Energy and Sustainable Solutions for Local Government

Answers for infrastructure.

SIEMENS

A Vibrant, Growing and Green Community

Your Buildings, Your Infrastructure — For Today and the Future

A solid, stable community. As a civic leader, you know that a strong community is built upon fiscal responsibility, the ability to attract stable business partners and the capacity to provide responsive services that satisfy and retain residents. In challenging economic times, balancing the immediate needs and services of your citizens while addressing the long-term operational, energy and infrastructure requirements of the future will be what gives your municipality an advantage — an advantage that will benefit all of your constituents in local businesses, public facilities and private homes alike.

At the same time, urban planning needs to incorporate sustainable practices to build a lasting, environmentally-responsible community. Municipalities that have incorporated renewable energy solutions, sustainable infrastructure upgrades and green building projects have been shown to have enhanced property values, improved community health and increased business/employee productivity, as well as generating good community relations.

At Siemens, our solutions help your government grow into the future — through strong civic infrastructure planning, fiscal responsibility and thoughtful project management.

Siemens will help you remain a viable, sustainable community through:

- Using existing resources efficiently
- Meeting existing mandates and legislation
- Designing and implementing sustainable facility and resource solutions
- Identifying financing; structuring performance guarantees

Today's Sustainable Community

What actions can you take now to have both an immediate and long-term economic and environmental impact? Whether you are "Going Green" or looking to reduce expenditures through efficient use of resources, Siemens will help you uncover a solution that is valuable to your community.

Renewable Energy: Solar, Wind and Biomass

The Challenge:

Local governments are at the forefront of the green movement — challenged to enact renewable energy legislation and mandates that incorporate alternative and renewable energy into their long-term civic planning. The use of renewable energy gives your community the opportunity to address climate change at the local level.

Siemens Solutions:

Renewable Energy is fuel generated by sources that are readily replenished and available in nature, such as solar, wind, biomass and biogas. As demand for fuel increases worldwide, alternative and renewable energy sources are emerging as economical, dependable options to traditional oil- and coal-based fossil fuels. To reduce your community's carbon footprint on the environment, several options are available.

Your government can take advantage of solar rays by converting them into usable energy. Solar photovoltaics on rooftops or above parking lots is the easiest way to incorporate renewable energy into your energy portfolio.

Wind energy projects capture the kinetic energy of wind, converting it into energy that can serve as a direct use, onsite source of energy.

Wood biomass can be converted into energy through a gasification process that heats wood in an oxygen-deprived environment, transforming the wood into gas, and gas into energy.

Value to your County/Municipality:

- Onsite fuel source
- Demonstration of your government's commitment to renewable energy
- Potential to reduce electricity costs
- State and Federal grants and incentives are available for solar- and wind-related projects

Helping Our Nation's Communities Make a Difference

From energy efficiency and renewable energy solutions to green buildings, Siemens can help make your community more sustainable and reduce greenhouse gas emissions.

A Alternative/Renewable Energy
- Solar Energy
- Biogas Technology
- Wind Energy

B Traffic Lights/Street Lighting Retrofits
- Light-emitting Diode (LED) Bulbs
- Back-up Battery Systems (BBS)
- LED and Induction Street Lighting

C Water Meter Retrofits/Replacements
- Automatic Meter Reading (AMR) Technology

D Wastewater Treatment Plants
- Blowers Upgrade
- Dissolved Oxygen (DO) Control Systems
- Digester Gas Technology
- Methane Capture/Conversion Systems

E Landfill Gas to Energy
- Methane Capture/ Conversion Systems
- Air Quality Improvements

F Green Buildings
- Energy Efficiency Upgrades
- Water Efficiency Upgrades
- Reduced Carbon Footprint
- Green Rooftop Installations

Traffic Lights and Street Lighting Retrofits

The Challenge:

As traffic signals are in continuous use, they consume a significant amount of energy. In addition, the incandescent bulbs used in most traffic lighting and signals typically have a one-year lifespan and need annual maintenance. The signals, while vital for resident order and safety, are not economical.

Siemens Solutions:

LED lighting lasts an average eight times longer than incandescent bulbs. Incandescent traffic lights are converted to high-efficiency LED technology — reducing your municipality's energy consumption and lowering operations and maintenance costs. Traffic signal indicators — including signal and arrow lamps, flashing beacons, school flashers — and their ancillary components are upgraded and converted to more efficient and diverse systems such as Battery Back-up (BBS) and solar power.

Value to your County/Municipality:

- LED bulbs typically use 80 to 90 percent less energy than incandescent bulbs and have a five-to-seven-year warranty before replacement or maintenance is required
- Increased road safety for residents — LED bulbs emit light more evenly, with brighter luminosity
- Reduced operating expenses — less frequent replacement of bulbs requires less staff time
- Convenience for residents — free traffic flow reducing drive time

Water Meter Retrofits and Replacements

The Challenge:

Water is a community asset, and the accuracy of water meters declines with age and extended flow. With each residence and business facility — aging, inaccurate meters can "cost" your municipality both water and funds you never knew you were losing.

Siemens Solutions:

Older, less accurate meters are replaced with new meters that have Automatic Meter Reading (AMR) technology. AMR improves meter accuracy and provides you the opportunity to enhance your revenue stream through a more detailed measurement and reduced operational and maintenance costs.

Value to your County/Municipality:

Generally, municipal water authorities see a revenue change of 5 to 15 percent after upgrades and system replacements are completed.

- More efficient and frequent meter reading
- Increased accuracy; reflecting actual water consumption per residence and capturing "lost and unaccounted for" water
- Improved resident customer service

Wastewater Treatment Plants

The Challenge:

Wastewater facilities are extreme consumers of energy. In operation 24-hours per day, water treatment plants can account for 25 to 50 percent of a municipality's total energy use. As a result, your government could face increased costs from aging infrastructure, new effluent discharge regulations, increasing sludge disposal costs and population growth.

Siemens Solutions:

A comprehensive energy audit of your facilities' equipment and operations can lead to products, services and solutions that will improve the efficiency and operational performance of your treatment facilities. For example, improving aeration technology can result in significant energy and operational savings for your municipality. Siemens will design, develop and implement a comprehensive plan to upgrade inefficient blowers, replace coarse bubble diffusers with fine bubble diffusers, and automate and optimize a Dissolved Oxygen (DO) control system and improve the digestion process.

Value to your County/Municipality:

In addition to energy savings, treatment plant improvements:

- Extend equipment life and improve operational control
- Optimize biosolids systems
- Decrease use of chemicals
- Improve efficiencies
- Create onsite fuel sources

Landfill Gas to Energy

The Challenge:

Of the approximately 254 million tons of solid waste generated annually in the United States, nearly 100 million tons are deposited in municipal solid waste landfills across the country. Decomposing waste produces landfill gas (LFG) which can generate air pollution, unpleasant odors and can be hazardous. The Environmental Protection Agency requires many larger landfills to collect and combust landfill gasses.

Siemens Solutions:

Methane, a by-product of LFG, is a valuable source of energy. Landfills owned and operated by municipalities can convert this gas into a usable energy to help operate their facilities. Or, through the sale of energy generated, used as a revenue source.

Value to your County/Municipality:

Landfills are an existing source of a clean-burning, renewable commodity. You can use this gas to:

- Reduce overall greenhouse gas emissions — capturing up to 90 percent
- Generate energy to power your community or nearby industry
- Provide an additional income stream for the community
- Meet compliance requirements and mandates
- Improve local air quality

Green Buildings

The Challenge:

What impact do the buildings in your community have on the long-term energy and water needs of your residents and the environment; and what increased demands will be placed on your existing infrastructure five years from now?

Siemens Solutions:

Buildings play a vital role in the future of our nation's communities. Our local experts work with your team to establish green building goals that capitalize on energy and water efficiencies, reduce greenhouse emissions, extend facility life and enhance the indoor environmental quality of all public buildings. Siemens Guaranteed Performance-based Solutions can support your municipality's green building goals and mandates with your existing infrastructure – designing facility improvements to support LEED® requirements and ENERGY STAR® targets.

Value to your County/Municipality:

On average, green buildings use 30 percent less energy, emit 35 percent less emissions, conserve up to 50 percent more water and reduce waste by between 50 to 90 percent when compared to conventional buildings. By adopting green building practices, your government can:

- Reduce the environmental impact of your facilities' ongoing operations
- Operating more efficiently — using less energy, water and materials
- Demonstrate leadership and a commitment to green
- Attract and retain people and businesses (tax base)

Green Building Certification

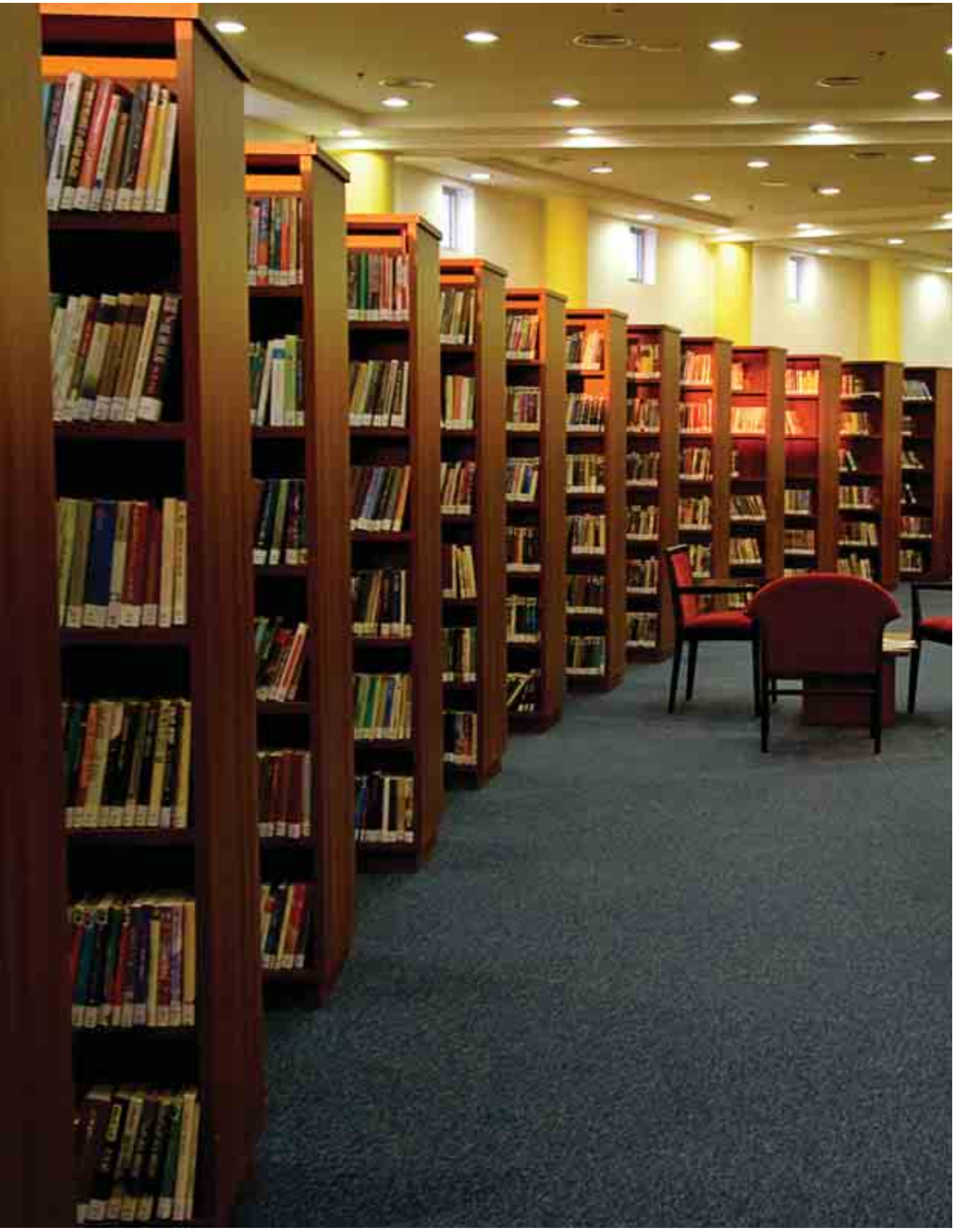
Make your sustainability mission a reality with the help of green standards.

ENERGY STAR®

ENERGY STAR is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy. The program helps organizations develop a strategic approach to energy management. That approach includes measuring current energy performance, setting goals, tracking savings and rewarding improvements.

LEED® Certification

Developed by the U.S. Green Building Council, the LEED Green Building Rating System is a voluntary standard for developing high-performance, sustainable buildings in the United States.



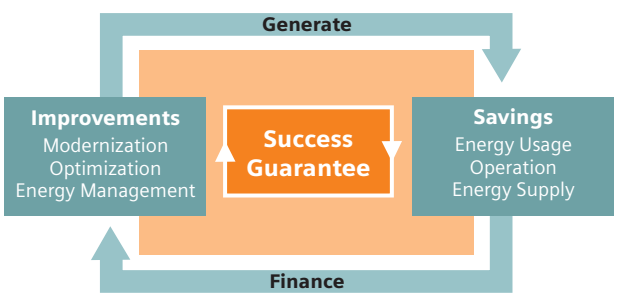
Siemens Guaranteed Performance-based Solutions – An Unbeatable Formula

Siemens Guaranteed Performance-based Solutions allow facility and capital improvements to be made and funded through the energy savings of your facilities. Our professionals formulate, design and implement customized solutions that can reduce your operating expenses, while providing the additional value of new, energy-efficient, environmentally responsible equipment.

Siemens solutions offer:

- State-of-the-art equipment upgrades
- High-performance, sustainable buildings
- Facility investments paid for through energy savings
- Improved occupant environment and comfort

Our Guarantee ensures energy and water consumption savings throughout the contract period. If the agreed upon energy goals are not met, Siemens pays the shortfall. If your energy savings surpass the Guarantee goals, you receive 100 percent of the excess savings — an unbeatable formula for our customers.



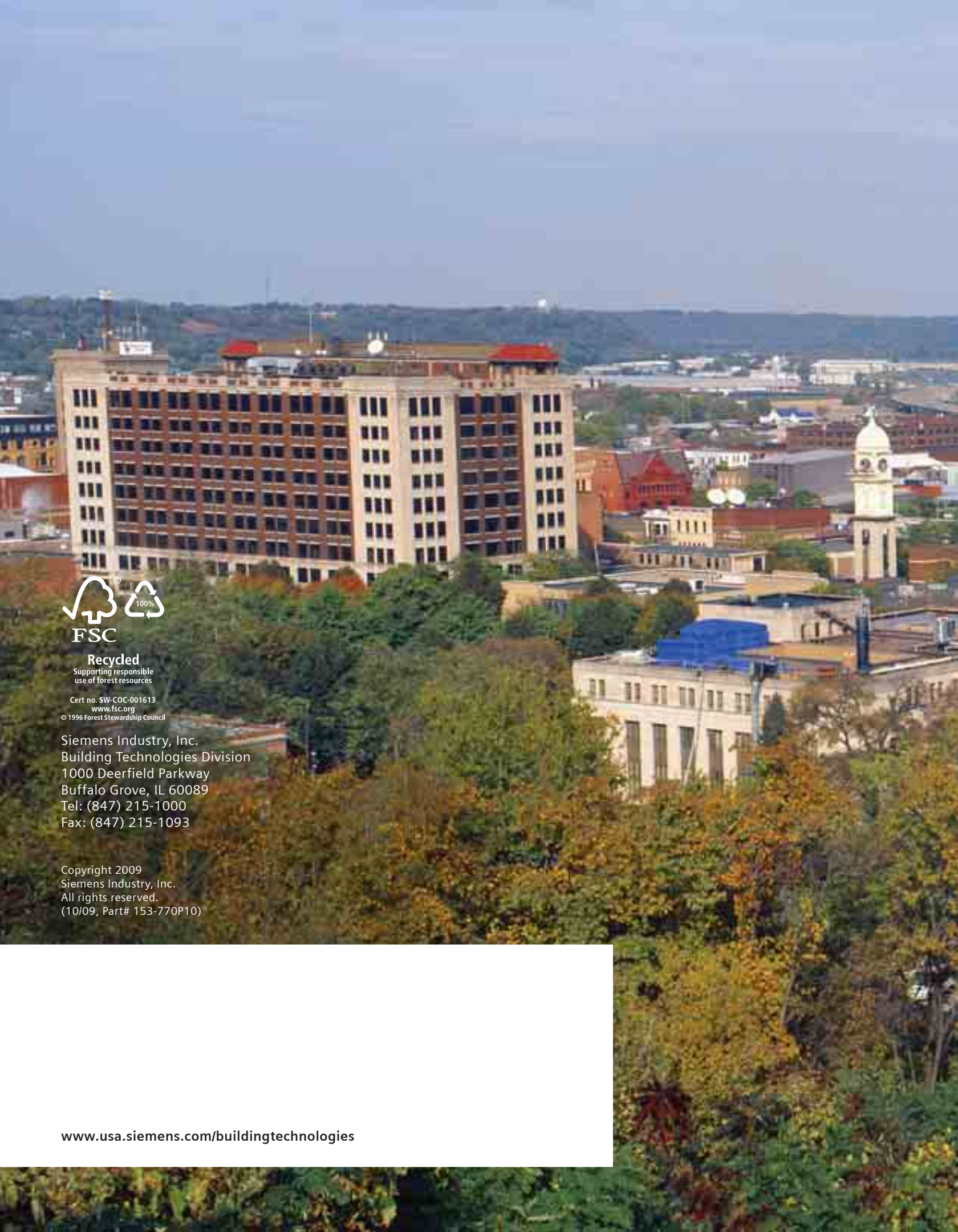
In Your Community — 24/7

At Siemens, we have a vested interest in your project's success. After all, we are part of your community. With more than 100 branch offices nationwide and 1,500 dedicated service personnel, your project will be managed by local professionals who understand community specifications and know the local contractors on your job. Available 24-hours-a-day, seven-days-a-week, Siemens service teams are available to you throughout the lifecycle of your facility and our close proximity not only allows us to serve you better, but makes us more cost competitive as well.

Siemens Industry — Building Technologies Division

As a leading provider of energy and environmental solutions, building automation and control technologies, fire safety and security system solutions, the Building Technologies Division makes buildings comfortable, safe, productive and less costly to operate.

As part of an international corporation, we are able to provide world-class solutions in conjunction with local support. Each of our offices is a full-service branch staffed by sales professionals, onsite technical service specialists and project management teams that deliver complete building solutions.



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