



**BELIMO RetroFIT+**

## **Belimo Energy Valve™ Helps San Francisco Office Tower Fix Low Delta T and Reduce Energy Costs**

### **Belimo Energy Valve Retrofit at Four Embarcadero Center Improves Chiller Plant Efficiency**

Four Embarcadero Center, a 48-story commercial tower on San Francisco's waterfront, was completed in 1981 and remains one of the city's most recognizable landmarks. BXP, one of the nation's largest developers, owners, and managers of premier workplaces, acquired the Embarcadero Center complex in 1998 and has continued to invest in modernization across the property.

**TYPE OF BUILDING**

Office Tower

**PROJECT**

RetroFIT+

**SECTOR**

Commercial

**PRODUCTS**

Energy Valve



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# Turning Visibility into Measurable Performance

## Project Overview and Motivation

By 2019, the building's 40-year-old chilled water system, equipped with two-way, pressure-dependent globe valves with pneumatic actuators, was struggling with low Delta T, rising energy costs, and no visibility into hydronic performance. "We were seeing unstable flow, poor Delta T, and no way to truly understand what was happening in the system," said Daniel G. Murtagh, Vice President of Engineering at BXP.

To address these challenges, BXP turned to its long-time controls partner Syserco to evaluate options for upgrading the system. Derek Eggers, Chief Executive Officer of Syserco, explained, "Belimo's Energy Valve technology is proven. It allows us to show our customers quantifiable energy reduction with minimal capital expense. For older buildings like Embarcadero Center it's a smart way to deliver measurable results."

After reviewing the building's needs, Syserco recommended retrofitting each of the six air-handling units with Belimo Energy Valves. The upgrade converted the system to pressure-independent operation, stabilized Delta T across the coils, and gave BXP real-time insight into flow, temperature, and energy data.

## Discovery Through Data

The retrofit was completed just before the pandemic, and with the building at low occupancy for several years, meaningful performance data was not available until 2024 when operations returned to normal. When the team reviewed Energy Valve data from January through July 2024, the average Delta T across the six air-handling units was 10.9 °F. This was an improvement over the legacy system, which was trending around 1 to 3°F prior to the retrofit, but lower than expected. At that point, Hush Tahir, Belimo District Sales Manager, called in David Kandel, Regional Application Manager, to help analyze the Energy Valve data, which was gathered using Belimo's WebView interface via Ethernet. Working closely with Syserco and Steven Travis, Chief Engineer for Four Embarcadero Center, the group studied the Energy Valve trend reports to isolate the source of the performance loss. The data made clear that a large amount of chilled water was being wasted, and their investigation ultimately traced the problem to a faulty bypass valve that was allowing continuous overflow through the system.

Travis recalled, "Once we started digging into the Energy Valve data, it became clear something wasn't right. You could see the numbers weren't lining up. When we found that bypass valve stuck open, it all made sense. We were bypassing too much water and wasting energy. Fixing that changed everything."



"The Energy Valve modernized our system without a major capital investment. It has given us measurable improvements, reliable data, and a clear path to meeting BXP's long-term energy efficiency goals."

**Daniel G. Murtagh,**  
**Vice President of Engineering at BXP (left)**

Also featured in photo:  
Don Colquhoun, Regional Engineer,  
BXP (center)

Controls Contractor:  
Derek Eggers, Chief Executive Officer,  
Syserco (right)

Once the bypass valve was repaired, system performance improved significantly. Kandel explained, “By the summer of 2025, the Delta Ts at the air handlers exceeded 14 °F. Using the Energy Valve and its built-in reporting, we were able to identify the issue, make the correction, and improve the efficiency of the chilled water plant.”

Tahir added, “This project shows how the Energy Valve turns the coil into a diagnostic point. It gave the team visibility they never had before and helped pinpoint problems well outside the valve itself.”

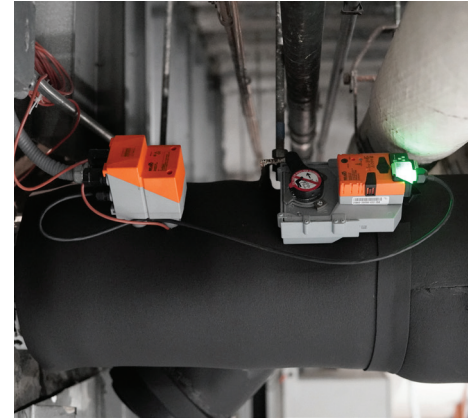
## Performance Results

Comparing January through October 2019 (pre-retrofit) with the same period in 2025 (post-retrofit), the Energy Valve retrofit delivered measurable improvements in Delta T performance and overall system efficiency, reducing energy use by 28%, which translates to approximately \$131,000 in energy cost savings coming directly from the chiller plant.

The retrofit significantly increased system efficiency by stabilizing flow and maintaining proper Delta T across the coils. Continuous monitoring through the Energy Valve allowed the team to fine-tune operation, correct inefficiencies, and maintain a consistent 14 °F Delta T at the AHUs during the summer months of 2025, while using just 53% of the chilled water compared to 2019 levels. The project demonstrates how accurate flow control and visibility into coil performance can optimize chilled water systems in existing high-rise properties.

Don Colquhoun, Regional Engineer for BXP, noted, “This is a classic example of continuous improvement. We solved the major problems first and now have the tools to fine-tune the system even further.”

Murtagh added, “The value of the Energy Valve comes from taking a 40-year-old pneumatic system that had conventional modulating valves and replacing them with a valve that gives us real intelligence. We finally had flow control, BTU control, and visibility into our Delta T across the equipment, which allowed us to slow down pumping and save energy.”



### **BELIMO ENERGY VALVE™**

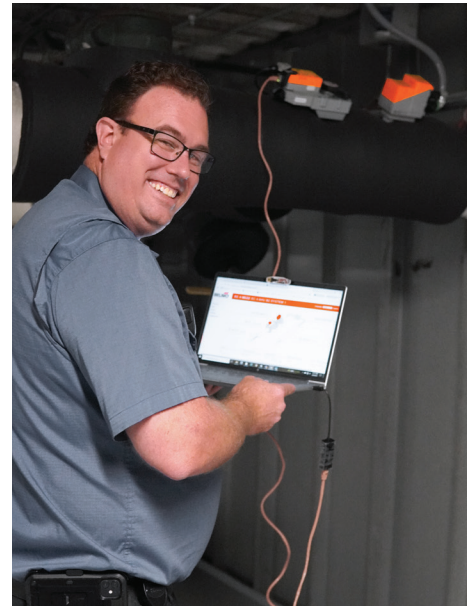
The Belimo Energy Valve™ is an IoT cloud connected pressure independent valve that monitors coil performance and energy consumption while maintaining Delta T.

- Patented Power Control and Delta T Manager logic continuously optimize available coil energy.
- Integrated ultrasonic flow measurement and temperature sensors provide real-time BTU data.
- Local WebView access via Ethernet allows direct trend analysis, configuration, and reporting through the BMS.
- Broad communication platform support includes BACnet/IP, Modbus, MP-Bus, and analog signal.

## Looking Ahead

BXP continues to track Energy Valve performance data as part of its ongoing efficiency program. With coil-level Delta T materially improved, the team plans to use the insights provided by Belimo's WebView and their BMS trend logs to maintain optimal operation and evaluate further opportunities to implement the Energy Valve across the Embarcadero Center portfolio and beyond.

Murtagh concluded, "The Energy Valve modernized our system without a major capital investment. It has given us measurable improvements, reliable data, and a clear path to meeting BXP's long-term energy efficiency goals."



**Steven Travis, Chief Engineer for  
Four Embarcadero Center**