



Civil / Structural /  
Transportation Engineers

Construction  
Inspectors/Managers

Bridge Condition  
Inspectors

*New Jersey  
New York  
Pennsylvania*

[www.sjheng.com](http://www.sjheng.com)

## Croton Falls Pumping Station

Westchester, New York

### **PROJECT TYPE**

Design

### **CONTRACT AMOUNT**

\$10,000,000 construction value

### **ROLE**

Subconsultant to Gannett Fleming Inc., and  
Malcolm Pirnie, JV  
Structural Engineering

### **PROJECT OWNER/CLIENT**

New York City Department of  
Environmental Protection

### **START & END DATES**

10/2010 – 11/2011

### **REFERENCES**

Steve Hadjiyane, Gannett Fleming Inc.  
(516) 671-8440

### **PROJECT DESCRIPTION**

The Croton Falls Pumping Station is a new two-story building to house pumps and other equipment as part of the Cross River and Croton Falls Pumping Stations and Related Facilities Improvement Project. The proposed Pumping Station is a 14,000 square foot building, located on the Delaware Aqueduct, Shaft 11. The proposed design features six (6) pumps at the Pump Room level with Electrical and Control Rooms at the same level. Mechanical Equipment is located on the mezzanine level. The steel frame building features an exterior masonry veneer. In order to maintain a consistent appearance and conform to the general architectural appearance of other NYCDEP Pumping Stations, the roof is designed with slopes in all four directions, ridges and skylights. Roof trusses of various geometries were developed to match the existing roof configuration.

We provided structural design services for the Pumping Station building. The structural steel frame was modeled in STAAD and analyzed. The design was based on the New York State / City Building Code, with most stringent clauses. Bracing was strategically positioned at select bays to avoid conflicts with window placement. Curved steel lintels span over the windows. Due to the roof geometry, the facility contains long span steel roof trusses with complicated connections to steel roof members. A girder, designed below the roof level, supports the crane used to hoist pump equipment.