

## STATE HIGHWAY 20 MANUKAU HARBOUR CROSSING MANGERE BRIDGE, MANUKAU CITY

### PAVEMENT SYSTEMS - BASAL REINFORCEMENT

**Products:** Tensar TriAx Geogrids & Bidim Geotextile

#### Problem

The contractor needed to erect a temporary working platform to support cranes and piling rigs to complete construction of bridge piers for the new SH20 4 lane motorway bridge. The location of the platform within the tidal flats meant that an access route had to be constructed over soft tidal marine sediments. The sub grade consisted of marine mud and sediment deposits and is totally submerged during the high tide. This temporary access route had to support the weight of a 200 tonne crane, 40 tonne excavators and piling equipment along with associated plant.

#### Solution

The original solution was to build another complex staging system of platforms to support the associated plant and machinery required to construct the bridge piers. The alternative solution and one adopted for this project was to construct a temporary land reclamation over the soft marine sediments through the use of bidim A29 geotextile and Tensar TriAx 170 pavement geogrid. The grade of bidim geotextile was chosen to ensure that the imported fill did not punch through into the soft subgrade and the TriAx geogrid provided added support to the imported granular fill for the high design loads. By adopting the alternative solution the contractor saved an estimated \$100,000 in temporary works.

A team of 8 - 10 men completed the platform over a period of 4 days. The time available for construction was limited to a total period of 4 hours per day due to tidal restrictions. Actual construction time was approximately 5 days for the completion of the temporary access route.



Manukau Harbour



Placement of Tensar TriAx and bidim for landing

Client name:

NEW ZEALAND TRANSPORT AGENCY

Main Contractor:

FLETCHER BECA HIGGINS ALLIANCE

Consultant:

BECA GROUP AUCKLAND

Products used:

TENSAR TRIAX 170 & BIDIM A29

Construction date:

NOVEMBER 2006 - JUNE 2008



Temporary platform landing constructed

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Quality System AS/NZS ISO 9001:2000

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