

CASE STUDY: HARLEYSVILLE INSURANCE HARLEYSVILLE, PA

Tozour-Trane, a division of Tozour Energy Systems, Inc.

Tozour-Trane

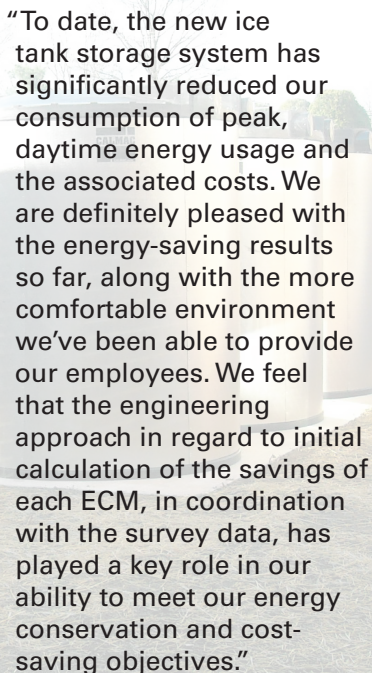
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About Harleysville Insurance

Harleysville Insurance is a leading super-regional provider of insurance products and services for small and mid-sized businesses, as well as for individuals, and ranks among the top 60 U.S. property/casualty insurance groups based on net written premiums. As a Trusted Choice® company partner, Harleysville distributes its products exclusively through a network of independent agents primarily across 32 states. For more information, visit www.harleysvillegroup.com.



"To date, the new ice tank storage system has significantly reduced our consumption of peak, daytime energy usage and the associated costs. We are definitely pleased with the energy-saving results so far, along with the more comfortable environment we've been able to provide our employees. We feel that the engineering approach in regard to initial calculation of the savings of each ECM, in coordination with the survey data, has played a key role in our ability to meet our energy conservation and cost-saving objectives."

Andy Shields, assistant secretary and director of facilities, Harleysville Insurance

THE CHALLENGE

Harleysville Insurance, based in Harleysville, Pa., is housed in a two-story office building comprising about 220,000 usable square feet and accommodating about 900 full- and part-time employees. The original part of the complex was constructed in 1950, with three additions built over the years to support the company's steady upward growth in property, casualty and life insurance.

The company has had a long-standing relationship with Tozour-Trane, a division of Tozour Energy Systems, Inc. Based on the age of the Harleysville building's HVAC systems, coupled with pending utility deregulation in 2011 that is expected to increase energy costs by 20 percent or more, Tozour-Trane recommended that the company upgrade its existing infrastructure and controls to save on its energy consumption and costs.

Tozour and Harleysville worked closely to determine a solution with the right mix of energy conservation measures to balance payback based on the age of the facility and pending utility deregulation cost increases.

THE SOLUTION

Tozour-Trane partnered with Concord Atlantic Engineering and Innovative Energy Solutions to provide the turnkey solution to Harleysville Insurance. After an engineering review of the facility, Tozour proposed replacing the building's existing chiller plant with a new thermal storage solution designed to optimize the company's energy savings. Lighting and control upgrades on the facility's air handling systems also were suggested to provide a more efficient and comfortable environment for the company's employees.

The chiller plant project consisted of the replacement of two CFC chillers with a new Trane Helical Rotary Chiller, the rebuilding and renovation of a Trane Centrifugal Chiller, and the installation of a Calmac Thermal Storage System to "load shift" electrical consumption.

The new system produces ice during off-peak hours when electricity rates are significantly lower, which reduces the client's overall utility costs. During the daytime hours, the ice is melted to produce chilled water for the building's comfort cooling needs. In addition, a facility-wide lighting upgrade was performed and existing air handling units at the site were upgraded to include variable frequency drives with enhanced space pressurization and controls to provide increased efficiency and employee comfort.

One of the most unique aspects of this project is the physical location of the ice storage tanks. Harleysville installed the tanks outdoors in a courtyard near a highly used corridor so the company could showcase this important green initiative before its employees and visitors.

THE RESULTS

With the new ice tanks, Tozour shifted 300kW+ of demand from peak times in the early afternoon when the electrical grid is stretched to capacity, to after midnight when the grid is relaxed and there is an excess of electrical capacity.

Based on preliminary estimates, the project is expected to generate energy savings for Harleysville Insurance representing more than 1,900 tons of carbon avoided, which is the equivalent of planting more than 9,500 trees.