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Green Building Projects in Ohio

The concept of designing and building or renovating resource and energy efficient buildings has spread rapidly in Ohio. The number of buildings utilizing these principles has grown geometrically in only a few years. The economic and environmental advantages are becoming more defined, and Ohio stands at the threshold of making dramatic strides in improving resource conservation, energy efficiency and waste minimization in the construction industry.

The purpose of this document is to highlight the features and advantages of projects in Ohio so that organizations can understand and adopt the economic and environmental benefits of green building. This document is not intended to be the authoritative listing of all completed or ongoing projects in Ohio, but is a snapshot of the various techniques, materials and opportunities for implementing green building principles in Ohio. This document focuses on the minimization of wastes and the conservation of resources in the state, as well as the utilization of local materials in the design and construction/renovation activities.

A major consideration in the adoption of these principles is the long-term economic and environmental impacts of buildings as functional systems. When buildings are primarily considered on a least cost per square foot basis, this greatly misrepresents the long-term energy, maintenance and productivity costs.

When the costs and benefits of resource efficient design are

measured over the useful life of a building, the concept of green building clearly outperforms standard construction design (see FEMP, 2003 under *References*).

Research of government building construction or renovation projects lists the estimated benefit of each dollar invested in sustainable design as returning as much as 10 dollars in additional value (see Kats, 2003 under *References*).

When defining any concept, one difficulty usually experienced is establishing a standard or uniform criteria for measuring attainment. In the case of green building, a nationally recognized standard has been developed in the form of the Leadership in Energy & Environmental Design (LEED™) standards established by the U.S. Green Building Council (USGBC). Registration and/or certification to this standard were considered for the purposes of this document, with the recognition that buildings can utilize these principles without such a formal process.

At present, there are more than 40 LEED™ registered projects in Ohio and many more are planned.

Completed Projects in Ohio

**Adam Joseph Lewis Center
Oberlin College, Oberlin, OH**
www.oberlin.edu/ajlc/ajlcHome.html
Highlights

- renewable energy (geothermal and solar)

- water conservation and innovative waste water treatment/recovery and reuse (living machine™)
- energy efficiency
- daylighting
- LEED™ registered project

**Youngstown U.S. Federal
Courthouse - U.S. General
Services Administration
Youngstown, OH**

www.ofee.gov/sb/youngstown.htm

Highlights

- 62 percent of construction materials were manufactured locally
- indoor air quality
- brownfield redevelopment
- LEED™ certified project

**Cleveland Environmental Center
Cleveland Green Building
Coalition
Cleveland, OH**

www.clevelandgbc.org/cec/

Highlights

- renovation of a historical building
- energy efficiency
- geothermal system
- green roof
- transportation efficient location
- Detailed cost and benefit analysis
- LEED™ registered project



Green Building Projects in Ohio



Cleveland Environmental Center Life Cycle Case Study

“Although first cost of the high-performance model is estimated to be \$138,000 higher than the standard practice model, it yields a net present value of \$608,395 for the cumulative cash savings on the incremental investment over the 25-year life of the study. Analysis shows a simple payback of four years, a life cycle payback of 2.3 years and an internal rate of return (or discount rate) of 47.7 percent.”

www.clevelandgbc.org/cec/building_energy_analysis.pdf

McPhail Environmental Center Barney-Davis Hall Renovation Dennison University Granville, OH

www.denison.edu/enviro/barney/tour/

Highlights

- renovation of existing building
- materials reuse
- energy efficiency

Planned or Ongoing Projects

Licking County Joint Vocational School

Newark, OH

www.lrkimball.com/Architecture%20and%20Engineering/ae_experience_green.htm

Highlights

- water conservation
- energy efficiency
- efficient use of materials and resources
- indoor air quality
- innovative design

Cuyahoga County Youth Intervention Center

Cleveland, OH

www.heery.com/project.cfm?pid=pd&proj=100

Highlights

- brownfield redevelopment
- energy efficiency

North Residential Village Case Western Reserve University

Cleveland, OH

<http://housing.case.edu/construction/phase1/green.html>

Highlights

- water conservation
- energy efficiency
- recycled content materials
- LEED™ registered project

Ohio 4-H Center

Ohio State University

Columbus, OH

www.lincolnstreet.com/5-n.htm

Highlights

- energy efficiency
- water conservation
- storm water management
- LEED™ registered project

Campus Life Recreation Center University of Cincinnati Cincinnati, OH

www.kzf.com/Portfolio/Division1/wUCRecCenter.pdf

Highlights

- indoor air quality
- water conservation/efficiency
- day lighting
- LEED™ registered project

Andrew W. Breidenbach Environmental Research Center U.S. EPA

Cincinnati, OH

www.sfa-architects.com/epaawberc.html

Highlights

- energy efficiency
- daylighting
- indoor air quality
- water efficiency
- LEED™ registered project

Canton Senior Center Stark County Metropolitan Housing Authority

Canton, OH

www.starkmha.org/page12.html

Highlights

- energy efficiency
- materials reuse
- indoor air quality
- LEED™ registered project

References

FEMP, 2003. *The Business Case for Sustainable Design in Federal Facilities, Section 2: The Economic Benefits of Sustainable Design*. Retrieved 11/30/04 from www.eere.energy.gov/femp/pdfs/buscase_section2.pdf

Kats, 2003. *Green Building Cost and Financial Benefits*. Gregory H. Kats. Retrieved 11/30/04 from www.cap-e.com/ewebeditpro/items/O59F3481.pdf