

# Glenborough Takes Energy Efficiency Strategy to the Next Level with the Niagara Framework®

## The Project

- 12-story Class-A commercial office located at 1525 Wilson Boulevard, Arlington, VA, managed by Glenborough, LLC
- 23-year old building consists of 316,959 square feet of multi-tenant office space
- Subject to an extensive renovation to bring current control system into the 21st century
- Stairwell Ex. Fans
- Parking Garage Fans
- CO2 monitoring sensors in garage



Building consists of multiple systems and equipment including:

- 12 - 60 Ton Lynskey AHUs with Turbocor compressors feeding 11 floors
- 375 - Ceiling Fan Powered VAV boxes w/perimeter electric heat
- 2- 600 Ton BAC Cooling Tower
- Tridium technology utilizing the Niagara Framework
- Floor lighting controls
- 2- Condenser water pumps
- OSA Fan

## The Requirements

Glenborough required the ability to drive energy management activities and guide daily decision-making in order to reduce energy consumption and costs. They needed access to real-time information and control with the air distribution systems throughout the building.

They also wanted to ensure they provided optimum comfort levels to each tenant who occupies space and save energy, save money, and help the environment through superior energy performance and maximum system efficiencies throughout their building.

While Glenborough had a corporate-wide energy management plan since 2004, it mainly consisted of water conservation with little focus on energy efficiencies and energy reduction from their systems and equipment.

While many organizations and owners find reasons why energy reduction



Courtesy of Alan Schindler Photography

## Case Synopsis

**COMPANY:** Glenborough, LLC  
**INDUSTRY:** Commercial Real Estate  
**PROJECT:** 1525 Wilson Boulevard  
**FOCUS:** Energy  
**CHALLENGE:** Retrofit a 23 year old building to save energy, save money and help the environment through superior energy performance and maximum system efficiencies throughout the building  
**SOLUTION:** The Niagara Framework is being used as a centralized energy management infrastructure to connect and bring together the different systems including the management and control of all 375 VAV boxes throughout the building.

### KEY RESULTS:

- 28% energy consumption reduction
- Major improvement in ENERGYSTAR score
- Finalist - EPA National Building Competition
- Saved over \$283K in one year



efforts will not work or choose not to implement them, Glenborough aggressively sought out proven, creative, and innovative solutions and methods that would work.

Following the final commissioning of the project, the company decided to participate in the EPA's National Building Competition and was named a finalist.

**It's not always about the 'money' one commits into an operation; it's how you bring other important stakeholders, such as your tenants and vendors, into energy conservation.**

**Carlos Santamaria, LEED AP  
Glenborough's Director of Engineering**

## The Results

With better air distribution, real-time management and control and better compressor efficiency with the replacement of existing compressors to the new Turbocor units, Glenborough has reduced energy consumption by over 2,353,000 kilowatts of energy in the 12-months ending August 2010. This represents a 30% reduction to date. In addition, they have improved their ENERGY STAR score from 46 to a current 97.

The building owner and facility management personnel now have the ability to easily add new technologies into the system and integrate with any system and equipment existing or new.

As a result of the contest and the success of the project, the performance by Glenborough and the Wilson

Boulevard building has been and will continue to gain national recognition.

Building management also have plans to elevate tenant participation into a formal "energy reduction" tenant program, providing frequent tips on saving energy as part of routine tenant outreach. They will be highlighting their own case to demonstrate the benefits and savings.

Additionally, they plan to incorporate additional technologies to continue to make the building run at peak performance levels.

## Summary

Thanks to Niagara, Glenborough is energized in the substantial financial and operational savings they are receiving, and are thrilled to show other real estate organizations just how easy it is to turn buildings around by reducing energy use.

Glenborough's tenants and vendors are committed to demonstrating how their determination and ongoing energy use practices significantly impact how the energy use in the 1525 Wilson Boulevard Building is being reduced. They hope their example will be a roadmap for other organizations to follow.

## The Niagara<sup>AX</sup> Framework

The Niagara Framework<sup>®</sup> is being used as a centralized energy management infrastructure to connect and bring together the different systems including the management and control of all 375 – VAV boxes throughout the building.

Niagara has also enabled the energy team to convert all of the building's pneumatic variable air volume boxes to direct digital control, upgrade the energy management system, and is in the process of upgrading all the compressors and controls for floor supply fans.

## About Tridium Inc.

Tridium is the global leader in open platforms, application software frameworks, automation infrastructure technology, energy management and device-to-enterprise integration solutions. Our technologies extend connectivity, integration and interoperability to the millions of devices deployed in the market today and empowers manufacturers to develop intelligent equipment systems and smart devices that enable collaboration and communication between the enterprise and edge assets.



The U.S. Environmental Protection Agency's (EPA) **ENERGY STAR National Building Competition** is a highly selective program for commercial buildings to increase their energy efficiency as much as possible between the start of the contest and August 31, 2010. The building that reduces its energy use the most will be named contest winner. Fourteen buildings from across the U.S. were selected to compete head-to-head to work off their waste and reduce energy use to win the first National competition. Each finalist is required to monitor their building's monthly energy use. The building that shows the greatest percentage-based reduction in energy use will be named the winner in October 2010.