[Schneider Electric Case Study - Commercial Office]

The Durst Organization

New York, New York

Achieving success in developing environmentally advanced buildings

Make the most of your energy℠

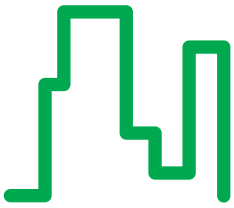
Schneider Electric

New York City is arguably the world's most competitive real estate market.

Since its founding in 1915, The Durst Organization has achieved great success in this market by developing innovative properties.

As new technologies emerge, Durst combines its role as an early adopter with its own best practices to develop properties where each new building becomes more environmentally advanced than its predecessors.

With One Bryant Park in midtown Manhattan, Durst has built the world's first office tower to achieve the LEED Platinum rating, the highest level of certification awarded by the USGBC (U.S. Green Building Council).



CUSTOMER BENEFITS

- Scalable, flexible architecture
- Interoperability with building automation and business systems
- Web portal for real-time and historical data
- Coordinated control for managing demand and loads
- Trending, reporting, and monitoring of alarms and events

PROJECT AT A GLANCE

Project Type:
Centralized sub-metering and advanced energy monitoring system

Location:
New York City

Number of Buildings:
9 Class A commercial properties – total 8.447M sq ft.

Installation:
2002 - 2010

The Challenge

All of the company's commercial properties in New York City have Class A ratings, which speaks volumes about how well they are designed, maintained and managed. Collecting energy data from each building was a labor-intensive task that relied on coordinating the efforts of building staff and third parties.

Durst envisioned a system that would accurately allocate energy costs to tenants while allowing the building staff to respond faster to issues that could affect tenant satisfaction and impact operational costs.

A key component in any building's operational cost is energy. In New York City, energy might include chilled water, domestic water, natural gas, steam and electricity. Timely collection of data relating to the usage of energy throughout the building allows for better reconciliation of complex utility tariffs.

Managing electrical time-of-use rates ... day-ahead hourly pricing ... power factor and peak demand charges - all can become a full-time job for a property owner. Accurately billing tenants in accordance with the utility rates brings additional challenges.

Moreover, savvy tenants often consider energy costs when negotiating their leases while also stipulating some degree of certainty regarding the availability and quality of power in their space. Attracting these tenants requires an owner to be aware of a building's energy delivery systems and to develop tools that provide the ability to effectively manage energy resources.

Durst specified a metering system that would allow its buildings to send utility data to a centralized server via its local area network (LAN), enabling Technical Services staff to view, trend and report on energy use by any building process, tenant space or an entire building. Requirements for the metering system also included utility-grade accuracy, proven and reliable technology, and vendor support throughout all phases of development and implementation.

The bottom line was that Durst wanted a system that would allow the company to take the next step in operating "green" buildings while optimizing performance and assuring accurate recovery of utility costs across its entire portfolio.

Ultimately, Durst selected Schneider Electric because of its end-to-end solution, commitment to leverage the existing infrastructure wherever possible, and willingness to provide engineering guidance throughout the project. Moreover, the two companies had collaborated since 2001 to implement metering applications in multiple Durst properties, which had earned Schneider Electric a role as a trusted advisor.

Solutions Installed:

- ION Enterprise Management System
- Base building and Tenant meters (ION7330)
- Remote terminal units (ION 7550 RTU)
- Remote terminal units (ION 7700 RTU)

The Solution

Making the most of energy resources requires the right tools to uncover all opportunities, avoid risks, track programs against goals and verify success. Schneider Electric's sub-metering solution addressed these requirements head-on.

Schneider Electric expanded its ION Enterprise software server, ION tenant sub-meters and communication gateways at One Bryant Park, adding the ability to pull energy data from the building automation system (BAS) to monitor operation of its sophisticated cogeneration plant and ice-making equipment. Technical Services staff uses the expanded system to plan building operations, ensuring energy use during peak periods is reduced , to lower the building's overall energy spend.

Wherever possible, Schneider Electric used Durst's existing meters and leveraged equipment to count pulses, connecting up to 20 meters to a single device. Making the most of Durst's secure LAN, Schneider Electric also integrated its metering system with digital pulses from utility meters (electricity, water, steam) and with data from equipment such as VFDs (variable frequency drives).

In buildings where peak electrical demand is greater than 3,000 kW, New York's Public Service Commission allows utilities to institute day-ahead, hourly pricing for electricity, which more closely links the price of each kilowatt with the hourly demand for electricity in the city. The expanded metering system allows Durst to manage this rate change by tracking building and tenant energy use in real-time, managing energy use during peak hours to control costs, and leveraging timely energy information for more intelligent building operations.

Durst's sophisticated, web-enabled, advanced metering system serves multiple functions: accurate billing based on energy use by individual tenants, and system performance monitoring in real-time. In addition, Durst's electrical engineers are able to analyze new tenant space designs and requirements to
assure sufficient electrical distribution in accordance with lease terms and building rules and regulations.

Schneider Electric's solution enables ongoing measurement and verification (M&V) for LEED certification of a building's energy performance, the EPA's EnergyStar ratings, and local benchmarking requirements.

"M&V [measurement and verification] is essential – you simply can't operate a building without a well-developed M&V plan."

– Don Winston,
Vice President of
Technical Services

The Bottom Line

One Bryant Park raised the bar for high-profile, high-rise buildings, becoming the first office tower to earn the coveted LEED Platinum rating by incorporating features designed for greater water efficiency, higher indoor air quality, and overall energy conservation.

Durst now monitors electrical distribution across its commercial portfolio in real-time and regulates power use during peak demand periods to take advantage of pricing incentives. In the event of a power disruption, on-board memory in each meter stores the data and sends it to the server when power is restored, assuring accurate information for tenant billing.

Durst reaped another benefit in terms of revenue recovery. The previous 60-day lag between paying for a building's energy use and allocating those costs to tenant spaces ended when the new sub-metering system was installed. Today, the recovery schedule matches the utility billing schedule, allowing Durst to quickly and easily allocate individual tenant electrical use and bill accordingly.

Energy use in tenant spaces typically accounts for up to 70 percent of a building's total energy load. By providing tools and guidance to tenants for increasing their energy efficiency, the Durst Organization differentiates itself as not only a provider of green buildings, but also as a provider of "bright green" performance buildings.

"A powerful yet user friendly metering system is important to the operation of a "Class A" office building, not only for tenant billing purposes, but to identify equipment and operational issues that may have a substantial impact on energy usage and cost."

– Phil Skalaski, Assistant Director of Technical Services

Schneider Electric SAS
295 Tech Park Dr., Suite 100
LaVergne, TN 37086
(615) 287-3500

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