



ABOVE: PREPARED RETAINING WALL BEING SPRAYED LEURA BY PASS.
LEFT: SHOTCRETE WOOD FLOAT SPONGE FINISH.

THE RIX GROUP PTY LTD.

THE RANGE OF SHORING WORKS TO BE COMPLETED AT RHODES WATERSIDE

required a fast, effective shoring solution. The Rix Group was engaged by Walker, and by John R Burton, to expedite their respective shoring needs. Rix Group provides Shotcrete Solutions for Construction and Civil Works.

Shotcrete shoring provides a fast and efficient method of constructing permanent shoring and retaining walls. Shotcrete is mortar or concrete pneumatically projected at high velocities onto a surface.

Mr. Matthew Hicks, of the Rix Group, explains Shotcreting. "A concrete agitator feeds the shotcrete mix into a purpose built shotcrete rig which pumps the mix through a 50mm internal diameter hose. An air line is attached to the nozzle, and the resulting pressure propels the shotcrete mix from the hose, which is directed onto the walls by the Shotcrete operator," said Mr. Hicks.

"Shotcrete is a tailored mixture. It has a high cement content and contains silica fume, which causes the mix to become 'sticky,' so that it adheres," said Mr. Hicks. Once it has adhered, the mix needs to set rapidly. Reduced aggregates of around 10mm compared to standard concrete's approximate 20mm aggregate, and the inclusion of water reducing chemicals, facilitate rapid setting.

The careful preparation of reinforcement prior to the Shotcreting process ensures absolute effectiveness of the process. "We put piles in a line along the length of the future wall, and welded steel mesh to these piles. To alleviate hydrostatic pressure from behind the new Shotcrete wall, which could structurally weaken the wall, we also installed drainage between the piles," said Mr. Hicks.

"The shotcrete is sprayed horizontally over the face of the prepared piles, for evenness. The final face is screened to a line, smoothed using wooden floats, and followed by damp sponging. We then install vertical trowelled joints to attempt to induce cracking and any possibility of movement in the shotcrete."

The Rix Group used Shotcrete shoring for the kilometre long, six to eight metre high shoring wall required to support the adjoining railway line - for John R Burton. For Walker, they completed further Shotcrete shoring walls at the North and South origin residential sites. And again for Walker, Rix Group completed shoring for embankments at the East and South East Boundary, under the Ikea building. They are currently spraying two lifts shafts in the Northern commercial towers.

Rix Group also used Shotcreting to establish three metre wide air ventilation trenches, between 50 and 100 metres long, beneath the slab of the Ikea building in the retail precinct. "The process of meshing the trench walls and floor and then spraying Shotcrete in one pass, which avoided cold joints at the floor to wall joints, took around two days. If conventional methods were used the floor would have been poured first and then the walls formed, propped, poured and then stripped. Not only would this have taken over more than a week the cold joints would have required treating with expensive waterproofing strips," said Mr. Hicks.

Shotcrete consistently shows a significant reduction in construction time and materials used during construction when compared to conventional methods and ultimately equals considerable financial savings.

To discover how Shotcreting can meet the construction needs of your next project, contact the Rix Group, on 02 9521 8733, or visit www.therixgroup.com.

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