



Market Segment - OFFICE

Brooklyn Renaissance Plaza

The Brooklyn Renaissance Plaza is a mixed-use development consisting of a thirty-two-story office tower and a Marriott Hotel. The office tower contains 800,000 square feet of office space offering magnificent views of Manhattan as well as the harbor.

Brooklyn Renaissance Plaza is located in downtown Brooklyn adjacent to the Metro Tech Center, Polytechnic University, New York City Technical College, Federal and State Courts, and is only minutes from Manhattan and the financial district. The building offers a powerful addition to the New York City skyline and is the second tallest building in downtown Brooklyn.

BACKGROUND

Project Type:

HVAC, new construction

Location:

333-335 Adams Street
Downtown Brooklyn, NY

Owner:

Muss Development

Architect:

William B. Tabler

Engineer:

Lehr Associates

Project Size:

Office Tower: 800,000 sq. ft
of office space

Facility Usage:

Office Space

Thomas S. Brown Associates was awarded contracts to furnish and install state of the art building management systems for the office tower, hotel, and energy plant. All systems were to be independent from one another but all were to have the ability to communicate with each other.

The office tower rises from floors 7 through 32. It sits on top of the hotel.

Each office floor is conditioned with a McQuay

variable air volume, chilled water packaged air-conditioning unit. Each unit pulls mixed air from the mechanical equipment room it is located in. The room is fed with adjustable minimum outside air and fixed return air. The units came complete with a factory furnished control package, including controller, supply air, mixed air, and return air temperature sensors, low temperature cutout thermostat, high static pressure cutout switch, and a pre-mount-

ed and wired static pressure sensor. The chilled water valve was also pre-piped and wired.

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integrated into the McQuay air handlers through an integration panel provided by TSBA and an open protocol master panel provided by the unit manufacturer. The TSBA building management system, through the integration, included the following points at the BMS workstation for viewing and/or commanding:

- Fan Run Status
- Supply Air Temperature
- Return Air Temperature
- Mixed Air Temperature
- Warm-up Control Mode Active
- Supply Air Temperature Reset
- Low Temperature Alarm
- High Static Pressure Alarm
- System Static Pressure
- System Static Pressure Setpoint Adjustment

A pneumatically operated combination fire/smoke damper at the outside air intake to the mechanical room provided ventilation air to the AC unit. The damper was modulated through an E/P transducer furnished and installed by TSBA based on the mechanical equipment room mixed air temperature.

Two outside air intake fans, one at the 5th floor and one at the 32nd floor supplied air to the common outside air intake shaft. Each fan contained pneumatically actuated inlet vanes which were controlled by individual digital controllers. The capacity of the fans was regulated to maintain the shaft pressure sensed at two different points at setpoint.

A smoke exhaust fan located at the top of the outside air



intake shaft is activated through the fire alarm system and pulls air from the tenant floor space by way of the mechanical equipment room. The minimum outside air damper is closed and the air handling unit fan is off during this mode.

Over 700 variable air volume terminal units are controlled by individual direct digital controllers maintaining the individual offices at setpoint. All report to the BMS workstation. Space temperature, actual supply flow and minimum and maximum flow setpoints are viewable from the workstation. In addition, the space temperature setpoint is adjustable.

During after-hours operation, the terminal units are set to their unoccupied flow setpoints. During morning warm-up mode, the action of the terminal units are reversed so that on a fall in space temperature, the terminal unit damper modulates open to a maximum warm-up mode flow setpoint instead of a cooling minimum flow setpoint. By doing so, more heated air is be supplied to the cold space.

Twenty-eight BMS network controllers sit on a local area network. They provide supervisory functions to the more than 700 VAV controllers, 25 McQuay controllers, and miscellaneous air-handling unit and exhaust fan controllers. All report back to the BMS workstation located at the 6th floor.

Alarm logs, history logs, user logs and trending are just a few of the tools available to assist the operator in managing the facility.

 **TSBA
Controls**
Thomas S. Brown Associates

For more information, Call
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