WEIL-McLAIN

APPLICATION *HIGHLIGHT*

Pleasant Valley Elementary & Middle Schools Hydronic Heating System Modernization

Project Location: Brodheadsville, Pennsylvania

Completion Date: September 2024

Engineer / Installer: CHA Consulting, Myco Mechanical

SVF™ 2500 & 3000
Series 1

Project Background

The Pleasant Valley School District located in Brodheadsville, PA required a comprehensive heating system upgrade to its elementary and middle schools to address an aging commercial cast iron boiler infrastructure that was nearing the end of its service life and to meet targeted energy efficiency improvements. Through a collaboration between CHA Consulting and Myco Mechanical, customized heating solutions were developed to support a combined heat load of roughly 400,000 square feet and deliver comfortable, reliable and cost-saving operation to approximately 2,000 students across both campuses.

Existing System Limitations

- ***Inefficiency:*** Old non-condensing steam boilers operated at significantly lower thermal efficiencies
- ***High Operating Costs:*** Elevated fuel usage and ongoing maintenance
- ***Limited Control:*** Minimal modulation capabilities and outdated control logic
- ***Reliability Concerns:*** Heating system downtime risk at both school campuses

Pleasant Valley Elementary School – (6) SVF 2500

Pleasant Valley Middle School – (2) SVF 3000 & (2) 88

Upgraded System Specifications

This modernization project replaced the outdated steam system with high-efficiency, fully modulating hot water plants featuring Weil-McLain® SVF™ Condensing Stainless Vertical Fire Tube Boilers with 96% thermal efficiency, 88 Series Cast Iron Boilers, and fully integrated building automation systems. Highlights include:

- Pleasant Valley Elementary School: (6) SVF 2500 condensing, stainless steel high-efficiency boilers
- Pleasant Valley Middle School: (2) 88 non-condensing cast-iron boilers paired with (2) SVF 3000 condensing, high efficiency stainless steel boilers in a hybrid heating system in which the non-condensing boiler carries the base heat load on the coldest winter days and the condensing, high-efficiency boilers carry the heat load on days with less severe outdoor temperature sand across the heating shoulder months
- Full modulation to match system load variations and the targeted temperature setpoint range of 120–160°F.
- Efficient load ramp-up and reduced cycling – extending heating system service life
- Variable primary closed-loop water system for minimized circulation pump energy usage
- Space heating through perimeter baseboards delivering even, consistent building comfort
- Smart controls & integration
- Building Automation System (BAS) tie-in with remote monitoring capability

System Performance & Benefits

- ***Energy Efficiency:*** Up to 96% thermal efficiency, significantly reducing natural gas consumption
- ***Operational Savings:*** Lower fuel and maintenance costs due to advanced control strategies and high-efficiency equipment
- ***Reliability:*** Redundant boiler configuration ensuring uninterrupted heating comfort
- ***Improved Comfort:*** Precise temperature control across all heating zones
- ***Sustainability:*** Reduced greenhouse gas emissions aligned with district energy goals