CONSTRUCTION MANAGEMENT PLAN

TO ACCOMPANY AN APPLICATION FOR A 50 BERTH MARINA AND CARPARK RECONFIGURATION AT KOOLEWONG
CROWN LAND ABOVE AND BELOW MEAN HIGH WATER MARK OFF BRISBANE WATER DRIVE, Lot 519 DP 729020

INTRODUCTION

This Construction Management Plan (CMP) has been prepared for Gemsted Pty Ltd for submission to the NSW Department of Planning as part of the Project Application for a fifty (50) berth marina and reconfiguration of the existing car park "the Project" at 19 Brisbane Water Drive, Koolewong.

This CMP should be read in conjunction with the following experts reports:

i. Aquatic Ecology Report - Cardno Ecology Lab (refer **Appendix 5**).
ii. Coastal Processes Investigations - Cardno Ecology Lab (refer **Appendix 6**)

This CMP provides broad details on the main components of proposed construction, a future contractor will prepare a detailed Construction Management Plan in accordance with the requirements of consent.

This CMP should be read with reference to the drawings within **Appendix 1**.

CONSTRUCTION PROCEEDURES

WORK AREAS

The work would be undertaken in two areas.

1. Work above the mean high water mark (MHWM) with regards to the reconfiguration of the existing car park; and
2. Work below the MHWM with regards to the proposed marina and jetty restoration.

STRUCTURES

The various elements of the works would be constructed using the following materials:

1. Car park – paving over compacted base graded to existing stormwater system;
2. 50 berth marina – 31 hollow steel piles, with a PVC sleeve and cap on the top to exclude air and 12 – 19 sections of pontoons; and

3. Existing Fixed Jetty – Existing timber decking to be removed and replaced with ecostyle "sea grass friendly" polypropylene decking.

Piles and pontoons delivered by truck to a nearby jetty at Koolewong (same jetty as used by the local oyster farmers), then craned onto a barge and transported to the site.

WORK METHOD

- CAR PARK

The reconfiguration of the car park would involve minor works using standard equipment and work methods such as:

1. Import minor fill to required levels;
2. Placement and compaction of base course material; and
3. Placement of matching pavers.

- 50 BERTH MARINA

Construction of the marina involves the following two processes:

1. Piles delivered by truck to a nearby jetty at Koolewong then craned onto a barge and transported to the site, where they are driven in by pile driving barges. The piles will be delivered in batches as required so as to avoid the need to stock pile them. This will all be done from a facility which is used by the local oyster farming industry for loading and unloading.

2. Beginning and end piles driven in first with pontoons then towed in place and secured. Remaining piles are then driven in to assure straightness. There will be between 12 – 19 sections of pontoon, depending on the system chosen for use.

3. Once each pile is driven, a black poly sleeve and cap is placed over them.

4. Lighting and security cameras to be installed at same time.

5. Once pontoons are installed – the water and power are connected.

The entire process is anticipated to take no longer than 12 weeks depending on suppliers.

WORK HOURS

The work hours each day would be in accordance with the Council requirements and the Conditions of Consent, namely:

Monday to Friday: 7:00 am to 6.00 pm

Saturday: 8.00 am to 1:00 pm
Sunday: No work

In order to reduce the level of "noisy" activities the work would be undertaken in accordance with AS 2436-1981 "*Guide to Noise Control on Construction, Maintenance and Demolition Sites*"

GENERAL SITE MANAGEMENT

WORKS ABOVE MHWM (CAR PARK WORKS)

- Site Layout

The car park is located adjacent to the existing restaurant to the north-east and Brisbane Water Drive to the south-west. Beyond that exists The Great Northern Railway and then further west, residential development.

For all site amenities temporary buildings will be located within the site boundaries at all times. The location, type and number of the site amenities will be determined closer to the commencement of construction.

- Hoardings and Protection

Prior to the commencement of any construction works, a temporary perimeter fence will be constructed along the boundary lines. The fence will consist of 50mm chain wire mesh panels 2.1m high with hinged lockable gates that open inwards at all required access points. The fence will also be lined internally with shade cloth to help prevent dust and debris exiting the site from the construction activities.

- Fill Import and Site Leveling

A minor amount of fill will be required for the reconfiguration of the car park. This will be delivered by small rigid vehicles within the site boundaries, with this vehicle to be washed down to remove soil and debris.

- Standing Trucks

Unloading of all materials and equipment will be carried out on site at all times and as such traffic controllers will not be necessary.

- Machinery

Small rigid vehicles, a small cement truck, paving cutter, hand tools etc. will be required.

- Site Storage

Construction materials and waste containers for construction refuse will be stored within the site in an area not accessible to the public. The location for storage of the items will vary throughout construction due to changing site constraints. Dedicated storage areas will be established by way of the placement of lockable storage containers and installation of temporary fencing. No materials will be stored outside of the site boundary.

- Tree Protection

All trees adjacent to site that are nominated as being retained are to be protected at all stages throughout construction. In order to achieve this, temporary 1.8m high chain wire fences are to be constructed around each tree and will encompass the primary root zones where practicable.

- Construction Waste

Rubbish skips/bins will be used during the course of the project for the collection of general construction waste and material packaging. Rubbish skips will be located within the site.

All rubbish placed in skips will be removed from site by a waste collection company and taken to an approved licensed waste disposal and recycling facility. At no time will rubbish skips/bins be stored on the footpath or roadway during the course of construction.

WORKS BELOW MHWM (MARINA & JETTY)

- Site Layout

The proposed marina will be connected to the existing jetty located approximately 30 metres offshore.

All waterside works will be undertaken using plant and equipment mounted on barges. All necessary amenities for the construction personnel will be on the barges.

- Materials Handling

All materials for waterside works will be delivered to site on barges which will be securely moored to piles. Materials will be handled using the barge mounted equipment. All materials will be secured to the barges until required for installation.

- Machinery

Aside from barges and piles driving barges, minor hand tools only will be required in the construction of the jetty and marina.

- Construction Waste

All construction waste will be placed in sealed bins on the barges and removed from time to time to an approved landfill or waste processing facility.

TRAFFIC MANAGEMENT

CARPARK WORKS

Vehicle Access Movements

The proposed works to the existing car park are minor and will not involve the use of vehicles larger than medium rigid vehicles (MRV). With this in mind Brisbane Water Drive will be sufficient in absorbing additional truck movements for this portion of the works with anticipated movements expected to be no more than a couple per day.

Vehicle Access
Vehicle access is to be gained via the main entrance and will be sign posted for easy identification. All vehicles are to enter and leave the site in a forward direction.

Vehicle Parking
Given the excess number of parking spaces on the subject site, construction workers will have ample parking to avoid the reliance upon on-street parking.

Pedestrian Management
The cycle/pedestrian path which runs alongside the site along Brisbane Water Drive will remain unobstructed at all times.

MARINA & JETTY WORKS

No specific traffic management is required for this portion of the development given the limited number of trucks required to deliver the required piles and pontoons.

SEDIMENTATION AND EROSION CONTROL

This plan identifies sediment control systems to be implemented on all stages of the project. The sediment control systems are designed to minimise erosion on site and retain sediment eroded by water and wind and minimise the risk of disturbed sediment leaving the site area.

EROSION AND SEDIMENT CONTROL DEVICES

A 'no wash' speed limit will be enforced on vessels as they approach and move around the work site.

The use of silt curtains may be necessary to minimise the dispersal of sediment. Care must be taken to ensure that the installation and operation of silt curtains does not inadvertently damage seagrass (e.g. silt curtain based chain contacting nearby seagrass);

Monitoring of water turbidity will occur during the installation of piles to ensure that no sustained or widespread increases in turbidity occur.

Silt fences and erosion control measures will be placed around the site for the car park.

Any collected silt will be disposed of in accordance with Council's Erosion and Sediment Control policies, any other relevant codes or standards.

VEHICLE ACCESS

During car park construction vehicular access will be controlled to prevent sediment being tracked onto the adjoining roads. Any sediment that is tracked onto the surrounding roads will be cleaned off in a timely manner.

STORMWATER INLETS

During car park construction all stormwater inlets near the site will have protection installed to prevent soil and other materials from entering.

DUST CONTROL

During car park construction the shade cloth to the boundary fences will be maintained throughout all stages of construction to assist in dust control. Also if the need arises due to excessive dust being created, the site will be watered down where necessary by sprinklers and hoses.

SEAGRASS PROTECTION MEASURES

During construction the following methods will be employed to ensure minimal impact on nearby sea grasses:

- Construction teams should be made aware of the presence and distribution of nearby seagrasses as part of the detailed construction management plan documentation. This documentation should include the importance of seagrass habitat, and details on how and why to avoid damaging seagrass.

- To ensure work vessels avoid seagrass habitat it is advisable to deploy marker buoys outside of seagrass beds to give better visual indication of their outer extent.

- Construction teams should be prohibited from deploying anchors within seagrass areas due to the likelihood of causing damage.

- Construction teams should be made aware of the importance of avoiding navigating over seagrass, particularly in shallow areas. If movements over seagrass are necessary during construction then these should be done at high tide, while travelling slowly and ensuring that adequate clearance is maintained between seagrass and propellers.

- Accidental spillages of fuels and oils should be contained within floating booms and cleaned up as soon as possible to prevent weathering and subsequent deposition of heavy fractions; and

- Construction teams should be prohibited from discharging sewage and bilge water directly into Brisbane Water and encouraged to remove oil from bilge water by using bilge removing pads.