

# Tank Sealing and Void Filling

- INDUSTRY**  
Infrastructure
- STRUCTURE**  
Tank
- PROBLEM**  
Holes and Voids
- LOCATION**  
Cairns, Australia
- DURATION / YEAR**  
4 days / 2014
- TECHNOLOGY**  
Mainmark Civil & Mining  
Void Fill and Water Stop
- BUSINESS UNIT**  
Mainmark Civil & Mining



## Summary

An underground tank located in the heavily trafficked area of the Cairns waterfront precinct was to be converted into a refurbished shallow junction pit for the transfer of waste water and effluent. The concrete tank was surrounded by ground water to a level of only one metre below street level and had to be sealed to prevent water ingress. The new piping junction was installed and then the tank was filled with expanding resin to ensure the safety of pedestrians and vehicular traffic.

## Objectives

Mainmark Civil & Mining (MCM) were engaged to provide pipe penetration sealing and later void filling after a new pipe junction was installed in the area of a decommissioned underground transfer tank located in the waterfront precinct in Cairns, Far North Queensland.

## Solution

In the first instance MCM applied a quick reacting two-part polyurethane resin that would react in the presence of high volumes of water. This sealed the underground external area of the tank where the

penetrations were to be installed for the incoming new sewer pipes. It ensured that the ground water was blocked from entry during the cutting of the penetrations and installation of the incoming pipes.

Later, following the installation of the pipes, MCM returned to the site and filled the void of the tank with another fast set expanding urea silicate that was impervious to ground water. This ensured that support was provided and that, should anyone be able to access the tank, there was a solid barrier to eliminate the risk of actual entry into the tank.

The tank was successfully modified by the client's sewer contractor and the new pipes installed and the junction completed. The void was filled to maximum capacity of 120m<sup>3</sup> and then sealed from entry. Following clean-up, the area was returned to the city and opened for public traffic use again. MCM works were completed in a total of four days with minimal impact on the aesthetics or traffic flow of the area.