

The background of the top half of the page is a large, vibrant blue aquarium tank. In the foreground, a man and a woman are seen from behind, looking into the tank. The tank is filled with various fish, including large ones and many smaller ones. The lighting is bright and blue, creating a deep-sea atmosphere. The Siemens logo is in the top left corner, and the URL is below it.

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# Aquarium of the Pacific – additional capital thanks to savings

## Reduction of energy consumption and improvement of carbon footprint with Demand Flow from Siemens

“Because of the reduced demand and low-flow energy scenario, we were able to apply for and receive a one-time rebate from the utility company. Our reduced energy consumption is helping us achieve our sustainability and carbon footprint goals.”

John Rouse,  
Vice President Operations  
Aquarium of the Pacific

### The building

The Aquarium of the Pacific is Southern California’s largest aquarium and home to more than 11,000 animals. Every year, an average of 1.5 million people visits the aquarium there in Southern California.

A LEED Platinum facility, the Aquarium of the Pacific is committed to expanding its exhibits and educational facilities without increasing its carbon footprint. It is involved in many conservation and sustainability efforts, including to be the first museum in the United States to earn the status of a Climate Action Leader™ from the State of California.

### The challenge

With one existing LEED Platinum building and a second LEED Platinum building on its way, the Aquarium facilities looked for opportunities to reduce energy usage as part of an overall sustainable strategy. As it was adding a building and its necessary life support systems for the animals, the Aquarium’s goal was to expand the facility but not to increase its overall electrical consumption.

With this amount of life at stake, the building’s life sustaining systems, including the chiller plant, could not be put at risk throughout the project.

**Answers for infrastructure.**



### The solution

To help the Aquarium of the Pacific achieve its carbon footprint, sustainability, and energy consumption goals, Siemens implemented the Demand Flow™ chiller plant optimization solution in the central chilled water plant utilizing the existing building automation system.

To achieve the desired results variable frequency drives were added to the chilled water and condenser water pumps as well as the cooling tower fans. High-accuracy temperature sensors and flow meters were also installed along with revised sequencing and reprogramming of the three existing chillers. Additionally, Siemens included 12 months of web-based Energy Monitoring and Controlling (EMC) to ensure that the Demand Flow solution delivered the projected and required chilled water plant energy reductions.

The Demand Flow energy optimization solution from Siemens has delivered the following results:

- Electric kWh was reduced by 51% – from 2,128,448 kWh annually before implementation of Demand Flow to a predicted 1,042,940 kWh by the end of the first 12 months
- Energy consumption savings exceeded US\$168,000 in the first year
- Thanks to the reduced energy consumption, the Aquarium received an US\$114,000 rebate from the local utility company
- The Aquarium of the Pacific has been recognized for its sustainable practices

The energy savings generated by Demand Flow not only help the Aquarium of the Pacific achieve their sustainability goals, but also allow the facility to improve its educational programs thanks to the additional operating capital from the cost savings.

### Highlights

- Electric kWh was reduced by 51%
- Savings exceeded US\$168,000 in the first year
- High recognition of sustainable practices
- Additional operational capital thanks to cost savings