



Market Segment - HOTELS & LODGING

Marriott Hotel

The Marriott Hotel sits at the base of Renaissance Plaza, a mixed-use development consisting of a thirty two story office tower, hotel and underground parking garage.

The Marriott hotel has 384 guest rooms with additional rooms planned. It is the first hotel of its kind in the borough of Brooklyn for more than fifty years. The hotel offers elegance and convenience on a grand scale. Located in Downtown Brooklyn, it is adjacent to the Metro Tech Center, surrounding universities, and is only minutes away from Manhattan and the financial district.

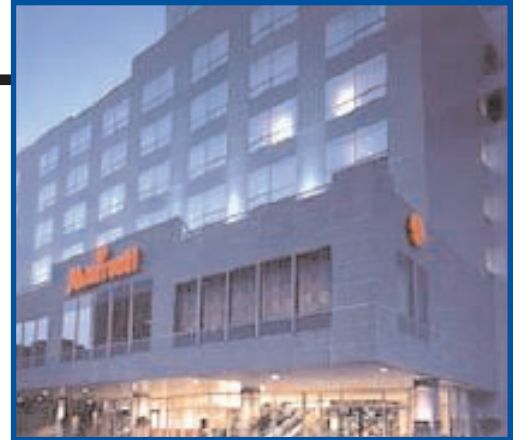
Conditioning of the hotel common spaces is accomplished with fifteen air handling units; most of them equipped with

hot and chilled water coils and airside economizers. They serve banquet halls, banquet foyers, a health club, and the hotel lobby. Each air handling unit is controlled from a TSBA furnished dedicated local control panel complete with a custom programmable direct digital controller, two differential pressure switches (for fan status monitoring), transformer, control relays, electric pneumatic switch, and E/P transducers to convert the DDC controller analog signals to pneumatic

for operating the pneumatic control valves and automatic economizer dampers.

A majority of the units' supply and return fans have pneumatically actuated inlet vanes. The DDC controller maintains the downstream static pressure at set-point by regulating the position of the vanes. A static pressure trans-

mitter located at the end of the supply duct monitors the supply pressure and inputs the value to the controller.



For each unit, a summer-winter mode is selectable at the building management system workstation. Summer-winter mode can be selected manually or, automatically, based on outside air temperature. In summer mode, the economizer dampers are positioned for minimum outside air and the chilled water coil is modulated to maintain the supply air temperature at setpoint. In winter mode, the dampers are modulated as a source of free cooling and the heating coil valve is modulated in sequence with the dampers. In both modes, the supply air temperature set-point is reset by return air temperature.

The units are automatically scheduled on and off through the building management system. Fan run status, low temperature alarm, outside air temperature, outside air humidity, supply air temperature, return air temperature, economizer damper command, heating valve command, chilled water valve command, and inlet vane command, are all viewable from the BMS system workstations. Setpoint adjustments for return air temperature, supply air temperature, static pressure, summer-winter changeover, and warm-up mode are adjustable from the workstations as well.

During the heating season, when the units are commanded to start, they operate under a morning warm-up mode. During this mode, the economizer dampers are positioned for 100% re-circulation and the supply air temperature set-point is increased until the return air temperature rises above an adjustable set-point. The dampers are then commanded to a minimum outside air position and modu-

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:

Hotel: 27,000 sq. ft
of meeting and banquet space

Facility Usage:

Lodging & Meeting

late beyond this point as the cooling load increases during the day.

Each air handling unit DDC controller has a local display where operators can view all temperatures, pressures, alarms, and equipment conditions. Operators can also override output commands to valves, dampers, and inlet vanes, and index the system to summer, winter, or warm-up modes providing they have the necessary security access.

Approximately thirty-three DDC controlled variable air volume terminal units and twenty pneumatically controlled VAV terminal units provide local conditioning of the individual spaces.

Chilled water and hot water for the hotel is produced in the building's energy plant. The plant also serves the office tower. The hotel's three booster chilled water pumps circulate chilled water. Hot water is pumped directly by a main energy plant's primary pumps.

A BMS workstation located at the first sub-level monitors each air handling unit as well as the DDC operated VAV terminal units, chilled water pumps, and miscellaneous exhaust fans. A local area network of three network controllers provides supervisory functions for the various systems. The BMS communications bus, which connects the local DDC controllers to the supervisor, controllers, runs from the 3rd sub-level up to Level 8.

The BMS workstation resides on a local area network with the Office Tower and Energy Plant BMS workstations. Each workstation has access to the other facility's systems, providing access is enabled. An alarm-logging printer at each workstation records all alarms and operator activities. A history log records all activities, including logging on times, off times, operator on duty, setpoint changes, and alarms. A full colorgraphics package is also included. A multi-level password application provides different levels of access and privileges for the system.



For more information, Call
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