

# Designing a Healthy School Environment in a Rural Setting

Buckingham County Primary and Elementary Schools

DILLWYN, VIRGINIA



The Dining Room features abundant natural light, local materials, and non-traditional dining furniture. The furniture is moveable and stackable, and it lends itself to multiple rapid reconfigurations.

The new Carter G. Woodson Center Education Complex located in Buckingham County, in central, rural Virginia, has been designed and renovated as a modern learning campus for K–5 students with the intent to promote connectivity, creativity, physical activity, health and well-being for students and for the Buckingham County district community.

The design for the school renovation was developed using novel theory-based guidelines created collaboratively by the design team and health research teams from the University of Nebraska and the University of Virginia. The project involved renovating two former schools built in 1954 and 1962, and connecting them through newly built structures to form one

new school. The architectural firm VMDO oversaw and supported the designs for architecture, interior spaces, graphics and wayfinding, and landscaping.

## Sustainable Features Create an Ideal Learning Environment

The campus design supports the health of students and the environment by incorporating many sustainable features. Solatube® high-performance daylighting systems were used in ceilings and light louvers in classrooms to supplement the natural daylight from windows. Non-toxic materials and low-emissions products were used throughout the construction process. According to Steve Davis, director of sustainable design at VMDO, “Special attention was paid to the

use of sustainable materials from the local area such as Buckingham slate and kyanite, which are mined locally.” Additionally, a water-source heat pump system supports energy efficient heating and cooling of the school, and innovative stormwater strategies integrate green space, native landscaping and natural hydrologic functions to generate less runoff on the site.

The design team employed several strategies to increase engagement, concentration and health among students. The design elements include creating flexible, customizable spaces to accommodate movement and encourage learning. Circulation hallways, open gathering spaces, and outdoor gardens and play terraces were other design elements to encourage physical activity and interaction among the school community. Additionally, the use of newly developed flexible furniture allowing for easy arrangement and adjustment is supporting the movement and enhancing the learning experience for students. “The furniture enables the kids to have the wiggles, and it helps them keep their focus for longer stretches of time or to get the wiggles out”, says Davis.

## Design Strategies Encourage Healthy Eating

As one of the primary goals of the school district, design team and health research teams, the K–5 campus incorporates several strategies to facilitate healthy eating among children to help prevent and reduce childhood obesity. The dining commons area, one of the newly

## Buckingham County Primary and Elementary Schools DILLWYN, VIRGINIA

NEW AND RETROFIT GREEN SCHOOLS: THE COST BENEFITS AND INFLUENCE OF A GREEN SCHOOL ON ITS OCCUPANTS

Image courtesy of VMDO Architects and Tom Daly



**View of the Woodland Hub (an extended learning area) featuring recycled forest products and wood species native to Virginia. Forest products are an important part of the local economy, in addition to farming and mining.**

constructed spaces, is an enriched learning environment that serves as a shared space, connecting the primary and elementary schools. The commons includes a teaching kitchen, innovative food and nutritional displays, open areas that promote demonstration cooking, a food lab, a scratch bakery, dehydrating food composter, natural daylight, flexible seating arrangements, an outdoor student dining terrace and kitchen gardens.

The commercial kitchen in particular was designed to provide an important educational experience – retaining key food service functions

### Project Facts and Figures

<b>Owner</b> Buckingham County Schools	<b>Completed</b> August 2012
<b>Architect</b> VMDO	<b>Grades</b> Primary School: K-2 Elementary School: 3-5
<b>Type of Project</b> New Construction & Renovation	<b>Student Capacity</b> Primary School: 500 Elementary School: 500
<b>Size</b> 135,000 sq. ft.	<b>LEED</b> Pursuing LEED Silver
<b>Total Cost</b> \$17,332,000	

while allowing students visual access to the kitchen as they move through the serving lines. Davis says, “As designers, where and how we design a fruit display could affect a child’s selection as they go through the lunch line.” The special attention given to food preparation, from the gardens to the open serving stations, gives students a new appreciation of their food. Students gain awareness about how their food grows, how it is prepared in the kitchen and how it fuels them in their activity and learning. These educational opportunities can create shifts in food culture and improve student health and well-being. Davis says, “The kitchen can also be used to do targeted interventions to help parents understand how to prepare quick, home cooked, healthy meals. So it helps support and educate not only the students but the broader community as well.”

### Site Design Promotes Environmental Stewardship

The site design strategies promote the importance of the

natural environment and highlight the local natural resources. The gardens feature plant species that are local to the Piedmont region of Virginia, native grasses and wildflowers replace grass lawns, and Buckingham slate and local kyanite appear prominently in the campus’ exterior details. For example, slate is used in the channel for stormwater runoff, which cuts through the school’s entry plaza, revealing the stone beneath the earth’s surface. The channel measures the size of storm events, allowing students to understand the occurrence and volume of water associated with each storm.

The landscape offers a bounty of educational opportunities, particularly in the vegetable and herb gardens. Students are able to learn firsthand about the growth of edible plants and other food and become more familiar with the science of horticulture. The garden also allows and supports the lunch menu with nutritious options. A pollinator garden teaches students about native pollinating insects and animals vital to our ecosystem and agriculture. ■