Dover Area School District

Qualifications Prepared for:
Architectural/Engineering Services for a 9th Grade through 12th Grade
High School Building Project

August 8, 2016

Crabtree, Rohrbaugh & Associates - Architects
August 8, 2016

Dave Nelson  
Facilities Manager, Safety & Technology  
Dover Area School District  
101 Edgeway Road  
Dover, PA 17315

Dear Mr. Nelson:

We are pleased to provide you with Crabtree, Rohrbaugh & Associates’ proposal for the Dover Area School District’s 9th Grade through 12th Grade High School Building Project. We are looking forward to the opportunity to continue working with the School District on your high school facility. Crabtree, Rohrbaugh & Associates has many unique qualifications that set our team apart from other Pennsylvania architects. Some of these qualifications are as follows:

**High School Experience** – Crabtree, Rohrbaugh & Associates has completed more than 31 Pennsylvania high school projects representing over $800 Million in construction costs. Each of these projects were the result of successful Master Planning and Community Engagement programs. Principal In Charge for this project, John A. Beddia, AIA, LEED AP has managed educational projects for more than 20 years. His experience, combined with the firm’s depth of experience allows us to manage the project in-house and eliminate the need for additional teaming. We will bring this knowledge and work ethic to partner with the Dover Area School District. Crabtree, Rohrbaugh & Associates project team has been responsible for every secondary project our firm has completed since 1994. We have managed many projects of this size and have the experience managing multiple district, community, and stakeholder groups.

**Project Schedule** – Crabtree, Rohrbaugh & Associates is committed to meet the timeline provided by the District in the Request for Qualifications. With a staff of over 70 architects, we will provide a dedicated project team to the new high school project. We work closely with the Owner and consultants to provide comprehensive and exceptional design services through all stages of the design process. Our approach to the project schedule, design or approvals, will be managed efficiently and effectively. We will translate ideas into comprehensive drawings and specifications that reflect your vision and goals.

Architecture . Planning . Interior Design
**Project Budget** - Another significant element of our team is our unparalleled ability to produce accurate estimates from the start of the process, and more importantly to design to budget. We understand the complexity of projects this size and the effects on the budget. Since the inception of the firm, we have guaranteed the budget on every public educational project.

**Cost-Effective Design** - Our firm has designed the most cost-effective school buildings built in Pennsylvania according to PDE Report 30 each year since 1997. We focus on providing high quality design solutions that meet the education program and technology. We design facilities that are constructible, have minimal change orders and we have contractors that prefer to bid our projects because of the quality of the drawings which create a non-adversarial relationship during the construction process. We pride ourselves in the fact that our clients feel that their facilities are of the highest quality compared to other schools constructed in the state and at a very reasonable cost.

**Educational Program/Sustainability** – Our project will work with the District to enhance the educational vision that Dover Area School District is working towards and incorporate desirable sustainable elements into the project for not only energy efficiency but as a teaching tool for the students. CRA includes a certified and experienced Educational Planner that will help guide the educational programming process. Educational Planner, Robert M. Pillar, AIA, ALEP, LEED AP brings a national perspective to share with planning educational environments and will work with the District to achieve your desired educational vision with integrated technology.

**Pennsylvania Department of Education** – Our PLANCON Part A/B submission prior to the May 2016 moratorium for the new high school enables the district to pursue and maximize state funding. Our team’s current knowledge and insight associated with performing the district wide study will allow us to move quickly to meet your schedule.

Thank you again for your consideration. We look forward to an opportunity to present our firm’s credentials in more detail.

Sincerely,
Crabtree, Rohrbaugh & Associates

John A. Beddia, AIA, LEED AP
Principal In Charge
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Corporate Information

**Firm**
Crabtree, Rohrbaugh & Associates - Architects

**Corporate Headquarters**
Pennsylvania
401 East Winding Hill Road
Mechanicsburg, PA  17055

**Branch Offices**
Pittsburgh Area
105 E. McQuistion Road
Butler, PA 16001

Virginia
250 West Main Street, Suite 200
Charlottesville, VA 22902

Maryland
100 West Road, Suite 402
Towson, MD 21204

West Virginia
793 Main Street East, Suite 200B
White Sulphur Springs, WV 24983

**Years Providing Architectural Services**
32 years

**Contact Persons**
John A. Beddia, AIA, LEED AP
Principal
jbeddia@cra-architects.com
(c)  717-514-4505

**Contact Information**
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(f) 717-458-0047
marketing@cra-architects.com
www.cra-architects.com

**Officers of the Company**
Thomas C. Crabtree, President
G. Douglas Rohrbaugh, Vice President/Secretary

**Date of Incorporation**
July 1984

**State of Incorporation**
Pennsylvania (also foreign incorporation in Maryland and Virginia)
Welcome to Crabtree, Rohrbaugh & Associates

Who We Are.
Crabtree, Rohrbaugh & Associates is a nationally recognized design firm employing more than seventy leaders in the fields of architecture design, planning and project management. We are recognized as a Top 100 Architectural Firm by Architectural Record and a Top 500 Design Firm by Engineering News-Record. We have the resources to provide our clients with the highest quality architectural design services and through our management approach provide the personal attention associated with a small firm.

Our people are our greatest asset. Our Project Managers and Directors are among the most talented and diversified in the country, and the environment we have created at the firm has kept our core members growing with us.

The firm has no turnover of project management staff, in fact the project team responsible for our first project in 1984 continues to produce architectural design services throughout the Commonwealth. The depth of their experience—together over 425 years across the United States and abroad—translates into impressive, well-executed projects and the highest level of hands-on support for all of our clients.

Our progressive approach to management has earned us recognition as a top 100 places to work in Pennsylvania.

What We Do.
Crabtree, Rohrbaugh & Associates has designed and administered the construction of facilities for our clients in thirty-nine states and counting. Our talented design staff of over 70 professionals can handle any project type, regardless of size. In addition to our experienced educational project team, the firm is also experienced in corrections, detention, judicial, historical, educational, retail, health care, religious, governmental, warehousing, distribution, manufacturing, corporate office, commercial office, professional office, multi-family housing, residential, hotel, restaurant, recreational and banking facilities.

The common thread running through all of our projects is our collaborative design process. We work with our clients from day one to incorporate their needs and goals into the design of the building and place the emphasis on the people who use the facilities.

K-12 Education Focus
Crabtree, Rohrbaugh & Associates has provided educational studies, facility assessments, architectural services to K-12 clients throughout Pennsylvania for 23 years. Our integrated design approach utilizes state of the art technology to allow the firm to communicate with its consultants and clients and seamlessly coordinate our work efforts on a local and national level.

What Makes Us Different.
Thirty-two years ago, Tom Crabtree and Doug Rohrbaugh founded the firm based on a simple mission of providing “a client-oriented approach to architecture.” This dedication to placing the client first in the design process sets us apart. The quality of our design, the completeness of our construction documents and our ability to provide the resources to complete projects on schedule and on budget plays a major role in our success. Eighty percent of our current workload is with repeat clients. Our projects are appropriate, on-budget, on-schedule, well-executed and work well with their surroundings to give our clients and their communities the best in architectural design. At the end of the day, our clients are happy and our designs are continually recognized for excellence by the American Institute of Architects.
Sustainable Design
Crabtree, Rohrbaugh & Associates has held sustainable design as a core company belief prior to the inception of the U.S. Green Building Council (USGBC). The first and strongest example of this dedication is found at the Benjamin Olewine III Nature Center at the Wildwood Lake Sanctuary in Harrisburg, Pennsylvania. The firm historically has a talent for recognizing a need and responding with innovation.

Based on the need for more efficient and better performing buildings, we create sustainable designs for our clients. Our LEED Accredited Professionals incorporate efficient green building solutions into their designs. We maintain the highest standards in technology, training, education and innovation so that our work is always on the leading edge.

Our LEED Accredited Professionals have over thirty projects which are in various stages of the certification on process including eight LEED Gold certified projects, four LEED Silver certified, two certified and two projects achieving Green Globe status.

“...CRA brought a depth of experience and people for a transparent and collaborative process, which was critical for our community’s acceptance and support.”
- Dr. Robert J. O’Donnell, Superintendent, State College ASD

Pennsylvania Education Experience
The firm has provided educational feasibility studies, architectural design and interior design services throughout Pennsylvania since 1993. The areas shaded below on the map represent the firm’s Pennsylvania Educational Experience.
Capabilities

Thanks to the diversity and experience of the architects at Crabtree, Rohrbaugh & Associates, we are able to handle every project type that comes our way, regardless of size. We cultivate partnerships with our clients and take them through the entire process, from inception to completion and beyond. As a full-service architectural firm, Crabtree, Rohrbaugh & Associates takes pride in the relationships we build as well as the structures we create.

**Pre - Design**
- Educational Programming/Visioning
- Programming
- Facilities Assessment
- Master Planning
- Space Planning
- Capital Improvement Planning
- Facility Survey
- Market Study
- Feasibility Study
- Development Scheduling
- Project Budgeting

**PLANCON**
- Part A – Project Justification
- Part B – Schematic Design
- Part C – Site Acquisition
- Part D – Project Accounting
- Part E – Preliminary Design Review
- Part F – Final Design Review
- Part G – Project Accounting, Bids
- Part H – Project Financing
- Part I – Interim Report
- Part J – Project Accounting, Final Costs

**Bid / Negotiation**
- Bid Administration
- Bid Evaluation
- Contract Preparation

**Construction Administration**
- Project Representation
- Field Observation
- Office Administration Inspection
- Project Consultation Commissioning

**Post-Construction**
- Maintenance/Operational Programming
- Occupancy Assistance
- Record Document

**Specialty**
- Educational Programming/Visioning
- Community Engagement
- Referendum Planning
- Renderings
- Models
- Life Cycle Cost Analysis
- Value Analysis
- Energy Studies
- Americans With Disabilities Act Survey
- Americans With Disabilities Act Implementation
- Code And Regulatory Agency Approvals
Technology Applications

The state of art in architectural design is an integrated process in which all team members interact through the use of collaborative technology. Crabtree Rohrbaugh & Associates has utilized the latest tech since 2008 to implement these Building Information Model (BIM) and Integrated Project Delivery (IPD) methodologies, including AutoCAD Architecture 2010, Autodesk Revit Architecture 2016, 3D Studio Max Design, and the Attolist/NewForma web-based construction management administration system.

Unlike the Design-Build project delivery method which places the Contractor in the leading role on a building project, IPD represents a return to the “Master Builder” concept where the entire building team including the owner, architect, general contractor, building engineers, fabricators, and subcontractors work collaboratively throughout the construction process.

All of these tools combine to enable 3d design to become 4d and 5d design by incorporating the elements of time (4d) and cost (5d) with geo-spatial (3d) information. Photo-realistic digital renderings and animations/walk-throughs, as well as lighting studies/simulations, are provided through the use of Autodesk 3d Studio Max. Our network consists of Xeon workstations, running 64 bit Windows 7 Professional, which are connected, via gigabit Ethernet with fiber backbone, to servers in a virtual machine environment. Our 10Mbps internet connection provides high speed communication with clients, consultants and contractors.

Our on-site Information Technology Director and our BIM/CAD Manager provides training and support to ensure that construction documents are complete and on schedule. We also utilize a vast library of standard details and equipment to produce drawings in a reliable, cost-effective and timely manner. Our standard CAD library holds the latest technical materials available from manufacturers and suppliers of building systems, ranging from sophisticated HVAC and mechanical systems to the latest technology in energy efficient windows, insulation and roofing systems.

Our Web Based Project Management System allows the architect, consultants and clients to collaborate efficiently and securely. The architect and the client use the site as a means of communication for minutes, drawings, documentation and track revisions. The architect and their consultants use the site as a platform for sharing R.F.I.’s, meeting minutes, drawings, requests for information, and change orders. The client may use the site to communicate with the public through questionnaires, presentations and announcements.
Educational Client Listing

In the past 10 years, Crabtree, Rohrbaugh & Associates has provided more than $3.5 Billion in Educational architecture throughout the Mid-Atlantic.

Abington Heights School District
Albert Gallatin Area School District
Amelia County Public Schools
Annville Cleona School District
Augusta County Public Schools
Baltimore City Public Schools
Belleville Area School District
Bethlehem-Center School District
Brookville Area School District
Camp Hill School District
Capital Area Intermediate Unit
Carlisle Area School District
Catasauqua Area School District
Central PA Institute of Science & Tech
Chambersburg Area School District
Clarion Area School District
Clarke County Public Schools
Clearfield County Career & Technology
Coatesville Area School District
Commonwelath Connections Academy
Connelsville Area School District
Coudersport Area School District
Cumberland Perry Vo-Tech
Culpeper County Public Schools
Cumberland Valley School District
Dauphin County School of Technology
Dallas School District
Dallastown Area School District
Donegal Area School District
Dover Area School District
Eastern Lancaster County SD
Eastern Lebanon County School District
Eastern York School District
Elizabethtown Area School District
Fairfax County Public Schools
Fannett-Metal School District
Fayette County Area Vo-tech School
Fluvanna County Public Schools
Franklin County Career Technology
Franklin Learning Center
Frederick County Public Schools
Garrett County Public Schools
Gettysburg Area School District
Gettysburg Montessori Charter School
Greencastle-Antrim School District
Halifax Area School District
Hanover Public School District
Harrisburg School District
Harrisonburg City Public Schools
Hazleton Area School District
Hempfield School District
Infinity Charter School
Iroquois School District
Jersey City School District
Jersey Shore School District
Juniata Valley School District
Juniata County School District
King George County Public Schools
Lancaster County Day School
Lewisburg Area School District
Lincoln IU #12
Line Mountain School District
Littlestown Area School District
Lower Merion School District
Madison County Public Schools
Manheim Township School District
Matawan Aberdeen Regional SD
Mechanicsburg Area School District
Mecklenburg County Public Schools
Midd-West School District
Middletown Area School District
Millersburg Area School District
Milton Hershey School
Minersville Area School District
Monroe Career & Technical School
Montoursville Area School District
Moshannon Valley School District
Mount Carmel School District
North Pocono School District
North Schuylkill School District
Northern York School District
Northern Potter School District
Northern Tier Career Center
Northern Tioga School District
Northern York County School District
Northumberland Vo-Tech
Otto-Eldred School District
Penn Cambria School District
Penn Manor School District
Penns Valley Area School District
The Phelps School
Phoenixville Area School District
Philipsburg-Osceola School District
Pocono Mountain School District
Pottsgrove School District
Pottstown School District
Preston County Schools
Prince George’s County Public Schools
Polytech School District
Port Allegany School District
Queen Anne’s County Public Schools
Red Lion Area School District
Richmond City Public Schools
School District of Philadelphia
Schuylkill Valley School District
Seneca Highlands Vo-tech
Shamokin Area School District
Shippenburg University Foundation
Shippenburg School District
Southern Huntingdon County SD
South Middleton School District
South Western School District
Southern Columbia School District
Southern Fulton School District
Southern York County School District
Spring-Ford Area School District
Spring Grove Area School District
State College Area School District
Staunton City Public Schools
Susquehanna Twp School District
Susquenita School District
Talbot County Public Schools
Tamaqua School District
Temple University
Trinity High School
Troy Area School District
Tuscarora School District
Tussey Mountain School District
Twin Valley School District
Uniontown Area School District
Upper Adams School District
The Vista School (The Hershey Trust)
Vida Charter School
Warrior Run School District
Warren County School District
Washington County Public Schools
Waynesboro Area School District
West Shore Christian Academy
West Shore School District
Westmoreland County Public Schools
West Perry School District
West Point Public Schools
Williams Valley School District
Wyomissing Area School District
Wyalusing Area School District
York County School of Technology
### High School Project Experience

The firm has provided educational planning and architectural services since 1993. The following chart outlines the firm’s experience in the planning and design of High School Facilities.

<table>
<thead>
<tr>
<th>Project</th>
<th>Completion</th>
<th>Cost</th>
<th>Size</th>
<th>Relevance to Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penn Manor High School</td>
<td>2020</td>
<td>$87M (est)</td>
<td>250,000+ SF</td>
<td>Site Issues/Challenges 21st Century Learning Spaces</td>
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<td>541,000 SF</td>
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<td>$32.5M</td>
<td>210,000 SF</td>
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<td>Montoursville School District</td>
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<td>2016</td>
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<td>182,481 SF</td>
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<td>2016</td>
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<td>202,700 SF</td>
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<td>2012</td>
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<td>318,546 SF</td>
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<td>180,000 SF</td>
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<td>2011</td>
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<td>193,000 SF</td>
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<td>172,043 SF</td>
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<td>2010</td>
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<td>Juniata Valley Jr/Sr High School</td>
<td>2010</td>
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<td>102,350 SF</td>
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<td>Cost</td>
<td>Size</td>
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<td>2009</td>
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<td>2009</td>
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<td>434,795 SF</td>
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<td>Wyalusing Valley School District</td>
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<tr>
<td>Tussey Mountain Jr/Sr High School</td>
<td>2009</td>
<td>$15.3M</td>
<td>134,000 SF</td>
<td>Educational Programming</td>
</tr>
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<td>Tussey Mountain School District</td>
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<td>Spring Grove Area High School</td>
<td>2008</td>
<td>$48.6M</td>
<td>333,810 SF</td>
<td>21st Century Learning Spaces Educational Programming Community Involvement New Construction</td>
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<tr>
<td>Spring Grove Area School District</td>
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<td>Troy Senior High School</td>
<td>2008</td>
<td>$20.9M</td>
<td>147,524 SF</td>
<td>21st Century Learning Spaces Educational Programming</td>
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<td>Troy Area School District</td>
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<tr>
<td>Boiling Springs High School</td>
<td>2007</td>
<td>$10.8M</td>
<td>52,300 SF</td>
<td>Educational Programming Community Involvement</td>
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<td>South Middleton School District</td>
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<td>Wyomissing Area Jr/Sr High School</td>
<td>2006</td>
<td>$5.3M</td>
<td>248,861 SF</td>
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<td>Wyomissing Area School District</td>
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<tr>
<td>Project</td>
<td>Completion</td>
<td>Cost</td>
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<td>Relevance to Project</td>
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<tr>
<td>Southern Huntingdon County High School</td>
<td>2004</td>
<td>$12.1M</td>
<td>143,554 SF</td>
<td>Educational Programming</td>
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<td>Southern Huntingdon County School District</td>
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<td>Northern York High School</td>
<td>2002</td>
<td>$24.4M</td>
<td>233,000 SF</td>
<td>21st Century Learning Spaces Educational Programming Community Involvement New Construction</td>
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<td>Northern York County School District</td>
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<tr>
<td>Catasauqua High School</td>
<td>2002</td>
<td>$20.9</td>
<td>191,000 SF</td>
<td>21st Century Learning Spaces Educational Programming New Construction</td>
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<td>Catasauqua Area School District</td>
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<td>Mechanicsburg Area Senior High School</td>
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<td>$15.1M</td>
<td>295,855 SF</td>
<td>21st Century Learning Spaces Educational Programming Community Involvement</td>
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<td>Mechanicsburg Area School District</td>
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<td>Phoenixville High School</td>
<td>2002</td>
<td>$16.6M</td>
<td>196,000 SF</td>
<td>Educational Programming</td>
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<td>Phoenixville Area School District</td>
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<td>Susquenita High School</td>
<td>2002</td>
<td>$12.6M</td>
<td>187,000 SF</td>
<td>Educational Programming</td>
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<tr>
<td>Susquenita Area School District</td>
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</tbody>
</table>
2.2 FIRM HISTORY
Project Team

Crabtree, Rohrbaugh & Associates:
Architectural Prime, Educational Programming & Interior Design

John A. Beddia, AIA, LEED AP
Role: Principal in Charge

Richard C. LeBlanc, AIA, LEED AP
Role: Director of Design

Rob Pillar, AIA, ALEP, LEED AP
Role: Educational Planner

Scott Cousin, AIA, LEED AP
Role: Senior Project Manager

Arif Hasanbhai
Role: Project Designer

Jessie Harder, Associate AIA
Role: Architectural Project Coordinator

Jeff Straub, AIA, RFP, LEED AP BD+C, CPD
Role: Security Analysis

Tracy Rohrbaugh, Allied IIDA
Role: Director of Interior Design

Danette Quave
Role: Interior Design Project Manager

Moore Engineering
MEP & Technology
Ken Kauffman, PE
Role: Project Engineer

William Fleischer
Role: Project Manager

Carney Engineering
Structural
Joshau Carney, PE
Role: Project Manager

McFarland Kistler & Associates
Foodservice
Ken Kister, FCSI
Role: Project Manager

Acoustical Distinctions
Acoustics & AV System Design
Christopher Brooks
Role: Acoustics

Mark Turpin
Role: AV Systems

Walloover Architects
Natatorium
Susan Dipiero
Role: Natatorium Designer

Advantage Engineering
Geotechnical
Kevin Barnhart
Role: Project Manager

Quality Assurance Plus (QA+)
Code Review, Building Inspections/Testing & Commissioning
Keith Gingrich, MCP
Master Code Reviewer
In order to ensure the new Dover Area High School is ready for occupancy by August 2018, we will commit the resources and appropriate staffing to this project. The team shown below, lead by John A. Beddia, AIA, LEED AP, has the expertise and available to begin work on this project immediately. Our management approach is outlined, in greater detail, in Tab 2.8 Additional Information of this proposal.

### Team Responsibility Matrix

<table>
<thead>
<tr>
<th>Personnel</th>
<th>SD</th>
<th>DD</th>
<th>CD</th>
<th>Bidding</th>
<th>Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>John Beddia, AIA, LEED AP</strong></td>
<td>90%</td>
<td>75%</td>
<td>65%</td>
<td>50%</td>
<td>40%</td>
</tr>
<tr>
<td>As Principal in Charge, John is responsible for the entire team to ensure schedules and client’s needs are met.</td>
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<tr>
<td><strong>Richard C. LeBlanc, AIA, LEED AP</strong></td>
<td>75%</td>
<td>60%</td>
<td>50%</td>
<td>25%</td>
<td>10%</td>
</tr>
<tr>
<td>As Director of Design, Rick is responsible for directing and coordinating all professional activities.</td>
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</tr>
<tr>
<td><strong>Rob Pillar, AIA, ALEP, LEED AP</strong></td>
<td>90%</td>
<td>75%</td>
<td>50%</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>As Educational Planner, Rob is responsible for 21st Century Educational Programming</td>
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<tr>
<td><strong>Scott Cousin, AIA, LEED AP</strong></td>
<td>85%</td>
<td>90%</td>
<td>90%</td>
<td>75%</td>
<td>35%</td>
</tr>
<tr>
<td>As Senior Project Manager, Scott is responsible for the planning, design and technical documentation</td>
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<tr>
<td><strong>Arif Hasahbhai</strong></td>
<td>85%</td>
<td>85%</td>
<td>85%</td>
<td>65%</td>
<td>25%</td>
</tr>
<tr>
<td>As Project Designer, Arif is involved in all design-related activities, including coordination of all disciplines</td>
<td></td>
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</tr>
<tr>
<td><strong>Jessie Harder</strong></td>
<td>50%</td>
<td>85%</td>
<td>85%</td>
<td>50%</td>
<td>10%</td>
</tr>
<tr>
<td>As Architectural Project Coordinator, Jessie works with the architectural team during the development of design solutions</td>
<td></td>
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</tr>
<tr>
<td><strong>Jeff Straub, AIA, LEED AP BD+C, CPD</strong></td>
<td>50%</td>
<td>80%</td>
<td>60%</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>Jeff will provide insight and recommendations to ensure exterior and interior building security</td>
<td></td>
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<tr>
<td><strong>Tracy Rohrbaugh, Allied IIDA</strong></td>
<td>50%</td>
<td>75%</td>
<td>75%</td>
<td>25%</td>
<td>10%</td>
</tr>
<tr>
<td>As Director of Interior Design, Tracy is responsible for oversight of the interior design staff and direction of the FFE</td>
<td></td>
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</tr>
<tr>
<td><strong>Danette Quave</strong></td>
<td>50%</td>
<td>75%</td>
<td>75%</td>
<td>25%</td>
<td>10%</td>
</tr>
<tr>
<td>As Interior Design Project Manager, Danette is responsible for FFE design, planning, finish selections &amp; specifications</td>
<td></td>
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</tr>
<tr>
<td><strong>John Yarnall</strong></td>
<td>5%</td>
<td>10%</td>
<td>25%</td>
<td>50%</td>
<td>75%</td>
</tr>
<tr>
<td>As Construction Administrator, John ensures compliance and coordination with the contract documents during construction</td>
<td></td>
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</tbody>
</table>
John A. Beddia, AIA, LEED AP
Principal in Charge

Mr. Beddia has more than 21 years of educational experience and joined the firm in 1994. As Principal in Charge, Mr. Beddia will provide project oversight, ensuring project goals, schedule and budget defined by the client are met. During planning and design, Mr. Beddia will be assisted by the Project Manager and Director of Design.

Education
Bachelor of Architecture, North Carolina State University, 1992
Bachelor of Science, Environmental Design, 1991

Registered Architect
Pennsylvania, Maryland & Louisiana

Affiliations
A4LE, Association for Learning Environments (Formerly CEFPI)

Awards
Northern High School, Recognized for “Educational Design Excellence”, American School and University, 2007
Larry J. Macaluso Elementary School, “Outstanding Design”, American School and University, 2010

Relevant Project Experience

Dover Area School District
John A Beddia, AIA, LEED AP has played a vital role in the addition/renovation to Dover Elementary School, Weiglestown Elementary School and the Athletic Stadium project. John recently completed the District Wide Feasibility Study update.

State College Area High School
Addition & Renovation / 683,000 SF / $120,345,200 / LEED Gold Registered
The design for the modernization of State High incorporates flexible 21st century design of academies, including Science, Technology, Engineering, Arts and Math (STEAM), Health and Human Services, Arts and Humanities, Visual and Performing Arts, Business and Communications and A “Democratic” 5-12 grade magnet school.

Lewisburg Area High School
New Construction / 182,481 SF / $31,500,000 / LEED Gold Registered
At completion, the new high school will feature six science labs, classrooms, gymnasium, cafeteria, auditorium, band & chorale rooms, locker and team rooms, auxiliary gym, weight and cardio rooms, art rooms, technical education, TV studio, small and large group instruction rooms, administration, guidance and nurse areas.

Middletown Area High School
New Construction / 202,700 SF / $30,185,810 / Green Globes Registered
The design of the new school features a Central Commons area with public access space to include library/media center, gymnasium and administration. The student resource center holds several breakout workrooms and the design allows for flexible classrooms throughout the corridors. All students are equipped with ipads.

Spring Grove Area High School, Spring Grove Area School District
New Construction / $44,070,044 / 333,810 SF
The new High school includes state-of-the-art technology and systems integration including a security system, broadcasting provisions and a wireless internet system, a 1,400 seat auditorium, one gymnasium and an auxiliary gym, an elevated indoor track, an indoor swimming pool, an outdoor amphitheater, a practice softball field and a competitive soccer field.

Chambersburg Area Senior High School
Addition & Renovation / $61,895,700 / 530,000 SF

A vital part of the design process is to ensure the architecture provides a creative and collaborative solution while integrating my client’s vision and goals.
Mr. LeBlanc has over 34 years of experience and joined the firm in 1985. Mr. LeBlanc will have the responsibility of directing and coordinating all professional activities. He also oversees internal design review meetings with project teams. His experience includes the design and management of major projects throughout the United States, including data center, network operation centers, multiple office and headquarter buildings.

A successful work of architecture combines the talents of all key stakeholders. It requires proper planning and understanding of the problem and development of a solution that meets the requirements of the owner’s budget and schedule.

Relevant Project Experience

**State College Area High School, State College Area School District**
Facility Study, Addition & Renovation / 683,000 SF / $120,345,200 / LEED Gold Registered
The high school project began as a comprehensive study and schematic design of the current facility as well as programming to integrate STEAM education (Science, Technology, Engineering, Arts & Math). Programming also includes diverse program options through a partnership with State College Career and Technical Center (CTC) and Penn State University.

**Lewisburg Area High School, Lewisburg Area School District**
New Construction / 182,481 SF / $30,500,070
When complete, the new school will feature 6 science labs, classrooms, gymnasium, cafeteria, auditorium, band & choral rooms, locker and team rooms, auxiliary gym, weight and cardio rooms, art rooms, technical education, TV studio, small and large group instruction rooms, administration, guidance and nurse areas.

**Dallas High School**
New Construction / 224,000 SF / $37,601,491
Dallas High School holds 1,200 students on a 100 acre site. The student commons is a key component of the design and serves as a Community Area for the school both during and after school hours for public events.

**Northern York High School**
New Construction / 233,000 SF / $24,472,641
The school features a student commons, natatorium, 1,200 seat gymnasium and auditorium, technology shops with a working greenhouse, broadcast studio and library with computer and conference rooms as well as new ball fields, tennis courts and band practice fields.

**Spring Grove Area High School**
New Construction / $44,070,044 / 333,810 SF
The new high school is a blend of academic and extra-curricular facilities, as the new space includes state-of-the-art technology and systems integration including a security system, broadcasting provisions and a wireless internet system, a 1,400 seat auditorium, one gymnasium and an auxiliary gym, an elevated indoor track, an indoor swimming pool, an outdoor amphitheater, a practice softball field and a competitive soccer field.
Mr. Pillar has 28 years of experience and has focused on educational planning and design throughout his career. He works side by side with our clients to design facility environments that support innovative curricula and enable our next generations to excel in a global society. Mr. Pillar will lead our team through the facilities assessment and prepare the educational program as well as offer appropriate solutions to problems found during the facilities assessment.

**Relevant Project Experience**

**Bethlehem-Center High School, Bethlehem-Center School District**
High School Study & Design
Crabtree, Rohrbaugh & Associates’ has begun work on a district wide study, focusing on the High School Facility. The assessment documents the educational program, evaluate educational spaces as well as MEP and structural issues. Initial Schematic Design solutions and cost estimates were identified in the study.

**Central Valley High School, Central Valley School District**
New Construction / 200,000+ SF / $45M+
Crabtree, Rohrbaugh & Associates’ is moving forward with initial schematic design for a new high school facility. The new school will be designed to incorporate 21st Century Learning environments and provide flexible classroom space and furniture.

**The Neighborhood Academy, Private, Pittsburgh, PA**
New Construction / 54,000 SF / $11,700,000
This private school sought to create a forward thinking 21st century leaning campus with minimal cost. The solution was to use pre-engineered structures to provide a simple framework to create engaging internal spaces. The school also constructed an indoor fieldhouse that creates a sustainable future for the school by generating revenue through leasing to area athletic associations.

**French American School of New York, Private, White Plains, NY**
New Construction / 112,000 SF / $47,000,000
The focus of the project was to create a 21st century learning environment to support and combine the school’s French Baccalaureate and International Baccalaureate curricula. The school is being developed on a portion of a former golf course with a goal of LEED Platinum. The site will also include a nature conservancy that will support the school’s sustainability program and be a resource to the White Plains community.

**Canon McMillan Sr. High School, Canon McMillan School District**
Addition/Renovation / 180,000 SF / $24,500,000
The focus of the project was to efficiently expand the school on its existing site to create capacity for increasing enrollment. The design replaced the existing sprawling single story academic wings with efficient two story academies for 21st century learners. The solution required a very complex phasing strategy to replace the existing building in place with minimal disruption to the learning environment.
Scott Cousin, AIA, LEED AP  
Senior Project Manager

Mr. Cousin is responsible for all aspects of the design phase. He will meet with our client to discuss and gain an understanding of the overall function and aesthetic design goals. Scott will also meet with additional client staff to discuss the needs of individual spaces of the building. Scott coordinates the design concepts and detail with consultants and maintains the project budget.

Education
Bachelor of Architecture, The Pennsylvania State University, 1999

Registered Architect
Pennsylvania

Affiliations
American Institute of Architects
ASHE (American Society of Healthcare Engineers)
USGBC Member
U.S. Green Building Council
Green Building Council of Central PA

Relevant Project Experience

Montoursville Area High School
Addition & Renovation / $29,601,000 / 210,000 SF
The addition and renovation project will include demolition of approximately 125,000 SF of the existing structure to make way for a 136,000 SF addition and 80,000 SF of renovation. This project was complete with an accelerated design and construction schedule.

Spring Grove Area High School
New Construction / $44,070,044 / 333,810 SF
The new high school is a blend of academic and extra-curricular facilities, as the new space includes state-of-the-art technology and systems integration including a security system, broadcasting provisions and a wireless internet system, a 1,400 seat auditorium, one gymnasium and an auxiliary gym, an elevated indoor track, an indoor swimming pool, an outdoor amphitheater, a practice softball field and a competitive soccer field.

North Pocono High School
The new high school facility has a capacity of 1,200 students throughout grades 9 through 12 and is equipped with modern technology, library and auditorium. The auditorium seating is movable which allows for a black box theater. The classroom wings are three story that hold various classrooms and science labs.

Middletown Area High School
New Construction / 202,700 SF / $30,185,810 / Green Globes Registered
The design of the new school features a Central Commons area with public access space to include library/media center, gymnasium and administration. The student resource center holds several breakout workrooms and the design allows for flexible classrooms throughout the corridors. All students are equipped with ipads.

Chambersburg Area Senior High School
Addition & Renovation / $61,895,700 / 530,000 SF
The Chambersburg Area Senior High School project included a comprehensive rehabilitation to the existing school with a 330,000 SF addition on an urban site. The project allowed for the renovation and expansion of existing performing arts center, a new competition gymnasium, cafeteria, kitchen, library and a new three-story classroom wing.
Mr. Straub has more than 16 years of experience and joined the firm in 1999. Mr. Straub is responsible for overseeing design-related activities pertaining to LEED and Security design. Jeff will actively participate in all design review meetings that will be held throughout the life of the project. Additionally he brings an in-depth level of expertise in Premise Security and Liability and has successfully used Crime Prevention Through Environmental Design (CPTED) techniques.

In 1914, Paul Scheerbart wrote, ‘If we want our culture to rise to a higher level, we are obliged, for better or for worse, to change our architecture. And this only becomes possible if we take away the closed character from the rooms in which we live.’ Over the years, this idea has become part of my design philosophy.

Education
Bachelor of Architecture and Art History, The Pennsylvania State University, 2001

Sedi Di Roma Program, Rome, Italy, 1999

Distinguished Thesis (Educational Architecture within the Inner City)

Registered Architect
Pennsylvania, Maryland, Virginia, Delaware, Ohio, West Virginia, New York, New Jersey, Texas, Michigan & Colorado

Affiliations
The American Institute of Architects Board Member- Central PA Design Awards Chairman
US Green Building Council
AFREC (Alternative Fuels & Renewable Energies Council)

Awards
Sixteen projects cited for design recognition from American Institute of Architects, U.S. Green Building Council, CEFPI and PA Historic Museum Commission

Thirteen projects receiving U.S. Green Building Council Certification from Certified through Gold Designation

Relevant Project Experience

State College Area High School
Addition & Renovation / 683,000 SF / $120,345,200 / LEED Gold Registered
The design for the modernization of State High incorporates flexible 21st century design of academies, including Science, Technology, Engineering, Arts and Math (STEAM), Health and Human Services, Arts and Humanities, Visual and Performing Arts, Business and Communications and A “Democratic” 5-12 grade magnet school.

State College Area High School Master Plan
Facility Study & Assessment
We developed six building concepts, exploring both current on site facilities as well as three potential off site scenarios. The Board established an aggressive schedule to pursue analyzing each option by way of a decision matrix and ongoing public input obtained during multiple community forums. Ultimately we moved forward with schematic design of additions and renovations to the current Westerly Parkway site. Schematic design was completed for the May 2014 voter referendum, which was successful.

State College Area School District Elementary School Master Plan
Feasibility Study
The study focuses on Corl Street Elementary (K-5), Lemont Elementary (K-2), Houserville Elementary (3-5) and Radio Park Elementary (K-5). Working with administration and the community, our team is evaluating various options to upgrade the facilities and exploring possible consolidation to create equity amongst all of the elementary schools with-in the district.

Iron Forge Elementary School, South Middleton School District
Addition & Renovation / $22,400,000 / 118,164 SF / LEED Gold, V3 Registered
Currently under construction, the Iron Forge Educational Center will include classrooms in grade level pods with learning support, classroom technology, flexible learning spaces and furniture, the consolidation of school office, separation of school and district support.

Middleburg Elementary School, Midd-West School District
Addition & Renovation / 109,820 SF / $20,550,766 / LEED Gold Certified
Middleburg Elementary School’s design is divided into both public and private areas and houses three grade levels, each divided into “grade houses”. The three interior grade houses are further broken down into grade pods consisting of a ring of classrooms.
Tracy M. Rohrbaugh, Allied IIDA
Principal / Director of Interior Design

Tracy has more than 25 years of experience in educational interior design and project management. She has worked for the firm since 1990. She serves as the Director of Interior Design and a principal of the firm. Tracy is responsible for the direction, and oversight of the firm’s Interior Design professional services. This includes programming, space planning, project management, interior concepts, finishes, furniture and design specifications.

Education

Associates Degree in Interior Design, Bradley Academy for the Visual Arts, 1990

Affiliations

International Interior Design Association

Pennsylvania Green Building Alliance

Awards

2014 USGBC Green School of the Year- Sudlersville Middle School

2014 AIA Citation Award - Middleburg Elementary School

Larry J. Macaluso Elementary School- Outstanding Design” Common Areas by American School & University- 2010

West Manheim Elementary School - Recognized for Educational Design Excellence by American School & University- 2007

Relevant Project Experience

Dover Elementary School
Addition & Renovation / 96,000 SF / $14,560,700
The additions/renovations include a new main entry lobby, two story academic wing and new District Administration Office and existing building renovations. Included in the renovation are a new HVAC system, fire suppression system, security system, data and technology systems, new casework, interior finishes and window replacement.

State College Area High School
Addition & Renovation / 683,000 SF / $120,345,200 / LEED Gold Registered
The design for the modernization of State High incorporates flexible 21st century design of academies, including Science, Technology, Engineering, Arts and Math (STEAM), Health and Human Services, Arts and Humanities, Visual and Performing Arts, Business and Communications and A “Democratic” 5-12 grade magnet school.

Middletown Area High School
New Construction / 202,700 SF / $30,185,810 / Green Globes Registered
The design of the new school features a Central Commons area with public access space to include library/media center, gymnasium and administration. The student resource center holds several breakout workrooms and the design allows for flexible classrooms throughout the corridors. All students are equipped with ipads.

Dallas High School
New Construction / 224,000 SF / $37,601,491
Dallas High School holds 1,200 students on a 100 acre site. The student commons is a key component of the design and serves as a Community Area for the school both during and after school hours for public events.

Gettysburg Area Middle School
New Construction / 195,000 SF / $31,973,726
The facility is designed with a “main street” which separates the large program spaces, such as the gymnasium, auditorium, cafeteria and media center, from the academic spaces. The classroom wing is designed in a system to achieve appropriate separation between grade levels. Eighth grade is located on the first floor, while sixth and seventh grade are on the second floor.

Our designers work to enhance the quality of the experience for the people who use the facility. Integrating interior design elements into the building design ensures that our clients receive what they want and need in the interior spaces of a project.
Danette M. Quave
Interior Design Project Manager

Ms. Quave has 12 years of experience and joined the firm in 2003. Ms. Quave is responsible for assisting the Director of Interior Design with the management and development of interiors, including design, space planning, finish selections and creation of design concepts and specification of furniture, fixtures and equipment.

Education

Awards
Larry J. Macaluso Elementary School- Outstanding Design” Common Areas by American School & University- 2010

Spring Grove High School- “Outstanding Design” Common Areas by American School & University- 2007

Spring Grove High School - “Outstanding Project Entire Campus” by Learning By Design- 2007

Relevant Project Experience

Chambersburg Area Senior High School
Addition & Renovation / $61,895,700 / 530,000 SF
The Chambersburg Area Senior High School project included a comprehensive rehabilitation to the existing school with a 330,000 SF addition on an urban site. The project allowed for the renovation and expansion of existing performing arts center, a new competition gymnasium, cafeteria, kitchen, library and a new three-story classroom wing.

Middletown Area High School
New Construction / 202,700 SF / $30,185,810 / Green Globes Registered
The design of the new school features a Central Commons area with public access space to include library/media center, gymnasium and administration. The student resource center holds several breakout workrooms and the design allows for flexible classrooms throughout the corridors. All students are equipped with ipads.

State College Area High School
Facility Study, Addition & Renovation / 683,000 SF / $117,023,100 / LEED Gold Registered
The high school project began as a comprehensive study and schematic design of the current facility as well as programming to integrate STEAM education (Science, Technology, Engineering, Arts & Math). Programming also includes diverse program options through a partnership with State College Career and Technical Center (CTC) and Penn State University.

Midd-West High School
Addition & Renovation / 192,492 SF / $31,631,727 / LEED Gold Certified
The Midd-West High School project included the demolition of approximately 88,000 SF to accommodate for an extensive addition and renovation project to update the aging facility. LEED components include 82% of daylit education spaces and automated dimming systems.

Uniontown High School, Uniontown Area School District
Addition & Renovation / $21,611,554 / 180,000 SF
The design of the 1900's Uniontown High School facility included the relocation of kitchen and cafeteria to make room for additional classroom space. Given significant restrictive site conditions, a concept for swing space was developed to allow full occupancy during construction. The design improved site safety and traffic and a new identity to the Main entrance.
Arif Hasanbhai
Project Designer

Mr. Hasanbhai has 14 years of experience and joined the firm in 2001. He assists with all aspects of design and design-related activities, including coordination of all disciplines and specialty consultants. During the development of construction documents he will be assisted by the Senior Project Manager. Mr. Hasanbhai’s strongest focus will be on listening and translating the district’s vision and goals into reality.

Education
Bachelor of Architecture, Penn State University, 2001
Sedi Di Roma Program
Rome, Italy, 1999

Professional Awards
2014 USGBC Green School of the Year - Sudlersville Middle School
2014 AIA Citation Award - Middleburg Elementary School
2012 USGBC Maryland “Public Project of the Year” - Sudlersville Middle School
2012 AIA Citation Award Midd-West High School
2010 CEFPI Northeast Design Award Midd-West High School
AIA 2008 Merit Awards Connellsville Area Career & Technical Center
AIA 2007 Merit Award- York County School of Technology
Nine buildings receiving U.S. Green Building Council Certification

Relevant Project Experience

State College Area High School
Addition & Renovation / 683,000 SF / $120,345,200 / LEED Gold Registered
The design for the modernization of State High incorporates flexible 21st century design of academies, including Science, Technology, Engineering, Arts and Math (STEAM), Health and Human Services, Arts and Humanities, Visual and Performing Arts, Business and Communications and A “Democratic” 5-12 grade magnet school.

Connellsville Area Senior High School
Addition & Renovation / $45,163,708 / 318,546 SF / LEED Gold Certified
Modifications included daylighting the existing internal classrooms and creating open teaching areas to foster large group instruction, technical education geared to science, technology, engineering and math (STEM) and teamed organization of core curriculum programs.

Midd-West High School
Addition & Renovation / 192,492 SF / $31,631,727 / LEED Gold Certified
The Midd-West High School project included the demolition of approximately 88,000 SF to accommodate for an extensive addition and renovation project to update the aging facility. LEED components include 82% of daylit education spaces and automated dimming systems.

State College Area High School Master Plan
Facility Study & Assessment
We developed six building concepts, exploring both current on site facilities as well as three potential off site scenarios. The Board established an aggressive schedule to pursue analyzing each option by way of a decision matrix and ongoing public input obtained during multiple community forums. Ultimately we moved forward with schematic design of additions and renovations to the current Westerly Parkway site. Schematic design was completed for the May 2014 voter referendum, which was successful.

State College Area School District Elementary School Master Plan
Facilities Study & Assessment
The study focuses on Corl Street Elementary (K-5), Lemont Elementary (K-2), Houserville Elementary (3-5) and Radio Park Elementary (K-5). Working with administration and the community, our team is evaluating various options to upgrade the facilities and exploring possible consolidation to create equity amongst all of the elementary schools with-in the district.

As a project designer it is exciting to see the electronic design become a functional and efficient building that is used by the students, administration and community.
Ms. Harder joined the firm in 2007 and will serve as Architectural Project Coordinator. Ms. Harder will work with our architectural team during the investigation, evaluation and recommendation of design solutions. She will play a vital role during each design phase and will work closely with the project team.

Relevant Project Experience

**State College Area High School**
Addition & Renovation / 683,000 SF / $120,345,200 / LEED Gold Registered
The design for the modernization of State High incorporates flexible 21st century design of academies, including Science, Technology, Engineering, Arts and Math (STEAM), Health and Human Services, Arts and Humanities, Visual and Performing Arts, Business and Communications and a “Democratic” 5-12 grade magnet school.

**Connellsville Area Senior High School**
Addition & Renovation / $45,163,708 / 318,546 SF / LEED Gold Certified
Modifications included daylighting the existing internal classrooms and creating open teaching areas to foster large group instruction, technical education geared to science, technology, engineering and math (STEM) and teamed organization of core curriculum programs.

**Midd-West High School**
Addition & Renovation / 192,492 SF / $31,631,727 / LEED Gold Certified
The Midd-West High School project included the demolition of approximately 88,000 SF to accommodate for an extensive addition and renovation project to update the aging facility. LEED components include 82% of daylit education spaces and automated dimming systems.

**State College Area High School Master Plan**
Facility Study & Assessment
We developed six building concepts, exploring both current on site facilities as well as three potential off site scenarios. The Board established an aggressive schedule to pursue analyzing each option by way of a decision matrix and ongoing public input obtained during multiple community forums. Ultimately we moved forward with schematic design of additions and renovations to the current Westerly Parkway site. Schematic design was completed for the May 2014 voter referendum, which was successful.

**State College Area School District Elementary School Master Plan**
Facilities Study & Assessment
The study focuses on Corl Street Elementary (K-5), Lemont Elementary (K-2), Houserville Elementary (3-5) and Radio Park Elementary (K-5). Working with administration and the community, our team is evaluating various options to upgrade the facilities and exploring possible consolidation to create equity amongst all of the elementary schools within the district.

It is vital to every project to collaborate with my clients to create a space that not only is esthetically pleasing, but also meets the project goals, requirements and vision set forth by the client.
Relevant Project Experience

Iron Forge Educational Center
Addition & Renovation / $22,400,000 / 118,164 SF / LEED Gold V3 Registered
Currently under construction, the Iron Forge Educational Center will include classrooms in grade level pods with learning support, classroom technology, flexible learning spaces and furniture, the consolidation of school office, separation of school and district support.

Pequea Elementary School
Additions & Renovations / 63,856 SF / $10,923,509
This project includes a comprehensive renovation/addition which addresses physical plan upgrades, increased capacity and large collaborative learning commons with supporting small group areas. The project includes new kitchen/cafeteria and new geo-thermal HVAC system.

Ravensworth Elementary School
Roofing / Addition & Renovation / 78,000 SF / $11,100,000
This project design increases the student enrollment to 650 students. Renovations will include interior finish upgrades, code compliance including ADA upgrades, and envelope upgrades including roof and window replacement and electrical, mechanical and security systems throughout the facility. The school will receive new technology upgrades.

Westbriar Elementary School
Addition & Renovation / 35,000 SF / $7,540,000
The design for this project includes 18 general classrooms, as well as a music room and storage, art room, multi-purpose classroom, resource classroom, teacher workroom and various support spaces. The current capacity is 447 students with projected population in FY17-18 to be 882 students. Site work will include expansion of the Kiss and Ride driving loop for parent drop off, relocation of the hardcourt play area, additional parking, and on site storm water detention.

Eugene Burroughs Middle School*
Roofing / Additions & Renovations / $30,000,000.00 / LEED Gold
New classroom addition and a complete replacement of all systems, roofs, doors, windows and interior finishes in existing building. Site work included new storm water & transportation lots.

*personal experience

John W. Yarnall

Construction Administration

Mr. Yarnall has more than 20 years of experience and joined the firm in 2015. He is responsible for the on site coordination during construction completion. He troubleshoots problems on site and evaluates construction change orders as well as maintains quality control and field operations.

Coming together is a beginning. Keeping together is progress. Working together is success.

~ Henry Ford
KENNETH L. KAUFFMAN, P.E., LEED AP
Vice President
Project Manager/Mechanical Engineer

PROJECT RESPONSIBILITIES
Mr. Kauffman is Vice President of Moore Engineering Company. In addition to his executive responsibilities, he will serve as the lead Mechanical Engineer. These responsibilities will include all related aspects of the HVAC, Plumbing, and Fire Protection systems. Specific tasks will include feasibility studies, energy modeling, system options studies, system calculation and design, specification writing, bid coordination, construction administration, submittal review, inspections, and general overall project coordination.

PROFESSIONAL TRAINING AND EXPERIENCE
31 Years Mechanical Engineer at Moore Engineering Company
12 Years Vice President of Moore Engineering Company
7 Years LEED Accredited Professional

EDUCATION
1994 Bachelors of Science in Construction Engineering, Pennsylvania State University
1985 Mechanical Engineering Technology, Pennsylvania State University

REGISTRATIONS
Registered as a Licensed Professional Engineer in Pennsylvania, Maryland, New York and Virginia.

MEMBERSHIPS
American Society of Heating, Refrigeration, and Air-Conditioning Engineers, Inc. (ASHRAE)
National Society of Professional Engineers
Pennsylvania Society of Professional Engineers

PROFESSIONAL ACTIVITIES AND SERVICES
2012 – Present Warwick Education Foundation Board Member
2011 – Present Warwick Township Built and Natural Infrastructure Committee
2010 – Present Warwick Township Planning Commission
2003 – 2010 Warwick Township Zoning Board
2004 – Present Lancaster-Lebanon Science & Technology Alliance
1989 – Present American Society of Heating, Refrigeration and Air Conditioning Engineers

RELATED K-12 FEASIBILITY STUDY EXPERIENCE
Downingtown Area School District
Coatesville Area School District
West Chester Area School District
Eastern Lancaster County School District
Penn Manor School District
Warwick School District
WILLIAM M. FLEISCHER
Electrical Design/Lighting Design
Project Manager

PROJECT RESPONSIBILITIES
Mr. Fleischer is the lead Electrical Designer for electrical systems including interior and exterior lighting systems, normal and emergency power distribution systems, sports field lighting systems, fire alarm systems, security and access control systems, as well as data and telecommunications systems.

His responsibilities include electrical system design, specification writing, project coordination, feasibility studies, cost analysis, and construction supervision.

Mr. Fleischer regularly performs surveys of the electrical systems in existing facilities to evaluate the age, reliability, code compliance, maintenance requirements and costs of those systems. He has also served as the lead electrical project manager on many LEED projects as well as solar photovoltaic projects.

PROFESSIONAL TRAINING AND EXPERIENCE
15 Years Electrical Design/Project Management at Moore Engineering Company
2 Years Electrical Department Manager
1 Year Relevant engineering experience at another firm

EDUCATION
1999 Bachelors of Science in Electrical Engineering, University of Pittsburgh

MEMBERSHIPS
BICSI - Building Industry Consulting Service International
NFPA – National Fire Protection Association
ICC – International Code Council

RELATED K-12 FEASIBILITY STUDY EXPERIENCE
Coatesville Area School District
West Chester Area School District
Springfield Township School District
Bensalem Township School District
Cornwall Lebanon School District
Littlestown Area School District
Joshua M. Carney, P.E. is President and Owner of Carney Engineering Group (CEG), a multi-discipline, forward-looking engineering firm located in York, PA. Josh founded CEG in January 2009, and supervises the firm’s conceptual structural design and forensic engineering work. In addition, he oversees firm management, business development, marketing and top-level project management. Josh holds 20 years experience in structural engineering, specifically with historic renovation and preservation, forensic engineering and analysis, long-span steel structures, design/build and Integrated Project Delivery (IPD).

Josh’s experience on specific projects includes: steel construction, including conventional joist framing, composite design, tension-compression ring structures, rigid frames, concentric and eccentrically braced frames and staggered trusses. He has designed various foundations including footings, caissons, concrete and steel driven piles, auger cast concrete piles and micro and mini piles, and has been involved in multiple underpinning projects.

Josh has been an expert structural witness to the U.S. Department of Justice and is called on for professional forensic consulting services by a wide variety of clients. He is experienced in seismic analysis, ATFP design and analysis and teaches regularly at Penn State University on structural load path issues in steel construction.

PROJECT EXPERIENCE

Since its inception in 2009, CEG has completed over 200 projects of various sizes under Josh’s review and direction. Over the course of his career, Josh has served as the Principal-in-Charge on many notable projects including:

DONEGAL INTERMEDIATE SCHOOL, MARIETTA, PA

Project included a complete renovation of the existing school, including façade upgrades and replacements, canopy modifications and structural repairs.

LANDIS RUN INTERMEDIATE SCHOOL, MANHEIM, PA

Project management of structural design, structural modeling and coordination of a new three-story, 200,000-square-foot school housing fifth and sixth grades. Designed with a hybrid structural system of steel and load-bearing masonry. Project is seeking LEED certification.

DOVER ELEMENTARY SCHOOL, DOVER, PA

Design of additions and renovations to existing elementary school. Scope included structural engineering, full BIM modeling and production of steel fabrication drawings.

MIDDLETOWN HIGH SCHOOL, MIDDLETOWN, PA

Design of a 200,000-square-foot new replacement high school.
BRENT M. DETTER, RLA
Senior Project Manager

Key Project Experience:

Educational
- Chadds Ford Elementary School, Pennsbury Township, Chester, PA – Design, preparation of construction drawings, specifications, permitting and coordination for project approvals through local and State permitting, and construction administration.
- Chambersburg Area Middle School North - Cafeteria Addition and Renovation, Chambersburg Borough, Franklin County, PA – Land Development, Construction Documents, and Construction Administration
- Ephrata Middle School, Ephrata Borough, Lancaster County, PA – Integral in the design and management of the project from sketch plan to Final Land Development Plans, including Construction Administration.
- Garnet Valley High School, Garnet Valley School District, Concord Township, Delaware County, PA.
- Hilltop Elementary School, Chichester School District, Upper Chichester Township, Delaware County, PA.
- Immaculata University, East Whiteland Township, Chester County, PA – Site design, layout, grading and drainage design for new parking facilities. Design and construction documents for University monument sign and way finding system.
- Manheim Township School District 5th and 6th Grade Facility, Manheim Township, Lancaster County, PA – Prepared Zoning, Land Development, and Construction Documents for new 5th and 6th Grade education facility, as well as Construction Administration.
- Millersville University, Borough of Millersville, Lancaster County, PA – Design and construction documents for gateway signage project and University Quad Landscape Master Plan.
- New Marion Elementary School, Guilford Township, Franklin County, PA – Land Development, Construction Documents, and Construction Administration.
- Waynesboro Area Middle School - Building Additions and Renovations, Concession Stand and Field Improvements, Borough of Waynesboro, Franklin County, PA – Land Development, Construction Documents, and Construction Administration.

Registration:
Landscape Architect, PA
LEED Green Associate, 2009

Education:
West Virginia University, WV
B.S. Landscape Architecture – 1996

Professional/Technical Affiliations:
- Master Planner, Lancaster County Planning Commission
- Golden Key National Honor Society
- Sigma Lambda Alpha Honor Society

Training:
- Professional Registration Continuing Education

Years of Experience:
Years with this firm: 10 yrs
Years with other firms: 10 yrs

Responsibilities:
Mr. Detter joined ELA Group, Inc. in April 2006 following tenures at David Lynch and Associates, Inc. (Lancaster), and Toll Brothers, Inc. (Horsham, PA). His experience includes the design, project coordination, and project management related to the development of public schools, municipal facilities, and residential and commercial sites. Responsibilities include schematic site design, master planning, grading, drainage, utility design, landscape plans, permitting, construction and bid document preparation, specifications and construction observation.

Registration:
Landscape Architect, PA
LEED Green Associate, 2009

BRENT M. DETTER, RLA
Senior Project Manager
GEORGE R. SMITH, III, P.E.
Senior Project Engineer

Key Project Experience:

Educational
- Blue Mountain School District, Orwigsburg Borough, Schuylkill County, PA – Design engineer for the expansion of an existing 50 acre school facility including multiple on-site basin design. Design and approvals included stormwater collection, conveyance and management facilities.
- Columbia High School Improvements, Columbia Borough, Lancaster County, PA – Design engineer for renovations, additions, and improvements to the existing stadium facility. Design and approvals included stormwater collection, conveyance and management facilities; erosion and sedimentation control; and NPDES Phase II compliance integrating infiltration and best management practices.
- East Petersburg Elementary School, East Petersburg Borough, Lancaster County, PA – Design engineer for a new elementary school. Design and approvals included stormwater collection, conveyance and management facilities, erosion and sedimentation control, and NPDES Phase II compliance.
- Exeter Elementary School, Exeter Township, Berks County, PA – Design engineer for the renovations of an existing school facility. Design and approvals included stormwater collection, conveyance and management facilities.
- Farmdale Elementary School, West Hempfield Township, Lancaster County, PA – Design engineer for a new elementary school facility. Prepared stormwater collection, conveyance and management facilities for renovations and additions, Erosion and Sedimentation Control, and NPDES Phase II compliance.
- Garnet Valley School District, Concord Township, Delaware County, PA – Design engineer for a new school facility on a 104 acres campus. Design and approvals included stormwater collection, conveyance and management facilities; and NPDES Phase II compliance integrating infiltration and best management practices.
- Landisville Intermediate Center, East Hempfield Township, Lancaster County, PA – Design engineer for new school. Design and approvals included a flood study on Swarr Run, stormwater collection, conveyance and management facilities.
- Lower Pottsgrove Elementary School, Lower Pottsgrove Township, Montgomery County, PA – Drainage design and calculations for the renovations of an existing school facility including basin design and roadway design.
- Octorara Area School District, Highland Township, Chester County, PA – Design engineer for a new school facility and renovations to the existing school facility on an 80 acre campus. Design and approvals included stormwater collection, conveyance and management facilities; erosion and sedimentation facilities; and Highway Occupancy Permit Plans for roadway improvements.
- Warwick School District, Lititz Elementary School, Lititz Borough, Lancaster County, PA – Engineering manager for the expansion of an existing 5 acre elementary school facility. Design and approvals included stormwater collection, conveyance and management facilities; erosion and sedimentation facilities; and NPDES Phase II compliance.
- West Chester Area School District, West Goshen Township, Chester County, PA – Design engineer for a 43-acre new athletic field complex. Design and approvals included stormwater collection, conveyance and management facilities; and Highway Occupancy Permit Plans for roadway improvements.
- West Chester Area School District, West Goshen Township, Chester County, PA – Design engineer for the expansion and renovations an existing 62 acre school facility including stadium improvement. Design and approvals included stormwater collection, conveyance and management facilities including multiple on-site basin design integrating best management practices design; flood plain analysis and delineation of existing on-site tributaries.

Years of Experience:
Years with this firm: 17 yrs
Years with other firms: 5 yrs

Responsibilities:
Mr. Smith rejoined ELA Group, Inc. in September 2006 as a Project Engineer. His experience includes the design and project management related to the review, development, and planning of commercial, industrial, residential, and educational sites. His experience includes storm water management collection, conveyance, and management design; best management practice design; erosion and sedimentation control plan preparation; roadway design; construction drawings preparation; project specification documentation; construction inspections/observation and associated administration; and municipal engineering and representation services.
MARK L. HENISE, P.E., PTOE
Senior Transportation Manager

Key Project Experience:

Traffic Impact Studies – General
- Prepared approximately 30 Engineering and Traffic studies for installation and modification of various traffic control devices including traffic signals, speed zones, traffic control signs etc.
- Prepared or supervised preparation of approximately 200 traffic impact studies for various types of residential, commercial, industrial, municipal, and agricultural development projects.

Traffic Impact Studies – Schools
- Bayard Rustin High School, Westtown Township, Chester County, PA – Served as the project manager for the preparation of a traffic impact study for the installation of lights at the football stadium and testified at a zoning hearing. The study included traffic counts during Friday evening and Saturday afternoon football games at other high schools within the school district to develop trip generation rates.
- Chadds Ford Elementary School, Pocopson Township, Chester County, PA – Served as principal traffic engineer for the preparation of a traffic impact study to identify the impact of the construction of a new elementary school on the surrounding roadway network. Studied existing elementary schools within the district to develop district-specific trip generation rates. Also testified at conditional use hearing.
- East Petersburg Elementary School, East Petersburg Borough, Lancaster County, PA – Served as project manager for the preparation of a traffic impact study for a new school building and new access drive on a state road. The study also included traffic counts at existing school buildings to develop local trip generation rates.
- Farmdale Elementary School, West Hempfield Township, Lancaster County, PA – Served as project manager for the preparation of a traffic impact study for a new school building and relocation of existing access drives on a state road. The study also included traffic counts at existing school buildings to develop local trip generation rates.
- Jim Thorpe Area High School, Jim Thorpe Borough, Carbon County, PA – Served as principal traffic engineer for preparation of a traffic impact study for an expansion to the existing high school.
- Landisville Intermediate Center, East Hempfield Township, Lancaster County, PA – Served as project engineer for a modified traffic assessment for new school and a campus signing plan.
- Manheim Township 5/6 Building, Manheim Township, Lancaster County, PA – Served as project manager for the preparation of a traffic impact study for a new 5th/6th grade building. The study included 5 intersections and addressed the relocation of students from other buildings on the campus. The study also included traffic counts at existing school buildings to develop local trip generation rates.
- New Franklin Elementary School, Guilford Township, Franklin County, PA – Served as project manager for the preparation of an abbreviated traffic impact study for the expansion of an existing elementary school.
- North Coventry Elementary School, North Coventry Township, Chester County, PA – Served as principal traffic engineer for preparation of a traffic impact study to identify the impact that construction of a new elementary school would have on area roadways and make safety recommendations.
- Sherman Street Improvements, Central York School District, York, PA – Design of roadway improvements and traffic signals in conjunction with the construction of a new high school. Mr. Henise evaluated six alternatives for the realignment of two closely-spaced T-intersections and served a principal traffic engineer for the design of four traffic signals and preparation of three traffic signal warrant studies.
- Walnuttown Elementary School, Richmond Township, Berks County, PA – Served as project manager for the preparation of a traffic impact study for a new elementary school for Fleetwood Area School District. The study area consisted of 5 intersections.

Education:
Pennsylvania State University, PA
B.S. Civil Engineering – 1996

Continuing Education:
- Traffic Signal Design and Operation
- Traffic Signal Operation in Coordinated Systems
- Traffic Engineering & Safety Conference

Certification:
- Professional Traffic Operations Engineer, 2002
- IMSA Work Zone Safety, 2008

Professional/Technical Affiliations:
- Engineering Society of York
- York Area MPO Technical Committee
- Hallam Borough Planning Commission
- Institute of Transportation Engineers

Years of Experience:
Years with this firm: 9 yrs
Years with other firms: 11 yrs

Responsibilities:
Mr. Henise joined ELA Group, Inc. in 2007 as a Senior Transportation Manager in the Traffic and Transportation Services division. His responsibilities include oversight and coordination for the preparation of Traffic Impact Studies, signalized intersection layout and design, and various other traffic engineering projects.

Registration:
Professional Engineer, PA
Mr. Sweater joined ELA Group, Inc. in March of 2003 as a Project Engineer. His responsibilities at ELA Group, Inc. include engineering design of storm water management facilities including water quality and infiltration BMPs, domestic water distribution and water meter pits, gravity sanitary sewer collection and conveyance systems, force main and sanitary sewer pump stations, sanitary sewer On-Lot Disposal Systems (OLDS) including pressure dosing and various distribution systems, erosion and sedimentation controls; as well as hydraulic and hydrologic analysis including bridges, culverts and flood plain delineation; and preparation of sewage facilities planning modules and construction specifications for the development of residential, commercial, industrial, and educational facilities.

Education:
Pennsylvania State University, State College
B.S. Environmental Systems Engineering – 2001

Certifications:
- OSHA 1910.120 40-hr course, Hazardous Waste Site Operations
- Class A Commercial Drivers License with Hazmat Endorsement

Years of Experience:
- Years with this firm: 13 yrs
- Years with other firms: 2 yrs

Responsibilities:
Mr. Sweater joined ELA Group, Inc. in March of 2003 as a Project Engineer. His responsibilities at ELA Group, Inc. include engineering design of storm water management facilities including water quality and infiltration BMPs, domestic water distribution and water meter pits, gravity sanitary sewer collection and conveyance systems, force main and sanitary sewer pump stations, sanitary sewer On-Lot Disposal Systems (OLDS) including pressure dosing and various distribution systems, erosion and sedimentation controls; as well as hydraulic and hydrologic analysis including bridges, culverts and flood plain delineation; and preparation of sewage facilities planning modules and construction specifications for the development of residential, commercial, industrial, and educational facilities.

Key Project Experience:

**Overall Site Design and Engineering**
- Annville-Cleona Secondary School, Annville-Cleona School District, South Annville Township, Lebanon County, PA – Design and approval of storm water management facilities and BMPs, as well as public sanitary sewer and water distribution extensions for the High School Campus.
- Bayard Rustin High School, West Chester Area School District, Westtown Township, Chester County, PA – Stormwater plans and report.
- Catasauqua High School, Catasauqua Area School District, Catasauqua Borough, Lehigh County, PA – Site and utility layout, land development, and technical specifications for the new high school.
- Centerville Elementary School, Hempfield School District, East Hempfield Township, Lancaster County, PA – Cost estimates, site and utility layout, grading, drainage, land development, utility highway occupancy permits, and construction drawings for new additions to the exiting Centerville Elementary School, parking and loading facilities, student drop-off areas, and play area(s). Responsibilities also included erosion and sedimentation control and construction administration.
- Concord Elementary School, Garnet Valley School District, Windsor Township, Delaware County, PA – Design and approval of storm water management facilities and BMPs, as well as erosion and sediment control facilities for the High School Campus.
- Iron Forge Educational Center Improvements (Boiling Springs High School), South Middleton School District, South Middleton Township, Cumberland County, PA – Site and utility layout, grading, drainage, lot consolidation plan, land development, synthetic running track design and research, construction drawings, and front-end legal contracts and technical specifications for the new track and field stadium and campus.
- Manheim Township High School Campus, Manheim Township School District, Manheim Township, Lancaster County, PA – Preparation and approval of a sewage facilities planning module for a sewage system under a moratorium.
- Mountville Elementary School, Hempfield School District, Mountville Borough and West Hempfield Township, Lancaster County, PA – Site and utility survey, subdivision, land development, and construction drawings for the new elementary school. Responsibilities also included erosion and sedimentation control and construction administration.
- Northeastern School District Tennis Courts, Northeastern Area School District, Manchester Borough, York County, PA – Tennis court product research and analysis, front-end legal contracts and technical specifications for new tennis courts.
- Philipsburg Elementary School, Philipsburg-Osceola Area School District, Rush Township, Centre County, PA – Cost estimates, PDE Plancon forms, site and utility layout, grading, drainage, lot consolidation plan, land development, parking and loading facilities, student drop-off areas, and play area(s), zoning, utility and access drive highway occupancy permits, sewage facilities planning module, sanitary sewer and water pump station design, and construction drawings and technical specifications for the new elementary school.
- Rohrerstown Elementary School, Hempfield School District, East Hempfield Township, Lancaster County, PA – Cost estimates, PDE Plancon forms, site and utility layout, grading, drainage, land development, zoning, utility and access drive highway occupancy permits, and construction drawings for the new elementary school, parking and loading facilities, student drop-off areas, and play area(s). Responsibilities also included erosion and sedimentation control and construction administration.
- South Western School District Tennis Courts, South Western Area School District, Penn Township, York County, PA – Front-end legal contracts and technical specifications for the new tennis courts.
Kenneth M. Kistler, F.C.S.I
President / CEO

High School/Jr-Sr High School Projects

Project Responsibilities:
Mr. Kistler will serve as Principal/Project Manager throughout the entire project. Ken will handle all meetings/correspondence, generate conceptual designs, compile all equipment specifications, coordinate with all other disciplines, generate equipment estimates, and provide all quality control measures associated with the contract documents.

Number of Years with Firm:
35 Years

Firm Address:

Education:
Pennsylvania State University, 1980-1983
LaRoche College, Pittsburgh, PA - B.S. Administration & Management, 1987

Professional Affiliation:
Professional Member - Foodservice Consultants Society International (Since 1987)

Specific Role/Responsibility for these High School Projects:
Mr. Kistler served in the same capacity with responsibilities matching those proposed for this project.

Relevant Projects: *indicates projects with Crabtree, Rohrbaugh & Associates.

Brookville Area School District, Brookville, PA
Brookville Junior-Senior High School

Carlisle Area School District, Carlisle, PA
Carlisle Area High School Complex
Swartz Intermediate High School

Centennial School District, Warminster, PA
William Tennent High School

Central York School District, York, PA
Central York High School

Chichester School District, Ashton, PA
Chichester High School, Boothwyn, PA

Donegal School District, Donegal, PA
Donegal High School*

Eastern York School District, Wrightsville, PA
Eastern York Senior High School

Elizabethtown Area School District, Elizabethtown, PA
East High Intermediate School*

Hanover Public School District, Hanover, PA
Hanover Senior High School

Lewisburg Area School District, Lewisburg, PA
Lewisburg Area (New) High School*

Middletown Area School District, Middletown, PA
Middletown Area High School*

Montoursville Area School District, Montoursville, PA
Montoursville Area High School*

State College Area School District, State College, PA
State College Area High School – North Bldg & South Bldg*

Tussey Mountain School District, Saxton, PA
Tussey Mountain Junior-Senior High School, Saxton, PA*
Christopher Brooks

Senior Associate
Acoustic Consultant / Project Manager

LEED AP

In his 25-year consulting career, Chris has worked on acoustics for educational facilities, auditoriums, performing arts centers and civic facilities. He offers extensive experience in programming and design for both public and privately-funded projects—helping to find a balance among program, budget and schedule. A musician and performer, Chris offers strong insights into the end-user experience. Chris writes extensively, with publications including Architectural Acoustics (McFarland 2002) and contributor to the Integrative Design Guide to Green Building (Wiley Publishing, 2009).

- REPRESENTATIVE PROJECTS
  - Ferguson Elem. School LEED Compliance, State College, PA
  - Jersey Shore Elem. School LEED Compliance, Jersey Shore, PA
  - Lindbergh Avenue Elem. School LEED Compliance, York, PA
  - Jackson & McKinley Elem. Schools LEED Compliance, York, PA
  - North & South Brandywine Mid. Sch. LEED Compliance, Coatesville, PA
  - Selingsgrove School Dist. LEED Compliance, Selinsgrove, PA (LEED Gold)
  - School District of Lancaster LEED Compliance, Lancaster, PA
  - Rainbow Elementary LEED Compliance, Lancaster, PA
  - Philadelphia Performing Arts Charter School, Philadelphia, PA
  - Gateway High School Auditorium, Jamaica, NY
  - Camp Hill School Performing Arts Center, Camp Hill, PA
  - Lenape Middle School Auditorium, Doylestown, PA
  - Cumberland Valley High School Auditorium, Mechanicsburg, PA
  - McCaskey East High School Auditorium, Dillsburg, PA
  - Northern York High School Auditorium, Dillsburg, PA
  - Tunkhannock High School Band Room, Tunkhannock, PA
  - Connelsville Area High School Auditorium, Connelsville, PA
  - Christopher Dock Mennonite HS Auditorium, Lansdale, PA
  - Schnader Theatre at Franklin & Marshall College at Roschel Performing Arts Center, Lancaster, PA
  - Messiah College Calvin & Janet High Center, Grantham, PA
  - Millersville Univ. Visual & Performing Arts Center, Lancaster PA
  - SteelStacks Performing Arts Center, Bethlehem, PA (LEED Silver)
  - Carlisle (Historic) Theatre Renovation, Carlisle, PA
  - Majestic Theatre Rehearsal Hall, Chambersburg, PA
  - Harrisburg Midtown Arts Center, Harrisburg, PA
  - Capitol Auditorium Improvements, Harrisburg, PA
  - Susquehanna Univ. Stretansky Recital Hall, Selinsgrove, PA

- EXPERIENCE
  - More than 25 years of design of acoustics for music performance
  - Author of the book, *Architectural Acoustics*

- EDUCATION
  - MS in Architectural Acoustics from Greenwich University
  - BA in Violin Performance from the New School of Music

- WITH FIRM SINCE
  - 2005

- OFFICE
  - Lancaster, PA

- CONTACT
  - 717.291.9123
  - cbrooks@ad-ny.com
SENIOR CONSULTANT – AV SYSTEMS

MARK TURPIN

AV system design professional with more than 30 years experience carries insights and knowledge for a broad spectrum of projects. Work over the past decade has centered on AV systems for performance spaces, education, boardrooms and museums. His background includes project management and engineering for staging, theatrical production management and project/construction engineering. Skills include AutoCAD block management and 3D drawing, Revit, acoustic modeling (EASE), video and controls design, and client interface. He is gifted at transforming a written system description into a complete bid package with location drawings, signal flows, panel elevations, rack elevations and mechanical details. He particularly enjoys the commissioning phase of projects in seeing the outcome of design efforts and acclimating clients to their new systems.

• REPRESENTATIVE PROJECTS
  - Xavier High School, New York, NY
    Private school facility located on Floors 2-6 in new mixed-use condominium building involved study and design for AV systems to enable multi-functionality for space usage in serving performance and academic activities.
  - Bennington College Commons Building Renovation, Bennington, VT
    35,000-SF gut renovation of existing 3-story building to accommodate new spaces for top floor academic spaces, 450-seat dining / meeting and event space area and lower level for social gathering and back of house facilities.
  - Ford’s Theatre Museum Renovation, Washington DC
    As part of base building design, provided expertise for theatre’s audio system. Entailed coordination with the National Park Service.
  - Vietnam Veterans’ Memorial Museum Education Center, Washington DC
    As part of base building design for facility adjacent to the Memorial Wall, provided expertise and design services for AV systems. Entailed coordination with the National Park Service. (Project on hold for funding).
  - White House Visitor Center, Washington DC
    Provided peer review and acoustic modeling of AV system design
  - St. John Paul II National Museum and Shrine,
    Provided peer review and acoustic modeling for museum and provided AV design for the café and the church that are part of the complex.
  - Bethel Woods Center Museum and Amphitheatre, Bethel, NY
  - Museum of the American Indian, Washington, DC
  - National World War II Museum, New Orleans, LA
  - Hirshhorn Museum, Washington, DC
  - National Music Centre Performance AV, Calgary, AB
  - U.S. Embassy Complex, Confidential Location; Included galleries/patron spaces

• EXPERIENCE
  - 30 years experience
  - Combined expertise in audio and video systems for patron engagement
  - Strong project management skills
  - Design interface utilizing REVIT

• EDUCATION
  - Bachelor of Science
  - Texas A&M University

• WITH FIRM SINCE
  - 2014

• ASSOCIATIONS/AFFILIATIONS
  - Audio Engineering Society
  - U.S. Institute for Theatre Technology
  - InfoComm
FIRM PROFILE

WALLOVER AQUATICS International, LLC was created by its President, Susan Wallover. Wallover Aquatics provides comprehensive consulting in the aquatics industry. This enterprise was formed out of the experience Susan gained from directing Recreation Planning Associates, a division of WALLOVER ARCHITECTS incorporated.

WALLOVER AQUATICS International provides consulting for:

- Development
- Conceptual Design
- Management
- Programming
- Feasibility Studies
- Assessment Surveys
- Grant Writing

WALLOVER AQUATICS International was created to meet the demands of Wallover Architects and its division, Recreation Planning Associates, internationally. WAq is specialized in aquatic facility development, operations, and programming and provides consulting services across the United States as well as internationally.

In addition to her long history in park and recreation facilities, Susan Wallover has gained an excellent perspective on aquatic facilities at numerous levels. She has worked with municipalities and both public and private sectors. Wallover Aquatics can direct the operators of aquatic facilities as to how they can maximize income generating potential while enhancing the recreation experience for their patrons. The firm strives to reinforce the idea that aquatic facilities can and do generate profits if properly operated and programmed.

The benefits of a properly operated aquatic facility are numerous and can have an impact on the health of the surrounding community. An innovative and open-minded approach to solving the problems facing aquatic facilities, both public and private, has reinforced WALLOVER AQUATICS International’s proven ability to provide high quality consulting services.

Susan is the founder and director of Recreation Planning Associates of Lancaster, Pennsylvania. In January 2009, RPA has transitioned to WALLOVER AQUATICS International, LLC, to continue to offer development, management and operational assistance to operators of aquatic facilities throughout the United States and in Ukraine. Susan has over 20 years experience in private consulting to municipalities and private recreation providers. Mrs. Wallover provides recreational planning services on select recreational and aquatic projects developed by WALLOVER ARCHITECTS. This association provides the added benefit of operator and user oriented insight during the planning and design phases of the firm’s work. Our concern for recreational issues results in designs that meet the specific needs of the clients served by WALLOVER ARCHITECTS incorporated.
Kevin R. Barnhart

EDUCATION
- B.S. - Geo-Environmental Studies, Shippensburg University, 2003

PROFESSIONAL REGISTRATIONS
- Certified for Use of Nuclear Moisture-Density Equipment, Q/C Resource, 2003
- American Concrete Institute (ACI) Certified for Use of Concrete, 2005

SUMMARY OF EXPERIENCE
Mr. Barnhart, a Project Manager, has 2 years of experience in project coordination and oversight of geotechnical investigation projects, including coordination of subcontractors, laboratory analyses, engineering analysis of data, and report preparation. Areas of emphasis include slope stability, sinkhole and karst-related features, rock and soil mechanics, and foundation evaluation and design. His experience also includes the coordination and oversight of construction phase services; include: concrete, soil, foundation, and asphalt testing. Mr. Barnhart’s project management responsibilities include scheduling, contract review and preparation, cost analysis and proposal preparation, client relations, review and preparation of engineering drawings, and preparation of project specifications.

Mr. Barnhart, Senior Geotechnical Specialist, has more than 8 years of experience in the geotechnical engineering field. His expertise includes; foundation design and recommendations, geotechnical engineering analysis, structural Fill recommendations and specifications, rock core analysis, soil permeability analysis, bearing capacity determination, soil permeability analysis, sinkhole evaluation and remediation, detailed settlement and consolidation analysis, and deep foundation recommendations and design. Mr. Barnhart also has expertise in the lab doing standard laboratory compactions ASTM D 698, Modified Laboratory Compactions ASTM D 1557, In-place density; Nuclear Densitometer ASTM D 2922, Permeability; Falling head, Atterberg Limits ASTM D 4318, Soil Classification ASTM ASSHTO USDA FAA, CBR; Recompacted in Laboratory ASTM D 1883. In the field Mr. Barnhart has expertise in Subsurface Investigation – Test borings in soil and rock, test pits, construction monitoring and oversight, compaction grouting, sinkhole remediation, concrete and masonry testing, density testing of Fill, remediation quality assurance/quality control, and soils and foundation inspection.

PROJECT EXPERIENCE
Blue Beacon Truck Wash Facility, Middlesex Township, Cumberland County, Pennsylvania – Project Manager who provided construction phase services included full-time, on-site review of the over excavations of subsurface soils in areas found to be weak and yielding; engineering review and oversight of the placement of structural fill, utility installation, foundation and slab construction, structural steel erection, and paving elements; and laboratory testing of construction materials for conformance with the project specifications, including concrete, masonry, and grout specimens.
Kevin R. Barnhart

Silver Creek Plaza on the Pike, Hampden Township, Cumberland County, PA – Project Manager who provided geotechnical engineering services during both the design and construction phases. The geotechnical engineering services completed during design included the completion of a detailed subsurface investigation, laboratory testing program, and development of final foundation design criteria and construction recommendations. Our design services also included the development of a ground modification program (i.e. compaction grouting). Our construction phase services included full-time, on-site review of the compaction grouting program; engineering review and oversight of the placement of structural fill, utility installation, foundation and slab construction, structural steel erection, and paving elements; and laboratory testing of construction materials for conformance with the project specifications, including concrete, masonry, and grout specimens.

1.8 MSF Warehouse/Distribution Center, Southampton Township, Franklin County, PA – Project Manager who provided geotechnical engineering services during the design phase. The geotechnical engineering services completed during design included review of previous reports and data completed by others pertaining to the project site, in conjunction with a detailed subsurface investigation via standard test borings and a geophysical survey, laboratory testing program, and development of final foundation design criteria and construction recommendations including difficulties and methods required to reuse in situ soils containing elevated moisture levels. Advantage also completed a field investigation, laboratory testing program, and design calculations to aid in design of bituminous paving for the project.

New Penn Hills High School, Penn Hills, Allegheny County, PA – Technical Manager who provided geotechnical engineering services during subsurface investigation and the design phase for a 171,000 SF school. A full scale subsurface investigation was completed via test borings in soil and rock to access the current soil conditions beneath the stress zones of the proposed foundations and to aid in evaluating the proposed steep “cut” slopes against global and veneer failures. The design phase consisted of evaluating the exiting Fill conditions in order to alleviate the potential for detrimental differential settlement of the proposed foundations, address the subsurface voids created by deep mining through mine grouting with injection of high-slump, high-mobility, grout into the underlying voids under relatively low pressures, and analyses of the proposed slopes using GSLOPE Software, to identify if the proposed slopes will possess an adequate factor of safety.

Connellsville Area Career and Technology Center, Connellsville, Fayette County, PA - Technical Manager who provided geotechnical engineering services during the design phase of a major addition onto the Connellsville Area Career and Technology Center in the Connellsville Area School District in Connellsville, Fayette County, Pennsylvania. The geotechnical engineering services completed during design included the completion of a detailed subsurface investigation through test boring and rock coring, laboratory testing program, and development of final foundation design criteria and construction recommendations. In addition, a forensic study was completed to evaluate the cause(s) of structural distress to the existing building; specifically, the heaving of floor slabs along the central corridor. Based on our forensic investigation, it was determined that the movement of the structure was directly related to chemical alteration and subsequent volumetric change of the existing pyrite within the shale bedrock to gypsum. Due to the unique character of the subsurface conditions, Advantage developed foundation designs and stringent specifications to ensure that similar events would not occur within the new addition.

Land O’Lakes Facility Expansion, Carlisle, Cumberland County, PA – Technical Manager for the construction of 2 new equalization tanks, a 2,520 square foot pre-fabricated Dissolved Air Flotation (DAF) building and a new stormwater management facility. Advantage completed an infiltration study, addressed the Township ordinance in regards to the Environmental Impact Assessment (EIA), and conducted a geotechnical investigation. The geotechnical engineering services conducted during design included the completion of a detailed subsurface investigation, laboratory testing program, and development of final foundation design criteria and construction recommendations.
Keith C. Gingrich  M.C.P.
Master Code Reviewer

Keith C. Gingrich has over 36 years experience in the construction industry as a certified inspector, plan examiner, Building Code Official, construction foreman, surveyor and drafter.  Mr. Gingrich has numerous International Code Council and PA Department of Labor and Industry Certifications.

Starting a project with code analysis and planning at the earliest design phase leads to a smooth and successful construction code review process. Code compliance is just one of the many aspects a building owner expects when their project is completed.

Education
Building & Codes Enforcement, Harrisburg Area Community College, 1969

Affiliations
National Fire Protection Association

ICC Certifications
Certified Building Official (#3735)
Certified Electrical Code Official
Certified Housing Code Official
Certified Mechanical Code Official
Certified Plumbing Code Official
Combination Plans Examiner
Commercial Combination Inspector
Commercial Energy Inspector
Commercial Energy Plans Examiner
Fire Inspector I
Master Code Professional (MCP)
Spray-applied Fireproofing Special Inspector
Accessibility Inspector & Plans Examiner

Department of Labor & Industry Certifications
Residential Building Inspector, 10
Residential Electrical Inspector, 11
Residential Mechanical Inspector, 12
Residential Plumbing Inspector, 13
Residential Energy Inspector/Plans Examiner, 14
Building Inspector, 15

Relevant Project Experience

State College Area High School
Addition & Renovation / 683,000 SF / $120,345,200 / LEED Gold Registered
The design for the modernization of State High incorporates flexible 21st century design of academies, including Science, Technology, Engineering, Arts and Math (STEAM), Health and Human Services, Arts and Humanities, Visual and Performing Arts, Business and Communications and A “Democratic” 5-12 grade magnet school.

Midd-West High School
Addition & Renovation / 192,492 SF / $31,631,727 / LEED Gold Certified
The Midd-West High School project included the demolition of approximately 88,000 SF to accommodate for an extensive addition and renovation project to update the aging facility. LEED components include 82% of daylit education spaces and automated dimming systems.

Connellsville Area Senior High School
Addition & Renovation / 318,546 SF / $45,163,708 / LEED Gold Certified
The 1970 facility required a total renovation to replace MEP systems, interior finishes, windows and roof throughout the facility. Modifications included daylighting the existing internal classrooms and creating open teaching areas for large group instruction.

Middleburg Elementary School
Addition & Renovation / 109,820 SF / $20,550,766 / LEED Gold Certified
Middleburg Elementary School which is part of a large campus project is divided into both public and private areas and houses three grade levels, each divided into “grade houses”. The three interior grade houses are further broken down into grade pods consisting of a ring of classrooms centered around a communal daylit central activity space or open classroom.

Rupert Elementary School
Addition/Renovation / 47,969 SF / $5,982,436 / LEED Gold Certified
This project includes a two story addition to accommodate a new primary entrance, administration, music and library. The addition will create a loop system within the building maximizing educational adjacencies, while limiting disturbance to the three front historic facades of the building.
2.3 PROJECTS WITH SIMILAR CHALLENGES
2.3 PROJECTS WITH SIMILAR CHALLENGES

1. Dover Elementary School

2. State College Area High School

3. Middletown High School

4. Lewisburg Area High School

5. Montoursville High School
One of the main concerns of this project was to allow construction activities to occur with little impact on the operations of the existing school. Careful consideration was given to the areas of the existing school to be demolished and the limited space for the new additions, while achieving the requirements of the educational program.

The result included a new main entry Lobby, two story academic wing and new District Administration Office. Included in the renovation is a new HVAC system, fire suppression system, security system, data and technology systems, new casework, interior finishes and window replacement. Site improvements include a separate parent and bus drop-off areas, designated parking areas, storm water management facilities and hard surface play areas.

**Legal Proceedings:** Crabtree, Rohrbaugh & Associate’s has had no legal proceedings (claims, arbitration, complaints, or court actions) filed by an owner against our firm for this project.

**Project Challenges:** (1) A week prior to the opening of school, it became clear the curbing designed by the civil engineer was not adequate for proper bus movements. CRA’s project team was on site to address the problem and coordinated a redesign by the civil engineer which allowed for the contractor remove the curbing and reinstall it correctly. This effort kept the project on schedule and at no cost to the district. (2) When completion of the work was not met by the general contractor, CRA assisted the district implementing provisions of the contract ensuring any costs incurred by the district were addressed and the work completed.
The design for the modernization of State High incorporates flexible 21st century design of academies, including Science, Technology, Engineering, Arts and Math (STEAM), Health and Human Services, Arts and Humanities, Visual and Performing Arts, Business and Communications and A “Democratic” 5-12 grade magnet school.

The academies are designed around houses allowing for identity to develop in sectors of the building, breaking down the overall size of the facility. A “Mentor by the Side” approach to education was discussed throughout the project creating an open atmosphere within the academies. These academies consist of classrooms wrapping flexible student break out areas of varying sizes. This approach allows State College the flexibility in accommodating individual to large group interactions.

**Legal Proceedings:** Crabtree, Rohrbaugh & Associate’s has had no legal proceedings (claims, arbitration, complaints, or court actions) filed by an owner against our firm for this project.

**Project Challenges:** After successful passage of a public referendum on their $120 M High School project, the SCASD directed CRA to proceed immediately so that summer of 2015 construction would be realized. The design team prepared an approach to accelerate the site design and ALL approvals to permit a $3M phased site package to be awarded in time to maximize the entire summer. This effectively added the necessary time for construction and design of the high school to continue. CRA and ELA bring this experience for the New Dover ASD High School.

**Relevance to Project:**
High School Experience | 21st Educational Programming | Project oversight by John A. Beddia, AIA | Site Issues/Challenges

**Construction Estimate**
$129,400,000

**Construction Cost**
$120,300,000

**Construction Completion**
May 2019

**Project Size**
48,000 SF Additions
169,000 SF Renovations
466,000 SF New
2700 students

**Client**
State College ASD
Dr. Robert J. O’Donnell
Superintendent
814-231-1016
rjo11@scasd.org

**LEED Gold Registered**
The design of the new school features a Central Commons area with public access space to include library/media center, gymnasium and administration. The student resource center holds several breakout workrooms and the design allows for flexible classrooms throughout the corridors. All students are equipped with ipads.

Flexible learning environments are equipped with mobile classroom casework, the design features a large courtyard to be used as Educational spaces (greenhouse, pond, solar panels, outdoor teaching space). Additionally, the design features a two story classroom wing. The new gymnasium has a capacity for 1250 people, the auditorium can seat 850.

Site design includes the demolition of the old high school after completion of the new and the site design includes the consideration of the district’s middle school and elementary school (all design and built by Crabtree, Rohrbaugh & Associates).

**Legal Proceedings:** Crabtree, Rohrbaugh & Associate’s has had no legal proceedings (claims, arbitration, complaints, or court actions) filed by an owner against our firm for this project.

**Project Challenges:** The Middletown Area High School and the new Dover Area High School are similar because Middletown Area High School is a Replacement School being constructed behind the current high school. The current high school facility was demolished after substantial completion of the new High School. Our design team worked with site constraints during design and construction.

**Relevance to Project:**
- High School Experience  
- 21st Educational Programming  
- Project oversight by Scott Cousin, AIA  
- Site Issues/Challenges

**Middletown Area High School**

Construction Estimate
$33,000,000

Construction Cost
$30,185,810

Construction Completion
August 2016

Project Size
202,700 SF New 800 students

Contact
Middletown ASD  
Dr. Lori Suski  
Superintendent  
717-948-3300
Crabtree, Rohrbaugh & Associates has worked with Lewisburg Area School District on a detailed facility assessment of the current Lewisburg Area High School. After careful deliberation, the school board approved the construction of a new high school which is currently under construction. When complete, the new school will feature 6 science labs, classrooms, gymnasium, cafeteria, auditorium, band & choral rooms, locker and team rooms, auxiliary gym, weight and cardio rooms, art rooms, technical education, TV studio, small and large group instruction rooms, administration, guidance and nurse areas.

**Legal Proceedings:** Crabtree, Rohrbaugh & Associate’s has had no legal proceedings (claims, arbitration, complaints, or court actions) filed by an owner against our firm for this project.

**Project Challenges:** An addition/renovation to the aging, existing high school was determined to be cost prohibitive, limited in any future growth potential and severely by available land for site design. The New Lewisburg Area High School was 10 + years in the planning for the district. CRA’s cost effective design approach enabled the district to build a new high school meeting the entire educational program within the budget established by the board.

**Construction Estimate**
$31,500,000

**Construction Cost**
$30,500,070

**Construction Completion**
February 2017

**Project Size**
182,481 SF
700 students

**Client**
Lewisburg ASD
Dr. Mark DiRocco
Superintendent
570-522-3204

**LEED Gold Registered**

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**Relevance to Project:**

High School Experience | 21st Educational Programming | Project oversight by John A. Beddia, AIA | Site Issues/Challenges
After an extensive district wide facility study and assessment of the Montoursville Area High School, an addition and renovation option was chosen by the board.

The addition and renovation project will include demolition of approximately 125,000 SF of the existing structure to make way for a 136,000 SF addition and 80,000 SF of renovation. Renovations will include upgrades to the HVAC systems, upgrade windows and doors, new casework, finishes and furniture. New additions will include a three story classroom wing with classrooms, science labs, computer labs, and a library. On the first floor of this addition will be a new cafeteria, food court, and kitchen. Other planned additions include a new 900 seat auditorium along with a new music department.

Located in an urban setting, the developable area was restricted by the existing streets. The design includes improving traffic flow which incorporates a new bus loop to improve the current condition of dropping students off on the street. Additional parking was also incorporated into the site layout.

**Legal Proceedings:** Crabtree, Rohrbaugh & Associate’s has had no legal proceedings (claims, arbitration, complaints, or court actions) filed by an owner against our firm for this project.

**Project Challenges:** Montoursville Area High School was completed on an accelerated design schedule. Our team programmed and designed the additions and renovations in less than 12 months.

**Construction Estimate**
$32,500,000

**Construction Cost**
$29,601,000

**Construction Completion**
August 2017

**Project Size**
135,000 SF Additions
75,000 SF Renovations
700 Students

**Contact**
Montoursville ASD
Dr. Timothy S. Bowers
Superintendent
570-368-2491

**LEED Gold Registered**

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**Montoursville Area High School**

Qualified for an Alternative & Clean Energy Program Grant from PA DCED.

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**Relevance to Project:**
- High School Experience
- 21st Educational Programming
- Accelerated Schedule
- Site Issues/Challenges
- Project oversight by Scott Cousin, AIA, LEED AP
2.4 SIMILAR PUBLIC SCHOOLS PROJECTS
2.4 SIMILAR PUBLIC SCHOOLS PROJECTS

1. Spring Grove High School

2. Dallas High School

3. Chambersburg Area Senior High School

4. Midd-West High School

5. Gettysburg Area Middle School
SPRING GROVE AREA HIGH SCHOOL
SPRING GROVE AREA SCHOOL DISTRICT

List of project team members, consultants and staff involved:
Team
John A. Beddia, AIA, Scott Cousin, AIA, Tracy Rohrbaugh & Danette Quave

Consultants

Size (project cost and square feet) and location of the project:
$48,692,300 / 333,810 SF; Spring Grove, PA

Provide contact name and telephone number for the owner and contractors (specific individuals):
Owner
Spring Grove ASD, Mark Czap, Facilities Director (717-225-4731)

Contractors
(GC) Lobar, Inc: AJ Arfanella, 717-432-9728
(Plumbing) WG Tomko: 724-348-2000
(HVAC) Frey Lutz: 717-898-6808
(Electric) The Fairfield Company: 717-560-7930
(HVAC Commissioning) Flood & Sterling: 717-232-0529
(Technology) Gooseworks, Inc: Scott Moyer, 717-519-6600

Proposed budget and construction schedule:
Estimate: $65,000,000; Schedule: 28 months

Total cost of change orders not requested by the owner as well as their percentage of the initial project cost:
Crabtree, Rohrbaugh & Associates (Architectural): $243,461 (.5%)
Barton Associates (MEP & Technology): $535,615 (1.1%)

List the awarded contract amount for each prime contractor:
(GC) Lobar, Inc: $35,367,500
(Plumbing) WG Tomko: $3,444,944
(HVAC) Frey Lutz: $5,495,000
(Electric) The Fairfield Company: $4,648,500
(HVAC Commissioning) Flood & Sterling: $168,000
(Technology) Gooseworks, Inc: $696,100
Crabtree, Rohrbaugh & Associates worked closely with the school to develop a design scheme of smaller learning communities based on academic pathways. The result is a blend of academic and extra-curricular facilities, as the new space will include state-of-the-art technology and systems integration including a security system, broadcasting provisions and a wireless internet system, a 1,400 seat auditorium, three gymnasiums, an elevated indoor track, an indoor swimming pool, a practice softball field and a competitive soccer field.

The High School boasts an outdoor amphitheater/courtyard centered within the building footprint. Similar to the new K-4 school, the new brick-and-glass building of the High School fits in aesthetically with the existing buildings yet features its own unique design elements, reinforcing the campus community feel.

“The new high school was designed to enhance an academy teaching approach, developing distinct learning communities based on students’ career and academic goals.”
Building Organization

The building is organized around a central commons spine upon which the academic and extra-curricular facilities are organized. The main entrance located at one end serves the buses, faculty, and after hours community use. The main entrance at the opposite serves the student parking lot. Shared spaces such as the community room, career center, TV Studio, and student store, are strategically located along this commons to encourage use and participation.

Intersecting the spine is an academic corridor which each academic pathway radiates. This not only helps to form intimate spaces for each academic community but creates a clear and ordered circulation pattern within the school. Support facilities for the students and staff are located along the academic corridor for ease of access and collaboration.
The space also promotes community through the use of full height glass in the key areas available to the public. The vertical circulation of the high school is also paramount in the movement patterns of students and is emphasized with grand open stairs in the central commons and academic corridor areas which utilize the same materials and design.
List of project team members, consultants and staff involved:

Team
John A. Beddia, AIA, Richard C. LeBlanc, AIA, Tracy Rohrbaugh & Danette Quave

Consultants
Centerpoint Engineering, Greenman-Pederson, Kurowski & Wilson & Quality Assurance Plus

Size (project cost and square feet) and location of the project:
$37,601,491 / 224,000 SF; Dallas, PA

Provide contact name and telephone number for the owner and contractors (specific individuals):

Owner
Dallals SD, Form Super Frank Galicki

Contractors
(GC) Lobar, Inc: AJ Arfanella, 717-432-9728
(HVAC) AJ Demor & Sons: Jim Hayes, 570-383-3876
(Plumbing) Jay R. Reynolds, Inc: Bill Nice, 717-464-2755
(Electric) Apollo Group, Inc: Roy Answini, 570-823-7877
(Site) Charles H Corby & Sons Excavating: Charles Corby, 570-996-0794

Proposed budget and construction schedule:
Budget: $38,267,242; Schedule: 40 months

Total cost of change orders not requested by the owner as well as their percentage of the initial project cost:
$770,239 (2%)

List the awarded contract amount for each prime contractor:
(GC) Lobar: $19,842,700
(HVAC) AJ Demor & Sons: $5,932,000
(Plumbing) Jay R. Reynolds, Inc: $2,282,000
(Electric) Apollo Group, Inc: $3,726,067
(Site) Charles Corby & Sons: $5,243,800
The Dallas School District was in need of a major renovation or replacement of their existing high school due to age and neglect. After analyzing both options the school district decided to build a new high school. The site had 5 significant facilities including a stadium, high school, middle school, and two elementary schools. The new high school option required that the entire site be master planned to address major deficiencies in access, vehicular and pedestrian circulation, stormwater management, sports fields, and conflicts with bus traffic.

Crabtree, Rohrbaugh & Associates developed a new main entrance to the site to separate automobiles from bus traffic at the high school and middle school. The masterplan called for a new three story high school to be constructed behind the existing high school while maintaining operations. A very detailed phased construction plan was developed to minimize disruption and maintain an aggressive project schedule all within very tight budget parameters. The design focuses the large public gather spaces upon a centrally located student commons. The result is an open learning environment filled with daylight in which community and learning are celebrated.

“Walking the halls of this outstanding building has made me realize how fortunate Dallas students really are.”

- Sarah Flaherty, Class of 2012 President
**Challenges & Solutions**

**Crowded site:** New High School occupies a slightly smaller footprint than the existing school while adding 100,000 SF of program area.

**Safety:** Parent drop-off areas will be separated drop-off.

**Poor Circulation:** New access drive and separate vehicular entry points will be created.

**Inefficiency:** Combined bus pick-up area for High School and Middle School will alleviate multiple stops.

**Parking:** Over 200 parking spaces will be added to the campus.

**Sports Fields:** District was able to maintain, or replace completion fields on site.

**Storm water Management:** Retention basins will accommodate run-off for the entire campus.

**Phasing:** New High School can be completed in phases before demolition of existing High School.

**Community Use:** New all weather track and walkways will be included for community use.
The design of the student commons, which all building circulation flows through, separates the academic wing from the larger public spaces, such as the gymnasium, cafeteria, auditorium, library and outdoor courtyard. The use of bold colors and graphics within the commons allows age appropriate way-finding into the different academic departments. The courtyard allows all learning spaces in the academic wing to receive natural day light while maximizing the lighting within the commons area.
FLOOR PLAN

1. Main Entrance
2. Administration
3. Commons
4. Cafeteria
5. Gymnasium
6. Kitchen
7. Food Court
8. Auditorium
9. Art & Family Consumer Science
10. Classrooms
11. Science Labs
12. Band & Chorus
13. Courtyard
List of project team members, consultants and staff involved:

Team
John A. Beddia, AIA, Scott Cousin, AIA, Tracy Rohrbaugh & Danette Quave

Consultants
Barton Associates, Greenman-Pederson, Centerpoint Engineering & Quality Assurance Plus

Size (project cost and square feet) and location of the project:
61,895,700 / 530,000 SF; Chambersburg, PA

Provide contact name and telephone number for the owner and contractors (specific individuals):

Owner
Chambersburg ASD, Dr. Joe Padask, Jr. (717-261-3300)

Contractors
(GC) Nello Construction: Bob Skryniarz, 724-746-1900
(Plumbing) Jay R. Reynolds, Inc: Bill Nice, 717-464-2755
(HVAC) The Fairfield Company: Bill Riddle, 717-560-7930
(Electric) Ellsworth Electric: Sheldon Richmond, 717-264-2888
(Fire Protection) Triangle Fire Protection: Dustin Potteiger, 717-241-9662

Proposed budget and construction schedule:
Budget: $62,744,095; Schedule: 44 months

Total cost of change orders not requested by the owner as well as their percentage of the initial project cost:
$815,000 (1.1%)

List the awarded contract amount for each prime contractor:
(GC) Nello Construction: $41,807,000
(Plumbing) Jay R. Reynolds, Inc: $2,978,000
(HVAC) The Fairfield Company: $7,070,000
(Electric) Ellsworth Electric: $ 8,955,900
(Fire Protection) Triangle Fire Protection: $1,084,000
The Chambersburg Area School District began their planning process by assembling a 45 person advisory task force to guide their vision for the high school project. During the 8 month planning process, both on site and off site options were explored as well as the possibility of two separate high schools. Community meetings and desire of the board to remain at the current location necessitated a $73 million dollar expansion and renovation of the current facility to accommodate 2,400 students. The 9-12 educational program called for 330,000 sf of new space and renovation of the remaining 200,000 sf, while maintaining full occupancy.

The project required an aggressive nine month design and approval schedule in consideration of significant act 1 exemption implications. This was only achieved through the collaborative efforts of the entire district, design team, administration and support of the community.
The most significant challenges of this project were the limited site and the student occupancy of the facility throughout the entire 36 month construction duration. Separation of bus, service, public, and pedestrian traffic required a complete reorganization of all traffic and circulation patterns. Community meetings were held to discuss the improvements planned and design sensitivity to the residences surrounding the perimeter of the high school. The project required multiple phases to start with a new three story academic wing then upon its completion, move students from the existing portion to the new, and renovate the existing.
List of project team members, consultants and staff involved:

**Team**
John A. Beddia, AIA, Jeff Straub, AIA, Tracy Rohrbaugh, Arif Hasanbhai & Danette Quave

**Consultants**
Centerpoint Engineering, Kurowski & Wilson, & Quality Assurance Plus

Size (project cost and square feet) and location of the project:
$31,498,808 / 192,000 SF; Middleburg, PA

Provide contact name and telephone number for the owner and contractors (specific individuals):

**Owner**
Midd-West SD, Ms. Lynn Naugle, Business Manager (570-837-0046)

**Contractors**
(GC) IMC Construction: Ted Jeffries, 610-889-3600
(Plumbing) Jay R. Reynolds: Bob Mease, 717-464-2455
(HVAC) Silvertip: Matt Schmacher, 570-523-1206
(Electric) Howard Organization: Todd Hockenbroch, 570-784-9646
(Foodservice) Todd Devin Food Equipment: Carl Reichert, 609-333-8805
(Fire protection) SA Comunal Co: Nathan Swinehart, 610-670-3960

Proposed budget and construction schedule:
Budget: $35,498,808; Schedule: 35 months

Total cost of change orders not requested by the owner as well as their percentage of the initial project cost:
$321,913 (.98%)

List the awarded contract amount for each prime contractor:
(GC) IMC Construction: $21,514,900
(Plumbing) Jay R. Reynolds: $1,917,000
(HVAC) Silvertip: $4,130,000
(Electric) Howard Organization: $3,758,770
(Foodservice) Todd Devin Food Equipment: $775,999
(Fire protection) SA Comunal Co: $518,958
Crabtree, Rohrbaugh & Associates worked closely with administration and the school board to first listen and evaluate the overall needs of the entire district and involve the public before a definitive design was selected for the high school. Town hall meetings, design charrettes, online surveys of the community, teachers, staff and students were some of the tools utilized to create an inclusive environment for the future of the district.

The Midd-West High School was designed to meet U.S. Green Building Council LEED Gold rating to maximize the school district’s long term capital investment while maintaining a cost effective budget and utilizing durable building materials. Over a 30 Year Life Span of the Building, it is anticipated that the sustainable design components will save approximately $3,500,000 in utility costs. At the same time, the cost of construction for the facility is substantially lower than the current state average for school construction. The building was designed to reduce average yearly energy consumption by 35.5% through the increased use of building insulation, high performance windows and a water source heat pump mechanical system.

The renovated two-story High School for grades 8 through 12 includes over 40 classrooms, 7 science rooms, band and choral music rooms, art and technical education rooms, a gymnasium, 900-seat auditorium, library, kitchen/cafeteria, along with office areas for Administration and Guidance. The project scope also included related site work such as parking lots, new bus loop, driveways and athletic fields.
Because of the slow unplanned growth of the school campus over 85 years, the first task, before designing the high school was to master plan the three building campus. The first decision that drove the entire site design was to reorient the three schools and have them address each other creating a unified campus. The most dramatic example of this is the High School which turned 180 degrees to allow the main entrance to face Middleburg Elementary School. The final design separated student, faculty, visitor and pedestrian traffic for safety. Modular trailers and tennis courts were removed from the core of the campus and a campus green, sidewalk and plaza network was created to move vehicular traffic away from the core of the campus and refocus it on pedestrian student interaction between the buildings.
AT A GLANCE

While 82% of educational spaces are naturally daylit, attention to glare control incorporated exterior BRIS SOLEILS, interior light shelves and utilization of acid etched glass to both control sun intensity, but to also refract & reflect light deeper into classrooms for teaching.

Acoustic performance included use of ceiling clouds and acoustical wall paneling to modulate sound. Wall construction was enhanced with sound insulating foams and duct work for mechanical equipment was strategically placed within the building to lower decibel sound levels within the teaching spaces.

The public "Main" street: From the outset of design discussions occurred about the importance of the school as a community center as much as 12 high school. The idea of the building as 24/7 facility utilized all year resulted in a "Main" street accessing gymnasiums, auditorium, library, cafeteria and computer labs that could be locked down from classroom wings after hours for community use.

Grand staircase connecting library and classroom wing to student commons: clear organization of space and wayfinding was a strong discussion throughout design of Mid-West High School. It resulted in two dominant circulation paths a public and student street intersecting at the main staircase of the building for both movement and student respite and conversation.

35% Projected energy savings

44% Projected water reduction

82% Daylit educational spaces

84.5% Projected construction waste management

LEED facts

<table>
<thead>
<tr>
<th>Gold</th>
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<tbody>
<tr>
<td>Sustainable sites</td>
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*Proposed out of 79 points
List of project team members, consultants and staff involved:

Team
John A. Beddia, AIA, Tracy Rohrbaugh & Danette Quave

Consultants
Advantage Engineers, Centerpoint Engineering, Kurowski & Wilson, Quality Assurance Plus

Size (project cost and square feet) and location of the project:
$31,557,681 / 197,000 SF; Gettysburg, PA

Provide contact name and telephone number for the owner and contractors (specific individuals):

Owner
Gettysburg ASD, Dr. Larry Redding, Superintendent (717-334-6254)

Contractors
(GC) eci Construction: Davis Noss, 717-638-3311
(Plumbing) Stouffer Mechanical: Andrew Baughman, 717-262-0078
(HVAC) Matchline Mechanical: Daniel Foresman, 717-721-3160
(Site) Horst Excavating: Ralph Carruthers, 717-581-9910
(Electric) Leer Electric: Joe Maywell, 717-432-9756
(Fire protection) Triangle Fire Protection: Joshua Potteiger, 717-241-9662
(Foodservice) 11400 Eleven Four Hundred Food Service: Corwyn Smith, 717-392-7429

Proposed budget and construction schedule:
Estimate: $31,557,681; Schedule: 25 months

Total cost of change orders not requested by the owner as well as their percentage of the initial project cost:
$220,533 (.07%)

List the awarded contract amount for each prime contractor:
(GC) eci Construction: $16,658,800
(Plumbing) Stouffer Mechanical: $1,240,000
(HVAC) Matchline Mechanical: $4,318,000
(Site) Horst Excavating: $4,968,877
(Electric) Leer Electric: $3,454,500
(Fire Protection) Triangle Fire Protection: $388,850
(Foodservice) 11400 Eleven Four Hundred Food Service: $632,300
The district’s campus, located within the borough of Gettysburg and adjacent to the Gettysburg National Military Park, consisted of three schools and an athletic stadium. The project goal was to redevelop the campus master plan while maintaining the existing educational operations during construction. All structures were in close proximity but were disconnected by poor pedestrian circulation, inadequate traffic patterns for parent and bus drop-off zones and an undefined approach to the athletic stadium. Additionally a new middle school would be constructed to accommodate an increase in projected student population and address educational program, spatial and building code deficiencies.

The final campus design emphasized program adjacencies and connections between the buildings. The development of plazas, lawns and play fields connected by a network of sidewalks united the new and existing structures. Careful consideration was given to the proximity of the new school to the National Military Park by using existing trees as a buffer.

The design solution of the middle school replicated the emphasis of program adjacencies to achieve educational collaboration and enhance community use of the school. The development of a “main street” was used to organize public spaces and provide separation from the private and semi-private educational spaces. The “main street” organization helped improve student circulation, visual supervision and natural daylight in the common areas.
The buildings on the existing campus were disjointed and had safety concerns of vehicular and pedestrian circulation. Lefever street had become a throughway for traffic bypassing “the square” in Downtown Gettysburg. Lincoln Elementary did not have a separate bus and parent drop-off zones which caused vehicular congestion. At the middle school, parent and bus drop-off zones unloaded at different locations which caused concerns with visual supervision of students. Access to the stadium was difficult because of the distance to the middle school gymnasium/lockers and parking area.

By realigning Lefever street a clearly defined bus and parent drop-off zones were created to improve student safety and eliminate vehicular congestion. Traffic calming devices were implemented to further improve pedestrian circulation. A plaza connecting all three structures improved the connection between the buildings. Play fields and play areas were located appropriately for each school. The middle school was located away from Confederate Avenue to preserve views of the Gettysburg battlefield.
2.5 CONSULTANTS
**Consultants**

Crabtree, Rohrbaugh & Associates has worked with our team of consultant on educational design projects and they have the experience and availability to complete this project.

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<td>Moore Engineering</td>
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<td>MEP &amp; Technology</td>
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<tr>
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2.6 21ST CENTURY DESIGN PHILOSOPHY
21st Century Design Philosophy

The turn of the century brought with it a transformation in education that created a new trajectory for learners. The priority focus shifted from a teacher centric model where the students stored knowledge and performed rote tasks; to a student centric model, developing critical thinking, creativity, communications and collaboration skills that are necessary for success in the 21st century. Along the way, educators have developed several innovations in learning that have added an alphabet soup of acronyms to the educator’s lexicon. STEM, STEAM, DI, PBL, MOOCs, CTE, BL, etc. All of these innovations recognize that each student has their own learning style and provides opportunity for differentiated instruction while giving context for learning.

Responding to these educational needs from an environmental aspect requires planning and design that blurs the lines and breaks down the barriers of the traditional concept of school building. The CRA team believes that a 21st century school must support anytime, anywhere learning, and that every inch of development and every penny of investment must support the educational vision of our client.

Additionally, Crabtree Rohrbaugh believes that the process of planning and design of a 21st century learning environment should be a learning experience for the students and the community. Our collaborative process will include district staff, students, and community members engaging with our staff to plan, envision, design, and implement a learning environment that brings your community and educational aspirations into reality.

CRA has successfully implement this collaborative planning and design process for several local school districts including: State College Area School District, South Middleton School District, Dallas School District, Spring Grove School District, Penn Manor School District, Hazleton Area School District, and Gettysburg Area School District. We look forward to continuing our relationship with Dover Area School District, and adding your High School to our growing list of the most innovative school designs in Pennsylvania.

Education Program Survey

21st century learning environments

| Priority Shifts in the educational environment |
|-----------------|-----------------|
| From | To |
| Teacher-centric | Student-centric |
| Passive learning | Active learning |
| Focus on 3 Rs | Develop 4 Cs: Collaboration, Creativity, Communication, Critical Thinking |
| Learn in classroom | Learn anywhere |

<table>
<thead>
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<th>To</th>
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<td>Curriculum integrated</td>
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<tr>
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**Geographic Proximity**

Crabtree, Rohrbaugh & Associates will lead this project from its Corporate Headquarters, located at 401 East Winding Hill Road, Mechanicsburg, PA 17055. This location is 26 miles from 4500 Intermediate Avenue, Dover, PA 17315.

Our team is lead by John A. Beddia, AIA, LEED AP who resides 13 miles from this location in Wellsville, PA.

We establish clear lines of communication at the beginning of the project which allows our team of professionals to respond and be available within a short amount of time. Our project team outlined in this proposal has the availability to begin this project immediately and complete the new high school within your schedule.
2.8 ADDITIONAL INFORMATION
**Additional Information - Why CRA...**

**Budget:**
The Facility Study performed by CRA with input from the District, explored a new 1,200 student high school at the intermediate school site. CRA provided a preliminary educational program of spaces ranging from 250,000-275,000 SF and a total project cost range from $53-58 M. Our construction cost estimate range utilizes several recent new high school bid results; State College High School at $190/SF, Lewisburg High School and Middletown High School at $167/SF.

| State College Area High School | 2019 | $110.3M | 541,000 SF | Site Issues/Challenges 21st Century Learning Spaces Educational Programming LEED Certified Community involvement |
| Montoursville High School | 2017 | $92.5M | 210,000 SF | 21st Century Learning Spaces Educational Programming Community involvement |
| Lewisburg Area High School | 2016 | $30.5M | 182,481 SF | Site Issues/Challenges 21st Century Learning Spaces Educational Programming Community involvement |
| Middletown Area High School | 2018 | $30.1M | 202,700 SF | Site Issues/Challenges 21st Century Learning Spaces Educational Programming Community involvement |

Since 1997, CRA has established a proven track record for providing the most cost effective schools designed and constructed in PA; PDE Report 30. Our cost estimating is detailed, accurate and allows the District to make reliable and practical budget decisions for your project. We will work closely with the DASD to define the learning environments which represent your goals and your educational vision while maintaining the District’s budget expectations. This experience translates to the ability to provide the DASD with more educational space than other firms.

**Guaranteed Budget:**
We are confident in achieving excellent bidding results to the extent that we will guarantee the budget. If on bid day the project exceeds the School Board approved budget, CRA will redesign the project at no additional costs in design fees and bring the project back within budget without reducing any educational space. We have made this guarantee to every public education client for the $3.5 Billion of public educational projects we have designed since the firm’s inception.
Why CRA...

Schedule:
We understand the Districts RFQ request for the new high school to be complete for August 2018 occupancy, but may be fluid based upon school board action. We believe our team has the experience to guide and manage a process to promote key decisions by your planning committee and school board, expedite the design and approval process and avoid any potential impacts to the final cost of the project.

Our proposal to expedite the design schedule includes the following:

Design Team
With over 70 experience staff, we are committing key principals (local) and design staff that are experienced with large high school design and will move the project quickly and efficiently through the design process. We are experienced with the Department of Education’s PlanCon Process and will navigate this process to qualify the project for maximum reimbursement. We are experienced working with the School District and our knowledge of your education model and vision will allow us to move quickly through the programming and schematic design process. Our Civil Engineer Brent Detter, from ELA is a Dover graduate and is experience working through the local permitting processes.

Pre-Release of Site Packages
We can expedite the construction process through the pre-release of the site package. This will allow the contractor to prepare the site pad and critical underground utilities while we are completing the final design and construction bid package for the new High School building. Working with ELA as our civil engineer, this approach has been successfully implemented for the SCASD high school project

Phased Occupancy
A phased building occupancy approach could permit Fall 2018 occupancy to provide adequate classroom space to meet current student capacity and key building areas. The RFQ planned capacity of 1,400 students would allow sufficient space to meet your 2018 capacity needs and permit construction to continue in other areas or a dedicated wing. This approach would reduce contractor acceleration costs and allow occupancy while the final phase of construction is completed. Harrisburg School District hired Crabtree, Rohrbaugh & Associates to design and construct the Rowland Middle School and Scott Elementary School projects in less than fourteen months. We were able to accomplish this task through comprehensive decision making process with the District and a phased occupancy schedule. The Middle School Project had the first phase which consisted of the Academic Areas completed by the School Opening in August, and the Second Phase which consisted of the Gymnasium and key Support Spaces opening approximately 6 months after initial occupancy.

GRANT WRITING EXPERIENCE
Crabtree, Rohrbaugh & Associates Alternative Clean Energy grant writing experience has recently contributed $14M of additional funding for 7 Pennsylvania school projects. LEED Gold certification and sustainable design requirements are met in a cost effective manner so that grant funds are strategically / thoughtfully applied directly to construction costs. Our diverse market and building type experience brings an innovative approach that makes sense to sustainable design.