



Central Plant Projects

PROJECT	DESCRIPTION	CAPACITY (TONS)
IBM Campus San Jose, CA	Twelve chiller plant with primary-only chilled water distribution system. Project included a 2,800 ton replacement of two chillers and control optimization. The new chillers were selected through LCC optimization. This project saved 6.5 GWH/yr of electrical energy.	17,000
State Central Plant Sacramento, CA	Developed a 30 year master plan and design build criteria for the expansion of an existing dual-fuel plant serving 23 State buildings. The new plant includes cogeneration, steam turbine chillers, chilled water storage tank, all-variable speed (pumps, towers, chillers), primary/distributed secondary with the secondary pumps in series with the primary pumps. Project included conceptual plant design, LCC analysis of the chiller plant proposals, calibrated models of the plant and hydronic system, controls (design and master plan) and commissioning.	13,000 at present 19,000 with long-term build-out 52,000 ton-hour TES system
UC Davis Central Plant Davis, CA	Developed a report comparing central and satellite plants, distribution pumping options, review of a 30 year plan for the campus' central chilled water system, and a gap analysis in chilled water capacity from 2005 to 2011 with recommendations for improvements in the chilled water plants and distribution system.	13,500 at present 33,500 in 2014 40,000 ton-hr TES system
Symantec Corporation Culver City, CA	Three chiller plant with variable speed chillers and primary-only variable speed pumping system. Plant is all-variable speed (pumps, towers, chillers) with control sequences optimized through extensive modeling. Project included design, LCC optimized chiller bids, controls, controls optimization, and commissioning	2,300
Gap 250 Embarcadero San Francisco, CA	Two chiller plant with unequally sized chillers and a unique primary/distributed secondary distribution system. Project included design, LCC optimized chiller bids, controls and commissioning	1,100
Electronic Arts II Redwood City, CA	Three chiller plant with primary-only chilled water distribution serving office and data center. Project included design, LCC optimized chiller bids, controls and commissioning	775
Symantec Corporation Tucson, CA	Primary-only variable flow plant with air-cooled chillers serving a 20,000 ft ² data center. The second phase of the project employs variable speed air-cooled screw chillers. Project includes design, controls and commissioning.	980



CHILLER PLANT PROJECTS (CONTINUED)

Alameda County Courthouse and Administration Building Oakland, CA	Conversion of an existing hybrid primary/secondary plant to a primary-only variable flow plant.	800
US Census Bureau Washington DC	Primary-secondary plant with six variable speed chillers. Project included design assistance, LCC optimized chiller selection, and controls.	4,500
Sonoma State University Sonoma, CA	Survey of existing campus central plant and distribution system, calibrated a DOE-2 model, projected future loads, evaluated options for improving plant efficiency and increasing plant capacity by reconfiguring plant to allow simultaneous use of TES tank and chillers. Developed detailed long term master plan for chilled water system expansion and optimization.	2,000 tons 7300 ton-hr thermal storage
IBM Facility Santa Teresa, CA	Three chiller plant with primary-secondary distribution. Project included a 1,940 ton heat recovery chiller replacement and control optimization.	4,850
LLNL Terascale Facility Livermore, CA	Five chiller plant with primary-only chilled water distribution system serving data center. Project included full CDR design of the plant and HVAC systems. The new chillers were selected through LCC optimization.	5,510
Pacific Exchange San Francisco, CA	Four chiller plant including both water- and air-cooled chillers and primary-only distribution system serving offices, trading floors and 20,000 ft ² data center. Project included design, LCC optimized chiller bids, and controls.	1,700