

2013 Exhibition of School Planning and Architecture

Manassas Park Elementary and Pre-K

Manassas Park City Schools
Virginia

Manassas Park Elementary and Pre-K



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Shared Outdoor Classroom



Manassas Park Elementary



Manassas Park Pre-K



Transforming a School District

Community Environment:

The design of the new elementary school and pre-K was the capstone of a decade-long renovation of the entire Manassas Park school district. Frequent collaboration between the architect and the school board, city government, teachers, parents, and other community members contributed to the complete overhaul of a school district formerly struggling to pass standards for building performance and student achievement.

The results of this decade-long redesign, bolstered by the new elementary school and pre-K, included: higher testing scores, greater teacher/student retention rates, civic pride stemming from student achievement, and even winning athletics seasons. Giving Manassas Park citizens a fresh start, the redesign transformed the core identity of the young city – rejuvenating community spirits, attracting new residents and businesses, and stewarding a new generation of students proud to hail from Manassas Park, VA.



A School in the Woods

Community Environment (*cont'd*):

In 2009, the City of Manassas Park expanded their existing K-3 elementary school campus to include two new projects: Manassas Park Elementary School (serving grades 3-5) and Pre-K. The result is a consolidated elementary school campus serving children ages 4 to 11, many of whom live within walking and biking distance. School design and curriculum draw from the educational and recreational opportunities of nearby Camp Carondelet – the encampment site of a Louisiana regiment during the Civil War. By nestling tight to the Camp's mixed-oak forest, the campus preserves open space and creates a 'school in the woods.' The resources of the area are celebrated while connecting students to the wonder of their natural environment.



Educating Each Child

Learning Environment:

Learning spaces are tailored to accommodate the innovative 'parallel block' academic system used by the school district. Each school day, all students receive large and small group instruction in language and math, while full time specialists teach science and social studies. Small group instruction is targeted at specific skill levels, while large group instruction allows for guided practice, discussion, and group projects among heterogeneous groups of learners. Custom breakout spaces and teacher workspaces allow for further specialized instruction and transparent monitoring.

Instead of separating students by grade in the school, grade levels are evenly mixed, allowing teachers to build multi-year relationships with a smaller number of students. In addition, teaching extends outdoors with two courtyards – one doubling as a stormwater bio-retention area, the other doubling as a cistern, equipped with a colorful rain gauge and large-scale graphics explaining the hydrologic system and the impact of rainwater harvesting.



Creating Environmental Stewards

Learning Environment (*cont'd*):

A green school should carry the additional obligation of creating environmental stewards out of its occupants. The elementary school is designed around the premise that children can't be expected to preserve and protect what they don't understand. Hence, educational opportunities abound in every space of the school. Mirroring nearby Camp Carondelet, the three floors of the school correspond with the levels of a Virginia forest. Each classroom is themed after a local animal or plant – with ground dwelling creatures on the first floor, mid-canopy flora on the second floor, and treetop inhabitants on the third floor. Signage highlights facts about these creatures in addition to factoids about the building's sustainable systems. When in natural ventilation mode, green lights tell students to open the windows, making them active participants in energy conservation.

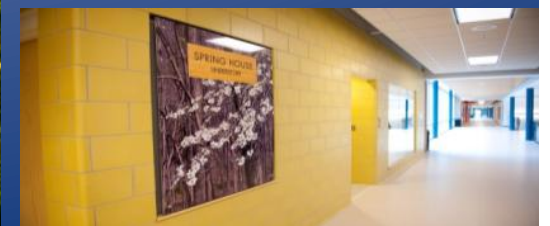


Responding to Physical Context

Physical Environment:

Occupying a slender site nestled against 75-foot tall trees, the elementary school has three academic 'houses' identified as Summer, Autumn, and Spring. The cafeteria and media center form the Winter Commons. These themed 'houses' are denoted with signage and unique color schemes.

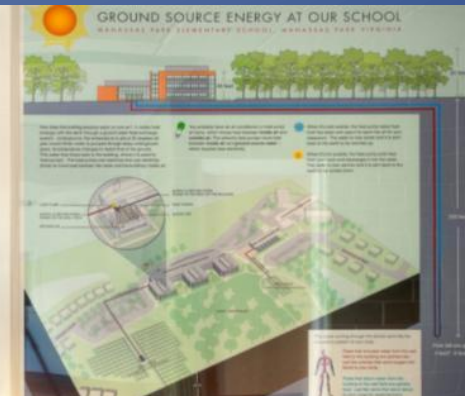
While moving in the school reflects the passage of time, moving up and down stairs represents moving vertically through a northern Virginia deciduous forest – like Camp Carondelet. The three levels of each house are identified as Forest Floor, Understory, and Canopy. The 'trees' in each hallway feature Poplar, Cherry, Ash, Oak, and Maple planks mixed with full length mirrors – giving students the abstracted effect of walking in the woods. Each species of tree can also be found in the adjacent forest.



Sustainable Systems that Educate

Physical Environment (*cont'd*):

Utility bills demonstrate that the new LEED Gold schools use 50% less energy than typical code-compliant buildings. Part of this savings stems from 221 geothermal wells that efficiently heat and cool the school, providing conditioned air to each classroom only when needed. In the elementary school, signage located next to the revealed geothermal system teaches students about thermodynamics while relating it to their own circulatory system. Rainwater is collected from all roof surfaces and diverted into a cistern used for irrigation and toilet flushing – saving roughly 1.3 million gallons of water a year. Stormwater is routed through a bio-filtration area, doubling as an outdoor classroom, capable of holding the runoff from an 100-year storm event. The cistern and bio-filtration areas create usable learning spaces out of what would otherwise be fenced-off areas. Lastly, all lumber is made from wood native to the area – furthering the indoor-outdoor connections.



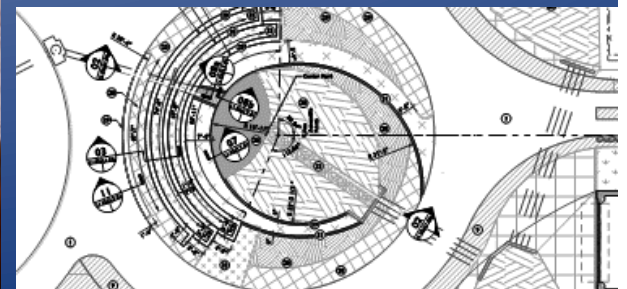
Achieving New Milestones

Planning Process:

This project completed a decade-long process to replace every school facility in Manassas Park, VA. Despite significant increases in the ESL population during this period, pass rates on standardized tests increased from 40% to 90%. Scores today remain consistently high and even higher than nearby larger cities.

The planning and design of the new buildings built upon four previous successful projects in the school district, incorporated lessons from past experiences, and furthered, even pushed, cross-disciplinary relationships in order to design the most successful and sustainable learning spaces within reach.

Other communities can perhaps draw from the lessons learned during Manassas Park's complete overhaul, the largest being the need to craft an uncompromising vision of success that is not constrained by the burden of past failings or current limitations. Where there's a will, there's a way; this philosophy shaped the entire planning process for all involved.



A Lifelong Partnership

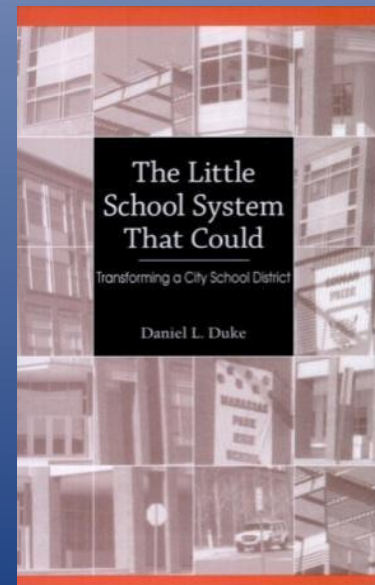
Planning Process (cont'd):

During the planning process, educators requested a design that didn't separate grades into different areas, that fostered teachable moments across the educational landscape, and that promoted community connections. The planning and design team took note of these requests for integrated, concurrent learning experiences and devised design solutions that fostered the desired results. Experiencing these results firsthand during post-construction events such as school move-in day and garden work sessions (as seen right) communicated an alignment of intention/result that the design team works to ensure exists with the Manassas Park community to this day.

Designers: Bob Moje - Principal, Wyck Knox - Project Architect/Project Manager, Ken Thacker - Project Designer, Steve Davis - Director of Sustainability, Brittney Butler - Graphics

School Leaders: Dr. Tom DeBolt - Former Superintendent, Frank Jones - Mayor of Manassas Park, Stacey Mamon - Elementary School Principal

TIMELINE:



Floor Plan

FLOOR PLANS

- SUMMER HOUSE
- AUTUMN HOUSE
- WINTER COMMONS
- SPRING HOUSE



0 25 50 100 150

- 1 TYPICAL PRE-K CLASSROOM
- 2 TYPICAL CLASSROOM
- 3 TEACHER SUPPORT
- 4 CAFETERIA + COMMONS
- 5 MUSIC
- 6 GYMNASIUM + ASSEMBLY
- 7 STAGE
- 8 DELIVERIES
- 9 ADMINISTRATION
- 10 LIBRARY
- 11 ART
- 12 BIO-RETENTION CLASSROOM
- 13 EDUCATIONAL COURTYARDS



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	
Title	
Address	
City, State or Province, Country	
Phone	

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

Construction Firm:	HESS Construction
Project Role	General Contractor
Project Contact	Greg Ramirez
Title	Project Manager
Address	804 West Diamond Avenue, Suite 300
City, State or Province, Country	Gaithersburg, MD 20878 USA
Phone	((301) 670-9000

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Project Details

Project Name	Manassas Park Elementary and Pre-K
City	Manassas Park
State	Virginia
District Name	Manassas Park City Schools
Supt/President	Dr. Bruce McDade
Occupancy Date	April 2009
Grades Housed	Pre-K, 3-5
Capacity(Students)	1,000 students (Pre-K, 3-5)
Site Size (acres)	30
Gross Area (sq. ft.)	131,700
Per Occupant(pupil)	132
gross/net please indicate	gross
Design and Build?	No
If yes, Total Cost:	
Includes:	
If no,	
Site Development:	\$ 3,006,091
Building Construction:	\$28,026,925
Fixed Equipment:	\$ 535,000
Other:	\$ 1,431,984
Total:	\$33,000,000

Pre-Kindergarten

The new Pre-Kindergarten (Pre-K) building is located between Cougar Elementary School (serving grades K-2) and the new Manassas Park Elementary School. The Pre-K serves 70 students, including special-needs individuals.

Spaces are custom-sized for 4 and 5 year olds, including a 4 foot high 'entrance door' and cave-like window reading nooks oriented with views towards the hardwood forest.

Built using the same sustainable techniques as the elementary school, 100% of this one story building can be naturally day lighted during 90% of the average weather days in a year. A separate geothermal well field was drilled exclusively for the Pre-K.



Letting the Outside In

Proven to increase student achievement, daylight floods each classroom. In south facing classrooms (featured right), exterior sunshades block direct sunrays, while clearstory 'light louvers' redirect sunlight to the ceiling. Acoustical ceilings slope to reflect more ambient light while absorbing more noise than a flat ceiling. The result is a glare-free teaching wall with no artificial light.

When lights are needed, three rows of florescent fixtures, each with their own photosensor, automatically dim to adjust to changing exterior light conditions. Vacancy sensors automatically turn lights off, but occupants have to consciously flip a switch to turn them on.

89 Solatubes® are used throughout the school to bring natural light into interior spaces. In the Media Center and Gym, the tubes can be dimmed to accommodate specific lighting needs. Abundant signage encourages students to always be aware of wasteful electricity usage.



Healthy Indoors

Good indoor air quality doesn't stop with the elimination of allergens, VOCs, and formaldehyde. Children are highly susceptible to harmful effects from ethanol and ether found in many conventional school cleaning materials.

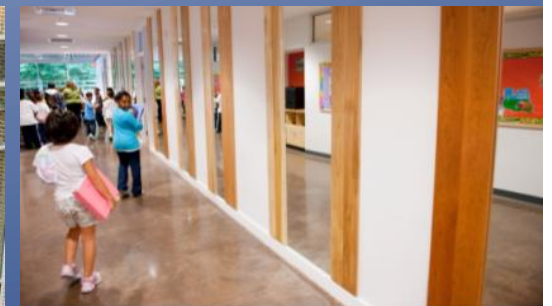
The elementary school's high performance flooring tiles never require stripping, waxing or polishing – the leading cause of poor indoor air quality in schools. The maintenance staff uses green cleaning products and procedures, prompted by design team and school leadership.



Transparency

Properly oriented or shaded insulated glass provides a high degree of transparency. Whether reading in the corridor, working on group projects in breakout spaces, or studying in the courtyards – teachers can easily keep an eye on what's going on.

Large expanses of mirrors in the elementary school's corridors reflect ambient light and views, while also encouraging student self esteem and proper behavior. (Incidentally, there are no mirrors in the restrooms, to reduce 'grooming' behaviors.) There is a pervasive sense of openness – and students naturally assume the responsibility that is expected of them.



Promoting Lifelong Learning

Most people read in a cozy chair or lying down – so why should we try to instill a love of reading and learning using only hard plastic chairs? Break-out areas featuring upholstered chairs and sofas, beanbags, and carpeted risers help inspire creativity and comfort among young learners.

Lifelong learning is also not limited to students. Teachers from varying grades and subjects in the school are assigned workstations in shared professional office spaces which promotes interdisciplinary discussions.

This arrangement de-emphasizes the use of the teacher desk in the classroom, thereby encouraging rearrangement of furniture for the unique needs of each class. Non-classroom educational spaces promote learning without teaching – even if the students don't realize it.

