

# MH Professional Engineering, PLLC

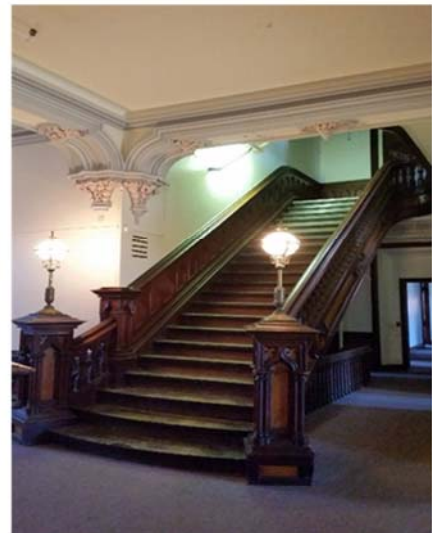


## INSTITUTIONAL PROJECT EXPERIENCE

### **CASTLE ON THE HILL EXISTING CONDITIONS STUDY, BINGHAMTON PSYCHIATRIC CENTER**

Binghamton, NY

- Lead Mechanical, Electrical, Plumbing, and Fire Protection Engineers for a study on an 86,000 ft<sup>2</sup> landmark constructed in 1858.
- The gothic revival building is listed on the National Register of Historic Places as the New York State Inebriate Asylum. The building has been vacant for approximately 20 years, but measures have been taken to preserve the building.
- MH Professional Engineering provided short-term recommendations and cost estimates for immediate actions that should be taken to stabilize building deterioration as well as long-term solutions and cost estimates for rehabilitating the building for future occupancy.



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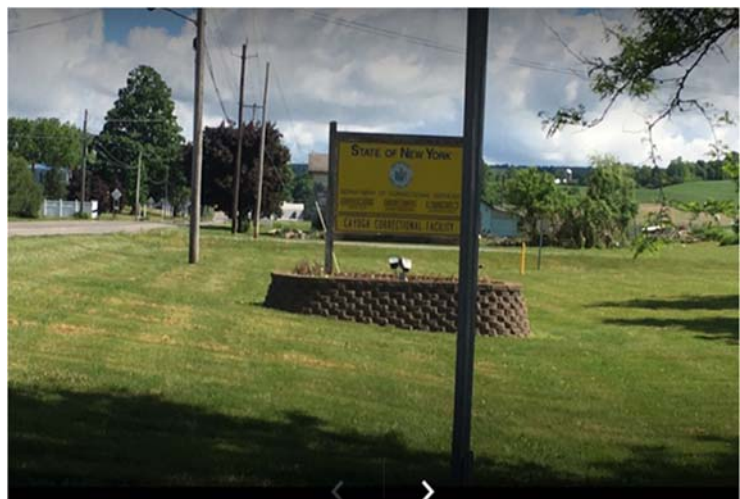


## INSTITUTIONAL PROJECT EXPERIENCE

### **CLASSROOMS AND OFFICE SPACE, BLDG. 38, RESIDENTIAL REHABILITATION UNIT, CAYUGA CORRECTIONAL FACILITY**

Moravia, NY

- This project was part of the nine expedited design and construction projects for the Residential Rehabilitation Unit Program Initiative.
- Lead Mechanical, Electrical, and Plumbing Engineers for the renovation of 11,500 ft<sup>2</sup> space in the basement of a secure housing unit at a medium security correctional facility from storage to classroom and office space.
- HVAC systems serving these renovations consisted of an indoor desiccant dehumidification energy recovery make-up air unit in the attic for ventilation air and exhaust, and an indoor air handling unit with hot water coil for space conditioning located in the basement. The system is capable of 100% economizer cooling and controlled by an existing facility Building Management System.
- Renovations included two secure bathrooms and one staff bathroom. Plumbing systems included appropriate thermostatic mixing and recirculation of domestic hot water to existing water heater. A duplex sewage ejector pump was added for the restrooms and two sump pumps were replaced. Modifications were also added to existing cell waste stacks to relieve blockage issues.
- Secure LED lighting was provided in the inmate occupied renovated spaces. Exit and emergency light was placed in accordance with current code requirements for egress.
- Electrical power distribution design included receptacles, HVAC, and plumbing equipment power. A/V and CCTV camera equipment was provided to meet new classroom and office layouts for the basement and second floor.
- PA speakers, telephone and data backboxes, conduits with pullrope were provided throughout all the renovated spaces.



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## INSTITUTIONAL PROJECT EXPERIENCE

### **CAPITAL DISTRICT PSYCHIATRIC CENTER INPATIENT RENOVATIONS WITH ASSOCIATED ASBESTOS ABATEMENT**

Albany, NY

- Lead Mechanical, Electrical, Plumbing, and Fire Protection Engineers for the renovation of five inpatient living units at The Capital District Psychiatric Center totaling 62,500 ft<sup>2</sup>.
- The project was planned with extensive phasing, allowing for the work to progress smoothly while ensuring uninterrupted operation of the psychiatric center. To achieve this, one unit was repurposed as swing space, guaranteeing patient care was never compromised.
- The design required the redistribution of airflows and modification of ductwork to match the reconfiguration of the spaces. It also included adding exhaust systems for toilet and laundry rooms, dryer exhaust, and addressing fire and smoke damper requirements.
- Part of the design comprised adding a bathroom, laundry room, and janitor's closet to a floor level where no plumbing previously existed, altering medication rooms and adding an exam room to each living unit.
- Electrically, the scope involved the design of new lighting, egress lighting, and exit fixtures throughout the living units, as well as reconfiguring branch circuitry, replacing panelboards, and making each living unit electrically independent from adjacent units. Additionally, the project expanded the existing emergency power system, supported security systems, and upgraded the fire alarm.
- The fire protection system within each living unit was adjusted to match the space reconfiguration.
- Throughout the entire design process, our team placed paramount importance on patient safety, functional efficiency, and adherence to prevailing industry standards.
- The project was executed to meet and exceed all patient safety standards set by the Office of Mental Health (OMH).



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## INSTITUTIONAL PROJECT EXPERIENCE

### **CLASSROOMS, BLDGS. 5 & 6, AND OFFICE BUILDING ADDITION, RESIDENTIAL REHABILITATION UNIT, SOUTHPORT CORRECTIONAL FACILITY**

Pine City, NY

Lead Mechanical, Electrical, and Plumbing Engineers for a multi-faceted project at Southport Correctional Facility.

#### **Renovations for the Addition of Classrooms**

The renovations for the addition of classrooms involved various electrical engineering tasks, including the addition of LED lighting, replacement of exit and emergency lighting, provision of lighting controls from a secure control room, installation of general receptacles, power for laptop carts, HVAC, plumbing, A/V equipment, and IP camera equipment. Additionally, the existing PA system was reconfigured, and A/V, telephone, and data raceway and cabling were provided throughout all the renovated spaces.

#### **Recreation Pen Renovations**

In the recreation pen renovations, the electrical engineering scope included the design of maximum security LED wall pack lighting and LED canopy lighting for the pens, as well as the design of manual lighting controls to the 1st floor secure control room. Furthermore, the engineer designed grounding for all pens, fencing, and the Guard Building, and provided conduit, cabling, and junction boxes for the installation of IP cameras and microphones.

#### **Temporary Vehicle Compound and Expanded Parking Lot**

For the temporary vehicle compound and expanded parking lot, the electrical engineering scope involved the design of feeder and routing through Building 1 for the compound, exterior route to the location of the Guard Station within the vehicle compound, conduit and wire design for parking lot lighting and temporary access road lighting, and grounding design for light pole bases and vehicular compound fencing.

#### **Addition of Building 50**

The addition of Building 50 was a comprehensive project that required the expertise of mechanical, electrical, and plumbing engineers. The HVAC system included an indoor air handling unit with a hot water pre-heat coil and a packaged DX system serving VAV boxes with hot water reheat coils. The plumbing systems included new domestic cold water and sanitary waste services, with domestic hot water connected to the existing facility loop. The electrical systems included various components such as feeder from an existing 15kV manhole to a pad-mounted switch, building electrical distribution system, central battery unit for emergency power, full system grounding, branch circuit distribution for various purposes, maximum security LED wall pack emergency lighting, and a public address system.

The entire project was halted in July 2021 due to a decline in the prison population.



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## INSTITUTIONAL PROJECT EXPERIENCE

### **ELECTRONIC SECURITY UPGRADES FOR SOUTHPORT, GROVELAND, ALBION & SING SING CORRECTIONAL FACILITIES**

Pine City, Sonyea, Albion & Ossining, NY

- Lead Electrical Engineer for upgrades to the electronic security systems at four correctional facilities.
- The scope of work included upgrading the facility-wide CCTV/audio monitoring system.
- A facility-wide civilian personal alarm system was provided at both Groveland and Albion correctional facilities.
- Power distribution upgrades were required at various locations within the facilities to support the monitoring and recording equipment.
- Electronic Equipment Rack rooms were created/expanded in the facilities requiring increased power distribution, UPS power, improved lighting, and critical cooling.
- Facility design for multiple campus buildings to be connected and monitored from one central location. Provided design of the site underground and aboveground distribution for low voltage cabling and fiber optic cabling.



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## INSTITUTIONAL PROJECT EXPERIENCE

### **LOBBY & SECURITY OFFICE RENOVATION, BLDG. 40, CREEDMOOR PSYCHIATRIC CENTER** Queens Village, NY

- Provided Mechanical, Electrical, Plumbing, and Fire Protection engineering design services for the renovation of the entrance, main lobby, and duty station at the psychiatric hospital.
- The project included the establishment of a temporary visitor entrance and duty station as well as the main entrance renovation.
- Project scope included reconfiguration of the HVAC and sprinkler systems to match space layout, complete renovation of existing toilet rooms, new lighting and power distribution reconfiguration to support new space layout, and upgrades to electronic security and safety systems.



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## INSTITUTIONAL PROJECT EXPERIENCE

### **REPLACE CATWALKS, PLUMBING & ELECTRICAL SYSTEMS, BLDGS. 32 & 34 A & B BLOCKS, SING SING CORRECTIONAL FACILITY**

Ossining, NY

- Lead Electrical Engineer for repair project.
- Initial project scope was to upgrade the catwalk system between the cells. Based on existing conditions in the pipe gallery area, the scope has increased to include cell back repairs, plumbing fixture replacement, plumbing piping replacement, and the replacement of cell electrical components.



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## INSTITUTIONAL PROJECT EXPERIENCE

### **REPLACE CELL BACKS, BLDG. 7, A & B BLOCKS, GREEN HAVEN CORRECTIONAL FACILITY**

Stormville, NY

- Lead Mechanical, Electrical, and Plumbing Engineers.
- Project scope included replacement of steel cell backs, new stainless steel security plumbing fixtures, electronic water control system, plumbing piping replacement, upgrade to the cell exhaust system, addition of heat recovery makeup air system for galleries, replacement of cell light fixtures with LED fixtures, replacing/upgrading power to cell where necessary, and upgrades to lighting in catwalk area.





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## INSTITUTIONAL PROJECT EXPERIENCE

### **REHABILITATE CELL BLOCK SHOWERS, GREAT MEADOW CORRECTIONAL FACILITY**

Comstock, NY

- Lead Mechanical and Plumbing Engineers.
- Project scope included the total removal and reconstruction of shower stall area and CO toilet.
- Replaced the existing inmate shower waste, vent/hot water and cold water risers from the fourth floor down to the sub-basement. Replacement in the sub-basement stopped at the existing mains.
- Retained the existing sanitary waste/vent risers serving the officer plumbing fixtures in the existing locations and enclosed existing risers within new pipe chases.
- Repiped all domestic cold/hot water supply and the hot water return risers from the sub-basement up to the fourth-floor showers within the new pipe chases.
- Provided new isolation valves for water supplies to new plumbing fixtures on each level. Insulated all new water piping and portions of existing piping at each connection.
- Provided new floor drains in the showers and in the shower dressing areas.
- Provided new water closet and sink installations for the officers at each level.
- Replaced the existing exhaust branch and main ductwork serving the inmate shower areas and correctional officer's toilet room.
- Replaced the existing exhaust mains and exhaust fan in the attic.



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## INSTITUTIONAL PROJECT EXPERIENCE

### **MACCORMICK SECURE CENTER**

Brooktondale, NY

- Designed a full sprinkler system for existing secure building.
- Project included fire pump system from an on-site pond.

### **REPLACE BAR SCREEN, MOHAWK CORRECTIONAL FACILITY**

Rome, NY

- Lead Electrical Engineer.
- Completed the demolition of all existing electrical within the building, including the electrical and telephone services to the building.
- Designed electrical/telephone services, new power/lighting design, power circuitry to all new special equipment, new telephone service for repeater, new power design to bar screen control panel and flow/level control panel and design of control wiring as required.
- Electrical work was classified as Class I, Division I.
- Completed a code/standards review.

### **INDUSTRY RESIDENTIAL CENTER BUILDINGS 72, 73 & 74**

Rush, NY

- Lead Mechanical and Plumbing Engineers for upgrades to bathroom and shower rooms at a juvenile secure center.
- A total of three buildings were included in the project for a total of 7,000 ft<sup>2</sup>.
- Renovation of the plumbing systems included a total of 24 showers, 18 water closets and lavatory sinks, and 18 drinking fountains. All fixtures were secure finishes and anti-ligature. New thermostatic mixing valves provided for the domestic hot water system.
- Existing exhaust systems were completely removed. A total of six energy recovery ventilators with hot water coils were designed to exhaust air from the restrooms and showers and provide conditioned make-up air to these spaces. Fin tube radiators were replaced on perimeter spaces to fit the new space layout.

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## INSTITUTIONAL PROJECT EXPERIENCE

### WALLKILL CORRECTIONAL FACILITY, NEW FIRE ALARM SYSTEM

Wallkill, NY

- Designed the replacement of the existing fire alarm systems within the 12 buildings comprising this medium security prison.
- This included a new fire alarm control panel containing Class B wiring to fire alarm devices within each building and a Class A configuration between the buildings.
- Smoke detectors, horn/strobes, strobes, manual pull stations, exact conduit routing, device addresses, wire types and sizes were detailed within each building.
- Each building's fire alarm control panel was tied together with Class A wiring.
- Included were the maintenance building, storage/maintenance office, firehouse, ten-car garage, cold storage building, carpentry, mason and paint shop, visitor pavilion, recycling building, visitor's center, fire safety building, vehicle maintenance building and recycling building.



## INSTITUTIONAL PROJECT EXPERIENCE

### WATER STORAGE TANK REPLACEMENT, CAMP SMITH

Cortlandt Manor, NY

- Lead Electrical Engineer for a water storage tank replacement at the Department of Military and Naval Affairs Camp Smith site in Cortlandt Manor, NY.
- Provided for the removal of all power to existing water tank.
- Designed new electrical service, general purpose lighting, obstruction lighting and general purpose power for replacement water tank.



## INSTITUTIONAL PROJECT EXPERIENCE

### **COOLING PIPE REPLACEMENTS, BUILDINGS 1-9, ELMIRA PSYCHIATRIC CENTER**

Elmira, NY

- Lead Electrical Engineer for the replacement of above ground chilled water piping and associated systems in Buildings 1-9 of the Elmira Psychiatric Center.
- The project scope included providing piping above ground and in buildings, providing a glycol feed system, upgrading system pumps, and upgrading piping and heat exchangers for each building.
- Designed new switchgear for support of proposed larger pumps in Building 1.
- Designed stanchion system to support combination VFD & disconnect.
- Designed conduit, wire and switchgear location for large pumps in Building #1.
- Designed conduit, wire and bucket location for additional pumps in Buildings 2 through 9.

### **LOBBY RENOVATION, BLDG 34, MARY BROOKS TRANSITIONAL LIVING PATIENTS, KINGSBORO PSYCHIATRIC CENTER**

Brooklyn, NY

- Lead Mechanical and Electrical Engineers for the renovation and rehabilitation of the facility's main entrance lobby in order to improve the safety and security of the entrance and safety post.
- Refurbished existing fin tube radiators and enclosures along exterior curtain walls.
- Removed existing through-wall packaged air conditioning units and replaced with ductless split units to meet cooling load demands and space reconfiguration.
- Removed existing cabinet unit heater and replaced with fin tube radiator and controls to meet space reconfiguration.
- Replaced existing sprinkler heads with appropriate institutional heads and modified coverage to meet new space configuration.
- Provided removal plans for existing gates, entry lobby-area lighting, fire alarms, exit signs, desk power, reception area door hardware support.
- Designed temporary security post, including pathways for door control, intercom, boiler notification light and telephone.
- Designed new LED lighting, exit signs, smoke detectors, power for door controls, pathways for intercom, boiler notification light, telephones, CCTV and power to AC-CU unit for reconfigured and upgraded lobby entrance.

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## INSTITUTIONAL PROJECT EXPERIENCE

### STATE PREPAREDNESS TRAINING CENTER

Oriskany, NY

- The State Preparedness Training Center serves as a hub for emergency response training for natural, technological, and terrorism-related disasters for first responders at all levels of government.
- The building's function is to serve as a training center for emergency vehicular operation and includes driving simulators and classrooms, and is adjacent to a repurposed airport runway system for actual driver training.
- The building design included a VAV system for heating and cooling, a vehicle exhaust system, radon evacuation system, wet, dry and chemical sprinkler systems, emergency power system, fire alarm system and security system.



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## INSTITUTIONAL PROJECT EXPERIENCE

### WASHINGTON CORRECTIONAL FACILITY

Comstock, NY

- Lead building systems engineers for the replacement of the recreation yard toilet facilities. The scope of work included the design of electrical, plumbing, and mechanical systems for the proposed toilet facilities, the upgrading of site lighting for the running track area and emergency lighting for the guard station in the recreation yard.
- In a separate project, MH Professional Engineering was the lead mechanical, electrical, and plumbing designer for upgrades to eighteen shower rooms in nine dormitories.
- Electrical design was also provided for the upgrade of the ventilation system in the weight room in Building 8.



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## INSTITUTIONAL PROJECT EXPERIENCE

### **BROOKWOOD SECURE CENTER**

Claverack, NY

- Brookwood Secure Center is a fully secure detention facility for boys. MH Professional Engineering provided lead electrical engineering services for the design of the facility-wide fire alarm upgrade project.
- There were existing buildings that did not have fire alarm protection and others that were not networked into the Central Secure Unit. The project included the installation of new fire alarm systems in four buildings and the networking of all existing fire alarm systems at the facility.
- Also provided lead mechanical, electrical, and plumbing design services for the new laundry facility and upgrade to the existing UPS systems.

