

Introduction to Security Design Criteria

Purpose

The purpose of this guide is to provide school architects and school district personnel recommended criteria for constructing a secure instructional facility. The criteria set forth in this guide are to be taken into consideration during the design process and are not meant to supersede local building codes or Texas Administrative Code Title 19, Chapter 61, Subchapter CC.

Building security encompasses how assets (i.e., people, information, and property) can be protected from the effects of malevolent acts carried out by individuals or groups of individuals (i.e., violent people, criminals, extremists and terrorists).

Senate Bill 11

Senate Bill 11 of the 79th regular legislative session focuses on school security. The bill was authored by Senator Todd Staples of Palestine, Texas.

“Every parent's worst nightmare is something like the recent massacre at Red Lake High School in Minnesota, leaving 10 students dead and 14 injured. This reminds us all too well that the public school can be an easy target for those who intend to do harm,” Sen. Staples said. “Senate Bill 11 will take Texas the step further to ensure our school officials, law enforcement, first responders and students know how to detect, deter, and respond in

the event of such an emergency. I am thankful Lt. Governor Dewhurst has made this issue a priority for our state.”

Components

Senate Bill 11 has three major components: mandatory security audits, security design criteria, and mandatory multi-hazard emergency operations plans. The components of Senate Bill 11 fit with the primary components of a comprehensive security plan: detection, deterrence, delay, and response (see Figure 1.1).

Deterrence and Delay

Senate Bill 11 mandates the creation and consideration of security design criteria for construction and major renovation of instructional facilities. This document serves as the deterrence component. The design of the building, use of construction materials, landscaping, and management procedures all play a role in deterring potential threats.

Detection

Senate Bill 11 mandates that districts conduct security audits every three years. The security audit is the detection component. To develop effective security for an instructional facility, it is critical to determine potential threats to the building and to people who use the facility. Identifying threats aids in determining the desired levels of protection and the functional design requirements. A security audit conducted prior to new construction or major renovation will help detect threats and vulnerabilities which can be mitigated through the design or redesign of the facility/site.

Response

Senate Bill 11 mandates that all districts must have a multi-hazard emergency operations plan (EOP), which serves as the response component. When a threat is detected, staff and students must know how to respond or detection is ineffectual. The district and/or campus EOP should address how to respond to all potential threats.

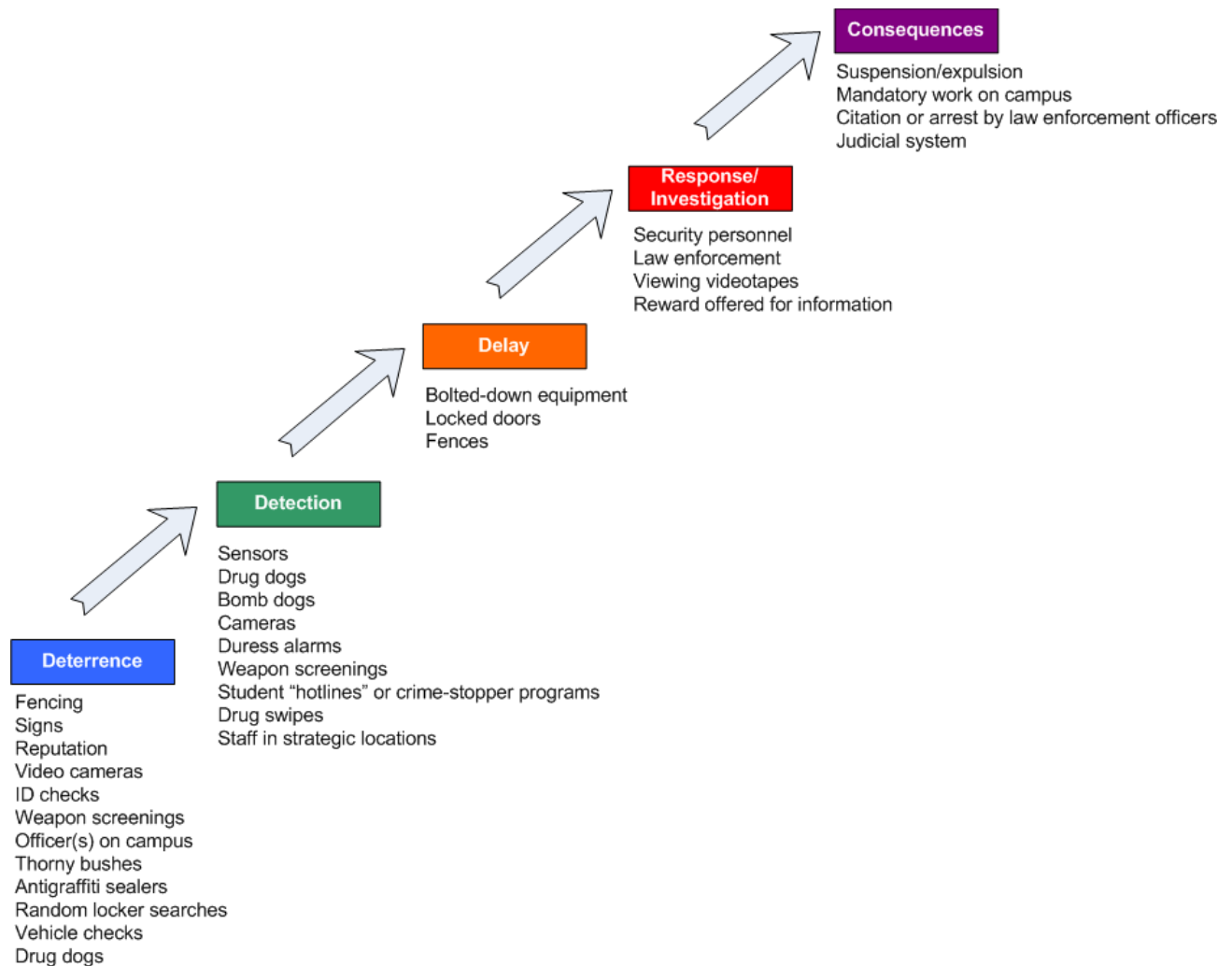


Figure 1.1 Considerations for designing a new security system for a school environment. Examples of each component are included.

National Institute of Justice Research Report, The Appropriate and Effective use of Security Technologies in U.S. Schools, Mary W. Green Sandia National Laboratories 1999

Security Design and Management

When looking at security, design and management, understand they are intimately connected in “real world” application. This is especially true of instructional facilities, where daily use of places within a facility can affect their original design intent. One example is the design of windows facing building entry ways to facilitate surveillance, a fundamental crime prevention principle. If administrators allow staff or

students to obstruct the windows their effectiveness is compromised. Management policies and practices must work with design to complement crime prevention and deterrence on a continuing basis.

Another important aspect of security is proper training. If staff are not trained in how to execute or monitor those measures, then security, itself has not value. For example, building a school with interior vestibule doors to be locked after students have arrived at school is a great strategy to channel visitors to the main office, since they have no other way to get inside the school. However, if staff are not trained to lock the doors, it defeats the purpose of having them.

These criteria are not intended to dictate management practices or policy, but to provide guidance for building security into educational facilities. The criteria illustrate—through text and graphics—how school architects, facility managers, risk managers, planners, and others can design and construct a secure instructional facility.

This document is designed to be a guideline which applies to any educational facility. It does not differentiate between elementary schools, middle schools, high schools, or community colleges. Architects and administrators can make specific adjustments based upon the unique needs of their facility. Before designing an educational facility, the district needs to go through the process of completing a hazard, vulnerability, and risk assessment (see Chapter 2: Asset Value, Threat Hazard, Vulnerability, and Risk Assessment). Completing this process will aid the district and architect in making decisions on which criteria to implement.

Spectrum of Physical Security Approaches

A wide array of security measures involving people, campus modifications, and/or technologies can be considered for most concerns, keeping in mind the unique characteristics of each school. The National Institute of Justice created the following list of design-related security measures to address various security issues.

Outsiders on Campus

- Signs posted regarding penalties for trespassing
- Campus enclosed (fencing)
- Exterior doors locked from the outside
- Cameras placed in remote locations
- School layout designed to ensure all visitors pass through front office

Fights on Campus

- Cameras
- Duress alarms

Vandalism

- Graffiti-resistant sealers
- Glass-break sensors
- Aesthetically pleasing wall murals (these usually are not hit by graffiti)
- Eight-foot fencing

Theft

- Interior intrusion detection sensors
- Bars on windows
- Reinforced doors
- Elimination of access points to rooftops
- Cameras
- Doors with hinge pins on secure side
- Bolted-down computers and TVs
- Interior room location for high-value assets
- Key control
- Biometric entry into rooms with high-value assets

Drugs

- Removal of lockers

Alcohol

- Elimination of open campus at lunch
- Elimination of access to vehicles
- Removal of lockers

Weapons

- Walk-through metal detectors
- X-ray inspection of book bags and purses

Malicious Acts

- Set back all school buildings from vehicle areas in order to reduce vulnerability to out-of-control vehicles and vehicle attacks
- Inaccessibility of air intake and water source
- Vehicle barriers near main entries and student gathering areas

Parking Lot Problems

- Cameras
- Fencing
- Card I.D. systems for parking lot entry
- Parking lots sectioned off for different student schedules
- Sensors in parking areas which should have no access during school day

False Fire Alarms

- Sophisticated alarm systems which allow assessment of alarms (and cancellation if false) before they become audible
- Boxes installed over alarm pulls which alarm locally (screamer boxes)

Bus Problems

- Video cameras and recorders within enclosures on buses
- Smaller buses
- Duress alarm system or radios for bus drivers

Teacher Safety

- Duress alarms
- Open classroom doors during class
- Cameras in black boxes in classrooms
- Controlled access to classroom areas

Security measures may be contradictory, and consideration of which features to incorporate into a school design involves deciding if a feature's benefits outweigh its costs. The district and designer will need to look at the situation for each location and determine which trade-offs are necessary. For example, eliminating windows as a part of the main entrance will harden the building, but will hinder or eliminate natural

surveillance. To harden means to increase the ability of a structure to withstand blast effects.

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