



CASE STUDY

Optimizing campus efficiency through partnership with Siemens Energy Services

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A legacy of innovation and sustainability

A private institution established in 1949, the University of San Diego (USD) is renowned for its commitment to academic excellence and leadership. Today, it's guided by its strategic plan and vision for the future – to set the standard for an engaged, contemporary Catholic university by fostering an environment for student success, diversity, and community engagement.

Central to this vision is the university's dedication to reducing energy use through a variety of energy efficiency and renewable energy projects. Collaborative efforts, such as USD's decades-long partnership with Siemens, exemplify the university's proactive approach to energy efficiency. Because there are more than 30 buildings on campus with an air conditioning load, chilled water optimization has been essential to this strategy.

About Demand Flow® Chilled Water Optimization Technology

Demand Flow® is our intelligent, powerful, proven HVAC optimization solution that focuses on three key areas of your chiller plant – uptime, comfort, and energy efficiency. It can be implemented on any BACnet-compatible building automation system without shutting down your HVAC operations or disrupting your day-to-day.

Learn more
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Revising Demand Flow® for greater efficiency

For more than 30 years, Siemens has provided automation technologies at USD, including a Demand Flow® implementation in 2010. Since then, the campus has added several buildings, thus increasing the load on the campus's chiller plant. These changes in load coincided with configuration and equipment changes within the plant, some of which had an impact on the efficiency gains from the original Demand Flow® implementation.

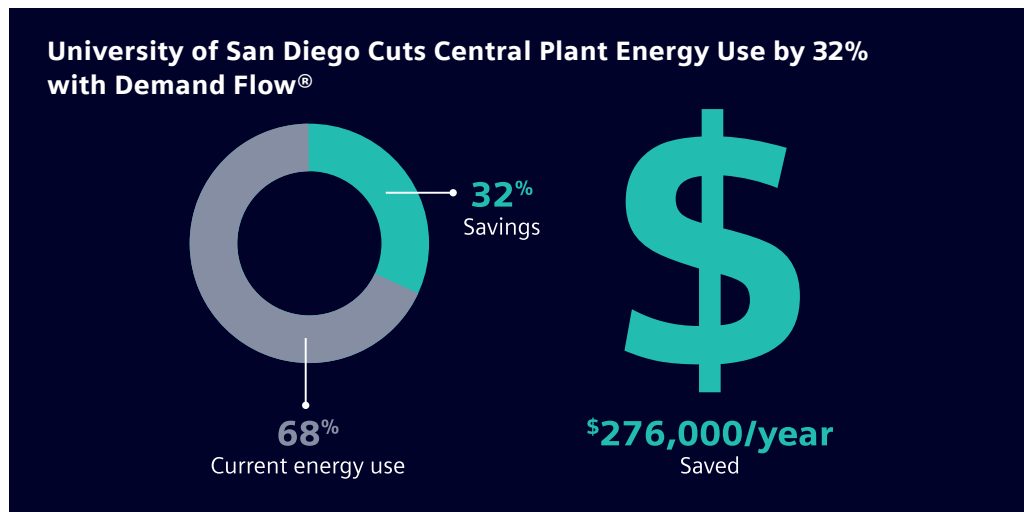
The focus of the university has been expansion while maintaining energy efficiency commitments. The solution was simple: assess the initial Demand Flow® project to increase the cooling capacity of the plant and update the programming. In 2023, the Siemens team performed a chilled water system assessment to satisfy the requirements of USD.

Ultimately, an engineering study identified opportunities to implement necessary programming adjustments and install new equipment including controllers and high accuracy, industrial grade temperature and pressure sensors.

During the initial study, the Demand Flow® team projected an 18% reduction in annual energy consumption based on the new baseline with higher load, translating into approximately \$153,000 in cost savings every year, aligning with the university's energy and cost reduction

Exceeding expectations: measurable results and cost savings

With about one year of energy data, measurement and verification (M&V) of the USD Demand Flow® implementation revealed a 32% reduction in central plant energy consumption compared to the originally projected baseline, delivering approximately \$276,000 in annual utility savings. Realizing the additional savings has been important to USD due to the ever increasing costs of California's electricity rates.



Seamless execution through collaboration

One of the key advantages of Demand Flow® is its ability to optimize the entire chilled water system without requiring chiller replacements, additions, or major retrofits. This allowed Siemens and USD's facilities team to implement the solution with minimal disruption to campus operations, keeping its students, faculty and staff comfortable during the entire project.

Siemens completed the Demand Flow® implementation in the fall of 2023, and while the primary objective was to reduce energy consumption and costs, USD appreciated how Demand Flow® simplified operation within the central plant and optimized equipment performance. By optimizing chilled water flow and system performance in real time, Demand Flow® increases efficiency without compromising occupant comfort.



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