



# BUILDING A SUSTAINABLE LIBRARY

## 1. What is a sustainable building?

A sustainable building is one that is environmentally responsible, as well as a healthy place to live or work. The design for Fayetteville Public Library developed with community input derived through a series of more than 30 public meetings over the course of three years. As the design evolved, it became apparent that the library, as a public institution, needed to respond to the changing nature of technology in ways respectful of both the community and the environment.

## 2. What is the LEED® rating system?

The Fayetteville Public Library is proud to be a LEED® Silver-NC certified building. LEED, standing for Leadership in Energy and Environmental Design, is a national standard for developing high-performance, sustainable buildings that have minimal impact on the surrounding environment. Buildings that meet LEED standards are recognized as Certified, Silver, Gold or Platinum, depending on the number of sustainable design strategies they use. As a LEED Silver certified structure, the Fayetteville Public Library scored high in all six LEED categories: sustainable sites; water efficiency; energy and atmosphere; materials and resources; indoor environmental quality; and innovation and design process.

On July 5, 2001 FPL became the first project in Arkansas to register for LEED certification. In 2006, the library received a silver rating from the U.S. Green Building Council. Being Silver Certified has meant huge savings. From December 2005 through November 2006, the library saved an estimated \$43,000 on electricity, gas and water consumption in comparison with the average usage for a public building of our size.

## 3. What are Blair Library's sustainable strategies in the six LEED categories?

### The Sustainable Site Category

- Complied with EPA construction site erosion and sedimentation controls: stabilized site with seed, silt fence and mulch
- Used a "diaper", or portable sediment trap, to capture all concrete waste to further protect local streams
- Located site near alternative transportation - Ozark Regional Transit
- Provided bicycle racks for the public and showering facilities for staff cyclists
- Installed down lights, low spotlights, etc. to reduce light pollution in neighborhood
- Transformed trees harvested from the site into library furniture or mulch for local parks
- Constructed a compact parking deck

### The Water Efficiency Category

- Installed nine waterless urinals
- Used low flow aeration faucets and auto flush valves
- Installed a rainwater cistern that captures an estimated 48,000 gallons of water per month for irrigation of surrounding landscape
- Installed high efficiency irrigation components
- Chose native plants for the landscape, rather than exotics, because of their ability to thrive with less water.
- Realized a savings of 750,000 gallons of water annually from employing these strategies





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## The Energy and Atmosphere Category

- Met or exceeded tough standards for building envelope and systems (ASHRAE/IESNA 90.1-199)
- Installed a high efficiency HVAC system exceeding federal standards
- Strategically placed windows, reading spaces and circulation desks to take advantage of natural sunlight without overworking the building's air conditioners
- Used sunlight (which streams through 75% of the library's public spaces) to reduce energy costs by 25% and the overall building's energy consumption by up to 30%
- Installed a lighting system that automatically dims when enough natural light is present
- Installed window shade sensors in some areas to automatically open and close the shades to mitigate sun's heat

## The Materials and Resources Category

- Established a well-organized system for recyclables
- Recycled or reused nearly 99% of construction waste - enough waste was recycled to fill Razorback Stadium to a depth of 18 feet
- Donated more than 1,000 pounds of paper to local schools
- To the extent possible, used products that met requirements and contained recycled content, were recyclable and were locally produced
- Selected construction materials (65%) that were made within 500 miles of Fayetteville; e.g., used 500 tons of hard sandstone from a local quarry for the fireplace
- Used renewable products where suitable, e.g. cork flooring
- Used Forest Stewardship Council certified wood products

## The Indoor Environmental Quality Category

- Met standards for indoor air quality (ASHRAE 62-1999) through wise choices in building materials and placement of possible contamination sources away from fresh air intakes.
- Installed a CO2 monitoring system
- Designed an effective ventilation system
- Selected materials, e.g. upholstery and paint, that were lowest in volatile organic compounds (VOCs)
- Installed temperature/humidity monitoring for thermal comfort

## The Innovation and Design Process Category

- Held 36 public meetings over the course of three years to gather citizen input during the design phase
- Used light and heat reflecting roof material
- Landscaped roof adjacent to outdoor terrace and used alternative roofing materials to reduce the air temperature up to 20° F and save about \$4000 in annual energy costs
- Made heavy use of trees and perennials on the library grounds to promote carbon sequestering - a plant's natural ability to absorb pollution