EI Associates recently assisted DSM Nutritionals by executing piping and equipment installation design for the replacement of multiple CIP tanks at the Belvidere site. The project involved the replacement of four existing tanks with three new 1,500 gallon tanks. Similar to the existing tanks, the new tanks were equipped with internal heating coils which required steam and condensate return connections. Two of the new tanks for Caustic solution and Sanitizer solution, were equipped with top mounted agitators. An acid solution tank and its recirculation system were eliminated from the new CIP system.

Dike walls and low overhead clearances provided limited access to the project area creating design and construction challenges. EI Associates prepared piping and equipment installation design for the new system/tanks to allow DSM to solicit installation bids from qualified trade contractors. In addition, EI also performed a design review on the heat duty and heat transfer area of the new pre-heat exchanger which had been specified by DSM to confirm that it will meet the needs of the CIP system.

The units were replaced with 7,000 cfm and 5,000 cfm units, representing a 20% capacity increase to address prior environmental deficiencies within the laboratory. The units were each provided with an outside air section with modulating dampers, pre-filnal filters, glycol water heating coil, glycol chilled water coil and plug fan with variable frequency drive (VFD). One of the units included a humidifier section while the other unit was provided a return air section with modulating damper.

Due to the critical nature of the work, EI Associates accelerated this project on a “turn-key” basis, expediting the permit approval process and required prompt replacement to maintain ongoing laboratory operations.
EI Associates recently assisted a global biopharmaceutical company by executing the design of conversions and renovations of several campus buildings at their North American headquarters. The work involved the gut renovation of several obsolete, multi-story laboratory facilities to accommodate their growing office staff. The subject buildings adjoin existing-to-remain facilities connected by common circulation spines. This occupancy required the design to address phasing, dust and noise mitigation and temporary egress to maintain safe, ongoing operations.

Former laboratory areas were "re-invented" based on open plan design concepts. Open office cubicles are located along the exterior window walls to allow natural light to filter deep within the space. Private offices are now located within the interior of the space, utilizing glass doors and partitions to provide a visually open plan of the entire floor. New huddle areas, conference rooms, break areas and pantry are also utilized as part of this project.

Existing laboratory HVAC systems were replaced with recirculating VAV mechanical systems. New roof-mounted, water-cooled and steam heated air handling units were installed to serve the renovated office areas. The project also included the installation of a new digital addressable communication system including hubs, radio controls and repeater antennas, to provide direct communication for fire department, police and EMT first responders.

### Headquarters Process Facility Master Plan Improvements

To improve manufacturing efficiencies and address future growth demands, EI Associates recently assisted a leading developer of formulated film coating systems for the pharmaceutical and nutritional industries with the execution of Phase 1 of a multi-phase, multi-site campus expansion and improvement master plan. The Phase 1 master plan improvements addressed extensive renovations to their North American headquarters facility to accept the relocation of laboratory and client training operations, process lab equipment and forty added employees relocated from another nearby facility. The headquarters improvements covered the modification of lab areas to accommodate relocated process equipment, modifications to the existing employee entrance to create new conference facilities and renovations to the existing library to form a new coffee/break and cafeteria area. A new central dust collection system was also installed within a newly created equipment room along with new rooftop air handlers to serve the modified and expanded production areas.

Major parking area expansions, to accommodate client training facility personnel and visitors, were also constructed as part of the Phase 1 work. Completion of the Phase 1 improvements has permitted the subsequent renovation and conversion of the vacated process areas of the nearby facility into new high-bay warehouse and support areas.

### Process Facility Documentation

Following acquisition of the former Zinsser Coatings facility in Somerset, NJ, EI Associates assisted Rust-Oleum with the preparation of record P&IDs and related plant documentation to comply with OSHA’s PSM and NJDEP requirements. Existing plant documentation of the major process equipment, process lines and instrumentation was lacking and, under the new ownership, required enhancement. EI Associates updated the existing plant documents by recording process piping and utility line numbers and sizes, preparing insulation specifications and documenting instrumentation identification numbers, process control loops, and equipment information for both process and utilities. The project entailed significant field investigation to obtain equipment nameplate or recorded data and other "As-Built" field information for the above. Existing corporate standards and newly developed standards, where none previously existed, were included and the information was used to generate full size, updated, electronic format P&IDs compliant with ISA standards.
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As-Built P&IDs

EI Associates was retained by Veolia North America, a waste stream processor of solvents, to prepare As-Built Piping & Instrument Diagrams of Tank Farms 100, 200, and 400 as well as the "Process Area" located in Middlesex, NJ. This required significant field effort in documenting the existing facility under adverse weather conditions followed by the subsequent preparation of more than 45 P&IDs. Our work included documenting over 30 vertical carbon steel tanks, 3 vertical stainless steel tanks, several 2 and 3 segregated compartmental horizontal tanks, pumping stations, piping manifolds, truck loading stations, rail loading/unloading stations, blanket and purge nitrogen distribution systems, fire protection systems, and other process equipment such as distillation columns, thin film evaporators, filters, and heat exchangers.

Campus Office Conversions for Global Biopharmaceutical Firm

EI Associates was recently assisted a global biopharmaceutical company by executing the design of conversions and renovations of several campus buildings at their North American headquarters. The work involved the gut renovation of several obsolete, multi-story laboratory facilities to accommodate their growing office staff. The subject buildings adjoin existing-to-remain facilities connected by common circulation spines. This occupancy required the design to address phasing, dust and noise mitigation and temporary egress to maintain safe, ongoing operations. Former laboratory areas were "re-invented" based on open plan design concepts. Open office cubicles are located along the exterior window walls to allow natural light to filter deep within the space.

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CIP Tank Replacement

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Dike walls and low overhead clearances provided limited access to the project area creating design and construction challenges. EI Associates prepared piping and equipment installation design for the new system/tanks to allow DSM to solicit installation bids from qualified trade contractors. In addition, EI also performed a design review on the heat duty and heat transfer area of the new pre-heat exchanger which had been specified by DSM to confirm that it will meet the needs of the CIP system.

Due to the critical nature of the work, EI Associates accelerated this project on a “turn-key” basis, expediting the permit approval process and procurement of long-lead mechanical equipment. EI performed all design, engineering, technical construction administration and construction management services for this assignment.