

# MH Professional Engineering, PLLC



## GREEN BUILDING PROJECT EXPERIENCE

### **DEPARTMENT OF ENVIRONMENTAL CONSERVATION REGION 3 HEADQUARTERS BUILDING**

New Paltz, NY

- Lead Mechanical and Electrical Engineers for a 20,000 ft<sup>2</sup>, two-story complete renovation and 22,000 ft<sup>2</sup> addition.
- The project included a 24-well water-to-water geothermal heat pump system for heating hot water and chilled water generation, a 4-pipe distribution system, a lighting control system, and use of water saving plumbing fixtures throughout the building.
- The project achieved a Silver rating under LEED 2.1 with the United States Green Building Council.



# MH Professional Engineering, PLLC



## GREEN BUILDING PROJECT EXPERIENCE

### **DEPARTMENT OF ENVIRONMENTAL CONSERVATION REGION 5 SUB-OFFICE BUILDING**

Warrensburg, NY

- Project managed the entire engineering scope and designed the HVAC, plumbing, and fire protection systems for a 16,000 ft<sup>2</sup>, two-story complete renovation and 12,000 ft<sup>2</sup> addition.
- The project included a variable air volume air handling system, heating hot water generation and distribution system, DX cooling, a lighting control system, and use of water saving plumbing fixtures throughout the building.
- The project was awarded a Gold Rating under LEED 2.1 with the United States Green Building Council.



# MH Professional Engineering, PLLC



## GREEN BUILDING PROJECT EXPERIENCE

### NYS DEPARTMENT OF TRANSPORTATION REGION 1 HEADQUARTERS

Schenectady, NY

- The Department of Transportation (DOT) Region One Headquarters located in downtown Schenectady earned a LEED 2.0 “Silver” rating from the United States Green Building Council due to its environmentally-friendly design and construction.
- The project involved redevelopment of a vacant urban site into a four-story, 125,000 ft<sup>2</sup> design/build office building.
- Firm principal was responsible for the mechanical engineering design and commissioning services of the HVAC and fire protection systems on this project.
- The mechanical building systems were designed to meet LEED 2.0 standards and included five boilers, four air handlers, two water-cooled chillers, and two cooling towers. Energy efficiency was achieved so that the building's energy cost dropped to 35 percent below its modeled baseline and water consumption dropped to 32% below that of a standard building.
- The building project tied into the municipal water, sewer, natural gas and electrical services, and at the same time allowed for needed upgrades to this vital infrastructure.
- All HVAC equipment – chillers and package equipment – was selected based on criteria of non-ozone depleting refrigerants.
- A carbon dioxide (CO<sub>2</sub>) monitoring and control system was installed to respond to occupancy and maintain acceptable CO<sub>2</sub> concentrations, while at the same time reduce energy use for conditioning of ventilation air. Diffuser selection and layout were designed to achieve effective air mixing.
- The commissioning began during the design phase, and continued through construction, training, and into the warranty period to ensure that the functional and energy efficiency objectives for the project were achieved. As part of the commissioning services performed, a recommissioning manual was written for use by the building owner to maintain the building's LEED rating. This project was one of the first New York State office buildings to achieve a LEED rating.





# MH Professional Engineering, PLLC



## GREEN BUILDING PROJECT EXPERIENCE

### FORENSIC INVESTIGATION UNITS AND COMMAND CENTERS

Ray Brook, Oneida and Middletown, NY

- MH Professional Engineering was retained by The Office of General Services (OGS) to provide consulting and design engineering services for the Forensic Investigation Unit (FIU) and Command Center addition and renovation projects in Ray Brook, Oneida, and Middletown, NY.
- The designs in all three buildings incorporated LEED standards and Executive Order 111 for “green” buildings and are LEED certified with the United States Green Building Council.
- The result of the engineering services was a coordinated prototypical set of building engineering documents allowing for consistent design and construction between the three sites.
- New FIU buildings were planned to alleviate some of the overcrowding within the existing headquarters buildings. With the rapidly expanding role of the forensic sciences in police investigations and new regulations requiring long-term storage of DNA evidence, the existing headquarters buildings no longer support the needs of the forensic investigations unit. Specifically, the FIU buildings provide much needed evidence storage, laboratory and office space for the rapidly expanding departments of Forensic Investigations and Computer Crimes.
- The command center supports all the troop radio dispatch and communications functions, the park police dispatch functions and non-business hour troop desk operations. All of the facility sites, with the exception of the Ray Brook facility, have command center upgrades, which include the design and construction of a small data center.



# MH Professional Engineering, PLLC



## GREEN BUILDING PROJECT EXPERIENCE

### TAPESTRY ON THE HUDSON

Troy, NY

- Lead Mechanical, Electrical, Plumbing, and Fire Protection Engineers for the complete redevelopment of a seven-story, early 1900s warehouse into mixed-income family rental housing located in Troy, New York.
- The estimated \$22.2 million project generated a total of 67 one- and two-bedroom units. It also incorporated numerous energy-saving features including solar panels and geothermal heating and cooling systems. A community room, kitchen, laundry and exercise facility were incorporated as well. In addition, the development boasts an elevated green space which overlooks the Hudson River and provides residents with recreational opportunities.
- HVAC systems consist of individual heat pumps located in each apartment, a geothermal heating/cooling water loop, back-up boiler, continuous fresh air ventilation system with energy recovery units, and dryer exhaust system.
- Plumbing systems include water and sanitary systems, storm water drainage, natural gas distribution system, and gas-fired central water heaters with recirculation loop.
- Storm drainage system includes a connection to a cistern for community gardening plot.
- A fire sprinkler system was provided for the building. A diesel-powered fire pump was designed to meet the requirements of the local jurisdiction.
- Designed new 2500A electrical service to the building with individual tenant metering.
- Provided electrical distribution system design for elevators, mechanical loads throughout the building, as well as power for lighting and receptacles.
- Designed new building fire alarm system, lightning protection system, and security system.

