New Jersey's Clean Energy PROGRAM™

Your Power to Save

Success Stories

Munich Reinsurance America, Inc.

Energy Efficiency and Comfort in Balance

PROJECT INFORMATION

Organization
- Munich Reinsurance America, Inc.

Location
- Princeton, NJ

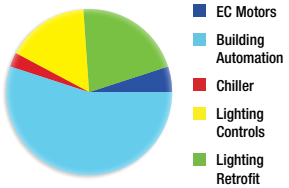
Project Contact
- Paul Lupica
  Vice President
  Corporate Facilities

Technologies
- Building Automation System
- High Efficiency Lighting
- Lighting Controls System
- Electronically Commutated Motors on Fan Powered Units
- Design Support for Chiller

Total Project Cost
- $3,703,957

NJCEP Incentives
- $42,539 Design Support
- $793,293 End Of Project
- $547,112 End Of Performance Period

Project Savings
- $955,483 annual energy and demand expenses
- 6,265,970 total anticipated annual kWh savings



Project information, savings and environmental benefits were provided by the project contact.

The Energy Reduction Plan combined Building Automation System (BAS) strategies of real time critical zone resets and demand control ventilation with lighting strategies of dimming, day light harvesting, and occupancy control to provide the ideal operating condition where comfort and energy usage are in complete balance.

"The company's partnership with New Jersey's Clean Energy Program is an outstanding example of jointly working towards environmental responsibility in a manner that mutually benefits the company and the community."

Paul Lupica
Vice President, Corporate Facilities
Munich Reinsurance America, Inc.

Background

As a leading risk carrier and provider of financial services operating worldwide, Munich Re acknowledges its responsibility for environmental protection and sustainability. Since 2001, Munich Re has been a permanent fixture on the Dow Jones Sustainability Index. The headquarters of its U.S. subsidiary, Munich Re America, includes 417,400 square feet of interior space located on 40 acres in Princeton, NJ.

Challenge

In June 2007, Munich Re announced that its international organization — with over 50 locations worldwide — would be carbon neutral by 2012. Munich Re America's first step towards achieving this goal is to dramatically improve energy efficiency while maintaining or improving comfort for employees and clients on the 22-year-old campus.

Solution

In 2009, Munich Re America partnered with ENERActive Solutions, an independent energy consulting and project development company. ENERActive provided in-depth analysis, offered project development consultation, assisted with the development of the project, and facilitated assistance from Pay For Performance, part of New Jersey's Clean Energy Program.

The first important component of the project was selecting an innovative building automation controls provider. After an exhaustive review of products and companies, DVL Automation was chosen to upgrade the controls to a web-based Automated Logic BAS.

Both comfort level and energy usage are being measured and verified at each level of building operations: central cooling plant, air handling systems, and each occupant zone thermostat.

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Munich Reinsurance America's Princeton campus is one of many Munich Re locations worldwide that will be carbon neutral by 2012. Upgrades to the lighting, building automation system, and lighting controls will combine to reduce energy consumption by over 40% on the campus.

PAY FOR PERFORMANCE is a comprehensive energy efficiency program for large facilities that provides incentives towards whole-building energy improvements in existing buildings and new construction projects.

Incentives typically cover 25% or more of project costs and are delivered at various stages of implementation, including a final payment when performance goals have been achieved.

Munich Re America
Munich Re Group

Munich Reinsurance America, Inc.

555 College Road East
Princeton, NJ 08543

A series of dynamic reset control algorithms continuously balance the comfort needs of the occupants with the optimization of energy consumption by the heating, ventilation, air conditioning, and lighting systems. Airflow is regulated in each occupant zone with the use of highly efficient Electronically Commutated Motors (ECM) and ventilation airflow is reset based on the actual mix of outside air in the primary airflow system.

Through the BAS, air and water systems utilize integrated temperature and static reset based on real-time zone load requirements. Also, demand control ventilation is implemented in high occupancy zones to insure that CO_2 levels are minimized without impacting nearby occupant zones and their energy usage.

The second key component was an overhaul of the campus lighting system. The combination of a fixture retrofit on a large portion of the campus lighting and the addition of lighting controls to keep lights off or dimmed when not needed provided significant energy savings, as well as improved light levels that are more evenly distributed.

Upgrading lighting controls to an Encelium lighting management system gave Munich Re America access to multiple strategies in lighting management, including smart time scheduling, occupancy control, daylight harvesting, and automated load shedding. Also, the flexibility of the system allows for quick and easy changes to the lighting levels and lighting groups through software based technology, thereby supporting the ever-changing needs of the campus.

The lighting project also included converting 3500 2 x 2 fixtures from a three lamp T-8 or bi-ax fixture to a two lamp T-5 standard. This change provides a longer lasting lamp, while reducing storage costs, disposal costs, and the amount of mercury-containing lamps entering the waste stream. The new fixtures reduce electrical consumption by approximately 60% when compared to the existing lay-in lighting fixtures.

Benefits

Savings from the project are estimated at over 6,200,000 kWh's annually (over 50 kBTU per sq ft). The measures are expected to take approximately 8 months to install after the design is completed and will permanently reduce the annual kWh usage on the all-electric campus by over 40%.

The expected New Jersey's Clean Energy Program incentive of $1,384,954 allowed the company to be even more aggressive in targeting areas to improve, and with annual energy savings of approximately $955,000, this multifaceted project allows Munich Re America to maximize comfort and productivity in an environmentally and financially responsible manner.