The power of improving data center efficiencies.
Harvard Pilgrim Health Care and Staples Advantage®

At Staples Advantage, we pride ourselves on being a single provider for our customers’ product and service needs, from office supplies and printing solutions to managed IT services and data center solutions. Through Staples® Technology Solutions, customers benefit from proven expertise, experienced specialists, and a broad selection of products designed to support individual technology needs. Below is an example of how one organization turned to Staples to complement its data center operations, dramatically improving cooling efficiencies to drive cost and energy savings.

The Company
Harvard Pilgrim Health Care is a full-service health benefits company serving members throughout Massachusetts, New Hampshire, Maine and beyond. For more than 35 years, Harvard Pilgrim has built a reputation for exceptional clinical quality, preventive care, disease management and member satisfaction, and has consistently rated among the top plans in the country – topping the list of America’s Best Health Plans for the past seven years. The organization maintains an extensive, growing network of more than 135 hospitals and 28,000 doctors and clinicians.

“Not only have we significantly reduced energy costs, but we now also have redundancy among our CRACs (computer room air conditioning units), with a spare unit online and ready to go. We now have the peace of mind that the utilization of our cooling units is mirroring our true data center needs – of today and tomorrow.”

James Connolly
Director of Facilities
Harvard Pilgrim Health Care

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The Challenge

With customer information as the lifeblood of their business, Harvard Pilgrim is committed to ensuring that its data center is well maintained and in top working condition. At its data center in Quincy, MA, the organization was operating six 20-ton computer room air conditioning units (CRACs) to maintain temperature, air distribution and humidity. These units – operating at 100 percent capacity, 24/7 – were providing dramatically more cooling power than the space required. Not to mention, Harvard Pilgrim was planning to deploy new blade servers, but with the added heat sources, the CRAC units would not be able to provide the cooling required to support the expansion. Therefore, Harvard Pilgrim wanted to bring in outside expertise to evaluate existing data center operations and provide recommendations to improve cooling efficiencies and reduce power consumption. Ultimately, the organization turned to Staples Technology Solutions to assess climate control conditions and identify a reliable, energy-efficient solution.

The Solution

Staples, together with partner Bluestone Energy Services, conducted an energy audit of Harvard Pilgrim's data center, which included a thorough health check of existing cooling systems and customized recommendations to better manage air flow processes.

While the desired path of air in the data center flows out of the air conditioning equipment, through the IT equipment and back to the AC unit, Harvard Pilgrim’s CRACs were operating quite differently. The Staples and Bluestone team found that the CRACs were “short cycling,” with air from the CRAC returning directly back to the unit. Typically, there should be a 20–30 degree difference between the air temperature going out of the CRAC and the air coming back in. But in Harvard Pilgrim’s case, the difference was a mere six to eight degrees.

Harvard Pilgrim’s existing CRACs were installed to form both cold and hot aisles, with cool air dispensed through the floor and rising in perforated sections (“cold aisles”) and then picking up heat and exiting behind the racks (“hot aisles”), and the hot air then returning to the CRACs. However, in reality, Harvard Pilgrim’s weren’t providing optimal air return due to obstructions under the floor that were preventing cooling reach.

To address these two identified problems, Staples and Bluestone recommended AdaptivCool — a centralized system that uses thermostatic controls to allow more cold air to get to the racks that need it most. Quite simply: AdaptivCool directs cooled air to where it is needed for cooling key equipment, when it is needed, and returns the warmest air back to the CRAC for optimum control.

The Results

As a result of implementing AdaptivCool, Harvard Pilgrim has dramatically improved the cooling efficiency of its data center. By improving the capacity of its existing CRACs — with AdaptivCool automatically compensating for changes in airflow and temperature — Harvard Pilgrim has been able to turn off one unit completely, reducing utilization by 20 percent.

Working with National Grid, an international electricity and gas company, the cited goal of the overall project was to deliver $53,000 in savings and a reduction of 335,000 kilowatt hours. Upon completion of the AdaptivCool installation, National Grid conducted a follow-up assessment of Harvard Pilgrim’s data center and showed that the organization not only met the savings goals, but exceeded them.

To learn more, please visit StaplesAdvantage.com.