

LEED PROJECT PROFILE



**McDonnell Hall & Brauer Hall
Mary Institute and St. Louis
Country Day School
St. Louis, Missouri**

35% building material recycled content

45% reduced water consumption

90% of waste diverted from landfill

LEED® Facts

**Mary Institute and St. Louis Country
Day School
McDonnell Hall & Brauer Hall
St. Louis, Missouri**

LEED BD+C: Schools v2009
Certification awarded May 2015

Platinum 84*

Sustainable Sites 12/24

Water Efficiency 9/11

Energy & Atmosphere 32/33

Materials & Resources 8/13

Indoor Environmental Quality 13/19

Innovation & Design 6/6

Regional Priority Credits 4/4

**Out of a possible 110 points*

The information provided is based on that stated in the LEED® project certification submittals. USGBC and Chapters do not warrant or represent the accuracy of this information. Each building's actual performance is based on its unique design, construction, operation, and maintenance. Energy efficiency and sustainable results will vary.

McDONNELL HALL and BRAUER HALL

Using principles of Science, Technology, Engineering and Mathematics to achieve best practices in green building

PROJECT BACKGROUND

The idea for a new STEM educational facility at MICDS came about with an overhaul of the STEM (Science, Technology, Engineering and Math) curriculum. As teachers developed a new curriculum to focus on hands-on, application-based learning in those disciplines, it was agreed that the existing math and science facilities, which were more than 50 years old, lacked the space and infrastructure to effectively teach 21st century science. MICDS sought to develop a new STEM facility designed to actively engage students in research and inspire curiosity about the natural world. The resulting 80,000 square foot facility replaced two buildings, doubling the total square footage and providing students with the most advanced STEM building in the region.

STRATEGIES AND RESULTS

At the onset of the project, the design team met with MICDS faculty and staff to evaluate how the new facility would align with the new STEM curriculum. The resulting design is a building that not only houses classrooms but also serves as a teaching tool filled with design elements featuring concepts taught in the STEM curriculum. The new science classroom / laboratories are significantly larger, providing space for long-term experiments. Science and math classrooms were deliberately mixed together to foster learning across multiple disciplines. Similarly, faculty areas were created as collaborative workspaces for teachers when they are not teaching class, bringing multiple disciplines together instead of isolated in individual classrooms. Break-out areas were also developed, as well as a common area with a fireplace, to promote small-group interactions.

In addition to providing much-needed space, the design of the new facility was created for improved energy and water efficiency. Efficiency measures include:

- A 10,000 gallon underground rainwater harvesting tank is used for the evaporative cooling system at the greenhouse and for the building's flush fixtures, reducing water consumption by 45%.
- Over 50% of the disturbed site area was restored as open green space with a bioswale creek and a bioretention garden, both of which serve as outdoor learning areas. Indigenous, drought-resistant plants were selected throughout, reducing irrigation by more than 50%.
- A 70,000 Btuh solar thermal array was installed, providing 100% of the new building's domestic hot water.
- A 112 kW rooftop photovoltaic array was installed, providing 15% of the building's total energy needs.
- High-efficiency HVAC systems, low-velocity ceiling fans, and continuous insulation were installed, resulting in 50% reduction in energy use for heating and cooling.

In addition to these water and energy efficiency measures, several other sustainable design techniques were employed throughout demolition and construction. Over 90% of the building demolition and construction debris was donated or recycled. More than 35% of the building materials, such as synthetic slate shingles made from recycled tires, were manufactured from recycled sources. 90% of wood-based materials and products are FSC-certified.

ABOUT MICDS

Mary Institute and St. Louis Country Day School is a private JK-12 nonprofit, independent, day school. Its mission is to help students discover their unique talents and calling, preparing them for higher education and a life of purpose and service as an engaged citizen in an ever-changing world.

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“This has been a long and satisfying journey made by a team of professionals who recognized the importance of not only including sustainable features but to make them visible. In this way the building reflects our commitment to doing what is good and right environmentally.”

Lisa Lyle, Head of School
Mary Institute and St. Louis Country Day School



Architect: Centerbrook Architects and Planners, LLC
Owner: Mary Institute and St. Louis Country Day School

Owner's Representative: Northstar Management Co, LLC

Contractor: BSI Constructors

LEED / Sustainability Consultant: Bryant Dieso, LLC

Civil Engineer: Civil Engineering Design Consultants, Inc.

Landscape Architect: SWT Design

Building Envelope Consultant: Heitman Associates

Code Consultant: PR Sherman

Commissioning Agent: Solutions AEC, LLC

Structural Engineer: Alper Audi, Inc.

Interior Furnishings: CI Select

MEPFP Engineer: William Tao and Associates

Photographs Courtesy of: MICDS and Centerbrook Architects and Planners, LLC

About USGBC-Missouri Gateway Chapter

USGBC is the nation's foremost coalition of leaders from across the building industry. Missouri Gateway Chapter members represent all segments of the building industry and work together to promote buildings that are environmentally responsible, profitable, and healthy places to live and work.



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