DRAFT CONSTRUCTION MANAGEMENT PLAN

d'Albora Marinas - The Spit, NSW

Hamptons

Sydney - Melbourne - New Zealand
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PROJECT PARTICULARS

Project No.:	2006-038
Project Address:	The Spit, Mosman
Local Government Area:	Mosman Municipality
Client:	Ardent Leisure Pty Ltd
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1 INTRODUCTION

Hamptons Development Group Pty Ltd (Hamptons) has been retained by Ardent Leisure Group, trading as d'Albora Marinas (herein referred to as d'Albora), to prepare a Construction Management Plan (CMP) to accompany a **Part 3A** development application. The development application relates to alterations and additions to an existing commercial marina facility, operated by d'Albora, and located at The Spit, Mosman.

As such, this CMP has been prepared to address the impacts of constructions works, as well as associated demolition and excavation works. This CMP sets out the key impact mitigation and/or minimisation mechanisms which will be implemented during the demolition, excavation and construction periods, as well as the various management procedures, in order to protect against unacceptably high levels of environmental and community disturbance.

It must be noted that the preparation of this CMP has been based on industry practice and recommendations put forward by the consultant team, as part of their environmental studies (refer to the **Environmental Assessment**, prepared by Hamptons, dated May 2010).

2 CONSTRUCTION PARTICULARS

The construction works, including demolition and excavation works will be undertaken in consultation with the relevant statutory authorities, as required. These may include:

- NSW Workcover Authority;
- NSW Maritime Authority;
- Mosman Council;
- Sydney Water;
- NSW Roads and Traffic Authority (RTA); and
- Energy Australia.

The following Sections outline the Construction Particulars, as relevant to the subject application.

2.1 Construction Hours

It is proposed to undertake construction, demolition and excavation works between the following hours:

- **Monday to Friday:** 7:00am to 6:00pm; and
- **Saturday:** 8:00am to 1:00pm.

No work will be undertaken on Sundays and Public Holidays.

2.2 Scope of Construction Activities

The proposed alterations and additions will involve the following scope of construction activities:

- Demolition of the existing fixed jetty at N-Arm, and its replacement with an expanded and modernised marina system, to match the existing floating sections of the marina;
- Replacement of D-Arm with a new floating berth configuration attached to an expanded over-water hardstand area, to the north of the existing facility;
- New floating marina berths at the T-heads of A-, B- & C-Arms, and new fingers on the western side of C-Arm;
- New floating pontoons will include a new fuel berth and sewage pump-out facility, and incorporate a new travel lift facility;
- Replacement of the existing slipway, located on the northern side of the building, with a new hardstand area;
- Relocation of the fuel berth and sewerage pump out, and decommissioning of the existing underground storage tanks. The new underground storage tanks will be located below the existing on-grade car parking area;
- Demolition of the existing marina complex and construction of a new building to enable the use of two floors; and
- Replacement of the existing piling beneath the building for additional structural support.

It is noted that no dredging is required to facilitate the new marina facility, with adequate existing water depths.

2.3 Connection of Services

Advice from suitability qualified engineers will be sought at the Construction Certificate stage, in relation to the following infrastructure requirements during the construction period:

- Sewer Drainage;
- Stormwater Drainage;
- Domestic Water and Fire Services; and
- Electrical.

In addition, the relevant authority applications, fees and the like will be sought in relation to the above matters.

2.4 Construction Requirements and Materials Handling

As a result of the site being positioned on a busy arterial road, being Spit Road, the delivery of materials and supplies will be programmed to minimise disruption of traffic flow along this roadway.

Trade delivery and suppliers will be coordinated to ensure that materials are provided outside of peak traffic periods.

In addition, the proposed works will require, at minimum, the use of mobile cranes. These will predominately operate within the site boundaries, where practical. Should permits required from Mosman Council or the RTA, then such permits will be obtained accordingly.

3 PEDESTRIAN AND VEHICULAR TRAFFIC MANAGEMENT

As part of the pedestrian and vehicular traffic management, consultation will be undertaken with Mosman Council, the RTA and the NSW Police, when required.

3.1 Pedestrian Management Method

Pedestrian movement management during the construction period of the development will include the following aspects:

- Pedestrian movement and pathways during the construction period will not be adversely affected by the development, through the implementation of appropriate and safe mechanisms;
- Pedestrian movement mechanisms will include the use of accredited traffic controllers when construction vehicles enter and exit the site and, where required, the use of temporary pedestrian pathways;
- Protection for pedestrians will be provided in accordance will all the relevant statutory requirements and will involve the use of perimeter fencing; and
- The provision of night-lighting, protective barriers and, when required, traffic barriers, will be provided.

3.2 Vehicular Management Method

Vehicular traffic management during the construction period of the development will include the following:

- All construction vehicles will enter and exit the site *via* Spit Road. This will be coordinated to ensure that disruption to traffic flow along the Spit Road is minimised;
- All crane operation and delivery areas will be located directly opposite the existing building on the site, within the northerly adjoining area;
- Waste bin, delivery access and removal to and from the site will be the same as the construction vehicles, being and entry from the south and depart to the north;
- All traffic control devices and personnel shall be set-up and controlled in accordance with the relevant *Australian Standards* and Workcover authority practices; and
- Workers will be encouraged to utilise public transport to and from the site.

4 DEMOLITION AND EXCAVATION – WATERWAY

It is acknowledged that the Department of Environment and Climate Change require details on the bulk fuel storage, vessel refuelling, fuel/sewage pump out berths, and the protection measures to be adopted during the construction and operation of the facilities. In addition, it is acknowledged that the NSW Department of Planning also require a detailed description of the piling techniques and the impact on the sea floor; and details of the wharf demolition methods as well as the management of demolition waste.

Such details will be made available upon the appointment of a Builder and provided at the Construction Certificate stage.

It must be noted that all demolition and excavation work within the waterway will be undertaken in accordance with the relevant *Australian Standards*, industry practice and statutory requirements. In addition, all activities involved on the waterway during the construction period will be conducted with due diligence and care in order to ensure that no undue damage occurs. Specifically, impacts to the seabed will be minimised where possible and direct physical impacts to the western stone seawall will also be avoided.

5 DEMOLITION AND EXCAVATION – LAND

Demolition and excavation on-land will, at a minimum, involve the following aspects:

- All existing piles found to be structurally deficient will be cut short below water level, but not at sea floor level. It is anticipated that approximately 30% of the existing piles will require this work.
- The design and erection of hoardings will comply with the relevant Mosman Council's policy.
- A complete scaffold system will be erected along the perimeter of the project. This will include a shade cloth barrier to prevent failing debris or dust to level the confines of the site.
- Prior to the commencement of any works, liaison and correspondence with the relevant authorities and agencies will ascertain the location and position of all existing services. All the relevant authorities and agencies will be consulted and employed to provide accurate information in this regard.
- Each service which will be affected by the construction work will be disconnected, capped off, removed, altered or re-directed, as necessary for the completion of the works.
- All excavation below the water table will require shoring support and will be undertaken accordingly, as required.
- A detailed dilapidation survey of the neighbouring Spit Rd (northern lane and footpath adjacent to the site and 20m to the south) and park (from site boundary to 20m south) will be undertaken, with an emphasis on pavement condition, sea wall and structural characteristics.
- The final design of footings will be in accordance with any structural engineering requirements.
- For excavation conducted near the boundary of the site, below the water table or any other areas where batter slopes cannot be utilised, temporary sheet piling or geocast walls with soil anchors may be utilised to support excavation.

In addition, archaeological monitoring and documentation by a qualified archaeologist will be conducted during the following components of the proposed development:

- Subsurface excavation associated with the installation of the new underground fuel storage in order to ascertain whether any remains of the former tram lines / balloon loop (1910s) survives and to document any archaeological features and / or deposits that may be encountered;
- Demolition and removal of the northern slip in order to examine and record any remains of earlier slip constructions or associated artefact deposits that may be present;
- Any land-based subsurface excavation that may be associated with the proposed redevelopment of the boatshed building in order to ascertain whether any remains of the earlier boatsheds survives and to document any archaeological features and / or deposits that may be encountered.

Such archaeological monitoring would be of a minor scale, involving the presence of an archaeologist on site during the subsurface excavation in these areas. Recording would be conducted by the archaeologist as the earthworks are carried out by relevant contractors. It is anticipated that such monitoring would require an archaeologist on site for a few days only.

6 WATERWAY AND LAND REMEDIATION METHOD

The proposed development will involve remediation works during the construction period. As such, at the Construction Certificate stage, the appropriate mapping will be provided, which identifies the specific areas and processes of remediation. This will also be accompanied by a Remediation Action Plan (RAP) that will cover the removal of the existing underground storage tanks.

The RAP will be prepared in accordance with the relevant Environmental Protection Authority Guidelines and Regulations, as well as any conditions of consent and Workcover requirements.

In addition, the following regulations will be implemented during the decommissioning of the existing underground storage tanks, and the installation of the new storage system:

- The new storage system must be designed and installed by a duly qualified person;
- An equipment integrity test of the system must be undertaken and certified by a suitably qualified person;
- The new storage system must include mandatory pollution protection equipment and groundwater monitoring wells; and
- For sites where a system is to be decommissioned, a validation report for the storage site must be served to the relevant authority.

7 STORM AND WASTE WATER MANAGEMENT PLAN

A storm and waste water management plan will be in place throughout the construction period. The purpose of such a plan is to ensure that storm and waste water run-off is managed and there are no off-site impacts, particularly to the waterway.

All required construction works shall comply with the following guidelines and requirements pertaining to storm and waste water management:

- Landcom *'Managing Urban Stormwater' handbook (2004);*
- Mosman Council regulations and controls;
- Conditions of Consent;
- Environmental Protection Legislation; and
- Clean Waters Act 1970.

A storm and waste water management plan will be supplied at the Construction Certificate stage and will be prepared in consultation with the following parties:

- Environmental Protection Authority;
- NSW Maritime;
- NSW Department of Land and Water Conservation; and
- Mosman Council.

8 WASTE MANAGEMENT METHOD

The purpose of waste management during the construction period is to ensure that resources are conserved and waste is processed responsibly through the minimisation of waste generation and maximising recycling of Materials, where possible.

Specifically, waste management during the construction period will involve the following:

- Selection of all materials will be undertaken by the project architects and will be accurately calculated to minimise waste from over ordering;
- Materials ordering will aim to minimise packaging;
- Material Safety Data Sheets area to accompany all materials delivered to the site, to ensure safe handling and storage procedures are implemented. This will assist in minimising waste through material damages and theft;
- Waste generation from construction activities will be minimised, reused or recycled where practical;
- Recycle materials will be specified where practical;
- Dedicated and secure containers will be provided by an approved waste handling company for non-recyclable waste;
- Where practical, dedicated recycling containers will be provided during the construction period by an approved company for steel, paper/cardboard, glass, concrete/brick, and plasterboard.

9 NOISE QUALITY MANAGEMENT

The NSW Department of Environment, Climate Change and Water (DECCW) recently issued an *Interim Construction Noise Guideline* which sets criteria for various types of construction activities regulated by DECCW. As such, where the construction period is likely to be over 26 weeks, a construction noise goal, based on an intrusive noise criterion of background + 5dBA, will be adopted. Table 01 below presents applicable noise criteria for this project.

Table 01: Construction Noise Criteria

Receiver Area	Management Noise Goals -dBA	
	Recommended	Maximum
Seaforth	60	75
Clontarf	59	75
Beauty Point	59	75

Source: Wilkinson Murray, 2010

There are two construction areas that have the potential to generate construction noise, being on-water and land-based construction works. Predications from Wilkinson Murray indicate that in the case of surrounding residential receivers, noise levels from construction are expected to comply with established construction noise criteria. However, the following aspects will be implemented during the construction period:

- Machines used on site will be maintained in good condition, particularly considering the exhaust system on diesel powered machines, to minimise noise emissions;
- Excessively loud machines will be repaired, modified or removed from the site;
- Sound pressure level measurements will be conducted on all plant prior to works commencing on-site;
- The appointed project manager will be available to respond to questions and complaints from the community in a professional, considerate and timely manner; and
- Reversing alarms will be controlled to the minimum sound level consistent with safety by replacing, shielding or relocating the alarm unit on noisy machines.

The full Wilkinson Murray report accompanies this development application.

In addition, the site manager, during the construction period will ensure that all employees and sub-contractors are advised of the procedures pertaining to noise attenuation, during their site specific safety induction session. The induction will:

- Explain employee's responsibilities regarding noise attenuation;
- Explain the restrictions of the usage of any equipment or device on site;
- Notify approved hours of work;
- Ensure that the employee are skilled in the tasks to be performed;
- Record certificates of competency to induction records; and
- Regular meetings to identify whether the noise attenuation procedures established are being abided and followed by all site personnel.

10 AIR QUALITY MANAGEMENT

It is acknowledged that air quality in the vicinity of the site, during the construction period, may be affected by the following demolition and construction activities:

- Removal of buildings;
- Breaking up of concrete;
- Vehicles travelling on site;
- Wind erosion of bare earth surfaces; and
- Excavation of the site.

As such, the purpose of Air Quality Management is to ensure that such activities do not lead to unacceptably high levels of dust or other air pollution.

As the site is at sea level, there will be comparatively little excavation and associated dust generation with this stage of the project. However, to mitigate the generation of excessive quantities of dust the following measures will be implemented during demolition and construction activities:

- The use of water sprays across the site to suppress dust as required;
- Cleared areas and internal access routes would be kept to a minimum;
- All dry spoil entering and leaving the site would be securely covered with a tarpaulin or contained within bins; and
- Designated vehicle wash down areas would be used to remove soiled material from vehicles prior to them leaving the site.

In addition, the following measures will be implemented as part of the overall air quality management:

- All construction plant, equipment and vehicles will be properly maintained and operated so as to alleviate excessive exhaust emissions;
- All dust generating construction activities are to cease during high wind conditions unless such operations can be controlled by localised watering or other control means;
- The burning of waste materials and the lighting of fires will be strictly prohibited at the site;
- Where practical, materials and processes that are non-toxic will be employed to minimise possible harmful affects to air quality; and
- Where practical, any ozone depleting gases in building services installations will be removed prior to demolition works.

It should be noted that the closest residential receivers from the site are approximately 300 metres, and at this distance, Wilkinson Murray consider it is unlikely that there would be any air quality impacts from construction and demolition on the site. The full Wilkinson Murray report accompanies this development application.

11 EROSION AND SEDIMENT CONTROL METHOD

The purpose of outlining the erosion and sediment control method during the construction period is to ensure that there are no adverse effects to the surrounding roads, footpaths, waterways and natural environments.

Martens and Associates have identified the suitable locations of sediment and erosion control measures which are to be provided on the site (refer to the Engineering Services Report which accompanies the development application). Such control measures for the site include:

- **Mooring facilities;** it is understood that the likely foundation solution will be suspended concrete on driven piles. Construction by driven piles into the seabed will prevent dredging and suspension of marine sediments and the oxidation of any Potential Acid Sulphate Soils present.

- **Containment booms;** All construction works within Middle Harbour shall be done with a containment boom and silt net surrounding the works area. This will reduce sedimentation impacts during berth construction and reduce the impacts of an accidental spill in the works area by containing any potential pollutants.

- **Sediment fences and straw bales;** Sediment fencing and straw bales will be installed above the high water mark in the areas where works to upgrade the existing marina are to take place.

Stormwater flows are to be redirected around the construction site to prevent the transportation of sediments into the waterway. This shall also ensure construction materials and waste do not discharge into Middle Harbour during periods of rainfall.

All sediment fencing and straw bales shall be maintained and monitored on a regular basis and after periods of extended rainfall. Any damaged fencing shall be replaced immediately to prevent sedimentation of surrounding waterways.

Sediment fencing and straw bales locations and typical specifications are provided in the Engineering Services Report, prepared by Martens and Associates, which accompanies this application.

12 TERRESTRIAL FLORA AND FAUNA PROTECTION

The purpose of terrestrial flora and fauna protection is to ensure that there are no adverse impacts to the surrounding natural land ecosystems during the construction period.

In this manner, the following measures will be implemented:

- Disturbed soil is to be stabilised as soon as practicable;
- All vegetation adjoining the development area should be protected by the erection of an exclusion fence clearly defining the development area. Such fencing is to stay in place until such time as construction works are finished;
- Appropriate sediment control measures must be implemented down slope of the proposed development to help reduce the amount of particle matter entering the waterway below (see **Chapter 10**);
- Post construction, all residual soil, imported fill and other surplus material are to be removed from the site;
- No excess material will be deposited in the adjoining reserve areas;
- Appropriate machine hygiene should also be adhered to. Any machinery used in a weed infested areas should be cleaned prior to its use in relatively weed-free areas;
- Storage areas and access routes will be located only in areas that contain minimum native vegetation and such areas should be kept away from those trees to be retained;
- Soil excavated from the site and designated for re-use will be stored in a manner that allows the separation of weed-free topsoil to be replaced following the completion of works; and
- All stockpiling of soil will be restricted to the development site and contained with appropriate sediment fencing and covered to prevent wash into the adjoining parkland.

13 AQUATIC FLORA AND FAUNA PROTECTION

An Environmental Management Plan (EMP) will be prepared in order to address aquatic ecology management matters during the construction period.

The EMP will be prepared in accordance with the requirements of the NSW Department of Environment and Climate Change, as well as the NSW Department of Planning. These requirements will be established through additional liaison and consultation and will include, at a minimum, the following aspects:

- Details on the bulk fuel storage, vessel refuelling, fuel/sewage pump out berths, and the protection measures to be adopted during the construction and operation of the facilities.
- Description of the piling techniques and the impact on the sea floor; and
- Details of the wharf demolition methods as well as the management of demolition waste.

An EMP will be provided at the Construction Certificate stage.