

Project Profile

Colorado School District Enhances Safety, Security, and Comfort with a Fully Integrated *Continuum*® System



"Although security today needs to be a constant concern, even a comprehensive management system like Continuum can remain behind the scenes —unobtrusive and noninvasive."

*Russ Coomes,
Coordinator of Student Services
Harrison School District Two*

The Harrison School District Two (HSD2), located at the foothills of the Rocky Mountains just south of Colorado Springs, Colorado, educates over 11,000 students. Its 23 schools include 14 elementary, three middle, and two high schools, plus four alternative and charter schools.

HSD2 strives to provide a setting conducive to learning. They realize if their students and faculty do not feel safe, the quality of education will be compromised. In recent years, HSD2, like so many educational institutions since the Columbine tragedy in 1999, has paid even greater attention to how they can enhance safety and security in their schools.

Continuum® Facility Management System Installed District-wide

In 2002, the HSD2 passed a measure to upgrade their energy management and security systems in all 23 schools. The District called on consulting engineers, *Energy Service Associates, Inc. (ESA)*, to solicit proposals from several vendors. After a thorough review process, Jim Walsh, *ESA's* president, recommended that HSD2 choose local Tour Andover Controls Representative, *Westover Corporation* of Denver, Colorado, to install an Andover *Continuum*® Facility Management System. The system would provide CCTV, digital video recording, card access control, and energy management district-wide.

In the first phase of the project, *Westover* installed card readers on selected school perimeter doors, and HSD2 issued combination personnel badges/access cards to all staff members. The access cards also eliminated the costly and recurring "rekeying" of school locks, which was necessary every time a master key was lost. (All building exterior locks were re-keyed as part of the process, but key distribution is extremely limited now.)



Next, every school was equipped with a digital video recording (DVR) unit from *Integral Technologies*. Cameras were purchased for all front lobbies, and surveillance for the exteriors and some interior areas was added in the middle and high schools. Older analog VCRs were upgraded to digital video recorders and pan-tilt-zoom cameras were added in some secondary buildings.



Interior and exterior camera views

24/7 Digital Video Recording Provides Convenience and Peace-of-Mind

Today all perimeter school doors, with the exception of the main front lobby entrance, remain locked 24/7. Lobby entrances are unlocked during school hours, but a camera/ DVR unit at each school records all activity. Everyone going in or out is videotaped. A monitor in the front office in each school allows the office staff to watch what is going on at all times.

The security system in each school is networked to the Central Administration Building, which monitors all the school facilities 24 hours a day. Here Russ Coomes, Coordinator of Student Services, can call up any of the District's 100 cameras and view streaming video instantly over the Ethernet network. Searching for a particular security incident is much easier now with a digital video recording system compared to the time-consuming search process needed with the older analog units. In addition, Coomes and his staff have the capability to view video from a remote location using a standard web browser.

"The new digital video recording technology makes our jobs a lot easier," notes Coomes. "We no longer have to hassle with changing out tapes constantly. The *Integral* DVR units are recording at every school building 24/7. The peace-of-mind that digital recording provides us allows us to focus on our primary goal, which is educating our students. Although security today needs to be a constant concern, even a comprehensive management system like *Continuum* can remain behind the scenes — unobtrusive and noninvasive."

Serial Thief Caught on Video!

Soon after the installation of the District's new CCTV equipment, the *Continuum* system "caught" its first thief. A woman had entered three HSD2 school buildings during the lunch hour and stole cash and credit cards from the teachers' purses while they were at lunch. After reviewing frames of video at the three schools, the staff was able to provide police with a clear image of a woman entering all three schools within hours of each other. It turned out the suspect was a serial thief that had been preying upon elementary schools up and down the Front Range, and always using the same "M.O".



Russ Coomes, Coordinator of Student Services, reviews video of an incident at school

With any security breach, video clips showing the criminal activity are exported to a CD-ROM and handed over to the local authorities for prosecution. The *Integral* DVR system features a built-in "Video Authentication" process, which automatically verifies that stored video data has not been altered since it was archived. This feature is extremely important, in that a video clip must first be proven to be original and unaltered before it can be used as evidence in any court proceedings that may follow.



SCHOOL DISTRICT TWO
HARRISON
 Character Through Diversity, Challenge & Accomplishment

Direct Interface to Burglar Alarm System

The *Continuum* system also interfaces to the District's existing ADT burglar alarm system. When an alarm is triggered

after hours, *Continuum* sends e-mails/pages to the District's private security company. Upon investigation, the security guard can reset the system automatically by presenting his prox card badge to a *Continuum* card reader.



Panic button and school lockdown button

Reacting to an Emergency with a Touch of a Finger

HSD2 uses both an electronic lockdown procedure and a wireless panic system to further enhance their building security in emergencies. If a security concern were to occur; for example, a school gets word that a wanted individual is in the neighborhood, a staff member can press a button in the front office, immediately locking all perimeter doors and deactivating all card readers. In this "Lockdown" mode, entry into the school is via the front door only and only after the front office views the person at the door on the monitor. The door can then be manually unlocked from the office by pressing a button.



Staff member demonstrates wireless panic device

Key on-site personnel at each elementary school carry wireless personal panic devices that can signal for assistance from anywhere on the school grounds. When pressed, the panic device activates a white strobe light in the front office and e-mails and pages the school's designated Response Team. And if a principal finds him or herself in a crisis situation with, for example, a disgruntle parent behind closed office doors, their panic device activates a strobe light immediately outside their office door.

New Security System Making a Difference

Since the installation of the District's new security management system, building security personnel report fewer fights and vandalism. In fact, chronic behavior incidents at one Middle School are reported to have nearly ceased in the first year of system operation! Across the District, numerous students engaging in illicit activities have been identified from the digital video.

Beyond Security Control

In addition to security management, HVAC control is also an important part of the Andover system at HSD2.

Before being chosen for the district-wide security project, *Westover Corporation* was selected to install electrical demand limiting controls in all of HSD2's schools in 2001.

In an attempt to reduce peak kW demand and shave kWh usage, *Westover* configured the *Continuum* system using the Andover *Plain English*® programming language to automatically "Round Robin", or duty cycle, the air handling units on and off in sequence.

According to Jim Walsh, the demand limiting program has indeed impacted the District's utility bills. "To date," notes Walsh, "on-peak KW savings is \$4,975.00 and off-peak savings is \$21,953, for a total of \$26,928 year to date. These savings prompted the District to upgrade all the remaining HVAC equipment to DDC."



Integrated CCTV, access control, and HVAC system equipment

Continuum DDC Brings Added Benefits to Facility Operation

Westover replaced all remaining pneumatic controls with a *Continuum* DDC Control System in 2001. Today both the HVAC and the Security sub-systems run on the same network backbone, providing HSD2 a single, integrated facility management solution.

The District benefits from *one* software and hardware package used throughout, simplifying training, service, and day-to-day operations. Plus with one centralized database, all alarms, both security and HVAC, come back to in to a single front-end workstation for easy access.

Password protection on the system allows the Security data to remain separate from the HVAC data. The District's Crisis Center has remote operational command of the combined

system in an emergency situation.



Ray Zacher, Facilities Group Manager and Art Martini, Bond Project Director, review HVAC controls

The installation of the *Continuum* DDC system has made daily facility operations for the District much more efficient. "An equipment alarm from any school in the District will display on the CyberStation workstation, allowing technicians to be dispatched immediately to correct the problem before it affects comfort in the classrooms," explains Bob

Praiswater, Account Manager at *Westover Controls*. "Staff and students alike are more comfortable now, and at the same time, HSD2 is reducing their energy bills. It's a win-win situation for everyone!"

According to Walsh, *ESA* is also implementing an interface to a district-wide work order/preventive maintenance CMMS system using *Continuum*. By attaching alarms to equipment assets, for example a boiler in a specific school, *Continuum* will print out a work order automatically to perform routine planned maintenance based on hours of equipment operation or equipment failure.

PROJECT AT A GLANCE:

Project Type:

Integrated Building Control

Project Name:

Harrison School District Two

Location:

Colorado Springs, Colorado

Market Segment:

Education

Number of Buildings: 23

Andover Equipment Installed:

20 – NetControllers
74 – SCX 920s
137 –LCX 810s
485 – TCX 850s
2 – ACX 780s
8 – ACX 781s
59 – AC-1s
14 – DI-8s
4 – CyberStation workstations
2 – DCX 250s

Network:

Fiber Optic Ethernet LAN

CCTV Equipment

100 – cameras
23 – *Integral Technologies* DVRs

Applications:

HVAC & R
Security: Access Control, Photo ID, CCTV
Temperature Control
Load Shedding/KW Monitoring
Freezer Alarms
Burglar Alarms
Power Backup

Third-party equipment and/or drivers:

Inovonics Wireless Panic System
ADT Burglar Alarm System
MicroMain CMMS (Computer Maintenance Management System)

Number of Controlled Doors: 59

Number of Cardholders: 2800

Total System Points: 5,454

Andover Controls Representative: *Westover Corporation*



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