

SCHOOL

Planning & Management

FACILITIES • SECURITY • TECHNOLOGY • BUSINESS

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Education design Showcase

OUTSTANDING DESIGN +
ARCHITECTURE IN EDUCATION
ANNUAL AWARDS

REPLACE AND REPAIR

PREPARING FOR FALL
DURING THE SUMMER

DESIGNED TO CURB OBESITY

USING SPACES FOR
PHYSICAL ACTIVITY

BUILDING ENVELOPE IMPROVEMENTS

UPGRADES IMPACT ENERGY
PERFORMANCE AND HEALTH

should collaborate to approach the facility assessment from all angles.

“The facility assessment is a crucial part of the renovation process because it helps us understand our clients’ needs and tailor renovation recommendations to meet those needs,” says Lee Andrea, principal at SHW Group, one of the nation’s largest educational architectural and engineering firms. “Our architects and engineers work collaboratively to determine what areas of the building envelope and mechanical and electrical systems present the greatest opportunities for renovation at the highest return on investment.”

Prior to performing the physical evaluation, the architect and engineers work with district administrators, faculty and staff to assess how the building performs in its current state and determine what immediate changes can be made from an operations stance to improve the building’s performance. Many times, even the simplest changes can make a significant impact on energy savings. It is also important to understand how the building functions on a day-to-day basis so architects recommend changes that will provide a cohesive transition for user groups into the updated facility.

When the architects and engineers have a solid understanding of the building operations, they can move forward with the hands-on facility assessment to evaluate the building envelope, mechanical systems and electrical systems for both simple and large-scale upgrade opportunities. Even when focusing on building envelope upgrades, it is important that all systems are evaluated to understand how each affects another’s energy usage.

Post-evaluation, the architects and engineers collaborate to perform energy modeling on the potential updates and compare it with the school’s most recent energy bills. By looking at the key components one-by-one, they complete a life-cycle analysis that yields the projected energy savings. The facility assessment and resulting life-cycle analysis provides

[THERAPEUTIC LEARNING]

The Monarch School: Changing Lives From the Inside Out

The Monarch School, founded in 1997, is a premiere Houston-based school, providing a safe and nurturing atmosphere and development program for children and young adults with neurological differences. The school prides itself on offering a unique, therapeutic learning environment where active minds are challenged, all are treated with respect and dignity, learning is a joy and wisdom is the outcome. The school initially opened with 23 students and 15 staff

members. Today, Monarch hosts more than 100 students with a dedicated faculty and staff of more than 50.

In 2006, the Monarch School faced a dilemma: how to expand the school’s unique accommodations to meet the increasing demand of

enrollment. Shelly Potorff and John Clements of Jackson + Ryan Architects were hired to bring the dream of a brand new campus to life. The new layout would consist of three facilities: the Chrysalis, named after the chrysalis stage of the monarch butterfly; the Monarch; the Butterfly; and an included special “outdoor classroom.”

Designing the facilities proved to be a far from normal venture. School administration was present through the entire process. Important elements of consideration included the necessity for absolute light, sound and color control. The Chrysalis would house children still in early developmental phases, whose sensory perception is still incredibly delicate. Muted green wall tones and high placement of windows were selected to evoke a calm and easy-to-focus ambiance.

To that end, the choice of building materials was also a crucial concern. School officials wanted to maintain a rustic, natural Texas landscape look and feel, while promoting a green and energy-efficient structure that was sure to

stand the test of time. Metal roofing was a key component that met these requirements.

The overall roof plan consisted of a multitude of angles and inverse pitches, making it a particularly complex project. MBCI was involved early in the design process to help ensure the proper roof system and weathertightness warranty. They also provided the architects with a list of roofing contractors in the Houston area that were certified in the proper installation


of standing seam panels.

To ensure that all parties were in alignment before bid day, the roofing manufacturer constructed a series of large mock-ups of the unusual and complex details. The design team, as well as the contractors bidding the project,

walked through every inch of the upcoming process, minimizing any risk for surprises. The successful bidder, Gulf Star Roofing, knew before construction of the roof started exactly what was required.

The Monarch School Chrysalis Building officially opened its wings to students and the community in August 2009. Today, it is LEED certified by the United States Green Building Council (USGBC) at the Gold level. The roof panels themselves are made from 25- to 35-percent recycled steel and are virtually 100-percent recyclable, adding to the overall green atmosphere initially conceptualized. Construction of the first portion of the Monarch School was a triumph.

Phase One of the Monarch School was a hit in part because of the teamwork of everyone involved. Funds continue to be raised for construction of the additional two buildings. Children continue to learn, grow and thrive.

“Our new campus is a people miracle. Hundreds of people made our dream their dream; our passion, their passion,” Dr. Webb says. 

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