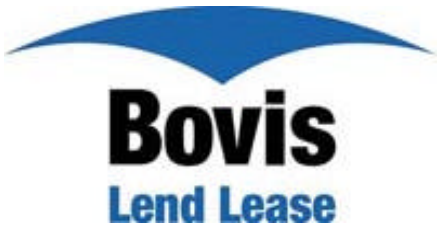


Darling Walk

Tenancy / Fitout

Construction Management Plan

Including

Traffic & Pedestrian Management Plan
Noise and Vibration Management Plan
Waste Management Plan

DATE	REVISION	PURPOSE	APPROVED BY
09/11/09	A	DRAFT	
23/12/09	B	SHFA SUBMISSION	

CONTENTS

Definitions

"BLL" Bovis Lend Lease
"Subcontractor" A company contracted to Bovis Lend Lease
"DA" Development application
"CM" Construction Manager

1.0 Site Establishment

1.1 Introduction

The Darling Walk site is located on Harbour Street in Darling Harbour between the Chinese Gardens and IMAX. It currently comprises a large area of public domain and the purpose built 2 storey Sega World building, constructed in the 1990's as a games and amusement complex. This site is being redeveloped to a purpose built commercial office space and ground floor retail space. The building consists of a ground floor with retail space with 8 floor of commercial space, with approximately 50,900m^2 of NLA

The Darling Walk commercial office space will be sole tenanted by the Commonwealth Bank of Australia (CBA). This construction management plan extends to the works associated with the tenancy fitout of this commercial space for the CBA.

The tenancy fitout of the commercial area of the Darling Walk site for the CBA consists of the following scope of works: Partition walls, set & feature ceilings, sub circuit cabling, soft wiring, tenant UPS, tenant DB, tenant ATS, MATV cabling, audio visual equipment, security systems, visitor management, commercial kitchen, MCR & FCR, feature lighting, sprinkler and service adjustment, workstations, joinery, storage, furniture, blinds and wall finishes

1.2 Site Working Hours

Subject to Authority approval, works will be undertaken between the hours of 7.00am and 7.00pm Monday-Friday and between 7.00am and 5.00pm on Saturdays. No work will be undertaken on Sundays or public holidays.

1.3 Contact Details

Project Manager	-	Bernadette Keating	0408 653 532
Construction Manager	-	Reece Marjoram	0401 148 642
Site Manager	-	David Kemp	0401 148 686

1.4 Parking

No on-site parking will be available for tradesman or site personnel. There are a number of paid parking areas available in the local vicinity.

- Garden Plaza: Harbour St between Liverpool & Goulburn
- Cinema Centre Car Park 521-527 Kent St Sydney
- 521 Kent St

1.5 Security and Hoarding Management

The site will be enclosed by hoardings for the construction phase as follows: Fitout areas are encompassed by the base building security and hoardings the details of which are below. In addition to the base building security and hording the fitout areas will require an additional induction. Access to fitout floors will only be granted to people inducted into the fitout. This will be managed by locking entrance to the floor through the fire doors (free exit only) and having identification stickers for access to the floors via the lifts/ hoists. The base building hoarding and security will be per the following:

Harbour Street: Class A painted plywood hoarding along Harbour Street extending north from the Liverpool St footbridge and up to the Bathurst St. intersection. The erection of the hoarding will be undertaken at the commencement of the demolition phase .The Bathurst St, Harbour St and, Western Distributor off Ramp pedestrian crossings will be maintained. Access shall be maintained to the Cross City Tunnel kiosk building on this corner.

Liverpool Street Footbridge: Whilst the elevated footbridge secures the southern site boundary, a 1200 mm high painted plywood screen shall be erected during the demolition phase on the existing bridge parapet. Footbridge access will not be impeded.

Western Frontage: Class A painted plywood hoarding will be erected during the demolition phase. The hoarding will continue from the western end of the Liverpool Street footbridge and extend to the west of the existing lake. The hoarding will continue past the existing children's playground and connect to the existing footbridge which links to Bathurst Street. Access will be maintained for pedestrians on the eastern side of Tumbalong Park (approx 5 m wide access) and along the eastern side of the children's playground.

Bathurst Street Footbridge: The Class B hoarding be erected over this footbridge for the duration of the demolition phase will be replaced with a 3000 m high plywood screen.

Architectural, construction and structural details of the hoardings will be in accordance with the relevant SHFA policy to ensure there is no obstruction to sightlines. Graphics to be applied to future detail and subject to SHFA detail. The hoardings shall be regularly cleaned and maintained to a premium standard.

Structural certification will be prepared and signed by a suitably qualified practicing structural engineer.

Access Control

To ensure that controlled access is maintained on the project, a swipe card system will be implemented. All construction workers will be issued with a swipe card at their induction. This will allow BLL to monitor employees on at any given time.

1.6 Site Sheds and Amenities

Separate lunch, change and ablution facilities will be provided for the use of the fitout site personnel. It is proposed that this accommodation will be located to the west of the new basement / building footprint to as the workforce numbers increase.

Once the basement becomes available the fitout trades will be located on level B2

Access to the workface will be via the construction hoist. The fire stairs will also be available until lock off of the floor. Once the façade of the building is in place and the goods lift has been commissioned and protected it will replace the hoist as the man and materials lift.

1.7 Safety Information

BLL have a safety and environmental management system called "EH&S" (Environment, Health and Safety").

All employees required to work on site must first complete the BLL site induction.

In addition, the Subcontractor must induct their employees into their safe work procedures and submit to BLL a copy of the induction register.

An EH&S meeting and site inspection will be held weekly to deal with issues which may arise on site.

The EH&S Meeting will be attended by BLL employee representatives and sub-contractor employee representatives, and chaired by a representative of BLL.

BLL will also periodically conduct its own internal safety audits. The audit team will consist of:

BLL Safety Manager
Site Safety Officer
Subcontractor Representatives
BLL Engineer

An EH&S information board will be erected and a copy of the BLL EH&S policy will prominently be displayed on the board

A Subcontractor's start on site will be conditional on the submission and approval of an Environmental Health and Safety plan and induction by workers into this plan. The plan must be submitted two weeks prior to their start date to allow sufficient time for BLL review

1.8 First Aid Facilities

BLL fitout team will ensure First Aid Facilities as specified by OH&S legislative requirements are provided. In accordance with Workcover requirements a first aid shed will be established on site once the workforce numbers exceed 50.

The BLL CBA fitout team will provide a first aider during normal work hours. For out of hours works the contractor will provide or organise the required first aid staff.

A nominated first aider will be on site whenever work is being carried out. This will be either a BLL or Subcontractor representative.

1.9 Approved plans to be on-site

In accordance with the conditions of consent, the CBA fitout team will maintain a copy of the approved and certified fitout plans, specifications and documents incorporating conditions of approval and certification on site at all times.

1.10 Dilapidation Survey

A dilapidation survey will be undertaken for all areas handed to the CBA fitout team before works commences. Copies of the report will be submitted to the appropriate party to rectify items before works commences. This report will include photos and location reference for ease of use.

1.11 Site Notice

In accordance with the conditions of consent, BLL will display, at the boundaries of the site and selected fitout floors, BLL's, PCA and Structural Engineers contact details.

1.12 Temporary Power

Construction power is to be provided by the base building team into 2 separate risers. The CBA fitout team will tee off this power to temporary/ base building distribution boards. The CBA fitout team will then provide temporary power boards in selected locations throughout the floors. These power boards will be RCD protected and mounted from the ceiling or on an approved power board stand. As the fitout concludes and permanent power is available the DB connection will switch over to the tenant board and selected & marked RCD protected power points will be available for site power.

1.13 Neighbours

The BLL Base Building team establish a forum for neighbours and stakeholders to discuss issues, project progress and special activities.

Meetings will be held on a regular basis for as long as required. Details from the following plans will be tabled at these meetings:

- Traffic & Pedestrian Management Plans
- Dilapidation Reports
- Construction Management Plan
- Construction program
- Noise and Vibration Monitoring Reports
- Plans for any temporary lane / road closures

Further to the above plans being issued, other information and registers will be available for the stakeholders such as site contact details and feedback registers.

A CBA fitout team will have a representative available for these forums as their presence is required.

2.0 Construction Methodology

2.1 Materials Handling

The key to delivering Darling Walk is well managed and efficient materials handling. The Main Works Site Establishment Plan shows the main materials handling plant.

A BLL representative in conjunction with the subcontractors will manage and supervise deliveries to the project to alleviate congestion of the materials handling areas and ensure minimum disruption on Harbour Street. Once the ground floor slab between the 2 buildings has been poured and stripped, this area becomes an additional materials handling zone.

- Man and materials hoists shall be installed to the south elevation of the north building and the north elevation of the south building. It is envisaged that the hoists will serve all floors from basement B3 to level 9 roof. A permanent lift within each building shall

be installed and commissioned early as a builders lift to allow the earliest possible removal of the external man and materials hoists.

- The goods lift will be commissioned early by the base building team. Once this is available the hoist will be removed and the goods lift will be used to bring men and materials to the fitout workface.

- Forklifts will provide horizontal movement of materials to the basement, ground floor area and external areas.

- Where appropriate materials will be quantified and pre delivered to floors to minimise congestion to delivery areas and reduce redundant materials.

- Rubbish and waste on site will be first of all reduced by less packing materials brought to site and all materials are to be site measure so appropriate quantities are brought on site. Site rubbish will be collected in separate rubbish bins for recycling. The CBA fitout team has a minimum recycled materials target of 80%. A separate rubbish removal will be used by the CBA fitout team to the base building team.

- The efficient removal of rubbish and debris from the work areas is a critical component of providing a safe project. Rubbish will be collected in separate bins depending on material type. These will delivered to the materials handling area via hoists. A bin lifter will be used to empty the bins into larger 15 – 18 m3 bins

- All penetrations and construction loads superimposed on the structure by plant and equipment (hoist, forklifts, etc) shall be certified in advance by the project consulting structural engineer.

2.2 Services

Services will be installed based on a floor by floor program starting with the ground floor and working up through the building.

- Services are to be installed in part by two parties. The base building team will be providing all major plant, equipment & house services as well as integrated backbone cabling, piping, ducting etc. The fitout team will be providing all tenant related services as well as integrated services to match the final floor configurations.

- Services will be fitoff & commissioned progressively as available base building service plant and equipment comes online.

- All Services will be installed and commissioned in accordance with all relevant authorities, standards and environmental conditions.

- Services to be installed include, mechanical, electrical, communications, hydraulics, fire, security & audio visual

2.3 Fitout & Finishes

Fitout and finishes will be installed commensurate with the standard required for an A grade commercial building.

- All ceiling and in ceiling works will be conducted off platform ladders or mobile scaffolding to minimise falls
- All electrical and comms cabling will be run on cable basket in the ceiling space and be loomed together with Velcro ties
- All workstations and as much joinery as possible is to be of a modular design to enable reuse and relocations without waste
- All paints used on site are to be low VOC
- Main communications rooms will be located on level 2 of each building connecting to 2 floor communications rooms on each floor. The link cabling between the FCR and MCR will be conducted progressively to match the construction program.
- Ceiling services will in general be positioned in their final location per the integrated works package. Some additional relocations may be required under the fitout package.
- Feature lighting and floor finishes are included in the fitout package while the standard base building house lighting and standard carpet will be provided under the base building works.
- As much as possible materials for the floors will be delivered on floor by floor bases. Minimising congestion around site.
- Large materials deliveries will be conducted out of hours where possible to minimise the effect on construction hours
- The fitout consists of mix modes areas. Including general open plan workstations, meeting rooms, training rooms, offices, technodes, compactus/ storage, tea/ hub and informal areas.
- The general construction program will be to progress through the north building starting at the ground floor moving up through the building and then repeating on the south building.
- Each floor will be locked off and access restricted progressive to minimise damage to finishes

- Main order of activates will be to stage through the following: service roughin, equipment installation, ceiling works, walls, floor finishes, glass walls, workstations, joinery, finishes, fitoff services, commission, clean & furniture

3.0 NOISE & VIBRATTION MANAGEMENT PLAN

Objectives

To minimise the generation of noise and vibration from construction activities occurring on site and its impact on site operations and workers.

To minimise the generation of noise and vibration from construction activities occurring on site and its impact on the neighbouring residents, businesses and associated building structures.

Establish and maintain good relations with community and neighbouring sites.

Key Management Issues

Noise generated during **construction** will be primarily associated with 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.

Site Action - Noise

All noisy construction or demolition activities are to be performed in accordance with the **building DA**

Noisy works are to be performed as follows

1. (Times in accordance with council requirements) Monday to Friday;
2. (Times in accordance with council requirements) Saturdays; and Sundays

Any noisy activities proposed outside the hours detailed above require prior written consent from the building owner, building manager or client with agreement from the (nominate approval authority).

Noise limits during the construction works are to meet the Maximum Allowable Noise Contribution as specified in the conditions of consent.

Personnel safety measures shall be implemented wherever noise exceeds 85dB(A).

4.0 TRAFFIC & PEDESTRIAN MANAGEMENT PLAN

- The fitout works will be carried out within the Darling Walk construction site therefore the fitout construction management plan traffic & pedestrian requirements will back to back with the base building plan. Following is a partial extract from the base building CMP.

A Traffic and Pedestrian Management Plan has been developed in conjunction with Masson, Wilson & Twiney Pty Ltd and is attached in Appendix 3.

4.1 Loading and Unloading

- All deliveries will be coordinated with BLL prior to arrival on site. To minimise congestion on/off site
- All loads are to be covered, securely fastened and reliably stacked on vehicles
- All hazardous materials to be transported and stored as per codes and regulations
- Only delivery trade vehicles will be allowed on site

4.2 Ingress and egress of vehicles to the site

- All construction traffic is to be coordinated with BLL prior to arrival on site.

4.3 Traffic management methods

- All vehicles prior to leaving site will be checked for cleanliness and washed down if required
- Construction vehicles are not permitted on site without approval from BLL
- Transportation of hazardous materials will be carried out in accordance with Authority Requirements and BLL Safety Requirements
- A truck wheel cleaning facility will be maintained for the effective cleaning of wheels prior to trucks leaving site
- To restrict traffic and noise impacts, trucks transporting materials from the site will be confined to the main road system and avoid local roads as far as is practicable

4.5 Pedestrian Management methods

- Wayfinding signage will be provided on the Eastern side of Harbour St to direct pedestrians onto the Liverpool or Bathurst Street footbridges.
- All pedestrians have the right of way, especially within the site.
- Pedestrian thoroughfares around exterior of site to be maintained and clearly marked.
- All visitors will report to the BLL site office to sign visitor register (Appendix 1).
- All visitors must sign out on leaving the site.
- All visitors must be suitably attired to enter the site e.g.; proper footwear, hardhat, high visibility vest, glasses, etc.
- An inducted person must accompany all visitors to the site.
- No private car parking will be available within the site. Visitors will be advised to park in the surrounding public car parks.
- The construction area will be suitably segregated from the public and adjoining pedestrian areas.
- Access to, from and around the workface is to be via defined access routes detailed in the induction process

5.0 WASTE MANAGEMENT

5.1 Compliance with Planning Requirements

- All hazardous materials removed from the site will be disposed of at an approved waste disposal facility in accordance with the requirements of the relevant legislation, codes, standards and guidelines.

- As detailed below in the BLL Waste Management Plan, any existing concrete of suitable volume will be taken to a concrete recycling works

5.2 BLL Waste Management Plan

- See Appendix 4 for the BLL Waste Management Plan

6.0 SAFETY

As part of BLL's commitment to ensuring a safe work environment to following items will be implemented:

- Environmental health and safety plan will be implemented and issued to all subcontractors at the time of tendering to ensure that contractors are aware of the requirements that will be placed on them
- A safety plan will be collected from each contractor and reviewed/approved by a BLL engineer, foreman, site manager & construction manager.
- A risk assessment is required for every work task
- A safe work method statement will be required for all work tasks with any risk identified in the risk assessment
- All worker on site will be required to be inducted into firstly the base building induction the fitout induction and be inducted into their safe work method statement/ safety plan
- A pre-start checklist will be required/ completed before any works is to be conducted by subcontractor
- A tool box talk is required monthly from each subcontractor and is to address relevant topics to the safety of the site
- A weekly safety checklist is to be completed by each subcontractor
- A weekly safety walk will be conducted by the safety committee
- A MSDS register is kept up to date and easy to access
- Regular audits of the subcontractors Environmental, health, safety and quality processes will be conducted by BLL
- All subcontractors workers & BLL staff will be required to complete a safety passport inducting them into BLL's global minimum requirements and Incident and Injury Free ideals
- BLL's personal protective equipment policy requires as a minimum all workers to have a hard hat, gloves, glasses, steel cap boots & a high visibility vest. Other PPE many be required if called for under the risk assessment

- BLL has implemented a working at heights policy with is issued to subcontractors at time of tender. Some of the items outlined in this include the use of platform ladders, snappy scaffolding to replace step ladders. No working off ladders within 3m of a penetration as well as requirements on the safe use and implementation of scaffolding

- All scaffolds, jacks and lifting platforms are to be inspected and have a approved equipment sticker

- BLL has also implemented a harness permit making the use of harnesses as a last resort to completing the work activity safely

- All temporary power is to be RCD protected and clearly marked

- All tools on site are to be tagged by a licensed electrician

- All people working in the ceiling are to wear long sleave shirts

- Only a licensed electrician is to be working on a switchboard

- No work is ever to be done on a live switchboard. Lock dogs are used for shutdowns as required

- All leads on site are to be elevated off the ground

- All penetrations on site will be covered by an approved method

- Dedicated cleaning staff and bins throughout the floor will be used to maintain a clean and tidy work environment

- All hazardous materials are to be stored in a dedicated store

7.0 SUSTAINABILITY

As part of BLL's commitment to intergenerational equity and sustainable building practice the CBA commercial fitout team has implemented the following initiatives:

- A minimum 80% of all waste materials on site is to be recycled. Recepts and records are kept to ensure validity.
- Low VOC volatile organic compound paints, glues sealants and adhesives are used on the site only
- Only Low formaldehyde timbers and board are able to be used on site
- All thermal insulation on site is to have 0 ODP ozone depleting agents
- Workspaces are designed to maximise natural lighting
- All lights are controlled through small zoning on the BMCS and are switched to turn off if not being used.
- All lights are to be low energy
- All hydraulic fixings are to be low flow
- All workstations, storage and most joinery units are designed to be modular and therefore able to be used in different location and arrangements without waste
- Plants are used throughout the tenancy to improve air quality
- All furniture and carpet has a project stewardship agreement on it so as it reaches the end of its life cycle it will be taken away and recycled
- Blinds are used throughout the building to minimise heat loading on the building reducing the air conditioning loading
- An enviro wash unit is used for paint washout to prevent any water contamination

Appendix 1

Visitor Register

Bovis
Lend Lease

SITE VISITOR REGISTER

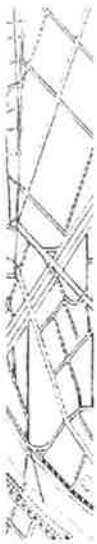
Project Name:	CBA Darling Walk
Project Address:	

All visitors to site are to sign this register prior to moving onto the site.
All visitors are to wear substantial safety footwear and a hard hat.

DATE	VISITOR'S NAME	ORGANISATION	TIME ON	TIME OFF	REASON FOR VISIT

Appendix 2

Masson Wilson Twiney Pedestrian and Traffic Management Plan



Traffic Management Plan

Darling Walk Redevelopment - Main Construction Works Traffic Management Plan

21 July 2008

Prepared for

Bovis Lend Lease

Suite 20/809 Pacific Highway
Chatswood NSW 2067
(t) 02 9410 4100 **(f)** 02 9410 4199
(e) info@mwttraffic.com.au
(w) www.mwttraffic.com.au

MASSON | WILSON | TWINEY
TRAFFIC AND TRANSPORT CONSULTANTS

Disclaimer

The information contained in this document produced by Masson Wilson Twiney Pty Limited is solely for the use of Bovis Lend Lease for the purpose for which it has been prepared and Masson Wilson Twiney Pty Ltd undertakes no duty to or accepts any responsibility to any third party who may rely upon this document.

Author: Kamoru Adetunmbi
Reviewer: Bruce Masson

Contents

1. Introduction

A traffic and pedestrian management plan for demolition of the Sega World Building was prepared by Masson Wilson Twiney on behalf of Bovis Lend Lease Pty Ltd. It is now required to prepare a traffic and pedestrian management plan for the construction of a new building and basement excavation after the completion of the demolition.

The new building consists of 4 levels of basement parking, a ground level retail floor including a children's theatre and up to 8 storeys of office space in two towers. The associated public domain area will be upgraded, including a new Children's Playground.

This report forms a component of the Project Application for the proposed development. The report covers traffic management plans for the construction of the main building and associated external works. This includes bulk excavation works, structural works, materials handling, façade and associated civil works.

The establishment plans for the bulk excavation works and the main works are provided in **Appendix A**.

The report is based on the description of the construction works provided by Bovis Lend Lease and on a visit to the site to obtain information on the site and existing traffic and pedestrian situations. This report includes an overview of the proposed construction works with respect to traffic and describes the potential impacts on the surrounding road network. The location of the site relative to surrounding road network is shown in **Figure 1**.

Traffic control plans for specific requirements of the proposed works are provided in **Figures 2- 5**. This document also indicates the Standard RTA Traffic Control Plans (TCP) on which the traffic management plan is based. The standard TCPs and the symbols used in the plan are provided in **Appendix B**, while the general notes pertaining to the standard layouts is contained in **Appendix C**. The routes of trucks exiting the site during bulk excavation are shown in **Appendix D**.

RTA Guidelines[1] specifies that Traffic Management Plans must be prepared by a person in possession of a current "Select/Modify Traffic Plans qualification or higher with name and certificate attached. The relevant certificates are provided in **Appendix E.**

As part of the construction of the new building it is necessary to carry out the diversion of a stormwater culvert that presently crosses the site onto a route around the site and then join an upstream section of the existing culvert in James Street cul-de-sac. The traffic management plan prepared for this work is provided in **Appendix F**.

The remaining part of this report is set out as follows:

- Chapter **2** - documents the existing traffic conditions.
- Chapter **3** - describes the works and construction phases.
- Chapter **4** - indicates the vehicular access and pedestrian requirements
- Chapter **5** discusses the traffic control plans for the proposed works
- Chapter **6** - describes impacts of the proposed works, including issues such as hours of operation, pedestrians, public transport and emergency vehicles.

Finally it is noted that the construction works will necessitate the diversion of a stormwater culvert that presently crosses the site onto a route around the site. This will be the subject of a separate construction management plan.

[1] Road Occupancy Manual – RTA (2007)

2. Background Situation

2.1 Site Location

The Darling Walk site is located on the western fringe of the Sydney CBD area. Being a sub precinct of the Darling Harbour, it is also located in close proximity to the Exhibition and Convention Centres, the IMAX Theatre and the Chinese Garden. The site has direct frontage to Harbour Street, a four-lane arterial road, which connects to the Western Distributor/Bradfield Highway as well as the Cross City Tunnel Motorway.

The site location is shown in **Figure 1**.

2.2 Existing Road Network

An appreciation of the existing traffic conditions can be gained by examining the road network, traffic volumes and the operation of intersections. These aspects are discussed below.

1. **Harbour Street** – is an arterial road running north-south along the frontage of the site. It has generally 2 traffic lanes in each direction. Access to the Cross City Tunnel is available in the middle of the road for northbound traffic to the south of Day Street. Vehicular accesses to the site are available from Harbour Street. Wide footpaths exist on either side of the road. Footbridges also exist across Harbour Street near the northern and southern boundaries of the Sega World. Signalised pedestrian crossings also exist across Harbour Street at the intersections of Day Street and Bathurst Street. The street carries up to 1,200 vehicles per hour in each direction during the morning and evening peak hours.
2. **Day Street** – is a short road connecting Harbour Street to Bathurst Street with a triangular open space between the three streets. A signalized pedestrian crossing exists across its intersection with Bathurst Street, leading pedestrians from Bathurst Street to the Bathurst Street footbridge over Harbour Street.
3. **Bathurst Street** – in the vicinity of the site is a one-way street providing access from the Western Distributor to the southern part of the Sydney CBD.
4. **Liverpool Street** – provides a one-way westbound link between the southern part of the CBD and the Darling Harbour entertainment area. A footbridge exists from the northern and southern footpath of the street across Harbour Street, providing direct pedestrian access to Darling Harbour.

3. Construction Program

3.1 Description of the works

The construction program involves the following items of works:

- Piling
- Site Sheds construction
- Bulk Excavation
- Scaffolding
- Plant Deliveries & Pick up
- Structural Works, construction of new site access
- Civil Works
- Services
- Roof installation
- Façade construction
- Fit-outs and Finishes
- External Works
- Construction Waste Collection
- Material Deliveries
- Tower Cranes
- Mobile Cranes

The construction works will be carried out over a period of 29 months, from November 2008 to Mar 2011. It should be noted that during the demolition of the site, it is proposed to install Class A-hoardings around the site. These hoardings will remain throughout the construction works and all construction activities, including bulk excavation will take place within the site. A pedestrian way-finding signage plan shown in Figure 5 will assist pedestrians to find alternative routes.

The pedestrian crossings at the intersections of Bathurst Street/Day Street and Harbour Street/Bathurst Street/Western Distributor Off-Ramp will be maintained during the works. The pedestrian crossings at the intersection of Harbour Street/Day Street and the signalised crossings across the site access on the western side of Harbour Street will be closed due to installation of hoardings on the footpath thereby closing pedestrian access to the footpath.

These preliminary and continuing construction enabling elements are covered in the separate demolition traffic management plan.

3.2 Staging of the works

Note that the RTA guidelines define work as short and long-term work. The relevant TCP should be used with reference to the type of work as defined below:

- **Long-term work** – work requiring traffic control and taking longer than one work shift and where some form of traffic control must remain when the site is left unattended and may need to operate both day and night;

- **Short-term work** – work requiring traffic control during work taking less than or equal to one work shift and where traffic control is not required when the work is complete and where road conditions are returned to normal when the work ends.

Applicability of long or short-term plans is specified in **Chapter 5** below.

A brief description of each aspect of the construction works and truck generation is outlined below:

Item 1 – Piling Phase This involves installation of cast in-situ concrete piles in the site. The works, including loading and unloading will take place within the site and no lane closure will be needed.

4 piling rigs will be delivered in November 2008 and then picked up in February 2009. 700 piles will be installed and around 560 trucks will visit the site to deliver concretes and other materials associated with the piling works during the 4 months of piling works.

Item 2 – Construction of Site Sheds. This involves construction of temporary sheds or containers for the contractors' staff. The sheds and containers will be erected in December 2008 and removed from site when work is completed in March 2011. It is estimated that 60 trucks will deliver the containers and the sheds progressively from December 2008 and another 60 trucks will remove the materials at the end of the works.

Item 3 – Bulk Excavation

Bulk excavation works will be carried out over 8 months, between December 2008 and July 2009. 10 major items of plants will be delivered at the beginning of the works and then picked up by trucks at the end of the work in July 2009. Around 110,000m^3 of material will be taken out by trucks. Around 7,400 trucks (dog & trailers) will remove the materials for disposal.

Item 4 – Scaffolding

Scaffold will commence to be erected in September 2009 to facilitate building construction. The scaffolds will be dismantled progressively from September 2010. 30 trucks will deliver the materials and 30 trucks will remove the materials after dismantling.

Item 5 – Plant Deliveries and Pick Up

100 trucks will deliver construction plant from July 2009 to the end of the works as needed. The plant will be removed progressively by 100 trucks until the end of the works in March 2011. All loading and unloading will take place within the site.

Item 6 – Structural Works

This includes major concrete works and reinforcement for the structural elements of the building. Around 35,000m^3 of fresh concrete will be delivered by 7,000 trucks over a period of 8 months, between July 2009 and February 2010. The following numbers of trucks will visit the site over a period of 8 months between July 2009 and February 2010:

- 7,000 trucks to deliver 35,000m^3 of fresh concrete
- 200 concrete pumps
- 400 trucks to deliver around 8,000 tonnes of reinforcement bars
- 60 trucks for post-tensioning materials

Item 7: Civil Works

This involves construction of roads and driveways associated with the development. The work will be carried out over 12 months, between February 2010 and February 2011. 200 trucks (dogs and trailers) will deliver roadbase materials and 60 trucks will deliver bitumen. This includes reconstruction of Harbour Street/Day Street intersection.

Item 8: Services

These works include installation of hydraulic, mechanical, electrical, fire and other services. All installation will be carried out within the site. The installation of services will be carried out over 16 months, from November 2009 to February 2011. The following number of trucks will make deliveries during installation of services:

- Hydraulic – 200 trucks (50 large and 150 small trucks)
- Mechanical – 250 trucks (100 large and 150 small trucks)
- Electrical – 350 trucks (100 large and 250 small trucks)
- Fire – 100 trucks (50 large and 50 small trucks)
- Other services – 100 trucks

Item 9: Tower Cranes
Two tower cranes will be erected within the site in April 2009 and dismantled in September 2010. 20 trucks will deliver the crane components in April 2009 and 20 trucks will pick up the components in September 2010.

Item 10: Mobile Cranes
It is estimated that up to 100 mobile cranes will visit the site between December 2009 and 2011.

Item 11: Façade
300 trucks will make deliveries to the site during façade installation between February and September 2010.

Item 12: Roof Installation
Construction of roof will be carried out in 6 months between March and August 2010. 100 trucks will deliver structural steel and 50 trucks will deliver roof sheet and insulation.

Item 13: Fit-outs and Finishes
Installation of fit-outs and finishes will be carried out over 12 months between April 2010 and March 2011. Around 300 trucks will deliver materials over 12 months as follows:

- Ceiling Grid & Tiles – 25 trucks
- Blockwork – 30 trucks
- Linings/Wall finishes – 80 trucks
- Metalwork/balustrades – 120 trucks
- Floor finishes – 40 trucks

Item 14: External Works
This involves installation of landscaping, playground equipment and furniture. The works will be carried out over 7 months, between September 2010 and March 2011. 120 trucks will deliver materials for hard landscaping, playground equipment and furniture and also soft landscaping.

Item 15: Waste Collection
This involves collection of construction waste for disposal at landfill or other sites. Around 1400 skip bins will be collected by trucks during the main construction works between August 2009 and March 2011.

Item 16: Sundry Deliveries
It is estimated that various miscellaneous deliveries will be made during the construction of the buildings between August 2009 and March 2011. It is estimated that up to 500 trucks will make deliveries during this time.

4. Vehicle and Pedestrian Requirements

4.1 Vehicle Types

Construction vehicles likely to be generated by the proposed construction activities include:

- Articulated vehicles for delivery of machinery and tower cranes
- Heavy and medium rigid trucks for construction material removals,
- Mobile cranes and concrete pumps
- Staff cars and delivery vans

As discussed in Section 3, all construction vehicles will be able to park on-site while carrying out loading and unloading. There will be no parking of staff cars in the site. Some staff will come by public transport as the site is located within walking distance of major public transport facilities, including train stations, monorail stations and STA bus stops. The workers who require parking for their cars will be able to park in the public pay parking stations available in the vicinity of the site.

4.2 Construction Vehicle Access

All construction vehicles will enter and exit the site via Harbour Street. 4 gates are proposed for entering and/or exiting the site. The gates shown in the establishment plans in Appendix A are:

- Gate 1: located just north of Liverpool Street, for exiting the site for exiting the site after completion of structure.
- Gate 2: located about 50m north of Liverpool Street for entering the site.
- Gate 4: Existing signalised exit driveway at the intersection of Harbour Street/Day Street
- Gate 5: Existing entry Driveway to Macdonald Restaurant. This gate will be reworked during construction phase.

It is proposed that the marshalling area for trucks be in Hickson Road, subject to consultation with the Roads and Traffic Authority (RTA) and Sydney Harbour Foreshore Authority (SHFA) as to details.
The route of trucks will be as follows:

- Entry – From Hickson Road southbound to Sussex Street, turn right into Liverpool Street, right into Harbour Street, and left into the site via any of the three gates (Gate 2, Gate 4 and Gate 5) shown in **Appendix A**. It should be noted that signage at Gate 4 at the signalised intersection of Day Street/Harbour Street will be modified to permit entry of construction vehicles. New signage will be "No Entry" and "Construction Vehicles Excepted".
- Exit – Trucks will exit from either the existing signalised driveway at the intersection of Day Street and Harbour Street or the proposed Gate 3 during

main works. Routes of exiting trucks would be as follows depending on the destination:

- North: turn left to travel north via the Harbour Bridge
- West: travel straight in Day Street and Bathurst Street to access Western Distributor via Kent Street and Druitt Street, or turn right into Harbour Street, Goulburn Street and right into George Street.
- South: Right into Harbour Street, left into Goulburn Street, right into George Street, Regent Street, Cleveland Street and then South Dowling Street.

The proposed entry and exit routes provide shortest distances to the arterial roads and avoid the use of local roads by trucks.

4.3 Construction Traffic Flow

The numbers of trucks visiting the site during each item of works are outlined in Section 3.2. These have been separated into months and maximum number of trucks expected to visit the site during a peak hour has been calculated during each month. A summary of number of trucks expected to visit the site during each month of the construction works is provided in Table 4.2.

In calculating the maximum hourly truck volumes, it was assumed that there are 20 working days in a month and deliveries will take place during 6 hours per day. This results in conservatively higher volume than what is likely to occur. The project application actually seeks approval for construction works over 6 days per week (Monday to Saturday) and hours of work will be 7:00am - 7:00pm, Monday to Friday, and 7:00am – 5:00pm on Saturday. There will be no work on Sundays and public holidays.

Around 20,400 trucks will visit the site during the 29 months of construction works. The maximum number of trucks visiting the site per hour varies from 2 during some months to the highest number 17.

As outlined in Section 2, Harbour Street currently carries around 1,200 vehicles per hour in each direction during the morning and evening peak hours. These include some vehicles travelling to the Sega World complex that have been eliminated after demolition of the site. The volume of trucks visiting the site is considered minimal compared to the existing volume of traffic in Harbour Street.

The estimated maximum truck generation of 21 trucks per hour would have minimal impact on traffic operation in Harbour Street. Therefore the traffic impact of the construction activities will be low.

Furthermore Intersection analysis to assess the existing performance of the signalised intersections of Harbour Street with Liverpool Street and Day Street was recently

undertaken as part of the traffic planning for the Darling Walk Redevelopment. Results of the analysis are presented in Table 4.1.

Table 4.1 – Intersection Operations in Harbour Street

	Morning Peak		Evening Peak	
	Level of Service	Average Delay per vehicle	Level of Service	Average Delay per vehicle
Harbour St-Day St	B	25.1 seconds	B	24.4 seconds
Harbour St-Liverpool St	A	14.0 seconds	B	22.8 seconds

Note LOS A is the highest potential spare capacity, LOS F = Over capacity, poor operation.

Both intersections were found to operate satisfactorily under existing traffic conditions at level of service B or better in both peak periods. As stated in Section 2, Harbour Street currently carries around 1,200 vehicles per hour in each direction. Additional 21 trucks per hour less the existing traffic generation of the Sega World Building will result in insignificant changes to the operations of these intersections.

Table 4.2: Construction Truck Volumes

	Total Number of Trucks	NUMBER OF TRUCKS PER MONTH																									
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
		2008	2008	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2011
Total Number of Trucks	**20399**																											
Piling	564	282	282																									
Site Sheds Construction	120		60																									
Bulk Excavation	7420		935	925	925	925	925	925	925	935																		
Scaffolding	60											30												30				
Plant Deliveries & Pickup	200									10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Structural Works (Concrete & Reinforcement)	7845									981	981	981	981	981	981	981	981											
Civil Works	260																20	20	20	20	20	20	20	20	20	20	20	20
Services	1000													63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
Tower Cranes erect & dismant	40						20																					
Mobile Craness	100														7	7	7	7	7	7	7	7	7	7	7	7	7	7
Façade	300																38	38	38	38	38	38	38	38				
Roof Installation	175																	22	22	22	22	22	22					
Fitouts & Finishes	295																		25	25	25	25	25	25	25	25	25	25
External Works	120																							17	17	17	17	17
Waste Collection	1400										70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
Sundry Deliveries	500		18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
TOTAL TRUCKS PER MONTH		**282**	**1295**	**943**	**943**	**943**	**963**	**943**	**943**	**1944**	**1079**	**1109**	**1079**	**1142**	**1148**	**1149**	**1206**	**247**	**271**	**272**	**272**	**272**	**272**	**297**	**230**	**230**	**230**	**230**
TRUCKS PER DAY (Assume 20 working days)		**18**	**84**	**61**	**61**	**61**	**63**	**61**	**61**	**126**	**70**	**72**	**70**	**74**	**75**	**75**	**78**	**16**	**18**	**18**	**18**	**18**	**18**	**19**	**15**	**15**	**15**	**15**
MAX TRUCKS PER HOUR (Assuming 6 hours of delivery per day)		**3**	**14**	**10**	**10**	**10**	**10**	**10**	**10**	**21**	**12**	**12**	**12**	**12**	**12**	**12**	**13**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**2**	**2**	**2**	**2**

4.4 Pedestrian Access

As the Sega World constitutes an entertainment precinct, pedestrians currently walk on every side of the building as follows:

- Eastern side: Pedestrians walk on the wide footpath along the Harbour Street frontage of the site. Pedestrians also cross Harbour Street from this footpath to the opposite side of the road, via the signalised intersections with Day Street and Bathurst Street.

  The leg of the pedestrian crossing in Day Street/Harbour Street intersection is proposed to remain closed during the construction works as the class A hoardings will remain on the footpath, closing access to pedestrians who presently walk to and through the site.

- Western Side: Pedestrians walk in the public domain area between the Sega World building and the pond and also between the pond and Tumbalong Park. Although hoarding will be installed in the western frontage of the site, access will be maintained for pedestrians on the eastern side of Tumbalong Park and along the eastern side of the children's playground

- Northern side: Pedestrians walk from Bathurst Street across the footbridge into the Sega World building and along the western side of the building. This pedestrian footbridge will remain open for the duration of construction works.

- Southern side: Pedestrians walk from Liverpool Street across the Liverpool Street footbridges to the public domain area west of the site. Access for pedestrians will continue to be available via the Liverpool Street footbridges.

A Pedestrian Way-finding Signage Plan that will be implemented during the construction works is shown in **Figure 4**.

5. Traffic Control Plans

The Standard RTA Traffic Control Plans applicable to the construction work are discussed in the following sub-sections. The recommended Standard Traffic Control Plans are provided in **Appendix A**.

5.1 Bulk Excavation and Main Construction Works

The Class A-hoardings that will be installed around the site during demolition works will remain throughout the construction works and all construction activities, including bulk excavation will take place within the site.

Closure of any road or lane will not be required, however as heavy vehicles will visit the site to make deliveries it will be necessary to warn other drivers. The estimated number of trucks visiting the site per day varies from 11 to 102 trucks per day (See **Table 2**).

It will be necessary to provide advanced warning signage of truck movements to other drivers in Harbour Street. As Harbour Street is a divided road, only northbound drivers need to be notified. The signs should also be installed in Liverpool Street on the approach to the intersection of Harbour Street. The appropriate warning signs include **TRUCKS** (W5-22) and **TRUCKS TURNING** (W5-205).

The following standard RTA TCPs should be implemented for this work:

- Standard RTA **TCP No 195** shows warning signs and devices on the approach to an access road for trucks.

The traffic control plan for the site, based on TCP 195 is provided in **Figure 5**.

5.2 Construction of Temporary Site Accesses (Gate 2)

During the main works-civil phase, an existing unsignalised access to the site from Harbour Street will be closed off. A new gate (Gate 2) will be constructed south of the access.

The closing of the existing gate will be carried out within the site, and traffic in Harbour Street will not be affected. Also plant and equipment for constructing the new entry

will for the most part be located within the site and majority of the works will be carried out inside the site. However, because the footpath and the kerb in Harbour Street will be removed to construct the driveway, the kerbside lane in Harbour Street will be affected. It will be necessary to close off the kerbside lane such that the work area will be separated from the traffic in Harbour Street.

The work will be carried out at night and completed in one night. Standard **RTA TCP No 92** for short-term lane closure on a divided 4-lane road will be implemented to provide guidance for traffic in Harbour Street during construction of Gate 2.

As this work will be carried out at night, it is essential that flashing arrow signs be included in the signs and devices installed. Also, signs for nightworks should replace the standard signs.

As workers will be standing on the road close to the edge of the adjacent traffic lane, the speed limit should be reduced to 40km/h in the work area and for at least 100m on the approaches to the work area. Therefore 'Roadwork Speed Limit' (R4-212) signs will be installed. Authorisation of the use of the 'Roadwork Speed Limit' (R4-212) sign shall be obtained through RTA's Traffic Management Centre. The nearest Police Station needs to be notified by the Sydney Harbour Foreshore Authority in writing of the Authority's intention to implement a roadwork speed limit 7 days prior to works commencing.

The traffic control plan shown in **Figure 2** will be implemented.

6. Impacts of the Proposed Works

An assessment of the traffic impacts of the construction works has been undertaken in accordance with the RTA Guidelines for preparing a traffic management plan. The Construction Traffic Management Plan will require approval by the Sydney Harbour Foreshore Authority. Any road occupancies or temporary speed zone will also require approval by the RTA. The assessment of the Traffic Management Plan is provided below

A. **Description or detailed plan of the proposed measures.**

The construction works will be undertaken between the hours of 7:00am – 7:00pm, Monday- Friday, and 7:00am-5:00pm on Saturdays, subject to Authority approval. The works will be completed over a period of 29 months from November 2008 to March 2011.

The construction program involves the following works:

- Piling
- Site Sheds construction
- Bulk Excavation
- Scaffolding
- Plant Deliveries & Pick up
- Installation and Dismantling of Tower Cranes
- Structural Works, construction of new site access
- Civil Works
- Installation of Services
- Roof installation
- Façade construction
- Fit-outs and Finishes
- External Works
- Construction Waste Collection
- Material Deliveries
- Marshalling of trucks will be at appropriate areas in Hickson Road in consultation with the Roads and Traffic Authority and Sydney Harbour Foreshore Authority.

Around 20,400 trucks will visit the site during the 29 months of construction works. The maximum number of trucks visiting the site per hour varies from 2 during some months to the highest number 17. Trucks will enter Harbour Street from Liverpool Street and turn left into the site via any of the gates. Trucks will exit the site and travel north via the Harbour Bridge or via Day Street.

The Class-A Hoardings installed during demolition of the site will remain in place during construction works. Therefore all works, including loading and unloading will take place within the site. Two additional gates will be constructed from Harbour Street, and appropriate traffic control plans have been developed for these works.

Standard RTA Traffic Control Plans (as required) are recommended in accordance with AS1742.3 and RTA Guidelines. The traffic control plans will be implemented to inform the public and minimise impact of the works.

B. Identification and assessment of impact of proposed measures.

During the construction works, the number of construction trucks expected to visit the site varies from around 10 trucks per day to 130 trucks per day depending on the items of works being carried out. The impact of the construction trucks on traffic operations at the signalised intersections of Harbour Street/Liverpool Street and Harbour Street/Day Street will be minimal as the existing traffic visiting Sega World Building will be eliminated after and the construction traffic arriving and departing in any one hour will be low I the context of traffic already travelling through the are.

Implementation of standard RTA Traffic Control Plans will ensure that adequate warnings and guidance are available to other road users, thus minimising the impact.

On Harbour Street, it is proposed to continue closure of the footpath on the western side that is proposed to be implemented during the demolition phase for the duration of the construction works. Pedestrians will use the footpath on the eastern side of Harbour Street to access the footbridges at the northern and southern boundaries of the site.

The signalised pedestrian crossing across Harbour Street at its intersection with Day Street will also be closed. Alternative pedestrian crossing facilities exist at the intersection of Harbour Street/Bathurst Street and also at the Liverpool Street and Bathurst Street footbridges. Pedestrian Way-finding Signage Plan will be implemented to assist pedestrians, especially visitors, in locating alternative pedestrian facilities. In addition there will be no generation of public pedestrian movements by facilities on the site and public movement through the site by pedestrians will not be possible during construction. Pedestrian movements on Harbour Street that would otherwise have occurred on Harbour Street along the frontage of the site would be low.

Therefore the impact on pedestrians will be low.

C. Measures to ameliorate the impact of re-assigned traffic

The construction will not require re-assignment of traffic onto roads that it does not presently use. Trucks warning signage will be installed in Liverpool Street and Harbour Street on the approaches to the site to warn other drivers to anticipate trucks turning in and out of the site.

It is proposed to carry out the very limited works affecting Harbour Street at night when traffic volumes are lower to reduce impact of lane closure on traffic conditions in Harbour Street. Advanced warning signs will be installed in Harbour Street on the approaches from Liverpool and Bathurst Streets to inform drivers of a closed lane.

Pedestrian way-finding signage plan will be implemented to assist pedestrians to locate alternative pedestrian facilities in and across Harbour Street.

D. Assessment of Public Transport service affected

There will be no re-direction of public transport traffic during the project.

E. Details of provision made for emergency vehicles, heavy vehicles, cyclists and Pedestrians.

No change to access for emergency vehicles is proposed. Heavy vehicles will continue to have access along and from Harbour Street, including during lane closures at night.

There is no designated cycle route in Harbour Street. Cyclists will therefore not be affected by the proposed works.

Pedestrian way-finding signage plan, shown in **Figure 4,** will be implemented to direct pedestrians to alternative pedestrian crossing facilities, including signalised crossings and footbridges at Bathurst and Liverpool Streets.

F. Assessment of effect on existing and future developments with transport implications in the vicinity of proposed measures.

The proposed measures will be temporary and the effect on any existing development will be negligible. Future developments will not be affected by the works.

G. Assessment of effect of proposed measures on traffic movements in adjoining Council areas.

The works will have no effect on adjoining Council areas.

H. Public consultation process

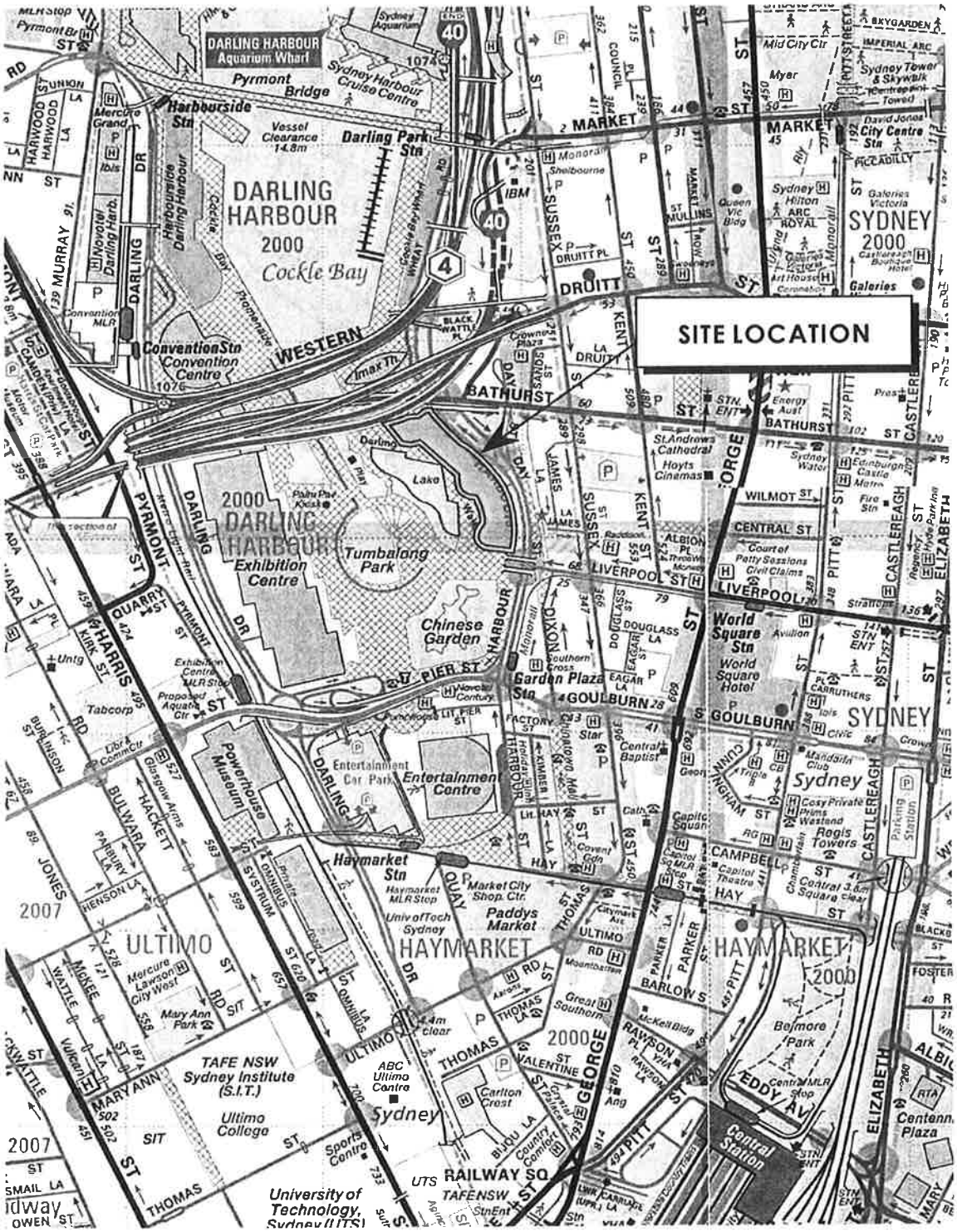
Public consultation will be undertaken in accordance with the conditions of consent. RTA and SHFA will be consulted on the use of Hickson Road for marshalling of trucks. In addition, SHFA will be consulted regarding installation of Hoardings on the western side of the site. Any other parties suggested for consultation by SHFA will be spoken to directly.

The name and telephone number of the Construction Manager are as follows:

Name:	Richard Eaton
Contact (Mobile No):	0408 252 679

SITE LOCATION

DARLING WALK



MASSON | WILSON | TWINEY

TRAFFIC AND TRANSPORT CONSULTANTS

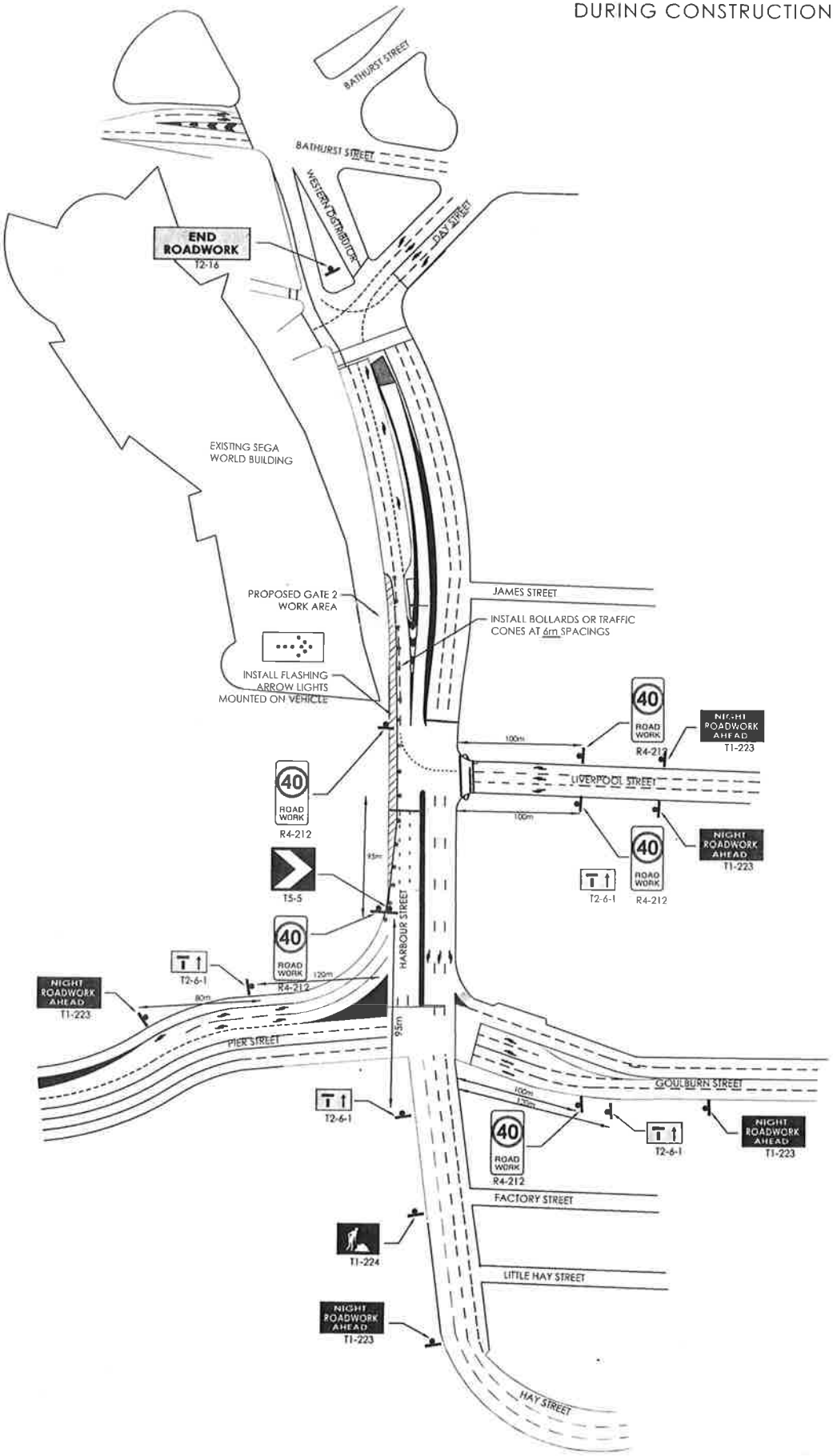
Figure 1

Filename: 073372di01.ai

Date: 2 April 2008

DARLING WALK

TRAFFIC CONTROL PLAN FOR CLOSURE OF KERBSIDE LANE IN HARBOUR STREET DURING CONSTRUCTION OF GATE 2



Scale: N.T.S.

MASSON | WILSON | TWINEY
TRAFFIC AND TRANSPORT CONSULTANTS

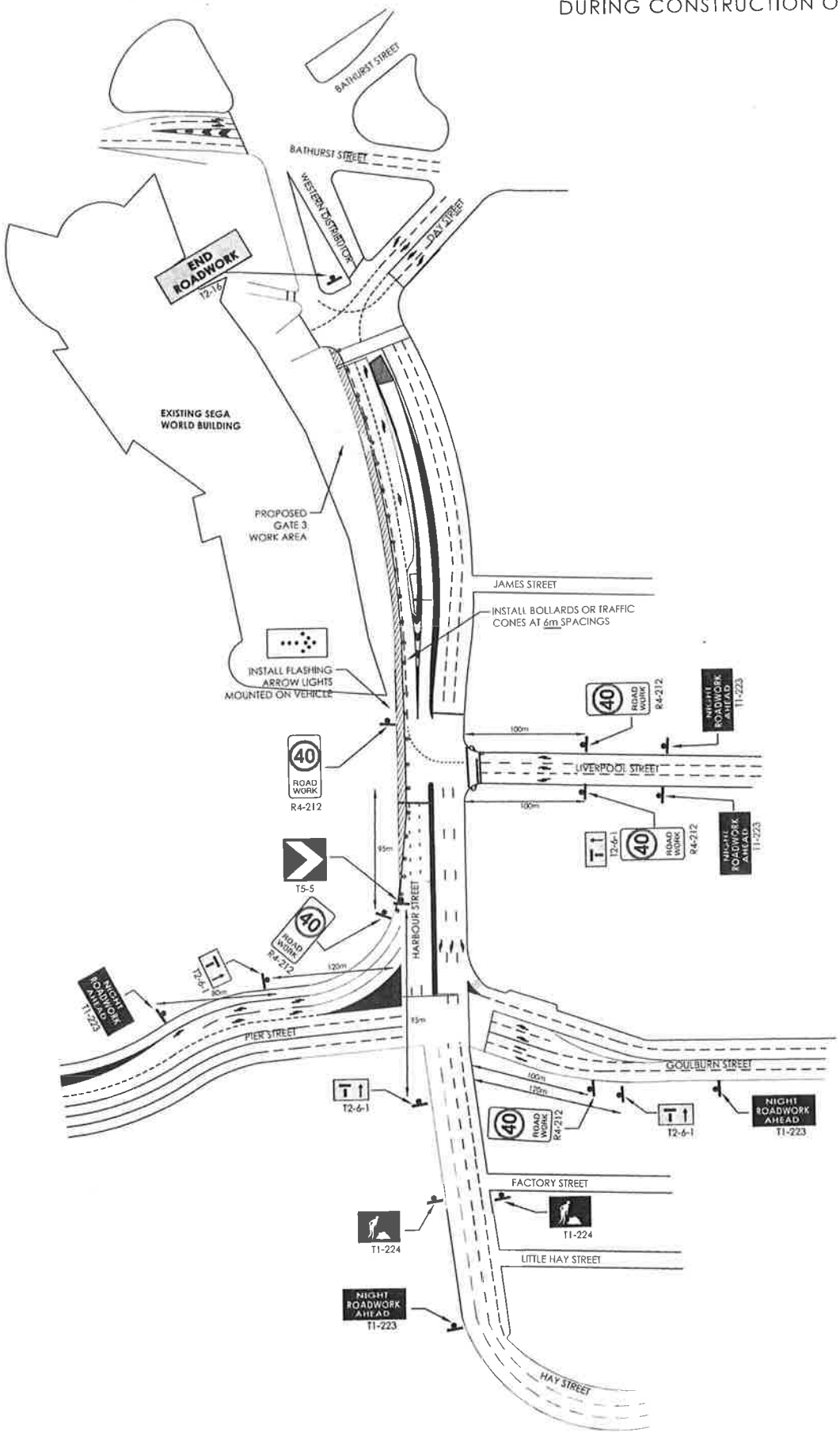
Filename: 073372da30_GATE-2_TMP

Figure 2

Date: 04.April.2008

DARLING WALK

TRAFFIC CONTROL PLAN FOR CLOSURE OF KERBSIDE LANE IN HARBOUR STREET DURING CONSTRUCTION OF GATE 3



Scale: N.T.S.

Figure 3

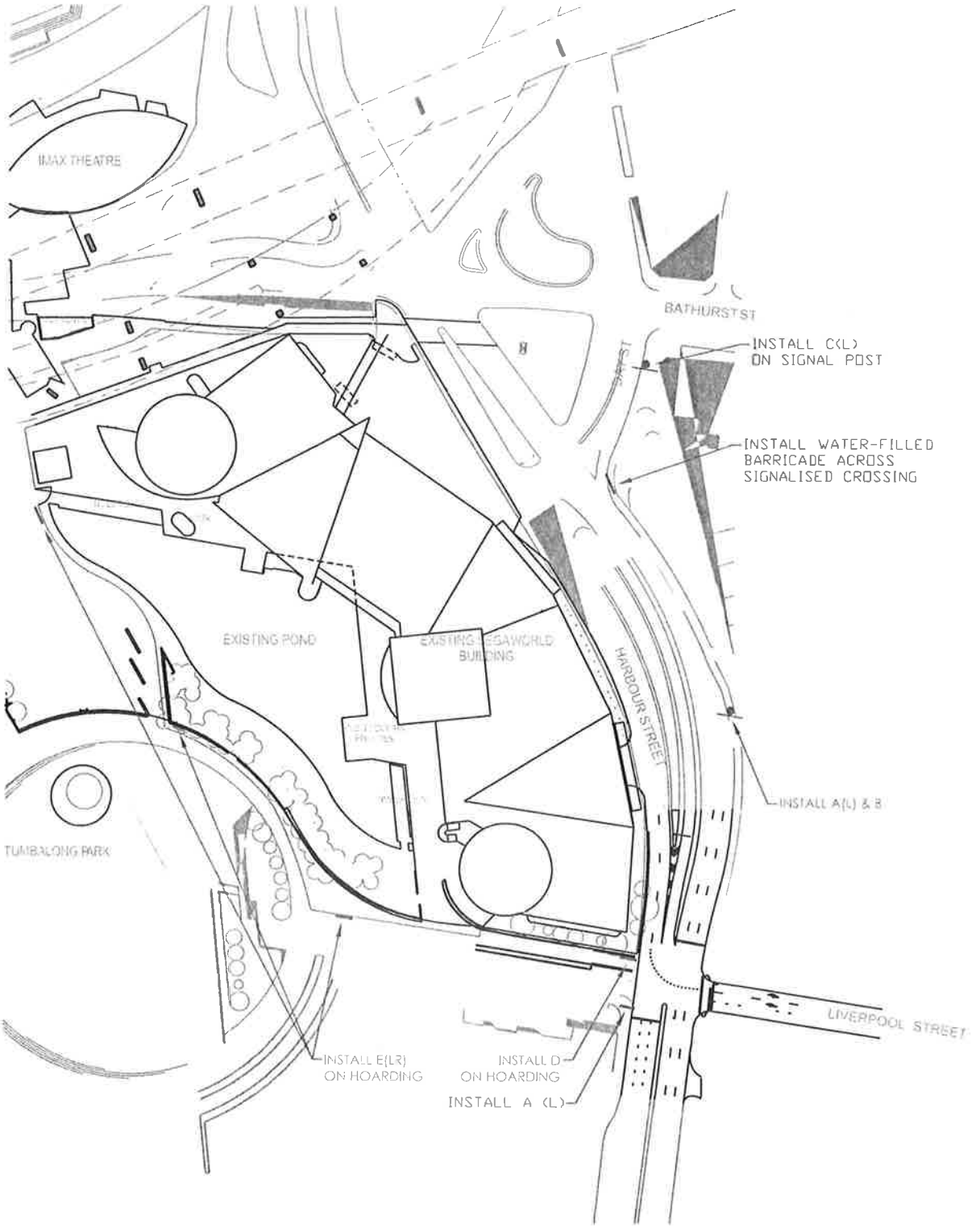
MASSON | WILSON | TWINEY
TRAFFIC AND TRANSPORT CONSULTANTS

Filename: 073372da31_GATE-3_TMP

Date: 04.April.2008

DARLING WALK

PEDESTRIAN WAY - FINDING SIGNAGE PLAN



Scale: N.T.S.

MASSON | WILSON | TWINEY
TRAFFIC AND TRANSPORT CONSULTANTS

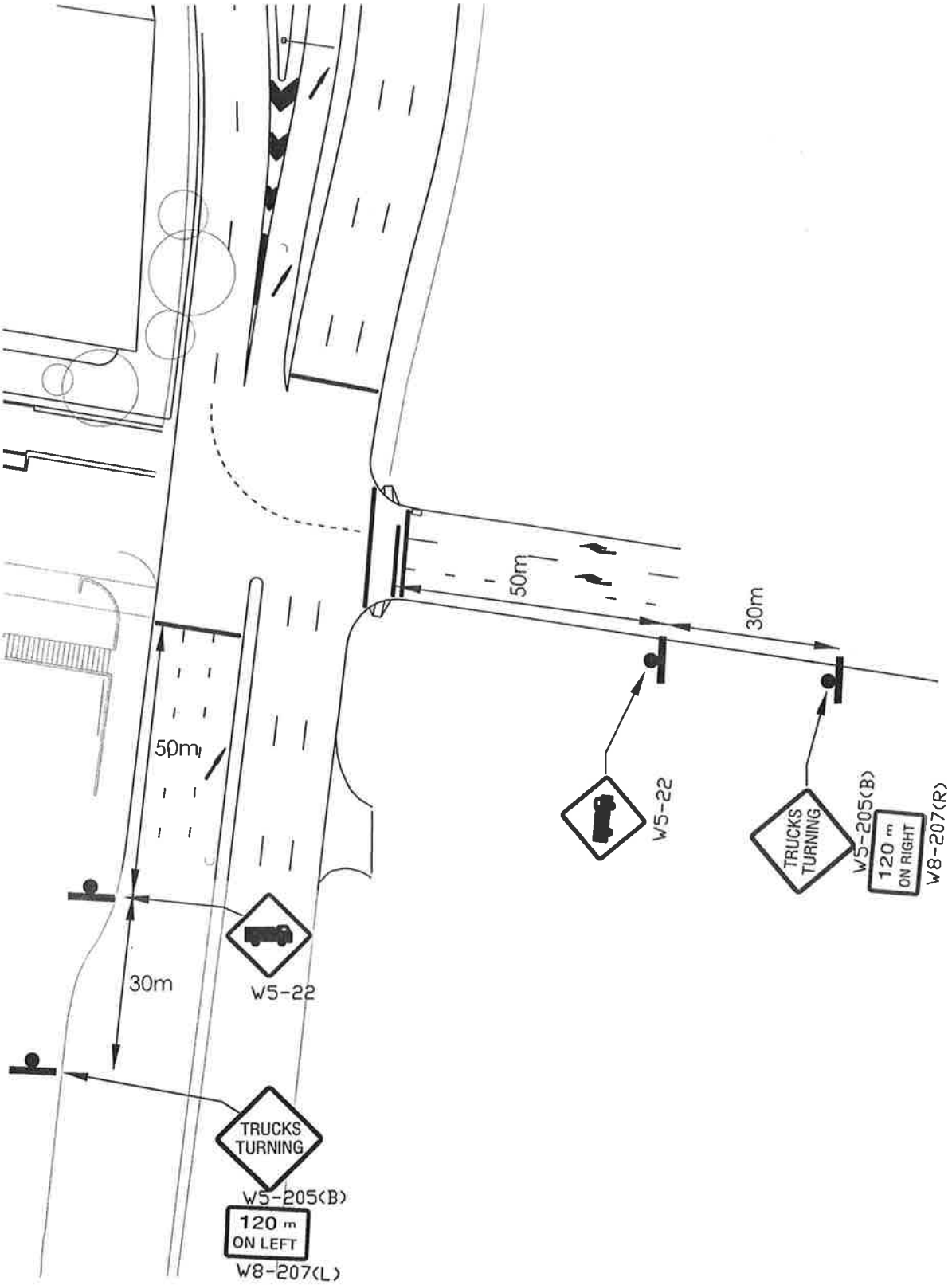
Figure 4

Date: 04.April.2008

Filename: 073372da33 Pedestrian Way finding Signage Plan

DARLING WALK

TRUCK WARNING SIGNAGE PLAN



Scale: N.T.S.

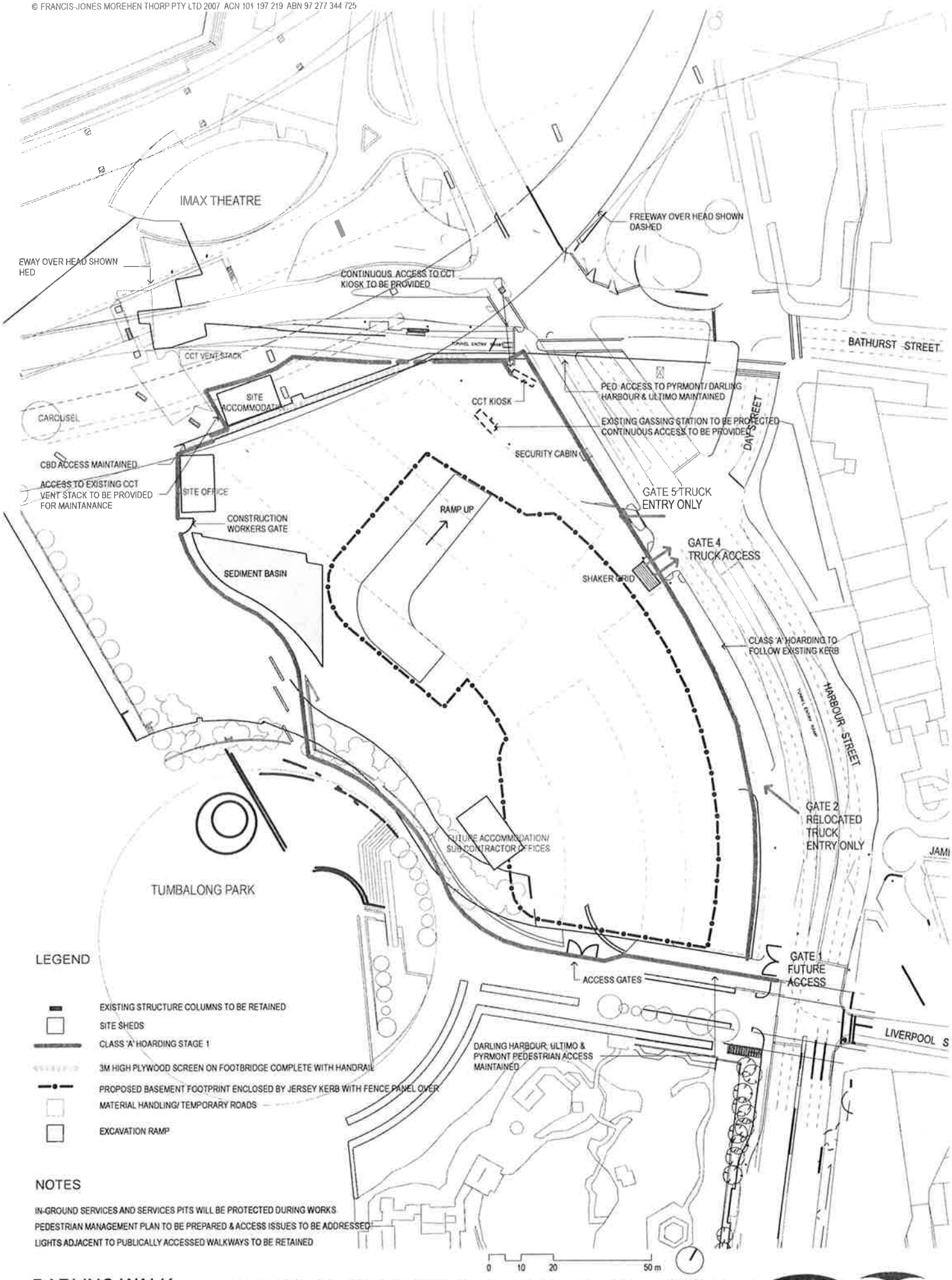
MASSON | WILSON | TWINEY
TRAFFIC AND TRANSPORT CONSULTANTS

Figure 5

Date: 04.April.2008

Filename: 073372da32 Truck Warning Signage

Appendix A - Main Works Establishment Plans



LEGEND

- EXISTING STRUCTURE COLUMNS TO BE RETAINED
- SITE SHEDS
- CLASS 'A' HOARDING STAGE 1
- 3M HIGH PLYWOOD SCREEN ON FOOTBRIDGE COMPLETE WITH HANDRAIL
- PROPOSED BASEMENT FOOTPRINT ENCLOSED BY JERSEY KERB WITH FENCE PANEL OVER
- MATERIAL HANDLING/ TEMPORARY ROADS
- EXCAVATION RAMP

NOTES

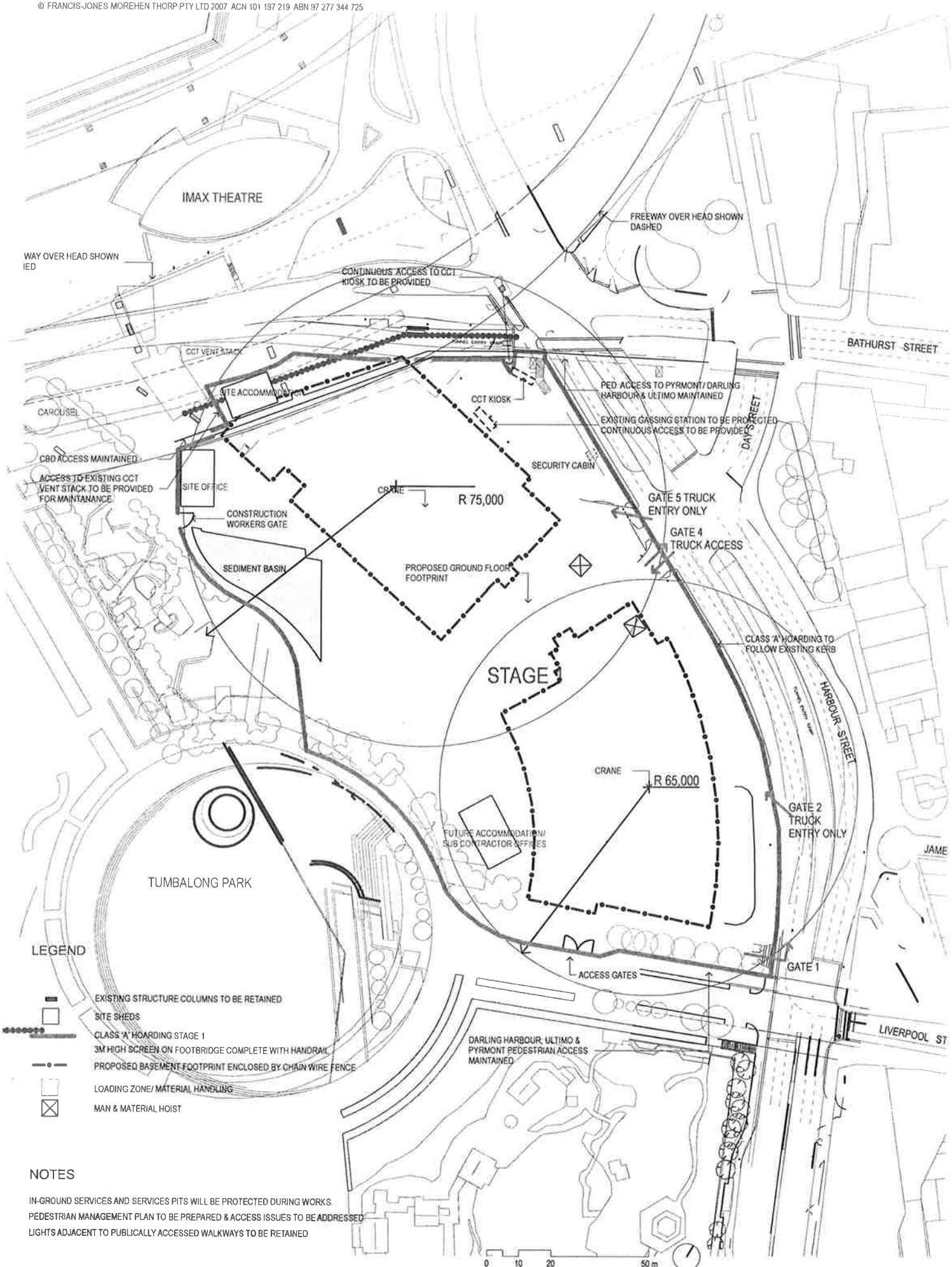
IN-GROUND SERVICES AND SERVICES PITS WILL BE PROTECTED DURING WORKS
PEDESTRIAN MANAGEMENT PLAN TO BE PREPARED & ACCESS ISSUES TO BE ADDRESSED
LIGHTS ADJACENT TO PUBLICALLY ACCESSED WALKWAYS TO BE RETAINED

DARLING WALK

BULK EXCAVATION PHASE PLAN 1:1000 @ A3 17/04/2008 DC 003

PROJECT DOCUMENTATION

fjmt Bovis Lend Lease Lend Lease Development



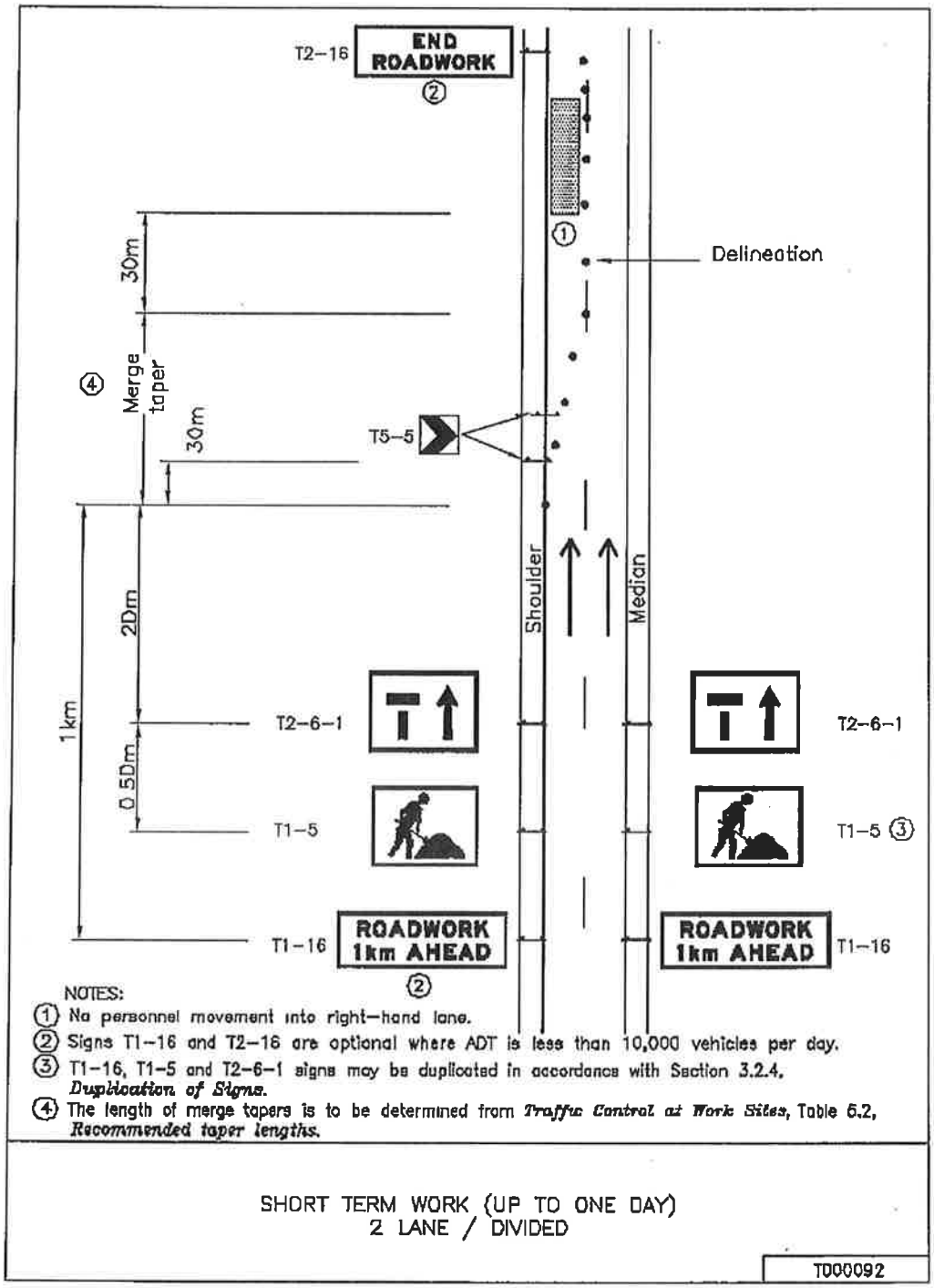
DARLING WALK **MAIN WORKS-ESTABLISHMENT PLAN** 1:1000 @ A3 17/04/2008 DC 002

PROJECT DOCUMENTATION

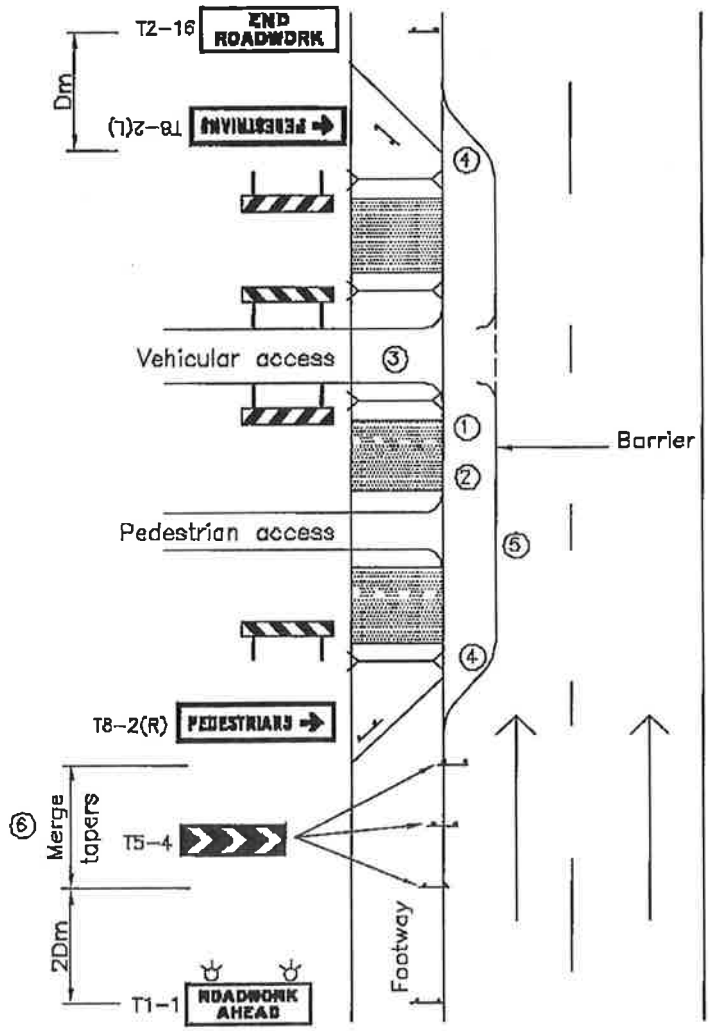
Bovis Lend Lease

Lend Lease Development

Appendix B - Standard TCPs and Symbols


T2–16
END ROADWORK
②
①
Delineation
30m
④ Merge taper
30m
T5–5
Shoulder
Median
2Dm
1km
0.5Dm
T2–6–1
T1–5
T1–16
ROADWORK 1km AHEAD
②
T2–6–1
T1–5 ③
ROADWORK 1km AHEAD
T1–16
NOTES:
① No personnel movement into right–hand lane.
② Signs T1–16 and T2–16 are optional where ADT is less than 10,000 vehicles per day.
③ T1–16, T1–5 and T2–6–1 signs may be duplicated in accordance with Section 3.2.4, *Duplication of Signs*.
④ The length of merge tapers is to be determined from *Traffic Control at Work Sites*, Table 6.2, *Recommended taper lengths*.
SHORT TERM WORK (UP TO ONE DAY)
2 LANE / DIVIDED
T000092

TCP 92



NOTE:

(1) Prohibit vehicles stopping along the length of narrowed carriageway.

(2) Provide a minimum clear width of 1.2m (desirable 2.0m) for pedestrian traffic and a minimum traffic lane width of 3.0m (desirable 3.5m).

(3) Arrange vehicular access across the work area using portable barriers or plastic mesh fencing.

(4) Provide a full width temporary ramp for prams and an all–weather surface on all pedestrian areas.

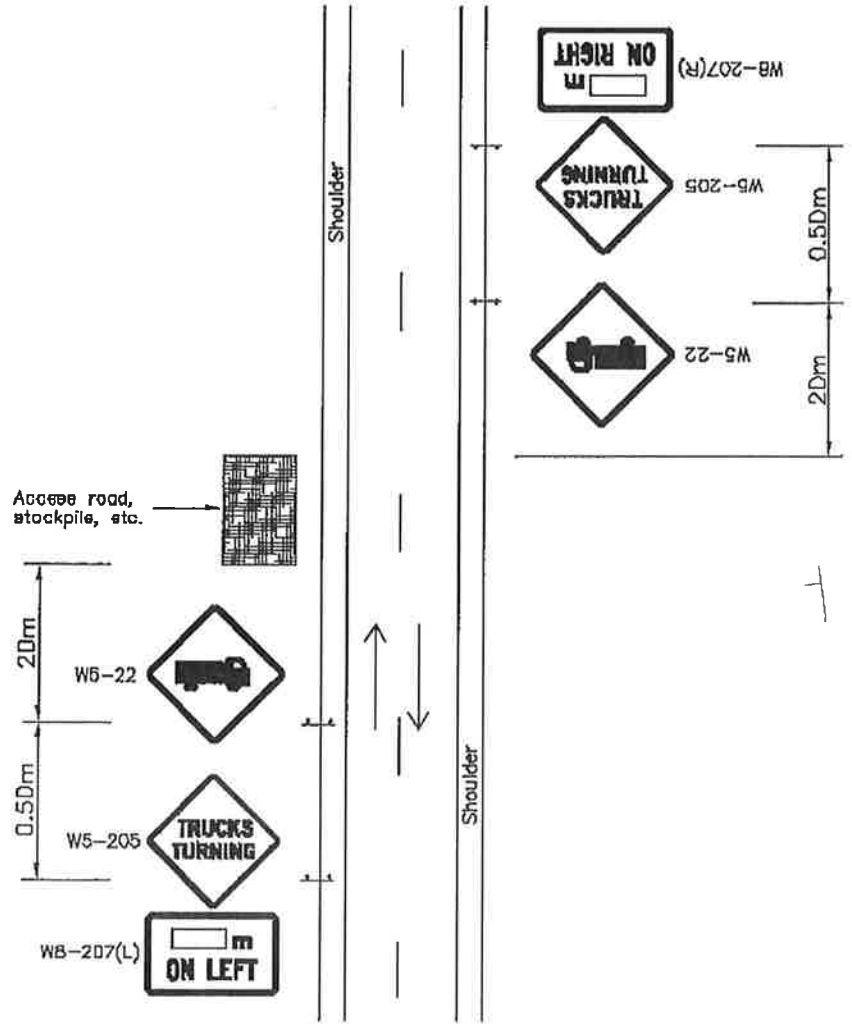
(5) Ensure that the requirements of *Traffic Control at Work Sites*, Section 3.6, *Safe clearances between workers and through traffic*, are met for pedestrians.

(6) The length of merge tapers is to be determined from *Traffic Control at Work Sites*, Table 5.2, *Recommended taper lengths*.

LONG TERM WORK
ALL ROADS
WORK OCCUPY THE FULL WIDTH OF A FOOTWAY

T000109

TCP 109



NOTE:

(1) For use where roadside is generally undeveloped, ADT is more than 1,500 vehicles per day, sight distance is restricted and there are more than 20 truck movements per shift.

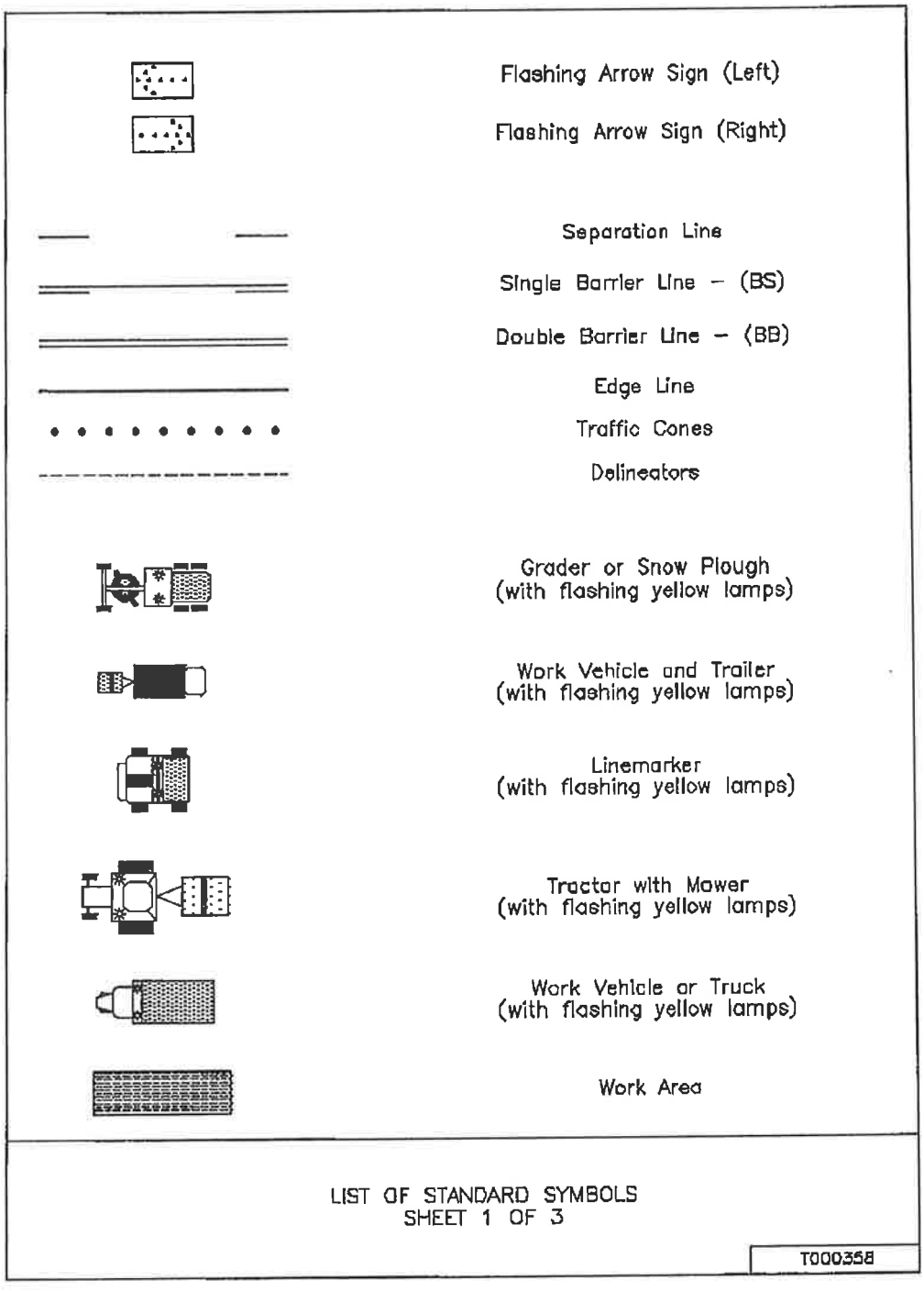
(2) See *Traffic Control at Work Sites*, Section 7, *Providing for works traffic*.

(3) See *Traffic Engineering Manual*, Section 19, *Miscellaneous devices*.

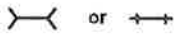
ACCESS TO DEPOT, STOCKPILE, QUARRY, GRAVEL PIT ETC.
ALL ROADS

T000195

TCP 195


Flashing Arrow Sign (Left)
Flashing Arrow Sign (Right)
Separation Line
Single Barrier Line – (BS)
Double Barrier Line – (BB)
Edge Line
Traffic Cones
Delineators
Grader or Snow Plough
(with flashing yellow lamps)
Work Vehicle and Trailer
(with flashing yellow lamps)
Linemarker
(with flashing yellow lamps)
Tractor with Mower
(with flashing yellow lamps)
Work Vehicle or Truck
(with flashing yellow lamps)
Work Area
LIST OF STANDARD SYMBOLS
SHEET 1 OF 3
T000358

T000358

	Antiglare screen
	Barrier Board Position
	Barrier Board
	Daytime Strobe
	Flashing Yellow Lamps (for sign mounting)
	Rotating Flashing Yellow Lamps (for vehicle mounting)
	Traffic Controller
	Reflector Carrier & Spotter
	Sign – single sided
	Sign – double sided
	Traffic Signal Position
	Traffic Signal Display
	Pedestrian Containment Fencing

LIST OF STANDARD SYMBOLS
SHEET 2 OF 3

T000359

T000359

Appendix C - General Notes on Traffic Control Plans

These requirements apply when workers are working within the road reserve.

Standard RTA TCP

- Those requirements shown in the standard RTA TCP's should be referred to by the personnel on site, including signs, advance warning lengths, taper lengths, etc.
- The minimum RTA certification for personnel on site involved in the supervision or installation of temporary construction traffic arrangements should include RTA's "Introduction to Traffic Control at Road works" and "Traffic control Using a Stop / Slow Bat".

Work Clearances

- The RTA Guidelines require a clearance of 1.2m and over between the edge of the work area and the nearest edge of a lane carrying traffic when there is no intervening physical barrier. In addition, to the clearance the following is required as a minimum:
  - A Workers symbolic (T1-5) sign in advance of the work area.
  - Delineation of the edge of the traffic lane with cones, bollards or similar means.

Signs

- T1-5 (digger symbol) must only be used when personnel are on the road and should be covered at other times. This symbolic sign is required at all road works sites.
- Sign size A is considered appropriate on local roads.
- All signs must be kept a minimum of 1m from the travel path.

Nightworks

- Flashing arrow signs are essential at night for lane closures.
- Signs for nightworks should replace standard signs used during daylight
- The work area is to be fully lit by floodlighting
- Cones and bollards used to delineate edge of traffic lane shall have retro-reflective band of Class 1 material.

Excavations

- Excavations shallower than 0.5 metres and within 3.0 metres of the travel path or edge line shall be defined by plastic mesh fencing, barrier boards (perpendicular to the traffic flow), cones, bollards or similar delineation while the adjacent lane is not under traffic control.
- Should the above requirement not be fulfilled, then RTA TCP 108 may be used in lieu of RTA TCP 109.

Delineation

- Barrier boards shall be located at right angle to the travel path or otherwise 4m from the travel path. Cones (at a spacing of 4m) are considered appropriate for day time use however may only be used when personnel are in attendance.
- All work areas should be separated from traffic and pedestrians by a minimum of mesh fencing. When used mesh fencing must be located 1.2m from the travelled path.

Disclaimer

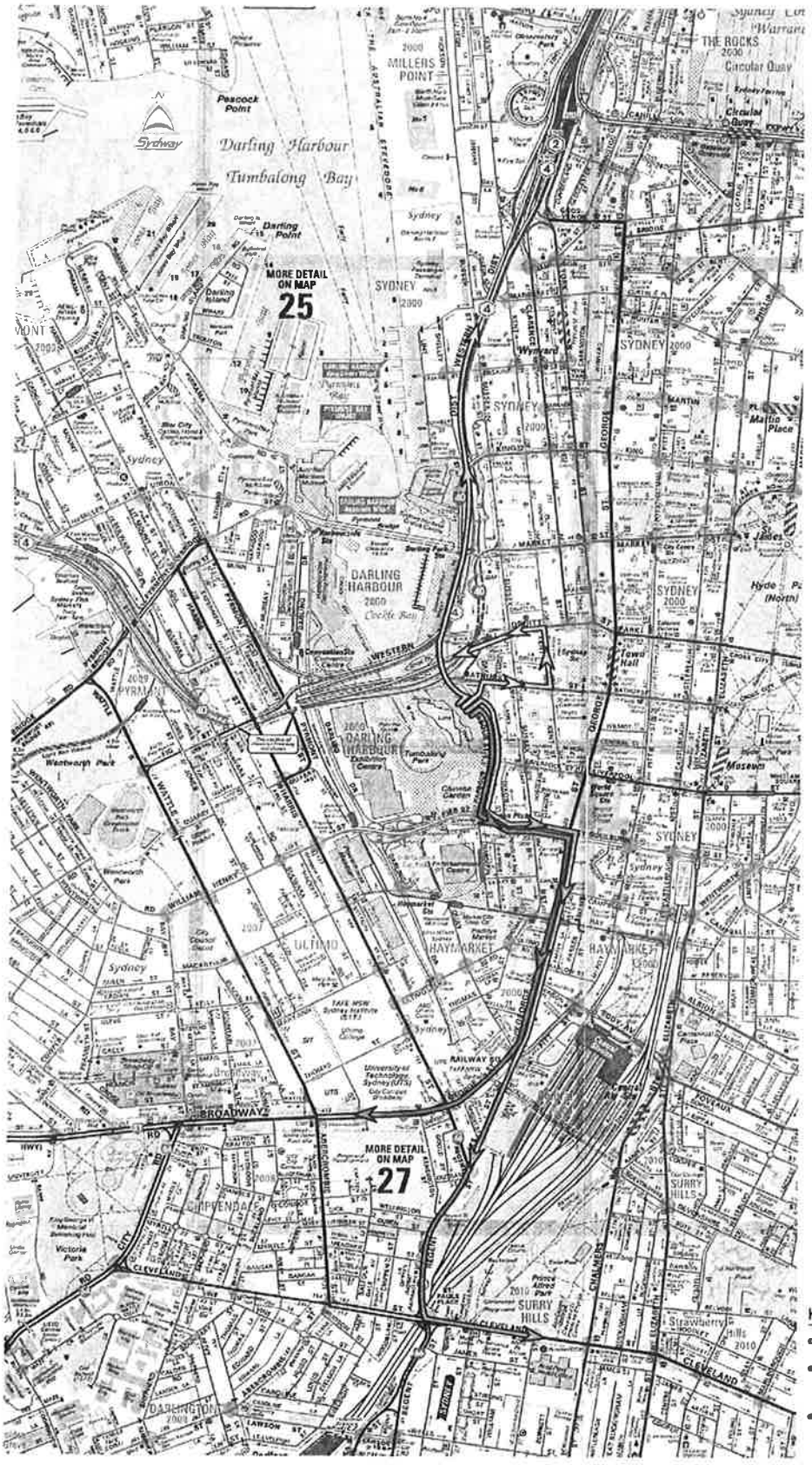
Masson Wilson Twiney Pty Limited and its employees and officers accept no liability for any loss or damage arising as a result of any reliance placed on the information provided. Such liability is hereby explicitly excluded.

This information is general in nature. Detailed information on appropriate training and documentation of work site operations are found in the RTA Traffic Control at Work Sites 2006, Australian Standard Documents and associated Work Site Manuals. Traffic Control at work sites must be undertaken with specific reference to Work cover Requirements and the Companies own Occupational Health and Safety Manuals.

Appendix D - Routes of Construction Trucks

TRUCK ROUTES DURING BULK EXCAVATION

DARLING WALK PROJECT



MASSON | WILSON | TWINEY

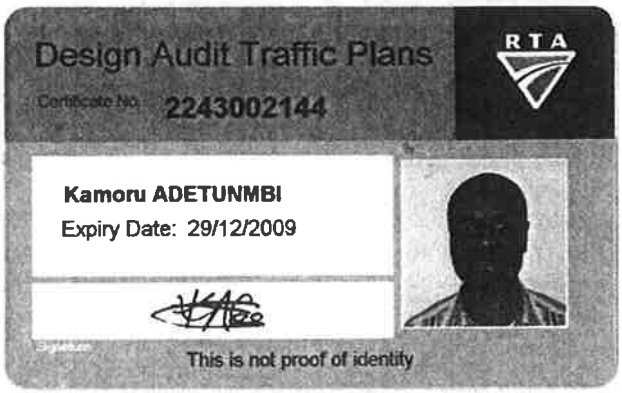
TRAFFIC AND TRANSPORT CONSULTANTS

Figure 1

Filename 073372di05.ai

Date 11 June 2008

Appendix E - Traffic Planning Certificate


Design Audit Traffic Plans
RTA
Certificate No. 2243002144
Kamoru ADETUNMBI
Expiry Date: 29/12/2009
Signature
This is not proof of identity

Appendix F - Stormwater Diversion Works TMP

Stormwater Diversion Works TMP

Introduction

Traffic and pedestrian management plans for demolition of the Sega World Building and for main construction of the new development were prepared by Masson Wilson Twiney on behalf of Bovis Lend Lease Pty Ltd.

As part of the construction of the new building it is necessary to carry out the diversion of a stormwater culvert that presently crosses the site onto a route around the site and then join an upstream section of the existing culvert.

This report forms a component of the Development Application for the proposed stormwater diversion works from the public domain on the western side of the Sega World Building, in the access way between the two Liverpool Street footbridges and to the western footpath of Harbour Street.

1.1 Description of the Works

The stormwater diversion works involve diversion of the existing stormwater pipe that runs from the pond in the public domain area on the western side of Sega World, then under the Sega World Building, to the western footpath of Harbour Street. In order to construct the basement carpark, it will be necessary to remove the section of the pipe under the Sega World building and divert this pipe around the site. The new culverts will be laid in trenches with depths varying from 2.7m to 4.7m. There will also be miscellaneous delivery and pick-up of excavators, shoring and rollers or compacting equipment.

The works will involve:

- Excavation of trenches and loading of around 3,000m^3 of spoil into approximately 300 trucks for disposal in landfill
- Casting of concrete culvert bases in-situ – around 30 truckloads of concrete will be required
- Installation of pre-cast crowns – around 25 truck deliveries will be required
- Filling of trenches with selected backfill or pavement material – around 60 truck deliveries will be required.

- Mobile crane – approximately 20 visits to lift in pre-cast crown units.
- Miscellaneous trucks (excavators/shoring/plant/sundry materials) – 30 trucks

1.2 Vehicle Types

Construction vehicles likely to be generated by the proposed construction activities include:

- articulated vehicles for delivery of machinery,
- heavy and medium rigid trucks for construction or excavation material delivery or removals,
- concrete pumps, and
- contractor vehicles and delivery vans

In general, all construction vehicles will park on-site while carrying out loading and unloading. The exception to this will be for work on Harbour Street. There will be no parking of staff cars in the site. Some staff will come by public transport as the site is located within walking distance of major public transport facilities, including train stations, monorail stations and STA bus stops. The workers who require parking for their cars will be able to park in the public pay parking stations available in the vicinity of the site.

1.3 Construction Vehicle Access Routes

Access routes for construction vehicles would depend on the location of works, and these are described as follows:

- Works in the Darling Harbour Public Domain Area and in the area between footbridges:
  - Construction/deliver trucks will either enter site directly from Liverpool Street or turn left from Harbour Street.
  - Exiting trucks will turn left into Harbour Street and either travel north via the Harbour Bridge or turn right into Day Street depending on the destination.
- Works within the Construction Site:
  - Construction/delivery trucks will enter the site from Harbour Street
  - Exiting trucks will turn left into Harbour Street, right into Harbour Street or into Day Street depending on the destination.

1.4 Construction Traffic Volumes

The number of trucks visiting the site during the 18 weeks of stormwater diversion works is estimated to be as follows:

• Spoil from excavation	300 trucks
• In-site concrete bases	30 trucks
• Precast crowns	25 trucks
• Backfill or road base	100 trucks
• Cranes	20 trucks
• Miscellaneous	30 trucks
• Total	505 trucks

This is equivalent to an average of around six trucks per day, and a maximum of ten trucks per day.

It is noted that the works will be carried out simultaneously with the demolition of the Sega World Building during which 30 trucks per day will visit the site. In combination, the demolition and stormwater works will generate a total of about 40 trucks per day.

2. Traffic Impacts of the Works

2.1 Impact of Construction Traffic

Harbour Street currently carries around 1,200 vehicles per hour in each direction during the morning and evening peak hours. These include some vehicles travelling to the Sega World complex which would cease when construction works commence. Compared with the background traffic on Harbour Street, the combined volume of demolition and stormwater diversion traffic would be minimal.

Accordingly, the estimated maximum truck generation of 40 trucks per day (demolition and stormwater works) would have minimal impact on traffic operation in Harbour Street.

2.2 Pedestrian Access

Pedestrian access along the western footpath of Harbour Street will be closed during the construction works as described in the MWT Main Traffic Report.I

Western Side:

Pedestrians walk in the public domain area between the Sega World building and the pond and also between the pond and Tumbalong Park. Although hoardings will be installed along the western frontage of the site, access will be maintained for pedestrians on the eastern side of Tumbalong Park and along the eastern side of the children's playground.

Northern Side

Pedestrians walk from Bathurst Street across the footbridge into the Sega World building and along the western side of the building. This pedestrian footbridge will remain open to pedestrians during the works. However access to Sega World from the footbridge will be closed by A Class Hoarding.

Southern Side

Pedestrians walk from Liverpool Street across the Liverpool Street footbridges to the public domain area west of the site. Access for pedestrians will continue to be available via the Liverpool Street footbridges.

Pedestrians also walk along the footpath in Harbour Street and enter Tumbalong Park via the at-grade pedestrian access between the two footbridges in Liverpool Street. The stairs from the Harbour Street footpath up to the southern Liverpool Street footbridge will remain open for these pedestrians. Pedestrians with walking difficulties who may not be able to use these stairs will be directed to use the at-grade access to the Chinese Gardens via the northern footpath of Pier Street, around 100m to the south. Advisory signs will be placed at the corner of Pier Street and Harbour Street and also south of Liverpool Street.

3. Assessment of Traffic Management Plan

An assessment of the traffic impacts of the stormwater diversion works has been undertaken in accordance with the RTA Guidelines for preparing a traffic management plan. The required assessment of the Traffic Management Plan is provided below.

A. Description or Detailed Plan of the Proposed Measures

The stormwater diversion works generally include the following:

- Excavation of trenches and loading of around 3,000m^3 of spoil into approximately 300 trucks for disposal in landfill
- Casting of concrete culvert bases in-situ – around 30 truckloads of concrete will be required
- Installation of pre-cast crowns – around 25 truck deliveries will be required
- Filling of trenches with selected backfill or pavement material – around 100 truck deliveries will be required.
- Cranes – 20 trucks
- Miscellaneous deliveries – 30 trucks

The Class-A Hoardings installed for demolition of the site will necessitate closure of footpath. Some aspects of the work will also require closure of the at-grade pedestrian access into Tumbalong Park from the western footpath of Harbour Street.

Standard RTA Traffic Control Plans (as required) are recommended in accordance with AS1742.3 and RTA Guidelines. The traffic control plans will be implemented to inform the public and minimise impact of the works.

B. Identification and Assessment of Impact of Proposed Measures

During the stormwater works, the number of construction trucks expected to visit the site will be a maximum of 10 trucks per day. The impact of the construction trucks on the operation of the signalised intersections of Harbour Street with Liverpool Street and Day Street will be minimal as the existing traffic visiting the Sega World Building will be eliminated on commencement of demolition.

Implementation of standard RTA Traffic Control Plans will ensure that adequate warnings and guidance are available to other road users, thus minimising the impact.

On Harbour Street, it is proposed to close the footpath on the western side for the duration of the works. Pedestrians will use the footpath on

the eastern side of Harbour Street to access the footbridges at the northern and southern boundaries of the site. The at-grade pedestrian access from Harbour Street to Tumbalong Park will also be closed to pedestrians when work is carried out between the two Liverpool Street footbridges. Alternative at-grade access to Tumbalong Park is available via the footpath in Pier Street, about 100m south of the closed access.

The signalised pedestrian crossing across Harbour Street at its intersection with Day Street will also be closed. Alternative pedestrian crossing facilities exist at the intersection of Harbour Street and Bathurst Street and also at the Liverpool Street and Bathurst Street footbridges. A pedestrian way-finding signage plan will be implemented to assist pedestrians, especially visitors, in locating alternative pedestrian facilities. Therefore the impact on pedestrians will be low.

The impact of the proposed lane closures on the operation of the intersection of Liverpool Street and Harbour Street has been assessed. When two northbound lanes will be closed, the impact was found to be low if night working hours are limited to 9:00pm to 7:00am. When only one northbound lane is closed, the traffic operation at 8:00pm is acceptable and longer working hours from 8:00pm to 7:00am are proposed.

C. Measures to Ameliorate the Impact of Reassigned Traffic

As part of the demolition traffic management plan, warning signage will be installed in Liverpool Street and Harbour Street on the approaches to the site to warn other drivers to anticipate trucks turning in and out of the site.

It is proposed to carry out the works affecting northbound traffic in Harbour Street at night when traffic volumes are lower, to reduce impact of lane closures on traffic conditions in Harbour Street. The hours of work will be limited to between 9:00pm and 7:00am when two northbound lanes are closed, and between 8:00pm and 7:00am when only one northbound lane is closed. Advance warning signs will be installed in Harbour Street on the approaches from Liverpool Street and Bathurst Street to inform drivers of closed lanes.

A pedestrian way-finding signage plan, shown in **Figure 3**, will be implemented to assist pedestrians to locate alternative pedestrian facilities in and across Harbour Street.

D. Assessment of Public Transport Services Affected

There will be no re-direction of public transport traffic during the project.

E. Details of Provision for Emergency Vehicles, Heavy Vehicles, Cyclists & Pedestrians

No change to access for emergency vehicles is proposed. Heavy vehicles will continue to have access into Harbour Street, including during lane closures at night.

There is no designated cycle route in Harbour Street. Cyclists will therefore not be affected by the proposed works.

A pedestrian way-finding signage plan will be implemented to direct pedestrians to alternative pedestrian crossing facilities, including signalised crossings and footbridges at Bathurst Street and Liverpool Street.

F. Assessment of Effect on Existing and Future Developments with Transport Implications in the Vicinity of Proposed Measures

The proposed measures will be temporary and the effect on any existing development will be negligible. Future developments will not be affected by the works.

G. Assessment of Effect of Proposed Measures on Traffic Movements in Adjoining Council Areas

The works will have no effect on adjoining Council areas.

H. Public Consultation Process

Public consultation will be in accordance with the conditions of consent. RTA and SHFA will be consulted on the use of Hickson Road for marshalling of trucks. In addition, SHFA will be consulted regarding the installation of hoardings on the western side of the site.

Bovis Lend Lease will consult with NSW Police Service regarding alternative parking arrangement at James Street during the Item 4 works, as the area is currently used for parking of staff cars.

The name and telephone number of the Construction Manager are as follows:

Name:	Richard Eaton
Contact (Mobile No):	0408 252 679

Appendix 3

BLL Waste Management Plan

Darling walk
Waste Management Plan

Objectives

The objectives of the Waste Management Plan are based on the hierarchy of avoidance/reduce, re-use, recycle, treat and dispose as outlined in the National Waste Minimisation and Recycling Strategy.

To re-use and/or recycle a minimum of 80% of all Hard Waste Material, and Soft Waste Material generated on the construction site, thus achieving up to 80% reduction/avoidance in waste to landfill.

Best Practice should be adopted wherever possible, to achieve waste minimisation and reduction. Key areas that will be targeted in the Waste Management Plan are:

- To avoid, whenever possible, the generation of wastes
- Demolition Materials (including hazardous building materials i.e. asbestos)
- Construction Materials
- Domestic & Human Waste
- Wastewater
- Litter generation due to construction activities

In addition the project will:

- liaise with Subcontractors 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; and
- Protect the safety and health of our employees, site personnel and the public.

Key Management Issues

The waste management strategy has been developed from best practice models. 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 “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 use. The use of 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 BLL and filed in the site records for verification purposes.

Site Controls

Planning

A Waste Management Contractor **or subcontractor** will be involved in the early stage of the project to ensure effective planning for the waste management.

Major Subcontractors will be asked to submit prior to commencement on site waste minimisation details including 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; and
- 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.

Site set up should include measures to prevent litter entering the stormwater drains and waterways feeding to the adjacent.

Waste Management will be addressed at any or all of the design coordination meetings.

A Waste storage and Handling Diagram Waste will be prepared for the site showing details of the designated storage locations of segregated waste, water / washout waste etc.

Pre Construction Phase:

Demolition

Specialist subcontractors will be used to remove classified material identified in a Hazardous Materials Buildings Survey that is to be performed on-site prior to demolition works commencing. These materials will be removed separately first and disposed of in accordance with relevant Authority requirements once all this material is removed a qualified Occupational Hygienist will provide certification that all classified material has been removed.

Demolition of the remaining components of the existing buildings will be conducted in a manner to maximise material recycling.

A demolition strategy will be developed and further consideration of sorting and segregating waste for reuse and disposal will be defined as the project progress.

(Describe these strategy or actions).

. Summaries of recycled material will be sent to Bovis Lend Lease monthly. Steel, copper, aluminium will also be stockpiled individually and recycled in the same manner through a scrap metal merchant.

- Non-hazardous miscellaneous strip out material will be stockpiled on site and then taken directly to a landfill. When arriving at the landfill site, the material will be weighed at a weighbridge. Dockets from the landfill site will then be made available for Bovis Lend Lease. Summaries of recycled material will be sent to Bovis Lend Lease monthly.

Waste Materials Bin System

The demolition and construction waste management system to be adopted on site will be through the use of a dedicated skip or Otto bins which will be removed of site to an approved waste depot.

The Subcontractors will be responsible for the daily cleaning of their respective work areas and placing of their waste in the supplied Otto bins.

Additional bins will be provided where possible to further separate waste. Adequate number of litter bins is made available within the construction site areas, including work and lunch areas. These bins must be regularly emptied.

The Subcontractors working on site will place all their waste in the Otto bins on site.

If a particular bin is found to be "contaminated" by waste material from a subcontractor that particular Subcontractor will be liable for the cost associated with tipping or sorting of waste.

Waste Water / 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 BLL guidelines/management plan 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 subcontractor'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.

Refer to tender interview checklist.

Recycled Materials

Suppliers will be encouraged to nominate products that include a recycled component and ability/opportunity for recycling of unused components in accordance with the specified 80% waste reduction target. Product selection will include a selection factor associated with recyclables and percent of recycled product.

Domestic & Human Waste

All domestic waste including litter will be managed via a similar bin system that will be provided in the vicinity of designated eating areas, kiosks and kitchen. Materials collected for recycling should include:

Construction and demolition waste bins and domestic waste bins will be located in separate designated areas on the site to ensure appropriately safe storage and collection of waste. Waste areas will be clearly signposted and colour coordinated to define acceptable waste types suited for each bin and secured where required. The location of the waste bins and recycling areas will be marked on the site waste management plans located on site.

All human waste and associated waste water will be collected via the provision of existing toilets

Training

Communication and education material on the waste management system will be part of the Site Environmental Awareness Program that will be incorporated into the site induction program.

Additional third party training will be investigated when a waste contractor is nominated.

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

Performance Measures

- A Waste Management Contractor **or subcontractor** will be involved in the early stage of the project to ensure effective planning for the waste management.
- The Waste Management Contractor **or subcontractor** will coordinate waste recycling, recovery and disposal of all waste during all stages of the project.
- The waste system (bins / signage / training) is in place prior to any major waste generation works.
- All waste transportation and disposal documentation to be maintained on-site and signed as received or disposed by the appropriate contractor or waste receiving facility.

- Destination of all wastes to be approved by the receiving waste facility prior to the commencement of works.

Monitoring and Reporting

The Waste Management Contractor will be responsible for providing monthly reports to the SM: the number and size of bins taken away, tonnages and m^3 taken away and tonnage's and m^3 recycled. This will include the final destination of materials for recycling.

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

The SM will produce monthly reports and other statistic information as per BLL EH&S requirements.

The BLL Project EH&S Manager will formally audit the progress on waste management from the above monthly reports to ensure waste reduction targets are met and appropriate waste documentation maintained.

Correctives Actions

Non-conformances are to be recorded by way of the System Defects.

The Subcontractor and BLL SM/CM if applicable 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 CM.

It is the responsibility of the CM to immediately initiate corrective actions following approval. The non-conformance and corrective action must include details of the action proposed; desired performance target and action close out date. The system defects report should be signed, dated and filed.

All corrective and preventative action taken by the Subcontractor will be carried out by and at the cost of the Subcontractor.

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

Waste Management Implementation Plan

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
Waste Identification					
A Waste storage and Handling Diagram Waste will be prepared for the site showing details of the designated storage locations of Segregated waste, water / washout waste etc.	Prior to works commencing	In accordance with the Waste Management Plan.	CM/SM	Review of Diagram prior works commencing.	Diagram Map prepared & containing all relevant details.
Hazardous building materials to be identified in Hazardous Materials Building Survey	prior demolition works commencing	Independent surveyor to prepare a Hazardous Materials Register	CM	To be reviewed by PM and incorporated into WMP.	Preparation of a functioning HazMat Register for building materials.

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
Project waste types to be identified and quantified.	Prior to works commencing	Coloured bins will be supplied for the nominated waste streams in accordance with the Waste Management Plan.	CM/ PM	To be reviewed by PM and incorporated into Waste Management Plan.	List of relevant waste streams and volumes from construction & demolition.
Waste Disposal					
Remove all hazardous building materials off-site.	Prior demolition works	Appropriately licensed contractor to remove and transport waste to licensed landfill	SM	Air quality monitoring daily. Clearance Survey by hygienist as required.	Non detect asbestos during ambient air monitoring. Landfill disposal dockets.
Segregation and storage construction/ demolition and domestic waste prior off site disposal.	At all times	Waste contractor to address and follow legislative requirements.	SM	Weekly inspection of Waste Collection Areas.	No cross contamination of wastes. No spillage or loss of wastes from collection containers in storage compound. Waste Dockets.
Transport and handling of demolition/ construction waste and domestic waste by licensed contractors.	At all times	Only approved contractor to be used. Appropriate SWMS for transportation of waste	SM	Random inspection of waste transport licenses. Random inspection of waste transport vehicles.	Correct covers and containers for waste transfer. No spillages/loss of waste during transport.
Demolition/ construction and domestic waste disposal to correct licensed waste receiving facilities.	All times	Only approved waste receiving facilities to be used.	SM	Waste classification reports. Inspect as required.	Waste disposal dockets correspond to waste types/ volumes.
Disposal of excavated fill materials deemed for off-site disposal.	Prior construction	Waste soils (if any) classified in accordance with relevant authority Guidelines (e.g.: DEC, EPA etc). Licensed waste contractor and landfill used	SM	Waste classification reports. Inspect as required.	Waste disposal dockets correspond to waste types/ volumes.
Collection and storage of wastewater from site operations (i.e. paint washing) or temporary facilities (i.e. toilets).	At all times.	Design and installation of appropriate wastewater collection/storage system.	SM	Weekly inspection of bunds, drains and sumps.	No wastewater spills or uncontrolled discharges.
Appropriate disposal of all wastewater from site operations (i.e. paint washing) or temporary facilities (i.e. toilets).	At all times	Collection and disposal of wastewater by approved licensed contractor	SM	As required	Waste disposal dockets correspond to waste types/ volumes.

Control	Timing	Methodology	Responsibility	Monitoring and Reporting	Performance Measure
Recycling					
Waste building or demolition materials (i.e. concrete, timber, steel, etc) to be segregated and stored in separate site bins.	All times	Appropriately designed waste storage areas with designated recycling bins.	SM	Weekly inspection	Clean waste bin area. No cross contamination of waste types.
Segregated waste building/demolition materials are appropriately recycled.	All times	Approved waste recycling contractor to collect bins for recycling.	SM (Environment Manager if appropriate)	Established collection schedule. Audit actual recycling volumes compared to waste recycling targets (%).	Waste recycling dockets. Waste recycling targets are met.
Minimisation					
Excavated material to be reused or recycled where possible.	As required	Independent contractor to test soils for environmental/ geotechnical parameters.	CM/SM	Soil testing report to confirm suitability for re-uses. Review by Environment Manager.	No contaminated soils re-used on site.
Any fill imported onto the site is to consist of certified clean material only	As required	Indentation of material	CM/SM	Certificate of suitability.	Certificate provided prior to bring to site.
Minimise packaging and maximise use of recycled products by contractors.	At all times	Review contractor materials and packaging proposals	CM/SM	Inspect material deliveries/ specifications.	Proven examples of minimal packaging and recycled materials.
Site Offices					
Recycling bins shall be provided with the site working area.	As required	Coordinated with existing operational facility	CM/SM	Ensure waste is disposed in accordance with existing operations	monthly EH&S Managers review
Site amenities shall be provided on-site as required	Prior to works commencing	Coordinated with site population numbers	CM/SM	Ensure waste is disposed in accordance with existing facilities requirements	all waste disposed of appropriate

A Waste storage and Handling Diagram of the site showing details of the designated storage locations of Segregated waste, water / washout waste etc.

Not only the levels of contamination present, but also the feasibility of various remediation options and the capacity of the site for re-use of any materials.

Training

Communication and education material on the contaminated land and schedule wastes will be part of the Site Environmental Awareness Program that will be incorporated into the site induction program.

Performance Measure

- Retain all copies of tipping and disposal documentation to be supplied to BLL and filed with site records.

Corrective Actions

Non-conformances are to be recorded by way of the System Defects.

The Subcontractor (and EM/ CM/ SM if applicable) 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 CM.

It is the responsibility of the Environment Manager (EM) to immediately initiate corrective actions following approval. The non-conformance and corrective action must include details of the action proposed; desired performance target and action close out date. The system defects report should be signed, dated and filed.

All corrective and preventative action taken by the Subcontractor will be carried out by and at the cost of the Subcontractor.

Key Management Issues

Site Controls

A Waste storage and Handling Diagram Waste be prepared for the site showing details of the designated storage locations of segregated waste, water / washout waste etc.

PAINT WASTE MANAGEMENT PLAN

Objectives

To eliminate damage to the environment caused by disposal of paint and associated wastes

To implement appropriate controls to eliminate damage to the environment caused by disposal of paint and associated wastes.

Key Management Issues

The proposed development will include the construction and fit-out of **Darling Walk** as part of the works, the building **partitions, ceilings core and perimeter walls, columns and doors and frames.** As a result, appropriate environmental safeguards are required to ensure that no uncontrolled discharges paint waste and/ or washout occurs from the site and impacts off-site sensitive receptors including waterways (Environmental Class P1 Risk).

In addition to the above, all disposal documentation from construction processes will be obtained from contractors and retained by BLL in the site records for verification purposes.

Site Actions

All paints and associated products are to be stored appropriately to ensure the elimination of damage to the site environment or potential sensitive receptors located off-site.

Paint storage areas are to consist of the following components;

- Secure / lockable area where paints can be stored without risk of vandalism, theft or damage.
- Appropriate washout facilities as described below.

- In the case of enamel paints and thinners, a fire extinguisher is to be stored in the storage area.
- The area is to be well ventilated.

Paint washout facilities are to consist of the following components;

- Water and recycled water storage (approx 10 litres).
- Spinning drum for acrylic paints.
- Spinning drum for enamel paints.
- Enamel paint filter and recycled turpentine storage.
- Paint residue and clean out wastes.
- Empty drum storage for return to the manufacturer.

Procedure for cleaning acrylic based paints.

- Designated painting equipment per type and colour of paint used on the project.
- Transfer as much paint as possible from rollers, brushes and trays back into paint containers at the end of the day or job.
- Clean paint trays with cloth or paper. Do not wash in water. Dispose of cloth or paper as clean out waste in the nominated waste bin located in the paint washout area.
- Place the roller sleeve into a COVERMATE canister, and fill with the appropriate amount of water as specified by the manufacturer, and shake. Replace the canister in the designated location in the paint storage area.
- Place brushes into storage tin filled with water or recycled water.
- On commencement of the next roller application, remove the roller from the COVERMATE canister and spin off into the appropriate spinning drum. The roller sleeve is now ready for use.
- On commencement of the next brush application, wash brush in storage tin and spin off in the appropriate spinning drum. The brush is now ready for use.
- Repeat above mentioned process on a daily basis or as necessary
- Dispose of old brushes and roller sleeves as clean out waste on completion of the project.
- The use of the Dulux Enviro Solutions ES800 system will be utilised were possible.

Disposal of clean out wastes

- Filter all washout liquids through filter fabric, e.g. stocking or biddum, into the appropriate recycled liquid container. (Allow for colour and type).
- Dispose of the filter as clean out waste in the nominated waste bin located in the paint washout area.
- When recycled liquid is no longer fit for use and can't be filtered, dispose of as clean out waste in the nominated bin located in the paint washout area.
- When sufficient amount of clean out waste is accumulated, e.g. 20 litres, seal the drum and return to the manufacturer, or alternately, dispose of at an approved waste disposal facility. Ensure a record of disposal is obtained and submitted to BLL, to be maintained on site in the records.
- Performance Measures
- Facility constructed and operating prior to any major Painting works commencing.
- Facility is used regularly.
- Copies of all tipping/disposal documentation to be supplied to BLL and filed with site records.
- Routine maintenance checklist prepared and signed off by responsible party. These checklists are to be filed with the Site Environmental Reporting.

Monitoring and Reporting

The responsible site Subcontractor will carry out weekly maintenance checks.

Corrective Actions

Non-conformances are to be recorded by way of the System Defects.

The Subcontractor (and EM/ CM/ SM if applicable) 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 CM.

It is the responsibility of the EM to immediately initiate corrective actions following approval. The non-conformance and corrective action must include details of the actions proposed, desired performance target and action close out date. The system defects report should be signed, dated and filed.

All corrective and preventative action taken by the Subcontractor will be carried out by and at the cost of the Subcontractor.

If such corrective and preventative action leads to further non-conformance, any further action shall be subject to approval by the CM in consultation with the EM.

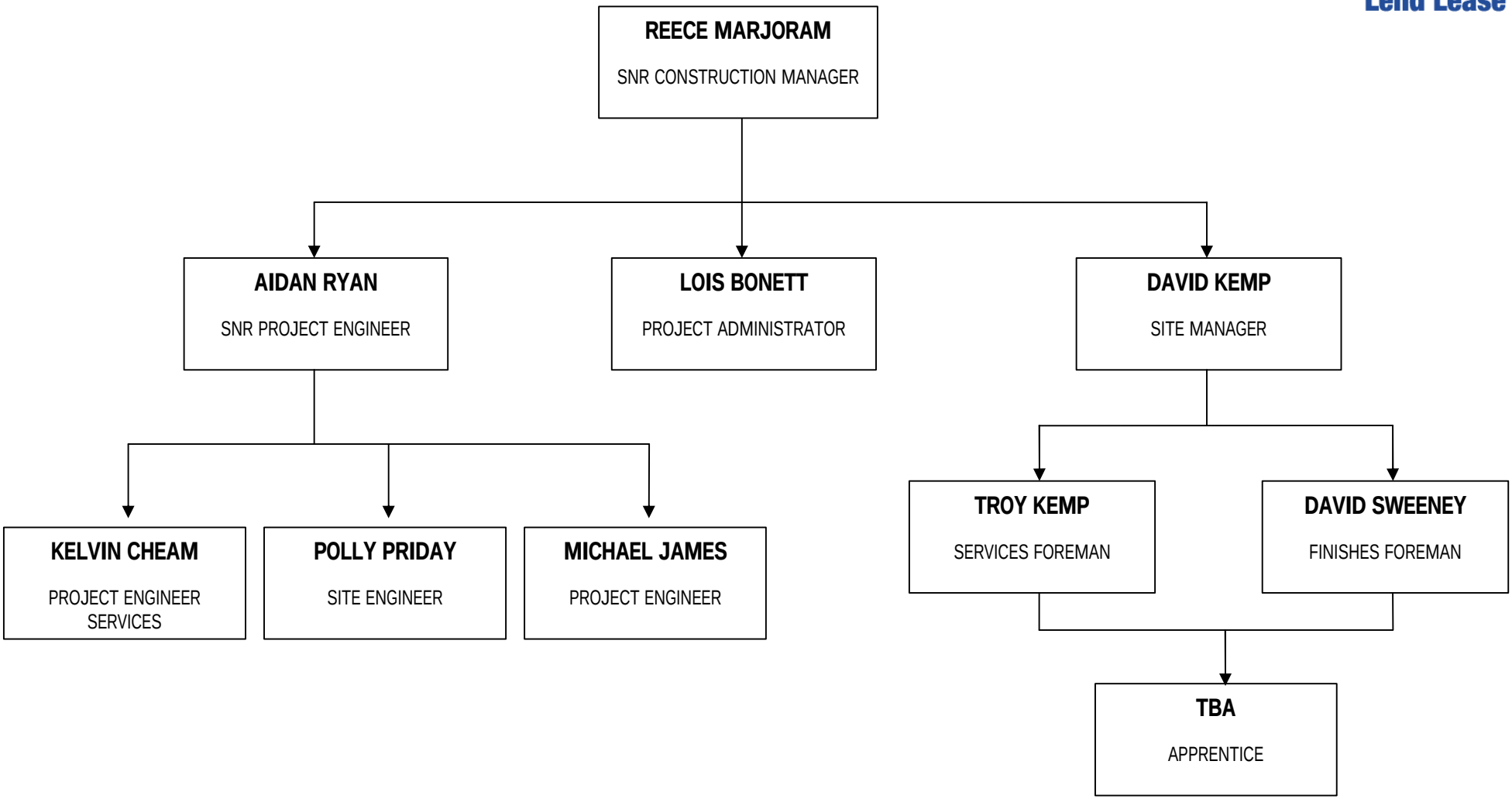
A specific Implementation Plan is not required.

Appendix 4

Hieratical Chart

HIERATCIAL CHART

CBA DARLING WALK FITOUT - PROJECT TEAM



Appendix 5

Site Office

Indicates the path between the site office and site

BLL CBA fitout team site office
L4 299 Sussex Street