



## PROJECT PROFILE

# Andersen Air Force Base Water Tank

Water Tank Roof Collapse | Yigo, Guam



### CLIENT

Smithbridge Guam, Inc.

### BACKGROUND

The Andersen Air Force Base water reservoir was designed to replace the off-base water supply for the base. The cylindrical tank was designed to hold 12,320 kiloliters of water. The steel-reinforced concrete reservoir was completed in January of 2007. The roof of the concrete reservoir was cast-in place while the walls were made up of twenty-eight precast and prestressed sections.

On July 12, 2007, the roof of the water tank supposedly collapsed. During that time, the reservoir was being filled for the second time after the completion of construction. WJE was retained to determine the reason for the roof collapse and also if the tank could be salvaged for future use.



### SOLUTION

WJE determined that the roof collapse of the water tank was the result of negative differential pressures on the roof of the tank while water was being pumped out of the tank. The tank had been constructed without vents, and as a result, the pressure equilibrium within the tank could not be maintained. After a structural and materials assessment, WJE determined that the existing concrete walls and base of the structure could continue being used.

