CASE STUDY

Atlantic Station: Turning Penalties into Profits with the DeltaPValve

"Within the first three summer months, we saved $150,000."

-MIKE GIERSCHNER
Chief Building Engineer

Built on the site of a former steel mill, Atlantic Station is a mixed-use neighborhood development that allows residents to live and work within walking distance of their everyday needs.

In the planning phases of the project, careful attention was given to mitigating urban sprawl and reducing air pollution, which helped position the development to receive the EPA's 2004 Phoenix Award as the Best National Brownfield Re-development, as well as the Sierra Club's 2005 America's Best New Development Projects listing.*

Fast Facts

Location:
Midtown Atlanta, Georgia

Industry:
Mixed-use development

Buildings:
CBRE: 975,000 sq ft
Atlantic Station: 3 million sq ft total

Problem:
Poor ΔT performance resulting in penalties, occupancy issues, and inflated cost of ownership

Solution:
Replacement of current valves with DeltaPValves®

Results:
ΔT performance increased nearly 300%
CBRE saved $150,000 in 3 months
Veolia regained 1000+ tons of capacity
CBRE's electricity consumption dropped 17%

Time to Completion:
6 months

**The Phoenix Awards™ inspire and recognize exemplary brownfield redevelopment and revitalization. Winning projects offer a fresh take on significant environmental issues, show innovation, and demonstrate masterful community impact.*

The Sierra Club's America's Best New Development Projects criteria focus on redeveloping existing areas, preserving community assets, offering a range of transportation options, promoting walkability, and handling environmental issues in a conscientious way.

CASE STUDY

DELTA P VALVE

To complement the environmental focus, a new chilled water facility was constructed to provide district cooling to each building in the development. Now owned and operated by Veolia Energy, the chilled water plant can provide 7,500 tons of cooling to 3 million sq ft of conditioned space, with room to expand and eventually serve 12 million sq ft.

The contract between Veolia and the building owners required chilled water performance targets, including a maximum cooling load and minimum chilled water temperature differential (ΔT), the difference between supply and return water temperature to the building. Despite being designed for peak efficiency and less than 5 years old, several buildings in the development were unable to meet these ΔT targets and faced inflated rates and stiff penalties.

CB Richard Ellis (CBRE), owners of the high-rise 201 and 271 buildings at Atlantic Station, paid fines of up to $10,000 per month for a single building due to poor chilled water ΔT performance. Because the utility costs typically pass through to occupants, it became increasingly difficult for the buildings to acquire and retain tenants.

The Solution:

CBRE struggled to find a solution that would enable their system to achieve the required ΔT performance without sacrificing tenant comfort. Their system simply didn't have the precision control essential to managing chilled water throughout a wide range of cooling loads. CBRE turned to Veolia as a respected subject matter expert for guidance on how to remedy this growing challenge. Veolia then introduced CBRE to FlowEnergy, a turnkey energy optimization company specializing in chilled and heating water systems.

Following an on-site survey and Air Handling Unit (AHU) audit, FlowEnergy presented a solution to fix the system and guarantee ΔT performance, all without sacrificing comfort.

FlowEnergy proposed to replace each AHU chilled water control valve with a DeltaPValve®, a precision control valve manufactured by Flow Control Industries. The first phase, which addressed daytime operation, included integrating each new valve into the existing Building Automation System, confirming the desired performance at every unit, and modifying the building pump control strategy to address the reduction in chilled water flow.

The second phase of the project, which addressed nighttime performance, included replacing fan coil unit control valves, correcting equipment operating schedules, and locating and eliminating bypasses. The entire project, including a validation of system performance, was completed in two weekends to minimize system downtime.

CASE STUDY

"We were faced with what seemed to be an insurmountable hurdle until we found the DeltaPValve®."

The Results:

The new average monthly ΔT performance of 18°F exceeded CBRE's expectations, nearly tripled the previous best of 5-7°F, and *eliminated all ΔT penalties*. In addition, CBRE reduced their **total building electricity consumption by 17%**, delivering an outstanding project simple payback in only 6 months. With the reduced utility bills, the buildings became easier to lease. Despite occupancy nearly doubling in one building alone, there was no increase in chilled water usage.

In 2014 both CBRE buildings were designated BOMA 360 Performance Buildings, and CBRE received two TOBY awards.** Both buildings were also awarded LEED-EB Gold certification and their energy score rose 10%. CBRE's results inspired another building within Atlantic Station to implement the DeltaPValve® System solution the following year. The combined efficiency improvement and cooling load reduction of the three buildings has enhanced Veolia's distribution infrastructure to allow delivery of an additional 1,000+ tons of cooling capacity throughout the development. Taking control of the chilled water benefited both Veolia's production and distribution facility and the CBRE end-users, setting the Atlantic Station development back on track to lead the way in energy efficiency and environmental design.

***The BOMA 360 Performance Program, sponsored by BOMA International, evaluates buildings against industry best practices in 6 major areas: building operations and management; life safety, security and risk management; training and education; energy; environmental/sustainability; and tenant relations/community involvement.*

The Outstanding Building of the Year® (TOBY) Awards honor the best of the best in commercial buildings.