

Crime Prevention Through Environmental Design: Enhancing the Security of Your K-12 School Using an All-Hazards Approach

READINESS AND EMERGENCY MANAGEMENT FOR SCHOOLS TECHNICAL ASSISTANCE CENTER

According to the [National Center for Education Statistics School Survey on Crime and Safety](#), 70 percent of public schools reported at least one incident of violent crime during the 2019-20 school year. In the past two decades, many schools have implemented physical security measures to reduce crime, including security cameras, random contraband sweeps, metal detectors, and locked or monitored points of access. Although well intentioned, the presence of these highly visible security features in the school environment can negatively impact school climate and students' perceptions of safety at school. Crime Prevention Through Environmental Design (CPTED) is a multidisciplinary strategy for deterring criminal behavior and protecting a community. It is grounded in the idea that the physical environment can impact response to crime, and social control, and therefore changes to the environment can reduce opportunities for criminal behavior. CPTED strategies include design features that integrate seamlessly into the built and natural environment, as well as approaches to strengthening the social environment by building a sense of community. This combination of enhanced environmental security and prosocial climate and culture enrichment suggests that CPTED is a crime-prevention approach especially well suited to a school environment.

In collaboration with their local government and community partners, schools can take a proactive approach to crime prevention as a part of developing, implementing, and maintaining school emergency operations plans (EOPs) using the [Guide for Developing High-Quality School Emergency Operations Plans \(School Guide\)](#). In addition to

outlining the school's approach to operations before, during, and after an emergency, the *School Guide* suggests that comprehensive all-hazards and all-threats school EOPs include "courses of action that schools will implement on a routine, ongoing basis to secure the school from criminal threats originating from both inside and outside the school," including implementation of CPTED. This fact sheet presents an overview of the CPTED approach to reducing and removing opportunities for criminal behaviors, along with tips and strategies for applying CPTED in a K-12 school environment.

Principles

C. Ray Jeffery, Ph.D., who was a criminologist and professor at Florida State University, is considered the founder of CPTED and was the first to coin the "Crime Prevention Through Environmental Design" terminology. Dr. Jeffrey posited that thoughtful design and effective use of the built environment could reduce the fear of crime and the actual occurrence of crime and violence, and improve the quality of life for individuals in the environment. Early approaches to CPTED were heavily influenced by the [principles of defensible space](#) defined by Oscar Newman after witnessing a public housing project designed with modern architectural planning principles fall to vandalism, disrepair, and crime. Newman observed that a second public housing development across the street had flourished throughout the rise and fall of the first, and he began to evaluate factors that might have led to a space remaining clean, well maintained, safe, and fully occupied while another deteriorated and was torn down 10 years

Principles of Defensible Space

1. **Territoriality:** use of the physical environment to create zones of territorial influence
2. **Surveillance:** use of physical design to provide surveillance opportunities for residents
3. **Image:** use of physical design to avoid presenting an impression of an easy target for crime
4. **Milieu:** location within a safe community, rather than areas with high crime rates

after construction. Observation and comparison of other stable and successful areas led Newman to conclude that changes to the physical environment, including territoriality, surveillance, image, and milieu, could affect indicators of social control. Consideration of these factors in urban design, in turn, could bring an environment under the control of its residents. The principles were adapted to address a broader range of settings, establishing an approach that focused almost exclusively on using the physical environment to reduce and eliminate opportunities for crime.

First-Generation CPTED

This approach became known as “First-Generation CPTED.” First-Generation CPTED was initially applied to the planning of urban areas, but its strategies are adaptable enough to be applied to any community where safety is a priority, including a school campus. The specific number of core components in First-Generation CPTED described in literature varies according to setting, but all are meant to establish boundaries and protect vulnerable areas through architecture and physical design. The principles of First-Generation CPTED, as they apply to school emergency management planning, include

- **Natural Surveillance**, simply put, provides opportunities to see and be seen. Natural surveillance in action arranges physical features in and outside a school to maximize visibility.
- **Natural Access Control** uses physical features to control access to a school and school grounds. Natural access control limits access by using real (e.g., doors, fences, and gates) or symbolic/perceptual (e.g., paths or gardens) barriers to guide movement.

- **Territorial Reinforcement** uses design elements to define ownership of and the intended use of spaces on the school campus.
- **Management and Maintenance** provides evidence that the school is cared for and valued and demonstrates that users/guardians take pride in the school and are paying attention.

Although First-Generation CPTED provides a model for low-cost methods of improving the security of a community environment, it does not address the social and interpersonal factors that affect crime and violence. There is a growing understanding that crime does not occur because of opportunity alone but is influenced by community factors such as population density, neighborhood instability, and neighborhood disadvantage.

Second-Generation CPTED

Second-Generation CPTED considers neighborhood health and social ecology as drivers of crime and sources of prevention and includes four principles:

- **Social Cohesion** promotes positive interactions among school community members (e.g., students, staff, families, residents) and aligns with First-Generation CPTED elements like territoriality reinforcement. This principle involves inclusive activities that create a sense of unity among individuals.
- **Connectivity** activities situate a school as part of a larger neighborhood and community. Rather than isolating a school by restricting activities to its campus, these efforts promote connections to and communication with local residents, businesses, libraries, and community organizations.
- **Threshold Capacity** aims to create spaces that have multiple uses and ensures a balance of spaces that reflect community need. A school sports field, for example, may also host community sporting events when not in use by the school. A school campus may share space with a daycare or a recreation center.
- **Community Culture** fosters a sense of school pride and brings school community members together for a common purpose. This principle involves social activities that engage community members with the school.

Application to School Safety

Second-Generation CPTED includes concepts from social disorganization theory, which states that disorganized and chaotic communities produce environments where deviant behaviors like crime and violence are seen as normal and rational. This theory aligns with the increasing emphasis on the importance of school climate and its influences on the behavior of students for school safety. Research has demonstrated that disordered or chaotic school environments negatively impact both student learning and the ability of teachers to manage student behavior.

Measures of poverty, school size, and concentration of students with behavioral problems are linked to [student perceptions](#) of decreased safety, attitudes supporting aggression, and youth violence. Physical disorder, such as litter or graffiti, can increase the sense of a lack of security and increase the incidence of criminal activity. Conversely, indicators of social control, such as maintenance of the physical environment and evidence of adult presence and supervision, decrease student beliefs that violence is acceptable or will go unnoticed. Second-Generation CPTED principles emphasize fostering a sense of community, unity, and connection that motivates individuals to take responsibility for their environment and to establish and maintain the indicators of social control first described by Oscar Newman and later refined in the principles of First-Generation CPTED. The social coherence generated by the application of Second-Generation CPTED principles promotes a positive school climate as well as a physical environment less susceptible to crime and violence.

Following the shooting in Newtown in 2012, the Connecticut School Safety Infrastructure Council established new safety standards for schools that advocated for the use of CPTED.

An all-hazards approach to school emergency management planning considers the before, during, and after phases of a potential emergency as well as all five [National Preparedness System mission areas](#): prevention, protection, mitigation, response, and recovery. In all-hazards and all-threats planning, schools consider the potential risk posed by a full range of threats and hazards, conduct risk and vulnerability

Data from the Maryland Safe and Supportive Schools Initiative to improve school climate demonstrate that observations of increased trash in schools is associated with staff perceptions of increased bullying as well as perceptions of a more disordered climate and less physical comfort by both students and staff. More observed graffiti and vandalism were associated with staff perceptions of increased bullying and disorder as well as poorer perceptions by both students and staff of physical comfort, student connectedness, and availability of supportive services.

assessments, and gain insight from partners that helps the schools develop plans and hazard-specific annexes. CPTED offers a lens through which emergency management planning teams can specifically assess the physical and social environments of their schools and campuses for vulnerabilities that might make them more susceptible to crime, and implement approaches to addressing and eliminating these vulnerabilities. CPTED strategies primarily address the mission areas of prevention, protection, and mitigation, although improvements to school climate resulting from Second-Generation CPTED activities may also support the school community's social and emotional health and competency to respond to and recover from an emergency. The *School Guide* suggests that CPTED may be especially salient when planning for security, an emergency management function or activity that



applies to more than one threat or hazard. Schools can develop a [Security Annex](#) in their EOP that outlines how the whole school community ensures that the building is physically secure before, during, and after an emergency. Core planning teams can delineate actions to implement on a routine, ongoing basis to secure the school from criminal threats originating from both inside and outside the school. In developing this annex, planning teams may want to review CPTED principles in determining how to make sure that the building and environs are physically secure.

Strategies for Implementation

CPTED in Emergency Management Planning

The *School Guide* outlines the [six-step planning process](#) for developing and maintaining a comprehensive EOP as it applies to school emergency management planning. This process is flexible and may be implemented at any K-12 education agency, as it empowers the core planning team to customize the EOP and consider the school's unique circumstances and resources. During this process, planning teams form and collaborate (Step 1) to collect information that allows them to understand situations in the school community and identify potential threats and hazards (Step 2). With this information, planning teams address threats and hazards in the EOP, identify emergency management functions and set goals and objectives (Step 3), identify courses of action (Step 4), and format annexes and develop a Basic Plan (Step 5). Planning teams also maintain the EOP through training, exercises, and revisions (Step 6). CPTED principles can be considered during all six steps of the planning process, but may be especially relevant when forming a collaborative planning team, conducting site assessments and culture and climate assessments, developing the Security Annex, and providing training.

Planning Team Membership

In [Step 2](#), core planning teams identify potential threats and hazards and evaluate vulnerabilities and the risk that they may pose. To accomplish this, teams collaborate with community partners and members of the school community who can provide insight into possible threats and hazards. Individuals with an understanding of the ways in which the physical and social environment can be used to mitigate crime are likely to provide the most useful information regarding CPTED-related threats and hazards. These might include architects, engineers, urban planners, cognitive or social psychologists, sociologists, social anthropologists, or criminologists. Schools may want to consider including these individuals on their core or ad hoc planning teams during [Step 1](#) or consulting them for expert advice when conducting assessments.

Assessments

Performing assessments of the school environment (both the perceived environment and the physical buildings and grounds) is essential to the planning process. These assessments may be conducted independently of the planning process, but the data collected can be used in Step 2 to identify the range of threats and hazards the school may face and to determine associated risk and vulnerability. Site assessments examine the safety, security, emergency preparedness, and accessibility of school buildings and grounds. Culture and climate assessments measure student, staff, and family connectedness to the school, along with both positive and problematic behaviors. Incorporation of CPTED principles and strategies into these two particular assessments can improve the depth and specificity of data collected and identify vulnerabilities that might otherwise be overlooked.

Site assessments explore characteristics of the school facility and surrounding area, as well as security



policies, procedures, and systems; all of which could potentially make the school more susceptible to crime. The First-Generation CPTED principles of natural access control, natural surveillance, and management and maintenance reflect and can guide the site assessment. Site assessment teams should review building access and egress control measures (access control), visibility (surveillance), structural integrity, and compliance with architectural standards for individuals with disabilities or functional and access needs (management/maintenance). Teams can also incorporate a review of aspects demonstrating ownership of and the intended use of spaces (territorial reinforcement) to address the principles of First-Generation CPTED. Tools to aid in this process are readily available: the Centers for Disease Control and Prevention has developed [Crime Prevention Through Environmental Design \(CPTED\) School Assessment \(CSA\)](#) for rating the physical elements of a school that may have an impact on youth fear and aggressive behavior, and the REMS TA Center offers [SITE ASSESS](#), a free and secure mobile application that incorporates the principles of CPTED and Universal Design.



A school culture and climate assessment provides valuable data on student and staff perceptions of safety, connectedness, engagement, behavior, and the social and emotional environment. These characteristics serve as indicators of school climate and also of the social and emotional context in which crime may occur. A positive school climate where students feel connected to adults, their peers, and the school as a whole fosters a nurturing environment where students are more likely to succeed academically, feel safe, and report threats and incidents. But safe schools require more than just vigilance and reporting of criminal incidents — they also need to be places where people care about one another and value the school community. The four elements of Second-

Generation CPTED address the collective efficacy and social organization of an environment and offer a framework for identifying gaps and vulnerabilities in the social fabric of the school community. Measures of social cohesion, connectivity, threshold capacity, and community culture can be added where needed to school climate surveys, such as those included in the National Center on Safe Supportive Learning Environments' [School Climate Survey Compendium](#), to ensure that data collected capture any vulnerabilities that may weaken social control and increase opportunities for crime. Additionally, student behavioral indicators and incident data may be reviewed in the context of First- and Second-Generation CPTED principles to illuminate opportunities for strengthening and improving a culture of community; for example, reports of repeated violent incidents by multiple school staff members located in one campus area may indicate that this area is perceived as an “unowned” space that can be redefined by creating an internal sense of ownership through territorial reinforcement. Students and staff can team up to create a mural or repurpose the space, building social cohesion and motivation to maintain the area.

Annex Development

Planning team members with CPTED expertise, as well as those with familiarity with the principals of CPTED, will be able to apply them to the development of annexes, which occurs gradually in Step 3, Step 4, and [Step 5](#). Security is a cross-cutting emergency management function common to a range of threats and hazards, and the [Security Annex](#) is one of 10 functional annexes recommended by the *School Guide* for inclusion in school EOPs. In building this annex, the planning team will develop goals and objectives for security and threats in Step 3, identify courses of action in Step 4, and format and review content for the annex in Step 5. The Security Annex should describe the approaches for making sure that the building and grounds are physically secure, including the application and integration of CPTED principles and strategies. Additionally, planning teams can incorporate CPTED principles into threat- and hazard-specific annexes, such as the Criminal Threats or Actions Annex, Bomb Threats Annex, Active Shooters Annex, Gang Violence Annex, and Violent Extremism Annex. Any

courses of action in these threat- and hazard-specific annexes that reference security or another cross-cutting function can include a note that additional information on the particular function may be found in the corresponding functional annex.

Training Provision

As the approved school EOP is implemented in [Step 6](#), all stakeholders are trained on the plan and then continually exercise, maintain, and revise the plan as needed. Providing staff and stakeholders with CPTED information, including literature, quick reference guides, and fact sheets like this one, can support the application of CPTED principles and aid in

identifying areas in need of improvement. The REMS TA Center offers a [Specialized Training Package module](#) on CPTED for schools and school districts to download and use to train teams or individuals virtually or in person. The CPTED module includes a tabletop exercise, informational slide presentation, and CPTED resource list. This training module can be easily incorporated into plan exercises with school personnel as well as community partners.

The planning team can include specific strategies to improve alignment of the school environment with CPTED principles and reduce vulnerability to crime. Below are sample CPTED strategies by principle.

Sample Strategies for Implementing CPTED Principles in K-12 Schools



NATURAL SURVEILLANCE STRATEGIES

Identify approaches that improve visibility, and address any obstacles to sight lines both in the school and on school grounds:

- Ensure that lighting is sufficient to observe activities and identify individuals and objects. When arranging objects inside the school and features or landscaping on school grounds, maximize natural lighting and install artificial lighting in any dim or hard-to-see areas.
- Use windows to provide views from inside to outside and outside to inside for school community members. When making architectural changes, consider where windows can increase surveillance opportunities for school personnel without increasing vulnerability of students. If construction

is not an option, ensure that windows that improve visibility are not blocked by indoor objects or landscaping.

- Select trees, shrubs, and other plants that help to ensure that views on, off, and around the site are preserved over time. Use low ground cover, high-canopied trees, and regular maintenance of landscaping for maximum visibility.
- Organize space intentionally to support observation and encourage guardianship. Use furniture arrangements, window treatments, and other interior design elements to maximize lines of sight.

NATURAL ACCESS CONTROL STRATEGIES

Limit access to the school and grounds with actual and perceptual barriers to direct the movement of individuals:

- Establish the perimeter of the school grounds and areas within school grounds with physical features. Use fences, tree lines, hedges, or berms to define the boundaries of school property.
- Use gates and doors to limit points of entry to the school campus or building.
- Establish perceptual boundaries by clearly delineating the appropriate approach to an area. Arrange drives, sidewalks, paths, and gardens to guide movement through a site.

- Emphasize perceptual boundaries with signs. Use signs to direct movement, provide information, define appropriate activities and schedules, and identify intended users (e.g., “Staff Only”).

TERRITORIAL REINFORCEMENT STRATEGIES

Use design features to provide cues about who belongs in a space and what they are allowed to do:

- Separate spaces from one another with hedges, furniture, or indoor and outdoor plants. Use changes in elevation (steps, ramps) or variations in paving or flooring materials to define transitions from public to private spaces.
- Personalize areas by adding gardens, artwork, and furniture to individualize spaces and demonstrate that they are cared for and used.
- Use consistent colors or materials in buildings, pavers, signs, benches, light fixtures, landscaping, and décor to establish visual organization; create an identity; and unify areas with a common purpose.

Consider how the different elements of CPTED interact, and ensure that they do not conflict with one another.

Example: When establishing natural access control with barriers like fences and hedges, make sure that these barriers do not compromise visibility and opportunities for natural surveillance.

MANAGEMENT AND MAINTENANCE STRATEGIES

Maintain design elements, and ensure that all elements in the school space are functioning properly:

- Discourage antisocial behavior with a well-maintained school campus. Keep spaces clean and free of graffiti, vandalism, and litter.
- Establish a schedule for maintenance. Conduct regular checks to ensure that light bulbs are replaced when out, locks are intact, and walkways and seating areas are in good condition.



SOCIAL COHESION STRATEGIES

Enhance relationships between school community members (e.g., students, staff, families, neighborhood residents), and promote a sense of unity around a common purpose:

- Maintain groups that bring together school community members, such as an active PTA or mentoring program.
- Enhance conflict resolution skills among school community members. Offer trainings to school staff, and include security and law enforcement personnel.
- Include parents and students in school event planning and decision-making.
- Provide peer mediation programs to help students engage with one another to solve problems in an appropriate way.

CONNECTIVITY STRATEGIES

Strengthen connections between the school and the community it serves:

- Involve local businesses, school campus neighbors, and community members in safety planning.
- Make sure that parents and students are aware of resources in the community. Compile lists or create infographics of key community resources to share with school community members.
- Build effective partnerships with local law enforcement and community organizations.

THRESHOLD CAPACITY STRATEGIES

Collaborate with the community to ensure that school spaces are used to meet community needs:

- Identify ways that school property can provide safe congregation areas or support community and social purposes when not being used for school activities. The sports field, for example, may also host community sporting events or serve as a local concert venue in the evening. A school campus might share space with a daycare or a recreation center.
- Maximize the efficiency of transitional spaces. Apply First-Generation CPTED strategies to ensure that congestion of areas is minimized during school drop-off and pickup and between classes.
- Realistically assess the capacity of school spaces to serve as community venues while properly supporting intended uses. Use planning, clear communication, and scheduling to ensure that use of space is maximized without creating conflicts.

COMMUNITY CULTURE STRATEGIES

Build school pride among school community members:

- Host events that communicate a culture of community, such as school performances and celebrations, family and community engagement activities, and cultural festivals.
- Provide opportunities for students to become involved in community service projects during school hours.
- Make time for sports events, music festivals, and showcases of student art to create shared experiences and demonstrate the achievements of students.

Remember, school community members are not likely to have strong feelings of ownership and responsibility for the safety of the school environment unless they acquire a sense of shared standards for positive behavior and connection. First- and Second-Generation CPTED strategies work together to create a physical and social context for crime prevention and school safety.

Resources

Further Reading — REMS TA Center

- [SITE ASSESS](#), Mobile Application
- [Maximizing School and Higher Ed Security as a Part of Emergency Management Planning](#), Web Page

Training Opportunities — REMS TA Center

- [Understanding Crime Prevention Through Environmental Design \(CPTED\)](#), Specialized Training Package
- [Assessing Your School Site](#), Online Course
- [Conducting K-12 Site Assessments With SITE ASSESS](#), Live Training by Request
- [Conducting K-12 Site Assessments With SITE ASSESS](#), Virtual Training by Request
- [Conducting K-12 Site Assessments With SITE ASSESS](#), Webinar
- [Conducting K-12 Site Assessments With SITE ASSESS](#), Specialized Training Package

Further Reading — School Crime Prevention Through Environmental Design

- [Crime Prevention Through Environmental Design \(CPTED\) School Assessment \(CSA\)](#), Publication (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention)
- [Using Environmental Design to Prevent School Violence](#), Web Page (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention)
- [Safe School Design: A Handbook for Educational Leaders Applying the Principles of Crime Prevention Through Environmental Design](#), Publication (Schneider, Walker, & Sprague)
- [School Safety and Security Toolkit: A Guide for Parents, Schools, and Communities](#), Publication (National Crime Prevention Council)
- [Crime Prevention Through Environmental Design for Schools](#), Presentation (National Institute of Crime Prevention)

Further Reading – Community Crime Prevention Through Environmental Design

- [Using Crime Prevention Through Environmental Design in Problem-Solving](#), Publication (U.S. Department of Justice, Office of Community Oriented Policing Services)
- [Crime Prevention Through Environmental Design Guidebook](#), Publication (National Crime Prevention Council)
- [CPTED Crime Prevention Through Environmental Design Manual](#), Publication (Connecticut Housing Finance Authority)
- [Crime Prevention Through Environmental Design: Your Guide to Creating a Safe Community](#), Publication (City of Fort Wayne Division of Community and Economic Development)

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