



VIEWS & VISIONS

A publication of Bowles Rice LLP

Fall 2013



Educational Evolution: Building a Sustainable Future One Brick at a Time

Timothy Murphy, Founding Principal
 Chuck Trimble, Principal
 Murphy + Graves + Trimble

Tim Murphy is the founding principal of Murphy + Graves + Trimble and has 25 years' experience with programming, planning and architectural design in the K-12 and higher education markets.

Mr. Murphy received a bachelor's degree in architecture from the University of Kentucky and is a LEED accredited professional. He was recently appointed to the Kentucky Board of Architects, where he serves as treasurer. Mr. Murphy also serves on the National Council of Architectural Registration Boards' Architect Registration Examination Subcommittee on Building Design & Construction Systems, and was recognized as a Citizen Architect by the American Institute of Architects.

Chuck Trimble is a principal at Murphy + Graves + Trimble and has more than 25 years' experience in the fields of architecture and construction. He attended the University of Kentucky's College of Architecture and Design prior to owning a construction management company, where his hands-on experience included regional projects in Kentucky, Ohio and North Carolina.

Mr. Trimble's experience as a construction manager, as well as his work with design professionals, allows him to introduce functional expertise to the planning process.



The needs of today's students are constantly evolving, and the conventional, "one-size-fits-all" classroom concept is becoming a thing of the past. A good architect recognizes that educational spaces intended for elementary children are fundamentally different from those structured to serve high school students. Thus, it is critical to understand how the design of these environments directly impacts intellectual learning and achievement, as well as sets the tone for lifelong accomplishment.

Educational spaces must be welcoming, productive and dynamic, but they also must be functional. Teachers are stepping away from a linear learning model and are embracing the opportunity to engage students on a more effective level. Conventional educational patterns and spatial relationships are being replaced with computer-based instruction, group execution and interactive critique. These advances in technology and shifting curriculum require flexible furniture, specialized electrical systems and reliable equipment, which are all implemented through thoughtful design. In turn, the classroom elements that generally go unnoticed become platforms for an enhanced educational experience; improve student retention rates and support the school's overall mission.

While understanding how to engage today's student, it is vital to acknowledge that education is no longer confined to the physical classroom. Effective instructional environments include blended-learning spaces for both small and large groups. Whether it is an alcove where a teacher can have one-on-one time with a student or a large outdoor classroom that holds 100 people, each space dramatically impacts student progress. These unique areas have become the new norm, therefore it is important to define program specifics and tailor these spaces around the end user – ensuring needs are met in a realistic and manageable way.



Mary Todd Elementary, shown above and opposite, incorporated "green," state-of-the-art design concepts into its construction in Lexington, Kentucky



Green Education by the Numbers

The Center for Green Schools at the U.S. Green Building Council (USGBC) released its first “State of Our Schools” report in March 2013. The report notes that the last comprehensive study on America’s school facilities was completed in 1995 and calls on the Government Accountability Office (GOA) to conduct an updated survey in order to accurately address today’s shortfalls. However, the USGBC estimates that our nation’s schools are facing a \$271 billion deferred maintenance bill, just to bring existing buildings up to working order – approximately \$5,450 per student.

From an environmental perspective, the concern for student health and well-being is fueling our nation’s investment in sustainable facilities. Responsibly designed educational buildings support academic and social development, higher attendance averages and a reduced ecological footprint. Some commonly utilized strategies include daylighting; specification of sustainable and non-toxic building materials; and renewable energy sources such as solar and geothermal technology. These “green” elements are no longer luxuries, but are considered “best practice” when planning and designing K-12 schools.

While initial costs associated with green projects may seem intimidating, districts across the nation continue to choose the sustainable route because of prolonged

life-cycle benefits. These benefits include reduced energy consumption, lower operational costs, enhanced student performance, increased faculty satisfaction and a healthier environment for the life of the building. In fact, McGraw-Hill Construction’s *Dodge Green Construction Outlook* reported that 54 percent of education construction was “green” in 2012 – up from 30 percent in 2008. This growth is expected to continue as financial and developmental rewards are realized and documented.

According to a 2013 McGraw-Hill Construction study entitled “*New & Retrofit Green Schools – The Cost Benefits and Influence of a Green School on its Occupants*,” leaders in the K-12 market have seen immense success with their sustainable facilities. The study’s findings include:

- 91 percent report green facilities have improved the health and well-being of their students;
- 70 percent report green efforts aided in raising test scores of their students;
- 83 percent report increased faculty satisfaction as a result of teaching in a green school;
- 32 percent report reduced student absenteeism;
- 48 percent report increased student engagement as a result of access to natural light and views into their classrooms; and

- 44 percent report an improvement in student attentiveness as a result of better acoustics in their green projects.

From Concept to Creation

The ultimate success of any design is determined by what happens during construction, which becomes even more apparent with sustainable facilities. From complex mechanical and electrical systems to specialized materials and a low margin for error, building a “green” school requires a heightened level of expertise. Construction professionals must take a holistic approach in order to fully comprehend how building elements and systems fit together to make the end-result function as intended.

As green design continues to advance, K-12 facilities will remain at the forefront of sustainability because they are the environments that build our future – the common thread to everyone’s individual story. Whether it is flexibility in the classroom or innovative energy systems, being knowledgeable about the evolution and its effects is our responsibility. ▾