

Sustainable Schools

Supporting Your Educational Mission

The objective of this Sustainable Schools Guide is to provide you with information that will allow your school system to make informed decisions regarding energy and environmental issues that are important to your school, community, and country.

The concept of sustainable development reflects an understanding that we must meet the needs of the present without compromising the ability of future generations to meet their own needs. A Sustainable School not only embraces the concept of sustainability but is, in itself, a teaching tool for sustainability.

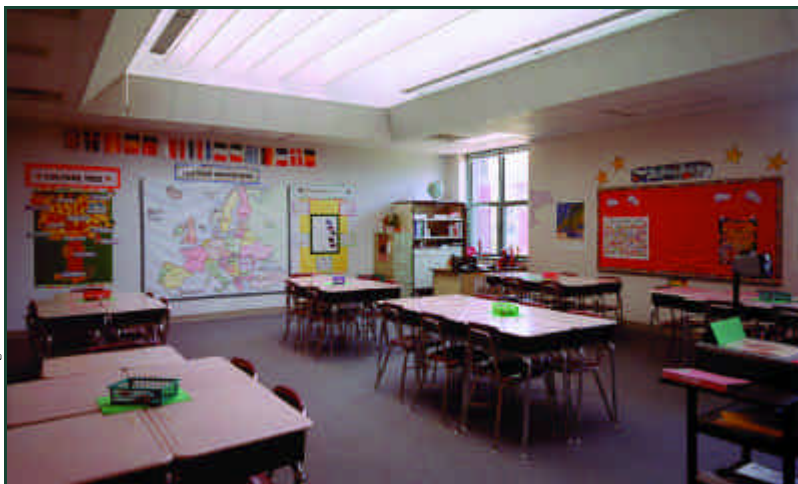


Photo: Innovative Design

You are encouraged to use these guidelines to develop your own criteria for sustainable school construction.

This guide is presented in six parts. Each eight to twelve page section addresses a different issue pertaining to Sustainable School design practices which can help you in meeting your educational mission.

- Reducing Operating Costs
- Buildings that Teach Sustainability
- Improving Academic Performance
- Protecting our Environment
- Designing for Health, Safety and Comfort
- Supporting Community Values



Photo: Innovative Design



Photo: Innovative Design



Photo: Innovative Design



Photo: Nevada Community School District

"Good teachers never teach anything. What they do is create conditions under which learning takes place."

S.I. Hayakawa

By implementing these sustainable design practices, you will be taking a significant step toward creating the physical conditions in which the learning process can thrive.

Photo: Innovative Design



Roy Lee Walker Elementary School, McKinney, TX

✓ Sustainable Schools – Sustainable Future

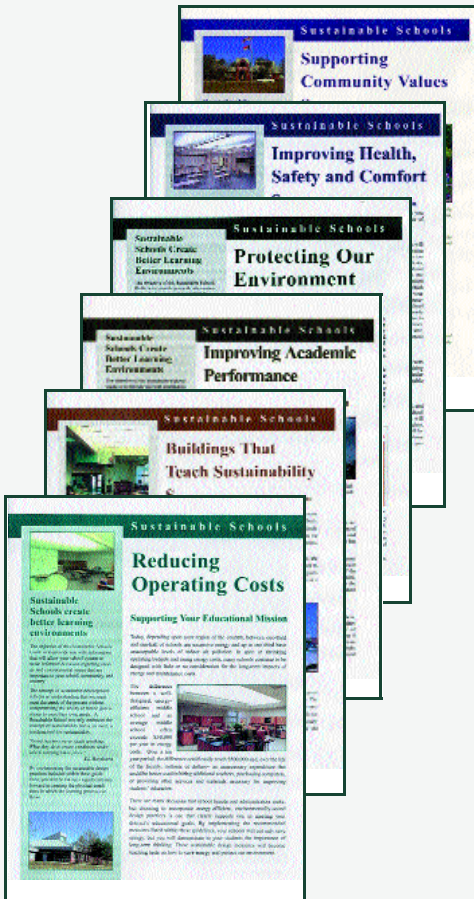
Across our country we are again seeing signs that the supply of energy is not keeping up with rising demand. Brownouts are becoming more commonplace. The price of natural gas is twice what it was just two years ago. We are moving from a period of less expensive energy and seemingly plentiful resources to a time in which building-related decisions will be more strongly influenced by energy availability and a growing concern over the environmental and societal implications of these energy options. Even today, energy costs over the life of a school will far exceed the initial cost of the building. As prices rise, it will become even more critical to comprehensively address this issue.

All around us, we see frightening signs that we are not on an environmentally-sustainable path. Acid rain is killing the mountains. The 1990's was the hottest decade every recorded. And, 1999 marked the year in which the world's population surpassed 6 billion people.

The Sustainable Schools guide was developed because of the understanding that it is important to think long-term and build our schools in a manner that reflects values supportive of the sustainability of our planet. Our schools should make a strong statement that saving energy and protecting our environment are important. The message that we give to future generations, through the schools we build for them, should not be under-estimated.

✓ Format

The Sustainable Schools Guide is developed as six separate sections, each dealing with a different aspect of your educational mission. Within these six sections are general recommendations, a checklist to success, and, most importantly, a guideline of key sustainable elements that should be considered by your architectural and engineering team during the design process. Case studies are also included and point out many different ways in which school systems across the country have successfully incorporated sustainable design strategies in an effort to save energy and help our environment. For your convenience, you will also find numerous informational resources that will help you develop your own Sustainable School.





Clayton Middle School, Clayton, NC



Roy Lee Walker, McKinney, TX



The New School, Apex, NC



Nantucket Elementary School, Nantucket, Massachusetts

■ Reducing Operating Costs

- design school to maximize site conditions and gain solar access
- incorporate daylighting strategies and energy-efficient windows
- develop an energy-efficient building shell
- employ renewable energy systems
- use efficient lighting and mechanical systems
- employ materials and products that reduce maintenance
- incorporate water conserving strategies
- create safe pedestrian ways to neighborhoods

■ Buildings that Teach Sustainability

- maximize sustainable elements of the building as teaching tools
- utilize an environmentally-sound site design to demonstrate sustainable approaches

■ Improving Academic Performance

- incorporate daylighting
- implement strategies to improve indoor air quality

■ Protecting our Environment

- develop environmentally-sound site design
- use renewable energy systems and energy-efficiency technologies
- employ environmentally-sensitive building products and systems
- implement water conserving strategies
- incorporate less polluting transportation alternatives
- integrate recycling systems

Photo: Innovative Design



Sterling Montessori Academy, Morrisville, NC

Photo: Innovative Design



Four Oaks Elementary School, Four Oaks, NC

■ Designing for Health, Safety and Comfort

- capture daylighting's benefits
- employ strategies that insure good indoor air quality
- link school to surrounding communities with safe pedestrian ways
- develop strategies that provide thermal, visual, and acoustical comfort

■ Supporting Community Values

- design school with history and place in mind
- integrate school into community
- share school facilities with the community
- incorporate long-term fiscal policies
- buy local products and use local services
- save energy to keep energy dollars in your community
- practice environmental stewardship
- educate community about sustainability

Initiatives

Alliance to Save Energy

www.ase.org/greenschools

American Electric Power's Solar Schools Project

www.aep.com/environment/solar

Energy Quest

www.energy.ca.gov/education

Energy Smart Schools

www.eren.doe.gov/energysmartschools

Maryland's Solar Schools Program Plan

www.energy.state.md.us/executiv.htm#Plan

On-Line Renewable Energy Education Module

solstice.crest.org/renewables/re-kiosk/index.shtml

Solar Energy: A Science Unit for Intermediate Grade Students

alpha.fsec.ucf.edu/ed/solar-unit

School Going Solar Program- IREC

www.schoolsgoingsolar.org

Solar Schools - Brighter Future

www.ises.org

Solar Now

www.eren.doe.gov/solarnow/solarnow.htm

SolarQuest

www.solarquest.com

Solar Schools

www.eren.doe.gov/solarschools

Watts on Schools

www.wattsonschoools.com

This document has been developed by **Innovative Design** (www.innovativedesign.net) with technical assistance from **Padia Consulting**, **BuildingGreen** (www.buildinggreen.com), and the **Sustainable Buildings Industry Council** (www.sbicouncil.org) and has been extensively reviewed by a technical review committee with broad based expertise in education as well as energy and environmental issues.

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