

Stabilising a retaining wall with Teretek®

INDUSTRY

Residential

STRUCTURE

Sea wall

PROBLEM

Erosion

LOCATION

Sydney, NSW, Australia

DURATION / YEAR

3 days / December 2016

TECHNOLOGY

Teretek®

BUSINESS UNIT

Mainmark Australia



Summary

The sandstone sea wall protecting the lawn and swimming pool area of a prestigious, beachside apartment complex in Sydney had begun to erode, causing sinkholes to form in the lawn area. Left unchecked, there was a risk that the subsidence could spread towards the building itself, leading to structural instability.

Mainmark was contracted to address weaknesses in the ground. Permeation Grouting was recommended for the project, but on arriving to site, the Mainmark team discovered that latent conditions would require them to use Teretek® resin injection instead. Teretek® is Mainmark's proprietary two-in-one solution that delivers both ground improvement and re-levelling.

In a process similar to keyhole surgery, Mainmark technicians drilled a number of injection points at 500mm under the sea wall to a depth of 2,500mm before injecting the Teretek® expanding polyurethane resin mix through very small injector tubes. The components mix together and expand, strengthening the ground and re-levelling the wall quickly and with minimal disruption.

The project was successfully completed in just three days.

Objectives

Mainmark needed to re-support the sandstone sea wall that protected the the complex's lawn and swimming

pool area using a quick, non-invasive method that would not require demolition or excavation.

It was important that the residents of this exclusive complex were not disturbed by the works, and that the treatment and application was fast and reliable.

Solution

The initial objective was to permeate the sandy soils under the sea wall with microfine cement to agglomerate the substrata and form a solid grout block behind the wall. This would prevent sea water from further eroding the wall and the soils that it was retaining.

After initial success with the microfine Permeation Grouting, Mainmark's technicians discovered that some of the site material was non-permeable. After consultation with the client's engineer, Mainmark proposed using their Teretek® resin injection solution to complete the consolidation of the fill material and help protect the sea wall from further erosion.

At the conclusion of the project, Mainmark placed clean sand around the site, returning it to its original state and so it looked completely undisturbed.

Mainmark's methods ensured that none of the complex's tenants or owners were inconvenienced and the sea wall is now fully supported. This has helped to eliminate the risk of future damage.