2013 Exhibition of School Planning and Architecture

Sudlersville Middle School

Sudlersville, Maryland

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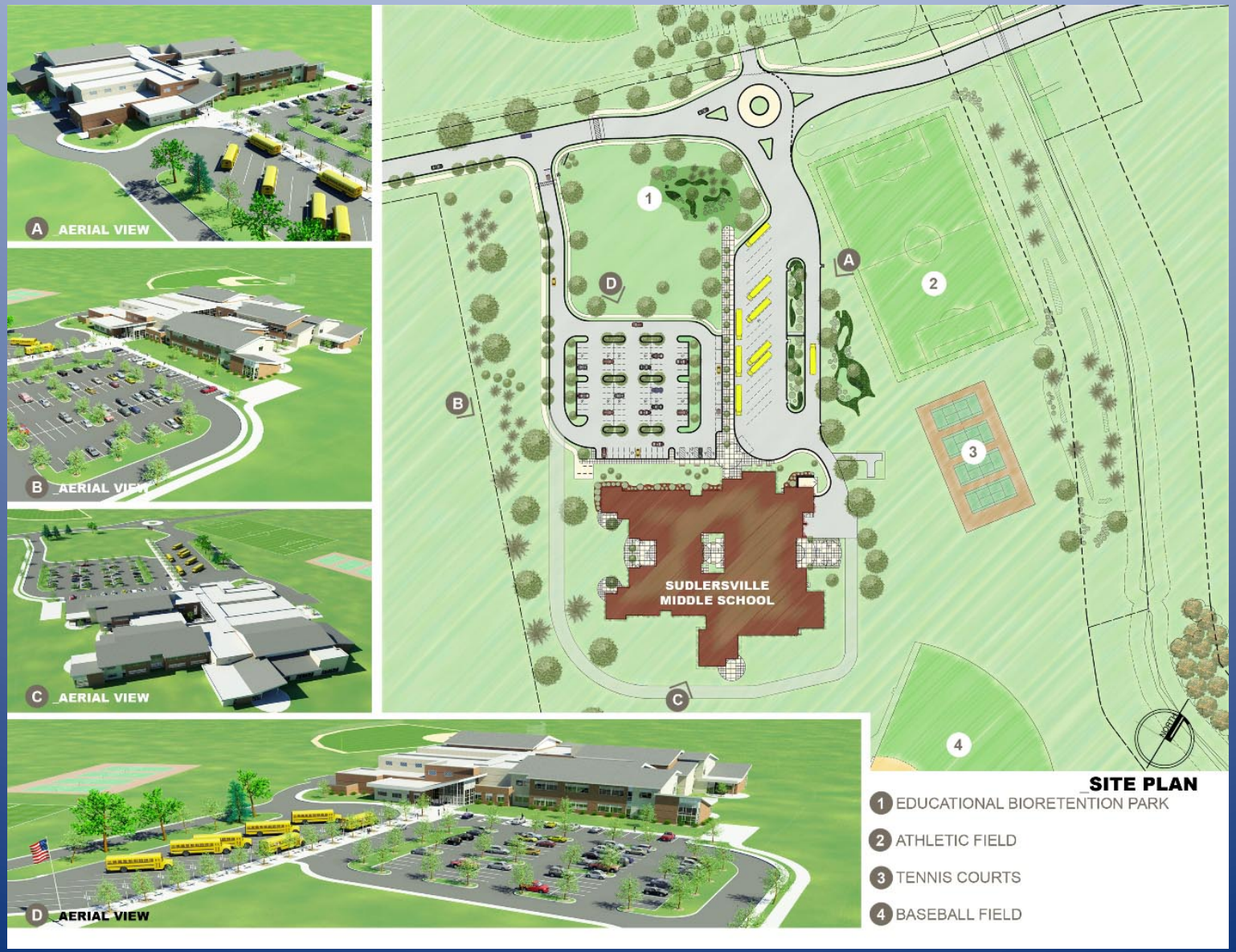


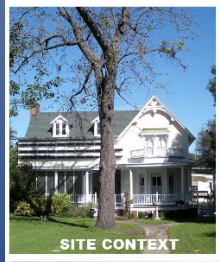
Community Environment

Queen Anne's County Public Schools charged the Design team to develop a middle school for the community of Sudlersville for future generations, the current facility no longer met the needs of the community and due to its location, it unfortunately could not be economically expanded. Throughout the development of the building the client wished to develop a building the client wished to develop a building that looked toward a modern view of educational architecture and yet pay respect to the vernacular architecture of the surrounding community. This led to a design that breaks down the building to a residential scale, acknowledging the quality of masonry detailing on the original middle school and reinterprets the form and details found in the community.

SITE/ CONTEXT

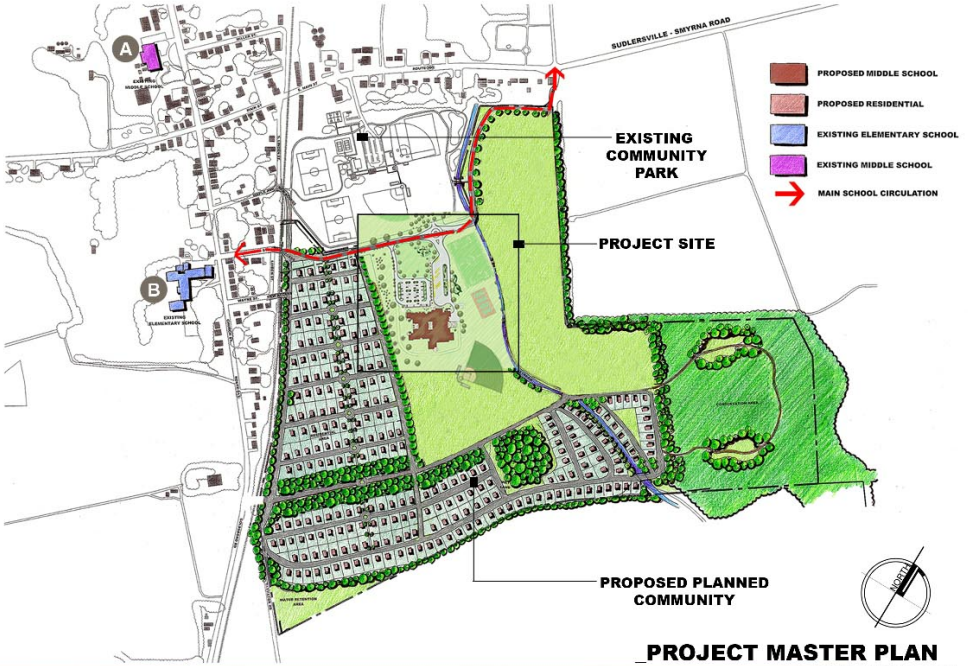
A _EXISTING MIDDLE SCHOOL

B _EXISTING ELEMENTARY SCHOOL



_SITE CONTEXT

This project is in Maryland's Eastern Shore, located near the intersection of S.R. 300 and S.R. 313 in the town of Sudlersville. The project site is part of roughly a 100 acre former farm that is adjacent to the city's large community park and walking distance to the historic center. The 25 acre project site sits back off of S.R. 313, of which the existing middle school and an elementary school are sited in the town. A Master Plan for the entire site ties the project site into the existing community park with trails and playfields and to the historic center with a grid of roughly 235 proposed residential sites. The proposed low-lying building is a modern interpretation of the local agrarian architecture through broken down building massing and dramatic sloping roofs.



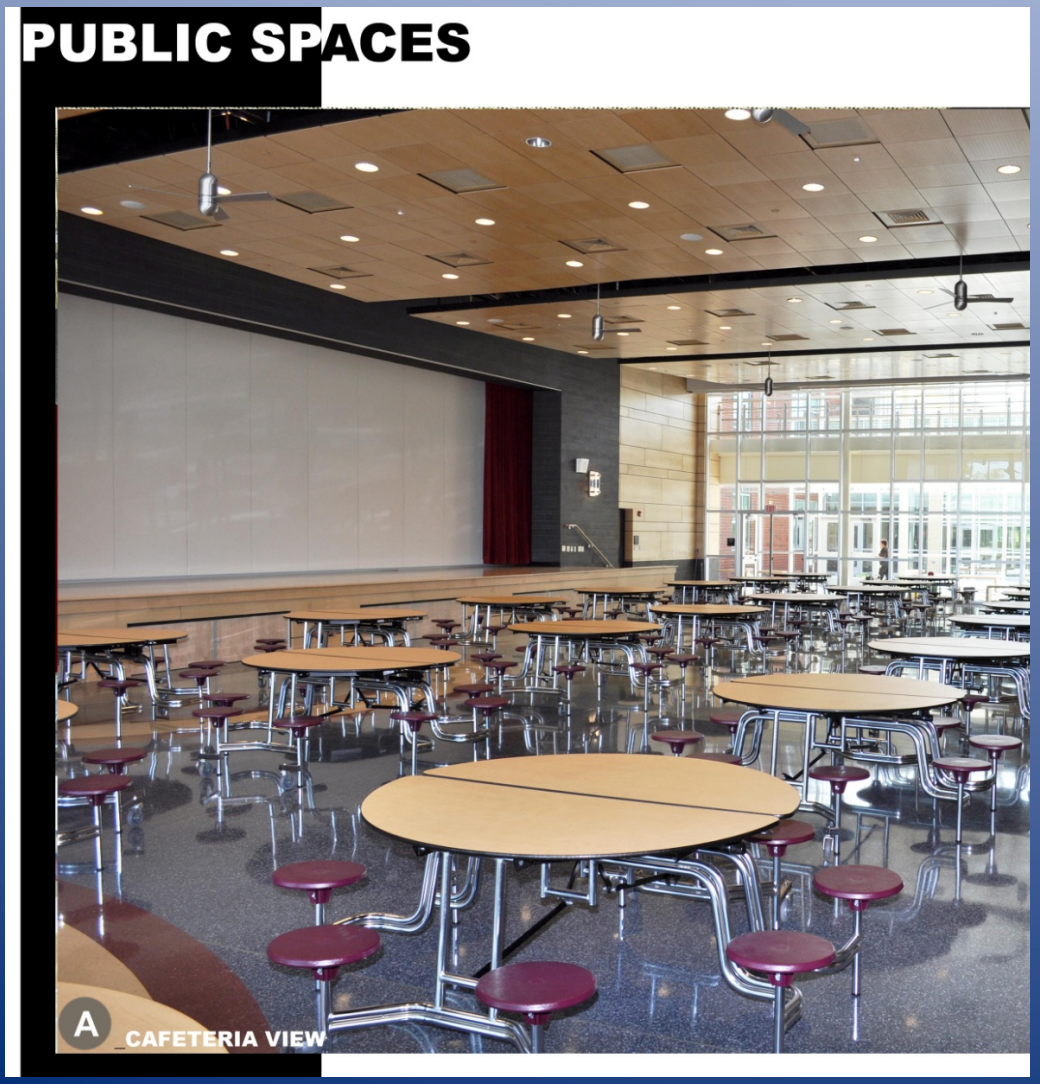
_PROJECT MASTER PLAN

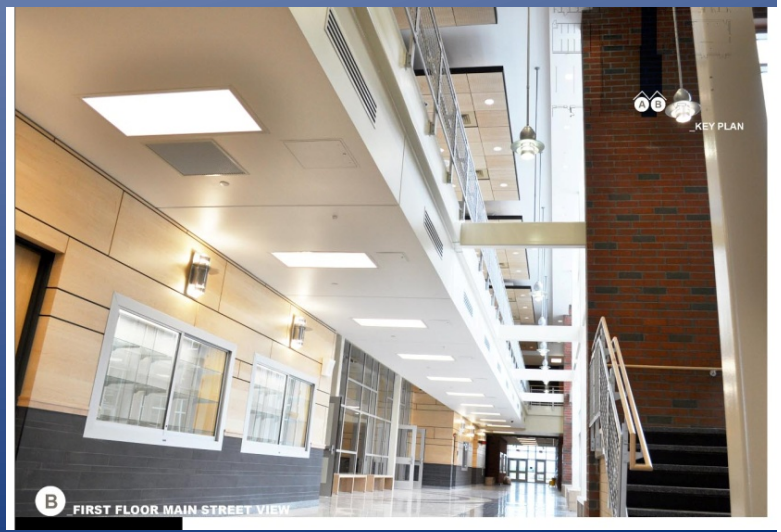
PROJECT SITE VIEW

_PROJECT SITE VIEW

Public Space

Community Environment: The final design created a main corridor that separates the public and private educational components of the middle school. The two primary public program pieces are the cafeteria and gymnasium which are naturally daylit from windows, clerestory and skylighting. Cafeteria and Gymnasium are connected by a stage that can be reconfigured by movable partitions accommodating either space. Classroom wings were organized to allow security separation after hours for community use.



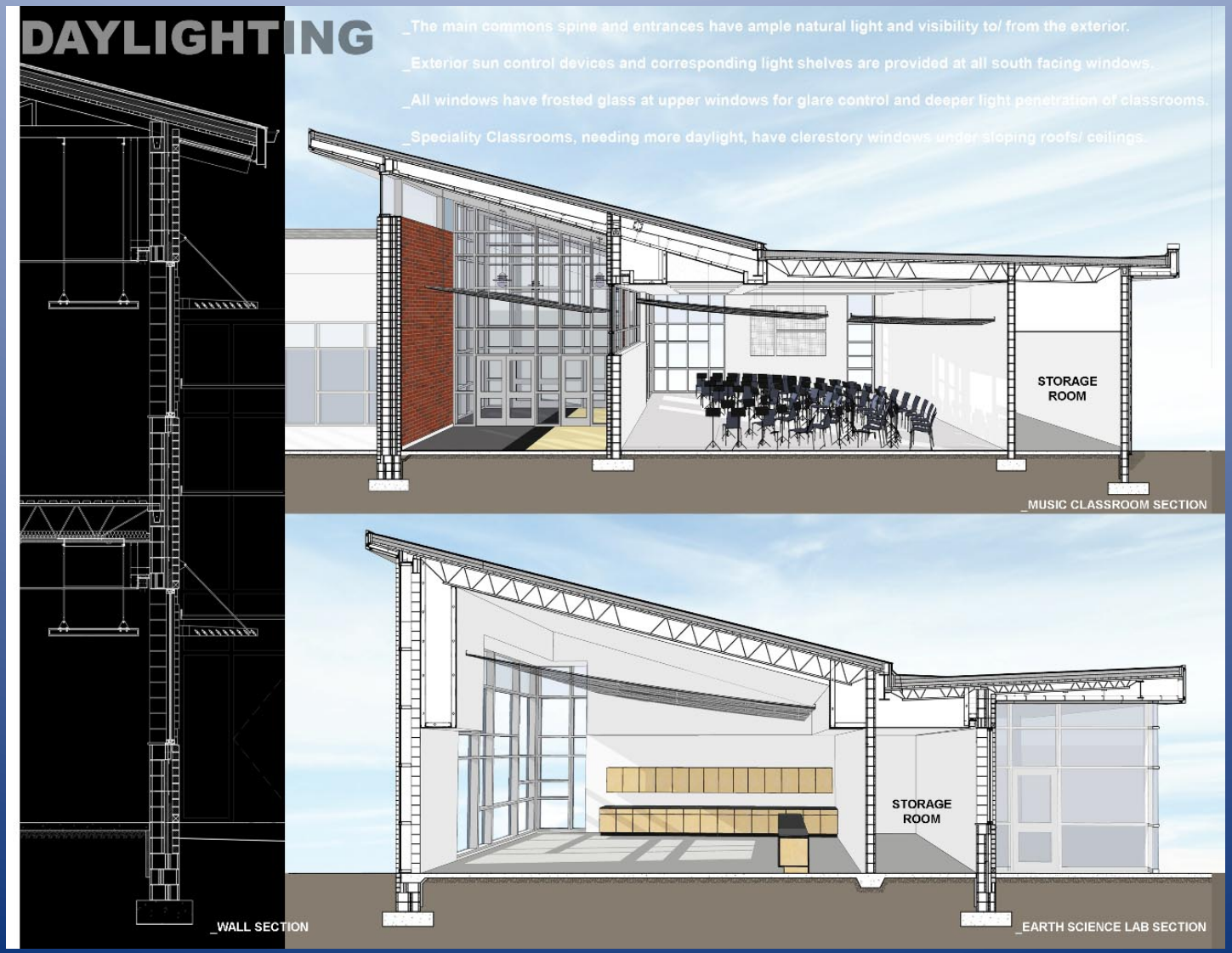


Learning Environment

Classrooms were organized into a north south orientation to maximize daylighting. A geothermal ground source heat pump system was utilized not only for energy efficiency but to have systems remote to classrooms to minimize acoustic disturbance to the classrooms in tandem with acoustical wall treatments in all educational spaces.

Learning Environment

Daylighting of educational spaces was a primary concern from the beginning of the project. The design utilized daylight modeling and BIM modeling to generate a building that naturally daylights more than 76% of the building. This was accomplished with the use of clerestory windows, fritted glass to refract light, exterior and interior light shelves to control glare and diffuse light deeper into classrooms. This in combination with daylight sensors to reduce energy use by lighting and automated motorized roller blinds creates a daylit building encouraging education.



Residential Connection

Physical Environment – The final building was designed for more than 600 students, however the building is knitted into a small residential rural community. For this reason it was discussed from early in the design to break down the scale of the facility and create residential (vernacular) forms to the building and classroom wings.

Sustainability and School as a Teaching Tool

Physical Environment – **Sustainability includes a final building that reduces energy use by 43.9%,saving $122,073 per year based upon national standards, reduces water consumption by 54.6%, and naturally daylights 76% of the educational spaces in the building. The school system also wished to integrate sustainability into the curriculum. This included educational display walls, interactive touch screens that tie into the building control systems and science classroom lesson plans based upon sustainable design. A photovoltaic array was also added to the building as much for its educational qualities as energy benefits.**

SUSTAINABILITY

SUDLERSVILLE MIDDLE SCHOOL

BID SEPTEMBER 2009
600 STUDENTS
SUDLERSVILLE, MD

OVERALL*

*PROJECTED

46.3%
TOTAL ENERGY SAVINGS / YEAR

$156,551
ANNUAL ENERGY COST SAVINGS

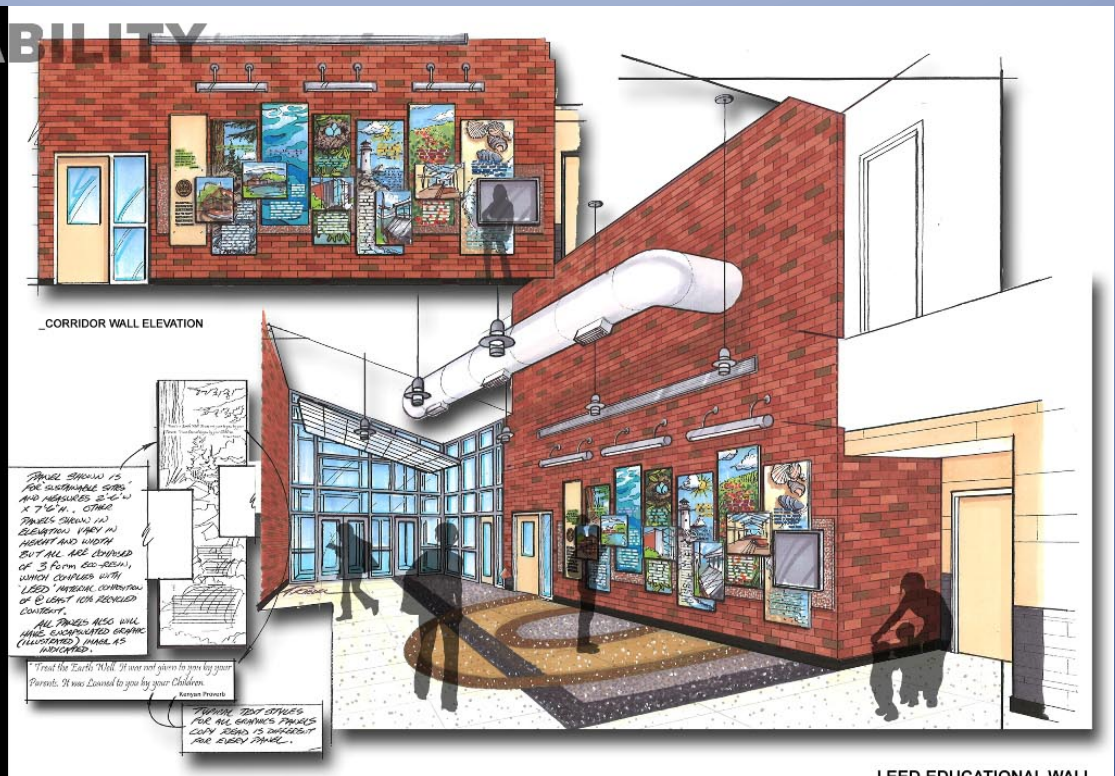
76.7%
DAYLIGHTED EDUCATIONAL SPACES

48.8%
WATER REDUCTION

LEED FACTS*

Anticipated Gold Certification	
Sustainable sites	8/16
Water Efficiency	5/7
Energy & Atmosphere	14/17
Materials & Reasources	6/13
Indoor Environmental Quality	15/20
Innovation & Design	5/6

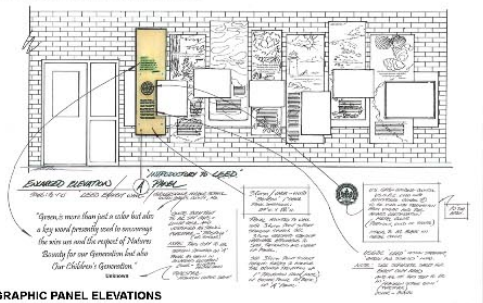
** Proposed 53 out of possible 79 points*



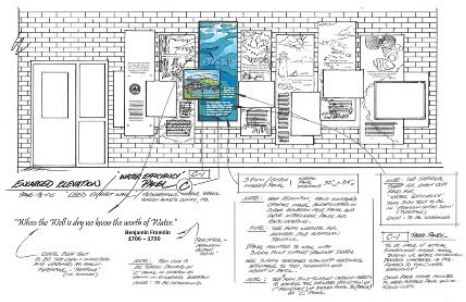
_CORRIDOR WALL ELEVATION

_ENLARGED VIEW OF GRAPHIC PANEL

_LEED EDUCATIONAL WALL

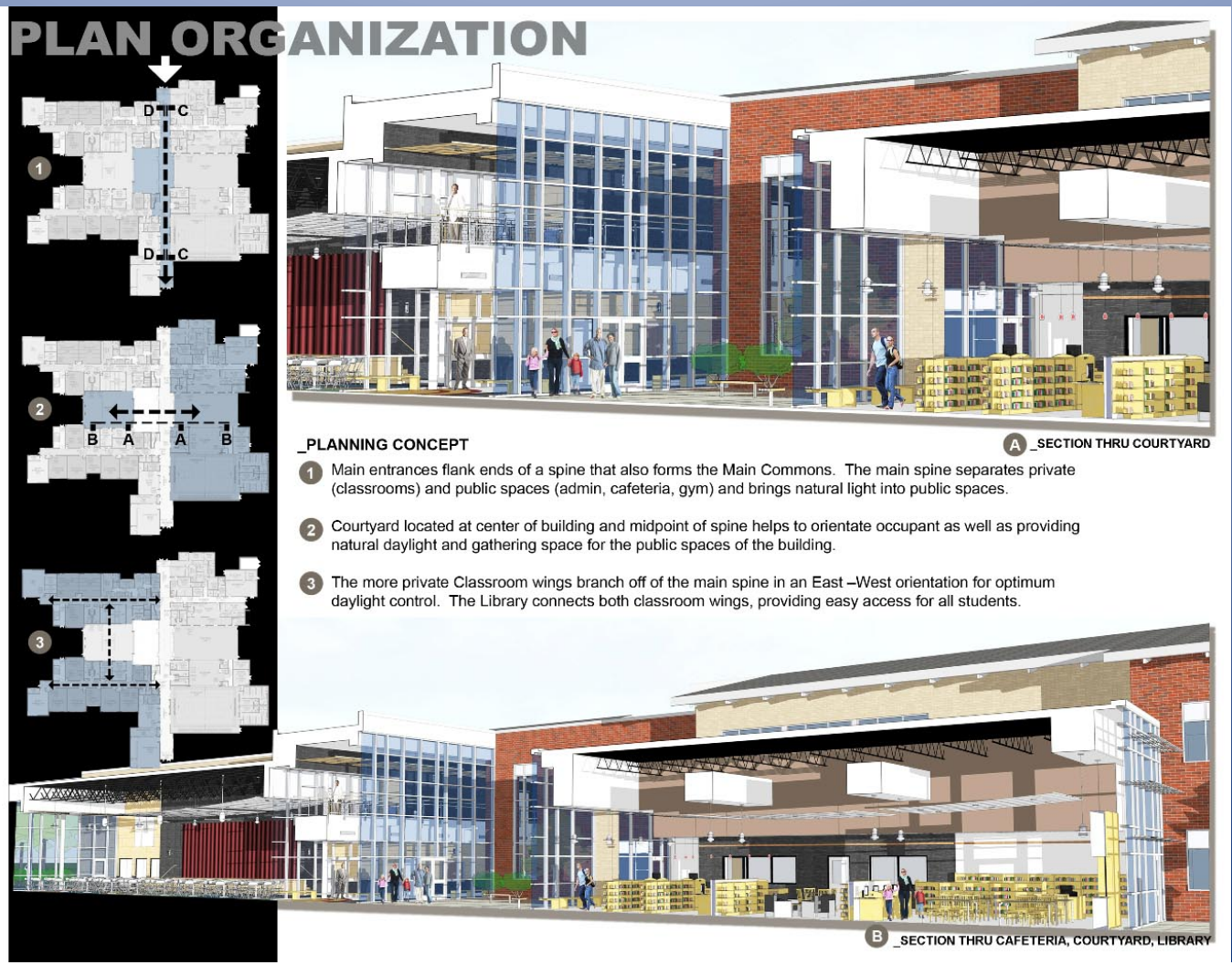


_GRAPHIC PANEL ELEVATIONS

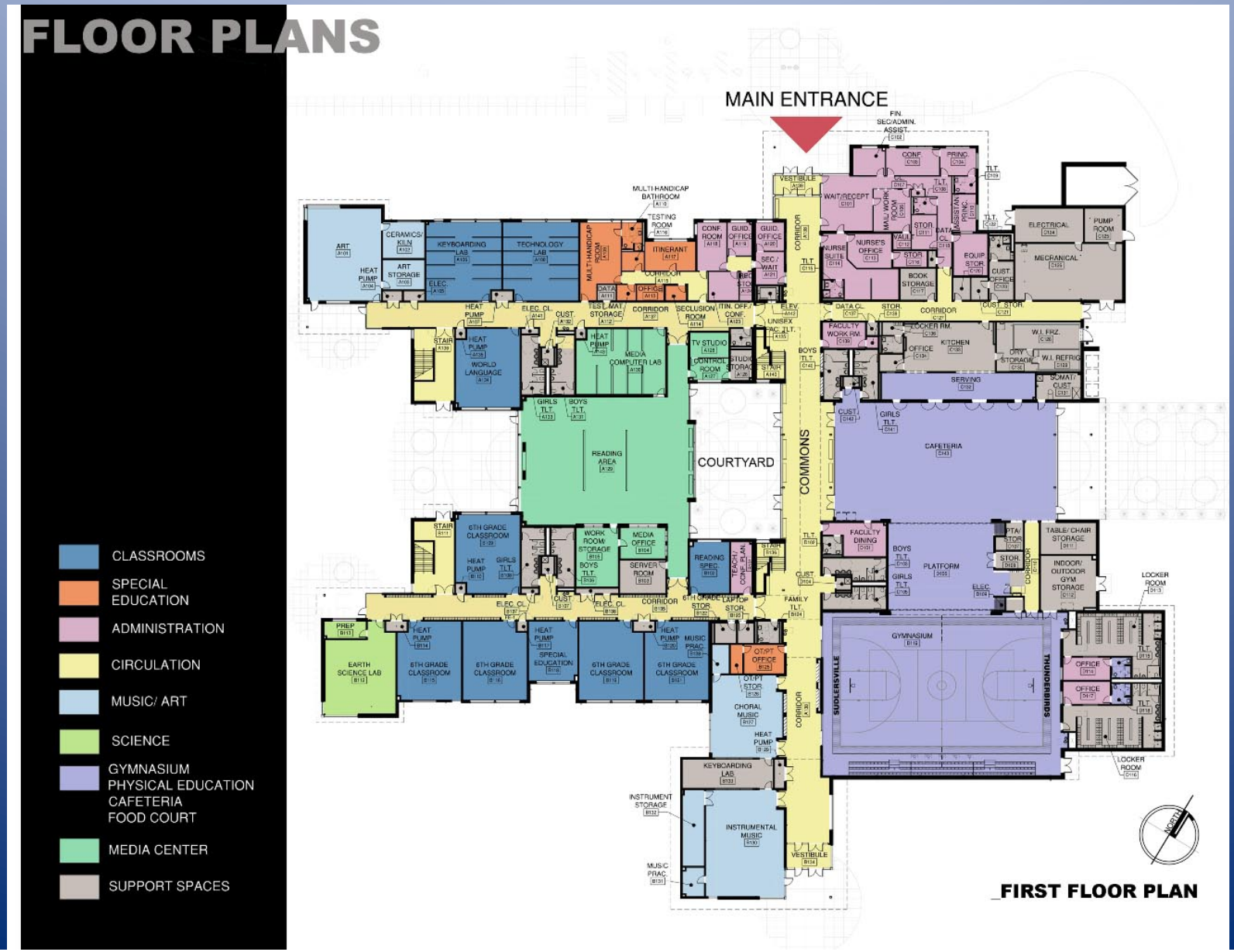


Individual Ownership in the Building

Planning Process: Early in the process the client created a design team made up of not only architects and engineers, but from the client consisting of Senior Administration, School Board Members, Curriculum Directors, Teachers, Janitorial Staff and Students and Community Members. Some of the involvement in the planning process revolved around community meetings, presentations, workshops and charettes, and many of the members mentioned were involved in "signing off" at schematic, design development and final drawing completion. A common theme throughout the project was that all stakeholders had a voice in the development of their school for the next 30-40 years. While most goals were met, some "wish list items" were not achievable, but with the invested effort of all stakeholders, everyone understood how the project achieved it's final design and gained community support.



First Floor Plan



Second Floor Plan

Exhibition of School Planning and Architecture

Project Data

Submitting Firm :	Crabtree, Rohrbaugh & Associates Architects
Project Role	Architect
Project Contact	Jeff Straub, AIA
Title	Director
Address	401 East Winding Hill Road
City, State or Province, Country	Mechanicsburg, PA
Phone	717 458 0272

Joint Partner Firm:	
Project Role	N/A
Project Contact	
Title	
Address	
City, State or Province, Country	
Phone	

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

Construction Firm:	
Project Role	N/A
Project Contact	
Title	
Address	
City, State or Province, Country	
Phone	

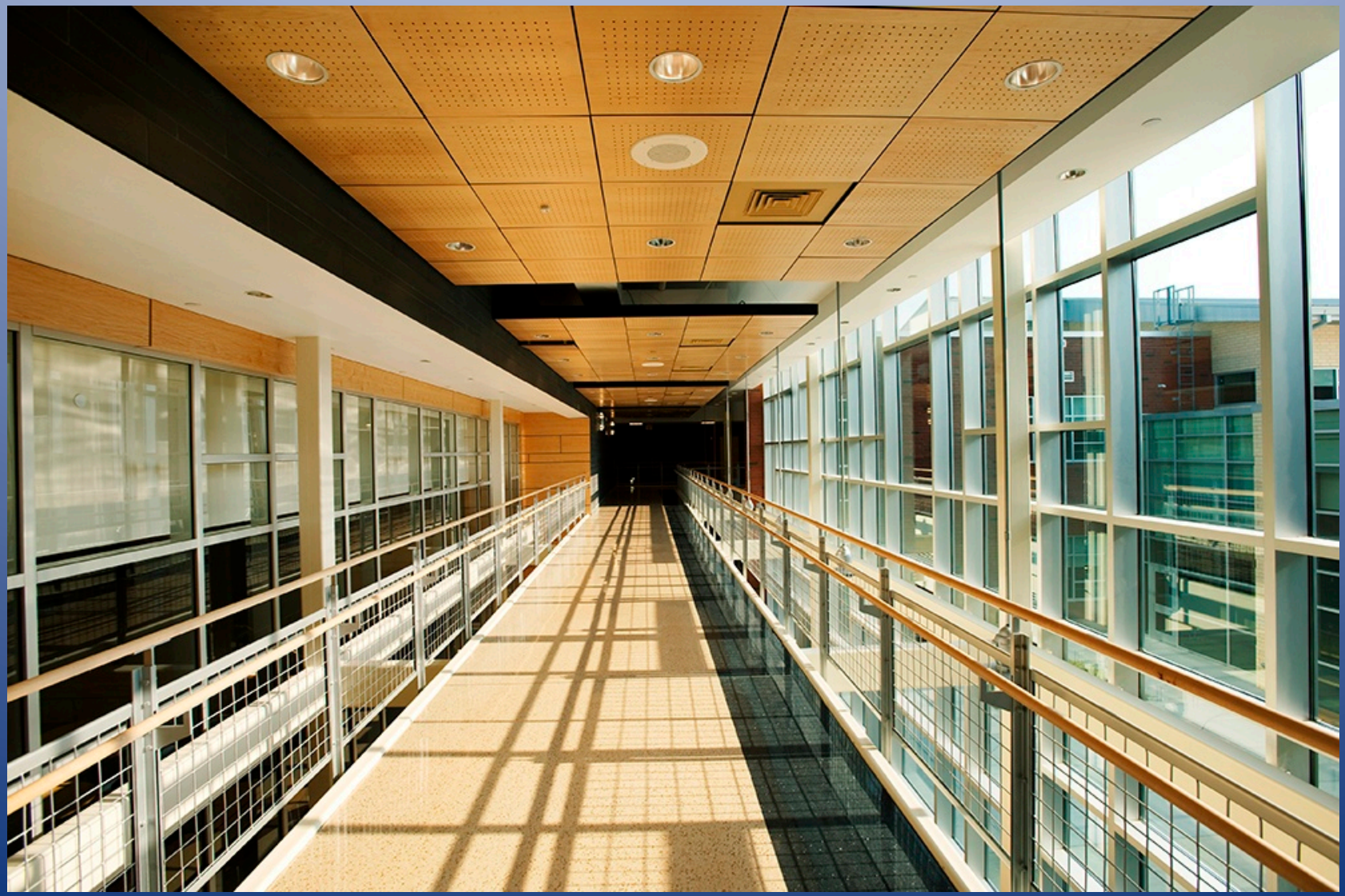
Exhibition of School Planning and Architecture

Project Details

Project Name	Sudlersville Middle School
City	Sudlersville
State	Maryland
District Name	Queen Anne's County Public Schools
Supt/President	
Occupancy Date	July 2011
Grades Housed	Sixth through Eighth
Capacity(Students)	600 Students
Site Size (acres)	23 Acres
Gross Area (sq. ft.)	100,884
Per Occupant(pupil)	206
gross/net please indicate	Gross
Design and Build?	Yes
If yes, Total Cost:	$23,203,000
Includes:	Site and Building Cost
If no,	
Site Development:	
Building Construction:	
Fixed Equipment:	
Other:	
Total:	

Main Corridor

2nd Floor Bridge



Library

Gymnasium