THE KRESGE FOUNDATION

Our Green Headquarters

Since 1984, The Kresge Foundation has operated from a three-acre campus in suburban Detroit anchored by an 1850s-era farmhouse and barn. Nestled incongruously in the shadow of towering commercial office buildings and ringed by wetlands and native plants, the headquarters features an array of energy-efficient, water-conserving and health-promoting systems designed for sustainability and productivity.

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Connections

At The Kresge Foundation headquarters, a restored vintage barn, the original farmhouse and a pair of iconic windmills connect us to our past. Sustainable, green building architecture connects us to our natural environment. Smart office design connects employees to one another. And spacious convening facilities with interactive technology allow us to connect with colleagues, partners, grantees and the Greater Detroit community.

The current Troy, Mich. site was acquired in 1982 – a sliver of land that remained of a once-thriving 300-acre dairy farm. Rather than raze the old structures and build anew – as was happening all around the area – Kresge leaders chose to incorporate the existing structures into the headquarters design.

Link to the Past

From the day it purchased the Troy property, the Foundation has committed to a headquarters campus that connects with the community, the natural environment and the history of the former farmstead.

While looking for larger office space in 1982, the Foundation learned that the last remnant of the historic Brooks Dairy Farm was available near its leased facilities on Big Beaver Road. With the cooperation and encouragement of the City of Troy – which had a keen interest in preserving the property's history – Kresge acquired the land and set about restoring the original farmhouse, outbuildings and windmills. A vintage barn – in need of rescuing from redevelopment several miles away – was sold to Kresge by the city for $10 and moved to the site.

The farmhouse was built in 1852 by dairy farmer Washington Stanley, and the property changed hands only once before it was purchased by William Brooks in 1911. Most of the property was sold in parcels to developers during the 1960s. The three acres that remain today were put on the market when Brooks' daughter, Bertha Brooks Parks, died in 1982.

The farmhouse, listed on the National Register of Historic Places, is constructed of split-faced stone in the Greek Revival architectural style, and includes Victorian-Italianate porches.

Kresge's decision in the 1980s to preserve the farmhouse and renovate the barn, windmills and outbuildings set the stage for a series of ever-more complex projects over the next several decades that were designed to protect the existing features of the property and integrate natural systems as part of the headquarters' infrastructure.

Our Windmills

Tucked amid the thicket of brick and glass office buildings flanking the Big Beaver Road commercial corridor, the Foundation's inconspicuous campus is a blur at 45 mph. But there's a surefire way to spot the headquarters before it disappears in the rearview mirror. A pair of vintage windmills poke above the Troy, Michigan campus – landmarks used by first-time visitors and employees alike. And once you've seen them, it's hard not to steal a glance each time you pass by the oddly incongruous structures.

The iconic towers stood sentinel over the once-thriving Brooks Dairy Farm for generations. Today they still spin freely, their 18 angled steel blades pivoting to face the gentle breezes that swirl and eddy in the canyons between office buildings.

Both Kresge windmills were manufactured by the Aermotor Windmill Company, which introduced the brand as the high-tech "mathematical windmill" in 1888. Model 702, with replaceable bearings was introduced in 1933 and became a mainstay at farms throughout the Midwest and Plains states for generations. It was a workhorse, capable of pumping 1,000 gallons of water per minute for irrigation. By 1981, 80 percent of all U.S. windmills were made by the Aermotor Company of San Angelo, Texas.

The windmills were part of the property when Kresge purchased it in 1982. The cement bases and moving parts have been rebuilt over the years, but the towers are original. Although they no longer pump water, the Foundation keeps them spinning. Periodic maintenance is provided by an Amish windmill mechanic from Ohio who scales the towers – 40 and 60 feet tall – to keep them in good working order. Each evening – and during stormy weather – the windmills are manually disengaged to prevent damage in high winds.

But most days the blades are free to capture the currents just as they did when cows – not cars – roamed beside them.

Going Native

Kresge was building "green" before green was mainstream.

Why? Put simply, Kresge believes its campus should reflect the Foundation's values of stewardship, respect, creativity, partnership and opportunity.

Two small but thriving wetland ponds nestled behind the offices are the centerpieces of a lush, green landscape peppered with native trees, grasses and plants including water lilies and a dense cattail colony. The wetland is an oasis of fresh water and shelter for species that have included ducks, geese, heron, fish, and even a fox. Crushed stone walking paths wind throughout the landscape, which include a wildflower and butterfly garden that attracts a menagerie of visiting creatures in the warm months.

The drought-tolerant plants require no supplemental irrigation, mowing or fertilization and provide a rest station and food buffet for many animals that use the landscape to raise young, fish for minnows and pluck sunflower seeds. Each spring, a carefully controlled prescribed burn helps manage invasive species and allows the prairie plants to regenerate.

The wetland benefits more than wildlife. It serves as a settling basin to capture and hold stormwater that otherwise would surge into the municipal sewer system. Water from the landscape and the pervious parking lot design is gradually filtered through natural substrate. Excess is pumped into a cistern used to irrigate vegetation on the Foundation's green roofs.

Working with Nature

Nature is harnessed in a myriad of innovate ways to provide much of Kresge's heating, cooling, lighting and physical infrastructure – efforts that earned the Foundation's 2005 expansion the nation's highest green building designation, LEED Platinum certification.

Efficiencies start with the placement of the modern office building. Much of it is embedded below-grade, cradled by a berm of soil that provides stability and natural insulation. The building is oriented to harvest daylight and reduce the need for supplemental lighting. Careful placement of the building, interior light shelves and exterior sunshades work together to maximize interior lighting while shielding occupants from direct summer sun.

Belowground, 40 geothermal wells plunge 400 feet into the earth, bringing constant 55-degree water to the facility's three heat pumps through six miles of pipes. The system virtually eliminates the need for supplemental heating and cooling by taking advantage of the earth's near-constant temperature.

The roofs also serve multiple roles. Four living roofs help retain stormwater, insulate the building and provide habitats for insects and birds. The remaining portions of roof are covered in a light-colored membrane to reflect heat that might otherwise contribute to the “heat island” effect that raises temperatures in urban areas.

A 40-kilowatt, 140-panel rooftop solar array installed in 2016 is designed to generate 140 kilowatt hours (kWh) of electricity each day, reducing the Foundation’s consumption by 12 percent on average. Over the 25-year life of the system it is expected to avoid the release of 819 metric tons of planet-warming carbon dioxide and offset the energy equivalent of almost 2,000 barrels of oil.

Recycled materials comprise a significant portion of the headquarters construction infrastructure, including caged stone gabion walls on the exterior that are filled with concrete demolition waste and finished with crushed granite – an alternative to traditional concrete walls.

Indoor Oasis

The tranquility of nature found on the Kresge grounds also is evident indoors, where a combination of natural and manmade amenities are part of an integrated design aimed at fostering collaboration, accommodating diverse workstyles and promoting employee health.

- Two 16-foot tall green “living walls” act as a natural air purification system and add aesthetic appeal to the interior workspace.
- A pair of indoor water walls are a soothing presence and also are an integral part of the humidification system.
- Building materials with low or zero harmful emissions were used to help reduce health risks to employees.
- Outdoor patios encourage employees to eat lunch or even work outside in pleasant weather.
- Sit-to-stand desks are standard, combatting fatigue and the harmful effects of prolonged sitting.
- More than 110 works from Detroit-area artists harmonize the building’s interior, located in all common spaces and in each private office.
- A treadmill desk is available for employees to stay active while listening to conference calls or reading documents.
- An onsite cafeteria provides healthy, convenient meals and a central point for employees to gather.

Collaborating with colleagues and peers

The workspaces, common areas and building grounds are designed to foster teamwork, collaboration and creativity.

A convening center, constructed during the 2015 renovation, is the centerpiece of collaborative design. With state-of-the art multimedia technology and seating for 120, the space is filled with light from a two-story, north-facing glass wall. A room divider descends from the ceiling to create separate meeting spaces.

The convening space doubles as an informal gathering spot and lunchroom for employees patronizing the new cafeteria – also part of the 2015 expansion. The kitchen offers a variety of healthy, locally prepared meals as part of Kresge's commitment to holistic well-being for its staff.

An open floor plan with an integrated circulation pattern connects workspaces and common areas to one another via sunlight-dappled, art-infused corridors. Glass office walls contribute to the feeling of collegiality; teaming rooms for each department provide quiet spaces for meetings and calls.

The headquarters also offers a number of spaces designed to foster informal interaction among staff including the outdoor walking paths, soft seating areas, a lounge in the barn, several kitchenettes, Sebastian's cafeteria, and the "5&10¢" coffee nook.

Construction Partners

2005

Architects
Valerio Dewalt Train Associates

Construction Manager
JM Olson Corporation

Project Manager
Ron Gagnon

2015

Architect
Valerio Dewalt Train Associates

Construction Manager
L.S. Brinker Company

Project Manager
Jones Lang LaSalle

What We Learned

Extensive redesign and additions that took place in 2005 and 2015 were both challenging and rewarding. Maintaining the character and integrity of the historic grounds while simultaneously integrating modern technology and amenities provided a rich learning experience.

Lessons included:

- **Prepare to be an educator.** Nontraditional construction methods often don't adhere to standard rules and practices. City of Troy ordinances that establish maximum grass height did not originally consider the tall, native grasses on Kresge's property. When the city leaders learned the ecological value of the plants, they were enthusiastic about the landscape.
- **Front-load the design process** to get the design team and stakeholders engaged in a holistic planning process from the beginning of the project.
- **Start early to iron out novel infrastructure issues.** The geothermal heating and cooling system required a substantial period of adjustment. Many key problems were addressed prior to staff occupying the new building.
- **Take the long view.** Most of the cutting edge and costliest green choices were lower in cost when amortized over the expected life of the systems.
- **Get buy-in.** Building occupants don't automatically act with efficiency in mind. Education is a priority to engage employees as part of the process and encourage them to facilitate optimal operation.

About the Foundation

Established by Sebastian S. Kresge in 1924, The Kresge Foundation works to expand opportunities in America's cities through grantmaking and social investing in arts and culture, education, environment, health, human services and community development in Detroit. In collaboration with our nonprofit, public, private and philanthropic partners, we help create opportunities for low-income people living in cities to improve their life circumstances and join the economic mainstream.

To learn more about The Kresge Foundation please visit us at **kresge.org** and follow us on Twitter and Facebook.

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