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About the Firm

Logan Security & Investigation Services is a professional security and forensic investigation consulting firm focused on making the built-environment more secure and safer for its users. Having specialized knowledge and experience in environmental criminology, Crime Prevention Through Environmental Design, physical and operational security, architecture, and construction, LSIS has a unique understanding and appreciation for how the built-environment contributes to the occurrences of criminal behavior and critical incidents.

Contact Information

If you or your school is interested in learning more about architecture in school security, contact us directly. LSIS can help.

Logan Security & Investigation Services

P.O. Box 6820

Broomfield, Colorado 80021

www.operationsecure.com

303.295.1869

ARCHITECTURE IN SCHOOL SECURITY

Methods for increasing a school's security level of protection are not always black and white; nor should they be

In today's social and political climate, all types of facilities and buildings are subject to the potential threat of a critical incident, such as an active shooter event. Businesses, professional organizations, schools, religious institutions, shopping malls, and movie theaters – just to mention a few, are all a potential target by a disgruntled worker, an abused spouse, an unsuspecting criminal, a terrorist, or simply someone who has become infatuated with other certain historical critical incidents. Accordingly, building security and the safety of the occupants within facilities has increasingly become an area requiring prudent planning and preparedness.

Security measures in buildings and facilities can often take on different forms depending on the needs and risks of a particular organization or group. Armed guard forces, physical security, and security management planning all have certain merit when it comes to increasing security levels of

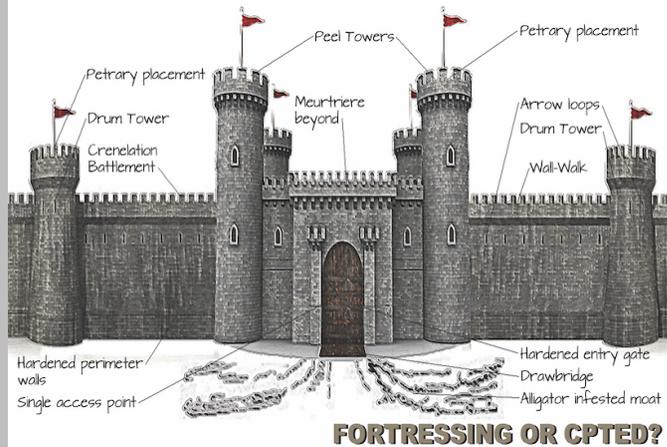
protection. Crime Prevention Through Environmental Design (CPTED) is one such method offering viable mechanisms for increasing the security levels of protection in a myriad of building types – including schools. Generally, CPTED is a method of incorporating physical security measures into the built environment (i.e., the architecture) that when implemented can greatly improve a facility's or building's ability to defend against a violent attack. Certain mechanisms can also provide for a more rapid response by first-responders, when necessary.

CPTED principles generally include the strategic design of various elements making up the built environment such as permanent architectural and structural components and barriers, lighting, landscaping, routes of travel, and signage. The design and placement of these and other critical elements can assist in increasing the security levels of protection while also improving the attitudes and actions of the legitimate users within the environment.

Fortressing or CPTED

Implementing architecture into school security does not require school buildings to become a fortress or to look like prisons. Architectural hardening of schools should consider the cultural and aesthetic desires. Creative architectural security measures are just another factor to be considered in the original design or renovation process.

“Establishing an overall protective system requires more than just basic mechanical or operational security enhancements.”



Physical Security: the implementation of tangible impediments to mitigate attacks and or unauthorized entry into otherwise secure areas.

(Katz & Caspi, 2003)

Such modifications in behavior can assist in deterring or even preventing illegitimate activities and criminal behavior.

Schools

Schools present a challenging facility type when it comes to developing and implementing security measures. Not only do the security measures need to perform their intended functions, but they also need to be sensitive to the particular social climate and aesthetic requirements of the facility. Fortressing techniques for example are typically not commensurate with a school’s intended open and inviting presence.

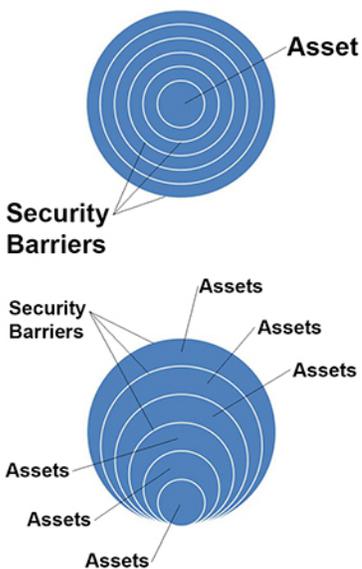
When it comes to increasing a school’s security level of protection, there are a number of methods and approaches routinely recommended by security and design professionals. Many of these methods and approaches are so routine they have become the default in school security with many being considered a best practice. Some of these methods include, but are not limited to:

- CCTV systems
- Secured entries
- Visitor check-in systems
- Ability to lock doors from inside classrooms
- Improved communication and notification systems

- School Resource Officer(s)
- Arming Teachers and Administrators

The above methods (along with many others) certainly can provide additional security and safety and thus reasonably should be given consideration. After all, without many of these measures certain vulnerabilities would exist, placing students, teachers, administrators, and legitimate visitors at risk.

Establishing an overall integrated protective system however requires more than just basic mechanical or operational security enhancements. Specific considerations should also be given to the various layers of a protective system so that each individual layer of protection can and will function on its own merit. This approach is commonly referred to as “Defense in Depth” or “Layers of Defense” and is intended to establish multiple layers of protection against an attack. In schools, such layers can typically be established as perimeters at locations such as the site perimeter, the building perimeter, and at individual room perimeters. These perimeters implement redundancy into the overall protective system thereby delaying or even preventing an attacker from completing their intended task.



Layers of Defense

Law Enforcement Response

In most cases, the development of the multiple layers of defense primarily focuses on the layers' ability to deter, detect, delay, and defend against an attacker. Generally, the intent is to create barriers between the attacker and the occupants of a building in order to provide a level of protection against the attack until Law Enforcement (LE) arrives on scene to eliminate the threat. LE's ability to efficiently locate and reach the attacker(s) to eliminate the threat is of the utmost importance in saving lives. Accordingly, not only should the multiple layers of defense create effective barriers between the threat and the target they should also be designed in ways that will assist in facilitating the most efficient and effective response possible.



Since the events at Columbine High School in April of 1999, LE's response tactics have evolved in regard to an active shooter incident. According to Sergeant A.J. DeAndrea of Arvada, Colorado who was a LE team leader at Columbine, the biggest lesson learned from the Columbine incident is that LE resources need to get into the building immediately in order to stop the threat as quickly as possible. (PERF, 2014) According to the Police Executive Research Forum (PERF), this approach may require a solo entry by the first responding officer when there is

insufficient time to assemble a contact team to perform the response.

Under this approach, LE's priorities include (1) stop the shooter(s); (2) assist the wounded; and (3) evacuate people from the scene. (PERF, 2014) Accordingly, the needs of LE when performing a tactical response must be considered in the design and construction of the various layers of defense – along with the remainder of the built-environment for that matter, in order to improve response time and to prevent potential barriers that may ultimately impede an efficient and effective response. When assessments are performed, specific coordination with local LE is crucial in identifying potential barriers that would likely impede a rapid response.

Layers of Defense

When developing the layers of defense in schools there are common primary perimeters already established where vulnerabilities should be identified and addressed. Generally, these perimeters include the site perimeter, building perimeter, and individual room perimeters. Each of these perimeters are common to virtually all schools and should be properly evaluated and modified as necessary to provide an acceptable level of protection.

In addition to the primary perimeters as noted, there typically are other existing potential perimeters that can be established based on the natural architecture of the building. I refer to these as "Zone Perimeters" whereby specific zones of protection are created based on the layout and organization of the building interior. Each established zone

encompasses either a group of classrooms or are of rooms having a higher occupancy count such as gymnasiums, auditoriums, and cafeterias. The first intent of these zone perimeters is to provide the opportunity to protect in-place a high number of occupants by as minimal means as possible and as quickly as possible. For example, schools are often designed having multiple classrooms grouped together, sometimes based on subject matter or grade level. As a result, a section of the building or zone is naturally created. Cross-corridor doors typically occur between the zone and the remainder of the building. These doors, along with the remaining perimeter of the zone, can become an effective barrier as one of the layers of defense. These conditions can provide an additional layer an active shooter must penetrate before reaching individual classrooms and or high-occupancy areas.

Another common characteristic of the zones is typically at least one or more doors exist from the zone to the exterior of the building. This provides the opportunity for direct ingress by LE if desired and for direct egress for evacuation purposes when directed. Although these doors are not intended to serve as a primary entry into the building during regular operational hours and should be controlled to prevent illegitimate entry, they do provide the opportunity to be used as deemed necessary during an active shooter event.

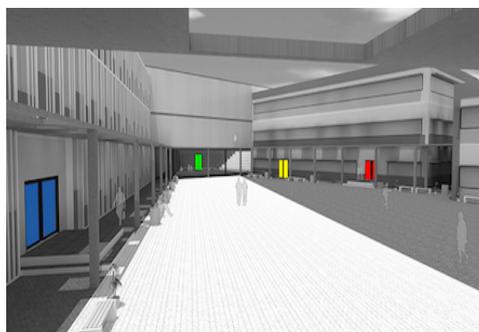
In addition to protecting the occupants seeking refuge within an established zone perimeter, these zone perimeters are also intended to improve response time by LE and other first-



responders by providing quick visual cues on where to enter the building and to identify which zone the threat is located. This of course must consider the information the responding officer(s) is being provided when arriving on scene.

Facilitating the Response

A rapid response to an active shooter event is a critical part of saving lives. The design and layout of buildings, most notably large buildings such as schools, can be extremely confusing and disorienting to those unfamiliar with the building and even to those who are familiar but are being faced with a stressful situation. Large buildings with many hallways leading to many rooms can become a maze of sorts especially when all the walls of the hallways and rooms are painted the same color throughout. When seconds count, having to read signs or drawings to become oriented with the built-environment takes time. During a critical incident, this can cost lives.



One method for facilitating a more efficient and effective response is through the use of color. From an architectural perspective, color is often used with a specific intent of impacting how people feel within a space. Color is also often used to provide specific direction and information to people. The use of color for communication purposes is common throughout our daily lives.

In collaboration with other physical security measures the creative use of color can provide valuable assistance during an active shooter incident. For example, provided LE is being given accurate information (a topic beyond the scope of

of this article) when arriving to an active shooter site, having zones visually identifiable by color can allow for immediate orientation providing the opportunity for LE to quickly know where the threat is located. Such application of color can remove the need to view drawings or signage to become oriented when entering and within a building, saving LE valuable time in their response.

Conclusion

Simply watching the evening news, one will quickly learn that all types of buildings and facilities are subject to an active shooter event with schools seemingly at the top of the list. As a result, numerous questions are being posed as to the best approach in preventing such events. Although there are disagreements on how best to approach this topic, there is little discussions being held regarding how to increase the security levels of protection in schools and other buildings

through the use of architecture and the built-environment.

Fundamental physical security concepts such as Crime Prevention Through Environmental Design are intended to deter, detect, delay, defend, and defeat an attacker such as an active shooter. Although schools are oftentimes referred to as a “soft target” in that they are typically gun free zones, there are viable architectural approaches for hardening such potential targets to increase the protection and security of the students and staff within our schools.

Creating layers of defense or defense in depth requires that all perimeters within the built-environment be properly assessed to identify existing vulnerabilities and to develop viable countermeasures. Site perimeters, building perimeters, zone perimeters, and room perimeters all have the potential to be hardened in such a way to increase the protection of the occupants.

The implementation of architectural security does not stop at just protection in-place, however. The creative design and implementation of color for example can aid in facilitating a more efficient and effective response by LE, saving time and lives.

Not all physical security methods are simple black and white approaches; nor should they be.

References

Katz, D.S., & Caspi, I. (2003). *Executive's Guide to Personal Security*. Hoboken, New Jersey; John Wiley & Sons, Inc.

Police Executive Research Forum. (2014). *Critical Issues in Policing Series, The Police Response to Active Shooter Incidents*



About the Author

Paul W. Logan is a Physical Security Professional, a Professional Certified Investigator, a Certified CPTED Practitioner, a Certified Forensic Interviewer, and a Licensed Architect. Mr. Logan specializes in environmental criminology, Crime Prevention Through Environmental Design, physical and operational security, and forensic investigations. Mr. Logan provides a variety of security and forensic investigation consulting services and is routinely retained as a subject matter expert for security related matters including active shooter incidents.

Mr. Logan can be reached at:

paulwlogan@operationsecure.com

303.295.1869