STATE OF ARIZONA

SCHOOL FACILITIES BOARD

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SCHOOL SAFETY RECOMMENDATIONS

These recommendations attempt to add insight based on the lessons learned from the active, life-threatening security breaches revealed by recent tragedies.

Introduction
In late 2006, the Governor's Office asked the Arizona School Facilities Board (SFB) to evaluate school security issues and to make recommendations for security measures that might be incorporated into new schools. SFB staff performed an extensive review of nationally recommended best practices for enhancing school security and sought public comment. Staff compiled best practice recommendations from those public comments and from sources including federal and state law enforcement agencies, various State departments of education, school security experts, and architects and planners engaged in school design.

Below is a list of nationally recommended physical features that may be applied to existing schools and incorporated into the design for new schools. Security measures required by the minimum adequacy guidelines for existing facilities may be implemented through the SFB with Building Renewal Grant or Emergency Deficiencies Correction funding.

Crime Prevention through Environmental Design
A national program for designing physical features to prevent crime is called Crime Prevention Through Environmental Design (CPTED). CPTED is a proactive crime prevention strategy utilized by urban planners, architects, police departments and security professionals that relies on the ability of design to influence offender decisions that precede criminal acts. CPTED principles are based on three primary school design features that include access control, natural surveillance, and the definition of territory. Dr. Jeffrey Lackney, an architect and school planner, defines those principles as follows:

1. Natural access control uses doors, shrubs, fences, gates and other physical design elements to discourage access to an area by all but its intended users.
2. Natural surveillance is achieved by placing windows in locations that allow intended users to see or be seen, while ensuring that intruders will be observed as well. Adequate lighting, glass and landscaping are similarly designed to permit unobstructed views and enhance surveillance opportunities.
3. Territorial reinforcement suggests that physical design can influence users to develop a sense of "ownership" that is perceived by potential offenders. Sidewalks, landscaping and other elements that establish boundaries between public and private areas promote territoriality.

A school's overall security system should be designed in an "onion" fashion, meaning layer upon layer in order to mitigate the highest risk potentials and assist in cost containment. The recommended approach would be an outer layer of campus perimeter security; the second layer, a controlled point of entry; and finally, a classroom security layer in case an assailant attains a complete campus breach.

The execution of such a design should begin with an activities profile of the potential assailant. Evidence reviewed indicates that certain common activities occur no matter the background of these assailants. After establishing this activities profile, a campus threat assessment should then be performed to focus resource expenditures on the highest risks specific to the campus. To begin, a threat assessment for the campus must be completed with an active, life-threatening security breach as the foundational event, of the type similar to an active shooter.

Based upon the previous recommendations, and considering the new information available, the SFB recommends that the following 11 safety features be considered as elements of any school design.

1. Assessment

The first step is to work with a State or Federal profile specialist to create an activity profile of the assailant most likely to create an active life-threatening security breach on a school campus. This profile will not be a psychological profile to identify potential risks in individuals, but to identify what the most likely actions will be once a security breach is accomplished. Using past active life-threatening events and projections of most probable future actions, accounting for multiple factors, e.g. socio-economic, local community, income, crime rate, etc., a more accurate threat assessment can be completed for each campus. This tailored threat assessment will lead to a system designed to meet the specific threats of the campus, thereby creating an internal cost containment system.

2. Exterior Security Lighting

It is important to consider outdoor lighting since nearly all school buildings are used after dark. Exterior lighting should facilitate easy circulation and provide security for the building and its occupants. At a minimum, adequate vandal-proof lighting for parking areas, bus loading zones, pick- up/drop-off areas, bicycle parking areas, and walkways leading to building entrances should be provided.

On the building exteriors, wall mounted fixtures with vandal-resistant lens generally work best. Light poles are not desirable close to building walls because they may provide a means to access roofs or upper windows. Light poles are more suitable for parking areas, play areas and driveways. Timing systems should be considered in order to save energy by minimizing lamp time to only those hours necessary.

Selection of exterior lighting should be based on specific site and application conditions that consider the amount of light cast on adjacent sites as well as contribution to light pollution. Additionally, motion sensors may be used as appropriate.

3. Administrative Office Locations

The main entry of a school should be located at the front of the school or campus and should be well marked to guide visitors to the administration area. Placing the primary entry at the front of the building promotes natural surveillance, helps eliminate wandering visitors, and provides general access control. Good external visibility should be available to the parking area, main lobby and corridors. Security experts also generally recommend that no major delivery and receiving functions be allowed through the front entrance.

The administration office should have a direct relationship to core instructional and non-instructional facilities, particularly those with after-hours community use. Open and flexible layouts allow office staff to visually supervise and control the entire administration complex, particularly the reception / waiting area and private office areas. For occupant safety, private office doors in the administration area should have sidelights or windows in doors for clear visibility into corridors. CPTED principles suggest that territory is reinforced when high visibility of and from the administration area is combined with the assertive placement of the main office.

The ideal configuration for school security is to create a single control point of entry onto the campus, after the school day has started. All other campus access points will be secured at this time forming a complete barrier to the campus from the non-secured parts of the site. This control point must be through the administration office of the school and will be the only entrance from the non-secured part of the school campus. This entry will be in the form of a secured vestibule, with a window for administration personnel to identify all visitors, and a single entry into the administration area through an access-controlled door.

Beyond the single entry point, the administration area would ideally be capable of being isolated in an active life-threatening security event, in essence becoming a secured "sally port". This area can be completely secured and isolated by using a panic button system enhanced with the active lockdown component. There should be multiple panic buttons throughout the administration area to ensure that there is more than one opportunity to contain the threat during an active life-threatening event. Once a panic button is pushed an immediate alert to police, fire, and emergency services is sent, as well as a campus-wide "all call" of a threat in progress and lock down notification. At the same time, electronic locks will secure all doors leading into the campus from the administration area.

4. Classroom Security

Classroom safety can be improved through the use of specific types of door hardware. Traditional classroom locksets require that the door be locked from the outside while the inside lever remains operable, which means that unauthorized individuals cannot lock or unlock doors without a key. But in an emergency situation it forces teachers to open the door from the inside, insert their key in the outside cylinder, turn the key to lock the door, and then close it again, which may actually expose the teacher to the very danger they are locking the door against.

A "security classroom function" lockset has a cylinder on the inside that locks the outside lever. Teachers can lock the classroom door without having to go into the corridor. This lock type provides a door lock on the corridor-side to protect occupants, yet the lever handle inside the room retracts the latch bolt with one motion for fast egress. Classroom door handles and locks must meet fire code requirements for exits. Therefore, it is recommended that the jurisdictional fire authority approve classroom door locks prior to installation.

Possible additional classroom security enhancements could include the installation of a safe for a non-lethal protection device, e.g. Tazer X2, with a biometric lock, to allow the teacher in the room to provide more defenses in case the classroom door is breached. Classroom security could also include the application of a Level I or Level II ballistic blanket to be hung on the inside of the classroom door.

5. Student Interior Restroom Configuration

Student violence data suggests that restroom areas are a common location for negative behavioral activities on school campuses. Student restroom security concerns vary depending on the age of the users. Restrooms should be designed to facilitate supervision, sized to avoid congestion, and convenient to the areas they serve in order to provide natural surveillance. A design challenge is to create restrooms for students that can be easily monitored by teachers of the opposite gender.

Many security consultants suggest that a maze entry consisting of a privacy screen wall that is walked around to enter a restroom rather than a door or a vestibule with doors makes audible supervision considerably easier. An added benefit is that this type of design may also help to prevent vandalism and make maintenance functions easier to perform.

Another design feature that provides a basic level of security is the placement of lavatories (also

called gang sinks) in a corridor just outside male and female student restrooms. This location permits both genders to use the same lavatories, which reduces the likelihood of vandalism and horseplay and keeps students under visual supervision by adults as long as possible.

6. Vestibule Entry
The goal of any school is to create a warm and welcoming school environment for staff, students and the community. However, school administrators frequently must consider how to maintain that environment yet integrate school security devices that may suggest an institutional and impersonal climate.

As a less obtrusive entry control device, some architects use CPTED principles to design main school entrances with a double door vestibule with the interior vestibule doors locked during class times. A second entrance within the vestibule either opens directly into the administration reception area where visitors check in prior to being admitted to student areas or requires that visitors be electronically "buzzed in" to the administration area.

7. Sidelights
Sidelights (windows next to doors) provide an additional security measure to classroom design. Sidelights allow teachers to keep an eye on corridors or adjacent student activity areas and to quickly see who is entering the room. Many districts specifically require sidelights next to doors on the door handle side as an added security feature. When sidelights are located next to the door handle side of the door rather than the hinge side, doors in the open position do not block the view through the sidelight.

Doors with integral windows and sidelights next to the door handle side must meet certain specific building code requirements regarding fire safety. Jurisdictional fire authorities and code officials should always be consulted prior to the addition of such features.

All windows that are adjacent to the secured campus access points and classrooms should be changed to ballistic glass, or filmed with a breakage resistant film to help prevent any sort of security breach into the school campus. This is a recommendation that many overlook; however, failing to include this could open the campus to a life-threatening security breach.

8. Perimeter Fencing
Perimeter fencing enclosing a campus is more to keep outsiders out than to keep insiders in. Security experts note that fencing cannot keep someone out who is determined to enter the campus and comes prepared to do so with devices such as a ladder and wire clippers or smashes through with a vehicle. However, limiting site access decreases the opportunity for crime by increasing the effort required to gain access to a school site and by limiting entry points onto school grounds. Site entry points located in high visibility areas can be easily observed and monitored by school personnel.

While wrought iron fencing is visually attractive, 8-foot chain link fence with small mesh (1-inch to 1-1/2 inches) is equivalent in cost to the 6-foot high wrought iron and provides an excellent barrier. Unlike a 6-foot high chain link fence, it is difficult to pull up on the fence and the small mesh doesn't permit toeholds. While chain link fencing that is 8-foot high is just under the cost per running foot as a 6-foot high fence, a site-specific risk assessment may determine that the additional height is warranted.

Current minimum guidelines provide for 6-foot fencing on Kindergarten through 6th grade campuses. The SFB recommends 8-foot fencing for all school sites.

9. Security Alarms

Teachers and learners need to feel safe within their classroom environments. Classroom telephones and public address systems generally afford teachers immediate communication with school administration or law enforcement personnel. In some extreme situations, telephone use might not be possible or discretion may be required when transmitting a request for help. Panic buttons are a common type of duress alarm found in schools. The simplest application is a wall-mounted or under-desk mounted button that when pushed sounds an audible or inaudible alarm to another location through wired or wireless transmission. Audible alarms can be combined with such devices as a corridor flashing light, a horn, or both.

Duress alarms vary widely in system capability and cost. There are three broad categories of duress alarms that can send one or more levels of distress signals to a particular location:
a.   A simple panic-button alarm affixed to a location, such as described above.
b.   Portable identification alarms that identify the device owner.
c.   Portable identification/location alarms that identify, locate, and track the device owner who activated the alarm.

The SFB recommends that a base security alarm system be provided that includes item b. a portable identification alarm that identifies the device owner.

10.   Security Cameras

Some school districts have elected to use video cameras alone or as part of a closed circuit television (CCTV) system in order to further protect students and faculty. From the standpoint of school personnel who handle daily security issues, cameras help distinguish between outsiders who do not belong on campus and those who do.

According to a Department of Justice research study of security cameras in schools, cameras are beneficial because of the strong evidence they can preserve on tape for use by school administration officials. The study notes that when students are shown a tape of themselves in an illegal or unacceptable act, even if the tape might not have been of sufficient resolution and detail to use for prosecution purposes in court, they usually admit to the incident.

Another benefit of using security cameras in public areas on school grounds is the use by staff who are normally assigned to oversee an area can instead be made available to monitor other areas of concern.

The SFB recommends a basic camera system that provides coverage of key playground areas building entries, main commons areas, gymnasium, cafeteria, and includes a computer network interface. Motion sensors may be used in conjunction with the cameras to improve the efficiency of the system during non-school hours.

11.   Classroom Telephones

Each classroom should have a telephone that will allow occupants to contact both the office and emergency personnel.

Conclusions:

Kenneth Trump, president of National School Safety and Security Services, a security consulting firm to school districts, says that it is possible for school districts to create a false sense of security in their response to high-profile school violence tragedies by installing security equipment and other physical and tangible measures simply to demonstrate to students, staff, parents, the media, and the overall school community of their commitment to school security without first accurately assessing

what the most effective site specific needs may be. He recommends that school districts take the time to assess safety risks before installing security equipment or putting other safety measures in place. He provided three questions for school districts to consider before purchasing security devices such as cameras and alarm systems:

a. What specific security threats and concerns are you attempting to address by using a particular type of security equipment?
b. How will this equipment help address these threats and how will you actually use it on a day-to-day basis?
c. Once the equipment is purchased, how will it be maintained, repaired and upgraded, as necessary?

Finally, he observed that there are three common problems with school district decisions made when considering security equipment:

a. Failure to identify where security technology can be appropriately used.
b. Poor purchasing practices related to school security equipment.
c. Failure to integrate the use of equipment with human, procedural and other school safety strategies.

The SFB does not suggest that implementation of these eleven school security design elements will accommodate all school security situations and conditions. However, the SFB believes that consideration of CPTED principles as well as the eleven design elements should be a part of any school district's renovation or new school design objectives. The SFB further believes that incorporation of the design elements during the planning phase can be cost effective when considered as a part of an overall school security program.