

Mt. Vernon Elementary

Boiler Replacement Project

Owner: Rockcastle County Board of Education
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Building Area: 77,000 SF.
Construction Cost: \$ 281,500
Project Status: Completed Fall 2015

Project Description: This project consisted of selective equipment replacement to aide in economic operations and maintenance. Project scope was to replace an existing coal fired boiler and a water-sourced kitchen make-up air unit.



Before

After

Engineering Highlights:

HVAC:

The existing HVAC system is a 26 year old two-pipe water-source heat pump system with a coal fired boiler and an evaporative cooling tower. Due to expanded capital construction needs, N3D Group worked with the Owner's available budget and designed a selective equipment replacement project to aide in the overall operation and maintenance costs. Current geographic conditions provided limited availability of new heat sources. The coal fired boiler was replaced with tandem 100% efficient electric boilers.

An existing water-sourced kitchen make-up air unit was replaced with an electric make-up air unit with variable intake and exhaust fans for high efficient operation.

Electrical System:

The existing electrical system voltage was designed around the original system design. With rising demand charges, we designed a new electrical switchgear and service entrance with a higher voltage. The new electrical service would support the new electric boilers as well as the new kitchen make-up air unit.

N3D Group designed the new electrical system to support the replacement of the remaining HVAC heat-pump units in the future as building capital construction funds become available.