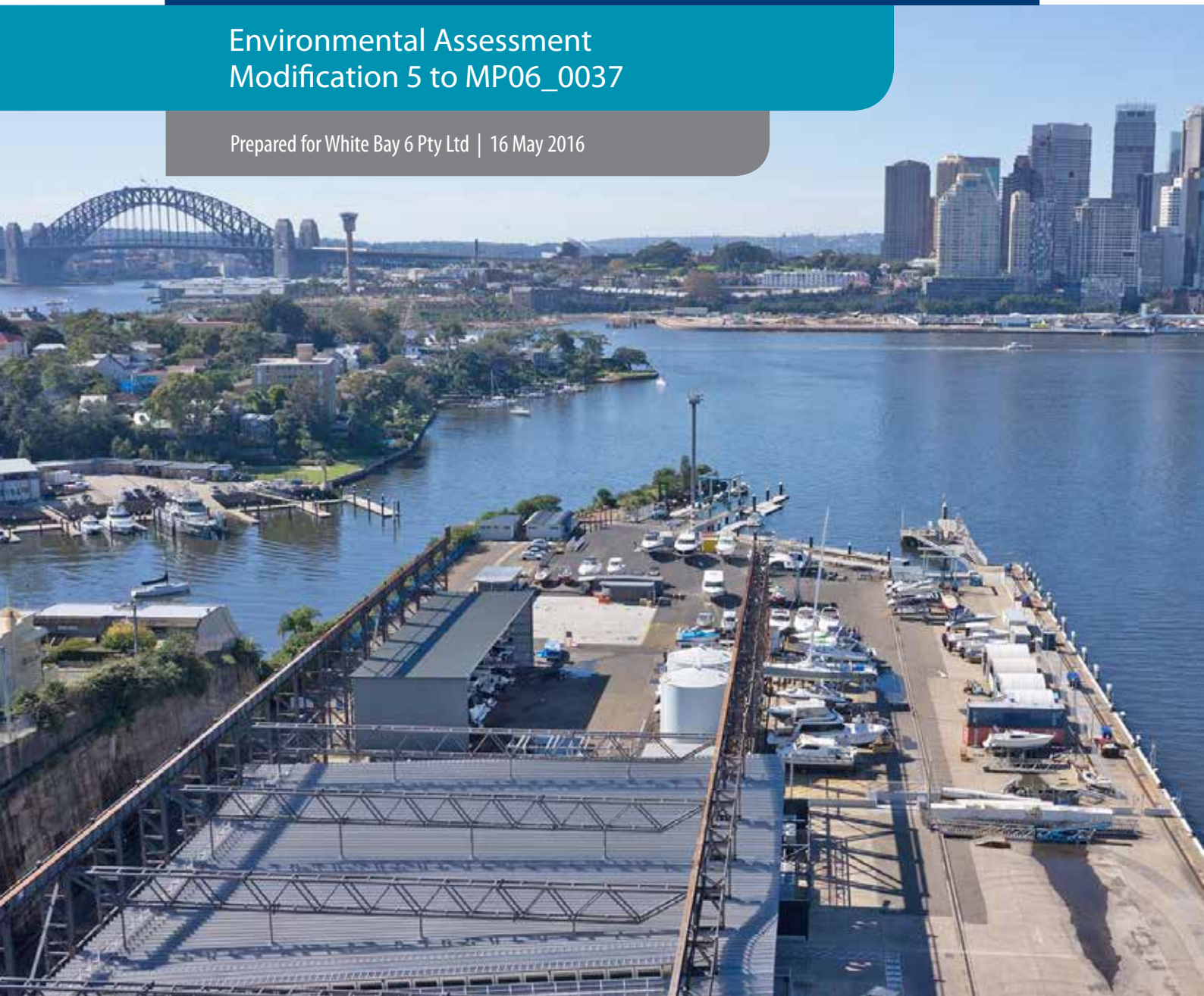


WHITE BAY 6 MARINE PARK

Proposed all weather cover and additional boat storage

Environmental Assessment
Modification 5 to MP06_0037

Prepared for White Bay 6 Pty Ltd | 16 May 2016



White Bay 6 Marine Park - Proposed all weather cover and additional boat storage

Environmental Assessment | Modification 5 to MP06_0037

Prepared for White Bay 6 Pty Ltd | 16 May 2016

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White Bay 6 Marine Park - Proposed all weather cover and additional boat storage

Final

Report J13129RP1 | Prepared for White Bay 6 Pty Ltd | 16 May 2016

Prepared by John Arnold

Approved by Luke Stewart

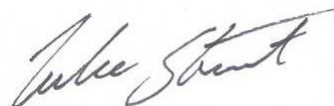
Position Manager of Planning

Position Director

Signature



Signature



Date 16 May 2016

Date 16 May 2016

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1 Introduction

1.1 Background

White Bay 6 Pty Ltd (the proponent) is seeking to modify major project approval MP06_0037 under Section 75W of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to provide all weather cover to support existing tenancies and approved activities, as well as permitting additional boat storage (the proposed modification), at the White Bay 6 Marine Park in Balmain, NSW (the site).

MP06_0037, as modified, allows for the site to be used as a marine fuelling and supply facility with dry boat storage for up to 50 berths. The proposed modification will allow for up to 80 additional dry boat storage berths and confirms the future arrangements for operations undertaken on the site's hardstand area, including boat storage, maintenance and repairs. The proponent leases the site from the Port Authority of NSW (PANSW) and has successfully operated the site since 2009.

EMM Consulting Pty Limited (EMM) has been engaged by the proponent to prepare this environmental assessment (EA) to accompany the proposed modification. The purpose of the EA is to provide details and an assessment of the proposed modification in accordance with objects of the EP&A Act to enable the NSW Department of Planning and Environment (DP&E), in consultation with NSW Government authorities, to assess the merits of the application and make a recommendation to the Minister for Planning as to whether or not to grant approval.

1.2 Location and context of the site

The site is located on the northern foreshore of White Bay in Balmain as shown on Figure 1.1. The site is known as Berth 6, which forms the north-eastern extremity of the White Bay foreshore and incorporates approximately 15,800 square metres (m²) of land owned by PANSW. The site also includes approximately 5,000 m² marine space beyond the mean high water mark at the eastern end of the site, including the foreshore structures, the harbour floor and the water above, which is owned and managed by the NSW Roads and Maritime Services (RMS).

Immediately adjoining the site to the west is Berth 5, being the PANSW White Bay Cruise Terminal. To the north are residential areas of Balmain and the Sydney Water Police site with residential areas (including Grafton Street) continuing beyond. To the south and east of the site is Sydney Harbour with the residential area of Pyrmont located approximately 300 m across the harbour to the south and the Barrangaroo site approximately 800 m across the harbour to the east.

The site comprises a number of structures, including a metal gantry, temporary offices, a permanent boat storage building and marine related infrastructure such as fuel pumps, ramps, lifts and a marina with floating pontoons for berthing boats.

1.3 Current project approval

MP06_0037, as originally approved, involved the construction and operation of a marine supply facility, including a refuelling facility, a number of office leases for commercial marine service businesses and bulk indoor storage space for boats and marine equipment. Other ancillary facilities included a roll-on/roll-off (Ro-Ro) ramp for intermodal freight operations, grey water and sullage pump facilities and temporary vessel moorings.

Four subsequent modifications have been approved to MP06_0037, including administrative changes to the wording of conditions (Modifications 1 and 2), an increase in the number of temporary moorings (Modification 3) and, most recently, an increase in the approved boat storage capacity (Modification 4). Further details of the components of MP06_0037 (as modified) are provided in Sections 2.1 and 2.2.

1.4 Overview of the proposed modification

The proponent is seeking approval to modify MP06_0037 under Section 75W of the EP&A Act to allow for:

- the reorientation and reduction of the footprint of Building 1;
- the provision of an all weather covered structure from the existing gantry, to support existing activities, provide additional dry boat storage for up to 80 boats on portable racks and provide areas to conduct light works on vessels;
- boat storage for up to 70 boats on portable racks on the site's hardstand area;
- a new floating 'finger' pontoon and pile attached to the existing marina;
- an increase in the number of car parking spaces from 45 to 75;
- identification signage; and
- the removal of Condition A4 Lease Renewal.

A detailed description of and justification for each component of the proposed modification is provided in Section 2.4. The components of the proposed modification are shown on the proposed site plan (Figure 2.3). Full architectural project plans are provided in Appendix A.

It is noted that an alternative proposal option (Figure 2.4) is provided to accommodate the potential for the take back of a northern portion of the site, which could occur under the current lease agreements between the proponent and PANSW. The alternative option comprises a reconfigured parking layout and the incorporation of the site's meet and greet facility and amenities within Building 1.

1.5 Justification for the proposed modification

The proposed modification primarily seeks to increase the boat storage capacity on the site.

A study completed in 2010 by the former NSW Maritime titled *NSW Boat Ownership and Storage: Growth Forecasts to 2026* (NSW Maritime, 2010) outlines the significant boat storage shortage that will be faced in the future if facilities do not cater for expected projections of growth in boat ownership in NSW. The subsequent *Maritime Policy Agenda* (Transport for NSW, 2012) identifies the need to 'encourage development of dry-stack storage facilities on Sydney Harbour'.

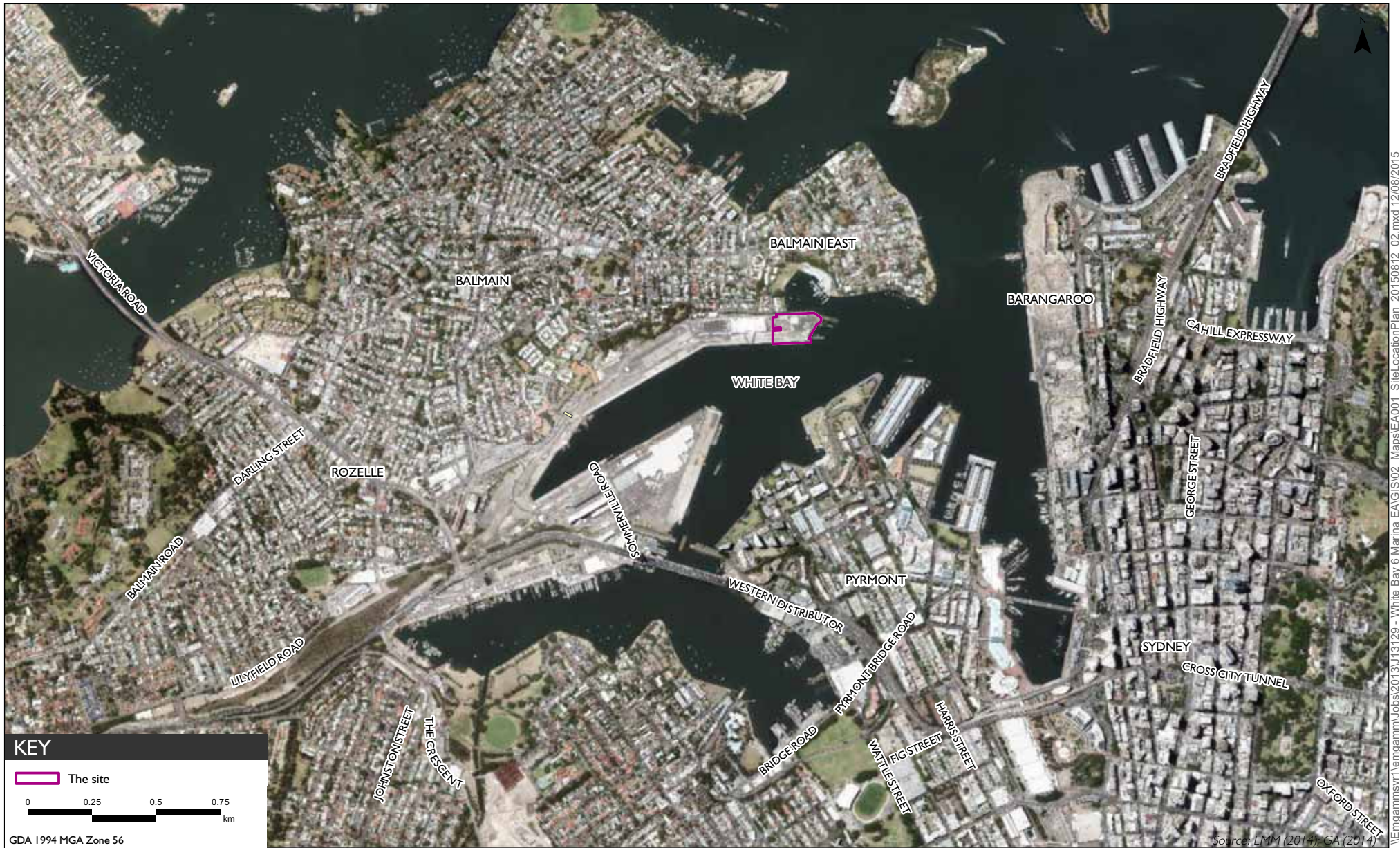
To meet the requirement of the *Maritime Policy Agenda*, the NSW Government prepared the *Sydney Harbour Boat Storage Strategy* (Transport for NSW, April 2013). This strategy sets a target for the provision of 1,000 to 1,200 new dry stack spaces on Sydney Harbour by 2021, but also notes that there are limited potential sites on the Harbour. The proposed modification will assist in meeting these targets by providing for an additional 150 (ie 80 additional dry boat storage berths and 70 additional outdoor berths) boat storage berths on Sydney Harbour.

The need for dry boat storage is consistent with the operations on the site where there has been increasing demand for boat storage, especially since the commencement of anti-fouling operations.

The *Sydney Harbour Boat Storage Strategy* also notes that the provision of dry-stack storage is likely to result in additional benefits including the reduced storage of boats on residential streets, which has become an increasing problem for communities living near the water and in coastal areas. In 2014 the NSW Government issued a media release committing to invest \$5 million to build dedicated off street boat trailer parking facilities and bring in measures such as the introduction of a three month parking limit on local streets and the issuing of fines for unregistered boat trailers left on the street. In line with this policy, additional boat storage at the site will provide an opportunity to decrease the number of vessels stored on the street.

Growth in boat ownership has been predicted by the former NSW Maritime by modelling using previous increases in ownership and population growth predictions. Overall, boat growth in NSW is expected to rise to approximately 351,113 by 2026, which is an increase of 117,000 from ownership levels predicted for 2012. By 2026 Sydney Harbour is expected to boast a cumulative growth of 19% from current levels (AECOM 2013). In its report, the former NSW Maritime states that 'development of strategies for better integrated planning, management and satisfaction of demand are needed' including the need for 'identification of new sites and funding sources for moorings and other options such as dry stack storage for smaller boats such as dinghies'.

The proposed modification will provide an essential supply of boat storage in a high demand region, particularly considering expected future growth of the Sydney Harbour boating community.



2 Existing project approval and proposed modification

2.1 Major project approval

On 12 June 2009 the Minister for Planning approved major project MP06_0037 under Part 3A of the EP&A Act. MP06_0037 allowed for:

- marine refuelling facilities consisting of a tank farm, eight fuel dispensers and associated pipe work;
- two buildings, one (Building 1) for commercial maritime tenancies and warehousing supported by a small number of offices and the other (Building 2) for bulk indoor storage of boats and associated marine equipment, and a work shed for the refit and repair of boats;
- a Ro-Ro ramp for intermodal freight operations to service Sydney Harbour islands;
- a 75-tonne capacity travel lift;
- grey water and sullage pump facilities;
- a supply point for commercial vessels to collect pre-ordered supplies; and
- eight temporary vessel moorings.

2.2 Modifications

Four subsequent modifications to MP06_0037 have been approved, comprising:

- Modification 1 (approved September 2009), which allowed for:
 - a change in the definition of 'the proponent'; and
 - the replacement of Condition F1 – Noise Limits with a new noise limits condition.
- Modification 2 (approved November 2009), which allowed for:
 - Condition A4 – Lease Renewal to be replaced with a new Condition A4 – Time Limited Approval.
- Modification 3 (approved August 2012), which allowed for:
 - an increase in the number of temporary moorings;
 - an increase in the allowed mooring period; and
 - the introduction of de-fouling and anti-fouling activities to the site operations.

- Modification 4 (approved March 2014), which allowed for:
 - internal changes to Building 1 to provide caretaker's accommodation within the building;
 - internal changes to Building 2 to facilitate the storage of up to 50 boat storage berths;
 - four new single storey buildings to be used as offices for amenities;
 - an increase in car parking spaces from 30 to 42 with changes to location and layout of parking; and
 - new floating pontoons.

2.3 Current operations

Site operations to date have comprised three stages as outlined below. Existing and approved project elements are shown on the approved site plan (Figure 2.1). The alternative layout, also approved under Modification 4, is provided in Figure 2.2.

2.3.1 Stage 1

Stage 1 of the project commenced in 2011 and included the refuelling, grey water and sullage pump operations.

The marine fuel supply facility serves a wide range of marine vessels, including recreational, commercial fishing, commercial marine, government, charter and marine transport, through a swipe-card system and automated dispensers/cabinets.

A sullage pump out system was installed to remove effluent and sullage from vessels through a single action diaphragm pump, discharging effluent to the closest sewer main through sealed lines. This type of pumping system is designed especially for use on boats and marinas, with the aim of protecting waterways from pollution.

As part of Stage 1 a small office and an amenities block were refurbished.

2.3.2 Stage 2

Stage 2 operations commenced in mid-2012 and involved the use of the travel lift and washdown bay. The RoRo facility was never constructed with vessels lifted into and out of the water via the travel lift. Following the approval of Modification 3 in 2012, de-fouling and anti-fouling activities have been undertaken at the site. These activities involve:

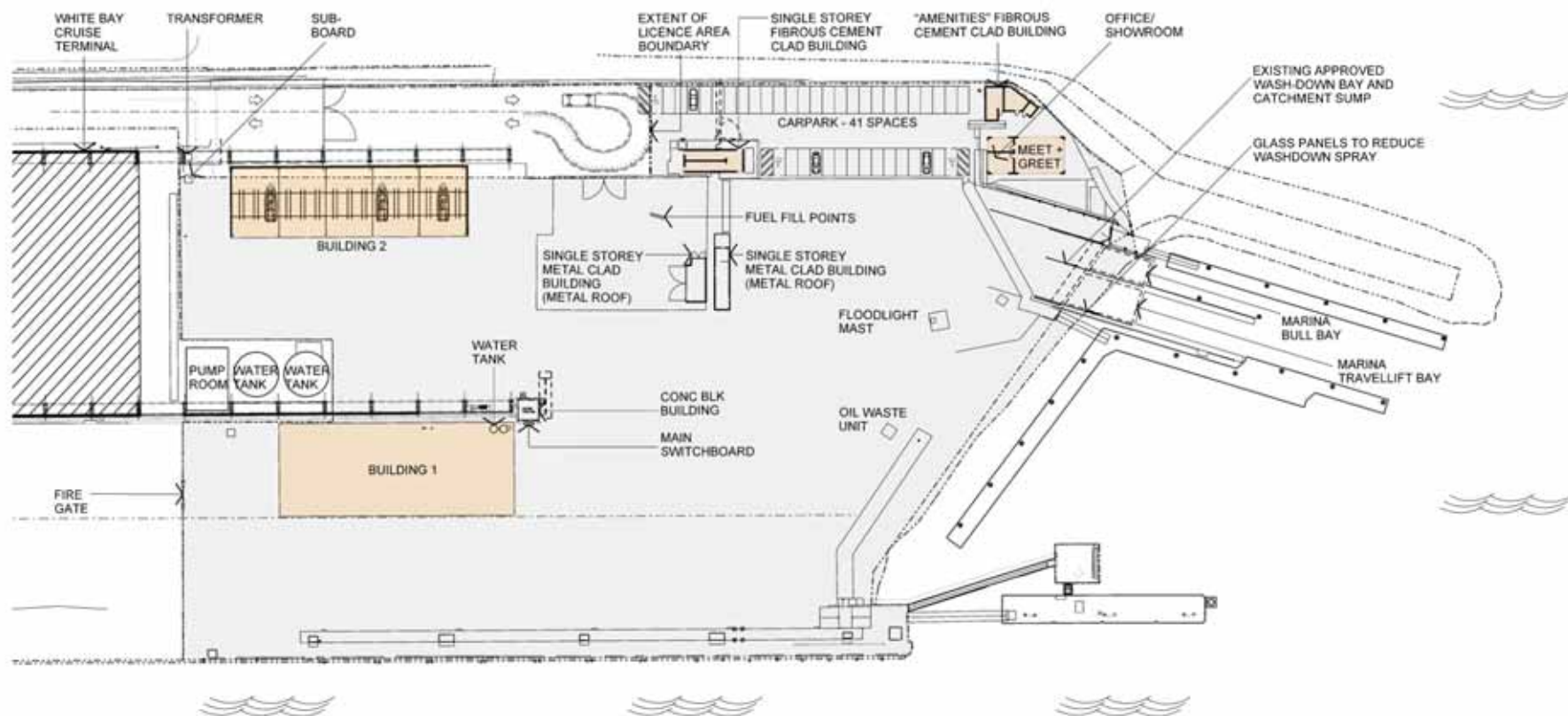
- the transfer of vessels from the water to the approved wash down bay;
- cleaning and de-fouling of vessels within the bunded wash down bay; and
- the transfer of vessels to the hardstand area.

2.3.3 Stage 3

Following the approval of Modification 4, Stage 3 operations commenced mid-2015 and involved the construction of Building 2 for sole use as dry boat storage, with a maximum capacity of up to 50 dry boat storage berths.

Three office buildings have also recently been constructed, comprising the main site office (Office 1), which replaced the Stage 1 site office, and the 'meet and greet' facility (Offices 2 and 3) in the north-eastern part of the site.

Approximately 45 car parking spaces are currently provided in the northern part of the site between the site office and the 'meet and greet' facility.

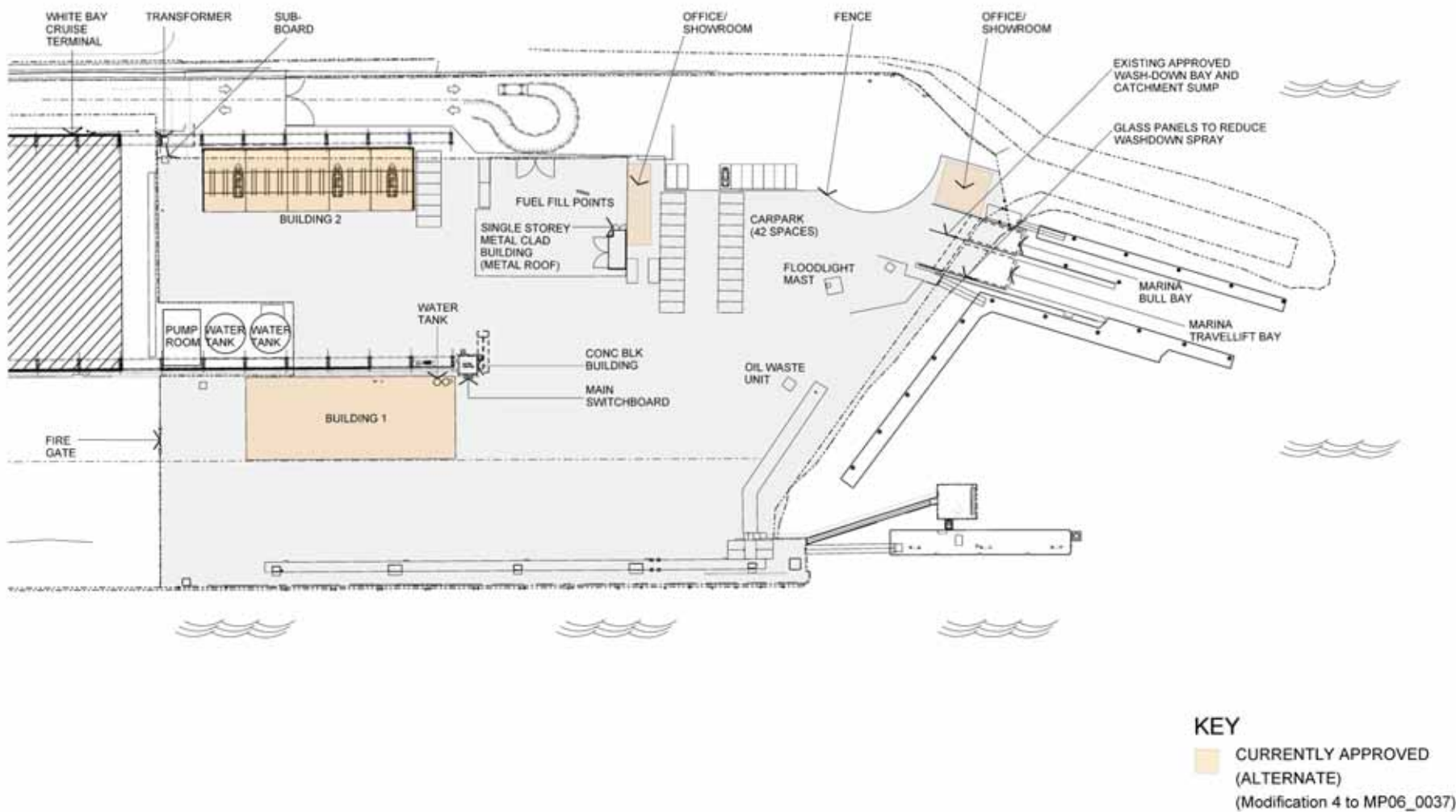


KEY
 **CURRENTLY APPROVED**
 (Modification 4 to MP06_0037)

Source: A/C (2015)



Approved site plan
 White Bay 6
 Environmental Assessment
 Figure 2.1



Source: A/C (2015)

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2.4 The proposed modification

The sections below provide further details of and a justification for each component of the proposed modification. Architectural site plans, floor plans and elevations are provided in full in Appendix A.

As described in Section 1.4, an alternative proposal option (Figure 2.4) is provided to accommodate the potential for the take back of a northern portion of the site, which could occur under the current lease agreements between the proponent and PANSW. The alternative option comprises a reconfigured parking layout, the relocation of the site's meet and greet facility and the incorporation of amenities within Building 1.

2.4.1 Structures

i Reorientation of Building 1

Building 1 has not yet been constructed. The proposed modification includes the reorientation of Building 1, which will be rotated 90-degrees to the east. Of note, the approved height of the building (11 m) will remain unchanged but the overall footprint will be reduced by 42% from approximately 500 m² to 350 m², significantly reducing the overall scale and bulk of the building. The proposed main elevations of Building 1 are included in the project plans (Appendix A).

The approved uses of Building 1 will remain unchanged. The internal building configuration, in particular the second floor, is designed to provide flexible office accommodation to support the ground floor commercial marine tenancies. The building will include a mix of full height spaces as well as purpose built offices and mezzanines, as required by the tenants. The previously proposed caretaker's residence will remain and will be a Class 4 building under the Building Code of Australia (BCA).

A justification for the re-orientation of Building 1 is provided below.

- It will allow for a more efficient use of the land area and access for haul and lift machinery.
- Prospective tenants will be more centrally located to where boats will be hauled and set down for anti-foul works and for storage. This will give both the proponent and its tenants better visibility and control of ground operations.
- It will allow for improved use of the building, with dual access at the front and rear.
- It will allow for improved office and amenity areas for the existing tenant (Caltex) to support their fuelling operations.
- The proposed orientation of the building towards the Sydney CBD will be more attractive to prospective tenants as it will be more visible and easily identified from the main entrance to the site from the water, from the CBD and from Barrangaroo.
- The current approved location for Building 1 sits under the shadow of the gantry and this has proven to be unattractive to prospective tenants.
- From a site planning perspective the proposed location of the building supports the proponent's vision for it to be the centrepiece of the overall development with the intention of attracting a quality anchor tenant.

As described above, if the alternate proposal option is pursued, the site's meet and greet facility will be relocated (refer Figure 2.4) and the amenities will be incorporated within Building 1.

ii All weather cover

The proposed modification involves attaching a lightweight cantilever structure to the existing gantry structure to provide all weather cover. The all weather structure will be suspended on both sides of the existing gantry, extending 15.5 m to the north and south at a height of 11.3 m. A cross section of the structure is included in the project plans (Drawing No. DA3111) provided in Appendix A and a preliminary site assessment by Geotron Engineering Consultants of the suitability of the metal gantry to accommodate the proposed structure is provided in Appendix B.

As described in Section 1.1, the all weather structure will support existing tenancies and approved activities and will provide additional boat storage on portable racks and areas to conduct light works on vessels. The potential dry boat storage capacity of the site will be increased by 80 berths from 50 up to a maximum of 130.

As outline in Section 1.5, there are a number of Government policies which identify a significant shortage of boat storage in NSW and encourage the development of dry stack storage facilities on Sydney Harbour. The additional dry boat storage berths will assist in meeting this recognised shortage.

iii Floating 'finger' pontoon

The proposed modification includes an additional floating 'finger' pontoon (approximately 30 m by 3 m) and pile attached to the existing marina, as shown on the site plan (Figure 2.1). The pontoon is minor in nature and the sole purpose is to allow for the reorientation of berthed vessels. It will not affect the existing use or capacity of the site.

The existing main north-south pontoon is at 90-degrees to the prevailing wash from vessel traffic in the main channel and is also 90-degrees to the prevailing fetch across the widest component of the channel, between the site and Jones Street wharf to the south. The combination of these two issues causes significant wash and wave effect to this pontoon resulting in vessels not being able to be moored safely and securely in a 'side to' manner, as originally envisaged. This poses a safety risk to staff and customers boarding and embarking vessels as the vertical rise and fall can be up to 400 mm. Movement of this scale is also causing damage to both the pontoon and vessels as well as increasing the possibility of vessels breaking their mooring lines.

The proposed finger pontoon will allow vessels to be berthed stern against the pontoon 'Mediterranean style' with the bow directly into the prevailing wash and fetch. This will virtually minimise any wash and fetch effects.

2.4.2 Ancillary infrastructure

i Outdoor boat storage, maintenance and repairs

The proposed modification seeks approval for up to 70 boats to be stored on portable racks on the site's hardstand area within a boat storage zone identified on the proposed site plan (Figure 2.3). This will increase the site's overall boat storage capacity from 50 to 200 berths (ie 80 additional dry boat storage berths and 70 additional outdoor berths).

A number of boats are currently housed on portable racks on the site, which are constructed from galvanised steel and either accommodate two or three tiers of boats. Both racks are approximately 15.5 m wide by 4.5 m deep with the two tier racks approximately 4.5 m high and the three tier racks approximately 8 m high. These racks and any additional racks required will be confined to the boat storage zone.

A boat maintenance and repair zone has also been identified on the western part of the site where approved activities in relation to boat maintenance and repairs will be undertaken. There will be no portable racks in this zone and any boats awaiting maintenance and repairs will be temporarily housed on the portable racks in the boat storage zone.

A quantification of all operations that could potentially occur on the site has enabled potential worst case impacts (ie traffic, noise and visual) to be assessed as part of this EA and addresses comments made by DP&E in a pre-lodgement meeting (refer Section 4.2).

ii Car parking

A total of 45 car parking spaces are currently required on site, representing 35 spaces for the site employees and visitors and 10 car parking spaces for the approved dry boat storage (50 boats). The proposed additional boat storage capacity for up to 150 boats (ie 80 dry boat storage berths and 70 outdoor storage berths) will generate the requirement for a further 30 car parking spaces, increasing the total site car parking requirement from 45 to 75 car parking spaces. This additional parking will be provided by extending the existing parking area to the north of the site and through the provision of several smaller parking areas on the main part of the site (refer Figure 2.3). It is noted that these additional parking areas will only be used when the main parking area to the north of the site is at full capacity.

As described above, an alternative proposal option (Figure 2.4) is provided which allows for a reconfigured parking layout to accommodate the potential for the take back of a northern portion of the site, which could occur under the current lease agreements between the proponent and PANSW. Under this alternative option, up to 26 spaces could alternatively be provided in the southern portion of the site within the boat storage zone, with the spaces provided on the ground floor first tier of the boat storage racks.

Both options allow for a total of 75 car parking spaces. No parking of non-operational vehicles will occur within 30 m of the boundary of the White Bay Cruise Terminal for either proposal option, in accordance with PANSW security requirements.

A justification for the number of car parking spaces required for the proposed modification is provided in the accompanying traffic impact assessment (TIA) (Appendix C) and summarised in Section 5.1.

iii Access

Access to the site is currently via Robert Street, although public vehicular access to the White Bay Cruise Terminal is restricted on days when a cruise ship is visiting the port, with no access permitted to use Robert Street. Access to the site for all employees, contractors and customers will continue to be permitted via Robert Street with an agreed access identification process utilising authorised access identification cards and provision of visitor lists to the PANSW gatehouse as per the site access control procedure provided in Appendix E of the TIA (Appendix C).

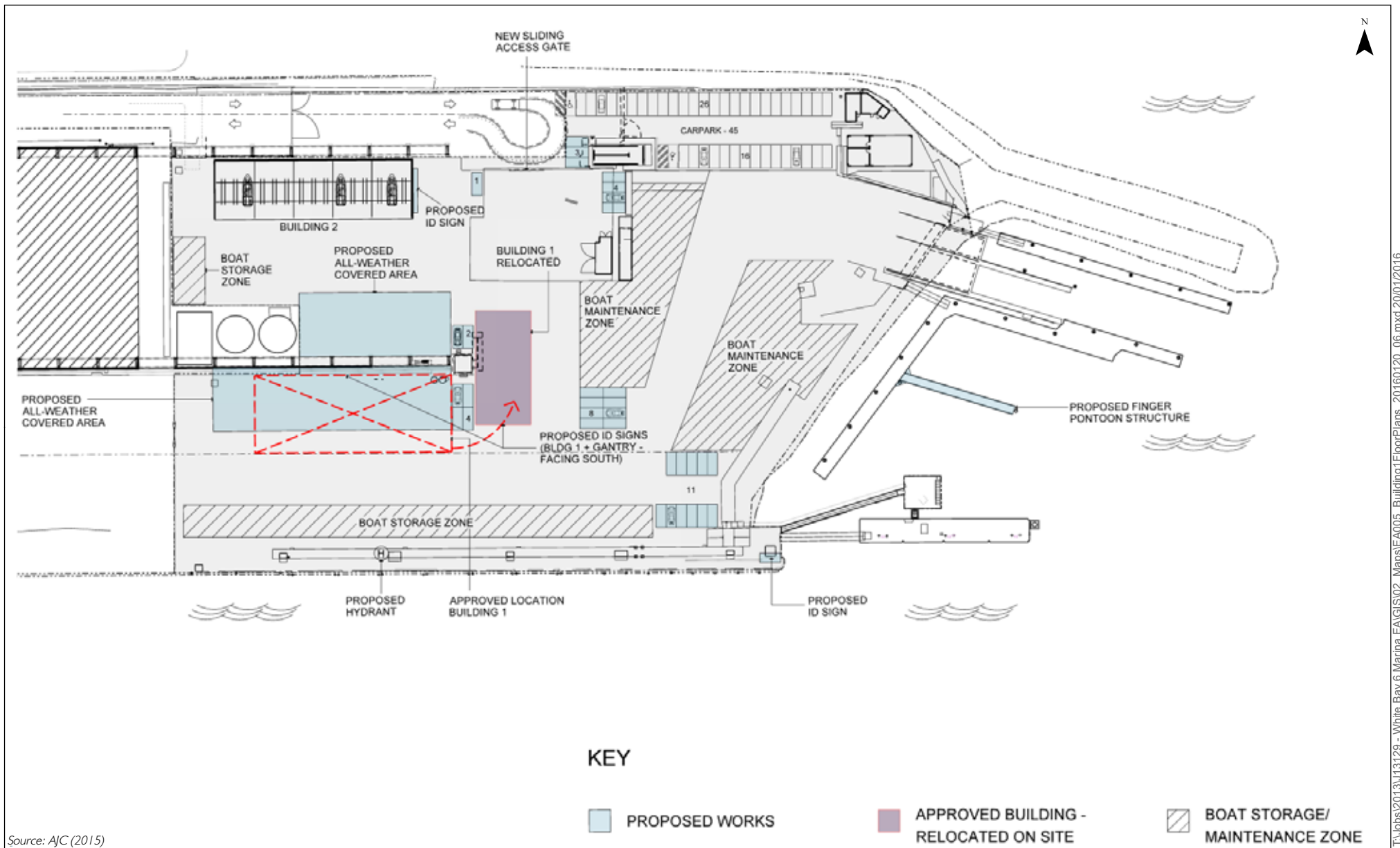
The proposed modification includes the identification signage listed below. The location of the signage is shown on the proposed site plan (Figure 2.3) and further detailed plans are provided in Appendix A.

- A free standing 'Caltex' site business identification sign (approximately 9 m high by 2.5 m wide) in the green, red and silver 'Caltex' colours to be positioned on the south-east corner of the site at the eastern extremity of the fuel pumps. This is the Caltex approved policy standard identification sign.
- Two wall mounted building identification signs in grey and white identifying the site and precinct as per the White Bay Cruise Terminal signage (approximately 1.7 m high by 9 m wide) fixed to the eastern elevation of the existing Building 2 and the re-orientated Building 1.
- An identification sign in grey and white identifying the site and precinct as per the White Bay Cruise Terminal signage (approximately 1.7 m high by 9 m wide) fixed to the southern side of the existing southern metal gantry and immediately above the proposed all weather structure.

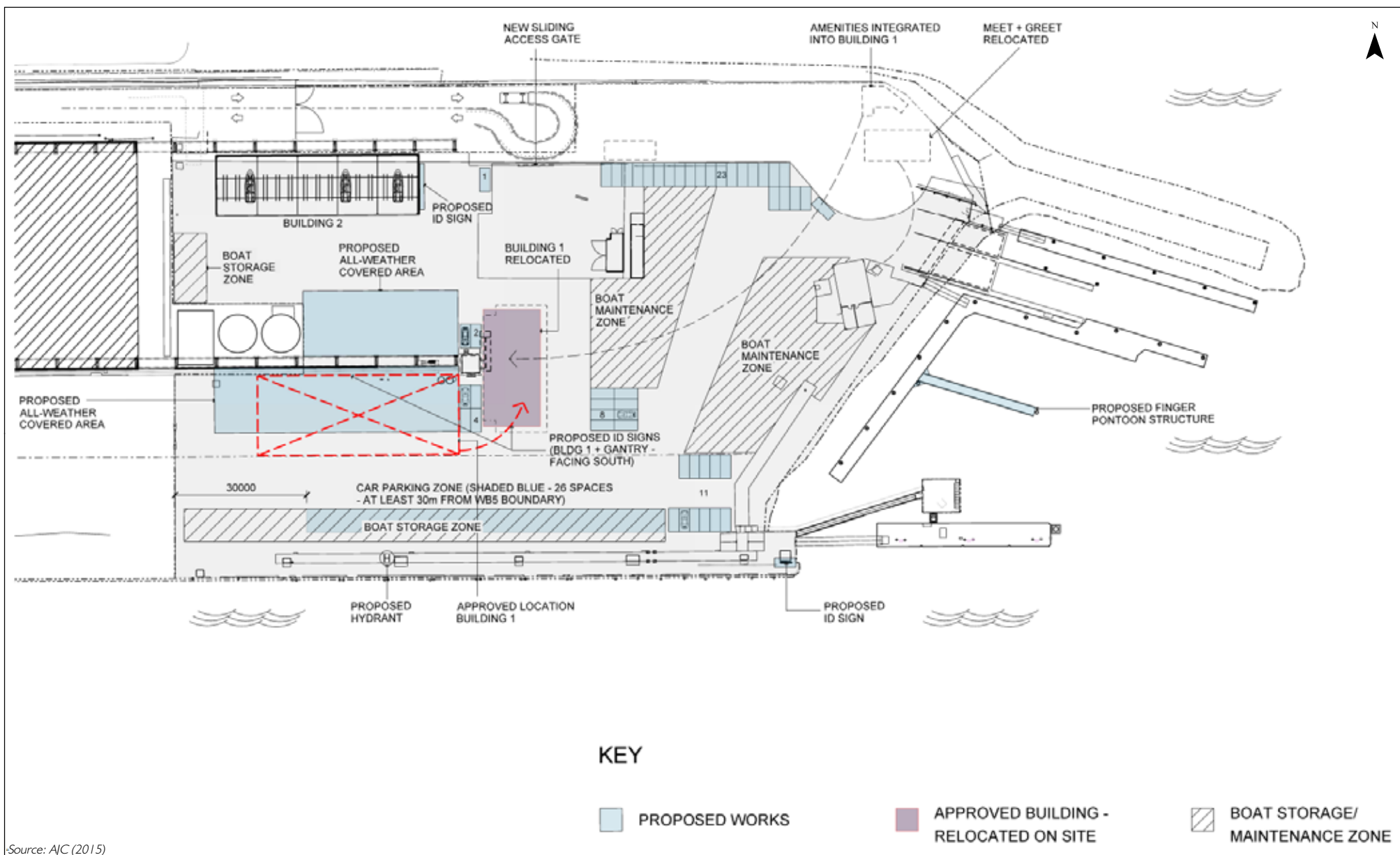
Over the past four years the site has been in a development phase both on a construction and business model level. The business and site components are now settled and primed for activation, presentation and release to the boating public. The site currently has no signage and it is proposed to include identification (not promotional) signage at key vantage points on the site.

Over 60% of the proponent's existing customers access the site from the harbour side and a major component of the proponent's target market is derived from boat owners using Sydney Harbour. In addition there is no opportunity to identify the site successfully from the landside as the site is located at the end of a private road. Services associated with the signage such as fuel, grey water, sullage pump out and dry boat storage are all fundamental marine services supported by RMS and the NSW Government in their better boating policies to support the boating community. It is therefore fundamental that the site is easily identified by the boating public on the harbour so they can access these services.

An assessment of the proposed signage against relevant statutory planning policies is provided in Section 3.4.4 and the potential visual impacts are considered in the visual assessment (Section 5.4).



Source: A/C (2015)



Source: A/C (2015)

Proposed site plan (alternate configuration)

White Bay 6
Environmental Assessment

Figure 2.4

2.4.3 Construction

i Construction activities

Construction methods for the relevant proposed modification components follow.

- All weather undercover structure, which would involve:
 - attachment of a lightweight cantilever structure to both sides of the existing southern gantry, similar to the adjacent White Bay Cruise Terminal; and
 - a steel support frame with light weight translucent fabritechture roof membrane attached.

It is noted that no groundwork/excavation for footings would be required.

- Dry boat storage facilities, which would involve installation of pre-constructed portable boat storage racks.

It is noted that, as above, no groundwork/excavation for footings would be required.

- Building 1 – caretaker’s accommodation, offices, workshops and showroom facilities, which would involve activities and construction methodologies and equipment almost identical to those outlined in the approved project as per the original EA (Kellogg Brown & Root Pty Ltd (KBR), 2006), including:
 - piling/excavation for ground slab;
 - masonry walls, suspended slab and structural steelwork;
 - roofing and welding;
 - window walls, wall cladding, plastering, partitions and ceilings, doors and frames, tiling;
 - services fit out;
 - joinery, glazing, painting, concrete sealer, carpet signage; and
 - services commissioning.
- Delineation of car and motorcycle parking areas and installation of bike storage facilities.
- A floating finger pontoon which would be identical to floating pontoon works previously constructed at the facility and described in the original EA (KBR, 2006), including:
 - on water piling works; and
 - placement of pre-fabricated pontoon elements.

All elements of construction would involve the provision of associated utilities (such as lighting and fencing) and be accompanied by detailed architectural and engineering design and drawings.

All construction on site is currently undertaken in accordance with the proponent’s Construction Environmental Management Plan (CEMP).

ii Schedule and hours of work

Construction of the modified facilities on site could be completed in approximately six months but may be staged to occur in discrete periods over an 18 month period, depending on demand. It is envisaged that construction would commence as soon as practicable once all necessary approvals are obtained and documentation is in place (such as the CEMP).

A construction staging report will be prepared and submitted to PANSW prior to the commencement of construction as required, which will detail construction programmes and key milestones. Construction hours would remain as per the original approval, with work permissible between:

- 7:00 am and 6:00 pm on Mondays to Fridays;
- 8:00 am and 1:00 pm on Saturdays; and
- no work permissible on Sundays or public holidays.

2.4.4 Operations

i Operational activities

The site operations would entail boat owners arranging access to boats via the site operators, and would typically arrive at a pre-arranged time as per the existing process. Boats will be transferred from boat racks by forklifts, and lowered into the water or placed in the travel lift. Boats will then be conveyed to the wet berth area to await collection by boat owners. Upon return to the site, boats will be collected by forklift and/or travel lift, washed and returned to storage.

Upon signing a tenancy agreement, boat owners will be provided with the rules and regulations of the site, including:

- access times and security arrangements;
- car parking locations;
- safe pedestrian access areas;
- arrangements for late returns; and
- noise considerations for neighbouring properties.

Contractors and tenants access the site to conduct support activities to vessels located on site. A comprehensive site induction procedure will continue to be implemented under the proposed modification which all contractors and tenants would be required to complete to obtain access. This process follows the Boating Industry Association of NSW marine card protocols. All contractors accessing the site during operations under the proposed modification (and involved in the construction process) will be required to complete the induction to obtain access. The induction covers the following areas:

- site access and security;
- environmental protocols;
- approval conditions;

- safe work practices including safe work method statements for all activities;
- insurance requirements; and
- operational protocols, including:
 - hours of operation;
 - noise minimisation and disturbance to neighbours;
 - car parking; and
 - approved activities.

All operations on site are currently undertaken in accordance with the proponent's Operational Environmental Management Plan (OEMP).

ii Timeframe

Operations associated with the dry boat storage will commence on completion of construction activities or the end of a discrete construction stage. All existing operations will continue throughout the construction phase where feasible.

Hours of operation will remain as per the current approval, with the dry boat storage accessible between:

- 7:00 am and 6:00 pm on Mondays to Saturdays; and
- 8:00 am and 6:00 pm on Sundays.

In the event that boats return the facility after 6:00 pm, they will be required to tie up to the wharf to be lifted out of the water and transferred to dry storage the following day during operational hours.

3 Planning framework

3.1 Introduction

This chapter describes the relevant Commonwealth and NSW planning framework under which the proposed modification has been prepared and will be assessed.

3.2 Commonwealth legislation

Under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), actions that may have a significant impact on a matter of national environmental significance (MNES) are ‘controlled actions’ and require approval from the Commonwealth Minister for the Environment. MNES include world heritage properties, wetlands of international importance and listed threatened species and ecological communities.

The proposed modification will not have any significant impacts on any MNES and, accordingly, a referral to the Commonwealth Minister for the Environment is not required.

3.3 NSW legislation

The EP&A Act and the NSW Environmental Planning and Assessment Regulation 2000 (EP&A Regulation) provide the assessment and approvals framework for development in NSW. They are administered by the NSW Department of Planning and Environment (DP&E) and the Minister for Planning.

3.3.1 Transitional Part 3A projects

Part 3A of the EP&A Act was repealed by the NSW *Environmental Planning and Assessment Amendment (Part 3A Repeal) Act 2011* (Part 3A Repeal Act) which was passed by the NSW Parliament on 22 June 2011, and commenced on 1 October 2011. Under the Part 3A Repeal Act, projects deemed to be ‘transitional Part 3A projects’ continue to be subject to Part 3A of the EP&A Act (as in force immediately before the repeal and as modified by the Part 3A Repeal Act). Transitional Part 3A projects include certain projects that were the subject of an existing approval under Part 3A. As the current approval was granted under Part 3A of the EP&A Act, the proposed modification is deemed to be a transitional Part 3A project.

3.3.2 Section 75W of the EP&A Act

Section 75W of the EP&A Act enables the Minister for Planning, or delegate, to modify a project approval granted under Part 3A of the EP&A Act.

Section 75W states:

(1) In this section:

Minister’s approval means an approval to carry out a project under this Part, and includes an approval of a concept plan.

modification of approval means changing the terms of a Minister's approval, including:

(a) revoking or varying a condition of the approval or imposing an additional condition of the approval, and

(b) changing the terms of any determination made by the Minister under Division 3 in connection with the approval.

(2) The proponent may request the Minister to modify the Minister's approval for a project. The Minister's approval for a modification is not required if the project as modified will be consistent with the existing approval under this Part.

(3) The request for the Minister's approval is to be lodged with the Director-General. The Director-General may notify the proponent of environmental assessment requirements with respect to the proposed modification that the proponent must comply with before the matter will be considered by the Minister.

(4) The Minister may modify the approval (with or without conditions) or disapprove of the modification.

The Minister's power to deal with a modification under Section 75W of the EP&A Act is broad, and it is for the Minister (not the court) to determine what constitutes a modification. Legal cases have established two tests as to what constitutes a modification of project approval under Section 75W: whether or not a proposed modification will have 'limited environmental consequences' beyond those taken into account in the original project assessment; and whether or not a proposed modification will result in a 'radical transformation' from the original project approval.

In relation to the first test, this EA has assessed (Chapter 5) the potential environmental impacts of the proposed modification, including what are considered to be the key issues of traffic, noise and visual amenity. In each case it is considered that the proposed modification will have limited environmental impacts beyond what have already been assessed and approved for MP06_0037.

The additional traffic generated by the increased boat storage was predicted and the local road network deemed to have adequate capacity to accommodate the relatively small increase, with the site having adequate capacity to provide for additional car parking (for both proposal options).

Predicted noise impacts are considered to be largely the same as those conservatively assessed for MP06_0037 with the noise levels predicted to be generated from the proposed modification to remain within existing noise criteria.

Visual impacts have been assessed as having a limited impact, with the footprint and bulk of the approved Building 1 being significantly reduced and the other modification components (ie the all weather structure and portable racks) being temporary in nature, visually permeable and consistent with the current visual landscape along the foreshore.

In relation to the second test, MP06_0037 (as originally approved) involved the construction and operation of a marine supply facility and included boat storage within Building 2. The additional boat storage is therefore consistent with the uses specified in MP06_0037 and will not affect the existing marine supply facility, which will continue to operate as per the current approval. As discussed above, the visual impacts of the proposed modification are limited and consistent with the existing character of the site and the surrounding area. As there is no change to the approved uses on the site and no significant change to the physical appearance of the approved development, it is not considered that the proposed modification will result in a radical transformation from the original project approval.

3.3.3 Landowner's consent

Landowner's consent for the proposed modification, as required by Clause 8F of the EP&A Regulation, has been provided by PANSW for the land-based components (ie buildings and structures), and by RMS for the water-based components (ie the floating pontoon).

Harbour Master approval has been sought pursuant to Clause 67 of the Management of Waters and Waterside Lands Regulation – NSW for the proposed pontoon pier as it will result in disturbance to the sea bed.

3.4 Environmental planning instruments

3.4.1 Sydney Regional Environmental Plan No 26 – City West

The *Sydney Regional Environmental Plan No 26 – City West* (SREP 26) provides planning principles and development controls of regional significance for development in the Bays Precinct, which includes the White Bay area.

The site is located within the 'Port and Employment Zone' under SREP 26. Uses are permissible if they are consistent with one or more of the zone objectives. It is considered that the proposal to increase the dry boat storage on the site is consistent with the zone objective 'to encourage a mix of land uses which generate employment opportunities', particularly in relation to port and maritime uses, as it includes a range of uses on activities on the site, all of which generate employment opportunities.

It is a requirement of Clause 40 of SREP 26 that consideration be given to any master plan for the site. The Glebe Island/White Bay Master Plan 2000 is currently applicable to the site. As described further in Section 3.5.1, the proposed modification is considered to be consistent with the plan's aims and objectives.

3.4.2 Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005

The *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005* (Sydney Harbour SREP) covers all the waterways of Sydney Harbour, its foreshores and catchment. It establishes a set of planning principles to be used by councils for the preparation of planning instruments, for the hydrological catchment of Sydney Harbour. It also zones the waterways into nine different zones to suit the differing environmental characteristics and land uses of the harbour and its tributaries.

The site is zoned W1 – Maritime Waters under the Harbour REP. The objectives of this zone are:

- 'a) to give preference to and protect waters required for the effective and efficient movement of commercial shipping, public water transport and maritime industrial purposes generally,
- b) to allow development only where it is demonstrated that it is compatible with, and will not adversely affect the effective and efficient movement of, commercial shipping, public water transport and maritime industry operations,
- c) to promote equitable use of the waterway, including use by passive recreation craft.'

The proposed modification is considered to be consistent with the objectives of the zone as the existing maritime use of the site would remain.

3.4.3 State Environmental Planning Policy No. 55 – Remediation of Land

State Environmental Planning Policy 55 – Remediation of Land (SEPP 55) provides for a state wide planning approach to the remediation of contaminated land. In particular, it aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment.

An assessment (HEC 2013) was undertaken in accordance with SEPP 55 as part of the AECOM (2013b) Modification 4 Response to Submissions (RTS) report, which demonstrated that the site was suitable for the proposed caretaker's residence in Building 1. There is no change to the use of Building 1 under the proposed modification.

3.4.4 State Environmental Planning Policy No. 64 – Advertising and Signage

State Environmental Planning Policy No. 64 – Advertising and Signage (SEPP 64) applies to all signage that is visible from any public place or public reserve.

Under Clause 8 of SEPP 64, a consent authority must not grant development consent to an application to display signage unless the consent authority is satisfied:

- that the signage is consistent with the objectives of this Policy as set out in clause 3 (1) (a); and
- that the signage the subject of the application satisfies the assessment criteria specified in Schedule 1.

The proposed signage includes:

- one illuminated free standing 'Caltex' 'business identification sign' (approximately 9 m high by 2.5 m wide) on the south-east corner of the site at the eastern extremity of the fuel pumps; and
- two illuminated wall mounted 'building identification signs' (approximately 1.7 m high by 9 m wide) fixed to the eastern elevation of existing Building 2 and the re-orientated Building 1 and to the southern end of the existing southern metal gantry.

These signs will be visible from vessels moving through the White Bay foreshore, which is considered to be a public place. Therefore, SEPP 64 applies to the proposed signage.

SEPP 64 defines a building identification sign as:

'a sign that identifies or names a building, and that may include the name of a business or building, the street number of a building, the nature of the business and a logo or other symbol that identifies the business, but that does not include general advertising of products, goods or services.'

and a business identification sign means a sign:

- (a) that indicates:
 - (i) the name of the person, and
 - (ii) the business carried on by the person,
 - (iii) at the premises or place at which the sign is displayed, and

- (b) that may include the address of the premises or place and a logo or other symbol that identifies the business, but that does not include any advertising relating to a person who does not carry on business at the premises or place.’

All signage has been assessed accordingly against SEPP 64 Schedule 1 in Table 3.1 below.

Table 3.1 Compliance with SEPP 64 Schedule 1 Assessment Criteria

Clause and applicability	Provision	Comment on compliance	Compliance Yes/No
Clause 8 - Granting of consent to signage	A consent authority must not grant development consent to an application to display signage unless the consent authority is satisfied:	See clause 3 Aims, objectives (below).	Yes
	(a) that the signage is consistent with the objectives of the SEPP as set out in clause 3(1)(a); and		
	(b) that the signage the subject of the application satisfies the assessment criteria specified in Schedule 1	See Schedule 1 - Assessment Criteria (below).	Yes
Clause 3 Aims, objectives etc	(1) This clause aims:		
	(a) to ensure that signage (including advertising):		
	(i) is compatible with the desired amenity and visual character of an area, and	The building identification signage is consistent with the bulk and size of the built form and working port character of the area.	Yes
	(ii) provides effective communication in suitable locations, and	The location of signage along the southern and eastern frontage of the site, and the size and scale of the signage, will provide effective legibility and viewing from boats and vessels moving past the site.	Yes
	(iii) is of high quality design and finish, and	Signage will be of a high design quality and is compatible with this aim.	Yes

Table 3.1 Compliance with SEPP 64 Schedule 1 Assessment Criteria

Clause and applicability	Provision	Comment on compliance	Compliance Yes/No
Schedule 1 – Assessment Criteria			
1 Character of the area	Is the proposal compatible with the existing or desired future character of the area or locality in which it is proposed to be located?	The signage is considered compatible with the existing and future character of the area for the following reasons: (i) Building identification signage - it will be positioned away from residential areas and will face outwards towards other industrial areas and vessels moving along the White Bay foreshore; and - it will be of a similar scale and appearance to other industrial building signage in the locality. (ii) Business identification signage - it is identifying important marine services within a high traffic area for marine vessels; and - the Caltex signage allows this service to be easily identified by the boating public on the harbour so they can access these services.	Yes
	Is the proposal consistent with a particular theme for outdoor advertising in the area or locality?	(i) Building identification signage The Sydney Harbour Foreshores and Waterways Area Development Control Plan (DCP) 2005 applies to the site. An assessment of the proposed signage against the relevant provisions of the DCP has been included in Table 3.2. (ii) Business identification signage As per (i) above.	Yes
2 Special areas	Does the proposal detract from the amenity or visual quality of any environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes or residential areas?	(i) Building identification signage The signage is for port related buildings and will not detract from the amenity or visual quality of environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes or residential areas in close proximity to the site. (ii) Business identification signage The Caltex sign will not detract from the amenity or visual quality of the area or the waterway due to its appropriate scale and height. It is positioned at the south-eastern extremity to minimise impacts on views from residences in Balmain East. It is in keeping with the working port/marine character of the area.	Yes

Table 3.1 Compliance with SEPP 64 Schedule 1 Assessment Criteria

Clause and applicability	Provision	Comment on compliance	Compliance Yes/No
3 Views and vistas	Does the proposal obscure or compromise important views?	(i) Building identification signage It will not protrude above the main ridge lines of buildings at the site and will be consistent with the height of surrounding buildings. Therefore, the proposed signage will not obscure or compromise important views. (ii) Business identification signage Due to its appropriate height, scale and position on the site the Caltex sign will not obscure or compromise important views.	Yes
	Does the proposal dominate the skyline and reduce the quality of vistas?	(i) Building identification signage The proposed signage will not dominate the skyline or reduce the quality of vistas for the following reasons: - it will not protrude above building ridge lines; and - signage will generally only be visible to marine vessels travelling along White Bay. (ii) Business identification signage The proposed Caltex sign will not dominate the skyline or reduce the quality of vistas for the following reasons: - it will be in keeping with the scale and height of surrounding business identification signage and buildings surrounding the site; and - as (i) above, it will generally only be visible to marine vessels travelling along White Bay.	Yes
	Does the proposal respect the viewing rights of other advertisers?	(i) Building identification signage The building signage does not obstruct visibility to any other existing advertisements or signs in the surrounding area. (ii) Business identification signage The position of the Caltex sign on the south-eastern corner of the site and adjacent to the waterway will ensure that it respects the viewing rights of other advertisers. There are no other free standing business signs near to the proposed sign.	Yes

Table 3.1 Compliance with SEPP 64 Schedule 1 Assessment Criteria

Clause and applicability	Provision	Comment on compliance	Compliance Yes/No
4 Streetscape, setting or landscape	Is the scale, proportion and form of the proposal appropriate for the streetscape, setting or landscape?	(i) Building identification signage The scale, proportion and form of signage is considered appropriate for the setting as: - it will be consistent with the marine uses at the site and in the surrounding ports area; and - signage design will be modern and in keeping with existing signage form in the area. (ii) Business identification signage The Caltex sign is appropriate given other examples of business signage in the ports area and will not adversely impact upon the streetscape, setting or landscape of the area.	Yes
	Does the proposal contribute to the visual interest of the streetscape, setting or landscape?	(i) Building identification signage The signage will contribute to the visual interest of the streetscape as: - it will be of high quality and visually appealing; and - it will be in keeping with the working port/marine character of the area. (ii) Business identification signage The Caltex sign is functional in its purpose and would not detract from the visual interest of the area.	Yes
	Does the proposal reduce clutter by rationalising and simplifying existing advertising?	(i) Building identification signage There is no existing signage on the site. Individual signs are well spaced and will not dominate the site, with only one sign on each of the two buildings and on the all weather structure. (ii) Business identification signage The Caltex sign is the only business identification sign proposed for the site.	Yes
	Does the proposal screen unsightliness?	(i) Building identification signage There are no features that are considered 'unsightly' on the site. Signage will be in keeping with the working port/marine character of the area. (ii) Business identification signage As above.	Yes

Table 3.1 Compliance with SEPP 64 Schedule 1 Assessment Criteria

Clause and applicability	Provision	Comment on compliance	Compliance Yes/No
	Does the proposal protrude above buildings, structures or tree canopies in the area or locality?	(i) Building identification signage The proposed signage will not protrude above the buildings, structures or tree canopies on the site or locality. (ii) Business identification signage The proposed Caltex sign is consistent with the height of existing and proposed buildings/structures on the site.	Yes
	Does the proposal require ongoing vegetation management?	(i) Building identification signage The proposed signage will not require ongoing vegetation management. (ii) Business identification signage As above.	Yes
5 Site and building	Is the proposal compatible with the scale, proportion and other characteristics of the site or building, or both, on which the proposed signage is to be located?	(i) Building identification signage The proposed signage is considered compatible with the scale and proportion of existing and proposed buildings and the site. (ii) Business identification As above.	Yes
	Does the proposal respect important features of the site or building, or both?	(i) Building identification signage The proposed signage has been designed to be of an appropriate scale for the site and site buildings so as to blend in and not detract from the site or surrounding land uses. (ii) Business identification signage As above.	Yes
	Does the proposal show innovation and imagination in its relationship to the site or building, or both?	(i) Building identification signage The proposed signage is appropriate for the site and the buildings and is reflective of the working port/marine character of the site and surrounds. (ii) Business identification signage The Caltex sign serves a functional purpose and is appropriately located adjacent to the fuel pumps on the site.	Yes
6 Associated devices and logos with advertisements and advertising structures	Have any safety devices, platforms, lighting devices or logos been designed as an integral part of the signage or structure on which it is to be displayed?	(i) Building identification signage The design and illumination of the proposed signage will be in accordance with the Building Code of Australia (BCA) guidelines. Safety and lighting devices will be concealed within the structure of the signs themselves. All sign logos have been designed to enable easy recognition by the public of the buildings and services provided. (ii) Business identification signage As above.	Yes

Table 3.1 Compliance with SEPP 64 Schedule 1 Assessment Criteria

Clause and applicability	Provision	Comment on compliance	Compliance Yes/No
7 Illumination	Would illumination result in unacceptable glare?	(i) Building identification signage Illumination devices will be concealed within all signage structures to minimise glare from the signs. The signs are not anticipated to cause any unacceptable glare. (ii) Business identification signage As above.	Yes
	Would illumination affect safety for pedestrians, vehicles or aircraft?	(i) Building identification signage Sign illumination will not affect safety for pedestrians or vehicles as the proposed signage is not located on any public roads or near pedestrianised areas. Illumination will not affect safety for aircraft as all signage is consistent with the height and scale of existing and proposed buildings on the site and is not anticipated to cause unacceptable glare. (ii) Business identification signage As above.	Yes
	Would illumination detract from the amenity of any residence or other form of accommodation?	(i) Building identification signage The proposed signage is located within the port area and has been orientated away from the nearest residential properties in Balmain East and other forms of accommodation. The signage on the southern elevation of the gantry may be visible from the residential area of Pyrmont. However, given the distance between the site and those properties on the opposite side of White Bay, it is unlikely to cause significant impacts on residential amenity. The level of illumination will comply with the BCA Guidelines. (ii) Business identification signage As above.	Yes
	Can the intensity of the illumination be adjusted, if necessary?	(i) Building identification signage The intensity of illumination of the proposed signage cannot be adjusted, however, illumination will not cause unacceptable glare and will be consistent with other illuminated signage in the area. (ii) Business identification signage As above.	Yes
	Is the illumination subject to a curfew?	(i) Building identification signage The proposed signage will be consistent with other signage in the area, which includes 24-hour illumination. (ii) Business identification signage As above.	Yes

Table 3.1 Compliance with SEPP 64 Schedule 1 Assessment Criteria

Clause and applicability	Provision	Comment on compliance	Compliance Yes/No
8 Safety	Would the proposal reduce the safety for any public road?	(i) Building identification signage The proposed signage will not reduce road safety as it will not be located near any public roads. (ii) Business identification signage As above.	Yes
	Would the proposal reduce the safety for pedestrians or bicyclists?	(i) Building identification signage The proposed signage will not reduce the safety for pedestrians or bicyclists as it will not encroach on foot or bike paths. (ii) Business identification signage As above.	Yes
	Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public areas?	(i) Building identification signage The proposed signage will not obscure sightlines from public areas as it will be consistent with the height of surrounding buildings on the site and will be located within the existing port area. (ii) Business identification signage As above.	Yes

The proposed building and business identification signage complies with SEPP 64 criteria as it will:

- be in keeping with the working harbour character of the site and the marine/port uses of the surrounding area;
- not impact upon residential areas or other forms of accommodation;
- have no impact on the safety of road traffic, pedestrians and cyclists;
- not cause unacceptable glare to surrounding land uses; and
- not impact sightlines, visual quality or the local skyline.

3.4.5 Leichardt Local Environmental Plan 2013

The site is located within the Leichardt local government area but is not zoned under the *Leichardt Local Environmental Plan 2013*, which identifies the site as being zoned pursuant to SREP 26.

3.5 Policy documents

3.5.1 Glebe Island White Bay Master Plan 2000

The preparation of the *Glebe Island/White Bay Master Plan 2000* (the master plan) was in response to the requirements of SREP No. 26 – City West. The master plan controls and directs the future development of the port facilities and identifies several considerations in relation to land uses, building design, zones and heights, landscaping, environmental impacts and heritage conservation. The site is identified in the master plan.

The master plan is intended to:

- ‘provide guidance to operators and authorities on the type, scale and form of development which will be acceptable in a particular location, within a publicly accountable process,
- enable development to proceed efficiently by clarifying issues and identifying requirements for coordination and consultation,
- assist the public in understanding the future character of the area and to assist them to comment on port intentions, and
- guide consent authorities when they are considering developments.’

The proposed modification is consistent with the intentions of the master plan and generally consistent with its relevant principles and provisions. Of relevance to the proposed modification are the principles and provisions that relate to views and building heights, as set out below.

i Principles

- ‘Maintain the general view of the Pyrmont skyline and Anzac Bridge as seen from the Balmain residential area.
- Maintain the general view of the Pyrmont skyline and Anzac Bridge as seen from White Bay Park.
- Maintain existing views to landmarks to reinforce the diverse visual quality of the area.
- Ensure that the approach to the Old Glebe Island Bridge is upgraded to contribute to the quality of the public domain.
- Maintain and protect vistas where practicable along streets which terminate at the water.
- Provide flexibility for locating port facilities including buildings and silos.’

A visual assessment of the proposed modification is provided in Section 5.4. Overall, the main elements of the proposed modification (ie the additional all weather structure, the portable boat racks and the reorientation of Building 1) are not expected to result in significant impacts upon visual amenity from key public viewpoints. The proposed modification will not result in buildings/structures that are substantial in scale and height and there will be no impact on the views from the adjacent Balmain residential area or White Bay towards Anzac bridge and the Pyrmont skyline. The proposed modification will assist in providing port related buildings/structures whilst maintaining key views and vistas. For these reasons the proposed modification is in accordance with the above principles.

ii Provisions

The master plan specifies maximum building heights of 12 m for the majority of the site with a portion of the eastern and southern parts of the site subject to a zero metre height limit restriction. The master plan also specifies building setbacks for the site as a minimum of 20 m off the water's edge.

The proposed all weather structure is 11.3 m high and within the 12 m maximum building height area. The proposed location of Building 1 falls just outside of the 12 m maximum building height area within the area shown with zero metre high limit restriction. Notwithstanding, Building 1 complies with the above specific principles and the overall intentions of the master plan.

Portable boat racks will be confined to the boat storage and zone, which are located within the areas of the site that are subject to a zero metre height limit restriction. The two tier racks will have a maximum height of approximately 4.5 m and the three tier racks will have a maximum height of approximately 8 m. Notwithstanding, it is considered that portable racks within this zone will be generally consistent with the principles outlined in the master plan, which identifies structures excluded from the maximum building height controls, including:

- silos;
- mobile equipment: cranes, gantries etc;
- masts;
- container stacks/cargo (Note: container stacks are excluded because they are not a permanent structure);
- incidental roof top vents, plant and equipment; and
- skeletal structures.

The portable boat racks are not permanent structures and may not be fully utilised at all times for storage and/or awaiting maintenance and repairs. On this basis partial views through the racks will be possible given that they are not solid structures and may not always be utilised to full capacity. The proposed height is not inappropriate given the height of the existing and proposed structures on the site and at the adjoining White Bay Cruise Terminal. Although the maximum height and buildings setbacks are not achieved, the portable racks are not permanent structures and the housing of boats on these racks will maintain the current landscape of the foreshore, continuing the use of the area as a working harbour.

For these reasons specified above and taking into consideration that the master plan is not a statutory planning policy, rather a guideline for development, a departure from the master plan is requested for the portion of Building 2 and the portable racks that are subject to a zero metre height restriction.

3.5.2 Sydney Harbour Foreshores and Waterways Area Development Control Plan 2005

The *Sydney Harbour Foreshores and Waterways Area Development Control Plan 2005* (DCP 2005) was prepared to support the Sydney Harbour SREP and was made at the same time the Sydney Harbour SREP was gazetted. The DCP 2005 establishes comprehensive design guidelines for development and criteria for natural resource protection for the area identified as Foreshores and Waterways area. The site is within the Foreshores and Waterways area and, therefore, the DCP 2005 applies.

The aims of the DCP 2005 are to:

‘Protect ecological communities within the area covered by SREP (Sydney Harbour Catchment).

Ensure that the scenic quality of the area is protected and enhanced.

Provide siting and design principles for new buildings and waterside structures within the area.

Identify potential foreshore access locations in the area.’

The DCP 2005 general requirements are outlined in Table 3.2 and have been considered in the context of the proposed modification.

Table 3.2 DCP 2005 requirements

Requirement	Consideration	Compliance
General		
Public access to waterways and public land is maintained and enhanced.	There will be no change to the existing site access as a result of the proposed modification.	Yes
Congestion of the waterway and foreshore is minimised.	The TIA (Appendix C), summarised in Section 5.2 , has identified that the local access road (Robert Street) and main intersections (Robert Street/Victoria Road) have adequate capacity to accommodate the proposed modification. The proposed modification will not affect congestion levels of the waterway due to staggered entry of boats to water via the travel lift and area for boats to rest in wet berth area before exiting the marina. The marina will be managed in accordance with the proponent’s Marine Traffic Management Plan (MTMP) which will be updated to incorporate the proposed modification.	Yes
Conflicts on the waterway and foreshore are avoided.	The components of the proposed modification will be contained in the current lease area and will not impact on the main navigational channel or other berths at White Bay.	Yes
The development warrants a foreshore location.	The development warrants a foreshore location as it is to provide marine services.	Yes
The development does not interfere with navigation, swimming or other recreational activities.	Navigation, swimming and other recreational activities in the area will not be affected by the proposed modification.	Yes
The demand for the development has been established.	The demand for the site operations was demonstrated in the original EA (KBR 2006), which related to the refuelling infrastructure as well as maintenance and repair services for vessels on the site. The proposed modification will meet the demand for boat storage spaces due to the current lack of dry boat storage in Sydney Harbour, to accommodate current boat ownership levels, as well as future projections of an increasing demand of boat ownership and need for dry boat storage.	Yes
The structure does not obstruct or affect the natural flow of tides and currents.	The components of the proposed modification are mainly land-based. The floating pontoon will not affect tides or currents.	Yes

Table 3.2 DCP 2005 requirements

Requirement	Consideration	Compliance
Development does not dominate its landscape setting.	The visual impacts of the all weather structure are not expected to be significant considering the current marine/industrial setting in which it will be located and general adherence to the building height limits for the area (Section 3.5.1). The proposed light coloured tension fabric/shade cloth of the all weather structure provides cover only and will not result in an additional enclosed building on the site. Similarly, the portable boat racks are not solid structures adding additional building bulk to the site. Both the all weather structure and the boat racks will be open on all sides, allowing views through the site to be maintained and minimizing affects on the landscape setting. In addition, the footprint of the approved Building 1 is being reduced by approximately 42%, which will significantly reduce the bulk and scale of this approved building.	Yes
The extent of development is kept to the absolute minimum necessary to provide access to the waterway.	Access to the waterway is outside the scope of the proposed modification as it will not impact on waterway access. Waterway access will remain via the travel lift and wet berth area as set out in the MTMP.	N/A
Share usage of facilities is encouraged to minimise the number of structures and their cumulative impact of the environment of the Harbour and its tributaries.	The site is operated commercially and provides services for a range of recreational and commercial craft, combined with a variety of workshops and showrooms. The proposed modification will augment this through the provision of dry boat storage facilities.	Yes
Development is setback at least 2.5 metres from the division of the waterway as established by the NSW Maritime Authority.	This is not relevant to the site. There are no adjoining properties (that will share this particular section of water) and the facility will remain within the lease footprint.	N/A
Built form		
Where buildings or structures would be of a contrasting scale or design to existing buildings, care will be needed to ensure that this contrast would enhance the setting.	The existing buildings on the site consist of the amenities block, offices and the boat storage in Building 2. The structures proposed will not differ significantly from structures originally approved. The proposed all weather structure and portable boat racks will be constructed of steel to match the existing gantry and the adjoining White Bay Cruise Terminal. The canopy material above the gantry will be lightweight, most likely a tension fabric to relate to the fabric canopies on the outside of the White Bay Cruise Terminal, and will enhance the appearance of the existing steel gantry. The choice of materials for both structures will ensure that the overall development is in keeping with the existing port and marine character of the area. In addition, the footprint of the approved Building 1 is being reduced by approximately 42%, which will significantly reduce the bulk and scale of this approved building.	Yes

Table 3.2 DCP 2005 requirements

Requirement	Consideration	Compliance
While no shapes are intrinsically unacceptable, rectangular boxy shapes with flat or skillion roofs usually do not harmonise with their surroundings. It is preferable to break up facades and roof lines into smaller elements and to use pitched roofs.	Building 1 has been architecturally designed with facades and roof lines broken up. The proposed all weather structure provides cover with the use of tension fabric without the need for an additional building and is in keeping with the structures at the adjoining White Bay Cruise Terminal. The portable boat racks will be constructed from galvanized steel and open on all sides to avoid introducing rectangular boxy shapes to the site.	Yes
Cumulative visual impact of a number of built elements on a single lot should be mitigated through bands of vegetation and by articulating walls and using smaller elements.	Overall cumulative visual impact of the site will not be significantly impacted by the proposed modification. The larger built elements on the site will be split by large spaces between buildings which will mitigate the bulk built forms on the site. It is noted that the only new built elements will be the fabric canopy associated with the all weather structure. This will be an open structure that will not significantly alter or add building bulk to the site. Landscaping adjacent to the waterway in the north-east corner of the site will further reduce the impact of the built elements on site. In addition, the footprint of the approved Building 1 is being reduced by approximately 42%, which will significantly reduce the bulk and scale of this approved building.	Yes
Signage		
Sign dimensions should be minimal and consistent with the commercial or community identity of the premises.	(i) Building identification signage The signage will provide the name of the businesses only. The size of the signage will be appropriate given the scale and marine character of the buildings. (ii) Business identification signage The dimensions of the proposed Caltex sign will ensure that it is visible to marine traffic whilst being of a size that is in keeping with the scale of existing and proposed buildings on the site.	Yes
Signs should not be brightly illuminated to avoid becoming navigational hazards. Lighting of signs should be directed downward, away from the water.	(i) Building identification signage Signs will not be brightly illuminated to avoid becoming a navigational hazard. (ii) Business identification signage As above.	Yes
Signs should preferably be placed on the facades of buildings, rather than on roofs or free standing.	(i) Building identification signage The proposed building identification signage will be placed on the facades of Buildings 1 and 2 and on the steel gantry above the all weather structure. (ii) Business identification signage The proposed Caltex sign will be positioned on the south-east corner of the site at the eastern extremity of the fuel pumps to ensure that it is visible to marine traffic.	Yes

Table 3.2 DCP 2005 requirements

Requirement	Consideration	Compliance
Signs that intrude on the skyline should be avoided.	(i) Building identification signage The proposed building identification signage will be positioned on the existing gantry and on approved buildings below the roofline, therefore not intruding on the skyline. (ii) Business identification signage The proposed Caltex sign will be compatible in height with the existing and proposed structures on the site.	Yes
All signage is to be located on dry land below the roofline (or parapet) of buildings. Advertising signs are not to detract from the visual quality or amenity of the foreshores and waterways when viewed from the waterways.	(i) Building identification signage The building identification signage is located below the roofline of Buildings 1 and 2 and below the uppermost part of the gantry on the all weather structure. The proposed materials used for the signage will compliment the buildings and not adversely affect the visual amenity of the site. The signage on Building 2 will sit flush to the wall and will not be visually obtrusive when viewed from the waterway. (ii) Business identification signage As described above, the proposed Caltex sign will be compatible in height with the existing and proposed structures on the site and will be in keeping with the marine character of the area.	Yes
Marinas (commercial and private)		
Visual		
The visual contrast (derived from an analysis of form, line, colour and texture) between the marina and the existing or planned future character of its setting is to be minimised.	The proposed all weather structure will utilise the existing gantry structure and is in keeping with the character of the adjacent White Bay Cruise Terminal building and the marine character of the area generally. The proposed steel structure utilized for the all weather structure will match the existing gantry both structurally and aesthetically. The proposed cantilevering of the fabric canopy with the angled struts overhead allows for maximum flexibility as well as negating the need for any new elements to penetrate the existing slab. The portable boat racks will be in keeping with the working harbour character of the site and the locality.	Yes
The bulk and scale of buildings and other structures on land is to be minimised through appropriate mitigation measures including landscaping, articulated walls, detailing of surfaces and by using smaller elements.	This issue is addressed above under 'built form' and considered further in the visual assessment (Section 5.4).	Yes
The visual impact of car parking from the waterway is to be minimised.	The main parking area has been provided to the north of the site away from the waterway. Other overflow parking is provided but will only be used on an 'as needs' basis and will, therefore, have limited visual impacts.	Yes

Table 3.2 DCP 2005 requirements

Requirement	Consideration	Compliance
Private landing facilities (pontoons)		
To minimise alienation of the public waterway, the total length of structures is restricted to the minimum needed for their function. This is generally 13 m with maximum length of 16 m from the mean high water mark.	The proposed floating 'finger' pontoon will be approximately 30 m x 3 m which will exceed the general requirements of the DCP. However, the pontoon will form part of the existing marina and should be classified as such. The proposed 'finger' pontoon will not extend beyond the extent of the existing marina.	N/A
Pontoons are to be a minimum size and to be as unobtrusive as possible. In general pontoons should be 3.6 m x 2.4 m x 2.4 m, but where circumstances demand, pontoons up to but not greater than 6 m x 3 m will be considered.	As above.	N/A
The depth of water to a pontoon or any associated vessel mooring shall conform with the requirements of the NSW Maritime Authority as construction approval authority.	The proposed 'finger' pontoon will be attached to and reflect the depth of the existing marina.	N/A
The surfaces of pontoons are to be left untreated or stained or painted in colours compatible with the character of the area, except as required for safety reasons.	The surface of the proposed 'finger' pontoon will be compatible with the existing marina.	N/A
Traffic and parking		
Land-based impacts including traffic volumes and parking demand meet established performance standards.	This issue is addressed in the TIA (Appendix C) and summarised in Section 5.2. The proposed modification will not significantly change the performance of the local intersections (Robert Street/Victoria Road). Car parking for the proposed modification has been provided in accordance with relevant RMS standards.	Yes
Adequate car and trailer parking (based on the number and type of berths, associated activities and number of employees) is to be available on-site. Off-site parking is acceptable only where it will not reduce community amenity or generate adverse traffic impacts.	Car parking for the proposed modification has been provided in accordance with relevant RMS standards and can be met on site.	Yes
The adverse impacts of traffic and parking generated by boat storage facilities in terms of congestion, safety, air quality and noise are to be minimised.	These issues have been addressed in the TIA (Appendix C) and resultant noise impacts are addressed in Section 5.3. There are not expected to be any significant adverse impacts as a result of additional traffic and parking generated by the proposed modification.	Yes
Noise		
The adverse impacts of noise (considering hours of operation, existing background noise, expected departure/arrival time for vessels, noise level of marina patrons, noise level from repair and testing of vessels and motors) are to be minimised through appropriate design and management measures.	The noise assessment (Section 5.3) has identified that the proposed modification will not significantly alter previously approved levels of noise. Mitigation measures to minimise potential noise impacts will be implemented on site during both construction and operation.	Yes

4 Consultation

4.1 Introduction

This chapter describes the process for and outcomes of stakeholder engagement for the proposed modification. A stakeholder engagement strategy was developed in consultation with PANSW. The strategy identified stakeholders for direct engagement which were divided into two groups; namely:

- government agencies; and
- the local community, including local residents and special interest groups.

4.2 Government agencies

4.2.1 Port Authority of NSW

A planning application meeting (PAM) was held between representatives of the proponent, EMM and PANSW on 21 May 2015 to present details of the proposed modification and confirm the permission to lodge (PTL) requirements for landowners consent. The minutes of the PAM are provided in Appendix D.

PANSW was generally supportive of the proposed modification. Table 4.1 provides a summary of the key items PANSW require to meet PTL requirements and where these have been addressed in this EA.

Table 4.1 PANSW permission to lodge requirements

Item discussed	Requirement	Where addressed in EA
Property and site layout	Full architectural plans are to be provided comprising site plan, floor plans and elevations.	Appendix A
	An overlay showing the approved site layout versus the proposed site layout is to be provided. Any additions to the approved site layout should be clearly noted.	Site plan (Figure 2.1)
	Confirmation is required that the proposed caretakers residence in Building 1 will not be a Class 2 residential dwelling under the BCA.	Section 2.4.1
	Clarification is required of the proposed parking arrangements, with primary and alternative locations noted, taking into consideration the potential take-back area along the northern portion of the site.	TIA (Appendix C), Section 5.2 and site plan (Figure 2.3)
Construction	The documentation is to include an assessment of all works that will be undertaken under the modification proposal.	Chapter 5
	The documentation is to detail a construction programme for physical works including key milestones, construction methods and equipment and how the works will impact on internal site operations and external stakeholders/operators.	Section 2.4.3
Asset management	Engineering certification of the proposed attachment of structures to the gantry is required.	Appendix B
	Responsibility for any repairs and on-going maintenance of the gantry is to be discussed and agreed with PANSW.	To be discussed and agreed with PANSW

Table 4.1 PANSW permission to lodge requirements

Item discussed	Requirement	Where addressed in EA
Environmental (noise, air, water quality, contamination, flora & fauna etc)	Assessment of construction and operations impacts is required and how the additional/modified works will be managed, in the context of the existing approval, to mitigate any impacts on the environment.	Chapter 5
	Reference should be made to Modification 4, including the RTS (AECOM 2013a), to understand the nature of objections and issues raised previously with the proposed dry boat storage proposal and to deal proactively with those issues in the assessment documentation, as appropriate.	Section 5.1
	The inclusion of the internal dry boat storage should consider the following potential impacts as a minimum: noise from construction and operation of the storage facilities on the neighbouring properties and uses; hours of operation; waste management disposal (including volumes); stormwater; water quality and waste water; traffic; visual impacts; energy and water consumption and management.	Chapter 5
	A completed Green Ports Guidelines Checklist to be submitted to PANSW.	Appendix E
Cruise Terminal Operations and Access/Egress	A proposal for managing the access of White Bay 6 customers via the Robert Street gatehouse on cruise ship days needs to be discussed and agreed with PANSW and is to be incorporated in the Operational Traffic Management Plan for the site.	TIA (Appendix C), Section 5.2 and the site access control procedure (Appendix D)
	Noted that there were specific and additional traffic assessment requirements as part of Modification 4 and these should reviewed as part of the traffic assessment for Modification 5.	Section 5.2 and TIA (Appendix C)
Information not discussed at the PAM	Proposal to attach structures to the existing gantries is to consider any heritage impacts to these structures that, although not heritage listed on the Port Authority S170 heritage register, were considered for their heritage value as part of the White Bay Cruise Terminal development.	Section 5.5

Consultation with PANSW has been ongoing throughout the preparation of this EA, through a series of subsequent meetings and phone conversations. PANSW's permission to lodge is provided in Appendix I.

4.2.2 NSW Department of Planning and Environment

A preliminary meeting was held between representatives of the proponent and DP&E on 4 June 2014 to present details of the proposal (as they stood at that time) and confirm the planning pathway and general assessment requirements. It is noted that the proposal discussed included the extension of Building 2 to accommodate additional dry boat berths, which is no longer proposed.

A summary of the key outcomes of the meeting is as follows.

- Assessment and approval pathway - DP&E requested that the EA demonstrate that the proposed modification is within the scope of a S75W of the EP&A Act.
- New building - DP&E raised no issue with the proposal for one building as opposed to multiple individual buildings stating that design and visual impacts would need to be adequately considered.
- Construction of approved Building 1 - DP&E suggested that any modification would need to give confidence that Building 1 would eventually be built.

- Assessment requirements - DP&E noted that the assessment must consider traffic and urban design / visual impacts, contamination and marine navigation.
- Matters raised by external stakeholders regarding the hardstand storage of boats associated with repair/maintenance - DP&E suggested that this be clarified in any future approval.

Given the time lapse between the preliminary meeting with DP&E and changes to the scope of the proposed modification (ie reorientation of Building 2 and proposed all weather structure), a subsequent meeting was held between representatives of the proponent, EMM and DP&E on 3 June 2015 to present the revised proposal.

A summary of the key outcomes of the meeting is as follows.

- Proposed all weather structure - DP&E raised no objection to the use of open structures to support existing tenancies, approved activities and additional boat storage.
- Assessment and approval pathway - DP&E reasserted that the EA should include a justification that it is within the scope of a S75W of the EP&A Act.
- Quantification of all operations on site - to enable potential worst case impacts to be assessed, DP&E requested that the EA identify all operations that are occurring and will potentially occur on the site, including the use of the hardstand area.

DP&E comments from both meetings have been considered and addressed in the preparation of this EA.

4.2.3 Other government consultation

i Leichardt Council

A letter providing a summary of and a justification for the proposed modification was emailed to the Director of Environment and Community Management at Leichardt City Council (Council) on 2 March 2016. A meeting was requested to provide an opportunity to further discuss any specific aspects of the proposed modification and to provide an opportunity for the Council to provide comments. A copy of the letter is provided in Appendix F.

A meeting was held between representatives of the Council, proponent and EMM at the Council offices on 8 March 2016. An overview of the proposed modification was provided and issues in relation to traffic and visual were discussed generally. No objections to the proposed modification were raised by the Council officers. Council representatives confirmed that Council's official position on the proposed modification would be made during public exhibition.

ii Other government agencies

Consultation occurred directly between PANSW and Urban Growth NSW. It is understood that at 16 May 2016 no objections to the proposed modification had been received. PANSW has also initiated consultation with RMS with respect to the proposed water-side works.

4.3 Community consultation

4.3.1 Community liaison group

Representatives of the proponent are regular participants at the PANSW Glebe Island/White Bay Community Liaison Group (CLG). The CLG is a consultation and communication forum which allow the local community and other stakeholders to participate and communicate about the activities at the port. The group is designed to provide a forum for:

- information exchange and discussion on port operations and activities at Glebe Island/White Bay;
- discussion and development of mutually satisfactory solutions concerning environmental impacts of activities at the port, consistent with the objectives of operating a commercially viable port;
- information and discussion on port lessee activities; and
- local residents to provide information about local issues.

A representative of the proponent presented details of the proposed modification at the CLG on 14 March 2016. No objections were raised and members of the CLG were generally supportive given that the proposed modification will support a working harbour.

4.3.2 Community information and feedback session

A community information and feedback session (CIFS) was organised to provide local community including local residents and special interest groups with information about the proposed modification and an opportunity to raise issues directly with the project team.

i Invitations

The following communication tools were used to invite members of the local community to the CIFS:

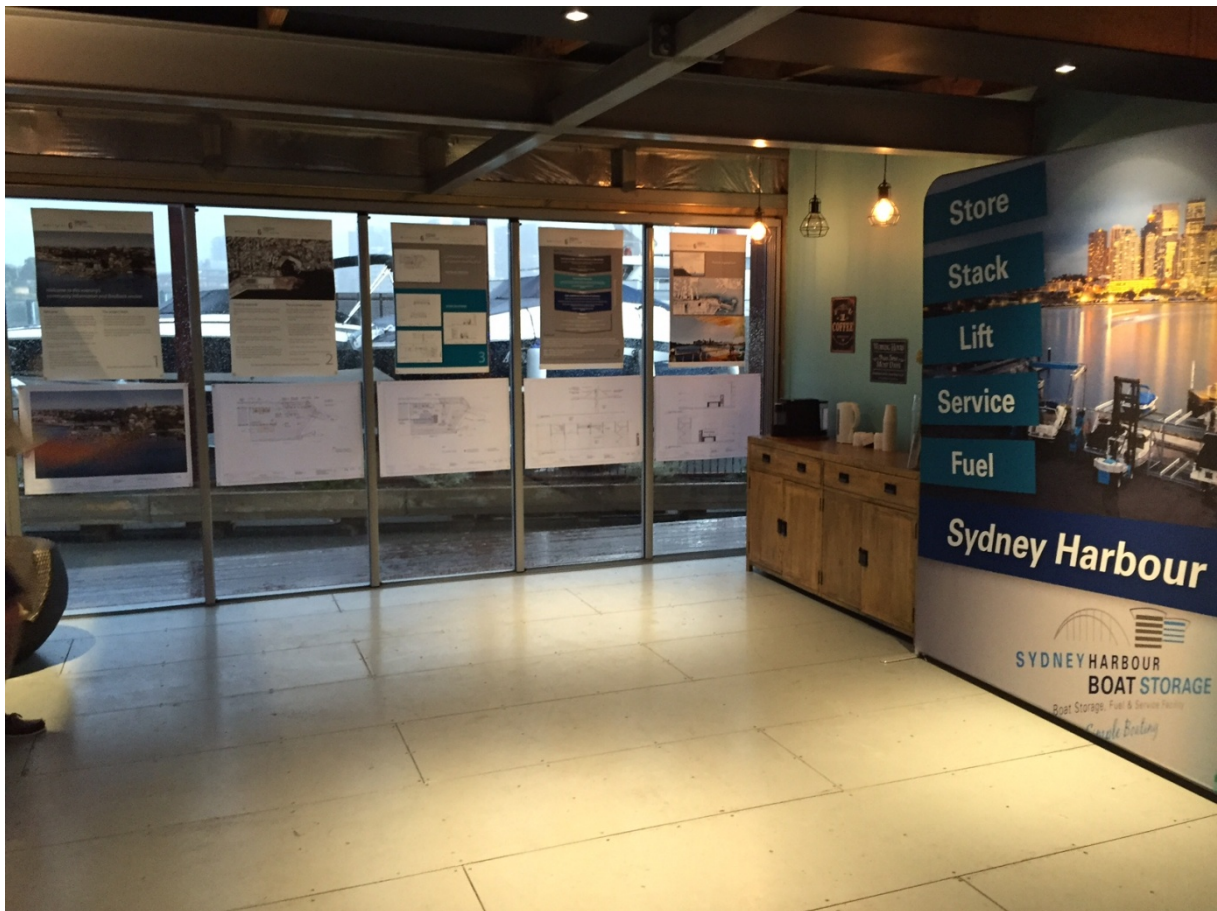
- an advert was placed in the Inner West Courier for one week from 8 March 2016;
- details of the CIFS were placed on the notice boards of the waterfront residential apartment in Pyrmont that have direct views of the site; and
- community members of the CLG emailed details of the CIFS to residents within their resident groups, which included residents in Pyrmont and the Buchanan Street precinct.

ii Engagement method

The CIFS was held over two hours (6 to 8 pm) on Wednesday 16 March 2016. Members of the project team were available to answer questions and a series of storyboards were displayed across the room, outlining:

- the purpose of the CIFS;
- details of the existing approval and the proposed modification, including plans, elevations and a photomontage of the site; and
- the planning assessment and approval pathway.

A copy of the storyboards is provided in Appendix H and a photograph of the CIFS set-up is provided below.



Photograph 4.1 Community information and feedback session

iii Outcomes

There was only one attendee to the CIFS who was a member of the CLG and had been previously briefed on the proposed modification. No objections were raised. Given that the CIFS was widely advertised the non-attendance suggests that the existing site operations and the proposed modification are of little concern to the local community.

5 Impact assessment

5.1 Introduction

This chapter assesses the potential environmental impacts of the proposed modification. A detailed assessment of traffic, noise and visual amenity aspects was considered warranted given the nature of the proposed modification and following consultation with relevant government agencies. Potential worst case impacts of the proposed modification have been assessed at both the construction and operation phases of the development. Other environmental aspects are addressed in Section 5.5.

In response to PANSW comments at the PAM (see Section 4.1), Table 5.1 provides matters raised in relation to the previous dry boat storage proposal (Modification 4), their applicability to the proposed modification and, where relevant, where they are addressed within the EA.

Table 5.1 Issues raised in response to submissions report for Modification 4

Summary of key issues raised in Modification 4 RTS	Relevance to the proposed modification	Where addressed in EA
Visual impact		
Use of the facade and roof treatments and the uses of appropriate landscaping.	Building 1 has been architecturally redesigned with facades and roof lines broken up. The proposed all weather structure provides cover with the use of tension fabric without the need for an additional building and is in keeping with the structures at the adjoining White Bay Cruise Terminal.	Visual assessment (Section 5.4)
Avoid locating the meet and greet centre adjacent to the water and on the point of the site.	The 'meet and greet' facility was relocated as part of Modification 4. Under the alternative proposal the 'meet and greet' facility and the site amenities would be included in Building 1.	N/A
The additional car parking is located within a highly exposed viewing corridor and indicates overdevelopment.	The majority of the car parking provided will be in the existing car parking area to the north of the site. Under both proposal options other smaller areas of parking will be provided across the site but this will only be used when the main car park is at full capacity. Therefore, potential visual impacts will be temporary and the additional car parking areas largely obscured by boat storage, maintenance and repair works that will be occurring on the site.	Visual assessment (Section 5.4)

Table 5.1 Issues raised in response to submissions report for Modification 4

Summary of key issues raised in Modification 4 RTS	Relevance to the proposed modification	Where addressed in EA
Road based traffic and transport		
Further assessment required to demonstrate the cumulative impacts associated with: - existing impacts including the use of the adjoining White Bay Cruise Terminal; - future impacts associated with traffic generated by recently approved developments including the Super yacht Marina and the Exhibition Centre; and - intersection performance for of all relevant intersections for both cruise and non-cruise ship days.	A further cumulative traffic assessment has been undertaken as part of the TIA.	TIA (Appendix C) and Section 5.2
Additional impacts associated with the introduction of dry-boat storage at the site.	The TIA quantified the total maximum number of all boats that could be stored on site and considered the associated impact on the site in terms of overall parking requirements and on the local road network in terms of access arrangements and overall capacity.	TIA (Appendix C) and Section 5.2
Inadequate assessment of traffic volumes and the traffic performance of James Craig Road and Robert Street.	The use of James Craig Road is no longer proposed. Additional traffic volumes have been assessed as part of the TIA.	TIA (Appendix C) and Section 5.2
The need for a Traffic Management Plan (TMP) prior to the commencement of construction.	A TMP will be prepared prior to the commencement of construction.	N/A
Marine based traffic and transport		
Impacts on maritime conditions, including: - congestion on the waterway; and - impacts to water navigation particularly as a result of the interface of recreational boats and cruise liners.	The MTMP has been updated to incorporate the additional boat storage. The impact is expected to be minimal. The proponent will continue to offer a structured and safe way for vessel owners to schedule their boating activities, thus minimising congestion.	N/A
Vessel Management Plan (VMP)		
RMS required the VMP to be updated to consider the boat stacking facility and the cumulative impact of the White Bay 6 Marine Park and Sydney Boat House in Rozelle Bay. The VMP should be read in conjunction with the Marine Traffic Management Plan prepared for the proposal.	The VMP has been incorporated in the MTMP which will be updated to include the additional storage capacity under the proposed modification.	N/A
SEPP 55 – Remediation of Land		
Consideration of SEPP 55 required in relation to the establishment of a residential use on the site, specifically a caretaker’s residence.	An assessment (HEC 2013) was undertaken for Modification 4 which demonstrated that the site was suitable for the proposed caretaker’s residence in accordance with the relevant provisions of SEPP 55.	Section 3.4.3

Table 5.1 Issues raised in response to submissions report for Modification 4

Summary of key issues raised in Modification 4 RTS	Relevance to the proposed modification	Where addressed in EA
Permissibility, land use zoning and unsuitability of land use		
The proposed change of use and the consistency with zoning objectives, including that: - the modifications change the land use to a marina; and - dry storage of boats is unsuitable and not classified as port or maritime use for which the site is zoned.	The proposed modification is generally consistent with the SREP 26 zone objectives. There will be no change land use classification to a marina or to the permissibility of the land use on the site. Boat storage is an approved use on the site.	Section 3.4.1
Environmental assessment of the modification		
Further assessment required of impacts associated with the modification in relation to: - noise; - air quality; - social and economic impacts; - light spill; and - aquatic ecology.	Where relevant, these issues have been addressed in the EA.	Chapter 5

5.2 Traffic and transport

A traffic impact assessment (TIA) has been prepared for the proposed modification by EMM. The TIA is provided in Appendix C and summarised in the following sections.

5.2.1 Existing environment

The major road network in the Rozelle Port area, which provides access to the site is shown on Figure 5.1 and includes Victoria Road and Robert Street.

Victoria road is a high capacity arterial type road which connects between the City of Sydney (via the Anzac Bridge) and Parramatta and other areas of western and north-western Sydney. Within the localities of Rozelle, Balmain and Drummoyne, a city bound bus lane was designated for the road in 2010 (The Inner West Busway), which operates full time on some sections and during the morning peak period only on other sections.

Robert Street is one of the two main vehicular access routes to the Balmain peninsula (the other is Darling Street) which between them carry the majority of the local car, bus and other traffic from all areas of the Balmain peninsula.

The Victoria Road and Robert Street intersection is the primary access point to the major road network which is proposed to be used by all site traffic on both 'cruise ship' and 'non cruise ship' traffic days.

Since 2010, a morning and afternoon peak hour 'citybound' bus lane has been introduced on Victoria Road. This bus lane has reduced the peak hour car traffic capacity and the traffic volumes for the car traffic which is using Victoria Road during both the morning and afternoon peak traffic periods.

The results of traffic counts undertaken as part of the TIA for the Victoria Road/Robert Street intersection on both a 'cruise ship' day and a 'non cruise ship' days, together with major road peak hourly traffic volumes, are provided in Table 5.2. The full traffic survey results are included in the TIA (Appendix C).

The existing site traffic activity from the site operations in July 2014 was also quantified by a twelve hour traffic survey on 17 July 2014.

Table 5.2 Summary of July 2014 and July 2015 peak hourly traffic surveys

Intersection	Time	Total intersection traffic volume in the peak hour	Two way traffic volume on Victoria Road	Two way traffic volume on Victoria Road	Two way traffic volume on Robert Street
Surveyed traffic in 2014 – with no Cruise Ship visiting					
Victoria Road/Robert Street	Morning Peak Hour (7.15 to 8.15 am)	5,913 vehicles per hour	4,277 vehicles, north of the intersection	5,862 vehicles, south of the intersection	1,687 vehicles, east of the intersection
Victoria Road/Robert Street	Afternoon Peak Hour (5.00 to 6.00 pm)	7,293 vehicles per hour	5,271 vehicles, north of the intersection	7,199 vehicles, south of the intersection	2,116 vehicles, east of the intersection
Surveyed traffic in 2015 – with a Cruise Ship visiting					
Victoria Road/Robert Street	Morning Peak Hour (7.15 to 8.15 am)	5,528 vehicles per hour	3,822 vehicles, north of the intersection	5,482 vehicles, south of the intersection	1,752 vehicles, east of the intersection
Victoria Road/Robert Street	Afternoon Peak Hour (4.15 to 5.15 pm)	5,672 vehicles per hour	3,965 vehicles, north of the intersection	5,561 vehicles, south of the intersection	1,818 vehicles, east of the intersection

Note: *Includes eastbound traffic using the underpass to the Anzac Bridge which bypasses the main part of the intersection.

The traffic survey results in Table 5.2 show the range of recent and current major road traffic volumes at the intersection in July 2014 and July 2015. The results show that there is minimal additional traffic using Robert Street on a cruise ship day as there was only a slight increase of 65 vehicles in the morning peak hour traffic using Robert Street in the July 2015 survey compared to the July 2014 survey. Further, there was a reduction in the afternoon peak hour traffic between the two traffic surveys.

The adjacent White Bay Cruise Terminal has public access restrictions for the traffic travelling via Robert Street on cruise ship days, which do not currently apply to the site operations. The access arrangements for the site will continue to allow vehicular access via Robert Street on all days via authorised access identification cards and provision of visitor lists to the PANSW gatehouse (see Section 2.4.2), including on the days when a cruise ship is visiting the White Bay Cruise Terminal.

5.2.2 Impact assessment

i Construction

During construction it is estimated that there will be a maximum of 20 daily heavy vehicles and 30 daily cars or other private vehicles visiting the site at the peak phase of the construction work. This level of traffic generation is lower than during the site operations which is, therefore, the main focus of the project traffic impact assessment.



Access to main road network

White Bay 6

Environmental Assessment

Figure 5.1

ii Operation

The proposed modification will increase the site's boat storage capacity from 50 to 200 berths (ie up to 80 additional dry boat storage berths and up to 70 additional outdoor berths). The traffic assessment is based on the maximum number of berths, to enable assessment of potential worst case impacts.

iii Other transport modes

Normal public transport services will not generally be required for the proposed modification. Where there will be a demand for individual or group transport travel by taxis and private minibuses these vehicles will be used to transport some site patrons and their guests to and from the site.

Access by pedestrians and cyclists to and from the site from surrounding areas is unlikely due to the current separation distances from the nearest residential area, which is near the corner of Robert Street at Buchanan Street. Some local residents from within a normal walking distance catchment (which is 500 m to 800 m approximately) may walk to site. Existing bicycle parking will be retained at the site.

a. Impact on the local road network

A comparative summary of the likely additional daily and peak hour traffic movements which would be generated by the proposed modification, in comparison to the existing site traffic usage, is provided in Table 5.3.

Table 5.3 Summary of peak daily and peak hourly traffic volumes generated by the proposed modification

Traffic period	Type of traffic	As originally approved	With approved operations (50 dry boat storage berths)	With potential maximum site utilisation (150 additional boat storage berths)
Daily Traffic	Staff trips	60	54	54
	Fuel deliveries	6	6	6
	Ro-Ro ramp/Boat deliveries	64	4	4
	Storage berths	0	70	280
	All traffic	130	134	344
Additional traffic				210
Peak Hour Traffic	Staff trips	30	27	27
	Fuel deliveries	3	3	3
	Ro-Ro Ramp/Boat deliveries	0	0	0
	Storage berths	0	14	56
	All traffic	33	44	86
Additional traffic				42

The proposed additional boat storage capacity (+150 boats) at the site will generate up to 210 additional daily vehicle movements. Approximately 42 of these additional vehicle movements will potentially be occurring at the site during either the morning or the afternoon commuter traffic peak periods. These movements will mainly be travelling inbound towards the site (90%) during the morning commuter peak traffic periods and mainly outbound (70%) during the afternoon commuter peak periods.

It is anticipated that the additional site operations traffic will have a similar geographical distribution to the existing site traffic movements which is 60% travelling to and from the south or the east in comparison to 40% travelling to and from the west via either Victoria Road or the City West Link. During the morning peak traffic period any outbound traffic from the site which will be travelling towards the west, will need to travel via the City West Link due to the morning peak period (6.30 am to 9.30 am) due to the no right turn restriction which applies to the Robert Street traffic at the Victoria Road intersection.

On Robert Street, there will be approximately +2.2 to 2.4% peak hourly traffic increases on either the days with or without a cruise ship visiting. The Robert Street route at Victoria Road has peak hourly two way traffic volumes in the range 1,687-2,116 vehicles per hour currently, which correspond generally to sub arterial route traffic conditions. The likely project generated traffic increases from the additional site traffic using Robert Street, (up to 35 additional hourly vehicle movements for +150 additional boats storage berths) are unlikely to have any noticeable road or intersection traffic queuing impacts to the route.

There will be generally less than 0.7% increases in the peak hourly traffic in any direction on the major road network (Victoria Road) to the north-west and south-east of Robert Street, which will have no noticeable effects on the peak hourly traffic flow conditions on the route.

The TIA included an intersection traffic assessment (undertaken using the SIDRA analysis program) at the Victoria Road and Robert Street intersection, being the main intersection to the site. The primary measure of the existing and future intersection performance is the average intersection traffic delay. The future traffic effects of the proposed modification (+150 boat storage berths) are effectively zero for the four traffic peak hour periods considered, which are:

- July 2014 traffic conditions (no cruise ship) the morning peak hour average intersection delay remains unchanged at 34.0 seconds;
- July 2014 traffic conditions (no cruise ship) the afternoon peak hour average intersection delay increases marginally from 27.7 to 27.8 seconds;
- July 2015 traffic conditions (with cruise ship) the morning peak hour average intersection delay increases marginally from 21.3 seconds to 21.6 seconds; and
- July 2015 traffic conditions (with cruise ship) the afternoon peak hour average intersection delay increases marginally from 20.8 seconds to 21.0 seconds.

The traffic safety conditions on the local road access to the site via Robert Street and the major road access intersection where this road meets Victoria Road are acceptable currently and will not be adversely affected by the proposed modification during construction or operation stages.

b. Impact on parking

The existing site car parking capacity of 45 spaces, which is primarily for existing customers, site employees and visitors, will be retained and additional car parking will be provided in four smaller parking areas on the main part of the site as shown on the proposed site plan (Figure 2.3). Existing bicycle parking capacity (three bicycle parking/storage spaces) will also be retained.

The additional car parking supply for the site has been calculated in accordance with the RMS Guide to traffic generating developments. This car parking standard recommends 0.2 car parking spaces per berth for car parking at a dry boat storage marina. This rate is also consistent with the recommendations of the Australian Standard AS 3962-2001 – Guidelines for the design of marinas, which recommends car parking in the range 0.2 to 0.4 parking spaces per dry boat storage berth.

The RMS car parking standard effectively corresponds to the lower end of the AS 3962 range, but is appropriate for this site as there are other car parking demand uses at the site (such as employee and visitor car parking) and some shared usage of the overall site car parking supply between the different user groups will generally be feasible. The total site car parking capacity will therefore need to be increased as follows:

- a total of 45 car parking spaces are required currently, representing 35 spaces for the site employees and visitors and 10 car parking spaces for the existing approved dry boat storage (50 boats) for customers and their guests;
- the proposed additional dry boat storage capacity for 80 more boats will require a further 16 car parking spaces; and
- the additional outdoor boat storage capacity for 70 boats will require a further 14 car parking spaces.

The requirement for 30 additional car parking spaces results in a future maximum site car parking requirement of 75 car parking spaces.

It is also noted that under the alternative site layout proposal up to 26 additional car parking spaces would also be provided in the southern portion of the site, as shown on the alternative proposed site plan (Figure 2.3). Both options allow for a total of 75 car parking spaces.

5.2.3 Management and mitigation measures

To accommodate the increased traffic as a result of the proposed modification the following measures will be implemented.

- Development of a further 30 car parking spaces which will include a proportion of disabled car parking spaces in accordance with the Australian Standards.
- The access arrangements for the site will continue to allow vehicular access via Robert Street on all days via authorised access identification cards and provision of visitor lists to the PANSW gatehouse (see Section 2.4.2), including on the days when a cruise ship is visiting the White Bay Cruise Terminal.

5.2.4 Summary and conclusion

The additional site traffic from the construction and operation of the proposed modification will have a negligible effect on the capacity and safety of the two roads which provide the primary access to the area; namely, Robert Street and Victoria Road. Proportional traffic increases (for the proposed additional 150 boats storage capacity) will be minimal, with a maximum 0.7% peak hourly traffic increase on Victoria Road and a maximum 2.4% peak hourly traffic increase on Robert Street. The proposed modification will have a negligible effect on the intersection of Victoria Road with Robert Street.

No improvements to either public transport services or pedestrian and cyclist access will be required for the proposed modification.

In an overall transport context, the traffic impacts for the proposed modification have been assessed via Robert Street for two site access conditions (access on a normal day and access on a cruise ship day) and, in both situations, the existing road network has been found to provide adequate traffic capacity.

5.3 Acoustics

5.3.1 Existing environment

The noise impacts associated with the construction and operation of the approved operations were assessed as part of the original EA (KBR 2006) and, where relevant, as part of subsequent modifications (including Modification 4). Where potential adverse impacts were identified measures were proposed to manage and/or mitigate these impacts. Construction and operation is undertaken in accordance with the relevant conditions of consent which, in relation to noise, include specified construction and operating hours, the preparation of and adherence to a noise and vibration management plan, compliance with specified noise limits and the requirement for ongoing noise measurements and monitoring.

5.3.2 Impact assessment

i Construction

The AECOM (2013) EA for Modification 4 included a noise assessment (AECOM 2013b) which assessed the potential noise impacts associated with the construction of four buildings (Buildings 1, 2, 3A and 3B) in accordance with 'Interim Construction Noise Guideline' (ICNG) (DECCW 2009). Following public exhibition, Modification 4 was revised to include only the two buildings (Buildings 1 and 2) approved as part of the original EA (KBR 2006). The assessment was not revised and therefore overestimated the construction noise that would be generated.

The proposed modification will result in the reorientation of Building 1 and the addition of the all weather structure. No new buildings are proposed. Construction noise levels associated with the reorientation of the building and the addition of the all weather structure are not assessed to exceed those levels approved for Modification 4. The ICNG remains the relevant guideline for assessing construction noise and, given that there are no additional noise generating activities in the area that weren't assessed previously, and the proposal will not generate noise any closer to the adjacent residential properties, the previous conservative noise assessment is relevant to the proposed modification. Therefore, no further assessment of construction noise associated with the proposed modification is required.

ii Operation

The noise assessment (AECOM 2013b) for Modification 4 also included an assessment of operational noise, assuming a maximum storage capacity of 150 dry berths. As discussed, Modification 4 was revised following public exhibition, which also included a reduction in the storage capacity from 150 to 50 dry berths and limited boat storage within Building 2. The noise assessment (AECOM 2013b) conservatively assessed the greater number of berths that were originally proposed for both buildings.

The proposed modification will not introduce additional operating plant and equipment from that assessed in the Modification 4 noise assessment (AECOM 2013b). Building 1, where alterations are proposed to facilitate the additional dry berths, is positioned furthest from nearest residential properties in Grafton Street, Balmain, and is separated and therefore acoustically shielded to a degree by the approved Building 2. On this basis, given that the Modification 4 noise assessment (AECOM 2013b) considered 150 dry boat storage berths, it is likely that noise from the proposed modification would be representative of noise levels presented in that assessment which demonstrate that relevant operational noise criteria can be satisfied.

iii Traffic noise

Consistent with the TIA, the traffic noise associated with the potential maximum utilisation of the site under the proposed modification was assessed. Under this scenario, a total of 309 daily traffic movements would be generated (refer Table 5.3) for all activities on the site, including boat storage (up to a maximum 200 berths).

All traffic would continue to access the site via Victoria Road and Robert Street which are classified as arterial/sub-arterial roads in accordance with NSW EPA 2011, Road Noise Policy (RNP). Of these roads, potential worst case road traffic noise impacts would occur at residents along Robert Street given the higher percentage increase of existing to proposed traffic movements.

Site traffic during the RNP daytime period (between 7:00 am and 10:00 pm), conservatively assuming all 309 movements would occur during this time would generate an average noise level over 15 hours (in accordance with the RNP) of 50 decibels (dB) at 10 m from Robert Street (representative of the distance to the facade of the nearest residence). This level is 10 dB less than the RNP daytime criteria of 60 dB. Therefore, the total traffic generated by all operations on the site (including the proposed modification) would satisfy the relevant RNP criteria.

5.3.3 Management and mitigation measures

No additional management or mitigation measures are required as a result of the proposed modification. The OEMP will be updated to incorporate the proposed modification.

5.3.4 Conclusion

Noise impacts from the proposed modification have been assessed as being largely the same as those predicted for the approved construction and operations on the site.

There are no new buildings proposed with Building 1 being reorientated and reduced in size and the inclusion of an all weather structure. Construction noise levels are not expected to exceed those levels previously approved and there will not be any additional noise generated closer to the adjacent residential properties. The previous conservative noise assessment is therefore relevant to the proposed modification and no further assessment of construction noise associated with the proposed modification is required.

The noise assessment (AECOM 2013b) approved for Modification 4 considered 150 dry boat storage berths. The proposed modification includes a total of 130 dry boat storage berths and no additional noise generating machinery (such as forklifts) is proposed. Noise from the proposed modification is therefore assessed to be within levels presented in the previous noise assessment, which demonstrated that relevant operational noise criteria can be satisfied. Traffic noise generated by the maximum number of boats that could potentially be stored on the site under the proposed modification was also considered and determined to be within the RNP criteria.

5.4 Visual

5.4.1 Existing environment

The site is located on the northern foreshore of White Bay in Balmain (as shown on Figure 1.1). The immediate locality is predominantly characterised by a mix of port and marine related uses and a number of large built elements dominate the visual landscape in adjoining berths.

5.4.2 Visual elements of proposal

i. Reorientation of Building 1

Since Building 1 was approved in 2006 there has been ongoing discussions relating to planning at the site. This has resulted in the reorientation of the building and reduction in the footprint of the building by approximately 42% which has significantly reduced its overall bulk and scale. The approved location of Building 1 is shown in Figure 5.2 and the proposed location of Building 1 is shown in Figure 5.3.

As detailed in Section 2.4.1, the current approved location for Building 1 sits under the shadow of the gantry and this has proven to be unattractive to prospective tenants. The proposed orientation of the building towards the Sydney CBD will be more attractive to prospective tenants as it will be more visible and easily identified from the main entrance to the site from the water, the CBD and Barrangaroo.

Overall, the visual impacts associated with Building 1 would be reduced as a result of the proposed modification, given the significant reduction in its overall bulk and scale.



Figure 5.2 **Approved Building 1**



Figure 5.3 **Proposed re-orientation of Building 1**

ii. All weather structure

As described in Section 2.4.1, the proposed modification involves attaching a lightweight cantilever structure to the existing gantry to provide all weather cover. The all weather structure will be suspended on both sides of the existing gantry, extending 15.5 m to the north and south at a height of 11.3 m. A cross section of the all weather is included in the project plans (Drawing DA3111) in Appendix A.

The Sydney Harbour Foreshores and Waterways Area DCP 2005 incorporates comprehensive design guidelines for new development identified in the Foreshores and Waterways area, in which the site is located. An assessment of the all weather structure against these guidelines is provided in Table 3.2.

In summary, the all weather structure has been designed to be light in appearance, considerate to the surrounding structures and harbour foreshore, and flexible in use. The steel structure matches the existing gantry both structurally and aesthetically and is in keeping with the character and appearance of the adjoining White Bay Cruise Terminal. The canopy material is light, and relates to the fabric canopies on the outsides of the White Bay Cruise Terminal.

iii. Outdoor boat storage, maintenance and repairs

As described in Section 2.4.2, the proposed modification seeks approval for up to 70 boats to be stored on portable racks on the site's hardstand area within a boat storage zone identified on the proposed site plan (Figure 2.3).

A number of boat are currently housed on portable racks on the site, which are constructed from galvanised steel and either accommodate two or three tiers of boats. Both racks are approximately 15.5 m wide by 4.5 m deep with the two tier racks approximately 4.5 m high and the three tier racks approximately 8 m high. These racks and any additional racks required will be confined to the boat storage zone.

The racks are not permanent and appear more like skeletal structures than solid buildings. They may not be fully utilised at all times which makes them visually permeable. They are compatible both structurally and aesthetically with the existing steel gantry on the site. Overall, they will be consistent with the working harbour character of the area and reflective of the port and maritime waterfront uses in the locality.

iv. Floating 'finger' pontoon

The proposed modification includes an additional floating 'finger' pontoon (approximately 30 m by 3 m) and pile attached to the existing marina. The sole purpose is to allow for the reorientation of berthed vessels at the site. As discussed in Table 3.2, the pontoon is an extension to the already approved marina at the site and will not significantly alter the visual appearance or bulk of these private landing facilities.

v. Signage

As detailed in Section 2.4.2, the proposed modification includes business identification signage, including a 'Caltex' sign and three building identification signs. The proposed signage is consistent with the commercial identity of the premises and compatible with existing signage in the locality. It will not add to the bulk or scale of the buildings on the site as the three building identification signs will be placed on the facades of Buildings 1 and 2 and the southern elevation of the all weather structure and not free-standing. The Caltex sign is compatible in size and height with other free standing business signs within the Sydney Harbour Foreshore area.

vi. Car parking

An additional 30 car parking spaces will be provided as a result of the proposed modification, which will extend the existing car park in the north-eastern part of the site through the provision of four smaller areas of parking across the main part of the site (refer Figure 2.3).

The additional car parking will not noticeably increase the visual appearance of the site. The main parking area will be extended only slightly and the other parking areas will be used for overflow parking once the main parking area reaches capacity. Potential visual impacts will therefore be temporary with views of the additional car parking areas proposed largely obscured by existing boat storage, maintenance and repair operations being undertaken on the main part of the site.

Under the alternative proposal option (Figure 2.4), additional parking would be provided primarily to the northern part of the site (adjacent to the main parking area), and across the site in smaller areas as discussed above. Therefore, potential visual impacts would be largely the same as for the preferred option. However, an additional area of up to 26 car spaces is proposed in the southern boat storage zone, with the spaces provided on the ground floor first tier of the boat storage racks. This area would only be used once the other parking areas had reached capacity. Potential visual impacts would therefore be temporary and, given that the cars are proposed to be parked on the ground floor level of the portable boat racks, impacts would be largely the same as for the portable racks.

5.4.3 Impact assessment

To ensure a consistent approach to the visual analysis, the same key viewpoints into the site that were identified under Modification 4 have been used to assess the visual impact of the proposed modification. These viewpoints were identified as having the most unobstructed views to the site from publicly accessible areas. Photomontages of the site from these key viewpoints showing the approved development (under Modification 4) and the proposed modification have been prepared. The photomontages are reproduced in the following figures and the originals provided in Appendix H. The location of the viewpoints is shown in Figure 5.4 and detailed below:

- Viewpoint 1: Public walkway at Balmain East.
- Viewpoint 2: Pirrama Road Park at Pyrmont.
- Viewpoint 3: Northern point of Pirrama Park at Pyrmont.

A visual assessment of the visible elements of the proposed modifications has been undertaken in Table 5.4.





Figure 5.5 PO1 from public walkway at Balmain East – current approved and built



Figure 5.6 PO1 from public walkway at Balmain East – proposed



Figure 5.7 PO2 Pirrama Road Park at Pyrmont – current approved and built



Figure 5.8 PO2 Pirrama Road Park at Pyrmont – proposed



Figure 5.9 PO3 Northern point of Pirrama Park at Pyrmont – current approved and built



Figure 5.10 PO3 Northern point of Pirrama Park at Pyrmont – proposed

Table 5.4 Visual assessment against viewpoints 1, 2 and 3

Proposed modification	Viewpoint 1: Public walkway at Balmain East (Figure 5.6 – Photomontage PO1)	Viewpoint 2 Pirrama Road Park at Pyrmont (Figure 5.8 – Photomontage PO2)	Viewpoint 3 Northern point of Pirrama Park at Pyrmont (Figure 5.10 – Photomontage PO3)
Re-orientation of Building 1	The approved Building 1 will be more visible from this viewpoint; however, the footprint of the building is being reduced by approximately 42%, which will significantly reduce its bulk and scale. Given the port/marine/industrial nature of the locality it will not be inappropriate in its setting. As the photomontage demonstrates, existing buildings on the site and neighbouring properties reduces the overall impact of Building 1. The architectural detail and design of the building will enhance the visual amenity of the port/marine/industrial character from this viewpoint. In addition, the footprint of the building is being reduced by approximately 42% which will significantly reduce the overall bulk and scale. Therefore, it is likely that the visual impact of this structure will be similar or less than the approved Building 1. Existing and proposed landscaping on the southern end of the site will also soften the visual impact of the building at this viewpoint.	Viewpoint 2 is the main public viewpoint. From this viewpoint it will primarily be the shorter western elevation of Building 1 that will be visible. The overall visual impact will therefore be reduced from this viewpoint, especially given that the overall bulk and scale of Building 1 will be reduced.	As per Viewpoint 2.
All weather structure	Only a small portion of the all weather structure will be seen from this viewpoint as it will be shielded by Building 1. It has been designed to be light in appearance and match both the existing gantry as well as the fabric used on the nearby White Bay Cruise Terminal. Therefore the visual impact will be minimal.	From this viewpoint the all weather structure is most visible. However, it appears as a continuation of the existing fabric canopy used along the western frontage of the adjacent White Bay Cruise Terminal. It does not add visual bulk to the overall development and provides cover only without introducing additional structures to the site.	As per viewpoint 1.
Outdoor boat storage, maintenance and repairs	Only the boat maintenance and repair zone will be visible from Viewpoint 1. These activities already occur on the site and, therefore, the visual appearance of the site from this viewpoint is unlikely to change significantly.	From this viewpoint both the boat storage and the boat maintenance and repair zones will be visible. The portable racks that will be housed in the boat storage zone are not solid structures and will allow for a degree of visual permeability. The use of galvanised steel on the racks is compatible with the all weather structure and adjoining White Bay Cruise Terminal. Overall, the use of portable racks on the site is consistent with the visual landscape of the foreshore and the working harbour character of the locality. Therefore, adverse visual impacts are not anticipated to occur.	As per viewpoint 2.

Table 5.4 Visual assessment against viewpoints 1, 2 and 3

Proposed modification	Viewpoint 1: Public walkway at Balmain East (Figure 5.6 – Photomontage PO1)	Viewpoint 2 Pirrama Road Park at Pyrmont (Figure 5.8 – Photomontage PO2)	Viewpoint 3 Northern point of Pirrama Park at Pyrmont (Figure 5.10 – Photomontage PO3)
Floating finger pontoon	It will not be visible from this location.	As per Viewpoint 1.	The pontoon will be visible from this viewpoint; however it is an extension to an already approved and larger marina and will be designed to reflect it. It is within the confines of the existing marina and will not result in any additional adverse visual impacts.
Signage	The signage on Building 2 will be visible from this viewpoint. It will be placed on the façade of the building and will not be brightly illuminated or protrude above the roofline. It is compatible in size and appearance with existing signage on neighbouring properties. For these reasons, it will not detract from the visual quality or amenity of the foreshores or waterways when viewed from the waterway. The proposed Caltex sign will also be visible from this viewpoint. The green colour of the signage is in keeping with the vegetation in the foreground and, as discussed in the SEPP 64 Advertising and Signage (Section 3.4.4) and the relevant signage provisions of the Sydney Harbour Foreshores and Waterways Area DCP 2005 (Section 3.5.2), is compatible with scale of the existing and proposed buildings on the site and in keeping with the marine character of the area.	The signage at the top of the gantry and the façade of Building 1 will be seen from this viewpoint. As per Viewpoint 1, its size, design and level of illumination will not result in any unacceptable visual impacts. The proposed Caltex sign will be visible from this viewpoint. As discussed, it complies with SEPP 64 and the relevant DCP 2005 provisions.	As per Viewpoint 1 and 2 for both building identification signs. The proposed Caltex sign will be visible from this viewpoint. As discussed, it complies with SEPP 64 and the relevant DCP 2005 provisions.

Table 5.4 Visual assessment against viewpoints 1, 2 and 3

Proposed modification	Viewpoint 1: Public walkway at Balmain East (Figure 5.6 – Photomontage PO1)	Viewpoint 2 Pirrama Road Park at Pyrmont (Figure 5.8 – Photomontage PO2)	Viewpoint 3 Northern point of Pirrama Park at Pyrmont (Figure 5.10 – Photomontage PO3)
Car parking	The additional car parking will not be visible from this location due to the existing landscaping adjacent to the site.	The additional parking areas will be visible from this viewpoint, however, they will only be utilised once the main parking area reaches capacity. Therefore, potential visual impacts will be temporary with views of the additional car parking areas proposed largely obscured by existing boat storage, maintenance and repair operations being undertaken on the main part of the site. For these reasons there are not anticipated to be adverse visual impacts as a result of the additional car parking areas proposed. Should the northern part of the site be 'taken back' by PANSW additional parking would be provided primarily to the northern part of the site and across the site in smaller areas as discussed above. Therefore, potential visual impacts would be largely the same for these areas. However, an additional area of up to 26 car spaces is proposed in the boat storage zone, which would be provided underneath the portable boat storage racks. This area would only be used once the other parking areas had reached capacity. Potential visual impacts would therefore be temporary and, given that the cars are proposed to be parked on the ground level of the portable boat racks, impacts would be largely the same as for the portable racks discussed under 'outdoor boat storage, maintenance and repairs' above.	As per viewpoint 2.

5.4.4 Management and mitigation measures

No additional management or mitigation measures are required as a result of the proposed modification.

5.4.5 Justification and conclusion

In addition to responding to the demand for dry boat storage, the proposed modification represents the next stage of the proponent's business and their existing operations on the site. This includes the introduction of signage and revisions to the site planning to attract high quality tenants. It is considered that these benefits will be achieved with little or no adverse visual impacts.

The architectural design and use of materials to complement the adjoining White Bay Cruise Terminal will visually enhance the overall appearance of the site. All structures proposed are reflective of existing maritime waterfront uses in the locality which include boat storage, boat repair, servicing, and related uses.

As detailed in Table 5.4 the proposed modification will not result in any significant impacts upon the visual amenity from key public viewpoints. As detailed in Section 3.5.1, the elements of the proposed modification are not substantial in scale and height and will not impact the views from the adjacent Balmain residential area or White Bay towards Anzac Bridge and the Pyrmont skyline.

5.5 Other aspects

An assessment of the environmental aspects as a consequence of the proposed modification (other than those addressed in the preceding sections) is provided in Table 5.5. This method of assessment is commensurate with the low levels of projected impacts arising from the proposed modification on each of these aspects.

No specific management measures regarding these aspects are warranted as a result of the proposed modification. Environmental management of these aspects will continue in accordance with the management plans, licences and consents that relate to the site's operations. The site's environmental management plans for construction and operation will be updated to incorporate the proposed modification.

Table 5.5 Other environmental aspects

Environmental aspect	Assessment
Water quality	The site drainage currently includes a roadside collection system along the northern boundary of the site which feeds into three concrete pipes which cross the site from north to south and are located under the hardstand areas. Surface water which falls onto hardstand areas drain into the stormwater intake pits that are equally spaced along the three drainage lines. The stormwater is then discharged along the southern boundary of the site to White Bay, which forms part of the Sydney Harbour and Parramatta River catchment (AECOM 2013). The proposed reorientation of Building 1 and the construction of the temporary all weather structure will not introduce any additional impacts to those assessed in the original EA (KBR 2006). The same applies to the additional car parking requirements, which will be included on the site's hardstand area with minimal modification/upgrades required. The operation of the internal and external storage facilities and associated activities, such as clients using the car parking areas, have the potential to impact water quality if not managed appropriately. However, these impacts will not be in addition to those assessed in the original EA (KBR 2006). The water used for washdown of vessels after use, and prior to returning them to their storage location, will be in-part sourced through the collection of rainwater from the boat storage buildings, and will not pose water quality issues due to the provision of the wash down bay, which has sufficient capacity to accommodate the washdown requirements of the additional boats to be stored on site as a result of this modification. The water from the washdown bay will drain to a 32,000 L tank for treatment prior to disposal or re-use, which has adequate capacity to accommodate the increase dry boat storage capacity. The water will drain through the clean hardstand area drainage method, transferring the water through one of the three 600 mm stormwater pipes, with gross pollutant traps to contain larger pollutants.
Aquatic ecology	The new floating pontoon could potentially impact the aquatic ecology of the area. However, given the small scale of the pontoon, potential impacts are expected to be similar to those outlined in the aquatic ecology assessment (Marine Pollution Research 2006) for the original EA (KBR 2006).

Table 5.5 Other environmental aspects

Environmental aspect	Assessment
Marine traffic	The existing approval, as modified, allows for eight temporary berths and 50 dry boat storage berths within Building 2. The proposed modification will allow an additional finger pontoon to the existing berths and up to 150 additional boat storage berths. To enable cumulative impacts of additional boat storage on the amenity of the area for all harbour uses the proponent has undertaken an assessment of the dry boat storage capacity of the site together with the approved storage capacity (750 boats) of the nearby Sydney Boat House in Rozelle. A report provided by Coriolis Marine Management and Training Solution (Coriolis 2013), who has experience in managing two of the largest dry boat storage facilities in Australia and New Zealand, was used to estimate the number of vessel movements in the White Bay and Rozelle area based on future estimates of occupancy levels and peak site usage for both the site and the Sydney Boat House. During weekend peak periods the anticipated number of additional vessels within the harbour area would be approximately 16 from the site and 90 from Sydney Boat House. Forecasts for 2012 indicated the number of recreational boats owned in the Sydney Harbour area is 18,574 (NSW Maritime, 2010). Assuming similar usage rates during these peak periods (12%) approximately 2,229 vessels enter the harbour, of which 119 vessels or 5.3% will enter from both the site and Sydney Boat House (assuming both facilities are fully operational). The site offers a structured and safe way for vessel owners to schedule their boating activities and reduces the waiting times experienced at boat ramps. The facility has the ability to stagger the entry of boats to the water in such a way that ensures the safety of all involved and reduces congestion. Overall, the cumulative effect of both the site and Sydney Boat House is predicted to be relatively minimal with impacts likely to be localised given the proximity of the two facilities. However, the proponent is committed to ensuring that both facilities operate in complimentary ways and are not detrimental to the continued enjoyment of the area for all boat users. Mitigation of impacts will concentrate on having open lines of communication with Sydney Boat House. During peak periods the numbers of vessels entering the water will be communicated to ensure congestion is avoided. Any incidents or accidents, which may impact on vessels or customers, shall also be communicated to Sydney Boat House to ensure safe passage past the site. These measures and other management and mitigation measures will be incorporated into the MTMP which will be updated to incorporate the proposed modification.
Heritage	The site is acknowledged as being within an area that is historically significant for its continuous maritime industry since the middle of the 19th century. An EMM archaeologist has undertaken a review of the following heritage registers: • Leichhardt LEP 2013; • NSW State Heritage Inventory; • Newcastle Port Corporation (trading as Port Authority of NSW); • Sydney Harbour Foreshore Authority; and • Ports Authority Heritage and Conservation Area Register (Section 170 of the NSW Heritage Act 1977). No items of heritage are listed on the site. However, it is recognised that the existing metal gantry on the site is of some heritage significance, having been constructed in 1969 as part of the White Bay Container Terminal. It is characteristic of the maritime and industrial history of the area. When it began operations, the White Bay Container Terminal was the first regular international container shipping facility in the world and when it was demolished in 2011, the original metal gantry crane structure columns were retained and are now integrated into the adjoining White Bay Cruise Terminal building (City Plan Heritage 2010). The gantry extends to the east White Bay Cruise Terminal building and runs across the site. It is proposed that the all weather cantilevered structure be attached to the gantry. It is anticipated that attaching this structure to the gantry will have negligible impact on this historic structure or the historic character of the area. Potential impacts on the heritage significance of the gantry will be reversible with the temporary structure being easily detachable.

Table 5.5 Other environmental aspects

Environmental aspect	Assessment
Air quality	Air quality and odour impacts from the existing marine refuelling and boat storage activities are negligible and there have been no complaints from nearby residents in this regard. The proposed modification will result in increased dry boat storage and fuel vapours from dry boat storage have the potential to cause air quality and odour-related impact on residential receivers. The mitigation of these impacts will be achieved through the design of the proposed all weather structures, which will house the additional vessels. The building will be well ventilated and will allow for air circulation as it is open on all sides. This will result in a lower risk of odour impacts being generated. All construction would occur on hardstand areas and no excavation is proposed. Therefore, the potential for dust impacts is negligible. The closest residents are approximately 50 m from the centre of the site and are unlikely to experience any adverse air quality or odour impacts as a result of the proposed modification.
Waste	Construction wastes from the project, as approved, comprise: • excavated material; • construction waste including metal, concrete, timber, sand, soil and asphalt; • green waste including cleared vegetation and topsoil, including weeds; • general domestic waste (paper, plastic and glass bottles) and sewage associated with site offices and compounds; and • liquid waste – waste oils and liquids from maintenance of construction plant and equipment. Operational wastes from the project, as approved, comprise: • effluent/sullage waste (Sydney Water trade waste licence), which will be pumped to the existing sewer main located adjacent to the existing toilet block from vessels (up to 2,000 L per day); • maintenance and servicing waste oil (up to 1,000 L per month); • oil filters and rags from maintenance and servicing, to be collected once a month; • general wastes (including food waste, glass, plastics and paper) from 30 full time employees; and • small quantities of green wastes from grounds maintenance, which will typically remain on site. The marine fuel supply facility provides waste disposal facilities for vessels and other marine users. A licensed waste disposal contractor has been engaged to collect for eventual treatment and/or disposal. A trade waste agreement has been entered into with Sydney Water for the disposal of effluent, grey water and sullage. The site also has a dedicated waste area, which is bunded (AECOM 2013). The types or volumes of waste considered in the original EA (KBR 2006) are not expected to be significantly altered as a result of the proposed modification.
Water consumption	Due to the increased use of the washdown bay, there will be a slight increase in the site's water requirements. As a portion of the water required will be sourced from the collection of rainwater from the constructed buildings, the increase in volume is not likely to be significant and, therefore, the proposed modification is unlikely to have any significant impact on the water consumption of the site.

Table 5.5 **Other environmental aspects**

Environmental aspect	Assessment
Fire safety and risk	Prior to the construction of Stage 1 of the project, a fire safety study (FSS) was completed as a requirement of MP06_0037. Three key incidents were identified that would have the potential to impact offsite or result in excessive heat radiation impact at fire fighting equipment (that is, making equipment inaccessible during the fire events). These were carried forward for further analysis. These incidents were associated with refuelling activities at the site, specifically: • a fuel spill during transfer of fuel from delivery tankers to storage tanks, ignition of the spill and a full containment bund fire at the fuel transfer point; • a fuel spill into the pump bund as a result of pump seal failure, ignition of the spill and a full transfer pump bund fire; and • a fuel dispensing spill resulting in release to the harbour, ignition and pool fire on the harbour. A recommendation of the original FSS included the installation of additional fire hydrants to ensure a hydrant is no further than 70 m from a potential fire (being 60 m for hoses and 10 m for a water jet). This was required to comply with Australian Standard AS 2419 - Fire Hydrant Installation (AECOM 2013). A further FSS was conducted as a part of Modification 4 being the construction of Building 2 and the associated office buildings. The FFS recommended the installation of a fire access gate as well as upgrades to the hydrant system. All requirements have been completed and the FSS has been endorsed and approved by FES. The FSS has been updated to incorporate the proposed modification, which recommends the inclusion of an additional hydrant on the wharf front to the south of the proposed all weather structure, as shown on the proposed site plans (Figures 2.3 and 2.4). Building 1 and the proposed all weather structure will be designed and provided with firefighting equipment in order to meet the relevant Australian Standards and the BCA. The floating pontoon will also be equipped with appropriate firefighting equipment such as fire hose reels. The operation of the additional boat storage will not pose risks to the safety of staff on site, with all existing site safety procedures continuing to apply.

6 Statement of commitments

This chapter provides commitments made to negate or minimise potential environmental impacts arising from the proposed modification. Environmental management will continue in accordance with conditions of MP06_0037 and the processes and procedures outlined in the proponent's environmental management plans for the site's construction and operation, which will be updated to incorporate the proposed modification.

Table 6.1 provides commitments specific to aspects of the proposed modification and are additional to those identified in MP06_0037.

Table 6.1 **Commitments**

Aspect	Commitment
Traffic and transport	• Preparation of a Traffic Management Plan prior to the commencement of construction. • Development of a further 30 car parking spaces which will include a proportion of disabled car parking spaces in accordance with the Australian Standards. • The site access arrangements will continue to allow vehicular access via Robert Street on all days via authorised access identification cards and provision of visitor lists to the PANSW gatehouse, including on the days when a cruise ship is visiting the White Bay Cruise Terminal.
Fire safety and risk	• Installation of an additional fire hydrant to be located on the wharf to the south of the all weather structure.
Construction	• Preparation of a construction staging report to be submitted to PANSW prior to the commencement of construction as required. • The EMP for the site's construction will be updated to incorporate the proposed modification.
Operation	• The MTMP will be updated to include the additional boat storage capacity under the proposed modification. • The EMPs for the site's operation will be updated to incorporate the proposed modification.

7 Justification and conclusion

The proposed modification will provide all weather cover to support existing tenancies and approved activities as well as providing additional boat storage.

Potential worst case cumulative impacts of both the construction and operation phases of the proposed modification have been assessed for key aspects such as traffic, noise and visual amenity. Impacts have largely been identified as being within the scope of impacts predicted in the original EA and subsequent modifications. Even when the total maximum number of boats that could potentially be stored on-site at any one time was considered, resultant traffic and noise impacts were assessed as being negligible, with the local road network having sufficient capacity to accommodate the estimated increase in vehicle movements and the site having adequate capacity to accommodate additional parking if required.

Other environmental aspects such as water quality, waste and fire safety and risk were also considered but impacts were not assessed to be beyond those predicted for the current approved operations with existing management systems having adequate capacity to accommodate the proposed modification. All environmental management plans relating to the site's construction and operation will be updated to incorporate the proposed modification.

Overall, the proposed modification will provide the proponent with the flexibility and capacity to meet their operational requirements whilst helping to address the recognised shortage of dry boat storage on Sydney Harbour. These benefits will be achieved with little or no adverse environmental impacts.

References

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NSW Maritime 2010, *NSW Boat Ownership and Storage: Growth Forecasts to 2026, Sydney*.

Transport for NSW 2013, *Draft Sydney Harbour Boat Storage Strategy, Sydney*.

Abbreviations

BCA	Building Code of Australia
BIA	Boating Industry Association
CEMP	construction environmental management plan
DECCW	NSW Department of Environment, Climate Change and Water
DCP	development control plan
DP&E	NSW Department of Planning and Environment
EA	environmental assessment
EMM	EMGA Mitchell McLennan Pty Limited
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPA	Environmental Protection Authority
EPL	environment protection licence
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
HEC	Hayes Environmental Consulting
ICNG	Interim Construction Noise Guideline
KBR	Kellogg, Brown and Root Pty Ltd
L	Litre
LEP	local environmental plan
m	metre
mm	millimetre
MNES	matters of national environmental significance
MTMP	marine traffic management plan
OEMP	operational environmental management plan
PANSW	Port Authority of NSW
PTL	permission to lodge
RMS	NSW Roads and Maritime Services
RNP	Road Noise Policy
RTS	response to submissions
SEPP	state environmental planning policy
SREP	state regional environmental plan
TMP	traffic management plan
VMP	vessel management plan

Appendix A

Project plans



DRAFT MASTERPLAN + DEVELOPMENT FOR WHITE BAY 6

Revisions				
No	Date	Description	Ver	App'd
01	07/08/15	ISSUE FOR DRAFT PLACEHOLDING	01	JW
02	12/08/15	ISSUE FOR DRAFT EA	02	JW
03	26/08/15	ISSUE FOR EA	03	JW

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Client

WHITE BAY 6 PTY LTD

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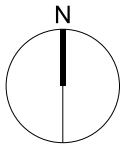
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Project

MASTERPLAN +
DEVELOPMENT FOR
WHITE BAY 6

Drawing Title

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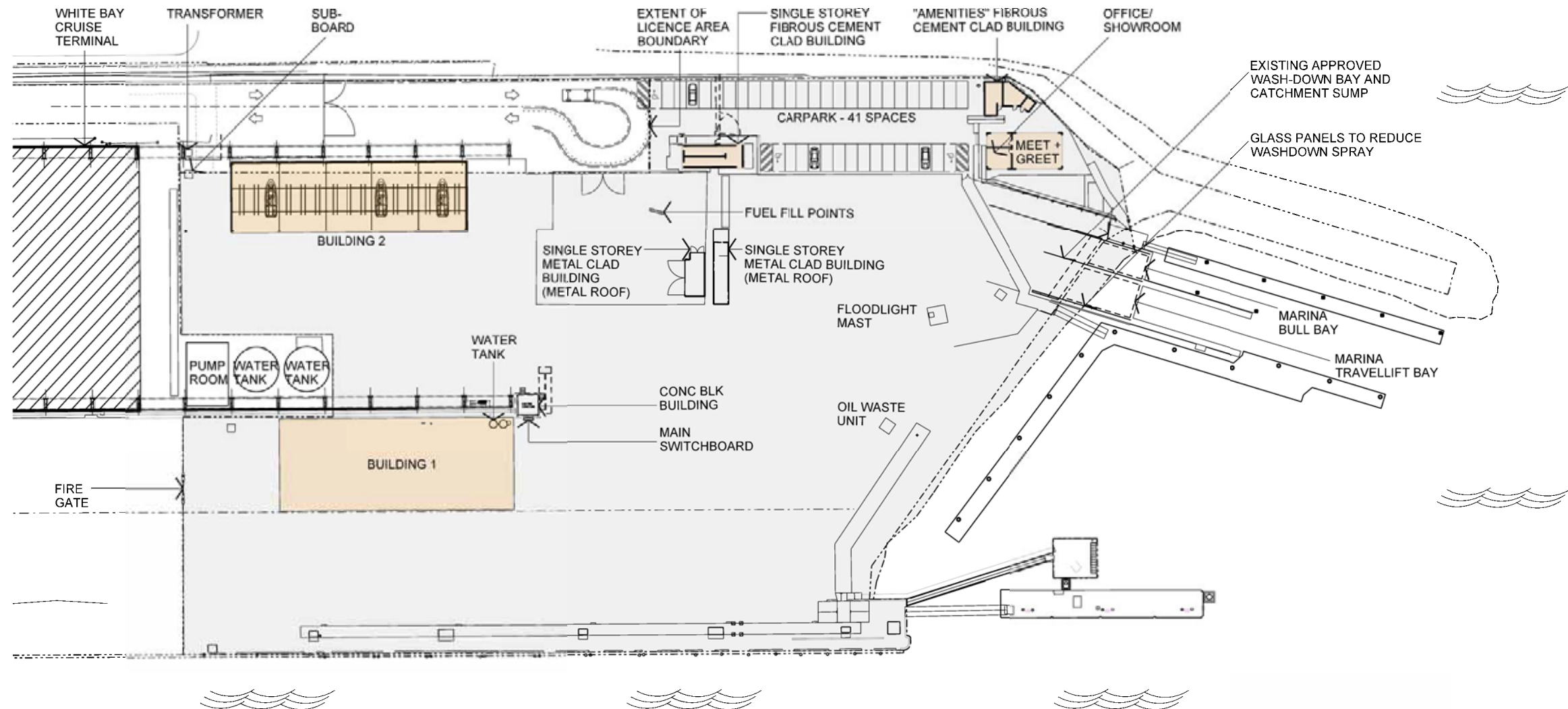
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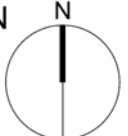
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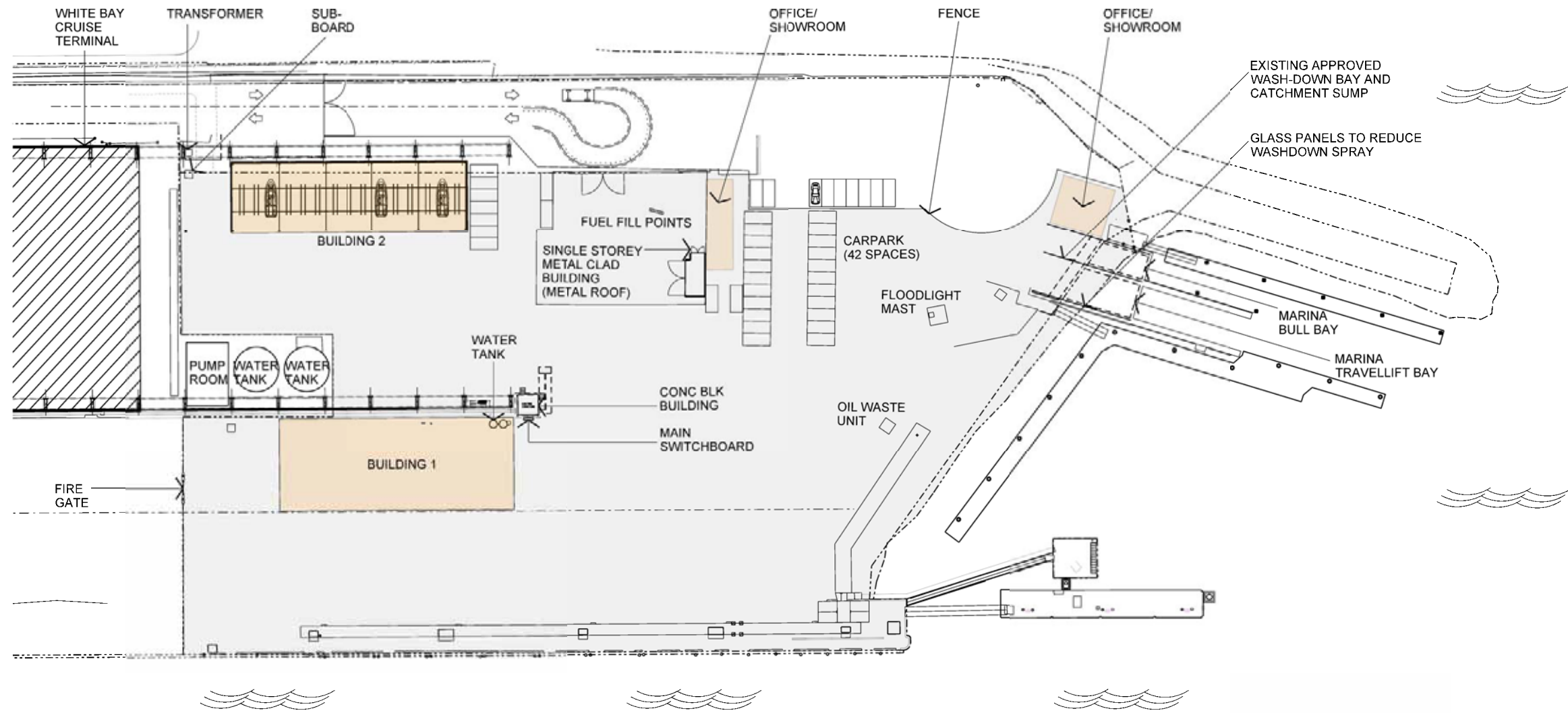
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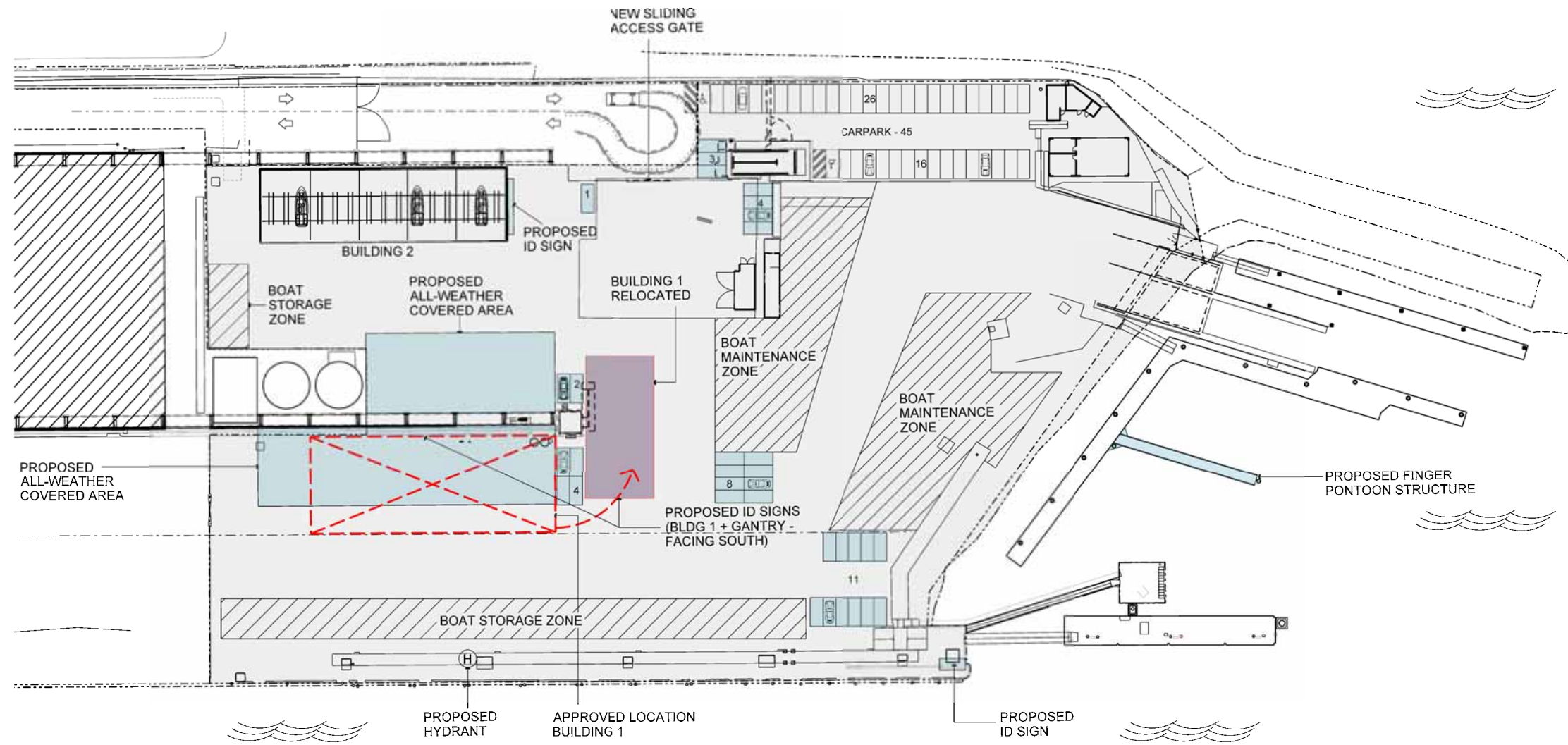
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(Modification 4 to MP06_0037)

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KEY



PROPOSED WORKS



APPROVED BUILDING -
RELOCATED ON SITE



BOAT STORAGE/
MAINTENANCE ZONE

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Architect

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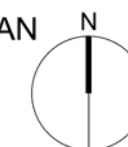
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Project

MASTERPLAN +
DEVELOPMENT FOR
WHITE BAY 6

Drawing Title

PROPOSED SITE PLAN



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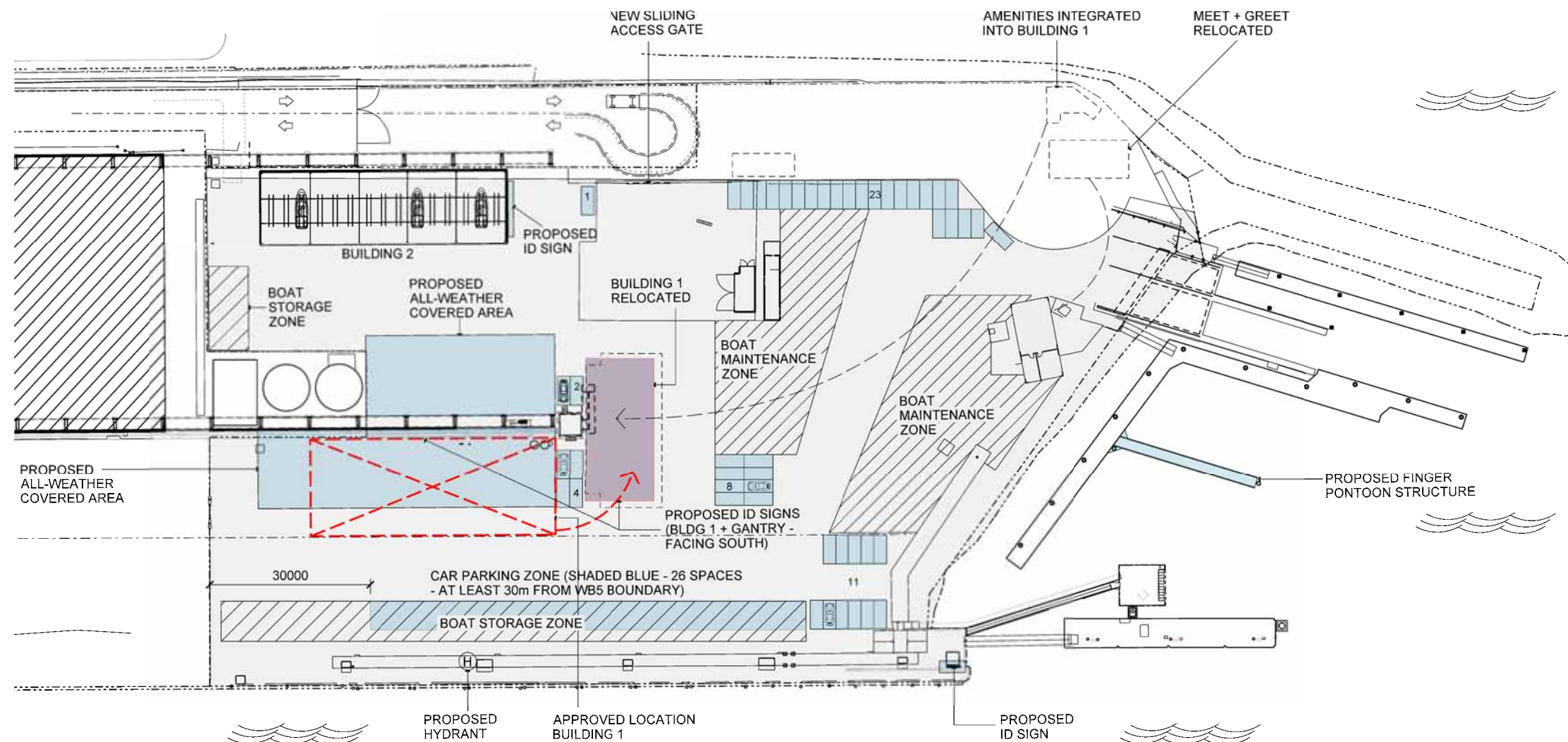
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Issue

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KEY



PROPOSED WORKS



APPROVED BUILDING -
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BOAT STORAGE/
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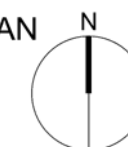
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WHITE BAY 6

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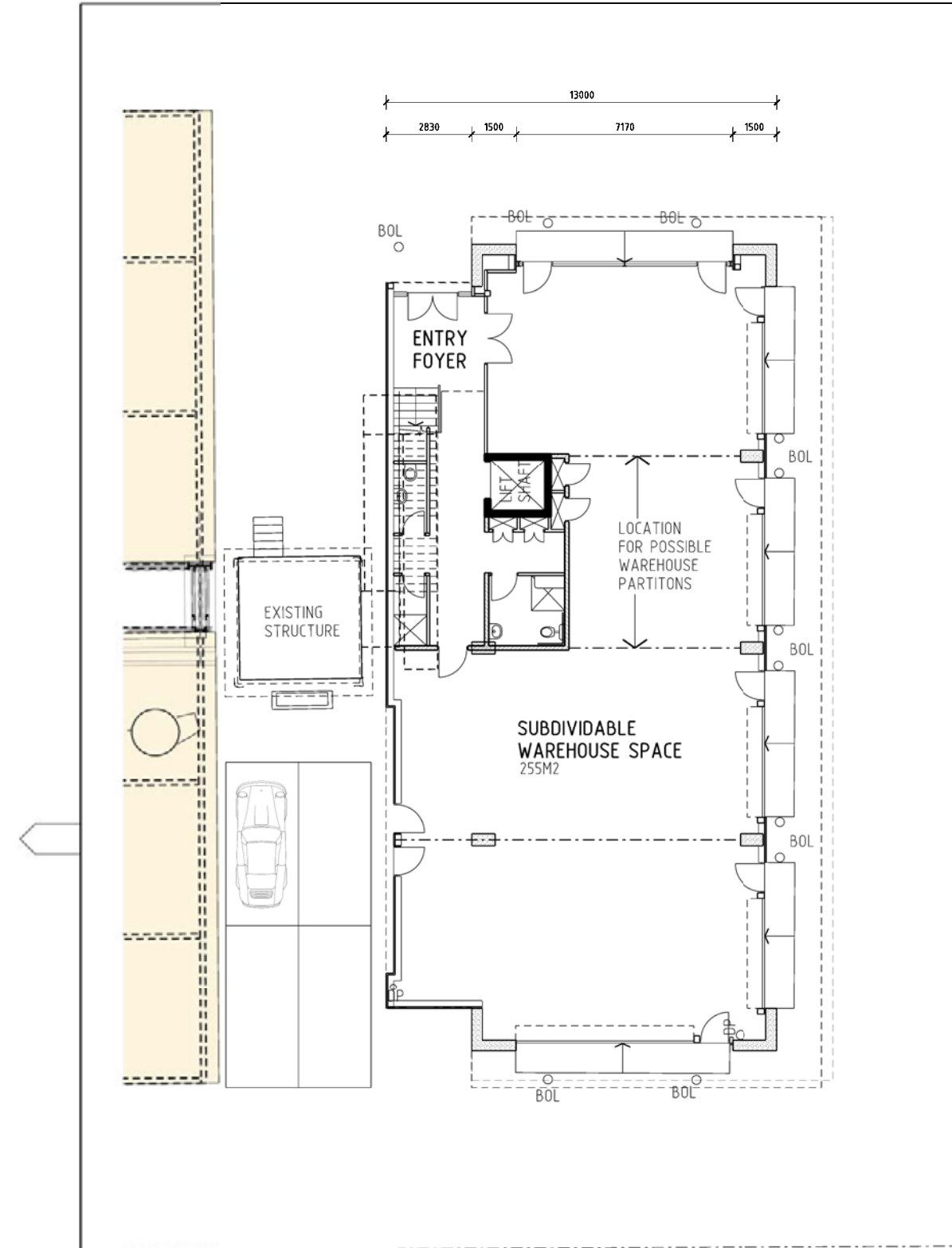
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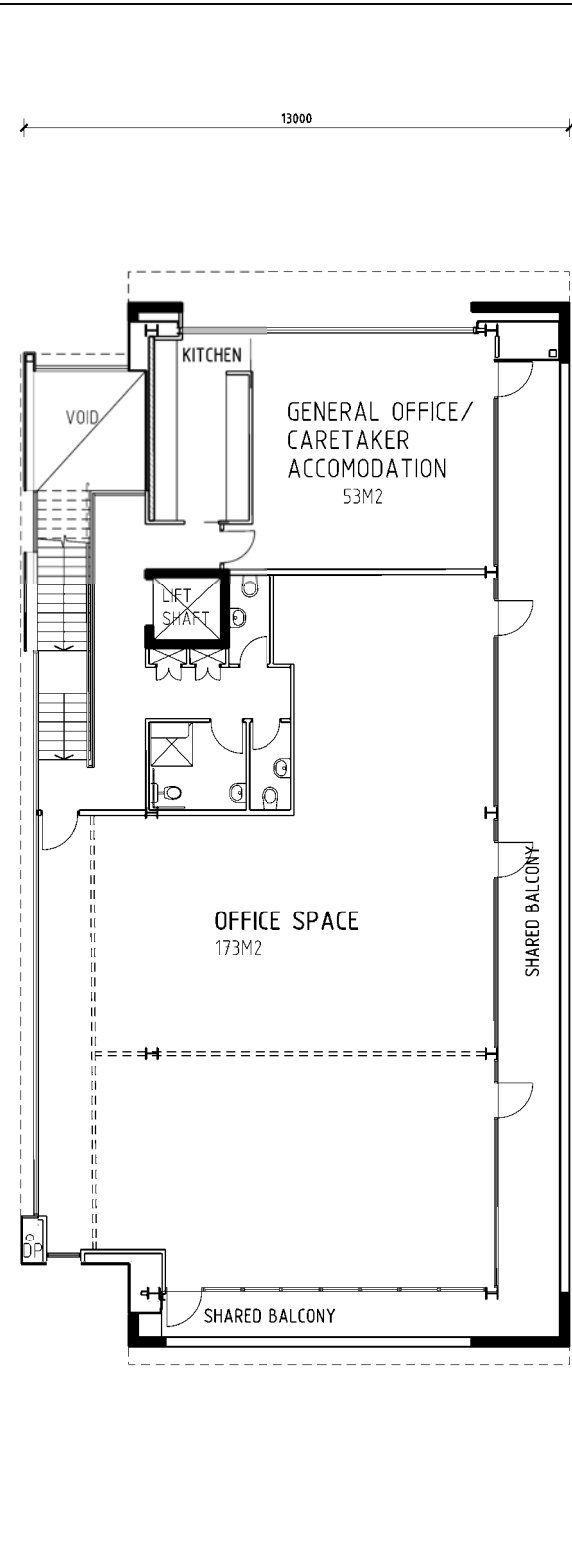
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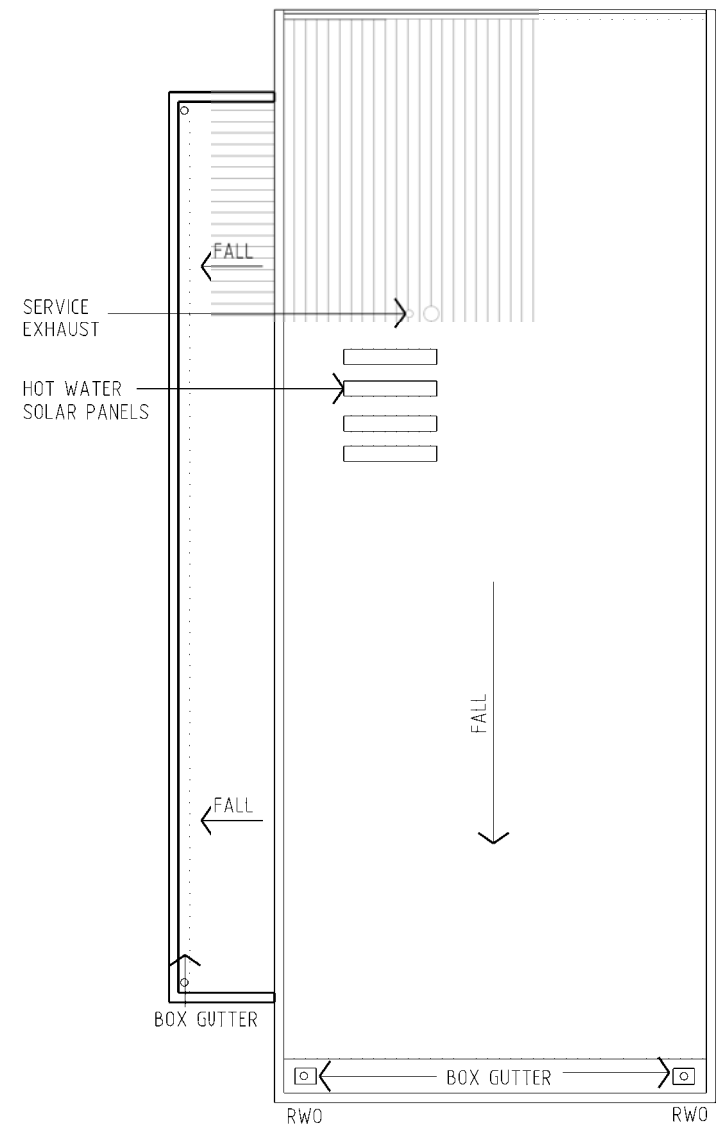
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1:200



1 ROOF PLAN
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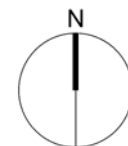
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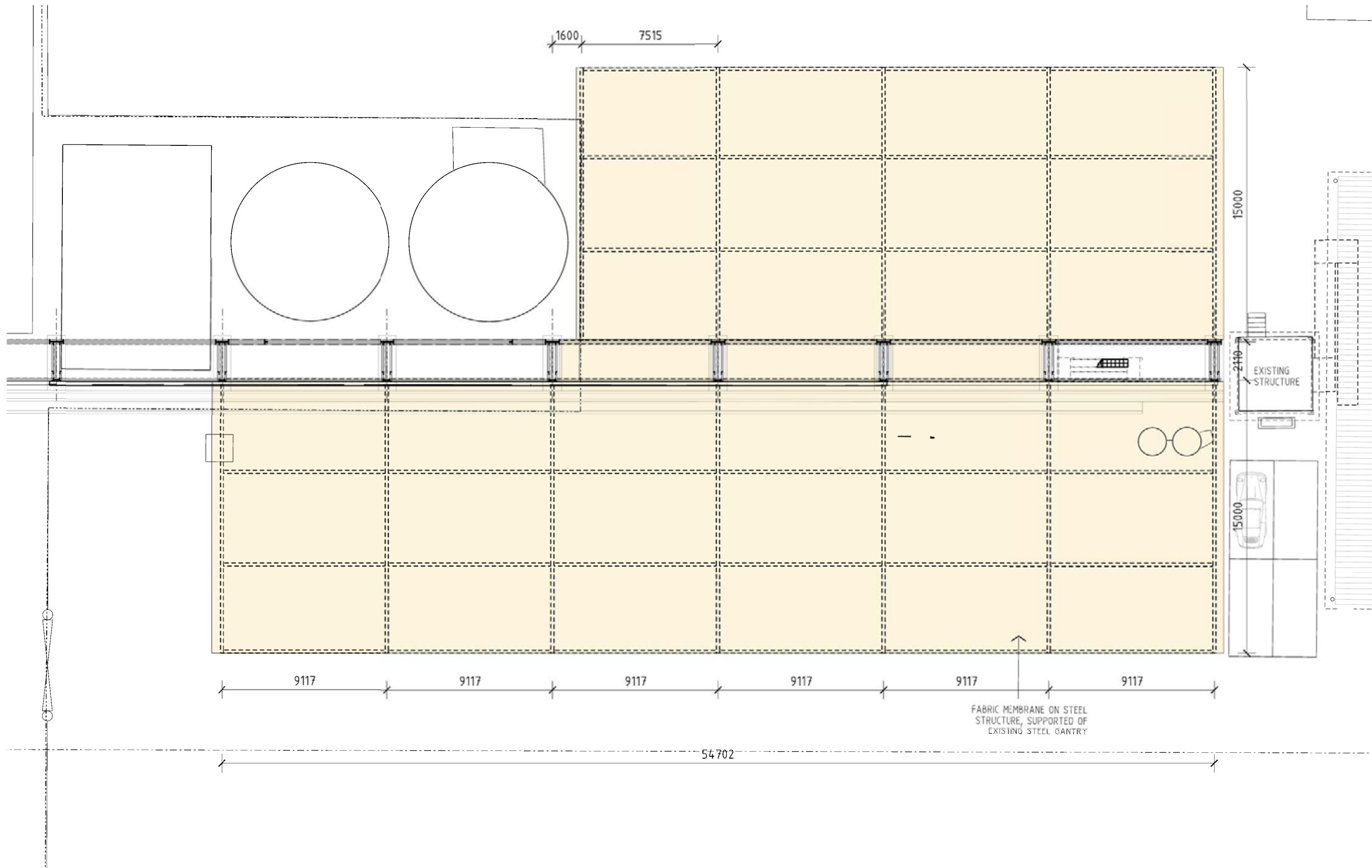
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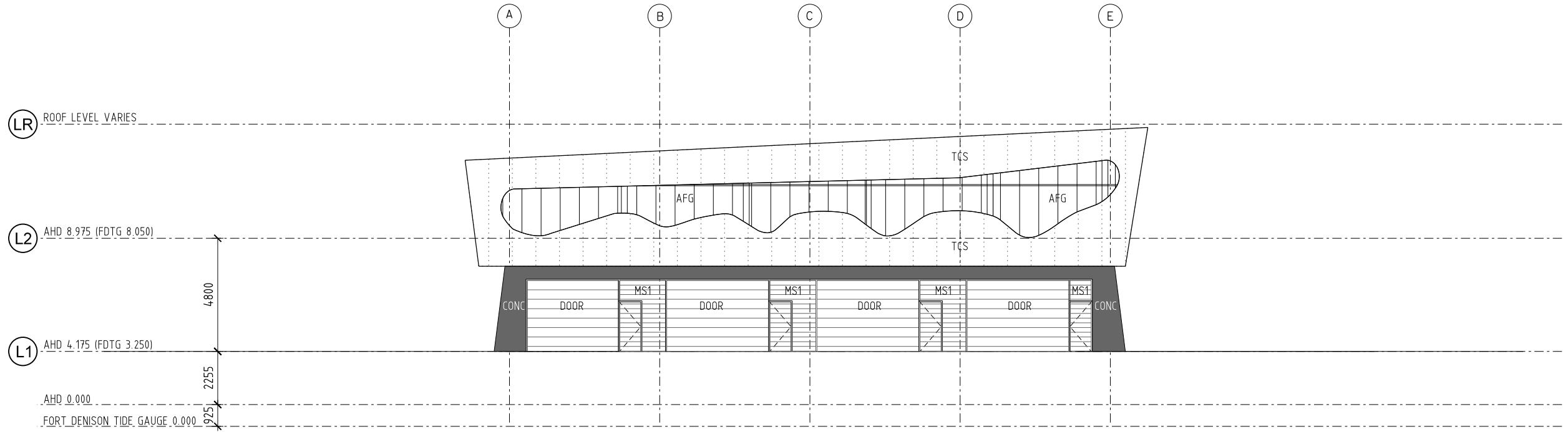
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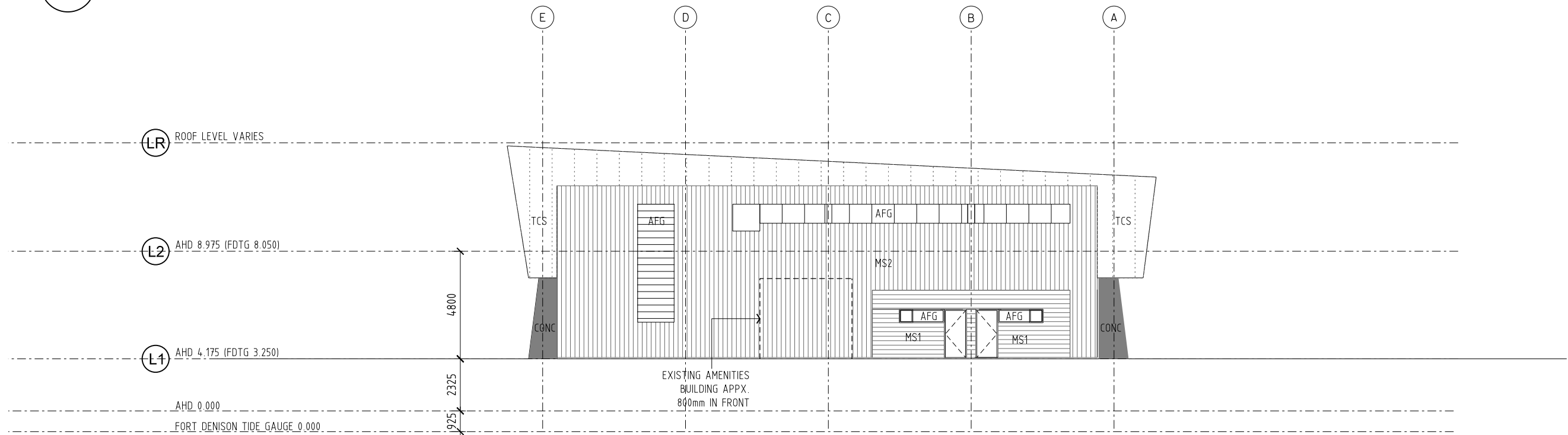
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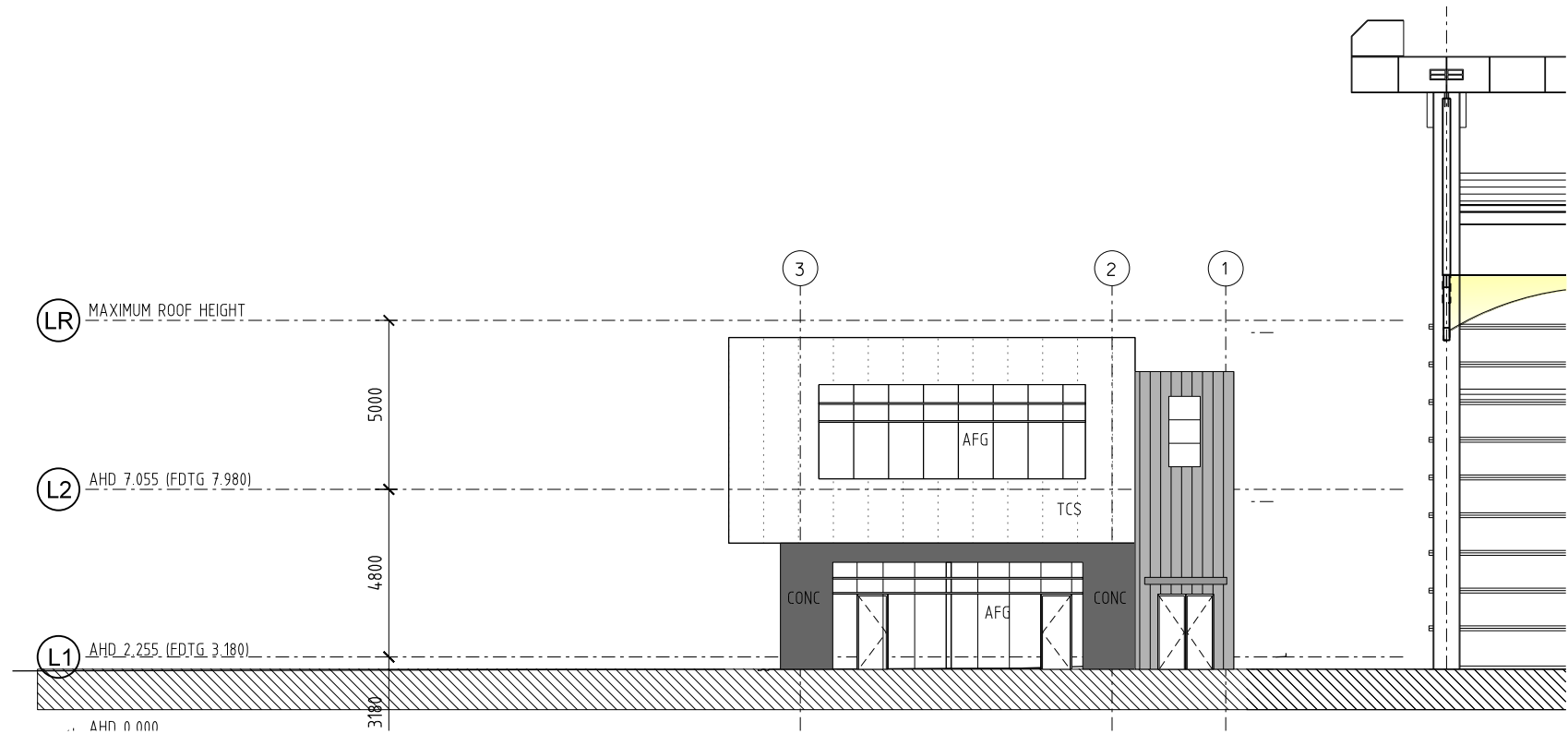


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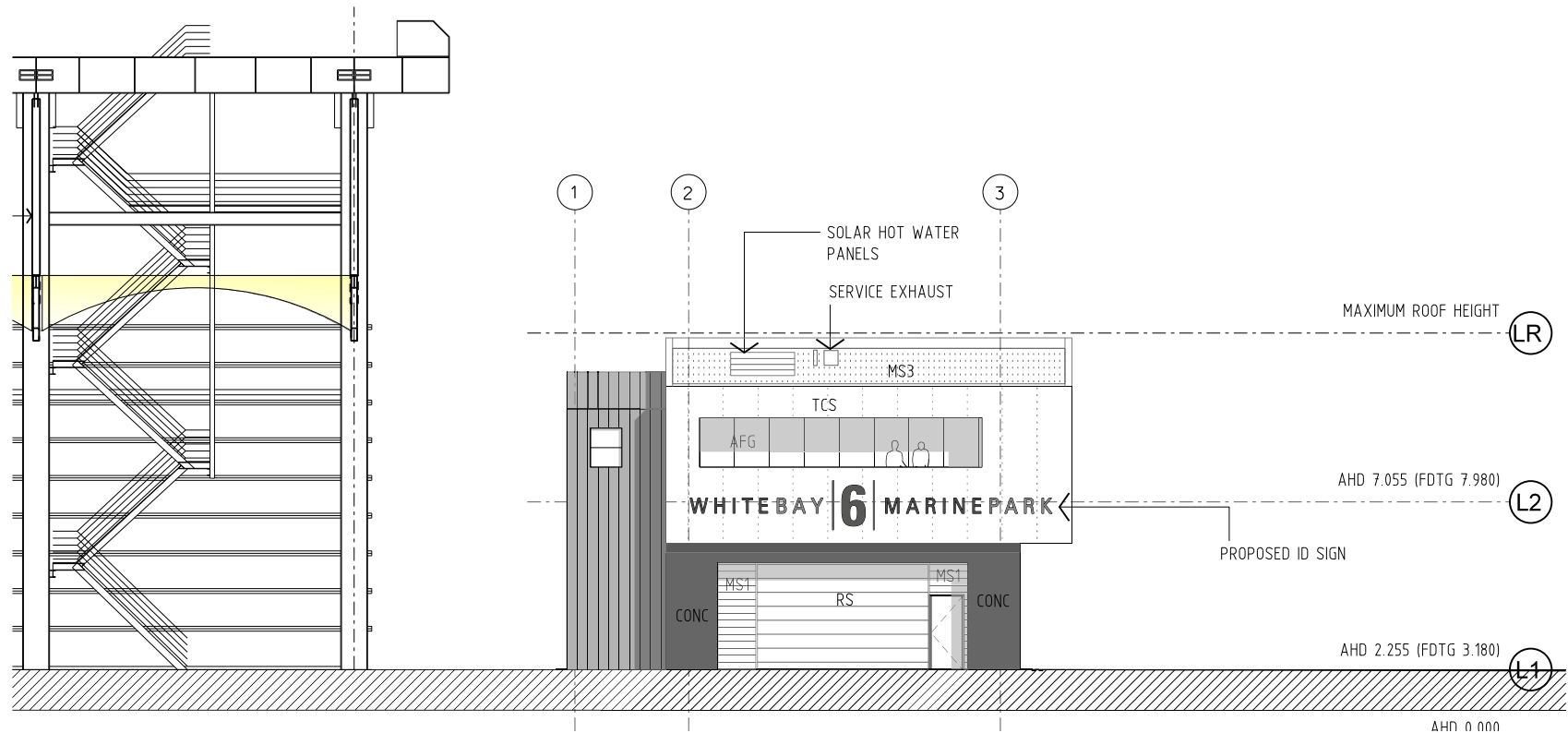


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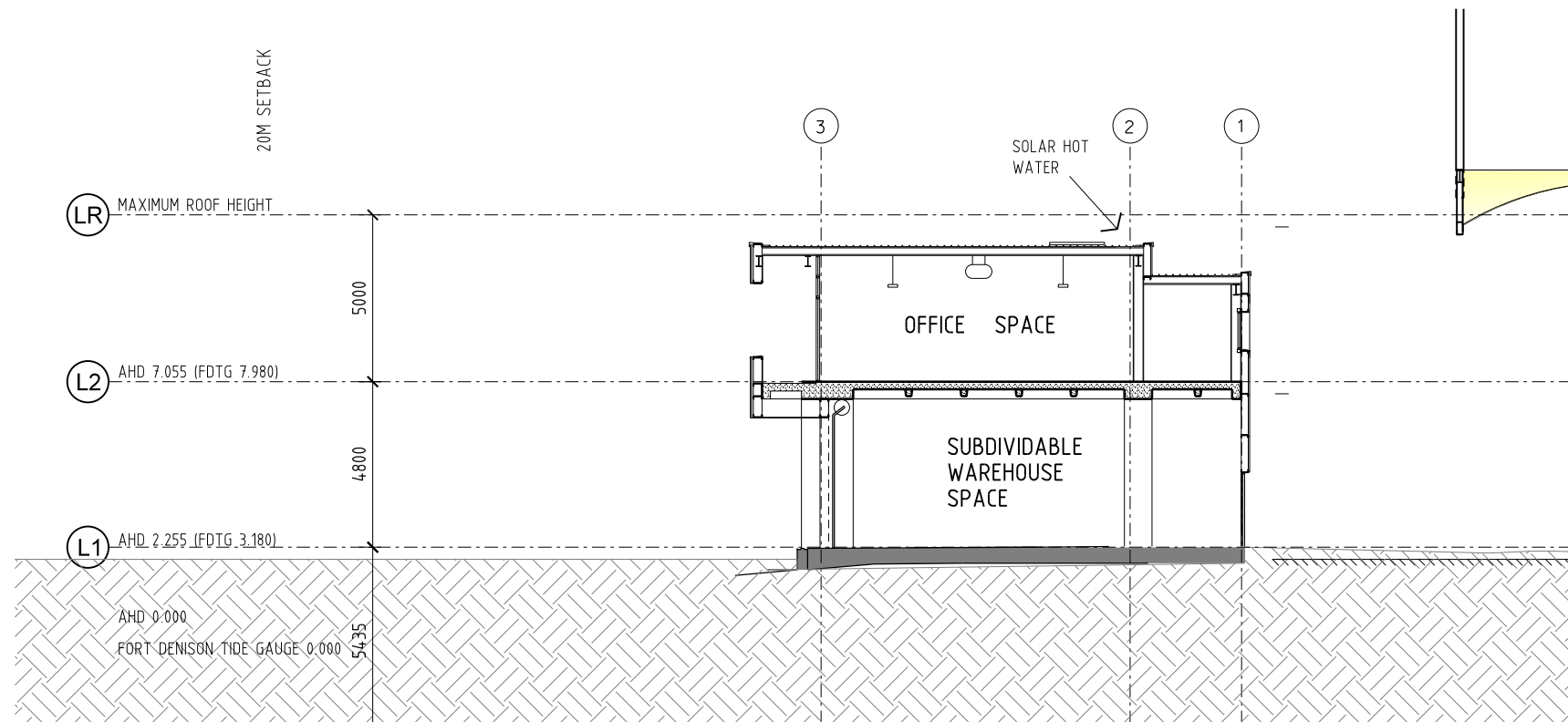


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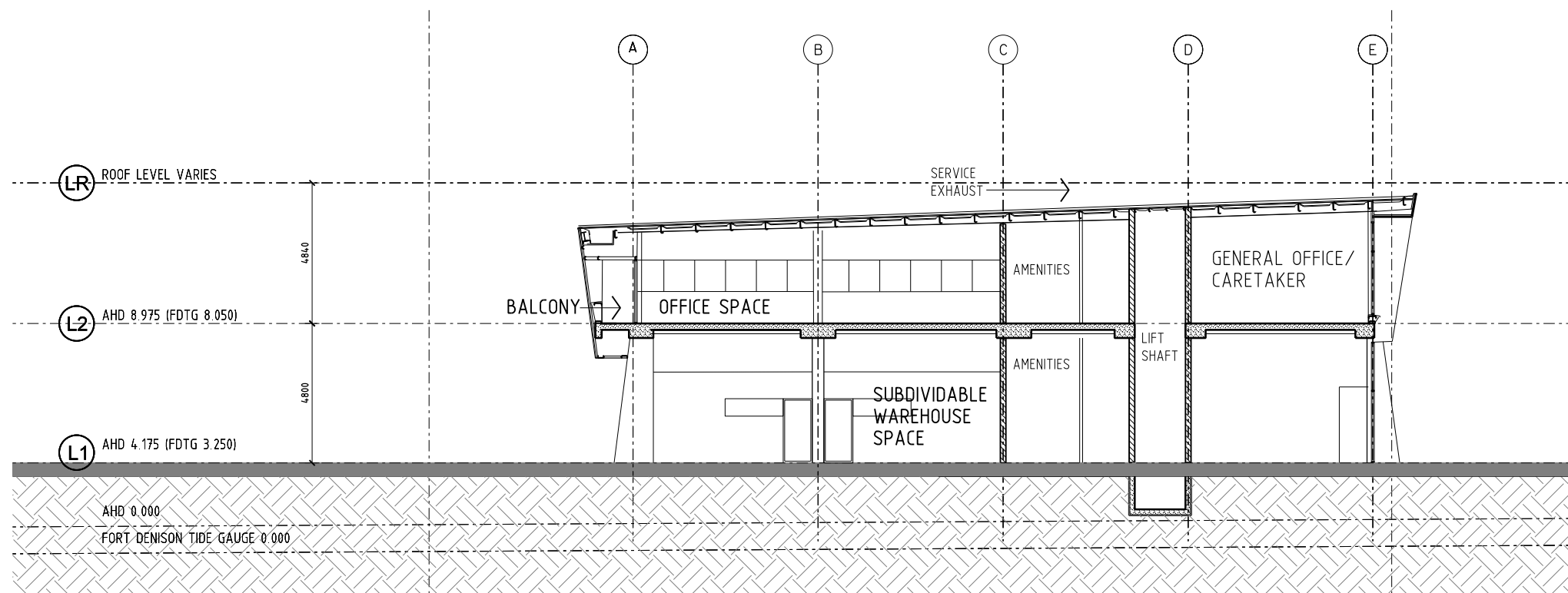


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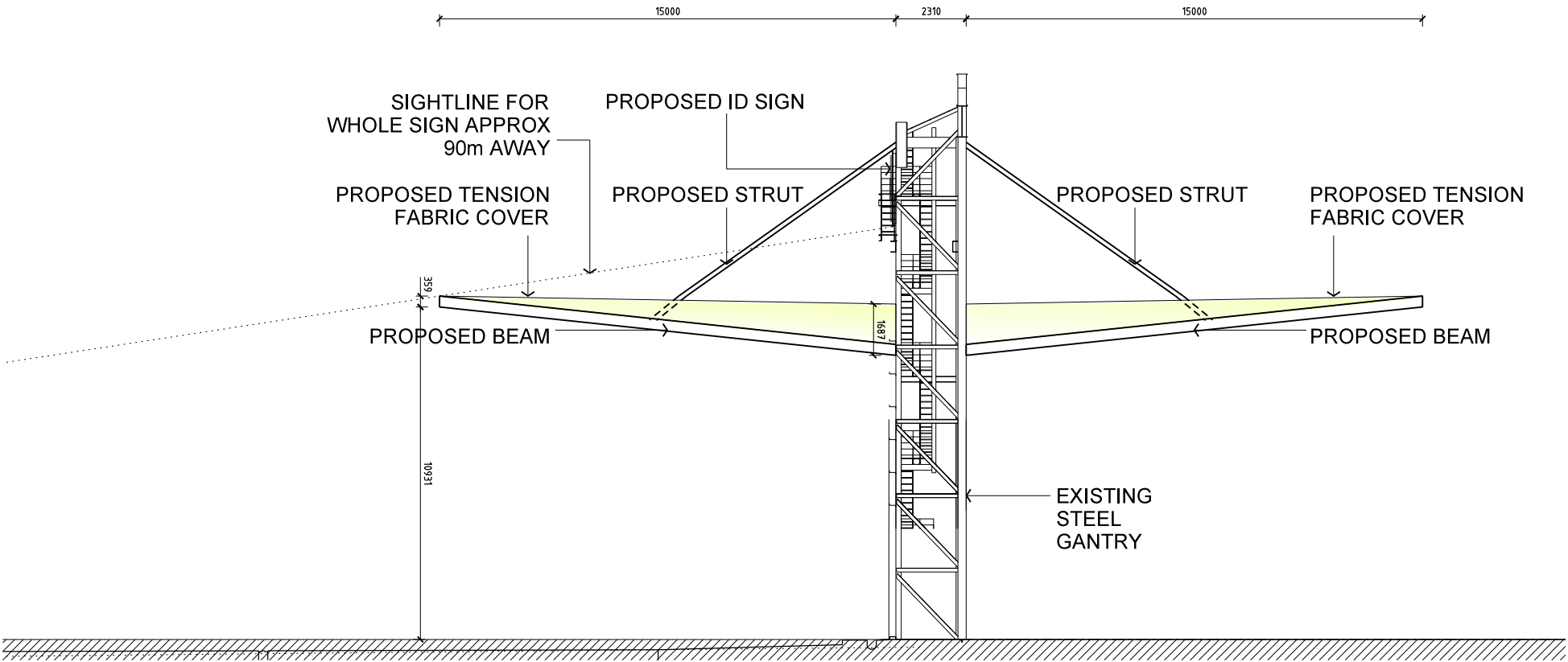
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DEVELOPMENT FOR
WHITE BAY 6**

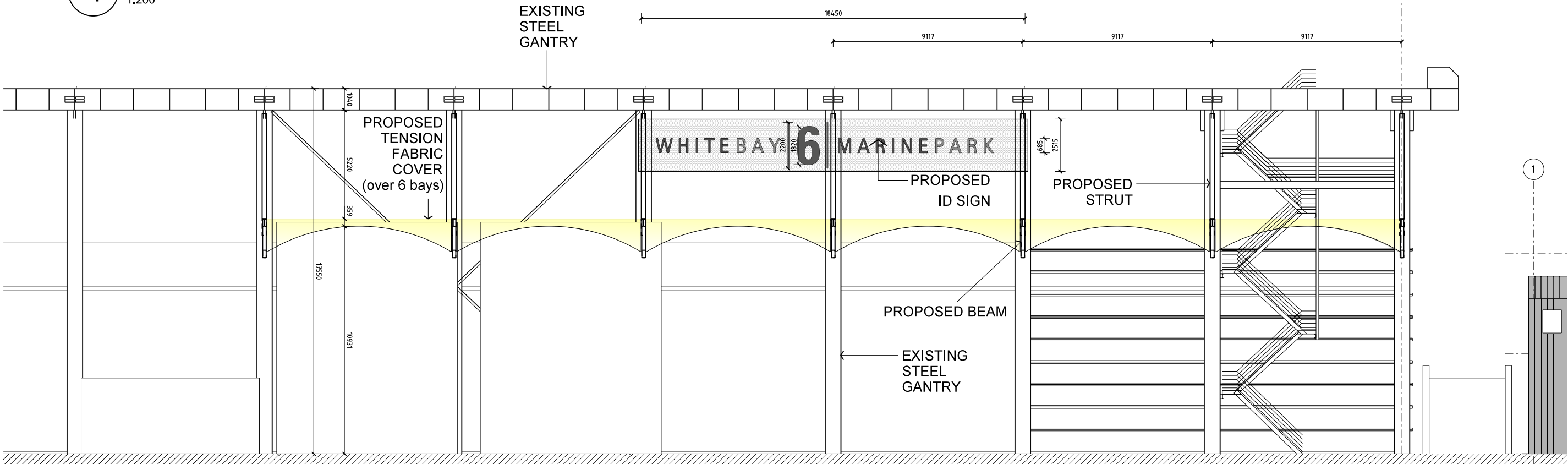
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Client
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Drawing Status
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Project
**MASTERPLAN +
DEVELOPMENT FOR
WHITE BAY 6**

Drawing Title
**ALL WEATHER
COVERED
AREA - SECTIONS**

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Appendix B

Preliminary site assessment of existing steel gantry

PRELIMINARY SITE ASSESSMENT

OF

EXISTING STEEL GANTRY

AT

**Sydney Harbour Common User Services Park,
White Bay NSW**

For

BAILEYS MARINE

Prepared by

GEOTRON
ENGINEERING CONSULTANTS

Ref: AUS02-16013_Report1revA

Mr Tim Crosland
c/o Allen Jack + Cottier Architects
79 Myrtle Street,
Chippendale NSW 2008

12th August 2015

Attention: John Whittingham

Dear John,

RE: PRELIMINARY STRUCTURAL ASSESSMENT OF EXISTING STEEL GANTRY FOR PROPOSED CANTILEVERED AWNING ROOF STRUCTURE AT SYDNEY HARBOUR, WHITE BAY 6

CLIENT: Baileys Marine Fuels

SITE: Sydney Harbour Common User Services Park, White Bay NSW

As per instructions, Geotron Pty Ltd have carried out a *preliminary* structural assessment of the existing steel gantry located on the above mentioned site for the purposes of developing the proposed concept to utilize the gantry to support a cantilevered roof structure.

A site visit was carried on site on 28th July 2015 of the steel gantry to generally view the existing structure and the site conditions, however this is not a detailed site condition report. The general observations were made from the ground level only.

BACKGROUND

The existing steel gantry constructed in the 1960's for the operations of the international containerised shipping service, is now disused as a gantry. The height of the gantry is in the order of approximately 18 to 20metres high above pavement level and runs almost approximately 250m along the White Bay site which extends from the existing White Bay Cruise Terminal located to the West of the subject site.

It is noted that the recently completed (2013) existing building for the White Bay Cruise Terminal has utilized the same steel gantry as a significant structural component for that development, refer to photographic images below in Appendix A.

GENERAL OBSERVATIONS AND RECOMMENDATIONS

The steel gantry is a significant structure located on the subject site and generally appears to be in good and sound structural condition.

However there are minor maintenance requirements and repairs that would be recommended for example - the steel stairs, some existing girts, some bracing members and other components (refer photographs below in Appendix A), and however, the detail is outside the scope of this report.

The major structural components appear to be in reasonable structural condition suitable for the proposed cantilevered roof structure.

An initial preliminary structural assessment has found that the main structural components would be adequate to support the proposed cantilevered roof given the proposed wind and dead load regime.

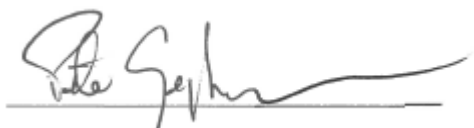
This initial assessment is subject to a final detailed wind and structural analysis of the existing gantry and hence the concept design is subject to change. With access to all existing drawings, a comprehensive assessment shall be made prior to final design and construction phases.

However, further to the above, as per our observations, given that the existing White Bay Cruise Terminal has utilized the gantry, even though the proposed cantilevered roof structure is different to the Terminal building, one may conclude that the existing gantry has provided proven structural support for this building.

Hence we do not see any structural reasons why the proposed use of the steel gantry cannot be used as a primary supporting structure for the proposed cantilevered awning.

If you have any queries please do not hesitate to contact the undersigned.

Kind regards



Peter Geoghegan BE (Hons) MIEAust CPEng RPEQ
Managing Director
GEOTRON Pty Ltd

APPENDIX A

PHOTOGRAPHS



PHOTO 1: Existing Steel Gantry location for proposed Cantilevered Roof – Southern Gantry



IMAGE 2: Existing steel gantry used integrally at White Bay Cruise Terminal - image by others



IMAGE 3: Existing steel gantry used integrally at White Bay Cruise Terminal - image by others



PHOTO 4: Existing Steel Gantry in location of proposed Cantilevered Roof
(Southern Gantry)



PHOTO 5: Existing Steel Gantry columns in location of proposed Cantilevered Roof



PHOTO 6: Existing Steel Gantry girts in location of proposed Cantilevered Roof



PHOTO 7: Existing Steel Gantry bracing cut in location of proposed Cantilevered Roof

Appendix C

Traffic impact assessment

White Bay 6 Marine Park - Proposed all weather cover and additional boat storage

Traffic Impact Assessment

Prepared for White Bay 6 Pty Ltd | 22 December 2015



White Bay 6 Marine Park - Proposed all weather cover and additional boat storage

Traffic Impact Assessment

Prepared for White Bay 6 Pty Ltd | 22 December 2015

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White Bay 6 Marine Park - Proposed all weather cover and additional boat storage

Traffic Impact Assessment

Prepared for White Bay 6 Pty Ltd | 22 December 2015

Prepared by	Timothy Brooker	Approved by	John Arnold
Position	Senior Transport Planner	Position	Associate Environmental Planner
Signature		Signature	
Date	22 December 2015	Date	22 December 2015

This report has been prepared in accordance with the brief provided by the client and has relied upon the information collected at the time and under the conditions specified in the report. All findings, conclusions or recommendations contained in the report are based on the aforementioned circumstances. The report is for the use of the client and no responsibility will be taken for its use by other parties. The client may, at its discretion, use the report to inform regulators and the public.

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1 Introduction

1.1 Transport context of the proposal

White Bay 6 Pty Ltd (the proponent) is seeking to modify major project approval (MP06_0337) under Section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to provide increased under cover dry boat storage capacity, to support existing tenancies and approved activities at the site, and additional areas for outdoor boat storage, maintenance and repair works (the proposal) at the White Bay 6 Marine Park in Balmain, NSW (the site). The site is directly adjacent and to the east of the White Bay Cruise Ship Terminal which is operated by the Port Authority of NSW (PANSW).

EMGA Mitchell McLennan Pty Ltd (EMM) has prepared this traffic impact assessment to assess the traffic and parking impacts of the proposal, which would increase the site's boat storage capacity from 50 to 200 berths. This includes up to 80 additional covered dry boat berths and up to 70 boats that may be stored in the open areas of the site on portable racks.

This has quantified the maximum number of boats as 200 (150 more than the existing approved number) that could potentially be stored on the site and used on a regular basis, under the current approval and the proposed modification.

The existing locality traffic volumes and traffic conditions have been investigated and documented in this report for two alternative traffic survey days at the Victoria Road and Robert Street intersection. The intersection traffic conditions were surveyed:

- on Thursday 24 July 2014 when there was no cruise ship visiting the White Bay Cruise Ship Terminal; and
- on Tuesday 14 July 2015 when the cruise ship Sun Princess was visiting the White Bay Cruise Ship Terminal, arriving at 07:00 am and departing at 16:00 pm.

The existing site traffic activity from the site operations in July 2014 was also quantified by a twelve hour traffic survey on 17 July 2014.

The adjacent White Bay Cruise Ship Terminal has public access restrictions for the traffic travelling via Robert Street on cruise ship days, which do not currently apply to the site operations. The site access arrangements for the site will continue to allow vehicular access via Robert Street on all days via swipe card access (see Section 2.3) at the PANSW gatehouse, including on the days when a cruise ship is visiting the White Bay Cruise Terminal.

The relevant peak traffic generation periods for the site operations on a typical weekday are as follows:

- An early morning site peak traffic period when the site traffic will be primarily employees and contractors arriving at the site, with some customer and commercial delivery traffic. This period would coincide with the normal weekday morning peak hour commuter traffic peak on the surrounding major roads, which is typically 7.00 to 8.00 am on weekdays.
- A mid morning peak period, when traffic is primarily customers arriving at the site before taking boats out for the day, and some commercial deliveries also occur. The site traffic activity normally peaks between 9.45 and 10.45 am on weekdays.

- A mid afternoon peak period, when the site traffic is primarily customers departing from the site after taking boats out for the day. This traffic generally peaks between 2.15 and 3.15 pm on weekdays.
- A late afternoon peak period when the site traffic is primarily employees departing from the site, with some customer traffic. This period can also coincide with the normal weekday afternoon peak hour commuter traffic on the surrounding major roads, which is typically 5.00 to 6.00 pm on weekdays.

The general layout of the proposal is depicted on the proposed site plan (Drawing No. DA1002) provided in Appendix A.

1.2 Site location and access

The site location in relation to the White Bay Cruise Ship Terminal is shown on Figure 1.1.

The site is located less than 2 kilometres (km) north-west in a direct line from the centre of the Sydney CBD. However the actual travel distance for access by road is significantly further and also depends on which access route is being used.

The site access traffic will normally travel via the traffic signals at the intersection of Victoria Road and Robert Street and the channelised T-intersection at the corner of Robert Street and Mullens Street. Robert Street is also the primary access routes for residential traffic travelling to and from the Balmain Peninsula from the Sydney CBD direction and is heavily used by residential traffic and buses, during both the morning and afternoon commuter peak traffic periods on weekdays.

However, the Robert Street route provides the most direct and convenient access to the major road network for the site traffic without this traffic needing to use any residential street for access to and from the major road network.

1.3 Scope of this report

This assessment of the proposal's traffic impacts has considered the following general traffic and parking matters which are outlined in the Roads and Maritime Services (RMS) Guide to Traffic Generating Developments (RTA 2002), namely:

- the existing locality traffic conditions for the road network and intersections;
- the existing site activity;
- traffic and car parking generating characteristics of the proposal;
- traffic and car parking impacts of the proposal;
- a summary of any relevant traffic or parking impact and mitigation measures;
- traffic safety; and
- access by walking, cycling and public transport.



Access to main road network

White Bay 6

Environmental Assessment

Figure 1.1

2 Existing traffic conditions

2.1 Road network

The major road network in the Rozelle Port area, which provides access to the White Bay Cruise Ship Terminal and other port facilities including the site, is shown in Figure 2.1. Also shown are the approved access routes for B-Double trucks. Further detail of the number of traffic lanes, including the additional left and right turning lanes at the Robert Street and Victoria Road intersection are shown in Figure 2.2.

Since 2010, a morning and afternoon peak hour 'citybound' bus lane has been introduced on Victoria Road which is shown on Figure 2.2. This bus lane has reduced the peak hour car traffic capacity and the corresponding traffic volumes for the car traffic which is using Victoria Road during both the morning and afternoon peak traffic periods.

2.2 Traffic volumes

Baseline traffic volume surveys, which included the existing site traffic travelling via Robert Street, were undertaken for this assessment on Thursday 24 July 2014 (on a non-cruise ship day) and Tuesday 14 July 2015 (when a cruise ship was visiting the White Bay Cruise Terminal).

The traffic survey results recorded the following intersection and major road peak hourly traffic volumes (Table 2.1) on each traffic survey day. The full traffic survey results are included in Appendix B.

Table 2.1 Summary of July 2014 and July 2015 peak hourly traffic surveys

Intersection	Time	Total intersection traffic volume in the peak hour	Two way traffic volume on Victoria Road	Two way traffic volume on Victoria Road	Two way traffic volume on Robert Street
Surveyed traffic in 2014 – with no Cruise Ship visiting					
Victoria Road/ Robert Street	Morning Peak Hour (7.15 to 8.15 am)	5,913 vehicles per hour	4,277 vehicles, north of the intersection	5,862 vehicles, south of the intersection	1,687 vehicles, east of the intersection
Victoria Road/ Robert Street	Afternoon Peak Hour (5.00 to 6.00 pm)	7,293 vehicles per hour	5,271 vehicles, north of the intersection	7,199 vehicles, south of the intersection	2,116 vehicles, east of the intersection
Surveyed traffic in 2015 – with a Cruise Ship visiting					
Victoria Road/ Robert Street	Morning Peak Hour (7.15 to 8.15 am)	5,528 vehicles per hour	3,822 vehicles, north of the intersection	5,482 vehicles, south of the intersection	1,752 vehicles, east of the intersection
Victoria Road/ Robert Street	Afternoon Peak Hour (4.15 to 5.15 pm)	5,672 vehicles per hour	3,965 vehicles, north of the intersection	5,561 vehicles, south of the intersection	1,818 vehicles, east of the intersection

Note: *Includes eastbound traffic using the underpass to the Anzac Bridge which bypasses the main part of the intersection.

The traffic survey results in Table 2.1 show the range of recent and current major road traffic volumes at the intersection in July 2014 and July 2015. These survey results also show there is minimal additional traffic using Robert Street on a cruise ship day as there was only a slight increase of 65 vehicles in the morning peak hour traffic using Robert Street in the July 2015 survey compared to the July 2014 survey. There was actually a reduction in the afternoon peak hour traffic between the two traffic surveys.



Figure 2.2 **Layout of the major road access via the Victoria Road and Robert Street intersection**

2.3 Site layout

The site has dimensions of approximately 100 m by 150 m and is located at the eastern end of Robert Street, where the road is effectively a two lane two way private road which provides access to the port area. This includes the White Bay Cruise Ship Terminal and the site, which includes a marine refuelling facility, boat storage, hard stand and harbour access for vessels via a travel lift and marina bull bay.

The current layout of the site including the vehicular access, car parking, boat refuelling and boat storage areas is shown on the site plan (Drawing No. DA1001) in Appendix A. Approximately 45 car parking spaces are currently provided for use by the site employees, customers and site visitors including 10 spaces for the approved 50 dry boat storage berths at the site. This parking is located along the northern edge of the site access road, along the northern site boundary.

The vehicular access to and from the site is currently controlled at the PANSW access gatehouse (Figure 2.3) which is located approximately 800 m west of the site, near the corner of Robert Street and Buchanan Street. The site traffic currently uses Robert Street for all its access, including on the days when there is a cruise ship visiting the White Bay Cruise Terminal.



Figure 2.3 Road connections at the PANSW gatehouse on Robert Street 800 m west of the site

Although the public vehicular access to the White Bay Cruise Terminal is restricted on the days when a cruise ship is visiting the port, with no access permitted to use Robert Street, the site traffic for all site employees, contractors and customers will continue to be permitted to travel via Robert Street with an agreed access identification process via authorised access identification cards and provision of visitor lists to the PANSW gatehouse on a cruise ship day. The proposed site access control procedure is provided in Appendix E.

2.4 Existing site traffic

The current site traffic volumes were surveyed over a twelve hour period on Thursday 17 July 2014.

The detailed site traffic survey results, which are included in Appendix C, showed a total of 98 vehicle movements for the day (over a twelve hour survey period) which included 86 car/light vehicle movements and 12 heavy vehicle movements.

The weather was dry and sunny on the day of the traffic survey and the surveyed site traffic volumes are considered to be representative of site traffic on a typical winter weekday.

A summary of the existing site operations hourly traffic movements, commencing each quarter hourly interval over the 12 hour survey period, is shown in Figure 2.4 The analysis of the existing site hourly traffic movements showed the following peak site traffic generation movements on the survey day:

- a mid morning peak site traffic generation period occurred between 9.45 to 10.45 am with 14 vehicle movements (7 in, 7 out); and
- a mid afternoon peak site traffic generation period occurred between 2.15 to 3.15 pm with 13 vehicle movements (5 in, 8 out).

During the normal weekday morning and afternoon commuter peak traffic periods at the external major road access intersections, the site traffic movements were lower than the surveyed mid morning and mid afternoon peak levels.

These traffic movements were 10 vehicle movements per hour (9 in, 1 out) during the normal weekday morning commuter peak traffic period 7.00 to 8.00 am and 10 vehicle movements per hour (3 in, 7 out) during the normal weekday afternoon commuter peak traffic period 5.00 to 6.00 pm.

2.5 Intersections

The existing traffic capacity at the major road access intersection (Victoria Road and Roberts Street), has been assessed from the July 2014 and July 2015 surveyed intersection traffic volumes which are provided in Appendix B.

The intersection modelling software SIDRA was used to analyse the morning and afternoon commuter peak hour traffic periods at each intersection. The RMS intersection level of service standards have been used for this assessment, which are shown in Table 2.2.

The detailed SIDRA program results are included in Appendix D and are summarised in Table 2.3. The modelled morning and afternoon peak period intersection layouts, including the effective queuing lengths of the turning lanes on each intersection approach, are also shown in Appendix D.

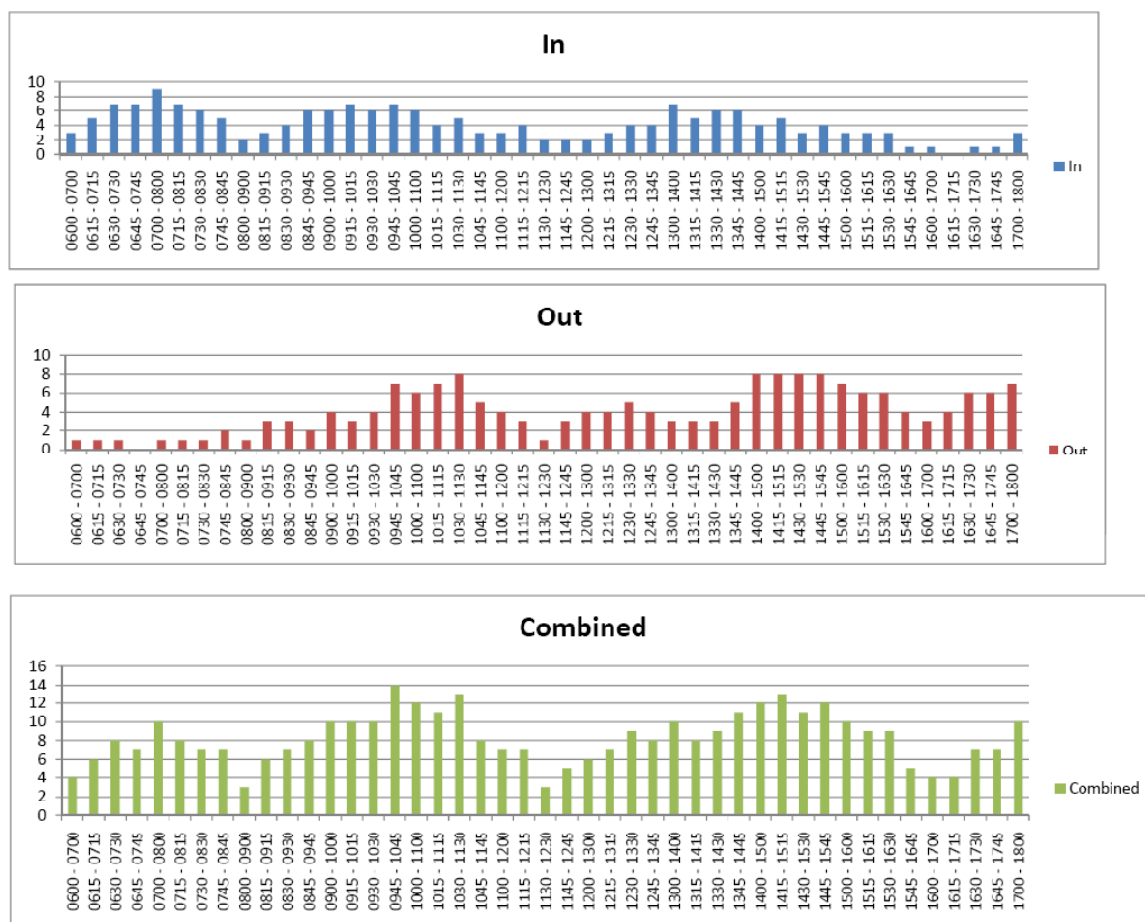


Figure 2.4 Existing site hourly traffic movements for quarter hourly intervals on 17 July 2014

Table 2.2 RMS Intersection level of service standards

LoS	Average delay (seconds per vehicle)	Traffic signals, roundabout	Priority intersection ('stop' and 'give way')
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity. At signals, incidents will cause excessive delays. Roundabouts require other control mode	At capacity; requires other control mode
F	Greater than 71	Unsatisfactory with excessive queuing	Unsatisfactory with excessive queuing, requires other control mode

Source: Guide to Traffic Generating Developments, RTA 2002.

The intersection traffic operations are primarily reported in terms of level of service (LoS) limits and their corresponding average vehicle delay (AVD) in seconds (s). The intersection modelling results also include the intersection degree of saturation (DOS) which is a measure of the spare capacity of the intersection to accommodate additional traffic movements under the calculated optimum traffic signal phasing and cycle time, which is determined by the SIDRA analysis program.

Table 2.3 Results of the existing intersection operations SIDRA analysis

Intersection peak hour	Existing situation –intersection operations					
	Traffic day	LOS	DOS	AVD* (seconds)	Optimum cycle time (seconds)	Maximum traffic queue length (m)
Victoria Road/ Robert Street am peak hour (7.15– 8.15 am)	July 2014 Normal Day	C	0.937	34.0	90	391 (Victoria Road north)
Victoria Road/ Robert Street pm peak hour (5.00– 6.00 pm)	July 2014 Normal Day	B	1.000	27.7	150	392 (Victoria Road north)
Victoria Road/ Robert Street am peak hour (7.15– 8.15 am)	July 2015 Cruise Ship Day	B	0.877	21.3	55	193 (Victoria Road north)
Victoria Road/ Robert Street pm peak hour (4.15– 5.15 pm)	July 2015 Cruise Ship Day	B	1.076	20.8	86	139 (Victoria Road north)

Notes: *The average vehicle delay for traffic signals is the average for all traffic movements at the intersection.

The SIDRA intersection traffic modelling results (Table 2.2), indicate that the intersection is operating with either good or satisfactory traffic delays (LoS B or C). The higher intersection pm peak degrees of saturation (1.000 to 1.076) compared to 0.877 to 0.937 in the am peak indicate generally more congested traffic conditions at the intersection during the afternoons. It is noted that the city bound morning peak hour car traffic volumes using Victoria Road have declined in recent years (since 2010), following the commencement of the Inner West Busway operations.

The maximum peak hour traffic queues were approximately 390 m in July 2014 on the Victoria Road (north) traffic approach during both the morning and afternoon traffic peak hours. The maximum queue lengths were significantly lower in the July 2015 intersection traffic analysis. Both the 2014 and 2015 intersection modelling results show the maximum peak hour traffic volumes and the intersection traffic queues have been reducing since 2010, following the commencement of the Inner West Busway operations.

The minor road intersection traffic queue lengths are not shown in the SIDRA analysis results summary in Table 2.3. However, they are included in the detailed intersection analysis results in Appendix D. In July 2014 the minor road (Robert Street) intersection approach maximum traffic queue lengths were 188 m (am peak) and 126 m (pm peak) respectively. However in July 2015, these maximum peak hour traffic queue lengths had reduced to approximately 76 m and 55 m respectively, during the morning and the afternoon traffic peak hours.

2.6 Public transport

There are no existing regular scheduled public transport services operating via the eastern end of Robert Street, where the facility operates. The same applies to the White Bay Cruise Terminal, which is generally reliant on taxis and coaches for passenger movement.

2.7 Traffic safety

The traffic safety conditions on the local road access to the site via Robert Street and the main Victoria Road and Robert Street access intersection are considered to be generally good currently.

The recent intersection redesign and reconfiguration works (from the Inner West Busway project which was completed in late 2010) would have included network road safety audits which would have ensured the most up to date road safety standards were incorporated into the design of the route intersection.

2.8 Pedestrian and cycle access

Access by pedestrians and cyclists to and from the site from surrounding residential areas is considered unlikely due to the current separation distances from the nearest residential properties, which are located near the corner of Robert Street at Buchanan Street. However some local residents from within the local Balmain and Rozelle areas may walk or cycle to the site if they needed to for any reason.

Three bicycle parking/ storage spaces are provided with the existing development, in accordance with the conditions of MP06_0311. These bicycle parking spaces will be retained under the proposal.

3 Traffic and parking demands of the proposal

3.1 Site access and circulation

The site effectively shares its vehicular access via Robert Street and Mullens Street with the White Bay Cruise Ship Terminal. However, the public vehicular access for the White Bay Cruise Ship Terminal is only permitted via the new port link road to James Craig Road and The Crescent (City West Link Road) on the days when a cruise ship is visiting, which prevents that traffic from using Robert Street.

The intersection of Robert Street and Victoria Road had either good or satisfactory traffic conditions at the times surveyed (LoS B or C) in 2014 and 2015 and has some spare traffic capacity to accommodate additional traffic if required at the morning and afternoon commuter traffic peak periods.

The existing site layout provides 45 car parking spaces for the site employees, customers and visitors including the 50 approved dry boat storage berths. Additional site car parking for the additional storage berths would be provided in accordance with recommended RMS parking demand rates from the Guide to Traffic Generating Developments (0.2 spaces per dry berth).

The internal site layout and the traffic circulation plans which show where the existing car parking is provided within the site are shown on the proposed site plan (Drawing No.DA1002) provided in Appendix A.

3.2 Traffic generation during operations

In terms of traffic generation, the traffic impacts of the proposal on the external road network will be directly proportional to the future total number of operating boat storage berths (200) at the site in comparison to the approved number of berths (50) at the site.

The roll-on roll-off vehicle loading facility for barges at the site was not constructed and the originally proposed traffic usage of up to 64 heavy vehicle movements daily has not occurred. In place of these movements, there are now occasional deliveries by trucks to and from the site for boat deliveries and pick-ups by road, which can normally occur up to twice daily (representing 4 daily truck movements) which would generally occur during the weekday daytime periods outside the main morning and afternoon commuter traffic peak hours.

The peak traffic periods for the site generally occur during the daytime (mid morning and mid afternoon periods) on weekdays and weekends or public holidays and the site will not have high traffic generation periods which coincide with the normal times of peak weekday commuter traffic conditions on either The Crescent or City West Link Road.

A comparative summary of the likely additional daily and peak hour traffic movements which would be generated by the proposal, in comparison to the existing site traffic usage, is provided in Table 3.1.

Table 3.1 Summary of peak daily and peak hourly traffic volumes generated by the proposal

Traffic period	Type of traffic	As originally approved	With approved operations (50 dry boat storage berths)	With potential maximum site utilisation (150 additional boat storage berths)
Daily Traffic	Staff trips	60	54	54
	Fuel deliveries	6	6	6
	Ro-Ro ramp/Boat deliveries	64	4	4
	Storage berths	0	70	280
	All traffic	130	134	344
Additional traffic				210
Peak Hour Traffic	Staff trips	30	27	27
	Fuel deliveries	3	3	3
	Ro-Ro Ramp/Boat deliveries	0	0	0
	Storage berths	0	14	56
	All traffic	33	44	86
Additional traffic				42

From Table 3.1, it is calculated that the proposed additional 150 berths boat storage capacity at the site would generate up to 210 additional daily vehicle movements.

Approximately 42 of these additional vehicle movements would potentially be occurring at the site during either the morning or the afternoon commuter traffic peak periods. These movements would mainly be travelling inbound towards the site (90%) during the morning commuter peak traffic periods and mainly outbound (70%) during the afternoon commuter peak periods.

It is anticipated that the additional site operations traffic will have a similar geographical distribution to the existing site traffic movements which is 60 per cent travelling to and from the south or the east in comparison to 40 per cent travelling to and from the west via either Victoria Road or the City West Link. During the morning peak traffic period any outbound traffic from the site which would be travelling towards the west, would need to travel via the City West Link due to the morning peak period (6.30 am to 9.30 am) no right turn restriction which applies to the Robert Street traffic at the Victoria Road intersection.

3.3 Traffic generation during construction

During the proposal's construction phase, the additional peak hourly traffic movements generated on the external road network would be similar to the additional hourly traffic movements generated during the operations phase. However there would be higher proportions of heavy vehicle traffic during construction. During construction of the proposal, it is estimated that there will be a maximum of 20 daily heavy vehicles and 30 daily cars or other private vehicles visiting the site at the peak phase of the construction work.

Approximately one third of these vehicles would potentially be travelling inbound towards the site during a typical morning peak hour (eg 7.00 to 8.00 am) and one third would potentially be travelling outbound from the site during a typical afternoon peak hour (eg 5.00 to 6.00 pm).

The peak hourly site construction traffic movements will therefore be approximately:

- 10 cars per hour and 7 trucks per hour travelling in during the morning peak hour; and
- 10 cars per hour and 7 trucks per hour travelling out during the afternoon peak hour.

The geographic direction distribution of this site construction traffic during the peak hours would also be similar to that for the site operations traffic and would be generally 60 per cent travelling to or from the south and east and 40 per cent travelling to or from the north and west.

3.4 Car parking

The existing site car parking capacity of 45 spaces, which is primarily for existing customers, site employees and visitors, will be retained and additional car parking will be provided in four smaller parking areas on the main part of the site as shown on the proposed site plan (Drawing No. DA1002) provided in Appendix A. Existing bicycle parking capacity (three bicycle parking/storage spaces) will also be retained.

The additional car parking supply for the site has been calculated in accordance with the RMS Guide to traffic generating developments. This car parking standard recommends 0.2 car parking spaces per berth for car parking at a dry boat storage marina. This rate is also consistent with the recommendations of the Australian Standard AS 3962-2001 – Guidelines for the design of marinas, which recommends car parking in the range 0.2 to 0.4 parking spaces per dry boat storage berth.

The RMS car parking standard effectively corresponds to the lower end of the AS 3962 range, but is appropriate for this site as there are other car parking demand uses at the site (eg employee and visitor car parking) and some shared usage of the overall site car parking supply between the different user groups will generally be feasible. The total site car parking capacity will therefore need to be increased as follows:

- A total of 45 car parking spaces are required currently, representing 35 spaces for the site employees and visitors and 10 car parking spaces for the existing approved dry boat storage (50 boats) for customers and their guests.
- The proposed additional dry boat storage capacity for 80 more boats will require a further 16 car parking spaces, increasing the site car parking requirement from 45 to 61 car parking spaces.
- A further 14 car parking spaces will also be required as a result of the additional outdoor boat storage capacity for 70 boats, resulting in a potential future maximum site car parking demand of 75 car parking spaces.

The additional parking areas proposed will increase the capacity of the site to accommodate a total of 75 car parking spaces. This will provide adequate capacity for the estimated future maximum site car parking demand of 75 car parking spaces.

It is also noted that an alternative site layout proposal option has been developed which allows for a reconfigured parking layout to accommodate the potential for the take back of a northern portion of the site, which could occur under the current lease agreements between the proponent and PANSW. Under this alternative option, up to 26 additional car parking spaces could alternatively be provided in the southern portion of the site (refer Drawing No. DA1003 in Appendix A). Both options allow for a total of 75 car parking spaces.

3.5 Public transport

In the context of the proposal, the demand for public transport travel will be generally low and will primarily occur either by taxis or private minibuses.

4 Impact assessment

4.1 Traffic volumes on the surrounding roads

Current peak hourly traffic volumes, the future additional traffic generated by the proposal and the corresponding percentage traffic increases on the surrounding roads in the Rozelle locality are summarised in Table 4.1. The analysis assumes the maximum future site operations traffic for +150 additional boats stored at the site will all be using the main site access route via Robert Street to and from Victoria Road on all days, including the days when there is a cruise ship visiting the White Bay Cruise Terminal.

Generally lower proportional traffic increases would occur on the main Robert Street site access route during the peak site construction activity, when the predicted generated hourly construction traffic movements (an additional 17 vehicle movements per hour) will be significantly lower than the potential maximum additional hourly traffic movements which would be generated during the future site operations (an additional 42 vehicle movements per hour).

Table 4.1 Future locality traffic volumes including additional project operations traffic

Traffic generation route	Traffic day	Existing hourly traffic volumes (am and pm peaks) July 2014	Additional peak hourly traffic from the proposal	Future total peak hourly traffic	Average peak hourly traffic increase
Surveyed traffic in 2014 –with no Cruise Ship visiting					
Robert Street east of Victoria Road	Normal day	1,687-2,116	42	1,729-2,158	2.2%
Victoria Road north of Robert Street	Normal day	4,277-5,271	4-7	4,281-5,278	0.1%
Victoria Road south of Robert Street	Normal day	5,862-7,199	35-38	5,900-7,234	0.6%
Surveyed traffic in 2015 –on a Cruise Ship visit day					
Robert Street east of Victoria Road	Cruise Ship day	1,752-1,818	42	1,794-1,860	2.4%
Victoria Road north of Robert Street	Cruise Ship day	3,822-3,965	4-7	3,826-3,972	0.1%
Victoria Road south of Robert Street	Cruise Ship day	5,482-5,561	35-38	5,520-5,596	0.7%

The results in Table 4.1 show that traffic increases from the proposal will primarily only be measurable on the Robert Street route, where there will be approximately +2.2 to 2.4% peak hourly traffic increases on either the days with or without a cruise ship visiting.

The Robert Street route at Victoria Road has peak hourly two way traffic volumes in the range 1,687-2,116 vehicles per hour currently, which correspond generally to sub arterial route traffic conditions. The likely project generated traffic increases from the additional site traffic using Robert Street, (up to 42 additional hourly vehicle movements for +150 additional boats in storage) are unlikely to have any noticeable road or intersection traffic queuing impacts to the route. This is further analysed in the context of the potential site traffic impacts at the Victoria Road and Robert Street intersection in Section 4.2.

At the other locations on the major road network (Victoria Road) either to the north-west or the south-east of Robert Street, there will be generally less than 0.7 per cent increases in the peak hourly traffic in any direction. These increases will have no noticeable effects on the peak hourly traffic flow conditions on the route. This is also confirmed by the analysis of the potential site traffic flow impacts for the key intersection at Victoria Road and Robert Street, in Section 4.2.

4.2 Traffic impacts at intersections

The future traffic operations SIDRA intersection assessment results are presented in Table 4.2 and Table 4.3 for the July 2014 and July 2015 existing traffic conditions, for the site generated construction traffic (+17 hourly vehicle movements) and for the site generated operations traffic (+42 hourly vehicle movements) for 150 additional berths.

Table 4.2 Future SIDRA results for 2014 Victoria Road/Robert Street intersection operations

Intersection	Traffic day	LOS	DOS	AVD* (seconds)	Optimum Cycle Time (seconds)	Maximum traffic queue length (m)
Victoria Road/ Robert Street am peak hour	Normal Day (July 2014 Base Traffic)	C	0.937	34.0	90	391 (Victoria Road north)
	Normal Day (with construction traffic)	C	0.922	33.9	95	405 (Victoria Road north)
	Normal Day (with maximum +150 boats in storage at the site)	C	0.941	34.0	90	391 (Victoria Road north)
Victoria Road/ Robert Street pm peak hour	Normal Day (July 2014 Base Traffic)	B	1.000	27.7	150	392 (Victoria Road north)
	Normal Day (with construction traffic)	B	1.000	27.8	150	392 (Victoria Road north)
	Normal Day (with maximum +150 boats in storage at the site)	B	1.000	27.8	150	392 (Victoria Road north)

Notes: * The average vehicle delay for traffic signals is the average for all traffic movements at the intersection.

Table 4.3 Future SIDRA results for 2015 Victoria Road/Robert Street intersection operations

Intersection	Traffic day	LOS	DOS	AVD* (seconds)	Optimum Cycle Time (seconds)	Maximum traffic queue length (m)
Victoria Road/ Robert Street am peak hour	Cruise Ship Day (July 2015 Base Traffic)	B	0.877	21.3	55	193 (Victoria Road north)
	Cruise Ship Day (with construction traffic)	B	0.877	21.3	55	193 (Victoria Road north)
	Cruise Ship Day (with maximum +150 boats in storage at the site)	B	0.898	21.6	55	193 (Victoria Road north)
Victoria Road/ Robert Street pm peak hour	Cruise Ship Day (July 2015 Base Traffic)	B	1.076	20.8	86	139 (Victoria Road north)
	Cruise Ship Day (with construction traffic)	B	1.076	21.0	86	139 (Victoria Road north)
	Cruise Ship Day (with maximum +150 boats in storage at the site)	B	1.076	21.0	86	139 (Victoria Road north)

Notes: * The average vehicle delay for traffic signals is the average for all traffic movements at the intersection.

The intersection analysis results in Table 4.2 and Table 4.3 show virtually no measurable traffic effects at the intersection for either the year 2014 (no cruise ship) or year 2015 (with cruise ship) traffic survey periods considered. Neither the proposal's construction traffic nor its operations traffic will have any measurable effect on either the morning or the afternoon peak hour levels of service, degrees of saturation or maximum traffic queue lengths at the intersection.

The SIDRA intersection traffic assessment allows the program to determine the optimum intersection cycle time, which in some cases changes for the future traffic scenarios, in which case this also becomes a factor in any change in the future intersection traffic operations. The future traffic effects of the proposal for +150 boats stored at the site are effectively:

- July 2014 traffic conditions (no cruise ship) the morning peak hour average intersection delay remains unchanged at 34.0 seconds;
- July 2014 traffic conditions (no cruise ship) the afternoon peak hour average intersection delay increases marginally from 27.7 to 27.8 seconds;
- July 2015 traffic conditions (with cruise ship) the morning peak hour average intersection delay increases marginally from 21.3 seconds to 21.6 seconds; and
- July 2015 traffic conditions (with cruise ship) the afternoon peak hour average intersection delay increases marginally from 20.8 seconds to 21.0 seconds.

These additional intersection traffic delays are barely measurable and would generally be acceptable in terms of their impacts as there would be minimal change to the existing peak hourly traffic delays on both Robert Street and Victoria Road, at this intersection.

4.3 Site car parking requirements

Car parking is already provided for the existing approved operational uses on the site, including the approved 50 boats capacity for undercover dry boat storage.

The site has a large car parking area for the site employees and visitors which is located immediately inside the site entry, which provides approximately 45 car parking spaces at the site.

Additional car parking demand for the site has been assessed for the additional future customers of the additional boat storage berths and their guests at the site, which results in the following site car parking design requirements:

- +16 car parking space for the users of the 80 additional undercover dry boat storage berths; and
- +14 car parking space for the users of up to 70 boats stored on the site hard stand areas.

As described in Section 3.4, additional car parking capacity that is to be provided for the proposal (to provide a future total of 75 car parking spaces at the site). This demonstrates that the site will have the capacity to accommodate parking for the future maximum of +150 additional boats stored at the site, which would increase the total site car parking demand from 45 spaces for the existing approved development, to 75 car parking spaces with the proposal.

4.4 Traffic safety

Traffic safety conditions on the local road access to the site via Robert Street the major road access intersection where this road meets Victoria Road are acceptable currently and will not be adversely affected by the proposal during either its construction or operations stages.

4.5 Access for pedestrians, cyclists and public transport

Access for pedestrians and cyclists from the site to the surrounding areas is considered unlikely due to the separation distances from the nearest residential areas at Balmain or Rozelle.

The existing bicycle parking spaces at the site will be retained with the proposal.

The demand for public transport travel for the proposal will be generally low and will primarily occur either by taxis or private minibuses.

5 Summary and conclusions

The traffic impacts for the proposal have been assessed for two examples of the locality site access traffic conditions (for access via Robert Street and Victoria Road) using the base intersection traffic volumes which were surveyed in July 2014 on a day when there was no cruise ship visiting the White Bay Cruise Terminal and in July 2015 on a day when there was a cruise ship (Sun Princess) visiting the White Bay Cruise Terminal:

- The existing morning and afternoon peak hourly traffic volumes using Robert Street and Victoria Road were surveyed as follows:
 - In July 2014, Robert Street, east of Victoria Road was 1,687- 2,116 vehicles per hour;
 - In July 2014 Victoria Road, south of Robert Street was 5,862- 7,199 vehicles per hour;
 - In July 2015, Robert Street, east of Victoria Road was 1,752- 1,818 vehicles per hour; and
 - In July 2015 Victoria Road, south of Robert Street was 5,482- 5,561 vehicles per hour.
- These existing volumes are within the range of typical peak hourly traffic volumes respectively for a sub-arterial road (Robert Street) and a major arterial route (Victoria Road).
- The main arterial road access intersection which is at Victoria Road and Robert Street has been analysed using the SIDRA intersection analysis program for both the July 2014 and the July 2015 traffic volumes. The intersection is operating with either good or satisfactory traffic delays (LoS B or C) currently, although the intersection degrees of saturation is relatively high, representing more congested peak hour traffic operations, during the afternoon traffic peak hour. Since 2010, the morning peak hour city-bound car traffic volumes using Victoria Road have actually declined, as a result of traffic changes to Victoria Road following the implementation of the Inner West Busway (city bound peak period bus lane).
- The intersection currently has similar morning and afternoon peak hour major road traffic queues, although the traffic queues were generally higher during the 2014 traffic survey (at approximately 390 m in both directions) compared to between 140 m to 190 m during the 2015 traffic survey.
- The existing site traffic (in July 2014) was surveyed as approximately 98 vehicle movements daily, with a mid morning traffic peak of approximately 14 hourly vehicle movements occurring between 9.45 to 10.45 am and a mid afternoon traffic peak of approximately 13 hourly vehicle movements occurring between 2.15 to 3.15 pm. During the normal commuter peak traffic periods on the external major roads, the site traffic movements were generally lower, being approximately 10 vehicle movements per hour (9 in, 1 out) during a typical morning commuter peak traffic period (e.g. 7.00 to 8.00 am) and 10 vehicle movements per hour (3 in, 7 out) during a typical afternoon commuter peak traffic period (e.g. 5.00 to 6.00 pm).
- Additional traffic generated by the proposal has been assessed from the site traffic usage on busy days, which will generate approximately 210 additional daily vehicle movements (cars or other smaller vehicles typically) of which 42 additional vehicle movements would generally be occurring during the external major road commuter peak traffic periods in the mornings or afternoons on weekdays. The predicted additional site traffic is likely to be distributed approximately 60 per cent to and from the south and east (via the Anzac Bridge) and 40 per cent via other routes, subject also to the effects of the morning peak period right turn traffic restriction from Robert Street at the Victoria Road intersection.

- During the peak construction period, the additional generated peak hourly traffic movements from the site will also be similar, being approximately 17 additional hourly vehicle movements, of which a higher proportion would be heavy vehicles (7 out of 17 additional hourly vehicle movements).
- The additional site traffic from the construction and operations of the proposal will not generally affect the capacity or safety of road networks in the area where the proportional traffic increases (from the proposed additional 150 boats stored at the site) will generally be minimal, being maximum 0.7% peak hourly traffic increases at various locations on Victoria Road and a maximum 2.4% peak hourly traffic increase on Robert Street. These are the two roads which provide the primary access to the area. The proposal would generally have minimal effect to the operating traffic capacity or safety of these roads or any other traffic routes.
- The effect of the additional proposal generated peak hourly traffic has also been assessed at the major road access intersection (at Victoria Road and Robert Street) for the additional site construction and operational (+150 boats storage) traffic movements. The project SIDRA intersection traffic assessment shows generally no measurable traffic changes for either the July 2014 (no cruise ship) or July 2015 (with cruise ship) base traffic conditions at the intersection, in terms of either the intersection levels of service, degree of saturation or traffic queue lengths. The SIDRA program has allowed the optimum intersection cycle time to vary at the intersections, which in some cases changes the future optimum intersection cycle time.
- Existing site car parking will be retained and expanded to accommodate the proposal. Additional car parking for the proposal will be provided at the recommended rate of the RTA (now RMS) guide to traffic generating developments. The site has 45 car parking spaces currently of which 35 are intended for use by the site employees and other site visitors and 10 are intended for customers of the approved 50 boat dry boat storage facility.
- For the future site development, 30 additional car parking spaces will be provided, resulting in a total capacity of 75 car parking spaces. This will provide overall increased capacity to accommodate the future maximum combined demand from all employees and visitors at the site which has been assessed as 75 car parking spaces. Also, during the peak utilisation periods for the site boat launching activity (which will be on weekends and during public holidays), the site employee car parking demand will generally be lower, such that a higher proportion of the overall site car parking capacity would effectively be available for additional use by customers of the proposed dry boat storage facility and hard stand boat storage area.
- Normal public transport services will not generally be required for the proposal. Where there will be a demand for individual or group transport travel by taxis and private minibuses these vehicles will be used to transport some site patrons and their guests to and from the site.
- Access by pedestrians and cyclists to and from the site from surrounding areas is unlikely due to the current separation distances from the nearest residential area, which is near the corner of Robert Street at Buchanan Street. Some local residents from within a normal walking distance catchment (which is 500 m to 800 m approximately) may nevertheless walk if they needed to visit the site. Existing bicycle parking will be retained at the site.
- In an overall transport context, the traffic impacts for the proposal have been assessed via Robert Street for two site access conditions (access on a normal day and access on a cruise ship day) and in both situations the existing road network has been found to provide adequate traffic capacity. On the days when a cruise ship is visiting the port, the site access arrangements for the extended site operations at the site will be agreed between the proponent and PANSW.

Appendix A

Plans of the proposal



DRAFT MASTERPLAN +
DEVELOPMENT FOR WHITE BAY 6

Revisions				
No	Date	Description	Ver	App'd
01	07/08/15	ISSUE FOR DRAFT PLACEHOLDING	01	JW
02	12/08/15	ISSUE FOR DRAFT EA	02	JW
03	26/08/15	ISSUE FOR EA	03	JW

Architect

AJ+C

ALLEN JACK+COTTIER

79 Myrtle Street Chippendale NSW 2008 AUSTRALIA
ph +61 2 9311 8222 fx +61 2 9311 8200 ABN 53 003 782 250

Client

WHITE BAY 6 PTY LTD

Drawing Status

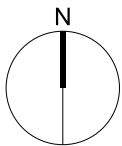
NOT FOR CONSTRUCTION

Project

MASTERPLAN +
DEVELOPMENT FOR
WHITE BAY 6

Drawing Title

COVER PAGE



Proj No.

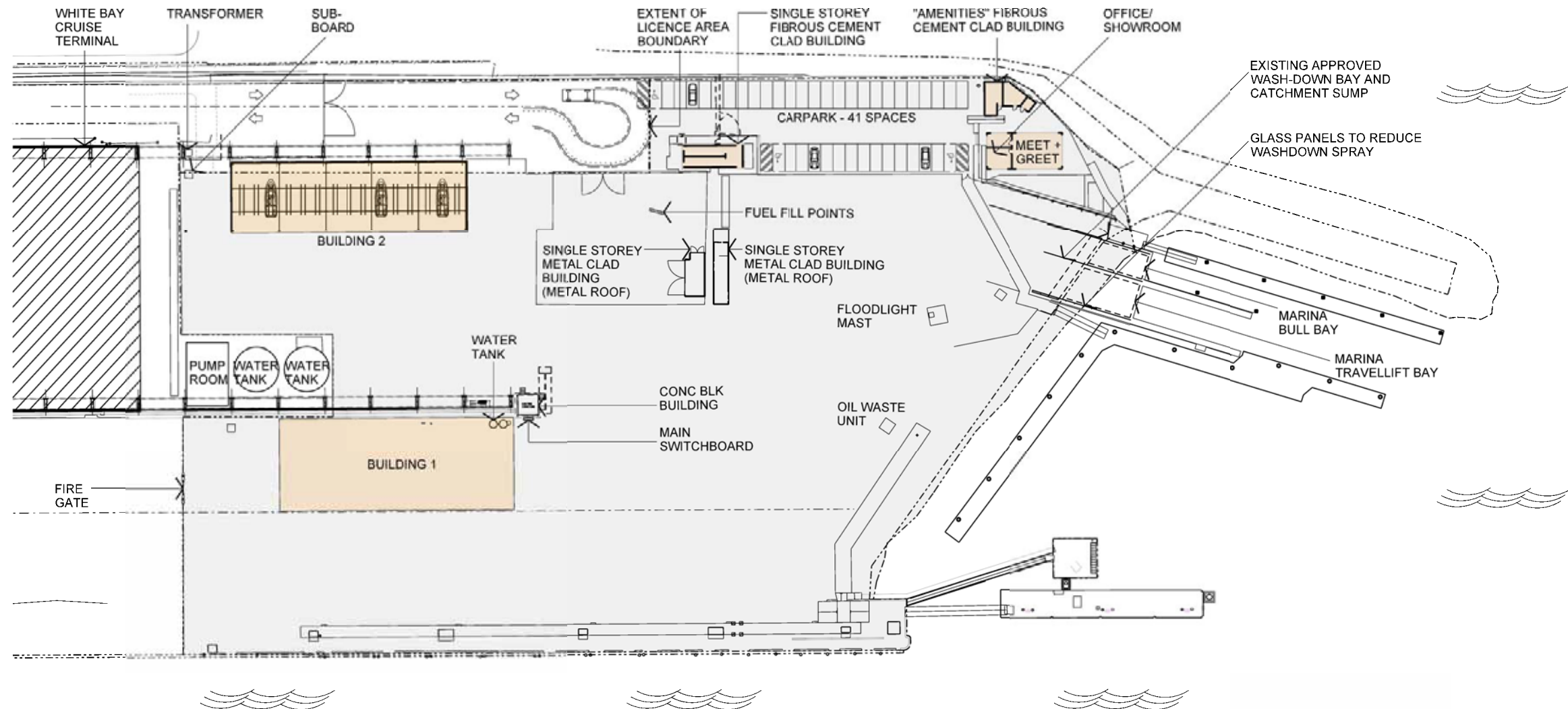
Scale at A3

Drawing No

Issue

DA0001

03



KEY

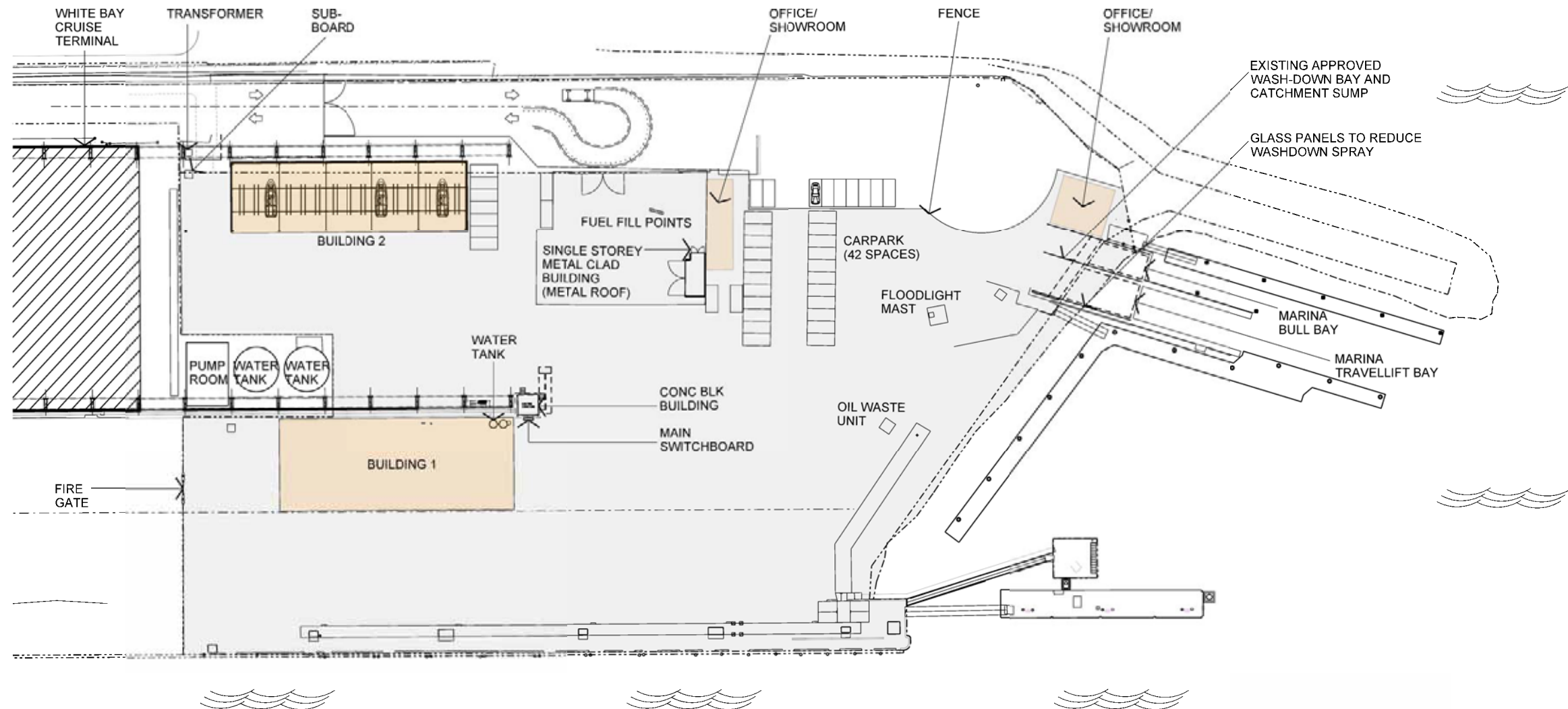
 **CURRENTLY APPROVED**
(Modification 4 to MP06_0037)

Revisions					Architect		Client		Project		Drawing Title		Proj No.	Scale at A3	Drawing No	Issue
No	Date	Description	Ver	App'd	 ALLEN JACK+COTTIER 79 Myrtle Street Chippendale NSW 2008 AUSTRALIA ph +61 2 9311 8222 fx +61 2 9311 8200 ABN 53 003 782 250		WHITE BAY 6 PTY LTD		MASTERPLAN + DEVELOPMENT FOR WHITE BAY 6		APPROVED SITE PLAN (PREFERRED CONFIGURATION)			1:1000	DA1001	05
01	07/08/15	ISSUE FOR DRAFT PLACEHOLDING	01	JW												
02	12/08/15	ISSUE FOR DRAFT EA	02	JW												
03	26/08/15	ISSUE FOR EA	03	JW												
04	13/10/15	ISSUE FOR EA	04	JW												
05	16/12/15	ISSUE FOR EA	05	JW												
					Drawing Status		NOT FOR CONSTRUCTION									

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REF: P:\2015\15041_BolleysMarineMasterplan\03_CAD\microstation\sheet_files\15041_DA1001.dgn

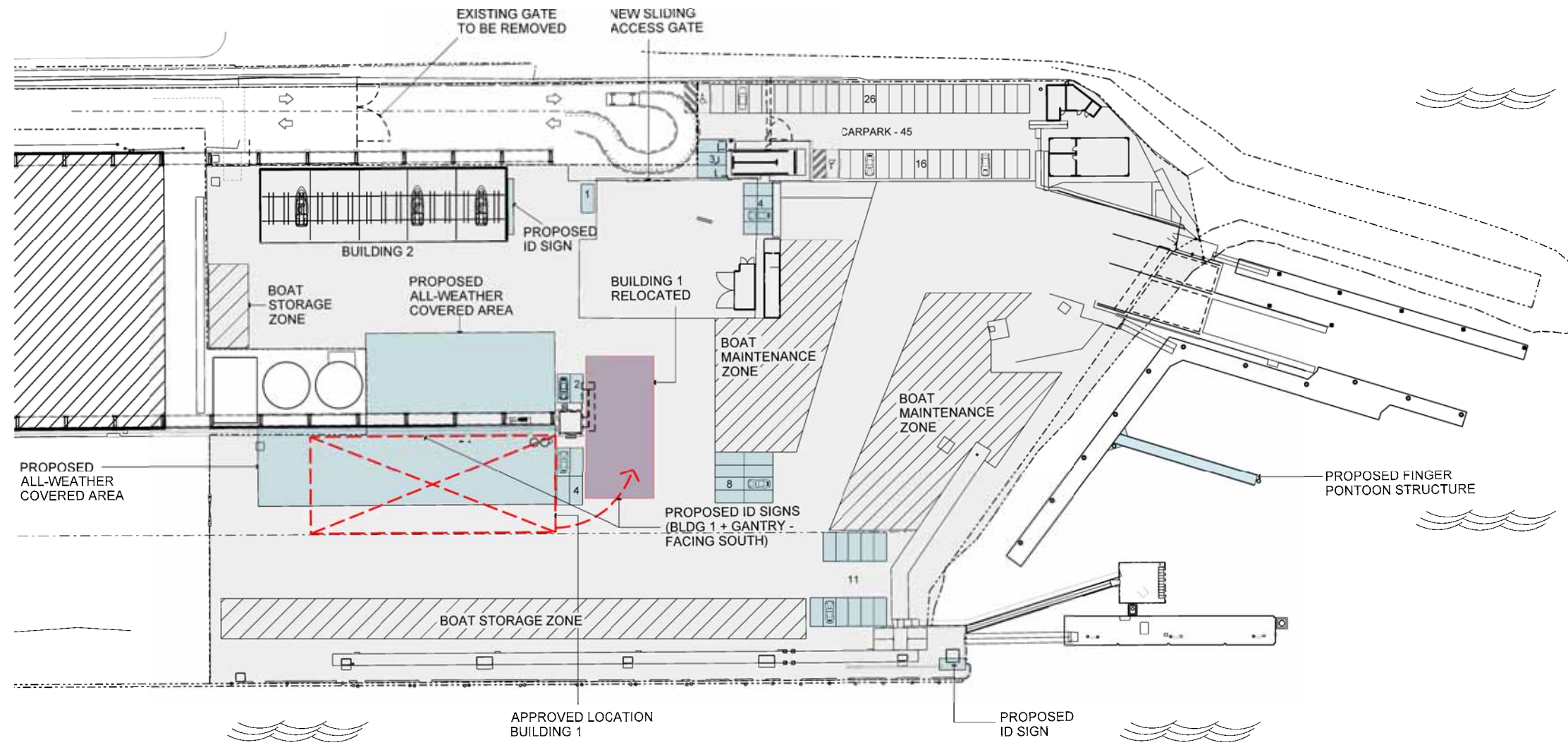
PLOT DATE & TIME: 16/12/2015 5:33:01 PM PLOTTED & CHECKED BY: wrothol



KEY

CURRENTLY APPROVED (ALTERNATE)
(Modification 4 to MP06_0037)

Revisions						Architect		Client		Project		Drawing Title		Proj No.	Scale at A3	Drawing No	Issue
No	Date	Description	Ver	App'd													
01	16/12/15	ISSUE FOR EA	01	JW													



KEY



PROPOSED WORKS



APPROVED BUILDING -
RELOCATED ON SITE



BOAT STORAGE/
MAINTENANCE ZONE

Revisions					
No	Date	Description	Ver	App'd	
01	26/08/15	ISSUE FOR EA	01	JW	
02	09/10/15	ISSUE FOR EA	02	JW	
03	13/10/15	ISSUE FOR EA	03	JW	
04	16/12/15	ISSUE FOR EA	04	JW	

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Client

WHITE BAY 6 PTY LTD

Drawing Status

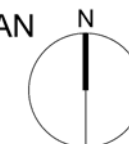
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Project

MASTERPLAN +
DEVELOPMENT FOR
WHITE BAY 6

Drawing Title

PROPOSED SITE PLAN



Proj No.

Scale at A3

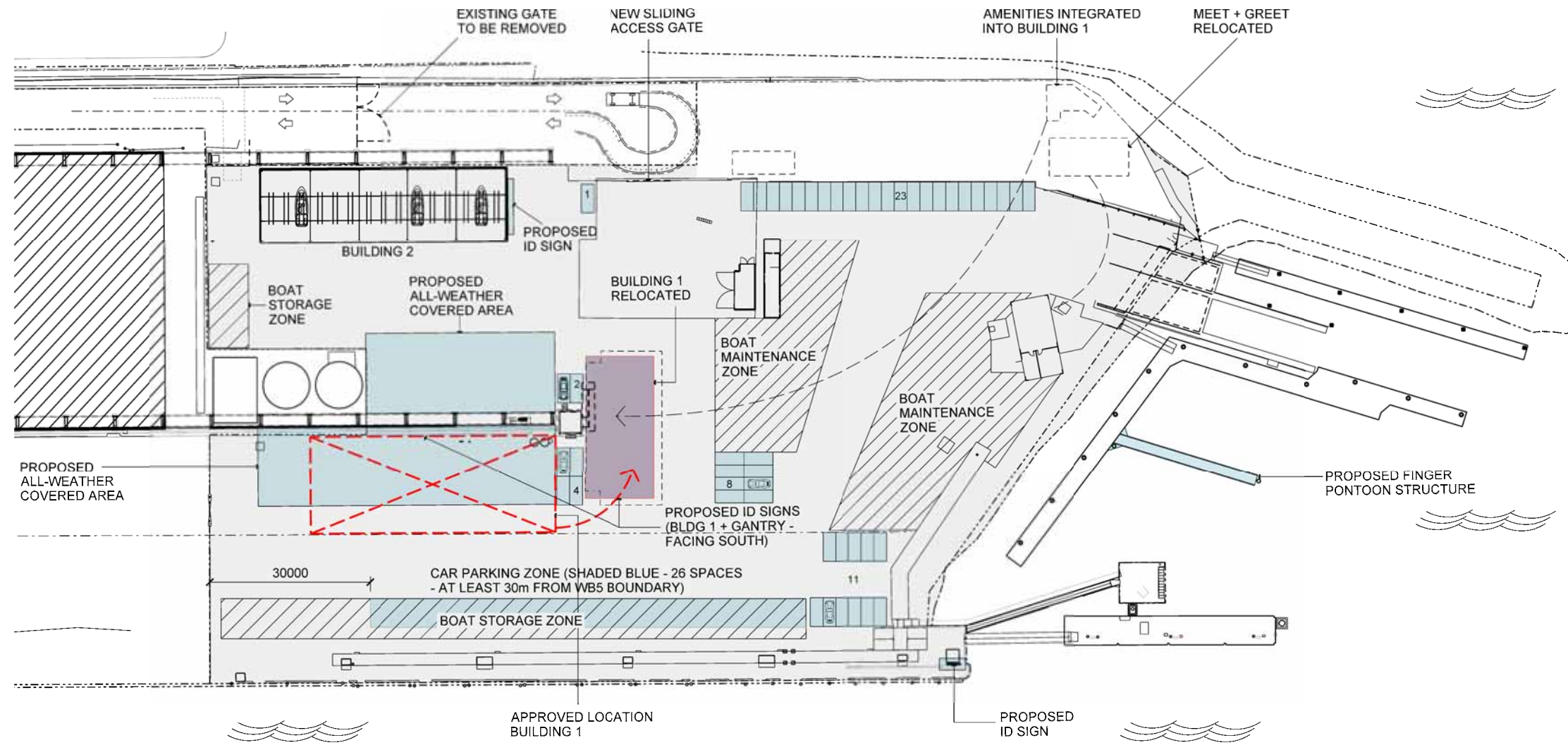
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Drawing No

DA1002

Issue

04



KEY

PROPOSED WORKS

APPROVED BUILDING -
RELOCATED ON SITE

BOAT STORAGE/
MAINTENANCE ZONE

Revisions					
No	Date	Description	Ver	App'd	
01	26/08/15	ISSUE FOR EA	01	JW	
02	09/10/15	ISSUE FOR EA	02	JW	
03	13/10/15	ISSUE FOR EA	03	JW	
04	16/12/15	ISSUE FOR EA	04	JW	

Architect

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Client

WHITE BAY 6 PTY LTD

Drawing Status

NOT FOR CONSTRUCTION

Project

MASTERPLAN +
DEVELOPMENT FOR
WHITE BAY 6

Drawing Title

PROPOSED SITE PLAN
(ALTERNATIVE)

N

Proj No.	Scale at A3	Drawing No	Issue
	1:1000	DA1003	04

Appendix B

Intersection traffic surveys



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : EMGA
Job No/Name : 5685 ROZELLE Roberts St
Day/Date : Tuesday 14th July 2015

Intersection Details

Observed via satellite
maybe incorrect

NO Right Turn
from Robert St
into Victoria Rd
(6.30 - 9.30am) Mon - Fri

AM PEAK HOUR
0715 - 0815



Victoria Rd

T	L	
2522	46	AM
2069	58	PM

R		
53	0	AM
		PM
L	708	892

T	R	
1785	999	PM
1254	814	AM

Robert St

PM PEAK HOUR
1615 - 1715

Weather >>>



Combined figure only

Victoria Rd



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849.

Mobile.0418239019

Client : EMGA
Job No/Name : 5685 ROZELLE Roberts St
Day/Date : Tuesday 14th July 2015

PEDS	NORTH	EAST	SOUTH	
Time Per	Victoria Rd	Robert St	Victoria Rd	TOT
0600 - 0615				0
0615 - 0630		NOT		0
0630 - 0645		REQUIRED		0
0645 - 0700				0
0700 - 0715				0
0715 - 0730				0
0730 - 0745				0
0745 - 0800				0
0800 - 0815				0
0815 - 0830				0
0830 - 0845				0
0845 - 0900				0
Per End	0	0	0	0

PEDS	NORTH	EAST	SOUTH	
Peak Per	Victoria Rd	Robert St	Victoria Rd	TOT
0600 - 0700	0	0	0	0
0615 - 0715	0	0	0	0
0630 - 0730	0	0	0	0
0645 - 0745	0	0	0	0
0700 - 0800	0	0	0	0
0715 - 0815	0	0	0	0
0730 - 0830	0	0	0	0
0745 - 0845	0	0	0	0
0800 - 0900	0	0	0	0
PEAK HR	0	0	0	0

Lights	NORTH		EAST		SOUTH		
Time Per	Victoria Rd		Robert St		Victoria Rd		TOT
0600 - 0615	472	5	8	56	68	129	738
0615 - 0630	595	17	3	81	69	157	922
0630 - 0645	558	18	0	145	131	230	1082
0645 - 0700	536	14	0	148	165	239	1102
0700 - 0715	620	9	0	156	139	266	1190
0715 - 0730	564	12	0	199	184	383	1342
0730 - 0745	607	11	0	202	154	292	1266
0745 - 0800	670	13	0	223	173	257	1336
0800 - 0815	593	10	0	233	280	266	1382
0815 - 0830	582	14	0	210	212	257	1275
0830 - 0845	589	10	0	203	258	275	1335
0845 - 0900	573	13	0	160	279	239	1264
Per End	6959	146	11	2016	2112	2990	14234

Heavies	NORTH		EAST		SOUTH		
Time Per	Victoria Rd		Robert St		Victoria Rd		TOT
0600 - 0615	5	0	0	3	3	3	14
0615 - 0630	11	0	0	1	3	3	18
0630 - 0645	15	0	0	2	4	13	34
0645 - 0700	14	0	0	3	2	8	27
0700 - 0715	9	0	0	2	8	12	31
0715 - 0730	18	0	0	14	2	14	48
0730 - 0745	19	0	0	8	6	14	47
0745 - 0800	26	0	0	6	7	13	52
0800 - 0815	25	0	0	7	8	15	55
0815 - 0830	31	0	0	4	8	12	55
0830 - 0845	22	0	0	5	7	14	48
0845 - 0900	21	0	0	9	6	18	54
Per End	216	0	0	64	64	139	483

Combined	NORTH		EAST		SOUTH		
Time Per	Victoria Rd		Robert St		Victoria Rd		TOT
0600 - 0615	477	5	8	59	71	132	752
0615 - 0630	606	17	3	82	72	160	940
0630 - 0645	573	18	0	147	135	243	1116
0645 - 0700	550	14	0	151	167	247	1129
0700 - 0715	629	9	0	158	147	278	1221
0715 - 0730	582	12	0	213	186	397	1390
0730 - 0745	626	11	0	210	160	306	1313
0745 - 0800	696	13	0	229	180	270	1388
0800 - 0815	618	10	0	240	288	281	1437
0815 - 0830	613	14	0	214	220	269	1330
0830 - 0845	611	10	0	208	265	289	1383
0845 - 0900	594	13	0	169	285	257	1318
Per End	7175	146	11	2080	2176	3129	14717

Lights	NORTH		EAST		SOUTH		
Peak Per	Victoria Rd		Robert St		Victoria Rd		TOT
0600 - 0700	2161	54	11	430	433	755	3844
0615 - 0715	2309	58	3	530	504	892	4296
0630 - 0730	2278	53	0	648	619	1118	4716
0645 - 0745	2327	46	0	705	642	1180	4900
0700 - 0800	2461	45	0	780	650	1198	5134
0715 - 0815	2434	46	0	857	791	1198	5326
0730 - 0830	2452	48	0	868	819	1072	5259
0745 - 0845	2434	47	0	869	923	1055	5328
0800 - 0900	2337	47	0	806	1029	1037	5256

Heavies	NORTH		EAST		SOUTH		
Peak Per	Victoria Rd		Robert St		Victoria Rd		TOT
0600 - 0700	45	0	0	9	12	27	93
0615 - 0715	49	0	0	8	17	36	110
0630 - 0730	56	0	0	21	16	47	140
0645 - 0745	60	0	0	27	18	48	153
0700 - 0800	72	0	0	30	23	53	178
0715 - 0815	88	0	0	35	23	56	202
0730 - 0830	101	0	0	25	29	54	209
0745 - 0845	104	0	0	22	30	54	210
0800 - 0900	99	0	0	25	29	59	212

Combined	NORTH		EAST		SOUTH		
Peak Per	Victoria Rd		Robert St		Victoria Rd		TOT
0600 - 0700	2206	54	11	439	445	782	3937
0615 - 0715	2358	58	3	538	521	928	4406
0630 - 0730	2334	53	0	669	635	1165	4856
0645 - 0745	2387	46	0	732	660	1228	5053
0700 - 0800	2533	45	0	810	673	1251	5312
0715 - 0815	2522	46	0	892	814	1254	5528
0730 - 0830	2553	48	0	893	848	1126	5468
0745 - 0845	2538	47	0	891	953	1109	5538
0800 - 0900	2436	47	0	831	1058	1096	5468

PEAK HR	2434	46	0	857	791	1198	5326
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PEAK HR	88	0	0	35	23	56	202
---------	----	---	---	----	----	----	-----

PEAK HR	2522	46	0	892	814	1254	5528
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R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

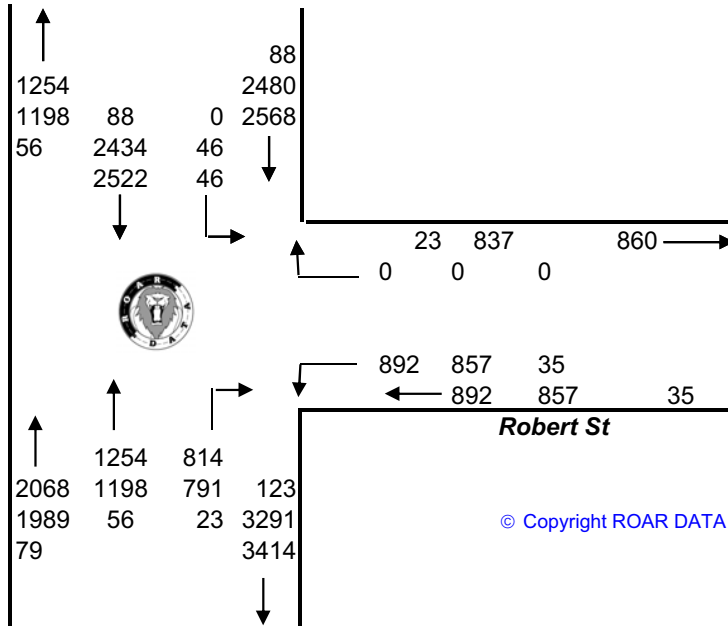
Client : EMGA
Job No/Name : 5685 ROZELLE Roberts St
Day/Date : Tuesday 14th July 2015

AM PEAK
0715 - 0815

TOTAL VOLUMES
FOR COUNT
PERIOD



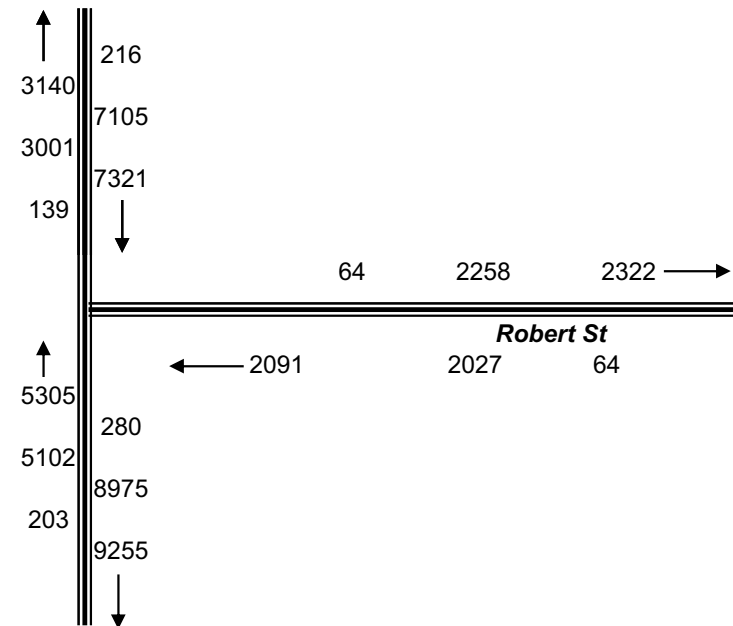
Victoria Rd



Victoria Rd

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Victoria Rd



Victoria Rd



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849.

Mobile.0418239019

Client : EMGA
Job No/Name : 5685 ROZELLE Roberts St
Day/Date : Tuesday 14th July 2015

<u>PEDS</u>	<u>NORTH</u>	<u>EAST</u>	<u>SOUTH</u>	
Time Per	Victoria Rd	Robert St	Victoria Rd	TOT
1500 - 1515				0
1515 - 1530		NOT		0
1530 - 1545		REQUIRED		0
1545 - 1600				0
1600 - 1615				0
1615 - 1630				0
1630 - 1645				0
1645 - 1700				0
1700 - 1715				0
1715 - 1730				0
1730 - 1745				0
1745 - 1800				0
Per End	0	0	0	0

<u>PEDS</u>	<u>NORTH</u>	<u>EAST</u>	<u>SOUTH</u>	
Peak Per	Victoria Rd	Robert St	Victoria Rd	TOT
1500 - 1600	0	0	0	0
1515 - 1615	0	0	0	0
1530 - 1630	0	0	0	0
1545 - 1645	0	0	0	0
1600 - 1700	0	0	0	0
1615 - 1715	0	0	0	0
1630 - 1730	0	0	0	0
1645 - 1745	0	0	0	0
1700 - 1800	0	0	0	0

PEAK HR	0	0	0	0
---------	---	---	---	---

<u>Lights</u>	<u>NORTH</u>		<u>EAST</u>		<u>SOUTH</u>		
Time Per	Victoria Rd		Robert St		Victoria Rd		TOT
1500 - 1515	228	7	15	120	86	280	736
1515 - 1530	254	7	14	150	188	348	961
1530 - 1545	451	6	16	177	214	521	1385
1545 - 1600	463	11	9	155	221	425	1284
1600 - 1615	448	10	8	183	233	515	1397
1615 - 1630	479	13	18	161	260	401	1332
1630 - 1645	507	9	15	184	232	485	1432
1645 - 1700	413	21	8	123	249	431	1245
1700 - 1715	597	15	12	225	239	420	1508
1715 - 1730	531	13	5	193	212	275	1229
1730 - 1745	502	21	9	200	270	297	1299
1745 - 1800	620	19	10	168	246	295	1358
Per End	5493	152	139	2039	2650	4693	15166

<u>Heavies</u>	<u>NORTH</u>		<u>EAST</u>		<u>SOUTH</u>		
Time Per	Victoria Rd		Robert St		Victoria Rd		TOT
1500 - 1515	8	0	0	4	0	7	19
1515 - 1530	10	0	0	5	2	8	25
1530 - 1545	9	0	0	2	3	10	24
1545 - 1600	13	0	0	4	5	16	38
1600 - 1615	19	0	0	5	5	11	40
1615 - 1630	17	0	0	3	3	11	34
1630 - 1645	20	0	0	1	5	15	41
1645 - 1700	19	0	0	5	5	8	37
1700 - 1715	17	0	0	6	6	14	43
1715 - 1730	7	0	1	4	2	16	30
1730 - 1745	12	0	0	5	7	14	38
1745 - 1800	21	0	0	8	6	16	51
Per End	172	0	1	52	49	146	420

<u>Combined</u>	<u>NORTH</u>		<u>EAST</u>		<u>SOUTH</u>		
Time Per	Victoria Rd		Robert St		Victoria Rd		TOT
1500 - 1515	236	7	15	124	86	287	755
1515 - 1530	264	7	14	155	190	356	986
1530 - 1545	460	6	16	179	217	531	1409
1545 - 1600	476	11	9	159	226	441	1322
1600 - 1615	467	10	8	188	238	526	1437
1615 - 1630	496	13	18	164	263	412	1366
1630 - 1645	527	9	15	185	237	500	1473
1645 - 1700	432	21	8	128	254	439	1282
1700 - 1715	614	15	12	231	245	434	1551
1715 - 1730	538	13	6	197	214	291	1259
1730 - 1745	514	21	9	205	277	311	1337
1745 - 1800	641	19	10	176	252	311	1409
Per End	5665	152	140	2091	2699	4839	15586

<u>Lights</u>	<u>NORTH</u>		<u>EAST</u>		<u>SOUTH</u>		
Peak Per	Victoria Rd		Robert St		Victoria Rd		TOT
1500 - 1600	1396	31	54	602	709	1574	4366
1515 - 1615	1616	34	47	665	856	1809	5027
1530 - 1630	1841	40	51	676	928	1862	5398
1545 - 1645	1897	43	50	683	946	1826	5445
1600 - 1700	1847	53	49	651	974	1832	5406
1615 - 1715	1996	58	53	693	980	1737	5517
1630 - 1730	2048	58	40	725	932	1611	5414
1645 - 1745	2043	70	34	741	970	1423	5281
1700 - 1800	2250	68	36	786	967	1287	5394
PEAK HR	1996	58	53	693	980	1737	5517

<u>Heavies</u>	<u>NORTH</u>		<u>EAST</u>		<u>SOUTH</u>		
Peak Per	Victoria Rd		Robert St		Victoria Rd		TOT
1500 - 1600	40	0	0	15	10	41	106
1515 - 1615	51	0	0	16	15	45	127
1530 - 1630	58	0	0	14	16	48	136
1545 - 1645	69	0	0	13	18	53	153
1600 - 1700	75	0	0	14	18	45	152
1615 - 1715	73	0	0	15	19	48	155
1630 - 1730	63	0	1	16	18	53	151
1645 - 1745	55	0	1	20	20	52	148
1700 - 1800	57	0	1	23	21	60	162
PEAK HR	73	0	0	15	19	48	155

<u>Combined</u>	<u>NORTH</u>		<u>EAST</u>		<u>SOUTH</u>		
Peak Per	Victoria Rd		Robert St		Victoria Rd		TOT
1500 - 1600	1436	31	54	617	719	1615	4472
1515 - 1615	1667	34	47	681	871	1854	5154
1530 - 1630	1899	40	51	690	944	1910	5534
1545 - 1645	1966	43	50	696	964	1879	5598
1600 - 1700	1922	53	49	665	992	1877	5558
1615 - 1715	2069	58	53	708	999	1785	5672
1630 - 1730	2111	58	41	741	950	1664	5565
1645 - 1745	2098	70	35	761	990	1475	5429
1700 - 1800	2307	68	37	809	988	1347	5556
PEAK HR	2069	58	53	708	999	1785	5672



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : EMGA

Job No/Name : 5685 ROZELLE Roberts St

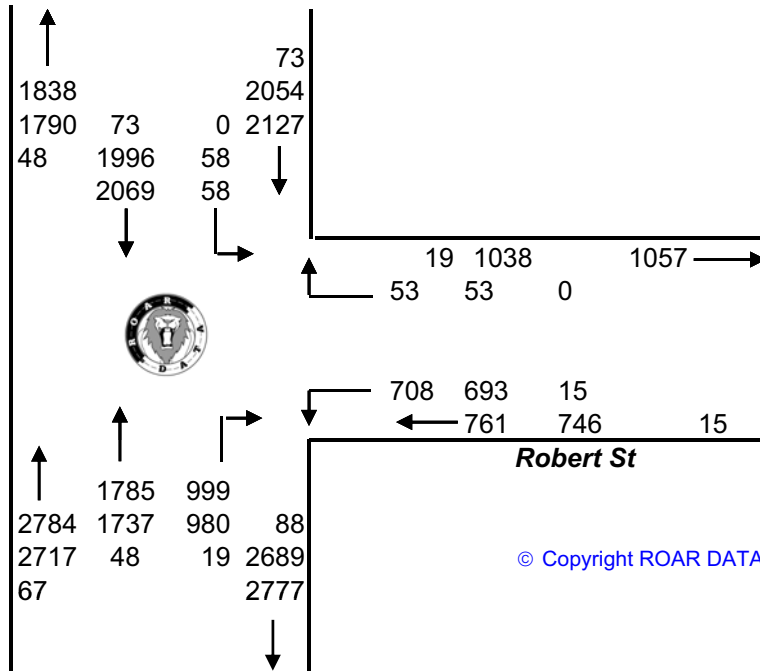
Day/Date : Tuesday 14th July 2015

PM PEAK
1615 - 1715

**TOTAL VOLUMES
FOR COUNT
PERIOD**



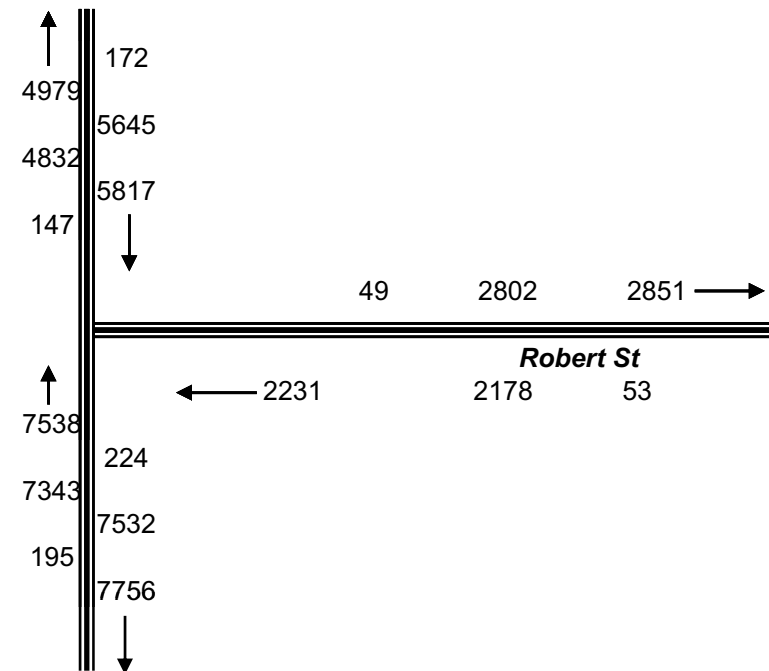
Victoria Rd



Victoria Rd

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Victoria Rd



Victoria Rd



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : EMGA
Job No/Name : 5260 ROZELLE Roberts St
Day/Date : Thursday 24th July 2014

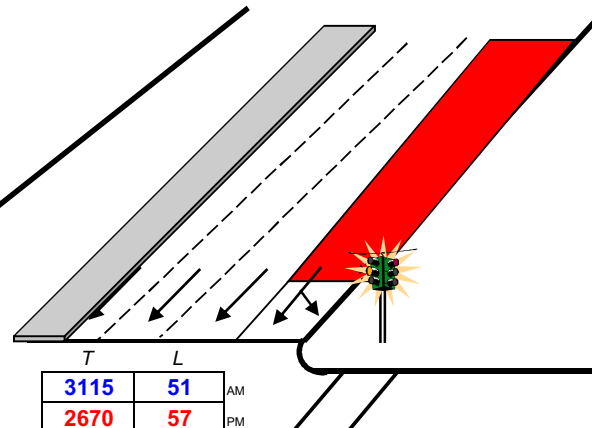
Intersection Details

Observed via satellite
maybe incorrect

NO Right Turn
from Robert St
into Victoria Rd
(6.30 - 9.30am) Mon - Fri

AM PEAK HOUR
0715 - 0815

Victoria Rd



R	37	0	
	PM	AM	
L	902	1007	

2507	1120	PM
1111	629	AM
T	R	

Robert St

PM PEAK HOUR
1700 - 1800

Weather >>>



Combined figure only

Victoria Rd



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849.

Mobile.0418239019

Client : EMGA
Job No/Name : 5260 ROZELLE Roberts St
Day/Date : Thursday 24th July 2014

PEDS	NORTH	EAST	SOUTH	
Time Per	Victoria Rd	Robert St	Victoria Rd	TOT
0600 - 0615				0
0615 - 0630		NOT		0
0630 - 0645		REQUIRED		0
0645 - 0700				0
0700 - 0715				0
0715 - 0730				0
0730 - 0745				0
0745 - 0800				0
0800 - 0815				0
0815 - 0830				0
0830 - 0845				0
0845 - 0900				0
Per End	0	0	0	0

PEDS	NORTH	EAST	SOUTH	
Peak Per	Victoria Rd	Robert St	Victoria Rd	TOT
0600 - 0700	0	0	0	0
0615 - 0715	0	0	0	0
0630 - 0730	0	0	0	0
0645 - 0745	0	0	0	0
0700 - 0800	0	0	0	0
0715 - 0815	0	0	0	0
0730 - 0830	0	0	0	0
0745 - 0845	0	0	0	0
0800 - 0900	0	0	0	0

PEAK HR	0	0	0	0
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Lights	NORTH		EAST		SOUTH		
	Victoria Rd		Robert St		Victoria Rd		
Time Per	T	L	R	L	R	T	TOT
0600 - 0615	399	7	5	64	45	89	609
0615 - 0630	547	10	1	69	51	123	801
0630 - 0645	698	10	0	107	105	221	1141
0645 - 0700	662	11	0	144	159	203	1179
0700 - 0715	628	15	0	148	104	205	1100
0715 - 0730	659	15	0	262	153	292	1381
0730 - 0745	785	10	0	241	112	257	1405
0745 - 0800	761	14	0	249	162	248	1434
0800 - 0815	823	12	0	228	186	256	1505
0815 - 0830	545	9	0	216	203	212	1185
0830 - 0845	309	10	0	160	169	203	851
0845 - 0900	332	14	0	58	175	195	774
Per End	7148	137	6	1946	1624	2504	13365

Heavies	NORTH		EAST		SOUTH		
	Victoria Rd		Robert St		Victoria Rd		
Time Per	T	L	R	L	R	T	TOT
0600 - 0615	6	0	0	1	5	8	20
0615 - 0630	7	0	0	5	1	3	16
0630 - 0645	10	0	0	3	1	11	25
0645 - 0700	10	1	0	1	6	6	24
0700 - 0715	8	0	0	1	5	11	25
0715 - 0730	17	0	0	7	4	8	36
0730 - 0745	21	0	0	10	5	21	57
0745 - 0800	26	0	0	6	4	12	48
0800 - 0815	23	0	0	4	3	17	47
0815 - 0830	27	0	0	6	5	25	63
0830 - 0845	23	0	0	8	2	18	51
0845 - 0900	25	0	0	2	7	14	48
Per End	203	1	0	54	48	154	460

Combined	NORTH		EAST		SOUTH		
	Victoria Rd		Robert St		Victoria Rd		
Time Per	T	L	R	L	R	T	TOT
0600 - 0615	405	7	5	65	50	97	629
0615 - 0630	554	10	1	74	52	126	817
0630 - 0645	708	10	0	110	106	232	1166
0645 - 0700	672	12	0	145	165	209	1203
0700 - 0715	636	15	0	149	109	216	1125
0715 - 0730	676	15	0	269	157	300	1417
0730 - 0745	806	10	0	251	117	278	1462
0745 - 0800	787	14	0	255	166	260	1482
0800 - 0815	846	12	0	232	189	273	1552
0815 - 0830	572	9	0	222	208	237	1248
0830 - 0845	332	10	0	168	171	221	902
0845 - 0900	357	14	0	60	182	209	822
Per End	7351	138	6	2000	1672	2658	13825

Lights	NORTH		EAST		SOUTH		
	Victoria Rd		Robert St		Victoria Rd		
Peak Per	T	L	R	L	R	T	TOT
0600 - 0700	2306	38	6	384	360	636	3730
0615 - 0715	2535	46	1	468	419	752	4221
0630 - 0730	2647	51	0	661	521	921	4801
0645 - 0745	2734	51	0	795	528	957	5065
0700 - 0800	2833	54	0	900	531	1002	5320
0715 - 0815	3028	51	0	980	613	1053	5725
0730 - 0830	2914	45	0	934	663	973	5529
0745 - 0845	2438	45	0	853	720	919	4975
0800 - 0900	2009	45	0	662	733	866	4315

Heavies	NORTH		EAST		SOUTH		
	Victoria Rd		Robert St		Victoria Rd		
Peak Per	T	L	R	L	R	T	TOT
0600 - 0700	33	1	0	10	13	28	85
0615 - 0715	35	1	0	10	13	31	90
0630 - 0730	45	1	0	12	16	36	110
0645 - 0745	56	1	0	19	20	46	142
0700 - 0800	72	0	0	24	18	52	166
0715 - 0815	87	0	0	27	16	58	188
0730 - 0830	97	0	0	26	17	75	215
0745 - 0845	99	0	0	24	14	72	209
0800 - 0900	98	0	0	20	17	74	209

Combined	NORTH		EAST		SOUTH		
	Victoria Rd		Robert St		Victoria Rd		
Peak Per	T	L	R	L	R	T	TOT
0600 - 0700	2339	39	6	394	373	664	3815
0615 - 0715	2570	47	1	478	432	783	4311
0630 - 0730	2692	52	0	673	537	957	4911
0645 - 0745	2790	52	0	814	548	1003	5207
0700 - 0800	2905	54	0	924	549	1054	5486
0715 - 0815	3115	51	0	1007	629	1111	5913
0730 - 0830	3011	45	0	960	680	1048	5744
0745 - 0845	2537	45	0	877	734	991	5184
0800 - 0900	2107	45	0	682	750	940	4524

PEAK HR	3028	51	0	980	613	1053	5725
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PEAK HR	87	0	0	27	16	58	188
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PEAK HR	3115	51	0	1007	629	1111	5913
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R.O.A.R. DATA

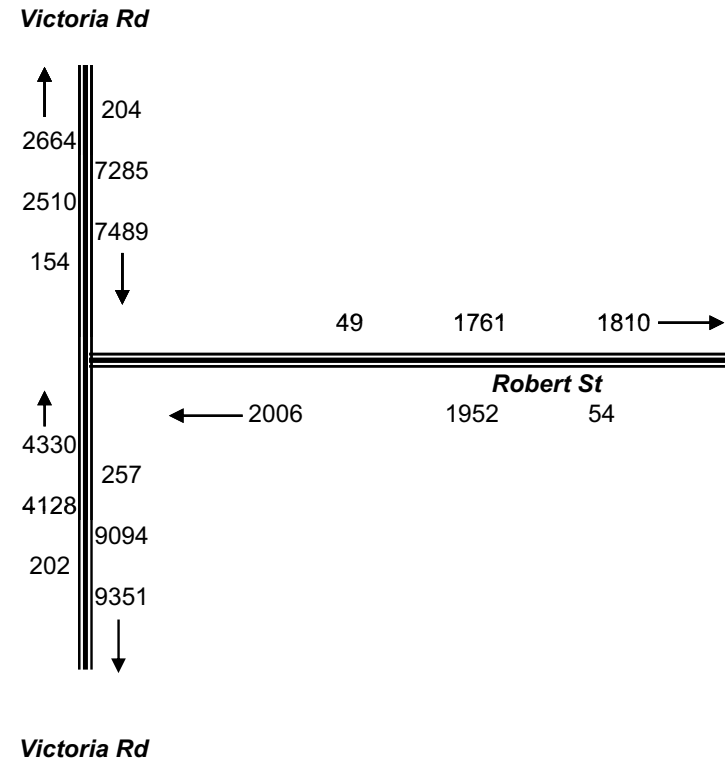
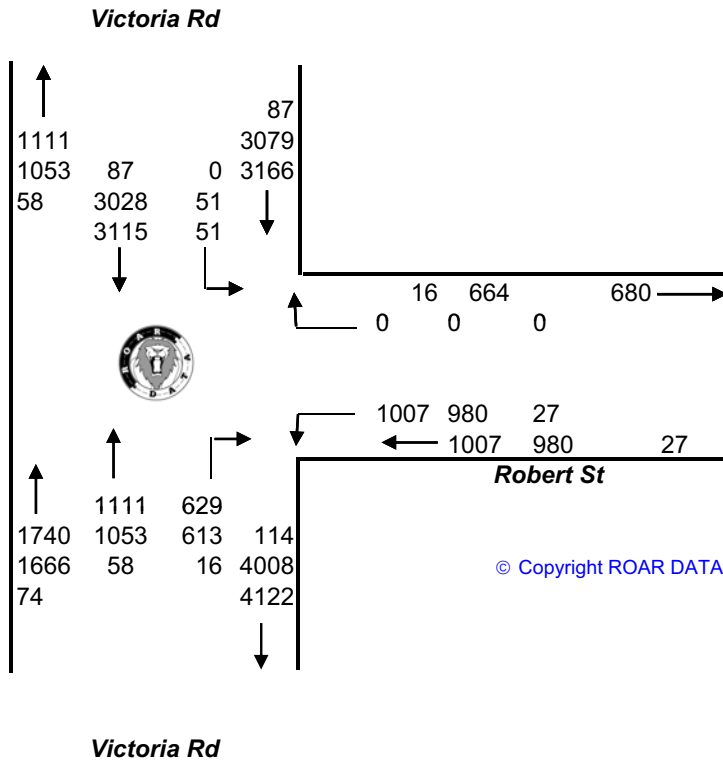
Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : EMGA
Job No/Name : 5260 ROZELLE Roberts St
Day/Date : Thursday 24th July 2014

AM PEAK
0715 - 0815

TOTAL VOLUMES
FOR COUNT
PERIOD





R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849.

Mobile.0418239019

Client : EMGA
Job No/Name : 5260 ROZELLE Roberts St
Day/Date : Thursday 24th July 2014

PEDS	NORTH	EAST	SOUTH	
Time Per	Victoria Rd	Robert St	Victoria Rd	TOT
1500 - 1515				0
1515 - 1530		NOT		0
1530 - 1545		REQUIRED		0
1545 - 1600				0
1600 - 1615				0
1615 - 1630				0
1630 - 1645				0
1645 - 1700				0
1700 - 1715				0
1715 - 1730				0
1730 - 1745				0
1745 - 1800				0
Per End	0	0	0	0

PEDS	NORTH	EAST	SOUTH	
Peak Per	Victoria Rd	Robert St	Victoria Rd	TOT
1500 - 1600	0	0	0	0
1515 - 1615	0	0	0	0
1530 - 1630	0	0	0	0
1545 - 1645	0	0	0	0
1600 - 1700	0	0	0	0
1615 - 1715	0	0	0	0
1630 - 1730	0	0	0	0
1645 - 1745	0	0	0	0
1700 - 1800	0	0	0	0

PEAK HR	0	0	0	0
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Lights	NORTH		EAST		SOUTH		
Time Per	Victoria Rd		Robert St		Victoria Rd		TOT
1500 - 1515	502	22	10	215	233	487	1469
1515 - 1530	481	18	17	213	208	550	1487
1530 - 1545	520	20	14	200	207	517	1478
1545 - 1600	536	15	6	163	250	627	1597
1600 - 1615	561	25	5	195	197	581	1564
1615 - 1630	543	14	7	148	207	675	1594
1630 - 1645	532	10	9	145	187	363	1246
1645 - 1700	572	10	5	148	217	513	1465
1700 - 1715	634	17	11	184	253	589	1688
1715 - 1730	656	8	7	261	282	691	1905
1730 - 1745	661	16	11	237	300	608	1833
1745 - 1800	652	16	8	198	266	550	1690
Per End	6850	191	110	2307	2807	6751	19016

Heavies	NORTH		EAST		SOUTH		
Time Per	Victoria Rd		Robert St		Victoria Rd		TOT
1500 - 1515	8	0	0	4	5	10	27
1515 - 1530	13	0	0	5	3	15	36
1530 - 1545	16	0	0	3	2	13	34
1545 - 1600	25	0	0	3	6	16	50
1600 - 1615	11	0	0	6	3	13	33
1615 - 1630	28	0	0	4	2	13	47
1630 - 1645	18	0	0	3	2	7	30
1645 - 1700	15	0	0	5	4	16	40
1700 - 1715	18	0	0	7	5	14	44
1715 - 1730	20	0	0	4	4	21	49
1730 - 1745	12	0	0	5	7	14	38
1745 - 1800	17	0	0	6	3	20	46
Per End	201	0	0	55	46	172	474

Combined	NORTH		EAST		SOUTH		
Time Per	Victoria Rd		Robert St		Victoria Rd		TOT
1500 - 1515	510	22	10	219	238	497	1496
1515 - 1530	494	18	17	218	211	565	1523
1530 - 1545	536	20	14	203	209	530	1512
1545 - 1600	561	15	6	166	256	643	1647
1600 - 1615	572	25	5	201	200	594	1597
1615 - 1630	571	14	7	152	209	688	1641
1630 - 1645	550	10	9	148	189	370	1276
1645 - 1700	587	10	5	153	221	529	1505
1700 - 1715	652	17	11	191	258	603	1732
1715 - 1730	676	8	7	265	286	712	1954
1730 - 1745	673	16	11	242	307	622	1871
1745 - 1800	669	16	8	204	269	570	1736
Per End	7051	191	110	2362	2853	6923	19490

Lights	NORTH		EAST		SOUTH		
Peak Per	Victoria Rd		Robert St		Victoria Rd		TOT
1500 - 1600	2039	75	47	791	898	2181	6031
1515 - 1615	2098	78	42	771	862	2275	6126
1530 - 1630	2160	74	32	706	861	2400	6233
1545 - 1645	2172	64	27	651	841	2246	6001
1600 - 1700	2208	59	26	636	808	2132	5869
1615 - 1715	2281	51	32	625	864	2140	5993
1630 - 1730	2394	45	32	738	939	2156	6304
1645 - 1745	2523	51	34	830	1052	2401	6891
1700 - 1800	2603	57	37	880	1101	2438	7116
PEAK HR	2603	57	37	880	1101	2438	7116

Heavies	NORTH		EAST		SOUTH		
Peak Per	Victoria Rd		Robert St		Victoria Rd		TOT
1500 - 1600	62	0	0	15	16	54	147
1515 - 1615	65	0	0	17	14	57	153
1530 - 1630	80	0	0	16	13	55	164
1545 - 1645	82	0	0	16	13	49	160
1600 - 1700	72	0	0	18	11	49	150
1615 - 1715	79	0	0	19	13	50	161
1630 - 1730	71	0	0	19	15	58	163
1645 - 1745	65	0	0	21	20	65	171
1700 - 1800	67	0	0	22	19	69	177
PEAK HR	67	0	0	22	19	69	177

Combined	NORTH		EAST		SOUTH		
Peak Per	Victoria Rd		Robert St		Victoria Rd		TOT
1500 - 1600	2101	75	47	806	914	2235	6178
1515 - 1615	2163	78	42	788	876	2332	6279
1530 - 1630	2240	74	32	722	874	2455	6397
1545 - 1645	2254	64	27	667	854	2295	6161
1600 - 1700	2280	59	26	654	819	2181	6019
1615 - 1715	2360	51	32	644	877	2190	6154
1630 - 1730	2465	45	32	757	954	2214	6467
1645 - 1745	2588	51	34	851	1072	2466	7062
1700 - 1800	2670	57	37	902	1120	2507	7293
PEAK HR	2670	57	37	902	1120	2507	7293



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : EMGA

Job No/Name : 5260 ROZELLE Roberts St

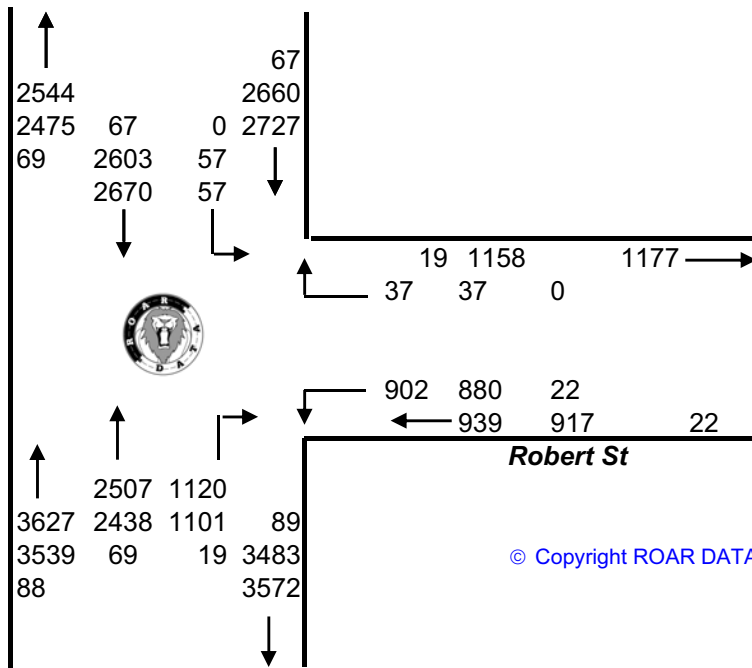
Day/Date : Thursday 24th July 2014

PM PEAK
1700 - 1800

TOTAL VOLUMES
FOR COUNT
PERIOD



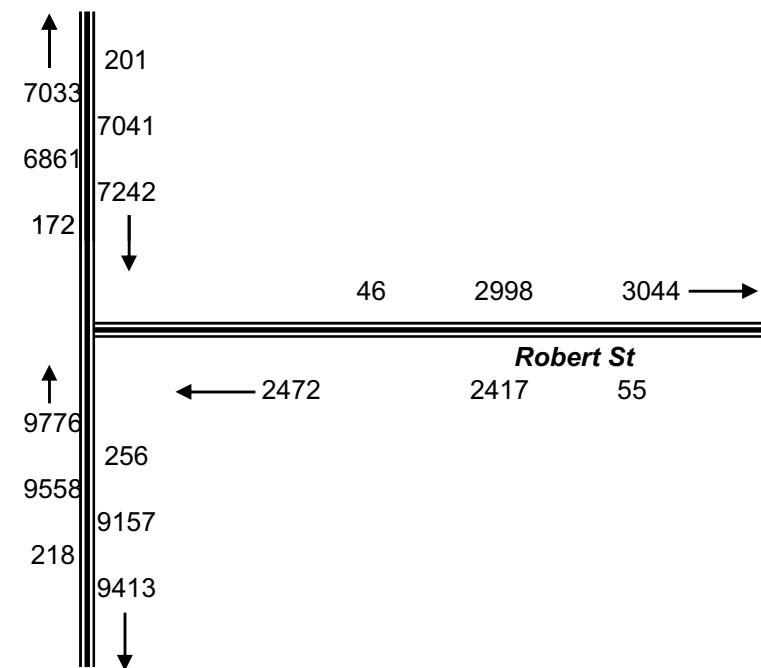
Victoria Rd



Victoria Rd

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Victoria Rd



Victoria Rd

Appendix C

Site traffic generation survey



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Lights

BOAT STORAGE			
Main Access			
Time Per	IN	OUT	TOTAL
0600 - 0615	0	0	0
0615 - 0630	0	0	0
0630 - 0645	1	1	2
0645 - 0700	2	0	2
0700 - 0715	1	0	1
0715 - 0730	2	0	2
0730 - 0745	1	0	1
0745 - 0800	3	0	3
0800 - 0815	0	0	0
0815 - 0830	1	0	1
0830 - 0845	0	0	0
0845 - 0900	1	0	1
0900 - 0915	1	1	2
0915 - 0930	1	0	1
0930 - 0945	1	0	1
0945 - 1000	1	2	3
1000 - 1015	2	1	3
1015 - 1030	0	1	1
1030 - 1045	3	2	5
1045 - 1100	0	1	1
1100 - 1115	0	1	1
1115 - 1130	2	2	4
1130 - 1145	1	0	1
1145 - 1200	0	0	0
1200 - 1215	1	1	2
1215 - 1230	0	0	0
1230 - 1245	1	2	3
1245 - 1300	0	1	1
1300 - 1315	2	1	3
1315 - 1330	1	1	2
1330 - 1345	1	1	2
1345 - 1400	3	0	3
1400 - 1415	0	1	1
1415 - 1430	2	1	3
1430 - 1445	1	3	4
1445 - 1500	1	3	4
1500 - 1515	1	1	2
1515 - 1530	0	1	1
1530 - 1545	2	3	5
1545 - 1600	0	2	2
1600 - 1615	0	0	0
1615 - 1630	0	1	1
1630 - 1645	0	0	0
1645 - 1700	0	1	1
1700 - 1715	0	1	1
1715 - 1730	1	3	4
1730 - 1745	0	1	1
1745 - 1800	2	2	4
Per End	43	43	86

Heavies

BOAT STORAGE			
Main Access			
Time Per	IN	OUT	TOTAL
0600 - 0615	0	0	0
0615 - 0630	0	0	0
0630 - 0645	0	0	0
0645 - 0700	0	0	0
0700 - 0715	1	0	1
0715 - 0730	0	0	0
0730 - 0745	0	0	0
0745 - 0800	1	1	2
0800 - 0815	0	0	0
0815 - 0830	0	0	0
0830 - 0845	0	1	1
0845 - 0900	0	0	0
0900 - 0915	0	1	1
0915 - 0930	1	0	1
0930 - 0945	1	0	1
0945 - 1000	0	0	0
1000 - 1015	0	0	0
1015 - 1030	1	0	1
1030 - 1045	0	1	1
1045 - 1100	0	0	0
1100 - 1115	0	1	1
1115 - 1130	0	0	0
1130 - 1145	0	0	0
1145 - 1200	0	0	0
1200 - 1215	0	0	0
1215 - 1230	0	0	0
1230 - 1245	0	0	0
1245 - 1300	0	0	0
1300 - 1315	0	0	0
1315 - 1330	0	0	0
1330 - 1345	0	0	0
1345 - 1400	0	0	0
1400 - 1415	0	0	0
1415 - 1430	0	0	0
1430 - 1445	0	0	0
1445 - 1500	0	0	0
1500 - 1515	0	0	0
1515 - 1530	0	0	0
1530 - 1545	0	0	0
1545 - 1600	0	0	0
1600 - 1615	1	0	1
1615 - 1630	0	0	0
1630 - 1645	0	1	1
1645 - 1700	0	0	0
1700 - 1715	0	0	0
1715 - 1730	0	0	0
1730 - 1745	0	0	0
1745 - 1800	0	0	0
Per End	6	6	12

Combined

BOAT STORAGE			
Main Access			
Time Per	IN	OUT	TOTAL
0600 - 0615	0	0	0
0615 - 0630	0	0	0
0630 - 0645	1	1	2
0645 - 0700	2	0	2
0700 - 0715	2	0	2
0715 - 0730	2	0	2
0730 - 0745	1	0	1
0745 - 0800	4	1	5
0800 - 0815	0	0	0
0815 - 0830	1	0	1
0830 - 0845	0	1	1
0845 - 0900	1	0	1
0900 - 0915	1	2	3
0915 - 0930	2	0	2
0930 - 0945	2	0	2
0945 - 1000	1	2	3
1000 - 1015	2	1	3
1015 - 1030	1	1	2
1030 - 1045	3	3	6
1045 - 1100	0	1	1
1100 - 1115	0	2	2
1115 - 1130	2	2	4
1130 - 1145	1	0	1
1145 - 1200	0	0	0
1200 - 1215	1	1	2
1215 - 1230	0	0	0
1230 - 1245	1	2	3
1245 - 1300	0	1	1
1300 - 1315	2	1	3
1315 - 1330	1	1	2
1330 - 1345	1	1	2
1345 - 1400	3	0	3
1400 - 1415	0	1	1
1415 - 1430	2	1	3
1430 - 1445	1	3	4
1445 - 1500	1	3	4
1500 - 1515	1	1	2
1515 - 1530	0	1	1
1530 - 1545	2	3	5
1545 - 1600	0	2	2
1600 - 1615	1	0	1
1615 - 1630	0	1	1
1630 - 1645	0	1	1
1645 - 1700	0	1	1
1700 - 1715	0	1	1
1715 - 1730	1	3	4
1730 - 1745	0	1	1
1745 - 1800	2	2	4
Per End	49	49	98

Client : EMGA
 Job No/Name : 5246 ROZELLE Traffic Counts
 Day/Date : Thursday 17th July 2014



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Lights

Peak Per	BOAT STORAGE		
	Main Access		
	IN	OUT	TOTAL
0600 - 0700	3	1	4
0615 - 0715	4	1	5
0630 - 0730	6	1	7
0645 - 0745	6	0	6
0700 - 0800	7	0	7
0715 - 0815	6	0	6
0730 - 0830	5	0	5
0745 - 0845	4	0	4
0800 - 0900	2	0	2
0815 - 0915	3	1	4
0830 - 0930	3	1	4
0845 - 0945	4	1	5
0900 - 1000	4	3	7
0915 - 1015	5	3	8
0930 - 1030	4	4	8
0945 - 1045	6	6	12
1000 - 1100	5	5	10
1015 - 1115	3	5	8
1030 - 1130	5	6	11
1045 - 1145	3	4	7
1100 - 1200	3	3	6
1115 - 1215	4	3	7
1130 - 1230	2	1	3
1145 - 1245	2	3	5
1200 - 1300	2	4	6
1215 - 1315	3	4	7
1230 - 1330	4	5	9
1245 - 1345	4	4	8
1300 - 1400	7	3	10
1315 - 1415	5	3	8
1330 - 1430	6	3	9
1345 - 1445	6	5	11
1400 - 1500	4	8	12
1415 - 1515	5	8	13
1430 - 1530	3	8	11
1445 - 1545	4	8	12
1500 - 1600	3	7	10
1515 - 1615	2	6	8
1530 - 1630	2	6	8
1545 - 1645	0	3	3
1600 - 1700	0	2	2
1615 - 1715	0	3	3
1630 - 1730	1	5	6
1645 - 1745	1	6	7
1700 - 1800	3	7	10
PEAK HR	6	6	12

Heavies

Peak Per	BOAT STORAGE		
	Main Access		
	IN	OUT	TOTAL
0600 - 0700	0	0	0
0615 - 0715	1	0	1
0630 - 0730	1	0	1
0645 - 0745	1	0	1
0700 - 0800	2	1	3
0715 - 0815	1	1	2
0730 - 0830	1	1	2
0745 - 0845	1	2	3
0800 - 0900	0	1	1
0815 - 0915	0	2	2
0830 - 0930	1	2	3
0845 - 0945	2	1	3
0900 - 1000	2	1	3
0915 - 1015	2	0	2
0930 - 1030	2	0	2
0945 - 1045	1	1	2
1000 - 1100	1	1	2
1015 - 1115	1	2	3
1030 - 1130	0	2	2
1045 - 1145	0	1	1
1100 - 1200	0	1	1
1115 - 1215	0	0	0
1130 - 1230	0	0	0
1145 - 1245	0	0	0
1200 - 1300	0	0	0
1215 - 1315	0	0	0
1230 - 1330	0	0	0
1245 - 1345	0	0	0
1300 - 1400	0	0	0
1315 - 1415	0	0	0
1330 - 1430	0	0	0
1345 - 1445	0	0	0
1400 - 1500	0	0	0
1415 - 1515	0	0	0
1430 - 1530	0	0	0
1445 - 1545	0	0	0
1500 - 1600	0	0	0
1515 - 1615	1	0	1
1530 - 1630	1	0	1
1545 - 1645	1	1	2
1600 - 1700	1	1	2
1615 - 1715	0	1	1
1630 - 1730	0	1	1
1645 - 1745	0	0	0
1700 - 1800	0	0	0
PEAK HR	1	1	2

Combined

Peak Per	BOAT STORAGE		
	Main Access		
	IN	OUT	TOTAL
0600 - 0700	3	1	4
0615 - 0715	5	1	6
0630 - 0730	7	1	8
0645 - 0745	7	0	7
0700 - 0800	9	1	10
0715 - 0815	7	1	8
0730 - 0830	6	1	7
0745 - 0845	5	2	7
0800 - 0900	2	1	3
0815 - 0915	3	3	6
0830 - 0930	4	3	7
0845 - 0945	6	2	8
0900 - 1000	6	4	10
0915 - 1015	7	3	10
0930 - 1030	6	4	10
0945 - 1045	7	7	14
1000 - 1100	6	6	12
1015 - 1115	4	7	11
1030 - 1130	5	8	13
1045 - 1145	3	5	8
1100 - 1200	3	4	7
1115 - 1215	4	3	7
1130 - 1230	2	1	3
1145 - 1245	2	3	5
1200 - 1300	2	4	6
1215 - 1315	3	4	7
1230 - 1330	4	5	9
1245 - 1345	4	4	8
1300 - 1400	7	3	10
1315 - 1415	5	3	8
1330 - 1430	6	3	9
1345 - 1445	6	5	11
1400 - 1500	4	8	12
1415 - 1515	5	8	13
1430 - 1530	3	8	11
1445 - 1545	4	8	12
1500 - 1600	3	7	10
1515 - 1615	3	6	9
1530 - 1630	3	6	9
1545 - 1645	1	4	5
1600 - 1700	1	3	4
1615 - 1715	0	4	4
1630 - 1730	1	6	7
1645 - 1745	1	6	7
1700 - 1800	3	7	10
PEAK HR	7	7	14

Client : EMGA

Job No/Name : 5246 ROZELLE Traffic Counts

Day/Date : Thursday 17th July 2014



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : EMGA
Job No/Name : 5246 ROZELLE Traffic Counts
Day/Date : Thursday 17th July 2014

Lights

PEAK HOUR
0945 - 1045

To
James
Craig
Rd

6 →

← 6

Sydney
Harbour
Boat
Storage

Heavies

PEAK HOUR
0945 - 1045

To
James
Craig
Rd

1 →

← 1

Sydney
Harbour
Boat
Storage

Combined

PEAK HOUR
0945 - 1045

To
James
Craig
Rd

7 →

← 7

Sydney
Harbour
Boat
Storage

Lights

Total Vehicles
Counted for
Period

To
James
Craig
Rd

43 →

← 43

Sydney
Harbour
Boat
Storage

Heavies

Total Vehicles
Counted for
Period

To
James
Craig
Rd

6 →

← 6

Sydney
Harbour
Boat
Storage

Combined

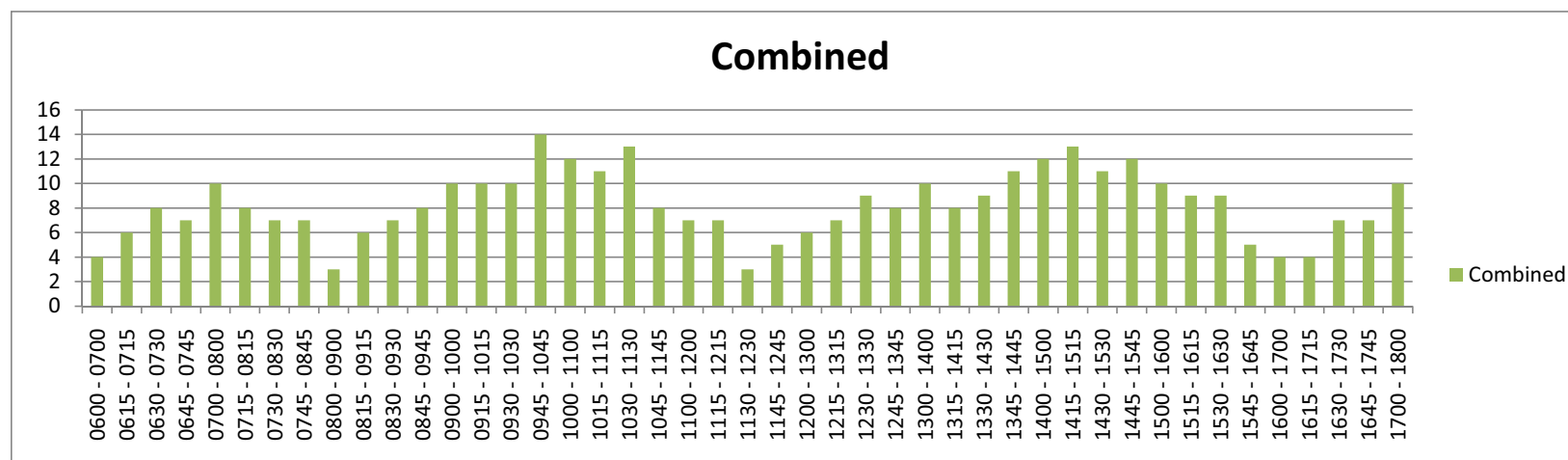
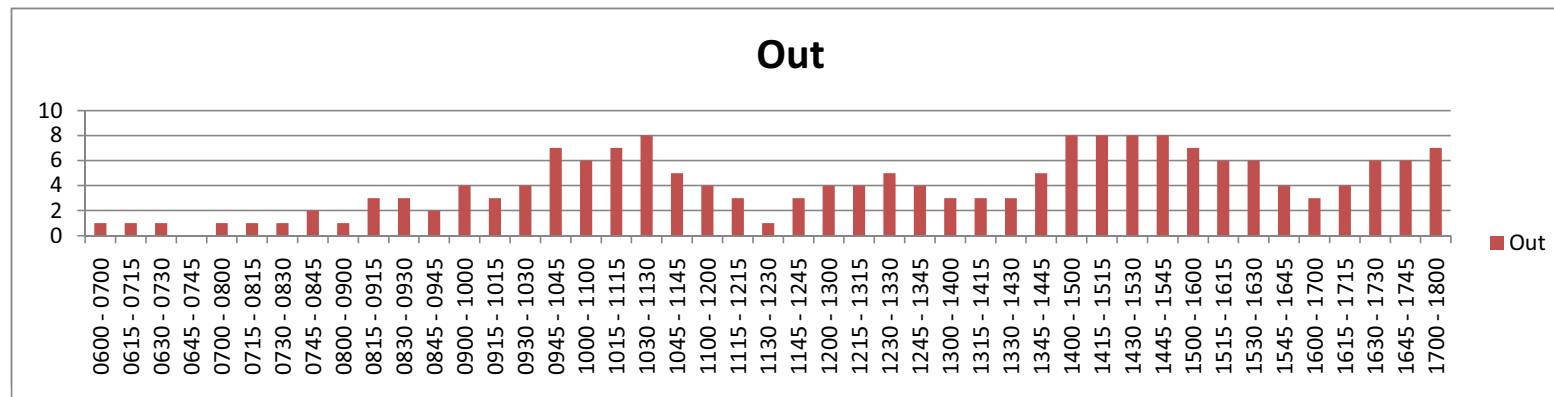
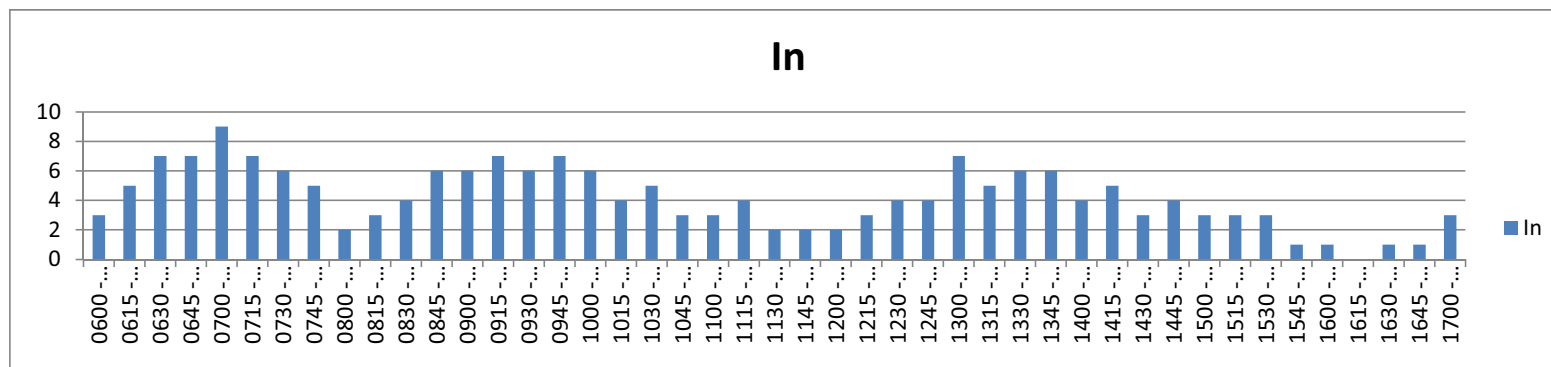
Total Vehicles
Counted for
Period

To
James
Craig
Rd

49 →

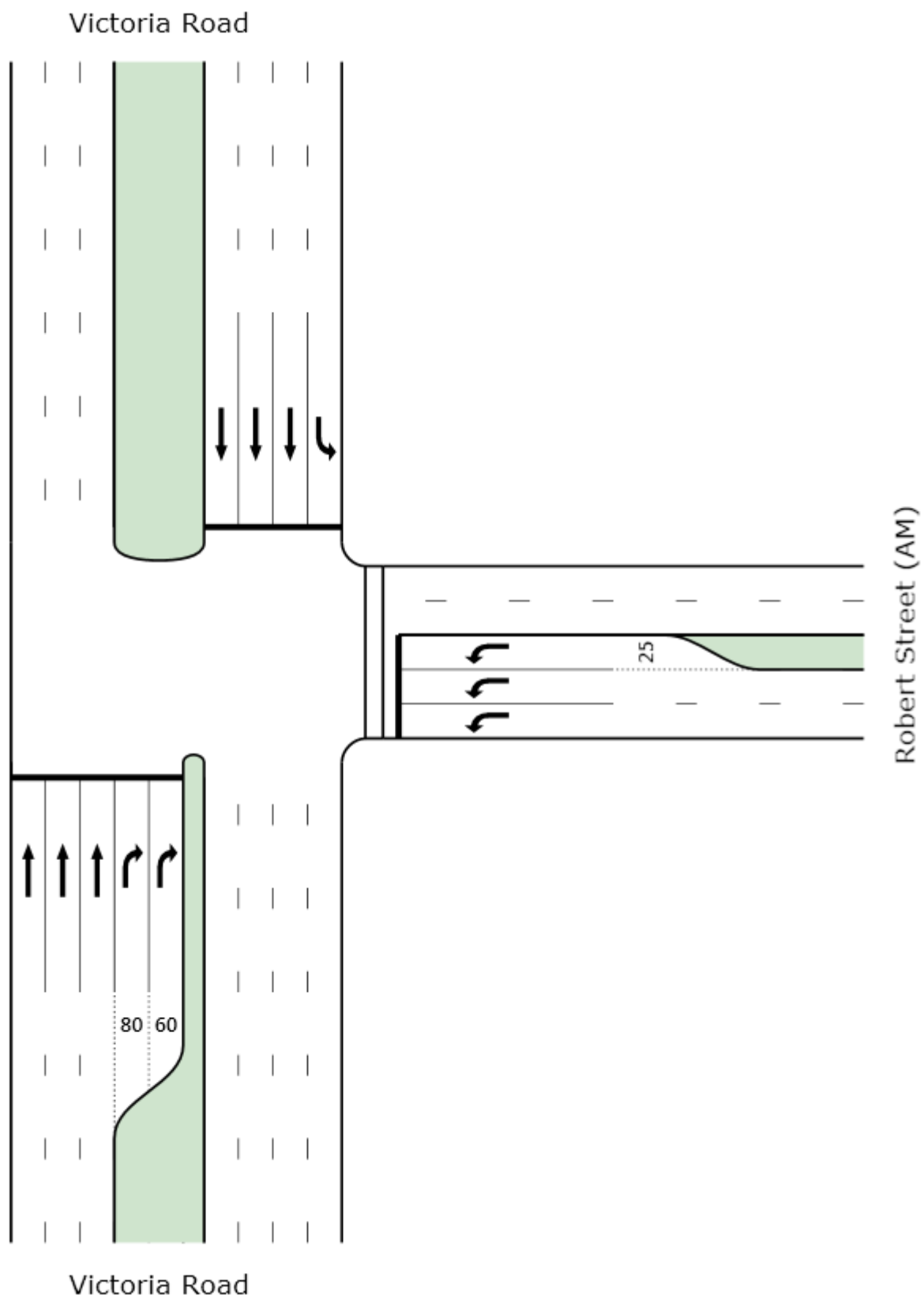
← 49

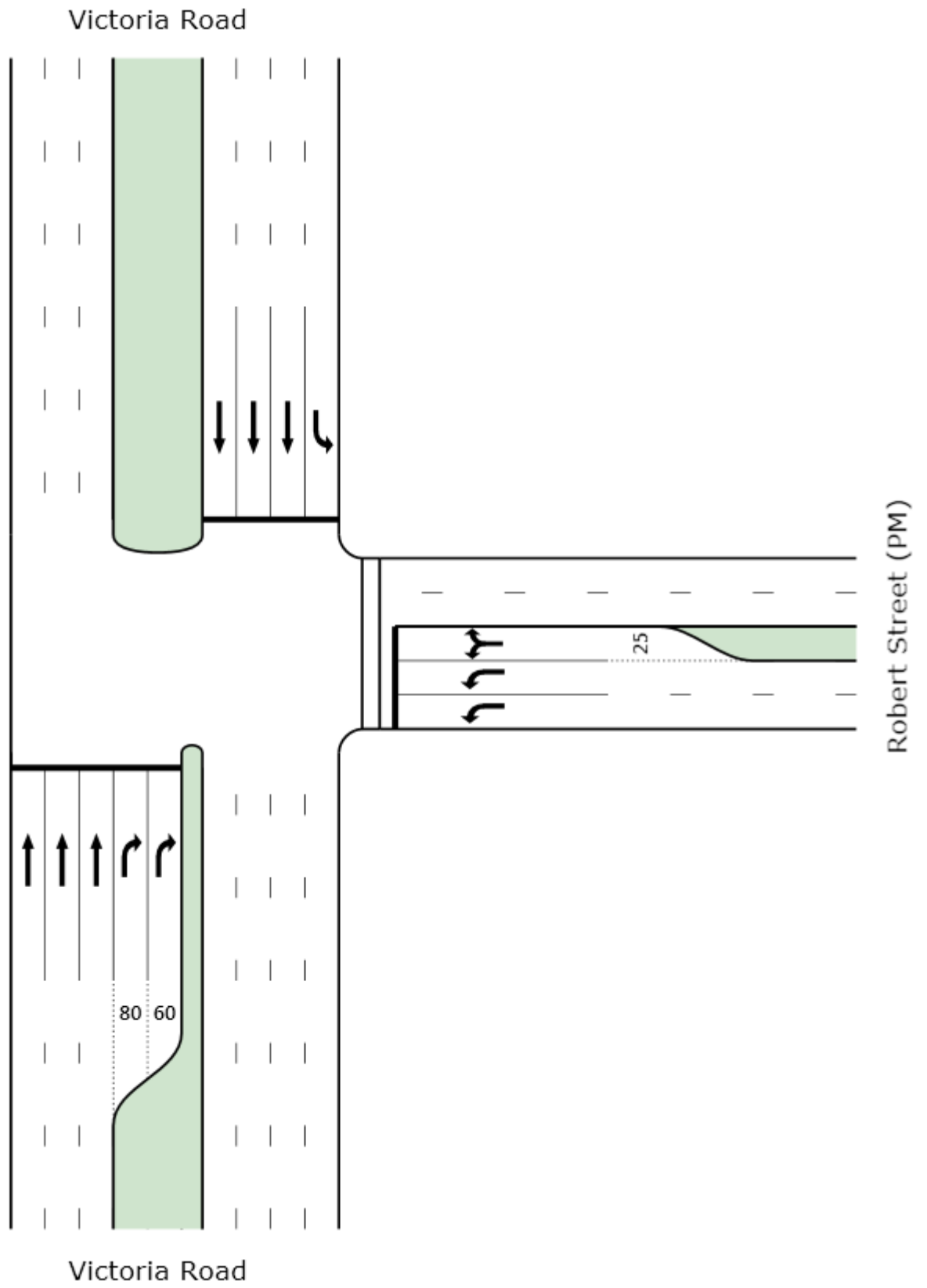
Sydney
Harbour
Boat
Storage



Appendix D

SIDRA intersection analysis results





PHASING SUMMARY

Site: Victoria Road Robert Street
AM Existing 2014

Existing Traffic Signals with Bus Lane Modelled as Left Turn Lane Buses excepted
Signals - Fixed Time Cycle Time = 95 seconds (Optimum Cycle Time - Minimum Delay)

Phase times determined by the program

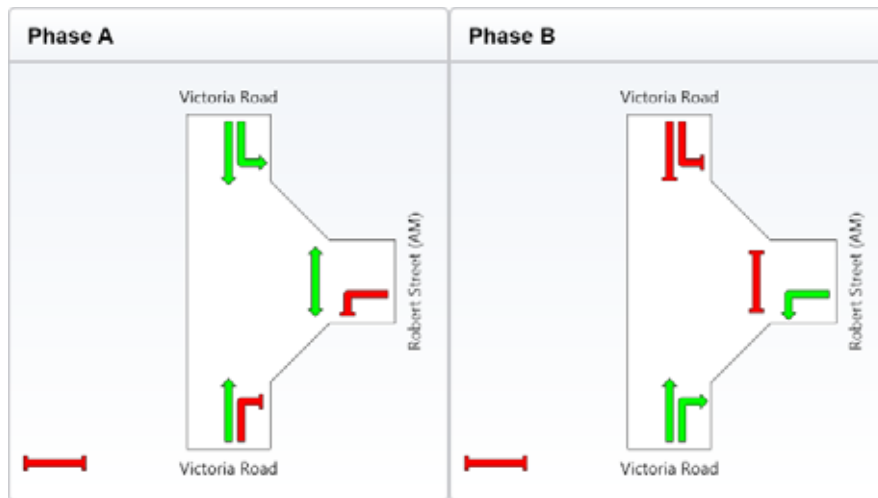
Sequence: Two-Phase

Input Sequence: A, B

Output Sequence: A, B

Phase Timing Results

Phase	A	B
Green Time (sec)	57	26
Yellow Time (sec)	4	4
All-Red Time (sec)	2	2
Phase Time (sec)	63	32
Phase Split	66 %	34 %



█ Normal Movement	█ Permitted/Opposed
█ Slip-Lane Movement	█ Opposed Slip-Lane
█ Stopped Movement	█ Continuous Movement
█ Turn On Red	█ Undetected Movement
	● Phase Transition Applied

Processed: Tuesday, 29 July 2014 11:08:18 AM
SIDRA INTERSECTION 5.1.13.2093

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Project: C:\Program Files (x86)\SIDRA SOLUTIONS\SIDRA RESULTS\White Bay Rozelle\Year 2014 Analysis with
Optimum Cycle Time.sip
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SIDRA
INTERSECTION

PHASING SUMMARY

Site: Victoria Road Robert Street
PM Existing 2014

Existing Traffic Signals with Bus Lane Modelled as Left Turn Lane Buses excepted (Five Phases in PM Peak)
Signals - Fixed Time Cycle Time = 145 seconds (Optimum Cycle Time - Minimum Delay)

Phase times determined by the program

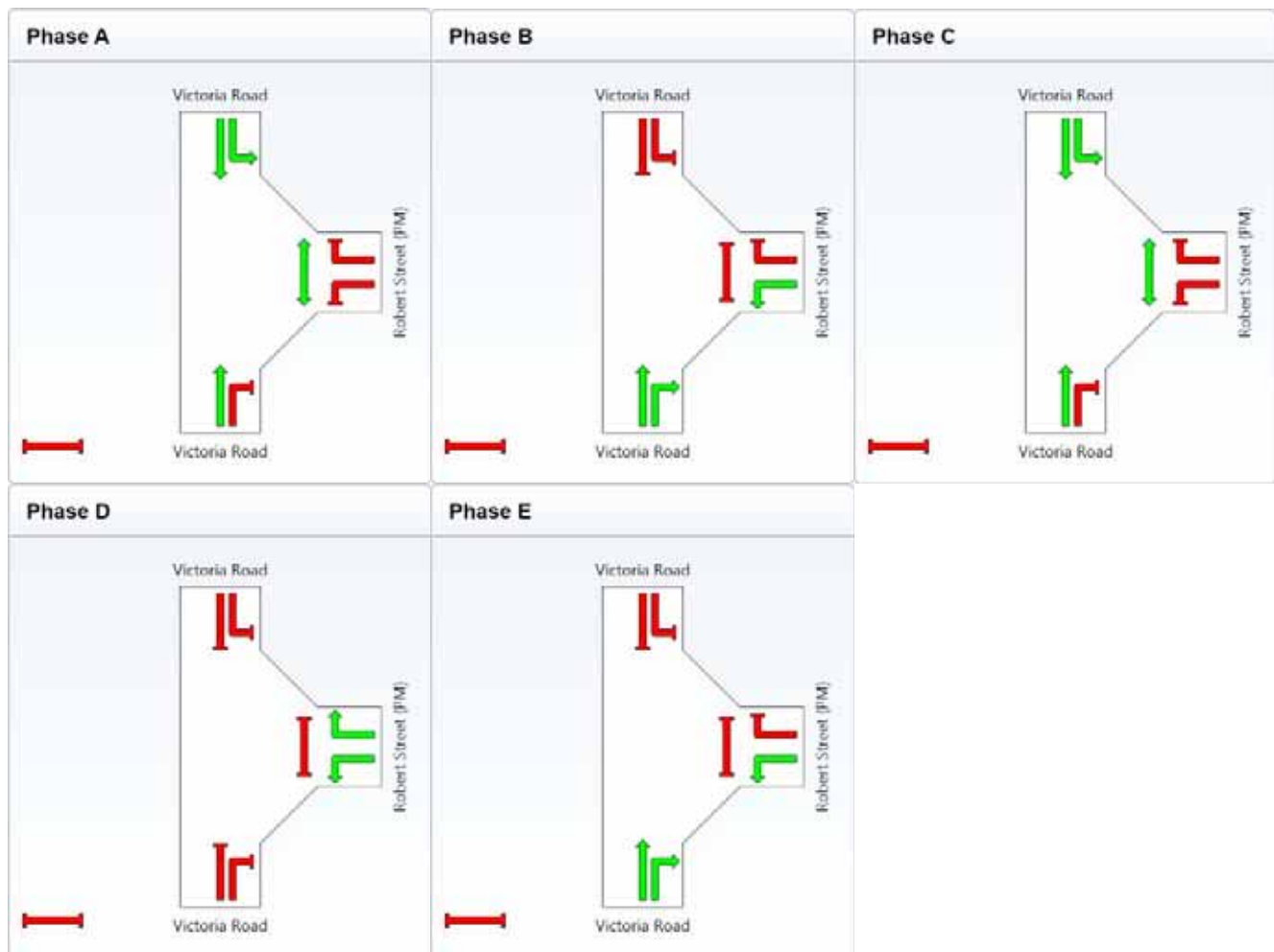
Sequence: Two-Phase

Input Sequence: A, B, C, D, E

Output Sequence: A, B, C, D, E

Phase Timing Results

Phase	A	B	C	D	E
Green Time (sec)	42	19	28	6	20
Yellow Time (sec)	4	4	4	4	4
All-Red Time (sec)	2	2	2	2	2
Phase Time (sec)	48	25	34	12	26
Phase Split	33 %	17 %	23 %	8 %	18 %



█ Normal Movement	█ Permitted/Opposed
█ Slip-Lane Movement	█ Opposed Slip-Lane
█ Stopped Movement	█ Continuous Movement
█ Turn On Red	█ Undetected Movement
	● Phase Transition Applied

MOVEMENT SUMMARY

Site: Victoria Road Robert Street
AM Existing 2014

Existing Traffic Signals with Bus Lane Modelled as Left Turn Lane Buses excepted
Signals - Fixed Time Cycle Time = 90 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Victoria Road											
2	T	1169	5.2	0.238	0.5	LOS A	1.5	10.7	0.18	0.10	56.6
3	R	662	2.5	0.865	50.5	LOS D	17.7	126.8	0.96	0.98	25.2
Approach		1832	4.3	0.865	18.6	LOS B	17.7	126.8	0.46	0.42	39.0
East: Robert Street (AM)											
4	L	1060	2.7	0.937	62.0	LOS E	26.2	187.7	0.99	1.03	22.2
Approach		1060	2.7	0.937	62.0	LOS E	26.2	187.7	0.99	1.03	22.2
North: Victoria Road											
7	L	115	53.2	0.142	18.6	LOS B	2.2	22.3	0.46	0.74	41.2
8	T	3218	0.9	0.922	34.1	LOS C	55.4	390.6	0.97	1.07	29.5
Approach		3333	2.7	0.922	33.6	LOS C	55.4	390.6	0.96	1.06	29.8
All Vehicles		6224	3.2	0.937	34.0	LOS C	55.4	390.6	0.82	0.87	30.1

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P3	Across E approach	53	13.3	LOS B	0.1	0.1	0.54	0.54
All Pedestrians		53	13.3	LOS B			0.54	0.54

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Processed: Tuesday, 28 July 2015 11:33:03 AM

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SIDRA
INTERSECTION

MOVEMENT SUMMARY

Site: Victoria Road Robert Street
AM Construction 2014

Existing Traffic Signals with Bus Lane Modelled as Left Turn Lane Buses excepted
Signals - Fixed Time Cycle Time = 95 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Victoria Road											
2	T	1169	5.2	0.237	0.5	LOS A	1.5	10.7	0.17	0.09	56.8
3	R	673	3.1	0.912	49.4	LOS D	18.2	130.6	0.95	0.93	25.6
Approach		1842	4.5	0.912	18.4	LOS B	18.2	130.6	0.46	0.40	39.2
East: Robert Street (AM)											
4	L	1060	2.7	0.921	60.4	LOS E	26.5	189.8	0.99	1.00	22.5
Approach		1060	2.7	0.921	60.4	LOS E	26.5	189.8	0.99	1.00	22.5
North: Victoria Road											
7	L	122	52.6	0.151	19.0	LOS B	2.5	25.1	0.47	0.74	40.8
8	T	3218	0.9	0.922	34.7	LOS C	57.4	405.4	0.97	1.06	29.3
Approach		3340	2.8	0.922	34.1	LOS C	57.4	405.4	0.96	1.05	29.6
All Vehicles		6242	3.3	0.922	33.9	LOS C	57.4	405.4	0.81	0.85	30.2

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P3	Across E approach	53	13.7	LOS B	0.1	0.1	0.54	0.54
All Pedestrians		53	13.7	LOS B			0.54	0.54

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: Victoria Road Robert Street
AM 2014 With +150 Berths Site
Traffic

Existing Traffic Signals with Bus Lane Modelled as Left Turn Lane Buses excepted
Signals - Fixed Time Cycle Time = 90 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Victoria Road											
2	T	1169	5.2	0.238	0.5	LOS A	1.5	10.7	0.18	0.10	56.6
3	R	698	2.4	0.911	48.5	LOS D	18.3	130.6	0.97	0.94	25.8
Approach		1867	4.2	0.911	18.5	LOS B	18.3	130.6	0.47	0.41	39.1
East: Robert Street (AM)											
4	L	1064	2.7	0.941	62.9	LOS E	26.6	190.3	0.99	1.03	22.0
Approach		1064	2.7	0.941	62.9	LOS E	26.6	190.3	0.99	1.03	22.0
North: Victoria Road											
7	L	119	51.3	0.146	18.5	LOS B	2.3	22.9	0.46	0.74	41.1
8	T	3218	0.9	0.922	34.1	LOS C	55.4	390.6	0.97	1.07	29.5
Approach		3337	2.7	0.922	33.6	LOS C	55.4	390.6	0.96	1.06	29.8
All Vehicles		6268	3.2	0.941	34.0	LOS C	55.4	390.6	0.82	0.86	30.1

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P3	Across E approach	53	13.3	LOS B	0.1	0.1	0.54	0.54
All Pedestrians		53	13.3	LOS B			0.54	0.54

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Processed: Monday, 26 October 2015 1:22:11 PM

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Project: P:\SIDRA RESULTS\White Bay 6 2015 Analysis\Year 2014 Analysis with Optimum Cycle Time.sip

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INTERSECTION

MOVEMENT SUMMARY

Site: Victoria Road Robert Street
PM Existing 2014

Existing Traffic Signals with Bus Lane Modelled as Left Turn Lane Buses excepted (Five Phases in PM Peak)
Signals - Fixed Time Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Victoria Road											
2	T	2945	2.8	0.585	2.3	LOS A	17.3	124.1	0.27	0.25	54.9
3	R	873	1.7	1.000 ³	38.0	LOS C	19.0	134.6	0.99	0.87	29.5
Approach		3818	2.4	1.000	10.5	LOS A	19.0	134.6	0.44	0.39	45.8
East: Robert Street (PM)											
4	L	949	2.4	0.728	33.8	LOS C	17.7	126.2	0.94	0.86	31.1
6	R	39	0.0	0.728	75.3	LOS F	3.9	27.3	1.00	0.87	19.6
Approach		988	2.3	0.728	35.4	LOS C	17.7	126.2	0.94	0.86	30.4
North: Victoria Road											
7	L	107	44.1	0.154	21.3	LOS B	2.5	24.0	0.58	0.75	38.9
8	T	2763	0.8	0.963	48.9	LOS D	55.5	391.5	1.00	1.08	24.6
Approach		2871	2.5	0.963	47.9	LOS D	55.5	391.5	0.98	1.07	24.9
All Vehicles		7677	2.4	1.000	27.7	LOS B	55.5	391.5	0.71	0.71	33.2

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

³ x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P3	Across E approach	53	34.7	LOS D	0.2	0.2	0.68	0.68
All Pedestrians		53	34.7	LOS D			0.68	0.68

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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INTERSECTION

MOVEMENT SUMMARY

Site: Victoria Road Robert Street
PM Construction 2014

Existing Traffic Signals with Bus Lane Modelled as Left Turn Lane Buses excepted (Five Phases in PM Peak)
Signals - Fixed Time Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Victoria Road											
2	T	2945	2.8	0.585	2.3	LOS A	17.3	124.1	0.27	0.25	54.9
3	R	873	1.7	1.000 ³	38.0	LOS C	19.0	134.6	0.99	0.87	29.5
Approach		3818	2.4	1.000	10.5	LOS A	19.0	134.6	0.44	0.39	45.8
East: Robert Street (PM)											
4	L	960	2.9	0.744	33.9	LOS C	18.1	130.1	0.94	0.86	31.0
6	R	46	6.8	0.744	88.3	LOS F	4.6	33.6	1.00	0.89	17.6
Approach		1006	3.0	0.744	36.4	LOS C	18.1	130.1	0.94	0.86	30.0
North: Victoria Road											
7	L	107	44.1	0.154	21.3	LOS B	2.5	24.0	0.58	0.75	38.9
8	T	2763	0.8	0.963	48.9	LOS D	55.5	391.5	1.00	1.08	24.6
Approach		2871	2.5	0.963	47.9	LOS D	55.5	391.5	0.98	1.07	24.9
All Vehicles		7695	2.5	1.000	27.8	LOS B	55.5	391.5	0.71	0.71	33.2

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

³ x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	Across E approach	53	34.7	LOS D	0.2	0.2	0.68	0.68
All Pedestrians		53	34.7	LOS D			0.68	0.68

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: Victoria Road Robert Street
PM 2014 With +150 Berths Site
Traffic

Existing Traffic Signals with Bus Lane Modelled as Left Turn Lane Buses excepted (Five Phases in PM Peak)
Signals - Fixed Time Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Victoria Road											
2	T	2955	2.8	0.587	2.3	LOS A	17.5	125.1	0.27	0.26	54.8
3	R	873	1.7	1.000 ³	38.0	LOS C	19.0	134.6	0.99	0.87	29.5
Approach		3828	2.4	1.000	10.5	LOS A	19.0	134.6	0.44	0.39	45.8
East: Robert Street (PM)											
4	L	976	2.4	0.753	34.1	LOS C	18.5	131.9	0.95	0.86	31.0
6	R	43	0.0	0.753	83.2	LOS F	4.2	29.5	1.00	0.90	18.3
Approach		1019	2.3	0.753	36.2	LOS C	18.5	131.9	0.95	0.86	30.1
North: Victoria Road											
7	L	111	42.9	0.158	21.3	LOS B	2.6	24.6	0.58	0.75	38.9
8	T	2763	0.8	0.963	48.9	LOS D	55.5	391.5	1.00	1.08	24.6
Approach		2874	2.5	0.963	47.9	LOS D	55.5	391.5	0.98	1.07	24.9
All Vehicles		7721	2.4	1.000	27.8	LOS B	55.5	391.5	0.71	0.71	33.2

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P3	Across E approach	53	34.7	LOS D	0.2	0.2	0.68	0.68
All Pedestrians		53	34.7	LOS D			0.68	0.68

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: Victoria Road Robert Street
AM Existing 2015

Existing Traffic Signals with Bus Lane Modelled as Left Turn Lane Buses excepted
Signals - Fixed Time Cycle Time = 55 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Victoria Road											
2	T	1320	4.5	0.297	0.9	LOS A	1.8	12.7	0.30	0.17	54.5
3	R	857	2.8	0.863	36.9	LOS C	13.8	98.6	1.00	1.04	29.9
Approach		2177	3.8	0.863	15.1	LOS B	13.8	98.6	0.58	0.51	41.2
East: Robert Street (AM)											
4	L	939	3.9	0.765	31.6	LOS C	10.5	76.1	0.95	0.92	32.1
Approach		939	3.9	0.765	31.6	LOS C	10.5	76.1	0.95	0.92	32.1
North: Victoria Road											
7	L	111	56.2	0.164	18.2	LOS B	1.6	16.8	0.56	0.75	41.5
8	T	2593	1.2	0.877	22.8	LOS B	27.2	192.5	0.96	1.06	34.9
Approach		2703	3.4	0.877	22.6	LOS B	27.2	192.5	0.94	1.05	35.1
All Vehicles		5819	3.7	0.877	21.3	LOS B	27.2	192.5	0.81	0.83	36.6

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	Across E approach	53	14.5	LOS B	0.1	0.1	0.73	0.73
All Pedestrians		53	14.5	LOS B			0.73	0.73

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: Victoria Road Robert Street
AM Construction 2015

Existing Traffic Signals with Bus Lane Modelled as Left Turn Lane Buses excepted
Signals - Fixed Time Cycle Time = 55 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Victoria Road											
2	T	1320	4.5	0.297	0.9	LOS A	1.8	12.7	0.30	0.17	54.5
3	R	867	3.3	0.876	37.3	LOS C	14.3	103.0	1.00	1.04	29.8
Approach		2187	4.0	0.876	15.3	LOS B	14.3	103.0	0.58	0.51	41.0
East: Robert Street (AM)											
4	L	939	3.9	0.765	31.6	LOS C	10.5	76.1	0.95	0.92	32.1
Approach		939	3.9	0.765	31.6	LOS C	10.5	76.1	0.95	0.92	32.1
North: Victoria Road											
7	L	118	55.4	0.174	18.2	LOS B	1.7	17.9	0.57	0.75	41.5
8	T	2593	1.2	0.877	22.8	LOS B	27.2	192.5	0.96	1.06	34.9
Approach		2711	3.5	0.877	22.6	LOS B	27.2	192.5	0.94	1.05	35.1
All Vehicles		5837	3.8	0.877	21.3	LOS B	27.2	192.5	0.81	0.83	36.5

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	Across E approach	53	14.5	LOS B	0.1	0.1	0.73	0.73
All Pedestrians		53	14.5	LOS B			0.73	0.73

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: Victoria Road Robert Street
AM 2015 With +150 Berths Site
Traffic

Existing Traffic Signals with Bus Lane Modelled as Left Turn Lane Buses excepted
Signals - Fixed Time Cycle Time = 55 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Victoria Road											
2	T	1320	4.5	0.297	0.9	LOS A	1.8	12.7	0.30	0.17	54.5
3	R	893	2.7	0.898	38.1	LOS C	15.5	111.0	1.00	1.04	29.5
Approach		2213	3.8	0.898	15.9	LOS B	15.5	111.0	0.58	0.52	40.5
East: Robert Street (AM)											
4	L	943	3.9	0.769	31.7	LOS C	10.6	76.7	0.95	0.92	32.1
Approach		943	3.9	0.769	31.7	LOS C	10.6	76.7	0.95	0.92	32.1
North: Victoria Road											
7	L	115	54.1	0.168	18.1	LOS B	1.7	17.3	0.57	0.75	41.5
8	T	2593	1.2	0.877	22.8	LOS B	27.2	192.5	0.96	1.06	34.9
Approach		2707	3.4	0.877	22.6	LOS B	27.2	192.5	0.94	1.05	35.1
All Vehicles		5863	3.6	0.898	21.6	LOS B	27.2	192.5	0.81	0.83	36.4

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	Across E approach	53	14.5	LOS B	0.1	0.1	0.73	0.73
All Pedestrians		53	14.5	LOS B			0.73	0.73

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: Victoria Road Robert Street
PM Existing 2015

Existing Traffic Signals with Bus Lane Modelled as Left Turn Lane Buses excepted (Five Phases in PM Peak)
Signals - Fixed Time Cycle Time = 86 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Victoria Road											
2	T	2394	2.7	0.532	3.4	LOS A	12.0	86.2	0.39	0.36	52.5
3	R	537	1.9	1.076	102.2	LOS F	18.4	130.6	1.00	1.28	15.8
Approach		2931	2.4	1.076	21.5	LOS B	18.4	130.6	0.50	0.53	36.8
East: Robert Street (PM)											
4	L	745	2.1	0.671	27.6	LOS B	7.7	54.9	0.94	0.86	34.1
6	R	56	0.0	0.671	37.7	LOS C	3.2	22.9	0.98	0.85	29.5
Approach		801	2.0	0.671	28.3	LOS B	7.7	54.9	0.95	0.86	33.7
North: Victoria Road											
7	L	113	45.8	0.182	18.5	LOS B	1.9	18.1	0.64	0.76	41.0
8	T	2126	1.2	0.829	17.0	LOS B	19.6	138.9	0.94	0.90	38.5
Approach		2239	3.4	0.829	17.1	LOS B	19.6	138.9	0.93	0.89	38.6
All Vehicles		5971	2.7	1.076	20.8	LOS B	19.6	138.9	0.72	0.71	37.0

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	Across E approach	53	31.8	LOS D	0.1	0.1	0.86	0.86
All Pedestrians		53	31.8	LOS D			0.86	0.86

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: Victoria Road Robert Street
PM Construction 2015

Existing Traffic Signals with Bus Lane Modelled as Left Turn Lane Buses excepted (Five Phases in PM Peak)
Signals - Fixed Time Cycle Time = 86 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Victoria Road											
2	T	2394	2.7	0.532	3.4	LOS A	12.0	86.2	0.39	0.36	52.5
3	R	537	1.9	1.076	102.2	LOS F	18.4	130.6	1.00	1.28	15.8
Approach		2931	2.4	1.076	21.5	LOS B	18.4	130.6	0.50	0.53	36.8
East: Robert Street (PM)											
4	L	756	2.6	0.698	29.0	LOS C	8.5	60.8	0.95	0.88	33.4
6	R	63	5.0	0.698	43.7	LOS D	3.5	25.7	0.99	0.88	27.3
Approach		819	2.8	0.698	30.1	LOS C	8.5	60.8	0.96	0.88	32.8
North: Victoria Road											
7	L	113	45.8	0.182	18.5	LOS B	1.9	18.1	0.64	0.76	41.0
8	T	2126	1.2	0.829	17.0	LOS B	19.6	138.9	0.94	0.90	38.5
Approach		2239	3.4	0.829	17.1	LOS B	19.6	138.9	0.93	0.89	38.6
All Vehicles		5988	2.8	1.076	21.0	LOS B	19.6	138.9	0.72	0.71	36.8

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	Across E approach	53	31.8	LOS D	0.1	0.1	0.86	0.86
All Pedestrians		53	31.8	LOS D			0.86	0.86

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: Victoria Road Robert Street
PM 2015 With +150 Berths Site
Traffic

Existing Traffic Signals with Bus Lane Modelled as Left Turn Lane Buses excepted (Five Phases in PM Peak)
Signals - Fixed Time Cycle Time = 86 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Victoria Road											
2	T	2404	2.7	0.534	3.5	LOS A	12.1	86.9	0.39	0.36	52.5
3	R	537	1.9	1.076	102.2	LOS F	18.4	130.6	1.00	1.28	15.8
Approach		2941	2.4	1.076	21.5	LOS B	18.4	130.6	0.50	0.53	36.9
East: Robert Street (PM)											
4	L	772	2.0	0.699	29.0	LOS C	8.5	60.9	0.95	0.87	33.4
6	R	60	0.0	0.699	40.8	LOS C	3.5	25.1	0.99	0.87	28.3
Approach		832	1.9	0.699	29.9	LOS C	8.5	60.9	0.96	0.87	33.0
North: Victoria Road											
7	L	116	44.5	0.186	18.5	LOS B	1.9	18.5	0.64	0.76	41.0
8	T	2126	1.2	0.829	17.0	LOS B	19.6	138.9	0.94	0.90	38.5
Approach		2242	3.4	0.829	17.1	LOS B	19.6	138.9	0.93	0.89	38.6
All Vehicles		6015	2.7	1.076	21.0	LOS B	19.6	138.9	0.72	0.71	36.9

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P3	Across E approach	53	31.8	LOS D	0.1	0.1	0.86	0.86
All Pedestrians		53	31.8	LOS D			0.86	0.86

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Appendix E

Site access control procedure

White Bay 6 Marine Park

Compliance Management SYSTEM PROCEDURE

Site Access Control Procedure

Document No: PRO-011

REVISION HISTORY

REVISION NUMBER	DATE	REVISED BY	APPROVED BY	REASON FOR CHANGE
A	09/07/2015	A. Graveley	Gemma Broderick	Draft of document
1	09/07/2015	A. Graveley	T. Crosland	Version issued for comment to PANSW
2	17/12/2015	A. Graveley	J. Rose	Amendments resulting from PANSW comment for Section 75W – Modification 5. Revision description of identification card.
3	13/1/2016	A. Graveley	J. Rose	Amendments resulting from PANSW comment for Section 75W – Modification 5.
4	16/5/2016	A.Graveley	J. Rose	Amendments resulting from PANSW comment for Section 75W – Modification 5 - Visitor access parameters.



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1 PURPOSE

The purpose of this procedure is to describe the process for controlling access to White Bay 6 ensuring safe, secure and efficient transport networks in the White Bay PANSW precinct on cruise ship days.

2 SCOPE

This procedure applies to all White Bay 6 employees, contractors, customers and visitors requiring access to White Bay 6 via the road network on cruise ship days.

3 REFERENCES

- FRM-0111 Authorised Access Register
- FRM-062 Contractor Site Induction
- PRO-006 Contractor Management
- PRO-012 Storage Management
- FRM-1218 SHBS Customer Induction

4 DEFINITIONS

Term	Meaning
Contractor	Any person(s), not employed directly by White Bay 6 that is providing a service for White Bay 6 clients to undertake specific work activities at the facility.
Visitor	Any person(s) not employed directly by White Bay 6, not a contractor, or a customer of White Bay 6.
PANSW	Ports Authority New South Wales

5 RESPONSIBILITIES

5.1 Management

Management is responsible for the implementation and maintenance of this procedure and all associated processes and forms including:

- Collecting all personal and company information from applicants;
- Ensuring completion of online site inductions;
- Assessing personal and company information, and registration;



- Authorising approval of site access;
- Providing PANSW gatehouse personnel with visitor lists as required; and
- Providing Authorised Access Identification Cards.

5.2 Employees, contractors, customers, and visitors

Employees, contractors, customers, and visitors are responsible for:

- Ensuring they have provided all information and applicable documentation;
- Ensuring they have completed the online site induction; and
- Presenting Authorised Access Identification Cards to appropriate authority.

5.3 Port Authority New South Wales

PANSW will be responsible for checking access identification cards and White Bay 6 visitor lists at the Roberts Street Entry Gate.

6 PROCEDURE

6.1 Gaining Authorised Site Access

Individuals will be required to apply for site access to White Bay 6. The application process is dependent on the type of access required. Individuals with authorised access will be recorded on FRM-0111 Authorised Access Register. The register includes four lists for the type of authorised accessed:

- Employees (Sydney Harbour Boat Storage and Baileys Marine Fuels Australia);
- Contractors;
- Customers; and
- Visitors - Temporary access.

The registers shall contain the following information for each individual:

- Name;
- Company name (if applicable);
- Date of induction (if applicable); and
- Date of expiry.

The register will be made available to PANSW on request.

6.1.1 Employees

Employees will be authorised access to White Bay 6 upon commencement of employment and completion of the employee induction. Employees include persons employed by Sydney Harbour Boat Storage and Baileys Marine Fuels Australia.



6.1.2 Contractors

Contractors will be authorised access to White Bay 6 upon the approval to conduct work outlined in PRO-006 Contractor Management. Gaining work approval requires the completion of the Contractor Site Induction and submission of the following documentation:

- Insurance details (public liability, ship repairers liability and workers compensation);
- Licences or permits (if applicable); and
- Safe Work Method Statement or other form of risk assessment.

6.1.3 Customers

Customers will be authorised access to White Bay 6 upon completion of the Sydney Harbour Boat Storage Customer Online Site Induction and formalisation of their contracts for vessel storage or work orders.

6.2 Authorised Site Access Identification Card

All employees, contractors, visitors and customers with authorised site access will be provided with an identification card from White Bay 6 management. The identification card will include the following:

- White Bay 6 logo;
- Name;
- Type of access (employee, contractor, customer, visitor);
- Expiry Date; and
- Photo.



Figure 1. White Bay 6 Authorised Access Identification Card example

6.3 Visitors and Temporary Access

Visitors who regularly visit the site will be provided authorised access and issued with an Approved Access Identification Card.

Visitors who have not been issued with an Approved Access Identification Card but who have a scheduled appointment at White Bay 6 on cruise days will be authorised temporary access. The visitor information will be recorded on FRM-0111 Authorised Access Register - Temporary Access. The register will be updated as



necessary and provided to PANSW gate house. When visitors have a scheduled appointment the security personnel at the Roberts Street Gatehouse shall be phoned on the morning of the appointment and informed of:

- The visitors name;
- Associated company (where applicable);
- Time of appointment.

A request will be made to allow these persons to access the facility.

Outside operating hours (9:00am to 5:00pm), visitors who do not have a scheduled appointment nor are on the visitor register shall not enter White Bay 6 until the Robert Street gatehouse obtains authorisation from White Bay 6 management.

6.4 Access to White Bay 6 via Robert Street

Access to the White Bay 6 on cruise and non-cruise days will be via the PANSW Robert Street Entry Gate (Figure 2 green access route). On cruise ship days, individuals with authorised access to White Bay 6 will present their Authorised Access Identification Card (Figure 1) to PANSW security at the entry gate on Robert Street (Figure 2) to be granted access.



Figure 2. Access pathways to White Bay 6.



6.5 Communication of process

All applications for an Authorised Access Identification Card will include completing a Sydney Harbour Boat Storage Online Site Induction which communicates the process for access to White Bay 6. When Authorised Access Identification Cards are issued to individuals these shall be accompanied with an information letter which explains how to access the site.

END OF PROCEDURE



Revision: 3
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SYDNEY

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Appendix D

Minutes of meeting with PANSW

Meeting minutes

Meeting name: Planning Application Meeting

Address of the Land: White Bay 6 (Lot 11 DP 1170710)

Port Authority of NSW Precinct: Glebe Island

Proponent: White Bay 6 Pty Ltd

Proposal Description:
Modification (5) to MP Approval
06_0037 – dry boat storage

Date: 21 May 2015

Estimated Capital Investment
Value: \$

Development Assessment Process: Section 75W Modification

Determining Authority: Minister for Planning

Attendees:

Brett McMullen (White Bay 6)

Goran Dimovski

Tim Crosland (White Bay 6)

Ryan Bennett

John Arnold (EMM)

Nick Garside

Peter Reed

Planning Facilitator & Meeting Chair: Ryan Bennett

Apologies: Robert Rybanic, Christa Sams, Richard Lorraine

MINUTES

Items Discussed	Discussion	Phase PTL Pre-Construction Pre-Operation
Proposed Modification Summary	As provided in the pre-PAM documentation (EMM, 1 May 2015) - Increase the dry boat storage capacity from 50 to 130 vessels - Relocate and enlarge Building 2 plus modification of the existing southern gantry structure to accommodate a metal	

Meeting minutes

	- cantilevered shelter structure for outdoor boat storage on portable racks - Associated increase in approved car parking from 42 to 56 - Reorientation of approved Building 1 from an east-west orientation to a north-south orientation	
Property and site layout	- Full architectural plans are to be provided comprising site plan, floor plans and elevations - An overlay showing the approved site layout vs the proposed site layout is to be provided. Any additions to the approved site layout should be clearly noted. - Confirmation is required that the proposed caretakers residence in Building 1 will not be a Class 2 residential dwelling under the BCA. - Clarification is required of the proposed parking arrangement, with primary and alternative locations noted, taking into consideration the potential take-back area along the northern portion of the site	PTL PTL PTL PTL
Development Assessment Process	Based on the information provided, the development assessment process is likely to be a S75W Modification to Major Project Approval 06_0037, with Port Authority of NSW required to provide a permission to lodge.	
Construction	- The documentation is to include an assessment of all works that will be undertaken under the modification proposal. - The documentation is to detail a construction programme for physical works including key milestones, construction methods and equipment and how the works will impact on internal site operations and external stakeholders / operators. - A staging report for the construction works is required to be submitted to Port Authority - Work as executed drawings in CAD format and certification documents to be issued to Port Authority upon completion of construction works	PTL PTL (preliminary) Pre-construction (detail) Pre-construction Pre-operation
Asset Management	- A dilapidation/condition report is required (to be done in conjunction with Port Authority). - Verification of the loadings for buildings and plant/machinery in relation to the wharf structure is required	Pre-construction Pre-construction

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Meeting minutes

Marine Operations / Harbour Master	- No one will be permitted to stay on boats moored overnight at WB6. - The approved Marine Traffic Management Plan may need to be revised and approved. This will be communicated in the Harbour Master's approval for the proposal.	Pre-operation
Traffic and Security	- Noted that there were specific and additional traffic assessment requirements as part of Mod 4 and these should be reviewed as part of the traffic assessment for Mod 5 - A construction traffic management plan will be required prior to the commencement of construction. This plan will have to take into consideration ship and non-ship days at the Cruise Terminal	PTL Pre-construction
Safety & Risk	- Consideration is required of the current location of the fire hydrants and the reach of these hydrants and hoses taking into consideration the proposed construction of the buildings, the additional moorings and the proposed parking (including the alternative parking arrangement required as noted above). - Prior to construction, the approved Fire Safety Study will need to be revised to fully consider the proposed modified development, including the proposed location of hydrants, hose reels, extinguishers, etc. Re-approval of the FSS by the NSW Fire Brigade may be required. Port Authority will provide a permission to lodge this with the Fire Brigade. - With respect to external boat storage racks, provide the credentials of the supplier and the load specifications of the racks (i.e. maximum safe working load, installation specifications and a process to ensure that the racks are not inadvertently overloaded).	PTL PTL Pre-construction
Applicable legislation & other guideline requirements	- Environmental Planning & Assessment Act, 1979 - Protection of the Environment Operations Act 1997 - Sydney Regional Environmental Plan No. 26 – City West - Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 - Glebe Island / White Bay Master Plan 2000	
Documentation to be provided to Port	Permission to Lodge Application Form http://www.sydneyports.com.au/data/assets/pdf_file/0008/10997/SPC10222_Form_Y_-	PTL

Appendix E

Green Ports Guidelines Checklist

Checklist

The completed Checklist is to accompany all applications for new developments/activities submitted to Sydney Ports, or when requested by Sydney Ports.

The Checklist has the following features:

- The Headings (shaded in blue), Item numbers and Purpose/Criteria descriptions directly correspond to those in the Green Port Guidelines. This allows easy reference between this Checklist and the Guidelines.
- Applicants are to state whether each item has been addressed, not addressed or whether it is not applicable to the specific development. The Stages of Development indicators in the Green Port Guidelines may assist in this assessment.
- Applicants are then to explain how each item has been addressed, why it hasn't been addressed or why it is not applicable. Applicants are directed to the Suggested Measures provided in the Green Port Guidelines for guidance on how to address each item although alternative and innovative measures that may be more specific or relevant to the individual facility or operation are also encouraged.
- Supporting documentation (such as a Waste Management Plan, Environmental Management Plan or Design Specifications) may be referenced or attached to the Checklist.
- The Checklist can be filled out either electronically or by hand and sent back to Sydney Ports for review.

Applicant details

Name	Tim Crosland	Company	
Address	White Bay Berth 6		
City/Town	Balmain	State	NSW
		Postcode	2041
Telephone		Mobile	0412 938 588
		Email	tcrosland@baileysgroup.com.au

Project details

Location of proposed development

White Bay Berth 6, Balmain, NSW, 2041

Description of proposed development

White Bay 6 Pty Ltd is seeking to modify major project approval MP06_0037 to provide all weather cover to support existing tenancies and approved activities as well as providing for additional boat storage on portable racks and areas to conduct light works on vessels at the White Bay 6 Marine Park in Balmain, NSW.

The details on this form are the provisions and intentions for maximising the environmental sustainability of this development.

Name	Tim Crosland
Signature	
	Date 22/12/15

	Item No	Purpose/criteria	Has this been addressed? (Yes, No, N/A)	How has it been addressed? Or, why has it not been addressed?	Provide details of supporting documentation/ reference material
Materials selection	R1	Reduce the quantity of new materials being used by reusing materials or by utilising recycled materials.	Yes	Opportunities to use recycled materials will be identified and implemented during detailed design.	-
	R2	Encourage environmentally friendly production of materials.	N/A	Not applicable as the proposed modification will not include the manufacturing of any materials.	-
	R3	Specify materials that have minimal embodied energy and environmental impact.	Yes	The selection of materials with minimal embodied energy will be undertaken at the detailed design stage. As part of the initial application, White Bay 6 Pty Ltd made a commitment to consider materials with minimal embodied energy.	-
	R4	Consider the end of life of materials and the whole building, design for deconstruction.	Yes	Consideration of the end of life of materials will be undertaken at the detailed design stage. White Bay 6 Pty Ltd has made a commitment to consider the end of life of materials.	-

	Item No	Purpose/criteria	Has this been addressed? (Yes, No, N/A)	How has it been addressed? Or, why has it not been addressed?	Provide details of supporting documentation/ reference material
Waste management	W1	Minimise the generation of wastes.	Yes	Construction waste management procedures will be outlined in the Construction Environment Management Plan (CEMP), including measures to minimise, reuse and reduce waste. The proposed modification will not result in the introduction of an additional waste stream, but will encompass general construction waste. These will be disposed of in accordance with the waste procedures identified in the environmental assessment of the project.	Refer to Section 5.5 of the EA.
	W2	Facilitate recycling to reduce the amount of waste going to landfill.	Yes	The CEMP will include measures to minimise, reuse and reduce waste. Paper, plastics, glass, waste oil, packaging, scrap metal and tyres from operational activities will be collected on-site and recycled.	
	W3	Ensure the safe storage and handling of hazardous wastes.	Yes	Hazardous waste will not be introduced on site as part of the proposed modification. On site, waste will be stored in sealed containers and removed from site by licensed contractors who are advised of the type of waste, and records will be kept of all such disposed wastes.	-

	Item No	Purpose/criteria	Has this been addressed? (Yes, No, N/A)	How has it been addressed? Or, why has it not been addressed?	Provide details of supporting documentation/ reference material
Water consumption	H1	Reduce consumption of potable water internally.	Yes	The proposed modification allows for additional building roof area and greater opportunity to capture rainwater for re-use in site activities such as boat cleaning. Rainwater capture will be considered during detailed design of Building 1.	Refer to Section 5.5 of the EA.
	H2	Manage and monitor water usage and any leaks.	N/A	No change from the approved development. White Bay 6 Pty Ltd will monitor water usage and leaks through Sydney Water bills.	-
	H3	Reduce the quantity of potable water used for landscape irrigation.	N/A	No landscape irrigation is proposed.	-
	H4	Treat water on-site and reuse the treated water to reduce demand on the local potable water supply and the demand on the local infrastructure.	N/A	No on-site water treatment and reuse is proposed.	-

	Item No	Purpose/criteria	Has this been addressed? (Yes, No, N/A)	How has it been addressed? Or, why has it not been addressed?	Provide details of supporting documentation/ reference material
Energy use	E1	Reduce energy consumption and hence greenhouse gas emissions.	Yes	White Bay 6 Pty Ltd will consider ways to reduce energy consumption during building design.	-
	E2	Manage the use of energy to minimise consumption.	Yes	White Bay 6 Pty Ltd will consider ways to reduce energy consumption during building design.	-
	E3	Source energy from renewable sources.	Yes	White Bay 6 Pty Ltd will consider ways to reduce energy consumption during building design. This will include installation of solar hot water panels on the roof of Building 1.	-
	E4	Source energy from alternate energy sources and use less greenhouse intensive fuels (in particular limit diesel use).	Yes	White Bay 6 Pty Ltd will consider ways to reduce energy consumption during building design.	-

	Item No	Purpose/criteria	Has this been addressed? (Yes, No, N/A)	How has it been addressed? Or, why has it not been addressed?	Provide details of supporting documentation/ reference material
Transportation	T1	Encourage the use of alternative modes of transport by employees, in order to reduce the amount of inefficient/individual car travel and therefore greenhouse gas emissions.	Yes	Employee modes of transport will not be affected by the proposed modification. Bicycle parking will be provided on site.	Refer to Section 5.2 of the EA.
	T2	Reduce greenhouse gas emissions from operational vehicles and equipment.	Yes	The proposed modification will not result in any additional vehicles or equipment than is already approved for the current operations. All current operational vehicles and equipment will be operated in accordance with the OEMP and plant will be turned off when not in use to minimise emissions where possible.	-

	Item No	Purpose/criteria	Has this been addressed? (Yes, No, N/A)	How has it been addressed? Or, why has it not been addressed?	Provide details of supporting documentation/ reference material
Indoor environment	IE1	Improve the quality of indoor air to protect the health of employees and enhance productivity.	Yes	Building 1 and the all weather structure have been designed to maximise ventilation and allow air circulation.	Refer to Section 5.5 of the EA.
	IE2	Optimise daylighting and make best use of artificial lighting to assist eye health and productivity.	N/A	No change from the approved development as a result of the proposed modification.	-
	IE3	Provide optimum acoustical environment for productivity and to prevent ear damage.	N/A	No change from the approved development as a result of the proposed modification.	-

	Item No	Purpose/criteria	Has this been addressed? (Yes, No, N/A)	How has it been addressed? Or, why has it not been addressed?	Provide details of supporting documentation/ reference material
Emissions	EM1	Protect the ozone layer and reduce the potential for global warming.	N/A	The proposed modification will not produce or use any substances that are harmful to the ozone layer.	-
	EM2	Limit the generation of air pollutants and ensure that they are emitted away from sensitive receptors.	Yes	During construction, air pollutant generation will be limited by implementing management measures outlined in the CEMP. The proposed fuel infrastructure will have vapour recovery technologies to prevent the release of air pollutants and vapours.	Refer to measures in the original EA (KBR 2006).
	EM3	Minimise odours.	Yes	The sullage pump out system will be designed to ensure that no odours are released.	Refer to measures in the original EA (KBR 2006).
	EM4	Minimise noise nuisance.	Yes	Construction noise and operational sound power levels will not generate any noise at a level above what was predicted in the original environmental assessment.	Refer to Section 5.3 of the EA.
	EM5	Avoid light spill into night sky or neighbouring properties/areas.	Yes	Any minor change in lighting will not significantly alter light spill. Lighting at the site will be kept to a minimum.	Refer to Section 8.5 of the original EA (KBR 2006).
	EM6	Avoid accidental contact with hazardous or poisonous goods.	Yes	This will be addressed in the OEMP.	-

	Item No	Purpose/criteria	Has this been addressed? (Yes, No, N/A)	How has it been addressed? Or, why has it not been addressed?	Provide details of supporting documentation/ reference material
Water quality	HQ1	Manage stormwater to reduce peak stormwater flows and protect water quality.	Yes	The proposed modification will not require any adjustments to stormwater drainage on site and will follow stormwater management measures outlined in the environmental assessment of the approved project.	Refer to Section 5.5 of the EA.
	HQ2	Manage water quality to protect the harbour and other water bodies.	Yes	The land-based activities which form part of the proposal will be incorporated into the pollution control measures that were approved for the site, in accordance with the OEH requirements.	Refer to Section 2.4.5 of the EA and Section 7.2 of the original EA (KBR 2006).
	HQ3	Prevent damage from potential flood events and water table changes.	N/A	-	-

	Item No	Purpose/criteria	Has this been addressed? (Yes, No, N/A)	How has it been addressed? Or, why has it not been addressed?	Provide details of supporting documentation/ reference material
Land use	L1	Encourage the redevelopment of sites that have previously been developed and remediate contaminated land.	Yes	The proposed modification will be an extension of the existing land use at White Bay Berth 6. No contaminated land remediation is required as part of the proposal.	Refer to the project scope in the original EA.
	L2	Use landscaping to enhance biodiversity and conserve and create habitat for flora and fauna.	N/A	The proposed modification does not include any landscaping.	-
	L3	Enhance visual amenity.	Yes	The proposed modification will not significantly alter the visual impact of the project or visual landscape of the area in which the project is situated.	Refer to Section 5.4 of the EA.
	L4	Avoid impact on identified heritage items.	Yes	The metal gantry at the site is of some heritage significance, however, it is anticipated there will be negligible impacts from the proposed modification.	Refer to Section 5.5 of the EA.

	Item No	Purpose/criteria	Has this been addressed? (Yes, No, N/A)	How has it been addressed? Or, why has it not been addressed?	Provide details of supporting documentation/ reference material
Environmental management	M1	Maintain good relationships with stakeholders and respond to any complaints.	Yes	White Bay 6 Pty Ltd has undertaken stakeholder consultation including with relevant government agencies.	Refer to Chapter 4 of the EA.
	M2	Provide a framework for identifying, managing and minimising environmental impacts, and maximising environmental benefits.	Yes	The proposed modification has undertaken an assessment of the environmental impacts associated with the proposed modification.	Refer to Chapter 5 of the EA.
	M3	Educate developers, tenants and employees about ESD and how to improve sustainability.	Yes	The OEMP will address this issue.	-

Appendix F

Leichardt Council consultation letter

2 March 2016

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Director Environment and Community
Leichardt City Council
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Re: White Bay 6 Marine Park - proposed all weather cover and boat storage - Modification 5 to MP06_0037

Dear Clare,

1 Introduction

White Bay 6 Pty Ltd (the applicant) is seeking to modify major project approval MP06_0037 under Section 75W of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to provide all weather cover to support existing tenancies and approved activities as well as providing for additional boat storage (the proposed modification) at the White Bay 6 Marine Park in Balmain, NSW (the site).

EMM Consulting Pty Limited (EMM) has been engaged by the applicant to prepare an environmental assessment (EA) to accompany the proposed modification.

The applicant recognises Leichardt Council as a key stakeholder in the planning approval process and provides the following briefing of the proposed modification. The applicant would also appreciate the opportunity to meet with yourself and any other relevant Council staff to answer any questions you may have and ensure that any comments are addressed in the EA.

2 Project status

2.1 Major project approval

On 12 June 2009 the Minister for Planning approved MP06_0037 under Part 3A of the EP&A Act. MP06_0037 allowed for:

- marine refuelling facilities consisting of a tank farm, eight fuel dispensers and associated pipe work;
- two buildings, one (Building 1) for commercial maritime tenancies and warehousing supported by a small number of offices and the other (Building 2) for bulk indoor storage of boats and associated marine equipment, and a work shed for the refit and repair of boats;
- a roll-on/roll-off (RoRo) ramp for intermodal freight operations to service Sydney Harbour islands;
- a 75-tonne capacity travel lift with associated of dual ramps;
- grey water and sullage pump facilities;
- a supply point for commercial vessels to collect pre-ordered supplies; and

- eight temporary vessel moorings.

2.2 Subsequent approved modifications

Four subsequent modifications to MP06_0037 have been approved, namely:

- Modification 1 (approved September 2009), which allowed for:
 - a change in the definition of 'the proponent'; and
 - the replacement of Condition F1 – Noise Limits with a new noise limits condition.
- Modification 2 (approved November 2009), which allowed for:
 - Condition A4 – Lease Renewal to be replaced with a new Condition A4 – Time Limited Approval.
- Modification 3 (approved August 2012), which allowed for:
 - an increase in the number of temporary moorings;
 - an increase in the allowed mooring period; and
 - the introduction de-fouling and anti-fouling activities to the site operations.
- Modification 4 (approved March 2014), which allowed for:
 - internal changes to Building 1 to provide caretaker's accommodation within the building;
 - internal changes to Building 2 to facilitate the storage of up to 50 boat storage berths;
 - four new single storey buildings to be used as offices for amenities;
 - an increase in car parking spaces from 30 to 42 with changes to location and layout of parking; and
 - new floating pontoons.

3 Description of the proposed modification

White Bay 6 Pty Ltd is seeking approval to modify MP06_0037 under Section 75W of the EP&A Act to allow for:

- the reorientation and reduction in scale of approved Building 1;
- the provision of an all weather covered structure from the existing gantry, to support existing activities, provide additional dry boat storage for up to 80 boats on portable racks and provide areas to conduct light works on vessels;
- up to 70 boats on portable racks on the site's hardstand area for maintenance and storage (note: this component of the proposed modification has been included to enable the cumulative impacts of current and future storage activities to be assessed);
- a new floating 'finger' pontoon and pile attached to the existing marina;
- an increase in the number of car parking spaces from 45 to 75;

- identification signage; and
- the removal of the existing sunset clause (Condition A4).

The proposed site master plan which identifies the key components of the proposed modification is provided in Attachment A.

4 Justification

The primary purpose of the proposed modification is to provide all weather cover to support existing tenancies and approved activities as well as providing additional boat storage.

A study completed in 2010 by the former NSW Maritime titled NSW Boat Ownership and Storage: Growth Forecasts to 2026 (NSW Maritime, 2010) outlines the significant boat storage shortage that will be faced in the future if facilities do not cater for expected projections of growth in boat ownership in NSW. Overall, the former NSW Maritime predicted that boat growth in NSW is expected to rise to approximately 351,113 by 2026, which is an increase of 117,000 from ownership levels predicted for 2012. By 2026 Sydney Harbour is expected to boast a cumulative growth of 19% from current levels. The subsequent Maritime Policy Agenda (Transport for NSW, 2012) identifies the need to 'encourage development of dry-stack storage facilities on Sydney Harbour'.

To meet the requirement of the Maritime Policy Agenda, the NSW Government prepared the Sydney Harbour Boat Storage Strategy (Transport for NSW, April 2013). This strategy sets a target for the provision of 1,000 to 1,200 new dry stack spaces on Sydney Harbour by 2021, but also notes that there are limited potential sites on the Harbour. The proposed modification will assist in meeting these targets by providing for an additional 150 (ie 80 additional dry boat storage berths and 70 additional outdoor berths) boat storage berths on Sydney Harbour.

The need for dry boat storage is consistent with the operations on the site where there has been increasing demand for boat storage, especially since the commencement of anti-fouling operations.

The Sydney Harbour Boat Storage Strategy also notes that the provision of dry-stack storage is likely to result in additional benefits including the reduced storage of boats on residential streets, which has become an increasing problem for communities living near the water and in coastal areas. In 2014 the NSW Government issued a media release committing to invest \$5 million to build dedicated off street boat trailer parking facilities and bring in measures such as the introduction of a three month parking limit on local streets and the issuing of fines for unregistered boat trailers left on the street. In line with this policy, additional boat storage at the site will provide an opportunity to decrease the number of vessels stored on the street.

In its report, the former NSW Maritime states that 'development of strategies for better integrated planning, management and satisfaction of demand are needed' including the need for 'identification of new sites and funding sources for moorings and other options such as dry stack storage for smaller boats such as dinghies'.

The proposed modification will provide an essential supply of boat storage in a high demand region, particularly considering expected future growth of the Sydney Harbour boating community.

5 Assessment

The EA will include an assessment of the potential environmental impacts of the proposed modification, including detailed assessments of traffic, noise and visual amenity aspects. An overview and outcomes of the assessments are provided below and the full assessments will be included as appendices to and summarised in the EA.

5.1 Traffic and parking

The major roads in the vicinity of the site comprise Victoria Road and Robert Street. The Victoria Road and Robert Street intersection is the primary access point to the major road network which is proposed to be used by all site traffic on both 'cruise ship' and 'non cruise ship' traffic days.

To quantify the existing traffic on the local road network, traffic counts were undertaken for the Victoria Road/Robert Street intersection on both a 'cruise ship' and 'non cruise ship' days. The results of these traffic counts are provided in Table 5.1.

Table 5.1 Summary of peak hourly traffic surveys

Intersection	Time	Total intersection traffic volume in the peak hour	Two way traffic volume on Victoria Road	Two way traffic volume on Victoria Road	Two way traffic volume on Robert Street
Surveyed traffic – with no cruise ship visiting					
Victoria Road/Robert Street	Morning Peak Hour (7.15 to 8.15 am)	5,913 vehicles per hour	4,277 vehicles, north of the intersection	5,862 vehicles, south of the intersection	1,687 vehicles, east of the intersection
Victoria Road/Robert Street	Afternoon Peak Hour (5.00 to 6.00 pm)	7,293 vehicles per hour	5,271 vehicles, north of the intersection	7,199 vehicles, south of the intersection	2,116 vehicles, east of the intersection
Surveyed traffic – with a cruise ship visiting					
Victoria Road/Robert Street	Morning Peak Hour (7.15 to 8.15 am)	5,528 vehicles per hour	3,822 vehicles, north of the intersection	5,482 vehicles, south of the intersection	1,752 vehicles, east of the intersection
Victoria Road/Robert Street	Afternoon Peak Hour (4.15 to 5.15 pm)	5,672 vehicles per hour	3,965 vehicles, north of the intersection	5,561 vehicles, south of the intersection	1,818 vehicles, east of the intersection

The results of the traffic surveys show that there is minimal additional traffic using Robert Street on a cruise ship day as there was only a slight increase of 65 vehicles in the morning peak hour traffic using Robert Street.

The adjacent White Bay Cruise Ship Terminal has public access restrictions for the traffic travelling via Robert Street on cruise ship days, which do not currently apply to the site operations. The access arrangements for the site will continue to allow vehicular access via Robert Street on all days via authorised access identification cards and provision of visitor lists to the Port Authority of NSW gatehouse, including on the days when a cruise ship is visiting the White Bay Cruise Terminal.

5.1.1 Impact on local road network

A comparative summary of the likely additional daily and peak hour traffic movements which would be generated by the proposed modification, in comparison to the existing site traffic usage, is provided in Table 5.2.

Table 5.2 Summary of peak daily and peak hourly traffic volumes generated by the proposed modification

Traffic period	Type of traffic	As originally approved	With approved operations (50 dry boat storage berths)	With potential maximum site utilisation (150 additional boat storage berths)
Daily Traffic	Staff trips	60	54	54
	Fuel deliveries	6	6	6
	Ro-Ro ramp/Boat deliveries	64	4	4
	Storage berths	0	70	280
	All traffic	130	134	344
Additional traffic				210
Peak Hour Traffic	Staff trips	30	27	27
	Fuel deliveries	3	3	3
	Ro-Ro Ramp/Boat deliveries	0	0	0
	Storage berths	0	14	56
	All traffic	33	44	86
Additional traffic				42

The proposed additional boat storage capacity (+150 boats) at the site will generate up to 210 additional daily vehicle movements.

On Robert Street, there will be approximately +2.2 to 2.4% peak hourly traffic increases on either the days with or without a cruise ship visiting. The likely project generated traffic increases from the additional site traffic using Robert Street, (up to 35 additional hourly vehicle movements for +150 additional boats storage berths) are unlikely to have any noticeable road or intersection traffic queuing impacts to the route.

There will be generally less than 0.7% increases in the peak hourly traffic in any direction on the major road network (Victoria Road) to the north-west and south-east of Robert Street, which will have no noticeable effects on the peak hourly traffic flow conditions on the route.

Overall, the traffic safety conditions on the local road access to the site via Robert Street and the major road access intersection where this road meets Victoria Road are acceptable currently and will not be adversely affected by the proposed modification during either construction or operations.

5.1.2 Impact on parking

Additional car parking required for the proposed modification has been calculated in accordance with the former Roads and Traffic Authority (RTA) *Guide to Traffic Generating Developments* (RTA 2012). This car parking standard recommends 0.2 car parking spaces per berth for car parking at a dry boat storage marina.

The total site car parking capacity will need to be increased as follows:

- a total of 45 car parking spaces are required currently, representing 35 spaces for the site employees and visitors and 10 car parking spaces for the existing approved dry boat storage (50 boats) for customers and their guests;
- the proposed additional dry boat storage capacity for 80 more boats will require a further 16 car parking spaces; and
- the additional outdoor boat storage capacity for 70 boats will require a further 14 car parking spaces.

Overall, the requirement for 30 additional car parking spaces results in a future maximum site car parking requirement of 75 car parking spaces. All 75 car parking spaces will be provided on site, as shown on the proposed site master plan (Attachment A).

5.2 Noise

Noise impacts from the proposed modification have been assessed as being largely the same as those predicted for the approved construction and operations on the site.

A noise assessment was undertaken for Modification 4 which included an assessment of operational noise, assuming a maximum storage capacity of 150 dry berths. Modification 4 was revised following public exhibition, which also included a reduction in the storage capacity from 150 to 50 dry berths and limited boat storage within Building 2. However, the noise assessment conservatively assessed the greater number of berths that were originally proposed for both buildings.

The proposed modification will not introduce additional operating plant and equipment from that assessed in the Modification 4 noise assessment. Building 1, where alterations are proposed to facilitate the additional dry berths, is positioned furthest from the nearest residential properties in Grafton Street, Balmain, and is separated and acoustically shielded to a degree by the approved Building 2. On this basis, given that the Modification 4 noise assessment considered 150 dry boat storage berths, it is likely that noise from the proposed modification would be representative of noise levels presented in that assessment which demonstrate that relevant operational noise criteria can be satisfied.

5.3 Visual

A visual impact assessment has been undertaken for the proposed modification utilising three key viewpoints identified as having the most unobstructed views to the site from publicly accessible areas and comprise:

- Viewpoint 1: Public walkway at Balmain East.
- Viewpoint 2: Pirrama Road Park at Pyrmont.
- Viewpoint 3: Northern point of Pirrama Park at Pyrmont.

Photomontages of the site from these viewpoints showing the approved development (and the proposed modification have been prepared and are provided in Attachment B.

The proposed modification will not result in any significant impacts upon the visual amenity from key public viewpoints. The elements of the proposed modification are not substantial in scale and height and will not impact the views from the adjacent Balmain residential area or White Bay towards Anzac Bridge and the Pyrmont skyline. Overall, the proposed modification is in keeping with the visual landscape of the foreshore and the working harbour character of the locality.

6 Conclusion

We hope that this briefing provides an adequate overview of the proposed modification and look forward to the opportunity of discussing it with you further. We will be in contact shortly to arrange a convenient time for a meeting. If in the meantime you have any queries in relation to any of the matters raised in this letter then please don't hesitate to contact the undersigned on 2 9493 9542 or via the email below.

Appendix G

Community information and feedback session - storyboards



Welcome to this evening's community information and feedback session

Welcome

Welcome to this evening's community information and feedback session for the proposed modification to Major Project Approval MP06_0037 to allow for all weather cover and additional boat storage at White Bay Berth 6.

The White Bay 6 Marine Park is pleased to share our vision for the site with the community and your knowledge and views are greatly appreciated.

The purpose of this community information and feedback session is to:

- provide you with information about the proposed modification;
- allow us to understand the needs and views of the local community; and
- provide you with the opportunity to discuss the proposed modification directly with the project team.

The project team

The White Bay 6 Marine Park has engaged independent planning and environmental consultants to prepare an environmental assessment for the proposed modification.

Representatives from the project team are here tonight to help answer your questions and are eager to hear your views.

Please take your time to review the information.



Existing approval

Existing operations at the site are approved under Major Project Approval MP06_0037 which allows for:

- the operation of a marine supply and refuelling facility;
- a number of office leases for commercial marine service businesses and bulk indoor storage space for boats and marine equipment; and
- other ancillary facilities included grey water and sullage pump facilities and temporary vessel moorings.

Four subsequent modifications have been approved to allow for an increase in the number of temporary moorings, an increase in the approved boat storage capacity and administrative changes to the wording of conditions.

The proposed modification

The White Bay 6 Marine Park is seeking approval to modify MP06_0037 to allow for:

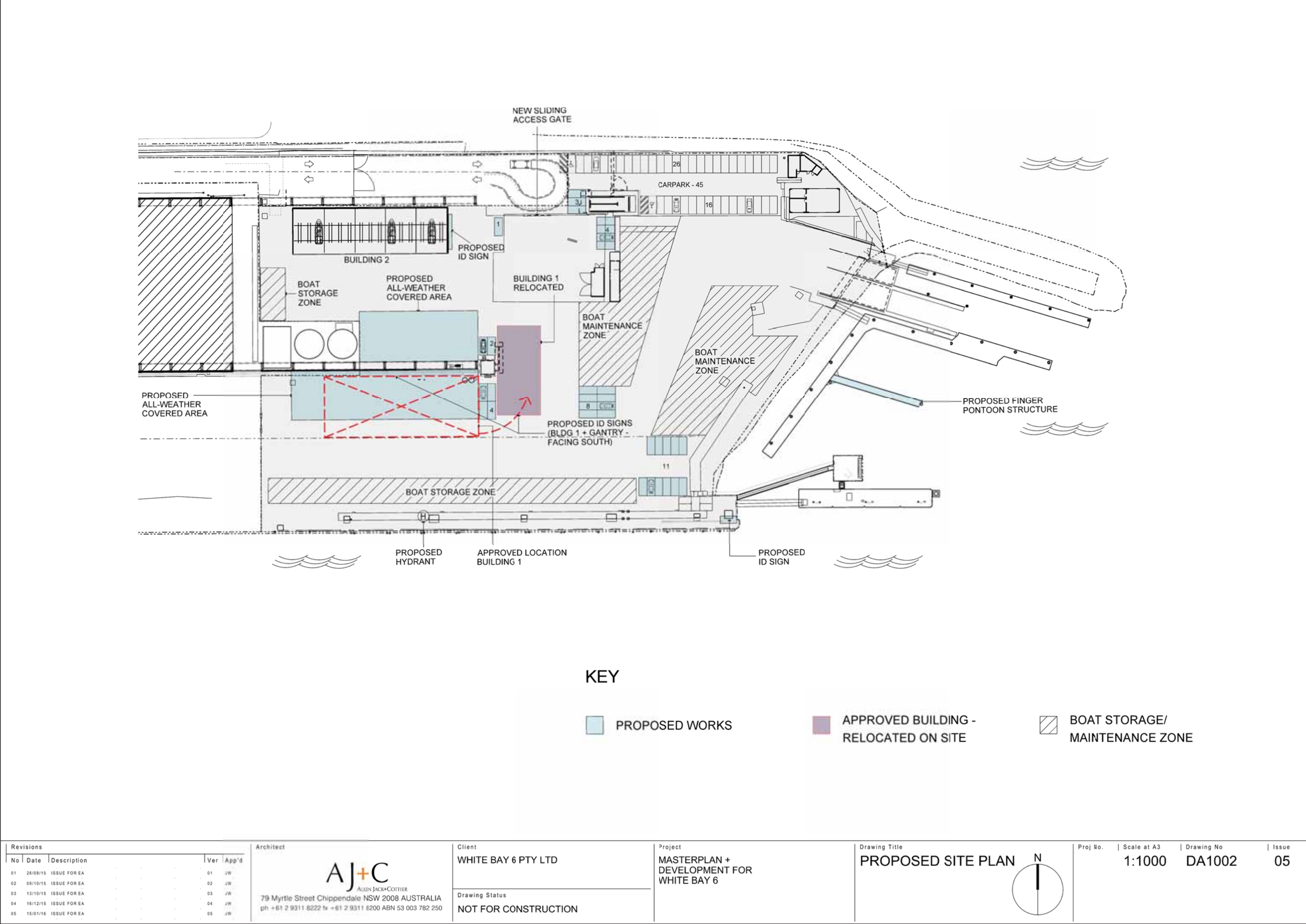
- the reorientation and reduction of an approved building;
- the provision of an all weather covered structure from the existing gantry, to support existing activities, provide additional dry boat storage for up to 80 boats on portable racks and provide areas to conduct light works on vessels;
- boat storage (up to 70 boats) on portable racks on the site's hardstand area;
- a new floating 'finger' pontoon;
- an increase in the number of car parking spaces from 45 to 75; and
- identification signage.

The components of the proposed modification are shown on the following board.

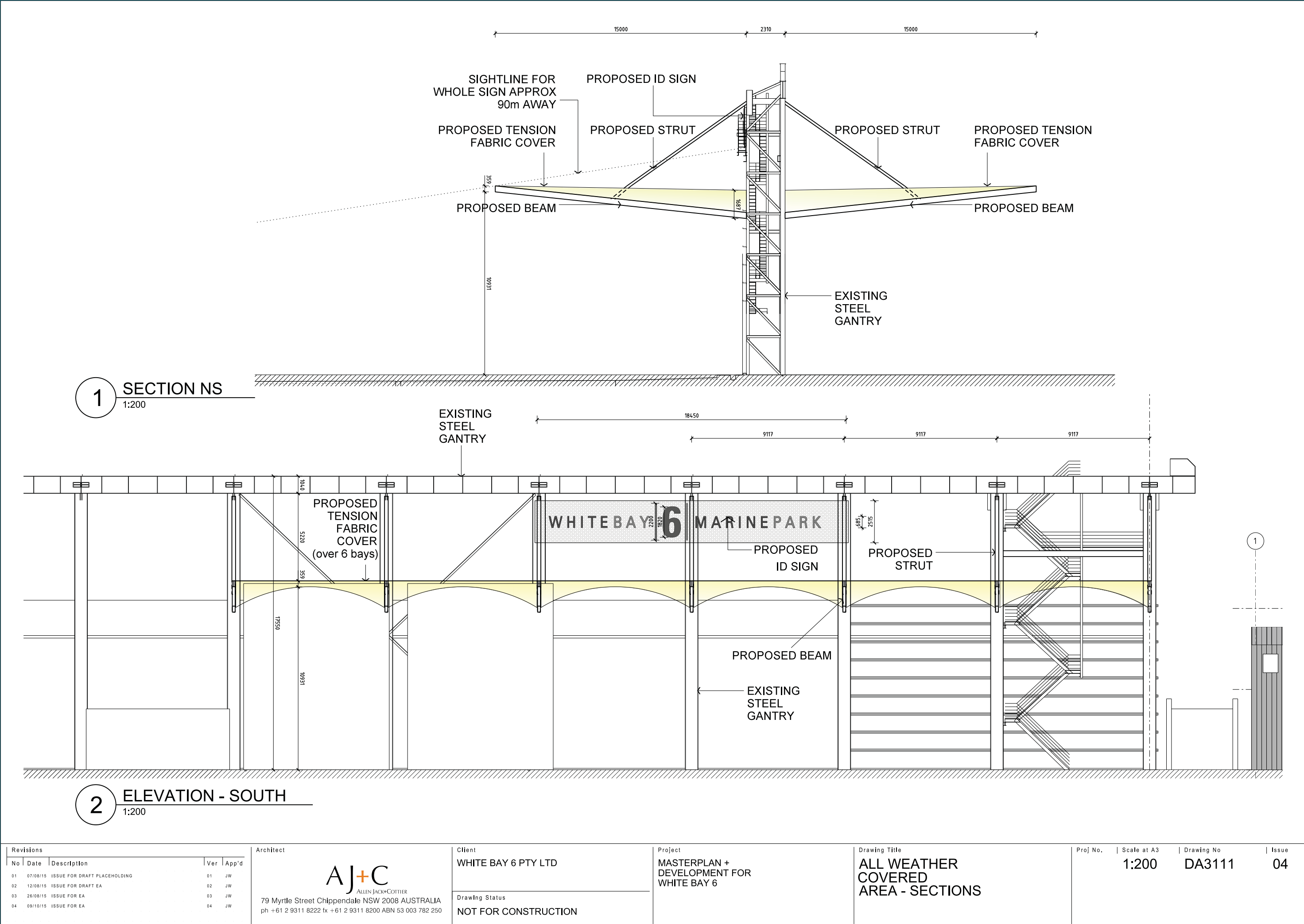
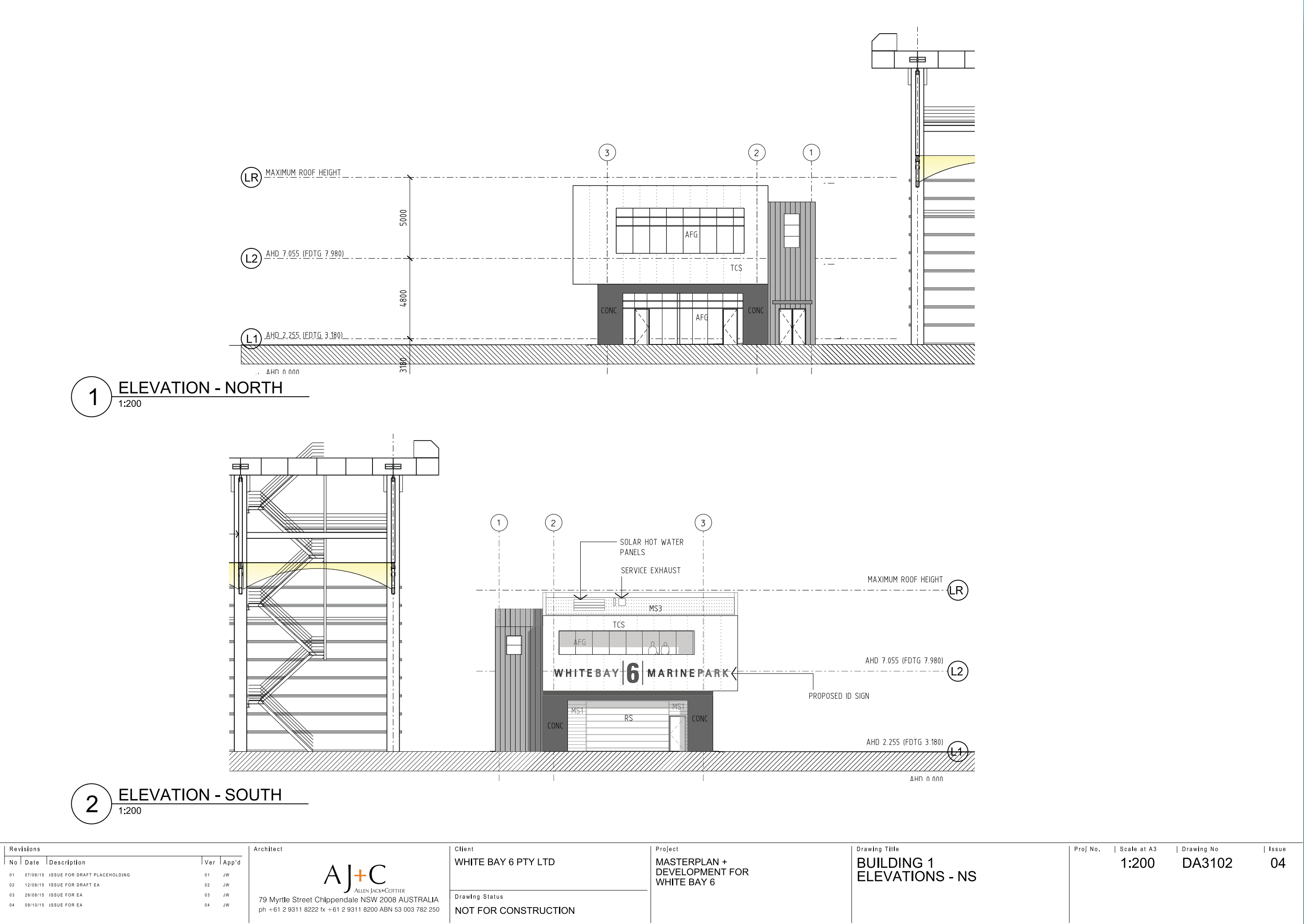
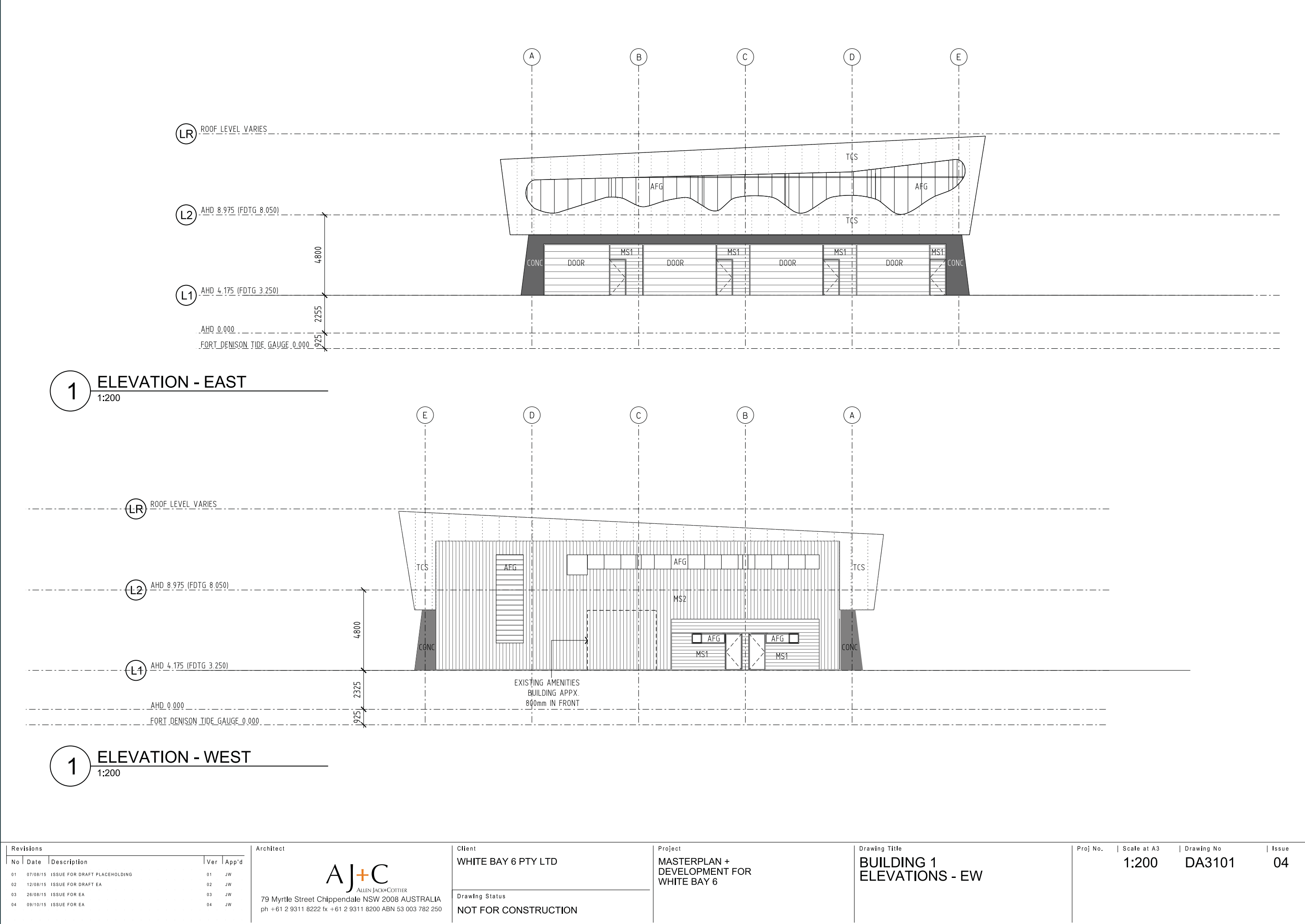
Components of the

proposed modification

PROPOSED SITE LAYOUT PLAN



SECTIONS AND ELEVATIONS



Approval process

Stage 1

Permission to lodge from the Port Authority of NSW (PANSW)

Consultation with PANSW and preparation of a draft environmental assessment (EA) to address specific PANSW requirements.

We are here

PANSW requested agency briefing and community information session.

Stage 2

Environmental Assessment

Finalise EA and lodge with the NSW Department of Planning and Environment (DP&E) for assessment in accordance with relevant local and stage planning policy and guidelines.

*Estimated timeframe for lodgement of EA:
April 2016*

Stage 3

Public exhibition and consideration of submissions

DP&E to put EA on public exhibition for a minimum period of 28 days.

Individuals and organisations can make submissions to DP&E during the public exhibition period.

The White Bay 6 Marine Park will respond to issues raised in the submissions and, if required, the EA will be updated accordingly.

*Estimated timeframe for lodgement of EA:
April 2016*

Stage 4

Determination

The DP&E will provide an assessment report of the proposed modification to the Minister for Planning (or delegate) for consideration.

The Minister for Planning (or delegate) will determine whether the proposed modification should be approved or refused.

*Estimated timeframe for determination of the proposed modification:
August 2016*

Approval process

Feedback

The community will be consulted during the public exhibition of the EA. If you would like to provide feedback tonight please fill out one of the feedback forms. We value your comments and insights into the proposed modification. If you would like more time to consider your response, please return your feedback form to us by Friday 23 March via one of the following:

Post: PO Box 21 St Leonards NSW 1590 using the reply paid envelope
Fax: (02) 9493 9599 (please fax both sides of the form)
Email: jarnold@emmconsulting.com.au

We thank you very much for taking the time to attend tonight's community information and feedback session.

Appendix H

Photomontages



ORIGINAL 2012



CURRENT APPROVED AND BUILT



PROPOSED

CERTIFIED PHOTOMONTAGE
No : PMC099202- Refer to attached Certificate.

Certifier: Cameron McFadzean B Arch BA (Arch) IES ABSA AAAI

NOTE:
Photomontage perspective based on camera data, Laser Survey position and survey photomatch.
SURVEY: Hard & Forester Ref 115500503, 9.07.12
Camera Data: Daylight: 18.04.13 3pm (35mm efl)
P 01 PUBLIC WALKWAY (East Balmain)
P01.1 120 mm lens (frame2)
P01.2 24 mm lens
P 02 Pirrama Road Park
P02.1 32 mm lens (frame5)
P 03 Pirrawma Park - NE Point (Sculptures)
P03.1 32mm lens (frame6)

AUGUST 2015 VERSION

EXISTING PHOTO - Original Photographed conditions 07.2012
DA CONDITIONS - IMAGE representing DA DESIGN CONDITIONS
PROPOSED - IMAGE showing proposed 2015 design conditions

DECEMBER 2015 VERSION

PROPOSED - As above PLUS added Fuel Caltex Sign, 9m high

CAMERA LOCATION MAP



P01.1 POSITION

TITLE
PROPOSED PHOTOMONTAGE
as viewed from PUBLIC SPACE

PROJECT
White Bay 6 Marine Park
ROZELLE

CLIENT
CLIENT: Mr B McMullen
WHITE BAY 6 MARINE PARK

DESIGN / DATA



79 Myrtle Street Chippendale NSW 2008 AUSTRALIA
ph +61 2 9311 8222 fx +61 2 9311 8200 ABN 53 003 782 250

REVISED DESIGN:
AJ+C ARCHITECTS -
3D File Aug 2015

DEC 2015 ISSUE :
Added Caltex Sign 9m High

PAGE No : P02
DATE : Dec. 15
VERSION : 02-Dec 15
REF : 0992

VISUALISATION / 3D
DENEb DESIGN
PO BOX 539 MONA VALE 1660
Ph 02 9997 7480 Fx 9940 0772
info@denebdesign.com.au
www.denebdesign.com.au





ORIGINAL 2012



CURRENT APPROVED AND BUILT

CERTIFIED PHOTOMONTAGE
No : PMC099202- Refer to attached Certificate.

Certifier: Cameron McFadzean B Arch BA (Arch) IES ABSA AAAI

NOTE:
Photomontage perspective based on camera data, Laser Survey position and survey photomatch.
SURVEY: Hard & Forester Ref 115500503, 9.07.12
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P01.1 120 mm lens (frame2)
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P 02 Pirrama Road Park
P02.1 32 mm lens (frame5)
P 03 Pirrawma Park - NE Point (Sculptures)
P03.1 32mm lens (frame6)

AUGUST 2015 VERSION

EXISTING PHOTO - Original Photographed conditions 07.2012
DA CONDITIONS - IMAGE representing DA DESIGN CONDITIONS
PROPOSED - IMAGE showing proposed 2015 design conditions

DECEMBER 2015 VERSION

PROPOSED - As above PLUS added Fuel Caltex Sign, 9m high



PROPOSED



LOCATION

CAMERA LOCATION MAP

P02.1 POSITION

TITLE
PROPOSED PHOTOMONTAGE
as viewed from PUBLIC SPACE

PROJECT
White Bay 6 Marine Park
ROZELLE

CLIENT

CLIENT: Mr B McMullen
WHITE BAY 6 MARINE PARK

DESIGN / DATA

79 Myrtle Street Chippendale NSW 2008 AUSTRALIA
ph +61 2 9311 8222 fx +61 2 9311 8200 ABN 53 003 782 250

REVISED DESIGN:
AJ+C ARCHITECTS -
3D File Aug 2015

DEC 2015 ISSUE :
Added Caltex Sign 9m High

PAGE No : P03
DATE : Dec. 15
VERSION : 02-Dec 15
REF : 0992

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info@denebdesign.com.au
www.denebdesign.com.au



ORIGINAL 2012



CURRENT APPROVED AND BUILT



PROPOSED

LOCATION



CERTIFIED PHOTOMONTAGE
No : PMC099202- Refer to attached Certificate.

Certifier: Cameron McFadzean B Arch BA (Arch) IES ABSA AAAI

NOTE:
Photomontage perspective based on camera data, Laser Survey position and survey photomatch.
SURVEY: Hard & Forester Ref 115500503, 9.07.12
Camera Data: Daylight: 18.04.13 3pm (35mm efl)
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P01.2 24 mm lens
P 02 Pirrama Road Park
P02.1 32 mm lens (frame5)
P 03 Pirrawma Park - NE Point (Sculptures)
P03.1 32mm lens (frame6)

AUGUST 2015 VERSION

EXISTING PHOTO - Original Photographed conditions 07.2012
DA CONDITIONS - IMAGE representing DA DESIGN CONDITIONS
PROPOSED - IMAGE showing proposed 2015 design conditions

DECEMBER 2015 VERSION

PROPOSED - As above PLUS added Fuel Caltex Sign, 9m high

CAMERA LOCATION MAP

P03.1 POSITION

TITLE
PROPOSED PHOTOMONTAGE
as viewed from PUBLIC SPACE

PROJECT
White Bay 6 Marine Park
ROZELLE

CLIENT
CLIENT: Mr B McMullen
WHITE BAY 6 MARINE PARK

DESIGN / DATA

79 Myrtle Street Chippendale NSW 2008 AUSTRALIA
ph +61 2 9311 8222 fx +61 2 9311 8200 ABN 53 003 782 250

REVISED DESIGN:
AJ+C ARCHITECTS -
3D File Aug 2015

DEC 2015 ISSUE :
Added Caltex Sign 9m High

PAGE No : P04
DATE : Dec. 15
VERSION : 02-Dec 15
REF : 0992

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info@denebdesign.com.au
www.denebdesign.com.au

Appendix I

PANSW Permission to Lodge

9 June 2016

Tim Crosland
Director
White Bay 6 Pty Ltd

c/o

John Arnold
Associate – Manager of Planning, Sydney
Ground Floor, Suite 01
20 Chandos Street
St Leonards NSW 2065

Dear John,

Permission to Lodge – Section 75W Modification Application – Proposed all weather cover and additional boat storage

Port Authority of New South Wales grants White Bay 6 Pty Ltd permission to lodge with the Department of Planning and Environment the Section 75W modification application (MOD5) to MP06_0037 for the proposed all weather cover and additional boat storage.

Permission to lodge is granted, subject to the following conditions:

1	Development Application	The documentation to be lodged is that which was submitted to and reviewed by the Port Authority of NSW (Port Authority), being the Section 75W Application and Environmental Assessment, dated 16 May 2016 (Version 1 Final), prepared by EMM Consulting on behalf of White Bay 6 Pty Ltd.
2	Amendments	Any amendments to the modification application or supporting documentation reviewed by the Port Authority in issuing permission to lodge as landowner (whether or not the amendments are made prior to lodgement or following lodgement) must be submitted to the Port Authority for review and/or comment. The Port Authority's consent for the amended and/or new documentation being lodged with the Consent Authority is required prior to submission.
3	Other Documentation	a) Any management plans, reports, studies or other documentation required to be submitted to the Consent Authority as part of the development's conditions of approval are to be submitted to the Port Authority for review and comment prior to submission to the Consent Authority. b) The following documentation is to be submitted to the Port Authority for review, comment and agreement at least two (2) weeks prior to commencement of construction, or other time

SYDNEY

ABN: 50 825 884 846

www.portauthoritynsw.com.au

YAMBA

PO Box 143
Yamba NSW 2464
T: 61 2 6646 2002

NEWCASTLE

PO Box 663
Newcastle NSW 2300
T: 61 2 4985 8222

SYDNEY

PO Box 25
Millers Point NSW 2000
T: 61 2 9296 4999

PORT KEMBLA

PO Box 89
Port Kembla NSW 2505
T: 61 2 4275 0100

EDEN

PO Box 137
Eden NSW 2551
T: 61 2 66461596

		frame as agreed with the Port Authority: - Construction Environmental Management Plan - Construction Traffic Management Plan - Construction and Staging Report c) The following documentation is to be submitted to the Port Authority for review, comment and agreement prior to the commencement of the relevant stage of operation: - Operational Environmental Management Plan - Operational Traffic Management Plan
4	Construction Environmental Management Plan (CEMP)	A CEMP for the project must be prepared and outline the environmental management practices and procedures to be implemented during construction, and include: a) a description of all activities to be undertaken on the site during construction of the project, including an indication of stages of construction, where relevant; b) statutory and other obligations required to be fulfilled / met during construction, including all approvals, consultations and agreements required from authorities and other stakeholders; c) details of how the environmental performance of the construction works would be monitored, and what actions would be taken to address identified adverse environmental impacts; d) a description of the roles and responsibilities for all relevant employees involved in the construction of the project; and e) complaints handling procedures during construction and site preparation.
5	Acid Sulfate Soils	The CEMP must detail measures to manage potential acid sulfate soils encountered during any excavation works.
6	Waste	The CEMP must detail measures to manage waste generated during construction works.
7	Construction Traffic Management Plan (CTMP)	A CTMP for construction activities relevant to this modification application must be prepared in accordance with Safe Work Australia Guidelines <i>General Guide for Workplace Traffic Management</i> and the <i>Guide for Construction Work</i> , to the satisfaction of the Port Authority of NSW.
8	Construction and Staging Report	A Staging and Construction Report is to be submitted to the Port Authority prior to the commencement of the next stage/phase of construction. The Staging and Construction Report must clearly describe the proposed stages and scope of works, identify how conditions and commitments will be addressed, and provide justification on why

		conditions and commitments are not or are partially applicable. The Staging and Construction Report is to apply to the site development as a whole including the proposed modification to MP 06_0037, if approved.
9	Harbour Master Approval	Permission to disturb the sea bed under clause 67 of the <i>Management of Waters and Waterside Lands Regulations – NSW</i> must be obtained from the Harbour Master prior to the commencement of any waterside construction works.
10	Dilapidation Report	a) A dilapidation report of the general area proposed for construction works is to be undertaken prior to commencement of construction / installation and agreed to by the Port Authority. This report is to be prepared by a suitably qualified person. b) At the conclusion of works, the same area is to be inspected with reference to the dilapidation report to determine if any damage was caused to the Port Authority's infrastructure as a result of the works.
11	Engineering Certifications and On-going Maintenance	a) Verification of the loadings for the building and plant/machinery in relation to the wharf structure is required to be provided to the Port Authority for review prior to the commencement of construction / installation. b) Engineering certification of the proposed attachment of the all-weather structure to the gantry is required to be provided to the Port Authority for review prior to the commencement of construction / installation. c) Clarification for the responsibility of any repairs and on-going maintenance of the gantry structure used for the attachment of the all-weather structure is to be discussed and agreed with the Port Authority prior to commencement of construction / installation.
12	Fire Safety Study	The revised Fire Safety Study (REV 6 – 22 September 2015) is to be approved by Fire & Rescue NSW in accordance with Condition C1 of MP 06_0037 prior to the commencement of construction.
13	Approval to commence construction	Should development approval be granted for this proposal by the Consent Authority, approval to commence construction works is to be obtained from Port Authority's Property & Commercial Department prior to works commencing.
14	Drawings	Work as executed drawings in CAD format and certification documents must be provided to Port Authority following completion of construction works.

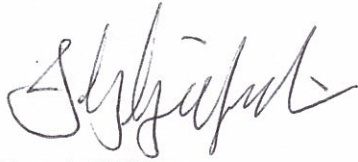
15	Operational Environmental Management Plan (OEMP)	An OEMP for the facility including modifications and additions to this development must be prepared and describe the environmental management framework, practices and procedures that will be followed during operations, and include: i) identification of all statutory and other obligations required to be fulfilled / met in relation to operation of the development, including all approvals, licences and consultations; ii) a description of the roles and responsibilities for all relevant employees involved in the operation of the development; iii) overall environmental policies, principles, performance measures and management procedures that will be applied to the operation of the development; and iv) all existing and approved environmental management measures and procedures for the site and any additional measures and/or procedures to be implemented for the proposed development.
16	Approval to commence operations	Prior to commencement of operations on-site relevant to this modification application, approval is to be obtained from Port Authority's Property & Commercial Department prior to operations commencing.
17	Parking	No vehicular parking is allowed within 30m of the White Bay 5 boundary along the wharf.
18	Damage	Any damage to buildings, pavements or other infrastructure is required to be repaired at no cost to, and to the satisfaction of, the Port Authority.
19	Compliance	Evidence of compliance with Conditions of Approval and Permission to Lodge requirements is to be submitted to the Port Authority's Property & Commercial Department within two weeks of a request by the Port Authority, or other time frame as agreed with the Port Authority.

This permission is valid for six (6) months from the date of this letter and can not be transferred to another applicant.

Port Authority of New South Wales is giving permission for you to lodge the modification application and as such, the application could still be refused by the Consent Authority.

If you have any questions regarding this letter please do not hesitate to contact Ryan Bennett,
Senior Planning and Sustainability Manager on 9296 4674.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Grant Gilfillan', written in a cursive style.

Grant Gilfillan
CEO and Director



www.emmconsulting.com.au

SYDNEY
Ground Floor, Suite 1, 20 Chandos Street
St Leonards NSW 2065
T 02 9493 9500 F 02 9493 9599

NEWCASTLE
Level 5, 21 Bolton Street
Newcastle NSW 2300
T 02 4927 0506 F 02 4926 1312

BRISBANE
Suite 1, Level 4, 87 Wickham Terrace
Spring Hill Queensland 4000
T 07 3839 1800 F 07 3839 1866