STANFORD REPLACEMENT CENTRAL ENERGY FACILITY

"You [design team] have achieved something I think we all thought was next to impossible a few years ago."

—Stanford University Representative

Photos: Courtesy of Stanford University; Matthew Anderson

Enabling a Green Revolution

The Stanford Replacement Central Energy Facility (RCEF) project consists of a non-OSHPD energy building, an OSHPD energy building, an office/administration building, a control room building, a workshop building, two chilled-water tanks, one hot water tank, two electrical equipment yards, three tall tank screens, one L-shaped trellis, and associated energy equipment. R+C was Structural Engineer-of-Record for the entire project.

Selected Project Highlights

- 20-foot basement covering a large portion of the site.
- Four non-OSHPD buildings under the jurisdiction of the County of Santa Clara.
- One energy building under the jurisdiction of OSHPD.
- A small control room building designed to remain virtually elastic following the design earthquake.
- Water storage tanks designed to an importance factor of 1.5 even if not required by code.
- Seismic anchorage of energy equipment followed the same design philosophy independent of review by OSHPD or by the County of Santa Clara.
- R+C was responsible for the design of supports and anchorage of pipes larger than 18 inches in diameter.
- Because of the nature of the energy facility, R+C reviewed one-of-a-kind equipment for compliance with code seismic certification requirements. Justification to OSHPD involved experience data, analyses, and testing in certain cases.
- All buildings were delivered under the fast-track project delivery method as follows:
  - Non-OSHPD buildings were delivered using three distinct bid/construction packages.
  - The OSHPD building was delivered using four distinct increments (construction packages).
  - The design, permitting, bidding, and construction schedule was 40 months and was dictated by the need to secure occupancy and have the new facility operational by April 2015 when the old facility was to cease operations.
  - Structural design led the deliverables in the multiple permit/construction packages, allowing construction to proceed as scheduled while other disciplines finalized their design.

Our Team

Structural Engineer: **Rutherford + Chekene** | MEP Engineer: **Affiliated Engineers, Inc.** | Owner: **Stanford University** | Architect: **ZGF Architects** | General Contractor: **Whiting-Turner**

R+C RUTHERFORD + CHEKENE