

MACQUARIE CENTRE REDEVELOPMENT STAGE 1 CONCEPT DA

PRELIMINARY CONSTRUCTION MANAGEMENT PLAN
DECEMBER 2015 | ISSUE A



lendlease

CONSTRUCTION

MANAGEMENT PLAN



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1 INTRODUCTION

This document outlines a Construction Management Plan for the Macquarie Centre Redevelopment project comprising demolition, excavation, concrete and steel structure, façade, services, associated finishes, services infrastructure and external works to the site.

Lendlease have been appointed to provide construction advice to AMP Capital as Development Managers. This plan documents AMP Capital's construction management approach for the Stage 1 Concept Development Application for the above mentioned works. It is recognised that AMP Capital is still to identify the Contractor to undertake the works, and for the purpose of this Construction Management Plan for the Stage 1 Concept Development Application AMP Capital's future preferred Contractor will prepare a detailed and tailored Construction Management Plan for the subsequent Stage 2 Development Application.

The contents of this document include a brief description of the project, planned project sequencing and an overview of how the construction will be managed. The Construction Management Plan will be continually updated and the final version of this Plan will detail how construction will be properly facilitated, integrated and coordinated once the detail design and staging has been finalised.

2 PROJECT DESCRIPTION

2.1 Proposed Development

Background

This report has been prepared on behalf of AMP Capital (AMPC) in support of a Stage 1 Development Application (DA) for the mixed use redevelopment of Macquarie Shopping Centre (Macquarie Centre). The Stage 1 DA seeks concept approval for the redevelopment of Macquarie Centre by establishing:

- Building envelopes and design parameters for future development on the site, including the proposed uses within the podium and tower components.
- The distribution of floor space across the site.
- Future pedestrian and vehicle connections to and within the site.

This report supports the proposed future redevelopment of the Macquarie Centre in relation to the Construction Management for the Stage 1 Concept Development Application.

Site Description

Macquarie Centre is approximately 11.25 hectares in area and is located at the corner of Waterloo Road, Herring Road and Talavera Road, Macquarie Park. The site is legally described as Lot 100 in DP 1190494.

The site is bound by Herring Road to the north west, Talavera Road to the north east, commercial uses to the south east and Waterloo Road to the south west. Located within the Macquarie Park Corridor, the site has excellent access to public transport, situated immediately adjacent the Macquarie University Railway Station and the Herring Road Bus Station. Located between the M2 Hills Motorway and Epping Road, the site also enjoys excellent vehicle connectivity.

Macquarie Centre was originally constructed in 1981. The centre has undergone various stages of redevelopment and extensions. A major refurbishment occurred in 2000, 2003 and most recently in 2014, creating a fresh food court, David Jones expansion, addition of second full line supermarket (Coles), a value supermarket (Aldi), with new speciality food and convenience stores. Today Macquarie Centre is the largest shopping centre in NSW and the 8th largest shopping centre in Australia and includes a wide range of retail, entertainment and service offerings.

The shopping centre currently spans five levels accommodating 368 stores, including major retailers such as David Jones, Myer, Target, Big W, Aldi, Coles and Woolworths. The centre also houses a large number of mini major international retail stores including H&M, Zara, Uniqlo, Forever 21, GAP and Sephora. A number of entertainment offerings exist in the centre including a cinema complex and ice skating rink. The site currently has a gross floor area of 170,850m² and accommodates 4,755 car spaces.

Development Proposal

The Stage 1 DA seeks concept approval for the mixed use redevelopment of Macquarie Centre under s.83B of the *Environmental Planning & Assessment Act* 1979. The first stage will seek concept approval only for:

- Mixed use development to enable a range of land uses. The final mix of land uses will be subject to and determined under the relevant Stage 2 detailed DAs.
- Building envelopes for the proposed basement, expanded podium and tower forms.
- The four tower envelopes fronting Herring Road will have maximum heights ranging from 90m and 120m above existing ground level. The building envelope for Tower 1 is of sufficient dimensions to accommodate alternate tower forms.
- Maximum additional gross floor area (GFA) of 148,000sqm.
- The new retail podium along Herring Road will replace the existing structure. This will provide an active frontage with separate pedestrian entries to Herring Road and the creation of a vibrant atrium space.

- The creation of 'Station Plaza' between the train station and shopping centre, framed by active uses and a landmark building known as the "Shard".
- The building envelopes for the proposed basement and upper levels of the expanded podium will accommodate a maximum of 2,175 additional car spaces.
- New vehicle and pedestrian access points.

The Stage 1 DA does not seek approval for

- Any works, including demolition, excavation, construction and public domain improvements.
- The final arrangement of land uses.
- Layout, mix and number of residential units.
- A specific number of car spaces (as this will be determined having regard to the final mix of land uses).
- The design of the building exteriors including facades and roofs.
- Public domain and landscape design.

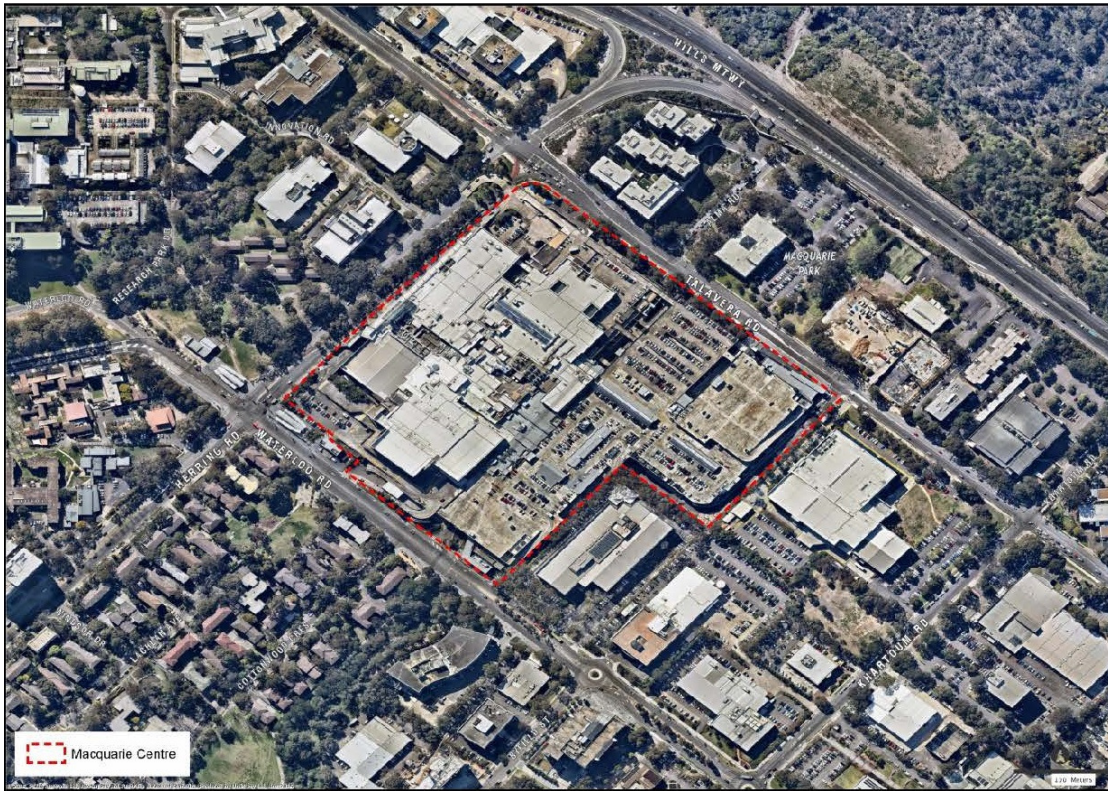
Such approvals will be sought via subsequent development applications following receipt of development consent for the Stage 1 DA.

The overview of the indicative mix of land uses within the proposed building envelopes is identified in the table below.

OVERVIEW OF INDICATIVE MIX OF LAND USES

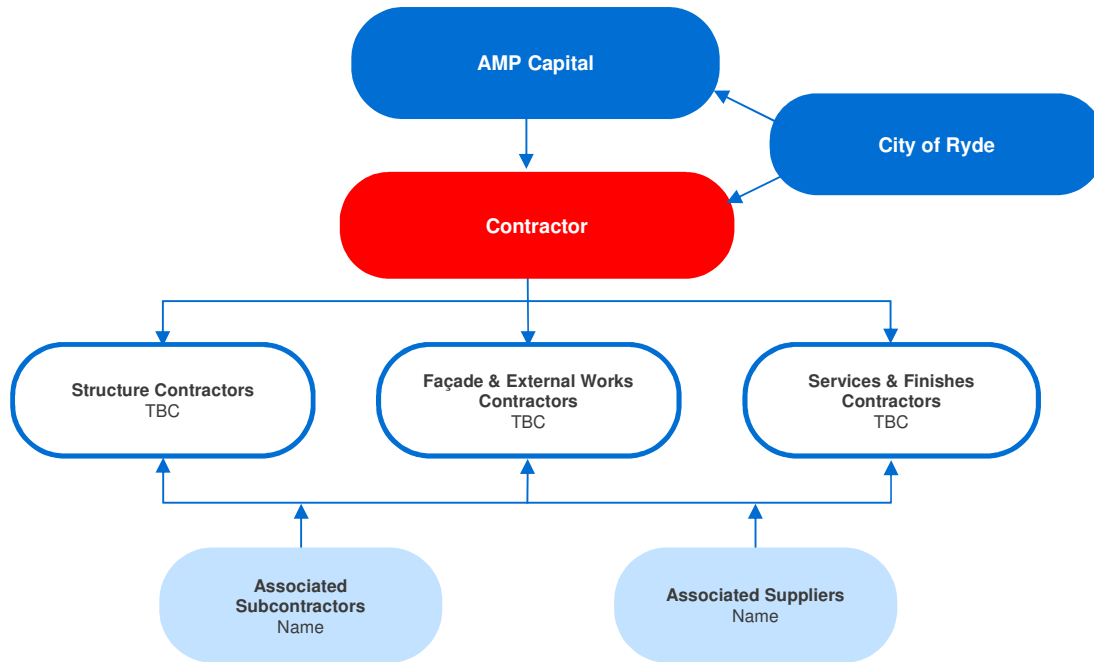
Component	Proposed
Basement	<ul style="list-style-type: none"> • Loading docks, car parking and associated vehicle circulation, waste rooms, utilities, future connection to existing train station (subject to consent from RailCorp) and retail premises.
Podium	<ul style="list-style-type: none"> • Retail premises, commercial premises, food and drink premises, entertainment facilities, recreation facilities (indoor), recreation area, car parking and associated vehicle circulation, community uses (subject to further discussions with Council) and communal open space associated with the towers.
Tower 1	<ul style="list-style-type: none"> • Mixed use development comprising commercial premises and/or residential accommodation and/or serviced apartments above a retail podium.
Towers 2, 3 and 4	<ul style="list-style-type: none"> • Mixed use development comprising residential accommodation and/or serviced apartments above a retail podium.

FIGURE 1: AERIAL PHOTOGRAPH



3 PROJECT STRUCTURE

AMP Capital as Development Manager has indicated the following reporting structure may be likely:



The Contractor will be the main point of contact for all of the construction works. The Contractor as the principal contractor will engage specialist demolition, excavation, structure, façade, finishes, services and external works contractors for the project.

The contractors will comply with all current Codes, Regulations and Standards.

The processes for monitoring the contractor's procedures such as safety plans, risk assessments, safe work method statements (SWMS) and controls is to ensure continual improvement in the environmental performance, and is part of the Contractor's EH&S Management System.

4 PROJECT SEQUENCING

Due to the size and complexity of this development, the future development works at Macquarie Centre is foreseen at this stage to be constructed in four separate stages. The stages outlined below are an approximate order of construction and may be subject to change due to external factors including but not limited to market demand.

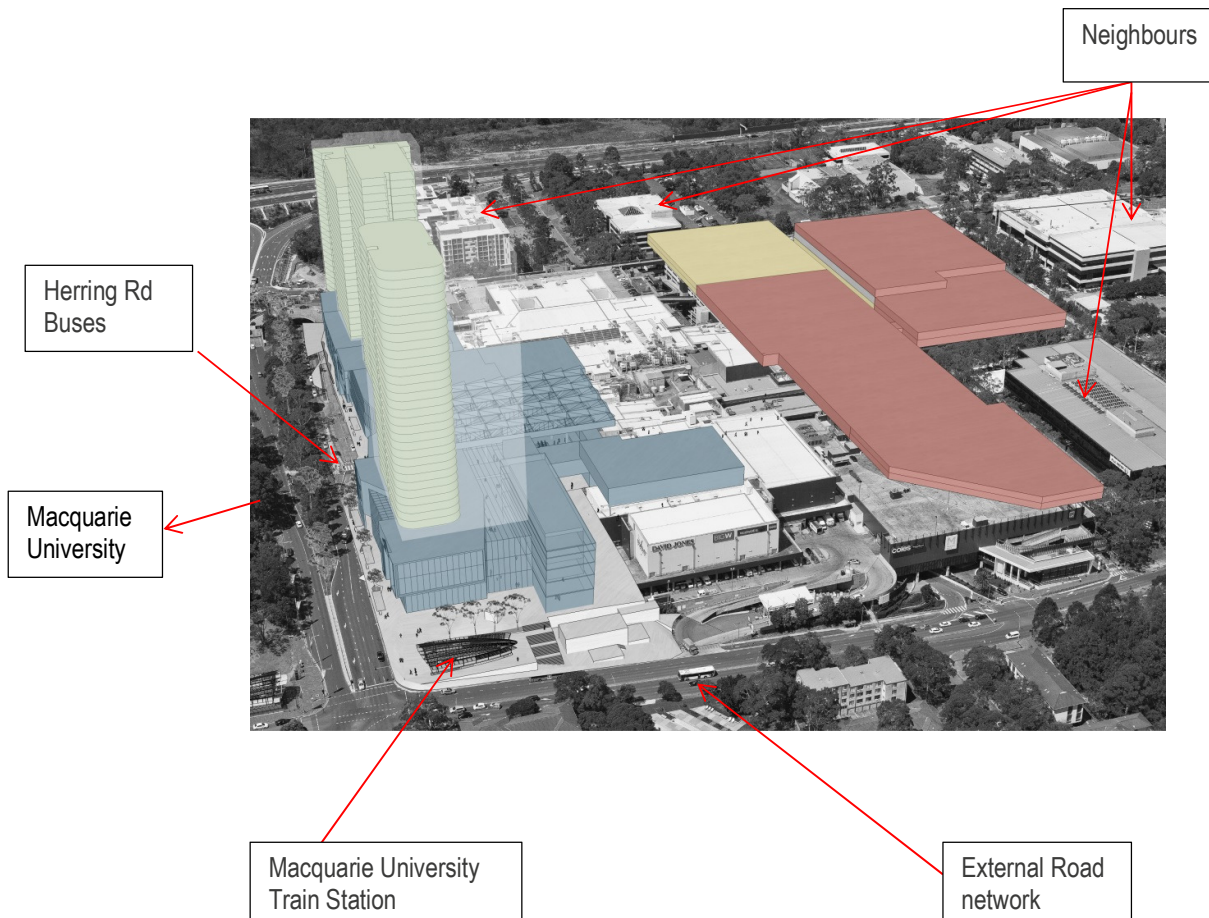
- Stage 1 – Enabling Works, including additional car spaces above and adjacent the existing David Jones and relocated Majors dock facility within an existing carpark;
- Stage 2 – The Herring Road Retail Podium Site including Station Plaza Site, Talavera Rd Quadrant & Herring Rd Main Entrance & Atrium. Demolition, excavation and reconstruction/new works from existing Rail Station to corner of Talavera Road.
- Stage 3 – The four Towers over Retail Podium along Herring Road. New works proposed to be sequenced with Tower T2 first, Tower T1 second, followed by Towers T3 & T4.
- Stage 4 – The Level 4 retail expansion and associated additional car spaces to the east of the site.

The above works shall be programmed to allow for sub-stage completions to maintain centre operations where practicable.

Refer to Appendix B for preliminary staging for the redevelopment.

5 PHYSICAL SITE CONSTRAINTS

The Macquarie Centre redevelopment comprises the redevelopment of the Herring Road portion of the site together plus additional carparking and retail expansion on the upper levels on the eastern side of the site. Careful planning will be required to ensure the construction works do not unduly impact upon the operations of the Macquarie Centre and its neighbouring facilities including the adjacent Macquarie University Train Station and the Bus Interchange and surrounding Macquarie University and Macquarie Park businesses.



Consideration to maintaining Macquarie Centre's existing services infrastructure, essential services, egress paths, customer entry and exit paths, retailers operations etc will be necessary during the construction works.

The Macquarie Centre site is bounded by Herring Road to the northwest, Waterloo Road to southwest and Talavera Road to the northeast with vehicular access between Talavera Road and Waterloo Road via The Link Road providing essential customer and service vehicle access to the heart of the centre and main carparking.

Consideration to maintaining Macquarie Centre's vehicular operations will be necessary during the construction works, providing minimal impacts to customer and service vehicles entering and exiting the centre and providing appropriate car parking and operational loading dock services. The proposed staging makes provision for increased carparking prior to demolition of existing car spaces to ensure the centre's carparking needs are not unduly impacted during construction.

The external road network and pedestrian network shall be maintained during construction to meet the traffic and pedestrian needs of Macquarie Park; necessary lane and pavement closures and access routes will be managed during the construction works to minimise the impacts upon the road and pavement network.

Neighbouring buildings' operations and amenity will be considered during the construction works.

6 MAJOR WORK ITEMS

The general description of major works is provided as follows:-

6.1 STAGE 1 – ADDITIONAL CAR PARKING (above and adjacent existing David Jones) & NEW MAJORS LOADING DOCK

Site Establishment

- Establish the site perimeter fencing and access gates for vehicular and site worker access (using turnstile-swipe card access to worksite).
- Establish the tower crane(s) on grillage to service new carpark construction. Provide Construction Zones on the internal access road servicing David Jones loading dock and on Talavera Road (pending approval).
- The site accommodation for construction workers is to be located in/on the proposed works footprint.
- Closure of the current Purple car park under Target is required to undertake the new loading dock works, these works to be contained within site perimeter fencing.

Structure

- Industry standard conventionally formed reinforced, post tensioned and placed concrete structure for new carpark.
- Excavation and resurfacing works for new dock facility, new road entry /exit onto Talavera Road and provision for new lift shaft and extension.

6.2 STAGES 2 & 3 – RETAIL PODIUM & TOWERS (HERRING ROAD Precinct)

Demolition – Including Enabling Works

- Pedestrian and construction/other vehicle enabling works including any required diversions of pedestrian and vehicular traffic prior to taking full possession of the demolition site.
- Establishment of the site perimeter 'A' Class & 'B' Class overhead gantries as required.
- Internal and external services isolations, make safe, cut and cap as required and establish Temporary Services required during demolition.
- Isolation, cut/make safe and/or diversion and protection of incoming authority services i.e. High Voltage.
- Enclose the Demolition Zone/Buildings as required via perimeter scaffold with chain wire and shade cloth.
- Establishment of Noise, Vibration and Air Quality Monitors around Demolition Site (*left in place for Bulk and detailed Excavation*). *Please refer also to Section 13 for further information.*
- Internals 'soft strip out', removal of services, deglazing, 'de-scaling' building back to concrete and structural steel structure etc.
- Structural Demolition via machinery, excavators, cranes etc.
- Sorting materials onsite to maximise recycling and reduce materials taken to Landfill.
- Hauling demolished materials from site, predominately via access provided on and off site.

Bulk & Detailed Excavation

- Upon handover of site from Demolition Contractors commence Enabling works which include –
 - Site Establishment – ramp access/internal haul roads.
 - Environmental controls in place - Sediment and erosion controls in place to surrounding 'live' stormwater system and 'truck wheel wash' facilities at all crossings at vehicle entry/exit points to/from site.
 - Onsite Dewatering stations/system

- Site retaining including existing structures, road infrastructure and bulk excavation requirements as required
- Dust Mitigation Strategies
- Bulk Excavation via 'ripping' of sandstone (pending detailed site analysis) and loading out via 'Truck & Dog'; minimal stockpiling onsite to reduce the risk of airborne dust migration.
- While Bulk and Detailed Excavation works are in progress sufficient water suppression to be used via a combination of water cart or a temporary relocated sprinkler system.
- Depending on existing rock strength saw cutting may be required and rock breaking, in particular to in ground services trenching, pad footings, core raft slabs etc

Concrete Structure – Basement Levels through to Retail Podium

- Basement retaining wall structure
- Industry standard conventionally formed, reinforced, post tensioned and placed concrete structure.
- Site serviced via tower cranes located in core locations of future Tower buildings. Refer to appendix A for materials handling.
- Provide Construction Zones located on Herring Road and Talavera Road.
- Concrete placement booms located across project on/in cores/jump forms and spread over general floors/decks, with concrete pumping activities taking place from designated Construction Work Zones.

Concrete Structure – Tower(s)

- Industry standard formed, reinforced, post tensioned and placed concrete structure following a main Core per tower. Core to be via a jump from poured ahead of the typical floors.
- Site Serviced via Tower Cranes located in Core Locations of future Multi Storey Towers. Please refer to attached Construction Zones & Tower Crane layout plan in Appendix A.
- Provide Construction Zones located on Herring Road and Talavera Road.
- Concrete placement booms located across the towers on/in cores/jump forms servicing both core and typical floors, with concrete pumping activities taking place from designated Construction Work Zones.

Façade – Retail Podium & Tower(s)

- Typically a combination of several façade/cladding types all erected/installed from within site boundary via the use of tower crane or specialist plant i.e. Meada crawler crane or overhead crane located on monorail from the actual floor in the case of glazed curtain wall facade system.
- For all lightweight composite cladding systems, including metal cladding etc to retail podium levels a perimeter scaffold will be required to facilitate installation works and provide suitable protection to surrounding pedestrian and road networks.

6.3 STAGE 4 –EASTERN LEVEL 4 RETAILEXPANSION & ADDITIONAL CAR PARKING

Site Establishment

- Establish site perimeter fencing and access gates for vehicular and site worker access (using turnstile-swipe card access to worksite)
- Establish Tower Crane(s) on Grillage to service new retail and carpark construction. Provide Construction Zones on the internal access road servicing David Jones loading dock.
- The site accommodation for construction workers is to be located in/on the proposed works footprint.

Structure

- Industry standard conventionally formed reinforced, post tensioned and placed concrete structure for new carpark.

Façade – Retail

- Typically a lightweight metal cladding system with glazing for entries.

7 SITE LAYOUT, LOGISTICS AND MATERIALS HANDLING

7.1 Site Perimeter Fencing, Hoardings & Overhead Protection

Generally the site will be fully enclosed by hoardings for each proposed stage/phase of works (2.4m high 'A' Class timber hoarding). Chain wire fencing will be provided as required to clearly delineate public spaces and footpaths from demolition and construction works.

Class 'B' hoardings or overhead gantries will be used for tower crane lifting operations from Construction Work Zones. No lifting of materials by the cranes will be over the public.

Where a site specific risk assessment may determine that either demolition or construction works are deemed too close to surrounding public footpaths and driveways or internal access for staff and public to the shopping centre, a 'B' Class hoarding overhead gantry is required, including any internal pedestrian 'tunnels' to ensure public safety.

Preparation of a Pedestrian Management Plan providing communication of the plan to key stakeholders/neighbours during the various stages of demolition and construction. The Pedestrian Management Plan is to demonstrate the extent and use of 'A' & 'B' Class hoardings, existing and temporary footpaths and wayfinding/directory signage to facilitate the safe pedestrian management around Macquarie Centre at all times.

7.2 Cranage Strategy

The overall strategy is to establish and use tower cranes once access to the site post demolition and bulk excavation is restricted and the use of mobile cranes is no longer possible from within the various sites' footprints. Refer to Tower Crane Location & Construction Work Zone Plan included in section 9 and Appendix A.

Tower cranes per stage:

1. Carpark Extension Works – Proposing Two (2) Tower Cranes, utilising Internal Construction Works Zones (David Jones Access road to loading dock and a Construction Works Zone on Talavera Road.
2. Retail Podium & Tower Construction - Proposing three (3) Tower Cranes, utilising Construction Works Zones on Herring Road and Talavera Road.
3. Expansion of Existing Retail on Level 4 and additional car parking - Proposing Three (3) Tower Cranes, utilising Internal Construction Works Zones (David Jones Access road to loading dock)

Each building element will be serviced by retractable Loading Platforms to ensure the safe and practical loading and unloading of floors as required.

7.3 Site Deliveries

There will be several nominated site construction vehicle access gates per stage. All construction vehicle access gates will be designed to allow 'nose in, nose off' operation to ensure public safety and will be subject to an approved Traffic Management Plan (TMP).

All construction vehicle access gates, while open and in operation will be controlled by RMS Ticketed and Authorised Traffic Controllers to ensure construction vehicles leave and enter surrounding public roads free of incidents to ensure pedestrians are kept safe at all times while navigating footpaths.

All deliveries to site will be pre-planned with vehicles 'booked in' a minimum of 24 hours prior to when required. Adherence to the plan ensures the safe unloading/loading of vehicles and limits congestion to the road network.

When gate access to site is no longer available due to site constraints, Construction Work Zones will be utilised for all site deliveries. Booking and confirmation procedures and traffic controllers managing the work zone(s) will remain in place.

All vehicular gates, Construction Work Zones operations will be subject to an approved Traffic Management Plan (TMP) and included in the Safe Work Method Statement (SWMS) for materials handling operations.

There will be limited construction parking permitted onsite. Construction workers will be encouraged to utilise Public Transport.

7.4 Site Accommodation

Generally, the Site Accommodation for construction workers will be contained within the site footprint per stage.

All Site Accommodation will be fully compliant with relevant Code of Practice for Temporary Accommodation, in particular with regards to safe access to and from buildings (Personal Protection Equipment (PPE) Free).

The site accommodation is to be sized appropriately for the numbers needed to be accommodated, especially in regard to lunch rooms, change rooms and ablutions.

If Site Accommodation is located under future Tower Crane lifting zones, a minimum 10Kpa overhead structure is to be provided for the safety of the occupants.

7.5 Site Induction & Site Security

Each construction worker will undertake a Project Specific Site Induction for the project, tailored to the specific stage of works and potential risks associated.

The Project Specific Site Induction will extend to all permanent workers, staff and consultants involved on the project. Visitors to site will need to sign into and out of the Visitors Register and be accompanied by a fully inducted person.

Regular delivery drivers that enter site i.e. concrete agitator truck drivers/operators will receive a detailed induction related to specific requirements.

The Site will be fully enclosed via either a 2.4m High 'A' Class timber hoarding, chain wire with shade cloth fence or 'B' Class Gantry, all clearly signposted and delineating site construction works from public areas.

Specific construction workers personnel entry gates will be located as required and accessed via a turnstile and swipe card access. Swipe card access is provided once an individual has sat and completed the Project Specific Site Induction and satisfied in full the specific site requirements. The swipe card system prevents unauthorised pedestrian access to the construction site.

Specific and dedicated Construction Vehicle Access gates will be monitored preventing unauthorised access.

A competent and experienced security firm will be utilised to conduct site perimeter checks outside of normal operating hours, including holiday periods, industry shutdown weekends, nighttime etc.

8 PUBLIC AMENITY, SAFETY AND PEDESTRIAN MOVEMENT

8.1 Indicative Hours of Work

Monday through Friday – 7:00am to 7:00pm

Saturdays – 7:00am to 5:00pm

No work Sundays or Public Holidays without prior approval of relevant and governing authority.

After hours works may be necessary for periods of the works, to avoid impact on existing operations.

8.2 Public Safety

The site will be full enclosed by hoardings or chain wire fencing as is required to totally delineate public spaces, footpaths and the like from demolition and construction works.

There will be no access for the general public to the site through the construction personal access gates/turnstiles

All construction vehicle access gates, while open and in operation will be controlled by RMS Ticketed and Authorised Traffic Controllers to ensure construction vehicles leave and enter surrounding public roads free of incidents and to ensure pedestrians are kept safe at all times while navigating surrounding footpaths.

Class 'B' hoardings or overhead gantries will be used where tower crane lifting operations from Construction Work Zones. No lifting of materials by the cranes will be over the public.

Perimeter scaffold, in addition to the proposed use of 'B' Class hoardings, will be used as required to enclose the demolition and/or construction works to ensure the safety of both pedestrians directly adjoining the work face(s) and construction workers alike.

8.3 Pedestrian Management

In conjunction with the Traffic Management Plans (TMPs) a specific Pedestrian Management Plan will be developed to plan and execute the safe pedestrian access and flow around and into Macquarie Centre. The plan is to consider maintaining the safe pedestrian access to the Macquarie University Train Station and Bus Interchange areas.

8.4 Noise & Vibration Management

A preliminary Noise & Vibration Management Implementation Plan is provided in section 13 of this report and it details preventative and management measures for noise and vibration associated with construction activities. It defines mitigation measures to be implemented, a monitoring program that enables control of the impacts of construction activities on potentially affected receivers, and contingency measures that may be implemented if complaints are received or exceedances are measured.

The main objectives are to:

- promote a clear understanding of ways to identify and minimize noise from construction works.
- focus on applying all 'feasible' and 'reasonable' work practices to minimise construction noise impacts.
- encourage construction to be undertaken only during the recommended standard hours unless approval is given for works that cannot be undertaken during these hours streamline the assessment and approval stages and reduce time spent dealing with complaints at the project implementation stage.
- provide flexibility in selecting site-specific feasible and reasonable work practices in order to minimise noise impacts.
- feasible work practices are practical to implement, while reasonable work practices take in

- comply with all statutory requirements.
- avoid or minimise adverse noise impacts from construction through construction methodology and appropriate management measures.
- to minimise the generation of noise and vibration from construction activities which could affect the site personnel.
- to minimise the generation of noise and vibration from construction activities which could affect neighbouring Retail tenancies, residences, businesses and associated building structures and other community members.
- establish and maintain good relations with the community and neighbouring sites.

9 CONSTRUCTION SITE & TRAFFIC MANAGEMENT PLAN

9.1 Objectives

- To address construction site and traffic issues arising from the construction works and to establish general guidelines and standards that address the issues.
- Manage the site to ensure that issues arising from construction activities address the needs of the local community.
- Detailed construction management plans will be developed at a later stage, prior to the commencement of construction.

9.2 Key Management Issues

Due to the complexities associated with the site, consultation with the appropriate stakeholders and careful traffic management will ensure that conflicts between construction and operational facilities and activities in the area are avoided.

Construction traffic on the project site is subject to constraints imposed by site conditions and public traffic movements.

The primary issues include:

- general site access and egress
- interaction with existing facilities and operations
- the timing and extent of material deliveries ;
- vehicle movements to perimeter of site;
- traffic congestion and conflicts on external roads;
- pedestrian movements;
- signage and directions; and
- general public

9.3 Site Actions

Site Access & Egress

Access to the construction site will be via controlled gates within perimeter site fencing. Key access points will generally be within the Macquarie Centre site during stages 1 & 4 for the eastern end expansion works. Access points for the Herring Road precinct during Stages 2 & 3 will be via Talavera Road and Herring Road with specific locations determined in the next design phase.

Perimeter & Internal Fencing/Hoardings

The permanent construction site fencing shall consist of 2.4m High, painted 'A' Class Timber Hoarding to Talavera/Herring and Waterloo Roads.

A certified 'B' class hoarding shall be erected along the footpath in front of the Main Entrance off Herring Road. This is to provide overhead protection for pedestrians during the works for Herring Road Main Entry and Atrium works. The hoarding shall be constructed in accordance with regulations and codes, including

lighting, appropriate directional signage and shall be monitored and maintained on a daily basis to ensure compliance.

All internal fencing or hoardings required to segregate construction works from the public, centre staff and visitors to the Macquarie Centre will be subject to AMP Capital approval. Typically the Internal hoardings will be as a minimum 2.4m High 'A' Class hoardings if located in a carpark area or full height, prefinished paneled wall with timber or metal framed framing within the centre.

Pedestrian Management

All pedestrian movement and diversions shall be managed and planned during the construction works to ensure safe and easy movement of pedestrians to and from the centre. Appropriate directional signage will be provided to ensure pedestrians are diverted safely.

A pedestrian entry to Macquarie Centre along Herring Road will be provided throughout construction.

Traffic Management

Traffic movements and vehicles will conform to current Roads & Maritime Service (RMS) requirements.

All customer and operational vehicles will use the entry and exit points (where possible) currently located on Herring Road, Waterloo Road and Talavera Road. Temporary closure of access routes on Herring Road during construction will be required. Sufficient vehicle access points will be maintained during construction to allow the smooth operation of existing carparking and servicing facilities.

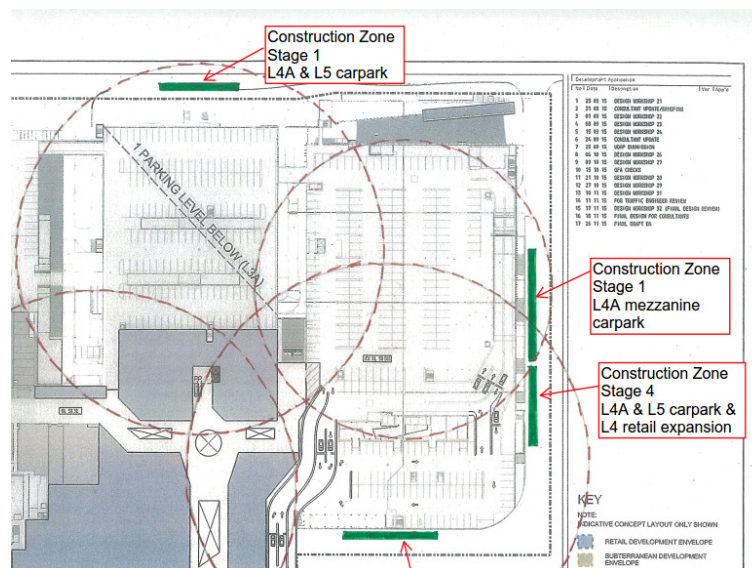
All construction vehicles accessing the site during the construction will conform to the RMS requirements – Traffic control will be supplied to ensure compliance with approved Traffic Management Plans (TMP) and only certified traffic controllers shall be used.

Loads on vehicles removing spoil or delivering material to be within RMS legal weight limits, vehicles to travel only on approved roadways, loads secured and covered.

Construction vehicles will be encouraged to use the M2 motorway to access Macquarie Park to avoid increased traffic on the local network.

The introduction of construction zones on the immediate road network adjacent to the construction works of the existing Macquarie Centre will be necessary for materials handling; these will be temporarily located and will require temporary lane closures, according the following stages:

1. Stage 1 - Construction Zones within Macquarie Centre road network and Talavera Road. (operating hours to be confirmed)



For the full extent of Construction Zones, see Appendix A.

The local area peaks on Thursday evenings and Saturday afternoon, do not generally coincide with additional traffic generated by the construction site.

Appropriate directional signage and traffic control will be provided to ensure vehicles enter and leave site with minimal disturbance to other road users. Temporary road closures and relocations during the construction period will be subject to coordination with the appropriate authorities. All traffic related issues / changes shall also be presented to existing stakeholders as part of the consultation process.

On site parking for all plant and equipment only shall be provided during various stages of the construction. This will include nominated areas within the site for various timeframes to suit the program. All efforts will be made to encourage the use of a good public transport system already in place to Macquarie Centre for construction staff and workers. This will be conveyed through all contractor documentation and site inductions. Timetables shall be provided for Trains and all bus routes and the site will not encourage local construction vehicle parking.

It is proposed to manage the impact of construction traffic through the provision of controlled access points to the site and designated routes. These will be carefully coordinated to minimise conflicts with other area activities such as controlled traffic movements during peak University, Macquarie Centre and neighbouring businesses arrival/departure times.

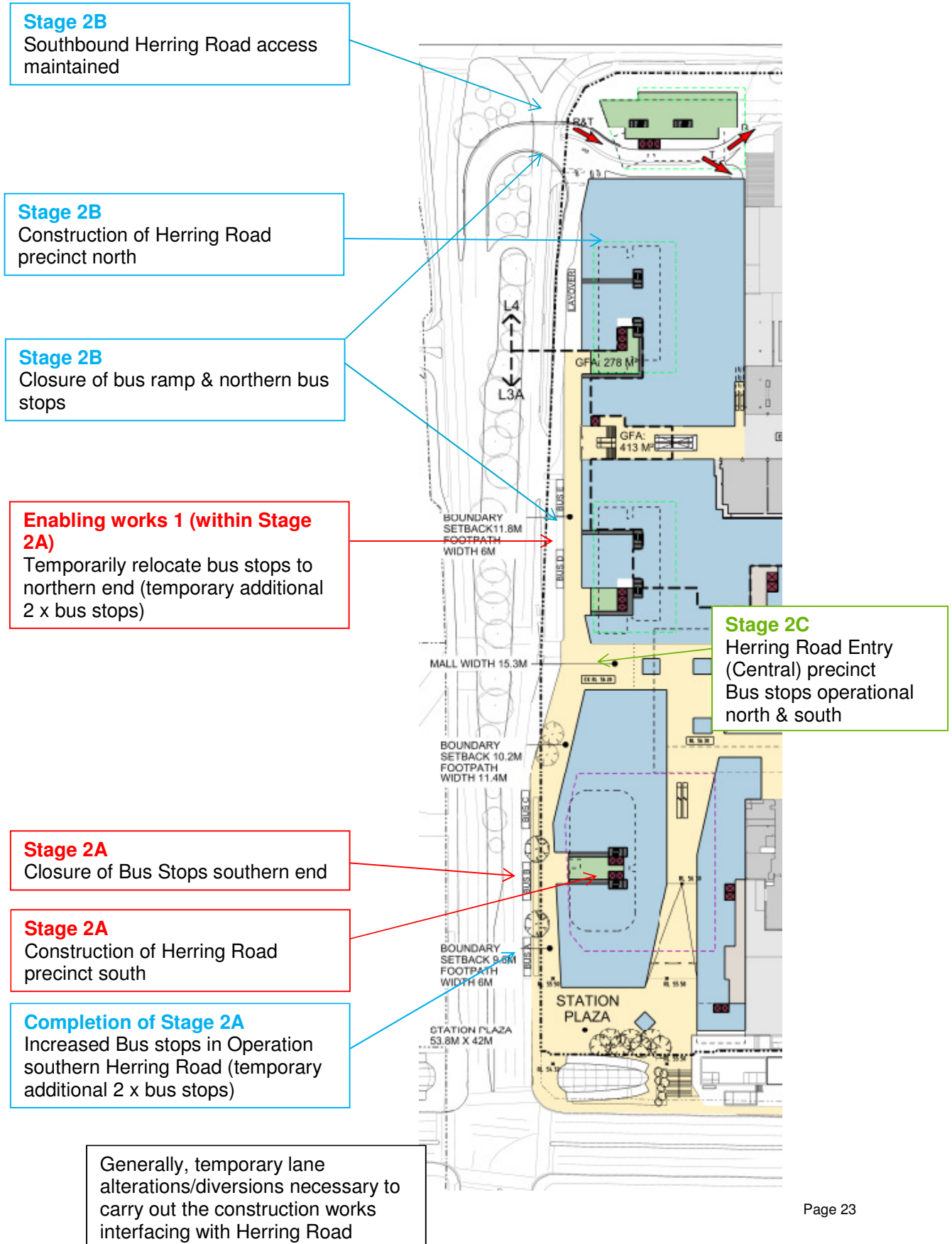
The following actions will be implemented to manage construction and public traffic to the surrounding area by providing a detailed construction traffic management plan and diagrams incorporating controls and procedures agreed to by all stakeholders, contractors and authorities prior to commencement of the works. This is to include such works as services diversions and relocations to existing road functions surrounding the development, i.e. the Bus stops on Herring Road.

Bus Operations

The existing Bus Interchange on Herring Road (5 x bus stops) will undergo alterations, with the removal of carpark exits along Herring Road allowing for new bus stop locations further south towards the Train Station. The precise staging of Herring Road will be developed in the next design phase, however preliminary planning may consider the need to prepare the new bus stops to the southern end of Herring Road first (Stage 2A), providing increased bus stop capacity prior to undertaking works to the northern end of Herring Road (Stage 2B).

Due to the basement excavation works the bus stops, layover area and bus turning ramp to the northern end of Herring Road will be impacted requiring temporary relocation of bus services. The following image outlines the preliminary planning for the Herring Road Bus operations during construction. Regardless of the construction, under our current plan we will be able to maintain the same number of bus stops.

Bus Operations on Herring Road



Northwest Rail Metro Construction – Macquarie University Train Station Temporary Closure

In discussions with Sydney Metro and Transport for NSW, AMP Capital acknowledges the need for temporary closure of the Train Station during Station and Rail construction works.

In the event that our construction works coincide with this shutdown period the Contractor will develop a detailed CMP which will include management around operation of temporary buses. The CMP will be developed in consultation with Council, Sydney Metro and TfNSW.

Site Accommodation

It is proposed that the site accommodation and amenities for the construction works shall be provided within the fenced boundary of the sites. During the construction the site accommodation shall be transferred at various Phases to a number of locations within the construction site perimeter.

Materials Handling

Materials handling will be predominantly by the use tower cranes, elevated work platforms, cherry pickers, tip trucks, forklifts, and mobile cranes operating generally within the site, newly constructed loading docks and construction zones. The removal of materials will be by load covered trucks and waste bins.

Perimeter scaffold / screens and personnel access shall be provided within the boundary of the construction site as per current legislation, codes and requirements for various stages of the construction works.

A detailed materials' handling risk assessment and SWMS shall be documented and submitted by the sub-contractors for approval by Lend Lease prior to any works. All plant and equipment used for materials handling shall comply with all sections of the CMP and legislation, regulations and codes.

For proposed Materials handling / tower crane locations utilising construction zones around the site, see construction zones images above and consolidated preliminary construction zones and tower crane locations in Appendix A.

Signage

All external boundary signage shall be monitored by the Contractor. This will include all pedestrian access changes around the site and any vehicle signage to highlight changes to the surrounding area.

Construction works contractors will be responsible for providing the on-site signage regarding internal traffic management, zones of work, access ways and the updating and maintenance of these signs as required.

Education

All site personnel will be inducted into the construction site and traffic management systems that will be operating for their sequence of the works during the site induction program.

Performance Measures

- Access provided by use of designated access / egress points;
- Provision of fencing and gates;
- Issues / queries / concerns received from all stakeholders;
- Responses to all issues / queries / concerns;
- Compliance to all standards, regulations and codes.

Monitoring and Reporting

The Contractor will report when required on the implementation of the aforementioned Plan. The plan will be periodically updated to include but not be limited to: -

- Changes to access points in use;
- Changes and alterations to site accommodation;
- variations to traffic management plans;
- identification of any safety / operational incidents and the actions taken to address
- monitoring issues / queries / concerns and corrective actions;

Corrective Actions

Non-conformances are to be recorded by way of a System Defects Notification process.

The Contractor shall review and analyse the cause of detected non-conformance and develop a corrective action to prevent recurrence. Details of the non-conformance including any immediate corrective actions undertaken are to be recorded, reviewed and accepted by the Construction Manager.

It is the responsibility of the Contractor to immediately initiate corrective actions, if required. The non-conformance and corrective action must include details of the action proposed and an appropriate close out date. The system defects report should be signed dated and filed.

If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the Contractor in consultation with the EH&S Manager.

9.4 Construction Site And Traffic Management Plan

Control	Timing	Methodology	Responsibility	Monitoring & Reporting	Performance Measure
Site preparation					
A Detailed Traffic Management Plan will be developed.	Prior to commencing.	In accordance with the Construction Management Plan.	Contractor	Pre-construction review.	Detailed Traffic Management Plan
During construction					
Only site personnel and authorised visitors shall be permitted to enter the work areas.	At all times	In accordance with the Construction Management Plan.	Contractor	Monitor for unauthorised access.	Unauthorised access, parking or deliveries.
Delivery of materials to be planned and scheduled to minimise disruptions to stakeholders	At all times	In accordance with the Construction Management Plan.	Contractor	Ensure deliveries arrive at scheduled times.	Issues from stakeholders
All construction traffic for internal works shall access the site via the main access points	At all times	In accordance with the Construction Management Plan.	Contractor	Monitor unauthorised access.	unauthorised access.
Truck movements to be restricted to specified routes	At all times.	In accordance with the Detailed Traffic Management Plan	Contractor	Specified routes to be nominated and incorporated into	Issues from stakeholders
Visitor and delivery areas to be clearly marked.	At all times.	In accordance with the Detailed Traffic Management Plan	Contractor	Monitoring designated areas for compliance	traffic using non-designated areas
Speed limit of 10km/h shall be adhered to at all times on the site	At all times.	In accordance with the Detailed Traffic Management Plan	Contractor	Monitor compliance	Speeding.
Vehicles departing the site shall proceed through a shaker-pad' facility to prevent site material tracking onto the public road system if required.	When deemed appropriate.	In accordance with the Detailed Traffic Management Plan	Contractor	Monitor compliance	Site material deposited on surrounding road system
Detailed Traffic Management Plan amended for stage handover of areas	Programme stages	In accordance with the Construction Management Plan.	Contractor	Review and update	Compliance with Construction Management Plan
Pedestrian movements due to closure of existing pathways	Prior to commencing	Authorised changes RMS / RCC, notifications, signage changes, barriers, road crossings	Contractor	Preconstruction inspection, monitor compliance to the specific changes	Issues from authorities

Control	Timing	Methodology	Responsibility	Monitoring & Reporting	Performance Measure
Signage changes	Prior to commencing/ during works	Authorised changes by authorities and compliance with Construction Management Plan	Contractor	Preconstruction inspection, monitor compliance to the specific changes	Issues from authorities
Perimeter boundary changes	Upon commencing	In accordance with authorised changes	Contractor	Preconstruction inspection, monitor compliance	Issues from authorities
Site accommodation and amenities	During works	In accordance with standards, regulations and codes	Contractor	Monitor compliance	Non-compliance
Plant and equipment	During construction	In accordance with the Construction Management Plan.	Contractor	Monitor compliance	Non-compliance

10 ENVIRONMENTAL MANAGEMENT

10.1 Introduction

The construction phase of this project, independent of design delivery, presents many opportunities to contribute to construction industry benchmarks for EH&S management through developing and implementing ecologically sustainable practices.

EH&S management during construction is the responsibility of each and every member of the project construction team.

Identification of potential EH&S aspects and impacts is an ongoing activity.

Potential impacts will be identified at both the design and construction phase via the project risk assessment and safe work practices procedures.

10.2 Objectives

The Project Team has the following objectives with respect to EH&S:

- Identify and eliminate 'Near Misses' and Critical incidents and occurrences;
- Achieve an incident and injury free workplace.
- Maintain statutory compliance with respect to EH&S;
- Conform to company EH&S Management System, Standards and Instructions;
- Encourage training, skilling, awareness and Best Practice;
- Maintain accurate reporting and record keeping.

The Environmental, Health and Safety Plan (EH&S) will demonstrate the Contractor's understanding of EH&S management and controls required for construction activities.

The EH&S Plan is intended to ensure that any EH&S commitments made and other requirements of the proposed development are identified and their incorporation in the works proposed is planned and implemented.

The EH&S Plan is a working document to be updated as necessary and forms part of the contract documentation for the project.

It shall be a commitment of the Contractor that Best Practice EH&S Management is adopted and implemented on all projects.

10.3 Environment Health & Safety And Rehabilitation Policies

The Contractor's Environment, Health and Safety Policy, and Rehabilitation Policy forms the foundation for the EH&S and Rehabilitation performance of the Contractor's company. The Policies represent the commitment of the Contractor to meeting EH&S and Rehabilitation objectives on a project specific basis to all project personnel.

The Policies are to be clearly displayed within the Site Office and accessible by the project team, eg. Project Noticeboard.

10.4 EH&S Standards

The Contractor's EH&S Standards and requirements apply to all personnel on the project. Project specific rules are to be developed and included in tender packages and site induction with the Company EH&S Standards.

A visitor's register will be maintained on site at all times with all visitors to sign the register before accessing site with a site inducted person.

10.5 Roles And Responsibilities

The Contractor's Project staff are required to:

- lead by example;
- utilise the Project EH&S Plan and treat it as a living document;
- encourage and support workers to work safely and with care for the environment;
- set priorities that reinforce safe and environmentally aware activities; and
- display ownership of areas under their control and assist project team members in overall EH&S management

Project Roles and Responsibilities for EH&S are also detailed in the EH&S Action Plan.

Key staff and service provider responsibilities for the delivery of the Environment, Health and Safety Policy are detailed in Section 3.3 of the Project Management Plan, Project Web. The Construction Manager will designate a Project Team Member responsible for EH&S

11 WASTE MANAGEMENT PLAN

11.1 Objectives

- Avoid, wherever possible, the generation of waste material.
- To recycle a minimum of 90% of all Hard Waste Material, and Soft Waste Material generated on the construction site during construction works, thus achieving up to 90% reduction/avoidance in waste to landfill.
- Waste Management will follow the preferred hierarchy of avoidance/reduction, re-use, recycle, treat and dispose. Best practice should be adopted wherever possible, to achieve waste minimisation and reduction.
- In addition the project will:
 - liaise with contractors to identify areas where they can reduce waste and reuse materials in their respective trades;
 - meet local, state and federal waste minimisation legislation and environmental standards;
 - prevent pollution and damage to the environment;
 - protect the safety and health of our employees and the public.

11.2 Key Management Issues

Waste Materials generated on site are to be managed such that recycling is maximised and the volume of waste transported to landfill is minimised.

Construction waste minimisation requires early planning and establishment of a “Waste Minimisation Culture” by all participants in the Design, Construction and End User process. Waste minimisation is a key element in life cycle analysis, material selection and specification.

Materials selected must be fit for re-use. The re-use of existing building materials that are fully recycled and/or include recycled material in their production will be maximised where practicable.

All disposal documentation from construction processes should be supplied to the Contractor and filed in the site records for verification purposes.

11.3 Site Actions

Planning

Prior to commencement, all contractors will be required to develop and implement any waste minimisation initiatives (eg. use of a recycled product).

Detail site waste minimisation details shall include as a minimum the following:

- practical measures associated with their works to prevent waste entering on site;
- waste streams resulting from their works which can be recycled and will be actively managed as part of their waste reduction plan;
- alternative products containing recycled material that could be utilised in their works, in place of more traditional materials, which conform and meet with the design specification;

All suppliers of building materials will be encouraged to nominate packaging minimisation and reuse initiatives, which have been implemented, as part of product supply to the project.

Bulk handling and reusable/returnable transport containers will be encouraged.

Waste Management will be addressed initially as part of risk assessments and monitored through monthly reporting.

Construction Phase

Bin System

The waste management system to be adopted on site will be through the use of the separation bins for recyclable materials, and non-recyclable waste materials as practicable for the contractor. The waste bin system shall involve a management plan with a licensed disposal contractor to administer the supply, delivery, removal and certified disposal of site generated waste.

Additional bins will be provided where possible to further separate waste. Examples include nominated bins for plasterboard and timber only.

Materials collected for recycling could include:

- Amenities waste
- Office generated waste
- Demolition generated waste
- Piling and excavation generated waste.

All contractors performing work on site will place all relevant generated waste in the correct bins on site. The contractors will be responsible for the daily cleaning of their respective work areas.

If a particular bin is found to be “contaminated” by waste material from a contractor, that particular contractor will be responsible for the tipping or sorting of waste in the contaminated bin.

Signs will be located on each bin, indicating type of bin and what waste may be placed in that bin.

Construction bin system shall involve an upfront plan with a licensed disposal contractor to administer the supply, delivery, removal and certified disposal of site generated waste. At this stage it is proposed to have bin sizes to help the various stages of the works. Initial bins shall be twenty five litre plastic bins with lids to site amenities, emptied daily into a number of three litre front lift bins located at sheds and serviced as required. Three cubic meter forklift/crane bins on wheels shall be located at the workface for material rubbish. These shall be originally marked for separate materials for recycle and deposited either by forklift/crane into fifteen cubic meter bins located at various points across the site for pick up and disposal.

As the structure progresses these bins shall then revert to mixed waste with the waste company disposal system sorting waste at their facility, not on site. Most bulk waste, such as plasterboard, will still be separated on site. The introduction of wheelie bins shall be used mainly for the fit out trades still deposited in the original take away bins.

A separate waste system shall be planned for the main office generated waste, to include food, paper recycle, cartridge disposal, sanitary (as on site) and bulk packaging.

Washout Areas

Washout processes and facilities for paint and/or finishing trades are to be minimised and water recycling for these activities are encouraged where possible.

Utilisation of the Contractor's Guidelines for disposal of paint and associated wastes are to be implemented.

Finishing trades washout facilities should NOT be plumbed to any building services and will be of a stand-alone nature. The maintenance of these facilities should be the contractor's responsibility and should comply with all appropriate Environmental Legislation and local authority guidelines.

Packaging

All suppliers of building materials will be encouraged to nominate packaging minimisation and reuse initiatives, which have been implemented, as part of product supply to the project.

Bulk handling and reusable transport containers will be encouraged.

Recycled Materials

Suppliers will be encouraged to nominate products that include a recycled component and ability/opportunity for recycling of unused components. Product selection will include a selection factor associated with recyclability and percent of recycled product, for example office and amenities supplies.

Training

Communication and education material on the waste management system will be part of site induction program and form part of relevant contractor's scope of works (SOW), risk assessments and safe work method statements (SWMS).

The responsibility to ensure that waste materials go into nominated bins will be with everyone on site.

Performance Measures

- A Waste Management Contractor will be involved in the early stage of the works to ensure effective planning for the waste management.
- The Waste Management Contractor will coordinate waste recycling, recovery and disposal of all waste during all stages of the construction works
- The waste system (bins / signage / staff education) is in place prior to any major waste generation works.
- A process for the verification of disposal of waste will be developed and maintained to ensure appropriate disposal of the waste material. Copies of all tipping/disposal documentation to be supplied to the Contractor and filed with site records.

Monitoring and Reporting

The Waste Management Contractor will be responsible for providing monthly reports to the Senior Site Manager: the number and size of bins taken away, tonnages and m³ taken away and tonnage's and m³ recycled. This will include the final destination of materials for recycling.

The Waste Management Contractor will be responsible for providing dockets to the Senior Site Manager for the removal and appropriate disposal of scheduled waste from the project.

The Site Manager will produce monthly reports and other statistic information as per Branch EH&S requirements.

The Branch EH&S Manager will formally evaluate the progress on waste management from the above monthly reports to ensure waste reduction targets are met.

Correctives Actions

Non-conformances are to be recorded by way of a System Defects Notification process.

The Contractor shall review and analyse the cause of detected non-conformance and develop a corrective action to prevent recurrence. Details of the non-conformance including any immediate corrective actions undertaken are to be recorded, reviewed and accepted by the Contractor.

It is the responsibility of the Contractor to immediately initiate corrective actions, if required. The non-conformance and corrective action must include details of the action proposed and an appropriate close out date. The system defects report should be signed, dated and filed.

If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the Contractor in consultation with the EH&S Manager.

11.4 Waste Management Implementation Plan

Control	Timing	Methodology	Responsibility	Monitoring & Reporting	Performance Measure
Waste Disposal					
Project waste types to be identified	Prior to works commencing.	In accordance with the Waste Management Plan (WMP)	Contractor	To be reviewed in EH&S Plan	Identify waste generation and Management Plan developed.
All off-site waste to be disposed of to an appropriate disposal point as required under the relevant legislation	At all times	Waste contractor to address and follow legislative requirements.	Contractor	To be monitored through waste docket records and reported to branch/region as per the Waste Management Plan	Pre-arranged list of waste destinations and no waste disposed to unlicensed facilities.
Only licensed waste contractors to dispose of construction waste from site.	At all times	Waste contractor to address and follow legislative requirements	Contractor	To be monitored through waste docket records and reported to branch/region as per the Waste Management Plan	All waste transported to appropriate waste facilities.
Waste reporting should include, quantity of waste streams generated and recycled	Monthly	Waste Management Plan	Contractor	Regional EH&S Monitoring and Reporting	Monthly EH&S Managers review
Recycling & Minimisation					
Material to be reused or recycled where possible.	As required	As identified in accordance with the Waste Management Plan	Contractor	Monitor waste pathways to ensure correct application of reuse/recycling.	Identified waste generation to stay on site or recycled off-site
Any material imported onto the site is to consist of certified clean material	As required	Identification of material	Contractor	Certificate	Certificate provided prior to bringing to site.
Where appropriate, existing materials on site to be reused or recycled.	As required	Identification of material	Contractor	Monitor waste pathways to ensure correct application of reuse/recycling.	Identified waste generation to stay on site or recycled off-site
Site offices					
Recycling bins shall be provided within the site working area.	As required	Coordinated Waste Management Plan	Contractor	Monthly reports from Waste Management Contractor	Monthly EH&S Managers review
Site amenities shall be provided on-site as required	Prior to works commencing	Coordinated Waste Management Plan	Contractor	Monthly reports from Waste Management Contractor	All waste disposed of appropriately.

11.5 Specific Trades Waste Management Plans

Specific Waste Management Plans will be provided in a detailed CMP at a later stage, for example:-

- Concrete waste management plan.
- Paint waste management plan.

12 STORMWATER & EROSION MANAGEMENT PLAN

12.1 Objectives

- To plan and carry out the works while avoiding erosion, contamination and sedimentation.
- To control the quality of surface water leaving the construction site such that no unacceptable impact occurs to adjoining waterways or the local stormwater system.
- Minimise disturbance to the hydrologic regime of the surrounding landscape and maximise opportunities for stormwater recycling on the site.
- Protect groundwater from contamination which could result from construction activities.

12.2 Key Management Issues

Construction activity on the project site involves disturbing soils so that infrastructure and foundation activities can be conducted. The potential exists for unconsolidated soils to be eroded by water and wind action.

The construction works has the potential to adversely impact:

- Water quality for receiving waterways
- hydrology and flooding
- soil resources
- unconsolidated soils to be eroded by water and wind action.

However the following activities are expected to be the key risk sources during construction:

- Bulk/detailed excavation and disposal.

Potential discoveries which could result from construction activities include direct contact with contaminated soil or substances of unknown quality during infrastructure works and detailed excavation.

The following management issues have been identified:

- Site contamination through the potential for an overflow of fuel/chemical storage containers and contamination from the equipment and plant repair area into the surrounding natural watercourse;
- Stormwater runoff coming into contact with potential contaminated soils may potentially flow into the stormwater inlets and thus nearby natural water courses could be affected and consequently reduce water;
- Sediment laden water from the site may potentially flow into the stormwater inlets and thus nearby natural water courses could be affected and consequently reduce water;
- Stormwater with excessively high or low pH values could run-off from the selected stockpiles stabilisation area;
- Site cut off drains eroding and increasing site water sediment loads;
- Vehicles leaving the construction site depositing dirt/mud on public roads after rain periods;
- Removal of bulk material off site escaping from vehicles and polluting roadways;

12.3 Site Actions

The prevention of soil erosion by water and wind and by sediment pollution will be key components of the environmental management plan for the site.

A preliminary stormwater, erosion and sedimentation control plan will be formulated in the Construction Management Plan. Water quality impacts shall be minimised by incorporation of appropriate erosion and sediment control measures in the design, specification, contract arrangements and quality assurance inspections during construction with the nominated contractors.

The Stormwater Management Plan is in accordance with the following principles:

Planning

- divert runoff around disturbed areas
- limit disturbance to the area
- stormwater drainage;
- site access will be limited to the minimum number of entry and exit points required, The Contractor will endeavor to utilise the existing entry and exit points;
- all approved access points shall be marked prior to the commencement of construction within that area;
- dissipate uncontrolled flow by sediment fencing/devices placed across the line of water flow;
- reduce the erosive energy (concentrated flow and velocity) of water using measures such as temporary storage, dissipaters and bulk excavation as holding ponds.
- where practicable maintain stormwater inlets and protect the drainage line from erosion;
- direct runoff from disturbed areas through sediment traps or filters
- loss of soil from stockpiles is minimised using filter barriers and temporary covering

Dispersal Control

- prevent deposition of sediment on the public road network due to truck / equipment movements to and from the site;
- a purpose built wheel wash/shaker facility will be constructed at the exit gates of the site if required;
- main construction roads on site to be all weather and adequately drained;
- collection of on site stormwater into temporary detention basins as part of bulk excavation. (refer to de- watering procedure)

Rehabilitation

During the construction works, sediment traps constructed as part of the works to all kerb inlets on streets shall be monitored for silt material at the base of the pit and removed upon completion of all surrounding works.

For landscaped areas, maintenance will continue until vegetation is well established.

De-watering

Management practices have been implemented to address all sources of pollution on the site in accordance with current practices outlined by Governing, authoritative and legislative bodies.

The approach is to encourage developers to actively manage stormwater so that a licence is not necessary, and generally the Authority does not encourage developers to apply for licences for stormwater discharges.

The Contractor shall operate in accordance with industry best practice for the management of stormwater and de-watering discharge.

All site waters during construction shall be contained on site, by utilising the current topography of the site and the bulk excavation. The collection of stormwater/ground water on the project could be discharged to the stormwater system if it meets certain criteria. This would involve an analysis of the quality of receiving waterways and the collected water within the project boundary. This analysis would need to be carried out by a nominated environmental consultant to prepare and interpret results for verification and acceptability before any pump out work can commence.

The analysis would need to demonstrate that the collected water within the project boundary does not exceed the tested parameters and have no evidence of the following substances detected:

- nutrients, from fertilisers;
- herbicides and pesticides used in landscaping;
- acids from washing;
- building wastes and litter;
- paint and paint wastes; and
- oils, grease and fuel, from equipment operation and maintenance.

An on site treatment with discharge to stormwater system could be implemented providing that there is no chemical contamination (as listed above) and compliance to all legislation and other standard requirements and guidelines.

This site treatment should be contracted to an appropriate contractor and the test results supplied to the Contractor and filed in the site records for verification purposes.

Treatment options could include the use of a mobile specialist plant for this procedure and may prove more cost effective than a procedure of pumping out and/or on site storage of this water. It is envisaged to re-use site contained rain water for dust suppression during the construction works.

Ongoing water quality monitoring would need to be addressed and the appropriate contractor engaged to do this work would need to provide a safe work method statement (SWMS) detailing the frequency of sampling and on site procedures to ensure discharge does not exceed the criteria.

Training

Communication and education material on the stormwater, erosion and sediment controls will be part of the site induction program, contractors scope of work, risk assessments and SWMS's for all of the construction trades.

Performance Measures

- Control methods operational prior to detailed earthworks commencing in the nominated area.
- All site cut-off drains unobstructed.
- All major site drains adequately stabilised.
- All controls maintained and functional.
- All stockpiled material adequately stabilised and protected.
- no de-watering stormwater/ground water discharge from the unless approved
- Issues concerning mud/organic debris on the surrounding public roads to the site to be addressed.

Monitoring and Reporting

At least weekly, and after major rainfall, the contractors or nominated Stormwater / Sedimentation control contractors will inspect (and document) the entire site and provide particular attention to the following:

- Visual inspection of sediment control devices.
- Ensure drains operate effectively and initiate repair as required.
- Remove spilled soil (or other materials).
- Construct additional erosion and/or sediment control works as might become necessary to ensure the desired protection is given.
- Remove trapped sediment from catch drains, pits, sediment fences, etc.
- Ensure rehabilitated lands have effectively reduced the erosion hazard and initiate upgrading or repair as appropriate;
- Maintain erosion and sediment control measures in a functioning condition until all activities are completed and the site is rehabilitated.
- Remove temporary soil conservation structures as a last activity in the rehabilitation program.
- The Contractor will keep records and comments on the condition of existing erosion and run-off controls (drains, silt fences, catch drains etc.) de-watering procedures and test results, and any site instruction issued to contractors to undertake remedial works;
- Rainfall data will be filed on site, and management will keep records of poor drainage areas.
- Monitoring and recording quality of water being discharged from site to ensure that the sediment loads are acceptable.
- The records will form part of the site EH&S Management Plan and will be made available on request.

Corrective Actions

Non-conformances are to be recorded by way of a System Defects notification process.

The Contractor shall review and analyse the cause of detected non-conformance and develop a corrective action to prevent recurrence. Details of the non-conformance including any immediate corrective actions undertaken are to be recorded, reviewed and accepted by the Contractor.

It is the responsibility of the Contractor to immediately initiate corrective actions, if required. The non-conformance and corrective action must include details of the action proposed and an appropriate close out date. The system defects report should be signed dated and filed.

If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the Contractor in consultation with the EH&S Manager.

12.4 Stormwater & Erosion Management Plan

Control	Timing	Methodology	Responsibility	Monitoring & Reporting	Performance Measure
Site preparation					
A stormwater, erosion and sedimentation control map will be prepared prior to site activity and Bulk Earthworks.	Prior to works commencing.	In accordance with the Early Works Stormwater Management Plan	Contractor	Weekly inspection.	Pre-construction check and monthly there after.
The stormwater and erosion controls to be installed as depicted in the documentation prepared by the Civil engineering consultant	Prior to works commencing.	In accordance with Civil Engineering consultant's documentation.	Contractor	Weekly inspection.	Pre-construction check and daily there after.
Sediment Control					
Silt stop filter fences to be located below disturbed areas and across all potential runoff sites.	Prior to construction commencement	In accordance with the Early Works Stormwater Management Plan	Contractor	Daily visual inspection & Weekly documented inspection.	Pre construction check Silt collected at base of fence, breach of fence line.
Truck wheel wash/ shake facility to be installed near construction access.	Prior to construction commencement	In accordance with the Early Works Stormwater Management Plan	Contractor	Pre-construction check and daily/weekly maintenance inspections.	Pre-construction check.
Stockpiles left for > two month to be temporarily seeded using sterile crops.	1 month from stockpile placement.	In accordance with the Early Works Stormwater Management Plan	Contractor	To be included in contractors weekly monitoring.	Sedimentation from stockpiles.
Stormwater inlet sediment traps to be installed.	Prior to construction commencement	In accordance with the Early Works Stormwater Management Plan	Contractor	Weekly inspection.	Sediment collected in traps.
All erosion controls to be maintained until potential for erosion and sedimentation passed.	Ongoing	In accordance with the Early Works Stormwater Management Plan	Contractor	Weekly inspection	Retaining all controls effective

Control	Timing	Methodology	Responsibility	Monitoring & Reporting	Performance Measure
Runoff					
Parking area and site facilities to be of aggregate material.	Prior to construction commencement	In accordance with the Early Works Stormwater Management Plan	Contractor	Pre-construction inspection	Sedimentation from parking/site facilities
Grassed and vegetated buffers to be maintained.	Ongoing.	In accordance with the Early Works Stormwater Management Plan	Contractor	Daily/weekly inspection.	Vegetated buffers/grass to channels. Monitor for siltation and sedimentation at downstream locations.
Site stormwater which is captured to meet discharge requirements.	Ongoing	In accordance with the Early Works Stormwater Management Plan	Contractor	Daily inspection and consultant's documentation.	Discharge not to exceed controlling Authority criteria.
Install sediment control devices upstream of existing stormwater pits.	Prior to construction.	In accordance with the Early Works Stormwater Management Plan	Contractor	Effective sediment traps.	Monitor for siltation and sedimentation at downstream locations.
Stormwater pipes and pits should be well maintained and kept clear of debris and sediment.	Ongoing	In accordance with the Early Works Stormwater Management Plan	Contractor	Daily/weekly inspection.	Free flowing pipes capable of discharging maximum flows. Monitor for potential blockages.

Control	Timing	Methodology	Responsibility	Monitoring & Reporting	Performance Measure
Sediment Basin					
Sedimentation basin, if required, sized and constructed to meet requirements set out in Managing Urban Stormwater and other relevant design authority.	Prior to construction	In accordance with the Early Works Stormwater Management Plan	Contractor	Daily/weekly inspection.	Effective basin that is easily cleaned and maintained. Monitor for sediment build-up and litter collection.
Within 24hrs of a storm event, inspect the sediment/detention basin and stormwater treatment devices and remove any build up of debris.	As required by storm events	In accordance with the Early Works Stormwater Management Plan	Contractor	Daily/weekly inspection.	Basin clear of storm debris.
Rehabilitation					
Stabilisation works & landscaping of batters, open drain etc will be given high priority to ensure that bare ground is rehabilitated.	As required	In accordance with the Early Works Stormwater Management Plan	Contractor	Daily/weekly inspection Project planning and design meetings.	Appropriate stabilisation of works.

13 NOISE & VIBRATION MANAGEMENT PLAN

13.1 Objectives

- To minimise the generation of noise and vibration from construction activities occurring on site impacting on surrounding residents, businesses and workers.
- To comply with the NSW Industrial Noise Policy goals.
- Establish and maintain good relations with community and adjacent neighbour sites.

13.2 Key Management Issues

Noise generated on the project site during construction will be created by vehicle movements, generators, heavy machinery (eg: Rock breaking/concrete pumps) and hand-held machinery and tools. Some additional vehicle noise may be generated by the thoroughfare of vehicles using transport corridors to and from the site.

Construction noise acceptability criteria vary depending on construction period, as outlined. The Contractor shall undertake localised noise monitoring during periods of construction to establish accepted criteria to the above standard.

13.3 Construction Period

The construction trades, including demolition, bulk/detailed excavation, structure, façade, finishes, services and external works will operate during the hours nominated in DCP once approved. The intent is for all works to be conducted within these nominated operating hours, however due to construction methods and certain safety issues, there will be occasions when works are completed outside normal working hours. If any of these works are proposed then approval will be sought from the relevant authorities.

The key measures to addressing this issue are as follows:

- Establish and maintain good relations with community and neighbouring sites.
- Noise generated during construction activity affects adjoining properties is a potential risk.
- Noise generated during construction affects overall site operations are a potential risk.

This includes noise and vibration generated from construction machinery such as jackhammers, concrete pumps and from vehicles travelling to and from the site.

13.4 Site Actions

No construction works shall commence unless the contractor has submitted a Risk Assessment and Work Method Statement which details the schedule of plant and equipment describing the equipment types to be used, noise levels these will generate, expected time and duration of use, and any measures required to ensure the noise levels are acceptable (such as screen mufflers), or monitored.

Ensure traffic access to and from the site will be via designated entry/exit points. Personnel safety measures shall be implemented wherever noise exceeds 85dB (A).

Fit and maintain appropriate mufflers on construction equipment as required, and to meet current legislation requirements. Operation of all plant, vehicles and hand held equipment is to be in accordance with Industrial Noise Policy Guidelines.

Table 1: Acceptable Maximum Noise Levels

Table 1 provides guidelines for acceptable maximum noise levels of typical plant and Equipment (at 7 meters).

ITEM	TYPICAL PLANT OR EQUIPMENT	MAX NOISE LEVEL (at 7 metres)
Bulldozer	Caterpillar D7, D9	88
Front End Loader	Wheeled	90
Jack Hammers	With silencing bags	85
Grader	Caterpillar 16	85
Compactor	Vibrating Plate	92
Vibratory Roller	10-12 Tonne	89
Water Cart		88
Dump Trucks	35 Tonne	96
Excavator	Kato 750	86
Truck		80
Crane	Truck Mounted	85
Compressor	600 CFM	75
Backhoe		88
Spreader	Asphalt, concrete	70
Asphalt Truck		92
Asphalt Paver		89
Tip Truck		83
Generator	Diesel	79
Spraying Machine		75
Concrete truck		83
Concrete Pump		84
Concrete Vibrators		80
Drill	Air	85
Welders		85
Concrete Saw		93
Concrete Leveller		90
Cherry Picker	On Truck	80

Vibration

When planning for the construction works activities that may include vibration work, all practical efforts to protect vibration sensitive buildings and the amenity of the occupiers of buildings are to be assessed and monitored.

A fully detailed dilapidation survey shall be conducted. This shall be undertaken initially by an authorised consultant, further survey undertaken by the Contractor and all the sub-contractors. These surveys shall be documented, issued to the relevant authorities and a copy kept on site. The buildings remaining on site and directly neighboring the Macquarie Centre are to be considered during these surveys.

Apply a practical and economical combination of vibration control measures to manage vibration impacts such as:

- Substitution by an alternative process
- Restricting times when work is carried out
- Screening or enclosures
- Consultation with affected residents.

During business hours, vibration disturbance from construction operation must be kept to a minimum. The basis for this vibration management strategy will be to limit the times that certain vibration producing activities may be carried out. Generally, this may well be accomplished by performing such work outside of normal hours (when the majority of businesses are either not present or engaged in less vibration sensitive activities).

Table 2: Guidelines for Restriction

Table 2 provides guidelines for restriction of vibrating rollers operation near buildings

Roller Class & Weight Range	Centrifugal Force Range	Example of Rollers	Distance from Building A	Remarks
Very Light Less than 1.25 tonnes	10-20kN	Coates 32RD tandem Davleco 32CR tandem	3m--	Maintenance and patching rollers. Generally not restricted for normal USE
Light 1 to 2 tonnes	20-50kN	Coates 42RD tandem Pannell 54T drawn	5m--	Generally not restricted for normal road use.
Medium 2 to 4 tonnes	50-100kN	Coates 66Tdrawn Davleco 66 drawn	6m	
Medium-Heavy 4 to 6 tonnes	100-200kN	Coates 72Tdrawn Davleco 72 drawn Pacific V12 drawn Raypo Rascal 400	12m	Not advised for suburban streets.

A – to prevent damage to buildings

Training

Communication and education material on the noise and vibration controls and procedures will be part of the site induction program and relevant contractor's scope of work, risk assessment and SWMS's.

Performance Measures

Assessment of performance by issues / queries / concerns received from adjoining operations or from statutory Authorities.

The maximum noise level (LA max), when measured at a distance of 7 metres from any item of plant or equipment and must not exceed the maximum noise level outlined in Table 1.

Monitoring and Reporting

Contractors may be required to submit noise monitoring compliance certificates or monitoring results for all major plant and equipment on the project prior to use on site demonstrating conformance with all standards, codes and regulations.

Routine inspections of plant and equipment should ensure acoustic performance as per compliance. Contractors are to provide details of acoustic performance of plant and equipment used on site.

Any noise issues, queries, concerns or feedback from adjoining properties or from the operational facilities around the site will be recorded, reported and monitored.

The Senior Site Manager may require the contractor to carry out additional noise monitoring if issues regarding construction noise are received.

The Senior Site Manager in consultation with the EH&S Manager will advise the monitoring location and the monitoring required will be manned monitoring. Results shall be confirmed and recorded.

Corrective Actions

Non-conformances are to be recorded by way of a System Defects notification process.

The Contractor shall review and analyse the cause of detected non-conformance and develop a corrective action to prevent recurrence. Details of the non-conformance including any immediate corrective actions undertaken are to be recorded, reviewed and accepted by the Construction Manager.

It is the responsibility of the Contractor to immediately initiate corrective actions, if required. The non-conformance and corrective action must include details of the action proposed and an appropriate close out date. The system defects report should be signed dated and filed.

If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the Contractor in consultation with the EH&S Manager.

13.5 Noise & Vibration Management Plan

Control	Timing	Methodology	Responsibility	Monitoring & Reporting	Performance Measure
Working Hours					
No work shall occur outside permitted working hours, unless prior approval granted	At all times	In accordance with the Noise & Vibration Management Plan	Contractor	Continuous	Issues from public or authorities
Adjoining properties likely to be affected by noise to be notified	Minimum five days in advance	In accordance with the Noise & Vibration Management Plan	Contractor	Continuous	Issues from public or authorities, adjoining properties.
Plant & equipment					
Plant to be fitted with engine covers in accordance with manufacturer's specification. Compliance certificates to be made available	Prior to construction commencement	In accordance with the Noise & Vibration Management Plan	Contractor	To be put into contractors tenders. Pre-construction inspection. EH&S site assessment.	Availability of compliance certificates
Ear muffs and plugs to be issued and worn where noise exceeds 85dB(A)	At all times	In accordance with the Noise & Vibration Management Plan	Contractor	Pre construction inspection & continuous inspection. Risk assessment, SWMS	Register of use
Ear protection to be available on demand and use monitored	at all times	In accordance with the Noise & Vibration Management Plan	Contractor	Pre-construction inspection Risk assessment, SWMS	Register of use
Record and schedule of approved equipment to be kept including type, noise compliance certificate, time and duration of use and noise mitigation measures employed	Prior to construction commencement	Update within one month of being on the project.	Contractor	To be included in contractors work method statements, contractor audit, monthly EH&S reviews	Records maintained
Ensure traffic access is through designated entry/exit points	Ongoing	Traffic Management Plan	Contractor	Continuous	Issues from public or authorities

14 AIR QUALITY MANAGEMENT PLAN

14.1 Objectives

- To implement appropriate controls to suppress dust and other suspended particles in accordance with legislation and risk management requirements.
- To minimise all potential odour issues relating to contaminated soil or groundwater.
- To minimise the generation of dust on the project site.
- To minimise all potential emission issues relating to plant and equipment.

14.2 Key Management Issues

Heavy machinery (mobile and fixed) may contribute to emissions (diesel pollution) to the local atmosphere. Exposed soils and unsealed vehicle access may contribute to dust generation and affect local air quality, with potential impacts upon native fauna and flora and reduce resident amenity.

The generation of dust from the construction works trades could be a major issue to local activities as well as creating unacceptable working conditions. The key measures to addressing this issue are as follows:

- Emissions of dust due to traffic movement. Limit areas of disturbance to the minimum necessary;
- Ensure water carts are available to dampen approaches, access roads and other susceptible surfaces;
- Emissions of dust due to wind erosion of stockpile material and exposed soil. Cover or rapidly dampen down areas where practicable to minimise wind erosion ;and install mitigation devices to reduce the transfer of spoil and dust;
- Emissions of gases, vapours and odours from exposure and handling of contaminated soils and/or contaminated water, to be mitigated by initial risk assessment and the installation of procedures to control the risk.

Dust generating from construction activities from the site affecting adjoining properties or public access is an Environmental Risk.

Dust generated on the construction site affecting site operations is an Environmental Risk.

14.3 Site Actions

The minimisation of air-borne pollution is a key component for this environment management plan for the site. Construction phase air quality impacts shall be minimised or avoided by incorporation of appropriate air quality control measures.

The installation and application of air quality controls during the construction phase shall be in accordance with the following principles:

Prior to Construction Works

- Ensure that all equipment used and all facilities erected on site are designed and operated to control the emission of Smoke, dust, fumes and any other air impurity into the atmosphere;
- spray earthworks, roads and other surfaces as necessary with water; or other approved applications.

Construction Phase

All disturbed areas shall be stabilised as soon as practicable to prevent or minimise wind blown dust;

- trafficable areas shall be clearly defined by guide posts or other suitable barriers to prevent unnecessary vehicle movement onto other areas;
- water carts, high pressure water hoses and other approved methods shall be employed as required to dampen work areas and exposed soils, to prevent the emission of excessive dust from the site.
- A wheel washing/shaking facility shall be constructed at the access point to the site if appropriate.
- trucks transporting material from the site shall be covered immediately after loading to prevent wind blown dust emissions and spillages. The covering must be maintained until immediately before unloading the trucks;
- the tailgates of all trucks leaving the premises must be securely fixed prior to loading or immediately after unloading to prevent loss of materials;
- all access roads shall be surfaced in selected materials to minimise generating dust, Mud stone, clay stone and shale stone shall not be used;
- Contractors will maintain all construction equipment to ensure exhaust emissions comply with the relevant Regulations issued under the State legislation;
- cleared vegetation, demolition materials and other waste material shall not be burnt on the site and no fires of any kind shall be lit;
- all waste material will be removed from the site in a manner described in the Waste Management Plan including covered stockpiles, secure waste bins and removal / recycling process off site at nominated waste depots.

Training

Communication and education material on the air quality and dust controls and procedures will be part of the site induction program and form part of the relevant contractor's scope of work, risk assessments and SWMS's.

Performance Measurements

Assessment of performance by number of issues, queries, concerns received from adjoining operations or from statutory Authorities.

Monitoring and Reporting

The Contractor in conjunction with the contractors will monitor background levels of dust deposition and air quality, the effectiveness of dust emission controls on the construction site and the impacts of any nuisance on adjoining properties or other affected properties.

The Contractor may require the contractor to carry out additional Air monitoring if an issue, query or concern regarding Air Quality is received.

The Contractor in consultation with the EH&S Manager will advise the monitoring location and the monitoring required will be manned monitoring. All results shall be recorded and reported.

Corrective Actions

Non-conformances are to be recorded by way of a System Defects Notification process.

The Contractor shall review and analyse the cause of detected non-conformance and develop a corrective action to prevent recurrence. Details of the non- conformance including any immediate corrective actions undertaken are to be recorded, reviewed and accepted by the Contractor.

It is the responsibility of the Contractor to immediately initiate corrective actions, if required. The non-conformance and corrective action must include details of the action proposed and an appropriate close out date. The system defects report should be signed dated and filed.

If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the Contractor in consultation with the EH&S Manager.

14.4 Air Management Plan

Control	Timing	Methodology	Responsibility	Monitoring & Reporting	Performance Measure
Site preparation					
Areas to be disturbed will be limited in order to minimise surface with potential to generate dust.	Prior to works commencing	In accordance with the Air Quality Management Plan	Contractor	Weekly inspection	visible dust
Dust control					
Exposed surfaces to be kept moist by spraying with water or dust suppressant	Daily or as necessary when dry and windy weather conditions prevail.	In accordance with the Air Quality Management Plan	Contractor	Daily inspection and monitor activities for dust generation.	visible dust
Exposed surfaces and stockpiles left for longer than 4 weeks to be stabilised by sealing, seeding or spraying with water or dust suppressant	One week from completion of activity	In accordance with the Air Quality Management Plan	Contractor	Daily inspection and monitor moisture content of exposed areas.	visible dust
Excavated material (not including stockpiles) to be kept in a damp state	As required	In accordance with the Air Quality Management Plan	Contractor	To be put into Work Method Statements for the contractor. Daily inspection	visible dust
All parking areas to be sealed or constructed from gravel	Prior to construction commencing	In accordance with the Air Quality Management Plan	Contractor	Pre-construction inspection	unsealed parking areas, cars parked on unsealed areas
Temporary roads and other trafficable areas to be constructed of non dust generating materials	Prior to commencing	Detailed work method statement to be prepared by contractor	Contractor	Pre-construction site inspection	temporary roads constructed of select material, dust generated by traffic movements
Combustible waste material shall not be burnt on site	At all times	Covered in site induction	Contractor	Continuous monitoring. To be put into tenders for contractors.	fires or incineration on site
Truck wheel wash/shaker facility to be installed near access gate	Prior to construction commencing	detailed work method statement to be prepared by contractor	Contractor	Pre-construction inspection	dust generated by traffic on leaving site clean roads
Inspect surrounding roads. Delap report	Ongoing		Contractor	Continuous	issues from public or authorities

Control	Timing	Methodology	Responsibility	Monitoring & Reporting	Performance Measure
Plant & equipment					
Plant and equipment to be fitted with standard pollution control devices	Prior to construction commencing	In accordance with the Air Quality Management Plan	Contractor	Pre-construction inspection, maintenance as required. To be put into tenders for contractors.	Copies of compliance certificates to be supplied. Plant and equipment meet Clean Air (Plant and Equipment) Regulation 1997req.
All vehicles shall not exceed the maximum speed limit of 10 km/h within the site.	At all times	Traffic Management Plan	All personnel	Risk Assessment and SWMS	visible dust
Trucks transporting loose material to and from the site to be covered	Ongoing	In accordance with the Air Quality Management Plan	Contractor	To be put into tenders for contractors. Compulsory inspection at gate prior to entrance into, exit site.	visible loose material from trucks Material on surrounding roads

15 PROJECT COMMUNITY MANAGEMENT PLAN

15.1 Objectives

- To address Community issues arising from construction activities on the project and to establish general guidelines and standards developed in the community consultation strategy process.

15.2 Key Management Issues

The location of the existing shopping centre has become a focal point for local residents, surrounding businesses and university in their day to day activities. Through consultation with the appropriate local authorities and institutions, The Contractor will ensure that issues between construction and community activities in the area will be communicated to all concerned.

The primary issues that may affect the local community include:

- general access around the construction site
- interaction with existing facilities
- signage and directions
- information on the progress of construction
- interaction with the construction team
- procedure for issues / concerns / queries

15.3 Project Actions

To manage the community expectations, a comprehensive Project Community Management Plan will be prepared to address all issues currently identified and incorporate further actions through consultation with local authorities and institutions.

The project team will provide technical information on the key elements of construction. This shall include community issues during construction such as public safety, traffic management and establishment of contacts with stakeholders concerned to manage the expectations of the community.

The project team shall have a nominated Community Liaison Officer on the project to ensure the Project Community Management Plan is developed. This shall be facilitated throughout the entire consultation process and delivered to all associated with the project.

The Community Liaison Officer will be responsible for all activities and communications involving the community and local stakeholders, as per the Project Community Management Plan. This will include regular contacts, meetings, forums, presentations and ongoing updates on project progress.

Part of the Community Liaison Officer's role is to ensure that all procedures shall be set up and monitored to handle all issues, concerns, queries from the local community, through such controls as advising contact numbers, conducting informal meetings and documentation of all contacts and actions.

It is envisaged to involve the local community with the project team into such activities as tours of the project, safety presentations, information letters and monthly updates of the project on notice boards around the site, as some possibilities.

Education

All site personnel will be inducted into the Project Community Management Plan system as part of the overall project site induction to ensure all the community issues are delivered and understood while operating on the site.

An ongoing site community awareness education process and supervision program for site staff will be carried out during the entire construction process.

Performance Measures

- Information supplied by the team for community issues
- Processing of community and stakeholders issues
- Responses to the community and stakeholders
- Overall facilitation of the community and stakeholders expectations.

Monitoring and Reporting

The Contractor and the Project Community Liaison Officer shall report when required on the implementation of the Project Community Management Plan.

The Plan shall be reviewed as part of all project audits to maintain a consistent and positive feedback to the community and stakeholders, ensuring all associated issues are communicated and rectified.

Corrective Actions

The Contractor and Project Community Liaison Officer shall review and analyse the cause of detected non-conformances related to the Project Community Management Plan and develop a corrective action to prevent recurrence.

The non-conformance shall be formulated by way of a System Defects Notification process, with the corrective action and the preventative action taken to correct the non-conformance and recorded.

If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the Contractor / Project Community Liaison Officer, in consultation with the EH&S Manager.

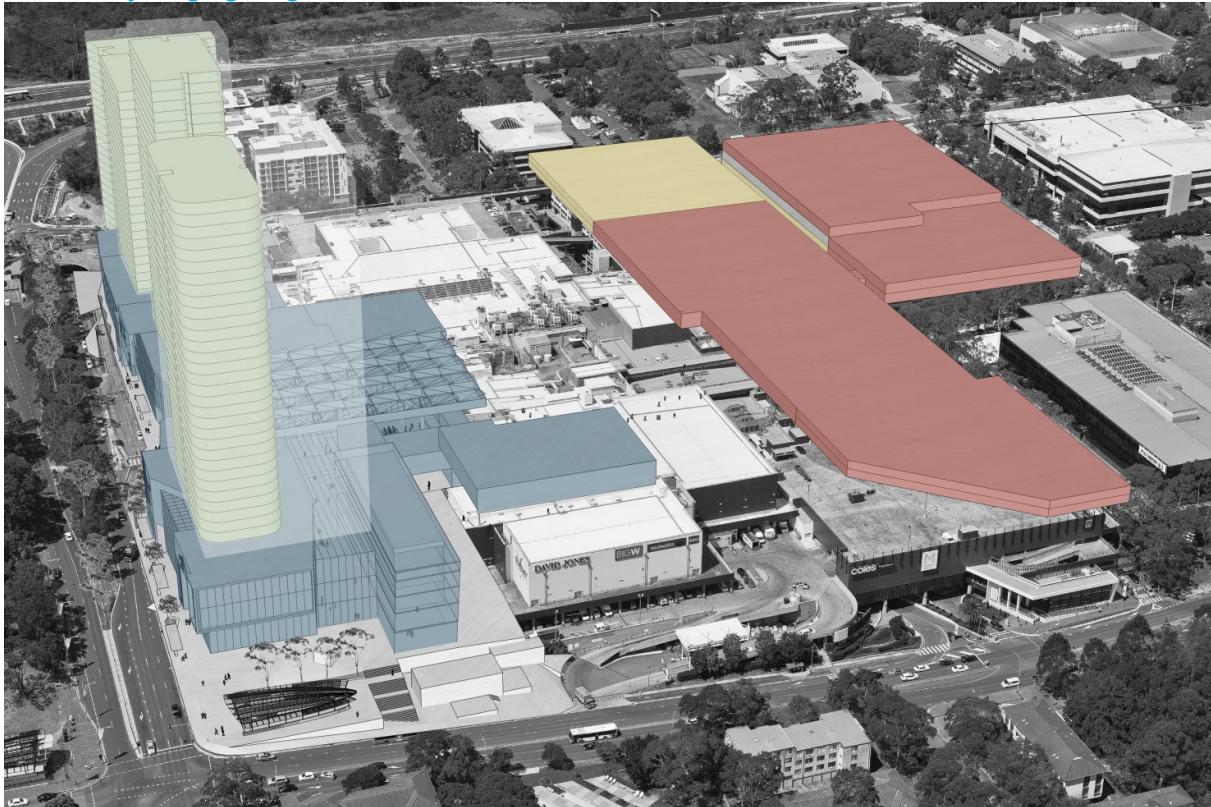
APPENDIX A – PRELIMINARY CONSTRUCTION ZONES & TOWER CRANE LOCATIONS

Stages 2 & 3 – Construction Zones on Herring Rd and Talavera Rd for extent of construction works adjacent. It is not envisaged that construction zones will be available on Waterloo Road adjacent to the station.

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APPENDIX B – PRELIMINARY STAGING DIAGRAMS

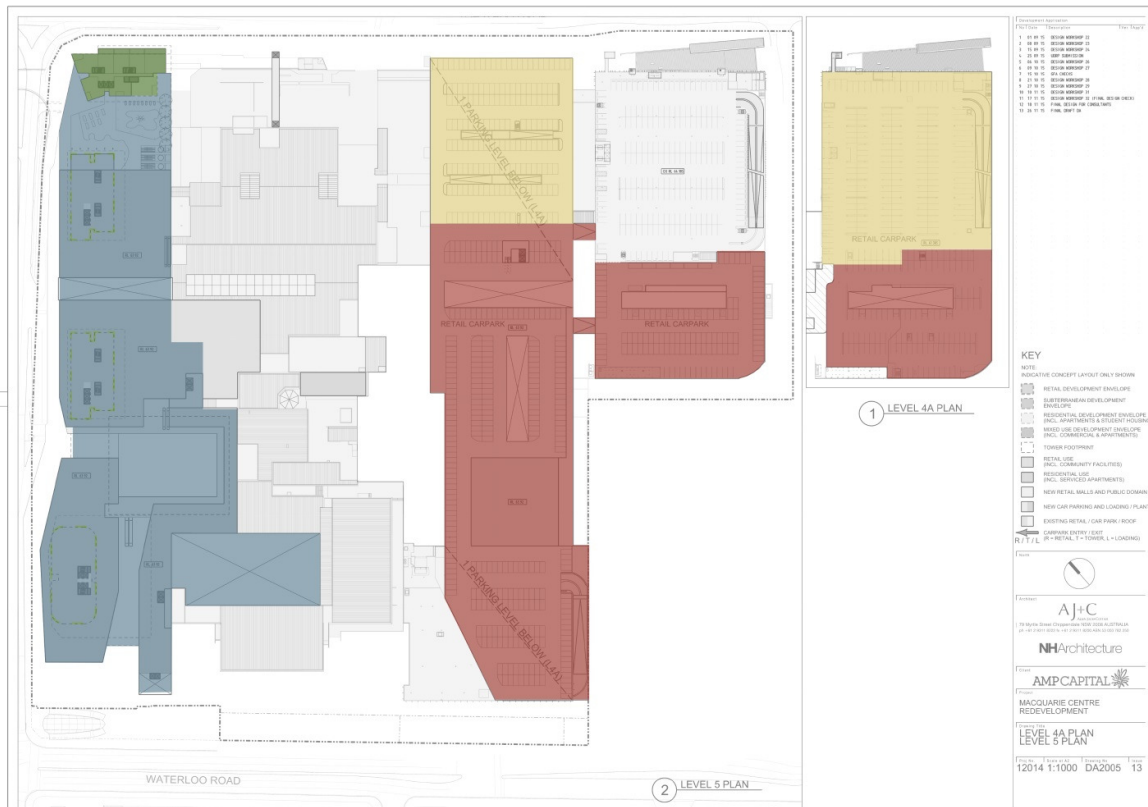
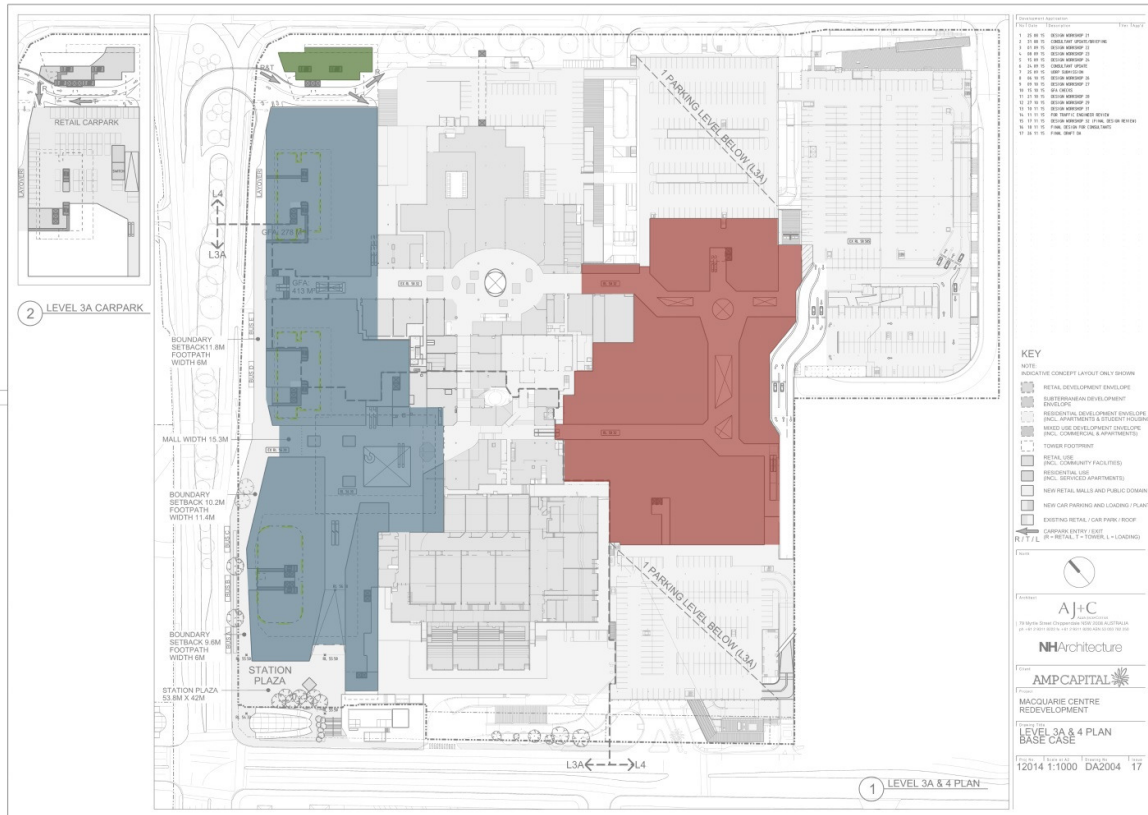
Preliminary Staging Diagrams



Preliminary Stages

- Stage 1 – Enabling Works, including additional car spaces above and adjacent the existing David Jones and relocated Majors dock facility within an existing carpark;
- Stage 2 – The Herring Road Retail Podium Site including Station Plaza Site, Talavera Rd Quadrant & Herring Rd Main Entrance & Atrium. Demolition, excavation & reconstruction/new works from existing Rail Station to corner of Talavera Road.
- Stage 3 – The four Towers over Retail Podium along Herring Road. New works proposed to be sequenced with Tower T2 first, Tower T1 second, followed by Towers T3 & T4.
- Stage 4 – The Level 4 retail expansion and associated additional car spaces to the east of the site.

Preliminary Staging Diagrams – Levels 4, 4A and 5



Preliminary Staging Diagrams – levels 6 and above

