

Baseline Recommendations for Securing our Schools

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Sandy Hook and Columbine disturbed the American conscience about the relative safety of the schools in the communities we live in. Both were considered locations where violence especially of this type would be considered a non-realistic potential. Both schools had the common security provisions that was the status quo of recommendations nationally installed. The following discussion will break down some of the inadequacies of most installed security provisions and outline what is not a complete comprehensive solution but the minimal base line of expected provisions each new school should have implemented and existing facilities should be renovated to meet.

People are more likely to be struck by lightning or bitten by a shark than be a victim of a murder suicide type attack. As a culture we also do not want facilities to reflect or resemble a militaristic defensive culture. Our education environments need to be securable but feel like the friendly open American culture Americans have grown up knowing. We also want our children focused on learning and being loving and carefree in spirit. The facility should feel friendly, inviting, and function as we know 21st century education facilities should. The teachers and children should not be confined to or locked in classrooms. They should be able to move freely and function in collaborative environments. We can create more secure education environments that fully function as great learning environments. Our responses should be addressing the challenges and through creativity providing education environments that can be secured but not impede learning or alter the culture we want our children to become accustomed to.

Several studies have been completed by several sources. FEMA/Homeland Security and the Secret Service completed extensive research on securing our schools. *Ref.(1 &2)* The studies have concluded that the only sure way to prevent loss of life or injury is to diffuse or intervene prior to the assailant initiating the attack. The best of secure solutions short of a level of security expected at a prison or federal facility can only impede and slow the attack buying time for first responders to arrive on site. The purpose of the base line recommendations that will be outlined are to reduce the probabilities of the casualties.

This paper is focused on individual school buildings. Campus security measures require considerably more vigilance and additional consideration beyond the base line provisions outlined in this paper.

Sandy Hook had what was perceived as a secure vestibule and camera/intercom system and a policy for lock downs. Most schools in the United States have a similar blind entrance with intercom and camera arrangement. Columbine had an SRO on duty and cameras through-out the facility. These schools had the standard protocol security provisions implemented by most school districts in place. These proved to be inadequate.

Recommendations:

1. Adopt expanded principles of CPTED (*ref. 3*) design:

Natural Surveillance:

Exterior - Provide clear site lines for observing physical movement on the School Campus/Site. The School entry/reception desk should be positioned to allow natural surveillance of all approaching visitors, students and staff. The views should not be camera dependent. The positioning of the building should provide an identifiable main entrance with parking and sidewalks positioned to lead you to the main entrance. There should be sufficient travel distance to allow the staff to monitor/recognize potential threatening behavior as they approach the entrance. The entry and reception should be all glass from a max 36" AFF to a minimum 7'4" AFF. The Glass should be a Polycarbonate laminated Bullet resistant glazing. Play and outdoor activity areas should be easily observed by direct visual observation from the school. Avoid creating features that can be used to hide for an exterior attack like dense shrubbery and solid walls/features. Shrubs should be no more than 24" tall, and clearance underneath trees no less than 72" to ground. Biology grow plots and gardens should be positioned on the site in a manner that does not create hiding spots for attackers or impeded visual observation.

FEMA Recommendations:

FEMA – Open Space: “The incorporation of open space into School site design presents a number of benefits. First and foremost is the ability to easily monitor an area and detect intruders, vehicles, and weapons. Closely related to this benefit is the stand-off value of Open Space”

FEMA – Parking: “Surface lots can be designed and placed to keep vehicles away from the school buildings.”

FEMA – Landscape Design: “Landscape design features should be used to create the level of protection without turning the school into a fortress. Elements such as landforms, water features, and vegetation are among the building blocks of attractive and welcoming spaces.”

2. Access Control:

Entrance Access should be managed and controlled. The primary building entrance should be secured and require direct visual observance from the reception area of all approaching visitors. The glazing between the vestibule and school should be a Glass Polycarbonate laminated Bullet Resistant glazing in 2 ¼" heavy duty aluminum door frames. The design should be standard friendly and inviting but secure. The receptionist should have verbal communication with the visitor prior to allowing access and ability to

buzz them into the reception area for check in. The primary and secondary entries at the beginning and end of the school day should be physically monitored by staff as students enter and exit. All secondary entries should be locked down during the course of the day when they are not monitored by staff. Secondary entry points should additionally be monitored by cameras and alert the office when they are opened.

3. Interior Circulation:

Provide simple building circulation patterns for clear sight lines for observing student movements through the school. A minimum 12' path width for primary corridor circulation should be required to allow sufficient space for movement. Most instances of bullying can be avoided when sufficient space is provided. Providing eyes from learning spaces is very effective in providing "eye on the street" Video cameras should be positioned and used to record and monitor the actions occurring in the building circulation and large gathering spaces. Transparency between the building circulation and classrooms should be provided to insure that classrooms/education spaces can be observed from the corridor and corridors from the education spaces. Covering the glazing should not be allowed. Storage Rooms should be provided with frosted glazing so that physical movement/activity can be detected in normally unoccupied areas.

A concept of layering should be implemented. The purpose of layering is to limit the level of penetration and access in the event of an attack. The first layer of penetration is the front door and other entry points. The traditional double loaded corridor model constructed primarily during the 50's-70's are the most vulnerable plan arrangement for an attack. The schools designed as smaller learning communities organized in houses/villages/pods provide additional opportunities for securing education environments during a lock down. See figure 1.1 demonstrate how layers of securing the education environments can be achieved. It is imperative that the entry be secured by a vestibule to provide the opportunity to identify and secure a threat before they can enter. The layering provides safety zones where open collaborative environments can function safely. If the Classroom wing or village is secured at all times the Classrooms can be left open for collaborative learning with a requirement for protocols in an event of a lockdown. This also provides more flexibility and time for teachers to move children to zones of safety. They can even provide more options for escape if that becomes necessary.

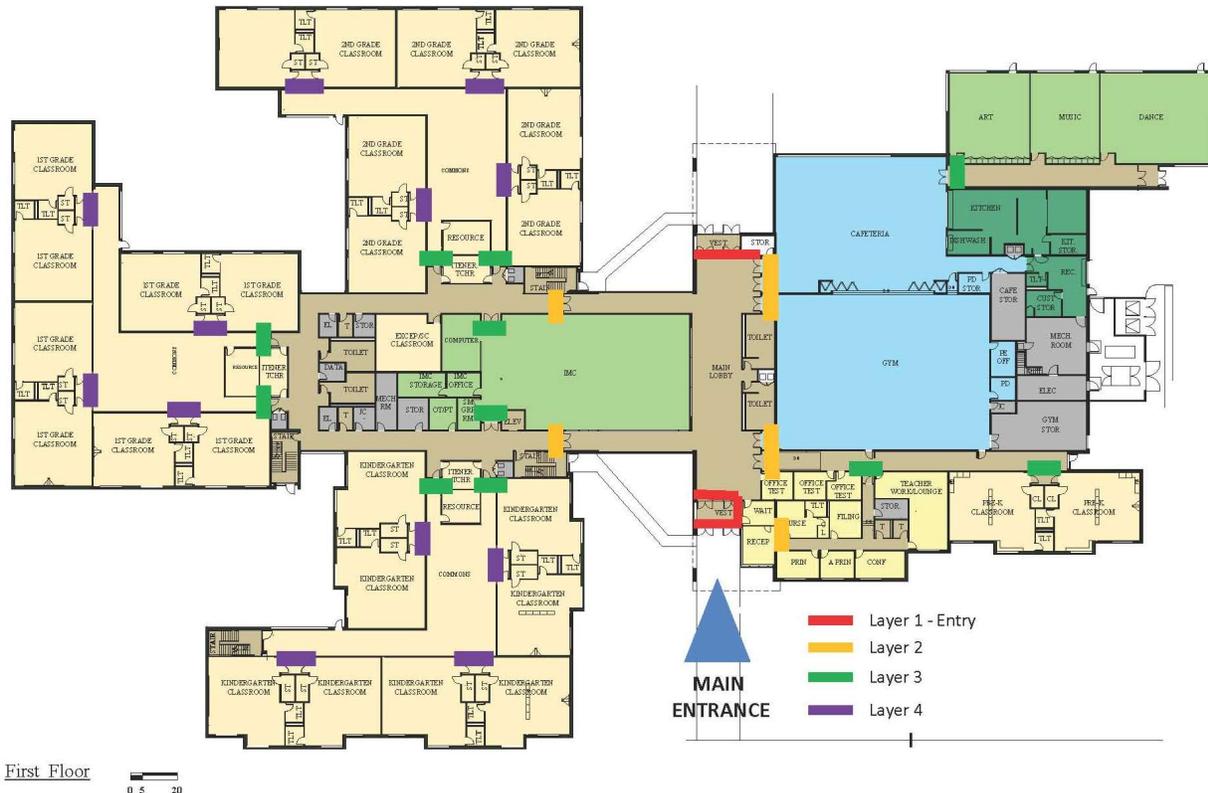


Figure 1.1

4. Exterior Doors and Classroom Doors:

Where the site perimeter is not completely secured the exterior doors at the perimeter of the school should remain locked at all times requiring a key or access card for re-entry to the school. A door position and latch detection switch can be installed at every exterior door and alert staff if the doors are held open for more than a preset period of time.

All Classroom and occupied education spaces should have doors that swing out into circulation. All door frames should be of metal construction to provide resistance to forced entry.

Interior occupied spaces can be equipped with closures and hold open devices that can be disengaged when the lockdown protocol is activated. All Classroom entries and access points to Classroom Commons/Villages/Pods should also be secured in a similar manner. Organizing buildings in a securable pod/village concept should be encouraged over organizing Classrooms along a singular corridor system. This layering provides safety zones where open collaborative environments can function safely. If the Classroom wing or village is secured at all times the Classrooms can be left open for collaborative learning with a requirement for protocols in an event of a lockdown.

Classroom Locks – Only Locksets that can be secured from the interior of the Classroom/learning space without requiring the teacher to open the door should be utilized. The Traditional Classroom Function Lockset should be considered banned.

- Classroom Intruder Function
- A traditional Dormitory Function: This may work well for changing out existing locksets and achieve the ability to lock from the interior of the Classroom.
- Office Function - Lock Function

5. Territorial Reinforcement:

The property edges should be discernable so it becomes obvious to someone approaching they are on school property as well as visually known to the school that a person is approaching. When a school district shares property with a Park District simply placing white posts similar to the white posts used on golf courses to define out of bounds would be sufficient. The appropriate secure perimeter will vary from urban to rural locations. Each community should work with their architect and consultants to identify the best solution.

Communications Infrastructure:

Communications devices and systems (hardware and software) should be acquired and regularly evaluated within each school building to ensure teachers and school administrators can easily communicate with police and first responders during an incident. Communications systems should not be proprietary. Communications systems should be openly compatible with first responder's communication equipment without special patches or provisions. The intent is for First Responder access and monitoring of communication within the building. It is imperative that law enforcement be provided the best access to communications occurring in the school.

Law Enforcement access:

Two Knox boxes should be provided at the Main entrance and a secondary entry point/exit. One should be the traditional Knox Box for the Fire Department and the second Knox Box should be specific for police use. Where local law enforcement can be provided with keys or electronic access cards/fobs would serve as an acceptable alternative. This will vary from Urban to rural areas and should be coordinated with FWe sadly learned several specific lessons from the Sandy Hook and Columbine attacks. The outlined base guidelines for school safety are strictly base line and all School Districts should evaluate the guidelines and add additional measures with the guidance of their Architect of Record. Since the probabilities of an attack are extremely low we want environments that are conducive to 21st century learning. We also want schools that espouse a friendly and inviting culture. Adequate security should exist to function properly if the unthinkable event occurs. The most comprehensive source to explore additional security measures is FEMA 428. This is a very comprehensive and well written source. Though it is exceptionally written there are a few things to keep in mind

when reading and implementing it. It is a direct reflection of requirements expected at Federal facilities which go well beyond what most School Districts could ever afford or in some cases consider reasonable. Each district needs to balance additional measures with education priorities. When reviewing the authors it was heavily populated by security experts and civil engineers. None were architects, educators and education environment planners. As you make your way through the document you will need to balance the recommendations with what is actually needed. For the timing of this paper it is the single best reference source and I fully expect over time future revised editions will incorporate language better balancing the concept of friendly learning environments with security.

At the minimum the outlined recommendations should be common at all of our education facilities.

1. FEMA – Primer to Design Safe School Projects in Case of Terrorist Attacks and School Shootings FEMA-428/BIPS-07/January 2012 Edition 2
2. THE FINAL REPORT AND FINDINGS OF THE SAFE SCHOOL INITIATIVE:
IMPLICATIONS FOR THE PREVENTION OF SCHOOL ATTACKS IN THE
UNITED STATES UNITED STATES SECRET SERVICE AND UNITED STATES
DEPARTMENT OF EDUCATION
3. CPTED - Crime Prevention Through Environmental Design