



CASE STUDY

Condominiums

Facility at a glance

Name

Northbridge Park

Location

Fort Lee, NJ USA

Facility size

14-story, 280 unit luxury co-op

Issue

Facility management wanted to change-out the refrigerant in its 30-year old Daikin chiller

Solution

Chiller optimization and conversion to a non-CFC refrigerant

Northbridge Park Co-op, a luxury 14-story, 280 unit co-op in Fort Lee, New Jersey.

New Jersey's Northbridge Park Reduces Energy Usage 16% with Daikin Chiller Optimization

With Daikin Service's chiller optimization program, everything old is new again—and even more energy efficient.

Northbridge Park Co-op, a luxury 14-story co-op in Fort Lee, New Jersey, had a dilemma common to buildings 30 or more years old. Being financially and environmentally responsible, the facility management team at Northbridge Park wanted to change-out the refrigerant in its 30-year old Daikin dual compressor chiller. The chiller itself ran efficiently, but the refrigerant it used—R-500—was being phased out.

Since 1996, CFC refrigerants such as R-500 and R-12 are no longer produced in the United States because of their ozone depletion potential. As the supply of these refrigerants has dwindled, their price has correspondingly increased. Replacing chillers that use R-500 with new chillers that use ozone friendly refrigerants is both a responsible and cost-effective solution. For Northbridge Park, however, the size constraints of the mechanical room, doors and hallways, and any resulting construction costs, meant replacing their current Daikin dual compressor chiller would not be financially feasible.

As long-term maintenance customers of Daikin Service, the management team at Northbridge Park naturally turned to Daikin Service for answers. After evaluating the system, Daikin Service representatives realized the 500-ton chiller would be an ideal candidate for chiller optimization and conversion to a non-CFC refrigerant.

The goals of a chiller optimization program are to enhance the chiller's energy efficiency, extend its operating life and improve its reliability. In order to achieve those goals, Daikin Service rebuilt the dual compressor chiller from the ground up using advanced impellers designed to maintain cooling capacity without significantly increasing energy usage.

In addition, Daikin Service optimized both compressors to substantially improve the efficiency of the unit. For even more energy efficient operation, Daikin Service installed variable frequency drives for both of the dual compressors to lower electrical consumption and reduce energy costs.

To help meet the building's comfort requirements for the 280 units throughout the building, Daikin Service added MicroTech II™ unit controls to the chiller to monitor, balance and control energy efficiency and temperature and to notify the building operator of equipment problems. With the color touch screen panel of the new MicroTech II controls, chiller operators can monitor operation at a glance and easily adjust setpoints.

Daikin Service also added solidstate starters that allow for "soft start" to help extend the operating life of the compressors. In addition, these starters monitor power quality and help prevent compressor motor damage from mechanical or electrical faults.

The chiller optimization was completed in July 2001. So far the Northbridge Park Co-op has seen a 10 to 16% improvement in energy efficiency. The chiller itself is running even more quietly and producing more consistent cooling for the entire building. The facility management staff regards the optimization of their chiller as a success for the comfort of the building occupants, the reduction in energy costs and for the environment.