PARTNERING WITH YOU IN STRENGTHENING AUSTRALIA

PROJECT SHEET

WATERPROOFING OF KARANA DOWNS RESERVOIR JOINTS AND FLOOR

PROJECT SUMMARY

Client: Queensland Urban Utilities (QUU)

Location: Karana Downs, Mount Crosby

Duration: 3 weeks

Value: $ 100,000

Major Challenges Overcome:

- Integrity of the reservoir
- Rain

Karana Downs Reservoir, Mount Crosby

The Project

Karana Downs reservoir is located on Lake Manchester Road, Mount Crosby. The reservoir capacity is approximately 1.5ML. It was originally constructed in 1979 and comprises of a reinforced concrete floor slab, three reinforced concrete columns, 31 pre-cast concrete wall panels with external post-tensioning, and a galvanised steel roof structure with aluminum purlins and roof sheeting.

The reservoir had recently been rehabilitated including floor and wall joint sealing, using a joint bandage system (Sika Combiflex SG). The walls had been sealed with a polyurea membrane which stretched between Hypalon bandage joints. Upon refilling the reservoir, leaks were identified externally around the base of the wall/ ring beam. Dynaciv was engaged to repair and waterproof the joint and floor leaks.

Program

The reservoir rehabilitation works commenced on 27 March 2016 and reached substantial completion on 11 April 2016.

Project Scope

Dynaciv carried out an inspection of the leaks and provided possible remedial solutions for QUU to consider. QUU selected the recommended option of applying a membrane

over the Hypalon bandage joints and entire floor.

The project included the following repairs/works:

- Applying a pure polyurea membrane over the Hypalon bandage lapping 200mm each side of the joint
- Applying a pure polyurea membrane to the whole ring beam and floor, covering all joints and cracks
- Epoxy-coating the water inlet
- Installing joint sealant to the external ring beam
- Carry out acceptance testing (spark and coating thickness testing) during the installation of the application.
- Clean the reservoir internally on completion of the construction work.

Completed Works

The following work was successfully carried out:

Abrading each side of the Hypalon bandage
This was then primed with an epoxy to provide a good bond/key for the polyurea

Apply bond breaker
A wide bond breaker was installed across the rubber on the Hypalon bandage joint. Cutting tape was also used on the edges to form a neat edge.

Apply polyurea membrane

Apply a 2.3mm thick polyurea membrane over the whole floor and ring beam. The membrane was 3mm thick over all joints.