

# Project Spotlight

## Kaneohe Kailua Tunnel-Honolulu, HI

Owner: City & County of Honolulu, Dept. of Environmental Services, Dept. of Design Construction

Installer: Southland Holdings, LLC

General Contractor: Southland/Mole JV



### Background Information

One unique aspect of tropical climates is that, because of the heavy rain seasons, wastewater management can be a tremendous challenge. The city of Honolulu recently implemented a unique method of dealing with this challenge, building a sewer tunnel that facilitates the flow and storage of wastewater using the force of gravity.

### Project Details

The first step in construction involved the use of a tunnel-boring machine to drill a 13-foot-wide tunnel underneath the Oneawa Hills. A 10-foot-wide diameter pipe was then installed inside the tunnel to carry the wastewater. The next step was to fill the annular space between the pipe and the tunnel—a space approximately three feet wide—for the entire length of the tunnel. This required a unique product that would provide both high compressive strength and extreme installation flexibility.

The installation team at Southland Mole JV decided to use a cellular lightweight concrete product manufactured by Aerix Industries to fill the annular space. Southland's installation crew pumped the AERLITE-iX™ LDCC for lengths of up to three miles into the annular space, utilizing 28,000 cubic yards of material. This process required the use of 18-to-24-inch lifts as well as the use of retarders at different levels, and took a total of 45 days, with the team working 12-to-14-hour shifts.

### Aerix Added Value

The use of Aerix's AERLITE-iX provided unique advantages for this challenging project. Firstly, AERLITE-iX offered the high compressive strength needed to stabilize a tunnel of this size and minimize potential corrosion of the structure. Secondly, AERLITE-iX provided the flowability required for this unique application. Thirdly, AERLITE-iX withstood the elevated levels of heat and humidity unique to the Honolulu climate. With Aerix's AERLITE-iX, the Kaneohe Kailua Tunnel will maintain its structural integrity while improving the island's quality of life and elevating its natural beauty.

