



INFRASTRUCTURE WEEK 2016

By 2050, two-thirds of the world's population will live in cities. With current U.S. infrastructure earning a D+ by The American Society of Civil Engineers, the country can't expect to sustain economic success and a growing population without acknowledging the impact it has on competitiveness and quality of life. The answer is building infrastructure that is smarter. Intelligent technologies not only improve systems, but make them more intuitive, safer, cleaner, and more efficient. All of which supports high-tech jobs in engineering and manufacturing, and provides cities with an opportunity achieve cost savings.

Siemens has developed new, intelligent technology and software across energy, buildings, transportation and industry that is improving and modernizing U.S. infrastructure to ensure the economic success and longevity of cities across America.

BUILDINGS

Security Technology for Port Manatee: Siemens has implemented an integrated physical security solution throughout Port Manatee in Tampa Bay, Fla., the closest U.S. deep-water seaport to the Panama Canal. The system combines access control and physical security infrastructure management technologies which allows the Port, which moves approximately 8 million tons of cargo annually, to streamline its processes and increase efficiency by enabling officials to track the movement of goods.

Energy and Water Conservation: Energy and water conservation measures can make cities, buildings and landmarks more environmentally friendly and save taxpayer dollars through energy savings performance contracts.

- On the **National Mall**, sprinklers with tiny sensors constantly monitor the soil to make sure the grass gets ample water, and conservation measures at the National Mall & Memorial Park will save more than 2.7 million kilowatt hours of electricity and almost 51 million gallons of water per year, enough to power 174 homes annually and fill almost 849,000 bathtubs of water each year – all by utilizing Siemens' technology.

Building Energy Management Systems: Buildings consume 40 percent of energy and produce 21 percent of carbon dioxide emissions worldwide. With Siemens' smart, cloud-based software that monitors and controls energy usage, they can reduce their CO2 footprint and achieve greater energy efficiency.

- In **San Bernardino County**, Calif., Siemens upgraded old infrastructure with new automation technology that ties together disparate systems such as additional building automation, fire and life safety, lighting, power, and water, on a single network. This allows the City to monitor and troubleshoot these technologies off-site via iPads, and has resulted in more than \$222,000 in savings in just the first two years.
- At **ALDI's U.S. grocery stores**, energy management technology will help reduce the company's CO2 footprint by an estimated 29,000 metric tons per year, which is equal to removing 6,100 cars from the road annually or of providing electricity for 4,000 homes per year.

ENERGY

Chicago Water Infrastructure Plant Upgrades: Siemens is providing critical power infrastructure technology to upgrade the Chicago Department of Water's South Water Purification plant that will save the city up to \$4 million a year in energy and maintenance costs. The technology, including medium-voltage switchgear and control, low-voltage switchgear and power transformers, will allow the plant to distribute power more efficiently to key process points throughout the plant to keep water flowing. Together with the James W. Jardine Water Purification Plant, these two plants provide nearly one billion gallons of clean, drinkable water from Lake Michigan daily for over five million Chicagoans and 125 surrounding suburbs.

Microgrid Management Software: Siemens microgrid management software dynamically manages renewable power sources like solar, battery storage, and biomass and can operate on or off the grid to keep electricity flowing during extreme weather. In California, Siemens microgrid technology will help **Blue Lake Rancheria Native American Reservation** reduce an estimated 150 tons of carbon annually.

Wind Power for MidAmerican Energy: Wind power can deliver clean energy to millions of homes and businesses—in Iowa, which leads the nation in wind electricity, **MidAmerican Energy** has hundreds of Siemens wind turbines in operation that provide enough electricity to power approximately 665,000 average Iowa homes and in Indiana, the Amazon Farm Fowler Ridgete supplying electricity to grids that serve Amazon Web Services datacenters.



Data Center Energy Monitoring: Data centers account for approximately 2 percent of world's total energy usage. With power monitoring and energy management software, data centers can rely on clean, alternative energy sources like biogas and consume up to 80 percent less energy. In Cheyenne, WY, Siemens' intelligent software is powering the first zero-carbon data center for **Microsoft** that will be entirely independent from the grid.

TRANSPORTATION

Intelligent Traffic Management Software for Seattle, WA: Seattle will be implementing Siemens "Concert" traffic management software that will connect traditionally separate traffic systems in and around the city to provide a clear view of issues and congestion in real-time. With this insight, the city will be able to plan better routes and manage traffic during special events like Seahawks games.

Connected Vehicle Technology: Siemens, as a member of the **Tampa-Hillsborough Expressway Authority** (THEA) team, has been chosen by **the U.S. Department of Transportation** (DOT) to provide innovative vehicle-to-infrastructure (V2I) technology for a new Connected Vehicle pilot project. This is one of three projects funded by the USDOT to pilot next-generation technology in infrastructure and vehicles that can impact unimpaired vehicle crashes, which make up 80 percent of the crashes on the road. Siemens V2I technology will enable vehicles and pedestrians to communicate with traffic infrastructure like intersections and traffic lights in real-time to reduce congestion specifically during peak rush hour in downtown Tampa.

Communications Based Train Control for the Metropolitan Transit Authority: Siemens has engineered rail automation technology called Communications Based Train Control (CBTC) for the **New York City MTA**. The technology has been installed on the 100+ year old New York Canarsie L subway line that intelligently automates operations so more trains can be added to the system—resulting in passengers waiting less at the station platform. Siemens has also been awarded a \$156 million contract by MTA to install CBTC on the Queens Boulevard Line, one of the busiest subway lines on the New York City Transit system. The upgraded CBTC system has allowed MTA to handle and sustain increasing ridership on the line over the last 20 years and increased ridership by 27 percent on the Canarsie line since CBTC was installed in 2007.

MANUFACTURING

Digital Factory Automation: Software is revolutionizing U.S. manufacturing by reimagining how products are designed, produced, distributed and serviced. **Local Motors** uses Siemens software to create 3D-printed cars resulting in 10 times faster manufacturing.

Food & Beverage: Schlafly Brewery teamed up with Siemens to increase efficiency, meet higher production demands and provide consistency in products – resulting in a 30% gain in efficiency (daily production).

Aerospace: To keep up with growing demand, aerospace manufacturers are embracing "hyper-automation," or the moving production line. At Boeing's 777 assembly plant, lost workday cases and production time were substantially reduced.

FINANCING

Performance Contracting: Performance contracts allow municipalities to use savings to fund an infrastructure project instead of passing the cost to taxpayers. Through performance contracting, Siemens has helped its customers realize more than \$2 billion in energy and operational savings over the past 10 years. The company has implemented more than 1,000 guaranteed performance contract projects for its customers, updating thousands of buildings with the latest energy savings technologies. Its energy services and solutions range from energy savings analysis, to implementation of facility improvement measures, to ongoing monitoring and verification.

Siemens Financial Services: Siemens Financial Services, Inc. (SFS) helps facilitate investments, providing commercial finance, project and structured finance with specific asset expertise in the energy, healthcare, industry, and infrastructure markets. SFS supports Siemens, as well as other companies, with capital needs and acts as an expert manager of financial risks within Siemens. With financing expertise and industrial know-how, SFS creates value for customers and helps strengthen their competitiveness. As of September, 30, 2015, the total, global SFS assets amount to \$27.2 billion.



SIEMENS IN THE U.S.

Siemens has been in the U.S. for over 150 years and the country is now the company's largest market with nearly 50,000 employees throughout all 50 states and Puerto Rico. Siemens has invested more than \$35 billion in America over the past 15 years and has more than 70 manufacturing sites that export about \$5 billion worth of products each year.

- Infrastructure investments have helped drive job growth and retention in the U.S., and support workforce development and training. Siemens invests more than \$500 million in job training each year, including \$50 million in the United States alone.

For additional information, video and photos, visit Siemens Infrastructure Week 2016 [Interactive News Release](#) and for expert insights, [sign up for our blog](#) and follow @SiemensUSA.

[Siemens Corporation](#) is a U.S. subsidiary of Siemens AG, a global powerhouse focusing on the areas of electrification, automation and digitalization. One of the world's largest producers of energy-efficient, resource-saving technologies, Siemens is a leading supplier of systems for power generation and transmission as well as medical diagnosis. With approximately 348,000 employees in more than 190 countries, Siemens reported worldwide revenue of \$86.2 billion in fiscal 2015. Siemens in the USA reported revenue of \$22.4 billion, including \$5.5 billion in exports, and employs approximately 50,000 people throughout all 50 states and Puerto Rico.

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