

CST Covers Replaces Water Reservoir Cover with Structural Aluminum Roof System

A common problem facing cities across the U.S. in the first part of the 21st century is the deterioration of water and wastewater infrastructure. Specifically, potable and non-potable water tanks all over the country are in dire need of rehabilitation. In 2007, the City of San Diego along with consulting engineering firm, Simon Wong Engineering, concluded that the existing concrete roof on the Rancho Bernardo Reservoir was in need of replacement.

CST Covers was subcontracted to design, fabricate and erect a maintenance-free Aluminum roof cover. The massive aluminum roof, 250' x 320', covering nearly two acres, is supported by 72 stainless steel columns (provided by CST Covers). The roof stands at a mere 6ft from the top of tank to the top of the roof ridge. A permanent non-glare (sandblast) finish was also incorporated into the aesthetic aspect of the design. The cover fits in well within the surrounding environment.

The roof cover consists of the same "strut and panel" system employed on CST Covers' standard Aluminum domes. The use of this system ensures that the cover will be leakfree and maintenance-free throughout the life of the cover. One of the key features to CST Covers' Aluminum structures is its light weight properties. Compared to the former concrete roof, the



Aluminum structure has a larger coverage area with fewer supports, reducing construction costs. Additionally, very little reinforcement of the existing tank was required to accept the Aluminum roof.

Health standards and security concerns now dictate that potable water supplies be covered, and municipalities are learning that CST Covers systems offer a lightweight maintenance-free alternative to concrete and steel.

The reservoir cover has been outfitted with an access hatch, gravity vents, aluminum flashing and more. The roof cover can accept virtually any type of appurtenances required.

As a result of the successful completion of this project for The City of San Diego and Simon Wong Engineering, CST Covers became involved in a second project also near San Diego. This 153' x 191' CST Covers column-supported Roof system is now being built for the Padre Dam Municipal Water

District in El Cajon, California.

Like all CST Covers aluminum roof systems, the covers in Rancho Bernardo and El Cajon are inherently corrosion-resistant. Aluminum does not rust, rot, spall or solar degrade, which means the roofs will remain maintenance-free for years to come.

CST Covers' proven erection method and precise prefabrication of all parts, makes construction of the roof a short process. The Rancho Bernardo roof was completed in a quick 10 weeks with a crew of only nine – also helping to reduce construction costs.

CST Covers' experience is not limited to the water/wastewater industry. The company's reputation extends to other industrial applications such as bulk storage and petroleum storage. Domes and roof systems for architectural applications are in place as sports arenas, cruise terminals, planetariums, churches, and more.

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