

Port Botany Stormwater Pits

Port Botany, NSW

Jet grouting has been used to create foundations for two stormwater pits resulting in significant time and cost savings.



The project

Two reinforced concrete cast insitu stormwater pits, 5m by 2m and 2.5m deep, were needed as part of the Port Botany Terminal 3 expansion project. The original design for the pit foundations comprised a steel frame connected to counterfort baffles beneath the pits, all constructed below the water table. McConnell Dowell approached Keller to develop an alternative foundation solution.

The challenge

Ground conditions across the site comprised 15m of dredged sandfill placed behind the sea walls counterfort structure as part of the reclamation. Settlement of the stormwater pits had to be kept below 10mm and any solution had to allow safe excavation below the water table.

The solution

Keller proposed using two, 1.8m diameter, 11m deep jet grout columns for each pit, the column bases being 13m below the surface. The upper 2m of each of the Soilcrete columns was enlarged to 2.5m, to create an even surface and cover a large area of each pit base. Before work began, trial columns were installed close to the pits to confirm installation parameters. The jet grout alternative resulted in significant time and cost savings for the client.

Project facts

Owner(s)

McConnell Dowell

Keller business unit(s)

Keller Australia

Main contractor(s)

Sydney Ports

Solutions

Bearing capacity / settlement control

Markets

Infrastructure

Techniques

Jet grouting