

NSIDC reduces cooling costs; stays true to mission

The National Snow and Ice Data Centre (NSIDC) in Boulder, Colorado, had a unique problem. The tools it was using to operate were actually contributing to the global warming issues it was monitoring. Coolerado helped the company dramatically reduce its energy use and stay true to its mission.

Specifications

Customer

National Snow and Ice
Data Center

Location

Boulder, Colorado

Property type

Data Center

Square footage

1,700

Coolerado solution

8 Coolerado M50's

Results

- 85-97% reduction in energy use
- Free cooling in shoulder season
- Drop in PUE from 2 to 1.09
- Saves \$54,000 a year in cooling

NSIDC studies “cryosphere”—areas of the planet that consist of snow and ice. Since the center began studying the cryosphere in 1976, it has witnessed a dramatic decrease in frozen surfaces, which can be directly attributed to global warming. David Gallaher, Manager of IT Services at the NSIDC says the irony of operating the data center is that the equipment it was using to study global warming was actually contributing to the problem.

Like most data centers, the NSIDC used a significant amount of energy to run and cool its IT equipment. Of its 77,000 sq foot building, the data center accounts for just

2% of that space, yet used over a half of the power. What's more, over half of the 100 kilowatts used to run the data center went to cooling. So, when the center needed to upgrade its cooling system, it looked for a more energy-efficient option.

That option involved installing eight Coolerado M50 air conditioners inside the data center. An air-handling unit positioned on the roof brings in outside air, which is then cooled by the Coolerado air conditioners. Unlike most air conditioners that only cool recycled indoor air, the Coolerado units run fresh outdoor air through air filters and then a heat and mass exchanger (HMX). This process





delivers cool air using one-tenth of the energy of traditional air conditioners.

“It now takes less energy to cool down the whole data center than it does to run your car’s air conditioner,” said Gallaher.

In months when outside air is cooler than inside air, the units are able to take advantage of “free cooling” by simply filtering the cold outside air and pumping it directly into the space. In this case, the Coolerado units’ unique design provide yet another benefit. The system regulates the air and adds humidity when the data center gets too dry.

The Coolerado units produce moist air as a waste product. By putting dampers on the exhaust stream, the center also gets “free” humidity. A variable speed motor helps maintain a very precise humidity using just 10% of the energy that was once used to run only its steam humidifier.

Another plus of the system is its built-in redundancy. If one unit goes down, it can be serviced without bringing the entire system down. The units’ modular design also makes it easy and cost-effective to add cooling capacity.

The new cooling process also requires very little maintenance because the Coolerado technology has only two moving parts. Regular maintenance is generally limited to changing air filters. “We’ve reduced our energy use by as much as 97%. In terms of strict dollars and cents, that’s a payout of less than two years. More importantly, this technology is allowing us to fulfill our mission. You can’t put a price on that.” said Gallaher.

“It now takes less energy to cool down the whole data center than it does to run your car’s air conditioner.”

David Gallaher
Manager of IT Services

“We’ve reduced our energy use by as much as 97%. In terms of strict dollars and cents, that’s a payout of less than two years. More importantly, this technology is allowing us to fulfill our mission. You can’t put a price on that.”

David Gallaher
Manager of IT Services

About Coolerado

Based in Denver, Colorado, Coolerado has been designing, manufacturing and marketing super-energy-efficient air conditioning systems for light commercial use, based on its proprietary, patented and proven technology since 2004. Customer energy savings of over 80% have been recorded with this cost-effective technology. Coolerado products are highly reliable and virtually maintenance-free and are currently operating in many countries around the world. Coolerado is another quality product by Seeley International.

Another quality product by



coolerado.com