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Tom Daly
Carefully planned nooks offer students light-filled spaces for reading or playing.

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PROJECTS:

Buckingham County School

VMDO Architects

Dillwyn, Virginia

Healthy Kids, Happy Students: Through a unique partnership with public-health researchers, VMDO Architects transforms an old high school into a prototype for the next generation of green schools.

By Alanna Malone

July 2013

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At any given time of day at Buckingham County Primary and Elementary School in Dillwyn, Virginia, you might find students playing tag on the front lawn, exploring the frog bog, or planting vegetables in the edible garden. In this groundbreaking pilot project designed by Charlottesville, Virginia-based VMDO Architects, lunch and playtime are as important to the curriculum as any math or spelling lesson. In fact, the meticulously researched design of the dining commons was really at the heart of the entire renovation and expansion of the former Carter G. Woodson High School into the county's primary and elementary school.

SLIDE SHOW

DATA

KEY PARAMETERS

Location Dillwyn, Virginia (James River watershed)

Gross area 131,787 ft² (12,243 m²)

Cost \$18.4 million

Date completed August 2012

Annual purchased energy use (based on simulation)

48 kBtu/ft² (548 MJ/m²), 27% reduction from base case

Annual carbon footprint (predicted) 7 lb CO₂/ft²(34

VMDO Architects has been a leader in designing green schools for years in terms of sustainable technology and teaching environmental stewardship—the Manassas Park Elementary School won a 2010 AIA COTE Top Ten project award. The firm wanted to take the idea of healthy green schools a step further when it was commissioned for this retrofit.

Steve Davis, director of sustainable design at VMDO, invited Dr. Matthew Trowbridge, an assistant professor in the department of emergency medicine at the University of Virginia School of Medicine, to make a presentation to the firm about the potential of design for childhood obesity prevention. These ideas were inspired by University of Nebraska professor Dr. Terry Huang's 2007 paper "Designer Schools: The Role of School Space and Architecture in Obesity Prevention." VMDO was motivated by these notions, and former superintendent Dr. Gary Blair shared its enthusiasm. The team decided to invite researchers, educators, and experts, including Huang and Trowbridge, to collaborate on the pilot project and craft healthy-eating design guidelines as a tool for other schools.

kg CO₂/m²)

Program Classrooms, cafeteria, gyms, library, faculty rooms, offices

TEAM & SOURCES

EIFS/ACM KlipTech EcoClad; Cem5 Edge Series Charcoal 212

Windows YKK AP America YES 45 TU/YES SSG

Glass PPG Solarban 70XL

[View all team & sources](#)



"Prioritizing health and well-being allowed us to bring every decision-making effort back to that point," explains Dina Sorensen, project designer at VMDO. "This made it easier to talk about the benefits of different investments—the payoff is better learning."

As the core of the complex and the central design inspiration, the dining commons is part of the new addition that binds the two existing buildings together. "The lower and upper schools act independently but have shared resources," explains Davis. At the entry to the upper school, a prominent stair leads to the second floor and a community meeting space features tubular skylights that run through the second-floor media lab, bringing daylight into the meeting area.

Circular windows line the corner bakery as you enter the dining commons, offering students a glimpse of the baking process. They pick up trays and circulate through the open serving lines, where they can see their food being prepared in the commercial kitchen. Along with nutritional signage, the transparency increases their awareness about where their food comes from and how it is prepared.

Many of the design team's strategies became the basis of the guidelines: facilitate the incorporation of fresh,

healthy food choices; engage the school community in food production and preparation; apply behavioral science to "nudge" the students toward healthy eating; use building and landscape features to promote awareness of healthy, sustainable food practices; conceive of school spaces as community assets to multiply the benefits of school-based food initiatives. Some examples are the prominent water fountains, lack of vending machines, strategic placement of healthy food, and composting system.

Unique features such as the food lab, teaching kitchen, and edible gardens are also used by the public and several local organizations such as Master Gardeners and City Schoolyard Garden have offered expertise, labor, or in-kind donations. "Local partnerships are so important," Davis says. "We can't be here forever to help keep these ideas going." Pennie Allen, the primary-school principal, started a food-education group for staff and is working to expand it to the greater community.

Several times a day, teachers take students out for 10 minutes of "active" play. "The physical-activity component of the design has led the staff to reinvent the pedagogy," says Sorensen. "Movement is becoming a part of their daily routine, and not just relegated to PE time—that's been a really powerful thing for us to witness."

Color palettes throughout the school were meticulously chosen to reflect nearby habitats, such as the Chesapeake Bay watershed. Together with detailed graphic design and signage, the colors reinforce grade-level identity—warm colors and terrestrial species for the primary school; cool colors and aquatic species for the elementary school. Each grade has small group-learning labs located in unexpected places, changing a typical hallway into a breakout learning space with reading nooks and playing caves.

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Keywords: [VMDO Architects](#); [Buckingham County Primary and Elementary School](#); [Dillwyn](#); [Virginia](#); [green schools](#)