

A photograph of a modern, multi-story office building complex with a glass facade, situated in an urban environment. The building is partially obscured by a decorative graphic consisting of overlapping curved lines in shades of green and grey.

# Waterfront Station

## CASE STUDY

Southwest of Capitol Hill, and within an easy walk to the Jefferson Memorial, lies a new seven-building, mixed-use urban center called Waterfront Station, located on 1100 and 1101 4th Street SW. BuildingIQ was invited to join a collaborative process with the owners, USAA Real Estate company, Cushman & Wakefield property management, and the office tenant, the District of Columbia Government, to improve tenant comfort, space-conditioning operations, and energy efficiency management of two eight-story office buildings in the complex— Waterfront East (340,000 sq. ft. / 31,587 sq. m.) and Waterfront West (295,000 sq. ft. / 27,406 sq. m.).

Given the building design, little improvement was expected in terms of energy savings through HVAC control by BuildingIQ, but it was felt that tenant comfort issues could be addressed more fully by employing our 5i Platform and expertise. Comfort remains the overriding factor in tenant satisfaction and retention.

## THE CHALLENGE

The central challenge revolves around tenant comfort when heating and cooling conflict. Air cooled for one part of a floor, for example, can register as overly cool when it flows past thermostats in another part of the floor, initiating heating, and vice versa.

The current challenge, as explained by Estatio Gutierrez, PhD, Optimization Engineer for BuildingIQ, is that the VAV set points are fighting the set points at the AHU level. Comfort issues and complaints are being reported when the air is too warm, and energy leaks and complaints when the air is too cold and must be heated up. The recommended course of action is to transition to greater zone control.

## THE RESULTS TO DATE

BuildingIQ took control of the AHU system of Waterfront East and West in March 2016 and has thus far shown energy savings far greater than expected for such a new, high-performance building. Figure 1 shows month-by-month savings in percentage terms for Waterfront East and Waterfront West. The East building achieved roughly 8.9% per month energy savings over the first nine months; the West building achieved roughly 4.2% per month.

# Waterfront Station

## NEXT STEPS

Working with the facilities team at the Waterfront Municipal Center, BuildingIQ's team of experts is setting up a test run for greater zone control of a single floor in Waterfront West. The test floor will be divided into six zones, instead of two, and direct control will be done by synchronizing AHU set points and VAV set points. The goal will be to evaluate not only energy savings, but also tenant satisfaction. BuildingIQ, the owners, and the facilities team are working on a platform to educate the tenants and get them actively involved in the process. The team hopes to get this underway before summer 2017.

Optimism about the project stems from the careful, thoughtful preparations now underway, and the fact that BuildingIQ's 5i Platform is tailor-made for this kind of facilities control. The thought is that if this project goes smoothly from the tenants' point of view as well as operational ease, it will be expanded to other floors in the West building, and from there, perhaps, to the East building. Any energy savings achieved from direct control will be on top of those already achieved under the current configuration.

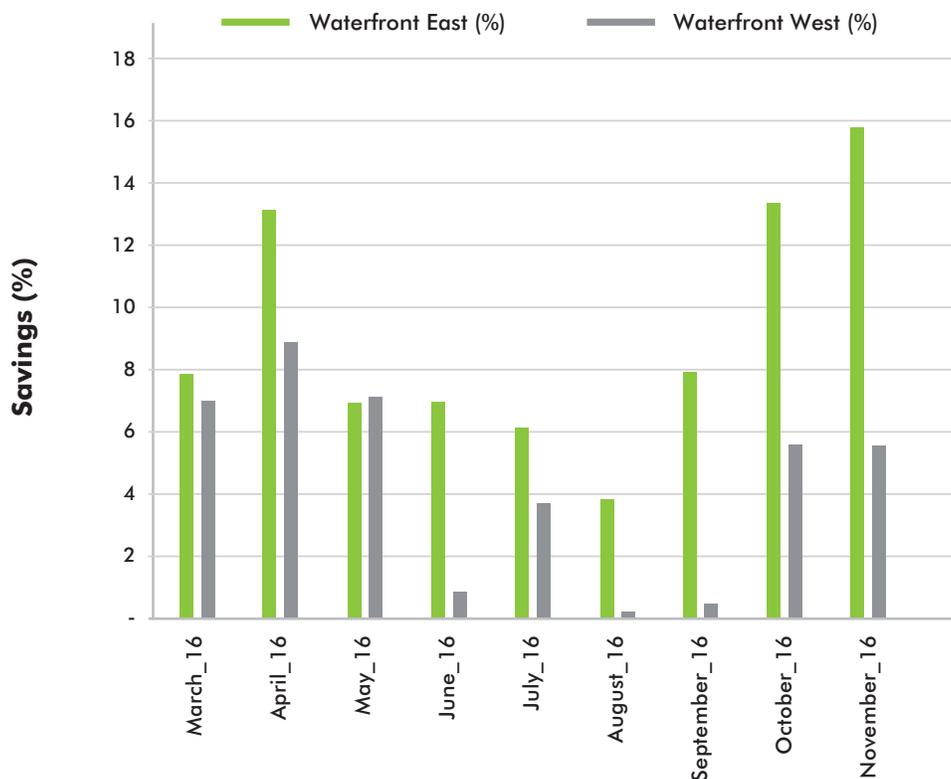


Figure 1 – Percentage Energy Savings by Month for Waterfront East and West from March 2016 to November 2016.

## About BuildingIQ

BuildingIQ (ASX: BIQ) helps building owners and operators worldwide lower energy use, increase building operations efficiency, and tenant comfort. The company's 5i cloud-based platform and managed services deliver on the promise of IoT for buildings with none of the drawbacks. Investors in BuildingIQ include the Venture Capital unit of Siemens Financial Services, Paladin Capital and Exto Partners.

## Energy Worksite

Energy Worksite was originally developed by NorthWrite, Inc., in cooperation with the US Department of Energy, to help improve the energy consumption in commercial buildings. It was recognized in 2008 with the Federal Laboratory Award for Excellence in Technology Transfer. The technology was acquired by BuildingIQ in 2016.



©2017 BuildingIQ, Inc. All rights reserved

2121 South El Camino Real, 2nd floor  
San Mateo, CA 94403 USA

[www.buildingiq.com](http://www.buildingiq.com)

[biq-sales@buildingiq.com](mailto:biq-sales@buildingiq.com)

Waterfront Station - CS | March 2017