

TAB I

Optional Information






































*New George Mason High School
PPEA Design and Construction*






























TAB I. Optional Information

9.1.12 OTHER RELEVANT CRITERIA

While the RFP for the new George Mason High School is focused on new school construction, Grunley and Samaha have broad experience completing the construction and design of new and renovated public schools and academic facilities of varying sizes, many in the Commonwealth of Virginia. In the tables below, we have provided a list of our respective experience with educational facilities (Virginia schools are denoted with the state map symbol):

GRUNLEY'S SCHOOL LIST					
ELEMENTARY SCHOOLS & CHILD DEVELOPMENT CENTERS		MIDDLE SCHOOLS		HIGH SCHOOLS	
Ashlawn		Gunston		Annandale	
Brightwood		Jefferson (Thomas)		Eastern	
Fort Myer CDC		Sandburg		Fairfax	
McKinley				Fairmont Heights	
Moten				Herndon	
Mount Daniel				Mount Vernon	
Patuxent River CDC				Robinson	
Reed School/Westover Library				Westfield	

SAMAHA'S SCHOOL LIST					
ELEMENTARY SCHOOLS		MIDDLE SCHOOLS		HIGH SCHOOLS	
Alexandria Country Day		Auburn		Annandale	
Arlington		Cabin John		Broad Run	
Arthur Middleton		Calvin M. Rodwell (K-8)		Chantilly	
Bailey's		Congressional (K-8)		Dulaney	
Baldwin		Cross Country (K-8) (Study)		Fauquier	
Barrett		Elkridge Landing		Gaithersburg	
Burtonsville		Franklin		George C. Marshall	
Catoctin		John Ruhrah (K-8) (Study)		Hayfield Secondary	
Crestwood		Kilmer		Henry E. Lackey	
Cunningham Park		Kilmer Center for Spec Needs		Lake Braddock Secondary	

SAMAHA'S SCHOOL LIST					
ELEMENTARY SCHOOLS		MIDDLE SCHOOLS		HIGH SCHOOLS	
Daniels Run		Liberty		Lee	
Dr. Gustavus Brown		MacFarland (Study)		Loudoun County	
Eva Turner		Mayfield		Loudoun Valley	
Forestville		Mayfield Woods		Northwest	
Fort Belvoir		Metz		Northwood (Wellness Ctr)	
Great Falls		North Bethesda		Osbourne	
Hayden		Nysmith School (K-8)		PWCS Alt Ed School (K-12)	
Indian Head		Ormond Stone		Sherwood	
Jackson Road		Pimlico (K-8)		Thomas Stone	
Jamestown		Rachel Carson		Thomas Wootton	
Jennie Dean		Rock Terrace		Wakefield Perf Arts Ctr (K-12)	
Mount Daniel		Silver Creek		Walter Johnson	
Northwest County		Tilden		Watkins Mill (Wellness Ctr)	
Nottingham		Warrenton			
Round		Washington Irving			
Tuckahoe		Westminster (K-8)			
Virginia Hills (Study)					
Weyanoke					

9.1.13 OPTIONAL INFORMATION

Below and on the following pages, we have included additional information related to Grunley’s and Samaha’s BIM processes, our LEED® experience and BIM capabilities. We anticipate using BIM extensively as we work with the City of Falls Church and Falls Church City Public Schools on this project.

a structure’s overall life-cycle and performance as well as reduce costs for the end user. Grunley has extensive experience constructing and installing new building systems and infrastructure for a more efficient building. Prior to construction, our preconstruction team is proactive in advising clients on the most cost-effective and energy efficient improvements for their project.

SUSTAINABLE DESIGN AND CONSTRUCTION

An overwhelming majority of our nation’s office buildings have adopted green building policies in accordance with standards like the U.S. Green Building Council’s (USGBC) Leadership in Energy and Environmental Design (LEED®) rating system and the U.S. EPA Energy Star® building labeling system. Implementing energy improvements to an existing building is one of the best ways to improve

Grunley has experience in the replacement of existing HVAC systems, plumbing systems, electrical systems, life safety upgrades, infrastructure upgrades, window replacement and roof replacements. These upgrades are conducive to improved indoor environmental quality. Implementing green construction methods on site has become a standard practice on all of our jobsites, and includes protecting the soils, effectively reusing

stormwater for irrigation, and recycling materials used during construction. Our team is also seasoned in the installation of geothermal HVAC systems and wells, photovoltaic and green roofing systems.

We have included a list of our projects that have attained LEED® Certification and our projects that are currently seeking certification in the following table.

GRUNLEY'S LEED® LIST	
PROJECT	LEED® LEVEL
1789 Massachusetts Avenue Building Renovation	LEED® Certified
C4ISR Center of Excellence	NC 2.2
Ft. Detrick Auditorium & Training Center	NC/MR 3.0
P1311 Consolidated InfoTech	LEED® Certified
DOI Modernization, Phases 4-5	CI 2.0
U.S. Treasury Main Building Renovation	LEED® O+M EB V2-LEED® 2.0
Eisenhower Executive Office Building Modernization, Phase II	NC 2.2 Silver
Eisenhower Executive Office Building Modernization, Phase III	NC 2.2 Silver
FDIC HVAC Retrofit	NC 2.0 Silver
Ft. Belvoir Emergency Service Center	NC 2.0 Silver
American University Cassell Hall	LEED® Silver
Hoover Building Phase 1	NC 2.0 Silver
Hoover Building Phase 2	NC 2.0 Silver
Hoover Building Phase 3	NC 2.0 Silver
Johns Hopkins Myer Building	LEED® 3.0 Silver
NOVA Brault Building Expansion and Renovation	NC/MR 3.0 Silver
P-301 Laser System Development Lab	NC 2.2 Silver
P-8A Aircraft Systems Integration Lab	NC 2.2 Silver
Pax River Child Development Center	NC 2.2 Silver
Potomac Annex Building 5	LEED® Silver
Shultz National Foreign Affairs Training Center - Childcare Center	NC 2.1 Silver
NMAH Public Space Renewal (PSRP 3)	CI 3.0 Silver
NMNH, HVAC Renovation SE	CI 3.0 Silver
Alexandria Public Safety Center West Wing Renovation	LEED® Silver
McKinley Elementary School	LEED® Silver
Andrews AFB Munitions Storage Area	LEED® Gold
Arts & Industries Building Revitalization	NC 2.2 Gold
FDA Building One Renovation	NC 2.0 Gold

GRUNLEY'S LEED® LIST	
PROJECT	LEED® LEVEL
German Embassy	BNB Green Gold
Montgomery College Science West	LEED® Gold
St. Elizabeths Phase 1B Adaptive Reuse	NC 3.0 Gold
Reed School/Westover Library	NC 2.0 Gold
Switzer Building Modernization	NC 2.1 Gold
Switzer HHSC Renovation	NC 3.0 Gold
U.S. Custom House	LEED® Gold
USDA South Administration Building Phase 4A	CI 2.0 Gold
Yates (Sidney) Building CDC	CI 3.0 Gold
DOI Modernization Cafeteria	CI 2.0 Platinum
DOI Modernization Childcare Center	CI 3.0 Platinum
PROJECTS IN PROGRESS - PENDING LEED® CERTIFICATION	
AFIR (Classified)	LEED® (Self-certified)
DOI Modernization, Phase 6	CI 2.0
1330 Connecticut Avenue, NW	LEED® Silver, 2009
Fairmont Heights High School	LEED® Silver for Schools, 2009
Mount Daniel Elementary School	LEED® NC Silver
Montgomery College Student Services Center	LEED® Silver, 2009
NMNH Dino Hall	CI 3.0 Silver , 2009
Penn Eleven Luxury Condominiums	LEED® Silver, 2009
Potomac Annex Buildings 3 & 4	LEED® Silver, 2009
USACE Building K	LEED® Silver BD+C, 2009
608 T Street	LEED® v4 BD+C
CFPB Headquarters Renovation	LEED® Gold, 2009
Historic Center Building at St. Elizabeths	LEED® Gold, 2009
Hoover (Herbert C.) Building Phase 4	NC 2.0 Gold
IMF HQ1 Renewal	NC 3.0 Gold
Lafayette Building Modernization	NC 2.1 Gold
NMNH Southside Improvements	LEED® Gold, 2009
Sidney Yates Exterior Renovation	LEED® Gold
USACE ECB-MC	LEED® Silver, 2009
Old City Hall Richmond	LEED® Gold, 2009
Montgomery College Student Services Center	LEED® Gold
St. Elizabeths Building 54	LEED® Gold, 2009
Hart-Dole-Inouye Federal Center	LEED® Gold

While Samaha’s portfolio is diverse in scope and complexity, their commitment to sustainable design is clear -- they consistently seek to create “green” and efficient facilities that minimize environmental impact. The firm’s projects reflect creative and measured strategies to conserve energy and protect diminishing natural resources, and improve indoor air quality. They have designed several facilities that serve as models for innovative green design, featuring insightful and instructive applications that improve sustainability and building performance. In addition to the LEED® projects listed below, Samaha has over 30 other projects that are designed with sustainable elements but are not LEED® certified. These projects include:

SAMAHA’S LEED® PROJECT LIST	
PROJECT	LEED® LEVEL
Arlington Elementary School	Silver (Target)
BEQ 46NS	Silver (Target)
Cabin John Middle School	Gold
Calvin M. Rodwell Elementary/Middle School	Silver (Target)
Dahlgren Building (Owners Rep)	Silver (Target)
DC Water HQ (Owners Rep)	Platinum (Target)
Crosspointe Fire Station #41	Gold
Gaithersburg High School	Gold
Great Falls Fire Station #12	Gold
Loudoun County Youth Shelter	Gold
Loudoun Heights Fire Station #26	Silver
P-6000 Vehicle Operations Addition	Silver (Target)
Pimlico Elementary/Middle School	Silver (Target)
Prince William County F&R Station #26	Gold (Target)
Quantico Child Development Center	Silver
Silver Creek Middle School	Silver (Target)
Tilden Middle-Rock Terrace School	Silver (Target)
University Mall Building E	Silver
University Mall Building F	Silver

NET ZERO ENERGY

Net Zero Energy is a process, not a product. For the past 10 years, CMTA has led the national trend of Zero Energy Schools by designing and supporting construction of the 1st zero energy school in the U.S., and then designing 1.6 million square feet of additional zero energy projects. The process of designing, constructing and optimizing the performance of a zero energy building

is a detail oriented process that is often set as a project goal but rarely accomplished. Many projects set out to accomplish the performance goal of achieving zero energy, yet rarely is this achieved due to the challenges of getting a building to perform as designed. CMTA utilizes a data-driven design process and pulls from years of lessons learned to feed performance data and paradigm shifts into the design process of every new CMTA zero energy project.

DESIGN TEAM NET ZERO ENERGY PROJECT LIST	
ZERO ENERGY PROJECT	SIZE
Richardsville Elementary School	72,285 SF
Turkey Foot Middle School	133,359 SF
Locust Trace AgriScience High School	70,100 SF
Lenawee High School – Center for Sustainable Futures	8,743 SF
Lee Elementary	95,633 SF
Discovery Elementary	98,500 SF
Corvallis Toyota Dealership	34,868 SF
Cincinnati Police Station	38,500 SF
Wilde Lake Middle School	106,221 SF
Graceland Elementary School	78,250 SF
Holabird Elementary School	78,250 SF
Alice Fleet Elem School	104,500 SF
Lubber Run Community Center	52,000 SF
Thaden High School Campus	125,000 SF
Botanica Community Center	10,500 SF
Raleigh Co Elem School	61,405 SF
Martin Co High School	124,000 SF
NeoCity Academy STEM High School	45,000 SF
Frederick Douglass High School	285,790 SF
Joint Base Andrews Fitness Center (Samaha)	87,290 SF
TOTAL	1,622,904

BIM

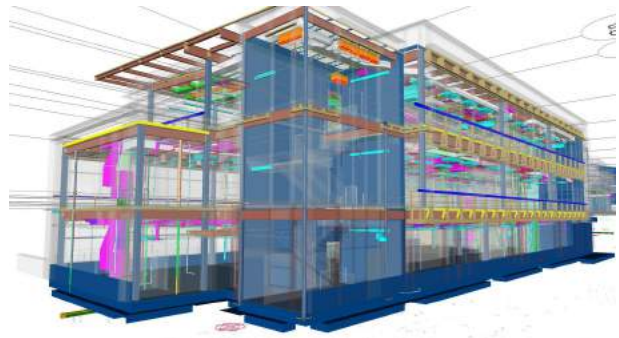
Grunley and Samaha integrate BIM into the design and construction process as part of a highly collaborative business culture. During preconstruction, we routinely work with owners, architects, engineers, trade subcontractors/SWaM businesses, and specialty consultants to ensure that the construction phase will yield the desired results. From the outset, we plan and build with an eye on cost, schedule, and the final outcome: the commissioning of a high-quality facility.

We use BIM for construction sequencing, 3D spatial trade coordination, estimating, and logistics planning to leverage and enhance our core construction expertise beyond what can be achieved with traditional methods. Our subconsultants are equally dedicated to the incorporation of BIM throughout project execution. Their systems overlap significantly with those used by Grunley and their personnel are proficient with the same software programs.

Our standard operating procedures include the preparation of a BIM Project Execution Plan, construction sequence planning and cost estimating in the preconstruction phase, and spatial trade coordination and constructability reviews during the construction phase. Using BIM, we will provide a systematic compilation of design, construction, commissioning and facility data in a model format suitable for City of Fall Church’s future use for operations and facility management.

Our core modeling and spatial coordination platform, and that of our subconsultants, is Autodesk Building Design Suite, which includes Revit and AutoCAD Architecture, Structure, and MEP. Our coordination platform integrates CAD models derived from various trades in various platforms into federated models using Autodesk Navisworks for clash detection and construction sequence planning.

Grunley currently uses BIM for construction sequence and construction logistics planning during preconstruction and for spatial coordination on all projects valued at \$15M or more, whether or not the use of BIM is required by the owner. We also use BIM for projects under \$15M if there is a demonstrable benefit to the project. We recently used BIM modeling during our Fairmont Heights High School Replacement and Sandburg Middle School Renovation and Additions projects. These projects involved new construction and modernizing and upgrading buildings involving complex MEP systems. These types of projects require coordinated and focused existing conditions documentation, using BIM, to ensure that the new systems are seamlessly integrated with the existing to remain system components.



Grunley used BIM to model systems and prevent clashes during the Ashlawn Elementary School Renovation and Addition project in Arlington, VA (shown above). BIM allowed us to complete the installation of new systems within the addition, upgrade systems in the existing building and tie-in new systems to the existing systems while the school remained operational without disrupting daily activities.

LASER SCANNING CAPABILITIES

For projects where new facilities and systems are to be attached to and integrated with existing facilities and systems, Grunley often performs on-site laser scanning and creates detailed 3-D BIM models of existing conditions. These serve as the base models for the modeling of proposed new systems by trade subcontractors. We then “federate” the existing conditions model with the new systems models to create a composite model that is used to resolve physical interferences virtually before they are encountered physically in the field. This BIM-based spatial coordination process provides a much higher degree of systems coordination than is possible with traditional 2D system coordination methods. It typically results in an increase of off-site prefabrication of building systems, which helps optimize the construction schedule because subcontractors have greater confidence that potential interferences with other building systems have been resolved. Additionally, by laser scanning the

existing conditions, we avoid using more destructive methods such as cutting openings in walls and ceilings. Spatial coordination, when performed early and fully integrated into the preconstruction and construction process, enables us to resolve individual physical interferences and to look at building systems holistically and optimize the physical arrangement of building components for ease of installation and future maintenance.

BIM IMPLEMENTATION

Grunley routinely creates schematic BIM models for construction sequence planning. The models increase in complexity and level of detail as the planning process evolves, allow us to visualize the intended construction sequence in three dimensions, and help us identify and address logistical challenges well in advance of actual construction. They also enable us to engage stakeholders in the owner’s organization in a discussion of logistical options and affected business operations in a meaningful way. For the new George Mason High School project, the Owner’s senior management, project managers and facility managers will be able to see the impact of future construction activities on business operations and provide valuable feedback for modifying the construction sequence to minimize adverse impacts on business activities. This will allow us to work collaboratively with The City of Falls Church, Falls Church City Public Schools, Samaha and the entire design team to consider multiple construction sequence scenarios so that the optimum construction sequence can be achieved before any activity takes place.

BIM PLATFORM AND CAPABILITIES

Our BIM team is certified in Autodesk Revit and AutoCAD platforms which are used at the outset of projects to develop logistic planning and 3D spatial trade coordination. Our staff is routinely trained in new versions of CAD systems including Revit (architecture/structural/MEP) and AutoCAD (architecture/structural/MEP), ArchiCAD, Navisworks and 3DsMax. Our experience consists of developing 2D and 3D CAD drawings including 3D scan data that are inserted in various CAD systems for planning, existing condition analysis, and coordination. Our trade models are constructed using

fabrication CAD software that is developed using the design intent documents and spatial coordination, and then fabricated using computer aided manufacturing software prior to installation. The ability to use CAD systems from design to manufacturing allows Grunley to reduce coordination errors and positively impact the construction schedule during actual construction.

OUR BIM TEAM

Grunley has an in-house BIM team dedicated exclusively to the implementation of BIM technology on all projects. Our BIM staff is nationally recognized for its leadership, proficiency, and innovation in the use of BIM technologies. Our BIM team, and our BIM efforts for the new George Mason High School project, will be led by Moez Jaffer, Associate AIA, LEED® AP. Moez has planned and implemented 3D laser scanning, building information modeling, spatial coordination, data commissioning, and mobile field technologies on some of our most prestigious historic renovation projects. Moez oversees and executes the modeling efforts for construction sequencing and spatial coordination. He has over 14 years of experience as a BIM and CAD Manager and has worked extensively with owners, architects, engineers, and contractors to develop and manage BIM execution plans for new and on-going projects. He has produced and facilitated spatial coordination for renovations.

Finally, we employ nine full-time MEP Coordinators who work closely with Grunley’s on-site team and subcontractors to document existing conditions and meet the modeling, spatial coordination, and data commissioning needs of our projects.

GRUNLEY
in association with

