



# *THE ROAD TO A* GREEN DISTRICT

School systems with sustainable practices and policies illustrate the steps along the way

BY RACHEL GUTTER AND EMILY KNUPP

**A** quick walk through the halls of the new Arabia Mountain High School in Dekalb County, Ga., and you know this is a special place. Sunlight filters in through oversized windows, the mechanical system is whisper quiet, and, although the school is just a few months old, there is no trace of the new-building smell that often overwhelms new facilities.

Faculty can size up the altered environment in behavioral terms. Susan Jacobs, chair of the language arts department, says at her old school a student asking to be excused to use his inhaler was as common as a student asking to use the bathroom. Inhaler breaks in Jacobs' classroom have dropped from one or two times a day to once or twice a month.

Designed and built to be a green school, Arabia Mountain is pursuing LEED green-building certification. For Jacobs and her fellow teachers, the school's healthy, high-performance design means no longer suffering from "the 2:30 headache" they often experienced at their previous facilities. Staff members meet regularly to share new ideas for integrating environmental themes

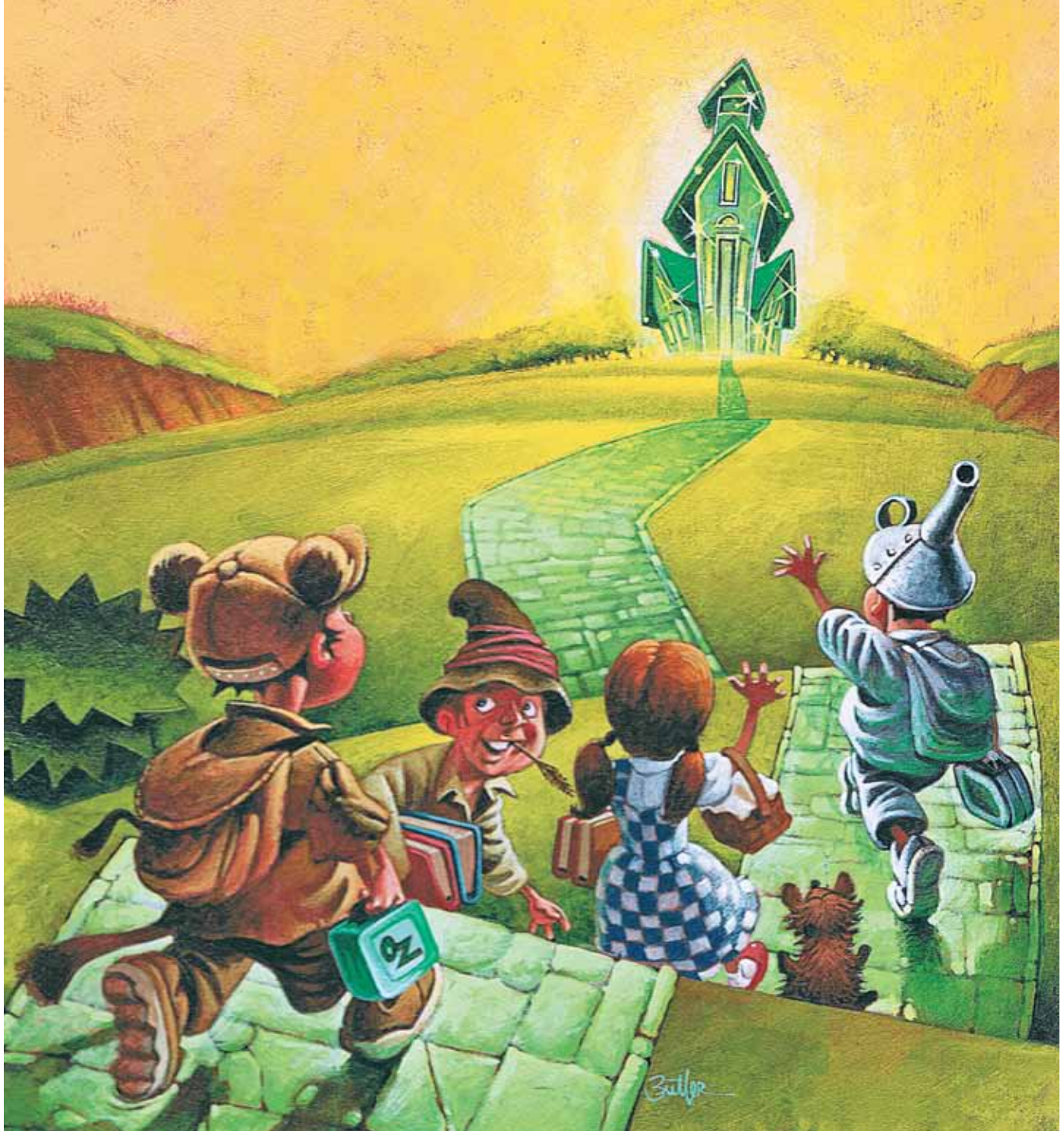
across all areas of instruction.

"We see the improvements that come from the right hand talking to the left hand," says Jacobs.

The LEED green-building certification program, developed by the Washington, D.C.-based nonprofit U.S. Green Building Council, provides recognized third-party verification of high-performance buildings. (LEED stands for Leadership in Energy and Environmental Design.)

The LEED for Schools rating system, introduced in 2007, recognizes the unique nature of the design and construction of K-12 schools, addressing classroom acoustics, mold prevention and environmental site assessment, among other issues. LEED for Schools provides a comprehensive tool for schools that wish to build green, and it provides districts with facilities that are healthy for students, comfortable for teachers and cost effective.

Improvements to the curriculum at Arabia Mountain, which serves 1,400 students in grades 9-12, are being made incrementally with the long-term goal of using the school facility and grounds as a living laboratory to enhance every subject — from environmental science to algebra. Though the staff has just scratched the surface of what is possible,



they are already seeing results. Teachers are energized by “seeing students get excited,” says Jacobs, an educator in the district for six years. “I haven’t seen that in a long time.”

### Gaining Momentum

Green design, green construction and green operations for new buildings are rapidly becoming the norm for school districts throughout the country. Today, increased availability of green products and technology coupled with cost savings that are realized through an integrated design process mean that schools like Arabia Mountain can be built for costs comparable to conventionally designed schools within the same region.

School districts that have realized the benefits of build-

ing new green schools are turning their attention to systemwide green operations, maintenance and purchasing practices so all students may enjoy the benefits of healthy schools that enhance learning.

No prescriptive path exists in this area. A series of incremental improvements can lead a school district to reduced utility costs, healthier occupants and optimized learning environments.

The 10 steps here are suggestions, derived from success stories shared by districts that are well on their way to going green.

► **COMMUNICATE THE TRIPLE BOTTOM LINE. (ENGAGE STAKEHOLDERS.)** For many school districts, building consensus with decision makers is the first step to launching a



**Above: Pupils find comfortable spots to read at Manassas Park Elementary School in Manassas Park, Va., recently selected by the American Institute of Architects as one of 10 examples nationwide of sustainable architecture and green design solutions. Right: An exterior look of the school, whose architects integrated an environmental curriculum into design elements.**

comprehensive sustainability program or initiative. How will you convey the benefits of green schools to other administrators, parents, teachers and taxpayers? The key to successful engagement is identifying and communicating the advantages that resonate most with each audience.

When it comes to greening a district, there is something in it for everyone. This value equation is commonly referred to as the triple bottom line — a truly sustainable solution that integrates people, planet and prosperity.

For many stakeholders, especially parents, the top priority will be healthy and comfortable conditions for students and teachers. Improved acoustics, good indoor air quality and thermal comfort have been shown to improve performance, reduce absenteeism and increase productivity.

Other community members may place importance on reducing the district's environmental impact. Green schools use up to 50 percent less energy and 40 percent less water than their conventional counterparts and divert thousands of tons of waste from landfills.

Those stakeholders focused on the bottom line will be interested to know that a new green school saves an average of \$100,000 a year in direct operating expenses, including energy and water costs, according to "Green-



ing America's Schools: Costs and Benefits," a 2006 study by Greg Kats, co-sponsored by the U.S. Green Building Council.

To identify and support green schools champions, host town hall meetings or community charrettes, write letters to the editor of your local newspaper and deliver presentations to parents, students and district staff. Encourage your community to support a formal commitment to green schools.

▶ **COMMIT TO A GREEN DISTRICT (ADOPT A RESOLUTION OR PILOT NEW STRATEGIES.)** Superintendents and school boards are powerful advocates, and many have set their districts firmly on a green path by instituting new policies

or adopting resolutions. Smaller districts, such as Bryant Public Schools in Bryant, Ark., as well as large districts, such as Chicago Public Schools, have committed to LEED certification for new schools and major renovations. In both districts, leadership articulated a vision for a sustainable future and solidified a long-term commitment by dedicating funds, staffing and ongoing support.

If your community has an “I’ll have to see it to believe it” mentality, build confidence in stakeholders through successful pilot projects. When Hudson School District, serving 5,300 students in northern Wisconsin, announced its intent in 2007 to pursue LEED certification for a new elementary school, some stakeholders were publicly skeptical.

Superintendent Mary Bowen-Eggebraaten actively sought community input. When Bowen-Eggebraaten and her project team learned that most concerns stemmed from an assumption that going green would cost more, they sought to dispel this myth through outreach and education. Says Bowen-Eggebraaten, “It was our responsibility to help our community learn what we were learning.”

And learn they did. Compared to other elementary schools built in the region in 2008, River Crest Elementary School cost 26 percent less to build. The success of their first green school project generated widespread enthusiasm and support.

“What’s good for River Crest isn’t just good for River Crest,” Bowen-Eggebraaten says. “It’s good for all of our schools and for our whole community.”

► **GROW YOUR GREEN TEAM. (BUILD CAPACITY AND EDUCATE.)** You haven’t made green initiatives a priority until you have made it someone’s job to oversee their implementation. School districts have come up with an assortment of titles for this position, such as director of sustainability initiatives or green schools program manager. In some cases the position reports to the superintendent or the chief financial officer, the deputy superintendent or the director of facilities.

School districts unable to hire for the new position can draw on the expertise and enthusiasm of current staff. Often, this new job description will be a natural extension of an employee’s current position. In 1993, the administration of Poudre School District in Fort Collins, Colo., conducted an internal search to identify a staff member who could reduce energy use across Poudre’s portfolio of 72 buildings.

Stu Reeve had managed electrical services for the facilities department for several years. His strong interest in conservation, combined with his understanding of the district’s building stock, made him a perfect fit as the district’s first energy manager. Over time, Reeve’s position has evolved beyond energy management; today he oversees one of the first comprehensive green school programs in the nation.

The most successful green programs are the result of an integrated team effort. Typically, multiple departments must be engaged for a single project. At Manassas Park City Schools in northern Virginia, the administration

## Contacts at Five Green Districts

The U.S. Green Building Council suggests these school districts as useful resources for others considering sustainability measures in current or planned schools.

► **Bryant Public Schools, Bryant, Ark.** Students in Bryant’s 11 schools get firsthand green experience, using their green buildings as living laboratories to inform curricula. Contact: Deborah Bruick, assistant superintendent for curriculum and instruction, [dbruick@bryantschools.org](mailto:dbruick@bryantschools.org)

► **Council Rock School District, Newtown, Pa.** This district reduced its energy consumption in its 16 schools by 46 percent, saving \$7.1 million in four years, but spending only \$150,000 to do it. Contact: Tom Schneider, supervisor of operations, [tschneider@crsd.org](mailto:tschneider@crsd.org)

► **Poudre School District, Fort Collins, Colo.** This district hired its first energy manager in 1993, launching a comprehensive program that has saved hundreds of thousands of dollars. Contact: Stu Reeve, energy manager, [stur@psdschools.org](mailto:stur@psdschools.org)

► **Rio Rancho Public Schools, Rio Rancho, N.M.** This 1,670-student district saves thousands of dollars each year through districtwide practices, such as turning off extra lights and appliances once a week and committing its new schools to earn LEED Silver certification. Contact: Al Sena, executive director of facilities, [asena@rrps.net](mailto:asena@rrps.net)

► **Virginia Beach City Public Schools, Virginia Beach, Va.** Through no-cost strategies such as removing personal appliances from classrooms and instituting a no-idling policy for buses, the district saves \$750,000 a year. Contact: Tim Cole, sustainable schools manager, [J.Tim.Cole@VBSchools.com](mailto:J.Tim.Cole@VBSchools.com)

assembles a diverse group of staff and outside experts to undertake major sustainability projects.

“Each project has what we call a dream team,” says Superintendent Thomas DeBolt, explaining that teams include teachers, principals and central-office staff, in addition to facilities staff.

Staff acquire new skills and expertise through in-house and outside training opportunities. If sufficient interest exists, a school district can launch a LEED Green Associate study group and create incentives to motivate staff. The LEED Green Associate is a professional credential offered by the Green Building Certification Institute. It’s ideal for employees who support green building design, construction and operations. The credential denotes basic knowledge of green building principles, practices and LEED.

In the 24,000-student Poudre district, Reeve says district leadership has been “very generous with trainings,” and their investment in ongoing professional development plays an important factor in Poudre’s successful sustainability efforts. Reeve says he has trained “in some of the great energy-saving areas in the country,” studying best practices of other school districts and energy managers.

► **ASSESS THE LANDSCAPE. (PERFORM A DISTRICT EVALUATION.)** Perform a systemwide needs assessment to identify immediate opportunities, long-term goals, and a timeline for incremental improvements and operational shifts.

Greening a school need not involve knocking an existing facility down and building a new one in its place. From a resources perspective, the greenest building is the one already built. Evolving operational procedures, maintenance practices and purchasing policies can lead to drastic improvements to indoor environmental quality, occupant comfort and resource conservation, as well as dramatic reductions in energy and water consumption.

The Agua Fria Union High School District in Avondale, Ariz., applied the LEED for Existing Buildings: Operations and Maintenance rating system to perform a districtwide assessment and develop a green schools strategy. Targeted guidance for school districts that launch comprehensive sustainability initiatives is available through the U.S. Green Building Council's Green Existing Schools Toolkit. This resource, available for free download, provides assessment tools, guidance, and policy and planning templates to assist school districts seeking LEED certification for their existing facilities.

Recently, Agua Fria staff, led by the associate superintendent for facilities, spent a full day conducting a districtwide evaluation for implementing sustainable operations and maintenance practices and improving building performance. The green team, which included the district energy manager, facilities support staff, school site and custodial managers as well as teachers and students, evaluated high-performance strategies and systems already in place, those that could be implemented for low- or no cost and long-term priorities for new initiatives and upgrades.

Agua Fria staff decided to extend the green cleaning program in place at two schools to the entire district. In the coming months, new energy meters will be installed so staff can benchmark the performance of each facility and monitor improvements. The team also set a vision statement for the district to "design, construct and operate our schools and facilities in a sustainable manner while creating



**River Crest Elementary School in Hudson, Wis., completed in 2008, achieved gold certification from the U.S. Green Building Council.**

a positive learning environment, engaging all stakeholders and influencing curriculum, all while saving energy, water and direct costs."

▶ **GET THE BALL ROLLING. (TACKLE LOW- AND NO-COST IMPROVEMENTS.)** Often, school districts focus early efforts on energy conservation. In some cases, resulting utility savings can be used to fund additional green initiatives. In 2005, when the Pennsylvania Association of School Business Officials identified Council Rock School District in Newtown, Pa., as one of the state's highest spenders on energy, the district launched an effort to identify and cease wasteful practices.

Council Rock staff conducted energy audits for all their buildings and benchmarked every school with the EPA Portfolio Manager. Staff targeted schools with low ENERGY STAR scores as strong candidates for low- and no-cost improvements. By taking advantage of this free tool and spending just \$150,000 of their existing capital budget, the district implemented energy efficiency measures that have reduced consumption by 46 percent, saving the district \$7.1 million over the last four years.

"We're doing the things that really anybody can do," says Tom Schneider, Council Rock's supervisor of operations, adding, "This was strictly through operational changes and cultural changes."

In Rio Rancho, N.M., Public Schools, tackling short-term goals led to a comprehensive commitment to green the fastest-growing school district in the state. "We identified where we might be able to start making changes, which really involved thinking long term," says Al Sena, executive director of facilities.

Rio Rancho staff focused on improving the indoor environment for their students. The district established a green cleaning program and used low-emitting materials and high-performance equipment whenever possible.

## LEED Certification for Schools

The LEED green building certification program is the foremost program for the design, construction and operation of green buildings, including public schools.

More than 33,000 projects are participating in the commercial and institutional LEED rating systems. Among these are 300 LEED-certified and 1,700 registered K-12 schools. (LEED stands for Leadership in Energy and Environmental Design.)

Intended for use in the design and construction phases of a building, LEED for Schools facilitates project teams in using an integrated design approach from start to finish, bringing down overall costs and delivering project goals.

Existing schools can certify using the LEED for Existing Buildings: Operations and Maintenance rating system. This tool identifies and rewards current best practices in buildings to use less energy, water and natural resources, improve the indoor environment and uncover operating inefficiencies.

For more information, visit [www.usgbc.org](http://www.usgbc.org).

By unplugging lights, computers and other energy-consuming devices at several schools, Rio Rancho saved an estimated \$40,000 over a 10-day winter break. Today, all schools unplug for long weekends and vacations, saving the 16,800-student school district hundreds of thousands of dollars each year in energy costs. The district's success with sustainable operational practices prompted the school board to adopt a policy requiring all new buildings achieve LEED Silver certification at a minimum.

► **SHOW ME THE MONEY. (CONSIDER FINANCING STRATEGIES.)** With upfront planning and buy-in from district leadership, the utility and operational savings from green initiatives and upgrades can be reinvested in future improvements, school supplies and technology or even staff.

The River Crest Elementary School project in Hudson, Wis., inspired staff to focus on conservation throughout the district. Every Hudson school now adheres to an individualized energy-reduction plan. In just one year the district saved \$92,000 by cutting its energy use by 11.7 percent. Hudson facilities staff used the savings to hire a full-time energy manager who works with building operators, teachers, students and staff to find more savings.

Green projects that involve major system upgrades or comprehensive retrofits will likely require capital funds or outside financing. When capital dollars are unavailable or insufficient, consider adopting a paid-from-savings approach. This financing strategy leverages the savings generated from building system upgrades to pay for a comprehensive greening project within a defined payback period. The paid-from-savings approach can help your district implement needed repairs and upgrades and incorporate green strategies and technologies in a cost-effective manner.

The key to successful paid-from-savings projects is *bundling* — aggregating utility cost-saving measures with low- and no-cost green improvement measures to expand large-scale green opportunities. Bundling longer payback measures with quicker ones creates a shorter overall payback period for the project.

Try bundling financing strategies, too. Combining existing capital or operating funds, tax-exempt bonds, utility rebates and grants, or performance contracting strategies can significantly increase the capital available for green projects. A resource developed by the U.S. Green Building Council, “The Paid-From-Savings Guide to Green Existing Buildings”, provides guidance on bundling project measures and financing strategies, including detailed instructions for incorporating LEED certification as part of the retrofit process.

► **MAKE IT HAPPEN. (IMPLEMENT POLICY AND BUILDING UPGRADES.)** Institutionalizing green policies and practices sends a message to the community that a high-quality learning environment for all students and teachers is a priority for the district. Virginia Beach, Va., City Public Schools has integrated green practices across the district, from school design standards to recycling and energy management programs.

## Resources on Green Schools

The National Clearinghouse for Educational Facilities offers resources to support a school district's green initiatives. NCEF Technical Service Manager Wayne Kemp recommends these resources:

- National Clearinghouse for Educational Facilities is home to a significant collection of resources, including hundreds of publications, videos and links relating to green schools. [www.ncef.org/green-schools](http://www.ncef.org/green-schools)
- The U.S. Green Building Council develops the LEED green-building certification program and provides supporting resources such as “The Paid-From-Savings Guide to Green Existing Buildings.” [www.usgbc.org](http://www.usgbc.org)
- The Center for Green Schools at USGBC shares free resources, including the Green Existing Schools Toolkit, and provides information on LEED-certified schools nationwide. [www.GreenSchoolBuildings.org](http://www.GreenSchoolBuildings.org)
- The Green Building Certification Institute provides third-party LEED project certification and professional credentials in green building performance and practice. [www.gbci.org](http://www.gbci.org)
- Green Education Foundation is a nonprofit offering environmental education resources for preK-12 schools. [www.greeneducationfoundation.org](http://www.greeneducationfoundation.org)
- Collaborative for High-Performance Schools has technical resources for school districts on the design, construction, maintenance and operations of high-performance schools. [www.chps.net](http://www.chps.net)
- ENERGY STAR is a government-backed program with a range of free tools for energy management, including a Benchmarking Starter Kit and Portfolio Manager. [www.energystar.gov/schools](http://www.energystar.gov/schools)
- Environmental Protection Agency's Indoor Air Quality Tools for Schools Program helps maintain a healthy environment in school buildings by identifying, correcting and preventing IAQ problems. [www.epa.gov/iaq/schools](http://www.epa.gov/iaq/schools)

According to Tim Cole, sustainable schools manager in Virginia Beach, an average high school in his district can spend up to \$600,000 on electricity each year. With simple strategies like eliminating the use of personal appliances in classrooms, automatically shutting down computers at the end of each day and establishing a no-idling policy for buses, the district saves more than \$750,000 each year in electricity and fuel costs.

Virginia Beach's strategies also teach community members about how their choices impact the environment. Recycling in every classroom diverted more than 1,300 tons of material from landfills last year. Each school has a designated sustainable school liaison who acts as a representative to the district's sustainable schools committee. Students get involved in environmental clubs, engaging their peers in green projects.

In Rio Rancho, Sena says the school district is “extending our branches to change our facilities overall,” addressing issues from landscaping to building envelopes to roof maintenance.

“We've been taking every aspect of operations and putting it under the magnifying glass,” he adds of the district's



**Rachel Gutter (left) is director of the Center for Green Schools at the U.S. Green Building Council in Washington, D.C., where Emily Knupp is an associate.**

continued effort to find opportunities for improvement. This ongoing process takes patience, he says, “to make people realize we’re not going away.” Rio Rancho takes small steps, reports Sena, “but we’re growing every year because we know we’ve established good practices.”

► **SCHOOL AS A TEACHING TOOL.** Green school facilities function as living laboratories for project-based learning, increasing students’ environmental literacy and encouraging them to explore the connectivity between nature and the built environment. Bowen-Eggebraaten, superintendent in Hudson, Wis., believes the district carries a responsibility to promote environmental awareness to students. “We need to make them aware of the sustainable practices around them,” she adds. “It can become a part of their lives as they grow and develop.”

Teachers and students from each of Bryant, Ark., Public Schools’ 10 campuses can participate in the design of green schools, and student efforts contribute directly to their class work. When planning their new high school, Assistant Superintendent Deborah Bruick insisted on gaining teacher buy-in to develop curricula that would complement the district’s green-building goals.

Bryant High School’s Environmental and Space Technology Lab is using software programs to create a virtual map of the future high school campus, which is pursuing LEED certification and is scheduled to open in 2012. The lab teaches students about emerging technologies, while applying them to real projects based in their own community.

In planning their new high school, students work close at hand with the rest of the project team, and much of their input has been integrated into the design plans, including a Greek-style outdoor theater and native plant species in the landscaping.

The secret to a successful environmental education

## “Greening your school district will be an ongoing process of evaluating, learning and making course corrections.”

program is not unlike that of successful green buildings, Bruick observes. The trick is to think of what you’re already doing through a green lens, and, she says, “not add something to teachers’ plates that doesn’t make sense.”

Organizations such as the Green Education Foundation offer free lesson plans and activities that meet national curriculum standards and can be easily integrated into classrooms at any grade level. The foundation offers resources for teachers to incorporate green lessons without taking away from planning or teaching time.

► **CELEBRATE SUCCESS. (SHARE YOUR STORY.)** When you’ve got something to show for your efforts, be it a new biodiesel school bus, a big Earth Day event or a LEED-certified school building, celebrating your success shows the community that your commitment to green is real, and that it is paying off.

Acknowledging your green team’s hard work through websites, news releases, open houses and newsletters will keep the team energized and can help get skeptics on board along the way. Virginia Beach, Council Rock, Rio Rancho and many other districts share their best practices and progress on their websites and encourage their communities to implement the strategies at home.

Greening your school district will be an ongoing process of evaluating, learning and making course corrections. Telling your story is critical for building momentum and support.

► **CONSIDER WHAT IS NEXT. (DREAM BIG.)** Districts with successful green programs in place should raise the bar on their own success. Bowen-Eggebraaten says her district is excited about what it has achieved, though more remains to be done.

“We believe it’s our obligation, our responsibility, to protect and conserve our natural resources, and model that for our students, staff and community,” she says.

In Manassas Park, Va., DeBolt says his 2,700-student school district was “never afraid to do things that haven’t been done before or that some would regard as a little risky.” Boldness has its rewards. Manassas Park Elementary School recently earned LEED Gold certification and was picked as one of the top 10 green projects of 2010 by the American Institute of Architects’ Committee on the Environment.

Moving your district in a greener direction will make a lasting impact on your community, your students and their future. “It’s the right thing to do,” says Al Sena, “for the kids, and the environment that they live in.” ■

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