



*Lazarus After Redevelopment*

## Project Highlights

### LOCATION & BUILDING SPECS:

Renovation of a 600,000 square foot commercial building in downtown Columbus, Ohio.

### DESIGN:

The Lazarus Team incorporated a variety of sustainable enhancements into the building renovation, including energy and water efficiency, improvements in indoor environmental quality, and the use of sustainable, recycled, and reused materials. Lazarus achieved a gold-level Leadership in Energy and Environmental Design (LEED) rating from the U.S. Green Building Council.

### MATERIALS REUSED OR RECYCLED:

Developers retained over 75 percent of the original structure, significantly reducing the amount of materials needed for the project. The renovation employed concrete containing coal fly ash, diverted nearly 3,500 tons of materials from landfills, and utilized products containing recycled metals, paper, nylon, plastic, and linoleum.

### POSITIVE COMMUNITY IMPACTS:

Retaining much of the original structure resulted in cost savings of over \$25 million and avoided local community impacts from trucks hauling debris away. Had the original structure been demolished, the resulting debris would have required landfill space equivalent to filling the nearby Ohio Stadium 25 percent full. The project also created local jobs, improving the local economy. Today, the building is one of the most significant green rehabilitation projects in the country, an anchor for downtown revitalization, and a showcase of innovative ways to reduce waste.

# Green renovation brings a community back to life: The Lazarus Building

## Before Redevelopment

The Lazarus building had undergone eight different renovations since its original construction in 1908. In August 2004, the building stood vacant and contaminated with asbestos in the middle of City Center in Columbus, Ohio. Private developers were skeptical about revitalization efforts, so the owners decided to donate their building to the Columbus Downtown Development Corporation (CDDC) to help bring the Lazarus Building and neighboring community back to life. The CDDC, a non-profit supported by the City of Columbus, worked closely with city officials to manage the renovation and revitalization of the surrounding community, forming a team of local business leaders, developers, contractors, and architects. The Lazarus Team incorporated a variety of sustainable enhancements into the building renovation, including energy and water efficiency, improvements in indoor environmental quality, and the use of sustainable, recycled, and reused materials. The Lazarus Team's vision resulted in the following key project attributes:

- Reducing, reusing, and recycling materials during renovation and construction
- Using recycled-content products and materials in construction
- Cost savings and environmental benefits
- Environmental awards and recognition
- Local community revitalization

# Sustainable Practices: From Start to Finish



Lazarus Before Redevelopment

## Reducing, Reusing, and Recycling Materials During Renovation and Construction.

Developers created and implemented a construction waste management plan to ensure the maximum possible recycling rate during both the demolition and construction phases. By maintaining 75 percent of the original structure and shell, developers significantly reduced waste generation. Had the original structure been demolished, the resulting demolition materials would have required landfill space the size of one quarter of the Ohio Stadium at Ohio State University.

Despite low local landfill disposal costs in Columbus, the recycling rate of the materials removed from the original structure and generated from construction was approximately 92 percent. Approximately 2,000 tons of steel, 1,000 tons of concrete, 300 tons of carpeting, 100 tons of ceiling tiles, and 50 tons of wood were recycled offsite in new products or applications.

## Using Recycled-Content Products and Materials in Construction.

Thirty percent of the materials used in the building construction contained recycled materials, 20 percent of which were from recovered construction and demolition materials and coal combustion products (e.g. fly ash). The Developers used:

- Coal fly ash in concrete;
- Recycled glass and tile flooring containing up to 100 percent recycled materials;
- Carpets containing recycled nylon;
- Restroom partitions containing 100 percent post-consumer recycled plastic;
- Drywall containing at least 96 percent recycled materials, including flue gas desulfurization gypsum; and
- Building siding containing 60 percent recycled metal.

## Cost Savings and Environmental Benefits.

Maintaining 75 percent of the original structure resulted in big cost savings for the non-profit developers: over \$25 million, or 50 percent of the cost of constructing a new 600,000 square foot building. Contractors for the project estimate that by preserving 75 percent of the structure, they prevented over 5,000 loaded trucks of concrete and steel from disturbing local residents, damaging local roads, producing smog and greenhouse gases, and causing traffic disruptions. Because of the large amount of usable indoor space given the amount of land the building occupies, Lazarus also helps reduce local community environmental disturbances and urban sprawl. Developers used coal ash to replace two to seven percent of the total amount of cement used in the concrete structure, offsetting the energy use and greenhouse gas emissions from cement production. In addition, concrete made with fly ash is stronger and more resistant to wear than conventional concrete, increasing its useful life.

## Environmental Awards and Recognition.

The Lazarus Building is “a showcase for environmentally sensitive and energy efficient technologies,” according to the National Association of Industrial and Office Properties (NAIOP). NAIOP, an association of real estate professionals, awarded Lazarus a Green Development Award in 2007. The U.S. Green Building Council awarded the building a Gold-level rating through its Leadership in Energy and Environmental Design (LEED)—in large part because of the project’s recycling rate of 92 percent. As of 2009, Lazarus was the largest building in Ohio, and among the largest internationally, to achieve this level of LEED certification for a renovation project.

**Local Community Revitalization.** In April 2007, two years after the start of the project, the building reopened its doors. Lazarus is now at the center of a bustling downtown area and houses 2,600 employees. With office spaces filled near to capacity, the CDDC has plans for future expansions at Lazarus. A portion of the building will become the Columbus Center for the Arts and Sciences, while other parts of the space will house restaurants and shops.

The building is one of the most significant green rehabilitation projects in the country—and a showcase of innovative ways to reduce waste. According to Michael Dinneen of Frank Road Recycling Solutions, a recycling contractor for the project, “On a rehab project... the structure may not be in the form you need it, but a little bit of creative engineering and some specialty demolition can make a useless building a perfect fit for a new use.”

## Contact info

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