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CASE HISTORY

A retaining wall structure for filling and levelling the site for the construction of a warehouse and a distribution centre at Arndell Park, Sydney

PRODUCT	BORAL KEYSTONE retaining wall system, TENAX TT SAMP mono-oriented geogrids
LOCATION	Sydney, 2002
DEVELOPER	Australand, Commercial & Industrial Division
ENGINEER	Connell Wagner
INSTALLATION	UCBC Pty Ltd
PROJECT	Cnr Great Western Hwy & Walter Street, Arndell Park, Sydney

Warehouse and tank located as close as 1.5m from retaining wall

PROBLEM

The development site chosen for this warehouse and distribution centre had a natural fall of 7 metres over the length of the property. One boundary also ran alongside an old creek bed. In order to maximise the usable land area, a retaining wall would be required around the property boundary to allow filling and levelling of the site.

SOLUTION

Poor foundation material along the creek bed was removed and replaced with compacted crushed sandstone to improve the bearing capacity. The Keystone® Retaining Wall System was then constructed on the improved compacted foundation to a maximum height of 7 metres. Geogrid soil-reinforcement layers were incorporated and compacted in the backfill zone to attain the design live load capacity of 25kPa, and the design dead load capacity of 10kPa. The high loadbearing capacity of the Keystone® Retaining Wall System enabled the construction of the warehouse to be as close as 1.5 metres from the retaining wall.

BORAL CLAY & CONCRETE

A Boral Keystone® Retaining Wall System maximises the useful land area for this warehouse site. The vertical wall was constructed along the boundary to provide a cost effective retaining structure for filling and levelling of the site.

http://%20www.boralbricks.com.au/

Products Used:	BORAL Keystone® Retaining Wall System with TENAX TT SAMP mono-oriented geogrids for Soil Reinforcement
Block:	Splitface

Colour:	Natural
Area:	1,200 m2
Maximum Wall Height:	7 metres
Rate of Construction:	60-120m2/day
Design Live Load (max.):	25kPa
Design Dead Load max:	10kPa
Retaining Wall Backfill:	Crushed sandstone (Ø35° angle of internal friction)

CONCLUSIONS

The Boral Keystone® Retaining Wall System was chosen as the most cost effective solution for this situation. It offered rapid construction of a vertical wall with minimal foundation preparation along the old creek bed, and could be easily engineered to accommodate the intended loads from the warehouse structure, storage tank and heavy container trucks.