MEP Design – Commercial Interiors Related Management, LLP 400 Chambers Street Lobby Air Conditioning Upgrade New York, New York

EME Group has been working with this multifamily property owner/manager on a variety of facility management issues. Their portfolio includes a wide range of developments from assisted housing in rural/suburban settings to luxury high-rise buildings in Manhattan.

Services

- Lobby Air Conditioning Upgrade
- Laundry Air Conditioning Upgrade
- Sanitary System Troubleshooting
- Energy Assessments
- Sanitary System Analysis
- Remote Water Meter Reading Program
- Detailed Feasibility Studies

EME Group was asked to evaluate the inadequate cooling supplied to the residential and oval lobbies at one of their luxury buildings in lower Manhattan. We undertook a phased approach to quantify the problems and identify solutions. The first task was a detailed load calculation to assess the existing equipment based on the as-built conditions. The Residential and Oval Lobbies are exposed to a range of cooling loads including large areas of unobstructed south facing glazing, the Oval Lobby is adjacent to the Boiler Room, portions of both lobbies are over the parking garage, infiltration of outside air through various egress doors and high transient occupant loads. We developed a computer model of these spaces that included all of these factors and calculated the peak cooling loads and determined that the installed equipment inadequate to maintain the desired space temperature.

We also performed detailed field surveys and determined that much of the supply air was short-circuiting directly back into the returns across the ceiling. The original design included supply grilles installed in the recessed ceiling coves with air returning to the plenum through narrow openings beneath the lighting fixtures in the ceiling cove. While this design did a wonderful job of hiding the HVAC supplies and returns, it apparently did not function as well as intended. Shortly after the building was occupied, additional return opening were cut into the

Lobby of 400 Chambers Street

plenum in the ceiling cove and lexan deflectors were placed in front of the supplies to deflect the air. However, the short-circuiting conditions persisted as evidenced by the air stream flowing across the ceiling in the cove.

During the course of work we identified some additional issues regarding these systems as well. In discussions with building staff, we learned that the Oval Lobby unit routinely shuts down on high head. The condenser is currently located in the Boiler Room and this location is problematic due to high internal temperatures. In addition, although the design drawings show ductwork to provide outdoor air to both units as required by the building code, it was not installed.

We developed contract documents to increase the tonnage supplied to each lobby and reconfigured the supply diffusers and return grilles to maximize air circulation and cooling in the space. We also relocated the condensing unit that was shutting down on high head and made provisions for outdoor air supply. The design was able to hide the new diffusers and grilles. We coordinated with the original lobby design architect to ensure that our approach met with their aesthetic design intent.