

## GREEN HILL RESERVOIR REHABILITATION NO 1 & 2



### CLIENT

Seqwater

### CONTACT

Peter Wall, 0434 283 655

### LOCATION

Chapel Hill, Brisbane, QLD

### TYPE OF CONTRACT

Design and Construct

### VALUE

\$2million

### CONSTRUCTION PERIOD

May 2013 - Sep 2013 & Mar 2014 - Jul 2014

### OVERVIEW

As an essential and one of Brisbane's largest potable water assets, Green Hill Reservoir No 1 & No 2 in Chapel Hill were in need of significant refurbishment in order for Seqwater to maintain its high standards for water supply. These structures were built in 1968 and required detailed inspection and repair of all defects.

Rob Carr Pty Ltd was engaged by Seqwater to initially clean the Reservoir No 1, conduct a detailed inspection of the reservoir structure in conjunction with Seqwater representatives and provide Seqwater with a detailed report on its findings. Upon provision of the report, Rob Carr Pty Ltd supplied Seqwater with detailed designs for repairs of the identified structural damage. The roof of the reservoir in particular, was in dire need of repair as the roof was leaking due to major cracks and other multiple defects in the roof slab structure and existing expansion joints.

Rob Carr Pty Ltd specifically selected LRM Products VersEseal membrane system which provided Seqwater with a high quality solution at a competitive price. The membrane eventually covered the entire roof slab of both reservoirs (No 1 and No 2) which comprise 15,000m<sup>2</sup> combined. Rob Carr additionally designed a system to prevent the ingress of water through these same expansion joints, cracks and saw cuts on the roof using the same product. Upon completion of all joint and crack repairs, the VersEseal membrane was sprayed on the entire roof surface sealing both reservoirs from any water ingress. Considering the enormity of the two reservoir structures (155ML), the height of the walls and columns was restrictive. Rob Carr used 3 x 20m Knuckle Booms inside the reservoir to undertake the works safely and efficiently inside the reservoir.

Rob Carr self performed the majority of work undertaking all supply, condition assessment, repairs, waterproofing, delivery, QS&E project management and commissioning of the reservoirs.

### PROJECT SCOPE

- Construct structural roof opening to allow for access into reservoir internals and reinstate.
- Pressure clean internal reservoir floor, walls, beams and columns
- Pressure clean external reservoir roof
- Inspect internal reservoir surfaces and joints for faults and provide detailed inspection report to client and independent verifier for approval
- Repair of 3km of floor, wall and roof joints/cracks
- Seal and waterproof 15,000m<sup>2</sup> roof surface area with 2000 micron VersEseal membrane
- Undertake localised patch repairs (200+) using a combination of Sika mortar products and VersEseal membrane
- Installation of new electrical cabling for and installation of mixers and S/S Downpipes
- Undertake 3D scanning of reservoir internals
- Disinfection and commissioning

### PROJECT HIGHLIGHTS



AS4020 compliant waterproofing in accordance with new reservoir standards. VOC free material.



Restrictive site footprint inside reservoir due to height necessitating use of knuckle booms and cranes.



Undertook mock emergency rescues from reservoir prior to and during delivery phases



Use of highly flexible membrane (850% elongation) for major expansion and contraction of reservoir structure



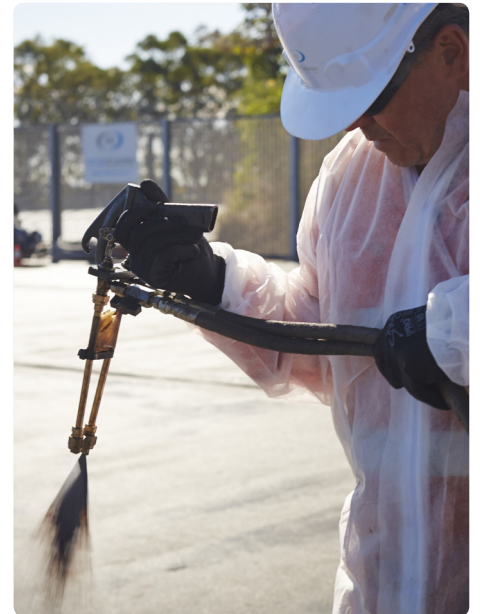
Worked to tight deadlines ensuring reservoirs remained online during peak / dry seasons.



Major savings passed on to client using alternate VersEseal membrane system in lieu of traditional products.



## GREEN HILL RESERVOIR REHABILITATION NO 1 & 2



**Top:** Cleaning of silt inside reservoir | **Bottom Left:** Pressure cleaning reservoir internal columns using knuckle boom | **Bottom Right:** Applying the VOC free, fire resistant and UV stable VersEseal (spray grade) product to the reservoir roof.