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Crime Prevention Through Environmental Design

Deck: The design of your site can deter criminals and maximize the benefit you gain from security technology

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Crime prevention through environmental design alters the internal and/or external environment of a facility to increase crime deterrence and the likelihood of apprehension and detection of criminals. Landscape planners, architects, developers and security professionals use CPTED to secure built structures and to improve the image of the individuals or companies that own them. And, as the National Crime Prevention Institute says, “The proper design and effective use of the built environment can lead to a reduction in the fear of crime and incidence of crime, and to an improvement in quality of life.”

The Origin of CPTED

Architect Oscar Newman developed the initial and most recognized documentation of CPTED in 1972 in his book *Defensible Space*. The core components of the design strategy allow for a balanced security presence by taking into account physical security—in this case referring to architectural components like doors, walls, fencing and landscaping—technical security, which includes alarms, access control technologies and CCTV, and operational security—that is, the policies and procedures that govern the security program.

CPTED uses these components of balanced security to create a built environment that facilitates the deterrence and delay of criminals and increases the likelihood of



Strategies for Physical Security

Compartmentalization. Compartmentalization means designing the facility to include layers of security starting from the outer perimeter and moving inward to the highest-security area of the building.

Natural Surveillance. Natural surveillance includes the placement of windows, open areas and clear lines of sight to minimize built-in hiding places for criminals. It can be complemented by CCTV, but not replaced by it. Natural surveillance should also provide adequate clear space between the access points to the property and the actual exterior of the facility. Properly designed, clear sight lines will prevent potential ambush and hiding areas and should extend beyond the building's façade.

Activity Support. In the movies, the hero often tells the villain that he will meet him in a public space, anticipating that the villain won't pull any tricks in a highly visible area. The hero is using the concept of activity support to enhance the concept of natural surveillance. It is easy to establish public venues to support and enhance security. These will become part of the natural surveillance system, which will deter criminal activity.

If you know of areas that could provide cover for ambush, place vending machines, telephones and other public interest points nearby. An ambush will be less likely in an area that is well traveled by multiple potential witnesses.

Territorial Enforcement. Territorial enforcement relates to the natural progression from public to private space. Clearly defining the boundaries between public and private areas of the campus or building through landscaping, architecture and technology establishes a sense of ownership and pride and sends a message that the private area is off limits. This pride or psychological ownership is also perceived by visitors and pedestrian traffic. Therefore, territorial enforcement is likely to encourage increased subliminal perception of an area as secured or inaccessible.

Territorial enforcement can also be used to direct pedestrian and vehicle traffic and can define where the property begins, sending a clear message to visitors, tenants and



For instance, most buildings are directly accessible from driveways or roads. In some cases, those roads are straight. This could allow a vehicle to approach the facility at a high rate of speed, providing the opportunity for deliberate or accidental vehicular ramming. The costs to provide supplementary vehicle arresting equipment to offset this threat in a real-world application could be in the hundreds of thousands of dollars. Using the strategies of CPTED, however, you could instead design a winding road that provides areas for landscaping and natural access control, thereby preventing the opportunity for a high-speed vehicular ram attack.

Lighting. Nighttime permits the best opportunity for a criminal to approach a building undetected. The Illumination Engineering Society of North America (IESNA) has published a guideline that will likely become an American National Standard. It is entitled “Guideline for Security Lighting for People, Property, and Public Spaces.” The guideline cites the work of Painter and Farrington, who determined in 1999 that “lighting does have an impact on crime prevention.” Effective lighting inhibits crime because the behavior is more likely to be observed.

Operational Security

Maintenance. James Q. Wilson and George Kelling's Broken Window Theory suggests that uncorrected decay, such as accumulated trash, broken windows and deteriorated building exteriors, will facilitate additional crime and cause people who live and work in the area to feel more vulnerable and withdraw to more desirable conditions. People become more fearful and less willing to address physical signs of deterioration or to intervene to maintain public order. For example, they're less likely to attempt to break up groups of rowdy teens loitering on street corners.

Sensing this, criminals and other offenders become bolder and intensify their harassment and vandalism. People become yet more fearful and withdraw further from community involvement and upkeep, thereby beginning a linear and upward progression of criminal activity.

In the same way that territorial enforcement encourages a psychological ownership of a facility or a secured area, the perceived psychological ownership of a facility can be enhanced by the proper maintenance and upkeep of the site and building. Lack of



who has subversive intentions.

To avoid this, facility designers and planners should take into consideration opportunities to reduce maintenance issues. For instance, consider using anti graffiti paint on the building's exterior.

In addition, planning should take into account lighting, camera placement and landscaping. Planners should identify vegetation and tree growth to anticipate if camera and lighting placement will be effective for the future, which would prevent unneeded maintenance.

Upkeep is extremely important to the overall property. Fencing should be repaired if damaged. Vegetation and refuse should be removed from fencing areas. Broken windows should be repaired. Failure to provide these types of maintenances will have negative effects on the area and encourage opportunistic crime.

Policies & Procedures. Accurate policies and procedures should identify areas and time of patrol and determine appropriate responses to security incidents.

Technical Security

The application of technical security should complement physical security. Specifically, camera placement should be coordinated with way-finding and territorial enforcement. By using soft barriers (shrubs, bushes, etc.) we can anticipate avenues of foot or vehicle travel. Cameras should be located in areas where foot or vehicle travel intersects or at choke points where physical attributes of the building or way-finding force individuals into the camera view. It will be obvious to an operator if someone is trying to avoid a camera, thereby providing an opportunity for detection.

Traditionally, cameras were mounted at 10 to 11 feet, which provides undesirable views. Technology advancements have now provided the capability for smaller, more powerful cameras to be mounted at lower heights. Consider mounting cameras lower, so accurate facial characteristics can be documented.

Implementing CPTED



Designation

1. What is the purpose of this space?
2. For what was it originally intended to be used?
3. How well does the space support its current and future uses?

Definition

1. How is the space defined?
2. Is it clear who owns it?
3. Where are its borders?
4. Are there social or cultural definitions that affect how the space is used?
5. Is there adequate way-finding approaching the site (i.e., signage)?
6. Is there a conflict or confusion between the designated purpose and definition?

Design

1. How well does the physical design support the intended function?
2. How well does the physical design support the definition of the desired or accepted behavior?
3. Does the physical design conflict with the productive use of the space?

CPTED is a proactive approach to security. Its byproduct is the potential decrease in crime and the increased unobtrusive perception of safety by visitors, employees, patrons or tenants. This approach is the most cost effective method to developing a proactive, rather than reactive, security program.



AAA Design and Dan Niedholdt for help with the graphics for this article.

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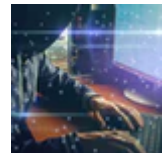


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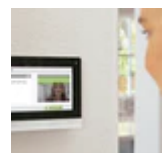


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