

Tweed River

**ENTRANCE SAND BYPASS**

Planning, Feasibility and Design

PRDW were appointed by Transfield Construction, one of the bidding contractors, to prepare a preliminary design of the fixed sand bypassing scheme for the Tweed River entrance.



Tweed River Entrance Channel



Gold Coast Aerial View

Cape Town

**Transfield Construction**

**Tweed**

**New South Wales**

**Australia**

**1998**

The Tweed River Entrance is located updrift of the Gold Coast beaches. The entrance is protected by training walls. These training walls intercept the nett northward sediment drift of approximately 500,000m<sup>3</sup> per year resulting in a loss of sand to downdrift Gold Coast beaches and a beach erosion problem on these beaches.

The training walls had been extended several times over the years to keep abreast of the accreting updrift beach. The training walls had reached their capacity for containing the updrift beach and sediment accreting in the entrance channel is removed periodically by means of maintenance dredge campaigns.

It had been proposed that a fixed sand bypassing scheme be implemented at the site to restore longshore transport continuity and maintain the entrance channel navigability. The project took the form of a BOOT (build own operate and transfer) contract.

PRDW's report included the evaluation of the sediment dynamics of the beaches up and down drift of the entrance training walls, design of the trap, conceptual design and costing of the scheme. The fixed sand bypass scheme included a series of automatically operated jet pumps deployed from a jetty extending across the surf zone on the updrift beach. A submerged groyne located between the jetty piles effectively created an extension of the training walls.

The jet pumps are driven by a clear water motive pump and the jet pump sand/seawater slurry discharge is pumped from the jetty in a closed system via a series of booster pumps to the selected discharge point on the downdrift Gold Coast beaches