



### LEBANON HILLS VISITOR CENTER

The Lebanon Hills Visitor Center was planned, designed, constructed, and is now operated to create minimal impact to the environment.

The Visitor Center and surrounding area of prairies, woodlands, lakes, and wetlands provide an opportunity for premier environmental education and outdoor recreation, natural and cultural interpretation, and outstanding visitor services. It also provides a gathering place, recreation equipment rental and direct access to waterways and miles of trails.

### ENVIRONMENTAL SUSTAINABILITY

The building, landscape, trails, access, and surrounding natural areas showcase the application of sustainable design principles and allow visitors to immerse themselves in an ecologically sustainable environment, to learn, and to begin thinking about ways to incorporate these principles into their daily lives.

*“...a thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.”*

Aldo Leopold

### SUSTAINABLE FEATURES

The following represents a partial list of strategies used to mitigate environmental impacts of the building and site development.

#### Land

- ◆ Entrance road and parking have shared use, reducing negative environmental impact
- ◆ Entrance road has minimum excavation/backfill and was constructed to avoid affecting wetlands
- ◆ Previously impacted site selected for building location and restored
- ◆ Building sited to avoid removing existing trees
- ◆ Vegetative roof reduces and filters storm water runoff
- ◆ Storm water runoff further treated through natural vegetative filtration and sedimentation holding areas (e.g., rainwater gardens)

#### Water

- ◆ Construction processes minimized water consumption
- ◆ Low-flow plumbing fixtures

#### Air

- ◆ Materials with low volatile organic compounds (VOC)
- ◆ Particleboard from agricultural residue (wheat straw and sunflower plants) with a non-toxic, emission-free binding agent
- ◆ Paint and stain water-based
- ◆ Fresh air interior ventilation
- ◆ Operable windows allow natural ventilation
- ◆ Windows located to enable cross and stack ventilation
- ◆ Materials do not contain Chlorofluorocarbons (CFC's)
- ◆ Vegetative roof reduces “heat sink”

- ◆ Vegetative roof contributes to conversion of carbon dioxide to oxygen

### Energy

- ◆ Natural day lighting
- ◆ Highly insulated envelope  
(Roof: R-60; Walls: R-29)
- ◆ Windows triple glazed, low “E”, argon-filled provide high thermal performance
- ◆ Energy management system
- ◆ Passive solar energy  
Masonry/concrete thermal mass storage  
Effective placement of glazing  
East/west orientation
- ◆ Heat recovery systems in conjunction with mechanical fresh air ventilation
- ◆ In-slab hydronic radiant heating system
- ◆ Soapstone, highly efficient wood stove
- ◆ Lighting fixtures highly efficient
- ◆ LED exit lights
- ◆ Daylight-sensing lighting dimming
- ◆ Gasketed service boxes at exterior walls
- ◆ Gas-fired high-efficiency furnaces

### Materials

- ◆ Durable, low-maintenance materials  
Quarry tile, Concrete
- ◆ Materials that do not adversely affect the biodiversity of the planet  
Engineered lumber, Natural fiberboard,  
Non-solvent based concrete form release
- ◆ Renewable materials  
Wheat straw and sunflower board  
Aspen acoustical tile  
Certified Sustainable Lumber
- ◆ Materials with low embodied energy (energy used during material extraction, refinement, manufacture, transportation and installation)  
Wood, Natural fiberboard
- ◆ Recycled materials  
Engineered wood using wood waste  
Carpet using recycled content  
Recycled polyethylene toilet partitions  
Use of fly ash in concrete
- ◆ Materials that are easily recycled  
Wood, Concrete
- ◆ Reduce material use by exposing infrastructure  
Concrete slab-on-grade

### Waste

- ◆ Design incorporates the modularity of the materials used to minimize

construction waste (i.e., the building is designed on a 4 foot module which is a derivative or multiple of 4’x8’ sheets of plywood and gypsum board; stud, joist and truss spacing at 16” and 24”;

- ◆ Construction Waste and Recycling Plan required of the contractor by the County

### Use and Reuse

- ◆ Strongly integrated indoor/outdoor relationship fostering a connection between the user and site
- ◆ Flexibility in planning enabling space to be used to its full potential through multi-use, and to facilitate future retrofitting
- ◆ Timeless design, relating to surrounding vernacular, to minimize future change
- ◆ Efficient space planning to minimize building footprint

## DESIGN INTENT

The Visitor Center’s design intent allows the building to be authentic to its location and to convey by its very nature a sense of value.

### Form

- ◆ Building serves as a transition from the built environment to the natural environment
- ◆ Building is “broken” into forms, which have a scale that is comfortable to visitors and with the surrounding landscape
- ◆ Vegetative roof visually “anchors” the building to the landscape

### Color

- ◆ Exterior color reflects the color of the surrounding landscape and is intended to allow the building to visually recede into its surroundings
- ◆ Interior accent colors reflect the color of wildflowers found on site
- ◆ Concrete stain reflects earth tones

The Lebanon Hills Visitor Center is unique in the upper Midwest. It is the first building of its kind to implement sustainable principals from planning through operation to create minimal impact to the environment.