

robert w.
galvincenter



for electricity innovation

at ILLINOIS INSTITUTE OF TECHNOLOGY



Our Mission

The mission of the Robert W. Galvin Center for Electricity Innovation is to pursue groundbreaking work in the generation, transmission, distribution, management and consumption of electricity.

The center is bringing together researchers, industry, government and innovators to plug-in to IIT's smart microgrid, research laboratories and Technology Park, creating a hub – or sandbox – for new innovations in advanced grid technology.



State-of-the-Art Facilities

In 2012 the Galvin Center completed a state-of-the-art facility designed to house its Smart Grid, microgrid and energy research, demonstration and education activities.

The 16,000-square-foot center contains offices, exhibition rooms, classrooms and student workrooms, acting as a hands-on experience center for Smart Grid, microgrid and energy technology and education.



Fostering Innovation

Workforce Training and Education

The Galvin Center's Smart Grid Workforce Education and Training Center is a \$12.6 million project to educate and train the nation's workforce to meet the global challenges and opportunities of the Smart Grid.

This initiative will educate and train 50,000 people on Smart Grid and new energy topics and develop new curriculum through a network of partners.

Great Lakes Symposium

The Galvin Center hosts the annual Great Lakes Symposium on Smart Grid and the New Energy Economy. This one-of-a-kind event showcases Smart Grid best practices from around the country along with innovative technologies and ideas that are spurring innovation, growing economies, reducing emissions and empowering consumers – GreatLakesSymposium.org.

Illinois Smart Grid Regional Innovation Cluster

The Galvin Center leads the Illinois Smart Grid Regional Innovation Cluster, a consortium of innovative institutions working to develop an emerging Smart Grid technology cluster in Illinois – SmartGridCluster.com.

Groundbreaking Research

Perfect Power Microgrid at IIT

Inspired by the leadership of Bob Galvin, the center's premier project is the development of the nation's first Perfect Power microgrid at IIT. When fully completed in 2013, the \$14 million project will equip IIT's microgrid with a new high-reliability distribution system for enhancing reliability, new sustainable energy sources, and smart building automation technology for energy efficiency and demand response. The high-reliability distribution system was completed in 2011, allowing IIT to eliminate blackouts on the microgrid. A \$3 million research project in partnership with Korean research entities and companies was launched in 2011 to demonstrate the use of phasor measurement technology on a microgrid.



Wind Innovation

The Galvin Center leads the University-Industry Consortium for Wind Energy Research, Education, and Workforce Development - a diverse pool of public and private members working together to improve wind power reliability and performance, lower the price of wind energy, encourage greater integration into the utility grid, and build an educated workforce to drive the industry. As part of its wind energy leadership and research, the Center operates three wind turbines:

- An 8kW advanced wind turbine located on IIT's campus is one of the nation's most visible wind turbines, dramatically increasing public awareness of urban wind power.
- Also on IIT's campus is an 8kW lab turbine that allows researchers to pinpoint areas of stress on the turbine to gain insight as they work to find solutions to reduce the wear-and-tear of turbine components.
- A 1.5MW GE turbine in rural LaSalle County, Illinois is outfitted with high-performing technology designed to increase its output and reduce wear and tear of components.



Solar Innovation

The Galvin Center operates a state-of-the-art smart solar installation on IIT's Perfect Power microgrid. The 60kW solar array and corresponding 60kW battery system will serve as a laboratory for new smart solar control technologies.

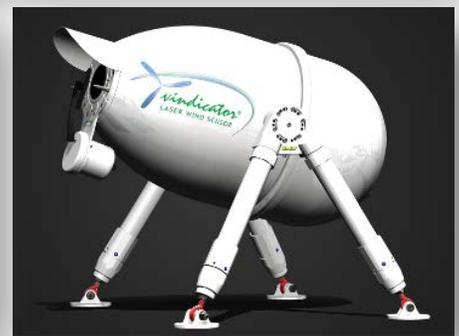
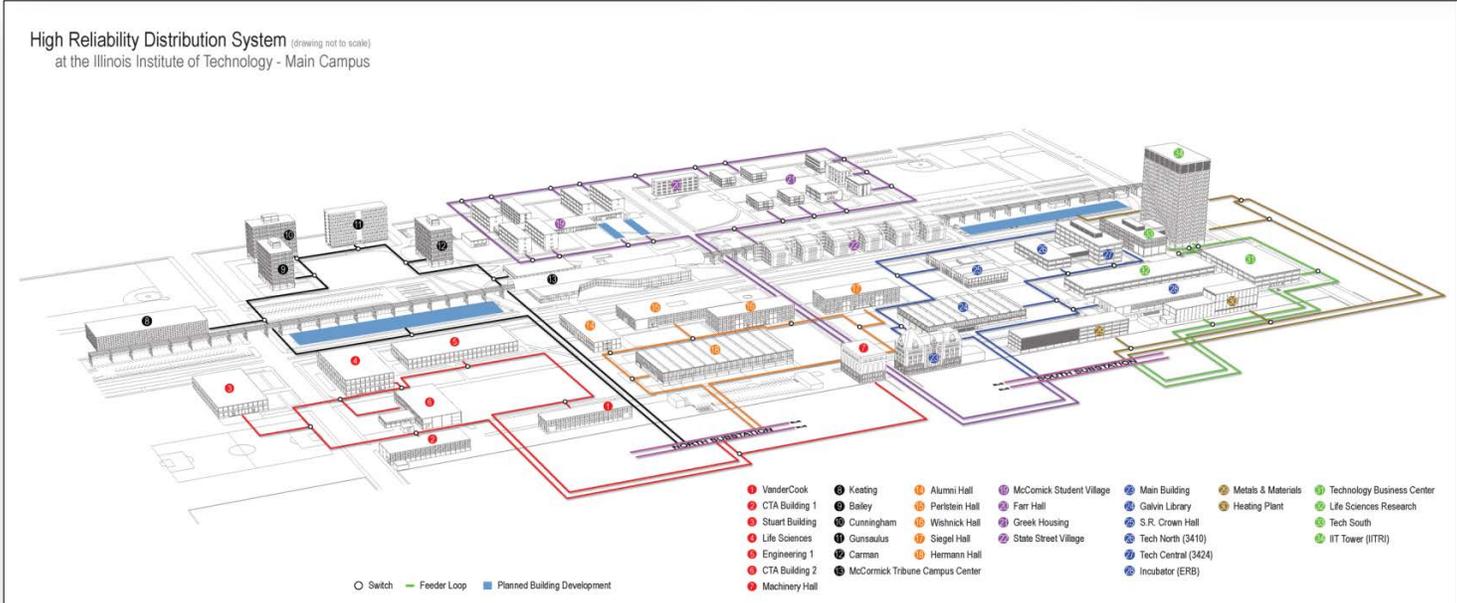
Next Generation Energy Storage

The Galvin Center operates a next-generation smart grid-capable large-scale battery project on IIT's Perfect Power microgrid. The 500 kWh zinc-bromide flow battery will be the first-of-its-kind in the U.S.

Electric Vehicle Charging Stations

The Galvin Center operates a smart electric vehicle charging installation on the IIT Perfect Power microgrid, which includes six Eaton Level 2 charging stations (5-6 hour charge time), and one Eaton DC Quick Charge station (15-20 minute charge time) - all monitored and controlled by a smart grid master controller.





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