MEP Design - Academic
Pratt Institute,
Manhattan Campus
Building Rehabilitation
142 West 14th Street
New York, New York

EME Group provided full engineering design services for this $22 million rehabilitation project of Pratt's Manhattan Campus. The project was an industrial loft building with seven floors totaling 93,000 sq.ft. of floor area. Now floors 2-7 provide educational facilities including classrooms, labs, a library and lecture halls. The first floor is leased to multiple independent retail tenants. The cellar provides building mechanical equipment space, utilities and storage space.

Services provided
- Mechanical System Design
- Electrical System Design
- Emergency Generator System
- Plumbing System Design
- Sprinkler System
- Fire Safety System Design
- Telecommunication System

The mechanical systems selected for this building include a scotch marine, firetube 125 hp dual fuel hydronic boiler that serves I cast iron convectors for the perimeter heating loads and heating hot water coils in the air handling units for the interior loads. A total of 360 tons of air conditioning is provided by through six 60-ton air-cooled scroll chillers located on the roof. The building required a new 4000-amp electric service coupled with a roof-mounted 200 kW emergency generator that provides emergency power.

Chilled water is piped through a primary/secondary pumping system with variable speed drives serving both loops. This proved an efficient means of providing chilled water since the chillers are designed to come on-line depending on demand, and the AHUs chilled water coils were specified with two-way control valves.

Due to physical constraints of the building, a distributed system comprised of 19 air handling units was required to handle the ventilation and air conditioning requirements. However, the total floor area of the mechanical space, less basement and roof, consumed by the HVAC systems is less than 3% of the building's floor area.

Pratt Institute's Manhattan Campus

A second floor gallery was designed as a museum quality space requiring tight control of the environmental conditions. Space conditioning is done through a variable volume air handling unit with variable air volume boxes serving different zones within the space. The air handling unit is equipped with a humidification system to ensure proper space temperatures and humidity levels.

A state-of-the-art Trane building management system provides efficient control of space temperatures, optimizes system operation to reduce energy usage, and enables remote monitoring of all building systems from the Facilities office located in the Brooklyn Campus.

The project was designed along the conventional pathway of schematic design, design development and construction document phases. After the schematic design submission was reviewed and approved we completed the design development and construction document phases. We assisted in the bidding phase by attending the project walk-through, responding to questions and making any required changes to the documents prior to the contract. We provided full construction administration services including attending meetings, performing inspections, reviewing submittals and approving contractor requests for payment.