

## KEY FACTS

*Architects: Zimmer Gunsul Frasca Architects  
OPN Architects, Inc.*

*General Contractor: Stahl Construction Co.*

*MEP: Affiliated Engineers, Inc.*

*Laboratory Design: Research Facilities  
Design*

*Structural: Charles Saul Engineering*

*Civil: Snyder & Associates, Inc.*

*Landscape: Conservation Design Forum, Inc.*

*Occupancy Date: June 2010*

*Square Footage: 71,000 gsf*

*Project Cost: \$32,000,000*

The Biorenewables Research Laboratory builds on Iowa State's goal to be a key resource supporting the State of Iowa's efforts to become a world leader in the development of biofuels and other products from renewable resources.



## LEED

### Leadership in Energy and Environmental Design

LEED is an internationally recognized green building certification system, providing third-party verification that a building was designed and built using strategies aimed at improving performance across all the metrics that matter most: energy savings, water efficiency, CO<sub>2</sub> emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts.

Developed by the U.S. Green Building Council (USGBC), LEED provides building owners and operators a concise framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions.

Iowa State University is committed to incorporating LEED principles when undertaking new construction or major renovations with the goal of obtaining certification at the Gold Level. Currently, ISU has four LEED certified buildings with several others in the process of applying for LEED Certification.

The BRL project attained a Gold LEED-NC v2.2 certification.

PROJECT MANAGEMENT SERVICES  
FACILITIES PLANNING AND  
MANAGEMENT

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## Biorenewables Research Laboratory



BUILDING ON  
COLLABORATIVE  
STRENGTHS

Supporting Iowa State's prominence  
in biofuels and bioenergy.



LEED Brochure

IOWA STATE UNIVERSITY

FACILITIES PLANNING AND MANAGEMENT

# Biorenewables Research Laboratory—A sustainability tour



The east elevation of the building.

The exterior of the building is designed in a contemporary manner to express the nature of the building's teaching and research mission, while relating to the immediate neighborhood as well as the overall campus context. The College of Design is immediately to the north and is constructed of cast-in-place concrete. Howe Hall to the south is a modern red brick building with metal panel accents. To the east the buildings are characterized as red brick with limestone accents. The addition to Coover Hall to the northeast has an accent wall of zinc panels.

The BRL wing is designed of a lighter color brick with ribbon windows on the laboratory portion. The administrative and office portion to the south is articulated by a metal rain screen system with a vision and spandrel glass wall system.



Research labs feature bamboo faced lab benches and optimal flexibility.

## Energy Efficiency

Designed to be 35% more efficient than code minimums for a laboratory building, BRL uses several techniques to accomplish this. The use of chilled beam technology has air moving over a chilled-beam system to cool the air in warm weather. Roll back thermostat set points automatically reset the building after hours to reduce energy use in condition spaces. An energy recovery system transfers heat and cool from the exhaust air stream to the fresh incoming air, reducing the demand to temper that air using steam or chilled water. Low-E windows provide greater thermal comfort by reducing heat gain from the sun's rays in the summer.



Windows throughout the building allow for reduced use of artificial lighting.

## Water-Efficient Building

The project utilizes low flow and low flush fixtures to reduce potable water consumption. To aid in the reduction of potable water use, a 25,000 gallon rain-water cistern is located in-ground next to the building. It collects and filters rain-water for use in flushing

toilets and urinals. Since the building opened only 170 gallons of potable water have been used for flushing.

## Storm Water Management

The high bay area has a green roof planted with native plants and grasses to retain the water that is collected there.

The planting areas surrounding the building feature a combination of native prairie plantings and adaptive vegetation, which do not require watering. The rain garden area holds storm water on site allowing it to recharge the soil instead of washing into storm sewers.

## Alternative Transportation

The building provides bike racks as well as shower and changing facilities for staff to encourage the use of alternative transportation. Access to public transportation is directly in front of the building.



The pilot lab allows for experimentation and features the building's green roof.

