



CASE STUDY

CLIENT NAME
TRANSNET PORT TERMINALS

MAIN CONTRACTOR NAME
LIVIERO

CONSULTANT
MOORE SPENCE JONES

PRODUCT USED
PARALINK™ 600 and 1000

CONSTRUCTION INFO

CONSTRUCTION DATE
09 MAY 2009

COMPLETION DATE
17 JUNE 2009

GEOTECHNICAL ENGINEERING / EMBANKMENTS ON SOFT SOIL

AGRIPORT, MAYDON WHARF | DURBAN, KZN

PROBLEM

A 12,000m² warehouse for storage of thousands of tons of soya had to be built on of low bearing, silty, fine hydraulic fills which are up to 4m in depth at the Durban Harbour area. These hydraulic fills are underlain by silty sand horizons which are interspersed by sandy clay and sandy clayey silts, which vary from 2m to about 20m in thickness. Calcareous sandstone, soft shale and siltstones were also found at depths of between 25-27m below ground.

The water table was at 1.6m below natural ground. The client needed the structure to be finished as quickly as possible. The challenge was to provide a suitable foundation to carry such huge loads, on such poor founding conditions, in the quickest time.

SOLUTION

A raft foundation of Paralink™ basal reinforcement was found to be the most cost-effective solution for this problem. Piled foundations would have served this purpose from a structural view point, but construction was going to take much longer than the client was willing to tolerate. Paralink™ reinforcement did not only offer a fast and sound engineering solution, but a cost analysis showed that this alternative provided a huge cost saving as well.



The top 1.5m of in situ material was removed in readiness of the contraction of a reinforced soil raft.



A Layer of the river sand sandwiched between two layers of AG 400 geotextile provided a drainage and separation layer below the proposed soil reinforced raft.



A compacted layer of decomposed granite was placed on top of the geotextile followed by the first layer of GeoGrids of Paralink™ 600 and Paralink™ 1000



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**REDUCED FOUNDING
BASE DIRECT COSTS IN
EXCESS OF 50%**

**REDUCED
CONSTRUCTION
PROGRAMME BY
MONTHS, ENABLING
CLIENT TO MEET SHIPPING
DEADLINE CONSTRAINTS**

**REDUCED OVERALL
CAPITAL OUTLAY FOR
THE CLIENT**



The next layer of compacted decomposed granite was laid on top of the first layer Paralink™



The contractor laid and covered up to 5000sqm of Paralink™ per day and was only limited by the rate at which the structural fill could be provided by the quarries.



The reinforcing of the approximate 13000sqm foundation of the entire site was completed within six weeks allowing for the structure to be completed within the deadlines set by the shipping requirements.

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