Freetown Elementary School

Glen Burnie, MD

Owner: **Anne Arundel County Public Schools**

Project Team

Architect & Interior Design: **Rubeling & Associates**

Civil Engineer: **KCI Technologies**

Construction Manager: **Jacobs Engineering Group**

Electrical Engineer: **James Posey Associates**

Geotechnical Engineer: **D.W.Kozera**

Life Safety/Fire Protection: **Koffel Associates**

Lighting Design: **James Posey Associates**

Mechanical & Plumbing Engineer: **James Posey Associates**

Structural Engineer: **Columbia Engineering**

Provided by Anne Arundel Public Schools

Provided by Aerial Photographers LLC

MECHANICAL

Mechanical Room is located in southwest corner of building with two boilers, 2 chilled/heating pumps, and domestic water heater. An air cooled chiller is located outside with a 1500 gallon grease inceptor. Two energy recovery units serves each classroom wing. The school is also equipped with ductless split system units, fan coil units with outdoor air and with conditioned outdoor air. An air source heat pump supplies the Extended Day Program addition to the building.

ELECTRICAL/LIGHTING

Adjacent to the main mechanical room is the electrical room, located in the southwest corner of the building. Freetown Elementary School has a connected load of 1396.1 kVA and a demand load of 1056.9 kVA. Located in the main electrical room is a switchboard with a main breaker of 2000 amps and a voltage of 277/480V 3 phase. Most of the lighting is 277 V with fluorescent, HID, and incandescent types of lights.

CONSTRUCTION

The existing Freetown Elementary School was demolished in order to build the new school and create new sports fields in place of the old school. The new school (83,000 ft^2 was managed through multiple prime contracts with design-bid-build and started construction March 2008, finishing May 2010. The building was divided into three different sections for easier flow of construction. The two wings each being a different section and the gym/ cafeteria being another.

STRUCTURAL

The building has a lateral braced frame with cast-in-place concrete columns of varying size. The first floor slab on grade is 5 inches thick with welded wire fabric over 6 mil vapor barrier and 4 inch washed gravel. The second floor slab is 3 inches normal weight concrete with 28 gage galvanized form deck. Steel joists span the classrooms and the corridors.

Matthew Buda — Mechanical Option

http://www.engr.psu.edu/ae/thesis/portfolios/2011/mrb5143/index.html