

Green Guide

HIGHLIGHTING THE MUSEUM'S COMMITMENT
TO WORKING LOCALLY AND SUSTAINABLY



LEED CERTIFIED BUILDING

Leadership in Energy & Environmental Design

Madison Children's Museum was the first museum in the state of Wisconsin to achieve LEED certification. LEED, Leadership in Energy & Environmental Design, is a green building certification program that recognizes best-in-class building strategies and practices. The museum received LEED Gold certification in the category of "Existing Buildings: Operations & Maintenance," in 2014.

This award recognizes our national leadership in promoting sustainable design and practices—especially in the field of children's museums. Our certified building saves money and resources and has a positive impact on the health of our visitors and staff, while promoting renewable, clean energy.

ONLY LOCAL INITIATIVE

In building our new museum and exhibits, Madison Children's Museum sought to go beyond green by working locally and sustainably in all aspects of project development. This guide showcases specific green examples with an overall commitment to:

- Working with **local talent**, including architects, designers, contractors, artists, and fabricators
- Using **materials** that are local, reclaimed, recycled, natural, organic, or donated
- Using materials with **low-embodied energy**—that is, the total amount of energy required to manufacture a product is as little as possible
- Modeling **sustainable behavior** for visitors
- Placing the **health** of visitors, the community, and the environment first in every decision

Take a tour of Madison Children's Museum and look for numbered icons like the one below to find several green examples within one area.





CAPITOL ENTRANCE



repurposing a historic department store

Repurposed Building ▲

One of the museum's greenest choices was to reuse this historic structure rather than build a new one. This space, originally built in 1929, housed a Montgomery Ward department store—and its downtown location has multiple advantages, including being a hub for the city bus lines.

Signs of Sustainability

Most museum signage is made of wood, metal, wheat board, green core board, or reclaimed materials. The wheat and green core board substrates contain no formaldehyde and are made from renewable resources such as wheat or wood fiber. Exterior signs are mostly aluminum, using efficient LED lighting to illuminate signage.

Accessing Natural Light

The museum restored the building's historic front windows and installed high-efficiency, low-e glass, bringing in a flood of natural light and reducing the museum's reliance on electricity.

Fresh, Local Food

Open to the public, our café serves fresh, locally sourced, and seasonal foods, most of which are nutritious and contain few artificial ingredients.

Stained-Glass Welcome ▶

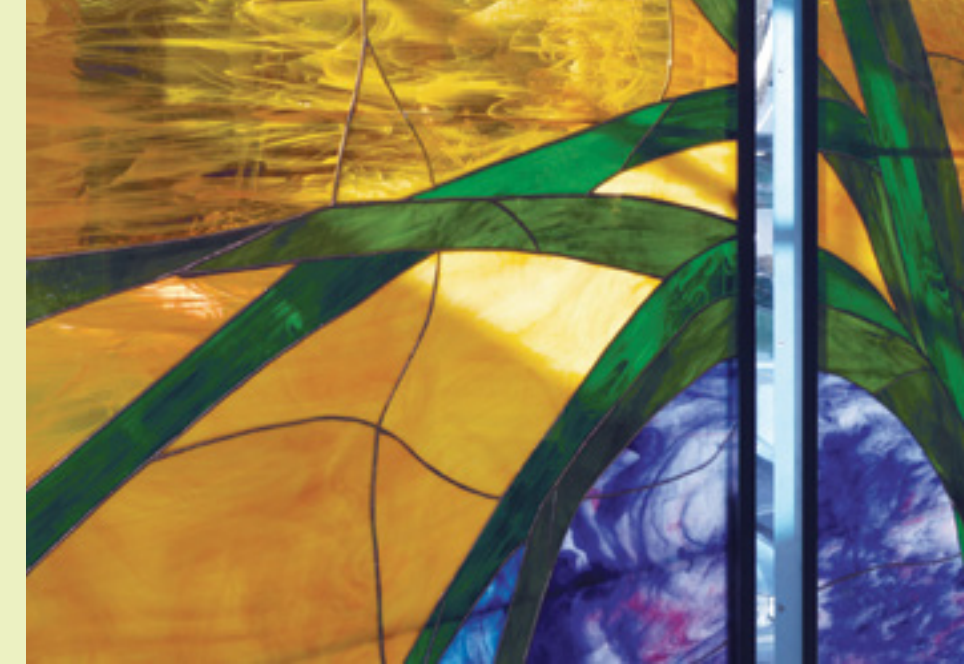
Artist Kathleen Johnson originally created these stained-glass windows for a 1998 museum exhibit entitled *First Feats*. They were repurposed by local artist Denny Berkery to pay tribute to the museum's major benefactor, W. Jerome Frautschi, who provided funds to purchase the building.

Linoleum Under Foot

The flooring in the DeAtley Community Concourse is linoleum, a natural and durable product made from linseed oil, burlap, rosin, and pigment.

Crafty Benches ▼

University of Wisconsin–Madison woodworking students and professors used local hardwoods and reclaimed materials to craft bench-seating for the museum. These pieces rotate on and off the floor, and include furniture incorporating a fire hose, board games, piano parts, chair legs, street signs, and other found objects.





DeATLEY COMMUNITY CONCOURSE

Front Desk Fun ▼

Check in at the front desk to find artful play areas, benches, and drawers designed by Madison artists Tom Loeser and Bird Ross in collaboration with neighboring families from the YWCA. The desk incorporates local and reclaimed materials, which carry low-embodied energy.



No- and Low-VOC Paint and Finishes

For minimal effects on the environment and human health, no- and low-VOC (Volatile Organic Compounds) products were used throughout the building. These interior paints, finishes, polyurethanes, and adhesives help keep toxins to the lowest levels possible, which is especially important for visiting preschoolers, whose immune systems are not yet fully developed. The museum used AFM/Safecoat interior paint, one of the only physician-approved brands for chemically sensitive people.

PHOTOGRAPH BY ZANE WILLIAMS © 2010



Highly Efficient Heating and Cooling

While visiting, look up to see our Daikin VRV (Variable Refrigerant Volume) units. They use an air-source pump technology that can heat a building for as little as 20 percent of the amount of energy required with a traditional gas-fired system. Daikin's heat recovery technology captures the internal heat of a building and uses it to minimize the amount of new energy required. The system is also extremely flexible and ideal for existing building retrofits with space constraints.

Barn Boards ▲

Two fallen barns in southern Wisconsin helped create the "squashed house," a play space designed by local artists Gail Simpson and Aris Georgiades, and constructed by artist/fabricator Dan Ganch. These barn boards connect visitors to the Wisconsin landscape and reinforce a sense of place.



WILDERNEST ENTRANCE



working with local artists and craftspeople

Views of Local Talent ▲

More than 120 local artists created exhibit components, objects, and public art for the museum. Artwork includes a mural to the left of the elevator by Laura Dronzek and Kevin Henkes, the welded entry gate by Erika Koivunen, and a ceramic mural by Linda Leighton. Working with local artists and craftspeople keeps money within our community while generating local pride.

Wisconsin Woods

Flooring in the Evjue Early Learning Gallery consists of locally harvested hardwoods donated by Wisconsin Woodland Owners Association members. The wood was selectively harvested from within 100 miles of Madison, kiln dried, and transformed into flooring by small rural businesses.

Tree Trunk Slide

This exciting ride into the *Wilderness* exhibit is made from a naturally downed white oak tree discovered in the backyard of one of our fabricators.

Tree Identification

Use of natural materials throughout the museum creates beauty and also raises awareness of Wisconsin's rich natural resources. A tree identification exhibit helps children connect to the natural world even in an indoor environment, priming them to notice different trees on their next woodland walk.



PHOTOGRAPH BY ZANE WILLIAMS © 2010

Bone Bridge ▲

The bridge walkway is a reclaimed wooden arch from the former Kohl's grocery store on East Washington Avenue in Madison. The "bones" were crafted from concrete form sheet material purchased from the Habitat for Humanity ReStore of Dane County.



WILDERNEST NORTH

Emphasize Healthy Living

Activities in the *Wilderness* were carefully designed to incorporate sustainable behaviors into children's play. Hanging laundry, gardening, buying fresh produce, and caring for the chickens give children a chance to practice sustainable living.

Mosaic Flooring ▼

Local artist Pat Smith used a combination of handmade tiles, broken dishes, local stone, and glass to create the mosaic floor in the *Wilderness*.

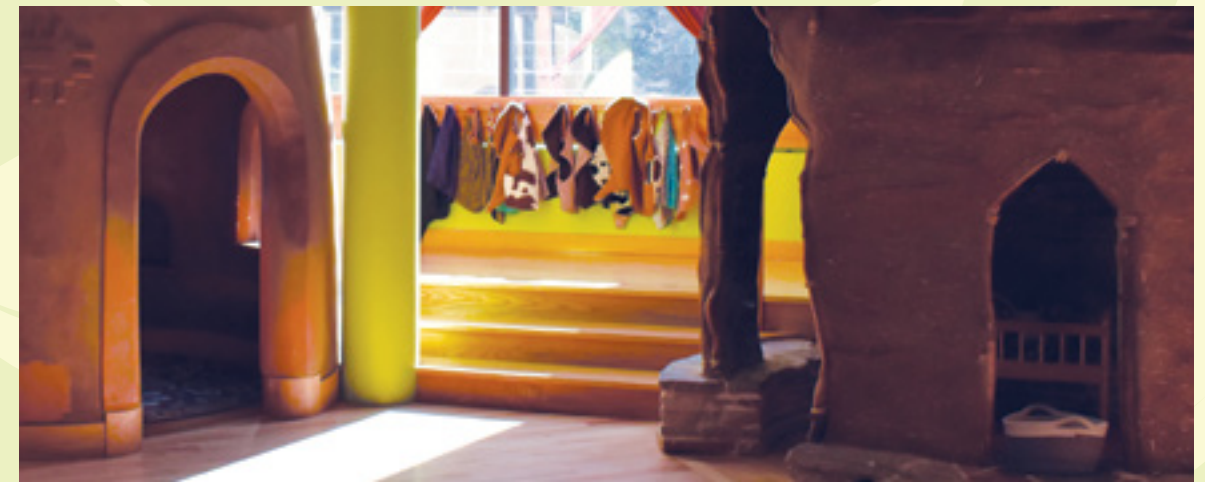


Natural Stone, Found Objects ▲

The rock grotto was created using Door County and Fond du Lac stone, sourced from Wisconsin quarries. Found objects, many from staff members' desks in the old museum, create an "I Spy" game, embedding old museum memories in a new building.

Costumes ▼

Material for costumes was donated or came from recycled clothing.





WILDERNEST SOUTH & URB GARDEN

PHOTOGRAPH BY ZANE WILLIAMS © 2010



Wonderful Wool

Tough and durable wool was used throughout the *Wilderness* for carpeting, rugs, and play objects. Felted wool animals and food offer an appealing alternative to plastic. Wool is naturally grown, organic, and biodegradable. Preschoolers are less likely to put wool objects in their mouths—and if they do, these wool objects can be quickly cleaned with a run through the washing machine.

Wattle & Daub

The Hearth Hut was constructed using the wattle and daub technique. Woven branches provide a framework that was filled in with an earthen plaster made of sand, clay, wheat straw, wheat paste, and water. A heated mix of linseed oil and beeswax was applied as a final coating. The grass roof is a natural, fire-rated material that comes exclusively from Florida.

◀ Clay & Straw Construction

The earthen Music Hut is made from local soil, wheat straw, wheat paste, beeswax, and food-grade linseed oil. This hut and its neighbor can be fully composted when they are no longer needed.

◀ Goat & Cart

Artist Cheryl DeWalt made the museum's resident goat out of needle-felted local wool roving, then attached it to an armature built out of old furniture. The cart was crafted by museum volunteer John Haverberg and is mounted to the frame of a former baby buggy.

Urb Garden ▼

This outdoor exhibit introduces our youngest visitors to active outdoor play and healthy, sustainable living in a compact urban setting. The *Urb Garden* showcases the seed-to-fruit life cycle of plants by encouraging planting, growing, watering, and harvesting.



PHOTOGRAPH BY ZANE WILLIAMS © 2010

Water Wonders ▲

Cut sheets of tempered glass within the *Wilderness* water dome came from this building's former interior office spaces.

Water running through exhibits is recycled to drinkable quality through a chlorine-free purification system that uses an ultraviolet sanitizer and a minimal amount of bromine. A double-filtration system removes particulate matter to the size of one micron.



CELEBRATIONS ROOM

Walnut & Ash

In our all-purpose spaces, flooring is made of both walnut and ash. Locally harvested walnut was donated from a sawmill in Windsor, Wisconsin by Jim Deppeler. Like that in the Early Learning Gallery, the ash flooring was donated by members of the Wisconsin Woodland Owners Association.

Bleacher Boards ▼

The refinished window sills and step seating in this room are made out of bleachers reclaimed from the gymnasium at Oak Creek Junior High School near Milwaukee. Unfinished versions of the same bleachers form the wall paneling in the rooftop Clubhouse.



bleachers reclaimed from a gymnasium



Fabric Seat Cushions ▲

The fabric used for the seat cushions is GreenGuard certified and made with 100% eco-intelligent polyester. Made by Knoll Textiles, this fabric can be easily recycled.

Banana Fiber Counters ▼

These countertops are Lamin-Art Abacá, a decorative surface manufactured using recycled banana fibers, which are randomly sprinkled over the surface of the material, giving it an organic, non-directional design and texture.





GIRLS & BOYS RESTROOMS, FLOOR 2



Photovoltaic Sinks ▲

These sinks from the Bradley Corporation in Milwaukee are made of a recycled solid surface called TerreonRE, which contains 25 percent pre-consumer recycled content and is also certified by GreenGuard as a low-emitting material. Photovoltaic panels on the sinks use light to power the faucets. This technology does not require electrical hookups or batteries, saving maintenance costs and keeping batteries out of landfills.

Recycled Partitions

Partitions in all the museum restrooms are made by the Bradley Corporation from 100 percent post-consumer recycled material. Each stall keeps more than 1,600 milk jugs from entering landfills.

Dual-Flush Toilets

Toilets made in Kohler, Wisconsin, feature conserving, dual-flush handles that pull up for less water flow and push down for more flushing power.

Hand Dryers

Dyson Airblade hand dryers are more hygienic, dry hands faster, and use 80 percent less energy than traditional, power-hungry dryers. Carbon dioxide emissions over the dryer's lifetime are low, equivalent to carbon emissions created by watching two minutes of television. And, by not buying paper towels, the museum covered the cost of the hand dryers within its first two years of operation.

Drinking Fountains

Take a sip from one of our water fountains and note the cold, but not frigid, temperature. The museum saves energy by using drinking fountains without chillers.

Colorful Tiles ▼

Throughout the building's bathrooms you'll find beautiful ceramic tiles crafted by more than 300 local schoolchildren. The tiles were made with local clay from Paoli Clay Company outside of Madison.





BAKKE ART STUDIO ENTRANCE



Entryway ▲

The Art Studio entry was created by Dale Malner, a Madison artist who made the piece using 100 percent recycled paintings, which were once hung in the corporate headquarters of the local Trek Bicycle Corporation.

Refrigerator Doors

Retro refrigerator doors avoided the landfill when they found a playful home in our Art Studio.



Have a Seat ▲

Art Studio chairs were purchased from University of Wisconsin's Surplus With a Purpose (SWAP) and painted by museum visitors under the direction of artist-in-residence Katharine Goray. Tables came from a Beloit College deconstruction sale and were refinished and shortened to accommodate young visitors.





ART STUDIO & CLASSROOM



Bottle Cap Art ▲

Madison elementary school students created more than 13,000 pieces of bottle cap art that were used in mosaics created by students from Shabazz City High School. Glass, stone, and small objects that are integrated into the mosaics were donated by museum members and friends.

Cabinets

All museum cabinets were made using a combination of local, sustainably harvested ash, and formaldehyde-free ash plywood. Cabinets were handmade by Bontrager Cabinetry in Dalton, Wisconsin, as part of the museum's commitment to patronize small businesses.

Interactive Paint Wall ▼

Painting on this large, reusable wall is fun for all ages and helps reduce the museum's use of paper.



a creative way to reduce the need for paper

Use of Recycled Supplies

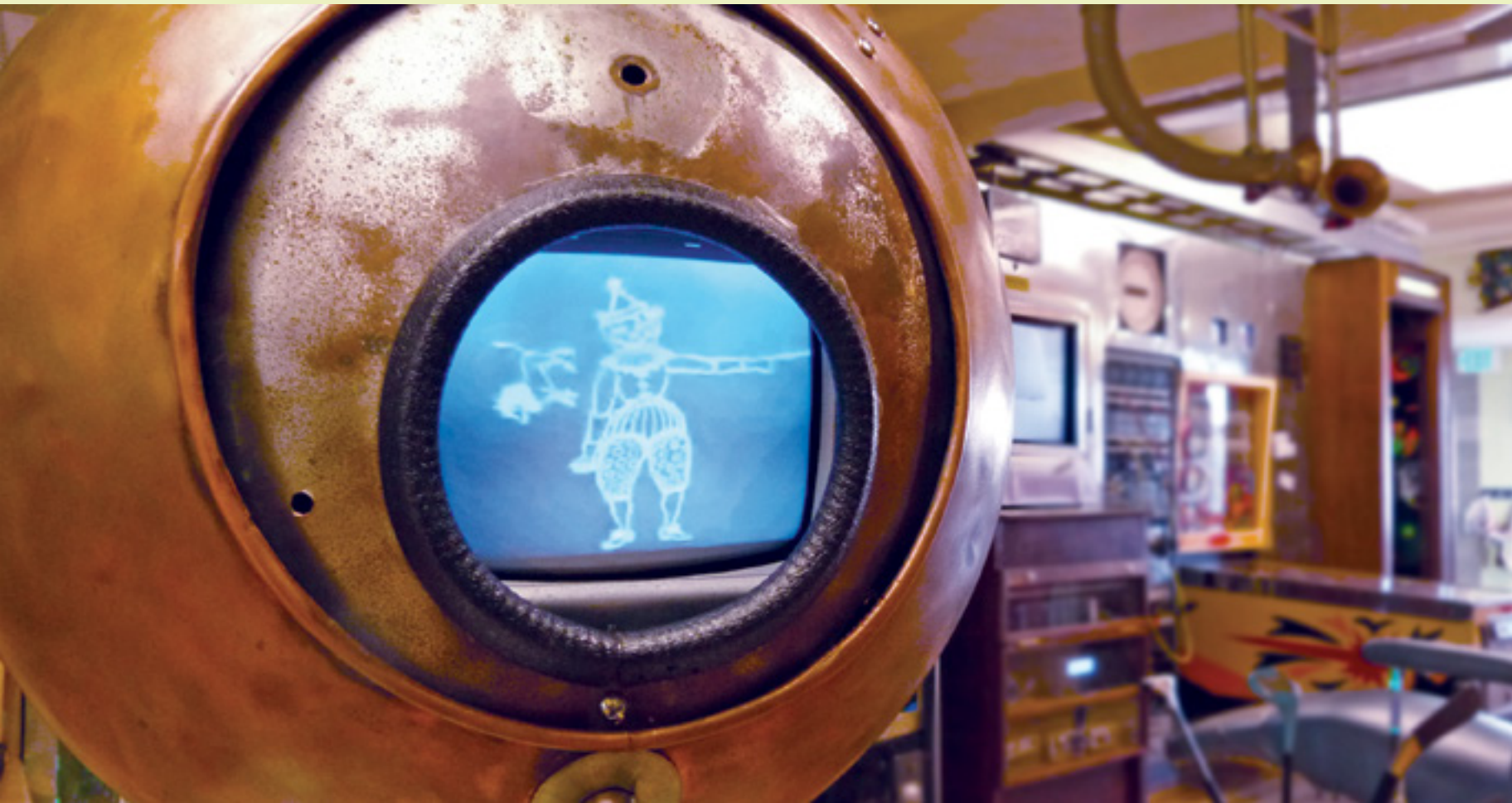
Many of the materials used for making art in the Art Studio and classroom are commonly throw-away or recycled items; egg cartons, cardboard tubes, yogurt containers, yarn, and more. Upcycling inspires young artists to use available materials rather than buying new. Most supplies are collected and donated by friends of the museum.



WAYBACK MACHINE & PIE IN THE SKY DINER

Retro-Technology ▼

The *Wayback Machine* exhibit transforms obsolete and retro-technology into a lively, interactive electronic playground. Eight Madison artists, musicians, and craftspeople—along with electronics wizard Chris Murphy and museum staff—assembled a fantastic visitor-controlled console, demonstrating an imaginative rethinking of electronics.



Repurposed Exhibits ▲

The Pie in the Sky Diner counter is the repurposed *Juice Caboose* and *Dairy Bar*, former museum exhibits that date back nearly 20 years! This revamp helped decrease costs, increase fun, and salvaged an old exhibit for more generations to enjoy.



◀ Felted Pie Ingredients

Madison Children's Museum is the first museum in the country to eliminate plastic toys, due to concerns about heavy metals found in some plastics. Pizza and pie ingredients, and many food toys throughout the museum, are made from recycled sweaters and fabrics by local artists Julie Case, Cheryl DeWelt, and Renee Roeder Earley.



HODGE PODGE MAHAL CLIMBER



◀ **Emphasizing Healthy, Active Kids**

Active children have stronger bodies, learn more easily, and help contribute to a healthy and resilient community. By providing a safe and engaging climber along with other opportunities for active play, the museum encourages a community of movers and doers.



an old three-wheeled car came from a scrapyard

Repurposed Objects ▲

The parts and pieces of this amazing climber came from multiple sources: an old three-wheeled car from a scrapyard, a buoy from Lake Michigan, shovel handles from Fiskars, and remnant slide parts.



NATURE AS CREATIVE INSPIRATION



Frank Lloyd Wright as Early Leader in Sustainability ▲

The museum built the exhibit *From Coop to Cathedrals: Nature, Childhood, and the Architecture of Frank Lloyd Wright* to highlight the connection between natural inspiration and creativity. Here you can learn how the architect's childhood experiences in Wisconsin led him to develop a deep commitment to the land; how he relied on local materials in his buildings; and how, through biomimicry of organic shapes, he drew design inspiration to create stunning architecture. He learned many of these lessons doing chores on his uncle's farm, recreated in the exhibit. Visitors can plant felted vegetables in a cob garden or examine pinecones and feathers under a magnifier.

Local Art, Local Landscape ▼

Local artist Jennika Bastian painted two murals depicting Frank Lloyd Wright's local landscape of Spring Green, Wisconsin, to evoke a natural environment for the exhibit. Similar to a Frank Lloyd Wright creation, this exhibit makes good use of the museum's surrounding landscape; installed in the point of the building's second floor, it is flooded with natural light during the day, and offers beautiful views of the State Capitol and other sights downtown.

a mural celebrating the local landscape





COW HOIST & TRAIN

Use of Volunteers and Local Photos ▼

Museum volunteers play a critical role in the museum's success and contribute significantly to its financial sustainability. Our donated train set was designed and installed by a group of skilled and dedicated volunteers from the Wisconsin Model Railroad Association. Photographs donated by local photographers surround the train layout, depicting southern Wisconsin and reinforcing a sense of place.



Repurposing of Museum Icons ▲

The museum prides itself on civic engagement opportunities for even our youngest visitors. In elections at our previous State Street location, visitors voted on which exhibits to bring to the new museum. The cows in the hoist and above the former parking lot entrance were winners, along with other icons scattered throughout the museum. By encouraging civic engagement and teaching children that they have a voice, the museum models democracy and encourages active citizenship, the bedrock of sustainability.

Anticipation of Expansion

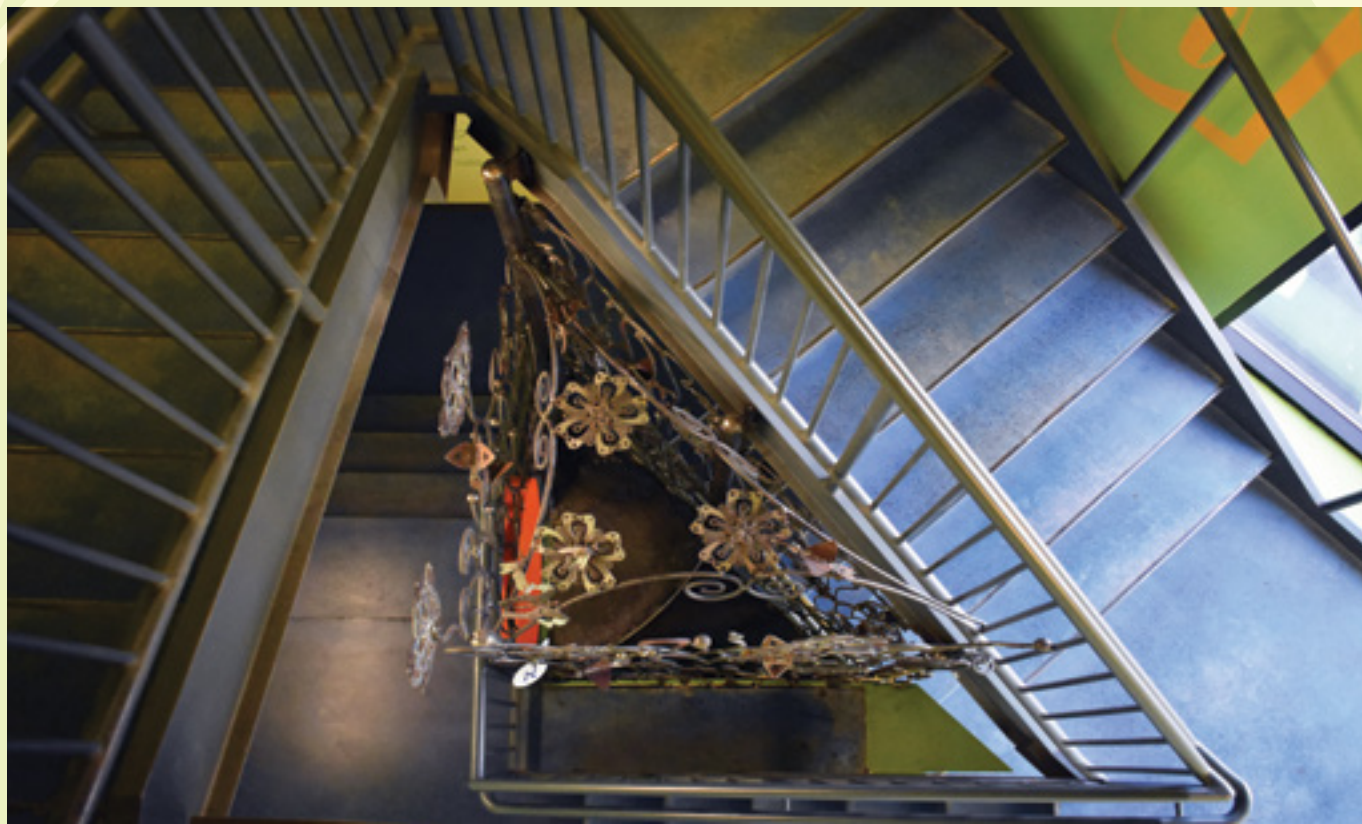
The museum was designed from the outset with expansion in mind. This economy of scale and forward vision for the museum's future has been captured in a master plan. Development of the backlot and extension of the central staircase to the third floor have been anticipated, so that major exhibits like the climber won't need to be relocated or rebuilt.



ROWLAND ROOFTOP RAMBLE LOBBY

Going Up ▼

Elevators are expensive in initial cost, energy use, and long-term maintenance. For efficiency, the museum combined the building's original two small passenger elevators into one large combination passenger and freight elevator. Staff use the giant elevator to move large objects and an entire school group can ride in one trip, while staff and able-bodied visitors are encouraged to take the stairs. In fact, the museum transformed three stairways within the building and seven more out in the community into fun, active play spaces. Murals, slides, and an ornate metal climber foster healthy behavior through interactive design.



Colorful Repurposed Mural ▲

This exquisite mural by Spring Green native Richard Haas was donated by a downtown property owner who wanted to find a new home for the piece—but keep it within Madison. Museum staff modified building plans to accommodate the mural and replaced the original neon tube lighting with efficient LED lights.

Reclaimed Carpet Tiles

Reused from our State Street location, Interface brand carpet tiles are found in the lobby, elevator, and staff offices. Since carpeting is a leading contributor to indoor air pollution, only reused carpet tiles and wool carpets are used in the building's public areas to ensure optimal air quality.



ROOFTOP MECHANICALS

Looking Up for Expansion ▼

The Daikin system is in two parts. Heat pumps mounted to the gallery ceiling are paired with tall, ship-like stack condensing units that extract or eject heat into the air depending on the season.

A place for additional stacks has been left for future expansion.



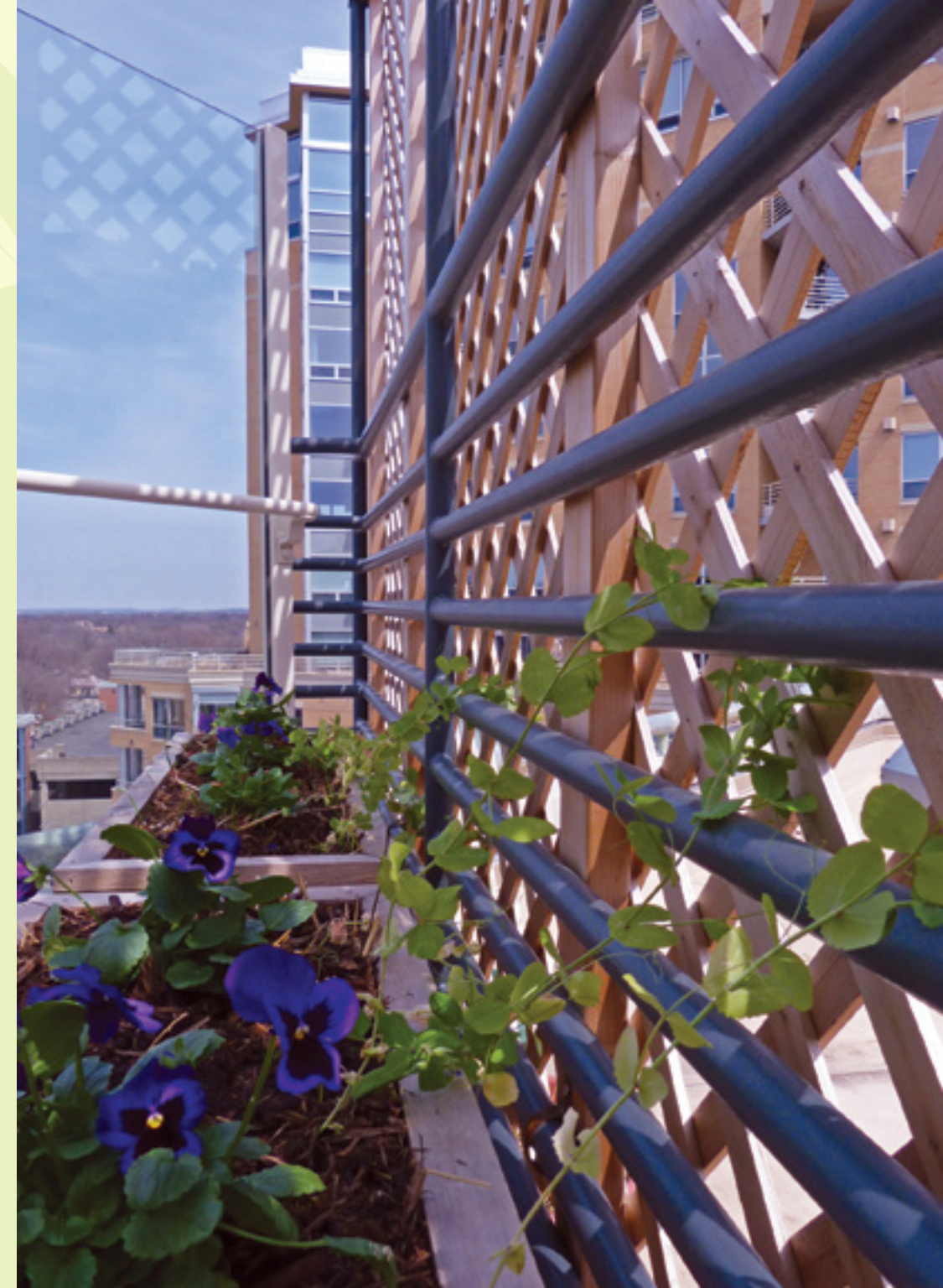
PHOTOGRAPH BY ZANE WILLIAMS © 2010

Heat Recovery Wheel

In winter, energy is wasted when a building's heat leaks out through its exhaust system. Here, exhaust air runs through the heat recovery wheel, which extracts the heat and adds it back to the system for more efficient operation.

Green Screens ►

This beautiful green trellis offers another opportunity to grow food in an unlikely spot, while helping to conceal the building's mechanical systems.





ROOFTOP RAMBLE LAKE OVERLOOK

Historic Reuse of a Log Cabin ▼

The museum's cabin can be seen best from this vantage point. Originally built in the early 1840s in Walworth County, it has served as a focal point for the museum's local history initiative. The cabin sat on land owned by The Nature Conservancy, whose volunteers disassembled it log by log for rebuilding on the museum site. Items found inside and around the cabin were researched by three Madison classrooms. Some furniture and objects were replicated by a local fabricator and other authentic items were generously donated by John Taylor of JTaylor's Galleries/MapSmart.



a Wisconsin cabin reassembled log by log



Green Roof Leads by Example ▲

Our rooftop provides an example of possibilities for all of our city's rooftops. By building a green roof—or having plants on existing roofs—citizens and businesses can help manage rainwater runoff, decrease heat absorption, and moderate downtown temperatures.

Natural, Local Stone ►

Local Fond du Lac stone was used to create the stream and pond. Using local materials helps reduce transportation costs while connecting people to their environment.





ROOFTOP RAMBLE GARDENS

Native & Useful Plants ▼

Most plants grown on our rooftop are not only beautiful, but useful too. Growing edible and medicinal plants with multiple uses is especially important on a small, urban green roof and a great way to make the most of a small city garden—while helping pollinators. Each summer and fall rooftop staff collect seeds to save and plant the following spring. Some of these seeds are rare; saving them is an important part of plant preservation.



Love Birds Sculpture ►

This sculpture by the legendary and iconic figure Dr. Evermor is made entirely from steel artifacts from Wisconsin's industrial past. For instance, the body is made from an old cheese kettle that doubles as a house for bats, which helps to control the mosquito population.

Location, Location

The museum's central site within Madison connects visitors to the heart and soul of the community. A healthy city can be summed up as vibrant, inclusive, and resilient. Our museum helps to encourage growth and rejuvenation in Madison's dynamic downtown. More than 40 percent of all trips made by car in the United States are less than two miles. Because we're centrally located and on all of the main bus routes and close to bike paths, museum visitors and staff are encouraged to use alternative transportation.





ROOFTOP RAMBLE PLANTS AND ANIMALS



Eggs ▲

Our chicken flock grazes among the rooftop vegetation. The chickens are fed homegrown organic feed and fresh vegetables. This keeps them healthy and strong, and results in eggs with bright orange yolks—a sign of high nutrients.



Fresh Fruits and Vegetables ▲

Local, sustainable urban agriculture can help cities feed their residents with healthy and affordable foods. The rooftop garden and *Urb Garden* encourage families to create their own green space in an empty pot, window box, patio, backyard plot, or community garden. We use our garden bounty to feed animals, guests, and staff.

Water Collection

Rain barrels located on the rooftop, Log Cabin grounds, and *Urb Garden* help minimize runoff, conserve water, save money, and water plants during the summer months. Donated by Sustain Dane, Lab Safety Supply, and Wollersheim Winery, each rain barrel saves up to 1,300 gallons of water annually.

ROOFTOP RAMBLE CLUBHOUSE EXTERIOR



PHOTOGRAPH BY ZANE WILLIAMS © 2010

Reclaimed Greenhouse ▲

The Villa family donated this greenhouse, which was previously used in their home. Rooftop construction plans were modified to accommodate this gift, allowing education programs to take place year-round, regardless of the Wisconsin weather.

Sun-Powered ▶

Our rooftop panels are solar electric, also called photovoltaic or PV. They collect energy generated by the sun to produce a direct current that is then converted to useful household electricity by a power inverter. Donated by Madison Gas & Electric, these panels send energy back to the grid and are specially designed to be shade tolerant for rooftops that may be surrounded by taller buildings. The museum's solar power exhibits, like these giant metal flowers that spin when activated by solar panels, help children understand—in playful, hands-on ways—how renewable energy works.



PHOTOGRAPH BY CRAIG WILSON © 2010





ROOFTOP RAMBLE CLUBHOUSE INTERIOR

Repurposed Bleachers ▼

Bleacher boards here and in the Celebrations Room were salvaged from Oak Creek Junior High School outside of Milwaukee. The reclaimed wood was left unfinished and has a beautiful, worn patina that tells the story of its past. Look for student carvings from years ago!

Cleaning Supplies

Throughout the museum we use natural and green cleaning supplies that have GreenSeal certification and are safe for children's health. These cleaning supplies come highly concentrated, cutting down on transportation costs.



Native Animals ▲

Many of the fish and animals in our Clubhouse tanks are native, offering a small sampling of the wildlife found throughout southern Wisconsin. Food—including crickets, mealworms, and vegetables—is grown on site or sourced locally to feed all animals.

Worm Bins

The rooftop hosts a worm composting, or vermiculture, exhibit, that helps to create a heterogeneous mixture of decomposing food waste, bedding materials, and worm castings. Our worms—mainly red wigglers—generate vermicompost, a nutrient-rich and water-soluble organic fertilizer and soil conditioner.

Would you like to learn more?

To read a digital version of this guide, visit MadisonChildrensMuseum.org and click on the Green Initiative page under the About tab. For more comprehensive information about green exhibits, visit GreenExhibits.org, our website devoted to green building, which supports our sustainable infrastructure and operations as well as environmental education programs.

greenexhibits.org

*a website devoted to green exhibit-building,
developed by Madison Children's Museum*



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as well as environmental education programs.

For information on the Great Green Fund,
please call (608) 354-0535 or email donate@madisonchildrensmuseum.org.



madison children's museum

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