

BUSINESS ENERGY SOLUTIONS

ENERGY EFFICIENCY CASE STUDY:

Blake Group
East Windsor, CT



The Blake Group is a manufacturers' representative and distributor of water and thermal energy products. When it was time to design a new home for its growing distribution, manufacturing, pump repair, corporate training, and warehouse operations, it set out to build the first Net Zero commercial building in Connecticut. The Blake Group is a manufacturers' representative and distributor of water and thermal energy products. When it was time to design a new home for its growing distribution, manufacturing, pump repair, corporate training, and warehouse operations, it set out to build the first Net Zero commercial building in Connecticut.

"The project was an opportune time to live our commitment to sustainable energy through our own building. We've monitored and determined we are now generating at least 150% of the energy we were using in the entire building, including all the equipment from our distribution center to our office machines and lights. This building enables us to test and learn how to get the most out of the technology and share what we learn with our customers and industry leaders. We hope others will feel empowered to build their own net zero commercial energy buildings."

- Fred Cuda, The Blake Group CEO

The Challenge

The Blake Group wanted to incorporate some of the very building technologies it markets into its plans to build a "net zero" structure, which utilizes energy-efficient design and technology to lower a building's energy use and balances energy used with energy produced through on-site renewable sources.

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The Eversource Solution:

The Blake Group gathered a team of experts including Eversource at the beginning of the planning process to support the design, development and financing of the pre-fabricated metal building.

Major aspects of the project that enabled The Blake Group to achieve net zero success include:

- Energy-efficient interior and exterior LED lighting and controls that harvest daylight, and utilize 25% less energy
- High R-value insulation (twice the standard 2.5"), which will provide payback over the building's lifecycle
- Thermally enhanced radiant tubing throughout the warehouse floor, which reduces circulator water pumping and maximizes efficiency and reduces demand of heat pump heating by about 20 percent
- A fresh air energy recovery ventilator exhausting unit that recovers energy from both heating and cooling, reducing building loads
- A rooftop photo-voltaic system that generates 92,000 kilowatt hours of electricity, approximately 150% of the building's annual energy usage

In addition to being recognized as Connecticut's first NBI-verified Zero Energy commercial building and one of the first 100 NBI-verified buildings across the United States and Canada, the building is a showcase and teaching tool for customers.

Results Summary

- Energy efficiency and zero energy a primary goal from early on in the design process
- Expected to save over 37,000 kWh annually, operate at a reduced heating load of 12 Btu/sf, and offset its additional energy demand through renewables.
- Savings of about \$6,000 in annual energy costs over a conventionally constructed steel building of the same size

Environmental benefits equivalent to:

- 100 tons of carbon dioxide emissions avoided a year
- 20 cars taken off the road for a year
- Planting nearly 150 trees

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