

Greenvale Reservoir Upgrade

Greenvale, VIC

This project included a significant dam wall upgrade involving a secant pile filter wall linking the main dam and wing embankment chimney filters.



The project

Situated just 20km north of the CBD, Greenvale Reservoir is Melbourne's most urbanised large water reservoir. Recent upgrades to codes to meet modern dam safety guidelines and significant downstream urban development has demanded an increased operational stability/safety factor. The project included a significant dam wall upgrade involving a secant pile filter wall linking the main dam and wing embankment chimney filters.

The challenge

Although the main dam and wing embankment were adjacent, they were not at the same slope within the embankment. Keller needed to determine a suitable methodology to meet the specific requirements of the client design brief.

The solution

Keller solved the challenges by installing a series of 1300mm dia. segmentally cased secant filter piles to depths of 12m. A down hole survey was conducted on every pile to ensure sufficient overlap prior to backfilling with a graded filter sand material in 750mm layers. The layers were compacted using a 3t free fall drop weight; and segmental casing was extracted without any vibration. Methodology and placement/compaction equipment were developed specifically to meet the project requirements.

Project facts

Owner(s)

Thiess Contractors

Keller business unit(s)

Keller Australia

Main contractor(s)

Melbourne Water

Solutions

Slope stabilisation
Seepage control

Markets

Infrastructure

Techniques

Bored piles