

Simple Security Improvements Can Go A Long Way

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As communities across our nation seek to understand the tragedies that have struck schools, the safety of our school children remains an ongoing concern for anyone responsible for providing responsive facilities, especially educators and school designers. These concerns have changed the way we think about school safety when planning a new building or conducting reviews of existing facilities.

Moseley Architects wants to share with you a summary of issues related to school safety that should be discussed with your design professional. It is important to recognize that investing the time and energy into a proper security training program for school staff and volunteers must be a top priority. This article focuses only on the physical, built-environment portion of a safety strategy. It does not address the school policies, procedures, or programs, which are a crucial part of a safe school strategy. As school facilities designers, we recognize that those discussions occur in local communities across America.

LAYERS OF PROTECTION

The ability to create layers of protection is an important concept when thinking about school safety . No single measure is going to be a panacea. An intruder on a school site should be required to pass through several layers of security measures before coming into contact with school children. Security measures generally fall into two categories: passive and active. Passive safety measures are the coordinated design decisions that improve the safety of the building without changing the operation of the building or requiring additional staff resources. Active safety measures incorporate both physical design strategies as well as technology components to support the safety of the school. Both measures are addressed in greater detail below.

SITE PERIMETER AND DESIGN

Safe school design does not start at the front door of the school building. It starts with a sensible site design strategy. **The first layer of security should be at the site perimeter.** Depending on the setting, a fenced perimeter should be considered for a school site. This is especially important for campus-style facilities, where students must exit one building to get into another. Video surveillance systems, commonplace on the interior of buildings, can be extended to monitor the site perimeter to create a secure environment. Wayfinding on the site should be evident to visitors with good site signage and design elements that direct visitors to the main entrance thus making those intruders more visible when out of place on the site. Site signage should also be designed to not allow hiding spaces and possibly be elevated to monitor possible hiding intruders.

Site design should also focus on making all elements of the site visible. The site design should allow for all areas of the site to be monitored from a security vehicle on patrol. Recessed areas on the outside of a building should be avoided or sectioned off with fencing. Many jurisdictions require that all exterior doors are numbered with large signs, to allow for precise reaction from law enforcement on security calls. This requires coordination with local law enforcement, to see that the numbering system is consistent across the entire school system or jurisdiction.



The numbering of doors for emergency personnel, and appropriate landscaping choices were two security measures included at Triangle Elementary School in Prince William County.

Adequate site lighting is also a crucial element of the security strategy. A balance must be struck between safety concerns that call for more lighting, and light pollution issues that have recently become a significant part of the sustainable building movement. Landscaping choices have a significant impact on the security of a school site as well. Overgrown landscaping adjacent to the exterior walls of the building should be avoided. Landscaping choices should not provide a place for a person to hide next to the building. With the emphasis on introducing natural light into classroom, many school designs include courtyards. Steps should be taken to prevent unauthorized access to courtyards. Low roof tops, which can be accessed from the perimeter of the building, should be avoided. Roof ladders that are on the exterior of the building should be secured to avoid unauthorized access to the roof, and potentially to the hidden courtyard spaces.

BUILDING ENTRANCES

The next layer of school security is at the entrances to the building. In general, the number of entrances should be limited to the minimum needed for operation of the building and life safety requirements. Fewer entrances result in fewer access points to monitor. Keeping track of keys to exterior doors is a constant problem for school leaders. Unauthorized access and use of keys to enter the building is a serious security concern. Many school systems are choosing to install keypads or card readers on all exterior doors to solve this problem. These systems offer the ability to change access



The renovation of Abingdon Elementary School in Gloucester County included a new security vestibule, which directs visitors through the front office of the school to check-in.

permissions, and monitor who is entering the building, that a traditional key system cannot.

The location and layout of the main entrance to the building is a crucial consideration of school safety. The administrative suite should be located at the main entrance, and the office area should have a good, unobstructed view of the site, to allow for passive supervision. Once the school day starts, all entrances except the main entrance should be locked down. A security vestibule, which forces arriving visitors into the reception area of the main office, allows school staff to check-in visitors and



The front desk at Kettle Run High School in Fauquier County allows the office staff to passively supervise the parking lot and main entrance of the building.

understand who is in the building at all times. “Panic” buttons at the reception area allow the reception staff to alert police and the rest of the staff in the case of an emergency. If there is a security emergency, pressing this button notifies the school staff of the need for a lock-down, and also calls 911 to alert the police. If there is no dedicated, full-time school resource officer on site, the main reception area is also where video surveillance of the school building and site can be monitored and recorded.

Keypad access and automated door lock “buzzers” are a good way to control access. They can be installed at the outside door or at the door in the secure vestibule that leads to the reception area. In either case, this location should be monitored with a camera and provide two-way audio communication with a receptionist.

VISIBILITY

Visibility is also a crucial element of school safety and security inside the building. Circulation patterns within the building should be designed so that the hallways can be adequately monitored during class changes by a few staff. Nooks and crannies within hallways, where students or intruders can hide, should be avoided. Many school designs include remote administrative offices, or strategically-placed teacher work centers, to allow for passive supervision of distant parts of the building. Some school systems choose to consolidate student lockers into one space, allowing just a few staff to monitor those areas.

DESIGNING CLASSROOMS FOR SECURITY

The final layer of security is the classroom. In the classroom, the challenge for designers and school leaders is the fundamental conflict between wanting the ability to lock-down the classrooms in the event of an emergency, yet also have some visibility between the hallway and the classrooms. Many school systems install blinds or shades that can cover door lites or sidelights in the event of an emergency. The hardware for classroom doors should provide the ability to easily lock the door from

the inside, without the use of a key. Some school jurisdictions also incorporate windows that are sized and operate to allow escape to the outside.

STRIKE A BALANCE

Each school's security needs are different. Some schools may have a high rate of incidents while others do not. It is important to strike the appropriate balance on a facility-by-facility basis to see that the security measures are appropriately visible to the facility users. In some cases, you want visitors to know they are being monitored and controlled. In other cases, you may want to integrate security measures more subtly to promote a welcoming environment while also providing a high level of security.

We live in a time during which school leaders, facility managers, and school facility designers must carefully consider the security and safety of our schools. These strategies are just some of the issues that merit consideration when evaluating a new or existing facility.

Should these topics spark conversation and consideration in your district, Moseley Architects is happy to serve as a resource. As a leading school design firm in the mid-Atlantic, our design professionals have the experience, skills, and commitment to effectively serve you as you consider your needs.

The following resources are from the AIA Committee on Architecture for Education and are good sources for more information:

1. U.S. Department of Education presentation William Lassiter, Dir. Of Communication, NC Dept. of Juvenile Justice & Delinquency Prevention and Steven McElroy, Director of Security Safety & Security, Columbus Ohio Public Schools
http://rems.ed.gov/docs/Training_CHIL07_SafetyPhysicalDesign.pdf
2. Architecture, Design and School Crime Prevention, Ken Trump
<http://www.schoolsecurity.org/resources/school-design.html>
3. Florida Safe Schools Design Guidelines http://www.fldoe.org/edfacil/pdf/fl_ssg.pdf
4. California Department of Education <http://www.cde.ca.gov/ls/ss/vp/safeschlplanning.asp>
5. Singapore Guidelines <http://www.ncpc.gov.sg/pdf/CPTED%20Guidebook.pdf>
6. FEMA Primer to Design Safe School Projects in Case of Terrorist Attacks and School Shootings http://www.dhs.gov/xlibrary/assets/st/bips07_428_schools.pdf
7. Crime Prevention Through Environmental Design
http://cptedsecurity.com/cpted_design_guidelines.htm
8. Crime Prevention Through Environmental Design, Robert A. Gardner
<http://www.crimewise.com/library/cpted.html>

9. Safety by Design, Don Hensely http://asumag.com/mag/university_safety_design

10. Designing Safe Schools, Gary C. Prager, AIA
http://asumag.com/mag/university_designing_safe_schools

11. National Clearing House for Educational Facilities
http://www.ncef.org/rl/safety_security.cfm

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