

Argo CHSD #217

7329 W 63rd St.
Summit, IL 60501

Contact:
Dr. Kevin O'Mara, Superintendent
708-728-3200

CONTRACT AMOUNT	\$2,325,612
TYPE	Guaranteed Performance Contract
TERM	10 Years
ANNUAL SAVINGS	\$249,076 in Energy, Operational & Maintenance
GRANT APPLICATIONS	\$80,000 ISBE and DCEO

- Pre Project Equipment Top to Bottom:
- Cooling Tower
- Centrifugal Chiller
- Pneumatic Controls



Background

Argo High School, a 340,000 Sq. Ft. facility that serves over 1,800 students and 118 teachers, was experiencing significant issues. Originally built in 1920 and expanded in 1980, aging mechanical equipment and controls were impacting comfort with some systems being nonfunctional, and were excessively expensive to maintain.

The District was utilizing two control packages that varied in age and were very archaic in terms of the structure of computer systems graphics. It was very hard to navigate the two systems, without memorizing each piece of equipment's age and the year the controls were installed, making it difficult to find equipment in order to troubleshoot. In addition, there were still some systems within the District such as the air handling system that had older pneumatic controls that were inefficient and difficult to control.

The existing chiller/tower plant system contained two chillers that were past their useful life with one of the systems (41 years old) being out of operation. Both chillers were inefficient and utilized refrigerant R-11 that had been phased out. This refrigerant is not environmentally friendly, expensive, and the current supply was quickly decreasing. In addition, the current systems utilized a pumping arrangement that was very inefficient, increased maintenance costs and decreased the life of the systems.

The air handling system was also operating past it's useful life and caused areas to often be uncomfortable and difficult to control. This constant volume system had older pneumatic controls, was inefficient and caused difficulty controlling separate areas.

Solution

CTS Group investigated the issues on site as well as conducted a thorough analysis of energy bills and discussions about the District's goals for the schools. Comfort was a top priority through the use of energy efficient systems which would could be easily maintained to provide years of service. Through the use of performance contracting, the project was developed and implemented with the following scope listed on the next page:

Argo CHSD #217



Installation of New Air Handling Units



New Variable Air Volume Unit



Project Scope

Temperature Control Upgrades:

- / One Web Based common system
- / Provide/Install Two (2) New Main System Controllers
- / Re Address all equipment into Common System with User Friendly Graphical Display
- / Complete Web access improves troubleshooting capabilities by staff, reducing maintenance costs & downtime
- / Commissioning to ensure all systems are communicating properly
- / Three (3) Year Remote Service Support on System Including Training

Chiller/Tower Plant Upgrade:

- / Two (2) High Efficiency Water-cooled Chillers with Variable Speed Drive Control
- / Primary/Secondary Pumping Design for improved efficiency
- / Two (2) Cell Cooling Tower with variable speed fans for improved efficiency
- / Design & Install New Structural support for Cooling Tower installation
- / New Refrigerant Monitoring System – Alarm tied to Control System
- / New Chiller Plant Controls
- / Electrical Panel Upgrades

Air Handling System Upgrade (AHU-17):

- / Replace Constant Volume Air Handling System with new Variable Air Volume Air handling Unit
- / Install Variable Air Volume units (VAV) with reheat coils
- / Installation of Direct Digital Controls and tied back into DDC Temperature Control System.
- / CTS will remove

Results

The projects bring major comfort improvements to the learning environments, protect the community's capital investment in their school facilities, and reduce annual energy and operational expenses.