

# Meeting demands and increasing energy efficiency

## Case Study

Sector:  
Data Centers

Company:  
Time Warner Cable

Location:  
New York, NY

Measures Implemented:  
A mix of energy-efficient power,  
cooling, and lighting strategies

Energy Savings Results:  
970,000 kWh and  
\$184,000 annually

## Background

Time Warner Cable provides Internet, phone, and television service to millions of businesses and homes across 28 states. To support its nearly 1.5 million customers in the New York metro area, the telecommunications company operates mission-critical equipment out of nearly 40 hub sites across the five boroughs of New York City and the Hudson Valley. Since it was established in 1989, Time Warner has seen requirements for power and cooling increase dramatically in these sites due to rapidly changing technology and an expanding customer base.

To meet this increased demand, Time Warner Cable is growing the capacity of one of their most active sites, Hub Site C, by building out approximately 14,800 square feet of raised floor data center space on the Upper East Side of Manhattan. The new, full 2N structured Tier 4 facility, dubbed “Super C”, is three times larger than the current Hub Site C. The Time Warner Cable critical infrastructure team wanted the new facility to be as energy efficient as possible and engaged with the New York State Energy Research and Development Authority (NYSERDA) in the initial planning phases to brainstorm ways to incorporate energy efficiency into the design of the facility.

## Recommendations

In dense, urban environments, Time Warner Cable’s network of hub sites must be especially close in proximity to customers to minimize latency. As a result, it was necessary to locate Hub Site C in the Sutton Place neighborhood of Manhattan to intersect with their existing network and feed their high-density mid-Manhattan customer load. Restricted to only a handful of possible sites, the team selected a four-story building that was originally built as an ice house and was designed with 12-18 inch cork-cored walls, making the space extremely well-insulated.

“It’s been a real team effort. We sat around the table with NYSERDA, Willdan, and our business partners and asked ‘What if we do this? How about this?’ Working with NYSERDA isn’t just about capturing the money for incentives — it’s not a driving factor compared to what we spend — but what they help us recoup in efficiency and redundancy is really primary to the process.”

— Sal Azzaro, Senior Facilities Director, Time Warner Cable

In addition to site selection, energy efficiency played a significant role in the design of Super C, and Time Warner Cable worked closely with NYSERDA and their data center outreach consultant, Willdan Energy Solutions, in the early stages of design. The new facility will be powered by two 600 kW UPS units that will improve the power quality for the IT equipment and are estimated to run up to 95-96 percent efficient. Super C will be cooled by a high-density, in-row cooling system comprised of a 45-ton glycol-cooled chiller module, eight in-row cooling modules, and a 240-ton indoor dry cooler to reject heat to the outside. The heat rejection system will be fitted with eight 15-horsepower fans and free cooling coils that will allow Time Warner Cable to take advantage of cool outside conditions (below 55°F). Time Warner Cable is also installing LED lighting and controls across the entire space.

## Results

Through a mix of energy-efficient power, cooling, and lighting strategies, NYSERDA and Con Edison estimate that Time Warner will save 970,000 kWh per year over a comparable baseline case and will save approximately \$184,000 on their electricity bill annually. The final incentive amount will be determined through a measurement and verification period that will allow Time Warner Cable to understand how electricity is used in the new facility and quantify how much energy the new facility uses compared to its baseline case.



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