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Instill Values of Sustainable Living in Students

By William S. DeJong

A change in mindset must occur for this country to embrace sustainable values, and the best place to start is with students.

For the most part, baby boomers did not grow up with a value system that included environmental advocacy. Many of us don't think twice about how we impact the environment on a daily basis. We drive gas-guzzling SUVs, apply chemicals to our lawns and don't recycle regularly.

However, since children's core values are learned at home, in places of worship and at school, we have a huge opportunity. School can become a powerful force in teaching sustainable values.

As we plan, design, construct and operate school buildings, there must be a parallel focus on teaching students the important benefits of sustainable living.

The focus on green buildings is probably the biggest trend in school facilities in the past decade and may become the most significant change in school construction in the 21st century. Great strides are



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being made for buildings to achieve LEED certification and other green guidelines. Many of these guidelines call for better use of natural light, more energy-efficient heating and cooling systems, reuse of building materials, improved indoor air quality, water use reduction and utilization of alternative energy sources.

Without a doubt, the focus on green and sustainable building has the potential to influence curriculum. In fact, buildings can be designed as learning opportunities. After all, if we want students to embrace conservation, why not design school buildings as textbooks for learning?

The goal should be to promote environmental education as an interdisciplinary approach, not necessarily a subject in itself. For instance, energy-saving mechanical systems can be exposed so students can graph consumption in math class. Green rooftops can include outdoor science laboratories. Alternative energy systems can be part of an engineering program at the high school level. Students can monitor indoor air quality. Competitions can be established to reduce utility consumption, while incentives can be established to share in cost savings.

Most of these ideas are not new, but the possibilities are limitless. This is not to say that school designers are now responsible for establishing school curricula. Rather, with additional creativity we have the opportunity to take a good concept and help move it

toward a cultural value.

In the past 20 years, I have been so impressed by the increased attention to recycling. Most schools already have recycling programs, which include recycling containers in the custodial area. Recently, I visited schools where the containers are displayed in public places such as cafeterias and common areas. Displaying these receptacles provides students with a much clearer message as well as pressure to recycle.

The same can be said about other green initiatives that are designed into a building. If they are visible, teachers and students can use these initiatives as learning tools, with the increased probability that these values will create sustainable living patterns for years to come.

Establishing a sense of individual responsibility that benefits the environment as a whole and emphasizes active responsibility is extremely powerful. Schools have that power to instill these values. Our children are the next generation of consumers.

William S. DeJong, Ph.D., REFP, is senior adviser of DeJong-Richter, an educational facility-planning firm based in Dublin, Ohio.



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The most successful projects also have a sustainable design champion on the owner's team and the project team. On the owner's side, the champion may be the superintendent or a member of the school board — a person who can elicit the enthusiasm and support of the stakeholders, including the board and community. On the project team's side of the table, the sustainability champion is usually a member of the architectural or engineering team, who often is the LEED administrator.

The most successful sustainable school projects use LEED as a qualitative guideline for discussion of planning, design and construction issues, rather than as a simple quantitative checklist for chasing LEED certification points.

In the right hands, the LEED for Schools Reference Guide becomes a framework for discussion of the critically important sustainability issues and helps the owner and project team to define the characteristics and features of a high-performance building.

An Integrated Process

The most successful projects also use an integrated design process to achieve a sustainably designed school building that fulfills the owner's educational mission and program.

Traditionally, project teams hand off the design in a linear fashion from one member to another. The owner defines the educational program; the architect defines the size, shape and overall aesthetic of the building; the structural engineer determines the most cost-effective structural form; the mechanical, electrical and plumbing engineers design systems to supply and operate the building; and finally, the team hands off completed, approved construction drawings to the builder.

But the problem with the use of a linear design process on a sustainable school building is that a sustainable feature might be derailed anywhere along the line if

one member decides that it won't work.

In contrast, an integrated design team brings all of the design, engineering and construction disciplines to the table to find solutions that work.

For example, when a cistern was proposed to collect stormwater at a new high school, the entire team identified the ideal location of the cistern and uses for the collected water. Not only was this a sustainable, cost-effective design solution, it also qualified for nine LEED points and helped develop related science lessons.

Visible Features

Incorporation of visible features of sustainability and energy and water measurement devices that display data for students to see and use are essential to development of curricula related to the features of the sustainable school building.



Let students see a green roof, waterless urinals and other water-saving plumbing fixtures, abundant daylight and views of the outdoors. Install instruments that measure water and energy usage and display them in a public place, such as the lobby or student commons, and on a dedicated school Web page.


Involve teachers, curriculum specialists and the project team's LEED-accredited professional in developing lessons that use the features and data generated by the sustainable building.

In addition to benefiting students, the LEED rating system offers a design innovation point for educational outreach.

Today, a high-performance school building has an additional meaning beyond efficient use

of resources, lower life-cycle operating costs and enhanced user health and comfort. It is a building that teaches.

Bryna Dunn, AICP, LEED AP, is vice president and director of environmental planning and research at Moseley Architects in Richmond, Va. Contact her at bdunn@moseleyarchitects.com.



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