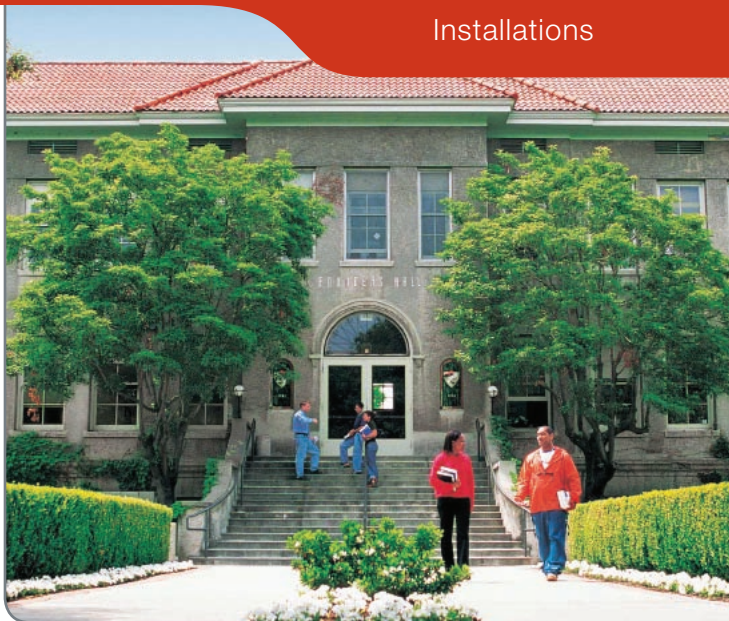




OPTIMUM INSTALLATIONS

UNIVERSITY OF LA VERNE



Environmentally Conscious Campus

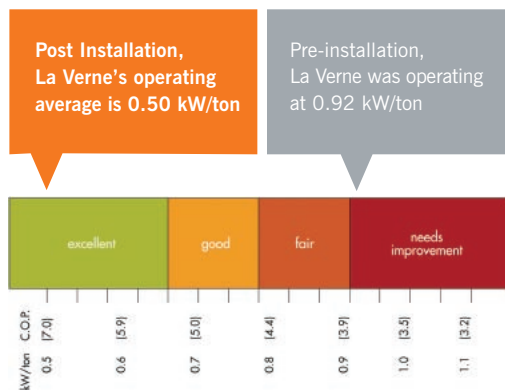
Thousands of colleges and universities across the U.S. are faced with a common issue: the need to reduce operating expenses while providing a comfortable learning environment. At the same time, students, faculty and administrators are demanding greener campuses. One way to save money and go green is to reduce the amount of energy used to heat and cool the diverse

range of buildings that make up a typical campus, such as: classrooms, labs, athletic facilities, residence halls, data centers, and faculty and administration offices.

The University of La Verne, founded in 1891 in Southern California, is a prime example. The La Verne campus has expanded through the years and currently 11 buildings draw their HVAC resources from a central plant. As the campus grew, improving plant efficiency and lowering the correlating facility costs in the face of rising energy prices became a top priority. As a result, the La Verne facilities department, working with EMCOR Services Mesa Energy Systems, decided to optimize their HVAC system at the same time they upgraded the chiller plant.

OPTIMUMHVAC PERFORMANCE CHART

The OptimumHVAC kW/ton performance chart helps determine the operational efficiency of existing chiller plants.



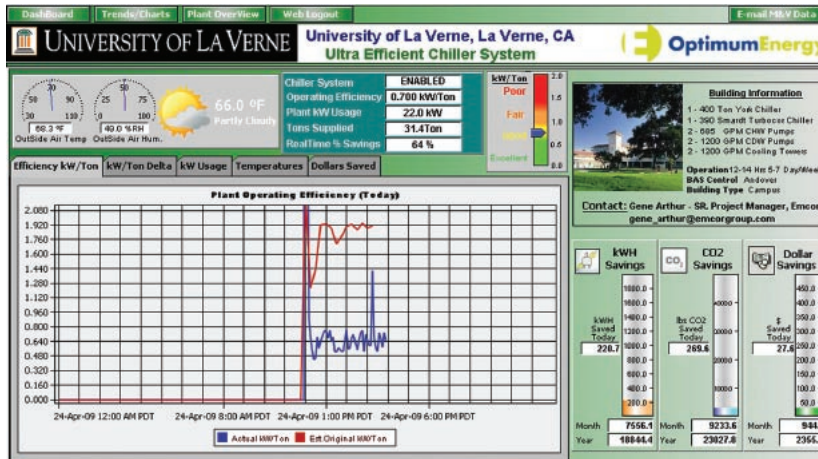
Green Chiller Plant

The La Verne central plant expansion included the addition of a chiller, and reconfiguration of the primary/secondary pumping loop to an all-variable speed/primary-only system. The newly expanded chiller plant, designed to operate 12-14 hours per day, 5-7 days per week, consists of:

- 1x400 ton York Chiller
- 1x390 ton Smardt Turbocor Chiller
- 2x685 GPM CHW Pumps
- 2x1200 GPM CDW Pumps
- 2x1200 GPM Cooling Towers

“Boosting the efficiency of our chiller plant with OptimumHVAC has a positive environmental impact, and it allows us to allocate the savings we realize toward other essential university needs.”

— David Koch, Facilities Management Director at the University of La Verne



OptimumMVM shows real time operating efficiency, daily and monthly dollars saved, and CO₂ reduction levels, and is accessible to both University technical staff and Optimum Energy engineers.

In order to maximize the cost savings potential of the renovated plant's all-variable speed, variable flow capabilities, La Verne also installed Optimum Energy's OptimumHVAC™ solution. The solution includes:

- OptimumLOOP, software that automatically and continuously gathers information about campus building loads, and uses that to match chilled water supply to demand by controlling pump and chiller speeds.
- OptimumMVM, a secure, Web-based service that ensures ongoing energy reduction by providing detailed real-time and historical performance data that enables campus operators to quickly detect, diagnose and resolve system faults and prevent performance degradation.

Saving Green

In the first year with OptimumHVAC, the University of La Verne:

- Improved wire to water kW/ton 46% – down to 0.50 from 0.92 kW/ton
- Saved 155,000 kWh of electricity
- Cut operating expenses by more than \$23,000
- Decreased carbon emissions by 164,000 lbs
- Received a utility rebate of \$14,000

Do Good. Do Well. And Prove It.

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About Optimum Energy

Optimum Energy's patented software solutions permanently reduce the amount of energy used to heat and cool commercial buildings by 30-60%. Compatible with all Building Automation Systems, OptimumHVAC software automatically optimizes the energy performance of centrifugal chilled water plants and air handling systems based on real-time building loads. In addition, OptimumHVAC's online measurement, verification and management capabilities ensure energy and cost reductions are sustained year after year.



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