

PROJECT OVERVIEW

Dinah Beach – Construct New Floating Jetty on North Side of Boat Ramp

Northern Territory

Principle Contractor:

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Client:

Northern Territory Government
Department of Planning and Infrastructure
Construction Division
Darwin NT 0801
Ph (08) 8999 5511 Fax (08) 8999 4682

Superintendant Representative:

Michael Makepeace

Project Commencement:

June 5 2009

Project Completion:

November 30 2009

Contract Value:

\$ 589,130.00



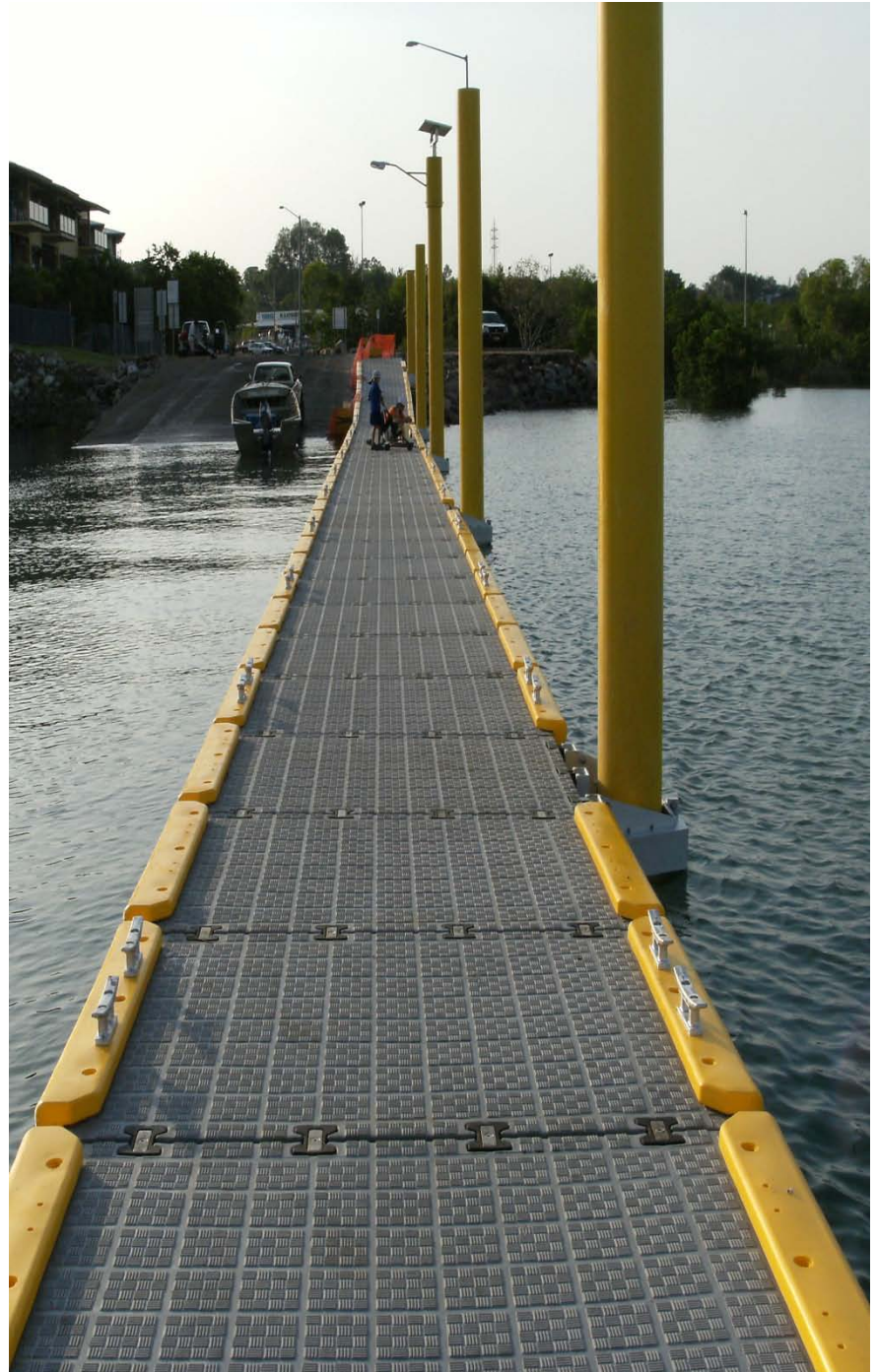
Dinah Beach Boat Ramp - Floating Pontoon

The existing Dinah Beach boat ramp is situated 1 kilometre from the heart of Darwin and is one of the busiest boat ramps operating on the Darwin Harbour.

The Northern Territory Government in association with the Northern Territory Fishermans Association recognised a real need to install a floating jetty next to the ramp to assist boaties in launching and retrieving both recreational fishing boats and pleasure craft.

In addition it was desirable to include solar lighting on the boat ramp as many users utilised the ramp both in the pre dawn and evening periods.

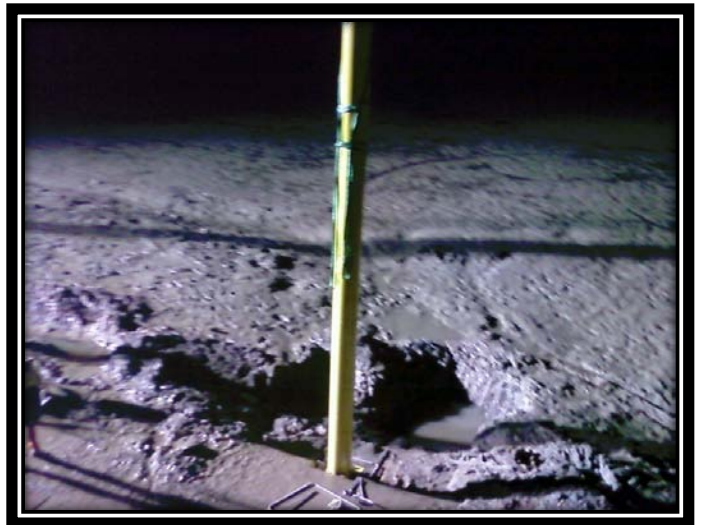
At least one ramp access had to be maintained at all times for boaties. In addition the general public had full unrestricted use on weekends and public holidays.



PROJECT OVERVIEW



NIGHT WORKS



1.0 CONSTRUCTION MANAGEMENT

1.1 Construction Excellence and Industry Best Practice

The contract required Advance Civil Engineering to maintain access to the ramp by the general public at all times, and no work was to be carried out on the ramp on Public Holidays or weekends.

Extreme tidal ranges effectively reduced working days on the lower end of the ramp to 6 days total over a 12 week period. All of the low spring tides were between the hours of 6pm and 6am, where subsequent night works were the rule rather than the exception.



Weight restrictions on the existing ramp required Advance Civil Engineering to review piling procedures, based on equipment size.



As the boat ramp is in a built up area, noise and movement constraints existed and needed to be adhered to.

1.2 Innovation in Concept and Implementation



Having previous experience with pile driving and marine foundation around the Darwin Harbour, Advance Staff after reviewing the geotechnical report concluded that the dense marine clay would remain stable which allowed our crew to pre bore the 9m deep pile sockets rather than drive the liners and drill out. Thus eliminating the need for heavy pile driving equipment on the ramp. Subsequently Advance crews removed the armour rock from the respective pile position, inserted a 2400 long 1200 Φ temporary concrete pipe sleeve. Above the seabed a drill ring was then positioned over the temporary sleeve and drilling was

carried out for an approximate depth of 9m below the sea bed.

On removal of the drill rig, a smaller diameter steel tube liner was inserted full depth to protect against the possibility of wall collapse within the socket. The entire pile hole was protected with heavy steel plates between tide changes for safety reasons.

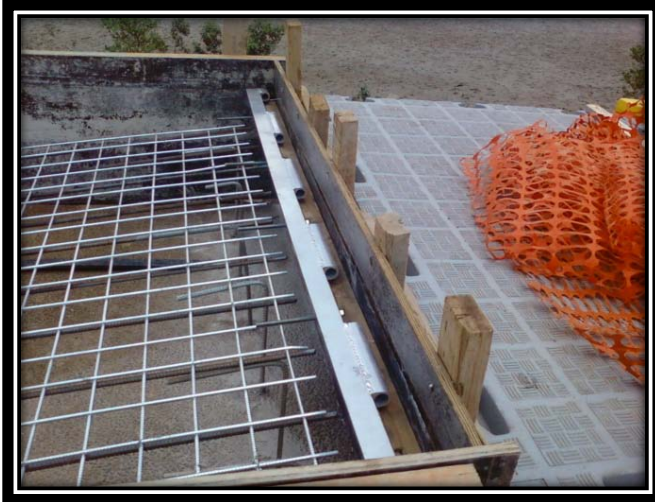
On the next available tides, prefabricated cages were installed and high strength concrete was placed under water using a purpose made tremmie attached to a 20 Tonne crane. During concrete placement the steel liner was progressively removed. Subsequent shifts installed a pile cap incorporating holding down bolts ready for steel tubular pontoon location piles.



In summary Advance offered the client an alternative to the extremely invasive activity of pile driving which would have impacted the residents living adjacent to the ramp, which at the same time addressed the issue of weight restrictions on the old ramp.

1.3 Interface with other Project Parties

As previously stated, one of the major requirements in this project was the ramp being available for use to fishermen and recreational boat users at all times; this was a priority with the Northern Territory Fisherman's Association and the Northern Territory Government.



No works were to be carried out at weekends and Public Holidays, and when work was being done, one ramp had to be open at all times.

The local residents were always kept up to date with the hours of work and the type of work being undertaken, which prevented any complaints for excessive or unnecessary noise.



CONSTRUCTION MANAGEMENT

1.4 Technical Complexity

Advance Civil Engineering and the design team of the pontoon, had to take into consideration the possibility of wave activity and severe storm event waves that may impact on the Dinah Beach pontoon.

The possibility of having waves in excess of 1 meter for a period of time and due to the movement that had occurred at another location in Darwin, it was decided to use specially fabricated stainless steel bolts.

Hold down bolts were incorporated in segment slabs over headstocks

The centre punching of a screw or bolt head was undertaken, which assists in prevention of vandalism and is common practice (by Boilermakers) where a bolt or screw may come undone or loosen over time (through vibration or movement).



2.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT

2.1 Management of Environmental Constraints and Enhancement

All works were undertaken under a site specific Environmental Management Plan drawn up by our Systems Manager which was submitted to the client prior to commencement of works on site and managed on site throughout the project.

This plan ensured that all precautions were undertaken to avoid erosion, contamination and sedimentation of the site and surrounding areas.

The important consideration of the control of marine mud was undertaken and any disturbed mud was



contained on site at all times, with no issues to report.

provide advance advice for residents and boat ramp users alike.

Whenever Advance needed to work during the hours of darkness i.e. between 6pm and 6am, all residents in the area were informed by individual flyers placed in their letter boxes as well as an advertisement in the local newspapers and a flashing message board appropriately placed at the entrance to the car park for the boat ramp to

All concrete wash was controlled to ensure no run off effected the waters of Darwin Harbour.



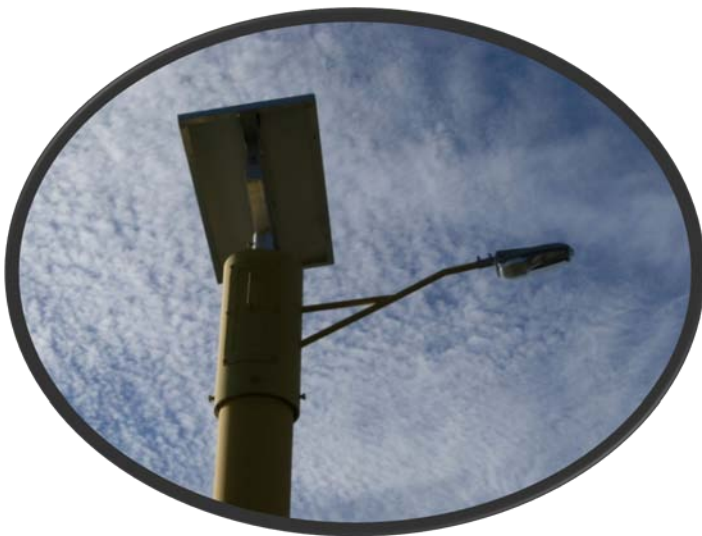
2.2 Resource Recycling



Dinah Beach Boat Ramp provided little scope for re-use of materials, apart from that which was excavated from the rock walls of the ramp; these were reinstated once the footings were completed.



Steel plates were placed over works (excavations) between work shifts (high tides) enabling both lanes of the boat ramp to be used on weekends and after work hours when tides prevented works being carried out.



2.3 Improvement in Environmental Amenity

As the finished product has had solar lighting installed, it minimises the ramp users need to have their high beam lights on and the use of spotlights in a built up area.



3.0 PROJECT MANAGEMENT

3.1 Project Planning and Management

Advance Civil Engineering was the preferred contractor, having previously completed more than 20 similar projects over the past 30 years of trading in the Northern Territory.



Advance Civil Engineering's construction Manager, Neil McMahon worked closely with the local community, residents, fisherpersons, Northern Territory Fisherman's Association and the client, Northern Territory Government Department of Planning and Infrastructure to complete the project within time constraints and budget.

Crews had to work shifts involving daylight and darkness hours, to ensure all works were completed whilst utilising low water during Spring Tides.

One of the project issues was the infestations of "midgies" and "mozzies" as the water level dropped and the coastal mud was above the water line, the mangroves being a haven for these biting creatures, the supply of repellent was an object of great interest and hugely in demand.



3.2 Quality Control and OH&S

Advance Civil's Systems Manager Jill McMahon, completed a site specific OH&S Management Plan, Project Control Plan and Traffic Control plan and submitted them to the superintendent for approval.

Advance Civil Engineering Pty Ltd has in place, as well as overarching policies, both Quality Control and Project Control Plans, designed specifically for each construction site. Plans are managed by our Systems Manager in the Pinelands office and they are implemented and signed off on site as the work proceeds.



The OH&S Management Plan for the Dinah Beach Floating Jetty project included a project specific Job Safety and Environmental Analysis at the initial induction and available on site at all times. This was continually referred to throughout the project.

Advance Civil Engineering has a site specific site induction that is read and signed by all who enter on our site. In addition, regular tool box meetings were conducted on site by the Systems Manager, addressing OH&S and Environmental issues that needed consideration.

As a result, with 5 staff members on the job site, there was no lost time due to injuries, no reported incidents and no damage to plant or machinery.

Quality control was continually monitored, not only by the supervisor on site, but also by our project manager and the client.



3.3 Workplace Training

Advance Civil Engineering employs three trainees and each of them worked on the Dinah Beach project at certain times.



A huge learning aspect was working with tidal movements, understanding how little time you have to accomplish required tasks before the water covers your work area.

Stepping out of the comfort zone and working different shifts was another aspect of this project some had not undertaken previously.

Neil McMahon, our Construction Manager on the project used some of the disciplines of the project to assist with his Recognised Prior Learning modules of his Certificate IV in Civil Construction Supervision qualifications.



3.4 Achieving Timing and Budget Targets

Advance Civil Engineering commenced work on the Dinah Beach Boat Ramp Pontoon on June 5th 2009 and achieved practical completion on November 30 2009

The pontoon on the North Side of the Dinah Beach Boat Ramp was completed within time and budget constraints.

