

CEFPI VA

2014 Architectural Awards

Jurors

- Victoria Bergsagel
- Mei Mah
- Ray L'Heureux
- Steven Bingler

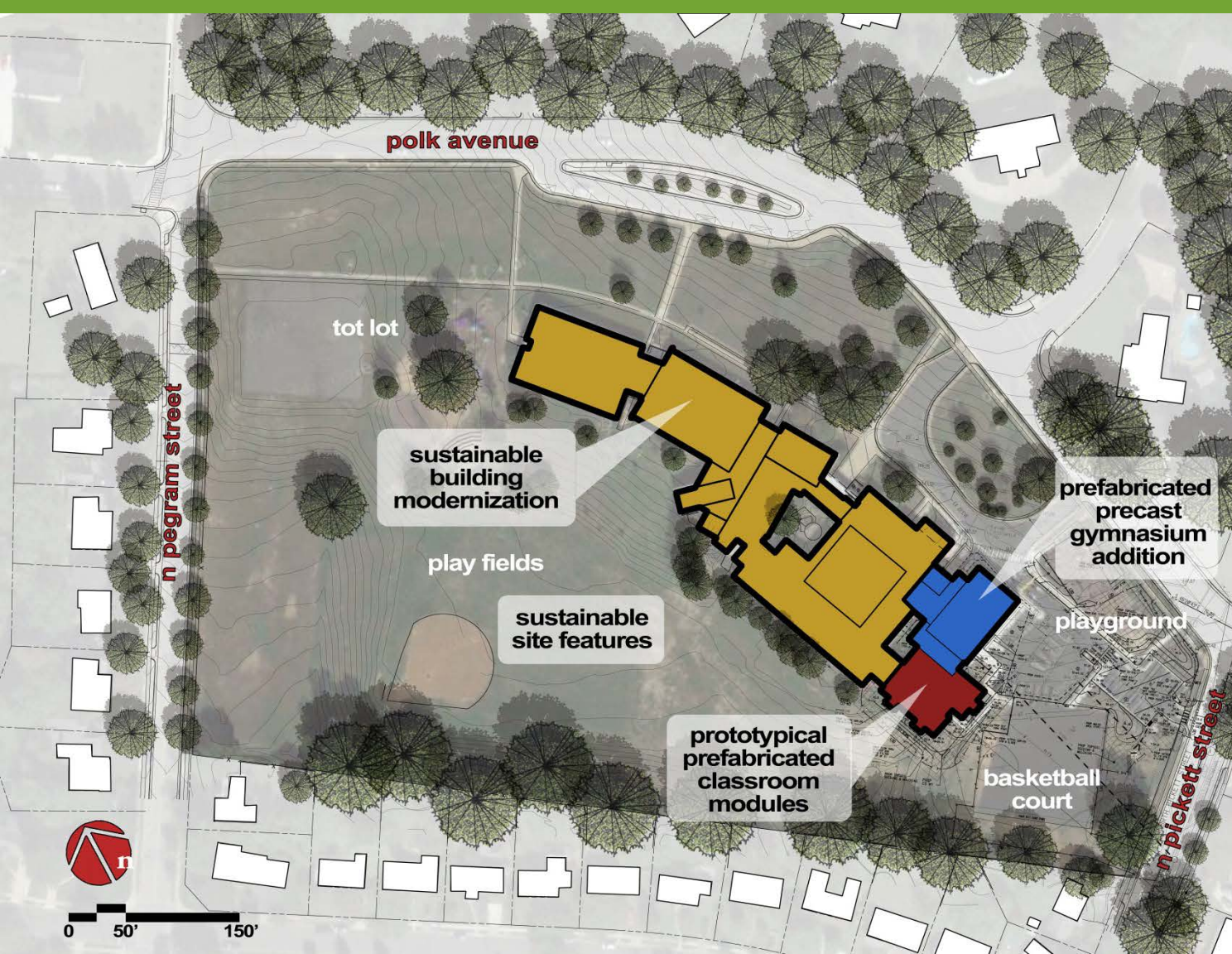
Innovation Bronze Award

Jury Comments

- Innovative use of building construction techniques
- Sustainable design

James K. Polk Elementary School Sustainable Modernization and Additions

Alexandria City Public Schools
Maginniss + del Ninno Architects



Polk Elementary School was challenged to meet increasing capacity, and the quality of the classroom environment was suffering due to outdated building systems.

With a planning a committee comprising users, facility planners, and school board representatives, the Architects created a Master Plan to optimize the existing school. The plan to modernize systems and strategically expand the school showcases the School Board's commitment to sustainable design and high quality teaching + learning environments.

site plan

partial south elevation



existing school with new solar panels and sun shading

prototypical prefabricated classroom addition

east elevation



prototypical prefabricated classroom addition

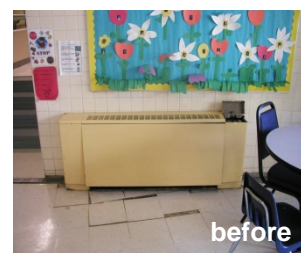
prefabricated precast gymnasium addition

building elevations + sections



Summary of the sustainable modernization of the existing building:

- **Vastly improved** classroom environment featuring new ceilings, daylighting, and finishes;
- **New HVAC system** with ground coupled heat pumps, providing individual classroom control;
- **Solar water system** providing exterior sun shading and heat and hot water for the school;
- **Photovoltaic panels** providing sun shading and 14,048 kWh per year; and,
- **High performance re-roofing.**



1 sustainable building modernization



A new gymnasium addition completed the Polk Elementary School modernization program.

The design approach for the gymnasium underscores the commitment to sustainable design, low-impact site development, and minimal disruption to school operations.

The gymnasium utilized a prefabricated concrete building with custom designed insulated concrete panels and pre-stressed "T" roof components.

Skylight tubes protrude through the green roof, and together with daylight controlled LED lighting provide a perfect environment for the physical education program.

2 prefabricated precast gymnasium addition

Several sustainable site features add to the total improvement of the school, site, and neighborhood, including:

- **O**ptimized storm water management system;
- **F**low-through planters;
- **G**reen roofs on the additions;
- **N**ew playfields over geo-well field; and,
- **N**ew playground for lower school children.



sustainable site features



An important focus of the project was to create an ongoing eco-education program, featuring:

- Field visits for students during construction;
- Permanent educational signage explaining design features;
- Visual dashboard and displays so all students can monitor the operation of the school;
- Eco-Docent program for students to educate other students, parents, and visitors to the school; and,
- A **Greenovation** learning lab in the mechanical room where students can learn about the technical details of the sustainable systems.



green building education program

Innovation Bronze Award

Jury Comments

- Exemplifies excellence in interdisciplinary small learning communities
- Engaging community center

Yorktown High School

Arlington County Public Schools
Perkins Eastman Architects PC

Yorktown High School

Marked by a glass tower, the new design relocated the school's front door from 28th Street to the school's namesake, Yorktown Boulevard.



11.5 ACRE SITE

The school was built in three phases to enable the existing school to remain on-site throughout construction. Joint use of the adjacent park complements the resources of the school's irregular 11.5 acre site.



A Courtyard featuring a monumental stair is the crossroads of the building and it has become the “heart of the school.” The terraced building provides opportunities for classes to move seamlessly outdoors on each level.



The West Facing Atrium’s Ipe Louvers

Monumental Stair

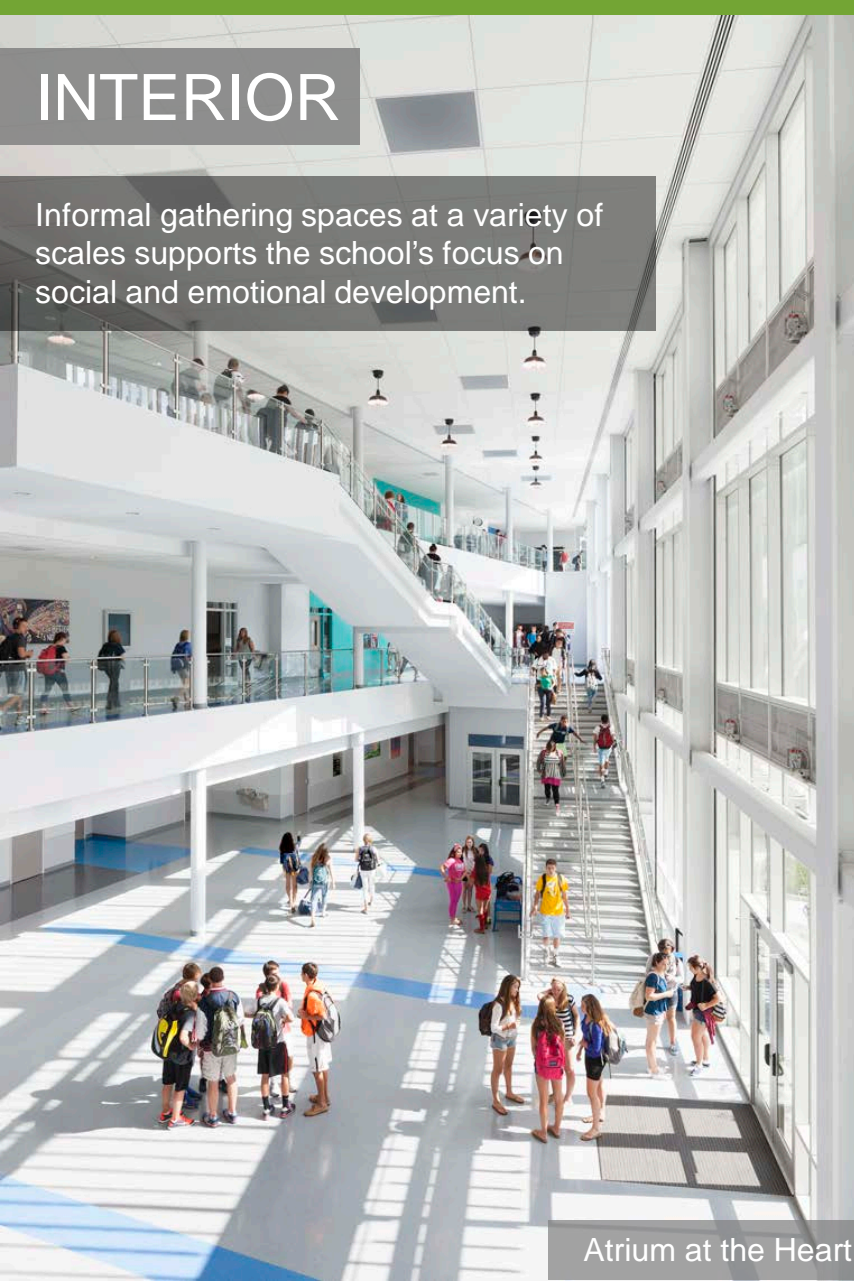


Terraces & green roofs



INTERIOR

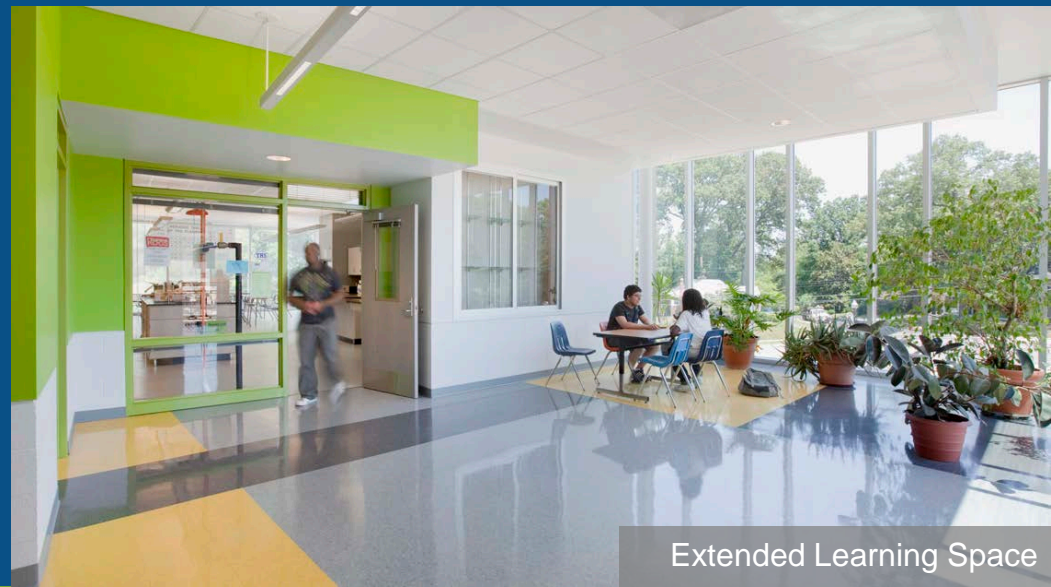
Informal gathering spaces at a variety of scales supports the school's focus on social and emotional development.



Atrium at the Heart



Dining engages Courtyard



Extended Learning Space

Innovation Silver Award

Jury Comments

- Student focused environment
- Opportunity for project-based learning
- Opportunity for students to design and collaborate

Buford Engineering Design Academy at Buford Middle School

Charlottesville City Public Schools
VMDO Architects

Buford Engineering Design Academy at Buford Middle School





Buford Middle School is the first public school to be part of the Commonwealth Engineering Design (CED) Academy, the nation's first laboratory school for advanced manufacturing technologies.

Dedicated to incorporating 21st century manufacturing technologies into classrooms and curriculum, the Buford Engineering Design Academy (BEDA) represents a unique partnership between the University of Virginia's Schools of Education and Engineering as well as Charlottesville City Schools.

Teachers in the BEDA work with University professors and students to integrate engineering concepts into their lessons, while the University uses feedback from the program to better prepare future science instructors. The result is a dynamic promotion of STEM learning and teaching in Charlottesville City Schools, expressed in ways that are engaging and memorable for students.

In all, advanced manufacturing technologies and STEM learning are revolutionizing the ways in which we live and learn. The BEDA prepares students for the future with smartly designed STEM spaces and empowers teachers with novel means of educating 21st century learners.



STUDENT LAB STATIONS

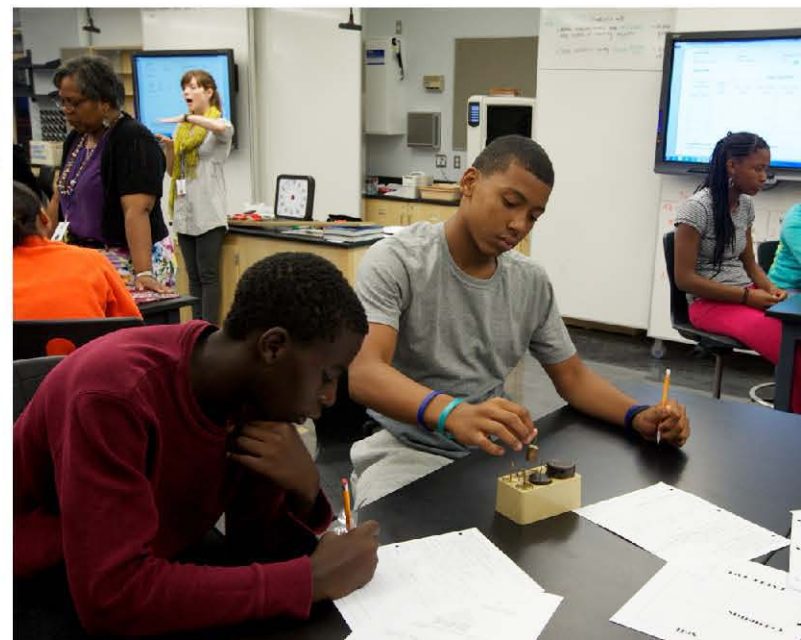
- L.E.D. MONITOR ON RETRACTABLE ARM AT EACH STATION WITH WIRELESS MOUSE AND KEYBOARD
- DIE-CUTTER & 3-D PRINTER WITH DEDICATED EXHAUST

TECHNOLOGY-RICH ENVIRONMENT

- CAMERAS & MONITORS SUPPORT AMBITIOUS DISTANCE LEARNING PROGRAM
- FULL WIRELESS CONNECTIVITY
- RETRACTABLE CEILING-MOUNTED POWER CORDS & TABLE GROMMETS SUPPORT RAPID RECONFIGURATION OF LAB SPACE
- INTEGRATED CHARGING STATIONS FACILITATE EASY TABLET STORAGE FOR EACH STUDENT

INNOVATIVE TEACHING WALL

- FOUR FULL-HEIGHT ROLLING DRY ERASE BOARDS
- DUAL INTERACTIVE WHITEBOARDS & TOUCH-SCREEN SMART BOARDS ON ROLLING ASSEMBLIES
- FULL-HEIGHT STORAGE & DEMONSTRATION SUPPORT BEHIND ROLLING TEACHING WALL
- OVERHEAD CAMERA AT EACH DEMONSTRATION STATION TIED TO INTERACTIVE WHITEBOARDS



SUSTAINABLE, LOCAL MATERIALS

The Buford Engineering Design Academy emphasizes and features a variety of sustainable and locally-sourced materials. Together, many of these materials offer students a sense of place while helping them situate their lives in the natural and cultural history of central Virginia.

The various wood species featured in the corridor (pictured right) are representative of the local materials featured in the design details for the Buford Engineering Design Academy.



WHITE OAK



Buford Middle School was once a part of Oak Lawn plantation. The main house, built in 1822, still stands adjacent to the school at the corner of 9th Street SW and Cherry Avenue. The White Oak boards (interspersed with some Red Oak) along Room 208 were reclaimed from 'rejected' stair treads at a local building materials supply store.

HEMLOCK



The Eastern Hemlock is a majestic tree that can grow as high as 173 feet tall and survive for over 500 years. The Hemlock for Room 206 comes from a reclaimed local tree that fell in a storm during the design phase. Hemlocks have been almost completely destroyed by the woody adelgid and are the "ghost" trees you commonly see in Shenandoah National Park.

DEODAR CEDAR



Deodar Cedar is a large coniferous tree native to the Himalayan mountains. The Deodar Cedar used for Room 204 was locally milled from a huge tree that once dominated the eastern end of Charlottesville's downtown mall, prior to construction of the concert pavilion. Some of its wood was originally used for the Downtown Transit Center; leftover wood was used in the Buford project.

AMERICAN CHESTNUT



The American Chestnut was once one of the most common trees in the eastern United States. Prior to a devastating blight, it accounted for 25% of the trees in the Appalachian Mountains. The Wormy Chestnut boards featured near Room 202 were salvaged from old barns. These boards showcase chestnut's warm character while highlighting the worm-holes and nail-holes that, together, are unique to this disappearing species.

e



Innovation Gold Award

Jury Comments

- Excellent example of 21st century learning environment
- Elegant celebration of community, leverages local resources
- Community involvement in planning

Buckingham County Primary & Elementary Schools at the Carter G. Woodson Education Complex

Buckingham County Public Schools
VMDO Architects

Buckingham County Primary and Elementary Schools

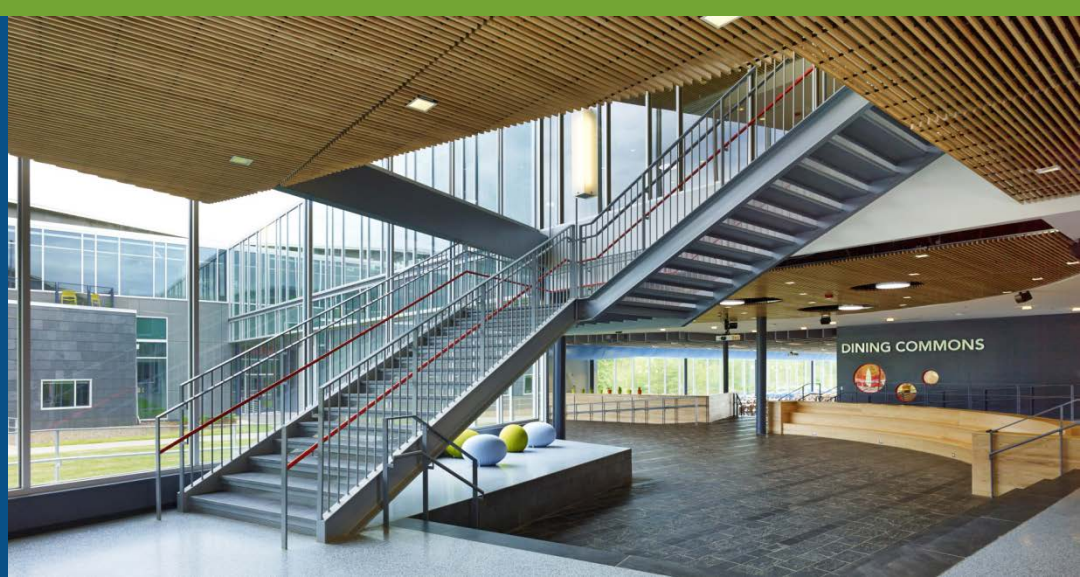


Community Environment

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.

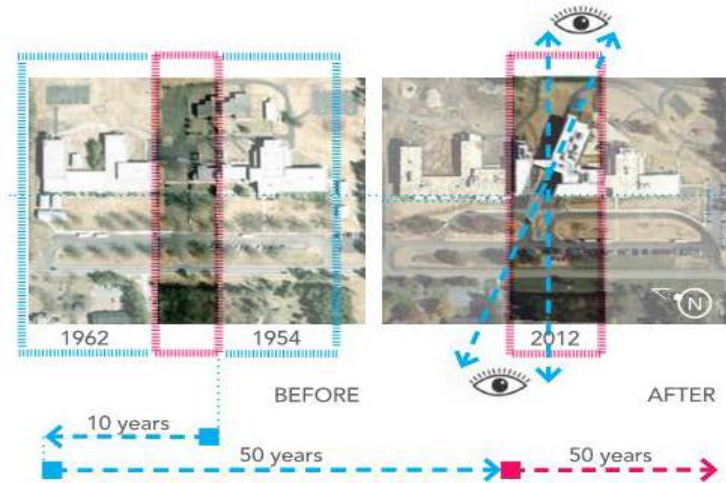
Unique shared-use spaces such as a kitchen lab, commercial kitchen with open serveries, teaching kitchen, and outdoor gardens are used by the public and help promote healthy, food-based education for the school community. A Community Commons, featuring local Buckingham slate flooring, is a community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



Site Plan



SITE PLAN_native, edible, active



PHYSICAL ACTIVITY ZONES

- 1 Slate + Grass Piazza
- 2 Gymnasia + Fitness Rooms
- 3 K-2 Play Terrace + Water Station
- 4 3-5 Play Terrace + Water Station
- 5 Tot Lot Natural Play Area
- 6 Eco-Walks / Jogging Paths
- 7 Recreational Sport Fields
- 8 Open Play Area + Grass Surface
- 9 Community Room
- 10 K-2 Exercise + Meditation Loop
- 11 3-5 Exercise + Meditation Loop
- 12 Woodland Hub
- 13 Monumental Slate Stair
- 14 Weekend + Off Peak Bicycle Loops

FOODSMART KIDS® ZONES

- 1 Dining Commons + Food Lab
- 2 Teaching Kitchen Lab
- 3 Kitchen Gardens
- 4 Edible Community Gardens
- 5 Great Lawn + Grab-n-Go Berry Patch
- 6 Fruit Tree Allée
- 7 Nut Tree Circle
- 8 Compost Demonstration Garden
- 9 Picnic Knoll
- 10 Outdoor Dining + Garden Classroom

ECO-ACTIVITY ZONES

- 1 Bioswales + Cleansing Biotopes
- 2 Slate Channel + Waterfall Scupper
- 3 River Rock Stream + Native Meadow
- 4 Frog Bog + Observation Deck
- 5 K-2 Science Garden
- 6 Arts Terrace + Garden Courtyard
- 7 Sonata Terrace + Garden Courtyard
- 8 Pollinator Bee + Bug Garden
- 9 Pervious Parking Garden

Healthy Building, Healthy Kids

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.



Graphics & 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 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 about 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.



WATER HYDRATES!

Hydration is all about water! Take drinks of water whenever you are thirsty to keep your body healthy.

How many ounces of water did you drink today?

RECYCLING SAVES WATER

Recycling one pound of paper saves about 3.5 gallons of water!

How often do you recycle?

SAVES

1 gal 1 gal 1 gal .5 gal

HOP ON UP!

Get out of your chairs! Jump up! Jump down! And hop on up the stairs!

Using the stairs burns twice as many calories as walking!

HEALTHY HEART!

Walking up stairs requires 8-11 calories of energy per minute. Using stairs burns twice the amount of calories than walking!

Aerobic exercise gets your heart pumping faster, which strengthens your heart. Does your pulse (heartbeat) change after taking the stairs?

YOUR HEART!

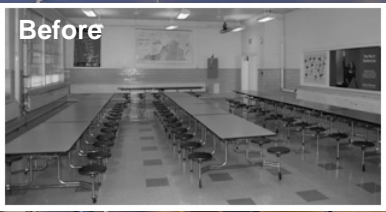
- with care blood flow to the body
- artery blood to the body
- pulmonary artery blood to the lungs
- pulmonary vein blood from the lungs
- left atrium
- left ventricle
- right atrium
- right ventricle

THE EDIBLE GARDEN

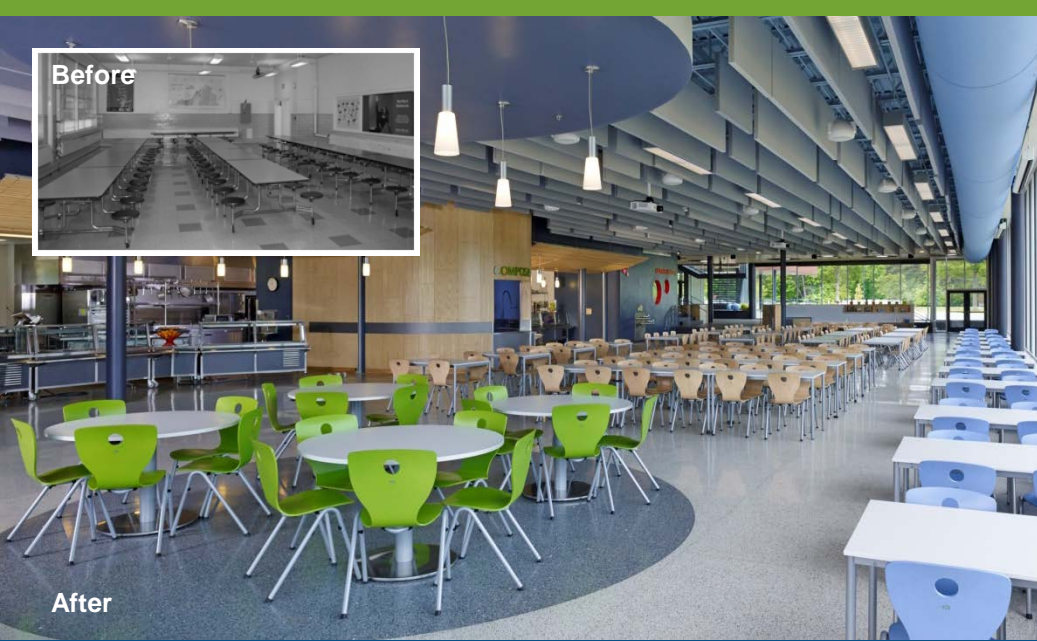
Fruits contain seeds. Seeds grow into plants. Plant roots take in water and minerals from the soil to nourish leaves and flowers. Leaves take in sunlight and air to make sugars for the plant. Flowers turn into fruit. And the cycle begins again!

YOUR HEALTHY PLATE!

- dairy** milk, yogurt, cheese
- vegetables** broccoli, carrots, cucumbers, and peas
- whole grains** brown rice and whole wheat bread
- proteins** fish, poultry, beans, and nuts
- fruits and juices** peaches, bananas, apples, oranges



Before



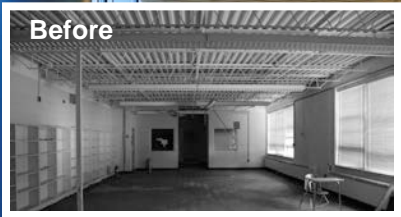
After



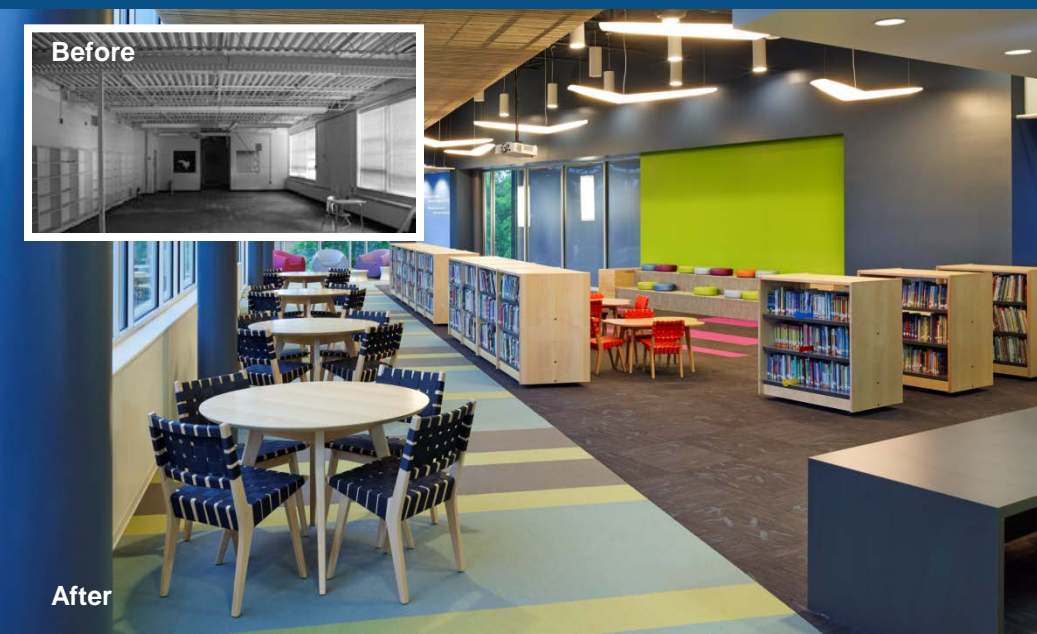
Before



After



Before



After