

# MH Professional Engineering, PLLC



## TREATMENT CENTER PROJECT EXPERIENCE

### HOPE HOUSE

Albany, NY

- Lead Mechanical and Electrical Engineers.
- Complete gut rehabilitation of a 4-story, 18,000 ft<sup>2</sup> drug and alcohol rehabilitation long-term stay facility.
- A dormitory style arrangement of rooms increased the capacity to house clients and make staff supervision easier. The design incorporated space for production kitchen, group activities and classrooms.
- The renovations included complete new base building systems for the HVAC, electrical and plumbing. A residential sprinkler system was designed and incorporated into the new layout.



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## TREATMENT CENTER PROJECT EXPERIENCE

### EQUINOX YOUTH SHELTER

Albany, NY

- Lead Mechanical Engineer.
- This building was originally the parish school for St. John's Church and was built in the late 1800s. It was completely gutted and rehabilitated for this project.
- Equinox operates this youth shelter serving runaway, abused, and homeless youth and helping them find safety, shelter, food, and a professional, caring staff to help them through the crisis of homelessness.
- A suite arrangement of rooms increased the capacity to house boys and girls and made staff supervision easier. The design incorporated space for group activities and private areas for crisis intervention.



## TREATMENT CENTER PROJECT EXPERIENCE

### FEASIBILITY STUDIES, NEW YORK STATE OFFICE OF ALCOHOL AND SUBSTANCE ABUSE SERVICES (OASAS)

- New Choices Recovery Center Feasibility Study, Schenectady, NY
- Hospitality House, 72-Bed Intensive Residential Facility Feasibility Study, 15-25 Warren Street, Albany, NY
- Addiction Care Center of Albany (ACCA) Feasibility Study, 504 Second Ave., Troy, NY
- Addiction Care Center of Albany (ACCA) Feasibility Study, 79 Glenwood Ave., Queensbury, NY
- Hope House, Women's and Children's Residential Facility Feasibility Study, 890 Madison Ave., Albany, NY
- Addiction Care Center of Albany (ACCA) Feasibility Study, 68 Quaker Road, Queensbury, NY
- Peoples Inc. Feasibility Study, 320 Pollys Rock Road, Cairo, NY
- Twin County Recovery Services, 16-Bed Community Residence Feasibility Study, 7186 Rt. 32, Cairo, NY
- Peoples Inc. 20-Bed Detoxification Residence Feasibility Study, Greenport, NY
- Hospitality House, 72-Bed Intensive Residential Facility Feasibility Study, 271 Central Ave., Albany, NY
- Twin County Recovery Services, 24-Bed Women's Treatment Residence, 428 West Main St., Catskill, NY
- Champlain Valley Family Center, Recreation Bldg. Feasibility Study, 516 Norrisville Road, Schuyler Falls, NY
- Transitional Services Association, 20-Bed Rehabilitation Program Feasibility Study, 994 Rt. 67, Ballston Spa, NY
- Twin County Recovery Services, 18-Bed Residence Feasibility Study, Hudson, NY

Prepared the mechanical, electrical, plumbing, and fire protection portions of feasibility studies for various operating agencies of the New York State Office of Alcoholism and Substance Abuse Services (OASAS). Studies included new buildings for renovation of existing treatment facilities and for conversion into residential treatment facilities. Sites generally contained residence bedrooms, bathrooms, common spaces, kitchens, staff offices, and medical exam rooms.

As part of the studies, preliminary sizing of systems and preliminary cost estimates were provided. Several projects have recently secured funding and are now beginning design.



Hope House, 890 Madison Ave., Albany



Hospitality House, 271 Central Ave., Albany

## TREATMENT CENTER PROJECT EXPERIENCE

### **RENOVATION OF MEDICAL OFFICE BUILDING INTO RESIDENTIAL TREATMENT FACILITY**

Queensbury, NY

- Lead Mechanical, Electrical, Plumbing, and Fire Protection Engineers for the gut renovation and rehabilitation of a 7,800 ft<sup>2</sup> medical office building into a 22-bed residential treatment facility for the Office of Alcoholism & Substance Abuse Services (OASAS).
- Designed all electric building heating and cooling. Provided variable refrigerant volume heating and cooling system and direct outdoor air system for ventilation requirements.
- Designed new sprinkler system throughout building.
- Provided all DASNY required documentation and review processes.
- Designed power and fiber pathways from utility poles to incoming service entrance locations.
- Designed LED surface and recessed lighting system with automatic controls. Provided inverter for emergency egress lighting.
- Designed emergency lighting units for interior egress lighting and exit lighting to meet code requirements.
- Maintained existing timeclock for exterior lighting to remain.
- Designed upgraded power service and new distribution boards. Designed tamper-proof receptacles in bedrooms and common spaces. Bedrooms were fed through an arc fault breaker.
- Designed power distribution for all AC units, HVAC equipment, laundry equipment, special equipment in the kitchen, IT equipment room, and nurse areas.
- Designed full smoke detection with pull stations and notification where indicated with backboxes and pathways provided.



## TREATMENT CENTER PROJECT EXPERIENCE

### **RENOVATION OF BUILDING INTO RESIDENTIAL TREATMENT FACILITY**

Troy, NY

- Lead Mechanical, Electrical, Plumbing, and Fire Protection Engineers for the gut renovation and rehabilitation of an 8,000 ft<sup>2</sup>, three-story building into a 20-bed residential treatment facility for the Office of Alcoholism & Substance Abuse Services (OASAS).
- Replaced existing cast iron boilers in pit with wall hung condensing boilers for increased energy efficiency. Provided control valves at terminal units and variable speed pumps for reduced energy usage and increased occupant comfort.
- Replaced plumbing stacks and risers that were leaking and causing internal damage.
- Updated fixtures to meet current program health and safety standards.
- Provided new sprinkler system throughout building.
- Replaced all lighting with LEDs.
- Replaced zoned fire alarm with addressable system.
- Replaced receptacles with GFCI, AFCI, and tamperproof where required.
- Upgraded (2) 200A, 120/240V services with (1) 400A, 120/240V.
- Provided all required DASNY documentation and review processes.



## TREATMENT CENTER PROJECT EXPERIENCE

### **HOSPITALITY HOUSE, 72-BED INTENSIVE RESIDENTIAL FACILITY**

Albany, NY

- Lead Mechanical, Electrical, Plumbing, and Fire Protection Engineers for the design of a 4-story, 15,000 ft<sup>2</sup> renovation and 22,500 ft<sup>2</sup> addition. Parts of the existing building date back to 1862. Construction phased to allow for partial occupancy of the building by Owner.
- Building includes residential spaces for 72 beds, commercial kitchen with large dining area, living spaces, and office spaces.
- Design process included coordination and review with DASNY and OASAS.
- Common spaces in the building are primarily ventilated and conditioned with gas-fired rooftop units (RTUs) and zoned variable air volume (VAV) boxes with electric reheat coils. Bedrooms are conditioned and ventilated with packaged terminal air conditioners (PTACs) that were electric heat pumps with auxiliary electric heating coils. Type 1 kitchen hood ducted to rooftop exhaust fan and gas-fired indirect make-up air unit was provided for the commercial kitchen. All HVAC systems were provided with local controls at Owner's request for simplicity in maintenance.
- Plumbing waste and domestic water systems serve group and individual restrooms, laundry rooms, and janitor's closets. Separate high temperature hot water and waste systems serve the commercial kitchen. Redundant gas-fired condensing, tank type water heaters provide hot water to the building due to 24/7 occupancy. Sewage ejector pump provided for basement fixtures. Custom platform designed for basement water service to allow for gravity drainage from backflow preventer. Increased pressure natural gas service coordinated with utility to serve whole building generator located on roof.
- Residential portion of the building protected with an NFPA 13R sprinkler system. A-2 and B occupancies protected with NFPA 13 system. Due to construction type, some attic spaces required additional sprinkler protection.
- Provided an 800A, 480V underground electrical service. National Grid providing a 500kVA pad mounted transformer. Incoming service fed through an 800A fused service entrance rated disconnect before entering the building into the basement 800A automatic transfer switch. "MDP-H" is an 800A, 480V rated I-Line panel. "MDP-L" is fed from "MDP-H" through a 225kVA transformer from 480V to 208V. The design consists of two power panels per floor for the addition and rehabilitated existing building.
- Lighting design contains all LED fixtures. In the basement, industrial strips with emergency lighting units (ELUs) spaced throughout. The basement corridor contains a drop ceiling and 2x4 recessed LED troffers. Stairwells contain surface-mounted LED strip lights with integral occupancy sensors to reduce the overall light from 100% down to 50%. Exterior lighting is powered through an inverter to obtain the required egress emergency lighting. For the 2<sup>nd</sup>, 3<sup>rd</sup> & 4<sup>th</sup> floors, there are recessed downlights in the corridors and surface-mounted dome lights in the bedrooms. Ceiling-mounted occupancy sensors are provided for the corridors, conference room, and ganged bathrooms, while wall-mounted sensors are provided for the offices and smaller common spaces. Lighting manually controlled in the bedrooms and shower stalls.
- Provided a full fire alarm system with combination smoke and carbon monoxide detectors, handicap door operators, access controls, wireless access points, security cameras.
- Designed a 450kW standby gas generator. Generator is sized to serve the entire building.

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## TREATMENT CENTER PROJECT EXPERIENCE

### **20-BED RECOVERY RESIDENCE, RISE HOUSING AND SUPPORT SERVICES**

Ballston Spa, NY

- Lead Mechanical, Electrical, Plumbing, and Fire Protection Engineers for the design of an 8,950 ft<sup>2</sup> group residence with 20 bedrooms, domestic kitchen, living space, and offices.
- To ensure optimal comfort and energy efficiency, zoned residential gas-fired furnaces with air-to-air heat pumps were provided. These systems allow for simple user controls for the entire building. Core type energy recovery ventilators were employed to provide ventilation air to the furnace inlet.
- Supply fans with electric reheat coils were installed to provide outdoor makeup air to the laundry room whenever dryers are operational.
- A residential-style domestic range exhaust hood was designed, equipped with an integral chemical fire suppression system and exhaust fan. The hood included integral controls, including manual (pull station) or automatic activation for the suppression system, ADA fan and light switches, and a gas shutoff valve.
- A fully-sprinklered NFPA-13 system was utilized for fire protection, with a dry system in unconditioned attic space.
- LED lighting was incorporated throughout the entire building, including exit and emergency egress lights.
- The full electrical service was provided with full standby generator backup, and a power distribution system was designed, featuring GFI/AFCI/Tamperproof/USB receptacles where required. Power was provided for HVAC equipment, plumbing equipment, access control, intercom system, and all appliances. Also designed were power and grounding systems for the IT room.
- A comprehensive fire alarm system was provided, including corridor smoke detection, manual pull stations, notification devices, duct smoke detectors, and carbon monoxide detection.



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## TREATMENT CENTER PROJECT EXPERIENCE

### **TWIN COUNTY RECOVERY SERVICES**

Hudson, NY

- Lead Mechanical, Electrical, Plumbing, and Fire Protection Engineers for Twin County Recovery Services, Inc., a nonprofit corporation that provides services to alcohol and substance abusers to enhance their drug-free living skills.
- Provided design services for renovation of the structure as well as the consolidation of both clinical and office spaces.
- Existing building systems were completely gutted and new, energy-efficient lighting, heating, and air conditioning systems were installed.
- The existing fire sprinkler system was completely replaced to match the new building occupancy and space layouts.

### **RENOVATION OF “DAY HAB” AREA, 50 PINE STREET**

Hudson Falls, NY

- Lead Mechanical, Electrical, and Plumbing Engineers.
- Approximately 50% of this existing +/- 8,000 ft<sup>2</sup> single-story day rehabilitation center was a gut rehab while the remaining 50% remained occupied.
- Renovated areas included offices, conference room, exercise room, therapy room, kitchen and large general use area.
- Designed new rooftop ventilation/air conditioning/heating system, kitchen hood exhaust and general exhaust.
- Modified the building's sanitary drainage and venting piping in renovated areas.
- Provided modifications to the building's potable water piping for renovated areas, including adding a recirculation system and modified natural gas piping to serve new loads.
- Provided modifications to electric power distribution for mechanical equipment, general receptacle power, and specialty equipment power feeds.
- Designed power, switching and wiring to indoor/outdoor lighting, associated controls, egress lighting, and exit signs for renovated areas.
- Provided fire alarm system modifications for additional horn strobe, pull station and initiating device with the appropriate interlocks to mechanical equipment and security system for building egress code compliance.
- Designed raceway/conduit to accommodate security, telephone and data wiring.