

autumn

The TJCAA Quarterly

2024
www.tjcaa.com

A New Hat and Accessories for the Alameda Reservoir

A New Hat and Accessories for the Alameda Reservoir

The Alameda Reservoir is a 16.0 mgd partially buried portable water reservoir that the Alameda County Water District originally put in service in 1972. Over the decades, a combination of wear and tear combined with upgraded seismic codes and regulations required the District to make improvements to the reservoir’s roof, lighting, ventilation, electrical, mechanical, and architectural components.



Five decades of wear and tear required significant rehabilitation and upgrade planning to restore the reservoir’s seismic safety and operational reliability.

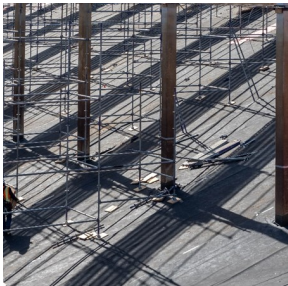
TJCAA led the design effort to restore the reservoir’s safety, reliability, and seismic resilience. Our team looked at multiple alternatives for retrofitting the existing roof structure, which was supported by 95 precast concrete columns and concrete walls around its perimeter. A condition assessment revealed cracking, spalling, exposed rebar, corrosion, and other degradation to some of these columns. As part of the roof replacement, TJCAA proposed

replacing 12 columns. TJCAA inspected the remaining 83 columns during construction and selected a fiber-reinforced polymer strengthening system to enhance their durability.

TJCAA relied on the expertise and experience of several subconsultants and subcontractors to complete the project.

The firms on our team included:

- Cornerstone Earth Group
- EKI Water and Environment, Inc
- Pittman Engineering
- Sigerson Architects
- JDH Corrosion Consultants, Inc.
- O’Dell Engineering
- WRA Environmental Consultants
- Yarbrough Architectural Resources
- Pacific Legacy
- Forensic Analytical Consulting Services



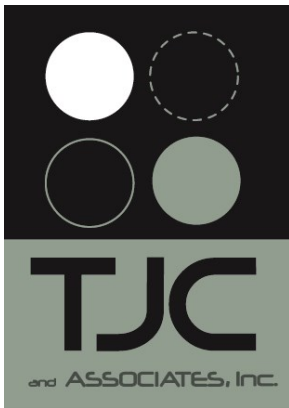
The condition assessment identified significant degradation and corrosion issues to some of the precast concrete columns, requiring a robust rehabilitation and replacement plan.

Copyright 2024 TJC and Associates, Inc. All Rights Reserved

Structural Engineering • SCADA • Electrical Engineering
Instrumentation and Controls • Control Systems Programming

TJCAA’s Business Certifications

- Alameda County Small, Local Emerging Business
- Bay Area Green Business Program
- California DGS SBE
- City of Colton SBE
- City of Los Angeles SBE
- City of Oakland LBE
- CPUC Women Owned Enterprise
- Eastern Municipal Water District SBE
- Inland Empire Utilities Agency SBE
- Metropolitan Water District of Southern California SBE
- San Diego County Water Authority SBE
- Port of Long Beach SBE
- Port of Oakland LIABE/SBE/VSBE
- PWC Registration—Dept of Industrial Relations (DIR)
- West Basin Municipal Water District SBE



autumn

The TJCAA Quarterly

2024

www.tjcaa.com

A New Hat and Accessories for the Alameda Reservoir

The District was concerned about contamination to the reservoir during construction, as well as damage to the existing reservoir liner. To mitigate this issue, TJCAA assisted the District during the development of contract documents that highlighted protection protocols to make sure debris, dust, equipment, and other potential contaminants were securely removed from the construction site, and that construction crews prepared the inside of the reservoir with protective equipment to avoid damage or disruption to the reservoir liner.



Post-construction testing verified that the reservoir interior was free from contaminants and ready to go back into operation.

materials were in place when needed, avoiding unnecessary rearrangements of the laydown area.

To support the District's sustainability goals, TJCAA also designed the new roof structure to accommodate solar panels. Once the District moves forward with installation, the new solar panels will generate electricity to run the District's key equipment, significantly reducing reliance on the regional power grid. With construction now complete and the reservoir in the final stages of being put back in service, the new, more structurally sound roof, as well as the improved ventilation, lighting, mechanical, and electrical components will help make sure the Alameda Reservoir can provide essential potable water service to the District's customers for decades to come.



Once back in service, the Alameda Reservoir will continue to provide vital drinking water supplies to Alameda County Water District's thirsty customers.

An additional construction challenge included material staging, as the District wanted to minimize disruption to the reservoir site and surrounding area. TJCAA's project team identified laydown areas for the contractor to make sure construction materials and equipment were kept within a 10-foot offset of the reservoir structure. This required additional construction phasing efforts to make sure the right equipment and



The Flick Strategy Group provides business development, marketing, and technical writing services to engineers, scientists, and contractors.

See how we can help you at FlickStrategyGroup.com or call 949-370-1265.

Copyright 2024 TJC and Associates, Inc. All Rights Reserved

Structural Engineering • SCADA • Electrical Engineering
Instrumentation and Controls • Control Systems Programming