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**Buffalo Public School #17**

*Buffalo, NY*

S&E provided the civil and structural engineering for interior renovations and two, 1 story additions. The new cafeteria addition of 1,600 s.f. is steel framed and includes a structural slab over a crawl space, supported on a caisson foundation. The also includes several renovations to the existing 2 story structure. This project is scheduled to be completed in 2012, and is part of the Buffalo Schools Phase IV Renovations.



**Buffalo Public School #81**

*Buffalo, NY*

Design of civil and structural plans for interior renovations and a 3 story addition to a Buffalo School constructed in the 1920's. The new 24,000 s.f. steel framed addition is supported on a spread foundation and interior renovations to the existing 3 story structure include stairway reconstruction and new elevators and lifts. This project is scheduled to be completed in 2011, and is part of the Buffalo Schools Phase IV Renovations.

**Renovations to Charlton Hall, Morrisville State College**

*Morrisville, NY (Est Completion Date 2009)*

S&E is providing the structural engineering assessment for the program study portion of the building renovation project. This project involves the construction of 2 additions to expand program space, stairways, elevators, and the construction of 2 penthouse structures to enclose new HVAC units. The existing building utilizes a cast-in-place concrete frame with prestressed concrete floor and roof beams, and cast-in-place slabs. The building is supported by both shallow and deep spread footings.

**State University of NY @ Buffalo**

*North Campus, Amherst, NY*

**Systems & Engineering** has provided structural engineering services for several projects at the North Campus. We are currently preparing the foundation drawings for the replacement of two chiller structures at the chilled water facility. This project will be complete in the Fall of 2009.

S&E was the structural engineer of record for the replacement of the Student Union roof. Determination of appropriate wind and snow loadings, design of new metal roof attachment, project site meetings, inspections were included.

S&E designed a new handicapped accessible building entrance ramp for the Chilled Water Facility. This structure was designed to replace an existing stairway and bridge structure. Construction is currently underway and will be complete by late summer 2009.

**Buffalo Public School # 205 – Phase III**

*Riverside School, Buffalo, NY*



**Systems & Engineering** provided the structural engineering design drawings for additions and renovations to this 3 story structure. A two story addition on a pile foundation and renovations to interior structures are included in the design.

**Buffalo Public School # 45 – Phase III**

*International School, Buffalo, NY*

**Systems & Engineering** prepared both the civil/site and the structural drawings for additions and renovations to this 3 story structure. A two story addition, infill of a one story portion, renovations to interior structures, and new site plan/drainage plan are included in the design.



**Buffalo Public School # 27- Hillary – Phase III**

*Buffalo, NY*



**Systems & Engineering** is currently designing the structural framing for additions and renovations to this structure. A two story addition supported on a pile foundation is planned.

**Buffalo Public School #43 – Phase III**

*Buffalo, NY*

**Systems & Engineering** provided civil/site engineering drawings for reconstruction and renovations.



## Renovations and Additions to Buffalo School # 95, Waterfront Academy, Phase II Buffalo, NY



Systems & Engineering, PC is responsible for additions and renovation work that required structural and civil engineering design. The project work includes a three story classroom addition with approximately 17,500 square feet in size. The new construction is located at the southwest corner of the school. The new construction replicates the existing building by using sloped steel roof and masonry exterior bearing walls. Steel joists and metal deck support the interior concrete slabs. Also, new construction will be used for a relocated lobby of approximately 3,900 sf at the northeast corner of the school. A new exterior structural steel canopy protects the new lobby entrance.

New foundations are concrete caissons with concrete slabs forming a crawl space. This is similar to the existing thus creating a connecting basement. S&E also designed the underground storm water drainage system.

## Buffalo East High School (BVTC) – Phase I Buffalo, NY

**Systems & Engineering, PC** performed the structural engineering design of additions and renovation work. The most challenging portion of the project was to infill a courtyard for two floors, which required the removal of a 2 foot thick bearing wall at ground and first floors. This wall supported five stories with natural arch windows. Detailed construction procedures were developed to transfer loads to the new frame without damaging the masonry wall on the floors above.



The construction process required the temporary steel shown here that allowed the removal of the existing wall as well as the installation of the foundations and the structural steel frame.



The construction process had to be closely monitored to prevent structural damage to the bearing wall above and natural arch windows. The picture below shows the new steel frame supporting the "needle beams" that were torch cut and left in place.

This project received an award for the "Best Educational Project" from Business First (9-16-05).

**D'Youville College Dormitories**  
East North St & Michigan Ave., Buffalo, NY

S&E designed the structural framing for a new 4 story dormitory structure with a partial basement. The building utilizes precast floor slabs, masonry bearing and shear walls, reinforced concrete grade beams, and drilled caissons.



**Jewish Center Rehabilitation**  
Amherst, NY

S&E assessed damage to existing floor joists and column bases, designed a program of remediation, and oversaw contractor repairs to the structure. Responsibilities included damage reporting and testing, determination of cause, and rehabilitation design.



**Marysville High School Addition**  
Marysville, OH

S&E provided structural design drawings for the expansion of the Marysville School in Marysville, OH. This project included a 2 story classroom wing, new music room, new entryways, and the addition of a 90' x 90' clear cafeteria / meeting room with a tubular steel trussed roof and center skylight cupola.

**Cold Formed Steel Framing Design**

S&E provided the light gage cold-formed steel framing design drawings for numerous schools including:

Buffalo Schools #17 & 89  
Lancaster High School Expansion  
The Alden High School at Townline

Ellicott Complex at SUNY Buffalo  
Cranston Hall Addition at Fredonia College  
Wilson Central High School

**Hutchinson Technical High School**  
Buffalo, NY

S&E designed a new fuel tank vault slab to replace an existing structure. The new vault slab carries parking lot and truck loading adjacent to the existing structure.