

# 2013 Exhibition of School Planning and Architecture

## Buckingham County Primary and Elementary Schools

Buckingham County Public  
Schools  
Virginia

# Buckingham County Primary and Elementary Schools



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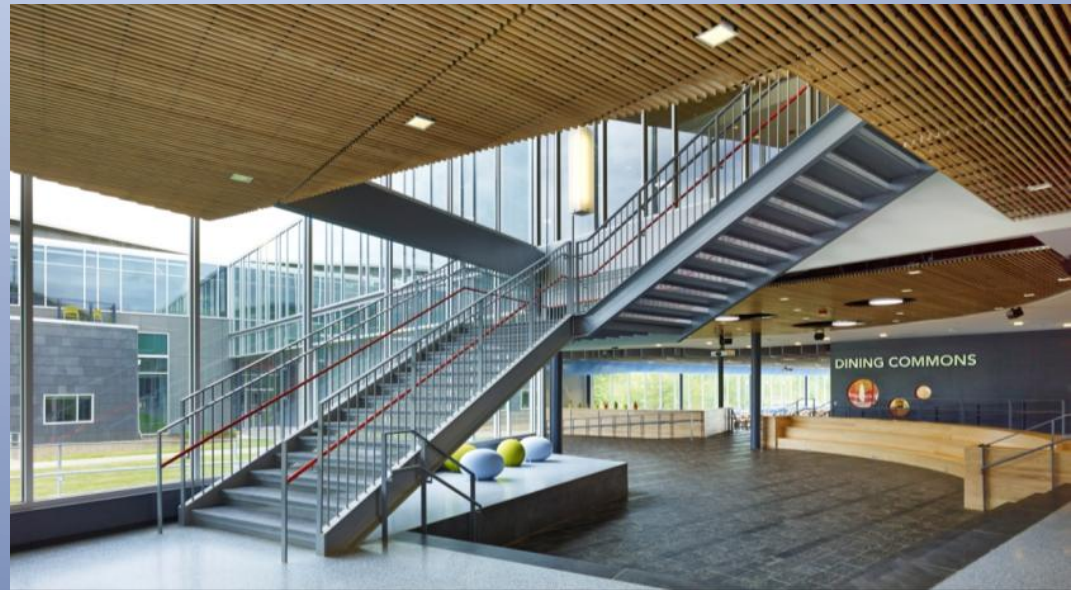
# Food-Based Education

## Community Environment:

Two former Virginia mid-century schools were re-fashioned as a modern learning campus for K-5 students with the express aim to promote connectivity, creativity, health, and well-being for the Buckingham County community.

The complex features a reconceived central Dining Commons which connects the two schools and serves as an active and engaging programmatic hub for the entire community.

Unique shared-use spaces such as a kitchen lab, commercial kitchen with open serveries, teaching kitchen, and outdoor gardens are used by the public and help promote healthy, food-based education for the school community. A Community Commons, featuring local Buckingham slate flooring, is a community resource for various meetings, public lectures, and school-based functions.





## Connecting the Community

### Community Environment (*cont'd*):

Located along a major highway and serving all county children, the school complex is a visible local marker that inspires civic pride and joins the community together. To celebrate the Buckingham community, a photo-documentary of local tradespeople was created, featuring the skilled workers, local materials, and unique partnerships involved during the construction process.





## Child-Centric Learning

### Learning Environment:

In the campus' academic areas, educational opportunities spill outwards from classrooms into corridors, where various reading nooks and small-group study stations transform circulation pathways into child-centric “learning streets.” These spaces are intimately scaled with soft seating and fun colors that help activate thought and play throughout the school day.



# One Big Classroom

## Learning Environment (*cont'd*):

The Dining Commons is an enriched learning environment that features a food lab, teaching kitchen, food and nutritional displays, open serveries that promote demonstration cooking, scratch bakery, dehydrating food composter, natural daylighting, flexible seating arrangements, outdoor dining terraces, and classroom and kitchen gardens.

The transparent treatment of food in the school, from the gardens to the open serveries, allows students to 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 are creating shifts in food culture and improving student health – fostering a generation of FoodSmart Kids™.

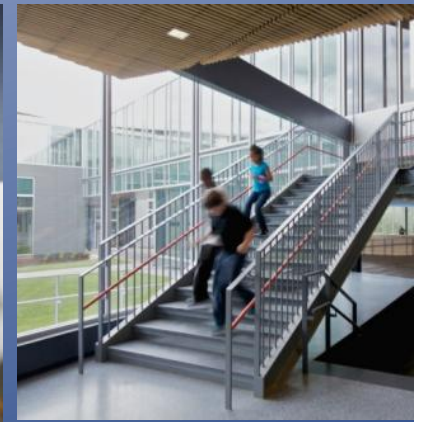
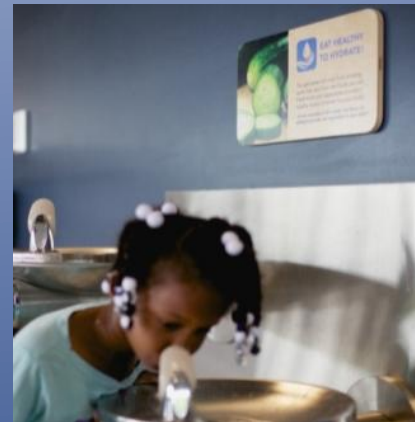




# Healthy Building, Healthy Kids

## Physical Environment:

The campus' design supports the health of students and the environment. Natural daylight from windows is supplemented with environmentally-friendly Solatube® daylight harvesting found in ceilings and light louvers in classrooms. A water-source heat pump system supports energy-efficient heating and cooling, while innovative stormwater strategies integrate green space, native landscaping, and natural hydrologic functions to generate less runoff. In addition, the building itself prompts healthy choices: water stations are prominently featured; and circulation hallways, large inviting stairways, and ergonomic furniture support movement and interaction – helping students engage with the learning process while staying active.





## Learning alongside Nature

### Physical Environment (*cont'd*):

By thoughtfully integrating local resources in the schools' indoor/outdoor spaces, the learning campus promotes the natural environment in the daily experiences of students. Classroom and kitchen gardens feature plant species found in the Piedmont region of Virginia, native grasses and wildflowers replace maintenance-heavy mown turf, and Buckingham slate and local kyanite appear prominently in the campus' exterior and interior details.

In addition, the growth of edible plants allows students to learn the science of horticulture and supports the lunch menu with nutritious options. A science garden based on a 3-5 year cycle demonstrates the transitions and seasonal shifts of the Virginia Piedmont. And a visibly-prominent rainwater scupper allows students to track the amount of rainwater received in the area.

Overall, the campus' site supports the core academic curriculum while fostering teachable moments and helping students form a strong relationship with the surrounding environment.



# Design-Research Collaborative

## Planning Process:

To study the impact of the campus' healthy design features, the design team partnered with public health scientists to study how health-promoting educational design strategies can reduce incidence rates of childhood obesity. This design-research collaborative co-created "Healthy Eating Design Guidelines for School Architecture," which provides new insight into how school environments can promote healthy eating and behavior. A rigorous mixed-methods evaluative approach (quantitative and qualitative) was built into the project scope and supported by the school district's superintendent and leadership team. Researchers are currently examining the impact of the school redesign on the adoption of school policies, programs, and practices that promote healthy eating; school personnel's attitudes and practices toward healthy eating; and students' behaviors, knowledge, attitudes, self-efficacy, and intentions toward healthy eating. The impact of these guidelines and research is expected to improve schools' ability to adopt healthy programming and support the well-being of students.

## THE DINING COMMONS : ONE BIG CLASSROOM

A PLACE FOR FOODSMART KIDS

A PLACE OF OPEN SOURCE EXCHANGE

A LEARNING LAB AND LOUNGE

A DEMONSTRATION KITCHEN

A SOCIAL HALL

WHERE NATURE IS THE TEACHER

**THE DINING COMMONS** design guidelines represent a new direction in design research. As part of this effort, architects, public health researchers, and educators engage directly with the large-scale complex environmental health issue of our time: childhood obesity. The outlined design guidelines illustrate the outcome of the collaborative partnership generated by the Carter G. Woodson Education Complex (Buckingham County, VA) - a K-5 renovation/addition project completed in Summer 2012, with follow-up studies conducted by academic institutions and research groups from across the country.

This design-research partnership marks a powerful moment in school design and research fields as experts from disparate yet interrelated disciplines engage with the large-scale, strategic health problem of childhood obesity by seeking to understand the political, social, economic, ecological, and infrastructural agendas that make up the school food environment. The design guidelines herein optimistically propose that the interoperability between the dining commons as a learning space and as a healthy food service environment will be capable of delivering individual and collective shifts in attitudes and behaviors - a new architectural paradigm that promotes health by design.

**VMDO ARCHITECTS** is an award-winning firm located in Charlottesville, VA. VMDO is dedicated to helping institutions and communities envision pivotal educational projects that translate into meaningful buildings of lasting value. Dedicated to designing environments that positively shape the way people live, work, and play, VMDO recognizes the impact that thoughtful and imaginative design can have on learners, teachers, parents, and the supporting community.

VMDO Design / Research Collaborative Participants

Dina Sorenson (VMDO Architects)  
Matthew Troutridge (University of Virginia)  
Terry Huang (University of Baltimore)  
Jim Calabrese, Steve Davis, Bob Maje, Kelly Callahan,  
Drew Fleming, Thomas Bates, Sarah Kott, Brittany Butler  
(all VMDO Architects)

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**HEALTHY EATING DESIGN GUIDELINES**

**FOR SCHOOL ARCHITECTURE**

**A NEW DIRECTION IN DESIGN  
FOR FOODSMART KIDS™**



# Working across Disciplines

## Planning Process (cont'd):

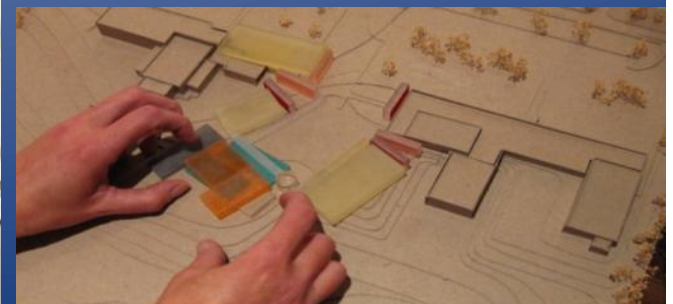
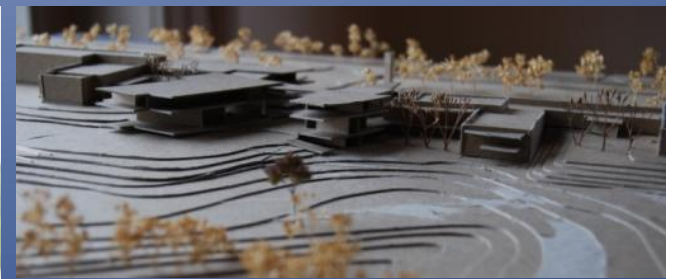
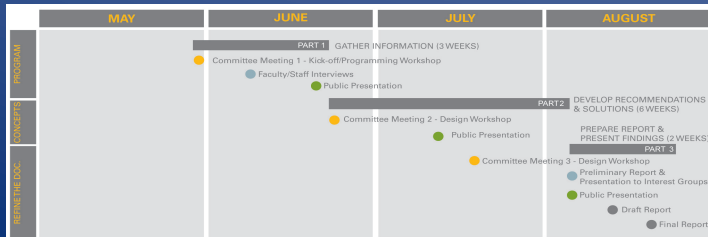
The redesign of this county-wide school complex allowed for a series of strategic investments and investigations: from site, material, and sustainable design choices to the decision to partner with researchers Dr. Terry Huang of the University of Nebraska and Dr. Matthew Trowbridge of the University of Virginia to analyze how the design of the built environment can influence health. The collaboratively written “Healthy Eating Design Guidelines” directly affected the campus’ design and requires input and analysis from the design-research-education team that will continue into the future.

*Designers: Bob Moje - Principal, Steve Davis - Director of Sustainability, Joe Celentano - Project Architect, Kelly Callahan - Project Manager, Dina Sorensen - Project Designer, Brittney Butler - Graphics*

*School Leaders: Dr. Gary Blair - Former Superintendent, Chip Davis - Director of Facilities, Primary School Principal - Pennie Allen, Elementary School Principal - Cindy O’Brien*

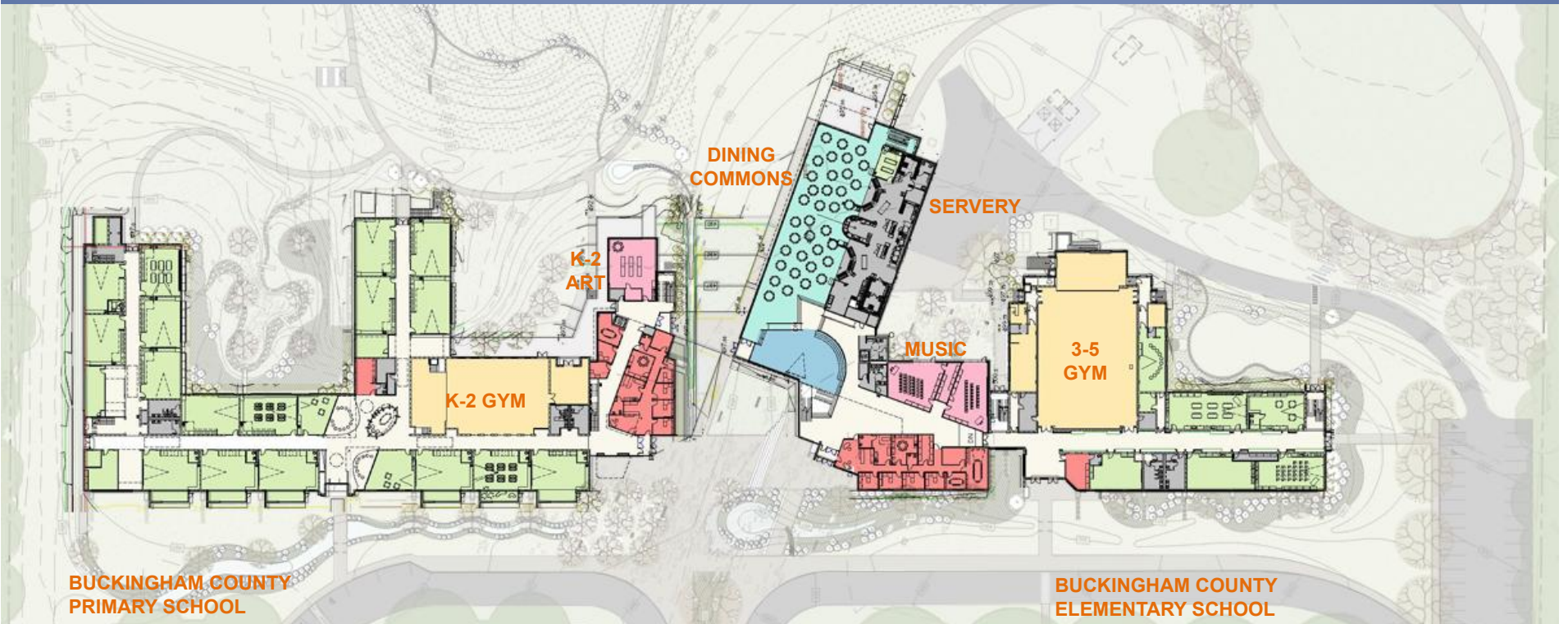
*Research Team: Dr. Terry Huang (University of Nebraska), Dr. Matthew Trowbridge (University of Virginia), and associated staff*

### TIMELINE:



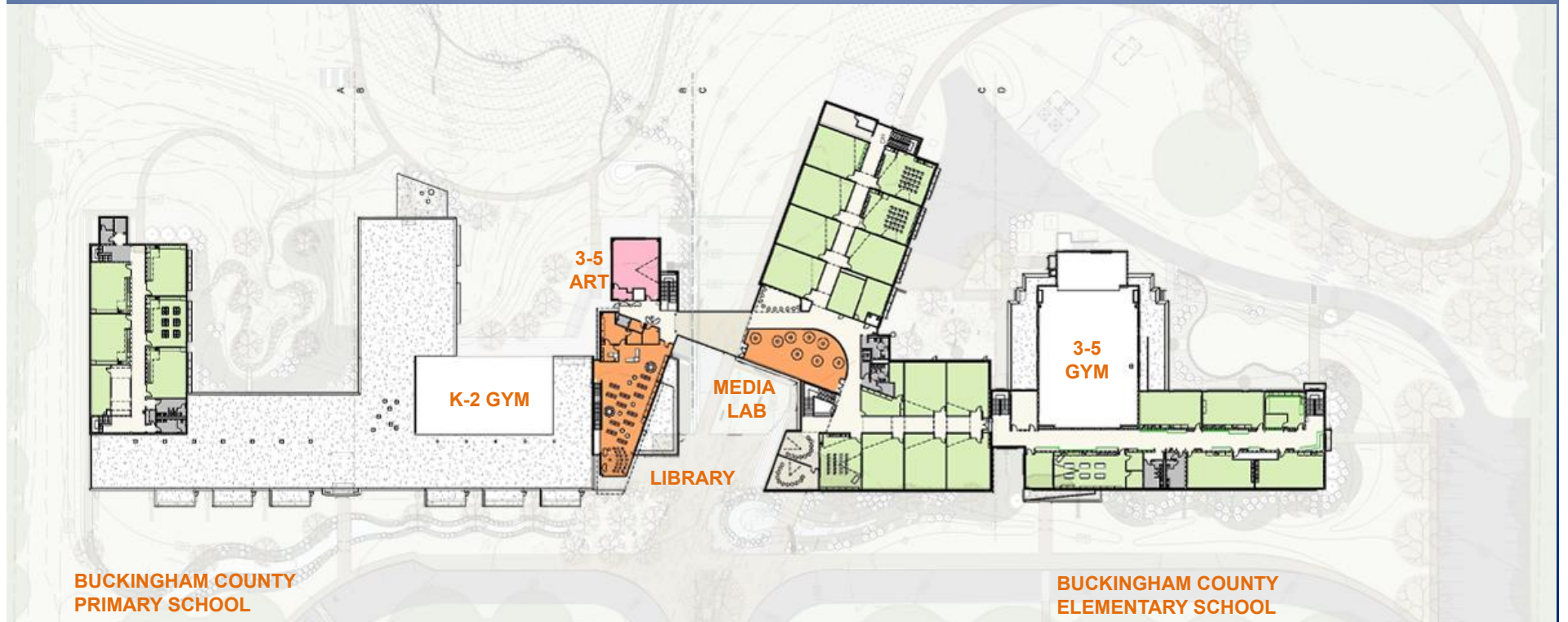


# First Floor Plan





# Second Floor Plan



BUCKINGHAM COUNTY  
PRIMARY SCHOOL

BUCKINGHAM COUNTY  
ELEMENTARY SCHOOL

# Exhibition of School Planning and Architecture

## Project Data

Submitting Firm :	VMDO Architects
Project Role	Architect
Project Contact	Bob Moje
Title	Principal
Address	200 East Market Street
City, State or Province, Country	Charlottesville, Virginia 22902 USA
Phone	(434) 296-5684

Joint Partner Firm:	
Project Role	
Project Contact	
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Phone	

Other Firm:	
Project Role	
Project Contact	
Title	
Address	
City, State or Province, Country	
Phone	

Construction Firm:	Blair Construction
Project Role	General Contractor
Project Contact	Ronnie Smith
Title	Project Manager
Address	23020 US Highway 29
City, State or Province, Country	Gretna, VA 24557 USA
Phone	(434) 656-6243



# Exhibition of School Planning and Architecture

## Project Details

Project Name	Buckingham County Primary and Elementary Schools
City	Dillwyn
State	Virginia
District Name	Buckingham County Public Schools
Supt/President	Dr. Cecil Snead
Occupancy Date	August 2012
Grades Housed	K-5
Capacity(Students)	1,000
Site Size (acres)	30
Gross Area (sq. ft.)	131,787
Per Occupant(pupil)	132
gross/net please indicate	gross
Design and Build?	No
If yes, Total Cost:	
Includes:	
If no,	
Site Development:	\$ 565,985
Building Construction:	\$17,407,604
Fixed Equipment:	\$ 635,300
Other:	\$ 5,403,315
Total:	\$24,012,204

## Graphics and Wayfinding

The natural setting of the surrounding forests, watershed, and microclimates are featured prominently throughout the active landscape of the school campus. The color palette is specially modulated to express local, natural contexts and help enhance indoor-outdoor connections.

Classroom/academic signage highlights Virginia's ecosystems and the flora, fauna, and resources found in each. The primary school (grades K-2) highlights terrestrial ecosystems while the elementary school (grades 3-5) features aquatic ecosystems. The signage ties in with grade-level curriculum and is color-coded per grade and ecosystem for wayfinding purposes.

Other graphics and factoids abound throughout the campus to prompt and reinforce healthy behaviors. Behavioral-based signage encourages hydration, water conservation, activity and movement, and healthy eating habits. Other educational signage explains the building's sustainable systems and the life cycle of the school gardens and surrounding natural systems.





## Bodies in Motion

Accommodating movement and encouraging learning through flexible, customizable spaces – inside and out – were strategies employed by the design team to increase engagement, concentration, and health among students.

Physical design elements such as circulation hallways, open gathering spaces, attractive stairways, and outdoor gardens and play terraces encourage movement and interaction among the school community.

On a smaller scale, specific features such as cushioned gym floors, inspirational and interactive breakout spaces, and flexible furniture support movement and enhance the learning experience for students.



## Campus Transformations – Library

*The library inspires reading, research, and collaboration in its kid-zoned spaces that contain soft seating areas, grab-n-go cushions, a theatrical storytelling center, and an outdoor reading terrace.*





## Campus Transformations – Classroom

*Collaborative and personalized learning areas feature ergonomic seating, flexible furniture, and daylighting strategies that support a healthy, dynamic learning experience.*



## Campus Transformations – Cafeteria

*The Dining Commons is an enriched learning environment that supports food-based learning activities, promotes social well-being, and fosters healthy FoodSmart Kids™.*

