13 Crime Prevention Through Environmental Design

Careful design and manipulation of the physical environment around and at the school site have the potential to reduce crime concerns, both real and perceived. Such manipulation is referred to as Crime Prevention Through Environmental Design (CPTED).

Introduction

With roots in city planning, architecture, criminology, and sociology, CPTED emphasizes design of outdoor school spaces based on the application of three fundamental concepts believed to reduce the occurrence and fear of crime: (1) the ability to survey surroundings (to see and be seen), (2) the ability to control access, and (3) the creation of a sense of ownership and school community identity. Through the utilization of these concepts, CPTED has the potential to reduce both the real and perceived dangers associated with walking and bicycling to school, while bolstering community identity and creating a safe and welcoming environment.

The Ability to Survey Your Surroundings

How important is it to see and be seen? As we move through the environment, we are constantly surveying our surroundings. Whether deliberate or unconscious, our ability to observe the environment around us contributes to our personal perceptions of safety and danger. For schools, the pursuit of safety is paramount. In order to maintain a safe outdoor environment, school administrators, teachers, parents, students and security cameras, if installed, should have the ability to clearly survey their surroundings at all times. This includes opportunities to see from adjacent properties or the site perimeter onto the site, and opportunities to see parking, walkways and other areas of the site. Examples of design elements that support our ability to survey our surroundings include:

- lighting that improves the ability to observe activity and identify individuals,
- building location and orientation that creates views, and
- judicious selection and location of trees, shrubs and other plant species, combined with regular maintenance, which can minimize the conflict between lighting and landscaping and ensure that views on, off and around the site are preserved.

COMMON ENVIRONMENTAL ELEMENTS OF SCHOOLS

- Pedestrian and Bicycle Access
- Vehicular Access
- Trees and Shrubbery
- Topography
- Fencing
- Lighting
- Maintenance
- Signage
- Gathering Space
- Activity Space

The Need to Control Access

Access to the school begins in the landscape well before anyone has reached the front door. It includes the sidewalks, paths and driveways as well as the fences, trees, hedges, and signs around the school. Parents and teachers, and possibly crossing guards and students, can also serve as access control by paying attention to the people and activities around them. By offering cues about who belongs in a place, when they are supposed to be there, where they are allowed to be while they are there, what they should be doing, and how long they should stay, CPTED measures can be employed to control access to school grounds by authorized users on foot, bicycle, or in cars. It can also create opportunities to deny access to unauthorized users. In essence, by controlling access to the school environment, not just the school building, school safety can be increased while the opportunities for unwanted activities and behaviors are diminished.



Image: NJDOT

Creating a Sense of Ownership and Identity



This wall mural at Hawthorne Elementary School in Newark creates a unique visual identity for the school community.

Schools have an identity created by the students, faculty, staff and surrounding community. CPTED practices encourage this community identity to be physically expressed and present in the landscape through clear signage, clear boundaries and other indicators of territorial ownership. In other words, CPTED recognizes the potential to augment safety and discourage crime by clearly marking the school community's territory. The consistent use of colors or materials, in buildings, paved surfaces, light fixtures, and landscaping, can be used to create an identity. This sends the message that the school is a place with an identity, an active community, and a purpose, reducing the likelihood of vandalism and incivility within the school environment.

Application of CPTED to Common Environmental Elements

In broad terms, most of our school environments are composed of a number of similar elements: a school building; a series of pedestrian access elements (including sidewalks, pathways, stairways, and ramps); a series of vehicular access elements (including driving lanes, parking lots, emergency lanes, and delivery access); a schoolyard (consisting of recreational facilities and gathering spaces defined by topography, trees, shrubbery, benches, fences, and retaining walls); and signage that tells users and visitors the accepted ways to move through and use this combination of elements. These physical elements are at work creating the overall school environment at day and night, on weekdays and weekends, in summer and during the school year. The following list considers such elements from the perspective of CPTED, in which the design and configuration of these elements can be employed to reduce the likelihood of crime while enhancing safety and school identity.

Pedestrian and Bicycle Access

Walking and bicycling should be a viable means of transportation for students in a range of settings: urban, suburban or rural. This means that schools must understand the pedestrian and bicycle networks that lead to their doors in a manner consistent with CPTED principles. In urban settings, students using these means of travel will likely access their school building from the street or sidewalk. Bicycle lanes and sidewalks should maintain high levels of visibility and clear sightlines and should be well-signed, well-lit, and well-maintained (free from cracks, debris, trash, puddles, and other obstacles). In more rural and suburban settings, the schoolyard may cover several acres and adjoin many other parcels of land, from which potential pedestrian and bicycle paths may have access. To encourage pedestrian and bicycle travel to and from the school, it is important to maintain these access points. The schoolyard, however, should not become a through-way for pedestrian and bicycle travelers not affiliated with or approved by the school. Pedestrian and bicycle access points should be clearly marked as part of the school territory.



Poor example: The slope in front of this school does little to control or enhance pedestrian access. As a result, it becomes both a safety concern (for the potential to slip and fall) as well as a maintenance concern (for the potential to track mud into the school).



Good example: The system of retaining walls, stairs, and ramps creates clearly defined access for pedestrians, allowing them to move safely, efficiently, and cleanly.

Vehicular Access

Cars, trucks, and buses that enter the school environment should be visible to school administrative personnel when school is in session and the building is accessible. This means that vehicular access is likely to be limited and placed within the view of the school office. The number and size of driveways should be limited and sidewalks should continue across driveway aprons.

Trees and Shrubbery

Trees and shrubs are an important part of the school site, contributing to environmental quality in a number of ways such as reducing air and noise pollution, providing protection from the rain and sun, and encouraging wildlife and plant diversity. Trees also create safer walking environments by forming and framing visual walls and by providing distinct edges to sidewalks and streets. In consideration of CPTED, trees and shrubbery should be employed to create spatial boundaries for the school site without inadvertently creating hiding spaces or limiting sightlines. For instance, a line of trees or a low hedge can create a spatial boundary at the edge of school property. However, shade trees should be "limbed up" and shrubs should be removed when they have been planted in a way that creates hiding places in the landscape. Weeping-branched trees should be avoided for their natural tendency to create a hiding space.



Poor example: The shrubbery adjacent to this sidewalk is overgrown and blocks this student's view into the schoolyard.



Good example: The trees along the left-hand side of this sidewalk create a visual boundary between the sidewalk and the road. The tree canopy is maintained high enough that eye-level views are not impeded.

Topography

Topography, or the act of grading the land to a desired configuration, is a part of most construction processes that relate to building schools, recreational, and transportation facilities. Therefore, the manipulation of topography in consideration of CPTED would prioritize the creation of clear sightlines and perimeter boundaries, while eliminating the potential for hiding spaces.



Poor example: The sightlines of these two students from the sidewalk to the schoolyard are blocked by the height of the grassy slope.



Good example: This configuration creates a clear site line from the sidewalk to the school entrance.

Fencing

Fencing can be used to define the spatial boundary of the school site, to control access, and to guide school users to a desired point of entry. However, fencing school property in such a way that prohibits the public from accessing outdoor school facilities like ball fields, walking tracks or playgrounds may be detrimental to the health of local residents. Fencing is available in a wide variety of materials and colors and should maintain a high level of visibility, clearly delineate school boundaries, and physically express the presence of the school community. Solid stockade or wall-style fencing should be avoided in favor of more permeable styles like wrought iron or chain link. Long stretches of fencing should be addressed from an aesthetic perspective to avoid creating the impression of the school building as a prison-like facility or as a fortress intended to keep community members out.



Poor example: Although this chain link fencing is visually permeable, the unfortunate side effect of its height, configuration, and barbed wire holders is an impression of the school as a prison-like facility.



Good example: This painted aluminum fencing mounted on brick piers is both visually permeable and visually appealing. Its integration with the school's sign helps to underscore the importance of the school as an institution and a community.

SHARED USE AGREEMENTS

The SRTS National Partnership encourages school districts and local government entities to utilize shared-use agreements (SUA) to set forth the terms and conditions for the shared-use of school property after regular hours. With SUA schools can continue to provide students and the local community with the facilities needed to maintain active and healthy lifestyles, while minimizing concerns about costs, vandalism, security, maintenance, and liability. For more on SUA, visit www.saferoutespartnership.org/state/bestpractices/shareduse

Lighting

Lighting is widely perceived to create a safe environment out of a dangerous one. Lighting improves the ability to observe activity and identify individuals as well as the ability to survey one's surroundings. However, the provision of lighting in a school environment when school activities are not in session may attract unauthorized users. Therefore, it may be wise to employ motion-sensitive technology in lighting the school grounds. Motion-sensitive lighting around the school environment would achieve the following: the dark environment would discourage unauthorized nighttime usage; authorized users would be provided with sufficient light as a result of their movement; and unauthorized users would be highly detectable as a result of their movement.

Maintenance

Proper maintenance is a sign of guardianship and territoriality which reinforces community identity. By properly maintaining the school environment through mowing and edging; removal of dead trees, trash, and debris; and upkeep of fences, benches, and painted, paved, and mulched surfaces, the school will be less likely to incur vandalism and other unwanted activities. Graffiti should always be removed in a timely manner to discourage further incidents. Well-maintained trees and landscape will create a pleasant environment, including the environmental benefits of cooling shade, progressive storm-water management and inviting outdoor spaces. Well-maintained sidewalks and bicycle routes will also encourage walking and bicycling.



Poor example: This poorly maintained sidewalk is a hazardous impediment for pedestrians and is likely impassable for a wheelchair. It sends the message that this space is not cared for.



Good example: This well-maintained sidewalk, which shows a recent repair, is safe for passage on foot or in a wheelchair. It sends the message that this space is highly cared for.

Signs

Signs are an excellent tool for communication. From signs, we learn how to navigate spaces ("SLOW DOWN") and how to behave culturally ("NO TALKING IN THE LIBRARY"). We learn where things are located, who is in charge of them and what type of environment we are in. Signs around schools, therefore, represent a major opportunity not only to control access and direct arrivals, but to communicate territoriality and community values. Signs around the school should be clear and coherent: they are a profound visual cue that can be used to encourage a safe environment.



These signs clearly identify Ivy Hill Elementary School in Newark.



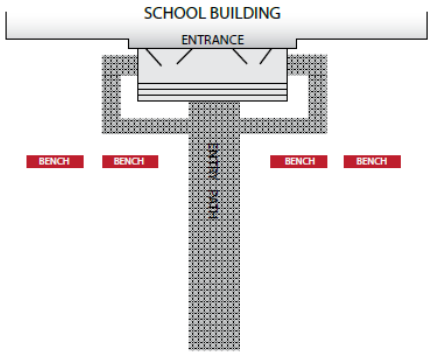
This 'Safe Corridor' sign in Camden expresses the importance of keeping children safe as they make their way to and from school.



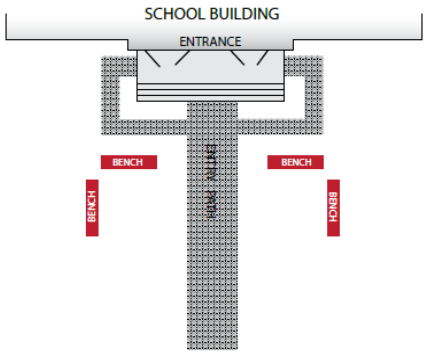
The signs placed on this school building in Montclair communicate a set of values associated with the school building.

Gathering Space

The more eyes there are on the environment, the more likely people will feel safe walking and bicycling. By creating outside gathering spaces that encourage interaction, people are more likely to be engaged in the outdoor environment, reducing the threat of crime. A simple consideration of this point is the way that benches can be arranged in outdoor spaces. A linear bench arrangement encourages solitude rather than interaction. In contrast, a pair of benches positioned at a 90-degree angled to each other creates a space for interaction.



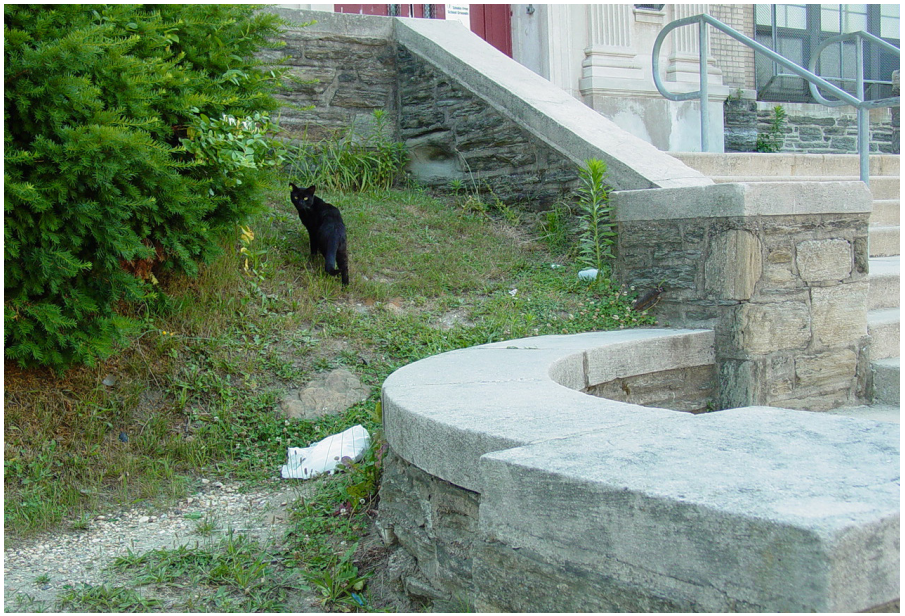
Poor example: The benches in this diagram are placed in a parallel configuration. This does not encourage interaction and it is likely that the benches will see little use.



Good example: The benches in this diagram are opposed in a perpendicular relationship. This configuration forms a space which encourages interaction. These benches are likely to be used by students, energizing the space and the schoolyard, and increasing safety through "eyes on the street."

Activity Space

One of the most effective ways to prevent crime is to encourage, support and engage in positive activity. At its best, the school is a place for safe and positive activity, including organized and pick-up sports, school gardening programs, arts and crafts programs, and music and theater performances. By creating an environment in which such activities take place, the likelihood of crime is likely to decrease.



Poor example: This space adjacent to a school building shows signs of wear and offers little in the way of positive activity.



Good example: This space adjacent to a school building shows signs of care and creates the opportunity for positive activity.

RESOURCES

For more information on CPTED, please review the following sources:
National Crime Prevention Council: https://www.ncpc.org/
National Clearinghouse for Educational Facilities: https://safesupportivelearning.ed.gov/resources/american-clearinghouse-educational-facilities
National Institute of Justice Research Report, Physical Environment and Crime, by Ralph B. Taylor and Adele V. Harrell, https://www.ojp.gov/pdffiles/physenv.pdf
Centers for Disease Control and Prevention: https://www.cdc.gov/