



Facility Addition with Clean Room in Chicago Suburbs

A worldwide leader in disposable healthcare products recently expanded their suburban Chicago manufacturing facility with a 15,300 square foot ISO Class 8 Clean room. The client's Boston-based engineering firm developed an initial "Basis of Design" for the project calling for four 100-ton (400-tons total) rooftop HVAC units to handle the temperature, humidity and air pressure requirements within the clean room.

The manufacturer then turned to Althoff Industries, their trusted mechanical and building automation contractor, to provide design assistance, capital allocation analysis and budgeting for the Clean room HVAC and its control system.

Althoff Industries developed HVAC system specifications and capacity requirements to meet the client's needs. As the Althoff Industries engineering team substantiated the basis of design, they were able to develop a more efficient, cost-effective solution.

The design was modified to be more efficient by including a series of recirculation fans into the design to maintain the Clean room's required amount of air changes per hour, while reducing the capacity of the HVAC system by over 60%. This resulted in significant capital equipment savings along with substantial associated installation cost savings. The smaller equipment also delivers the long-term benefit of greatly reduced energy consumption, yielding thousands of dollars in energy savings per year. The Althoff Building Automation Group designed, installed, and commissioned an integrated control system with real-time monitoring and alarming capabilities relating to pressurization, temperature and humidity. A customized graphics package was also included.

Althoff Industries eventually became the Engineer of Record for the project, assuming full responsibility for the systems design, installation and functionality. Upon completion, the client hired an independent Commissioning Agent who certified the project, to be FDA Compliant on the first review.

