

# B2E CONSULTING ENGINEERS

B2E Consulting Engineers, P.C. is a service oriented engineering consulting firm based in the Northern Virginia metropolitan area .

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## LOUDOUN COUNTY PUBLIC SCHOOL SYSTEMS NEWEST ENERGY EFFICIENT HIGH SCHOOL



### JOHN CHAMPE HIGH SCHOOL

41535 SACRED MOUNTAIN STREET  
ALDIE, VIRGINIA

Located on a 100-acre wooded site in Aldie, Virginia, the 290,000 square foot building is the first new design, two-story high school in Loudoun County. This project bid at \$60,000,000, approximately \$6,000,000 under budget. The project had an aggressive schedule with a completion time of 18 months. The state of the art educational facility features classrooms, laboratories, administrative offices, kitchen, cafeteria, library, auditorium, music, gymnasiums, locker rooms, tech ed facilities, as well as artificial turf athletic fields with sports lighting.

B2E Consulting Engineers, P.C. is very excited to be the MEP Engineers for this project. John Champe High School was designed using green renewable energy systems, including solar thermal panels for DHW and HW heating, photovoltaic solar panels (10kW), high efficiency lighting, primary variable flow chiller plant, primary variable flow condensing boiler plant, energy recovery ventilation for the classrooms and the locker rooms, energy efficient variable flow fans, energy efficient variable flow pumps, LED exterior lighting, and EMS control strategies to optimize energy savings for a projected energy savings of \$0.40 - 0.50 per square foot as compared to previous LCPS school designs. The project is built to the Loudoun County Public Schools Sustainable Design Standards. John Champe High School exceeds ASHRAE 90.1 –2007 energy efficient performance by over 30%. The school building was designed using BIM Autocad 2012 MEP 3D. Contractors used the BIM model to coordinate all systems prior to starting installation, subsequently reducing conflicts in the field. B2E uses REVIT-2013 for all current designs.

**Project Budget:** \$66,000,000

**Actual Cost:** \$60,000,000

**Design Schedule:** Jan 2009—Jan 2010

**Construction Time:** 18-months

**Completion:** July 2012

**Delays:** Zero

**Net Change Orders:** < 0.5%



VIEW OF SOLAR PANELS

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