



## CASE STUDY

Colgate-Palmolive—Piscataway, NJ

**Issue:** Outdated, energy consuming and costly HVAC system

**Solution:** D&B provided Daikin magnetic bearing water-cooled chillers, condenser water pumps, and variable frequency drives

**Ann. Energy Savings:** \$283,898

**Incentives Attained:** \$224,526

Photo credit: image courtesy of Colgate-Palmolive

# D&B Engineering Helps Colgate-Palmolive Clean... The Environment

## Eco-friendly chiller & water pumps attain substantial NJCEP incentives

Colgate-Palmolive Company has an extensive history of innovation in New Jersey. In 1896, the company opened a Jersey City research laboratory, the first formal lab of its kind. An expanding product line of soaps, perfumes and toothpastes prompted the company in 1962 to open the Global Technology Center located in Piscataway, New Jersey.

Just as this renowned corporation takes pride in producing products for household, personal and oral care, Colgate-Palmolive Company also appreciates the importance of environmental preservation. Their commitment to innovation extends to how the company consumes energy. The energy-reduction projects receive at least 2 percent of annual manufacturing capital. With those funds, CP aims to reduce its manufacturing energy intensity to one-third of 2002 levels by 2020.

"To help us meet these ambitious energy goals, CP seeks opportunities to partner with our stakeholders on key initiatives that advance our sustainability efforts, as was the case recently with *New Jersey's Clean Energy Program* [NJCEP]," the company said in an official statement.

In 2010, Colgate-Palmolive chose to improve the energy efficiency of their chilled water plant at the Global Technology Center. At the time, the chilled water plant consisted of a combined 2,150 tons of capacity and required an average of 1.7 million kWh of electricity per year.

D&B Engineering and C-K Air Conditioning replaced the outdated chillers with new higher-

efficiency, magnetic bearing units. The chilled water distribution system was retrofitted to include an air separation unit and a new chilled water pumping system equipped with variable frequency drives (VFD's).

Instead of maintaining the water at a constant temperature, as was done previously, the plant's water temperatures are now adjusted according to the day's weather. This reduces condensing pressures and improves the plant's ability to maintain constant water temperatures throughout the facility.

"Previously it was difficult to distribute cold water to the farthest building from the chillers. The new chillers and pumping system enable delivery of the right amount of cold water to all buildings at all times," said Jeffrey Barat, a partner at D&B Engineering. "The end result is improved employee comfort and energy savings even beyond what we expected."



The equipment upgrade, completed in 2014, increased plant capacity 33% to 2,850 tons and reduced annual electricity use by 2,365,818 kWh, or \$283,898, per year. The

annual reduction in electricity usage will go a long way to helping CP reach its long-term energy goals. The NJCEP Smart Start program incentivizes pre-approved new construction, rehab and retrofit energy-saving projects. CP qualified for an astounding \$224,526 in SmartStart incentives, applying a combination of prescriptive rebates for the water chillers and custom incentives for the cooling tower (Variable Frequency Drives), chilled water and condenser water pumps.

CP was excited to announce that they "were able to decrease electrical consumption per ton of refrigeration, increase total chiller plant efficiency, increase overall capacity to cover the expanding site's additional footprint and generate over \$300,000 in cost avoidance savings." The overwhelming success of the Global Technology Center's chiller upgrade has increased CP's motivation to accelerate the company's energy saving initiatives. The plant is currently in the process of applying for additional SmartStart incentives to replace their fourth chiller.

For more information regarding D&B, Daikin chillers or NJCEP SmartStart incentives, please visit us at [www.dbnj.com](http://www.dbnj.com). For a complete case study on NJCEP's website, click [here](#).