

MINETA SAN JOSE AIRPORT

“Improving the efficiency of our central chiller plant enabled us to make our airport facilities much more energy efficient and helped us to achieve LEED certification for our new concourse as well.” Patrick Tonna, Deputy Dir., Facilities & Engineering, Mineta San José Intl. Airport

Renovation Starts at the Chiller Plant

Located in California’s third-largest city, Mineta San José International Airport (SJC) handles on average more than nine million passengers annually. A completely self-supported enterprise owned and operated by the City of San José, the Airport’s operations and capital improvements are supported by operational revenues generated by user fees and federal capital grants.

As part of the airport’s comprehensive terminal modernization program begun in 2007, SJC made a commitment to achieving LEED® certification for its new facilities by implementing energy efficiency technologies that would help reduce operating costs and the facility’s carbon footprint for decades to come. The improvement program, which was completed in 2010, included construction of a new Terminal B and its 380,000 square foot North Concourse, as well as the upgrade of Terminal A.

Phase 1: Tackling Efficient Cooling in Terminal A

Recognizing that efficiency improvements to the airport’s central chiller plant would lead to significant energy savings, SJC made the decision to update its HVAC system and take advantage of continuous commissioning benefits made possible with Optimum Energy’s OptimumHVAC™ solution.

Engineering services firm WSP Flack + Kurtz oversaw the addition of a new, 1,100 ton chiller unit to the airport’s central plant in 2008. Additionally, upgrades were made to the airport’s existing two 450 ton chillers, including installation of variable frequency drives and a new cooling tower, and adjustment of the existing air handling units to maximize airport guest comfort and energy efficiency.

THE STATS

First year performance with OptimumHVAC operational in Terminal A:

- /// Saved 1,256,000 kWh of electricity
- /// Cut operating expenses by \$188,000
- /// Lowered wire to water kW/ton from 1.25 to 0.61, a reduction of 51%
- /// Decreased carbon emissions by 1.35 million lbs
- /// Qualified for utility rebates

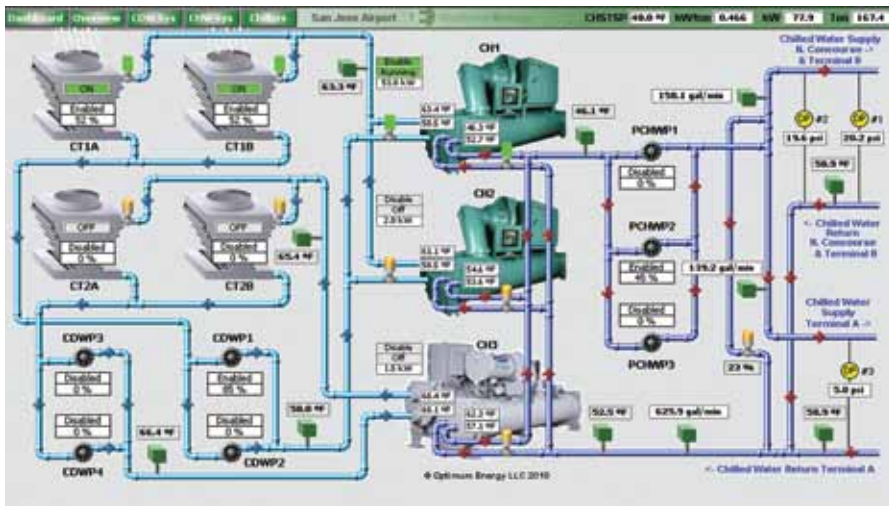
In the first six months (Oct 2010-Mar 2011) after re-commissioning Terminal A, B and the North concourse:

- /// Saved 85,917 kWh of electricity
- /// Cut operating expenses by \$12,888
- /// Lowered wire to water kW/ton from 0.68 to 0.57, a reduction of 17.2%





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



The OptimumMVM plant overview display gives plant operators a comprehensive look at system operation and an at-a-glance status of each piece of equipment.

Once completed, OptimumHVAC was installed and commissioned. Reductions in energy consumption were immediate and verifiable with OptimumMVM™, a secure, online service that allows facility managers to remotely measure and verify equipment operations and savings anytime. In the first year of operations, OptimumHVAC lowered wire to water kW/ton from 1.25 to 0.61, a reduction of 51% when comparing the newly optimized plant against the old plant.

Phase 2: Achieving Efficient Cooling for Entire Airport

In 2010 the Airport replaced the two 450-ton chillers with larger 650 ton ones and added the new terminal and North Concourse to the HVAC plant. Optimum Energy worked with an engineering services firm to re-commission OptimumHVAC for the new, larger chiller plant. When the re-commissioning had been completed, the airport asked OE to recalculate the savings baseline. For the first six months of operation, OptimumHVAC lowered wire to water kW/ton of the newly combined chiller plant by 17.2% when comparing it against the optimized Terminal A plant. This 17.2% savings is additive to the original 51% savings, delivering an estimated overall current savings for the airport of between 60 and 70%.

ABOUT OE

Simply put, Optimum Energy is the energy optimization expert. We use integrated software and cloud computing to optimize HVAC systems to deliver sustained energy reductions. Organizations like Mineta San Jose International Airport, the University of Texas at Austin and a variety of Fortune 100 corporations rely on the Optimum Energy OptimumHVAC solution for the continuous commissioning that maintains energy optimization year after year. Contact your local OE sales representative for more information about HVAC system optimization from Optimum Energy.

