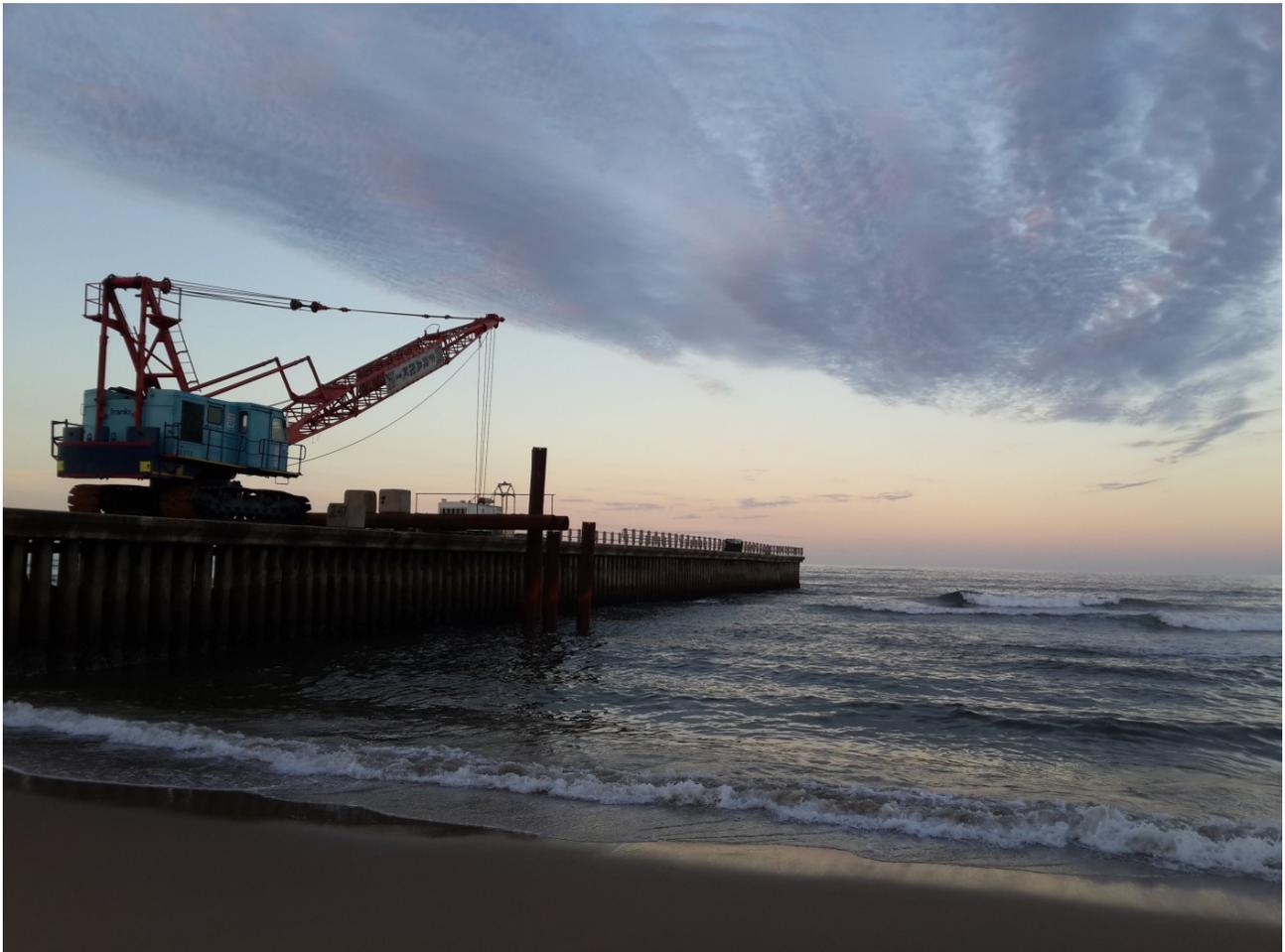


Bay of Plenty Pier

KwaZulu-Natal, South Africa

The Bay of Plenty is a blue flag beach situated on the Golden Mile of Durban, right in the of heart of the beachfront hub. The project involved the reconstruction of the Durban Bay of Plenty Pier.



The project

Due to the failure of existing precast concrete piles, the 30 year old pier was collapsing. We were appointed to demolish 75m of the existing deck and construct a new wider reinforced concrete deck on steel tube piles and install scour protection around the pier.

The new deck, is approximately 4m wider than the existing deck and was constructed in 11 sections.

The challenge

All works were carried out over water exposed to regular wave action in excess of 5m. The existing structure had to be demolished without any spoil entering the sea and old precast piles tied together to prevent loss of groyne rock. 4t scour protection bags had to be placed in a mat around the head of the pier in 6 - 10m water in the wave zone.

Obstructions, including large boulders and concrete, below the sea bed caused difficulties in installing piles and these had to be broken through using chisels and grabs resulting in lengthy delays. Where the existing failed piles obstructed the proposed new pile positions, the jetty had to be redesigned to accommodate the new pile positions.

The solution

The temporary jetty was constructed adjacent to the existing structure to ensure safe access for adequate piling equipment and craneage.

The main scope of works included the demolition of 75m of the existing piling and deck; installation of 22 no. 750mm diameter permanently cased piles to 24m, construction of 75m x 10m wide new deck and the installation of 500 no. 4-ton geotextile scour protection bags within and around the seaward end of the pier. The existing pier had continued to move due to the failed piles and in order to safely demolish the old pier and construct the new one, we constructed a 110m temporary jetty adjacent to the existing structure as a working platform.

Project facts

Owner(s)

Ethekwini Municipality

Keller business unit(s)

Keller South Africa

Main contractor(s)

Franki Geotechnical (Pty) Ltd.

Solutions

Marine structures

Markets

Infrastructure

Techniques

Jetty construction

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