

DUCK IRRIGATION SCHEME

Mill Creek Dam

Date: 2018

Principal: Tas Irrigation

Project Value: \$11M

TASK

Shaw Contracting undertook the Design and Construct contract for Tasmanian Irrigation to construct a 5,900mL earth filled dam at Edith Creek approximately 25km south of Smithton. The site was a heavily vegetated regrowth forest that covered approximately 75ha of area at FSL level.

The design was completed to ANCOLD guidelines for a High B consequence category dam with an AEP flood event of 1 in 100,000 year event. This included an innovative spillway design comprising of a 45m wide concrete throat, 25% (1 in 4) grade spillway chute with 1:1 concrete batters terminating at the bottom with a USBBR 2 stilling basin complete with deflectors, subsurface drainage and cut off walls.

Summary of the works completed:

- Dam Embankment Construction of approximately 415,000m³
- Installation of 180m of MSCL Concrete lined outlet pipe through the dam
- Concrete Spillway with approximately 1,800m³ of concrete
- Approximately 82,000m of reinforcing bar included in spillway
- Clearing of 75ha of regrowth forest

CHALLENGES

The remote location of the site and resourcing of this project was identified as a challenge throughout, but with a mixture of both internal resources and quality sub-contractors, that Shaw have developed relationships with in the past, the project was delivered inside the contract period. The project's contracted timeline was extremely tight as the dam was required to be filled ready for water delivery in the 2018-19 summer. With some minor clearing works completed in March and April 2017, the rest of the works were completed in a single summer construction season.

Once works commenced it was identified that the floor of the dam was mostly in an alluvial valley which required the removal of approximately 75,000m³ of unsuitable material prior to the dam wall construction commencing, which added significant additional works to the already tight project time frame.



CHALLENGES Cont'd ...

Shaw Contracting, along with our sub-contractors, identified concrete supply as being a significant issue in Smithton for the large volumes required in the spillway and engaged Bramich's Concrete from Wynyard to install their mobile batch plant on site to provide all concrete for the spillway construction. This allowed 140m³ pours to be achieved on numerous occasions with no delay in supply, whilst still supplying the quality of material required.

OUTCOMES

The project reached practical completion by 30 June, 2018 ready for river flows to be pumped up to the dam site from the Duck River. During the works Shaw Contracting adopted a 7 day a week operation to ensure works were completed on time with significant volumes of material shifted with one shift topping out at 10,075m³ for the single 12 hour shift.

