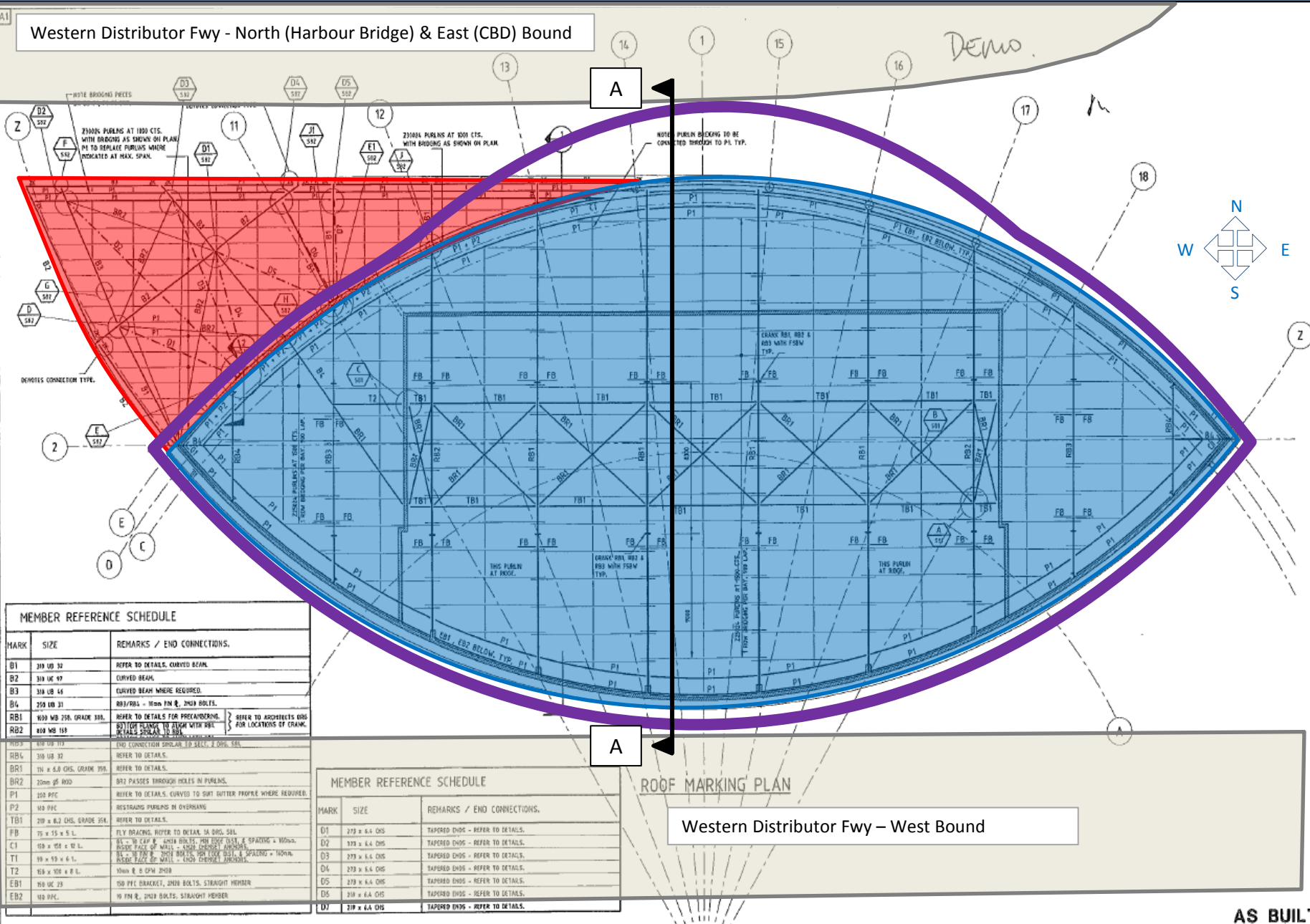
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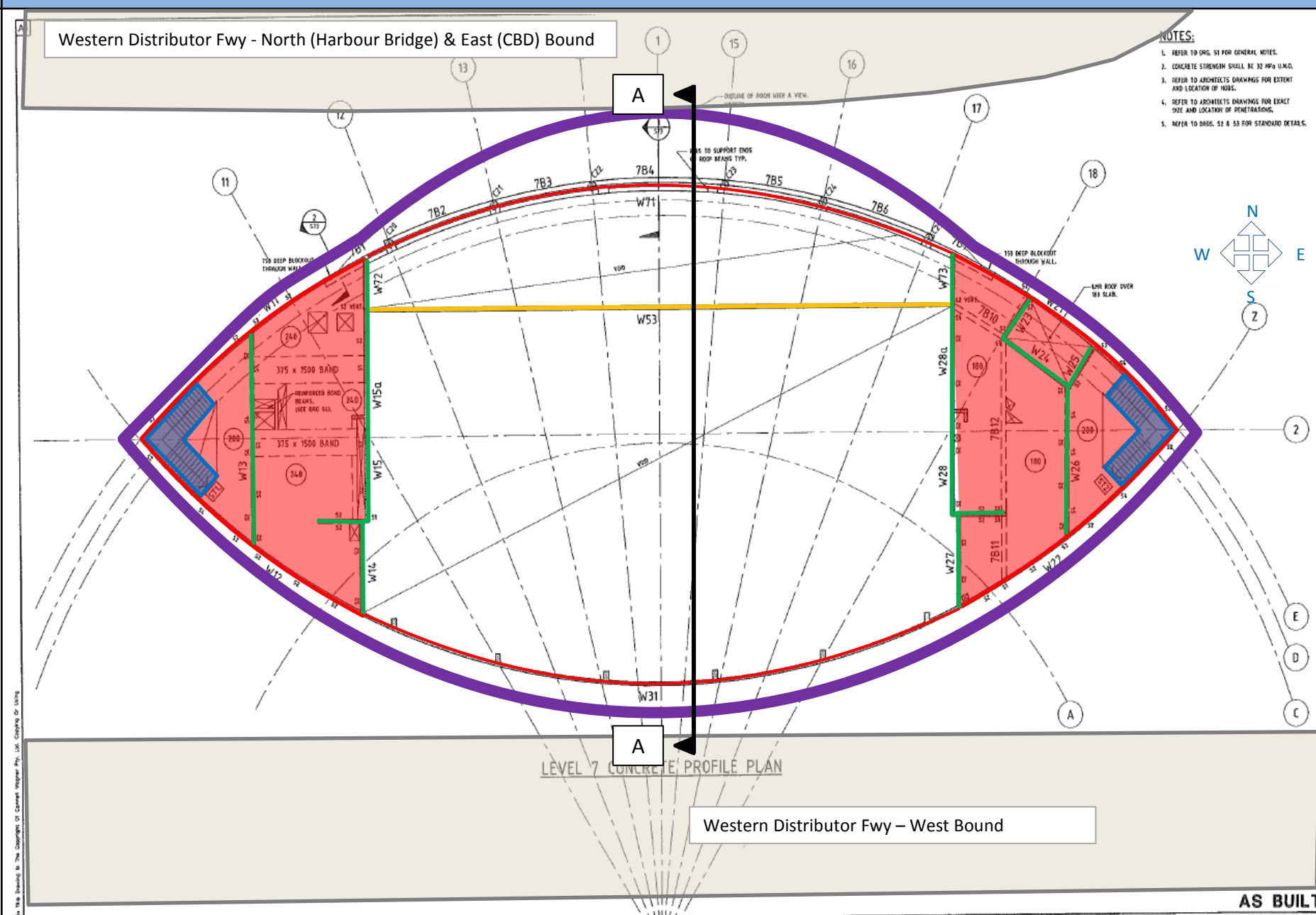
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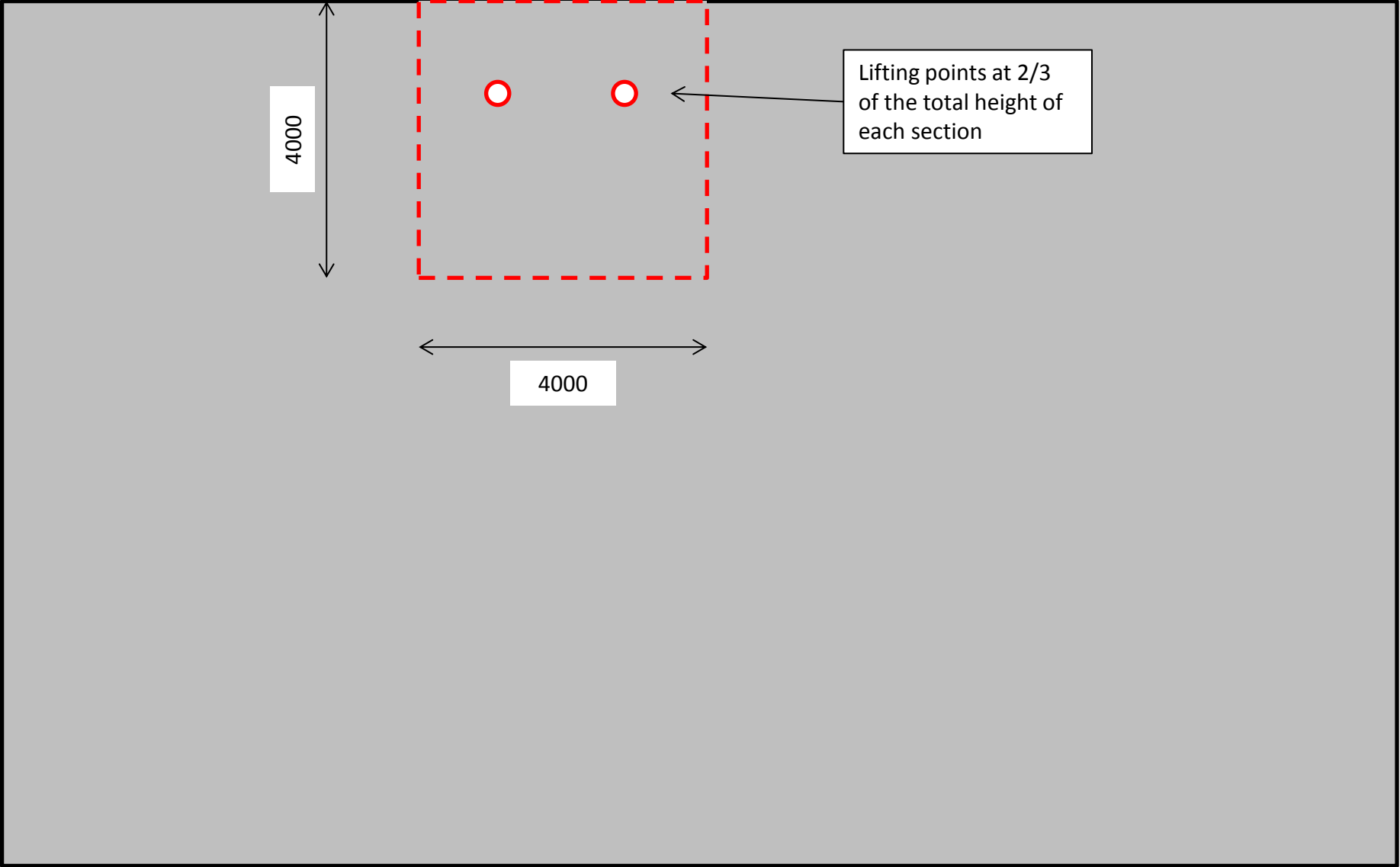
Step	Description	Diagram																																																																																				
MD - 1	<p>Main Demolition (Roof):</p> <ul style="list-style-type: none"> Red Section (N/W corner) to be removed first by peeling roof sheets back (from boom lift) and cutting and lifting steel members progressively utilising crane. Scaffold to be erected (Shown in purple) to full extent of building. Blue Section to be removed by peeling roof sheets back by workers working from above. Blue section exposed steel roof members to then be cut in safe and manageable sections (from worker in boom lift or crane man box) and dropped within the building footprint under controlled conditions. 	 <p>Western Distributor Fwy - North (Harbour Bridge) & East (CBD) Bound</p> <p>Western Distributor Fwy – West Bound</p> <p>AS BUILT</p> <table border="1"> <thead> <tr> <th>MARK</th><th>SIZE</th><th>REMARKS / END CONNECTIONS.</th></tr> </thead> <tbody> <tr> <td>B1</td><td>319 UD 32</td><td>REFER TO DETAILS, CURVED BEAM.</td></tr> <tr> <td>B2</td><td>319 UC 97</td><td>CURVED BEAM.</td></tr> <tr> <td>B3</td><td>319 UD 48</td><td>CURVED BEAM WHERE REQUIRED.</td></tr> <tr> <td>B6</td><td>219 UD 31</td><td>RB1/RB4 - 10mm FIN & 20mm BOLTS.</td></tr> <tr> <td>RB1</td><td>600 WD 150 GRADE 300.</td><td>REFER TO DETAILS FOR PRE-ANCHORING. REFER TO ARCHITECT'S DMS FOR LOCATIONS OF CRANK.</td></tr> <tr> <td>RB2</td><td>600 WD 150.</td><td>BOTTOM PLANKS TO ALIGN WITH RB1 DETAILS SHOWN TO RB1.</td></tr> <tr> <td>RB3</td><td>610 UD 113</td><td>END CONNECTION SIMILAR TO SECT. 2 OF 6, SBL.</td></tr> <tr> <td>RB4</td><td>319 UD 32</td><td>REFER TO DETAILS.</td></tr> <tr> <td>BR1</td><td>714 x 6.0 CHS, GRADE 300.</td><td>REFER TO DETAILS.</td></tr> <tr> <td>BR2</td><td>20mm 65 ROD</td><td>BR2 PASSES THROUGH HOLES IN PURLINS.</td></tr> <tr> <td>P1</td><td>200 PFC</td><td>REFER TO DETAILS, CURVED TO SUIT GUTTER PROFILE WHERE REQUIRED.</td></tr> <tr> <td>P2</td><td>143 PFC</td><td>RESTRAINING PURLINS IN OVERHANG.</td></tr> <tr> <td>TB1</td><td>219 x 6.2 CHS, GRADE 300.</td><td>REFER TO DETAILS.</td></tr> <tr> <td>FB</td><td>75 x 15 x 5 L.</td><td>FLY BRACING, REFER TO DETAIL, SA DMS, SBL.</td></tr> <tr> <td>CL</td><td>10 x 10 x 10 L.</td><td>CL - 10 CAP & 20mm BOLTS, FIN EDGE TOSH & SPACING = 100mm.</td></tr> <tr> <td>T1</td><td>10 x 10 x 10 L.</td><td>10 x 10 x 10 L. - 20mm BOLTS, FIN EDGE TOSH & SPACING = 100mm.</td></tr> <tr> <td>T2</td><td>10 x 10 x 10 L.</td><td>10mm & 5 CPM 2010.</td></tr> <tr> <td>EB1</td><td>100 PFC, 200 UC 29</td><td>100 PFC BRACKET, 200 BOLTS, STRAIGHT MEMBER.</td></tr> <tr> <td>EB2</td><td>100 PFC.</td><td>10 FIN & 20mm BOLTS, STRAIGHT MEMBER.</td></tr> </tbody> </table> <table border="1"> <thead> <tr> <th>MARK</th><th>SIZE</th><th>REMARKS / END CONNECTIONS.</th></tr> </thead> <tbody> <tr> <td>D1</td><td>273 x 6.4 CHS</td><td>TAPERED ENDS - REFER TO DETAILS.</td></tr> <tr> <td>D2</td><td>273 x 6.4 CHS</td><td>TAPERED ENDS - REFER TO DETAILS.</td></tr> <tr> <td>D3</td><td>273 x 6.4 CHS</td><td>TAPERED ENDS - REFER TO DETAILS.</td></tr> <tr> <td>D4</td><td>273 x 6.4 CHS</td><td>TAPERED ENDS - REFER TO DETAILS.</td></tr> <tr> <td>D5</td><td>273 x 6.4 CHS</td><td>TAPERED ENDS - REFER TO DETAILS.</td></tr> <tr> <td>D6</td><td>273 x 6.4 CHS</td><td>TAPERED ENDS - REFER TO DETAILS.</td></tr> <tr> <td>D7</td><td>219 x 6.4 CHS</td><td>TAPERED ENDS - REFER TO DETAILS.</td></tr> </tbody> </table>	MARK	SIZE	REMARKS / END CONNECTIONS.	B1	319 UD 32	REFER TO DETAILS, CURVED BEAM.	B2	319 UC 97	CURVED BEAM.	B3	319 UD 48	CURVED BEAM WHERE REQUIRED.	B6	219 UD 31	RB1/RB4 - 10mm FIN & 20mm BOLTS.	RB1	600 WD 150 GRADE 300.	REFER TO DETAILS FOR PRE-ANCHORING. REFER TO ARCHITECT'S DMS FOR LOCATIONS OF CRANK.	RB2	600 WD 150.	BOTTOM PLANKS TO ALIGN WITH RB1 DETAILS SHOWN TO RB1.	RB3	610 UD 113	END CONNECTION SIMILAR TO SECT. 2 OF 6, SBL.	RB4	319 UD 32	REFER TO DETAILS.	BR1	714 x 6.0 CHS, GRADE 300.	REFER TO DETAILS.	BR2	20mm 65 ROD	BR2 PASSES THROUGH HOLES IN PURLINS.	P1	200 PFC	REFER TO DETAILS, CURVED TO SUIT GUTTER PROFILE WHERE REQUIRED.	P2	143 PFC	RESTRAINING PURLINS IN OVERHANG.	TB1	219 x 6.2 CHS, GRADE 300.	REFER TO DETAILS.	FB	75 x 15 x 5 L.	FLY BRACING, REFER TO DETAIL, SA DMS, SBL.	CL	10 x 10 x 10 L.	CL - 10 CAP & 20mm BOLTS, FIN EDGE TOSH & SPACING = 100mm.	T1	10 x 10 x 10 L.	10 x 10 x 10 L. - 20mm BOLTS, FIN EDGE TOSH & SPACING = 100mm.	T2	10 x 10 x 10 L.	10mm & 5 CPM 2010.	EB1	100 PFC, 200 UC 29	100 PFC BRACKET, 200 BOLTS, STRAIGHT MEMBER.	EB2	100 PFC.	10 FIN & 20mm BOLTS, STRAIGHT MEMBER.	MARK	SIZE	REMARKS / END CONNECTIONS.	D1	273 x 6.4 CHS	TAPERED ENDS - REFER TO DETAILS.	D2	273 x 6.4 CHS	TAPERED ENDS - REFER TO DETAILS.	D3	273 x 6.4 CHS	TAPERED ENDS - REFER TO DETAILS.	D4	273 x 6.4 CHS	TAPERED ENDS - REFER TO DETAILS.	D5	273 x 6.4 CHS	TAPERED ENDS - REFER TO DETAILS.	D6	273 x 6.4 CHS	TAPERED ENDS - REFER TO DETAILS.	D7	219 x 6.4 CHS	TAPERED ENDS - REFER TO DETAILS.
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D1	273 x 6.4 CHS	TAPERED ENDS - REFER TO DETAILS.																																																																																				
D2	273 x 6.4 CHS	TAPERED ENDS - REFER TO DETAILS.																																																																																				
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D4	273 x 6.4 CHS	TAPERED ENDS - REFER TO DETAILS.																																																																																				
D5	273 x 6.4 CHS	TAPERED ENDS - REFER TO DETAILS.																																																																																				
D6	273 x 6.4 CHS	TAPERED ENDS - REFER TO DETAILS.																																																																																				
D7	219 x 6.4 CHS	TAPERED ENDS - REFER TO DETAILS.																																																																																				

Methodology

Project: The Ribbon
 Job No: TBC
 Date – Revision: 12/05/2014 – Rev 1
 Task: Demolition IMAX

Developed By: Aaron Gatt Revision By: Richard Strong Approved By: Jason Simcocks

Step	Description	Diagram
MD - 2	<p>Main Demolition (Level 7):</p> <ul style="list-style-type: none"> 5 – 12t excavators (pending load rating of slabs) will be lifted onto the suspended slab (Red Shading). Machines to break slab away from the middle and head towards the stair cases on the West and East. Walls in green to be demolished progressively. Rubble will fall to the level below during this process. Stairs to be demolished from top down as the excavators track / ramp down to the next level. Wall shown in orange to be demolished using crushing jaw to be fitted onto crane. (detailed method shown in <i>Jaw Crushing Method</i>) Outside walls shown in red are to be cut into 4x4m blocks and lifted down (Detailed method shown in <i>Cut and Lift Method</i>) 	 <p>Western Distributor Fwy - North (Harbour Bridge) & East (CBD) Bound</p> <p>LEVEL 7 CONCRETE PROFILE PLAN</p> <p>Western Distributor Fwy – West Bound</p> <p>AS BUILT</p> <p>NOTES:</p> <ol style="list-style-type: none"> 1. REFER TO ORIG. SET FOR GENERAL NOTES. 2. CONCRETE STRENGTH SHALL BE 32 MPa U.M.C. 3. REFER TO ARCHITECTS DRAWINGS FOR EXACT SIZE AND LOCATION OF PENETRATIONS. 4. REFER TO ARCHITECTS DRAWINGS FOR EXACT SIZE AND LOCATION OF PENETRATIONS. 5. REFER TO DRUG. SET & SET FOR STANDARD DETAILS.

Step	Description	Diagram
CL - 1	<p><u>Cut and Lift Method:</u></p> <ul style="list-style-type: none"> Outside Walls to be cut into segments of 4m x 4m (Assumed 250mm thick) minimum. (Block sizes may be larger depending on capacity of crane at each radius.) Each segments will have 2 x 100-150mm cores drilled through the sides to allow for the chains/slugs to pass through. Once the cores are made and the crane is fixed to the segment and taking the load, the perimeter will be cut to release the segments. Once cut the crane will lift and lower the segment to a processing area. 	 <p>The diagram shows a large gray rectangular area representing a wall segment. A smaller dashed red rectangle is centered within it, representing the segment to be cut and lifted. The dashed rectangle is labeled with dimensions of 4000mm by 4000mm. Two red circles are positioned horizontally within the dashed rectangle, representing lifting points. A callout box points to these circles with the text: 'Lifting points at 2/3 of the total height of each section'.</p>

Methodology

Project:

The Ribbon

Job No:

TBC

Date – Revision:

12/05/2014 – Rev 1

Task:

Demolition IMAX

Developed By:

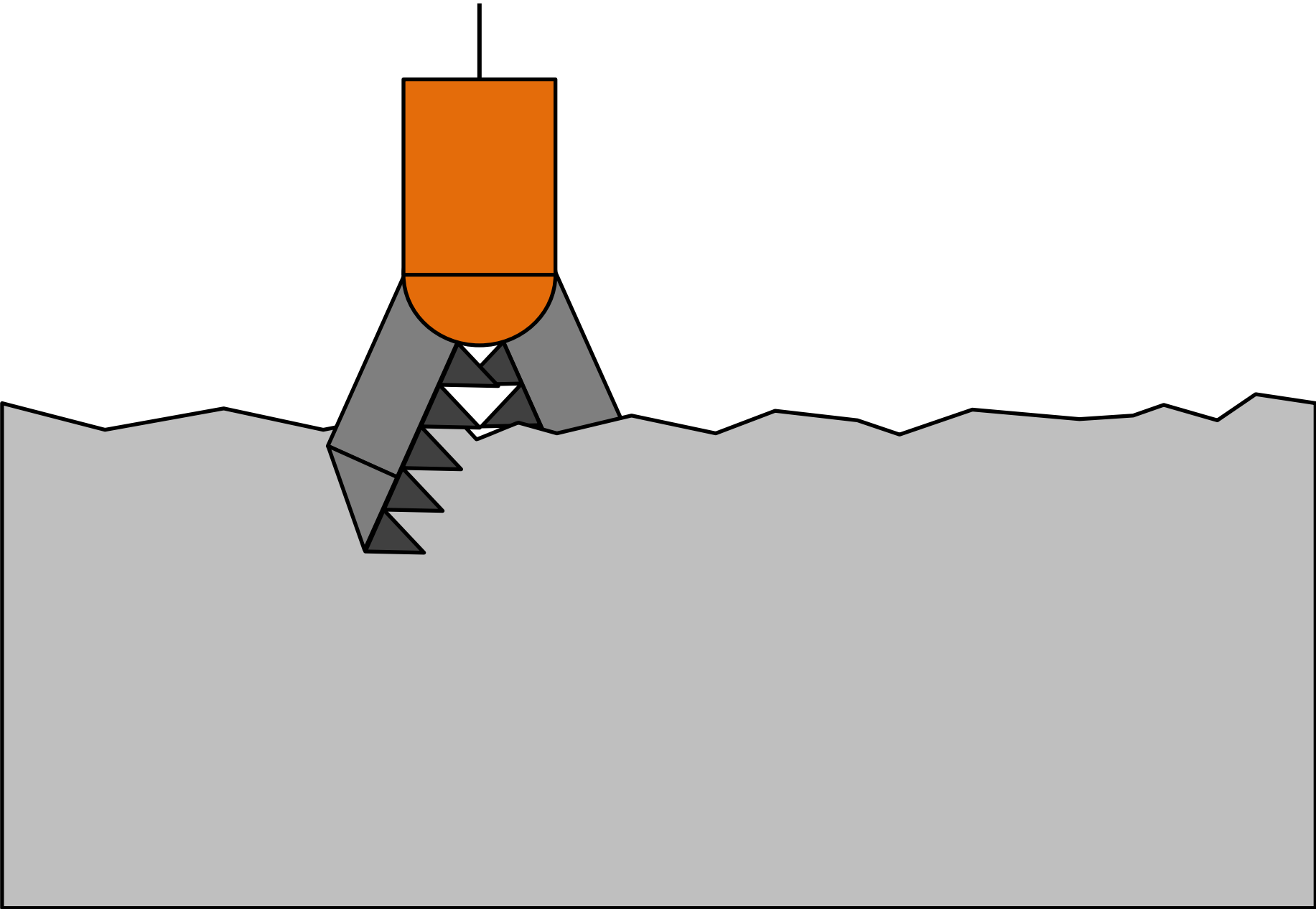
Aaron Gatt

Revision By:

Richard Strong

Approved By:

Jason Simcocks

Step	Description	Diagram
JC - 1	<p><u>Jaw Crushing Method:</u></p> <ul style="list-style-type: none"> Jaw Crusher to be lowered by crane and fit over concrete walls. Jaw crusher to munch wall progressively. Hydraulics of crusher to be operated by hydraulics (from 20t excavator) from ground level. 	 <p>The diagram illustrates the jaw crushing method. It shows a large orange rectangular jaw crusher being lowered by a crane (indicated by a vertical line) into a demolition site. The crusher is positioned over a grey, jagged concrete wall. The crusher's jaw is shown in a position to crush the wall. The background is a light grey area representing the ground or other structures.</p>

Methodology

Project: The Ribbon

Job No: TBC

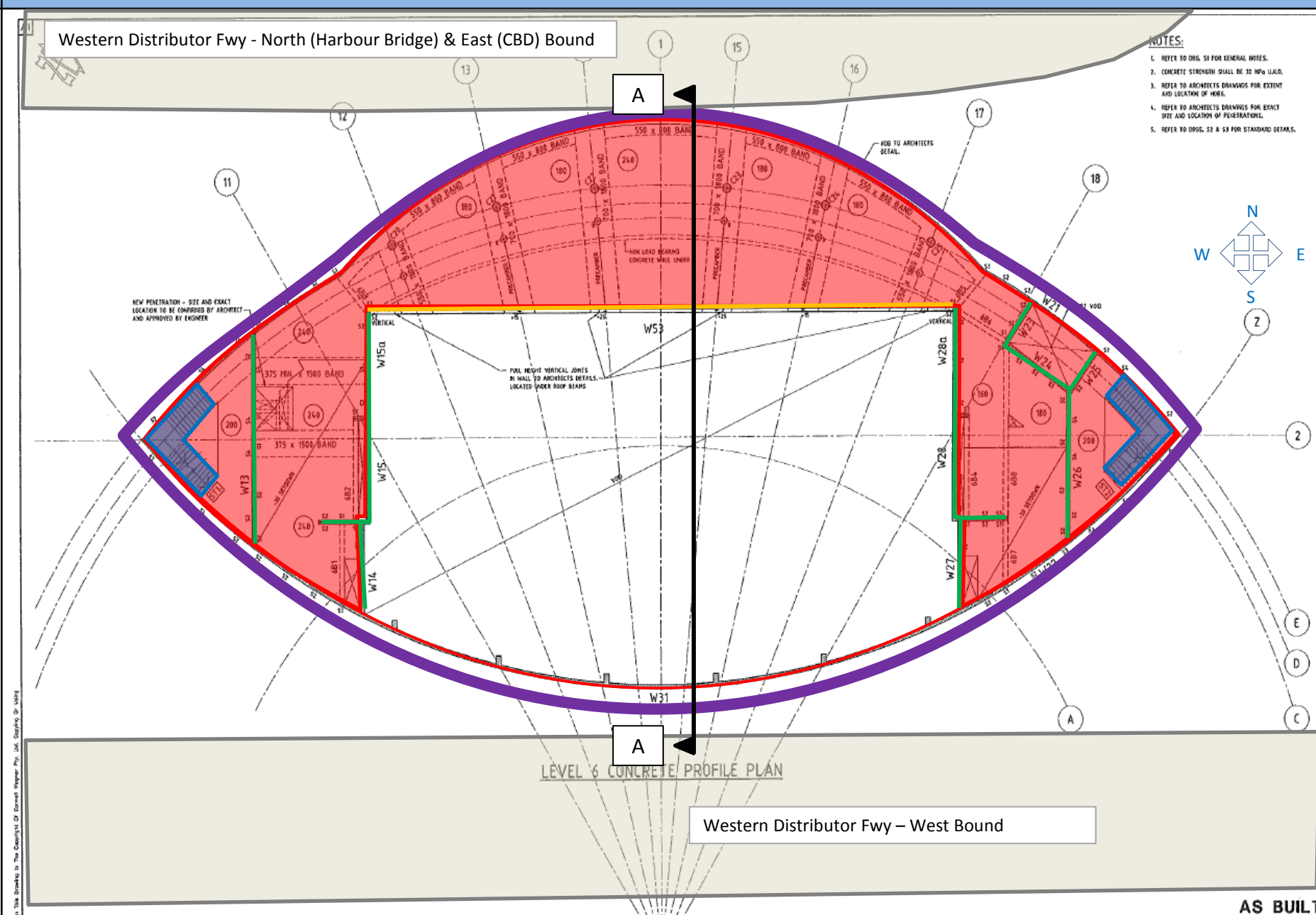
Date – Revision: 12/05/2014 – Rev 1

Developed By: Aaron Gatt

Revision By: Richard Strong

Approved By: Jason Simcocks

Task: Demolition IMAX

Step	Description	Diagram
MD - 3	<p>Main Demolition (Level 6):</p> <ul style="list-style-type: none"> Method as per step MD-2 	 <p>Western Distributor Fwy - North (Harbour Bridge) & East (CBD) Bound</p> <p>LEVEL 6 CONCRETE PROFILE PLAN</p> <p>Western Distributor Fwy – West Bound</p> <p>AS BUILT</p> <p>NOTES:</p> <ol style="list-style-type: none"> 1. REFER TO DRG. S1 FOR GENERAL NOTES. 2. CONCRETE STRENGTH SHALL BE 30 MPa UNLESS OTHERWISE SPECIFIED. 3. REFER TO ARCHITECT'S DRAWINGS FOR EXISTING AND LOCATION OF HOLES. 4. REFER TO ARCHITECT'S DRAWINGS FOR EXISTING AND LOCATION OF PENETRATIONS. 5. REFER TO DRG. S2 & S3 FOR STANDARD DETAILS.

Step	Description	Diagram
MD - 4	<p>Main Demolition (Level 5):</p> <ul style="list-style-type: none"> Method as per step MD-2 	<p>Western Distributor Fwy - North (Harbour Bridge) & East (CBD) Bound</p> <p>LEVEL 5 CONCRETE PROFILE PLAN</p> <p>Western Distributor Fwy - West Bound</p> <p>AS BUILT</p> <p>NOTES:</p> <ol style="list-style-type: none"> 1. REFER TO Dwg. 51 FOR GENERAL NOTES. 2. SLAB THICKNESS SHALL BE 150 MM. 3. CONCRETE STRENGTH SHALL BE 32 MPa (4500 PSI). 4. REFER TO ARCHITECT'S DRAWINGS FOR EXACT SIZE AND LOCATION OF PENETRATIONS. 5. REFER TO ARCHITECT'S DRAWINGS FOR EXACT SIZE AND LOCATION OF PENETRATIONS. 6. REFER TO Dwg. 52 & 53 FOR STANDARD DETAILS. 7. REFER TO Dwg. 54 FOR WALL SCHEDULE AND BLOCKOUT DETAILS. 8. REFER TO Dwg. 55 FOR BEAM SCHEDULE. 9. STAIRS NUMBERED THIS [STI].

Methodology

Project: The Ribbon

Job No: TBC

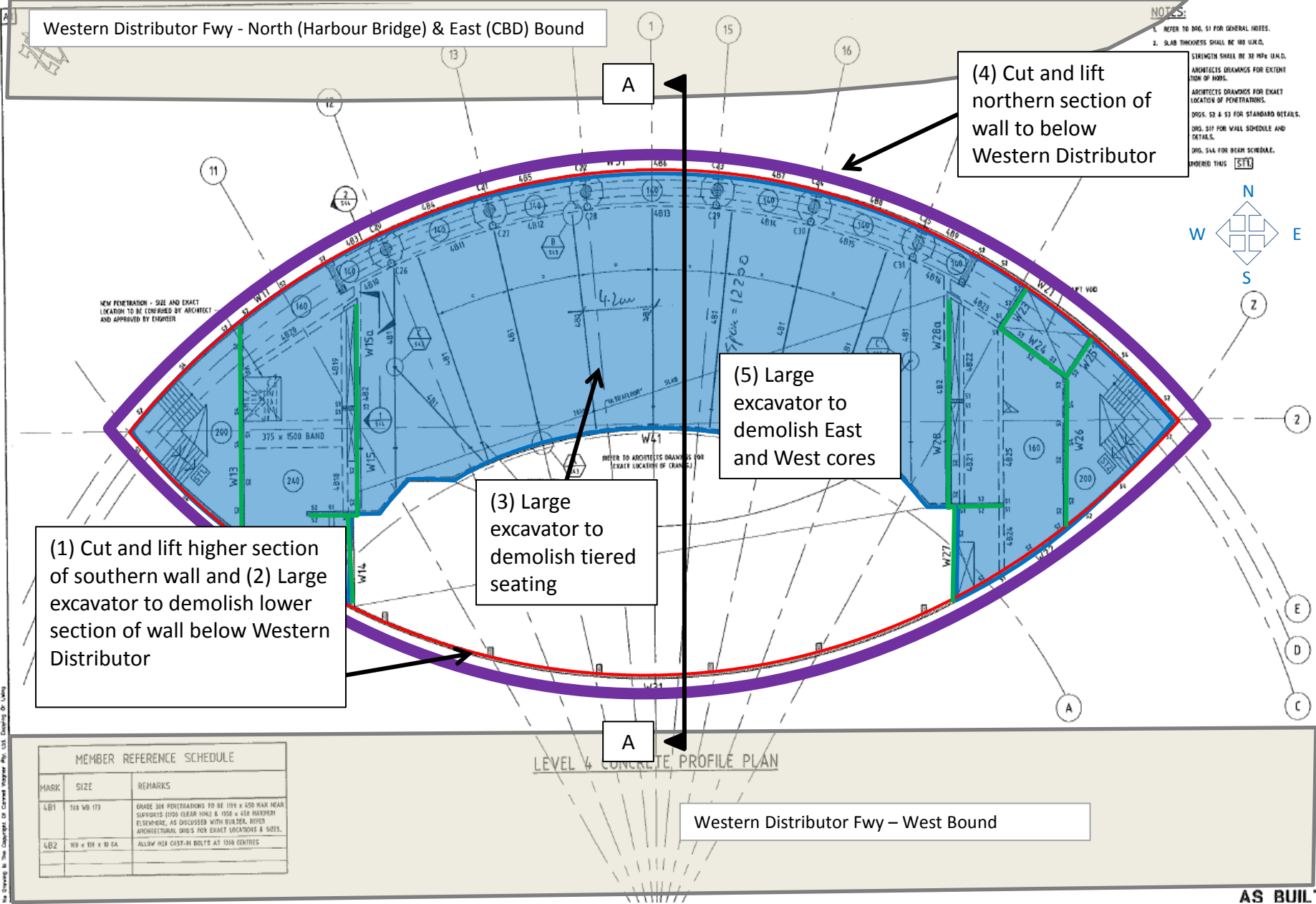
Date – Revision: 12/05/2014 – Rev 1

Developed By: Aaron Gatt

Revision By: Richard Strong

Approved By: Jason Simcocks

Task: Demolition IMAX

Step	Description	Diagram									
MD - 5	<p>Main Demolition (Level 4):</p> <ul style="list-style-type: none"> Southern wall to be removed by cut and lift sequence (Detailed method shown in <i>Cut and Lift Method</i>). The southern scaffold will then be dismantled Large excavators will then demolish bottom portion of southern wall Large excavators to demolish the tiered seating arrangement Northern Wall to be cut and lifted out (Detailed method shown in <i>Cut and Lift Method</i>) and remove scaffold Large excavators to demolish the Eastern and Western cores 	 <p>Western Distributor Fwy - North (Harbour Bridge) & East (CBD) Bound</p> <p>(1) Cut and lift higher section of southern wall and (2) Large excavator to demolish lower section of wall below Western Distributor</p> <p>(3) Large excavator to demolish tiered seating</p> <p>(4) Cut and lift northern section of wall to below Western Distributor</p> <p>(5) Large excavator to demolish East and West cores</p> <p>LEVEL 4 CONCRETE PROFILE PLAN</p> <p>Western Distributor Fwy – West Bound</p> <p>AS BUILT</p> <p>MEMBER REFERENCE SCHEDULE</p> <table border="1"> <thead> <tr> <th>MARK</th> <th>SIZE</th> <th>REMARKS</th> </tr> </thead> <tbody> <tr> <td>LB1</td> <td>119 x 173</td> <td>GRADE 304 PENETRATIONS TO BE 119 x 450 MAX NEAR SUPPORTS (1000 CLEAR HOLE) & 1050 x 450 MAXIMUM ELSEWHERE, AS DISCUSSED WITH BUILDER. REPLY ARCHITECTURAL DROPS FOR EXACT LOCATIONS & SIZES.</td> </tr> <tr> <td>LB2</td> <td>160 x 100 x 10 GA.</td> <td>ALLOW HIER CAST-IN BOLTS AT 1500 CENTRES</td> </tr> </tbody> </table> <p>NOTES:</p> <ol style="list-style-type: none"> REFER TO DRG. S1 FOR GENERAL NOTES. SLAB THICKNESS SHALL BE 180 U/LD. STRENGTH SHALL BE 30 MPa U/LD. ARCHITECTS DRAWINGS FOR EXACT LOCATION OF PENETRATIONS. ARCHITECTS DRAWINGS FOR EXACT LOCATION OF PENETRATIONS. DROPS, S2 & S3 FOR STANDARD DETAILS. DRO. S17 FOR WALL SCHEDULE AND DETAILS. DRO. S46 FOR BEAM SCHEDULE. ADOPTED THIS [STL] <p>W E S N</p>	MARK	SIZE	REMARKS	LB1	119 x 173	GRADE 304 PENETRATIONS TO BE 119 x 450 MAX NEAR SUPPORTS (1000 CLEAR HOLE) & 1050 x 450 MAXIMUM ELSEWHERE, AS DISCUSSED WITH BUILDER. REPLY ARCHITECTURAL DROPS FOR EXACT LOCATIONS & SIZES.	LB2	160 x 100 x 10 GA.	ALLOW HIER CAST-IN BOLTS AT 1500 CENTRES
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LB2	160 x 100 x 10 GA.	ALLOW HIER CAST-IN BOLTS AT 1500 CENTRES									

Methodology

Project: The Ribbon

Job No: TBC

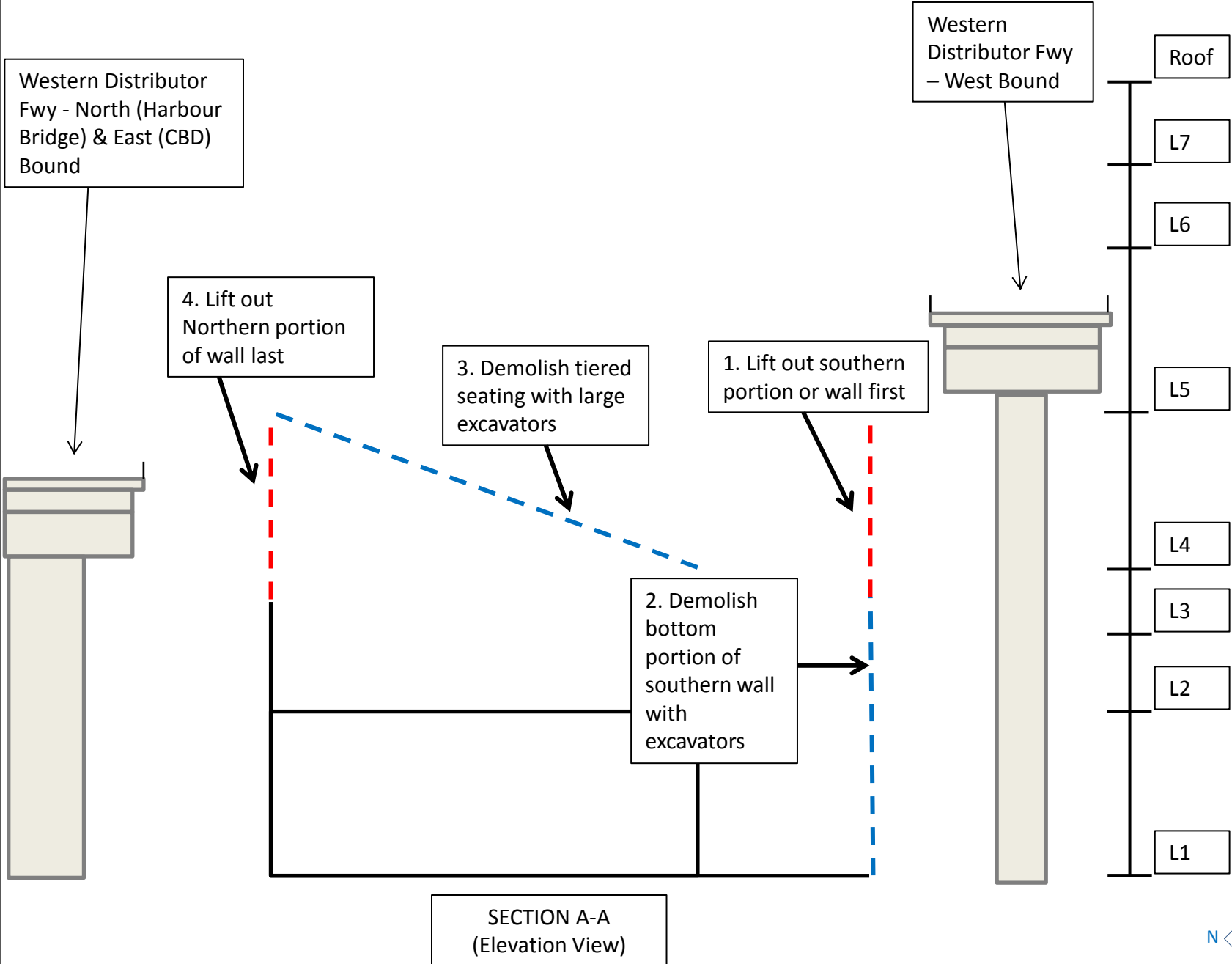
Date – Revision: 12/05/2014 – Rev 1

Developed By: Aaron Gatt

Revision By: Richard Strong

Approved By: Jason Simcocks

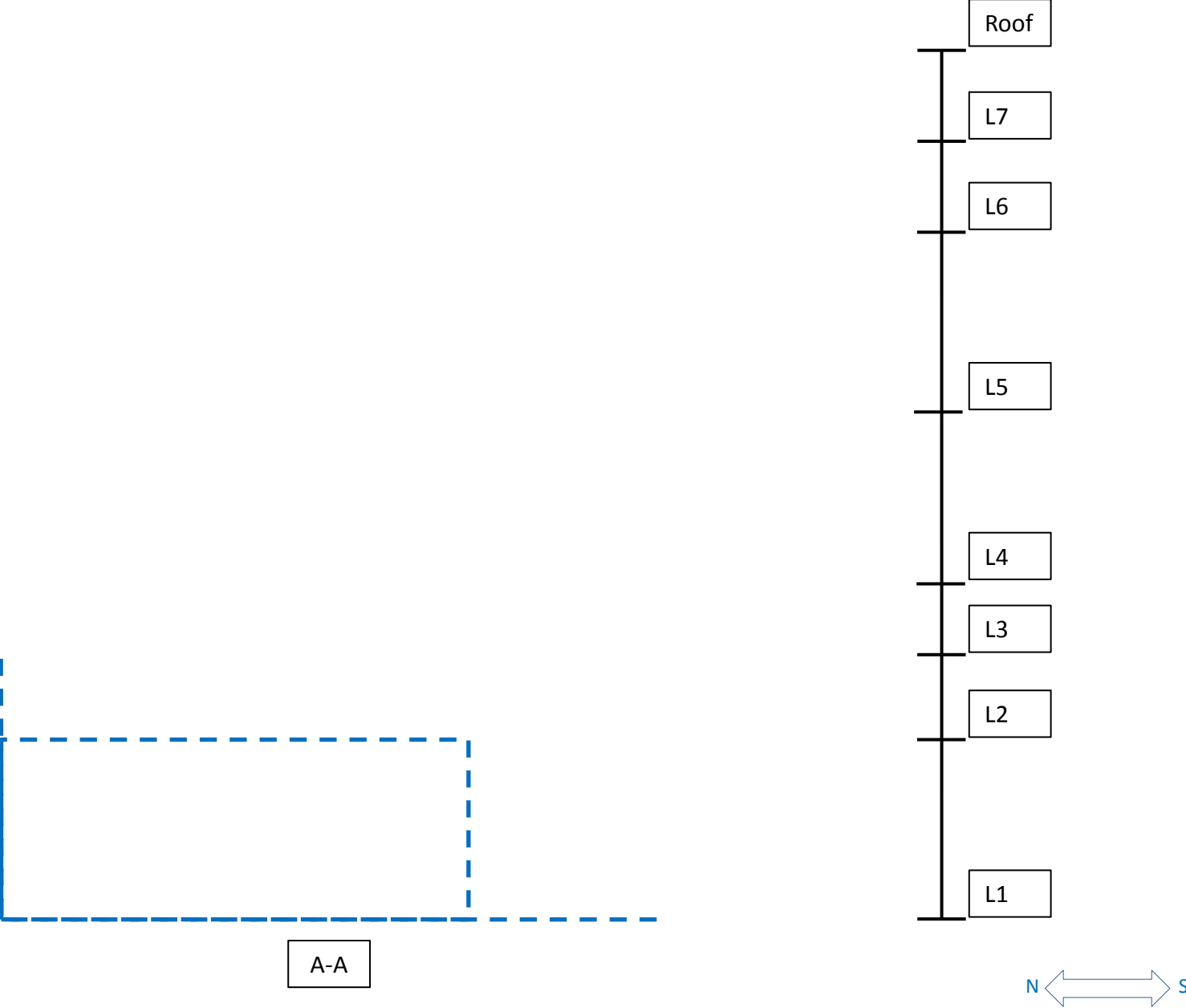
Task: Demolition IMAX

Step	Description	Diagram
MD - 5	<p>Main Demolition (Level 4):</p> <ul style="list-style-type: none"> Refer to previous slide for sequence 	 <p>Western Distributor Fwy - North (Harbour Bridge) & East (CBD) Bound</p> <p>4. Lift out Northern portion of wall last</p> <p>3. Demolish tiered seating with large excavators</p> <p>1. Lift out southern portion or wall first</p> <p>2. Demolish bottom portion of southern wall with excavators</p> <p>Western Distributor Fwy – West Bound</p> <p>Roof</p> <p>L7</p> <p>L6</p> <p>L5</p> <p>L4</p> <p>L3</p> <p>L2</p> <p>L1</p> <p>SECTION A-A (Elevation View)</p> <p>N ← → S</p>

Methodology

Project: The Ribbon
Job No: TBC
Date – Revision: 12/05/2014 – Rev 1
Task: Demolition IMAX

Developed By: Aaron Gatt **Revision By:** Richard Strong **Approved By:** Jason Simcocks

Step	Description	Diagram
MD - 6	<p><u>Main Demolition (Level 3 & 2):</u></p> <ul style="list-style-type: none"> Once the structure has been demolished to level 3 scaffold will be removed completely Working from South to North and top down 45t excavators using a combination of pulverises and hammers to demolish the structure to level 1 slab. The commencement of Level 3 & 2 demolition, will initiate the commencement of a staged demolition / civil handover. 	

Methodology

Project: The Ribbon
 Job No: TBC
 Date – Revision: 12/05/2014 – Rev 1
 Task: Demolition IMAX

Developed By: Aaron Gatt Revision By: Richard Strong Approved By: Jason Simcocks

Step	Description	Diagram																																																
MD - 7	<p>Main Demolition (Level 1 SOG):</p> <ul style="list-style-type: none">As the demolition team finishes the final stages of demolition (L3 & L2), the civil team will be handed over level 1 slab on ground progressively.Subject to geotechnical suitability, slab will be utilised as piling platform with pockets created locally for piling <p>NOTE: Remaining sequence must be read in conjunction with <i>Civil Methodology</i></p> <ul style="list-style-type: none">Proceeding all piling works, Level 1 slab will be demolished using 45t excavators heading West to East.The excavators will pull up the slab using hammers, buckets and ripping attachments.Section show in red will be carefully demolished as shown in <i>Hay Lackey Method</i>	<p>REINFORCEMENT TABLE</p> <table><thead><tr><th>MARK</th><th>REINFORCEMENT</th></tr></thead><tbody><tr><td>A</td><td>Y12-300</td></tr><tr><td>B</td><td>Y12-250</td></tr><tr><td>C</td><td>Y12-200</td></tr><tr><td>D</td><td>Y12-175</td></tr><tr><td>E</td><td>Y12-150</td></tr><tr><td>F</td><td>Y16-350</td></tr><tr><td>G</td><td>Y16-300</td></tr><tr><td>H</td><td>Y16-250</td></tr><tr><td>I</td><td>Y16-200</td></tr><tr><td>J</td><td>Y16-175</td></tr><tr><td>K</td><td>Y16-150</td></tr><tr><td>L</td><td>Y16-100</td></tr><tr><td>M</td><td>Y20-300</td></tr><tr><td>N</td><td>Y20-250</td></tr><tr><td>P</td><td>Y20-200</td></tr><tr><td>R</td><td>Y20-175</td></tr><tr><td>S</td><td>Y20-150</td></tr><tr><td>T</td><td>Y20-100</td></tr><tr><td>V</td><td>Y24-300</td></tr><tr><td>W</td><td>Y24-250</td></tr><tr><td>X</td><td>Y24-200</td></tr><tr><td>Y</td><td>Y24-150</td></tr><tr><td>Z</td><td>Y24-100</td></tr></tbody></table> <p>LEVEL 1 BOTTOM REINFORCEMENT PLAN</p> <p>AS BUILT</p>	MARK	REINFORCEMENT	A	Y12-300	B	Y12-250	C	Y12-200	D	Y12-175	E	Y12-150	F	Y16-350	G	Y16-300	H	Y16-250	I	Y16-200	J	Y16-175	K	Y16-150	L	Y16-100	M	Y20-300	N	Y20-250	P	Y20-200	R	Y20-175	S	Y20-150	T	Y20-100	V	Y24-300	W	Y24-250	X	Y24-200	Y	Y24-150	Z	Y24-100
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Y	Y24-150																																																	
Z	Y24-100																																																	

Step

MD - 8

Description

Main Demolition (Footings):

- Footings to be removed (excluding piles) will be demolished using 45t excavators heading West to East.
- The excavators will demolish the footings using hammers, buckets and ripping attachments.

Diagram

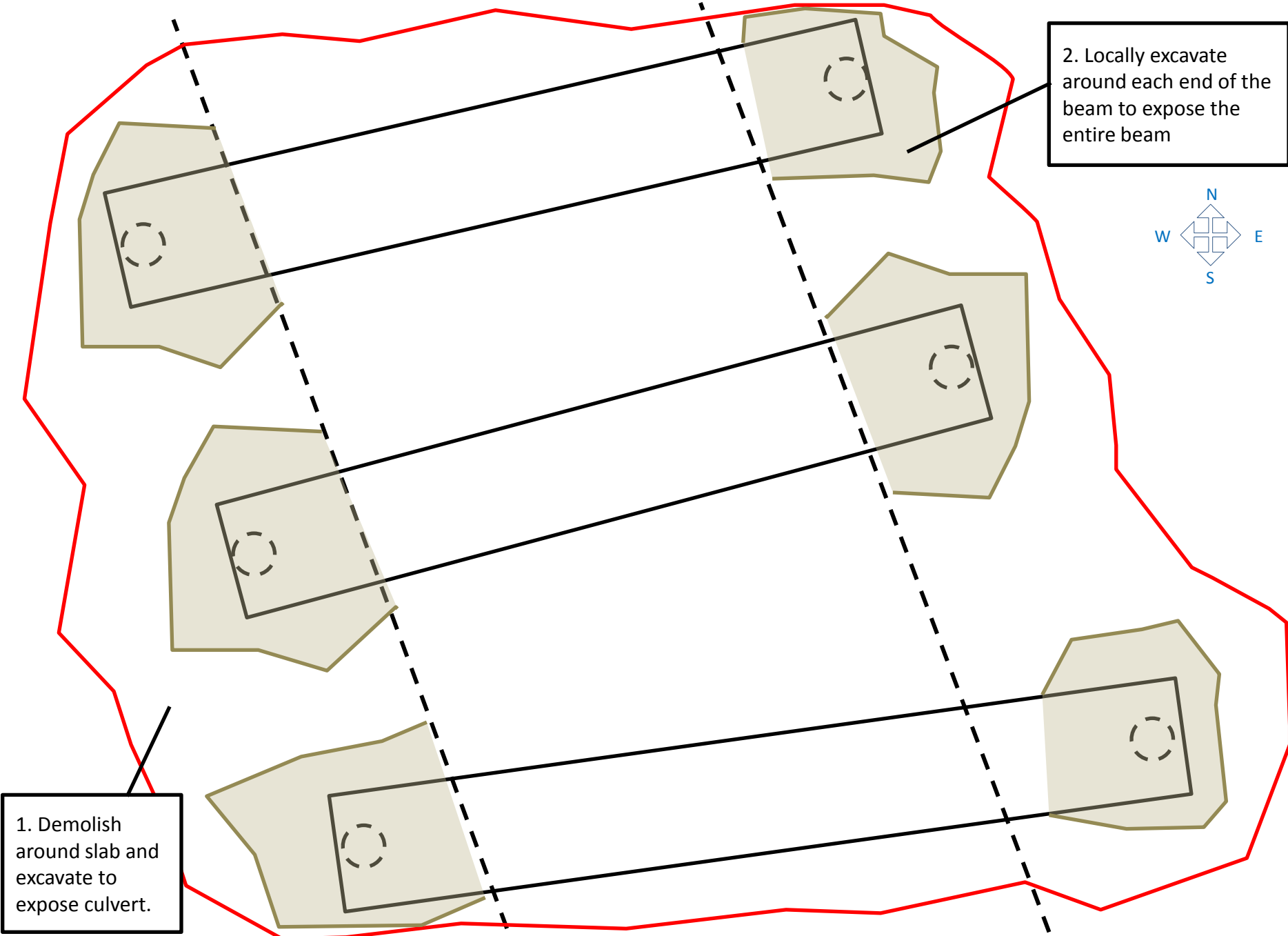
TYPE	SIZE	REINFORCEMENT	REMARKS
FB1	600 W x 600 DEEP	Y10-400 TIES 4Y20 B 4Y20 T	FBI ADJACENT TO DUMP WAREHOUSE PIT TO BE 800 DEEP SEE SECT 2 ON DNG. 510
FB2	600 W x 600 DEEP	4Y20 B 4Y20 T	
FB3	600 W x 600 DEEP	Y10-400 TIES 4Y20 B 4Y20 T	
FB4	600 W x 300 DEEP	RW-200 TIES 4Y20 B 4Y20 T	
FB5	600 W x 500 DEEP	RW-200 TIES 4Y20 B 4Y20 T	

TYPE	LOAD (TONNES)	PILE Ø	PILE CAP SIZE	REINFORCEMENT	REMARKS
P1	160	600	1000x1000x1000 DEEP	Y10-200 B Y10-200 T	
P2	200	600	1000x1000x1000 DEEP	Y10-200 B Y10-200 T	
P3	270	600	1000x1000x1000 DEEP	Y10-200 B Y10-200 T	
P4	350	2 x 600	2500x1000x1000 DEEP	P10 B P10 T	
P5	500	900	2500x1000x1000 DEEP	P10 B P10 T	
P6	500	2 x 150	2500x1000x1000 DEEP	P10 B P10 T	
P7	200	250		Y10-200 B Y10-200 T	PILE SIZED FOR CASE OF CONSTRUCTION IN WATER

Methodology

Project: The Ribbon
Job No: TBC
Date – Revision: 12/05/2014 – Rev 1
Task: Demolition IMAX

Developed By: Aaron Gatt **Revision By:** Richard Strong **Approved By:** Jason Simcocks

Step	Description	Diagram
HLM1: 1-3	<p>Hay Lackey Method 1:</p> <ul style="list-style-type: none"> After proceeding as far as practical with civil works, demolish remaining 250mm slab around the Hay Lackey Culvert leaving the beams in tact. Locally Excavate carefully around the sides of the beams to expose the piles underneath and the top of the Hay Lackey Culvert Allow surveyor to pick up the location of the Hay Lackey Culvert 	

Methodology

Project: The Ribbon

Job No: TBC

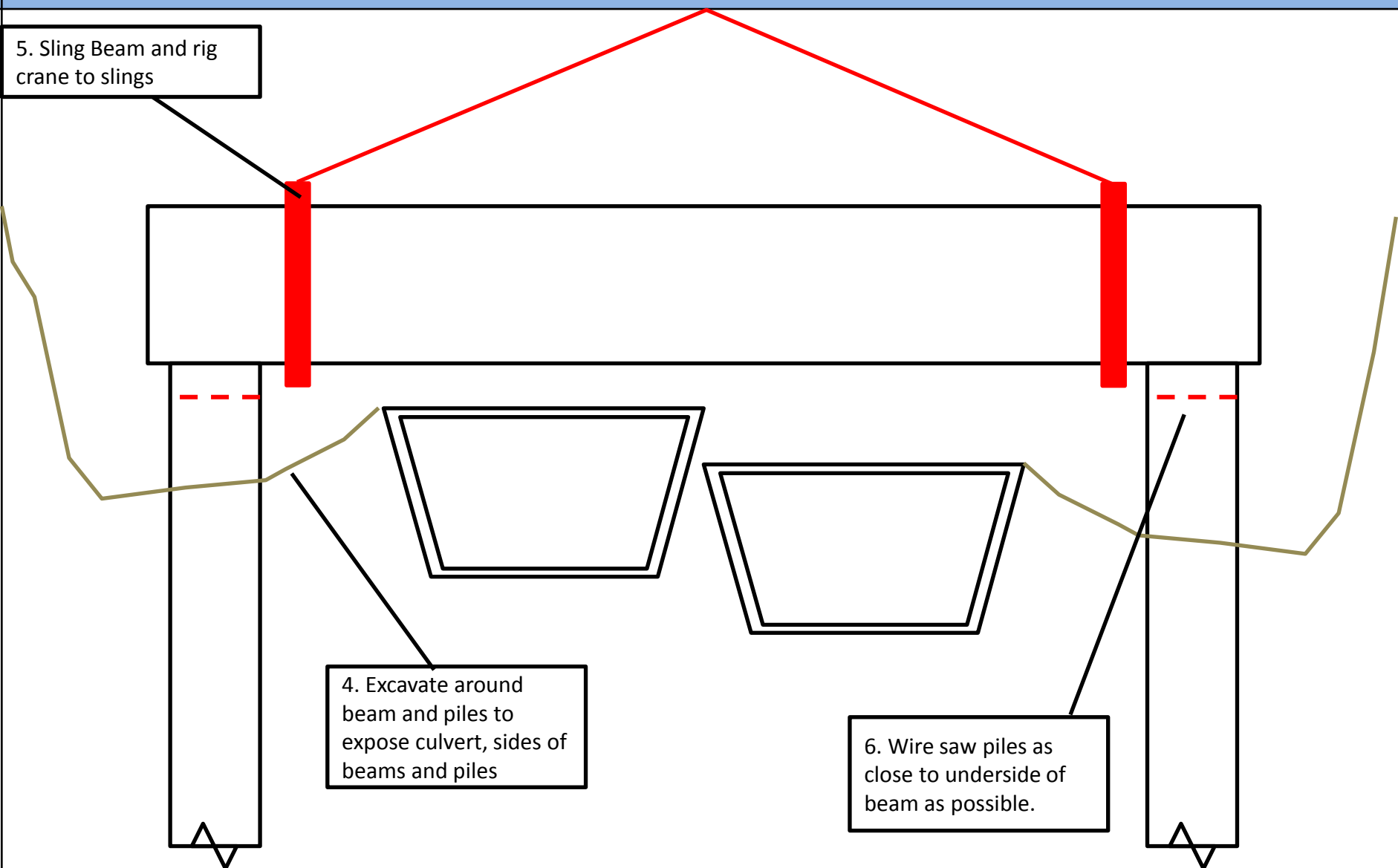
Date – Revision: 12/05/2014 – Rev 1

Developed By: Aaron Gatt

Revision By: Richard Strong

Approved By: Jason Simcocks

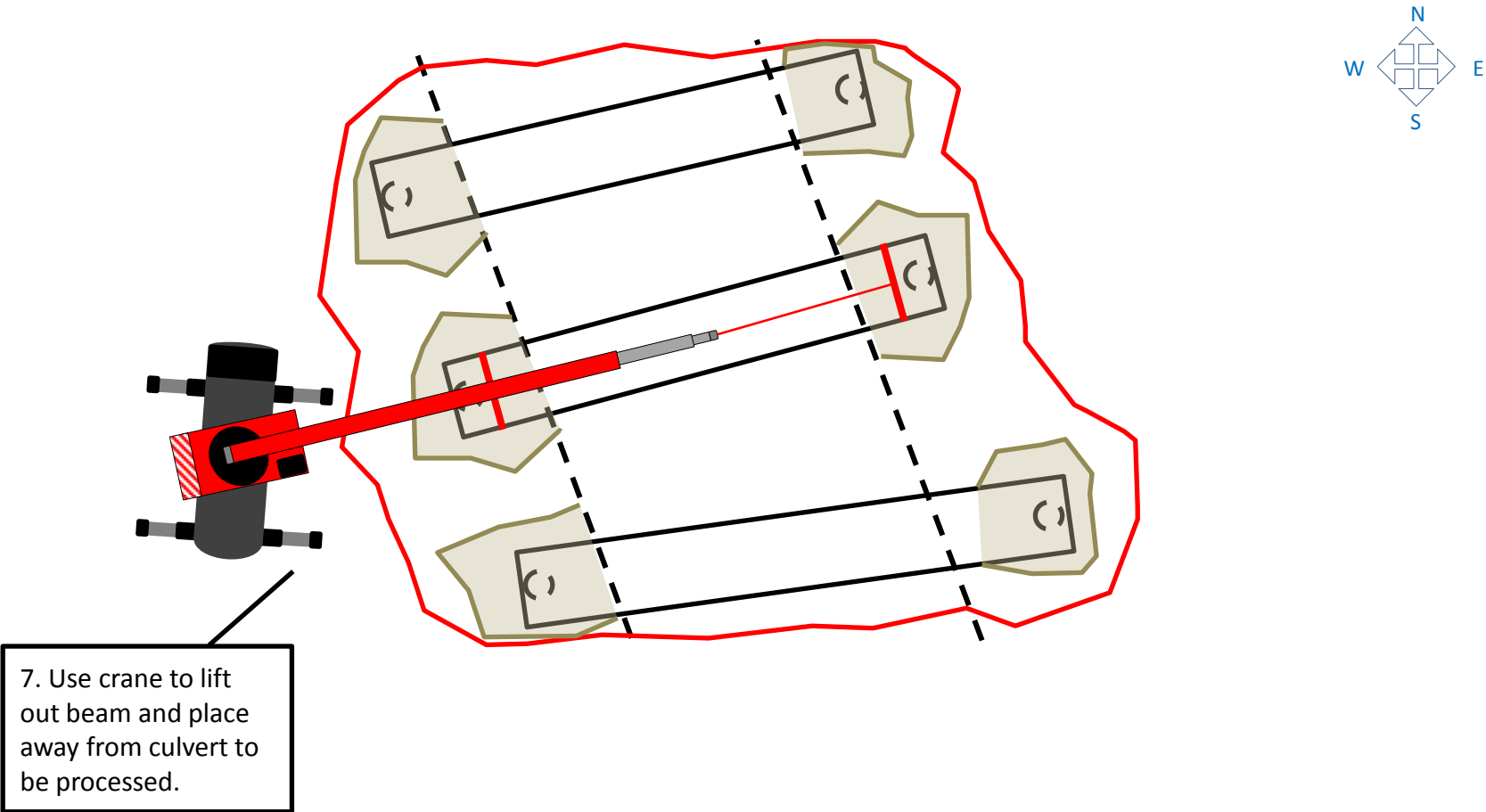
Task: Demolition IMAX

Step	Description	Diagram
HLM1: 4-6	<p><u>Hay Lackey Method 1:</u></p> <ul style="list-style-type: none"> Excavate under the beams to expose the beam entirely at each end of the beam Sling the beam to crane ready for lifting Use wire saw to cut through the existing pile and lift out beam. 	 <p>5. Sling Beam and rig crane to slings</p> <p>4. Excavate around beam and piles to expose culvert, sides of beams and piles</p> <p>6. Wire saw piles as close to underside of beam as possible.</p>

Developed By: Aaron Gatt

Revision By: Richard Strong

Approved By: Jason Simcocks

Step	Description	Diagram
HLM1: 7	<p><u>Hay Lackey Method 1:</u></p> <ul style="list-style-type: none"> Lift out beams to be processed by machines. 	

Methodology

Project: The Ribbon

Job No: TBC

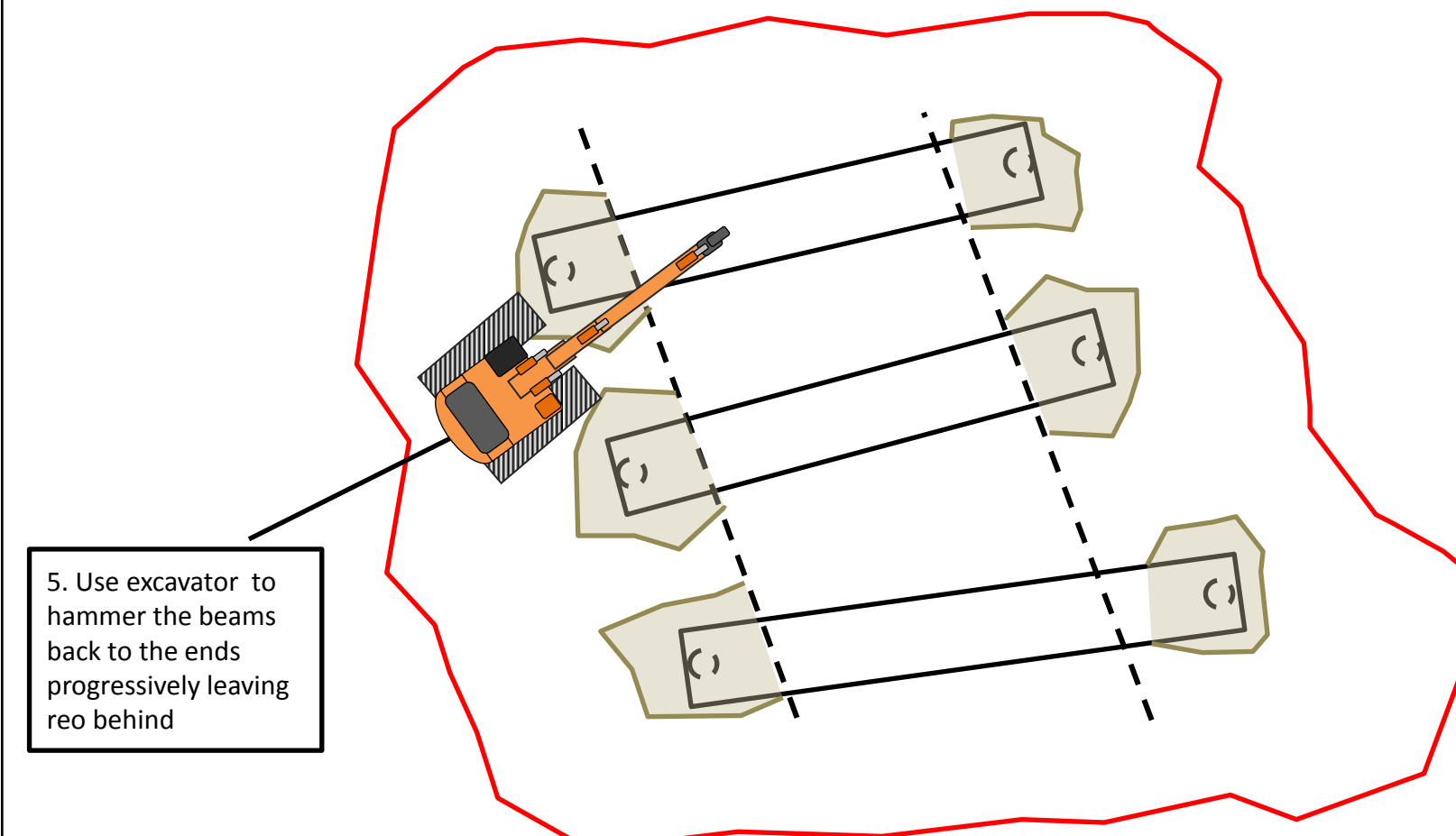
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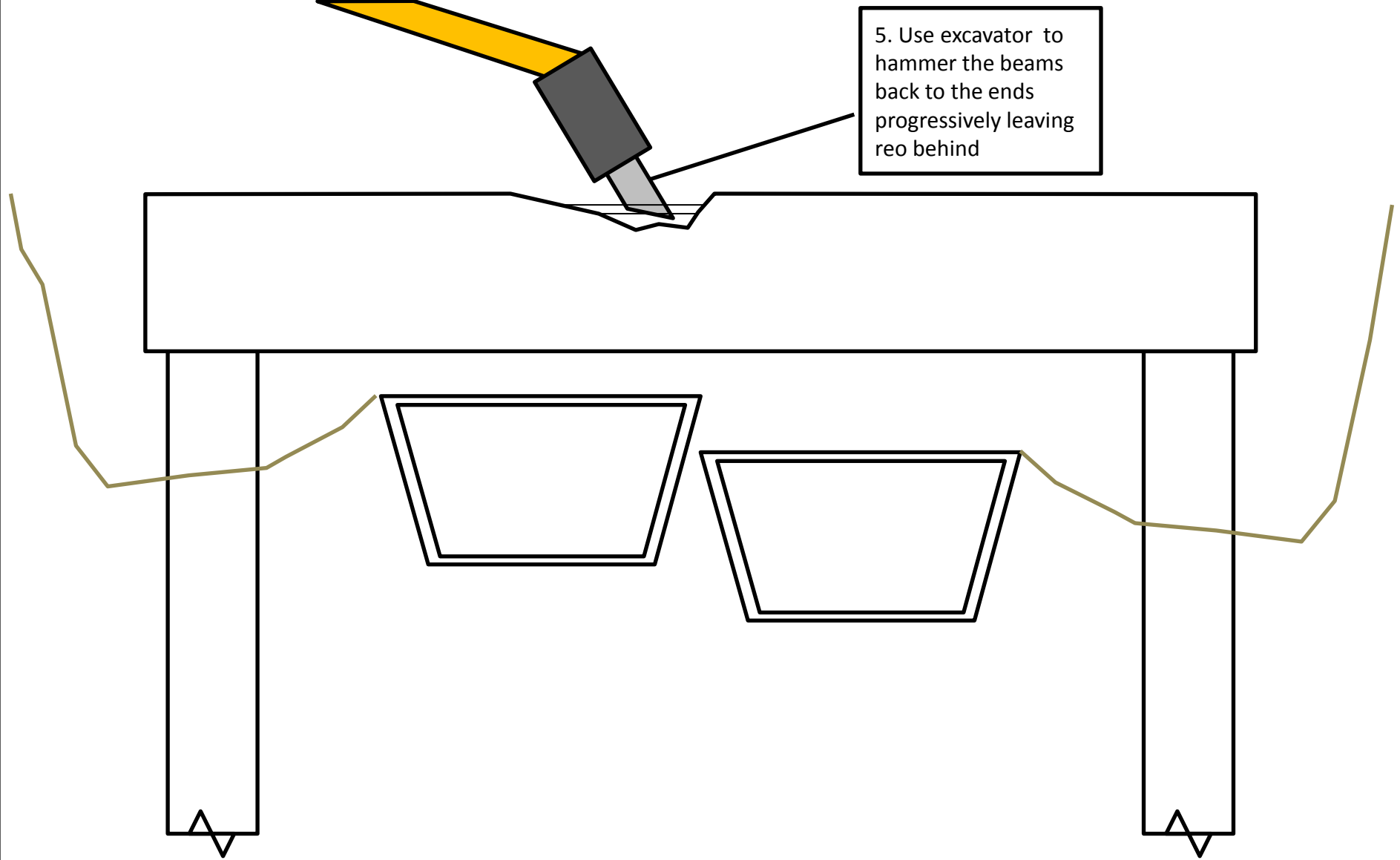
Task: Demolition IMAX

Step	Description	Diagram
HLM2: 5	<p><u>Hay Lackey Method 2:</u></p> <ol style="list-style-type: none"> Demolish 250mm slab around the Hay Lackey Culvert leaving the beams in tact. Locally Excavate carefully around the sides of the beams to expose the piles underneath and the top of the Hay Lackey Culvert Allow Surveyor to pick up the location of the Hay Lackey Culvert Excavate under the beams to expose the beam entirely at each end of the beam Use Excavator with hammer attachment to hammer the beam from the middle working towards the ends progressively leaving the reinforcement in tact Break back the ends of the beams by hammering to the pile Cut out the reinforcement using oxy/LPG sets 	

Methodology

Project: The Ribbon
Job No: TBC
Date – Revision: 12/05/2014 – Rev 1
Task: Demolition IMAX

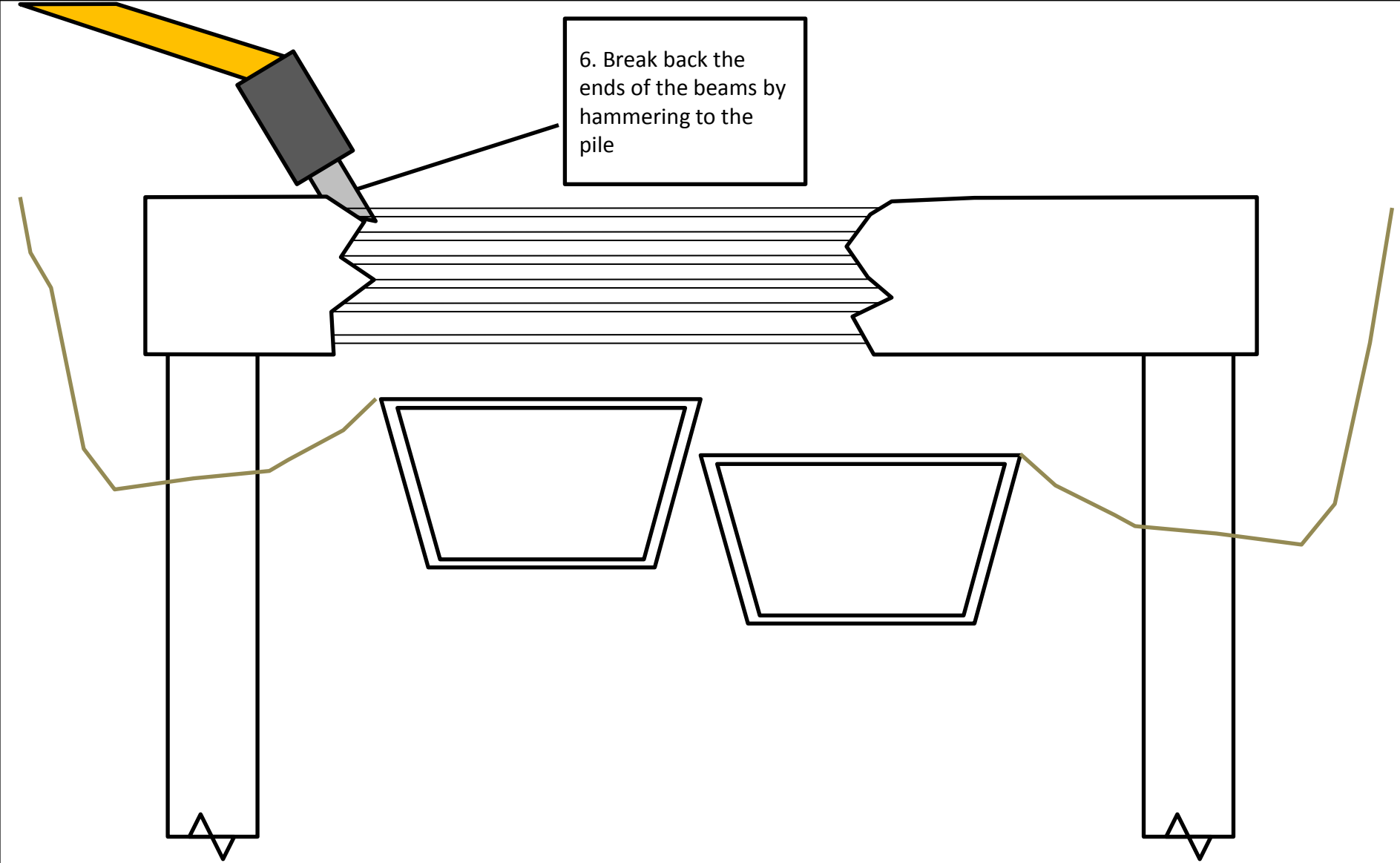
Developed By: Aaron Gatt **Revision By:** Richard Strong **Approved By:** Jason Simcocks

Step	Description	Diagram
HLM2: 1-5	<p><u>Hay Lackey Method 2:</u></p> <ol style="list-style-type: none"> Demolish 250mm slab around the Hay Lackey Culvert leaving the beams in tact. Locally Excavate carefully around the sides of the beams to expose the piles underneath and the top of the Hay Lackey Culvert Allow Surveyor to pick up the location of the Hay Lackey Culvert Excavate under the beams to expose the beam entirely at each end of the beam Use Excavator with hammer attachment to hammer the beam from the middle working towards the ends progressively leaving the reinforcement in tact 	

Methodology

Project: The Ribbon
Job No: TBC
Date – Revision: 12/05/2014 – Rev 1
Task: Demolition IMAX

Developed By: Aaron Gatt **Revision By:** Richard Strong **Approved By:** Jason Simcocks

Step	Description	Diagram
HLM2: 6	<p><u>Hay Lackey Method 2:</u></p> <p>6. Break back the ends of the beams by hammering to the pile</p>	

Methodology

Project:

The Ribbon

Job No:

TBC

Date – Revision:

12/05/2014 – Rev 1

Task:

Demolition IMAX

Developed By:

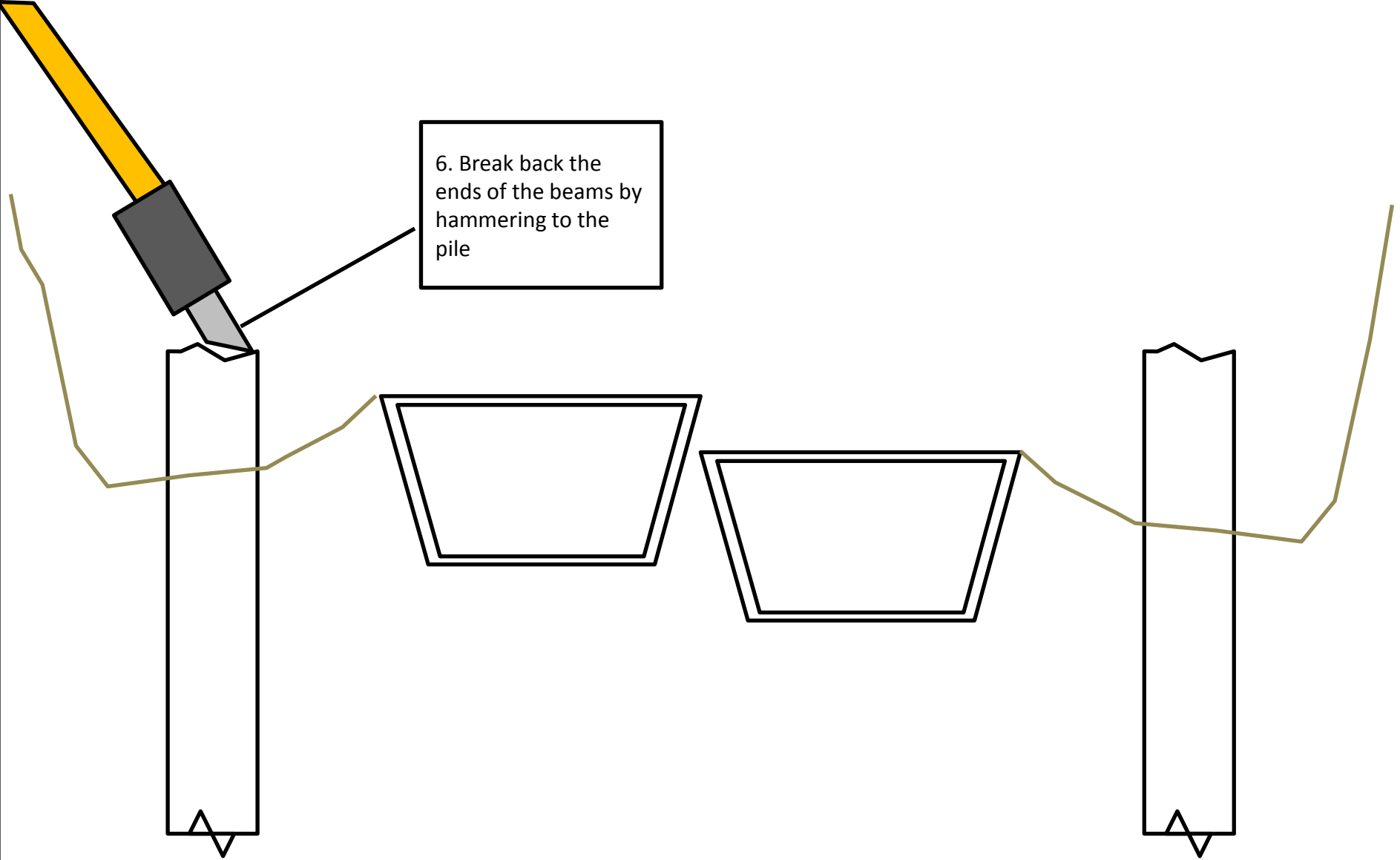
Aaron Gatt

Revision By:

Richard Strong

Approved By:

Jason Simcocks

Step	Description	Diagram
HLM2: 7	<p><u>Hay Lackey Method 2:</u></p> <p>7. Cut out the reinforcement using oxy/LPG sets</p>	

Quality Management Plan



Delta Pty Limited ABN: 67 007 069 794

**Head Office: 83 Bourke Road, Alexandria,
NSW, Australia. 2015
Telephone +61 2 8339 0588**

"Safety is no accident!"

PROJECT DETAILS

Date

12-05-15

Client Name

Grocon

Address

IMAX - 31 Wheat Road, Darling Harbour NSW 200

Project Description/Scope

THE RIBBON SYDNEY
Demolition of IMAX Theatre

DISCLAIMER

This document has been developed to assist the Delta Group to better understand and manage workplace safety and workers compensation issues in the workplace. While every effort has been made to ensure the accuracy of the material in this document, this publication is not meant to substitute for the legislation. For the specific requirements on an issue covered in this document, persons should refer directly to the relevant legislation in their location.

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The controlled copy of all documents is on the computer network.

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REVIEW OF QUALITY PLAN

Rev	Date	Description of Change	Page/s	Reviewed by	Approved by
0	12-05-15	Document Creation	All	Yasser Haragli	Richard Strong

1. INTRODUCTION

The Quality Management Plan identifies hazards and risks that Delta Group business and personnel may be exposed to during the course of work. The plan details the control measures to be implemented to regulate these hazards and risks. The risk management process involves the use of policies and procedures compliance, forms and checklists, education, training and supervision, and continual improvement in all areas required of quality. The model in AS/NZS 4581 Management System Integration and the guidelines in Standards Australia Hand Book Guidance on integrating the requirements of Quality, Environment and Health and Safety Management Systems form the basis for the Delta IMS.

2. QUALITY POLICY



Quality Policy

Our goal is to find and keep customers forever. It is our customers who define what good quality looks like. We must always meet or exceed our customers' specified quality standards. It is only by consistently keeping our customers satisfied that we will keep them forever.

To achieve our goal we will:

- o Maintain an Integrated Management System which meets the requirements of AS/NZS ISO9001
- o Constantly challenge the system for better ways of doing things
- o Apply our philosophy of "Right First Time" but when we don't get it right we will learn from our mistakes
- o Set objectives and targets to measure and improve our performance
- o Ask our customers how we are doing and act on their advice

Signed:



Stuart Gibson
Group General Manager
Delta Group

Date: 25/6/14

3. AUTHORISATION AND CONTROL

This Quality Plan is authorised by the General Manager and the National QSE Manager. All project personnel are to ensure their work activities and those of Project Consultants, Contractors and Suppliers are carried out in accordance with the requirements of this Plan. Delta Group senior management acknowledges the importance of meeting customer, statutory and regulatory requirements.

a. DISTRIBUTION

This Quality Plan is a Controlled Document and must be distributed and revised under the guidance of the Project Manager. People who hold Controlled copies are responsible for maintaining their copies up-to-date. We issue this document as a guide to all those who are working to our quality standards.

b. REVISION

The Project Manager will monitor the implementation of this Plan and review the need for change or improvements on an as needs basis. This document will be reviewed annually. Document versions may be viewed in the document "Properties".

c. CONTRACT REVIEW

Before we accept a contract, a contract review is conducted to ensure that we understand what the client requires, also that the client understands what we are doing, and this will involve a client review of our project methodology. It means committing this understanding to writing and maintaining communication with the client for the duration of the contract.

4. CONTRACT CHANGE MANAGEMENT

We follow a procedure for changing contracts that includes advising all stakeholders affected by the change. Where possible, all changes are made prior to acceptance of a contract. We require at least two people to carry out any major contract negotiation and review so that we minimize the risk of misunderstandings or omissions in defining contracts. When a change occurs which has an impact on a contract we ensure that the client is advised and we review with the client how this will affect the contract.

5. MANAGEMENT SYSTEM

The Delta Group Quality Management Plan is a project or contract specific plan developed by applying an appropriate Quality Management System to plan and carry out the work involved, to ensure conformity with the requirements for the project/contract and to manage the quality risks.

The Quality Management Plan is used and updated regularly during the life of the project or contract.

Delta Group:

- Maintains an up to date version of this Quality Management Plan
- Retains all obsolete pages of the Plan
- Provides a copy of the current version of the Plan to the Client
- Reviews the Plan on an as needs basis to maintain its currency
- Ensures all amendments to the Plan are communicated to persons involved in the works
- All of our people are involved in continuously improving our Quality System, particularly in how the system meets the needs and expectations of our clients.

6. MANAGEMENT SYSTEM REVIEW

Delta Group Management will conduct regular inspections of the work activities and work environment applicable to monitor the effectiveness of this Quality Plan. A record of all inspections / audits and toolbox talks used in communicating and reviewing will be retained on-site.

Should it be necessary to expand or modify the quality system, any alterations shall be duly reviewed and communicated to persons involved in the works. The scope of the management review includes the effectiveness of the Quality System, and the stability of the system in adapting to client and business needs and its compliance with the Quality Standard and Quality System objectives.

a. CONTINUOUS IMPROVEMENT

As a minimum the continuous improvement process is comprised of audits, self-assessments, lessons-learned, procedure preparation, and training. Continuous improvement is an essential management and quality strategy in addressing customer satisfaction, product delivery, compliance, and cost savings. It is the intention of the process that areas of concern are assessed before problems develop, and before they have a significant impact on a project.

In order to ensure the continuing efficiency and effectiveness of the Management System, all members of staff have a responsibility to observe and report occasions where the organisation does not meet its specified requirements, be they imposed by customers, by regulation or nominated in the Management System. The project management will maintain an infrastructure needed to achieve contract requirements.

b. DISPOSAL OF RECORDS

On completion of a project all site file documents will be returned to the Delta office to be reviewed for archiving and confidential document disposal. Delta will ensure that for the period for which a document must be kept, a copy is available for inspection under the Act.

7. ASSESSING CONTRACT RISK

The level of risk will be determined for each contract. The probability or likelihood and consequences or impact of nonconformity with specified requirements (including quality, technical, work health and safety, environmental, financial and operational) determine the level of risk. The risk level could be determined using the methods outlined in AS 4360, Risk Management.

8. ROLES AND RESPONSIBILITIES DEFINED

For each procurement activity, Delta Group will allocate sufficient resources to manage quality, including personnel with the appropriate knowledge, skills and experience, to cover the defined practices/processes and procedures required for tender/contract documentation, management and activities generally.

Appropriate training will be provided to personnel, including in:

- The quality management requirements for construction as outlined in the Guidelines
- The principles, standards and codes applicable to Quality Management Systems
- Specification of quality requirements
- Assessment of a Quality Management System
- Review of the Delta Group Quality Management System documentation, including any Quality Management Plan, and Inspection and Test Plans, submitted in connection with a contract

- Monitoring, reviewing and auditing of the Delta Groups implementation of the required quality management, and notifying the Delta Group IMS Manager where any action is required

PROJECT MANAGER is responsible for quality at the workplace and these include:

- Implementing and maintaining the Quality Management Plan;
- Undertake a detailed review of the project documentation and prepare a Schedule of Scope Deliverables which forms the basis of the Subcontractor Inspection Test Plan (ITP) process and records;
- Ensuring that the on-site Inspection and Testing are undertaken as set out in the Inspection and Test Plan (ITPs);
- Organisation of on-site personnel with regard to their responsibilities within the Quality System;
- Identify key quality risks and opportunities to ensure high quality outputs;
- Communicating with the principal contractor to reduce quality risks;
- Being a part of the planning and design stages of trade activities;
- Ensure that all staff under their control have adequate training and experience for the work in conjunction with operations supervisor;
- Ensure that all staff under their control has adequate equipment to carry out the works in conjunction with operations supervisor;
- Maintenance of project specific registers, forms and checklists/itps;
- Periodic audits of their quality control processes;
- Manage non-conformances (SEF 052) and initiate corrective action (SEF 005) as required;
- Manage defects on site to reduce the number of defects at completion;
- Leading by example and promoting sound quality practices at every opportunity;
- Reviewing quality reports and inspections, and following up on recommendations;
- Regular attendance at on-site meetings to ensure quality related issues are raised for review.

OPERATIONS SUPERVISOR is responsible for quality at the workplace and these include:

- Work with the Site Foreman, and ensure that no unnecessary delays occur;
- Develop systems for the implementation of safe and efficient work methodologies for the completion of project tasks;
- Assist in planning the daily work procedures, resourcing and allocation of labor;
- Assist in ensuring quality procedures are adhered to;
- Ensure communication is maintained between the subcontractor representative/s and Delta operations;
- Be responsible for providing appropriately trained personnel for the project and the hiring and expulsion of personnel;
- Organise the hiring of equipment and ensure its compliance with safety requirements

SITE FOREMAN/SUPERVISOR is responsible for quality at the workplace and these include:

- Implementing the Quality Management Plan;
- Understand the requirements of the contract and ensure the works are delivered in accordance with the contract;
- Ensure that itps are being carried out properly and nominated hold points are verified prior to works proceeding
- Providing advice and assistance on quality matters to employees;
- Deciding when training is required;
- Undertaking inspection of the contracted or planned works to ensure that quality control measures are implemented and effective;
- Ensure that all defects and incidents are identified, actioned and closed out;
- Ensure that itps are being carried out properly and nominated hold points are verified prior to works proceeding

- Leading by example and promoting sound quality practices at every opportunity;
- Regular attendance at on-site meetings to ensure quality related issues are raised for review;
- Assist in developing SWMS for all tasks and ensuring the work is monitored throughout. If required, amend the SWMS to reflect work activity changes;
- Take all reasonable care to maintain a high standard of care and workmanship;
- Ensure Site Inductions are conducted for all workers and Subcontractors;
- Managing the Site Folder on and ensuring all QSE documents are correctly completed – including consultation, communication checklist and registers;
- Recording all daily site activities in a site diary;
- Other quality related duties as directed by the Project Manager.

QSE ADVISOR is responsible for quality at the workplace and these include:

- Conduct internal audits and inspections of the quality management system
- Assist in the implementation of the Quality Management Plan;
- Understand the requirements of the contract;
- Providing advice and assistance on quality matters to employees;
- Advise when training required;
- Ensure that all defects and incidents are identified, actioned and closed out;
- Leading by example and promoting sound quality practices at every opportunity;
- Regular attendance at on-site meetings to ensure quality related issues are raised for review;
- Lead the process of ensuring quality audits undertaken periodically
- Other quality related duties as directed by the Project Manager.

9. TRAINING AND COMPETENCY

Delta Group confirms that all personnel are trained and competent to perform their work in accordance with the requirements of the contract. We require all employees to undergo training in our Quality System as part of their induction and continuing training. This training is both general quality training and training related to achievement of quality standards in the particular tasks done by each employee.

Delta maintains an electronic data base for training and competency which is updated as training is completed. N:\Ticket Register\TICKET REGISTER\New ticket register. Subcontractors will provide Delta with evidence of training and competency for their employees.

A listing of Delta Employee details with the skills and competencies of the group employees will be provided to the client on request.

Induction training is oriented in assisting personnel to be aware of their quality system responsibilities to ensure that a quality product or service is delivered and that an appropriate communication and reporting system is maintained to allow verification of all facets of work produced. Records of induction and training sessions are recorded and can be reviewed by the client's Quality Manager on request.

10. RECORDS AND RECORD MANAGEMENT

A system (on-site) shall be established for the identification, collection, indexing, filing, storage and maintenance of all records pertaining to the provision of objective evidence that:

- The quality system is being implemented in accordance with this quality plan and ISO 9001;
- The products and services provided meet the requirements of the project specification;
- The records shall be available when required for review and audit by the Client.

The records referred to in this section, will be all records generated by Delta Group personnel, their subcontractors and consultants for the project which may include:

- Inspection and test records;
- Inspection reports;
- Non-conformance notices;
- Quality memos;
- Written approvals for changes to specifications by structured engineers;
- Subcontractor's records;
- Final quality reports including test and commissioning report;
- Hazard identification, risk assessments and associated safe working procedures;
- Reports of incidents and illness/injury;
- Illness/injury and incident investigation reports;
- Particulars of qualifications held by individuals;
- Minutes of WHS meetings;
- QSE audit reports,
- Worker injury management records;
- Evidence of actions taken as a result of HSR/Safety Committee meetings;
- Corrective action records and
- Work safety records generally

Records will be maintained of the following, assessments of Quality Management Systems where applicable, reviews of Quality Management Plans, and Inspection and Test Plans as applicable, audit and other reports on the implementation of Quality Management Systems, Quality Management Plans, and Inspection and Test Plans as applicable, performance reports of Delta Group and related correspondence.

As each section of the work is completed, copies of the quality record shall be collated and made available for hand-over.

11. INSPECTION AND TEST PLANS (ITP's)

For construction activities (which may include design), Inspection and Test Plans where required, Delta Group Project Manager/s will document the procedure to be undertaken and provide evidence (including reviews and verification points) that a particular work process/product or activity conforms to the specified requirements. Inspection and Test Plans may also be used to incorporate work health and safety, environmental and regulatory requirements, and identify and trace nonconforming work. For complex processes ITPs may need to be supplemented with method statements and other documentation.

The content of Inspection and Test Plans will be based on the contract drawings, contract specifications/conditions and other sources such as standards, legislation and regulatory requirements.

An Inspection and Test Plan may:

- Detail the inspections and tests required, including Hold and Witness Points
- Identify acceptance criteria, sampling and testing methods and frequency of sampling/testing
- Identify responsibilities for inspection and testing and product/service approval
- Detail the records to be provided, including those required for identification and traceability

ITP's will be developed in accordance with and recorded in the ITP Register (QF 014)

Prior to commencement of works, the activities are as follows:

- Inspection and test activities shall be planned for constituent phases of the work;

- The inspection and test records that describe the inspections, tests and verifications for the works shall be documented where required;
- Inspection and test records shall be submitted to the Client who shall, following review, authorise the inspection and test records as “approved for use”.

The inspection and test records shall include the following information:

- Identify the product or service being supplied;
- Identify the trade contract package;
- Identify the name of the trade contractor;
- Identify the nature of the inspection;
- Identify the acceptance criteria as per the specification;
- Identify who is responsible for the inspection activity.

a. IN-PROCESS INSPECTION

In-process inspection activities are carried out during the project to ensure that compliance with the specification is being achieved at all times.

In-process inspections shall be carried out in accordance with Delta procedures, specifications and client requirements for the various works. The in-process inspection shall be carried out by nominated personnel with the appropriate skills and experience.

Items found to be non-conforming shall be identified, recorded and the client notified.

Notification of a non-conformance will be issued as a corrective action (CAR) (SEF 005) and recorded in the Action Register (SEF 024). Corrective action will be monitored to ensure effectiveness.

b. MONITORING IMPLEMENTATION DURING THE CONTRACT

The contract Quality Management Plan and/or Inspection and Test Plans will be reviewed for conformity with the requirements at the commencement of the contract. Subsequent reviews, audits, inspections, and witness and surveillance activities will occur to monitor adequately the QMS, QMP and ITP implementation which will planned, resourced and undertaken.

Audit/review findings will be reviewed, with any comment obtained from the auditor, and the appropriate corrective action and verification will be actioned. If inspection, witnessing or surveillance indicated that implementation of a QMS or QMP or ITP was not satisfactory, further auditing/reviewing and other such activities to verify conformity will be undertaken.

Confirmation of the satisfactory completion of audits, reviews, inspections and tests, and the corrective action undertaken by the project management to meet contract requirements will be obtained by the auditor.

The level of risk involved with the contract, together with the performance of the service provider and the results of any 1st party reviews and audits, would be considered in assessing the need for 2nd party reviews and audits

c. FINAL INSPECTION

Where applicable, final inspection will be carried out to ensure that defective works are detected and rectified to verify the works are completed prior to hand-over.

Final inspection shall be undertaken according to the specifications for each of the products, together with a visual inspection of the completed works prior to hand-over.

The completed works shall be identified, inspected and/or tested according to the Inspection and Test Plan prior to hand over of the finished works.

If the completed works meet the accepted criteria of the contract documents identified in the appropriate Inspection and Test Plans, the package shall be handed over.

All documentation verifying that the works meet compliance with the specification shall be completed, checked and handed over to the client at a time determined by the Client Quality Manager.

Where any item fails to meet the requirements of the contract documents, a non-conformance notice shall be raised which identifies the defect and the Client-approved means of disposition. Final approval will not be given until all rectification works are complete and the final inspection has been carried out.

12. SUBCONTRACT WORKS

Subcontractors will be subject to Delta Internal Audit Planner and External Accreditation Audits for compliance with this plan and work procedures. Prior to commencement on the work site, Delta Project Management will review all Subcontractor Quality Documentation including ITP's, Training records and work methodology. During the course of the project, Delta's Project Management will monitor works to confirm that work is being conducted according to the supplied documentation and also that appropriate registers are being updated as required.

Subcontractors working on Delta sites will be monitored daily and have their works included in Site Inspections and Site Audits. This is to confirm that QSE documents submitted prior to site commencement are being complied with. Subcontractors are required to participate in Delta's Safety Walks and QSE Site Audits. Where applicable sub-contracting is subject to the prior approval of the Client and all relevant Quality Assurance Plans will be provided to the Client for review prior to work commencing.

Delta Group shall ensure that each sub-contractor has full knowledge of the scope of works and is able to comply with the relevant sections of the contract. Qualified personnel shall monitor the progress of the sub-contract program to enable assessment of any potential impact on the overall contract program. Subcontractors are and remain responsible for meeting their legal obligations.

a. SUBCONTRACT EMPLOYEES

Are responsible for the following:

- Complying with the Quality Management Plan including all itps;
- Reporting all non-conformances to the Works Supervisor.

13. PURCHASING

To evaluate potential service providers ability and selection and criteria refer to the Sub-contractor Procedure and Purchasing Procedure. Subcontract requirements will be confirmed and specified in tender documents, subcontracts and purchase orders whenever applicable. Refer to the Purchasing Procedure; section 5 Verification of Purchased Product.

14. INTERNAL AUDITS

Delta Group reviews all quality policies and procedures on an as need basis to determine the effectiveness of the Quality Management Plan in addressing quality in the workplace. Internal auditing are conducted on all sites thereby ensuring standards are maintained. This procedure provides guidance for auditing the quality management system to ensure that the system continues to conform to the requirements of ISO9001.

Audits and reviews are part of the implementation of this Quality Management System and Quality Management Plan. A Delta Group QSE Advisor is principally responsible for conducting audits however we are subject to external quality audits for our ISO9001 accreditation

15. MONITORING AND REPORTING

Delta agrees to comply with 3rd party inspections by the client or an independent party not directly involved in production to inspect, witness and monitor characteristics for acceptance. The independent party shall report directly to the management responsible.

Delta will implement the following monitoring processes on this project:

- ITP's
- Site Inspections
- Internal Audits
- Corrective Action and Close Out
- Calibration of equipment
- Document Control
- Informal checks by Site Foreman/Supervisor
- Product delivery

Subcontractors are included in all monitoring processes Delta performs. Delta will maintain records of all monitoring activities in the site files.

a. REPORTING

Delta retains records of all reporting activity in the site files and will be provided to the client on request. Delta will meet client and subcontract reporting requirements.

b. SUBCONTRACTOR REPORTING

Subcontractors must provide Delta with the following information:

- Itp's
- Induction and training records
- First aid treatment
- Incident investigation reports and any corrective action evidence.
- Hazard reports
- Internal and external non conformances issued
- Site inspection and audit report

c. TRACEABILITY

Traceability only applies where traceability is a specific requirement of the contract and specification.

Where traceability is a specified requirement, individual documentation and components of projects shall be uniquely identified in accordance with client requirements.

Traceability requirements shall be noted on the quality system documentation and the quality systems records shall be developed to enable future tracing of the work and goods to which traceability applies.

Traceability of separate items or sections of work shall be by means of a unique identification number, which shall be referred to in all process inspection and test records.

16. MEASUREMENT AND TEST EQUIPMENT

Delta group carries out regular inspections and maintenance of all equipment that requires calibration. Delta group ensures equipment is inspected and maintained in accordance with the relevant standard and manufacturer's recommendations.

Instruments shall be calibrated and adjusted against devices traceable to international or national standards; where no such standard exists, the basis used shall be recorded. Calibration records (QF 002) for each instrument shall be maintained. Calibration Reports/Records (QF 002) shall be used to show history of deviation. Calibration Requirements will be identified and recorded.

Calibration of equipment is generally a function of the Delta stores located at the state head office. Records of calibration are kept on file and can be provided upon request. Calibrated instruments shall be identified by a label indicating calibration date and when next due.

Instruments without such labels shall be considered not calibrated and shall only be used for indication purposes.

Any equipment found to be out of calibration date or damaged is to be removed from site until the equipment has been rectified and recalibrated. Calibration certificates are to be viewed to ensure they are current. Calibration certificates usually note when recalibration is due, but as a general rule certificates found to be more than 1 year old will be treated as out of date.

Calibration status of subcontractor or hired equipment shall be confirmed prior to use.

17. NON-CONFORMANCES/CORRECTIVE ACTION REPORT

Non-conformances or system defects issued by the client will be closed out and evidence provided. Proposed corrective actions will be issued to the client for approval prior to commencing rectification. Non-conformances will be rectified in a timely fashion and as stipulated in the Non-conformance Report. The non-conformance details will be recorded in the Action Register.

The non-conformance register shall be updated and made available to the Client when a non-conformance notice is generated. The person or persons responsible for determining the method of disposition will be identified on the corrective action report (CAR) (SEF 005). The Project manager or the QSE department carry responsibility for issuing corrective action reports and closing out non-conformances.

Non-conforming product found at delivery shall not be accepted and returned to the manufacturer/supplier. Where the product cannot be immediately returned, the non-conforming product shall be clearly marked and segregated to prevent its use on site.

A Non-conformance report (SEF 052) will be raised and issued to the client for information. Non-conforming product found during the installation works shall be immediately rectified and re-inspected prior to proceeding.

Non-conforming product that cannot be rectified immediately shall be documented as a Non-Conformance and the client will be notified. The client will be advised of the proposed corrective action report for approval. The rectified product will be subject to re-inspection to verify its conformity.

a. DEFECTS

- Defect Rectification Process – Subcontractor;

Defects identified prior to the client's defect rectification process, will be recorded and signed off by the Works Supervisor when the defect has been satisfactorily rectified. Once all defects have been completed the client will be notified of completion of the area of work.

18. CORRECTIVE ACTION

Corrective Action Report (SEF 005) shall be initiated where a non-conformance or a potential non-conformance has been detected to prevent occurrence or re-occurrence of a non-conformance on the project.

The requirements for corrective action report result from the detection of a non-conformance or potential non-conformance.

On receipt of a non-conformance corrective action report, the management representative shall;

1. Assess the non-conformance to determine how the non-conformance occurred;
2. Develop, where possible, a revised method of carrying out works to ensure that the same non-conformance does not re-occur;
3. Regularly check operational methods following the implementation of corrective action to ensure revised methods of works are effective;
4. Submit to the Client's Quality Manager or nominated representative, all details of corrective actions implemented for all non-conformances.

Project Manager or delegate is responsible for carrying out and recording site inspections.

19. HANDLING, STORAGE AND PROTECTION OF MATERIAL PRODUCTS AND WORK

All products delivered to this project will be identified to ensure that no confusion arises between similar products where a product could be inadvertently used for an incorrect application.

Products are identified by using the applicable drawings, specifications. The handling and storage of all items will be controlled to prevent misuse, abuse, damage, deterioration or loss.

All items will be clearly identified and shipped with a delivery docket itemizing the content of the delivery. All items will be packed suitably to prevent damage during delivery.

a. DISPOSAL OF RECORDS

On completion of a project all site file documents will be returned to the Delta office for confidential document disposal.

20. QUALITY RECORDS AND CERTIFICATES

DELTA GROUP will provide the documentation in accordance with the Subcontract;

a. INSPECTION TEST PLAN

- Inspection Test Plan 1 and so on

b. OPERATIONAL AND MAINTENANCE MANUAL

- for Mobile plant

C. CERTIFICATES OF COMPLIANCE

- Provided separately

21. DEFINITIONS

The terms defined in the current ISO 9000, Quality management systems – Fundamentals and vocabulary, apply to these Guidelines. The following definitions also apply and take precedence: -

“audit” means an examination of a random or particular sample of processes to determine whether or not correct plans/procedures are being followed, and includes a document review or an examination of activities or an examination of documents and activities, to assess their conformity with requirements.

“certification” (of a Quality Management System) is the attestation by certificate that the QMS meets certain defined provisions of the current ISO 9001 Quality management systems – Requirements for use for a certain scope of activities. Usually this would be provided following a 3rd party certification audit by an organisation accredited under a Joint Accreditation System of Australia and New Zealand (JAS-ANZ) recognized product certification scheme or another scheme acceptable to the relevant agency.

“construction” includes all organised activities concerned with demolition, building, landscaping, maintenance, civil engineering, process engineering, heavy engineering and mining.

“ITP” means Inspection and Test Plan.

“QMP” means Quality Management Plan (including design plan).

“QMS” means Quality Management System.

“service provider” (or "organisation" as defined in the current ISO 9000 Quality management systems – Requirements) means a contractor, consultant and supplier, and their service providers, that contract with a customer to carry out asset construction, provide other products (including goods) and/or provide services.

22. REFERENCE MATERIAL

The Quality Management Plan has been developed to assist the Delta Group to manage Workplace Quality, Safety and Environmental issues across our sites. The following documents have been used in the development of this plan:


AS/NZS 4801, Workplace Safety Management Systems – Specifications with guidance for use
AS/NZS 4804, Workplace Safety Management Systems – General guidelines on principles, systems and supporting techniques
AS/NZS 4581 Management System Integration
AS/NZS 4360, Risk management
ISO 9001, Quality management systems – Requirements
ISO 14001, Environmental management systems – Specifications with guidance for use
The NSW Government Workplace Safety Management Systems Guidelines 4th edition and NSW Government Workplace Safety Management Systems and Auditing Guidelines 5th edition.

Each site, branch, state or territory should identify and apply the relevant WHS/OHS/OSH Legislation and COP's for the area that is applicable to their workplace. (Inclusive of AS/NZS)

23. ACCEPTANCE OF QUALITY PLAN

This Quality Plan has been developed and viewed in consultation with the workers and it is read and signed by all persons involved in the plan. If a variation occurs to this Quality Plan then management will communicate and re-induct the change to the work group whilst adjusting the work method accordingly.

I hereby confirm that I have read and understand this Quality Plan and I will ensure my work process is completed accordingly.

Project Manager Quality Plan Approval	Richard Strong		
Signature			
Date	12/05/15		
Inductee Name	Company/Title	Signature	Date

Safety Management Plan



Delta Pty Limited ABN: 67 007 069 794

**Head Office: 83 Bourke Road, Alexandria,
NSW, Australia. 2015
Telephone +61 2 8339 0588**

"Safety is no accident!"

PROJECT DETAILS

Date

12-05-15

Client Name

Grocon

Address

IMAX - 31 Wheat Road, Darling Harbour NSW 200

Project Description/Scope

THE RIBBON SYDNEY
Demolition of IMAX Theatre

DISCLAIMER

This document has been developed to assist the Delta Group to better understand and manage workplace safety and workers compensation issues in the workplace. While every effort has been made to ensure the accuracy of the material in this document, this publication is not meant to substitute for the legislation. For the specific requirements on an issue covered in this document, persons should refer directly to the relevant legislation in their location.

The information in this document is copyright. No part may be reproduced by any process without written permission from the Delta Group General Manager.

Controlled Documents: The aforementioned companies have all been assessed and registered as complying with the requirements of AS/NZS4801, ISO14001, and ISO900, therefore all documents within the Delta Group Integrated Management System (IMS) are known as "Controlled Documents". Once a document is printed it becomes un-controlled, it is thereafter known as an "Un-controlled Document". Document revisions may be viewed in the document "Properties", documents will be reviewed on an as need basis. The controlled copy of all documents is on the computer network.

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REVIEW OF SAFETY MANAGEMENT PLAN

Rev	Date	Description of Change	Page/s	Reviewed by	Approved by
0	12-05-15	Document Creation	All	Yasser Haragli	Richard Strong

1. INTRODUCTION

The Safety Management Plan identifies hazards and risks that Delta Group business and personnel may be exposed to during the course of work. The plan details the control measures to be implemented to regulate these hazards and risks. The risk management process involves the use of policies and procedures compliance, forms and checklists, education, training and supervision, and continual improvement in all areas required of safety.

The model in AS/NZS 4581 Management System Integration and the guidelines in Standards Australia Hand Book Guidance on integrating the requirements of Quality, Environment and Health and Safety Management Systems form the basis for the Delta IMS.

2. POLICIES

a. OHS Policy



OHS Policy

The safety of our people, the people who work on site with us and the community in which we work is our number one priority. All incidents can be prevented. No task is so important that risk of injury to people is justified.

Our Commitment

Through uncompromising leadership, certified management systems, behaviour and cultural reinforcement and a commitment to continuous improvement we will ensure;

No injuries to anyone, anytime

Our Actions

Delta will fulfil these commitments by:

- Foster an awareness of Health and Safety as our number one priority in everyone in Delta
- Empower and encourage every Delta team member to place their health and safety, and the safety of others, above all other requirements of their work
- Train everyone in safety awareness
- Prepare and use, for each project, a project Health and Safety Plan.
- Comply with the Legislative Safety Act, Regulations and codes of practice, within the appropriate state or territory to which Delta is involved in.
- Investigate every incident and change our practices based on investigation.
- Develop a long term improvement plan and measure our progress.
- Annually review this Policy
- No Delta employee will be reprimanded for stopping a task that they perceive in good faith to be unsafe, even if it is later proved to be safe.

Our current company objectives and targets are set out in the Delta Procedures - Objectives and Targets, which is found in the Delta Management System. The key result areas of our program of objectives and targets are:

- The elimination of incidents
- The elimination of injuries involving lost time
- Effective planning and review
- Effective training programs
- Effective consultation

Signed:

Stuart Gibson
Group General Manager
Delta Group

Date: 25/6/14

Melbourne	Sydney	Canberra	Perth	Brisbane
<p>Victoria Head Office 577 Plummer Street, Boro (Melbourne) VIC 3207, Australia Telephone: (03) 9646 8277 Facsimile: (03) 9646 0877 Email: delta@deltagroup.com.au Website: www.deltagroup.com.au</p> <p>1800 335 824</p>				

b. QUALITY POLICY



DELTA PTY. LTD. A.B.N. 67 007 069 794

DEMOLITION
ASBESTOS REMOVAL
CONCRETE RECYCLING
CIVIL AND LANDSCAPING
STEEL RECYCLING

CIVIL CONSTRUCTION
EARTHWORKS
SITE RETENTION
TIMBER RECYCLING OUTLET
DELTA RENT & DELTA QUIP

Quality Policy

Our goal is to find and keep customers forever. It is our customers who define what good quality looks like. We must always meet or exceed our customers' specified quality standards. It is only by consistently keeping our customers satisfied that we will keep them forever.

To achieve our goal we will:

- o Maintain an Integrated Management System which meets the requirements of AS/NZS ISO9001
- o Constantly challenge the system for better ways of doing things
- o Apply our philosophy of "Right First Time" but when we don't get it right we will learn from our mistakes
- o Set objectives and targets to measure and improve our performance
- o Ask our customers how we are doing and act on their advice

Signed:



Stuart Gibson
Group General Manager
Delta Group

Date: 25/6/14

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c. CODE OF CONDUCT POLICY



Code of Conduct

Delta's Code of conduct sets out the fundamental rules and values which govern the way we operate as a company. It applies equally to our employees as well as our sub-contractors. We all agree we will:

Deliver in a safe and sustainable way by:

- o Always placing health and safety as the primary consideration in decision-making
- o Never putting oneself at risk
- o Never physically striking another person
- o Never putting other persons at risk or by inaction, leave another at risk
- o Never putting the environment at risk
- o Never punishing anyone for bringing a risk to the attention of management or others

Act with integrity, openness and fairness by:

- o Never telling a lie to management, our client/s or others
- o Always doing what we say we will do
- o Complying with all applicable laws, regulations and Delta Group policies and procedures
- o Protecting Delta's assets, maintaining them regularly and only using Delta's assets for legitimate Delta business purposes
- o Reporting anyone who breaches this code

Believe in people and teamwork by:

- o Treating each other with respect, listening to different points of view
- o Never bullying anyone
- o Not tolerating discrimination against any person, based on age, race, colour, creed, gender or political opinion
- o Using communication to inform, motivate and engage with our people

Aspire to excellence and be passionate about success by:

- o Always looking for new and better ways of doing things
- o Seeking to exceed the expectations of our customers and ourselves
- o Taking responsibility (individually and collectively) for our own performance and decisions
- o Creating solutions not problems

We are serious about using this code to guide our behaviours. This code is agreed to by every employee. A breach of the code will result in disciplinary action. A wilful breach will result in instant termination.

Signed:

Stuart Gibson
Group General Manager
Delta Group

Date: 25/6/14



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d. ENVIRONMENTAL POLICY

 DELTA GROUP AUSTRALIA WIDE DELTA PTY. LTD. A.B.N. 67 007 069 794	DEMOLITION ASBESTOS REMOVAL CONCRETE RECYCLING CIVIL AND LANDSCAPING STEEL RECYCLING	CIVIL CONSTRUCTION EARTHWORKS SITE RETENTION TIMBER RECYCLING OUTLET DELTA RENT & DELTA QUIP
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Environmental Policy

Our goal is to improve the environments in which we operate.

This goal is not limited to minimising the environmental impact of our operations but includes taking active steps to reduce our energy usage, to reduce waste, to recycle everything we can and to be rigorous about safe disposal of any residual contaminants in strict compliance with regulatory requirements. This is at the heart of our business.

To achieve our goal we will:

- Maintain an Integrated Management System which meets the requirements of AS/NZS ISO14001
- Constantly challenge the system for better ways of doing things
- Apply our philosophy of "Right First Time" but when we don't get it right we will learn from our mistakes
- Set objectives and targets to measure and improve our environmental performance
- Strive to prevent pollution, reduce waste and recover and recycle with the aim of exceeding all relevant regulatory standards

Signed:



Stuart Gibson
Group General Manager
Delta Group

Date: 25/6/14

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e. RETURN TO WORK POLICY

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Return to Work Policy

Our goal is to return injured workers to employment at the earliest date following any injury or illness. We desire to speed recovery from injury or illness and reduce insurance costs.

In this policy "transitional" work means temporary modified work assignments within the worker's physical abilities, knowledge, and skills.

To achieve our goal we will:

- o Wherever feasible, make transitional positions available to injured employees in order to aid rehabilitation and minimise or eliminate time loss. For any business reason, at any time, we may elect to change the working shift of any employee based on the business needs of the company.
- o Provide the attending physician with the physical requirements of transitional work. Transitional positions are then developed with consideration of the worker's physical abilities, the business needs of the Delta Group, and the availability of transitional work.
- o Proactively manage the process of rehabilitation in the workplace to ensure that all injured workers have the opportunity to recover and either stay at or return to work.

This policy is a shared agreement between the Delta Group and its employees.

Signed:



Stuart Gibson
Group General Manager
Delta Group

Date: 25/6/14

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f. DRUG AND ALCOHOL POLICY



Drug and Alcohol Policy

Our goal is a safe workplace.

To achieve our goal we maintain the following principles:

- The misuse of legitimate drugs or the use, possession or sale of illegal or un-prescribed drugs on company premises is strictly prohibited.
- Employees and Subcontractors are not permitted to commence and or continue work if they are under the influence of alcohol or any other drug which impairs their ability to perform work safely.
- Should it come to attention of the company that an employee has a dependency issue with drugs and or alcohol then the employee will be referred to the relevant state's Drug and Alcohol program.

Wherever appropriate, Supervisors may require personnel to undertake drug and/or alcohol tests when in their opinion, any of the following circumstances apply:

- Accidents and incidents classified as having the potential for serious injury or significant damage to property;
- Erratic, unusual or dangerous behaviour by an Individual; and evidence of possible alcohol or other drug use at work (e.g. Drug paraphernalia, alcohol containers on work locations or in vehicles)

There shall be no termination where an employee "self declares" to the company that they have an issue which places them in contravention of the Fitness for Work Procedure.

Signed:

Stuart Gibson
Group General Manager
Delta Group

Date: 25/6/14



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g. WORKPLACE HARASSMENT POLICY

**DELTA GROUP**
AUSTRALIA WIDE
DELTA PTY. LTD. A.B.N. 67 007 069 794

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CIVIL CONSTRUCTION
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DELTA RENT & DELTA QUIP

Workplace Harassment Prevention Policy

Our goal is a harassment and violence free workplace. By harassment we mean any repeated behaviour that a reasonable person would consider offensive, intimidating or threatening.

It does not include actions taken by a manager or supervisor to transfer, demote, promote, discipline, redeploy, retrench or dismiss where those actions are taken for a reasonable business reason.

To achieve our goal we will:

- o Encourage any worker who believes that they have been harassed, or have seen harassment of others, to report that to their immediate supervisor, or their relevant Workplace Health and Safety Representative
- o Maintain a complaint handling system which includes procedures for reporting, investigating quickly and fairly, resolving and appealing workplace harassment complaints
- o Take disciplinary action against anyone who harasses a worker or victimises a witness or person who has made a complaint.

Signed:



Stuart Gibson
Group General Manager
Delta Group

Date: 25/6/14

Melbourne Sydney Canberra Perth Brisbane



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3. AUTHORISATION AND CONTROL

This Safety Plan is authorised by the General Manager and National QSE Manager. All project personnel are to ensure that their work activities and those of Project Consultants, Contractors and Suppliers are carried out in accordance with the requirements of this Plan. Delta Group senior management acknowledges the importance of meeting customer, statutory and regulatory requirements.

a. DISTRIBUTION

This Plan is a Controlled Document and must be distributed and revised under the guidance of the Project Manager. People who hold controlled copies are responsible for maintaining their copies up-to-date. We issue this document as a guide to all those working to our safety standards.

b. REVISION

The Project Manager will monitor the implementation of this Plan and review the need for change or improvements on an as needs basis. This document will be reviewed annually. Document revisions may be viewed in the document "Properties".

c. CONTRACT REVIEW (REFER QMS)

d. CONTRACT CHANGE MANAGEMENT (REFER QMS)

4. PROJECT SAFETY MANAGEMENT COMMITMENT STATEMENT

Nothing is more important to us than the safety and wellbeing of our personnel. Together, our personnel form the Delta Group most powerful asset - a rich and culturally diverse team of talented, enthusiastic individuals. Safety is about people, not numbers. The standards and targets we set are important, and have been successful in assisting the Delta Group to improve our performance, but they singly they do not deliver our safety vision.

5. PLANNING

The Site Safety Management Plan identifies hazards and risks that workers may be exposed to, it details the control measures to be implemented to regulate these hazards. The risk management process involves the use of policies, procedures, audits, safety forms, checklists, education, supervision, and continual improvement in all aspects of our safety.

The Site Safety Management Plan identifies the hazards associated with the work to be undertaken and the control measures that are to be implemented to protect people and property across our worksites.

a. OVERVIEW OF LEGAL REQUIREMENTS

Workplace Safety Legislation is the principle legislation that applies to all places of work. Delta Group applies the relevant state or territory legislation to the work location of any Delta Group workplace. Additionally we reference AS/NZS 4801, ISO-18001 and Codes of Practice relevant to the work location of any Delta Group workplace.

Occupational safety and health (OSH) also commonly referred to as **occupational health and safety (OHS)** or **workplace health and safety (WHS)** is an area concerned with protecting the safety, health and welfare of people engaged in work or employment. The goals of safety in the workplace programs include fostering a safe and healthy work environment.

Safety programs also protect co-workers, family members, employers, customers, and many others who might be affected by the workplace environment.

The purpose of the Workplace Safety Legislation is to outline the legal duties of employers and employees (including all onsite contractors). Under the Workplace Safety Legislation employers have two main duties: Duties relating to incidents/ duty of care (which extends to employees and others at the workplace) and a duty to consult. The Workplace Safety Legislation extends the duty of care beyond employees to cover others at the workplace. This includes contractors or members of the public. Beyond the duty of care, the Act imposes another duty on employers: The duty to consult. This requires employers to consult with their employees on safety issues.

An employer must, so far as is reasonably practicable, provide and maintain for employees of the employer a working environment that is safe and without risks to health.

6. MANAGEMENT SYSTEM

Delta Group:

- Maintains an up to date version of this Safety Management Plan
- Provides a copy of the current version of the Plan to the Client
- Reviews the Plan on an as needs basis to maintain its currency
- Ensures all amendments to the Plan are communicated to persons involved in the works
- Ensure all our people are involved in continuous improvement of our Safety Management System

7. RECORDS AND RECORD MANAGEMENT (REFER QMS)

8. MANAGEMENT SYSTEM REVIEW

Delta Group Management will conduct regular inspections of the work activities and work environment applicable to monitor the effectiveness of this Safety Management Plan. A record of all inspections / audits and toolbox talks used in communicating and reviewing will be retained on-site.

Should it be necessary to expand or modify the safety system, any alterations shall be reviewed and communicated to persons involved in the works. The scope of the management review includes the effectiveness of the Safety System, and the stability of the system in adapting to client and business needs and its compliance with Safety Standards and Safety System objectives.

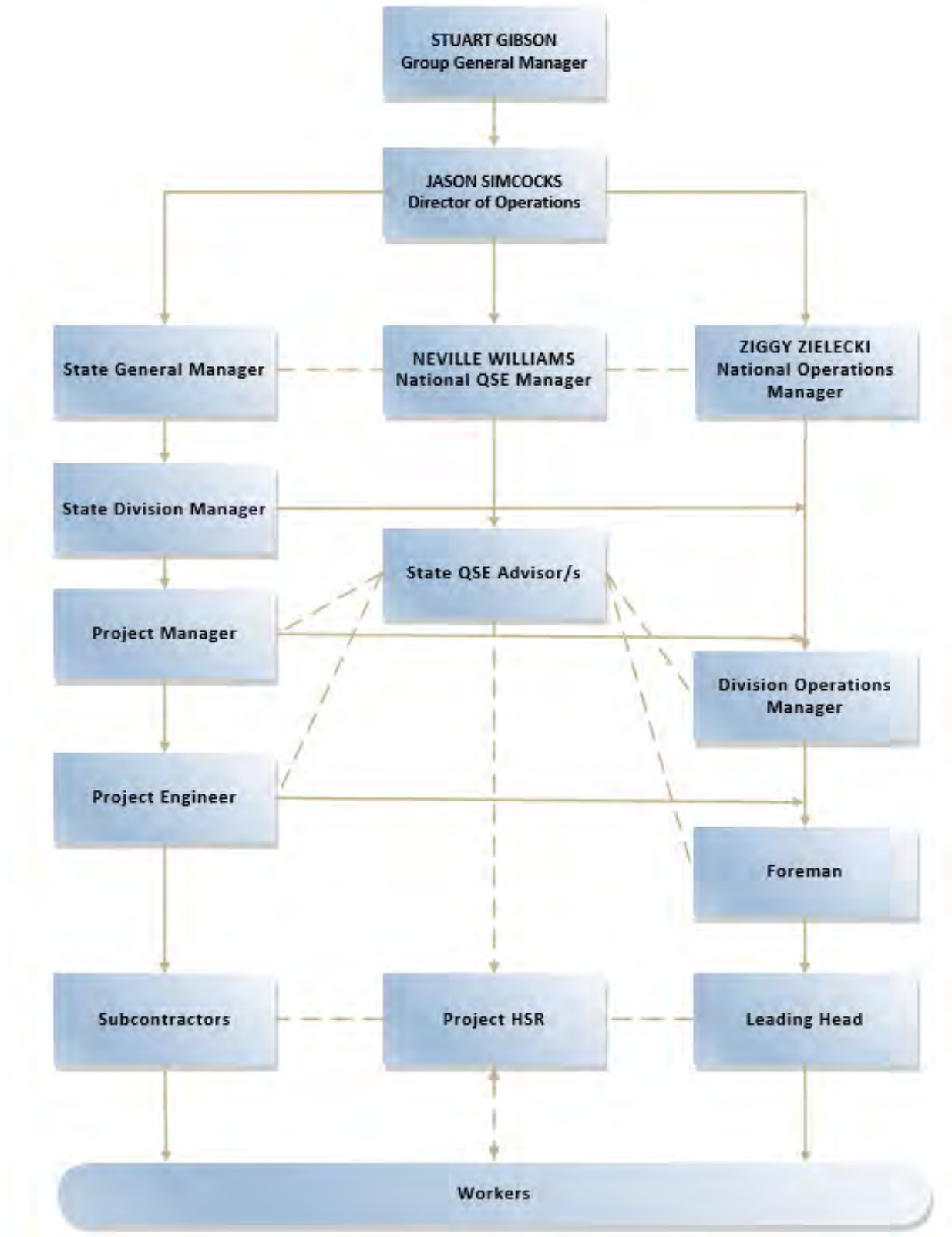
a. CONTINUOUS IMPROVEMENT

As a minimum the continuous improvement process is comprised of audits, self-assessments, lessons-learned, procedure preparation, and training. Continuous improvement is an essential tool of our safety strategy in addressing workplace hazards and risks.

It is the intention of the process that areas of concern are assessed before problems develop, and before they have a significant impact on a project. In order to ensure the continuing efficiency and effectiveness of the Safety Management System, all members of staff have a responsibility to observe and report occasions where the organisation does not meet its specified requirements. The project management will maintain an infrastructure needed to achieve contract requirements.

9. STRUCTURE RESOURCES AND RESPONSIBILITY

To ensure the project scope of works objectives and targets are met, Delta has allocated the following resources as identified below.



10. ROLES AND RESPONSIBILITIES DEFINED

PROJECT MANAGER is responsible for safety management at the workplace and these include:

- Implementing and maintaining the Safety Management Plan;
- Undertake a detailed review of the project documentation and prepare a Schedule of Scope Deliverables which forms the basis of the Subcontractor Inspection Test Plan (ITP) process and records;
- Ensuring that the on-site Inspection and Testing are undertaken as set out in the Inspection and Test Plan (ITPs);
- Organisation of on-site personnel with regard to their responsibilities within the Safety Management System and assist with site inductions;
- Identify key safety risks and opportunities to ensure high safety outputs;
- Communicating with the principal contractor to reduce safety risks;
- Being a part of the planning and design stages of trade activities;
- Ensure that all staff under their control have adequate training and experience for the work in conjunction with operations supervisor;
- Ensure that all staff under their control has adequate equipment to carry out the works in conjunction with operations supervisor;
- Maintenance of project specific registers, forms and checklists/itps;
- Periodic audits of their safety management control processes;
- Manage non-conformances (SEF 052) and initiate corrective action (SEF 005) as required;
- Manage defects on site to reduce the number of defects at completion;
- Leading by example and promoting sound safety management practices at every opportunity;
- Reviewing safety reports and inspections, and following up on recommendations;
- Regular attendance at on-site meetings to ensure safety management related issues are raised for review.

OPERATIONS SUPERVISOR is responsible for safety management at the workplace and these include:

- Work with the Site Foreman, and ensure that no unnecessary delays occur;
- Develop systems for the implementation of safe and efficient work methodologies for the completion of project tasks;
- Assist in planning the daily work procedures, resourcing and allocation of labor;
- Assist in ensuring safety management procedures are adhered to;
- Ensure communication is maintained between the subcontractor representative/s and Delta operations;
- Be responsible for providing appropriately trained personnel for the project and the hiring and expulsion of personnel;
- Organise the hiring of equipment and ensure its compliance with safety requirements

SITE FOREMAN/SUPERVISOR is responsible for safety management at the workplace and these include:

- Implementing the Safety Management Plan;
- Understand the requirements of the contract and ensure the works are delivered in accordance with the contract;
- Ensure that itps are being carried out properly and nominated hold points are verified prior to works proceeding
- Providing advice and assistance on safety matters to employees;
- Deciding when training is required;
- Undertaking inspection of the contracted or planned works to ensure that safety control measures are implemented and effective;

- Ensure that all defects and incidents are identified, actioned and closed out;
- Ensure that itps are being carried out properly and nominated hold points are verified prior to works proceeding
- Leading by example and promoting sound safety practices at every opportunity;
- Regular attendance at on-site meetings to ensure safety related issues are raised for review;
- Assist in developing SWMS for all tasks and ensuring the work is monitored throughout. If required, amend the SWMS to reflect work activity changes;
- Take all reasonable care to maintain a high standard of care and workmanship;
- Ensure Site Inductions are conducted for all workers and Subcontractors;
- Managing the Site Folder on and ensuring all QSE documents are correctly completed – including consultation, communication checklist and registers;
- Recording all daily site activities in a site diary;
- Other safety related duties as directed by the Project Manager.

QSE ADVISOR is responsible for safety management at the workplace and these include:

- Conduct internal audits and inspections of the safety management system
- Assist in the implementation of the safety management plan;
- Assist where possible to communicate to the workforce including toolbox meetings & inductions
- Understand the requirements of the contract;
- Providing advice and assistance on safety matters to employees;
- Advise when training required;
- Ensure that all defects and incidents are identified, actioned and closed out;
- Leading by example and promoting sound safety practices at every opportunity;
- Regular attendance at on-site meetings to ensure safety related issues are raised for review;
- Lead the process of ensuring safety audits undertaken periodically
- Other safety related duties as directed by the project manager.

11. SAFETY AND DESIGN

Review the designed works as per the documented information provided by the client, to identify any hazards inherent in the design and/or the construction of that design. Refer to the “Project Design Hazard Assessment” form (QF 024)

12. RISK ASSESSMENT

The Risk Assessment describes the measures to be implemented within the Project for the identification of hazards, and for the assessment and control of health and safety risks. It outlines methods for these hazards management activities, and set minimum performance standards for Delta employees and our subcontractors.

The risk assessment process is the legislated requirement to develop safety documents i.e. SWMS and SOP's. Legislation requires the employer to provide and maintain for employees a working environment that is safe and without risk to health. Risk Management Standard ISO 31000.

Risk assessment is the process of evaluating risks to workers' safety and health from workplace hazards. It is a systematic examination of all aspects of work that considers:

- what could cause injury or harm
- whether the hazards could be eliminated and, if not,
- what preventive or protective measures are, or should be, in place to control the risks.

A risk assessment ensures continual improvement whereby project management and designated individuals accept accountability for personnel skills and adequate resources to check controls, monitor risks, improve controls by ongoing risks assessing and communicating effectively about risks. Monitoring and review of risk controls is required to provide adequate data in the continual

improvement of our risk management system, and it is an integral part of all of our organisation's processes.

a. RISK MATRIX

Risk Assessment Matrix		LIKELIHOOD OF OCCURRING			
		Frequent 4(76-100%)	Likely 3(51-75%)	Occasional 2(26-50%)	Unlikely 1(0-25%)
C O N S E Q U E N C E	Catastrophic (E – Extreme)	4 E	3 E	2 E	1 E
	Critical (H-High)	4 H	3 H	2 H	1 H
	Marginal (M-Medium)	4 M	3 M	2 M	1 M
	Negligible (L-Low)	4 L	3 L	2 L	1 L

I confirm I have risk assessed this site and accept responsibility for detailing the level of control measures shown herein. Furthermore I have so far as is reasonably practicable addressed the risks of the current working environment thereby ensuring so far as is reasonably practicable a working environment that is safe and without risks to health.

So Signed and Dated below

Name Project Manager	Signature	Date of assessment
Name Supervisor	Signature	Date of assessment
Name Foreman	Signature	Date of assessment

13. SAFE WORK METHOD STATEMENT (SWMS)

SWMS (Safe Work Method Statements) - A comprehensive step by step work procedure and document, essential in the Building and Construction Industry. These should be developed in consultation with the workers when relating to high risk work.

A Safe Work Method Statement (SWMS) is an activity based process where the hazards associated with each step of a job are identified, and control measures are put in place to eliminate and /or mitigate and control the risk associated with each activity. All SWMS's (including Sub Contractors) are submitted for review by the Project Management Team (PMT) before the task begins.

A SWMS must be developed before commencing works and will be developed through consultation with workforce or workforce representative e.g. HSR's, Site Foreman and workers.

Through Delta site inspections all work tasks will be subject to a safe work observation. This process consists of reviewing stated procedure/controls in SWMS against actual undertaking of task and monitoring effectiveness. SWMS will be reviewed at a maximum duration period of 1 month.

Contractor SWMS's will be audited and recorded in the delta SWMS Register (SEF 037), contractor SWMS's must be reviewed monthly. When working as a subcontractor, Delta will provide copies of relevant SWMS's to the principal contractor prior to work commencing.

14. TRAINING AND COMPETENCY

Project personnel will be trained to a sufficient level of competency that will enable each person to carry out all required tasks in a safe manner. Depending on requirements training will be provided through internal training or authorised accredited trainers / assessors.

Training will be ongoing to ensure that a continuous improvements process is maintained. Training will be awareness or competency based and provided through an authorised or accredited training agency. Competency based training is an approach to vocational education and training that places emphasis on what a person can do in the workplace as a result of completing a program of training or based on workplace experience and learning.

a. COMPETENCY

Competency is best described as a collection of competencies that together define successful performance in a particular work setting. Competency skills are the foundation for important human resource functions such as work performed throughout the construction and building industry.

Delta Group ensures all site personnel are trained and competent to perform the work in accordance with the contract and certified to execute all works in accordance with manufactures recommendations.

Where site conditions permit, Delta Group will record evidence provided of minimum competencies for works to be undertaken, these records will be maintained and available at the Delta site office

b. TRAINING NEEDS

Prior to project commencement, the division Operations Manager and Project Manager will review the Scope of Works and determine required training and competencies of site personnel. Upon determination of requirements the appropriate personnel will be selected from the **ticket register** (skills matrix) and allocated appropriately.

If additional training is required to meet contractual needs then Delta will arrange and facilitate relevant personnel to complete such training in accordance with task requirements. The type of training will depend on state authority and or competency required. Skills competency or regulated licenses are identified and detailed in task specific SWMS/JSEA's, SOP's.

c. CHANGE

During the course of the contract should a change to the project management team become necessary then those involved will carry out a suitable handover to ensure their succeeding incumbent is fully conversant with their responsibilities and work status. Personnel handing over to incumbents shall complete handover notes, which may be in the form of a diary, notes

or a checklist of responsibilities. Delta Group will so far as is reasonably practicable consult with our workers when planning to make changes that may affect their work health and safety.

15. INDUCTION

The construction and demolition industry involves people working in a dynamic and ever-changing environment. Hazards and risks change frequently on a site as construction or demolition work progresses and as workers move from project to project.

The instruction and training required to ensure people can work safely on construction and demolition sites needs to recognise the pattern of employment and the way the construction industry operates. Therefore, three types of OHS induction training may be required:

- **General induction** provides persons entering the construction industry with a basic knowledge of requirements under OHS laws, the common hazards and risks likely to be encountered on construction/demolition sites and how these risks should be controlled.
- **Site induction** provides information and instruction to anyone engaged on a particular construction site with knowledge of the contractor's rules and procedures for site safety, emergency management, the supervisory and reporting arrangements and other site-specific issues.
- **Task-specific induction** provides information and instruction to anyone undertaking a particular construction activity of the risk factors and control measures relating to that task.

The National Standard for Construction Work provides for the following exceptions where OHS induction training is not required:

- Visitors to a construction site who are accompanied by a person who has received occupational health and safety induction training, and
- Persons temporarily at a construction site to deliver plant, supplies, materials or services where a risk assessment indicates that any risks to persons can be controlled through other measures (such as restricted access to low-risk areas, visitor sign-in/out procedures etc.)

'Relevant OHS authority' means the authority of the relevant Australian state or territory jurisdiction responsible for regulating occupational health and safety in workplaces in the jurisdiction in which the work is undertaken.

16. CONSULTATION – COMMUNICATION – REPORTING

Consultation: The duty to consult is based on the recognition that worker input and participation improves decision-making about health and safety matters and assists in reducing work-related injuries and disease. Delta will consult employees (including any health and safety representatives) when deciding on the membership of the committee. At least half of the committee must be employee representatives, and should be health and safety representatives where practicable.

Delta Group management consults with our employees and our contractors and their employees, on-hire workers, volunteers and any other people who are working for Delta sites and who are directly affected by a health and safety matter.

Workers are entitled to take part in consultation arrangements and to be represented in relation to work health and safety by a health and safety representative who has been elected to represent their work group. If workers are represented by a health and safety representative, consultation must involve that representative.

If requested by a health and safety representative for a work group for that business or

undertaking, Delta will allow the health and safety representative to attend a course of training in work health and safety that is:

- (a) approved by the regulator, and
- (b) a course that the health and safety representative is entitled under the regulations to attend, and
- (c) subject to subsection (5), chosen by the health and safety representative, in consultation with the person conducting the business or undertaking.

A **HSR** is an employee who has been elected by the members of their **Designated Work Group (DWG)** to represent them, providing a way for their views and concerns about health and safety to be heard by their employer. They are elected for a term of three years and perform an important role in helping communication/consultation between the Delta Group organization and workers. HSRs are the main point of contact for workers to raise health and safety issues or concerns.

Although consultation is a legal requirement Delta Management view it as an essential part of good practice in managing health and safety risks. Where it may not be reasonably practicable to consult each worker individually, **health and safety representatives or committees** may be more appropriate. On occasions our business may engage contractors or on-hire workers to carry out specific tasks, where arrangements such as **'toolbox talks'** (short discussions on specific health and safety topics relevant to the task) may be the most practical way to consult with them.

Communication: All communication documents regards health and safety issues are to be created using the appropriate templates and are to be recorded in the site folder for future reference. Workplace Health and Safety roles, responsibilities, authorities and accountabilities are communicated to employees during induction, via email broadcast, information sheet or training session as required.

Daily pre-start records and minutes of discussion shall be recorded and maintained by the Site Foreman. Discussion of any relevant safety issues shall be a mandatory agenda item for all pre-start meetings, contractors are required to attend toolbox meetings Delta will record these in site diary (SEF 047). Delta Site Foreman, Sub-contractors, suppliers and consultants (where appropriate) will ensure that safety toolbox meetings are held on site to include all project personnel.

Reporting: Delta Group employees work within a structured and well defined management system. Delta joins related functions into manageable units to achieve the objectives of the organisation in the most efficient and effective manner. Satisfactory upward and downward reporting is essential for a successful organization because it closes the gap between superior and subordinates by increasing the levels of trust, support, and the frequency of their interactions. Delta Group personnel maintain a chain of command reporting procedure; all personnel reporting are expected to submit timely, accurate and complete reports.

Statutory Authority Reporting: Incidents at a workplace which result in the consequences described below (notifiable incidents) must be reported to statutory authority. If you are uncertain about whether an incident is notifiable under any of the legislative provisions then contact the National QSE Manager for direction.

Notification is required where an incident at a workplace results in death; or serious injury. Serious injury is used in this context to describe those incidents that result in the consequences described in the Act.

They include, but are not limited to, incidents that result in a person requiring medical treatment within 48 hours of exposure to a substance, immediate treatment as an in-patient in a hospital, immediate medical treatment for:

Amputation – serious head injury – serious eye injury – separation of skin from underlying tissue (for example de-gloving or scalping) – electric shock – spinal injury – loss of bodily function – serious lacerations.

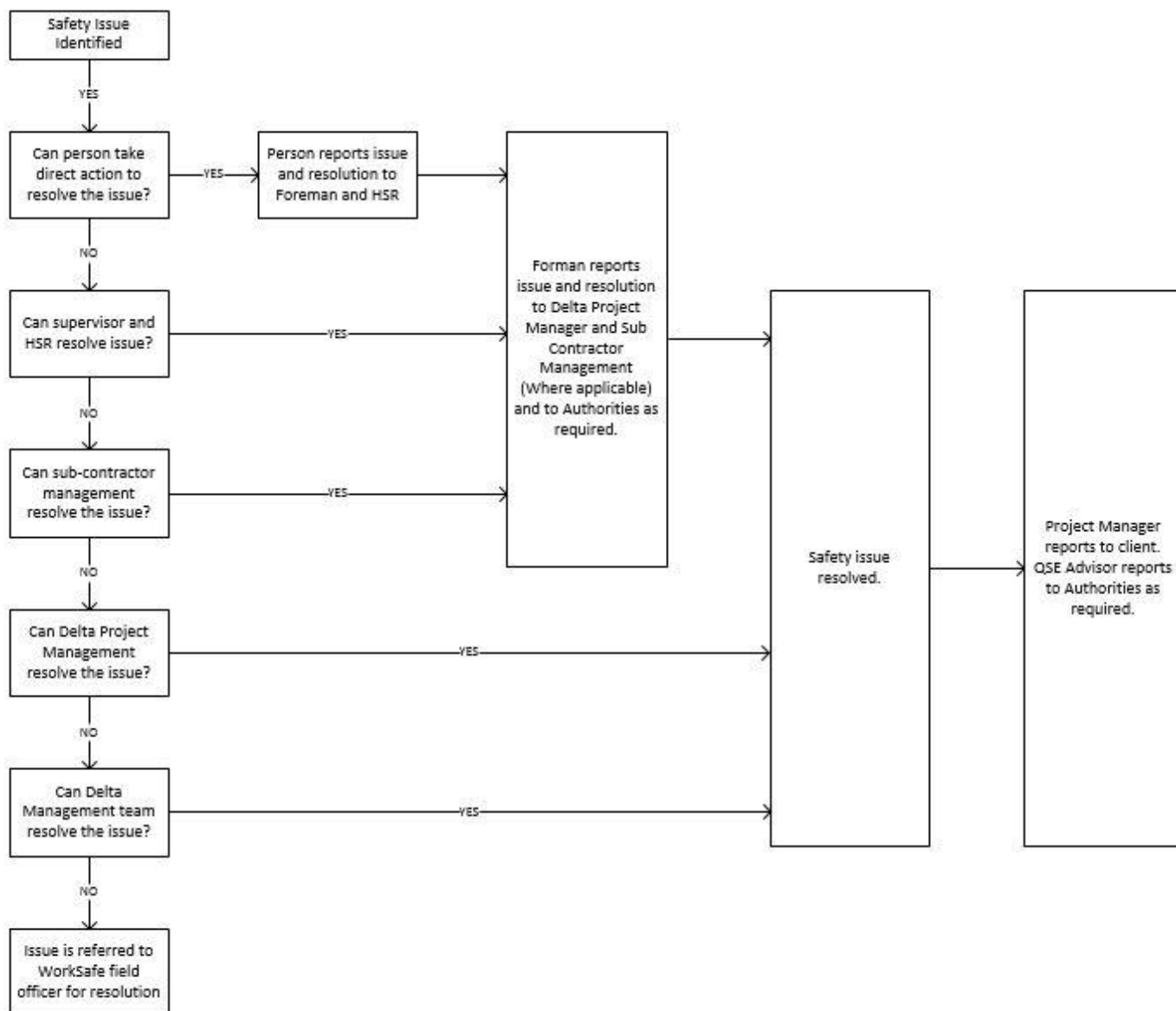
Client reporting: The timely reporting of WHS issues to the Client including:

- Worksite incidents, including such things as near misses, contact with hidden services
- Regulatory Inspector/s site visit
- Regulatory Notices issued
- Visits by Unions, FSC or similar to the site
- Results of internal reviews, site inspections and implementation of inspection and testing plans
- Results of audits, including non-conformances and the implementation of corrective actions

Incident Reporting: When injuries occur - no matter how minor - ensure they are reported to your Site Foreman or First Aider immediately. Seek First Aid Treatment on site if required - complete First Aid Treatment Register (SEF 029) and First Aid Treatment Notice (SEF 008) for minor treatment that does not require an incident report (SEF 010) (e.g. small cuts-band-aid, splinters). If medical attention is required, the Site Foreman must to notify Project Manager and National QSE Manager immediately.

RTW: Delta Supports all employees in the **Return to Work process** and is able to provide suitable duties with majority of restrictions. Employees also have an obligation to fulfill the duties as per medical certificate. Employees must also make all reasonable efforts to attend any follow up appointments and ensure they are issued with updated Work Cover medical certificates until GP certifies fit to resume normal duties. Subcontractors are and remain also responsible for meeting these legal obligations.

a. SAFETY ISSUE ACTION PROCESS



17. SITE INSPECTIONS

The Site Inspection and Compliance Team are a dedicated Team of trained and experience trades-related professionals who undertake site inspection and safety control on a regular basis on Delta sites.

a. DAILY PRE START INSPECTION

Pre-starts are an essential industry tool developed to help workers get focused and give all employees a chance to become informed on any changes to the work site. They are particularly useful for keeping track of the rapidly changing nature of on-site works, especially during the works phase and operations.

b. SITE SAFETY WALKS

The objective of safety walks is to evaluate the effectiveness of the company's safety effort and make recommendations which lead to a reduction in accidents and minimisation of loss potential. Safety walks are an important part of a company's control system and these checks ensure that deteriorating standards are detected. Examination of the defects exposed in safety walks result in hazardous conditions and potential accidents being avoided. Weekly Site Inspections are to include review/ close out of outstanding actions from previous Inspections. Site Inspections are to be conducted by Site Foreman or delegate/Safety Advisor with Safety Committee or Site Safety Representative.

c. SITE AUDITS

Site/s will be subject to Internal and External Audits, subcontractor safety management system will be included. Safety audits are intended to promote, improve and then maintain good safety performance. Safety audits (unlike accident statistics, which only record past accidents) are an instrument for the direct prevention of accidents, as they immediately generate positive actions across the whole business activity. Safety audit practice subjects each area of a company's activity to a systematic critical examination with the object of minimising human suffering and monetary loss.

Every component of the total system is included, e.g. management policy, attitudes training, features of the process, layout and construction of the plant, operating procedures, emergency plans, personal protection standards, accident records, etc. An audit, as in the fields of accountancy, aims to disclose the strengths, the weaknesses and the main areas of vulnerability or risk, and is carried out by appropriately trained personnel.

d. NON-CONFORMANCE AND CORRECTIVE ACTION REPORT

Each non-conformance will be noted in the audit form and documented in the Corrective Action Report (CAR) (SEF 005). The Corrective Action Report allows for up to five non-conformances to be documented. Each non-conformance and corrective action is loaded into the Audit Action Register for accountability by a set date.

e. SITE SAFETY RULES

The following codes reference the Site Safety Rules: SEF 058 Emergency evacuation, SEF 059 QSE Issues, SEF 060 QSE site rules, SEF 061 Syringe Stick and Scratch, SEF 062 Working near overhead electrical cables, SEF 063 Working near underground utilities.

18. PERSONAL PROTECTIVE EQUIPMENT (PPE)

All employees have a responsibility for maintaining and wearing the appropriate Personal Protective Equipment (PPE) at all times whilst on a Delta worksite. As a minimum, the following Personal Protective Equipment (PPE) shall be worn on site at all times by all site workers.

PPE Requirements									
	FOOT PROTECTION MUST BE WORN IN THIS AREA	HEAD PROTECTION MUST BE WORN IN THIS AREA	HEARING PROTECTION MUST BE WORN IN THIS AREA	EYE PROTECTION MUST BE WORN IN THIS AREA	FACE SHIELD MUST BE WORN IN THIS AREA	SAFETY VEST MUST BE WORN	HAND PROTECTION MUST BE WORN IN THIS AREA	RESPIRATOR MUST BE WORN IN THIS AREA	PROTECTIVE CLOTHING MUST BE WORN
<input type="checkbox"/> Tick if required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Work wear, long sleeved shirts and pants – Mandatory

Long and Longs: It is a Delta requirement that long sleeved shirts and long length pants are worn at all times. Short sleeve top and short pants are not permitted to be worn on site.

Footwear: Approved steel-capped safety footwear to AS/NZS 2210.2 Occupational Protective Footwear worn with socks must be worn at all times by all personnel whilst on-site. Lace-up over the ankle safety footwear is encouraged for all site works that form part of the project.

Hard hats: Approved safety helmets to AS/NZS 1801 Occupational protective helmets, must be worn at all times by employees working on a construction site.

High visibility: All persons working on the Project are required to wear long sleeve shirts and long pants at all times, complying with AS/NZS 4602 High visibility safety garments.

Appropriate high visibility apparel to AS/NZS 4602 High visibility safety garments and as described in AS 1742.2 Uniform traffic control devices, must be worn at all times by all personnel undertaking traffic control duties

Safety glasses: Approved eye protection to AS/NZS 1337 Eye Protectors for Industrial Applications, appropriate to the task shall be worn at all times by all personnel using grinders, oxy / acetylene, welding, power and pneumatically driven tools and equipment. Impact rating varies with eye protection equipment and must be considered when selecting appropriate eye protection for a task.

Hearing protection: Approved hearing protection to AS/NZS 1270 Acoustics – Hearing protectors, must be worn at all times where identified by the SWMS and / or risk assessment (SEF 043). All plant and equipment that exposed an employee to noises > 85dbA is required to have mandatory hearing protection signs displayed.

Gloves: Hand protection in accordance with AS/NZS 2161.1 Occupational protective gloves – Selection, use and maintenance, must either be worn or carried whilst working on the Project. When the employee is exposed to chemical contaminants or work that has the potential to cause injury to an employee's hands for example, but not limited to, cement handling, steel fixing, rigging, welding and dogging activities, gloves must be worn. The gloves provided, must suit the task and the hazard which the employee is exposed to, the gloves must be maintained in good condition and free from excessive wear.

UVR Protection: Delta will ensure to make available to their employees 30+ sun block, UV safety glasses and a broad brim for hard hats.

Additional PPE: Additional PPE may be required to be worn by personnel undertaking tasks with additional hazards. Equipment may include: goggles, face shields, fall arrest equipment, respirators, additional PPE will be identified in the relevant SWMS. . The equipment requirements for a particular task shall be determined by the Site Foreman in consultation with the OHS Coordinator and as stated in the SWMS for that particular work task.

All PPE will be freely available and replaced when worn, damaged, lost or stolen. All safety equipment provided must comply with the relevant Australian Standard. The Delta personnel issuing the PPE must record the Supply/Issue of PPE to personnel and this will be recorded in a PPE Register

19. PLANT

A Plant and Equipment risk assessment must be undertaken meeting the minimum requirements as outlined in National Standard for Plant (NOSHC: 1010 (1994)) in Particular Part 3 – General Requirements for Hazard Identification, Risk Assessment and Control of Risk and to fulfil the

requirements of section 3.5.2 of OHS Regulations 2007 (Vic). Part 4 Division 3 Occupational Safety and Health Regulations 1996 (WA) Section 3.1 WHS Regulations 2011 (QLD, NSW, ACT).

Pre-start checks, schedule of maintenance and fault reports are notified to the site supervisor, documented in plant log books and made available to relevant parties on request. The white copy is sent to the Delta Mechanical Workshop, the pink and yellow copies remain on site.

Plant logs are submitted to Delta Plant Mechanics on a weekly basis for review and for scheduling preventative maintenance. For items requiring urgent attention the supervisor is to contact the Workshop Manager. Where plant and equipment is hired, the same requirements as above apply.

All mobile plant must meet and be inducted onto site via the plant induction and recorded in the site Plant and Equipment Register (SEF 034). Where Delta is a contractor to a principle, plant will be inducted by the principal contractor unless instructed otherwise. All plant will still be recorded on Delta's plant register if inducted by the principal contractor.

20. ELECTRICAL

Delta ensures that the use of electrical wiring, equipment, portable tools and extension leads is in accordance with applicable codes and standards including AS/NZS3012, Electrical Installations – Construction and Demolition Sites and AS/3000, Wiring Rules. All maintenance and or alterations to electrical equipment will be done only by a suitably qualified electrician in accordance with relevant legislation.

All electrical equipment brought onsite must be listed in the site Plant and Equipment Register (SEF 034). The register is to be completed prior to commencement of works and will be maintained for the duration of project. All electrical equipment must be inspected prior to use and where damage is evident the equipment must be tagged 'DO NOT USE'.

Any tools or equipment that does not have a current inspection tag in place must not be used on the project. All site electrical tools and equipment must be inspected and tagged accordingly by a qualified electrician as required by AS/NZS 3760. RCDs are to be inspected and tagged monthly. All inspections must be logged on the Plant and Equipment Register (SEF 034) by the company or contractor responsible for the equipment.

21. LIFTING EQUIPMENT

All lifting equipment and Fall Prevention Equipment must have a valid inspection tag. Prior to use, all equipment is to be inspected by user for faults. Any equipment deemed faulty must be put out of circulation immediately and handed over to Project Manager/Supervisor for disposal or further inspection with "Out Of Service" or "Danger Tag" attached. All lifting gear is to be recorded in Site Plant and Equipment Register (SEF 034).

22. HEALTH SURVEILLANCE

Delta maintain a continuous health surveillance program which is a systematic collection, analysis, and interpretation of health data, essential to the planning, implementation and evaluation of employee health practice. Such surveillance serves as an early warning for impending negative trends and health and safety issues in the workplace. Pre-employment medicals are completed on all applicant employees. Ongoing medical care includes but is not limited to; audiometric testing and respiratory function tests for personnel working with hazardous substances like asbestos.

Where there is a significant risk to hazardous substance exposure, Delta Group will ensure that appropriate health monitoring by a registered medical practitioner with experience in health

monitoring is provided to any worker who is using, handling, generating or storing hazardous chemicals. The frequency of health monitoring is to be determined by the registered medical practitioner. Where Delta Group commissions health monitoring for a person, Delta will pay all expenses relating to the health monitoring.

23. FIT FOR WORK

Delta personnel will present their self as fit for work to ensure that every employee or subcontractor who is engaged and under its control, attends work in a fit state to carry out all duties that may be required. Failure to identify personnel who are not fit for normal duties increases the risk of injury to those people, and in addition, to other employees within the proximity of the impaired worker.

Delta will ensure that:

- No project personnel attend work in a condition, which precludes him or her from undertaking normal duties. This may be due to illness, injury, alcohol consumption, fatigue, or through the taking of prescription or non-prescription drugs.
- On a regular basis, all project personnel shall be assessed at the commencement and throughout the duration of the shift.
- Prompt action is taken in all instances where a worker is deemed as being unfit for duty.
- All instances shall be documented and brought to the attention of Delta QSE department.
- A person's site access may be revoked following a negative fitness for work test result.

24. WORKING AT HEIGHTS

A Risk Assessment (SEF 043) when employees are undertaking a Working at Height (SEF 020) task must be completed prior to commencement. The Project Manager and/or site supervisor is to conduct a risk assessment for each task which involves working at height in the workplace, where an employee is required to work at a height. All risk assessments are to be conducted in consultation with the employees; whilst considering the relevant standards, codes of practice, compliance code or legislation.

25. ELEVATED WORK PLATFORM

The Commonwealth, state and territory workplace safety regulators issue licenses in their jurisdiction. Delta personnel operating a scissor lift or <11m Boom will hold a EWPA industry card, EWP >11m Boom operators will hold a regulated license from the state or territory in which the work is being performed. Works will comply with AS2550.10, Elevated Work platforms. The Project Manager and/or the site supervisor are to conduct a risk assessment prior to working at height.

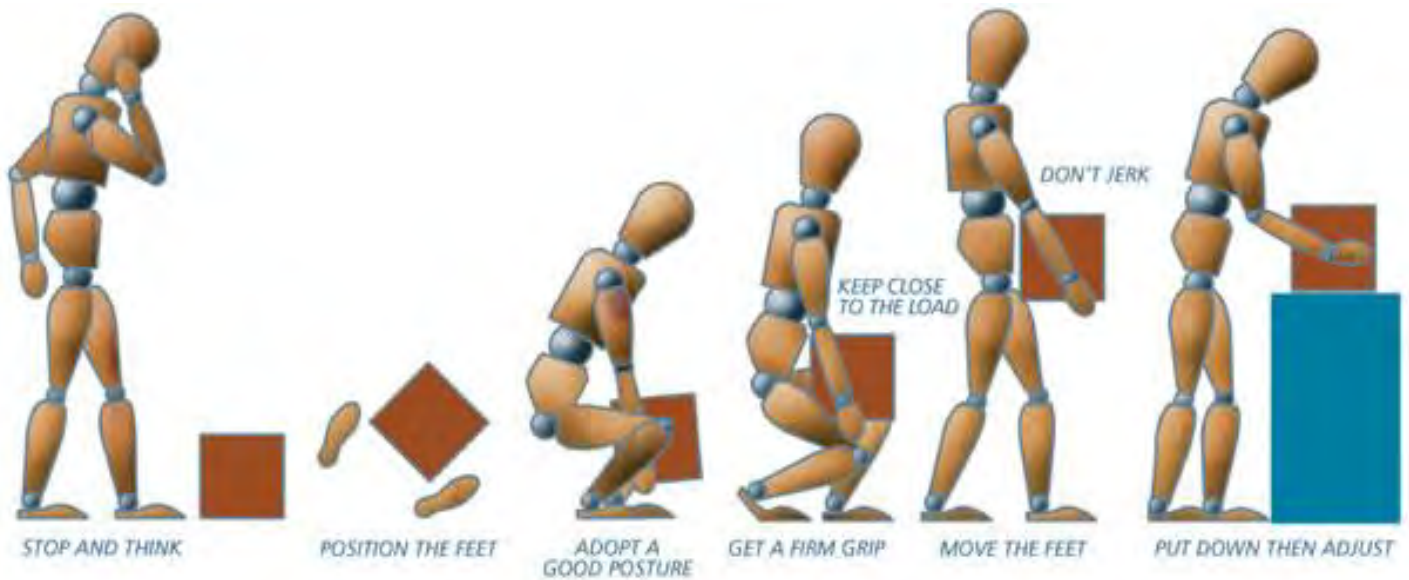
26. HOT WORKS

Hot work is any process that can be a source of ignition when flammable material is present or can be a fire hazard regardless of the presence of flammable material in the workplace. Common hot work processes are welding, soldering, cutting and brazing. When flammable materials are present processes such as grinding and drilling become hot work.

Prior to any hot works commencing the Project Manager and/or site supervisor is to conduct a risk assessment and a hot works permit will be completed by the person undertaking the works. The Hot Works Permit (SEF 019) must be approved by the site controller Foreman and is only valid for 1 day.

27. MANUAL HANDLING

(SOP 24)



28. CONFINED SPACE

Confined space is a term from labor-safety regulations that refers to an area which is enclosed with limited access which make it dangerous. An example is the interior of a storage tank, which workers may enter for maintenance but which is not ordinarily a habitable space.

AS2865 (NOHSC: 1009) Confined Space COP (Safe work Australia)

A confined space means an enclosed or partially enclosed space which is at atmospheric pressure during occupancy and is not intended or designed primarily as a place of work; and may have restricted means of entry and exit; and may have atmospheric contaminants or an unsafe oxygen level; or (ii) may cause engulfment. Entry to a confined space requires a risk assessment and entry permit (SEF 017). Only trained persons may be involved in confined space entry.

29. OVERHEAD AND UNDERGROUND ASSETS

Careful planning and preparation is an essential step to help ensure work is done safely, when preparing for this work a risk assessment (SEF 043) must be undertaken.

This should include understanding important parts of the planned work and how to deal with changes as the work proceeds, understanding what plant will be used in the operations, identifying possible hazards and risks associated with the work, consulting the electricity supply authority or asset owner about the proposed work if there is a risk of people, plant or things coming within an unsafe distance of an overhead or underground electric line, ensuring compliance with all conditions imposed by the electricity supply authority for the work, ensuring an effective communication system is in place between workers at the site, providing training and verifying qualifications and competency of workers, providing information and instruction to operators and other workers about control measures to eliminate or minimise electrical risks, supervising workers to ensure safe work procedures are followed, checking the plant and equipment including limiting

devices are working properly, checking proximity of people, cranes, mobile plant, material and tools to overhead electric lines, checking proximity of people to cranes and mobile plant, ensuring safe workplace entry and exit, checking emergency plan and rescue procedures, ensuring approach distances are appropriate for the authorisation levels of the workers undertaking the work and managing the impact of environmental factors including storms and lightning in the area.

30. EXCAVATION AND DRILLING

Safe earthworks depends on adequate pre-construction investigation of the ground and workplace, and proper interpretation of the information obtained, before commencing work Delta will obtain all available information and data acquisition for the workplace risk assessment then analyze the information for planning and construction. On sites where the nature, locations and extent of underground obstacles/services and excavations is significant or complicated or work is within 2m of an underground service / asset or within guidelines set out by an asset owner, then a formal Excavation Work Permit (SEF 018) system must be implemented.

31. HAZARDOUS SUBSTANCES

Delta and its subcontractors will provide a current (within 5 years of the date of issue) SDS for all products and substances to be used for the work activity. Before a product or substance is used for the work activity, Delta will review the Material Safety Data Sheet (MSDS). All employees involved in the use of products classified as hazardous, are provided with information and training to allow safe completion of the required task. As a minimum standard, all safety and environmental precautions for use listed on the SDS are followed when using the substance and will be included in the Safe Work Method Statement. All products and substances requiring a SDS brought onto the workplace will be documented in the Hazardous Substances Register (SEF 033). Refer to SOP for Portable Oxy-Fuel Gas (SOP 30) Equipment Operating Procedure.

32. HAZARD REPORTING

When a hazard is identified it is brought to the attention of the site Project Manager, Site supervisor, the HSR or the QSE Advisor. The hazard report form is completed and work may be stopped in the immediate area until an appropriate control has been implemented. Delta investigates all reported hazards and implements control measures to eliminate and/or minimise the likelihood of an incident or injury. Following a hazard report – the site risk assessment will be reviewed to determine if further controls are required and if the risk assessment needs to be updated. Any changes to the site risk assessment will be communicated to site personnel via toolbox talks and notice boards.

33. INCIDENT REPORTING

In the event of any person sustaining an injury or illness, near miss, property damage, unsafe act, increased environmental impact, non-conformance service/product or similar, they are be required to report the matter immediately to their supervisor (SEF 010). No matter how minor the incident must also be reported to the QSE department (24HR) so an action of investigation, corrective action or root cause analysis can take place.

34. INCIDENT CLASSIFICATION (GUIDE)

a. MINOR

An occurrence usually minor event or condition that is subordinate to another something resulting in or a near miss with the potential to cause:

- One injury requiring no more than First Aid treatment (FAI) on site
- Property damage with a value less than \$1,000
- Negligible Impact to the Environment

b. MEDIUM

An Incident resulting in or a near miss with the potential to cause:

- Medical Treatment Injury (MTI) or multiple First Aid treatments
- Property damage with a value greater than \$1,000 but less the \$10,000
- Minor on site impact to the Environment

c. MAJOR

An Incident resulting in or a near miss with the potential to cause:

- Lost time Injury (LTI) or greater, alternate work duties, multiple MTI
- Property damage with a value greater than \$10,000
- Derailment of rolling plant, collision or explosion
- Moderate onsite and minor offsite impact to the Environment

35. STATUTORY AUTHORITY REPORTING

Delta will notify the Authority immediately after becoming aware that a notifiable incident has occurred at a Delta workplace. Delta will report all notifiable incidents to the regulatory body in a timely manner, and within 48 hours after notifying the Authority, Delta will also give the Authority a written record of the incident, in the form approved in writing by the Authority

A notifiable incident will also require the site to remain undisturbed until advised otherwise by the Regulatory Authorities field officer. When a notifiable incident occurs, the Project Manager or Supervisor will immediately notify the Delta National QSE Manager so a report can be made to Workplace Services within the prescribed period.

When a Regulatory Inspector visits a Delta worksite, the Delta QSE Advisor/Foreman (as a minimum) shall accompany the Inspector, recording details of all discussions and events. A copy of the entry report must be uploaded into the Delta system for reporting purposes.

36. INCIDENT REPORTS AND INVESTIGATION

All accidents/incidents, property damage, near misses or work related illness must be documented and reported to the Delta Group National QSE Manager (SEF 010A). The incident investigation must be completed in a timely manner and submitted to the Delta Group National QSE Manager (SEF 010B). The investigator must provide in writing the following information relating to activities and those of any secondary contractor that Delta has engaged:

1. Any lost time injury/illness;

2. Details of any employee that is unable to continue with their normal duties and has returned to work on alternate duties as part of the return to work plan.
3. Details of any “serious incident” or “incident” (as defined by legislation) reported to the local Statutory Authority.
4. Copy of an accident, property damage or near miss report;
5. Name of the nominated person responsible for notifying the QSE department of any accident, “serious incident” or “incident”;
6. Copy of any improvement/prohibition notice or confirmation of advice report issued by the local Statutory Authority

The investigation is intended to identify a root cause of an incident and any actions required by Delta personnel then recorded in the Corrective Action Report (SEF 005) and logged into the Delta system. The investigation procedure should be a logical and intelligent collection of information through inquiry and examination for the purpose of developing evidence which supports the root cause corrective action.

a. CORRECTIVE ACTION REPORT (CAR)

The investigation process should determine the corrective action required to prevent an incident/non-conformance from re occurring. For each non-conformance a Corrective Action Report (SEF 005) must be completed, up to five non-conformances can be documented on one Corrective Action Report. Corrective actions will be listed in site Action Register (SEF 024) for completion by nominated person within a set timeframe. Nominated person is to provide evidence of the close out of the corrective action item.

In the event that a Corrective Action requires a review/update of Policy, Procedures, the IMS Manager will be immediately notified. The IMS Manager will review report and determine appropriate action.

37. RECORDS AND RECORD MANAGEMENT

A system (on-site) shall be established for the identification, collection, indexing, filing, storage and maintenance of all records pertaining to the provision of objective evidence that:

- The safety system is being implemented in accordance with this safety plan and AS/NZS4801;
- The products and services provided meet the requirements of the project specification;
- The records shall be available when required for review and audit by the Client.

The records referred to in this section, will be all records generated by Delta Group personnel, their subcontractors and consultants for the project which may include:

- Inspection and test records;
- Inspection reports;
- Non-conformance notices;
- Safety memos;
- Written approvals for changes to specifications by structured engineers;
- Subcontractor’s records;
- Final safety reports including test and commissioning report.

As each section of the work is completed, copies of the safety record shall be collated and made available for hand-over. Delta will maintain records for a period in accordance with statutory requirements.

38. HANDLING, STORAGE AND PROTECTION OF MATERIAL PRODUCTS AND WORK

All products delivered to this project will be identified to ensure that no confusion arises between similar products where a product could be inadvertently used for an incorrect application.

Products are identified by using the applicable drawings, specifications. The handling and storage of all items will be controlled to prevent misuse, abuse, damage, deterioration or loss.

All items will be clearly identified and shipped with a delivery docket itemising the content of the delivery. All items will be packed suitably to prevent damage during delivery.

a. DISPOSAL OF RECORDS

On completion of a project all site file documents will be returned to the Delta office for confidential document disposal.

39. EMERGENCY MANAGEMENT

Project personnel will as part of their induction will receive contact details of relevant site personnel regarding emergency management information. During the preparation stage of a project Delta will allocate suitably qualified personnel to fill the required roles in emergency management. A Delta supervisor and/or a Delta QSE Advisor will ensure there are wall posters with up to date names and numbers of emergency management personnel posted around the site in plain view.

Delta Group management will ensure on each project that a nominated first aid officer is available at all times whilst work is in progress. Where the assessment of a workplace location has identified significant risk, additional trained personnel shall be assigned as appropriate. This information will be communicated through inductions, pre start meetings and safety noticeboards. Each Sub Contractor may nominate an employee on site as their First Aid Representative and must have a current First Aid certificate. Adequately stocked First Aid kits relevant to the nature and size of the project will be provided by Delta. Where more than one project location is present during the project, first aid kits will be made available at each site to ensure easy and quick access to a kit when required.

The site supervisor and the first aid representative should ensure records are maintained for every first aid treatment given at the workplace. If a minor injury occurs then the first aid treatment notice must be completed and the injury logged in the First Aid Register (SEF 029), notification of the incident must be sent to the QSE Department within 24 hours of the injury occurring. If a serious injury occurs then the incident report form must be completed and the injury logged in the site First Aid Register (SEF 029), notification of the incident to the QSE Department must be immediate, with a written report (SEF 010) forwarded to the National QSE Manager within 24 hours of the occurrence.

40. INJURY MANAGEMENT AND RETURN TO WORK

Delta will assist the process to return injured workers to employment at the earliest date following any injury or illness. We desire to speed recovery from injury or illness and reduce insurance costs. In our policy “transitional” work means temporary modified work assignments within the worker’s physical abilities, knowledge, and skills. Where possible we will make transitional positions available to injured employees in order to aid rehabilitation and minimise or eliminate time loss. For any business reason, at any time, we may elect to change the working shift of any employee based on the business needs of the company. The Delta Group employs a dedicated National Return to Work Coordinator to manage the process of rehabilitation in the workplace to ensure that all injured workers have the opportunity to recover and either stay at or return to work. All injured employees will receive appropriate first aid or medical treatment as quickly as possible. The injured person will be assisted by either, the QSE / RTW Coordinator, First Aider or Site Supervisor to attend a medical center, where the medical management of the injury will assist in planning the return to work process. Injured employees are offered the assistance of a Work Cover-accredited rehabilitation provider to assist in returning to their pre-injury duties. An injured employee will be provided with suitable duties that are consistent with medical advice and are meaningful, productive and appropriate to the injured employee’s physical and psychological condition. Persons working modified duties will require a clearance certificate from their Doctor to return to pre-injury duties.

OH&S Legislation” means:

- (a) if the project is in Victoria, the Occupational Health and Safety Act 2004 (Vic) and the Occupational Health and Safety Regulation 2007 (Vic);
- (b) if the project is in New South Wales, the Work Health and Safety Act 2011 (NSW) and the Work Health and Safety Regulation 2011 (NSW);
- (c) if the project is in Queensland, the Workplace Health and Safety Act 2011 (QLD) and the Workplace Health and Safety Regulation 2011 (QLD);
- (d) if the project is in Tasmania, the Workplace Health and Safety Act 2012 (TAS) and the Workplace Health and Safety Regulation 2012 (TAS);
- (e) if the project is in South Australia, the Workplace Health and Safety Act 2012 (SA) and the Workplace Health and Safety Regulation 2012 (SA);
- (f) if the project is in the Northern Territory, the Workplace Health and Safety Act 2011 (NT) and the Workplace Health and Safety Act 2011 (NT);
- (g) if the project is in the Australian Capital Territory, the Workplace Health and Safety Act 2011 (ACT) and the Workplace Health and Safety Act 2011 (ACT);
- (h) if the project is in Western Australia, the Occupational Safety and Health Act 1984 (WA) and the Occupational Safety and Health Regulation 1996 (WA); or
- (i) any reference made to QSE (Quality, Safety, Environment), OHSE (Occupation, Health, Safety, Environment or the like.

41. REFERENCE MATERIAL

Relevant WHS/OHS/OSH legislation to the state or territory to which the contract applies
Relevant Code of Practice or Code of Compliance to the state or territory to which the contract applies

ISO 9001 QMS

ISO14001 EMS

AS4801 QHSMS

AS4801 4.4.3 Consultation, communication and reporting

AS4801 4.3.1 Planning and 4.4.6 hazard identification, hazard/risk assessment and control of hazard/risks

AS4801 4.4.2 Training and competency

AS4801 4.4.6 hazard identification, hazard/risk assessment and control of hazard/risks

AS4801 4.4.3.3 Reporting, 4.5.2 Incident investigation, corrective and preventive action

AS4801 4.4.6 hazard identification, hazard/risk assessment and control of hazard/risks

AS4801 4.5.1 Monitoring and measurement

AS4801 4.5.4 OHSMS Audit and 4.6 Management review

AS/NZS 4581 Management System Integration

AS4801 4.4.4 Documentation, 4.4.5 Document and data control, 4.5.3 Records and record management


Each site, branch, state or territory should identify and apply the relevant workplace safety WHS/OHS/OSH Legislation and COP's for the area that is applicable to their workplace. (Inclusive of AS/NZS)

For the purpose of identifying current national safety legislation and regulations Delta Group maintain an annual subscription to Workplace Safety Australia Pty Ltd.

ACCEPTANCE OF SAFETY MANAGEMENT PLAN

This Safety Management Plan has been developed and viewed in consultation with the workers and it is read and signed by all persons involved in the plan. If a variation occurs to this Safety Management Plan then management will communicate and re-induct the change to the work group whilst adjusting the work method accordingly.

I hereby confirm that I have read and understand this Safety Management Plan and I will ensure my work process is completed accordingly.

Project Manager Safety Plan Approval	Richard Strong
Signature	
Date	12/05/15

Inductee Name	Company/Title	Signature	Date

Environmental Management Plan



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"Safety is no accident!"

PROJECT DETAILS

Date

12-05-15

Client Name

Grocon

Address

IMAX - 31 Wheat Road, Darling Harbour NSW 200

Project Description/Scope

THE RIBBON SYDNEY
Demolition of IMAX Theatre

DISCLAIMER

This document has been developed to assist the Delta Group to better understand and manage workplace safety and workers compensation issues in the workplace. While every effort has been made to ensure the accuracy of the material in this document, this publication is not meant to substitute for the legislation. For the specific requirements on an issue covered in this document, persons should refer directly to the relevant legislation in their location.

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REVISION OF ENVIRONMENTAL PLAN

Rev	Date	Description of Change	Page/s	Reviewed by	Approved by
0	12-05-15	Document Creation	All	Yasser Haragli	Richard Strong

INTRODUCTION

The Environmental Management Plan identifies hazards and risks that Delta Group business and personnel may be exposed to during the course of work. The plan details the control measures to be implemented to regulate these hazards and risks. The risk management process involves the use of policies and procedures compliance, forms and checklists, education, training and supervision, and continual improvement in all areas required of the environment.

The model in AS/NZS 4581 Management System Integration and the guidelines in Standards Australia Hand Book Guidance on integrating the requirements of Quality, Environment and Health and Safety Management Systems form the basis for the Delta IMS.

1. POLICY



Environmental Policy

Our goal is to improve the environments in which we operate.

This goal is not limited to minimising the environmental impact of our operations but includes taking active steps to reduce our energy usage, to reduce waste, to recycle everything we can and to be rigorous about safe disposal of any residual contaminants in strict compliance with regulatory requirements. This is at the heart of our business.

To achieve our goal we will:

- Maintain an Integrated Management System which meets the requirements of AS/NZS ISO14001
- Constantly challenge the system for better ways of doing things
- Apply our philosophy of "Right First Time" but when we don't get it right we will learn from our mistakes
- Set objectives and targets to measure and improve our environmental performance
- Strive to prevent pollution, reduce waste and recover and recycle with the aim of exceeding all relevant regulatory standards

Signed:

A handwritten signature in black ink, appearing to be 'Stuart Gibson', is written over a light blue background.

Stuart Gibson
Group General Manager
Delta Group

Date: 25/6/14



2. AUTHORISATION AND CONTROL

This Environmental Plan is authorised by the General Manager and National QSE Manager. All project personnel are to ensure that their work activities and those of Project Consultants, Contractors and Suppliers are carried out in accordance with the requirements of this Plan. Delta Group senior management acknowledges the importance of meeting customer, statutory and regulatory requirements.

a. DISTRIBUTION

This Plan is a Controlled Document and must be distributed and revised under the guidance of the Project Manager. People who hold controlled copies are responsible for maintaining their copies up-to-date. We issue this document as a guide to all those working to our safety standards.

b. REVISION

The Project Manager will monitor the implementation of this Plan and review the need for change or improvements on an as needs basis. This document will be reviewed annually. Document revisions may be viewed in the document "Properties".

c. CONTRACT REVIEW (REFER QMS)

d. CONTRACT CHANGE MANAGEMENT (REFER QMS)

3. PROJECT SAFETY MANAGEMENT COMMITMENT STATEMENT

Nothing is more important to us than the safety and wellbeing of our personnel and caring for the environment. Together, our personnel form the Delta Group most powerful asset - a rich and culturally diverse team of talented, enthusiastic individuals. Safety and the environment are about people, not numbers. The standards and targets we set are important, and have been successful in assisting the Delta Group to improve our performance, but they singly they do not deliver our safety and environmental vision.

4. PLANNING

The Environmental Management Plan identifies hazards and risks that workers may be exposed to, it details the control measures to be implemented to regulate these hazards. The risk management process involves the use of policies, procedures, audits, safety forms, checklists, education, supervision, and continual improvement in all aspects of environmental management.

The Environmental Management Plan identifies the hazards associated with the work to be undertaken and the control measures that are to be implemented to protect people and property across our worksites.

a. RESOURCES

The resources essential to the implementation of the Delta Group environmental policy and the achievement of environmental objectives and targets are defined in the Environmental Management System and made available in its development and implementation in accordance with AS/NZS ISO 14001 clauses 4.4.1 and A.4.1.

b. OVERVIEW OF LEGAL REQUIREMENTS

Environmental Legislation is the principle legislation that applies to all places of work. Delta Group applies the relevant state or territory legislation to the work location of any Delta Group

workplace. Additionally we reference AS/NZS 4801, ISO-18001 and Codes of Practice relevant to the work location of any Delta Group workplace. The Delta Group will maintain legal and other compliance, we acknowledge the need to identify and understand the importance to address the regulatory and other requirements applicable to environmental aspects of its activities, products and services in accordance with ISO 14001 clauses 4.3.2 and A.3.2.

The goals of environmental management workplace programs include fostering a safe and healthy work environment. Environmental management programs also protect co-workers, family members, employers, customers, and many others who might be affected by the workplace environment.

The purpose of Environmental Legislation is to outline the legal duties of employers and employees (including all onsite contractors). The Environmental Management Legislation extends the duty of care beyond employees to cover others at the workplace. This includes contractors or members of the public. Beyond the duty of care, the Act imposes another duty on employers.

An employer must, so far as is reasonably practicable, provide and maintain for employees of the employer a working environment that is safe and without risks to health.

5. MANAGEMENT SYSTEM

Delta Group:

- Maintains an up to date version of this Environmental Management Plan
- Retains all obsolete pages of the Plan
- Provides a copy of the current version of the Plan to the Client
- Reviews the Plan on an as needs basis to maintain its currency
- Ensures all amendments to the Plan are communicated to persons involved in the works
- All of our people are involved in continuously improving our Environmental Management System, particularly in how the system meets the needs and expectations of our clients.

6. MANAGEMENT SYSTEM REVIEW

Delta Group Management will conduct regular inspections of the work activities and work environment applicable to monitor the effectiveness of this Environmental Management Plan. A record of all inspections / audits and toolbox talks used in communicating and reviewing will be retained on-site.

Should it be necessary to expand or modify the environmental management system, any alterations shall be duly reviewed and communicated to persons involved in the works. The scope of the management review includes the effectiveness of the Environmental Management System, and the stability of the system in adapting to client and business needs and its compliance with the Environmental Standard and the Environmental Management System objectives. Delta Group will consider and assess which aspects of our activities, products and services involve an interaction with the environment, and identify the risks and opportunities involved, and the resulting significant impacts in accordance with ISO 14001 clauses 4.3.1 and A.3.1.

This is an ongoing review process that identifies and assesses past, present and potential future impacts. The review includes revisiting existing environmental management assessments and procedures. An important part of the review is for the organisation to identify the legislation and regulations affecting the environmental aspects of its activities, products and services, and the related risks and opportunities involved.

a. CONTINUOUS IMPROVEMENT

As a minimum the continuous improvement process is comprised of audits, self-assessments, lessons-learned, procedure preparation, and training. Continuous improvement is an essential management and environmental management strategy in addressing customer satisfaction, product delivery, compliance, and cost savings. It is the intention of the process that areas of concern are assessed before problems develop, and before they have a significant impact on a project. The project management will maintain an infrastructure needed to achieve contract requirements.

In order to ensure the continuing efficiency and effectiveness of the Management System, all members of staff have a responsibility to observe and report occasions where the organisation does not meet its specified requirements, be they imposed by customers, by regulation or nominated in the Management System.

7. ROLES AND RESPONSIBILITIES DEFINED

Delta Group personnel at all levels are accountable legally and otherwise for environmental performance, within the scope of their defined and inferred roles and responsibilities, including in supporting the Environmental Management System.

PROJECT MANAGER is responsible for environmental issues at the workplace and these include:

- Implementing and maintaining the Environmental Management Plan;
- Undertake a detailed review of the project documentation and prepare a schedule of scope deliverables which forms the environmental management plan
- Organisation of on-site personnel with regard to their responsibilities within the Environmental Management System;
- Identify key environmental management risks and opportunities to ensure high environmental management outputs;
- Communicating with the principal contractor to reduce environmental management risks;
- Being a part of the planning and design stages of trade activities;
- Ensure that all staff under their control have adequate training and experience for the work in conjunction with operations supervisor;
- Ensure that all staff under their control has adequate equipment to carry out the works in conjunction with operations supervisor;
- Periodic audits of their environmental control processes;
- Manage non-conformances and initiate corrective action as required;
- Manage defects on site to reduce the number of defects at completion;
- Leading by example and promoting sound environmental management practices at every opportunity;
- Reviewing environmental management reports and inspections, and following up on recommendations;
- Regular attendance at on-site meetings to ensure environmental management related issues are raised for review;
- Manage responsibilities for the Environmental Impact Analysis Action Plan

OPERATIONS SUPERVISOR is responsible for environmental management at the workplace and these include:

- Work with the Site Foreman, and ensure that no unnecessary delays occur;
- Develop systems for the implementation of safe and efficient work methodologies for the completion of project tasks;
- Assist in planning the daily work procedures, resourcing and allocation of labor;
- Assist in ensuring environmental management procedures are adhered to;
- Ensure communication is maintained between the subcontractor representative/s and Delta operations;
- Be responsible for providing appropriately trained personnel for the project and the hiring and expulsion of personnel;
- Organise the hiring of equipment and ensure its compliance with environmental management requirements;

SITE FOREMAN/SUPERVISOR is responsible for environmental management at the workplace and these include:

SITE FOREMAN/SUPERVISOR is responsible for environmental at the workplace and these include:

- Implementing the Environmental Management Plan;
- Understand the requirements of the contract and ensure the works are delivered in accordance with the contract;
- Ensure that itps are being carried out properly and nominated hold points are verified prior to works proceeding
- Providing advice and assistance on environmental matters to employees;
- Deciding when training is required;
- Undertaking inspection of the contracted or planned works to ensure that environmental control measures are implemented and effective;
- Ensure that all defects and incidents are identified, actioned and closed out;
- Ensure that itps are being carried out properly and nominated hold points are verified prior to works proceeding
- Leading by example and promoting sound environmental practices at every opportunity;
- Regular attendance at on-site meetings to ensure environmental related issues are raised for review;
- Assist in developing SWMS for all tasks and ensuring the work is monitored throughout. If required, amend the SWMS to reflect work activity changes;
- Take all reasonable care to maintain a high standard of care and workmanship;
- Ensure Site Inductions are conducted for all workers and Subcontractors;
- Managing the Site Folder on and ensuring all QSE documents are correctly completed – including consultation, communication checklist and registers;
- Recording all daily site activities in a site diary;
- Other environmental related duties as directed by the Project Manager.

QSE ADVISOR is responsible for environmental management at the workplace and these include:

- Conduct internal audits and inspections of the environmental management system
- Assist in the implementation of the Environmental Management Plan;
- Understand the requirements of the contract;
- Providing advice and assistance on environmental management matters to employees;
- Advise when training required;
- Assist where possible to communicate to the workforce including toolbox meetings and inductions
- Ensure that all defects and incidents are identified, actioned and closed out;

- Leading by example and promoting sound environmental management practices at every opportunity;
- Regular attendance at on-site meetings to ensure environmental management related issues are raised for review;
- Lead the process of ensuring environmental management audits undertaken periodically
- Other environmental management related duties as directed by the Project Manager.

8. OPERATIONAL CONTROL

Delta procedures cover a specific task, activity and process, or a number of tasks, activities or processes, undertaken during the course of a contract. Our procedures serve to identify the controls to be put in place to achieve the related objectives and targets.

To ensure effective environmental management, the Delta Group have procedures that cover activities and processes contributing to significant environmental impacts with our operations, in accordance with ISO 14001 clauses 4.4.6 and A.4.6. The operations include planning, designing, purchasing, contracting, management of service providers, handling and storage of materials (hazardous or otherwise), disposal of wastes, recycling, air/water/land/heritage management, and de-contamination / remediation/restoration and asset maintenance.

9. TRAINING AND COMPETENCY

Delta Group confirms that all personnel are trained and competent to perform their work in accordance with the requirements of the contract. We require all employees to undergo training in our Environmental Management System as part of their induction and continuing training. This training is both general environmental management training and training related to achievement of environmental management standards in the particular tasks done by each employee.

The Delta Group ensures all personnel able to influence environmental performance have the necessary education, skills, experience and knowledge. This includes training all personnel; ensuring they are kept informed about changes, risks/opportunities, their roles and required procedures; and generally ensuring they are able to meet environmental management requirements.

Delta maintains an electronic data base for training and competency which is updated as training is completed. N:\Ticket Register\TICKET REGISTER\New ticket register. Subcontractors will provide Delta with evidence of training and competency for their employees.

A listing of Delta Employee details with the skills and competencies of the group employees will be provided to the client on request.

Induction training is oriented in assisting personnel to be aware of their environmental system responsibilities to ensure that an environmental product or service is delivered and that an appropriate communication and reporting system is maintained to allow verification of all facets of work produced. Records of induction and training sessions are recorded and can be reviewed by the client's Environmental Manager on request.

10. ENVIRONMENTAL ASPECTS AND IMPACTS ASSESSMENT

This procedure aims to allow environmental aspects and impacts to be identified and then assessed to determine which ones are considered to be significant. The Project Manager shall ensure that all environmental aspects and impacts are satisfactorily assessed, controlled and monitored. (SEF 006)

a. Identification of Environmental Aspects

Environmental Aspects may be seen as the cause of impacts to the environment.

The Project Manager shall conduct an assessment of any activity which will cause an impact (either positive or negative) to the environment. This will include aspects from workshops, maintenance facilities, onsite construction and office. When identifying aspects, consideration should be given to potential emergency situations, normal and abnormal operating conditions.

b. Identifying Impacts

Environmental Impacts are the consequences arising from environmental aspects. It is possible that from one aspect there may be a number of impacts on the environment. Impacts to all segments of the environment should be considered including positive impacts. (SEF 006)

11. ENVIRONMENTAL ASPECTS and IMPACTS ASSESSMENT REGISTER

Refer to SEF 068

12. RECORDS AND RECORD MANAGEMENT

The Delta Group ensure all Environmental Management System documents, including procedures, work instructions, checklists and forms, are available and appropriate before they are used, in accordance with ISO 14001 clauses 4.4.4, 4.4.5, A.4.4 and A.4.5.

A system (on-site) shall be established for the identification, collection, indexing, filing, storage and maintenance of all records pertaining to the provision of objective evidence that:

- The environmental system is being implemented in accordance with this environmental management plan and ISO 14004;
- The products and services provided meet the requirements of the project specification;
- The records shall be available when required for review and audit by the Client.

The records referred to in this section, will be all records generated by Delta Group personnel, their subcontractors and consultants for the project which may include:

- Inspection and test records;
- Inspection reports;
- Non-conformance notices;
- Environmental memos;
- Written approvals for changes to specifications by structured engineers;
- Subcontractor's records;
- Final environmental reports including test and commissioning report.

As each section of the work is completed, copies of the environmental management record shall be collated and made available for hand-over.

a. SUBCONTRACT EMPLOYEES

Are responsible for the following:

- Complying with the Environmental Management Plan including all its;
- Reporting all non-conformances to the Works Supervisor;
- Subcontractors are and remain responsible for meeting their legal obligations

13. INSPECTION AND TEST PLANS (ITP's) (Refer QMS)

14. INTERNAL AUDITS

Delta Group reviews all quality policies and procedures on an as need basis to determine the effectiveness of the Environmental Management Plan in addressing quality in the workplace.

Internal auditing are conducted on all sites thereby ensuring standards are maintained. This procedure provides guidance for auditing the environmental management system to ensure that the system continues to conform to the requirements of ISO14001. Delta Group internal auditing system is an independent, objective assurance and consulting activity designed to add value and improve our organization's operations.

Audits assist Delta Group to accomplish our objectives by bringing a systematic, disciplined approach to evaluate and improve our effectiveness of risk management, control, and governance processes. Internal auditing assists the Delta Group in improving our governance, risk management and management controls by providing insight and recommendations based on analyses and assessments of data and business processes. With commitment to integrity and accountability, the Delta Groups internal auditing provides value to governing bodies and senior management as an objective source of independent advice.

The QSE Advisor is principally responsible for conducting audits however we are subject to external quality audits for our ISO9001 accreditation.

15. MONITORING AND REPORTING

Delta agrees to comply with 3rd party inspections by the client or an independent party not directly involved in production to inspect, witness and monitor characteristics for acceptance. The independent party shall report directly to the management responsible.

Delta will implement the following monitoring processes on this project:

- ITP's
- Site Inspections
- Internal Audits
- Corrective Action/s and Close Out
- Calibration of equipment
- Document Control
- Informal checks by Site Foreman/Supervisor
- Product delivery

Subcontractors are included in all monitoring processes Delta performs. Delta will maintain records of all monitoring activities in the site files.

16. EXTERNAL COMMUNICATION

This element is addressed in accordance with ISO 14001 clauses 4.4.3 and A.4.3. Any report on environmental performance will include statistical and quantitative information rather than just qualitative remarks. This information is linked to the targets identified so that the report is part of the process of continual improvement and verifiable by a third party.

Reports cover the outcome of reviews, performance monitoring and other activities for some or all Delta Group operations.

17. THIRD PARTY CERTIFICATION

The international standard for environmental management is the ISO 14000 series.

18. REPORTING

Delta retains records of all reporting activity in the site files and will be provided to the client on request. Delta will meet client and subcontract reporting requirements.

19. SUBCONTRACT WORKS

Subcontractors will be subject to Delta Internal Audit Planner and External Accreditation Audits for compliance with this plan and work procedures. Prior to commencement on the work site, Delta Project Management will review all Subcontractor Environmental Documentation including ITP's, Training records and work methodology. During the course of the project, Delta's Project Management will monitor works to confirm that work is being conducted according to the supplied documentation and also that appropriate registers are being updated as required.

Subcontractors working on Delta sites will be monitored daily and have their works included in Site Inspections (SEF 049) and Site Audits. This is to confirm that QSE documents submitted prior to site commencement are being complied with. Subcontractors are required to participate in Delta's Safety Walks and QSE Site Audits. Where applicable sub-contracting is subject to the prior approval of the Client and all relevant Environmental Assurance Plans will be provided to the Client for review prior to work commencing.

Delta Group shall ensure that each sub-contractor has full knowledge of the scope of works and is able to comply with the relevant sections of the contract. Qualified personnel shall monitor the progress of the sub-contract program to enable assessment of any potential impact on the overall contract program.

20. SUBCONTRACTOR REPORTING

Subcontractors must provide Delta with the following information:

- Itp's
- Induction and training records
- First aid treatment
- Incident investigation reports and any corrective action evidence.
- Hazard reports
- Internal and external non conformances issued
- Site inspection and audit report

21. SUBCONTRACT EMPLOYEES

Are responsible for the following:

- Complying with the Environmental Management Plan including all itps;
- Reporting all non-conformances to the Works Supervisor.

22. MEASUREMENT AND TEST EQUIPMENT (Refer to the QMS)

23. NON-CONFORMANCES/CORRECTIVE ACTION REPORT

Non-conformances or system defects issued by the client will be closed out and evidence provided. Proposed corrective actions will be issued to the client for approval prior to commencing rectification. Non-conformances will be rectified in a timely fashion and as stipulated in the Non-conformance Report. The non-conformance details will be recorded in the Action Register (SEF 024). The non-conformance register shall be updated and made available to the Client when a non-conformance notice is generated. The person or persons responsible for determining the method of disposition will be identified on the corrective action report (CAR) (SEF 005). The Project manager or the QSE department carry responsibility for issuing corrective action reports and closing out non-conformances.

Non-conforming product found at delivery shall not be accepted and returned to the manufacturer/supplier. Where the product cannot be immediately returned, the non-conforming product shall be clearly marked and segregated to prevent its use on site.

A Non-conformance report (SEF 005) will be raised and issued to the client for information. Non-conforming product found during the installation works shall be immediately rectified and re-inspected prior to proceeding.

Non-conforming product that cannot be rectified immediately shall be documented as a Non-Conformance and the client will be notified. The client will be advised of the proposed corrective action report for approval. The rectified product will be subject to re-inspection to verify its conformity.

24. DEFECTS (Refer to the QMS)

25. CORRECTIVE ACTION

Corrective Action Report (SEF 005) shall be initiated where a non-conformance or a potential non-conformance has been detected to prevent occurrence or re-occurrence of a non-conformance on the project. Environmental performance reviews and environmental incidents provide definite pointers to unsound work practices and performance requiring action. Incidents and performance are recorded, investigated and analysed, to facilitate improvements in policy, procedures and work practices to progressively improve the Delta Groups environmental performance.

The requirements for corrective action report result from the detection of a non-conformance or potential non-conformance.

On receipt of a non-conformance corrective action report, the management representative shall;

1. Assess the non-conformance to determine how the non-conformance occurred;
2. Develop, where possible, a revised method of carrying out works to ensure that the same non-conformance does not re-occur;
3. Regularly check operational methods following the implementation of corrective action to ensure revised methods of works are effective;
4. Submit to the Client's Environmental Manager or nominated representative, all details of corrective actions implemented for all non-conformances.

Action undertaken after reviewing past errors or anticipating future problems is part of the learning that enables the Delta Group to keep improving our environmental performance. Project Manager or delegate is responsible for carrying out and recording site inspections.

26. HANDLING, STORAGE & PROTECTION OF MATERIAL PRODUCTS & WORK (Refer to the QMS)

27. QUALITY RECORDS AND CERTIFICATES (Refer to the QMS)

28. ENVIRONMENTAL CONTROL MEASURES / EROSION AND SEDIMENT CONTROLS

Erosion and sediment will be managed in accordance with sound environmental practices to prevent sediment laden water from entering any drainage or natural waterway.

a. PLACEMENT AND MANAGEMENT OF STOCKPILES

Some material may need to be stockpiled on the site which will be controlled by Delta. All other material will be progressively removed off site and all areas will be managed to minimise erosion and dust control. All stockpiled materials will be placed in areas which minimise erosion and inconvenience.

b. MANAGEMENT OF BATTERS

Any batters which are created will be cut at a minimum angle as to reduce the risk of slope failure and erosion. Where necessary control devices will be used to stabilise and control any erosion or sediment created from the construction of batters.

c. SEDIMENT TRAPS

Sediment traps can be formed by excavating or constructing an earthen embankment across a waterway or low drainage area allowing settlement in a containment area of the water course. The remaining water can be discharged through a stabilized spill way (rock ballast)

d. COFFER DAMS

An enclosure may be constructed of an earth embankment within the surface runoff or water course to allow water to be displaced from the area to create a dry work zone.

e. DIVERSION DRAINS

Diversion drains can be constructed to divert surface runoff or water course away from amenities, work areas including stockpile and to appropriate controlled discharge points.

f. STAGING OF WORKS

Works onsite will be done in logical and environmentally friendly stages in order to reduce any erosion or pollution which may occur.

g. VEHICLE NO-GO AREAS

Areas where construction work is taking place will be blocked off to all vehicles other than construction vehicles using bunting and barriers.

h. WASH DOWN AND RUMBLE GRIDS

Trucks wash down and / or cattle grate/ rumble strip may be utilized to minimised and avoid soil and dirt being transported out onto public roads by vehicle leaving the construction site.

29. OBJECTIVES and TARGETS

Delta Group believes that environmental awareness and preservation is an essential element of all operations. As we strive towards continual improvement, Delta aims to progressively develop the environmental standards of our work.

We are committed to controlling the impacts of our operations on the environment and protecting it by safeguarding existing land, water, air, the surrounding ecology and community.

Delta's scope of operations includes the provision of project management, site supervision, small equipment and labour hire, heavy earth moving equipment operation, maintenance and cross hire, civil and building demolition works, removal of prescribed and toxic waste, asbestos

removal, civil construction including bulk earthworks, civil and landscape works.

We strive to achieve and maintain our sound environmental performance by commitment to legislative compliance and our standard practices, which include:

1. Stating in writing, for each employee, his/her responsibilities in the campaign to protect and enhance the environment;
2. Fostering a dynamic awareness of the environment in all our employees;
3. Communicating our policy and environmental standards to all employees, subcontractors and the public at large.
4. Instituting a continuous program of education and training throughout the company;
5. Performing all works with an underlying objective of reducing pollution and pollution effects;
6. Keeping adequate records, and promoting controls and feedback to maintain our sound environmental record; and
7. Providing adequate resources to ensure that all planned means and methods are utilised to maximum capacity.

We will ensure that at project level, we:

1. Develop an Environmental Management System encompassing all the controls, mechanisms, employee and management requirements necessary to carrying out works in accordance with this environmental policy and AS14001;
2. Ensure all supervisory personnel accept responsibility for the establishment and maintenance of environmental controls including emissions, run off, waste removal, water management, materials recycling and the management and disposal of hazardous materials;
3. Ensure employees across all levels of the business are appropriately trained on environmentally sound work practices to ensure they are able to recognise, understand and minimise environmental impacts when undertaking any tasks;
4. Provide a safe working environment at all times;
5. Provide mechanical and physical environmental protective measures in keeping with relevant regulations and standards;
6. Ensure that all employees and subcontractors are aware of and comply with Delta Group's environmental policy, rules & governing regulations;
7. Ensure the surrounding environment, property and public are least affected by works carried out by Delta Group;
8. Assess and evaluate the effectiveness of our environmental management system and control measures and,
9. Ensuring environmental control measures and management systems are kept up to date, revised and redeveloped where required.

30. IMPORT & EXPORT OF FILL MATERIAL

a. STORAGE AREAS

Any materials which will be used in the construction process will be placed at a safe working distance from where they are needed or alternatively directly into location where required. All materials will be stored out of the main water flow areas on high ground in case of heavy rain.

b. CONTAMINATION STATUS

Any contaminated soils found on site by the soil tests conducted by a geotechnical Environmental Consultant and be removed from the site. Contaminated soils will be removed in line with EPA requirements to an approved tip site

31. NOISE AND VIBRATION

State and Local Authority requirements must be adhered to in relation to the level of noise, vibration and working hours, to ensure that neighbouring parties to the site are not disturbed unreasonably. Control measures will consist of the following.

a. APPLICATION OF NOISE REDUCTION MEASURES

Machine noise will be unavoidable during earthworks. However Delta will aim to keep noise and vibration to a minimum and only work within the specified hours of work.

b. SELECTION OF MACHINERY

Only machinery appropriate for works being undertaken will be used throughout the duration of the project. Any other machinery which could be deemed noisy will be used to a minimum and at designated times during the day.

c. RESTRICTION OF HOURS OF OPERATIONS

No machine work will occur outside the normal working hours set unless approval has been given by Superintendent &/or Council. Furthermore the following conditions apply:

- That noise and vibration from the use of any plant equipment and/or building services associated with the premises shall not give rise to an offensive noise as defined under the provisions of the noise Control Act 1975.
- As part of the noise mitigation treatment for the project, all trucks and machinery will be checked for defective exhaust systems and general servicing.
- No works shall be conducted outside of normal working hours unless the client representative has given written approval to do so.

d. PLACEMENT OF MACHINERY

Machinery will only be working inside the perimeters of the job site unless all relevant applications and permits have been obtained for outside works.

32. AIR QUALITY

a. DUST CONTROL ON UNSEALED ROADS

Dust will be controlled by regularly wetting traffic areas if needed and periodically wetting work areas if needed. On site traffic will be minimised in order to reduce dust creation. Precautions include the use of haul tracks on site.

b. SEALED ROADWAYS

Trucks entering and exiting the worksite will be supported by the use of Street Sweepers to prevent site presence.

c. RESTRICTIONS ON HIGH WIND DAYS

Shifting of loose materials will be minimised on days of high-wind in an attempt to reduce dust creation.

33. SOLID WASTE MANAGEMENT

Litter and Waste must be contained on site, before disposal in a responsible manner

a. HAZARDOUS MATERIALS DISPOSAL

If Hazardous materials are identified, they will be managed following the Disposal and Management of Hazardous Materials Guideline ... AS/NZS 3833. The transportation of collected hazardous materials is to be undertaken by EPA approved hazardous waste transports and disposed at an appropriate EPA licensed facility. Hazardous waste removed off-site will have obtained the appropriate waste disposal consent numbers from the EPA and completed the relevant docket of the EPA's waste tracking docket system.

b. CONTAMINATED MATERIAL AND WASTE DISPOSAL

If contaminated materials are identified onsite, they will be managed following the Disposal and Management of Hazardous Materials Guideline ... AS/NZS 3833. The transportation of collected contaminated materials is to be undertaken by EPA approved hazardous waste transports and disposed at an appropriate EPA licensed facility. Contaminated waste removed off-site will have obtained the appropriate waste disposal consent numbers from the EPA and completed the relevant docket of the EPA's waste tracking docket system.

c. WASTE MANAGEMENT

All material generated from a project will be recycled where possible. Clean demolition rubble (concrete, asphalt, bricks etc.) will be disposed of at accredited waste sites, clean fill will be reused on other civil projects. All materials leaving site shall be accounted for via documentation as to where the materials shall be disposed.

d. LITTER COLLECTION STORAGE AND REMOVAL

The responsibility of litter collection, storage and removal lies with DELTA / BUILDER. Responsibility of keeping work areas clean and utilizing litter collection bins will lie with each worker.

e. WASTE MINIMISATION AND AVOIDANCE

Any extensive areas of good quality fill found will be reused onsite as backfill. All other material will be removed from site. Trucks wash down and / or cattle grate/ rumble strip may be utilized to minimised and avoid soil and dirt being transported out onto public roads.

34. WATER MANAGEMENT

The runoff and disposal of site water will be managed in accordance with sound environmental practices to prevent sediment laden or any contaminated water from entering any drainage or natural waterway.

a. STORM WATER MANAGEMENT

The protection of newly constructed or existing storm water systems will have sediment controls implemented to ensure the systems are maintained and kept unblocked during the course of the project. No materials or machinery will be stored in a flood plain.

Storm water controls may consist of the following: Filtration barriers such as geo-fabric covering grated pit inlets, silt socks covering side entry pits and hay bales in open cut drains. Sediment barriers are sediment traps, settlement ponds and settlement tanks etc. Physical barriers are coffer dams or diversion drains etc.

b. DE-WATERING SITES

Should project sites require de-watering from wet weather conditions controls such as settlement ponds/ tanks/ dams, silt sock, hay bales will be implemented to eliminate sediment laden water leaving site and entering the existing water course. A permit may be sought from the relevant water authority to discharge water into the sewer system. Water identified as contaminated must be collected by EPA approved hazardous waste transports and disposed at an appropriate EPA licensed facility. Alternatively a permit and trade waste agreement from relevant water authority may be obtained to discharge the contaminated water in to the sewer system.

c. WASH DOWN AREAS

Truck wash down areas

d. WORKING IN WATERWAYS AND FLOOD PLAINS

No materials or machinery will be stored in the flood plain. No work will be done in the flood plain during heavy rain.

e. PROTECTION OF GROUNDWATER

Any natural groundwater will be protected throughout the course of the works.

f. DISCHARGE CONTROLS

Discharge points will be protected

35. PROTECTION OF EXISTING FLORA AND FAUNA

All significant flora and fauna on and adjacent to the site must be protected unless otherwise permitted. Any removal of flora and fauna will be dealt with through the relevant authorities and with the relevant permits.

36. REHABILITATION

a. STOCKPILING OF TOPSOIL

Topsoil excavated from site can be stockpiled and reused on site. Alternatively, topsoil can be disposed at a Delta's Recycling facility.

37. CULTURAL AND HISTORICAL FEATURES

Places, sites and objects of archaeological or heritage significance must be protected at all times. Any contact with historical or cultural features will be dealt with through the relevant authorities and with the relevant permits. Permits remain the responsibility of the principle contractor.

38. PLACEMENT OF TEMPORARY INFRASTRUCTURE

a. MINIMISATION OF AREA DISTURBED

Site amenity areas which Delta use will be maintained by Delta

b. ROADS

Haul roads inside the job site will be kept to a minimum and will be kept clean and hazard free

c. BUNDING, STORAGE OF CHEMICALS AND FUELS

All fuels and chemicals will be stored in site compound as per requirements. An area will be banded around fuels to control any spills.

d. DESIGNED RE-FUELLING AREAS

Re-fuelling area should be in the immediate vicinity to the fuel storage area.

e. CLEAN-UP EQUIPMENT (SPILL KITS)

Spill kits will be used as required

f. AMENITIES

Amenities responsibility and requirements will be determined in consultation between Delta and the principle

g. VEHICLE PARKING

To be determined in consultation between Delta and the principle

h. STORAGE OF MATERIALS

Only materials which are for short term use will be supplied and stored on site. All others will be taken to site as needed

39. EMERGENCY PREPAREDNESS AND RESPONSE

Delta procedures will address the requirements of ISO 14001 clauses 4.4.7 and A.4.7, including identifying emergency organization details and responsibilities, a list of key personnel to contact with full contact details, details of emergency services (such as ambulance, fire brigade, spill clean-up services), communications strategy (internal and external) and training plans, details of actions to be taken in the event of the various types of emergencies, accidents and other incidents possible, location of information on hazardous materials, including each material's potential impact on the environment and measures to be taken in the event of accidental release or other misuse and plan effectiveness testing, review and revision procedures.

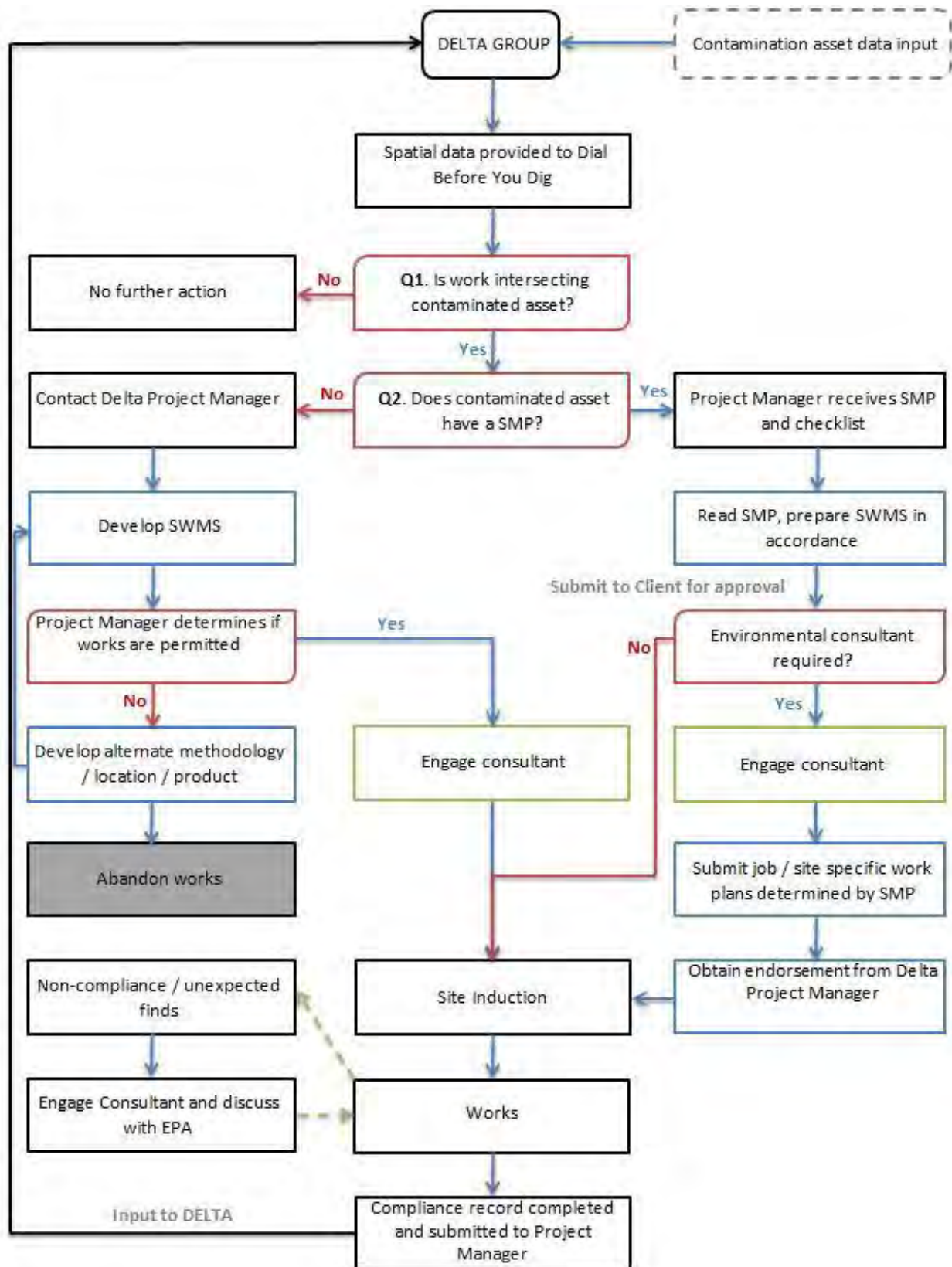
40. RISK CONTROL

Where a risk to the environment has been identified, controls must be introduced to reduce risk levels to an acceptable level. Consideration should be given to seriousness of the risk, experience and the skill of employees involved and legislative or client requirements.

41. MONITORING

As part of the Job Environmental Assessment (SEF 006) control mechanisms will be established and consideration should be given for the need for regular monitoring which may include, checks on noise levels near the work zone, checking on the level of dust and its effect on traffic or the public, supervision of the works, checklists associated with work procedures, hold points or critical inspection points and records or regular monitoring, testing or inspections.

42. CONTAMINATED ASSETS



43. DEFINITIONS

The terms used include the following and those defined in ISO 14001 and ISO 9000.

The term **'audit' or 'review'** means an examination of a random or particular sample of processes to determine whether or not correct procedures are being followed, and includes a document review or an examination of activities or an examination of documents and activities, to assess their conformity with requirements.

The **'certification'** of an Environmental Management System is the attestation by certificate that the Environmental Management System meets certain defined requirements for use for a certain scope of activities (usually following an audit by another organisation accredited to provide such certifications, as the certifier).

The term **'client'** means the owner of the asset to be procured or project product, and representative of the end users of the asset.

The term **'construction'** means all organised activities concerned with demolition, building, landscaping, maintenance, civil engineering, process engineering, heavy engineering and mining.

The term **'consultant'** means a professional person or organisation that contracts with a customer to provide design, management or other services.

The term **'contractor'** means an organisation that contract with a Principal to carry out the work under the contract, including construction and related services, to deliver an asset or construction product.

The term **'design'** means the process (and product) of converting a brief into design details ready for documentation, including concept design and design development, and then documentation or detailing of the technical and other requirements for the project in a written form that details the project product sufficiently for it to be constructed or otherwise provided.

The term **'environmental opportunity'** means a potential for beneficial environmental impacts.

The term **'environmental risk'** means a potential for adverse environmental impacts.

The term **'management'** means the planning and interactive controlling of human and material resources to achieve time, cost, quality, performance, functional and scope requirements. It involves the anticipation of changes due to changing circumstances and the making of other changes to minimise adverse effects.

The term **'project'** means an undertaking with a defined beginning and objective by which completion is identified. Project delivery may be completed using one contract or a number of contracts.

The term **'subcontractor'** means an organisation that contract with a contractor as the customer to carry out construction and related services, and/or provide other products.

44. REFERENCE GUIDANCE MATERIAL

National Strategy for Ecologically Sustainable Development 1992;

National Strategy for the Conservation of Australia's Biological Diversity 1996;

National Greenhouse Strategy 1998; and

National Environmental Protection (Ambient Air Quality) Measure 1998

Risk: AS 4360 Risk Management

National Environmental Protection (Assessment of Site Contamination) Measure 1999 NEPC

AS/NZS 4581 Management System Integration

AS1216 Hazard Identification and Information Systems for Dangerous Goods

AS1678 Emergency Procedures Guidelines Transport

AS1940 Storage and Handling of Flammable and Combustible Liquids

AS3580 Methods of Sampling and Analysis of Ambient Air

AS2346: Guide to Noise Control of Construction, Maintenance and Demolition Sites

AS1259.2 Acoustics-Measurement of airborne noise emitted by earth-moving, Stationary test condition. Part 1: Determination of compliance with limits for exterior noise

AS/NZS 1596 – The storage and handling of LP Gas

AS/NZS 3833 - The storage and handling of mixed classes of dangerous goods.

AS 1940: The storage and handling of flammable and combustible liquids

AS 3780: The storage and handling of corrosive substances

AS 4326: The storage and handling of oxidising agents

AS 4332: The storage and handling of gases in cylinders

Heavy Vehicle National Law Regulations

NHVR Code of Practice for the Approval of Heavy Vehicle Modifications

Environmental Acts and Regulation relevant to the state or territory to which the contract applies

Each site, branch, state or territory should identify and apply the relevant WHS/OHS/OSH


Legislation and COP's for the area that is applicable to their workplace. (Inclusive of AS/NZS)

For the purpose of identifying current national environmental legislation and regulations Delta Group maintain an annual subscription to Workplace Enviro Australia Pty Ltd.

45. ACCEPTANCE OF ENVIRONMENTAL MANAGEMENT PLAN

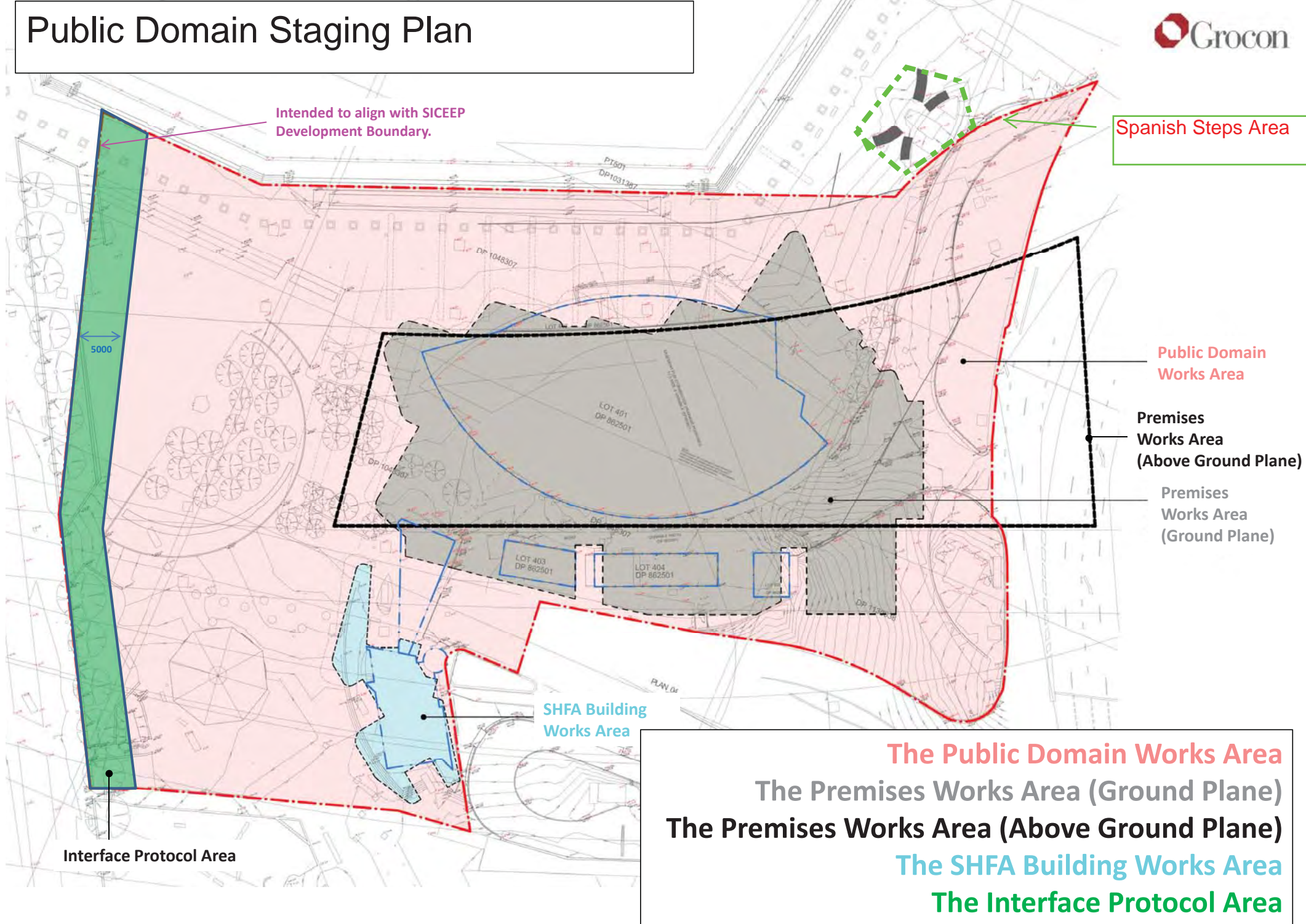
This Environmental management Plan has been developed and viewed in consultation with the workers and it is read and signed by all persons involved in the plan. If a variation occurs to this Environmental Management Plan then management will communicate and re-induct the change to the work group whilst adjusting the work method accordingly.

I hereby confirm that I have read and understand this Safety Plan and I will ensure my work process is completed accordingly.

Project Manager Environmental Plan Approval	Richard Strong		
Signature			
Date	12/05/15		
Inductee Name	Company/Title	Signature	Date

F. Public Domain Staging Plans

Public Domain Staging Plan



Public Domain Staging Plan - 1 of 7

Intended to align with SICEEP Development Boundary.

Aa

Non Vacated Existing SHFA Building

Note.
Public Amenities, 1st Aid, Parents Room Block and SHFA BOH Delivery Area/ Access Forms part of Developer SOS initial Vacant Possession.

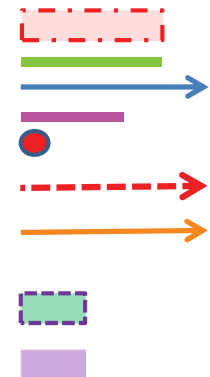
The Hoarding Boundary/ Premises Works Pre-Public Domain Staging (PRIOR SHFA building vacant possession) - (Area Aa) – Approx. 38 Months (Complete at Project Practical Completion)

LEGEND

Extent of Public Domain Works.
The Hoarding Boundary Line.
Pedestrian Access.
Gates (exact locations TBC on site).
Main Grocon and Site Workforce Access.
Construction Vehicular Access (Subject to Traffic & Pedestrian Management).
Shared Pedestrian & Emergency Vehicular Access.

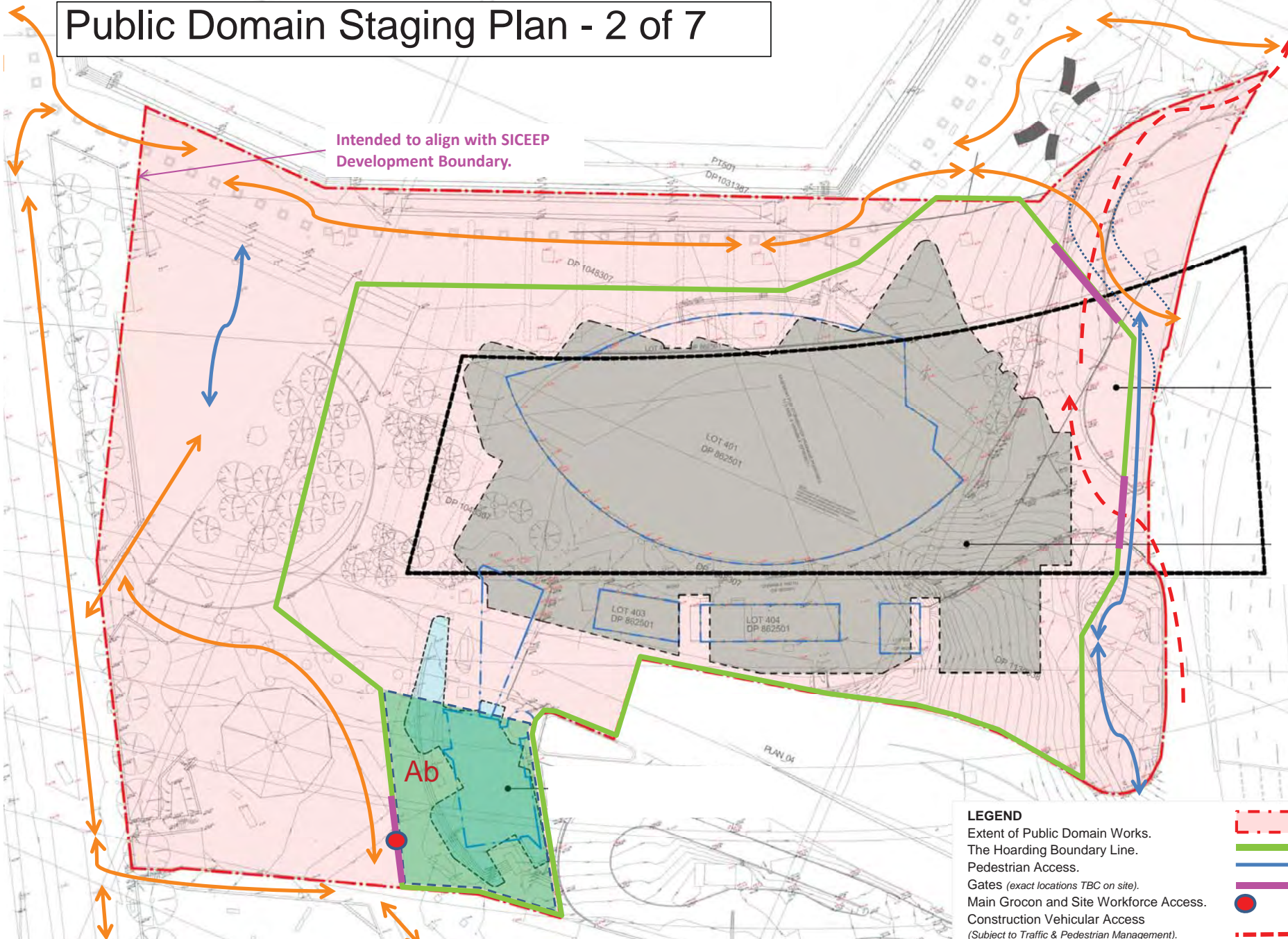
Staging

Fenced off works in progress.
Public Domain Works complete & accessible to public.



Public Domain Staging Plan - 2 of 7

Intended to align with SICEEP Development Boundary.



LEGEND

Extent of Public Domain Works.

The Hoarding Boundary Line.

Pedestrian Access.

Gates (exact locations TBC on site).

Main Grocon and Site Workforce Access.

Construction Vehicular Access

(Subject to Traffic & Pedestrian Management).

Shared Pedestrian &

Emergency Vehicular Access.

Staging

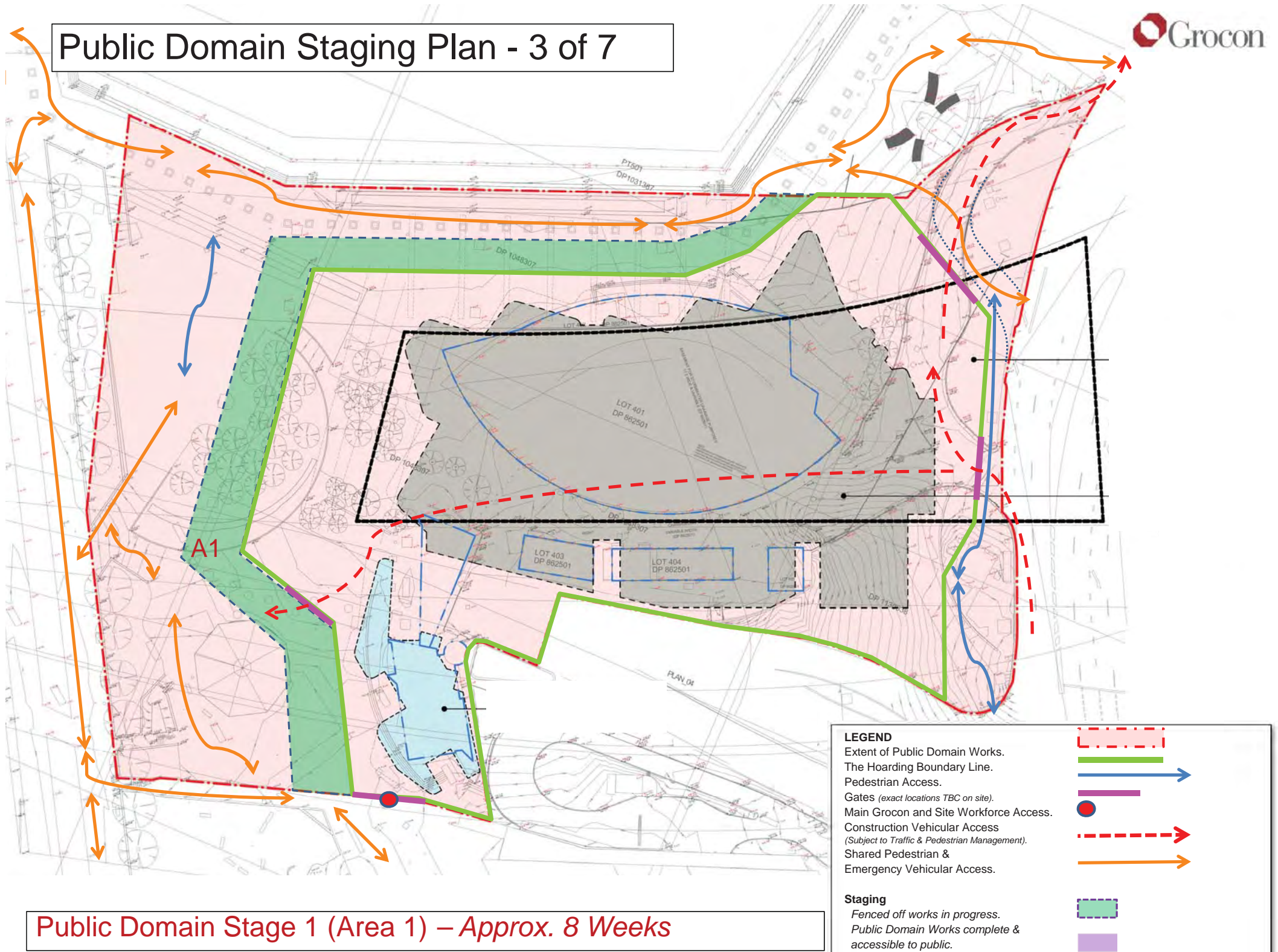
Fenced off works in progress.

Public Domain Works complete &

accessible to public.

The Hoarding Boundary/ Premises Works Pre-Public Domain Staging
(POST SHFA building vacant possession) -
(Area Ab) – Approx. 26 Months (Complete at Project Practical Completion)

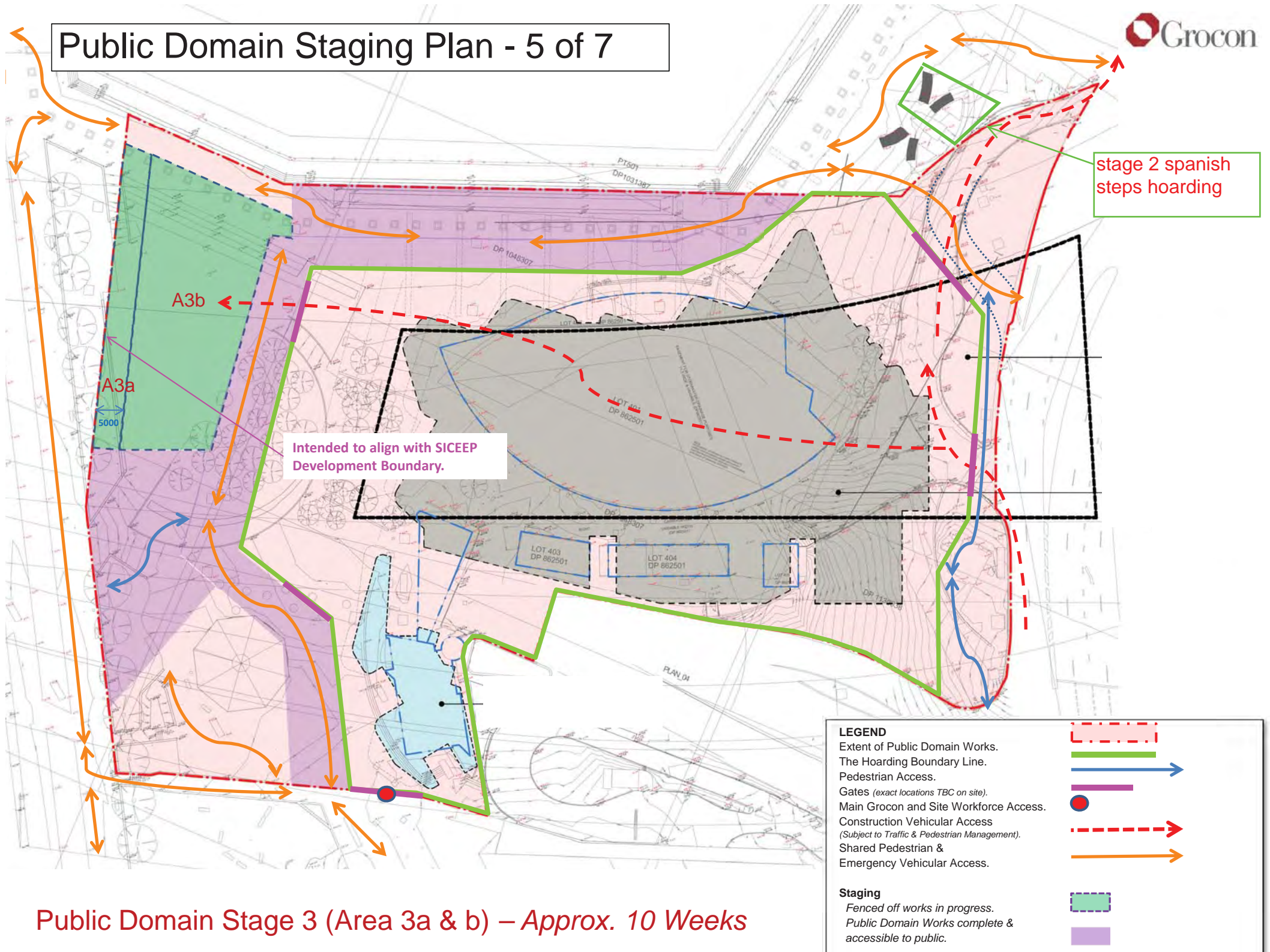
Public Domain Staging Plan - 3 of 7



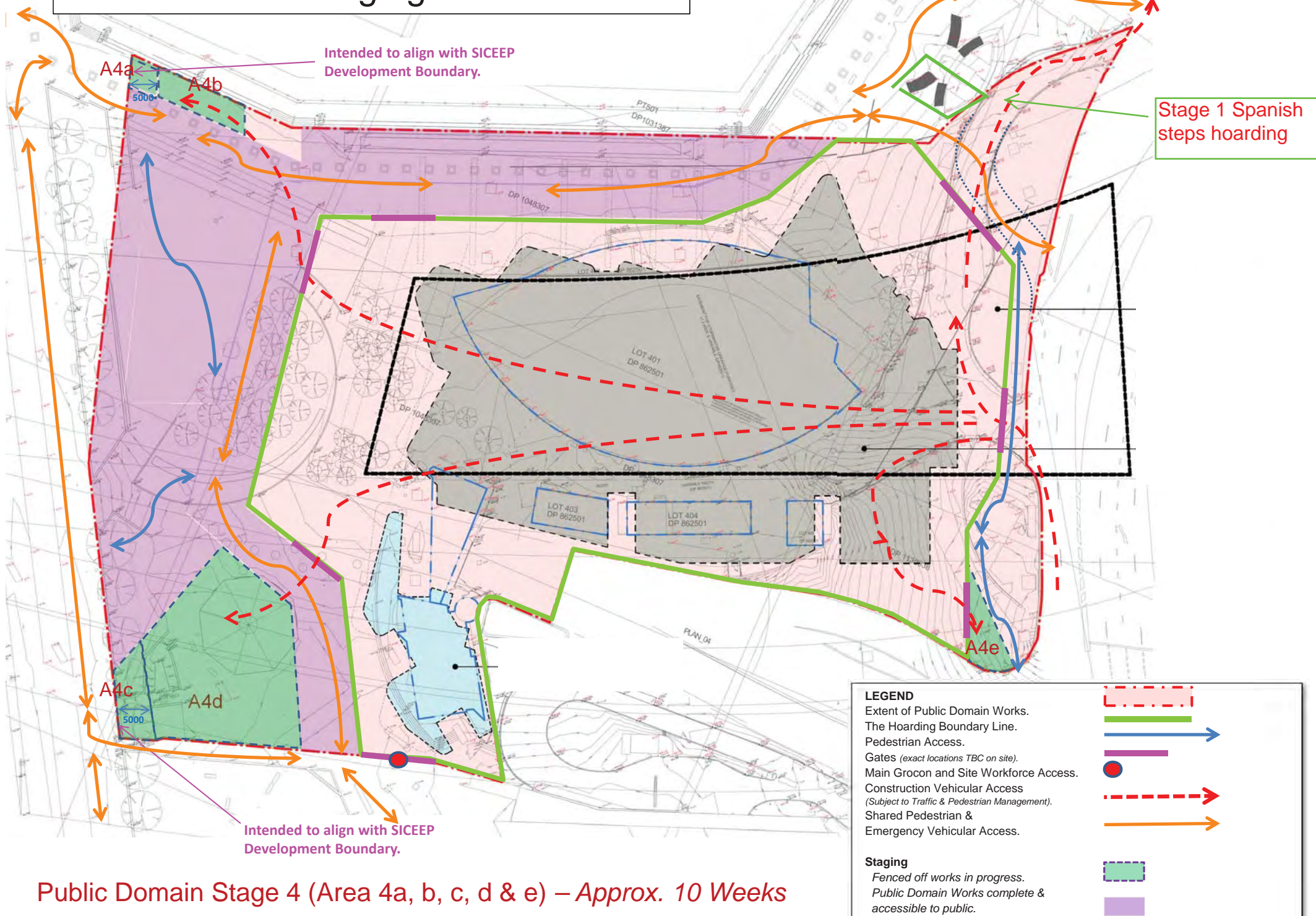
Public Domain Stage 1 (Area 1) – Approx. 8 Weeks



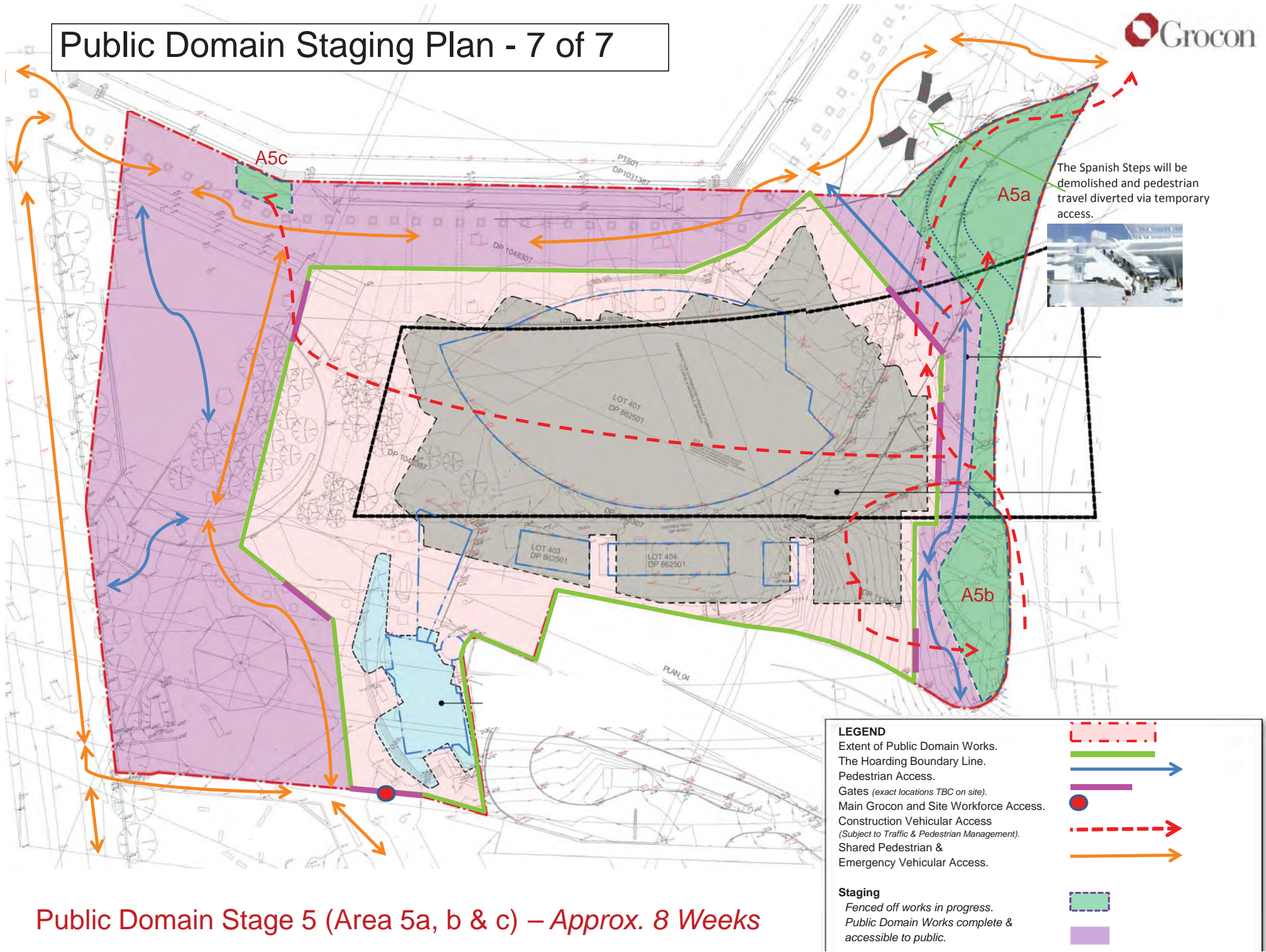
Public Domain Staging Plan - 5 of 7



Public Domain Staging Plan - 6 of 7



Public Domain Staging Plan - 7 of 7

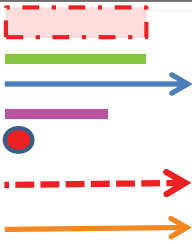


The Spanish Steps will be demolished and pedestrian travel diverted via temporary access.



LEGEND

- Extent of Public Domain Works.
- The Hoarding Boundary Line.
- Pedestrian Access.
- Gates (exact locations TBC on site).
- Main Grocon and Site Workforce Access.
- Construction Vehicular Access (Subject to Traffic & Pedestrian Management).
- Shared Pedestrian & Emergency Vehicular Access.



Staging

- Fenced off works in progress.
- Public Domain Works complete & accessible to public.



Public Domain Stage 5 (Area 5a, b & c) – Approx. 8 Weeks