Phillip M. Stokoe Elementary School, one of 14 elementary schools in the Alvord USD, incorporates the Alvord Unified School District's upgraded electronic access control standards

Alvord Schools Network Access Control to Improve Security

By Beverly Vigue, AHC/CDC

As part of a district-wide expansion and renovation program, the Alvord Unified School District (USD) is upgrading its building access control system from mechanical keys to a networked electronic system that integrates hard-wired and wireless locks in real time. It also has the ability to manage stand alone computer-managed (CM) locks used in some applications. As part of the program, mechanical locks used on interior doors are being upgraded to a restricted high-security key system that prevents unauthorized key duplication.

The Alvord USD was created in 1960 when two previous school districts were reorganized and combined. It is one of two unified school districts within Riverside, California. Presently, Alvord includes 14 elementary schools (grades K-5), four middle schools (grades 6-8), two comprehensive high schools (grades 9-12), a continuation high school and a separate alternative education site. Together, these facilities serve more than 20,000 students.

To meet the needs of an ever-growing student population and prepare for the challenges of the future, voters in the district authorized a $196 million bond issue by a healthy 62 percent margin of those voting. The major thrust of the bond issue was to build an additional high school and undertake major renovation and expansion at existing schools, in part to phase out mobile classrooms. In addition, the bond issue covered new administration buildings and lunch facility upgrades.

Assistant Superintendent Wendel Tucker, PhD, says, "These upgrades will be undertaken as bonds are sold to cover them. With an authorization for $196 million worth of bonds, we have made projections to determine how much is needed to cover each part. Our intent is to completely retrofit the entire district within the next five years."

He points out that the district has standardized on one basic building design that has been pre-approved for structural compliance by the State of California. It can be built in any shape and any number of rooms without going through the approval process for each site, since the design has been reviewed and pre-approved for factors such as

Typical of the district-wide expansion program at Alvord USD is this classroom and core facility addition.

accessibility and safety. This degree of standardization also allows the district to package bid requests for multiple sites for greater savings.

An Investment in Security

Unlike schools in other parts of the country, which tend to have interior corridors with classroom doors, California schools typically have exterior classroom doors that present a different security challenge. In the past, all these classroom doors were protected by mechanical locks and keys. When a key was lost, stolen or not returned when someone left the school system, any doors to which that person had access had to be re-keyed to maintain security. If a master key was involved, the costs and security risks increased exponentially. Electronic access control, by contrast, can be updated quickly, easily and with little or no cost.

Tucker points out an often-overlooked area of return on the investment in upgraded security. "One thing people sometimes don't take into consideration is the high deductibility on most liability insurance. If a district has a $10,000 deductible and someone takes four computers from a classroom, it probably won't exceed the deductible. If you multiply that by the number of classrooms or offices where that could occur, the higher security becomes a good investment."

Although iButton fobs currently are being used in some applications, the district's primary credentials will be ID badges with proximity card capabilities. Flexibility and better control are two major benefits. Tucker says, "We can issue an ID badge to a substitute teacher or temporary worker that will give them access only to the areas where they need to be. At the end of the day, they turn them back in, but if they forget or a badge is lost, we can

Schlage WA5296 Modular Lock combines card reader, elecrronic lock, request-to-exit sensor, door position switch, battery pack and RF communications in a fully integrated package. Conventional keyed lock, for emergency override, is fitted here with a construction core.
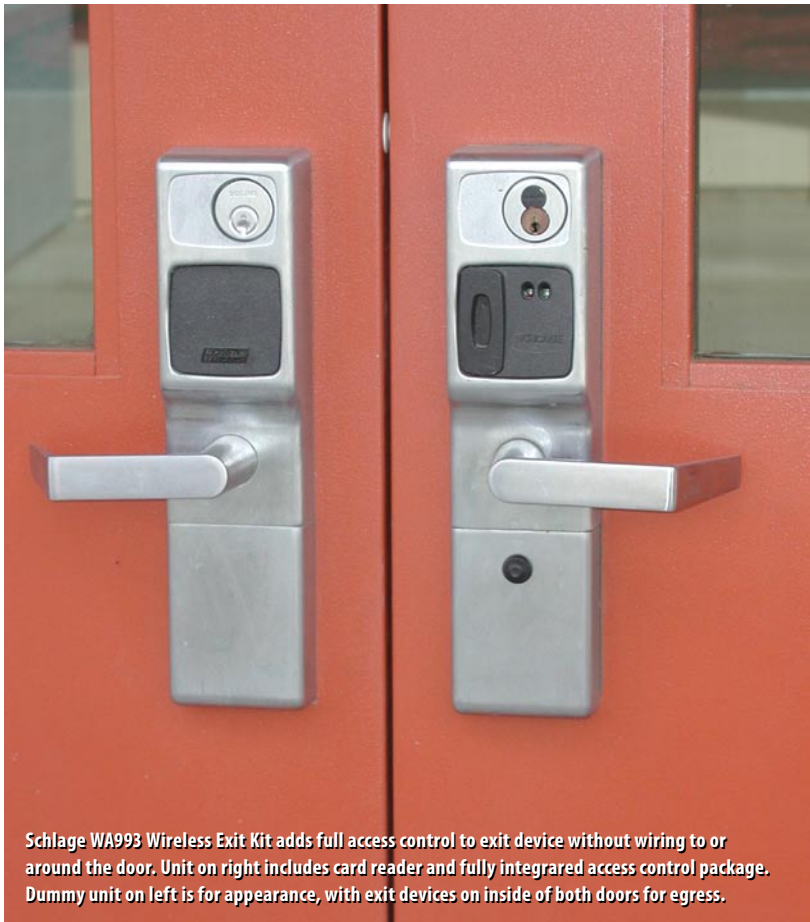
Schlage WA993 Wireless Exit Kit adds full access control to exit device without wiring to or around the door. Unit on right includes card reader and fully integrared access control package. Dummy unit on left is for appearance, with exit devices on inside of both doors for egress.

remove it from the system with a keystroke." He adds that combining the proximity card with the ID badge helps ensure that people will not forget their badges, since they need them to gain access.

Replacing keys with electronic access control solves another problem. Tucker explains, "In any given year, there are too many master keys issued to make effective key control possible. Even though they are legitimate, if one is lost, it can require an expensive and time-consuming re-keying of an entire school. Because of this, some people don't report their missing keys promptly, hoping they will find them. In the meantime, our security is vulnerable every day a key is unaccounted for. If we know when a card is lost, we can be secure and issue another card in minutes."

Networked Access Control Brings Everything Together

To bring access under control across the entire district, Alvord adopted as its standard the Schlage Security Management System (SMS), a Windows® based software program offered by Ingersoll Rand Security Technologies. The system enables the district to link hard-wired Schlage card readers or Schlage Wireless locks on exterior doors in real time, as well as Schlage Computer Managed (CM) stand alone locking systems. It has the capability to integrate the district's complete access control functions, with the potential for digital video, and alarm monitoring systems as well.

Tucker says, "The networked Ingersoll Rand system is included in the specifications of the new buildings as a non-bid item because it is a district standard." He notes that each classroom door will have one exterior door with an electronic lock. For classrooms with two exterior doors, the second door will be equipped with an exit device inside for emergency egress but will have no means of entrance from the outside to maintain security.

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▲ WA993 locks are mounted on aluminum and glass doors as well as conventional steel entrances.
▼ Closeup shows inside of WA993 kit with Von Duprin 98 Series exit device.

Electronic locks installed during new construction generally are hard-wired into the system, according to Tucker. However, wireless units are used in upgrading existing facilities. This eliminates the need to pull wiring and provide power supplies for each controlled opening, since these locks are battery-powered but linked to the network for real-time control by wireless data transmission.

As part of the bond-funded program, the district is building entirely new school office buildings that will be located at the front of each facility. This provides a controlled entry point for visitors. To provide added security and peace-of-mind, the networked security system allows a principal to lock every door immediately in case of an intruder or other emergency, using a master switch in the school office.

Prior to moving into the networked system, to improve security in some areas, the district installed a number of Schlage computer-managed (CM) electronic locks. These stand alone locks are now managed by the Schlage Security Management System, the same system that manages the online hard-wired and wireless readers and locks that communicate in real-time. The CM locks are linked to the campus security system by downloading access codes from the central computer to a laptop or hand-held device such as a PDA and then uploading them to the individual locks. The uploading or down-loading process takes only seconds and need only be performed when changes are needed to the cardholders or to the lock operation. Audit trail information for the stand alone locks can be downloaded to the laptop or PDA for transfer to the main computer, where it is integrated into the system.

High Security Key System Completes the Security Upgrade

With the building exteriors protected by the networked system, access to interior doors and other openings is being upgraded to a

◀ **Pair of doors includes Von Duprin 98 Series exit devices with Schlage WA993 lock on left, as well as LCN door closers and lockable Monarch removeable mullion to allow access for moving large objects and equipment.**

Schlage restricted high-security mechanical key system. District locksmith Terry Holloman explains, "Key blanks are controlled, and I have to send a letter of authorization to get them. The distributor doesn't keep them on the shelf, so they pass along the request, and Schlage sends the keys or locks directly to me."

Although the district will continue to use mechanical keys in these applications,

Holloman says the move to networked security makes his job easier by reducing the number of keys he has to cut and locks he has to re-key. In addition, any changes

or replacements can be made more quickly. He says, "Since I'm running the lockshop for the entire district, it's outstanding from a locksmith's point of view. If someone loses a key, especially a master, it means a lot of extra work. If they lose a credential, all we have to do is retire it and print them another one."

He sees another benefit of using electronic locking and credentials to control access to facilities or areas in their ability to accommodate various needs for hours of access and transfers of personnel. He notes, "A PE teacher or coach has a lot of odd hours for practices, so you can

control which schools and what hours they can enter. If a principal or teacher gets transferred from one school to another, we just delete them from one and add them to another." 🔒

About the Author: *Beverly Vigue, AHC/CDC, is Vice President, Education Solutions at Ingersoll Rand Security Technologies, where she is responsible for developing the vertical education market. Beverly joined Ingersoll Rand in 1999 as Business Development Manager (1999-2000), then led the company's Safe Schools Program from 2000-2002. She has been in her current position since 2002.*