TUNNELINE
PROJECT SHEET

ITS PipeTech

Rehabilitation of an existing culvert under the Adelaide to Broken Hill rail line, Oodla Wira, South Australia.

An innovative solution to re-structuring deteriorating culverts

Our Message

"ITS PipeTech deliver cost effective, high quality, low risk solutions for all pipeline and culvert rehabilitation, extending the life of existing assets and infrastructure utilising environmentally responsible processes and methodologies".

Better Smarter Outcomes

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Project Details

Industry: Rail
Client: Transfield Services
Project: Rehabilitation of an existing 5600mm diameter Corrugated Steel Culvert under the Adelaide to Broken Hill rail line, Oodla Wira in South Australia.

ITS PipeTech were engaged by Transfield Services, who are the facilities manager for ARTC to design and install structural solution to this under track culvert that was showing advanced signs of decay with large patches of rusted material and severe deformation on the shoulders where the structure had started to fail.

The unique features of the Tunneline system combine the use of conventional steel reinforcement and high strength concrete to form a structural lining that will last in excess of 100 years. The smooth internal finish provides an enhanced hydraulic flow delivering an increased discharge velocity despite the reduction in diameter.

The Oodla Wirra contract involved the structural lining of a corrugated steel culvert which was originally a nominal bore of 5.6m, however had distorted in places by ± 725mm as the strength in the host pipe began to deteriorate. Designed to accommodate the loadings of AS5100, a proposal was presented to install a twin cage reinforced concrete lining to provide a final diameter of 4.90m thereby maximising the hydraulic flows but reverting the structure to a true circular bore.

Adaptation of the Tunneline shutter system to accommodate the distortion in the host lining contract posed interesting challenges in maintaining a true line and level however the construction team managed to overcome these mainly due to the flexibility of the Tunneline system that can adapt to profile variations as it is installed.

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