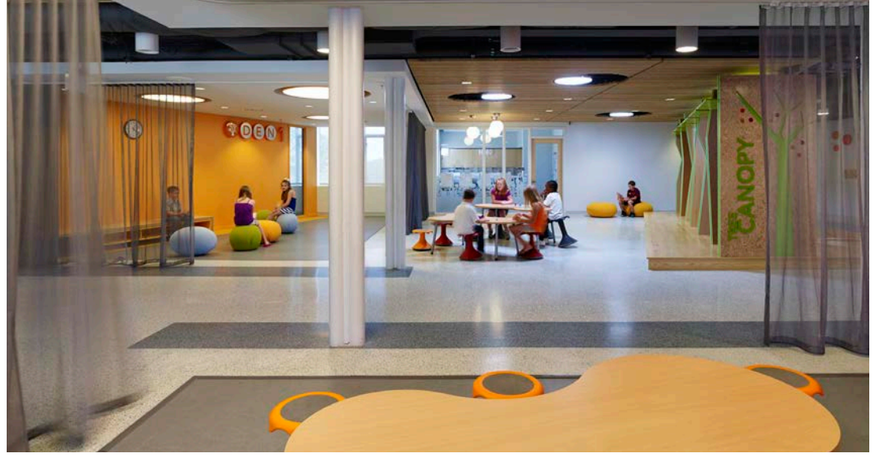
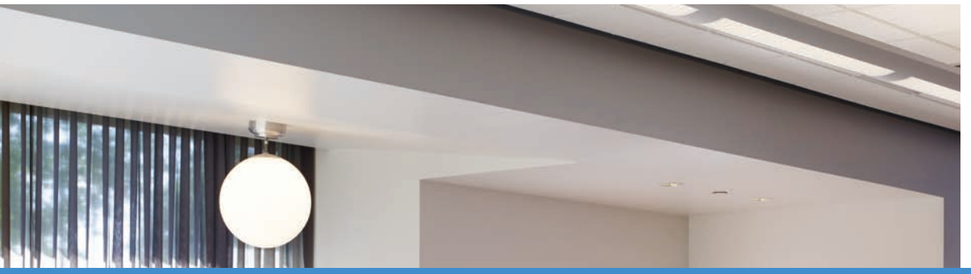
CASE STUDY:

BUCKINGHAM COUNTY PRIMARY & ELEMENTARY SCHOOLS AT THE CARTER G. WOODSON EDUCATION COMPLEX, DILLWYN, VA





These are no ordinary schools.

"Health" is literally creating fresh insight into the necessity to design for the inherent intelligence, amazing creative capacity and natural wonder and curiosity that young learners bring to their learning opportunities inside and outside of school.

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From the grounds up, the primary and elementary schools at the Carter G. Woodson Education Complex are holistically designed to focus on what matters most; young learners and their needs.

"Our goal was to create an environment that promotes the health and mental well-being of our students and results in better engagement and learning outcomes," says Pennie Allen, Principal, Buckingham County Primary School.

Completed in September of 2012, the new K-5 campus consists of 30 acres and a primary school (K-2) bridged to an elementary school (3-5) by an airy cutting edge central Dining Commons and outdoor Piazza.

The innovative campus takes advantage of every space and surface to create a Whole Child-centric environment that supports teaching and learning both inside and outside the unconventional classrooms.

Working collaboratively with the school administration, the design and research team identified all the sensory-rich experiences children have throughout the day and leaned on evidence-based strategies to develop a healthy environmental approach to design from the perspective of the children.

Broadly speaking, "health" is the new green which amplifies the need to acknowledge, by design, the catalytic connections between people, places and pedagogy. "Health" is literally creating fresh insight into the necessity to design for the inherent intelligence, amazing creative capacity and natural wonder and curiosity that young learners bring to their learning opportunities inside and outside of school. We know learning preferences are personal and embodied - so health-promotion design strategies aim to support teaching and learning modalities across the individual and collective need for a sense of well-being, which in turn, encourages a love of learning.

"The learning environment is enriched by the atmospheric use of color as it reacts to abundant natural daylight, a variety of materials and textures to emphasize the tactile and sensory nature of learning, and the furniture, which brings a completeness to the strategic desire to provide resilient settings that afford educators and students with options to interact with their learning environments," explains Dina Sorensen, Project Designer, VMDO Architects. "In other words, every design decision was made meaningful and rich with pedagogical opportunity."

The centerpiece of the campus is the Dining Commons, a multifaceted learning environment that serves as a shared, connecting space between the primary and elementary schools, and with the community as a whole.

The Dining Commons include a teaching kitchen, food and nutritional displays, open serveries for cooking demonstrations, a food lab and small group learning lounge, a scratch bakery, a dehydrating food composter, lots of natural daylight, an outdoor dining terrace, and edible and academic gardens.

Left and right photos © Alan Karchmer

“The classrooms, small group learning labs, media lab, intimate nooks and open spaces are all designed to facilitate individual, group and collaborative learning.”

“One of the key aspects of the design is the subtle combination of design features that signal and reinforce that ‘all things are possible’ in community. Learning is made visible and diversity celebrated,” says Ms. Sorensen.

She went on to explain that educators can exercise programmatic discretion for individual and small group learning activities in a variety of layered spaces. In turn, the whole community can come together to transform the use of shared gathering spaces to perform and generate narratives and traditions.

“The amazing observation I have had,” she says, “is that because the high degree of open space is balanced by smaller zones for small- and medium-sized groups, as well as a layering of inside and outside connections, the social interactions and peer-to-peer exchange is a positive, inspirational and joyful unfolding of daily events. And because the students are surrounded by nature and the constantly changing seasons, weather patterns and nature’s life cycles, the experience of dining is never routine or boring.”

Students can also see into the kitchen and watch the food educators preparing breakfast and lunch. They can see the fresh herbs and vegetables they have planted growing in the school gardens. Teachers can also integrate movement and physical activity breaks before lunch by using the Great Lawn and the Piazza.

“In essence, when a dining experience is created to be joyful by design and deeply considered for the educational programming inherent to the space type, it reinforces the power of individual and group behavioral health connections between food/nutrition, physical activity and healthy choices,” explains Ms. Sorensen. “The inspirational quality afforded by these experiences are designed to enhance creative exploration, pique on-going curiosity and speak to the joy of learning for all ages with a real ‘edible’ celebration of healthy food, biodiversity and sustainable practices.”

Flexible furniture arrangements are pivotal design elements integral to the function of the Dining Commons as an enriched learning environment.

“The VS LiteTables, Compass-VF chairs, and Series 2000 screens make it easy for educators, parents and community groups to transition from restaurant-style dining to project learning, presentation and performance sharing or special event settings. Providing lightweight, durable and flexible tables and chairs empowers kids. They love being able to sit in a variety of places with furniture that is sized appropriately and very comfortable. The teachers love how easy the furniture is to rearrange for different learning activities,” says Ms. Sorensen.

Encouraging learning through customizable settings were strategies employed by the design team throughout the campus to increase creativity, engagement, concentration, and health among students.

“The classrooms, small group learning labs, media lab, intimate nooks and open spaces are all designed to facilitate individual, group and collaborative learning. The design anticipates the evolution of educational delivery methods and combines both home classrooms as collaborative centers, including a variety of spaces and places outside the classroom. As practices expand to include the customization of programs for personalized, individualized learning, as well as peer-to-peer and blended learning environments, the campus is poised to adapt and provide,” explains Ms. Sorensen.

VS furniture is used extensively throughout the learning

LiteTable

Compass

Series 2000

PantoMove

RondoLift

MyCaddy

Photos © Alan Karchmer

"The three key traits that make a flexible environment possible are mobility, agility and adaptability. Responsive settings are easy to alter as emergent learning opportunities arise."

environments to give teachers and students a versatile and practical toolkit for hands-on and digital learning.

"The three key traits that make a flexible environment possible are mobility, agility and adaptability. Responsive settings are easy to alter as emergent learning opportunities arise," says Ms. Sorensen. "The VS furniture fulfills all those basic needs while also providing critically important health co-benefits, and therefore better learning outcomes, by promoting less sedentary behavior through more active, movement-rich environments.

"It's important," she adds, "for teachers and students to have postural choice throughout the day and to have flexible furniture options to support unique, personalized learning styles and teaching platforms."

Every grade level has PantoSwing-LuPo and PantoMove-LuPo chairs. They adjust up and down, swivel and rock, letting students change their sitting position thoughout the day, which research shows is critical to academic success.

"Growing bodies have a natural need to move," explains Dr. Dieter Breithecker, Europe's foremost expert on the relationship between ergonomic design in educational furniture and the physical development of school children. "Increased opportunities to move while seated improve blood flow and oxygen to the brain, thereby increasing attention and concentration levels."

"We chose VS furniture because it came with research that went with what we believed as educators," says Principal Allen. "Dr. Breithecker visited with our staff and did an amazing demonstration standing on one foot on a stool to help our teachers understand the value in movement and how it balances mind, body and soul. He even got a brave teacher to try it for herself."

In addition to core homerooms, each grade level has an innovation commons comprised of two small-group learning labs that transform everyday circulation paths into "learning streets." Child-centered learning areas, reading nooks and chill out spaces found off of these "streets" inspire creative exploration through intimately

Hokki | Ergo-I | Cloud | Puzzle | PantoMove-Kiga

scaled furniture, soft seating and beautiful colors that activate thought and play while reinforcing grade-level identity. Students can safely find their way, celebrate peer-to-peer learning while cultivating positive social interactions and exercise some sense of autonomy - all developmental gateways that strengthen interdisciplinary and innovative teaching practices.

The K-2 grade levels feature Ergo-I desks, Puzzle, Quattro, and Series 2000 mobile screens because they're strong, durable and easy to rearrange.

"My teachers definitely like the Quattro tables that accommodate two students the best. They wipe clean and have a wire basket that helps organize learning materials. Everyone wishes we had ordered more of these for our K-2 students," says Principal Allen.

In the K-2 reading nooks and breakout spaces, wiggle friendly Hokki stools and soft Cloud beanbags and pouffes have been a "big hit."

"Students who struggle with attention focus a bit better in the Hokki stools, and the Cloud beanbags are often used for students who are overwhelmed and need to 'calm' down and wrap themselves in something for a while," explains Principal Allen.

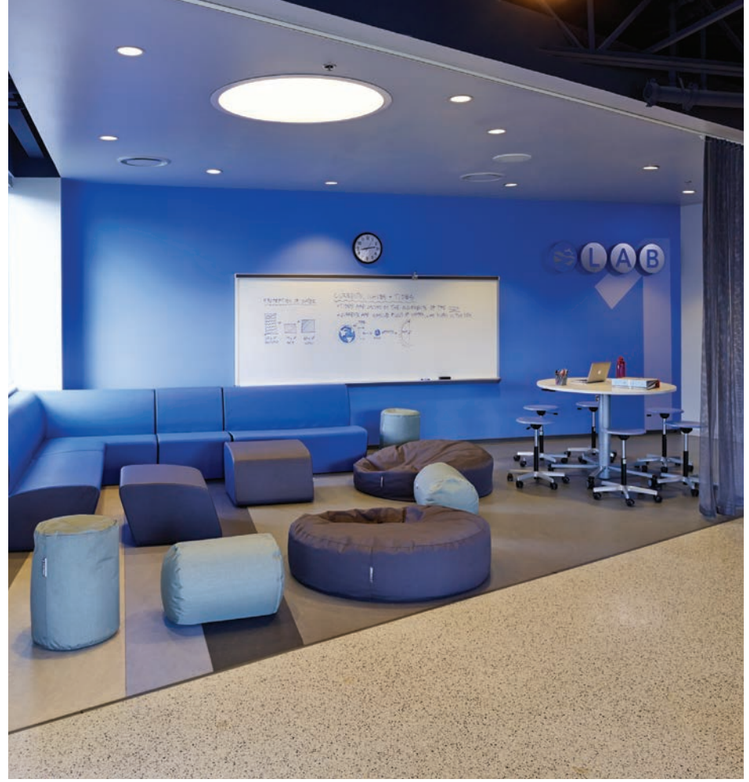
Teachers in the primary school have Uno-M instructors' desks and PantoMove-VF KiGa swivel chairs with special height-range adjustment. The Kiga model is designed specifically for use in primary schools and has an unusually wide range of stepless height adjustment from adult seat height all the way down to children's height levels. At the same time, it offers the comfort of an adult-sized upholstered seat shell.

"The ergonomic design of the PantoMove Kiga chair is really remarkable," says Ms. Sorensen. "It allows teachers to sit comfortably in an adult sized chair and be at the same height as the children."

In the elementary school, students move to and from different content-specialized environments throughout

Uno-M-Teach | Quattro | Series 2000 | DuoMedia

Photos © Alan Karchmer



"Collaboration signals a big shift from past traditions. When next generation educators have the right tools to support collaborative activities, they also expand the capacity of each student's ability to engage in new modes of learning."

the day. Ms. Sorensen used various types and sizes of VS furniture to give teachers and students the ability to quickly and easily tailor the setting to the activity.

"I can't imagine the campus being anything close to what it is without VS furniture. The line is so versatile and durable, we were able to design agile, customizable learning environments that support and amplify collaborative learning, focused learning, shared learning, and teacher collaboration," says Ms. Sorensen.

The elementary school classrooms are furnished with Uno-M desks (with grid bookshelf and backpack hook), RondoLift tables, Series 2000 screens, Solo stools and PantoSwing chairs.

"The RondoLift sit-stand tables let students choose between sitting and standing throughout the school day, which encourages healthy movement and empowers kids with choice in their learning experience," explains Ms. Sorensen. "They're easy and safe for younger students to use, raising effortlessly via a built-in gas spring with release lever."

For the specialized rooms, like the art and music studios, Ms. Sorensen specified furniture that was easy to reconfigure and roomy enough for textbooks and project materials. They chose DuoMedia, Quattro and EuroLine tables for features, such as a trough with a lockable sliding top that makes technology integration on the DuoMedia tables easy; cords and cables are kept out of the way and the table surface is neat and clean.

While the Quattro tables feature roomy, easy-to-clean tops in various shapes and wire bookshelves, the EuroLine tables are easy to rearrange for different class needs and group projects.

"Collaboration signals a big shift from past traditions. When next generation educators have the right tools to support collaborative activities, they also expand the capacity of each student's ability to engage in new modes of learning. That's why furniture pieces with high quality casters is so important, and also a variety of shapes and sizes," says Ms. Sorensen.

The free-form Puzzle tables and Hokki stools used throughout the primary school allow the smaller kids to "tuck in" around the tables to work together, while the circular RondoLift tables used in the elementary school and dining commons suit the older students' need to "gather round" for project work.

In the small group learning labs, Ms. Sorensen combined soft Cloud beanbags and pouffes, sleek ClubLounge chairs and colorful Rondo swivel stools, along with Puzzle tables (primary) and RondoLift tables (elementary) for a "really kid-friendly, kid-centric space."

"Kids are likely to find and create their own favorite place to read or reflect," points out Ms. Sorensen, "so it's really important to make these spaces available with soft seating, variable lighting, and lots of options to share analog and digital creations.

"Designing a place for children to be restful while reading quietly," she says "can be found by looking at what kids choose to do: sofas, couches, beanbags, etc. It's that moment of coziness and comfort that anchors and softens the experience, and it's super appealing to kids."

Rondo-Lift

Uno-M

Club Lounge

RondoLift

Cloud

Profil-800

Rondo-Fix

EuroLine

Photos © Alan Karchmer

"Our community loves the campus. But I think more than anything else they love it because the kids are going home saying that they love school."

The teachers' furniture is just as well thought out. By utilizing oval RondoLift tables with lockable drawers as teachers' desks, Ms. Sorensen satisfied three purposes with one piece of furniture: sitting-height desk, lectern and table for student-teacher interactions.

MyCaddy mobile workstations address the special requirements of the school's paraprofessionals and itinerant educators whose responsibilities take them all over the campus throughout the day. Castered and lockable, MyCaddy does double-duty as a personal workstation and a storage unit. It has a spacious worksurface, adjustable shelves, a materials drawer, and a dual handle/coat hanger.

The design and research team behind the innovative campus is gathering data to quantify the influence and impact of the design on learning outcomes, physical activity levels and healthy eating behaviors. There are no formal results yet, but Principal Allen believes they've already succeeded on many levels.

"I am very pleased with the progress our students are making," says Principal Allen. "The activity and healthy choices really go to supporting our academic goals and it's exciting."

Students are just as thrilled with the new school and the "cool furniture," saying things like:

"They finally got the furniture right for kids." And "I wish I could sleep here."

"The fact that the kids don't want to go home at the end of the school day is really rewarding," says Ms. Sorensen.

Adds Principal Allen, "Our community loves the campus. But I think more than anything else they love it because the kids are going home saying that they love school. Other schools around the country should come look and replicate what we're doing here."

Project Profile:
Buckingham County Primary & Elementary Schools at The Carter G. Woodson Education Complex

Project Team:

School Administration
Dr. Cecil Snead, Superintendent
Pennie Allen, Principal, Primary School
Cindy O'Brien, Principal, Elementary School
Patti Branch, Assistant Principal, Primary & Elementary Schools

VMDO Architects
Bob Moje, Principal-in-Charge
Joseph Celentano, Design Principal-in-Charge
Dina Sorensen, Project Designer, LEED AP
Kelly Callahan, Project Architect
Drew Fleming, Project Manager

Public Health Researchers
Dr. Terry Huang PhD, MPH, CPH. Professor and Chair, Department of Health Promotion, Social, and Behavioral Health. College of Public Health, University of Nebraska Medical Center. Senior Advisor, National Collaborative on Childhood Obesity Research (NCCOR).

Dr. Matthew Trowbridge MD, MPH. Assistant Professor and Associate Research Director, Department of Emergency Medicine. University of Virginia School of Medicine. Advisor, National Collaborative on Childhood Obesity Research (NCCOR).

Objectives:
- Transform two mid-century schools into a modern K-5 campus
- Use evidence-based strategies that support best practices concerning student learning and engagement
- Meet the needs of the whole child and the larger community
- Prioritize health and well-being of students and staff
- Create indoor-outdoor learning landscapes for project-based, hands-on learning activities
- Make learning visible, active and engaging
- Build a strong sense of school spirit and community
- Partner with public health researchers to redesign the food and physical activity environment

Applications:
- K-5 classrooms
- Small-group learning labs
- Reading nooks
- Chill out spaces
- Science lab
- Media lab
- Music and art studios
- Teaching kitchen
- Food lab lounge
- Dining commons
- Resource classrooms
- Special needs classrooms

Project Scope:
134,015 sq. ft. (Addition/Renovation)

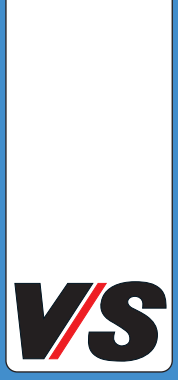
Year Completed:
2012

Products:
- PantoSwing-LuPo Chairs
- PantoMove-LuPo Chairs
- PantoMove-VF Chairs
- PantoMove-VF Kiga Chairs Swivel chair with special height-range
- LupoGlide Chairs
- Compass-VF Chairs
- Hokki Stools
- LupoStools
- PantoMove Plus Stools
- Rondo Swivel Stools
- Solo Stools
- Cloud Beanbag Elements
- ClubLounges
- Ergo-I Desks
- Ergo-III Desks
- Uno-M Desks
- EuroLine Tables
- Duo-Media Computer Tables
- FlipTable-RU
- LiteTable
- Puzzle Tables
- Quattro Group Tables
- RondoLift Tables
- RondoLift-ST Tables
- MyCaddy Stand-at Modules
- Series 2000 Mobile Folding Screens

Results:
- Modern indoor / outdoor campus
- Flexible, customizable, collaborative, and interactive learning spaces
- Active, "food smart" students
- Elevated school spirit and community pride

Awards & Recognition:
- Outstanding Project, Learning By Design
- Gold Design Award, Virginia School Boards Association
- People's Choice Award, Virginia School Boards Association
- Prize for Design Research and Scholarship, Virginia Society of the American Institute of Architects
- 3rd Prize in Childhood Obesity Challenge, American Journal of Preventative Medicine

Additional Featured Case Studies:
- Greensource The Magazine of Sustainable Design
- Center for Active Design
- McGraw Hill Smart Market Report



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