



MSA, P.C.  
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Environmental Sciences Planning Surveying Civil & Environmental Engineering Landscape Architecture

## VIRGINIA BEACH MIDDLE SCHOOL REPLACEMENT, Virginia Beach, VA

*Winner – 2009 Significant Achievement Award from the City of Virginia Beach, Green Ribbon Committee, Stewardship in Development Program*

Working as a consultant to the project architect, MSA provided survey, planning, environmental and civil engineering services to the City of Virginia Beach to evaluate sites to replace the existing Virginia Beach Middle School with new construction, based on current standards per the State of Virginia Department of Education recommendations and the City of Virginia Beach.

**Professional planning and preliminary engineering services were performed on three properties to identify requirements for the proposed school**, including: research and coordination with the City of Virginia Beach and other reviewing agencies regarding design requirements for sanitary sewer service and domestic water service; general traffic issues, site ingress/egress, and right-of-way improvements and stormwater management. Ultimately the existing school property was the preferred site.



The school project encompassed design of a new 190,000 SF, 925-student middle school on an extremely constrained 11-acre site of the existing school, which was required to remain fully operational during construction of the new school. Demolition plans were prepared for the school and associated on-site athletic facilities, and construction of the new school was completed where the athletic fields were once located. Phase II of the project included a new football field, track, bus loop, and roadway improvements, which were completed in 2010.

MSA performed topographic surveying and property line surveying for Beach Garden Park, Virginia Beach Middle School, portions of 25<sup>th</sup> Street, and Kilbourne Court and Holly Road, along with hydrographic surveying of Little Neck Creek. We also created a re-subdivision plat illustrating vacated internal lot

lines in order to create one overall parcel, and prepared the MT-1 application package necessary to obtain a Letter of Map Revision from FEMA in effort to move the newly constructed school from the Special Flood Hazard Area. All survey tasks were reviewed by a licensed land surveyor.

A Phase I Environmental Site Assessment (ESA) was completed to reveal one Recognized Environmental Condition (REC) that was associated with an unused fuel oil underground storage tank (UST) which was used to facilitate a boiler. As a result, MSA conducted a Phase II ESA to investigate subsurface conditions to investigate subsurface conditions surrounding the UST for the presence of any petroleum impact resulting from use of said tank.

MSA's Environmental Sciences Department also prepared a Joint Permit Application (JPA) for the impact to wetlands resulting from replacement of storm outfall pipe into tributary of Little Neck Creek, including preparation of required drawings to accompany application. In addition, MSA coordinated all efforts with the Army Corps of Engineers, submissions to the DEQ and follow up for Water Protection Permit 1. Further, portions of the existing track were located in the 50-foot seaward buffer of the Chesapeake Bay Preservation Area Resource Protection Area (CBPA RPA), requiring delineation of the CBPA buffer.

MSA also prepared a Virginia Pollution Discharge Elimination System (VPDES) Permit and a Storm Water Pollution Prevention Plan (SWPPP). We assisted with the construction phase by performing site visits, resolving field conflicts, and responding to contractor RFI's. Our surveyors performed construction phase surveying for the general contractor.

In the new Middle School, the classroom wing is three stories to house the student population on a small footprint, and the school incorporates low impact development design in accordance with the planned LEED Certification. MSA assisted in obtaining LEED certification for the Civil Engineering Site Work portion of this project including analysis of available options and completion of LEED credit templates. Civil engineering construction documents included dimensional site layout; erosion and sedimentation control; paving, sidewalks and parking for 20 buses and 90 cars; grading, drainage and stormwater



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management (utilizing bioretention rain gardens); water and sewer utilities; and landscaping details. Improvements to 25th Street fronting the school were designed to create a traffic roundabout with space for sculpture.

Students occupied the new school in March 2010.

Client Reference: HBA Architecture & Interior Design  
One Columbus Center, Suite 1000  
Virginia Beach, VA 23462  
C. Michael Ross, AIA  
(757) 490-9048

Owner: Virginia Beach City Public Schools  
Municipal Center, Building 16  
Virginia Beach, VA 23456  
Anthony L. Arnold  
(757) 263-1090

Completed: 2008 (design); 2010 (construction)

Estimated Value: \$37,156,000.00

MSA Team: Jeffrey J. Vierrether, LS – Surveyor; Douglas M. Will, P.E., NSPE – Civil Engineer; Gregory B. Hayes, PE, LEED AP – Civil Engineer; Charles H. Hall, PG – Environmental Scientist; Brian R. Owen – Environmental Scientist; Michael E. Perry, LA, ASLA – Planner