2012 Architectural Exhibit Awards

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DESIGNING BEYOND THE 3Rs

JURORS

Jamie Vollmer
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Steve Zetts

Renovation/Addition

RENOVATION/ADDITION

Best Renovation Design 2012

Swift Creek Middle School

Chesterfield County Public Schools

BCWH Architects

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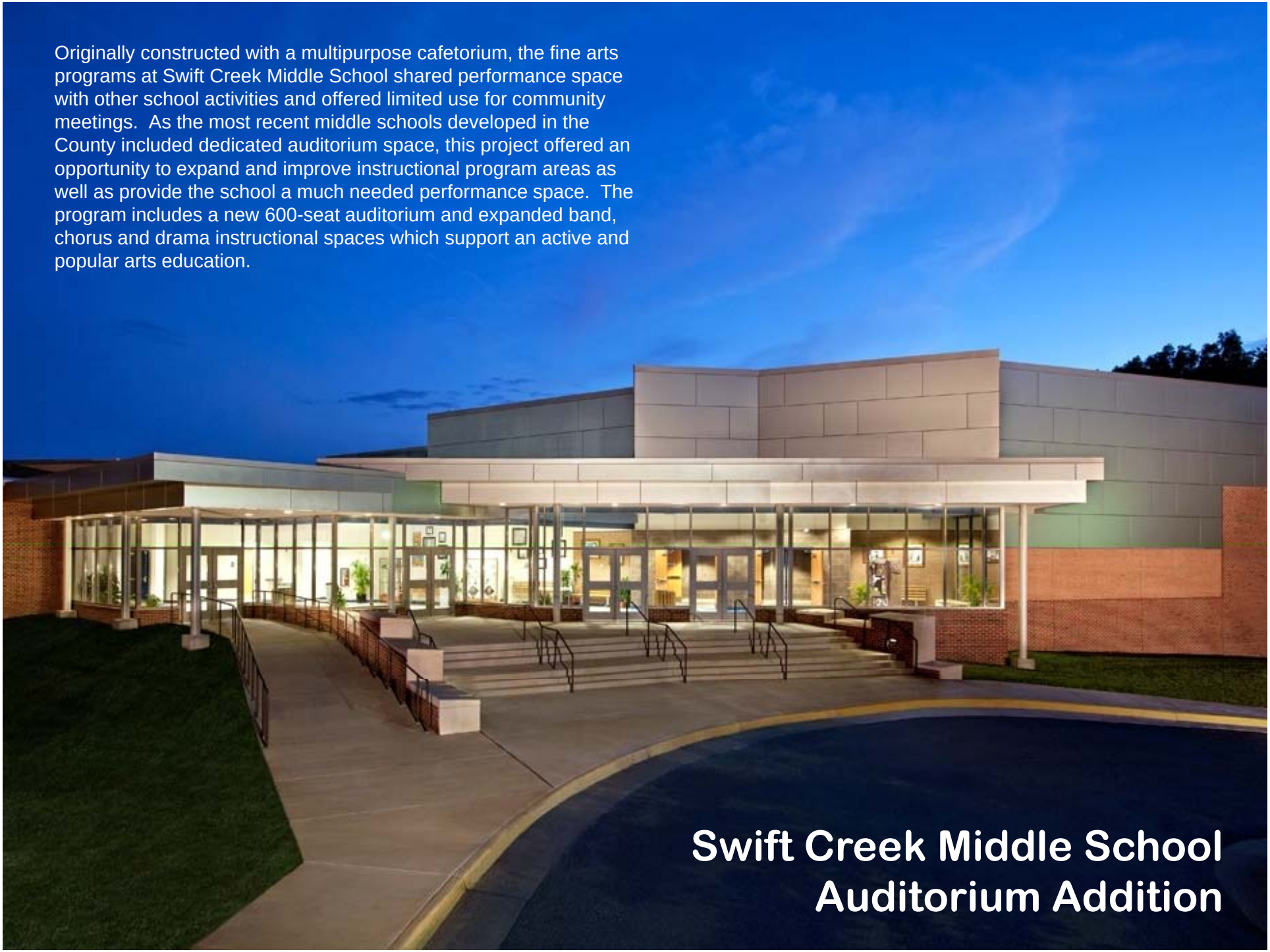
Jury Comments

- Balance of design
- Inviting and welcoming space
- Accessibility is an inherent feature of design
- Well designed auditorium space
- Natural colors
- Dynamic and flexible interior space



Originally constructed with a multipurpose cafetorium, the fine arts programs at Swift Creek Middle School shared performance space with other school activities and offered limited use for community meetings. As the most recent middle schools developed in the County included dedicated auditorium space, this project offered an opportunity to expand and improve instructional program areas as well as provide the school a much needed performance space. The program includes a new 600-seat auditorium and expanded band, chorus and drama instructional spaces which support an active and popular arts education.

Swift Creek Middle School Auditorium Addition

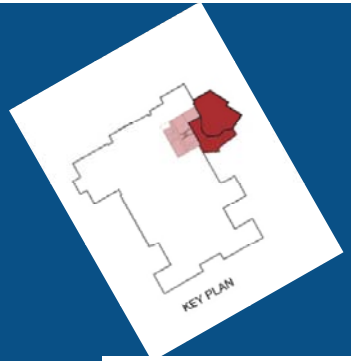
CIVIC PRESENCE

The addition of the school's auditorium is designed to have an unmistakable presence of its own while simultaneously relating to the existing building through the use of similar materials and colors.

The new transparent auditorium lobby provides a public entrance to the auditorium and also to the renovated performing arts department.

For patrons of the auditorium, as well as students waiting for their rides at the end of the school day, the entry is more than just a place to enter and exit the building. The broad steps, playful seat walls, and plaza create a place for social gathering and leisurely waiting that is artistically stimulated by the new auditorium façade.

SITE PLAN:



RENOVATION

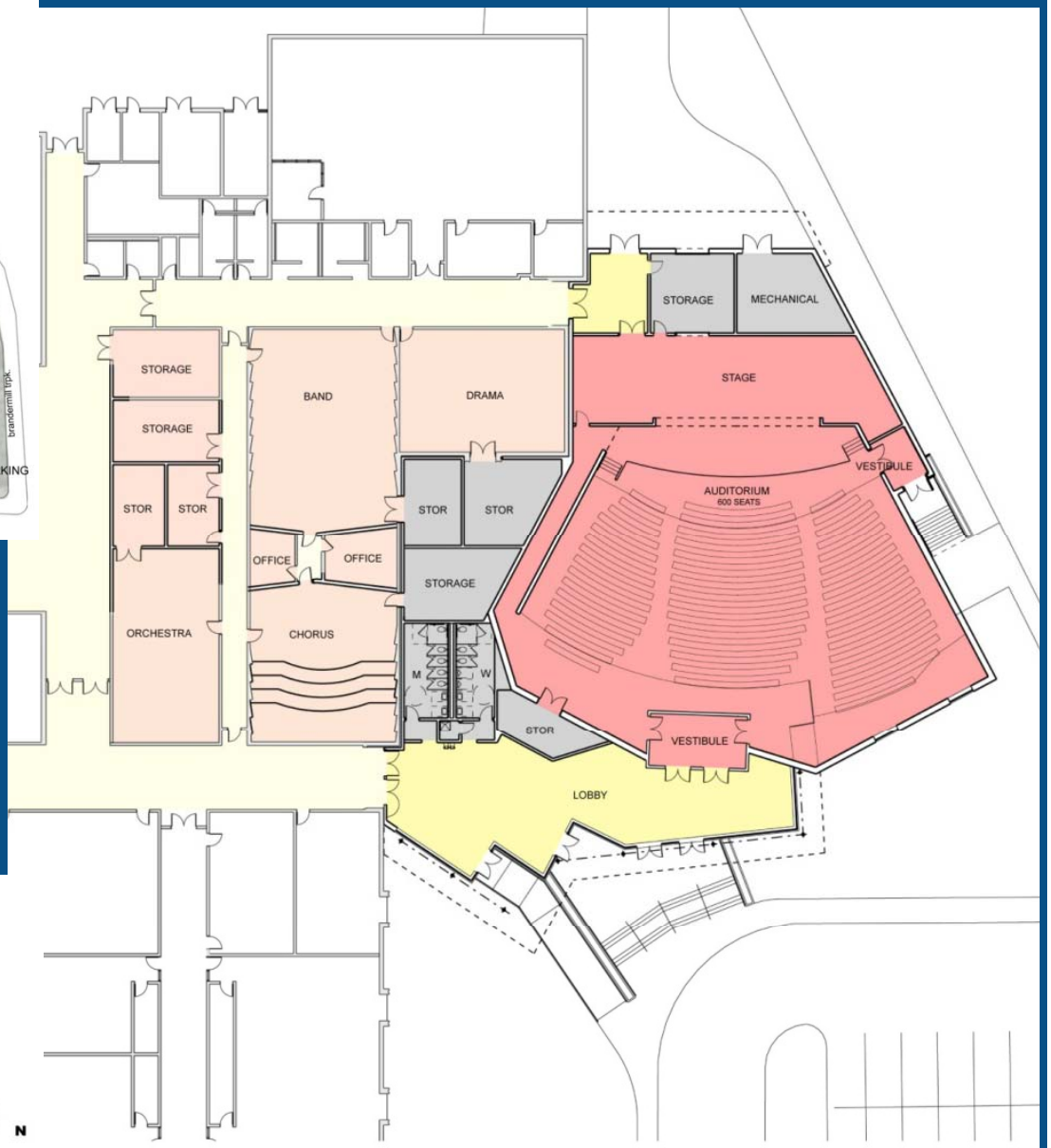
PERFORMING ARTS

MECHANICAL, RESTROOMS & STORAGE

CIRCULATION

10' 20' 30' 40'

N



FLOOR PLAN:

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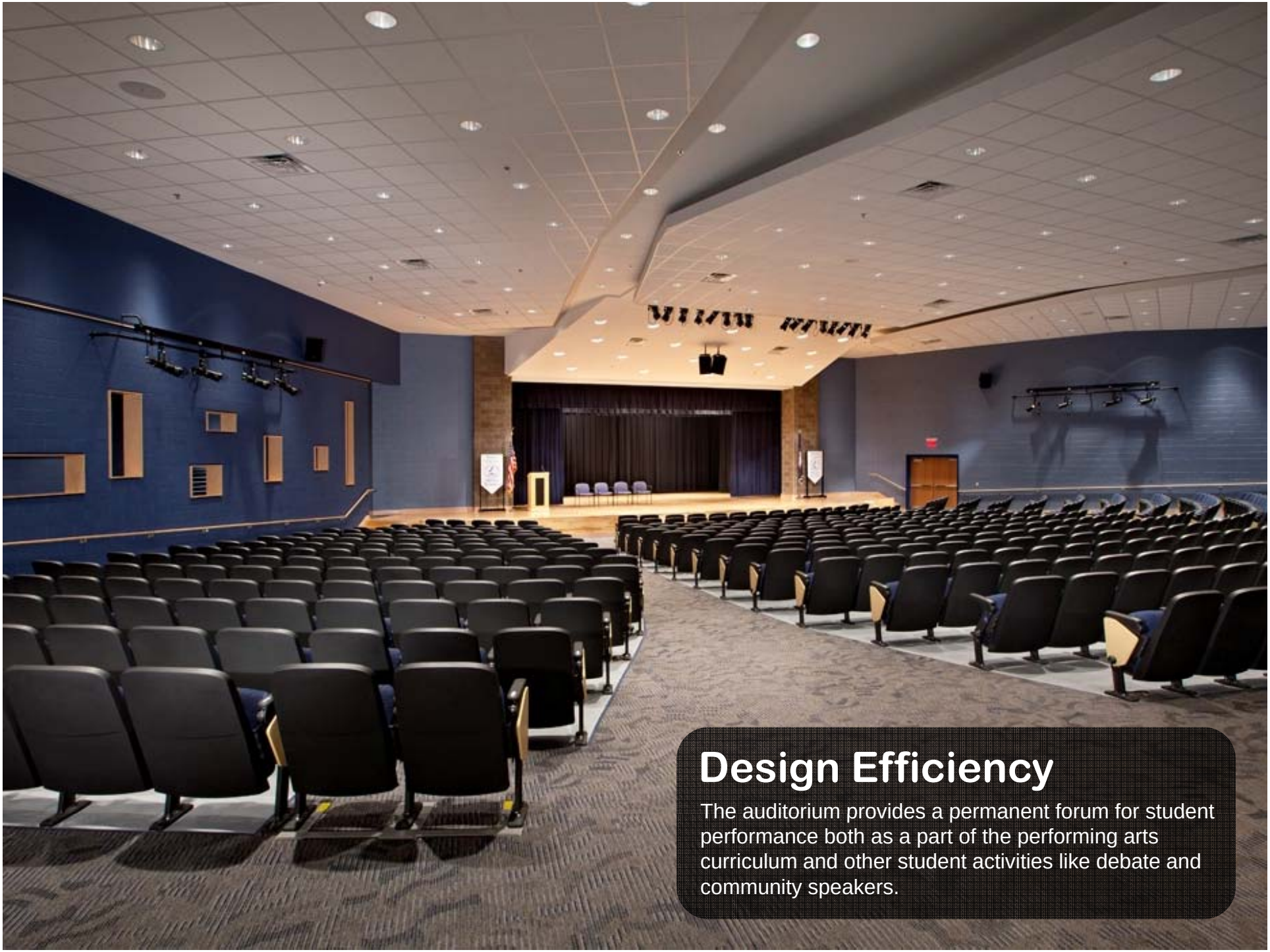
DESIGNING BEYOND THE 3Rs



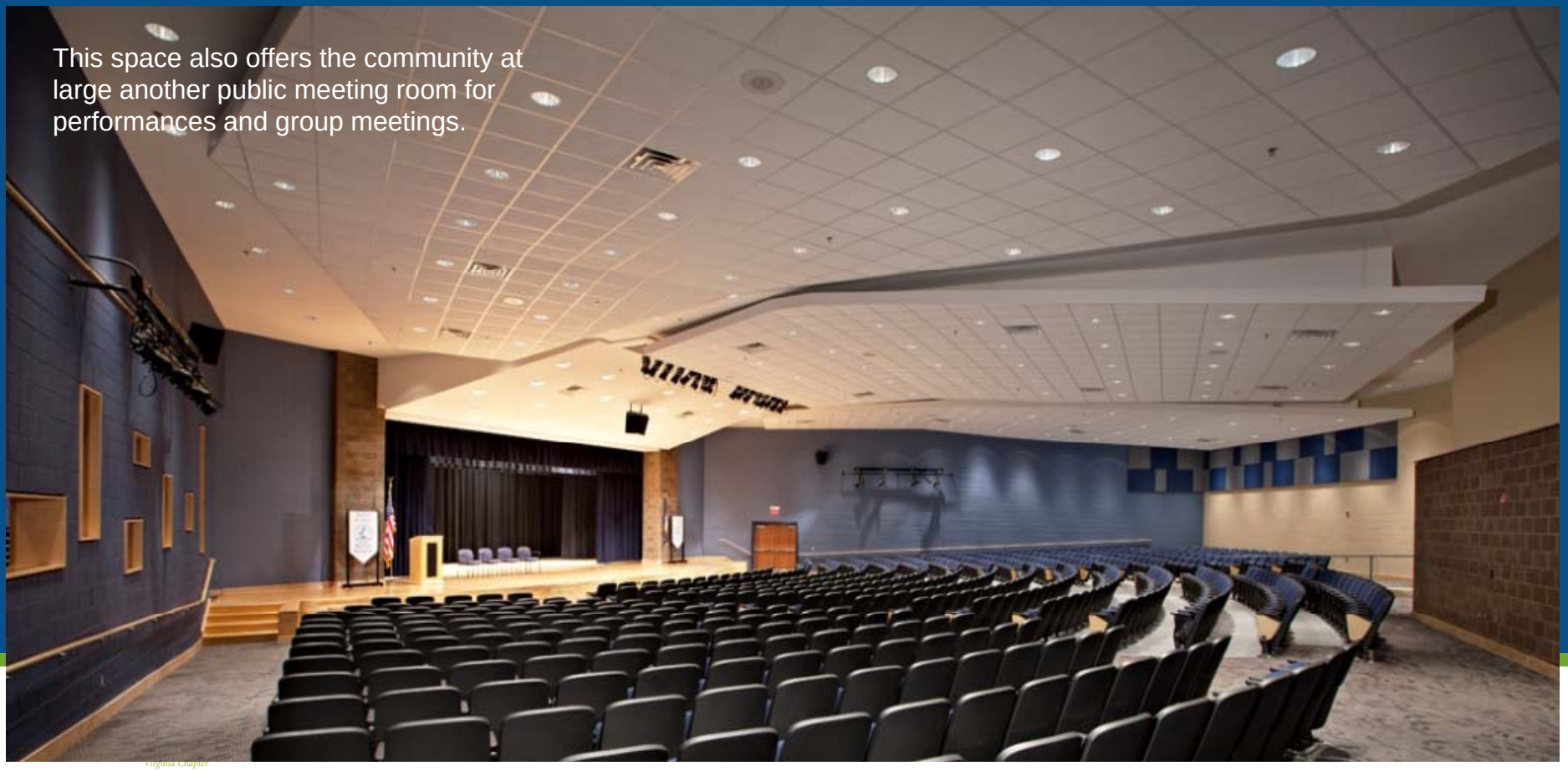
Design Efficiency

The auditorium provides a permanent forum for student performance both as a part of the performing arts curriculum and other student activities like debate and community speakers.

MULTI-FUNCTIONALITY

The former cafetorium presented logistical challenges for events in which lunch and other school functions limited use of the space. The new auditorium provides a dedicated space for public performance and gathering enhancing the student experience.


former Cafetorium


This space also offers the community at large another public meeting room for performances and group meetings.

SUSTAINABLE DESIGN

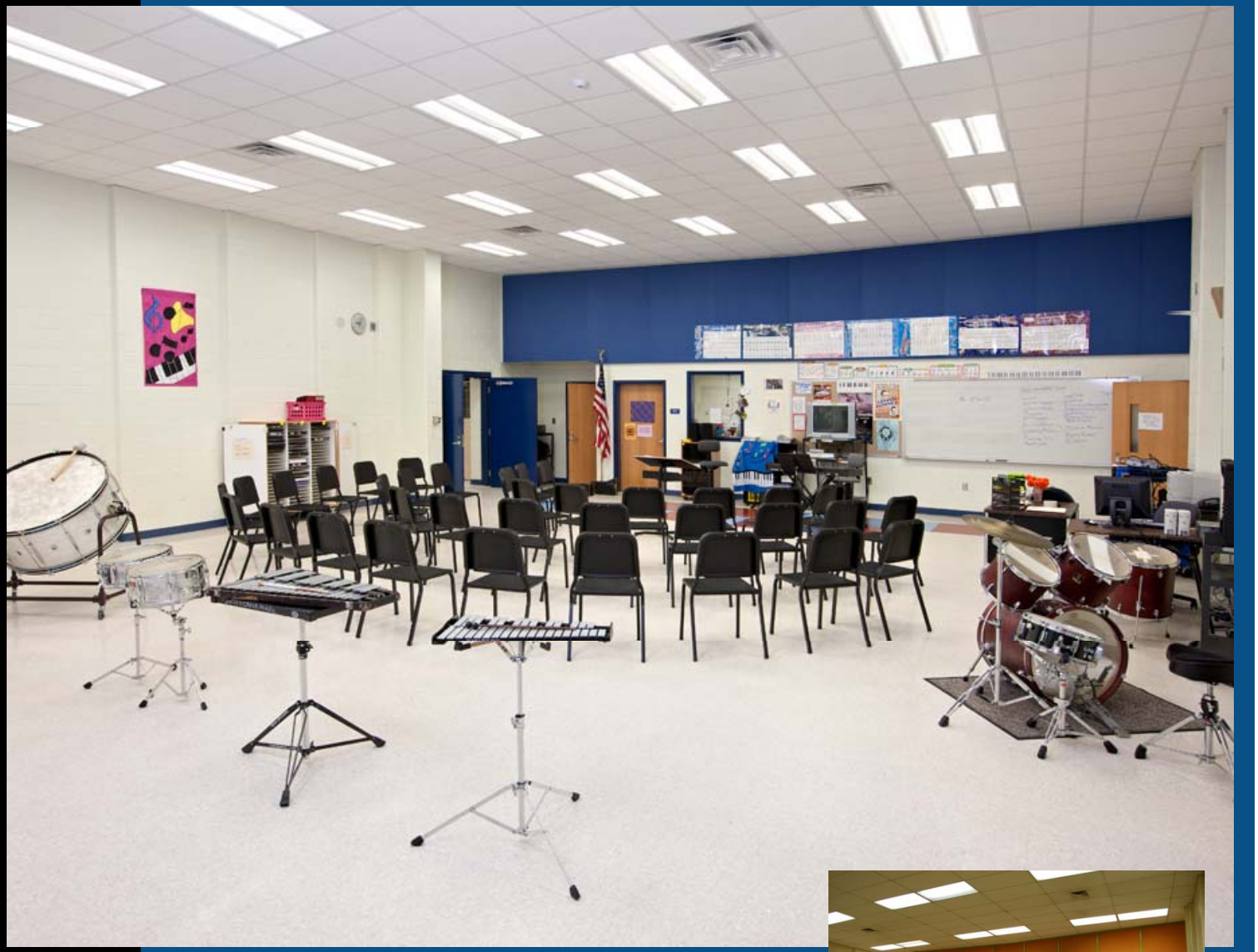
The addition includes materials and coatings that are low VOC, which contributes to improved indoor air quality. Day-lighting was also incorporated in the new corridor and entrance areas as spaces which would not impact the program use. Mechanical systems were replaced with highly controllable and energy efficient equipment improving operational efficiencies in spaces utilized for many after-hours events.

LEARNING AMBIENCE

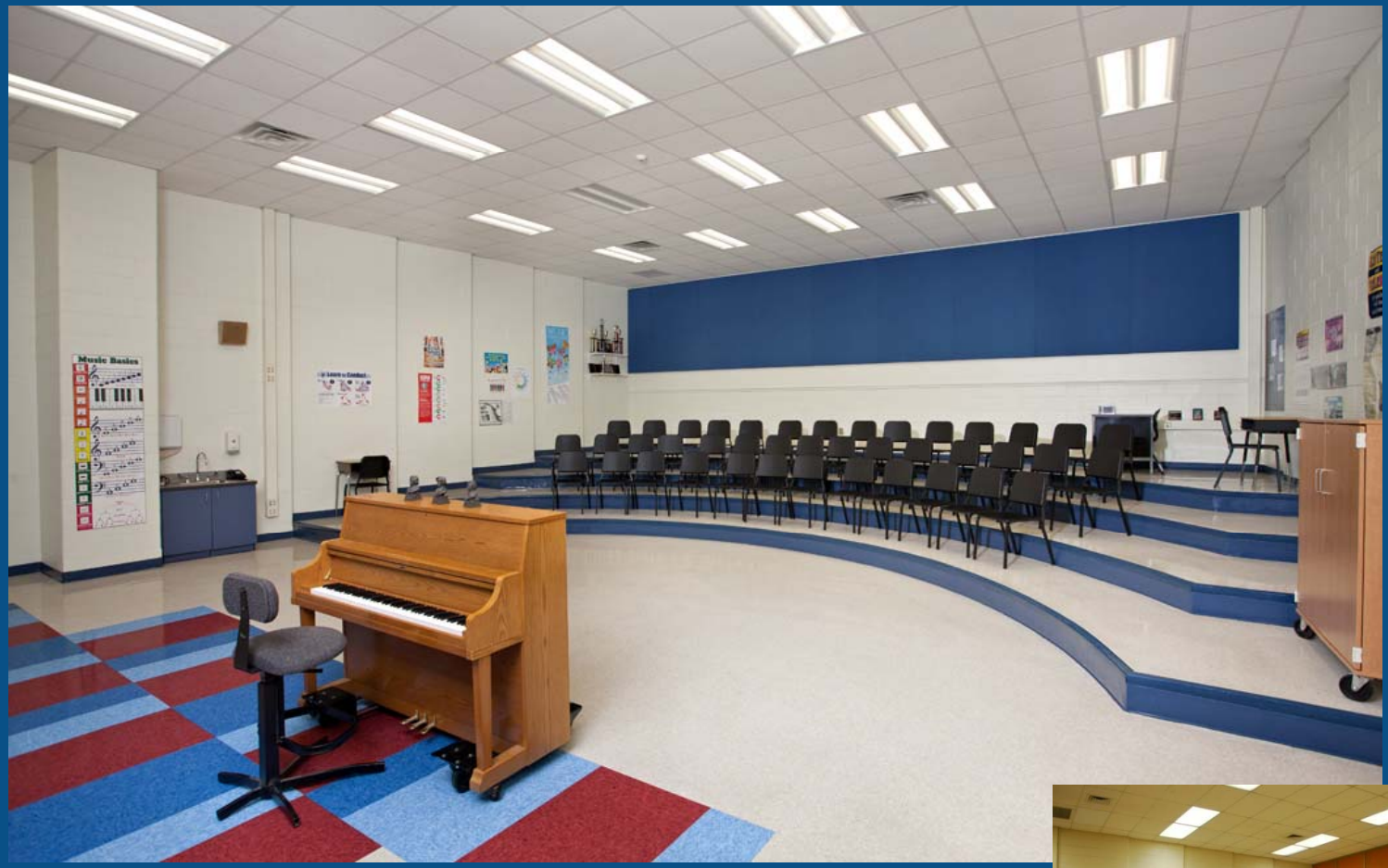
The new and renovated classrooms are designed with generous floor areas to provide for a variety of activities within the rooms and provide separate storage rooms for secure storage of instruments and costumes.

Classroom spaces are accented with new color patterns that provide visual continuity among the newly renovated spaces and enliven and update the school color palette. These colors were also integrated into other areas of the school not included in the renovations.

Each space was designed with a large volume of interior area to improve acoustic performance. Fabric treatments were utilized to tune the spaces and minimize sound reflections. The spaces are separated by support spaces which further improves the acoustic isolation between the rooms.



Band Room Before



EDUCATIONAL COMMUNITY

The band and chorus facilities have been greatly expanded. Spaces have been created for new curriculum - drama and orchestra. These, along with the dedicated auditorium for showcasing the students' creative work, provide new found opportunities for student experiences.


Chorus Room Before

SUBTLE SECURITY

The new auditorium lobby provides a highly visible path to the school corridors while visually connecting the interior to the landscape and parking areas beyond. The lobby serves two functions: both as a pre-function area for the auditorium and an entry for the school. At night, the transparent lobby glows, welcoming the public to events and clearly identifying the entrance. In addition, the entire auditorium can be secured from the existing building to create a stand alone space for after hours events.

PROJECT IDENTIFICATION

SITE SIZE: **1.92 acres - Project Area; 38.87 acres - School Site**

STUDENT CAPACITY: **900 students; Auditorium: 600 Seats**

AREA OF BUILDING ADDITION: **15,424 SF**

AREA OF BUILDING RENOVATION: **8,160 SF**

TOTAL PROJECT COST: **$3,695,000**

COST PER SQFT: **$158 (New Area + Renovated Area)**

COST PER STUDENT: **$4,105**

SPACE PER STUDENT: **171 SF**

New Construction
PreK-5

NEW CONSTRUCTION
PreK-5

Best New Elementary School Design 2012

Mason's Cove Elementary School

Roanoke County Public Schools

RRMM Architects

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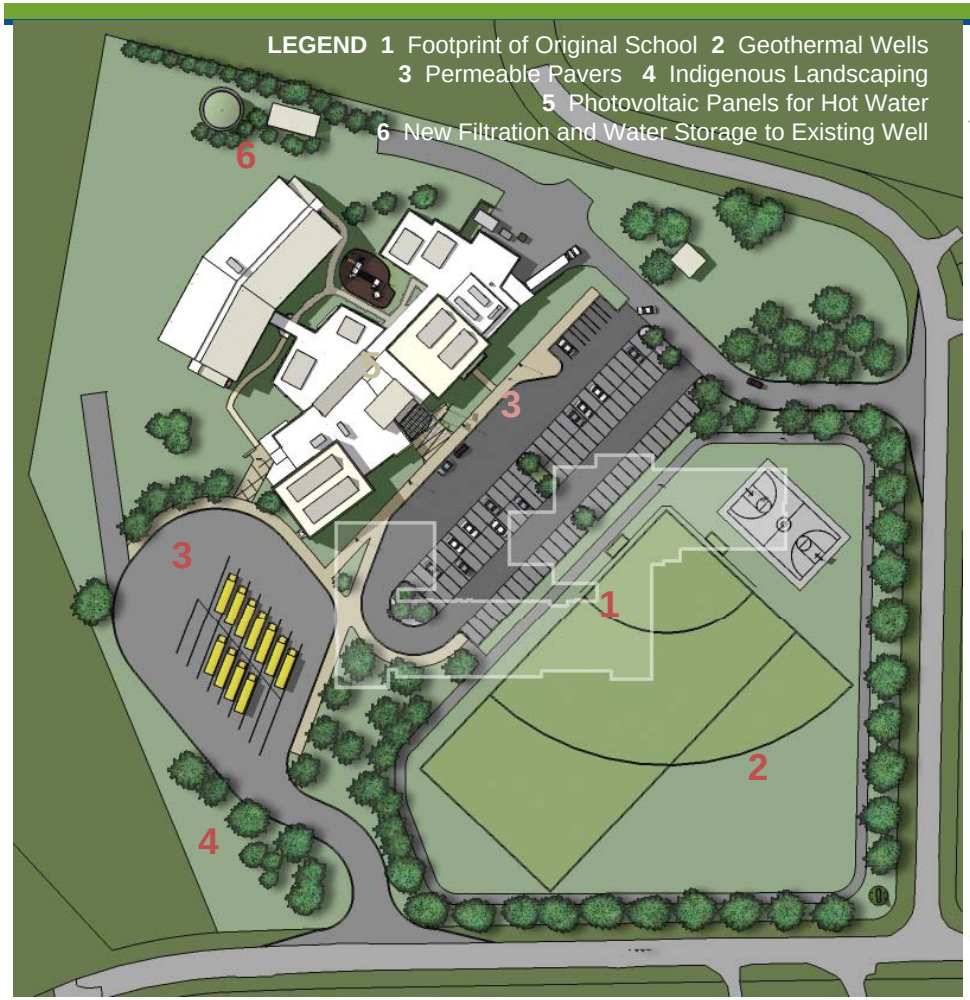
Jury Comments

- Motif of the theme carries though the design
- Provides students opportunity for exterior visibility
- Conscious effort to include day lighting
- Being designed to achieve LEED certification

CIVIC PRESENCE

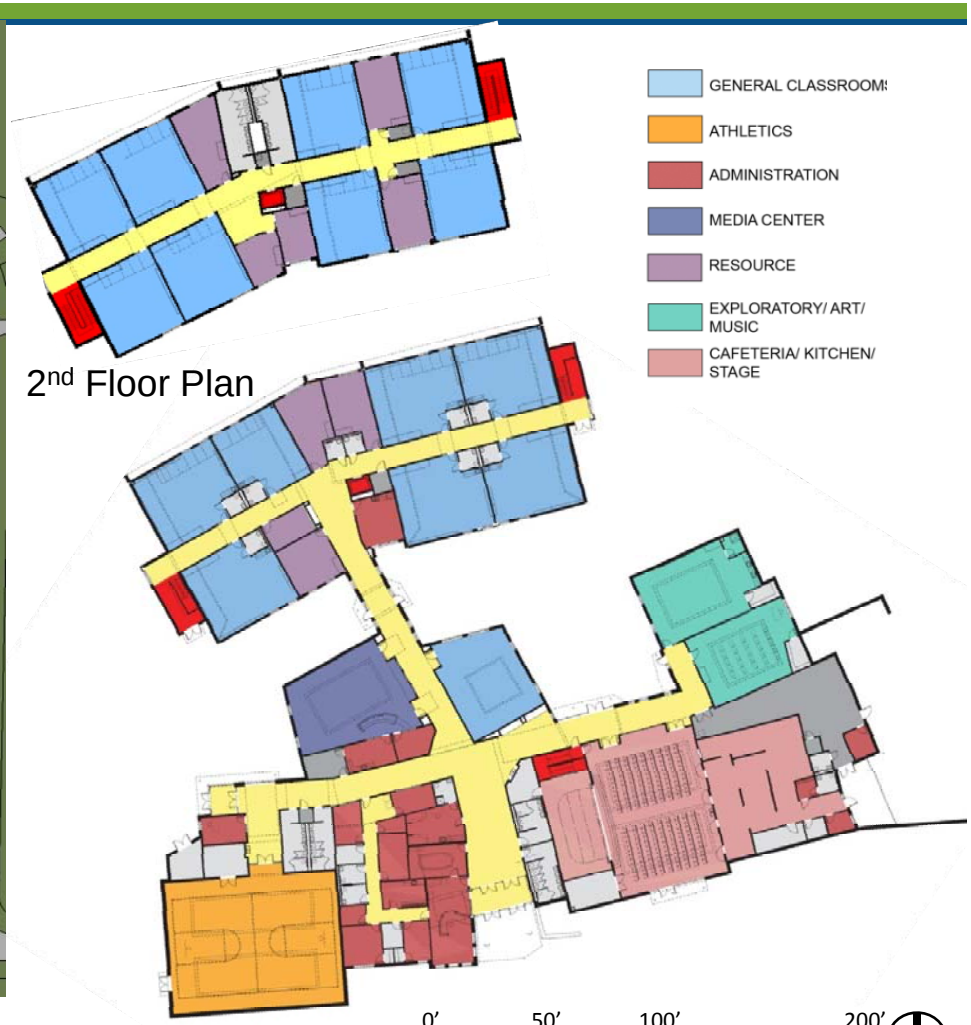
Masons Cove is a new 52,368 SF elementary school in Roanoke County that replaces the original school built in 1961. A feasibility study showed that improvements and additions to the original school would cost 75% of an entire new school.

Roanoke County boldly chose the opportunity to build a new state-of-the-art facility with the challenge of keeping the original school operational during construction.



Site Plan

0′ 50′ 100′ 200′



2nd Floor Plan

1st Floor Plan

0′ 50′ 100′ 200′

SUSTAINABLE DESIGN

Masons Cove will be the first school in Roanoke County to achieve LEED certification. With an emphasis on sustainable features such as geothermal wells, pervious pavements, solar orientation for optimum daylighting, solar hot water, and polished concrete floors, Masons Cove is anticipating a rating of LEED Gold.

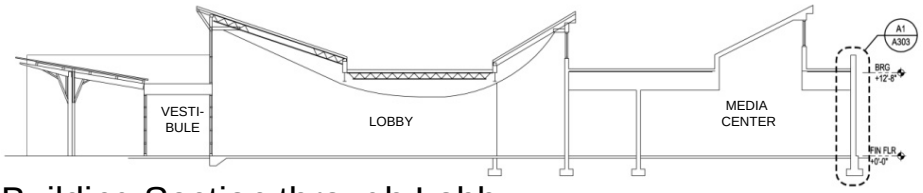
East Elevation

Entry from Bus Drop-Off

SUSTAINABLE DESIGN

The exterior material palette, colors, and rooftop shapes playfully compliment the natural surroundings of tree-covered mountains.

In section, the roofline was determined by opportunities to bring natural light from above the roof when rooms could not afford extensive windows along south-facing walls. **DESIGN NOTE:** *All roofing material meets LEED's reflectivity ratings (albedo) to minimize heat-island effect.*



Building Section through Lobby

SUSTAINABLE DESIGN

The two-story classroom wing is oriented east-west for maximum exposure to the sun. Light shelves mounted on the exterior wall serve two functions: 1) to block direct sunlight from entering low vision windows and 2) reflecting sunlight into the upper clerestory windows increasing the amount of usable daylight **DESIGN NOTE:** *Rooms without interior light shelves have clerestory windows insulated with translucent fiber.*

Typical South-facing Classroom
Upper and Lower Level

North-Facing Classroom
Lower Level

North-Facing Classroom
Upper Level

LEARNING AMBIENCE

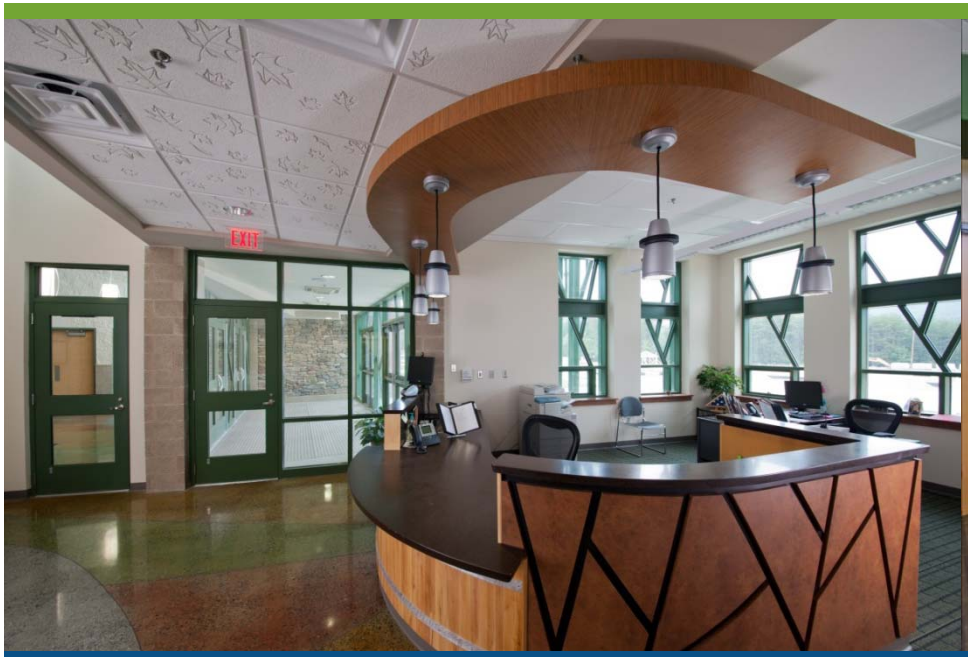
All classrooms are engineered for maximum daylighting through the combined use of vision windows, clerestory windows, and light shelves. The luminance of artificial lighting is controlled and adjusted automatically by sensors with dimmers.

Pictured are three daylighting strategies for classrooms based on their solar orientation and floor level. **DESIGN NOTE:** *Interior light shelves are designed with a pivoting pin-locking system to lower for cleaning.*

Conceptual Building Section Through Daylit Classrooms

LEARNING AMBIENCE

Masons Cove is home of the ‘Eagles’ where the interior design theme evokes a feeling of soaring amongst the sky, mountains, and trees**. DESIGN NOTE:** *Polished concrete floors are sustainable for its low maintenance and high durability.*



SUBTLE SECURITY

The entry sequence from the parking lot is designed for optimum visibility by staff members. Visitors are directed into the reception area before entering the school. **DESIGN NOTE:** *The reception desk is fabricated using wood that is salvaged from the original school's gym floor.*

EDUCATIONAL COMMUNITY

The Media Center (shown above) is one of several spaces that promote collaboration between teachers and students. **DESIGN NOTE:** *The insulation of mechanical equipment and NRC rating of interior finishes exceed the LEED for Schools criteria for acoustic performance in all core learning spaces.*

MULTI-FUNCTIONALITY

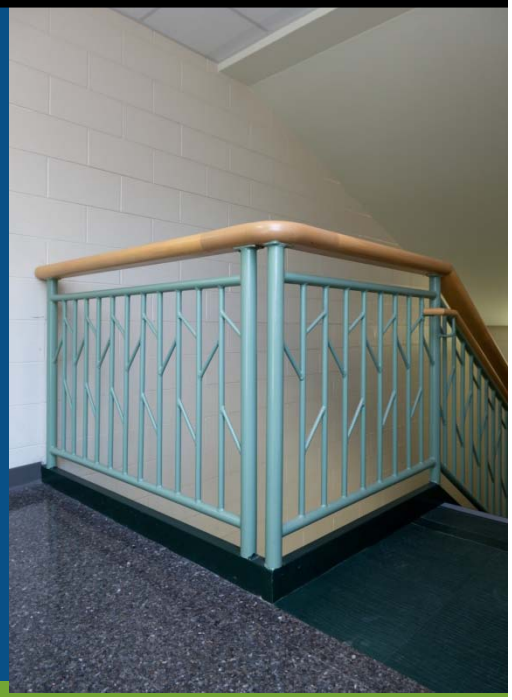
The Cafeteria with stage (above) and Playroom (above right) are adjacent to the parking lots for easy access during after-school activities. Strategically placed security gates prohibit interior access to other parts of the school (except restrooms). **DESIGN NOTE:** *Diffused daylight from roof monitors allow spaces to be occupied without the need of artificial light, as shown above.*

SUSTAINABLE DESIGN

Light baffles, made of awning fabric, are suspended from the ceilings of roof monitors. Their size and spacing is determined by solar angles that prohibit the passage of direct sunlight and heat. Reducing the need for artificial lighting translates into long-term savings in utility costs and energy-usage. **DESIGN NOTE:** *Lowering the air supply ducts significantly reduces the wasted conditioned air that is lost at the ceiling.*

DESCRIPTIVE DATA

Size of Site	10.28 acres
Student Capacity	350
Area of Building	52,368 SF
Total Project Cost	$9,837,000
Cost per Square Feet	$188
Cost per Student	$28,105
Space per Student	150 SF



New Construction

6-12

NEW CONSTRUCTION
6-12

Best New High School Design 2012

Patriot High School

Prince William County Public Schools

Moseley Architects

Jury Comments

- Well designed outdoor courtyards/spaces
- Good learning designed spaces
- Well scaled effective entrance
- Good use of outdoor fields
- Interesting palette of colors –inspiring and relaxing

PATRIOT HIGH SCHOOL

The new two-story, 312,000-square-foot high school was constructed in Prince William County to serve continued growth in student population. As an update to the existing high school prototype previously constructed four times, the plan was revised to introduce more natural light.

The building features an axial design in which the main public and student spaces are located off three primary axes. Upon entering the main public entrance, one of the two student commons and the gymnasium entrance are located along this main entry axis. A parallel axis organizes the second student commons and the entrance to the auditorium. These student commons spaces, separated by a shared kitchen, serve as the dining areas as well as overflow lobbies for the gymnasium and auditorium. The third perpendicular main student axis organizes the two main student commons, art rooms, media center and two interior courtyards that provide natural light to interior academic spaces. Clerestory windows above the entry, student commons, gymnasium, and second floor academic corridors provide natural lighting to spaces below.

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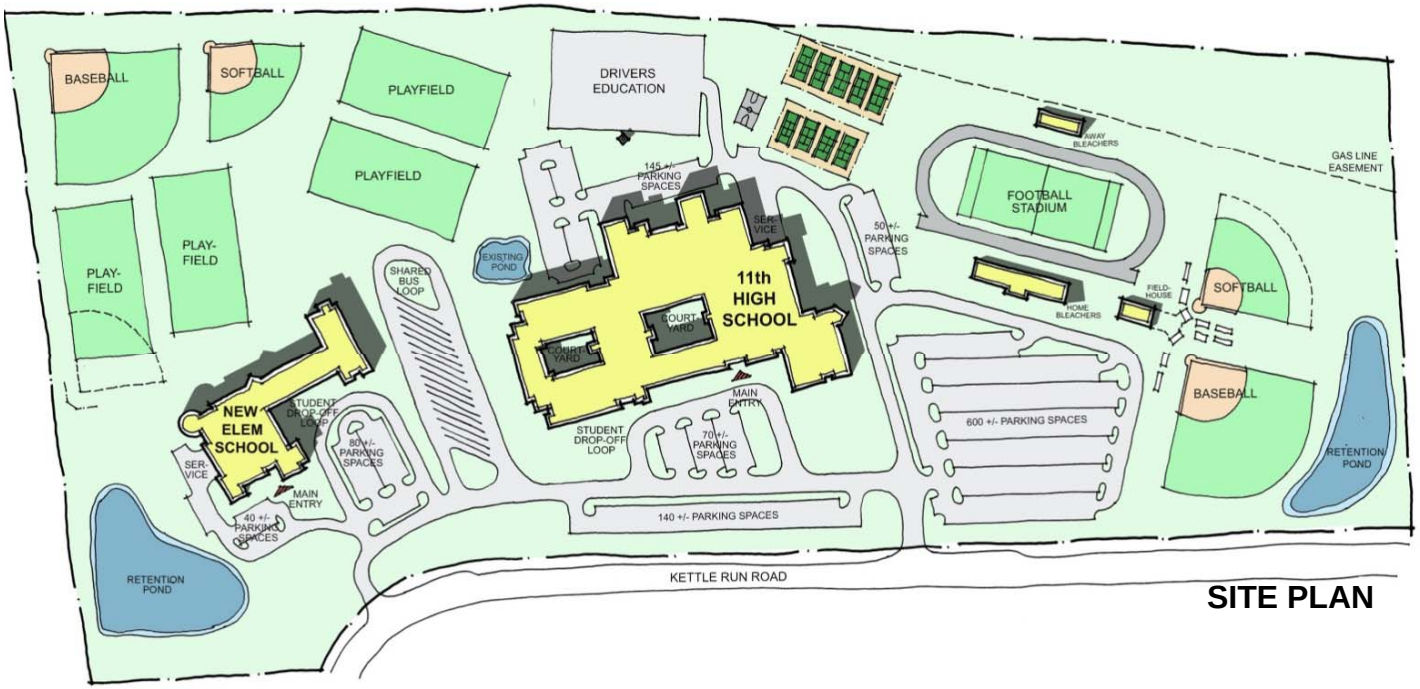

SITE PLAN

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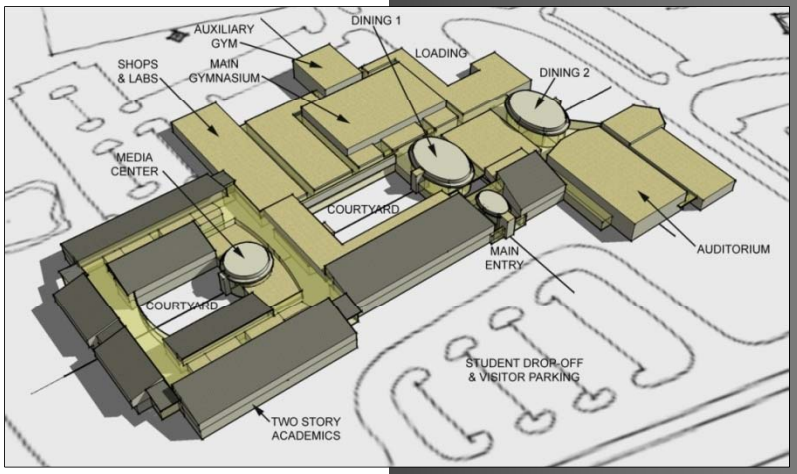
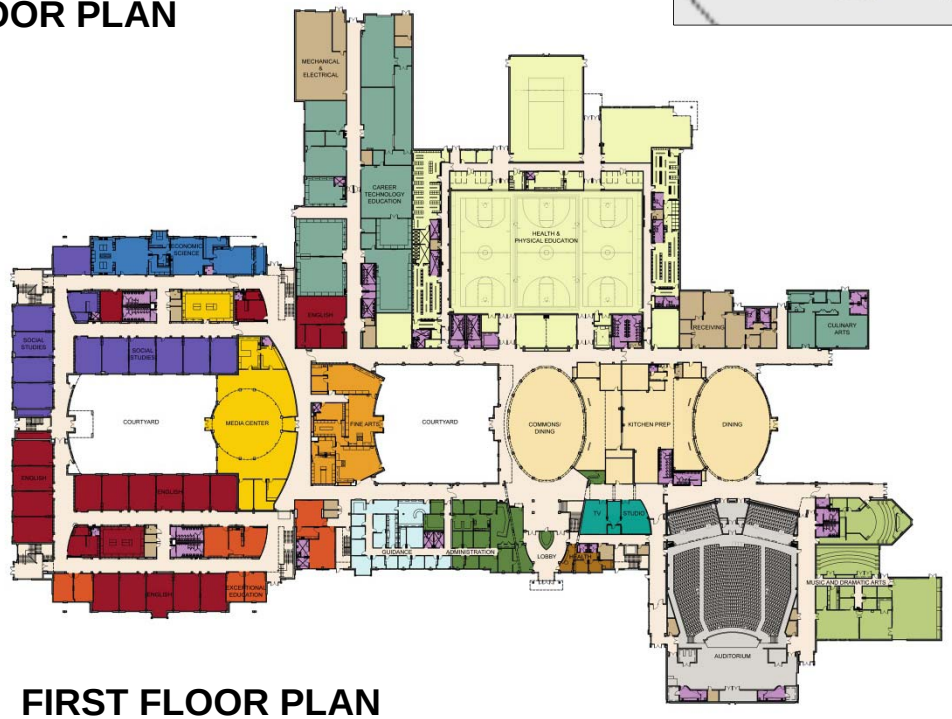
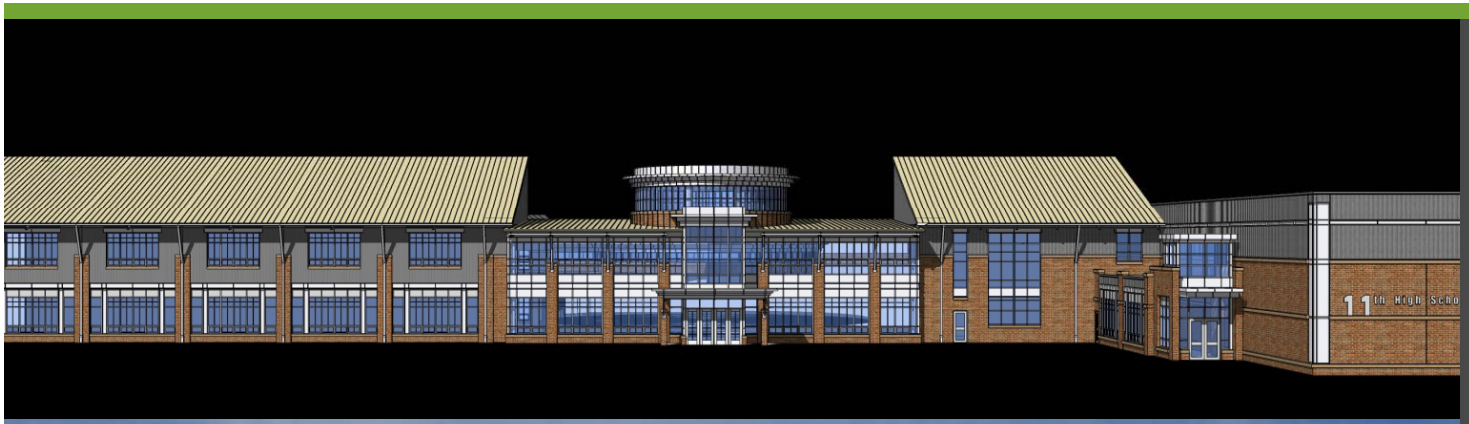
DESIGNING BEYOND THE 3Rs

SECOND FLOOR PLAN

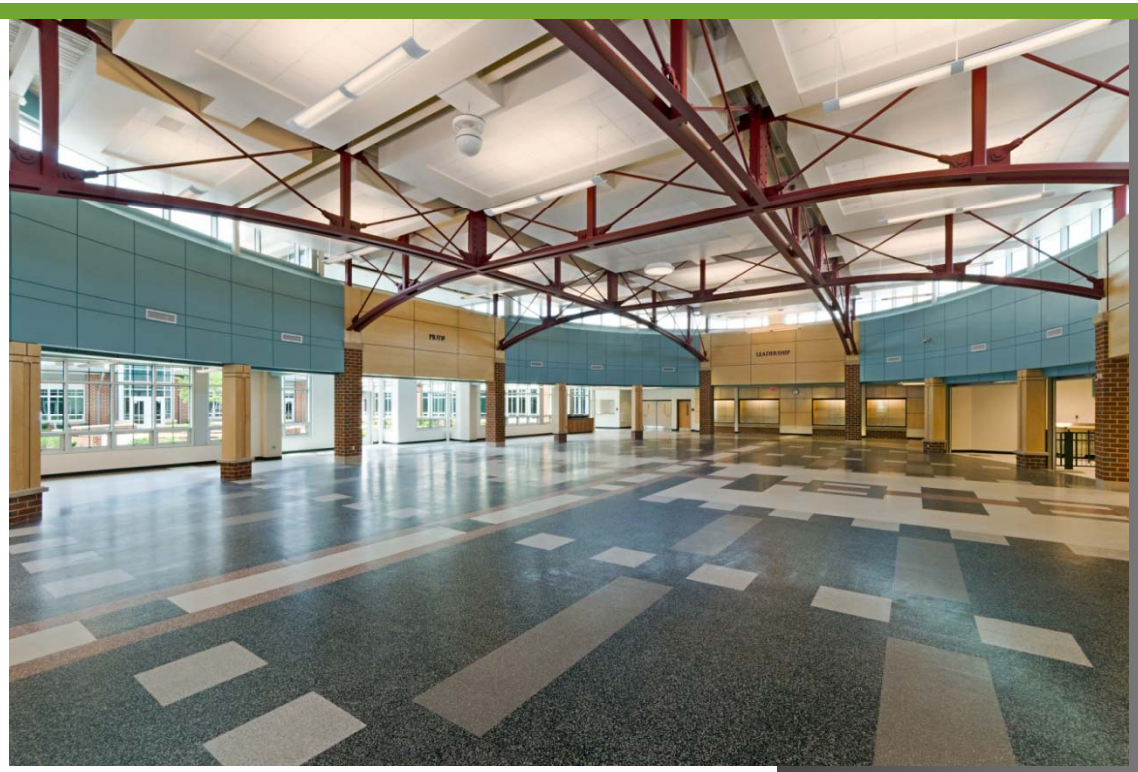


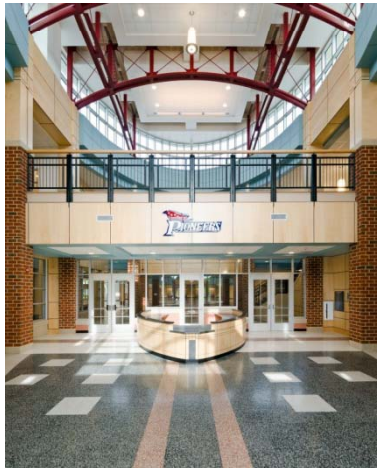


FIRST FLOOR PLAN

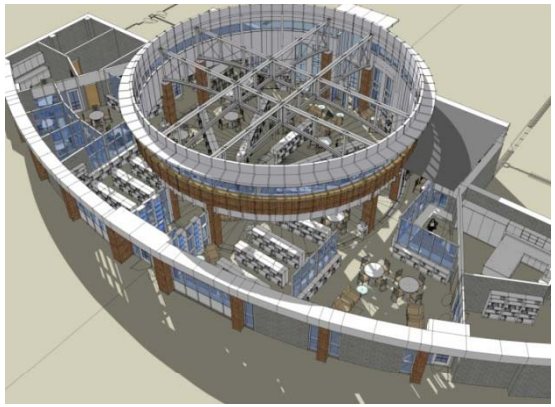


MAIN ENTRANCE



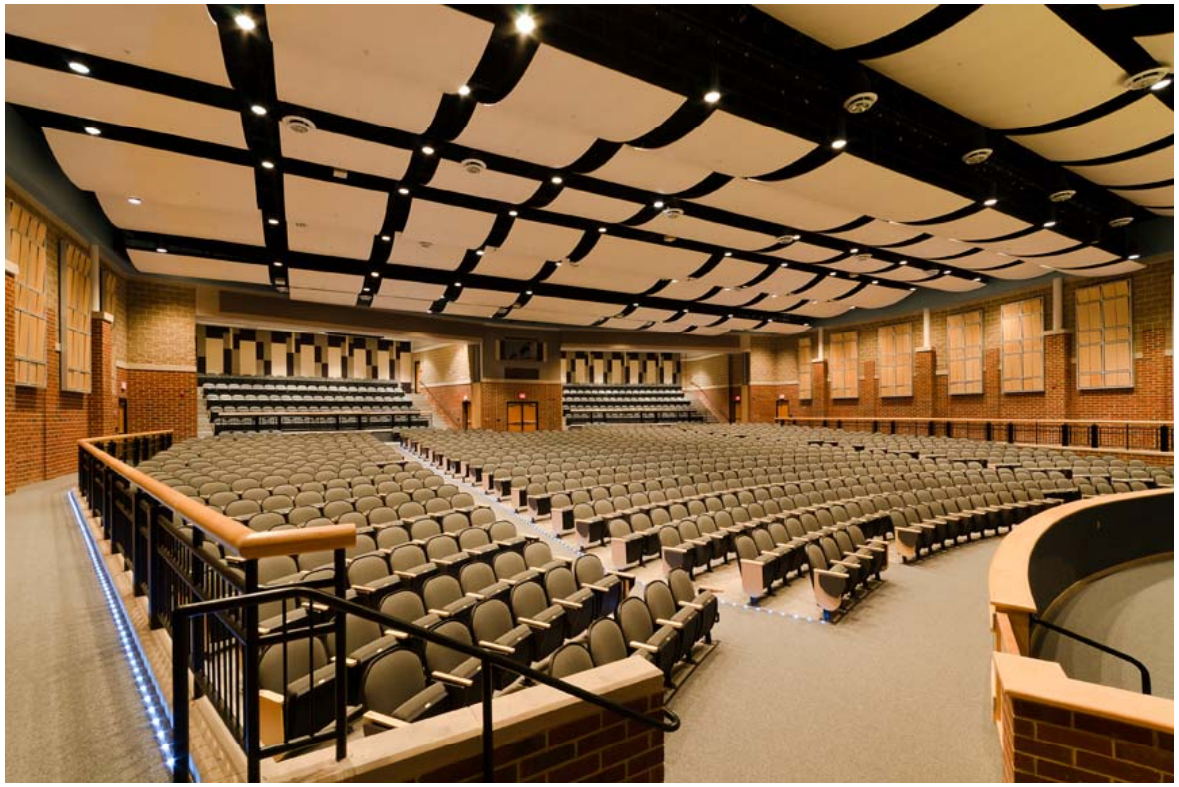


INTERIOR CIRCULATION



MEDIA CENTER

AUDITORIUM



OUTDOOR SPACES

Descriptive Data

- Site size: 94 acres
- Student capacity: 2,200
- Area of building: 312,067 sf
- Total project cost: $70,699,000
- Cost per square feet: $227 including site
- Cost per student $32,136/ student including site
- Space per student 142 sf

Other Educational Projects

OTHER EDUCATIONAL PROJECTS

Award for Design Excellence 2012

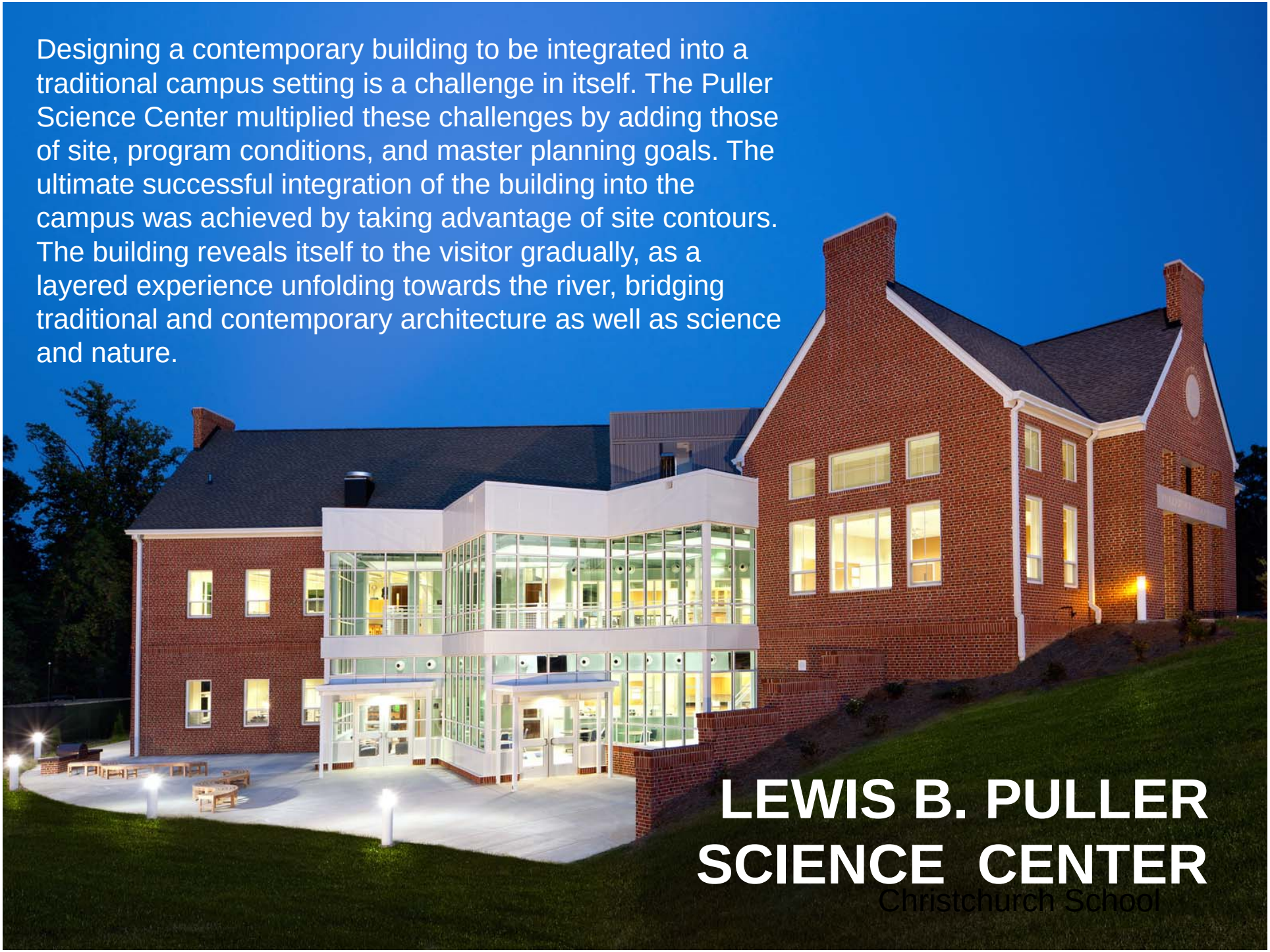
Christchurch School

Puller Science Center

BCWH Architects

Jury Comments

- Sense of collaboration and lightness throughout design
- Nice utilization of spaces for learning
- Good combination of traditional and modern design
- Open window walls provide view of the outside and the natural environment

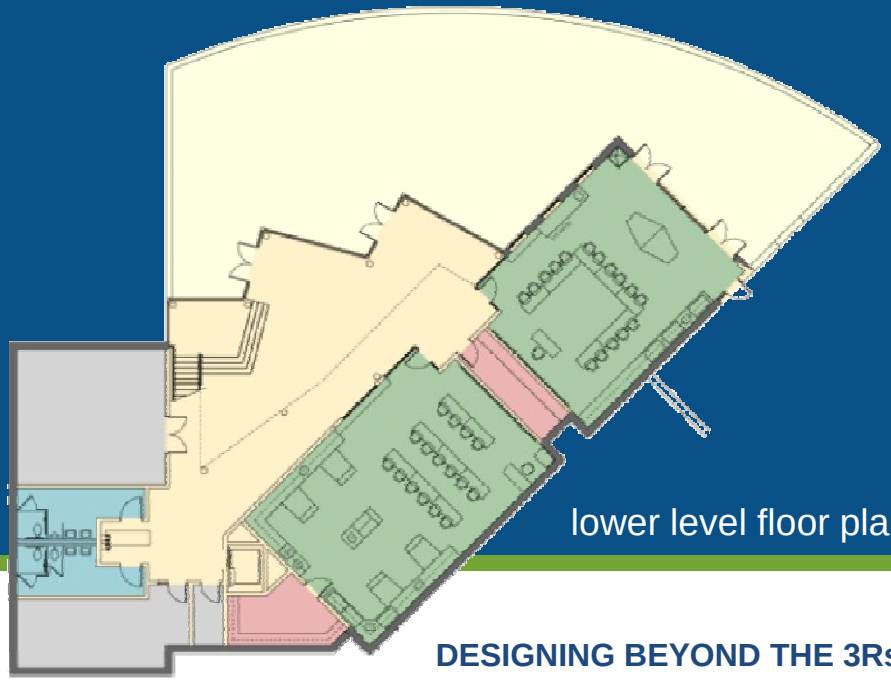

Designing a contemporary building to be integrated into a traditional campus setting is a challenge in itself. The Puller Science Center multiplied these challenges by adding those of site, program conditions, and master planning goals. The ultimate successful integration of the building into the campus was achieved by taking advantage of site contours. The building reveals itself to the visitor gradually, as a layered experience unfolding towards the river, bridging traditional and contemporary architecture as well as science and nature.
LEWIS B. PULLER SCIENCE CENTER
Christchurch School

The Puller Science Center at Christchurch School was designed to respond to the functional and educational program as well as the topography of the selected site while seamlessly blending into the campus architecture.

The program was developed in collaboration with the science department and involved aspects of the Christ church mission. The program included spaces and activities that influenced the location of the building on campus which helped establish the site selection criteria.

The planning process engaged all stakeholders, from the science faculty and the administration, to the building and finance committees. This was a highly collaborative exercise of obtaining feed-back from all and distilling this information to assess the essentials meeting the Owner's criteria for the building.

upper level floor plan



lower level floor plan

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The grading contours were designed to help enhance some of the building's design features while minimizing its presence on the campus side. Situated across from two of the campus' main landmarks, the Headmaster's House and the Bell Tower, the traditional side of the building offers an unpretentious counterbalance to these and complements them without standing out.

Other considerations in site selection were the school's desire to pursue sustainability as part of their building strategy, the school's long term campus master plan goals, and the school's philosophical connection to the Rappahannock River.

The project included the demolition of two one story brick structures, two tennis courts and an existing pool in an attempt to restore as much of the hillside as possible and minimize additional impervious areas on site.

One of the first steps during programming was to understand the educational mission of the science department within the larger picture of the school's educational philosophy. Having the benefit of being involved in the overall campus master plan, BCWH was familiar with the school's needs and goals for the future and therefore able to view the science building from a broad vantage point. The campus present and future connections to the science building were studied from the perspective of the educational needs and objectives. It was agreed during programming that the visual as well as functional connections to the river should be an essential feature of the design.

The building was shaped to fit into the hillside naturally to embrace the best views of the River. The gesture of nesting the building into the hill side and its orientation to the sun created an energy efficient building while successfully integrating it into the campus architecture.

The building was conceived as a series of interconnecting science-related experiences that revolved around a common, multipurpose space overlooking the river and hosting anything from science fairs and lectures to community events. As a programming condition, each of the labs had a visual connection to the commons and therefore an extended view of the hillside/river area.

The new labs are equipped with cabinet storage and the latest in instructional technology. Chemistry and biology labs accommodate separate seating arrangements for lab and lecture while physics and marine/environmental science labs allow flexible seating arrangements for changing functions.

The labs have been designed to facilitate collaborative activities in both teaching and learning, and storage and support spaces have been created to supplement teaching needs for laboratories and classrooms. For example, the teacher workroom provides collaborative space for the teachers at a location that allows them to oversee the commons space and restroom access.

Outdoor classroom set ups are readily available on the patio extending the commons into the hill side overlooking the river. The building and lab layouts emphasize collaboration and a permanent connection to the outdoors, and create a direct link to the marine and environmental science curricula connected to the river.

Sustainability is a major part of Christchurch's mission and goals as an institution and was therefore integral to the design of the new Puller Science Center. The building achieved **LEED certification** in the Spring of 2011.

The placement of the project on site maximizes the open space, in addition to controlling the quantity of storm water through grading and landscape. The Center minimizes the heat island effect through lessening paved surfaces and using a high-albedo pavement for hardscape. The surrounding site features water-efficient landscaping by using native vegetation and no irrigation. The interior of the building reduces water use through the use of low-flow fixtures and waterless urinals. The energy performance of the building is optimized with a mechanical system that is 21% more efficient than the standard system.

During construction, over 60% of the construction waste was diverted from land fills and all materials include over 10% recycled content. Over 20% of the materials used to construct the building were obtained from local and regional sources. In addition, the indoor air quality was managed during construction and a "flush-out" was performed before occupancy. All paints, adhesives, sealants, and carpets used throughout the science center are low emitting materials. The lighting and thermal comfort systems are controllable by the user to maximize efficiency. Lastly, through the use of windows, glass, and building orientation, day-lighting is abundant throughout the building

PROJECT IDENTIFICATION

SITE SIZE: 2 acres

STUDENT CAPACITY: 112

AREA OF BUILDING: 12,000 SF

TOTAL PROJECT COST: $ 2.78 M

COST PER SQFT: $231

COST PER STUDENT: $24,830

SPACE PER STUDENT: 107 SF