



MCILWAIN CIVIL

Creating Community Assets

PROJECT SUMMARY

Springfield Lakes - Low Level Dam
DELFIN SPRINGFIELD PTY LTD

Project Synopsis

- 20Ha of Clearing & Grubbing
- 300,000m³ of Earthworks including Non-Rippable Rock Excavation
- 17,000m³ of Imported Clay Core
- 15,000 tonne of Fine & Coarse Filter Materials
- 8,000m² of Rip Rap Protection
- 100m of 450mm Flanged DICL (Concrete Encased) Outlet Pipe
- 270m of 375mm Truck Sewer (DICL & PVC)
- 3,500m³ of Structural Concrete (S40)
- 500 Tonne of Reinforcing Steel
- 36 no Bridge Deck Unit (18.5m long)
- 600m of Safety Rails (Brifen Wire Rope, Bridge Rails, Pedestrian Ballustrade & W-Beam Guardrail)
- 900m of Concrete Footpath
- 5,000m² of Asphalt Roadway including granular pavement
- 3,000m of Electrical Conduits for Reticulation & Street Lighting

CLIENT

Delfin Springfield Pty Ltd

PROJECT

Springfield Lakes – Low Level Dam

CONTRACT VALUE

\$14.7 M.

COMPLETION DATE

December 2009

Mcllwain Civil were commissioned by Delfin Springfield Pty Ltd in July 2008 to construct the final of the three dams which form a vital part of the largest master planned community in Australia. The low level dam is to be the largest of the three lakes covering an area of 10 Hectares and holding an approximate volume of 282ML.

The construction of a the dam embankment wall is made up of critical zones of material including clay core materials, coarse and fine filter materials to make up the chimney and blanket filters and also general fill materials for the upstream and downstream embankment shoulders. Preparation works for the placement of clay core materials consist of detailed cleaning works (by hand) and dental concrete works to ensure an effective seal is created between the core and the rock foundation.

The works also include a cascading reinforced concrete spillway approximately 36m wide and 150m long with 5 levels dropping a total of 8.5m. Excavations works included removal of hard rock via large excavators (up to 70 tonne) and hydraulic breakers. The spillway is lined by reinforced concrete retaining wall up to 7m high and the floors include Precast concrete flow dissipater blocks and anti skate protection. All construction joints include waterstops and hydrotite seals to ensure the structure is water-tight as it forms part of the dam structure.

The project also includes the vital link to Springfield Lakes Boulevard which will provide the long awaited connection for the local community. The two lane road runs along the top of the dam embankment and crosses over the top of the spillway structure via a two span 35m long concrete bridge structure. The bridge includes mass reinforced concrete abutments founded on rock, a central pier and precast deck units. Architectural features, including pedestrian look out platforms are provided to increase visual amenity of the structure.

The works also include bulk earthworks to future residential development areas, trunk sewer diversions, street lighting and electrical works, parkland, carpark and lake floor improvements. The challenges associated with major construction works within an existing creek system mean that dewatering and in flow management is critical to project progress and as such has been given high priority. Extensive environmental (including dust and noise management) and safety control measures have also been installed as the site is immediately adjoining an established residential area.



PROJECT TEAM

Project Director Keith Mcllwain

Project Manager Tim Mcllwain

Project Engineer Matt Scully

Site Supervisor Glen Scholl

Site Administrator Leon Krelle

PROJECT REFEREE

Andrew Koek

Principal's Representative

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