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Setting Standards Of Sustainability: How Sandy Grove Middle School Can Serve As A Nationwide Model

Published on **8 Aug 2012** | Written by **Robert Ferris** | Posted in **Center for Green Schools**

Our ever growing population is driving an increased need for more educational facilities for future students. Likewise, as our population continues to grow, integrating sustainable principles into design and construction is becoming absolutely crucial. Without making a concerted move toward sustainability, future resources required for educating our nation's children will not exist. Sandy Grove Middle School in Lumber Bridge, NC, is currently being built as a net-zero energy facility, one that will return more energy to the grid than it consumes. The innovative design of the school, spearheaded by a team at SfL+a Architects and First Floor, will serve as a model of sustainability for schools across the state of North Carolina as well as the nation.

This high-performance building will increase student and teacher performance, in a cost-effective manner, while simultaneously reducing the total cost of ownership. In most schools, it is common for utility costs over the life of the building to equal the total cost of the building itself. Sandy Grove Middle School will cut utility consumption by 50 percent by installing a geothermal heating and cooling system, high efficiency lighting and spray foam insulation. Sandy Grove will also install large, photovoltaic solar panels to achieve further utilities reduction. These initiatives will ultimately save Hoke County Schools and Hoke County nearly $35 million dollars over the next 40 years and Sandy Grove Middle School will never have a power bill to pay. Additionally, the solar photovoltaic system will generate 30 percent more electricity than the school consumes and the site will feature a solar photo voltaic education center to be used by school and community organizations from around the County and beyond.

Using this type of environmentally-friendly technology, Sandy Grove Middle School will set the standard for school systems and counties who want to use similar energy-saving techniques. The more these technologies are utilized, the lower their prices become. For example, solar photovoltaic panels previously cost $10 per WATT, but as usage has increased, the price has dropped to less than $3 per WATT. With this trend, more energy efficient technology will fit building budgets and can be more widely used in other construction and building efforts.

Sandy Grove Middle School is the first net-zero energy school in the nation to be leased from a private developer. This arrangement is often referred to as Public Private Partnership (PPP). This system is a unique method of financing for new school construction and offers a more cost effective financing option than what is currently available. In these partnerships, the private sector assumes the risk of capital and resources for construction, while the public sector builds the facility to meet local and state standards. These partnerships are valuable because they offer benefits that publicly funded projects do not typically receive. In the case of Sandy Grove Middle School, the school is privately owned and leased to a government entity. The government entity leasing the building will provide the regular maintenance of the building, but the private owners will always offer maintenance services for special features, including the solar panels and the geothermal mechanical system, as the private owner may be more familiar with specialized technologies.

The green design measures taken in planning for this new school will serve as an incredible standard for future schools to follow. Methods for the design and construction of Sandy Grove Middle School can easily be used in other construction projects throughout the country. The more projects that emphasize sustainability, the more resources will be used efficiently, allowing for a wealth of economic and environmental benefits for all parties involved.

Robert Ferris

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Address
2101 L Street NW
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