

The Siemens logo is displayed in a bold, teal, sans-serif font. It is positioned in the upper left corner of the advertisement, set against a white rectangular background. The background of the entire advertisement is a low-angle photograph of the Peachtree Center building, showing its iconic grid-like facade of windows and concrete beams extending towards the top of the frame under a blue sky with light clouds.

Ingenuity for life

Peachtree Center

Siemens innovative Pressure Independent Control Valves help an Atlanta landmark keep cool and efficient

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Designed by famed American architect John Portman, the distinct, modern towers of Peachtree Center have been a fixture of Atlanta's skyline and economy for almost 50 years. At the heart of the downtown complex, which is owned and operated by Banyan Street Capital, are Peachtree Center's North and South Towers. Built in 1967 and 1969, respectively, the two, identical towers stand 26 floors tall and offer a combined 615,000 square feet of office and retail space.

Client Objectives

Commercial office buildings require a vast amount of energy and water to heat and cool the indoor environment. Peachtree Center was no exception, and the hot, humid Atlanta summers made the challenge even more daunting.

Tenant comfort was the primary concern faced by the management at Peachtree Center. "We were receiving more complaints from tenants because we couldn't get the temperature where it needed to be in the summer," says Barry Jacobs, Chief Engineer for the North and South Towers.

Part of the problem was the older equipment in place. The hydronic HVAC system relied upon pneumatic butterfly valves to control the flow of water through the air handlers. In order to get more chilled water to the furthest zones of the building the valves were opened wider, but that had the negative effect of pushing the water through the air handling coils too fast to be chilled properly. Additional chilled water was required, exacerbating the problem further.

This cycle resulted in a costly waste of energy for Peachtree Center. The chiller and pumping systems were both overworked. "We were using 75% more water than was needed for zones that had the right temperature when we still needed it for other zones that were too hot," recalls Mr. Jacobs. "It was frustrating because I

"If I want the leaving discharge air temperature to be 54.3F, I can get it to be 54.3F and if I want 52.5F, I can get that. Before, I didn't have that kind of control."

Barry Jacobs
Chief Engineer
Peachtree Center
North and South Towers

The Siemens PICV reduces Peachtree Center's energy usage by 13.8%.

could make the water temperature what I needed, I just couldn't deliver it." The pneumatic valves themselves were also at risk – continuous temperature adjustments, or "hunting," increased the chance of them breaking.

Siemens Solutions

Siemens presented Peachtree Center with an innovative and cost-effective solution: replace existing pneumatic butterfly valves with its 2-Way Pressure Independent Control Valves (PICV).

The PICV combines a control valve, adjustable flow limiter, and automatic pressure regulator in a single device. It provides greater control of water through the air handling coils, improving the accuracy and reliability of chilled water throughout the HVAC system.

Using the PICV, Peachtree Center can set the exact GPM (gallons per minute) flow for each zone, providing greater control over the leaving discharge air temperature. "If I want the leaving air temperature to be 54.3F, I can get it to be 54.3F and if I want 52.5F, I can get that," notes Mr. Jacobs. "Before, I didn't have that kind of control."

The PICV automatically responds to pressure changes in the hydronic system. The integrated differential pressure regulator keeps pressure across the internal control valve constant while also keeping volumetric flow constant. So, even with a rise or drop in pressure, the PICV keeps flow constant ensuring that water hits the desired temperature for optimal comfort. With the PICV, the valves no longer need to "hunt" for the right flow. This allows the whole HVAC system – valves, pumps, and chillers to work easier, reducing the amount of energy used as well as wear and tear on equipment.

Peachtree Center completed the valve retrofit in early 2015. The project involved installing two, 3" Siemens PICVs within each of its four air handling units. "We had looked at pressure independent control about 6 months prior, but the other solutions were more expensive, and they needed two valves – a flow control valve and a globe valve," recalls Mr. Jacobs. With the Siemens PICV, all functions were integrated into a single unit, simplifying installation.

Client Results

With the PICV, improvement in system performance was immediately noticeable. "My chillers and pumps are running at really low rates," notes Mr. Jacobs. "The first day that it reached 80F, we were only pulling 75% of full load." More importantly, tenants have been receiving the level of air conditioning they need to maintain an optimal working environment. "That's really why we're doing this," adds Jacobs.

The PICV reduces Peachtree Center's energy usage by 13.8%, according to an independent measurement and verification study. The report found that the PICV greatly improved control over chilled water, which allowed operators to engage only one chiller and its associated pumps and cooling towers. Prior to installation, two chillers were needed under similar conditions. Eliminating the need for the extra pump and cooling tower resulted in the significant savings for Peachtree Center.



Siemens 2-Way Pressure Independent Control Valve (right), and with actuator (above).



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