Team Members Architect – The Feldman Group

CASE STUDY Prep Academy of Richmond



Problem:

The school wanted the ability to install a traditional Building Automation System at a later date and to not incorporate the expense into their project today. The systems provided need to be able to give the school complete functionality now, while affording future flexibility.

Indoor air quality and system efficiency were also items the construction team wanted to address. The system provided had to incorporate energy savings while conditioning a large volume of outside air.

Solution:

High percentage outdoor air units with integral BACnet controls. The systems came with touch screen controllers that allowed for similar control that a traditional building automation system would have provided. The controller also incorporated CO2 demand controlled ventilation to reduce the amount of outside air introduced to the space based on occupancy need. An outdoor air economizer was incorporated to reduce the need for mechanical cooling when outside air conditions allowed.

Humidity control was critical in design as the system provided introduced large amounts of outside air. The evaporator coil was a high latent capacity 6 row cool to drive down the interior dew point. Given that the system provided is the main source of heating and cooling, the system is a heat pump with a supplemental gas furnace, incorporated into a single packaged unit for winter months.

Systems Provided:

10 Aaon RQ Packaged Air Source Heat Pumps with Integral BACnet Controls & CO2 Demand Control Ventilation

GC — Spectrum MEP Engineer — Cunningham Mechanical Contractor — C&C Industrial

Project Description Renovation/New Construction

This project was the renovation of a 9,665- squarefoot auto body repair shop into a one-story day care center. New construction included the complete construction of 7-classrooms, teacher work rooms, student toilet rooms, office, public restroom, lactation room, warming kitchen, storage and mechanical space.





