



AAON VAV Systems

Harrisburg High School Case Study

Harrisburg High School was constructed in 1903. The original construction included masonry exterior walls and framed plaster interior walls. The original heating system was a steam boiler with wall radiators. The building had not been retrofitted for air conditioning. A few window AC units had been installed in some office and classroom areas. After several years of conceptual planning and budgeting, it was decided to undertake a full renovation of the building. The exterior walls were tuck-pointed and the interior walls were stripped and refinished. The original 12-foot ceiling height throughout the building allowed the installation of new ductwork and piping. New drop ceilings were installed at a 10-foot elevation after the mechanical systems were installed. The mechanical system renovation included a complete packaged AAON VAV System.



The job was structured in three sections. A and B being renovation of the current wings and C being a future building addition. AC Systems, Inc. proposed a VAV system and full controls system with AAON Controls as the basis of design.

The Proposal for the Section A and B Renovations Included:



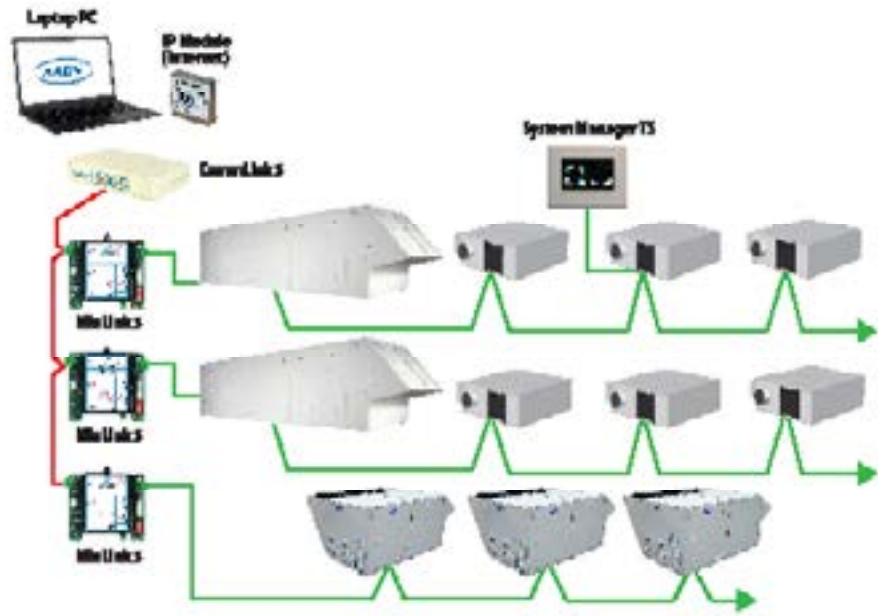
AC SYSTEMS INCORPORATED

Due to the strong relationship between AC Systems, Inc., the engineer, and the architect, AC Systems, Inc. was included in on the front end of the design.

“Since the building and roof structure was compatible with large ductwork and rooftop units, we recommended a VAV system with hot water reheat.”

*Brian D. Miller, PE
AC Systems, Inc.*

- 4 AAON rooftop units
- 64 VAV boxes with hot water reheat coils
- 64 AAON VAV Zone Controllers
- 4 Mini-Link Polling Devices
- 1 CommLink 5
- 1 IP Module Kit
- 1 GPC-XP Controller



Example AAON Controls VAV System

Utilizing Factory Provided AAON Controls on the Entire Job Provided Several Benefits:

- Using AAON Controls for the Rooftop Units as well as the VAV Boxes simplifies the start-up process by allowing technicians full access to all functions on the system. AAON Controls allows the complete system to be optimized and operate as efficiently as possible.
- Simplicity and efficiency are only part of the equation. By utilizing the AAON Controls system for both the rooftop unit controls and the VAV boxes, AC Systems, Inc. was able to offer a seamless economical HVAC control system package.
- By utilizing the AAON Controls System for both the RTU controls and the VAV boxes, AC Systems, Inc. was able to offer a seamless HVAC control system for a significantly lower price than third-party control contractors could provide.

AAON Controls Capabilities Exceed HVAC Specifications:

- It is common for jobs to require controls capabilities for equipment beyond the basic HVAC needs. In these cases the AAON General Purpose Controller – GPC-XP can be utilized to control chillers, boilers, walk-in coolers, parking lot lights and much more.
- On this job, AC Systems, Inc. proposed utilizing a GPC-XP Controller in the boiler room to handle duty cycling the hot water pumps, as well as providing an on/off command to the boilers and monitoring the supply and return hot water temperatures for the system.
- Do not miss on the opportunity to provide a complete controls system to your customer's needs. The GPC-XP Controller provides solutions and completed the control system for the customer.

System Installations:

- Clearly labeled controllers and detailed wiring diagrams allow for easy and painless installations.
- Any retrofit of a building this old has its challenges. There were no accurate plans of the existing structure and the cost for a structural engineering firm to validate and provide reinforcement drawings for the rooftop unit supports proved to be higher than anticipated.
- Other than the above-mentioned challenges, the install and start-up process was seamless. The high ceilings and availability of space for ductwork made the ventilation and the piping portion of the installation go quickly.
- Several bids were considered for the control installation and a qualified electrical contractor was hired as a subcontractor under AC Systems Inc. The electrical contractor installed all of the VAV box controllers and sensors and provided communication wire from each unit, associated VAV boxes, and one central control panel location.



Harrisburg High School VAV System

“In the past, working with third party control contractors and factory mounted third-party controls has often led to startup issues and finger pointing between the equipment provider and the controls contractor when things did not work correctly.”

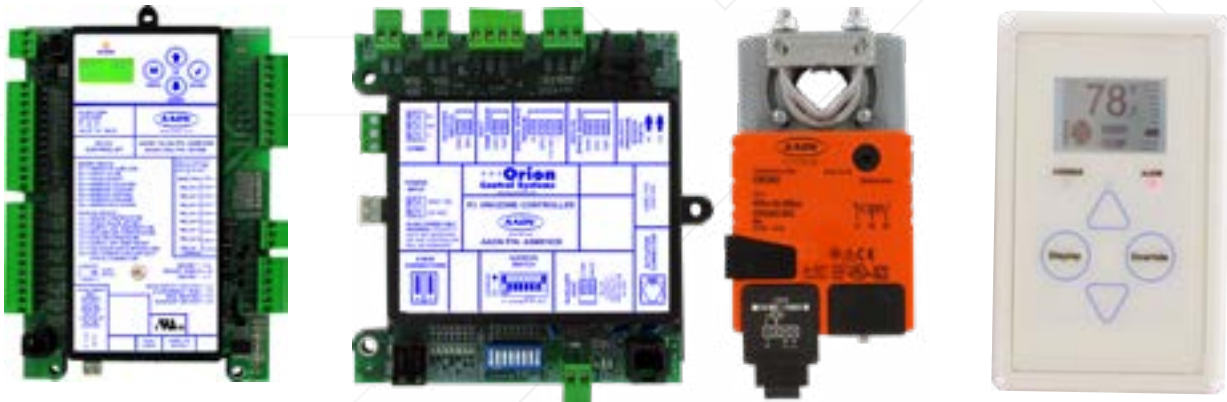
Brian D. Miller, PE • AC Systems, Inc.

Serviceability, simplicity, efficiency and competitive prices are some of the main benefits associated with AAON Controls and VAV Systems. Clearly labeled controllers and detailed wiring diagrams allow for easy and painless installations.

As a Result...

This A&B wing installation led to a successful contract being sole-sourced and awarded to AC Systems for the building C addition. The building C addition included:

- 6 AAON rooftop units
- 36 VAV boxes with hot water reheat coils
- 36 AAON VAV Zone Controllers
- 1 GPC-XP Boiler monitoring, pump control, and control front-end equipment
- 6 Mini-Link Polling Devices



AAON Controls System Components

For More Information about AAON VAV Systems
Contact Your Local AAON Representative

www.AAON.com/RepSearch



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