



GREEN BUILDING TOURS

April 15, 2011



LEED NC v 2.2

52%

Irrigation Water Savings

41%

Water Use Savings

28%

Energy Savings*

100%

Green Power

85%

Waste Recycled

35%

Recycled Content

33%

Regional Materials

90%

Spaces with Daylighting

* Has earned the Energy Star Rating, using Green-e® certified green power since 2007

LEED® Facts

The Monarch School
Houston, TX

LEED for New Construction
Certification awarded May 4, 2010

Gold 42*

Sustainable Sites 11/14

Water Efficiency 3/5

Energy & Atmosphere 6/17

Materials & Resources 6/13

Indoor Environmental Quality 11/15

Innovation & Design 5/5

*Out of a possible 69 points



"The greenest, most sustainable school in Texas!"

Chrysalis Building

PROJECT DESCRIPTION

The Monarch School provides an innovative, therapeutic education for children with neurological differences such as autism. By engaging in collaborative visioning with the students and faculty, the design team created a new campus which supports the transformative process of "changing lives from the inside out." Many students with neurological differences experience hypersensitivity to environmental conditions as well as motor, cognitive and social challenges that often result in various forms of disconnectedness. In response to these challenges, The Monarch School has learned that a strong focus on ecological education empowers students to gain control over themselves and their world. The Chrysalis Building is the first of three educational buildings to reach completion. Chrysalis currently houses the whole school, although it was designed for and will ultimately only serve the highly sensitive students at the Novice and Apprentice levels. The building design therefore provides a highly controlled, safe environment for these students to open themselves up to learning.

THE DECISION TO PURSUE LEED

The Monarch School's initial intention was to build green for their program, but not to pursue LEED certification because of the perceived 10-15% cost increase that was prevalent in the early part of the millennium. However, by the time the design team was near completion of the construction documents two things had become apparent: the building as designed was very likely to meet LEED certification, and the premium of LEED certification had dropped down to only 1-3%. The natural question might be: how did a school that wasn't designed to meet LEED end up achieving LEED Gold Certification? The answer lies in the integral connection between neurology and ecology. The development of the former always occurs in the context of the latter. The challenges faced by students with neurological differences brings this relationship to the forefront. Air quality, light quality, materials, and noise had to meet the requirements of students with neurological differences, and the resulting buildings were green by necessity. The implication is that if removing environmental instigators enables neurological development, perhaps the increasing prevalence of neurological challenges is a result of the overwhelming presence of those instigators in our man made environments.

LEED CERTIFICATION WAS ONLY THE START

The entire student body and faculty rallied to ensure that their new building lived up to its energy optimization features to achieve the Energy Star Rating. Outside, students are busy planting, watering and encouraging wildlife to join them in their new surroundings. Last but not least, Monarch is bringing natural building techniques to the Houston area as they build garden benches, walls and even an oven out of clay, sand and straw. As the campus continues to develop, it will truly serve the entire Houston community as an educational center for sustainability.

GREEN BUILDING STRATEGIES

Site credits were extremely well achieved with 11 out of 14 available, including adequate public transportation access, bicycle storage and showers and changing rooms, stormwater quality management retention, reducing heat island effect with reflective concrete and using steep sloped reflective roofing, and utilizing internal and exterior lighting fixtures to reduce light pollution.

Water use is reduced by over 50% by water efficient landscaping, and efficient fixtures reduced water use inside the building by 41% featuring dual-flush toilets.

Energy performance is 27% more efficient than the baseline, and 100% of the power is green power.

Materials were efficiently accommodated by recycling 85% of construction waste, and including 35% recycled content in new materials and 33% of materials locally.

Indoor environmental quality was enhanced with two construction IAQ management points which included pre-occupancy testing, and utilizing low-emitting adhesives, paints, carpet, and composite wood products. Lighting and thermal comfort control systems, as well as daylight for and views to the outside of 90% of spaces also enhance IEQ.

Innovation points include Green building education, green housekeeping, integrated pest management, and an exemplary level of water efficiency inside the building.



"What I like about learning in our new building is that you can see the outside from inside almost everywhere in the building. And the air is cleaner and more breathable!" – Chris Moore, Monarch Student

"Our new building is mission driven for our innovative, therapeutic program. The huge bonus is how healthy it is and how it boosts learning and student progress in our four core goals." – Dr. Marty Webb, Founder and Head of School



Owner: The Monarch School

Architect: Jackson & Ryan

LEED Consultant: Green Building Services

Structural Engineer: Matrix

MEP Engineer: Wylie & Associates

Civil Engineer: Brewer & Escalante

Acoustical Consultant: HFP

Energy & Sustainability Advisor: Mark Robinson

Contractor: Mission Constructors

Building Size: 24,720 SF

Campus Size: 10 Acres

Total Project Cost: \$5,153,895

Photography: Richard Wall

ABOUT LEED

The LEED Green Building Rating System is the national benchmark for the design, construction, and operations of high-performance green buildings. Visit the U.S. Green Building Council's Web site at www.usgbc.org to learn more about how you can make LEED work for you. Support the local chapter of USGBC by visiting www.usgbc-houston.org