

Ice keeps New York office towers cool

NEW YORK (AP) -- As the summer swelters on, skyscrapers and apartments around the city will crank up air conditioners and push the city's power grid to the limit -- but some have found a cool alternative.



Some skyscrapers in New York City are using ice to keep office workers cool this summer.

Some office towers and buildings are keeping their AC use to a minimum by using an energy-saving system that relies on blocks of ice to pump chilly air.

"If you take the time to look, you can find innovative ways to be energy efficient, be environmental and sustainable," said

William Beck, the head of critical engineering systems for Credit Suisse.

The systems save companies money and reduce strain on the electrical grid in New York, where the city consumes huge amounts of power on hot summer days.

Ice cooling also cuts down on pollution. A system in Credit Suisse's offices at the historic Metropolitan Life tower in Manhattan is equal to taking 223 cars off the streets or planting 1.9 million acres of trees to absorb carbon dioxide from electrical use for a year, according to the New York State Energy Research and Development Authority.

Such a reduction in pollution is valuable in a city where the majority of emissions come from the operation of buildings. Officials said there are at least 3,000 ice-cooling systems worldwide.

Because electricity is needed to make the ice, water is frozen in large silver tanks at night when power demands are low. The cool air emanating from the ice blocks is then piped through the building. At night the water is frozen again and the cycle repeated.

Ice storage can be used as the sole cooling system, or it can be combined with traditional systems to help ease the power demands during peak hours.

At Credit Suisse, for example, the company must cool 1.9 million square feet of office space at the historic Met Life tower.

How it works

- Air conditioning can be very expensive and use a lot of electricity, so some buildings are turning to ice cooling.
- Imagine a fan blowing cool air from a block of ice, only on a larger scale. Water is frozen in huge silver tanks and the cool air emanating from the ice blocks is then piped throughout the building.
- Officials say replacing traditional air conditioners with the ice-cooling system in one Manhattan office tower is as good for the environment as taking about 220 cars off the streets.

Source: AP

In the basement, three main cooling rooms house chilling machines and 64 tanks that hold 800 gallons of water each. Credit Suisse has a traditional air conditioning system, but engineers use the energy-saving system first.

Construction on the system took about four months, and company engineers say it is extremely efficient.

"When you make something mechanical, it can break, but a big block of ice ... isn't going to do anything but melt," said Todd Coulard of Trane Energy Services, which built the Credit Suisse system.

Trane, the air conditioning arm of American Standard, also developed a system for Morgan Stanley's Westchester County offices and just completed a new system for its offices on Fifth Avenue. A new Goldman Sachs headquarters will also have ice cooling.

Credit Suisse is considering installing the systems in offices around the globe, but nothing has been decided yet. Coulard, an expert in energy efficiency, was hired by the company four years ago to develop the energy services department.

"The idea of not only saving money for large companies, but doing something that benefits the environment, is win-win," he said. "It's doing the right thing."

Ice storage at Credit Suisse lowers the facility's peak energy use by 900 kilowatts, and reduces overall electric usage by 2.15 million kilowatt-hours annually -- enough to power about 200 homes, officials said.

At the Morgan Stanley facility in Westchester County, the system reduces peak energy use by 740 kilowatts and overall electricity usage by 900,000 kilowatt hours annually.

Both companies received incentives from the New York State Energy Research and Development Authority under a program designed to improve the power grid and help businesses reduce operating costs.

The technology is not for every office space. There has to be room to install the large tanks -- and costs are considerable. Credit Suisse spent more than \$3 million to renovate its cooling system and Morgan Stanley's costs were comparable, meaning the technology is best suited to large companies.

"This is for companies that want to go green, but there (need) to be other benefits, returns on investments," Coulard said. "It works for larger companies because their cooling costs are so considerable."