



Construction & Environmental Management Plan

Harbourside, Darling Drive, Sydney

Revision	Status	Date
	FINAL	November 2016

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1. Introduction

This Construction & Environmental Management Plan (CEMP) has been developed for inclusion in the State Significant Development Application (SSDA) to address the construction items related to the proposed development at Harbourside, Darling Drive, Sydney. In due course, the CEMP will address the Development Consent conditions in relation to construction and development works at Harbourside.

In addition, the CEMP outlines the actions and staging of construction deemed necessary to address the concerns of neighbouring properties, authorities and any other requirements, whilst maintaining a safe and productive construction site.

The CEMP is a commitment by Mirvac to ensure that the statutory obligations are fulfilled and that the project is delivered to the highest quality, safety and environmental standards.

The responsibility for the management of this document and the actions contained therein lies with the Construction Manager for the Project (name to be provided in due course). The CEMP will be monitored throughout the project construction phase until such time as all actions on the CEMP Action List are completed.

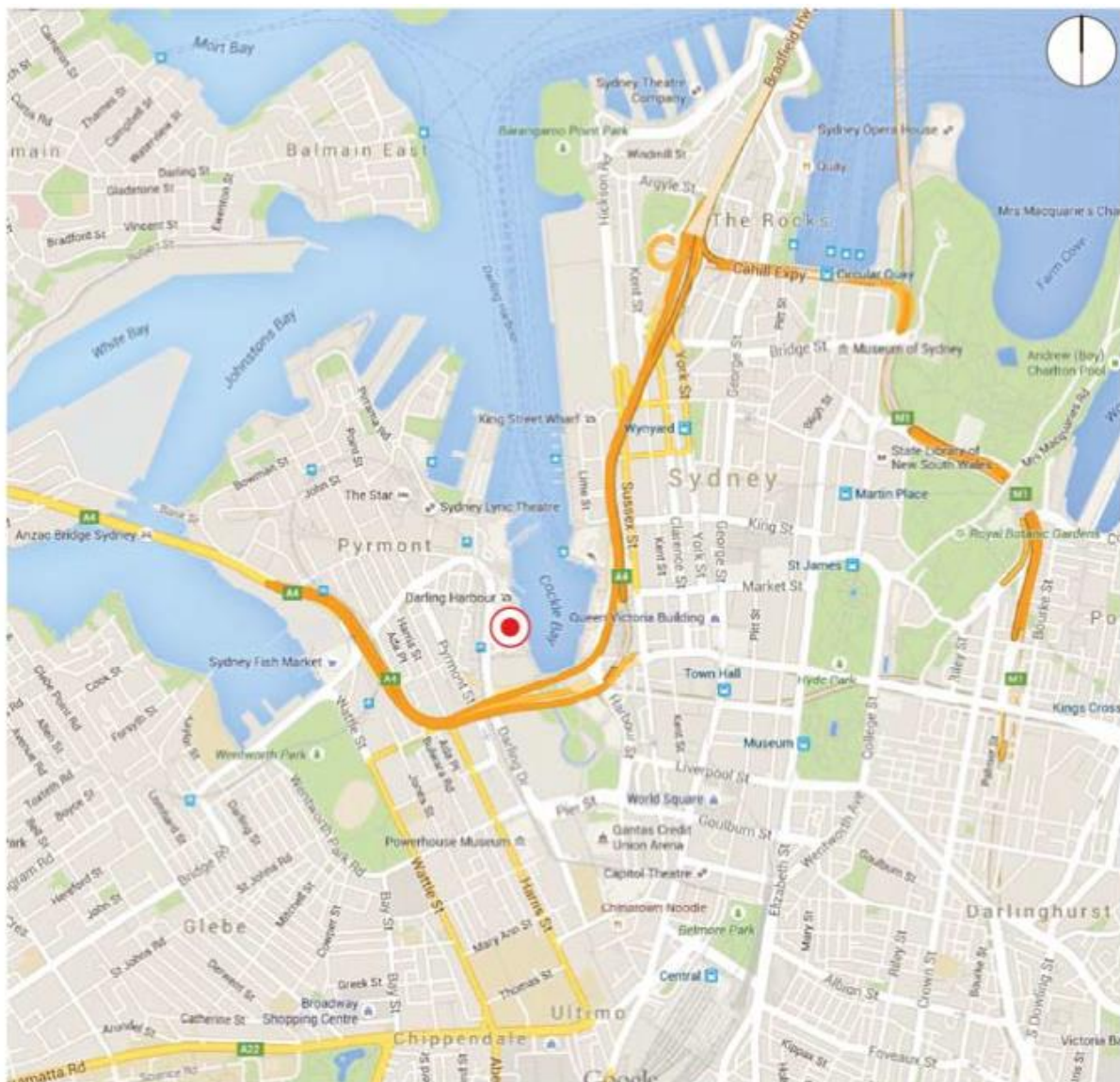
It is noted that at this stage Mirvac is only lodging a Stage 1 Development Application, which will seek approval for the land use including a combination of retail and residential uses. Moreover, at this Stage 1 DA period, approval is only being sought for the building envelope. A detailed building design to fill this envelope shall be worked up in a later Stage 2 DA.

1.1 Project Overview

Harbourside is a Sydney shopping centre with a strong tourist and food catering focus, occupying a strategic harbour front location with unparalleled views east to Sydney CBD. The site is located within the Sydney CBD on the western side of the Darling Harbour precinct. It is located to the immediate south of Pyrmont Bridge and north of the Sydney International Convention, Entertainment and Exhibition Centre/ Sydney Sofitel Hotel. The site is bounded by Darling Harbour Drive and the alignment of the Light Rail to the west, and the waterfront promenade to Darling Harbour to the east.

The Site is located within the City of Sydney local government area (LGA). A locational context area plan and location plan are provided at Figures 1 and 2 below.

The Darling Harbour precinct is undergoing significant redevelopment as part of the SICEEP and Darling Square renewal project. The urban, built form and public transport / pedestrian context for Harbourside will fundamentally change as these developments are progressively completed.



● The Site

Figure 1. Locational Context Area Plan.

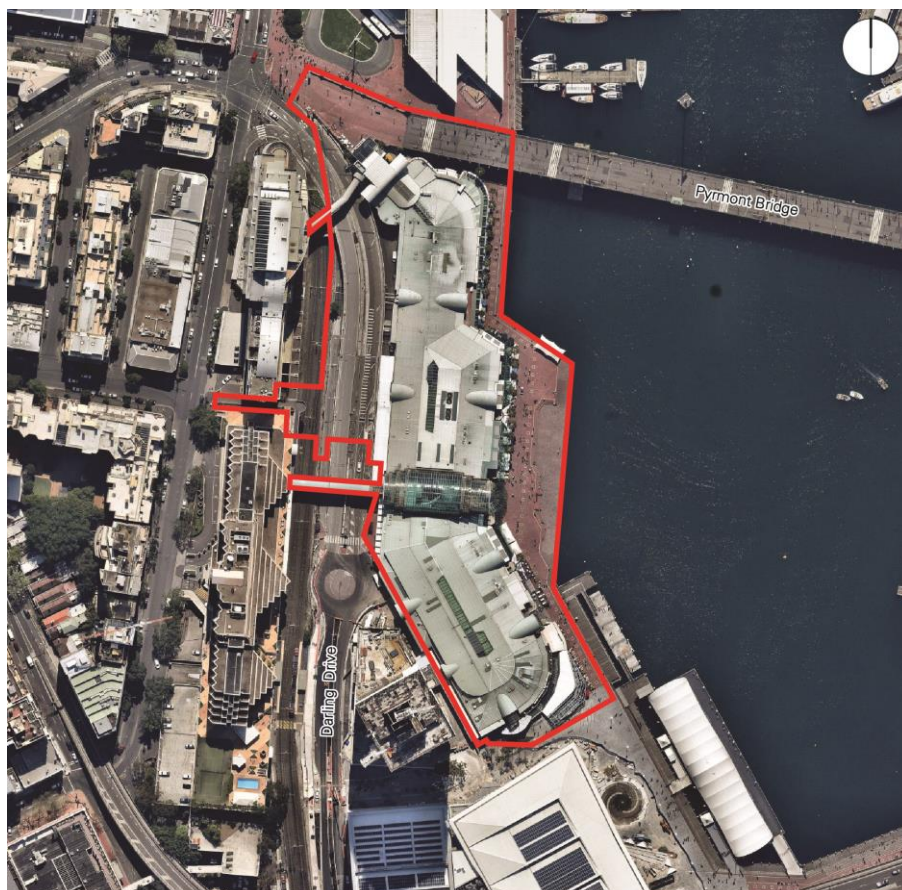
The Land is contained in Auto Consol 8663-98 (comprising Lots 1-10, 12-15 and 17 in Deposited Plan 776815). The Deposited Plans indicate the site comprises 15 adjoining lots which form an irregular shaped site with a frontage to Cockle Bay of approx. 270 metres and a total area of 20,542 square metres (2.054 hectares). The ground floor land footprint comprises around 18,425 square metres.

The site is generally inclusive of the shopping centre land itself, the loading dock area and associated driveways, the overhead vehicular bridge from level 3 of the centre to the car park, part of the entry area off Pyrmont Bridge and the former Monorail station (but not including the pedestrian bridge to the Ibis/Novotel Hotels). Figure 2 provides an aerial image identifying the Harbourside site.

A summary of the proposed development is detailed as follows:

- Demolition of existing Monorail Station
- Demolition of Novotel Bridge Link
- Retention of Ibis/ 50 Murray Street Bridge Link
- Demolition of existing Shopping Centre
- Construction of Bunn Street Bridge
- Construction of Basement Levels to suit 295 Car Parking spaces
- Construction of a five story Retail/ Restaurant Podium comprising of approximately 52,000sqm of GFA.
- Construction of a Residential Tower comprising of approximately 35,000Ssqm of GFA.
- Public domain works that integrates with the Sofitel Sydney Darling Harbour and adjoining SICEEP facilities, revitalises the pedestrian interface to Darling Harbour and provides for new connections between Darling Harbour and both Pyrmont and the Sydney CBD (via Pyrmont Bridge)

Figure 2: Aerial View of the site



 Indicative Site Boundary

1.2 Hours of Work

The anticipated hours of work pending approval for construction works, including the delivery of materials to and from the sites within the precinct, are as follows:

- Between 7:00 am and 6:00 pm, Mondays to Fridays inclusive.
- Between 7:00 am and 5:00 pm, Saturdays.
- No work will be carried out on Sundays and Public Holidays.

Works outside these times are subject to agreement and approval by Council or the relevant approving authority, however noting that it is anticipated that the demolition of the Monorail Station and Novotel and IBIS bridges will require out of hours working.

1.3 Contact Details

The Construction Manager for the Project will be confirmed in due course.

2 CEMP ‘Action List’

The “CEMP Action List” forms the basis of the Harbourside CEMP. The Action List responds to a series of anticipated DA conditions that are to be addressed prior to and during the construction phase of the project. They further address any Authority requirements as well as taking into consideration the concerns of neighbouring building occupiers.

The Action List provides a means by which responsibilities of the project team can be readily identified and monitored.

In addition to the Action List are a series of attachments which contain more detailed information in the form of checklists, registers, templates and reports. The attachments contain the information and tools that must be implemented during the construction phase in order to close out the specific items and ultimately satisfy the DA conditions associated with the project.

3 Traffic Management Plan

3.1 Introduction

Mirvac have engaged Arcadis as the traffic management consultant for Stage 1 of the DA submission. Arcadis produced an initial high level report measuring the existing traffic flows and the anticipated increased traffic volumes as a result of the proposed redeveloped Harbourside. Pending the approval of the Stage 1 DA, Mirvac will prepare and issue a Stage 2 DA. A Traffic Management Consultant will be commissioned to develop a detailed Traffic Management Plan (TMP) for the Harbourside project – This will be contained within Appendix D.

The traffic management plan for the project shall deal with the issues of construction traffic, their effect on the surrounding environment and be prepared prior to the issue of the Construction Certificate.

3.2 Access and Egress to site

Vehicles

During mobilisation, demolition, earthworks and construction the construction related traffic will enter the site off a road via Darling Drive. The temporary construction access route runs adjacent to the light rail line then under Darling Drive. By implementing this access system Darling Drive will remain open for the duration of the project (except potentially for the demolition of the Monorail Station and bridges).

Exit points on each site will be manned by qualified Traffic Controllers who will be responsible for managing both vehicular and pedestrian traffic movements.

A hoarding will be erected around the perimeter of the site and will be capable of having graphics installed.

Public Transport Access

All site workers and visitors to site shall be actively encouraged to take public transport to and from the Harbourside Site. Town Hall train station is located within 900 metres of the site and will enable the majority of site workers to travel by train. There are also bus services which run regularly from surrounding areas.

Pedestrians

All site workers and visitors shall enter and exit the sites via one of the following entry/exit points:

- Secured door on eastern side of Darling Drive adjacent to light rail line
- Secured door on western side of Darling Drive adjacent to current shopping centre site

3.3 Loading and Unloading of Materials

There will be several designated areas for deliveries and the loading / unloading of materials on the sites. These will be further developed and detailed in an Access and Egress Plan which will form Appendix C. As a principal it is anticipated that the main unloading area will be under and adjacent to Darling Drive within the existing loading dock and traffic routes of the shopping centre. Other key principles will be as follows;

- All loading and unloading operations are to comply with statutory requirements;
- No materials will be stored on public footpaths or roads;
- All entering and exiting of vehicles to work zones shall be supervised by a Traffic Controller. Flow to all lanes of Traffic shall remain mostly unimpeded in accordance with Council and DA requirements.
- Should any lane closures be required, a relevant traffic management plan will be compiled along with any required permits and stakeholders / residents notified where required.
- As noted above, these points are all subject to Council and Authority approval and, these proposals may require amendment prior to the works being undertaken.

3.4 Truck and Vehicle Routes:

The routes for all trucks and vehicles proceeding to and exiting from the site will be identified in Appendix B, construction staging plans and the TMP.

All major deliveries will enter and exit the Harbourside site via Darling Drive. Signage will be installed within the precinct to direct all deliveries to the correct sites. All vehicles upon entry to the precinct for the first time must complete a truck driver's declaration or complete a site induction to ensure compliance with the site rules.

3.5 Disruption to Traffic Flows

The primary goal of the TMP will be to mitigate any disruptions to traffic flow around the Harbourside site and in the surrounding areas. Trucks and vehicles using Darling Drive must be marshalled within the site boundaries and will not be permitted to stop or wait in Darling Drive prior to entering site.

All non-critical deliveries will be scheduled outside peak traffic periods where possible.

3.6 Pedestrian and Traffic Management

Signage will be established at the precinct entry and exit points to alert pedestrians and other drivers to the movement of construction traffic. Where required, traffic control personnel will control the movement of large vehicles to and from the sites.

Visitors to the sites will be escorted at all times by Mirvac Site Staff and will be provided with a defined entry path from the point of entry.

3.7 Site Safety Plan

A Mirvac Site Specific Workplace Risk Management Plan (WRMP), will be implemented prior to the commencement of construction and be updated from time to time to reflect the current stage of site works.

All works throughout the construction process will be required to comply with the TMP, statutory requirements, and the Mirvac WRMP.

3.8 Site Specific Issues

3.8.1 *Public Pedestrian Access*

Pedestrian access and movement around the Harbourside site will be of high importance during all stages of construction, and is anticipated to change as surrounding construction works are completed i.e. ICC. Detailed pedestrian access routes will be identified and highlighted in the TMP, which will form Appendix B. All pedestrian routes shall be clearly defined with signage and delineated from vehicular traffic routes where required. Pedestrian access to adjacent buildings and sites will be maintained for the duration of construction works.

3.9 Construction Staging, Description and Duration

The following is a summary of the proposed construction staging and estimated durations for the project;

Element	Description	Duration
1. Site Establishment	Set up hoardings and site amenities	TBC, pending final Stage 2 DA approved design
2. Demolition	Demolition of Monorail Station, Novotel Bridge Link and Ibis Bridge Link and existing shopping centre	TBC, pending final Stage 2 DA approved design
3. Earthworks	Foundation Piling, bulk excavation, detailed excavation and in-ground services	TBC, pending final Stage 2 DA approved design
4. Construction	Substructure	TBC, pending final Stage 2 DA approved design
	Superstructure	TBC, pending final Stage 2 DA approved design
	Façade, Services, Finishes and Finalisation	19 M TBC, pending final Stage 2 DA approved design

3.10 Plant & Equipment

The following is a summary of the types of plant and equipment that will be utilized on the project:

- Articulated flatbed truck for delivery of site sheds and hoarding materials.
- Articulated float / low loader for delivery of earth moving equipment such as excavators, dozers, dump trucks and piling rigs.
- Truck and trailers for the exportation of excavated material off site.
- Concrete trucks for delivery of ready mix concrete.
- Mobile cranes, of various size, for erection of site amenities, tower cranes and miscellaneous lifting.
- Prime mover and enclosed flatbed trailer for delivery of materials.
- Medium rigid vehicles, small rigid vehicles, vans and couriers to deliver smaller materials.
- Multiple tower cranes erected during the detailed excavation phase and early structure phase. Man / material hoists to be erected during the tower structure works.

3.11 Truck Movements

A detailed analysis of truck movements will be established with numbers to be finalised around the following activities;

- Demolition Waste – trucks per day
- Export off site of m3 / day by truck and trailer.
- Concrete trucks for piling / construction of sheet piles.
- Number of trucks per day during busiest concrete pour days

4 Noise and Vibration Management Plan

4.1 Introduction

Renzo Tonin & Associates have been engaged to provide a high level acoustic report for the Stage 1 DA. For the Stage 2 DA an Acoustic Consultant will be engaged to prepare a detailed Construction Noise and Vibration Management Plan (NVMP) for the project, which will form Appendix E of this CEMP. The management plan provides guidelines to reduce noise and vibration impacts to nearby affected tenants, residents and asset owners during construction works. The NVMP primarily deals with the issues of vibration and noise generating activities and their locations.

The NVMP has been compiled in accordance with the NSW Interim Construction Noise Guideline (ICNG, 2009) and through consultation with neighbouring landowners.

Mirvac will comply with the obligations provided in the NVMP and also commits to the Noise and Vibration Control Measures detailed within this section of the CEMP.

4.2 Project Objective

The principal objectives of the NVMP:

- Identification of the noise and vibration standards which will be applicable to this project.
- Formulation of a strategy for construction to comply with the standards identified in the NVMP.
- Development of a monitoring programme to measure and regulate noise and vibration at potentially affected locations if required.
- Liase with neighbouring building owners.

4.3 Noise Criteria

The criteria for noise from construction activities on this project will maintain reasonable levels within the site and surrounding buildings. The noise criteria is outlined in the NVMP.

Further to this, specific noise criteria relating to noise limits, the time and extent of works and monitoring shall be agreed between Mirvac and the adjacent landowners. This specific criteria shall be included within the Noise and Vibration Monitoring Plan.

4.4 Vibration Criteria

The criteria for vibration from construction activities on this project will maintain reasonable levels within the site and surrounding buildings. The vibration criteria is outlined in the NVMP.

4.5 Control of Construction Noise and Vibration

As part of the NVMP, a review will be undertaken of each of the proposed activities which will occur as a part of the construction works on this project. The execution of this work will confirm the effectiveness of ongoing noise control strategies for this project. In addition, the site working hours will be enforced and all works carried out in accordance with regulatory codes, practices and legislation.

4.6 Noise and Vibration Control Methods

The following Noise Management Measures to reduce the impact of construction noise and vibration shall be implemented:

- Carry out community consultation;
- Noise barriers such as site hoarding to be erected as soon as practical; Establish background noise and vibration levels prior to any construction works commencing;
- Include relevant noise and vibration components within site inductions and pre-start meetings;
- Monitor behavioural practices;
- Carry out short-term attended noise and vibration measurement of key activities during works to evaluate emissions, the effectiveness of work practices and identify opportunities for additional mitigation measures;
- Establish and implement appropriate complaints handling procedures;
- Manage approved construction working hours;
- Where possible, select low noise and vibration emitting plant and equipment.
- Where possible, use silencing devices to reduce sound emission from plant and equipment that exceed noise criteria.
- Establish regular maintenance of plant and machinery to ensure operating at optimum levels.

Further details regarding the proposed noise controls and management measures will be contained within the Noise and Vibration Monitoring Plan in Appendix E.

4.7 Establishment of Direct Communication with Affected Parties

Continual communication is required between all parties that may be affected by the development. A Community Liaison Officer shall form part of the project team and shall co-ordinate / communicate with all parties, stakeholders and residents. This establishes a dynamic response process which allows for the adjustment of control methods and criteria for the benefit of all parties.

Informing local residents is typically a critical aspect in reducing complaints regarding construction noise. The objective in undertaking a consultation process is to:

- Inform and educate the groups about the project and the noise controls being implemented.
- Increase understanding of all acoustic issues related to the project and options available.
- Identify group concerns generated by the project, so that they can be addressed.
- Provide advice about the time and duration of potential noisy activities.

4.8 Noise Complaint Procedure

Mirvac has in place a specific procedure in relation to the handling of noise related issues. When a noise related complaint is brought forward, the specific details will be recorded on the Mirvac community contact register form. The details will then be reviewed by the site manager. The site manager then makes an assessment of the complaint against our construction guidelines in relation to approved working hours, development consent conditions, noise levels and any other relevant items relating to the matter. Mirvac will close out accordingly within 48 hours.

If a breach of the guidelines and restrictions is found then further action will be taken to resolve the issue. If a suitable outcome cannot be achieved then a suitable acoustic and vibration engineer will be consulted to review and respond to the noise complaint. Further notification will then be provided to the complainant of the course of action to be taken to resolve the matter. A copy of Mirvac's noise control policy can be found below.

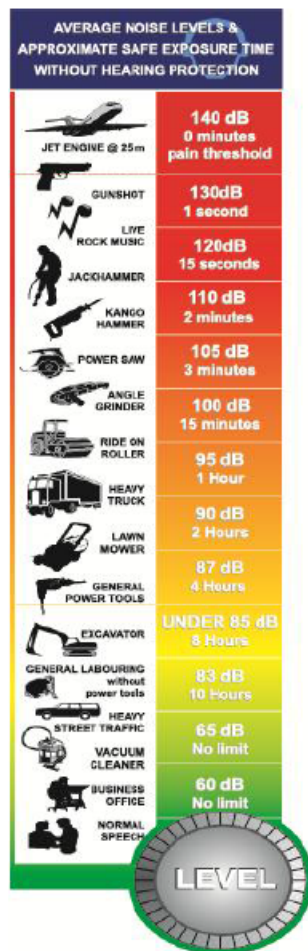
health safety environment

policy

**NOISE CONTROL POLICY**

Mirvac is committed to ensuring that its workplaces are free from noise and vibration levels which have the potential to adversely affect human health. This includes the monitoring of noise exposure and peak noise levels at temporary, new or existing workplaces, where noise is identified as a risk and the implementation of noise control measures where adverse levels are identified.

Noise can result in hearing loss based on either the intensity of the noise level, i.e. a peak of more than 140dB(C); or noise levels which exceed an 8 hour noise level equivalent of 85dB(A). As an employer or controller at workplaces where these levels may be exceeded, Mirvac will instigate noise control measures that include:



- > the identification of actual and potential exposure to noise in the workplace by conducting noise assessments or monitoring where identified as a risk
- > assessment of the risks to health and safety of potential or actual exposure to noise
- > the potential impact of noisy works on nearby neighbours or the surrounding community, strict adherence to any hours of operation imposed by local government or other development condition
- > outline of the responsibilities for noise control and information on the risk of noise exposure in workplace inductions
- > procurement of plant and equipment which does not adversely impact on noise levels
- > wherever practicable the implementation of control measures such as encapsulation or isolation of noisy works or plant and equipment to minimise reliance on personal protective equipment and the impact of noise on surrounding workers or others
- > use of personal protective equipment by employees, workers, service providers, visitors, surrounding workers or others who undertake, or are situated close to noisy work
- > the identification of noisy areas or plant and equipment with warning signage to alert personnel of the requirement for the use of personal protective equipment
- > display of the Mirvac Sound Advice Poster at all workplaces where noise is identified in risk and opportunity planning
- > employees or other workers frequently required to use personal protective equipment to protect against the risk of hearing loss associated with noise that exceeds the exposure standard will be monitored by their employer through audiometric testing

Mirvac is committed to assisting industry sectors in which it operates to reduce the instance of noise related hearing loss through ongoing implementation of the Mirvac Group Noise Management Procedure at all Mirvac workplaces. Implementation of this policy and the Mirvac Group Noise Management Procedure by Mirvac personnel is unconditional.

Susan Lloyd-Hurwitz
 Susan Lloyd-Hurwitz
 CEO and Managing Director

NOISE CONTROL POLICY

This policy is not intended to be contractual in nature and does not impose any contractual obligations on Mirvac. Mirvac reserves the right at its sole discretion to vary, replace or cancel this policy at any time.

Policy Authorised by: Executive Leadership Team	Date last amended: 23.01.2013 To be reviewed within three years of this date
Policy Maintained by: Corporate Services HSE Department	MG-CS-HSEPOL7.2-E 0113

5 Construction Waste Management Plan

A Waste Management Plan will be developed by a fully licensed Waste Contractor, for the removal of waste generated by construction works on site. Periodic review of this waste management plan will be undertaken to ensure continual compliance with environmental regulations and standards. Waste types likely to be generated on the site include the following:

- General Waste;
- Putrescible waste (lunch room waste from site personnel);
- Cardboard & White Paper (amended plans & drawings);
- Bottles, Cans & Plastics;
- Steel / Concrete / Bricks / Tiles / Timber & Gyprock.

The waste subcontractor will supply builder's waste bins for the onsite collection and storage of general waste material. It is required that the waste facility will recycle a minimum of 95% of the material brought to their recycling depot.

Upon arrival at the facility, the waste is sorted into various categories. Once the product has been sorted into its various categories, the facility then processes the individual recyclable waste streams into reusable products available for re-sale to the public as described below:

- Concrete is crushed, pulverized and sold as recycled aggregate;
- Bricks are also crushed, pulverized and sold as recycled road base;
- Timber is chipped and sold as mulch for garden beds and ground cover;
- Steel is sent to either Metalcorp or Simsmetal for recycling;
- Plasterboard is broken down to a gypsum product and sold to farmers as a soil additive;
- Cardboard & White Paper Recycling to Amcor for recycling;
- Bottles, Cans & Plastics Recycling to Visy for recycling.

Waste generated at the workplace shall be avoided or recycled wherever practical. Mirvac have implemented a Waste Management Plan and it is described as follows:

- material is reused wherever practicable, in particular top soil
- the establishment of a workplace waste management area(s) for sorting and segregating waste where available space allows;
- participation in waste minimisation training for all workplace personnel;
- recyclable materials are reprocessed wherever practicable, e.g. plasterboard off cuts, steel reinforcement and concrete;
- contractors identify areas where they can reduce waste and reuse materials in their respective trades (waste avoidance initiatives to be provided by each Service Provider in the JSEA);
- prescribed waste, e.g. hazardous or contaminated material, asbestos, aqueous waste (paint washout residue/sludge), shall be removed by a licensed contractor and dockets retained at the workplace for audit verification purposes;
- pollution and damage to the environment is prevented; and
- The safety and health of employees, Service Providers and the public is protected.

The figure below details the general principles for prevention of waste.



Figure 3: Waste prevention principles

6 Erosion, Sediment Control and Soil Pollution

An Erosion and Sediment Control Plan will be implemented on the project.

Below are items that as a minimum will be included in the Erosion and Sediment Control Plan:

- All stormwater pits around the perimeter of the site will be covered using filter fabric and sand bags.
- Filter fabric and sand bags shall also be installed around piling activities which are adjacent to public roadways or pedestrian footpaths in order to contain spoil arisings. These shall be regularly maintained to ensure no spoil or concrete migration onto public areas.
- During excavation, a wash down facility will be installed to wash down the tyres and wheel arches of any trucks exiting the excavation zone.
- All construction work zones and loading areas that are trafficked by vehicles are to be regularly swept / washed-down to maintain a clean surface and keep surrounding roads clean.
- Stockpiling of excavated material shall be carried out in a manner to limit sediment migration and water run-off. Stockpiled material to be appropriately covered where deemed necessary to prevent erosion and / or odour migration.
- The use of temporary sediment / silt fencing to ensure erosion and sediment particles do not enter public access ways or surrounding waterways.
- Vehicles leaving the site will secure and cover their loads. All trucks will be inspected prior to leaving the site (where applicable)
- All roads and pedestrian footways surrounding the site will be swept clean as required to remove any debris associated with the works on the site.
- A Dewatering Management Plan shall be compiled to outline the requirements for dewatering and any water treatment that may be required. Following any required treatment of water and verification testing, it shall be pumped to sewer and/or stormwater in accordance with Office of Water and Sydney Water requirements.

7 Water Quality

General Water Quality inc; Groundwater Seepage

- During excavation, a wash down facility will be installed to wash down the tyres and wheel arches of any trucks exiting the excavation zone.
- A Dewatering Management Plan shall be compiled to outline the requirements for dewatering and any water treatment that may be required. Following any required treatment of water and verification testing, it shall be pumped to sewer and/or stormwater in accordance with Office of Water and Sydney Water requirements.
- Due to the location of Harbourside a detailed Dewatering Management Plan shall be prepared and implemented by a suitably qualified and experienced person (s) and include but not limited to addressing the following elements;
 1. Dewatering technique
 2. Profile and radius of the water table
 3. Quality of dewatering liquid
 4. Evaluation of the need for treatment of the extracted water and its viability before release to the environment
 5. Risks of disturbing acid sulfate soils
 6. Discharge consent conditions
 7. Results of consultation with any local residents and business affected.

Stormwater Runoff

- Where required a Surface Water Quality Monitoring Program (SWQMP) shall be prepared and implemented to monitor impacts on surface water quality and resources during construction and operation. It shall be prepared by a suitably qualified and experienced person (s) and include but not limited to:
 1. Identification of works and activities during construction which may have the highest risk of impacts on water quality (e.g. exposure of soils during earthworks, accidental leaks or spills of chemicals, disturbance of contaminated land, stormwater runoff).
- All stormwater pits around the perimeter of the site will be covered using filter fabric and sand bags.
- Management strategies will be put in place to address any environmental issues arising during the operation of the dewatering project. This should include design measures to minimise the impact of local stormwater on the dewatering operation.
- All construction work zones and loading areas that are trafficked by vehicles are to be regularly swept / washed-down to maintain a clean surface and keep surrounding roads clean.
- The use of temporary sediment / silt fencing to ensure erosion and sediment particles do not enter public access ways or surrounding waterways.

8 Air Quality and Odour Impacts

Air quality monitoring will be carried out throughout the excavation phase of the Project. This will be limited to excavation phases of the Project with additional monitoring required being assessed on a monthly basis.

Dust created by construction related activities, typically becomes more prominent during windy conditions, and will be dealt with by way of water suppression. Other measures for dust suppression include:

- Stockpiles of spoil to be covered and/or emulsion spray added to stockpile;
- In windy conditions, the frequency of water suppression will be increased;
- The construction site will be maintained and kept clean. Where suitable, the use of mechanical sweepers and covered waste bins will be utilised;
- Completed surfaces will be kept clean;
- Controlled site access will be maintained with vehicle wash down / clean down facilities to be established to maintain access roads;
- All materials transported from site in trucks will be appropriately covered.

Air quality monitoring devices will be installed to neighbouring buildings, or in sensitive areas, if required following consultation with stakeholders and assessment by suitably qualified professionals.

Odour Impacts

Stockpiling of excavated material shall be carried out in a manner to limit sediment migration and water run-off. Stockpiled material to be appropriately covered where deemed necessary to prevent erosion and / or odour migration

9 Hazardous Materials

9.1 Existing Site Survey

A hazardous material inspection survey and report shall be completed for all areas within the project boundary.

The survey shall involve a visual inspection of representative construction materials, on-site testing of suspected materials and the collection and analysis of additional unidentified suspected asbestos-containing materials (ACM) in order to update the hazardous materials register for the site.

9.2 Hazardous Materials Controls and Monitoring

Prior to commencement, asbestos monitoring devices will be established to adjacent properties, in locations to be agreed with the building owner / manager.

Removal of any hazardous materials will be in strict accordance with Codes of Practice for the safe removal of the relevant hazardous materials. All hazardous materials removal works will be completed by licensed contractors.

All hazardous materials disposal will be recorded. All records will include vehicle details, material type, when it was removed, and where it was disposed.

9.3 Dust Emission's Monitoring

Dust monitoring devices will be established to adjacent properties, in locations to be agreed with the building owner / manager.

9.4 Hazardous Materials Clearance

Air monitoring results and clearance certificates shall be provided at regular intervals (minimum weekly) by Mirvac during any hazardous materials and remediation phases.

All certification shall be provided by a NATA accredited consultant.

Construction works will not commence until hazardous materials clearance has been received.

9.5 Ground Contamination

Mirvac shall implement a Remedial Action Plan (RAP) to identify and manage the remediation process on site, obtain a Remediation and Validation Report and Site Auditor sign off prior to completion.

9.6 Goods Stored on Site During Construction

During construction, Mirvac will implement as part of the Work Risk Management Plans and audit procedures, a hazardous materials register which will include the following materials / procedures:

- Fuels required for running of plant and equipment, these fuels will include: unleaded petrol, diesel and gas. All fuel will be contained and bounded as required under EPA guidelines, Department of Environment Climate Change and Work Cover requirements.
- Refuelling procedures and designated areas will be implemented and allocated to eliminate risks associated with spills and also identify procedures to contain spills.
- Spill kits and adequate training will be provided to relevant construction staff and at locations identified as storage and refuelling.

Dangerous goods to be stored on site will also include; oxyacetylene, bonding agents etc and as per the fuels listed above, these will also be stored as required under relevant Australian Standards, EPA guidelines, Department of Environment Climate Change and Water, Work Cover requirements and Industry codes of practice.

Hazardous substances and dangerous goods will be stored in secure well ventilated areas. At all times, Mirvac will have regard to the storage and hazardous materials and their proximity of neighbouring properties.

Mixed class gas cylinders, e.g. oxy and acetylene, will be separated from other hazardous substances or flammable goods by a minimum distance of 3 metres as detailed in AS4332 Storage and Handling of Gases in Cylinders. The exception to this requirement is minor storage situations (a total capacity of all cylinders in the store of less than 2,000 litres) where both oxygen and acetylene can be stored together.

Storage of dangerous goods that 'exceed' the amounts outlined in the Mirvac Group Dangerous Goods Storage Guidelines require the premises (workplace) to be licensed under dangerous goods legislation and associated regulations. To minimise workplace risk and eliminate the need for licensing, except in exceptional circumstances, it is a Mirvac Group requirement that maximum volumes of Dangerous Goods do not exceed those quantities outlined in the abovementioned guidelines.

The storage area for hazardous substances and dangerous goods shall be constructed with an impervious floor and bunded with a minimum capacity of 110% of the largest container in the store, e.g. a store consisting of a 20 litre substance container requires a bunding capacity of 22 litres.

Mirvac will maintain a dangerous goods register and material safety data sheets for each product listed as well as having a procedure to deal with spills.

All relevant firefighting equipment, first aid facilities and relevant authority contact details i.e. Fire, EPA will be displayed at prominent locations and included at site inductions.

10 SUSTAINABILITY

10.1 INTRODUCTION

Mirvac's target is to achieve a consistent level of environmental and social outcomes throughout the project by committing to establishing new initiatives where possible. Exploring alternative sustainable options outside of the legislative requirements and implementing them will make a significant contribution to the physical environment and the local community.

By exercising the sustainability values depicted in Figure 4 and recognising the benefits of social, environmental and economic sustainability, Harbourside will promote a balanced lifestyle for its future occupants and wider community which will be reflected in the development and throughout the construction phase.



Figure 4 – Mirvac's Sustainability Values

10.2 COMPANY STRATEGY

Adherent with Mirvac's commitment to sustainability, an integrated approach "This Changes Everything" is focused on the responsibility Mirvac has to the environment, wider community and to its investors. With the engagement from relevant stakeholders Mirvac seeks to deliver a culture that fosters sustainability and having a lasting impact. The four aspects of this strategy include:

- Reimagining resources:** Mirvac aims to generate more water and energy than we consume and to find ways to capture and reduce waste beyond that we create. Through efficient use of resources, Mirvac will reduce consumption of natural resources and operate in a manner which will achieve a minimum 95% recycling. In management practices, Mirvac will invest in opportunities such as renewable energy onsite and assess suppliers in their involvement to sustainability.
- Shaping the Future of Place:** To create a place where we live, work, shop and play utilising feedback from the community on past projects. Ongoing community engagement is necessary to predict future challenges while accepting information and boundaries will change over time. Implementation of utilities and infrastructures will be made in the design and construction to promote a sense of place.

- **Enriching Communities:** To improve the health and wellbeing within a community as well as strengthen social inclusion. Mirvac recognises “beyond boundaries” are what supports society as a whole and improves the places we create. Active participation from external stakeholders on sustainability issues will result in refining business operations and investing in the community.
- **Smarter Thinking:** Investing in assets designed to improve its own performance and ease of operation over its cycle. Financing in smart technology to become more efficient and effective in the delivery of the project while educating and informing the importance of sustainability.

10.3 PROJECT SPECIFIC STRATEGY

The following criteria will be monitored during construction to measure overall performance in addressing sustainability targets:

10.3.1 Environmental Management System

Implement a Workplace Risk Management Plan that is certified to AS/NZS ISO 14001, which establishes clear environmental objectives & targets for the site works.

10.3.2 Community / Schools

Provide opportunities for students and the local community to learn about the projects and the impact on the wider community. As well as this, hold information sessions on the health and safety programs to engage and build a rapport with the relevant agencies. Have email updates on the progress and any other media coverages.

10.3.3 Energy

Examine opportunities to reduce electricity and water consumption and the use of alternative systems implemented for site amenities.

10.3.4 Sustainability Induction

Construction staff will be educated on the sustainability initiatives planned for the project and encouraged to innovate and find sustainable solutions through site induction and tool box talk's process.

10.3.5 Innovation

Review project planning and development to explore innovative options to promote sustainability on the project.

11 Workplace Risk Management

11.1 Introduction

Mirvac is fully committed to providing a safe working environment. Each Work Place Risk Management Plan (WRMP) requires that equipment, workplaces and practices comply with relevant regulations and standards. Regular and ongoing reviews of these standards will be conducted and where higher standards are practical and desirable, they will be adopted. In addition the company will:

- Provide adequate resources to satisfy this policy.
- Identify, control and reduce work-related hazards and risks that may produce injury, illness or asset damage.
- Identify, quantify and control to safe levels, those chemicals and physical agents in the workplace capable of causing ill health.
- Promote environmental, health, safety and the welfare of employees and sub-contractors while respecting the privacy of individuals.
- Provide information, instruction and training for employees to increase their personal understanding of workplace hazards, promote safe working practices and ensure contractors are aware of and satisfy the Groups HSE expectations.
- Consult employees and contractors in environmental, health and safety to reduce workplace hazards and risks.
- Consult with clients, industry bodies and others in the development of appropriate standards, control strategies and monitoring techniques, which comply, with the requirements of statutory authorities.
- Set short and long term goals in occupational health and safety management, and review performance against these goals.

Mirvac Management is responsible for raising the awareness of the responsibilities of all workers on the site in regards to workplace safety and the role they play in achieving a safe and healthy work environment. Mirvac employees and all other workers on the premises or site are responsible for working towards achieving and maintaining a healthy and safe workplace. The intent of this policy is to foster a culture within Mirvac employees and its subcontractors, raising health and safety awareness, and promoting active participation in the Health Safety and Environment (HSE) program.

11.2 Workplace Risk Management Plans (WRMP) and Job Safety & Environment Analysis (JSEA)

A key tool in the management of HSE on the project will be the continued improvement of both Mirvac's WRMP and each individual Job Safety & Environment Analysis (JSEA). This plan as a minimum includes the following:

- A description of the work to be undertaken;
- An identification of the foreseeable hazards associated with the works; and
- A description of the hazard control measures to be used.

A detailed site specific Workplace Risk Management Plan shall be developed and implemented by Mirvac prior to commencement of works and shall be updated as / when required.

12 Site Management Plan

12.1 Introduction

A Site Management Plan will be developed to outline the proposed phases of the construction work on site, outline the order of works, and assess Mirvac's impact and interaction with the surrounding community.

12.2 Construction Phases

The works have been broadly divided into the following phases:

- a. Site establishment;
- b. Demolition of Monorail Station and existing Bridges
- c. Demolition of existing shopping centre
- d. Civil – basement diameter wall, excavation, piling and ground retention works;
- e. Remediation works to site;
- f. Structure;
- g. Façade & atrium roof works;
- h. Building fit out and finishes;
- i. Commissioning & handover works;
- j. Landscaping and public domain works.

12.3 Construction Staging

Proposed summary staging plans will be included within Appendix B of this document and will identify the key project stages and proposed phased handovers. Other construction staging items as follows:

- The demolition of the monorail station, including bridge link to the IBIS and the footbridge to the Novotel will be undertaken on the weekends only.
- The demolition and removal of the shopping centre in one phase
- Basement Construction and Excavation and treatment of all associated material
- Construction adjacent to Pyrmont Bridge
- Construction staging around the shopping centre and commercial tower

12.4 Interaction with Surrounding Community

The following actions will be implemented, which focus on minimising the impacts of construction activity to the community surrounding the Harbourside project.

- Hoarding around site;
- Monitor compliance of the Traffic Management Plan and Noise and Vibration Management Plan;
- Clear display of contact details on the hoarding for community information and contact in case of emergency;
- Make arrangements for the notification to surrounding properties of activities which may affect their amenity, including the provision of a 24-hour contact point;
- Close community liaison with neighbours
- Monthly Newsletter updating surrounding residents on construction works and upcoming activities or interactions;
- Monthly meetings to discuss the progress of works and to address any concerns raised by the surrounding community.

12.5 Dispute Resolution

Mirvac acknowledges the potential for disruption as a result of the development, and proposes that the following measures be established:

- Complaint procedure / complaint register to be developed. Should a complaint or infringement occur, the following procedures are to be adopted:
 - All complaints and infringements are to be brought to the attention of the Mirvac Site Manager immediately upon receipt;
The Mirvac Site Manager shall investigate the complaint and ensure appropriate action is taken to address the complaint or infringement within the time frame outlined in “HSE Objectives and Targets for Community Contact Issues”. This is detailed within the Mirvac Construction HSE Management Systems Manual;
 - A Community Contact Notification form shall also be completed for all complaints and enquiries (refer to following pages for this template);
 - A copy of this documentation is to be filed within the site office.

The contact details of the Site Manager will be permanently shown on the site notice to be displayed in a prominent location at site entries as an emergency 24 hour contact.

12.6 Fire Protection Measures During Construction

Mirvac will comply with the requirements of the BCA and Australian standards during excavation and construction. Specifically, E1.9 of the BCA requires the following:

- not less than one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each *storey* adjacent to each *required exit* or temporary stairway or *exit*; and
- after the building has reached an *effective height* of 12 m—
 - the *required* fire hydrants and fire hose reels must be operational in at least every *storey* that is covered by the roof or the floor structure above, except the 2 uppermost *storeys*.

12.7 Site Specific Issues

12.7.1 Contamination

Mirvac shall implement the (RAP) to identify and manage the remediation process on site, obtain a Remediation and Validation Report and Site Auditor sign off prior to completion.

12.7.2 Heritage

A heritage consultant will be engaged by Mirvac to produce a report for the project as well as assist in the development and monitoring of design and construction works adjacent to the Pyrmont Bridge.

12.7.3 Infrastructure Assets

A number of existing services are present within the precinct. Mirvac shall liaise with the relevant Utility Providers throughout the design process and prior to construction for approval of the design and proposed construction methodology to ensure compliance with Health, Safety and Environmental requirements, Network Standards and Codes of Practice.

A detailed Risk and Opportunity Register and work method statements shall be completed following acceptance of the design principles.



COMMUNITY CONTACT NOTIFICATION

PURPOSE

Contact with the community is a means by which Mirvac can positively engage stakeholders and potential clients or customers by demonstrating sound management practices in resolving any concerns raised in a timely manner.

Community members that interface with Mirvac business undertakings present the opportunity for feedback and a positive response by Mirvac.

Any response shall be commensurate with Mirvac's high regard and sensitivity to social amenity and the lifestyle impacts of its business undertakings.

The details outlined below must be completed for all 'formal' (oral or written) representations to any Mirvac representative by a community member or on being directly informed of a concern by a third party and corrective (follow up) action undertaken within 48 hours of notification where required.

WORKPLACE: _____

CONTACT DETAIL:

(1) How was the contact made?:

Telephone: ☐ Personal Contact: ☐ Written Letter: ☐ Email: ☐ Fax: ☐

Other [specify]: _____

(2) Date of contact: _____ Time of contact: _____ am ☐ or pm ☐

(3) Contact made by: [who made the contact?]

Name	Address	Phone

(4) Outline concerns/issues raised:

(5) Notification details recorded in the HSE Incident Reporting System by:

Name	Mirvac Division	Date recorded	Phone

(6) Has the contact been referred to another person? Yes ☐ No ☐

(7) If 'Yes' list the name and contact details of the person:

List Name	Mirvac Division	Time Referred	Phone

(8) Has the contact been 'formally' acknowledged to the complainant? Yes ☐ No ☐

[Note: mandatory within 48 hours of contact]

(9) How was the contact formally acknowledged?

Telephone: ☐ Personal Contact: ☐ Other: [specify] _____

(10) Is follow-up action required? Yes ☐ No ☐

COMMUNITY CONTACT NOTIFICATION

Form Authorised by: Ross Trethewy Title: Group Manager Health Safety Environment	Date amended: 05.04.2012	Page 1 of 2
Form Maintained by: Corporate Services - HSE Department	Current version : MG-CS-HSEF2.07-C 0412	



(11) Outline follow-up action undertaken:

[Note: mandatory within 48 hours of contact]

(12) Date of follow-up action: _____ Time of action _____ am ☐ or pm ☐

(13) Date complainant was advised of the outcome/action undertaken as a result of the contact:
Date _____ Time of action _____ am ☐ or pm ☐

[Note: mandatory within 48 hours of first contact]

(14) What were the 'Contributing Factors' and the 'Root cause' of the issue?

(Action/ inaction by persons, failure of tools/ machines or procedures not followed) (QUESTION THE CAUSE 5 TIMES)
e.g. (the issue) Slurry on public road, splashing on passing cars. Q. 1 *Where did the slurry come from?* – From concrete cutting adjacent to road. Q. 2 *How did it get on the road?* – No effective barrier in place. Q. 3 *Why was there no barrier?* – Hazard of slurry splashing on cars not identified. Q. 4 *Why was this hazard/ control not identified?* – Location/task specific risk assessment not reviewed for location. Q. 5 *Why was the risk assessment not reviewed?* – Risk assessment not maintained or checked prior to activity or during daily pre-start meeting.

Insert main issue description

Q. 1?

Q. 2?

Q. 3?

Q. 4?

Q. 5?

(15) Identified 'long term' corrective action(s) required to prevent the issue re-occurring

(16) Date 'long term' corrective action(s) implemented and R & O Register reviewed:

(17) Date the corrective action(s) were monitored by a Mirvac representative and confirmed as having been effective:

(18) Completion:

Person completing this report:

Name: _____

Signature: _____

Date: _____

Manager of person completing this report:

Name: _____

Signature: _____

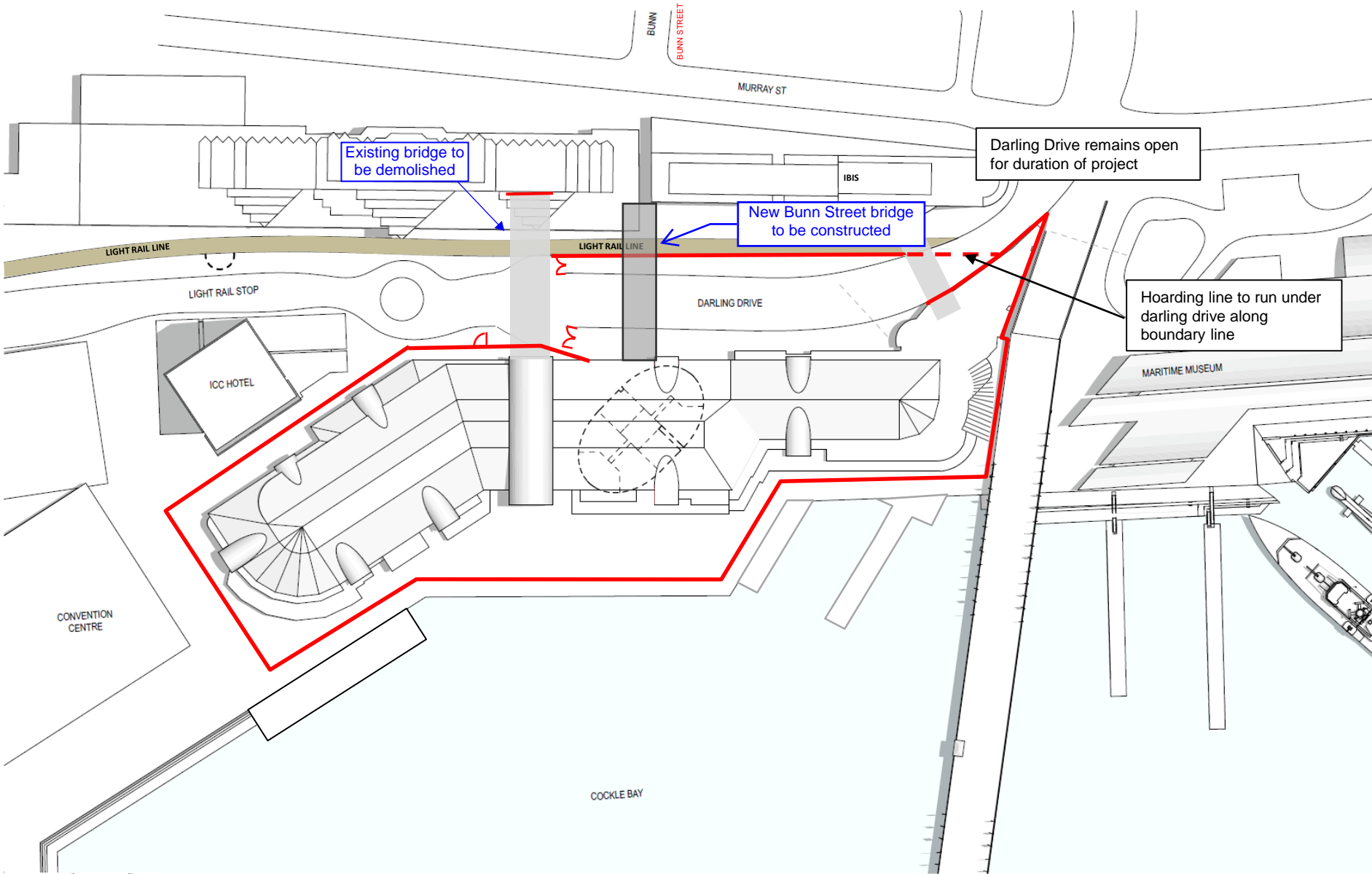
Date: _____

COMMUNITY CONTACT NOTIFICATION

Form Authorised by: Ross Trethewy Title: Group Manager Health Safety Environment	Date amended: 05.04.2012	Page 2 of 2
Form Maintained by: Corporate Services - HSE Department	Current version :	MG-CS-HSEF2.07-C 0412

Appendix A:
Location Plan

Proposed Site Set Up

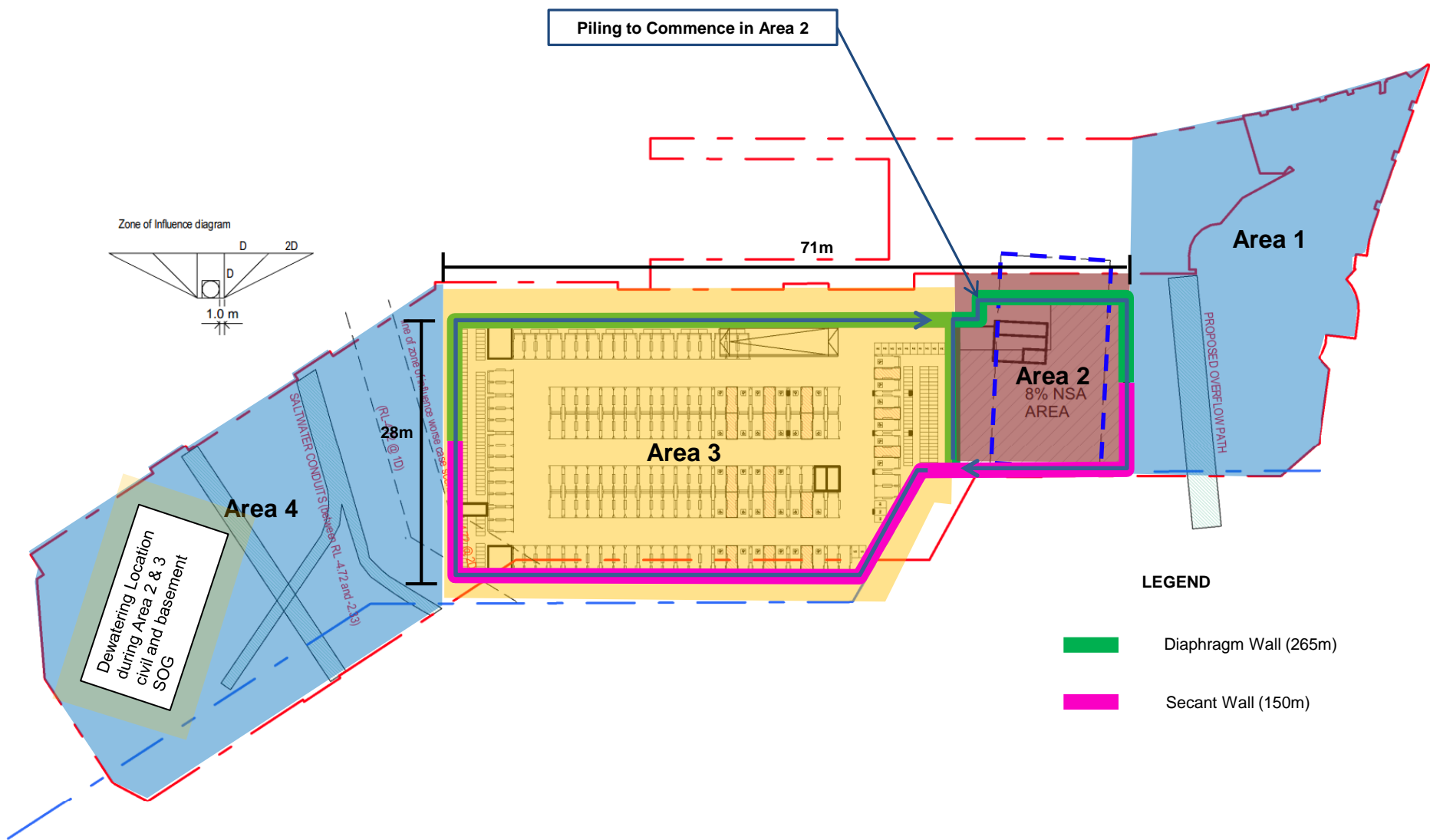


Harbourside Development

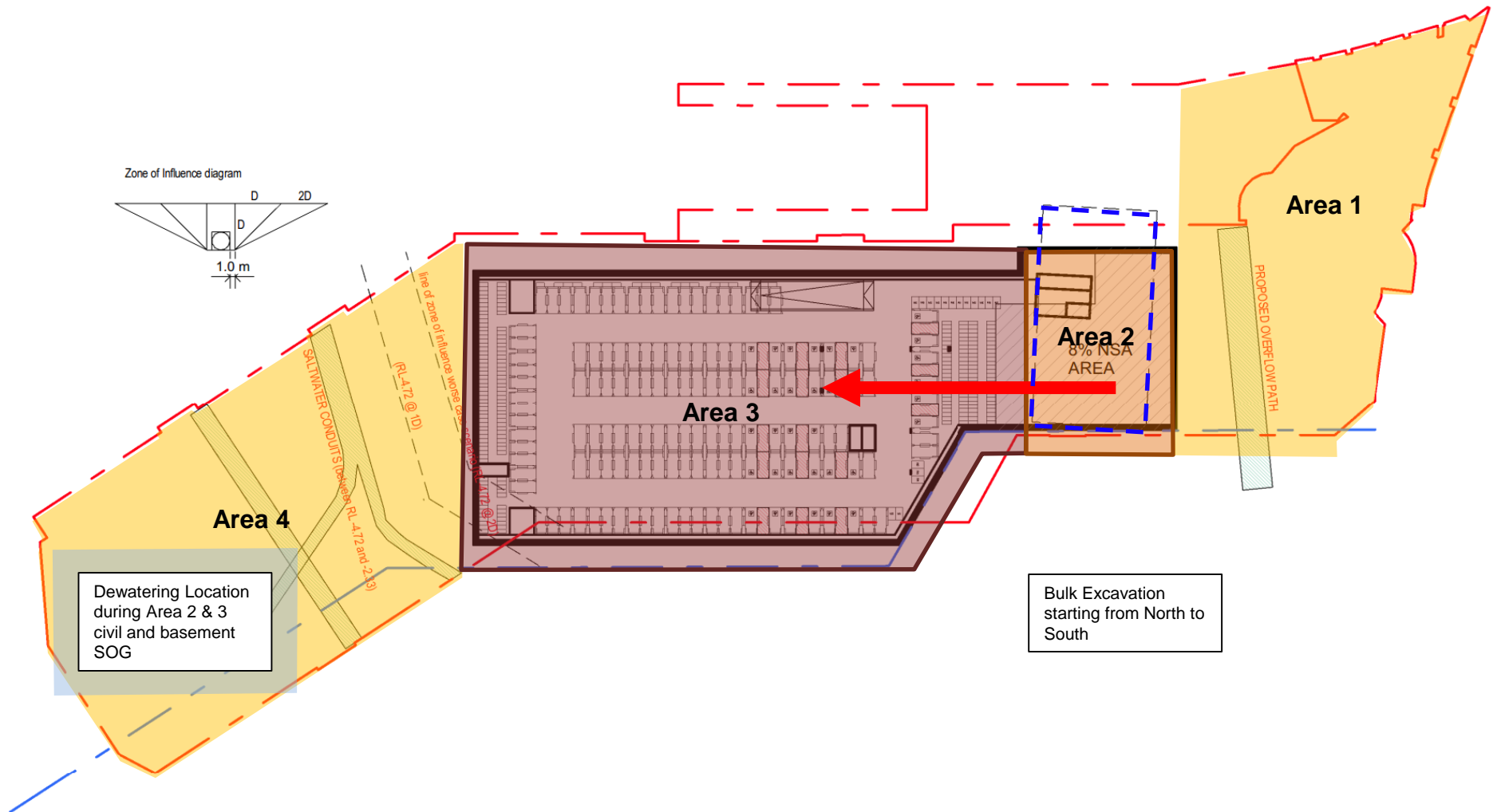
Appendix B:
Site Staging Plans

Prepared by: Mirvac

Retention Piling Sequence (Secant Pile Wall & Diaphragm Wall)



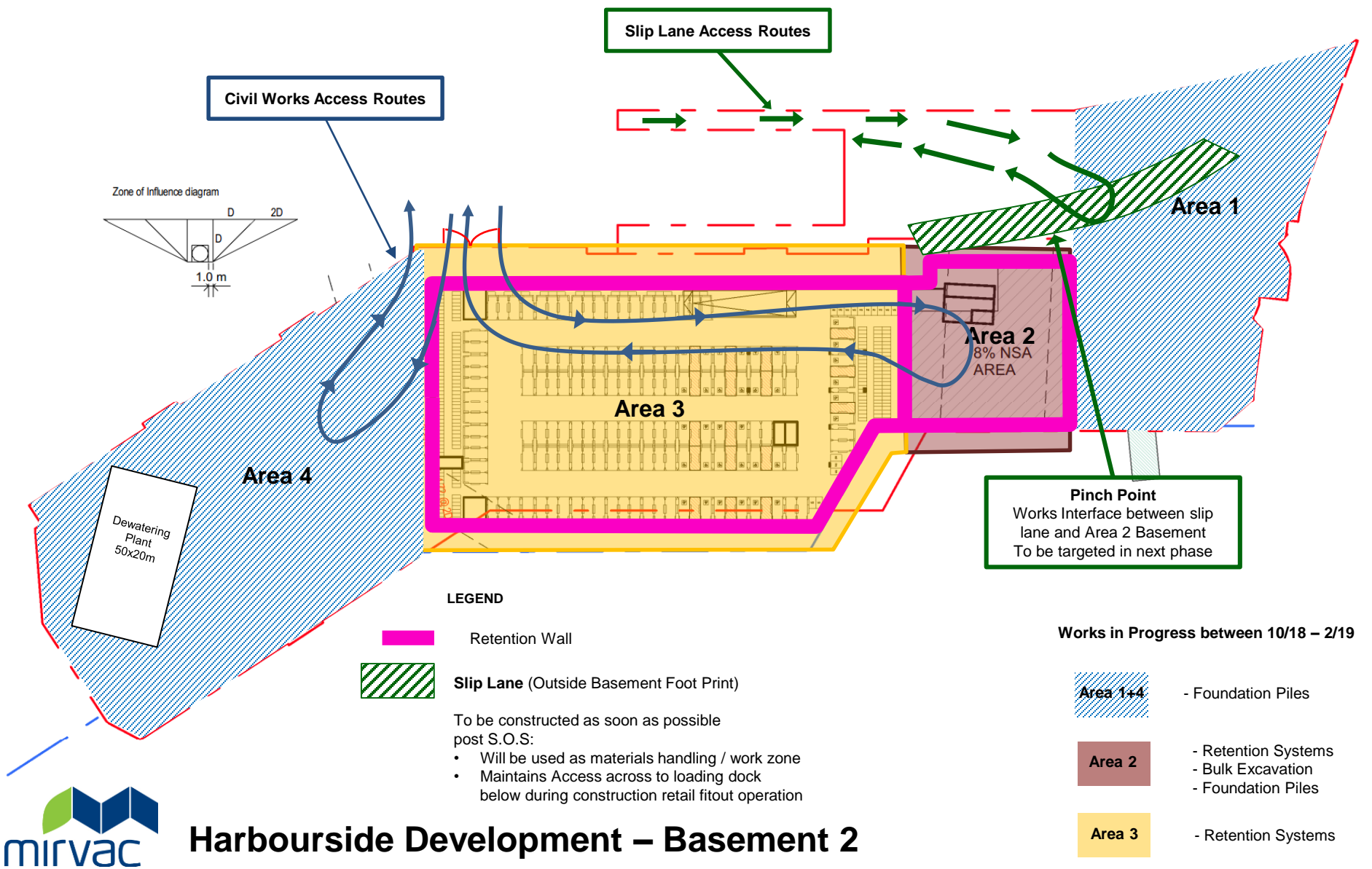
Bulk Excavation



Harbourside Development – Basement 2

NB: Bulk Excavation of basement calculated at 550m³/ per day

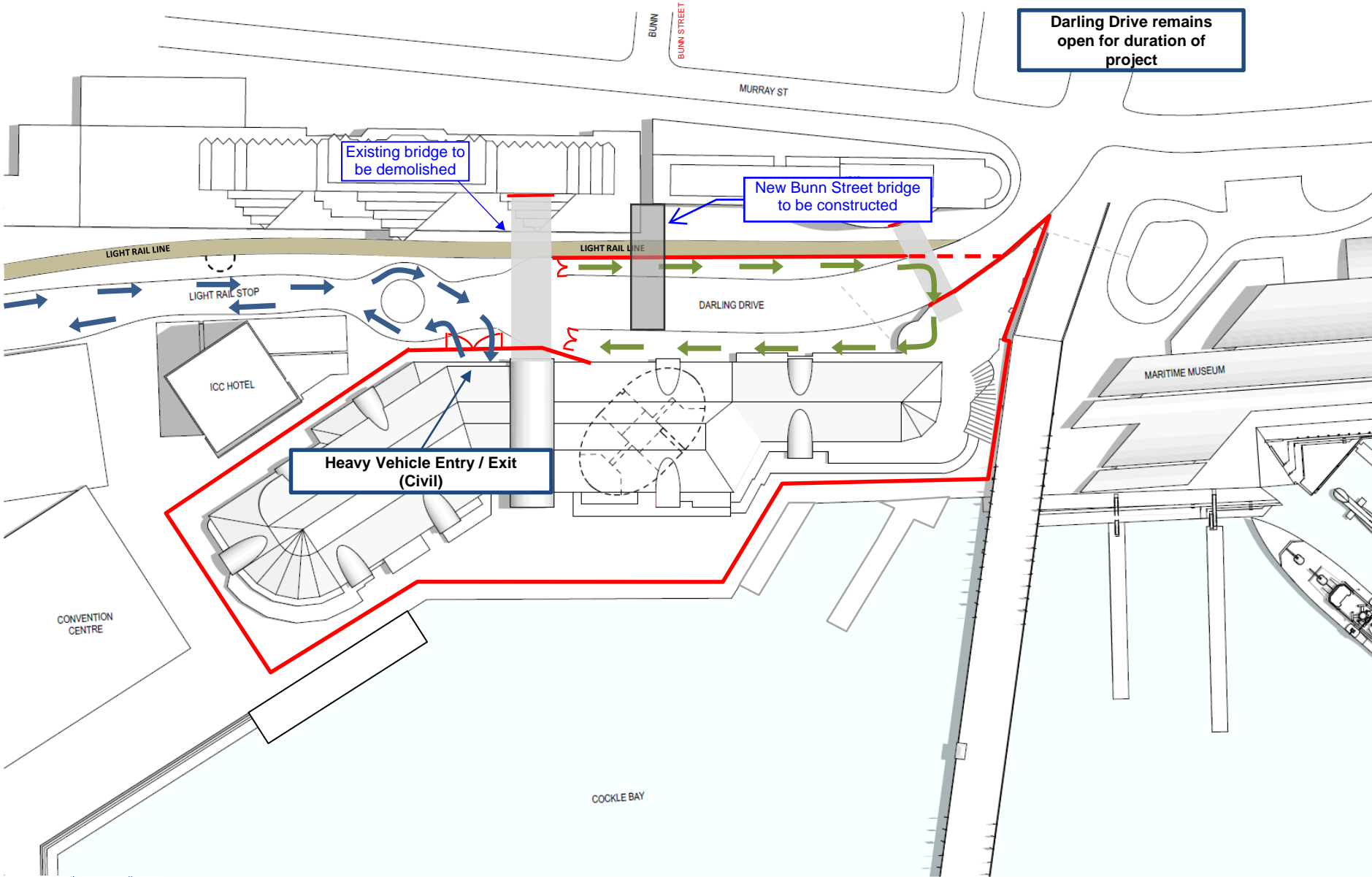
Site Status – October 18 → February 19



Appendix C:
Access and Egress Plan

Prepared by: Mirvac

Construction Worker Access & Vehicular Routes



Appendix D:

Traffic Management Plan (TMP)

DETAILS TO BE POPULATED IN LATER STAGE
DEVELOPMENT APPLICATION

Appendix E:

Noise & Vibration Management Plan (NVMP)

DETAILS TO BE POPULATED IN LATER STAGE
DEVELOPMENT APPLICATIONS

Appendix F:

Construction Waste Management Plan (WMP)

DETAILS TO BE POPULATED IN LATER STAGE DEVELOPMENT APPLICATIONS
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