

Design & Construct

Date: Sept 2013 – Jun 2015

Principal: Tasmanian Irrigation

Project Value: \$11.7M



TASK

Shaw Contracting was contracted by Tasmanian Irrigation to design and construct the Federal Government funded Dunns Creek Dam as part of the Upper Ringarooma Irrigation Scheme (URIS).

The dam is situated 20km south east of Scottsdale in the Ringarooma Valley and the completed scheme now irrigates pasture and cropping land around the townships of Ringarooma, Legerwood and Branhholm. Works commenced in September 2013 and were completed in June 2015.

The design brief was as follows:

- Design and Construct a 600m long, 750,000m³ earth-filled dam on Dunns Creek to provide a storage capacity of 6,500ML at FSL with ability to deliver 100-200ML/d through the irrigation scheme
- Design and Construct a 750m long spillway with a maximum 1 in 50,000 year flood capacity
- Design and install instrumentation to allow the client to remotely monitor water levels and pore pressures within the dam embankment
- Provide detail design and construction methodologies for approval by the Principal and Peer Reviewers
- Guarantee a 100 year economic use design life for all major infrastructure
- Comply with DPIPW dam permit requirements particularly in regard to control of sedimentation, maintaining environmental flows, emergency planning and protection of native flora and fauna during construction.

CHALLENGES

Shaw Contracting was presented with and overcame many challenges during the construction period which included:

- Management of borrow materials with regard to moisture content and suitability of material for various zones within the dam embankment
- Excavation and clearing of a 1000ha site in a high rainfall area
- Construction, protection and separation of horizontal and vertical filters
- Maintaining construction program whilst not exceeding embankment pore water pressure trigger levels
- Keyway foundation excavation and preparation below the water table
- Filling and placement of 2,000 rock filled reno mattresses to provide erosion protection to the primary spillway channel
- On site blasting and production of 20,000m³ of gabion rock and rip rap

CHALLENGES Cont'd ...

- Protection of native threatened flora and fauna including monitoring and identification of Giant Freshwater Crayfish, Wedge Tailed Eagles, Tasmanian Devils and Platypus
- Control of runoff water turbidity using large sediment basins therefore preventing sediment entering into Dunns Creek and further downstream into a RAMSAR protected wetland area.

OUTCOMES

Works were completed to the satisfaction of the client and met the design and program requirements.

Over 50,000 man hours were recorded on the project with no LTI's and no significant environmental incidents. Shaw Contracting worked closely with its client to ensure timely reporting and investigation of incidents and to prevent reoccurrence of similar incidents.

The completed irrigation scheme will improve agricultural productivity for the Ringarooma district and provide a safeguard to the local farming community against the possibility of drought.