

High performance buildings in high demand

University Research Park debuts new, energy-efficient building

Design strategies that reduce a building's energy use and lessen its environmental impact are hot commodities. University Research Park of the University of Wisconsin-Madison was banking on this when planning its new Accelerator building. And, that's why they partnered with Focus on Energy, Wisconsin utilities' statewide program for energy efficiency and renewable energy.

CHALLENGES

From the beginning, University Research Park directors knew they wanted the three-level, 84,000-square-foot structure to be as energy efficient as possible. Yet, the building is a mixed-use space—labs make up 80 percent of the space, and storage and offices account for the rest. A ventilation system has to run 24/7 for safety. How could all these different spaces be energy efficient and cost effective?

University Research Park directors knew who to turn to for answers. They contacted Focus on Energy. With input from Focus, University Research Park developers took a whole-building approach, which is ideal for buildings in the early design stages with complex energy-efficiency requirements. It also includes energy modeling to calculate projected annual energy savings.

Specifically, Focus used an energy simulation tool to compare the building with and without various energy-efficient options. First, a baseline model of the new building was developed. This “control building” represented a traditionally constructed building built to code.

Next, other model runs showed alternate building plans with various energy efficiencies plugged in. This allowed University Research Park developers to compare hypothetical building plans against the “control” and to evaluate the associated costs.



The developers chose the model that suggested the Accelerator building could be 30 percent more efficient than the “control.”

ACTIONS

Focus and University Research Park directors looked at three specific areas to achieve their energy performance goals: building envelope, mechanical systems, and electrical systems.

The building envelope includes enhancements to the windows, exterior walls, and roof that go above and beyond the current building code. For the Accelerator building, this included significant improvements in wall and roof insulation.

The high-performance mechanical systems installed include an overall high-performance system; energy-efficient configurations (e.g., dry-bulb economizers); a hot-water loop consisting of three 1500 MBH condensing boilers; a chilled-water loop, including two high-efficiency, 140-ton air-cooled scroll chillers; and a glycol energy recovery loop.

For more information,
call 800.762.7077 or visit focusonenergy.com.

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The electrical systems for the Accelerator building include interior lighting power density and high-efficiency motors with variable-frequency drives.

You won't find an electric heating system in the Accelerator building. The models showed this would have increased energy bills by \$23,500 per year. As a result, the developers opted for the hot-water loop heating system to save the tenants money.

RESULTS

As a result of working with Focus, University Research Park qualified for \$59,328 in financial incentives! The Accelerator building also saves more than 64,000 kilowatt-hours of electricity and 66,000 therms of natural gas annually—enough energy to power 74 Wisconsin homes for a year. Its tenants save a combined total of \$76,000 on energy bills each year.

“University Research Park has been successful in supporting the commercialization of university technologies—especially those in the life sciences—and continues to help emerging companies operate responsibly and economically,” said Greg Hyer, Associate Director, University Research Park. “Laboratories are energy intensive so when University Research Park needed additional laboratory capacity to meet increasing demands from companies coming off campus, it was critical to make the building as energy efficient as possible.”

BOTTOM LINE

University Research Park's development team worked collaboratively with Focus to reach their energy goals. As a result, the Accelerator building is now a model for energy efficiency.

NEXT STEPS

Call **Focus on Energy** at **800.762.7077** or visit **focusonenergy.com** to get started with your business' new construction project.

“Focus is helpful and knowledgeable. Support from Focus added real value to our project and helped to make our building project better,” said Greg Hyer, Associate Director, University Research Park. “Remember, these types of projects can take more planning and time than traditional projects, so connect with Focus early in the process.”

TAKE ACTION TODAY. SEE RESULTS TOMORROW.

Lower energy costs. Cleaner air and water. A healthier bottom line. These are the results when Wisconsin businesses tap into energy efficiency and renewable energy. To find out how you can reduce energy costs and improve the profitability of your business, call Focus on Energy at **800.762.7077** or visit **focusonenergy.com**.

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Join our online conversation at **focusonenergy.com/socialnetworks** to connect with people who share your interest in saving energy and money at home and work. Also, visit **focusonenergy.com/incentives** for the latest incentives and requirements as Focus offers are subject to change.

Focus on Energy works with eligible Wisconsin residents and businesses to install cost-effective energy efficiency and renewable energy projects. Focus information, resources, and financial incentives help to implement projects that otherwise would not be completed, or to complete projects sooner than scheduled. Its efforts help Wisconsin residents and businesses manage rising energy costs, promote in-state economic development, protect our environment, and control the state's growing demand for electricity and natural gas. For more information, call **800.762.7077** or visit **focusonenergy.com**.

