



MARINE STRUCTURES

TOWNSVILLE MARINE PRECINCT

Dynamic Replacement

AUSTRALIA



Owner

Port of Townsville

Engineer

GHD

General contractor

Lang O'Rourke

Period of works

June 2011-July 2011

Main figures

Dynamic replacement

treatment area of approximately 36,500 m²



Project description

The Townsville Marine Precinct (TMP) Project is located at the mouth of the Ross River on the reclaimed area of the Port of Townsville (QLD) and involved the development of approximately 18.4 hectares. It consists in an outer Harbor wall and an inner Harbor (7.9hectares) surrounded by reclaimed land on which permanent buildings and lift out facilities were constructed.

The focus of stage one of the project was to relocate the local commercial fishing fleet, marine fabrication and repair industries, marine research facilities, and other key marine operators to the new TMP complex prior to the construction of the Ross River Bridge in mid 2011 which upon completion, would subsequently prevent river access to these upstream commercial operations.



Ground conditions

Due to the critical time frame requirement to have stage one of the project completed by mid 2011, alternative forms of construction and ground improvement in particular were investigated. After assessing the site geology it was evident that Dynamic Replacement (DR) would provide a suitable foundation treatment area for the location of warehousing, office, workshops, pavements and access roads.

Solution

The DR technique was chosen due to ease and overall speed of construction, attainment of maximum flexibility to deal with the variable geology and changing loadings across the site, whilst remaining cost effective compared to other potential foundation treatment options. This form of ground improvement was a benefit to the contractor as it allowed areas to be progressively handed over thus subsequently enabling staged commencement of structures on the critical path.

Despite feeling the full effects of cyclone Yasi in February, the treatment area of approximately 36,500 m² was successfully completed by Menard in mid March 2011 thus allowing a combination of heavy duty pavements and buildings to be subsequently constructed by LORAC.

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