



Rebuild America Success Stories highlight partnerships working to improve communities by practicing energy awareness and investing in energy-saving measures.

- New Building Design
- Existing Building Improvement
- Operation and Maintenance
- Renewable Energy Technologies
- Financing Building Improvements
- Energy Education

Photo credit: Amy Roskilly



## Cleveland Green Building Coalition

### *Energy-Smart Technologies Transform Historic Building*

Historic preservation and energy efficiency converged to transform a vacant bank building in Cleveland, Ohio, into an energy-smart commercial space, serving as a model for sustainable renovations.

#### The Challenge

In 1918, a five-story building opened in Cleveland's near-west side neighborhood to house the Lorain Avenue Savings and Trust. Later purchased by the Cleveland Trust Company, the building served as a branch bank for more than 50 years. As residents left the city for the suburbs, the surrounding area steadily declined. After the bank closed the branch in 1971, neighborhood advocacy and non-profit groups moved into the space. An antiques shop moved in during the 1980s, as the building continued to deteriorate. By the 1990s, the historic structure was vacant and in disrepair.

The Cleveland Green Building Coalition (CGBC) - a non-profit organization working to advance sustainable development in Ohio - recognized the potential of the former bank building and its neighborhood.

CGBC, which formed a Rebuild America partnership in 2002, teamed up with Ohio City Near West Development Corp. and Cleveland Urban Properties, Ltd. to renovate the building. The partnership faced the challenge of incorporating sustainable building practices and energy-smart technologies into a structure built when less than half the households in the U.S. had electricity.

#### The Solution

With sustainable renovation as a guiding principle, the project followed the guidelines of the LEED (Leadership in Energy and Environmental Design) Green Building Rating System. To ensure the renovated space would use energy efficiently, the partnership turned to Rebuild Ohio - led by the Ohio Department of Development - for technical support.

The energy-smart features incorporated into the building reach from top to bottom.

Solar panels were installed on the roof, to meet a portion of the building's electricity needs. Reflective material and a garden were added to moderate the roof's temperature during summer months, reducing the load on the heating, ventilation and air conditioning (HVAC) system.

A radiant floor heating system was installed in the lobby. The system consists of tubes embedded in the floor which circulate heated fluid.

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# Partnership Facts:

**Name of partnership:**

Cleveland Green Building Coalition

**Partners:**

- Ohio City Near West Development Corp.
- Cleveland Urban Properties, Ltd.

**Targeted building:**

Former bank branch

**Space improved:**

25,000 square feet

**Annual energy savings:**

67 percent

**Amount invested in energy-saving project or initiative:**

\$4 million

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For more information about energy-saving technologies, visit the Business Partners section of the Rebuild America Web site: [www.rebuild.gov](http://www.rebuild.gov) or contact Rebuild America at: 252-459-4664.

The heat is transferred through the floor, keeping the building occupants warm without wasting energy to heat the unused 26-foot-high space above. Extra insulation throughout the building also helps reduce heating and cooling costs.

T-5 fluorescent lights were installed, along with sensors which turn off lights after occupants leave a room for an extended period of time. Carbon dioxide monitors were added to detect when rooms are unoccupied. When a space is not in use, the HVAC system automatically reduces ventilation to the minimum air handling standards to save energy.

Low-emissivity windows reduce heat gain, which lowers energy costs. Glass interior partitions allow daylight to reach far into the building, ensuring every desk is exposed to natural light.

With so many energy-efficiency measures incorporated into the renovation, the CGBC estimates the building will use 67 percent less energy than what would have resulted from a conventional renovation. To ensure these projected savings are realized, the building will undergo commissioning, so that systems are working at peak performance.

The building re-opened its doors in 2003. It is now known as the Adam Joseph Lewis Cleveland Environmental Center, home to environmental and nonprofit organizations, commercial businesses and a bank branch.

Financial and technical assistance for the renovation was provided by Rebuild America, the U.S. Department of the Interior, the Ohio Department of Development, the City of Cleveland and benefactor Adam Joseph Lewis, an advocate of green building.

## Key Technologies

- Photovoltaic panels
- Radiant floor heating system
- Low-emissivity windows
- T-5 fluorescent lights
- Occupancy sensors for lighting
- Low-flow plumbing fixtures
- No flush urinals
- Green roof
- No irrigation landscaping
- Carbon dioxide monitors
- Charging station for electric vehicle

## What the Future Holds

The \$4 million it cost to renovate the building will be recouped in about four years due to energy and water savings. Education tours will be offered, both onsite and online, to showcase the sustainable building features.

The improvements have also inspired others to invest in the neighborhood. With more people around, two restaurants have opened nearby, continuing the revitalization of the area.

To learn more visit: [www.eere.energy.gov](http://www.eere.energy.gov)

## A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.

Rebuild America is a U.S. Department of Energy program that focuses on improving communities through energy-saving solutions.



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