

Morgan Stanley Achieves Energy Efficiency Using Innovative Chiller and Ice-Storage Technology

Purchase, New York · Westchester County

Background

Morgan Stanley headquarters for its Private Wealth and Asset Management groups is located within a 747,595 square-foot office building in Purchase New York. Morgan Stanley acquired the building in 2002 and sought to implement energy efficiency measures during renovation. The company partnered with Trane Company and CALMAC to help achieve its energy goals.

The New York State Energy Research and Development Authority (NYSERDA) was contacted and financial assistance made available through its **New York Energy SmartSM** Peak-Load Reduction Program. This program seeks to reduce electric-power costs and improve electric system reliability, especially during the summer months by providing incentives for permanent demand-reduction, load curtailment/shifting, interval meters, and distributed generation projects.

Recommendation

As renovations took part at the Morgan Stanley building, it was recommended that a new 1400 ton Trane Earthwise CenTraVac chiller, which operates at .576 kW/ton in day mode and .733 kW/ton in ice-making mode be installed. The ice made by this chiller is stored in 48 CALMAC IceBank tanks with a total storage capacity of 8400 ton-hours, and includes a crossover plate and frame heat exchanger, which adds redundancy to the existing data cooling loop and extends the free cooling season for the facility. The system has the flexibility to run on chiller only, ice only, or a combined operation. There is also an emergency mode that can provide comfort cooling while making ice in the evening.

Incentives and Results

A NYSERDA incentive of **\$314,500** is provided for this project which will achieve:

Peak summer kW reductions	740
Annual kWh savings	870,000
Natural Gas Savings (therms)	150,000
Annual energy savings	\$545,000
Simple payback	4.5 years

The environmental benefits of this project are equivalent to Morgan Stanley planting 1.5 million acres of trees to absorb the carbon monoxide caused by the electrical usage during one year, or removing 271 cars from Westchester County roads.

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