

**Encompassing Effective CPTED Solutions in 2020
and Beyond: Concepts and Strategies**

Deterrents, CPTED Design, Policies and Procedures, Training Programs and Security Awareness Programs.

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CPTED does not require an extensive technical background or understanding. To be effective as a community strategy, basic CPTED concepts have to be understood by as many people as possible (in laymen terms). Otherwise, true public policy setting will remain in the hands of technocrats and politicians.

The following learning objectives should be considered as the absolute minimum for successful completion of this ten modules design:

The meaning of the pseudo-acronym CPTED: is Crime Prevention Through Environmental Design.

We feel you should be able to:

- A. Recognize the CPTED underlying premise.
- B. Recall the two underlined words in the definition as key CPTED descriptors.

CPTED premise: "That the proper design and effective use of the built environment can lead to a reduction in the incidence and fear of crime and to an increase in the quality of life."

The seven strategies have been updated and should be able to recognize and define (in a brief one sentence definition or example) the seven basic

CPTED strategies are listed and properly footnoted below. You should be able to distinguish (by definition or example) between the crime prevention strategy classifications of: • Organized • Mechanical • Natural

The in the sixth modules you should be able to recall the reference to the CPTED approach to space assessment and list the components:

3-D Concept: Components - *Designation, Definition, Design*

Plus you should be able to demonstrate his/her new awareness and understanding of CPTED concepts by providing a descriptive example(s) of a good and a bad CPED setting in at least one of the following types of locations: • a residential neighborhood that is near a major street intersection • neighborhood parks • neighborhood schools • public parking lots • public housing area • industrial/commercial center

The participant should be able to describe the functions and location of the following types of information:

• crime analysis data and crime patterns • demographic data • land use • observations • resident or user interviews

The participant should be able to draw a simple map of his/her residential or business neighborhood showing: • street layout • land use • pedestrian and vehicular usage • crime (or fear) problem areas • current boundaries of geographic, ethnic or neighborhood identities

Broken Windows, Community Policing and Neighborhood Watch

Broken Windows Live

On Oct. 28, 2017 at the Cape Cod Community College I had the honor of hearing Dr. George Kelling make a presentation about the History of Law Enforcement and Community Policing.

Therefore we have broken down his presentation on the topic into bullet point and first from his book he makes reference to four points:

1. Claim the high moral ground
2. Learn to problem solve
3. Prepare to win in court

4. Involve the community

Now from the presentation:

5. Don't let the neighborhood get out of control, restore order

6. Model of Community Policing is now collaboration

7. Safe handling of Community Policing

8. Law Enforcement must be evenly provide to all

9. We are live in a Fear of Police

10. Law Enforcement has to listen to the people, develop a Coffee with a cop program

11. A key factor is "TO KNOW THE PERSONS NAME" your addressing

12. Bring line officers to Community meetings as well as detectives, Prosecutors and Judges, law enforcement needs to be the Role Model

13. Foot patrol has a very positive impact

14. We have eight catorigies of Homelessness (which made us think about this very important social issue).

Finally when I asked Dr. Kelling if he was to do his book today in 2017 what would you add? He replied, "The Outreach of Authority".

Six Points of the Broken Window Theory:

1. Increase in physical deterioration.
2. Increased concern for personal safety among residents and proprietors.
3. Decreased participation in maintaining order on the street.
4. Increased delinquency, rowdiness, vandalism, and disorderly behavior among locals.
5. Further increase in deterioration and further withdrawal from the streets by residents and other locals.
6. Potential offenders from outside the neighborhood, attracted by vulnerability, move into the area.

CPTED and the "Broken Window Theory" 2 suggests that one "broken window" or nuisance, if allowed to exist, will lead to others and ultimately to the decline of an entire neighborhood. Neglected and poorly maintained properties are breeding grounds for criminal activity. It's important to develop a formal CPTED based maintenance plan to help preserve the property value and make it a safer place.

Neighborhood and Community Policing

We have a Need for more Community Policing

DEFINING COMMUNITY POLICING ¹

Cox and Fitzgerald (1992:159) claimed that community-oriented policing is in many ways an old idea that can be traced back to Sir Robert Peel. Many authors have referred to the difficult task of defining community policing in one paragraph, let alone one sentence! Friedmann (1992:2) noted that "community policing became a 'buzz word' that is taken for granted by professionals and scholars who used the term to replace other terms such as foot patrol, crime prevention, problem-oriented policing, community-oriented policing, police- community relations and more." Trojanowicz and Bucqueroux (1994:2-3) suggested that, with the trend of short sound-bite media coverage of events, we must attempt to create a simple and concise definition of community policing. If we do not define community policing ourselves, then others, who do not understand the concept, will do so. They suggested the following definition and called it the "Nine P's" of community policing: "Community policing is a philosophy of full service personalized policing, where the same officer patrols and works in the same area on a permanent basis, from a decentralized place, working in a proactive partnership with citizens to identify and solve problems."

Community policing can appear to be a difficult concept to understand, because community policing is geographically specific – no two communities or areas are exactly alike, and as a result, no two communities will require exactly the same method of community policing service delivery. Investigation and enforcement are essential elements of community policing, but the way in which these and other

services are delivered to the community will depend upon several factors such as the nature of crime and social problems found in the community, the resources (both human and financial) available to the community to solve these problems, the needs expressed by community members, the community's cultural make-up and diversity, and its size.

It is really not hard to identify community policing. There are a few essential factors of community policing which can serve as a guideline to those responsible for its implementation in any individual community. If these elements are present, then community policing is taking place.

Direct Service Delivery:

- **Identify the community, or communities, present in an area.** A community consists of a group of people who share certain elements: geographical location, cultural or racial background, socioeconomic status, common interests or goals, or concern with the same crime or social issues. People may belong to more than one community group (for example a person may consider themselves a member of an Aboriginal community and a specific residential community area), and there may be more than one community of people within a detachment or city boundary. Each group must be clearly identified by the police, so that the needs of the community members can be met.
- **Work with the community.** The police must establish a partnership with the community, in order to cooperatively address its problems and needs. Community Consultative Groups, with representatives from all communities identified, are an effective and successful way to initiate and carry out communication and cooperation between the police and their community.
- **Identify common problems and concerns.** The police are providing a policing service to the community, and must be aware of its concerns, needs and expectations so that their efforts are community-oriented and community driven. The community must be aware of the concerns, abilities and limitations of the police, so that their demands are appropriate and able to be met by the police. Once each group understands the other, compromises and agreements on which problems are most important can be reached.

- **Resolve the identified problems.** A problem is defined as a group of incidents which are similar and are of concern to both the police and the community. Problem incidents may be similar in the crime, victim or time of day or year. The responsibility for resolving problems must be shared by both the police and the citizens, and all abilities and resources found within the community must be directed towards finding and carrying out effective and innovative solutions. Solutions must be directed towards finding and carrying out effective and innovative solutions. Solutions must attack and remove the root cause of the problem, so that the problem itself, not just its symptoms, is removed.
- **Empower police officers to make decisions and take action.** Community Policing often involves innovative approaches to problem solving which have, in the past, not been considered part of “traditional policing”. Empowerment involves delegating a certain level of authority and enabling factors (proper training, guidance and information). Managers must trust their employees and take the risk to allow general duty officers, in daily personal contact with the community, and take the risk to allow general duty officers, in daily personal contact with the community, to be able to make necessary appropriate and innovative decisions, and take the initiative to act to address the concerns of the public.
- **Support the general duty officer.** The general duty officer has the most direct contact with the community, and must be regarded as the most important member of the policing service. The efforts of all other specialized members of the force must be directed toward supporting this community service position.
- **Make patrol, enforcement and investigation work effective and directed.** There should be no such thing as a random or preventive patrol. When a member leaves the detachment it should be with a purpose: monitoring traffic in a problem area, liaising with local farmers, business owners or people on the street or attending a complaint. Law enforcement and investigation (often the focus of contemporary, reactive policing) are still a necessary part of police work, but they are only one part. The police need to get back to crime reduction, not just crime control. Through community consultation, police services can determine the amount of time to spend on these efforts, and the problems, of concern both to the community and the police, which should be concentrated on.

Administrative Organization:

- **Decentralize.** The police cannot meet the needs of a community effectively if their actions and decisions are dictated to them from above. The members working in a community are the most qualified people to decide how best to serve that community. Authority and decision-making on issues such as programs, resource deployment and budgeting must be delegated down to the detachment level.
- **Use Modern Management Concepts.** Problem resolution, innovative resource deployment, risk management, downward delegation of authority, flattening organization hierarchy, participate management and client consultation can be used to ensure that the service provided to the client community is efficient, effective and responsive to its needs. Each detachment should provide a custom-designed service directed to the needs, concerns and problems of its community.
- **Create an enhanced Generalist Career Path.** In community policing the general duty officer, in direct daily contact with the client community, is the most important position within the police service. The existing generalist position may be augmented to allow and encourage experienced and tenured members to remain there and continue to direct their expertise toward serving the community, while still being rewarded for their service and initiative.
- **Reduce paper burden.** A large amount of police time is presently spent in administrative “paperwork” tasks. The statistical and paperwork demands, both from the internal and external sources, must be reduced to allow more time for direct community service.
- **Evaluate effectiveness through Citizen Satisfaction Surveys.** The satisfaction of the community is the best indicator of the success of its policing service; if the client is happy, then the job is well done. Some statistical data such as crime rates will still be required, but should be balanced against the concerns of the community in deciding how to direct police resources.
- **Be Proactive and Think Prevention.**

Footnote: 1. THE USE AND EFFECTIVENESS OF COMMUNITY POLICING IN A DEMOCRACY, Bertus R. Ferreira, POLICING IN CENTRAL AND EASTERN EUROPE: Comparing Firsthand Knowledge with Experience from the West, © 1996 College of Police and Security Studies, Slovenia, <https://www.ncjrs.gov/policing/use139.htm>

2. <http://cptedsecurity.com/cpteddesignguidelines.htm> retrieved July 13, 2018

CPTED and Security Awareness ²

It is broken down into three parts, Education and Imparting of knowledge, Training to develop security skills.

So what is security awareness?

The method through which an individual is made conscious of, and accepts, his or her own role and responsibilities in the protection of the assets of an organization. It should engender protective attitudes and behaviors - both personally and on behalf of the organization.

Awareness, Raising consciousness.

An effective security awareness program is NOT a process of waving the big stick a series of unplanned and unrelated communications about security issues knowing the name of the security officer, having a copy of the facility security policy manual in the desk drawer not just limited to staff.

Displacement of Crime

Can you move crime from one location to another? Yes, you can. I know criminologist will say show me the data and we can't. However, talk to veteran officers who have been working the various sectors for years and they will tell you that they have done it. Years ago in a dormitory that had only one entrance and individual was stealing wallets and cash from unlocked rooms. This was going on night after night, so we put a cruiser out front of the dormitory and every night around 3:00 am the car was back a few spaces then forward. Crime stop was it luck or skill. The cruiser was a deterrent, I know that. If the police car is outside then the officer

² Rick Draper, update of POA Manual on Awareness, 2017

must be inside and there is a likelihood I will get caught the crook is thinking, so he goes to another location.

We know that when drugs and prostitution and dealing and work the street by closing off the street and prevent traffic from going up and down the individuals will move to another location and be arrested on the new street.

Steven P. Lab states in his book titled Crime Prevention 7th edition “There is little reason to ever expect total displacement of a crime, regardless of the type of displacement considered.” He then discusses the various types of displacement, i.e. Territorial Displacement, Temporal Displacement, Tactical Displacement, Target Displacement, and Functional Displacement, he further states that although its not 100 % at the same time, they show that displacement does occur.

What is Suspicious Activity?

A total stranger entering your neighborhood or your neighbor’s home while your neighbor is away or someone crossing your or your neighbor’s yard for no apparent lawful reason. And you observe him trying to open your neighbor’s door. Or you see a moving truck pull into your neighbor’s driveway, while there still away. Keep in mind burglaries occur 24 – 7 not just at night, it looks innocent during the broad daylight, in full view of observers.

Let take the case of a suspicious person who enters your workplace, is stopped at the front desk and he asks to you to use the bathroom. Because if he gets by the front desk he is inside the complex.

Door to door solicitors without proper identification.

You have to use your senses in many of these cases, breaking glass for example, could be signal of a possible burglary, vandalism or a Larceny in progress. Screams, yelling, loud noise, a fight, an arm robbery, life threatening event, again your senses telling you, *we have a problem*.

An improperly parked car, an abandoned vehicle, a stolen car with the dashboard broken, combined with screaming maybe someone is being forced into a vehicle.

Call the Police, 911

Successful efforts to combat crime require a community working closely with law enforcement. Today just about everyone has a cell phone attached to their hip, so call. The police can't be everywhere, for this reason success against crime is dependent on the community involved with a safe and secure environment. Crime can be reduced when the community is alert to suspicious activity and law enforcement is notified.

Environment and Design

The conceptual thrust of a CPTED program is that the physical environment can be manipulated to produce behavioral effects that will reduce the incidence and fear of crime, thereby improving the quality of life. These behavioral effects can be achieved by reducing the propensity of the physical environment to support criminal behavior. Environmental design, as used in a CPTED program, is rooted in the design of the human/environment relationship. It embodies several concepts.

The term *environment* includes the people and their physical and social surroundings. However, as a matter of practical necessity, the environment defined for demonstration purposes is that which has recognizable territorial and system limits.

The term *design* includes physical, social, management and law enforcement directives that seek to affect positively human behavior as people interact with their environment.

Thus, the CPTED program seeks to prevent certain specified crimes (and the fear of crime) within a specifically defined environment by manipulating variables that are closely related to the environment itself.

The program does not purport to develop crime prevention solutions in a broad universe of human behavior but rather solutions limited to variables that can be manipulated and evaluated in the specified human/environment relationship.

CPTED involves design of physical space in the context of the needs of legitimate users of the space (physical, social, and psychological needs), the normal and expected (or intended) use of the space (the activity or absence of activity planned for the space), and the predictable behavior of both legitimate users and offenders. Therefore, in the CPTED approach, a design is proper if it recognizes the designated use of the space, defines the crime problem incidental to and the solution compatible with the designated use, and incorporates the crime prevention strategies that enhance (or at least do not impair) the effective use of the space. CPTED draws not only on physical and urban design but also on contemporary thinking in behavioral and social science, law enforcement, and community organization.

Space³

The continuum of space within a residential complex (that is, a property consisting of one or more buildings containing dwelling units and associated grounds or, more broadly, a neighborhood consisting primarily of residential uses) may be divided into four categories:

Public Space

Space that, whatever its legal status, is perceived by all members of a residential area or neighborhood as belonging to the public as a whole, which a stranger has as much perceived right to use as a resident.

Semi-Public Space

Semi-public space is accessible to all members of the public without passing through a locked or guarded barrier. There is thought to be an implied license for use by the public, and strangers will rarely be challenged. This is generally associated with multi-family housing.

Semi-Private Space

This space restricted for use by residents, guests, and service people on legitimate assignments. In multi-family housing, semi-private space is usually secured by protection officers (or doormen), locks or other forms of physical barriers. Strangers can be expected to be challenged as potential trespassers.

³ Tyska, Louis A. and Fennelly, Lawrence J. Physical Security – 150 Things You Should Know, Boston, Elsevier Publishers, Boston, Elsevier Publishers, 1998.

Private Space

Private space restricted for use by residents of a single dwelling unit, their invited guests, and service people, with access generally controlled by locks and other physical barriers. Unauthorized use is always challenged when the opportunity for challenge presents itself.

What am I trying to accomplish in this space? ⁴

Only after the true purpose of a space is recognized can CPTED be properly applied. The reason for this is that many times, a space is constructed to serve one purpose but is used for another. If CPTED strategies are used to affect the intended purpose, the strategies may have little or no effect on the true use of the property.

For example, a resident may have problems with people standing or sitting in his front yard while waiting at a nearby bus stop. The resident attempts to keep these people off his property by building a brick wall, but the wall only serves to create a bench for the people to sit on while they wait for the next bus! The resident must ask himself what he truly wants to do with the property. If he chooses to have a private front yard without the distraction of bus passengers, then the resident needs to consider removing the wall and replacing it with a short picket fence or short bushes; things that may not easily be used to sit upon.

Target Hardening

The emphasis on design and use deviates from the traditional target hardening approach to crime prevention. Traditional target-hardening focuses predominantly on denying access to a crime target through physical or artificial barrier techniques (such as locks, alarms, fences, and gates). Target-hardening often leads to constraints on use, access, and enjoyment of the hardened environment. Moreover, the traditional approach tends to overlook opportunities for natural access control and surveillance.

The term *natural* refers to deriving access control and surveillance results as a by

⁴ CPTED Security Handbook, Oakland Police Department Neighborhood Services Division 250 Frank Ogawa Plaza, Suite 6303 Oakland, CA 94612 2020

product of the normal and routine use of the environment. It is possible to adapt normal and natural uses of the environment to accomplish the effects of artificial or mechanical hardening and surveillance. Nevertheless, CPTED employs pure target-hardening strategies, either to test their effectiveness as compared to natural strategies or when they appear to be justified as not unduly impairing the effective use of the environment.

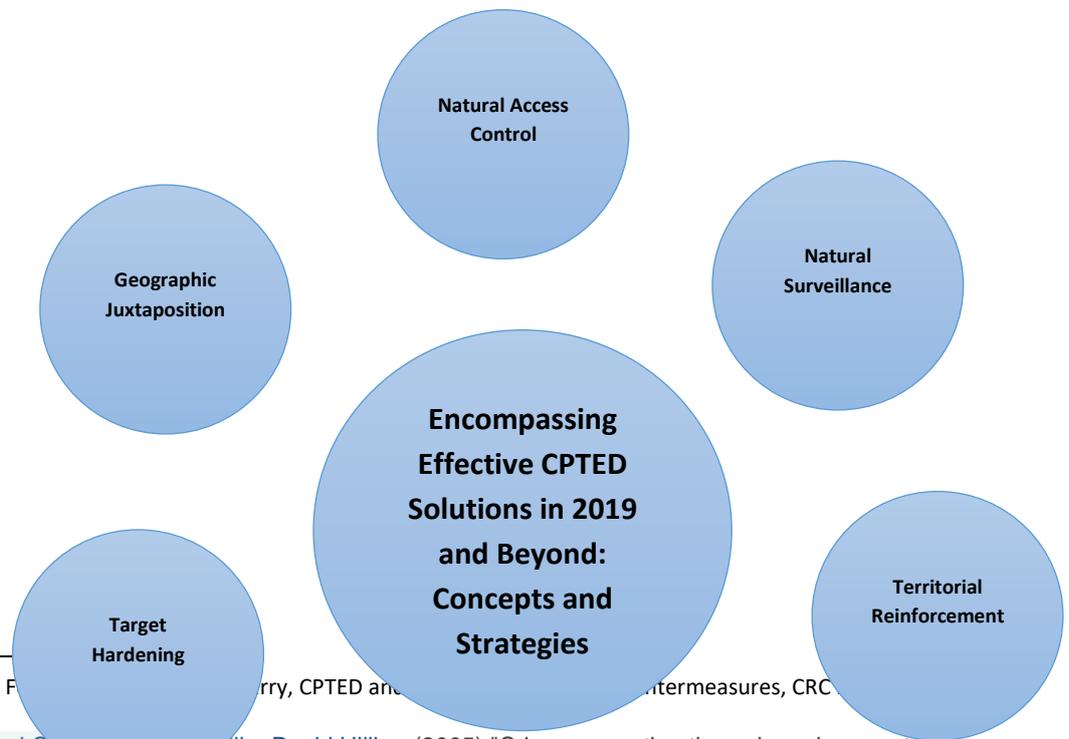
As an example, a design strategy of improved street lighting must be planned, efficient and evaluated in terms of the behavior it promotes or deters, and the use impact of the lighted (and related) areas in terms of all users of the area (offenders, victims, other permanent or casual users). Any strategies related to the lighting strategy (e.g., block-watch or neighborhood watch, 911 emergency service, police patrol) must be evaluated in the same regard. This reflects the comprehensiveness of the CPTED design approach in focusing on both the proper design and effective use of the physical environment. Additionally, the concept of proper design and effective use emphasizes the designed relationship among strategies to ensure that the desired results are achieved. It has been observed that improved street lighting alone (a design strategy) is ineffective against crime without the conscious and active support of citizens (in reporting what they see) and of police (in responding and conducting surveillance). CPTED involves the effort to integrate design, citizen and community action, and law enforcement strategies to accomplish surveillance consistent with the design and use of the environment.

CPTED STRATEGIES

There are seven overlapping strategies in CPTED - (as shown in fig. 1.1)

- 1. Natural Access Control**
- 2. Natural Surveillance**

3. Territorial Reinforcement
4. Image and/or Maintenance⁵
5. Activity Program Support⁶
6. Target Hardening⁷
7. Geographical Juxtaposition (Wider Environment)⁸



⁵ Lawrence J. F. ... rry, CPTED and ... ntermeasures, CRC

⁶ Paul Michael Co ... ville, David Hillier, (2005) "Crime prevention through environmental design (CPTED): a review and modern bibliography", *Property Management*, Vol. 23 Iss: 5, pp.328 - 356

⁷ Ibid.

⁸ Ibid.



Figure 1.1

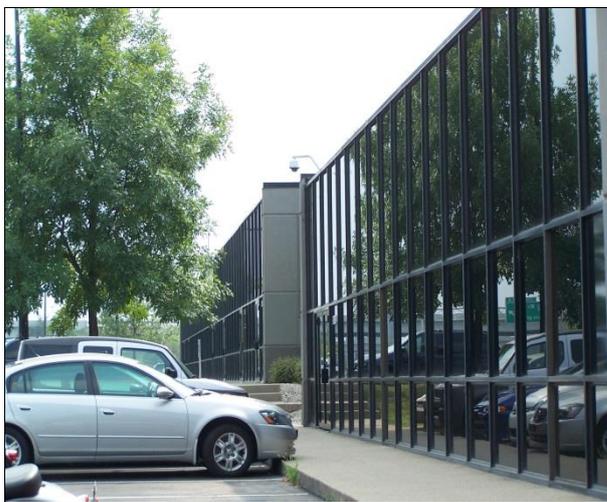
Natural Access Control

Access control and surveillance have been the primary design concepts of physical design programs. At the outset of the CPTED program, access control and surveillance systems—preexisting as conspicuous concepts in the field of crime prevention through environmental design—received major attention. Access control and surveillance are not mutually exclusive classifications since certain strategies achieve both, and strategies in one classification typically are mutually supportive of the other. However, the operational thrust of each is distinctly different, and the differences must be recognized in performing analysis, research, design, implementation, and evaluation.

Access control is a design concept directed primarily at decreasing crime opportunity. Access control strategies are typically classified as organized (e.g., security officers), mechanical (e.g., locks, lighting and alarms), and natural (e.g., spatial definition). The primary thrust of an access control strategy is to deny access to a crime target and to create a perception of risk in offenders.

Natural Surveillance

Surveillance is a design concept directed primarily at keeping intruders under observation. Therefore, the primary thrust of a surveillance strategy is to facilitate, observation, although it may have the effect of an access control strategy by effectively keeping intruders out because of an increased perception of risk. Surveillance strategies are typically classified as organized (e.g., police patrol), mechanical (e.g., lighting, locks and alarms), and natural (e.g., windows).





Photos 1.1-1.3 reflect good natural surveillance

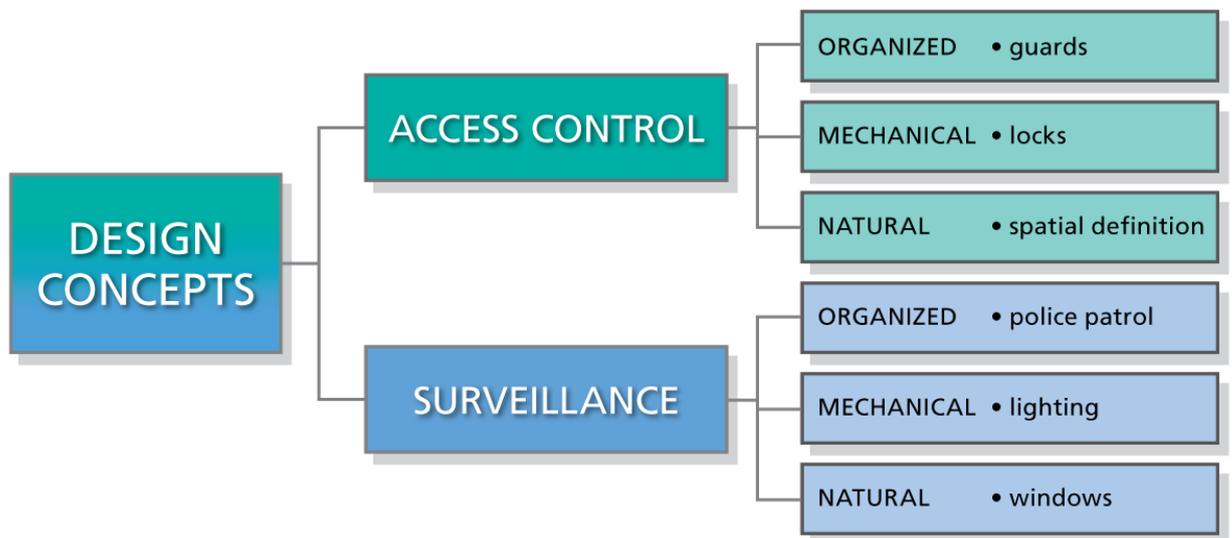


Fig. 1.2 Illustrates typical access control surveillance concepts as well as classifications of strategies.

Traditionally, access control and surveillance, as design concepts, have emphasized mechanical or organized crime prevention techniques while overlooking, minimizing, or ignoring attitudes, motivation, and use of the physical environment. More recent approaches to physical design of environments have shifted the emphasis to natural crime prevention techniques, attempting to use natural opportunities

presented by the environment for crime prevention. This shift in emphasis led to the concept of territoriality.

Territorial Reinforcement

The concept of territoriality (elaborated most fully to date in the public housing environment) suggests that physical design can contribute to a sense of territoriality. That is, physical design can create or extend a sphere of influence so that users develop a sense of proprietorship—a sense of territorial influence—and potential offenders perceive that territorial influence.



Photo 1.4 reflects physical design based on territoriality.

At the same time, it was recognized that natural access control and surveillance contributed to a sense of territoriality, making it effective for crime prevention. Natural access control and surveillance will promote more responsiveness by users in protecting their territory (e.g., more security awareness, reporting, reacting) and promote greater perception of risk by offenders.

Maintenance/Image

Finally, care and maintenance allows for the continued use of a space for its intended purpose, as well as contributing to territorial reinforcement. Deterioration and blight indicates less concern and control by the intended users of a site and

indicate a greater tolerance of disorder. Proper maintenance protects the public health, safety, and welfare in all existing structures, residential and nonresidential and on all existing premises by establishing minimum standards, best practices as well as a master plan. Maintenance is the responsibility of the facilities manager, owners, and occupants.

We recently conducted a physical security assessment of several HUD properties in the Northeast area. Some of the properties were in fairly good condition and some simply deplorable. We will discuss the worst of the properties below:

- We estimated that there were over 2000 pieces of paper and/or litter on the ground.
- This complex had 250 units and supplied only two small dumpsters on each side of the complex for trash. Trash was literally everywhere.
- Four sets of old mattresses and box springs were leaning against the fence in the dumpster area and it appeared as though they had been there for some time.
- We counted 6 broken down, damaged vehicles with flat tires in the parking area. Two of these cars appeared to be having work done to them and were on car jacks in precarious positions.
- Drug dealers were openly selling drugs at 3:30 pm and individuals who appeared “high” and/or under the influence, were sitting on steps at building entrances.
- Homeless individuals who congregated at the far end of the street from the complex were given cell phones and would call the drug dealers and warn them if they saw law enforcement approaching the complex.

Here's a question for you . . . what you think about the **Image and Maintenance** of the complex we have described? You can't get to the next level of security until you fix this mess.

The effort to achieve a balance between design for crime prevention and design for effective use of environments contributed to the shift in focus from organized and mechanical strategies per se to natural strategies. This was because natural strategies exploited the opportunities of the given environment both to naturally and routinely facilitate access control and surveillance, and to reinforce positive behavior in the use of the environment. The concept reflects a preference, where feasible, to reinforce existing or new activities, or to otherwise reinforce the behavior of environment users so that crime prevention flows naturally and routinely from the activity being promoted.

The conceptual shift from organized and mechanical to natural strategies has oriented the CPTED program to develop plans that emphasize natural access control and surveillance and territorial reinforcement.



Photo 1.5 reflects mechanical layout of mounted camera with street/parking lot lighting.

Although conceptually distinct, it is important to realize that these strategy categories tend to overlap in practice. It is perhaps most useful to think of territorial reinforcement as the umbrella concept, comprising all natural surveillance principles, which in turn comprises all access control principles. It is not practical to think of territorial reinforcement, natural surveillance, and access control as independent strategies because, for example, access control operates to denote transitional zones, not necessarily impenetrable barriers. If these symbolic or psychological barriers are to succeed in controlling access by demarcating specific spaces for specific individuals, potential offenders must perceive that unwarranted intrusion will elicit protective territorial responses from those who have legitimate access. Similarly, natural surveillance operates to increase the likelihood that intrusion will be observed by individuals who care but are not officially responsible for regulating the use and treatment of spaces. If people observe inappropriate behavior but do nothing about it, then the most carefully planned natural surveillance tactics are useless in terms of stopping crime and vandalism.



Photo 1.6 Can you see the man hiding behind the bushes?

Activity Support ⁹

In keeping with the CPTED principles and implementing the strategies, CPTED can discourage illegal activity and protect property from chronic problem activity. To support legitimate activity in public, private and semi-private zones, the concept has several utilization's. A few examples are:

- Adequate lighting is used to deter and detect any possible adversaries.
- Using visually permeable fencing permits detection, denial and delay while supporting surveillance via CCTV, employees, pedestrians or security guards.
- Along with the fencing, the landscape can be positioned in a manner to define zones and deter passage.

Picture your local mall, shopping center or large business; most have what appear to be large flower pots, a fountain or benches at their entrances. The additions are aesthetically pleasing and encourage the use of the area, but most also serve as bollards for vehicles, and their positioning clearly defines the space. The CPTED concepts can be implemented at any time but are cost-effective when developed during the construction process instead of afterward.

Landscaping and Architectural Designs

Use simple, inexpensive CPTED guidelines

to improve security for your complex:

- Ensure shrubs and trees don't create blind spots or hiding places.
- Trim bushes and hedges to a maximum height of three feet.
- Use walkways and landscaping to direct visitors to the proper entrance and away from private areas.

⁹ <https://securityprecision.com/crime-prevention-through-environmental-design/>

- Sidewalks, parking lots, doorways and all areas of the property should be well lit.
- Remove objects that may provide informal seating for loiterers.
- Recessed doorways can provide cover for criminal behaviour or loitering. Change these to be flush with the walls, or install gates.
- Prevent easy access to the roof or fire escape from the ground

CPTED and Landscape Security

An important element of CPTED that defines semi-private and private space within a complex is your landscape design. It is recommended that the height of bushes be no higher than 3 feet. We have recently read that FEMA recommends the height of bushes to be 18 inches. And that tree branches are between 7 and 8 feet *off the ground as a means for Natural Surveillance and Safety. You want to be able to detect intruders and not allow them a hiding spot. Your landscape if properly laid out can also be a deterrent and prevent criminal opportunity.

Landscape furniture should be vandal-resistant and if benches are installed they need to be designed so that individuals can't be sleeping on them.

Also, take under consideration, exterior lighting, video surveillance, vegetation, maintenance, barriers, the entrance & exit of your property, signage and the surface structure.

- 8 feet clearance is also recommended by ASIS Physical Security Principle Book, 2015, p. 214

Activity Program Support

The concept of activity support is to deliberately design formal and informal support for increasing the levels of human activity in particular spaces as a crime prevention strategy. (Cozens 2016)

How do we accomplish this strategy? First, review how the complex is being used. Then, if necessary, add bus stops, a community garden, food trucks, children's play grounds, a concrete table and two seats (immovable - fastened to the ground) for playing chess or checkers. The designed use of the grounds will bring community members together to interact - and for a positive purpose.

Target Hardening

Dr. Jennifer Hesterman wrote, *Soft Target Hardening: Protecting People from Attack*, the 2014 ASIS International Security Book of the Year. Dr. Hesterman put a tremendous amount of research into this book exploring case studies, presenting best practices and discussing methodologies for identifying soft target vulnerabilities and reducing risk in the U.S. It is a must-read for every security practitioner.

Target Hardening is not a fortress mentality concept, but instead a "good security practice." (M. Perry, NCPI 2012). We both live in gated communities where access to the neighborhood is limited to two entrances. Neighbors are aware of who lives in their communities and what types of vehicles they drive.

On Cape Cod, MA, in Larry Fennelly's neighborhood, there are homes that have rolling window shutters for protection against storms, especially when the home owners are away, but they also work well as effective security devices. Everyone in the neighborhood has good locks on their doors and windows, follow good landscape principles and have fences that comply with local ordinances. The residents are constantly walking to and from the beach with cell phones in their hands.

There is very little crime in the community because of the image and perception of the property as well as the maintenance that is done to all townhouses and houses. Additionally, there are several retired law enforcement officers who actually patrol the neighborhood first, when they leave their home to run errands. Yes, the cell phone is a *Crime Prevention Device* because it can be used to call for help.

Geographical Juxtaposition¹⁰

By definition, Geographical Juxtaposition is “assessing the potential influence on crime levels, of proximal land-users that may generate crime

We suggest that you read closely about Tim Crowe’s CPTED Strategies and 3-D Concepts. This material has been updated based on the past writings and newly discovered material of Crowe’s work which was found in 2016.

We see CPTED as a process of a series of concepts and strategies, that address risk, reduce crime and the fear of crime and improve the quality of life for our communities.

THE THREE-D APPROACH¹¹

For CPTED to be a success, it must be understandable and practical for the normal users of the space. That is, the normal residents of a neighborhood and the people who work in buildings or commercial areas must be able to use these concepts. Why? Because these people know more about what is going on in that environment and they have a vested interest (their own well-being) in ensuring that their immediate environment operates properly. The technologist or specialist, who may be a traffic engineer, city planner, architect, or security specialist, should not be allowed to shoulder the responsibility alone for safety and security. A specialist needs to follow

¹⁰ <https://www.huduser.gov/publications/pdf/def.pdf>

¹¹ Crowe, Timothy D. and Fennelly, Lawrence J. *Crime Prevention Through Environmental Design*, 3rd Edition. Boston, Elsevier Publishers, 2013.

the dictates of the users of the space, because he or she can often be swayed by mis-perceptions or by the conflicting demands of his professional competition.

To determine which CPTED strategies are needed for a particular environment, you have to first assess the space you are evaluating. To do this, the Three D Approach is normally used. This approach is based upon the following functions:

- All human space has some DESIGNATED purpose.
- All human space has social, cultural, legal or physical DEFINITIONS that prescribe the desired and acceptable behaviors.
- All human space is DESIGNED to support and control the desired behavior.

The Three-D approach to space assessment provides a simple guide for the layperson to use in determining the appropriateness of how her space is designed and used. The Three-D concept is based on the three functions or dimensions of human space:

1. All human space has some designated purpose.
2. All human space has social, cultural, legal, or physical definitions that prescribe the desired and acceptable behaviors.
3. All human space is designed to support and control the desired behaviors.

By using the Three-D's as a guide, space may be evaluated by asking the following types of questions:

Designation

- What is the designated purpose of this space?
- What was it originally intended to be used for?
- How well does the space support its current use? Its intended use? Is there conflict?

Definition

- How is the space defined?
- Is it clear who owns it?
- Where are its borders?
- Are there social or cultural definitions that affect how that space is used?
- Are the legal or administrative rules clearly set out and reinforced in policy?
- Are there signs?
- Is there conflict or confusion between the designated purpose and definition?
- Define the rules and how they are or will be enforced?

Design

- How well does the physical design support the intended function?
- How well does the physical design support the definition of the desired or accepted behaviors?
- Does the physical design conflict with or impede the productive use of the space or the proper functioning of the intended human activity? Is there confusion or conflict in the manner in which the physical design is intended to control behavior?
- How well does the space support its current or intended use?
- Is there physiological support for the intended function?
- Is there physiological control of the property, especially problem areas?
- Design space to increase the perception of natural surveillance?

The seven CPTED strategies of territorial reinforcement, natural access control, natural surveillance, image and/or maintenance, activity program support, target

hardening and geographical juxtaposition, (wider environment)¹² are inherent in the Three-D concept. Does the space clearly belong to someone or some group? Is the intended use clearly defined? Does the physical design match the intended use? Does the design provide the means for normal users to naturally control the activities, to control access, and to provide surveillance? Once a basic self-assessment has been conducted, the Three-D's may then be turned around as a simple means of guiding decisions about what to do with human space. The proper functions have to be matched with space that can support them—with space that can effectively support territorial identity, natural access control and surveillance and intended behaviors have to be indisputable and be reinforced in social, cultural, legal, and administrative terms or norms. The design has to ensure that the intended activity can function well and it has to directly support the control of behavior.

EXAMPLES OF STRATEGIES IN ACTION

There are hundreds of examples of CPTED strategies in practice today. In each example, there is a mixture of the seven CPTED strategies that are appropriate to the setting and to the particular security or crime problem. Some of the examples were created with the direct application of CPTED concepts. Others were borrowed from real-life situations. The common thread is the primary emphasis on naturalness—simply doing things that you already do, but doing them just a little better.

Some examples of CPTED strategy activities are:¹³

¹² Paul Michael Cozens, Greg Saville, David Hillier, (2005) "Crime prevention through environmental design (CPTED): a review and modern bibliography", *Property Management*, Vol. 23 Iss: 5, pp.328 - 356

¹³ Crowe, Timothy D. and Fennelly, Lawrence J. *Crime Prevention Through Environmental Design*, 3rd Edition. Boston, Elsevier Publishers, 2013.

- Providing clear border definition of controlled space
- Providing clearly marked transitional zones that indicate movement from public to semi-public to private space
- Relocating gathering areas to locations with natural surveillance and access control, or to locations away from the view of would-be offenders
- Placing safe activities in unsafe locations to bring along the natural surveillance of these activities to increase the perception of safety for normal users and risk for offenders
- Placing unsafe activities in safe spots to overcome the vulnerability of these activities with the natural surveillance and access control of the safe area
- Re-designating the use of space to provide natural barriers to conflicting activities
- Improving scheduling of space to allow for effective use and appropriate critical intensity
- Re-designing space to increase the perception or reality of Natural Surveillance
- Overcoming distance and isolation through improved communications and design efficiency

USE OF INFORMATION

It goes without saying that all informed decisions should be based on good, reliable information. This is especially true when the design and use of the physical environment is at stake. It is imperative that at least five basic types of information be collected and used. Unless a rational basis is used to make an informed decision, the same mistakes that caused the original problem to develop will continue to be made.

The five basic types of information needed for good CPTED planning are crime analysis information, demographic information, land use information, observations, and resident or user interviews. This information does not have to be sophisticated. It exists in a fundamental form in every community or location. Moreover, unless it can

be presented in its most basic form, it is of little value. For instance, very little can be done with a statistical measure that says burglaries are up by 5%. Much more can be done with a crime map that shows a clustering of burglaries in a specific block.

Even more can be done when one finds that the burglar used an alleyway as his/her approach to a series of related offenses because it afforded good cover for his vehicle in order to not be observed.

The other bits of information that are needed should be available in simple, usable formats. Following is a simple guide to each type of information:

Crime Analysis

This type of information is available in every police department; it is obtained by plotting offenses on a wall map and organizing the information on crime reports for the major purpose of identifying patterns of criminal activity. There are two basic types of patterns: geographic and similar offense.

Demographic

This is information that describes the nature of the population for a given city, district, or neighborhood. It is available through city planning departments or the city manager's or mayor's office. Another source of this type of information is the Census Bureau and the city and county data books that may be found in most public libraries.

Land Use

City planning departments, zoning boards, traffic engineering councils, and local councils of government have information and maps that describe and depict the physical allocations and uses of land. Simple wall maps with colored sections showing residential areas, commercial areas, industrial areas, parks, schools, and traffic flows can be of immeasurable assistance in understanding the physical setting. Natural boundaries and neighborhoods are easier to visualize on such maps, especially in relation to land use and pedestrian and traffic flows.

Observations

It is very helpful to conduct either formal or informal visual reviews of physical space to get first-hand knowledge of how, when, and by whom that space is used, and where problems may arise. Environmental cues are the key to normal user and offender behavior. Observations may include pedestrian/vehicle counts, on- and off-street parking, maintenance of yards and fences, the degree of proprietary behaviors prohibited by residents and/or users, the presence of either controlling or avoidance behaviors, and other potential indicators of territorial concern such as the percentage of window blinds drawn in homes and businesses overlooking parks or schools.

Resident or User Interviews

This source of information is needed to balance the other data sources. People's perceptions of where they feel safe and where they feel endangered often vary from the locations on crime maps where the most offenses occur. It is vital to determine the residents' or users' perceptions and extent of identity with the surrounding space, what affects their behavior or reactions as they move about, and what they think the needs are. Any attempt to skip the basics in favor of more complex forms of information gathering or analysis often obscures the picture. Professionals often suppress the active participation of residents or space users by relying on complex modes of analysis. This is dangerous because it can cause some very basic ideas or explanations to be overlooked. It is axiomatic that very little good will be accomplished without the full and active involvement of the users of space.

SOME BENEFITS OF CPTED PLANNING ACTIVITIES

In addition to dealing with the reduction of crime and fear problems, other benefits of CPTED planning include the following:

Treatment of Crime Problems at Various Environmental Scales

The CPTED process for identifying crime/environment problems, selecting CPTED strategies, and initiating, implementing, and evaluating anti-crime projects can be applied to entire neighborhoods or types of institutional settings within a city, such as secondary schools, or the process can be applied equally well to a small geographic area or to one particular institution.

Integration of Prevention Approaches

CPTED principles are derived from an opportunity model of criminal behavior that assumes that the offender's behavior can be accounted for by understanding how, and under what circumstances, variables in the environment interact to induce crime. Once an assessment of the opportunity structure is made, then appropriate strategies can be designed and integrated into a coordinated, consistent program.

Identification of Short-and Long-Term Goals

Comprehensive broad-based programs like CPTED have ultimate goals that may take years to accomplish. Unlike CPTED, however, many programs fail to develop short-term or proximate goals and adequate ways to measure their success. The CPTED approach includes an evaluation framework that details proximate goals relating to increased access control, surveillance, and territorial reinforcement. The rationale is that the ultimate program success is directly related to its success in achieving the proximate goals.

Encouragement of Collective Responses to Problems

The CPTED emphasis is on increasing the capacity of residents to act in concert rather than individually. Strategies are aimed at fostering citizen participation and strengthening social cohesion.

Interdisciplinary Approach to Urban Problems

An explicit policy of interdisciplinary teaming ensures effective cooperation among diverse city departments such as public works, social services, economic development, police, and so forth. Each participant benefits from exposure to the responsibilities, jurisdiction, and skills of the others.

Encouragement of Better Police/Community Relations

A key strategy is to coordinate law enforcement and community service activities with the result of improving police/community relations and developing an anti-crime program that is not solely dependent on enforcement agencies.

Development of Security Guidelines and Standards

CPTED programming can lead to the creation of security criteria for newly constructed or modified environments to avoid planning and design decisions that inadvertently provide opportunities for crime.

Assistance in Urban Revitalization

Through its impact on physical, social, and economic conditions, CPTED can be instrumental in revitalizing communities, including downtown areas. Once business leaders, investors, and other citizens perceive that a comprehensive effort is underway to reduce crime and fear, there will be an improvement in community identity and cohesiveness.

Acquisition of Development Funds

The incorporation of CPTED in to existing programs can provide additional jurisdiction for awarding grants, loans, and community development funds.

Institutionalization of Crime Prevention Policies and Practices

CPTED projects can create a local management capability and expertise to maintain ongoing projects. This capability can be incorporated in to existing citizen organizations or municipal agencies.

AN OUNCE OF PREVENTION: A NEW ROLE FOR LAWENFORCEMENT SUPPORT OF COMMUNITYDEVELOPMENT

Public/Private Sector Partnerships enhance public safety by sharing information, making the community more aware of threats and involving them in the problem-solving process. Collaboration is a key word for partnerships because all partners must recognize that their goals or missions overlap and they work together to share resources and achieve common goals. The added value of public-private sector partnerships is the cross transfer of skills, knowledge and expertise between the public sector and the private sector.¹⁴ In order for a partnership to be successful, each

¹⁴http://it.ojp.gov/documents/d/fusion_center_guidelines.pdf

partner has to understand the value they will gain from participating. Successful partnerships involve partners that are committed to working together to achieve common goals—building the community. There are a number of compelling reasons for law enforcement to be involved in CPTED aside from the formulation of

Partnerships:

1. CPTED concepts have been proven to enhance community activities while reducing crime problems.
2. CPTED concepts are fundamental to traditional law enforcement values, in terms of helping the community to function properly.
3. CPTED requires the unique information sources and inherent knowledge of the community that is endemic to the law enforcement profession.
4. CPTED problems and issues bear a direct relationship to repeat calls or service and to crime-producing situations.
5. CPTED methods and techniques can directly improve property values, business profitability, and industrial productivity, thereby enhancing local tax bases.

Law enforcement agencies, regardless of size, must be involved formally in the review and approval process of community and business projects. Their participation must be active and creative, rather than passive and reactive. Moreover, any such involvement should not be understood to expose the agencies to possible litigation, since it is the role of law enforcement in CPTED concepts to provide additional information and concerns that may not have occurred to the persons who are responsible (and qualified) for making changes to the environment. The expression, “Pay me now or pay me later,” conveys the idea that the early involvement of a knowledgeable law enforcement agency in the conceptualization and planning of community projects can lead to improvements in

the quality of life and to reductions in the fear and incidence of crime. This early involvement is one of the most cost-effective methods of crime prevention.¹⁵

CPTED Assessments¹⁶

During a CPTED Assessment, focus on the CPTED Principles of:

- 1. Natural Surveillance**
- 2. Natural Access Control**
- 3. Territoriality Reinforcement**
- 4. Image and /or Maintenance**
- 5. Activity Program Support**
- 6. Target Hardening**
- 7. Geographical Juxtaposition, (Wider Environment) ¹⁷**

Be sure that you notice positive attributes of the area while identifying needed changes or improvements. Logically organize your observations and recommendations.

Questions to be answered during an assessment:

- Are there casual **surveillance** opportunities? If not, can they be added?
- Is there sufficient **lighting** for all vehicular and pedestrian pathways and activity areas used during hours of darkness?



¹⁵ Crowe, Timothy D. and Fennelly, Lawrence J. Crime Prevention Through Environmental Design, 3rd Edition. Boston, Elsevier Publishers, 2013.

¹⁶www.popcenter.org/tools/cpted/

¹⁷ Paul Michael Cozens, Greg Saville, David Hillier, (2005) "Crime prevention through environmental design (CPTED): a review and modern bibliography", *Property Management*, Vol. 23 Iss: 5, pp.328 - 356

Photo 1.7 shows vegetation obstructing casual surveillance and lighting.

- Is there sufficient activity **lighting** indoors and is it supplemented by sources of natural light? Is there emergency lighting?
- Is **access** managed? If not, what combination of strategies could be used to better manage access?
- Are all **spaces designated and delineated** for specific use? If not, can they be?
- Are there **conflicts** between uses?
- Is there sufficient **capacity**? Is **crowding** creating tension, fear or potential dangers?
- Are there expressions of pride and ownership (**territoriality**)? Can they be increased?
- Are all areas well **maintained** - kept clean and functional with no needed repairs or replacements? If not, when were they last maintained?
- Are **rules of conduct** communicated? Enforced?
- Are there **supporting activities** that enhance surveillance, access management and social order? If not, can they be added?
- Are the grounds **legible**? Is it easy to understand where you are at any given point? Is it obvious which path or direction you need to take to arrive at a desired location?
- Does the **landscaping** enhance the ability to read the site? Does it provide shade and buffering where needed? Does it provide an aesthetic quality? Is it accessible? Is it healthy and well maintained? Is it a problem?
- How do the site users **behave**? Is there respect for the environment? Are there areas where tensions and disorder are common?
- Is there **graffiti** or other signs of vandalism?
- Is there **CCTV or video surveillance**? If so, are they placed in prime locations? Are there other means of surveillance?
- Are there successful **CPTED applications** already in place? If so, take note and use them as positive examples.¹⁸

Surrounding Neighborhood Observations

¹⁸http://cptedsecurity.com/cpted_design_guidelines.htm

- Adjacent land uses
- Condition of adjacent streets and properties
- Traffic patterns and volumes on adjacent streets
- Pedestrian crossing safeguards (marked crossings, traffic lights)
- Recommendations for improvements

Perimeter and Points of Entry

- First impressions on approaching the site/location
- Walls and/or fencing
- Type, location, hours of operation and users
- Special staff and/or visitor access points
- Sign(s) that identify the site/location, welcome visitors and info about special visitor parking and entry
- Signs and/or maps to guide visitors to special parking and entry
- Signs and/or pavement markings to guide vehicles
- Surveillance opportunities from interior spaces
- Landscaping and cleanliness



Photo 1.8 shows an environment in heed of landscaping and cleanliness.

- Lighting
- Recommendations for improvements

Vehicular Travel Routes and Parking Facilities

- Motor vehicle traffic patterns, including bus and student drop-off/pick-up loops in school applications



Photo 1.8 shows clearly identified vehicle traffic patterns and pedestrian crosswalks.

- Signs and/or maps to guide visitors to appropriate parking and entry locations
- Sign(s) to identify visitor parking
- Surveillance of parking lots from interior spaces
- Lighting
- Recommendations for improvements

Pedestrian Travel Paths and Gathering Areas

- Pedestrian routes to and from building(s)
- Pedestrian crosswalk markings or designated pedestrian routes
- Signage, landscaping and/or landmarks to guide pedestrians
- Surveillance of walkways and exterior corridors
- Formal and informal gathering areas
- Lighting

- Recommendations for improvements

Building Exteriors and Grounds

- Esthetics, building design, location and security of windows and doors
- Surveillance capability both natural and mechanical
- Hidden nooks and alcoves
- Use of mirrors and/or security surveillance systems, (CCTV).
- Cleanliness and landscaping
- Lighting
- Recommendations for improvements

Building Interiors

- External and/or internal surveillance capability
- Access management (observed versus policy and procedure)
- Hidden nooks and alcoves in corridors, stairwells, special use areas
- Use of mirrors and/or CCTV/security surveillance system
- Restrooms
- Alarmed areas
- Cleanliness, maintenance other territorial reinforcement
- Natural, artificial and emergency lighting
- Recommendations for improvements

Maintenance and Delivery Areas

- Access doors, location, surveillance opportunities
- Security and access management during delivery/maintenance
- Dumpster/trash location(s)
- Storage of fuels and chemicals
- After-hours use

- Recommendations for improvements

CPTED Survey for Colleges and Universities: 30 Vulnerabilities based on CPTED Assessments

1. Poor visibility at entry to campus
2. Easy vehicular access onto campus
3. No clear boundary separating the campus from public property
4. Inadequate distance between campus buildings and neighbors
5. Exterior doors to buildings unlocked 24/7
6. Areas and buildings on campus hidden by landscaping or vegetation
7. School adjacent to traffic hazard
8. Portions of buildings or campus inaccessible to emergency vehicles
9. Secluded hangout areas on campus
10. No safety/security awareness program for students, faculty and staff
11. Perimeter of campus not visible from streets
12. No barriers between parking and lawn
13. Gravel in parking area
14. Dangerous traffic routes or patterns on campus
15. Enclosed courtyard that offers concealment to criminals
16. High parapets on buildings that hide criminals
17. No security officers on site for access control or patrol duties
18. No “escort to vehicle” program during darkness
19. Inadequate lighting on campus
20. No lighting maintenance plan to repair or replace non-operational lights
21. Crime magnet or hangout located close to campus
22. No vegetation/landscape planting and maintenance program

23. Benches on campus that can be used for sleeping by homeless individuals
24. Faculty, staff and students not displaying ID Badges
25. Bollards not used to prevent vehicles from driving on sidewalks
26. No cameras or video surveillance program
27. Exterior doors in dorms propped open
28. Courtesy desk at entrance to dorms not staffed 24/7
29. Parking areas that are not clearly visible from buildings
30. No signage on campus

CPTED Recommendations

The following are some environmental problems and issues (as well as recommendations) that may be documented in part of a CPTED Assessment:

- One-way street systems have been found to improve traffic flow, but also to create dead zones for business, with resulting crime or fear of crime that deters development efforts.
- Through traffic in neighborhoods has been found to be detrimental to residential housing values, stability and crime rates.
- Downtown projects continue to fail by making fundamental errors that reduce natural surveillance and natural access control, resulting in the loss of desired users and domination by unwanted users.
- Fortress effects are produced by designers of convention centers, hotels, banks, senior citizen housing, and parking lot structures. These destroy the surrounding land uses and create a “no-man’s land.”
- Bleed-off parking enhances conflict between commercial and residential and uses; both lose.
- Design and management can actually reduce business and increase victimization of employees and customers.
- Mall and major event facility parking areas with poorly planned access control and layout can produce traffic congestion and become magnets for undesirable activity.
- School and institutional designs can inadvertently create dysfunctional areas where surveillance is impossible, resulting in increased behavioral and crime

problems and overall impediments to successful operations (e.g., students' achievement in schools).

- Public housing and affordable housing can become projects that serve as magnets for transients, as opposed to local poor, with further detrimental effects on existing neighborhoods.

Nearly every environmental situation or location is amenable to the application of CPTED concepts. The law enforcement agency can assist in asking the right questions and in supplying the right kind of information to help the community to make more informed decisions.

CPTED adds a new dimension by incorporating these elements into space design and management:¹⁹

Natural Access Control

Your space should give some natural indication of where people are allowed and are not allowed. Don't depend just on locks, alarms, surveillance systems and security officers, but make security part of the layout (see below landscape security).

Natural Surveillance

Again, traditional factors like good lighting are important, but don't overlook a natural factor such as a strategically placed window or the placement of an employee work station.

Territorial Reinforcement

This is an umbrella concept, embodying all natural surveillance and access control principles. It emphasizes the enhancement of ownership and proprietary behaviors.

CPTED proposes that the proper design and effective use of the built environment can lead to a reduction in the opportunity, fear and incidence of predatory stranger-to-stranger type crime, as well as result in an improvement of the quality of life (NCPI, 2008). Crime prevention design solutions should be integrated into the design and function of the buildings, or at least the location where they are being implemented.

¹⁹ Crowe, Timothy D. and Fennelly, Lawrence J. Crime Prevention Through Environmental Design, 3rd Edition. Boston, Elsevier Publishers, 2013.

In his writings on CPTED, Tim Crowe stated, "It is clear that light affects human behavior and too much or too little light will have different effects. It is now generally accepted that performance improves and fatigue levels drop in direct proportion to increased levels of light, but it also relates to the work or play environment."²⁰

The ancient field of chronotherapy, or photobiology as it is now called, is making a comeback because through research many scientists have discovered that color and light can affect health and behavior. Richard J. Wurtman, a nutritionist at the Massachusetts Institute of Technology, states that light is the most important environmental input, after food in controlling bodily function.²¹

Many psychologists believe that light has a tremendous influence on human behavior. There is a level of light that people experience as the most pleasant. Brightly lit rooms are more arousing than dimly lit rooms. Light also influences the image of a retail store as shoppers look at and scrutinize merchandise to purchase.

CPTED principles were not only founded upon social interactions, criminology and architecture but also on the psychological impact of the principles. Colors have a physical aspect in security, such as assisting in way finding and moving people to safer locations, proper entrances etc., but there is also a psychological impact. Security practitioners do well in applying the physical aspect of color such as using lighter colors to reflect more light, but not very well at considering the emotions evoked from a particular color. Many security practitioners believe that the use of color may be one aspect to consider for preventing crime and may have a positive impact on workplace violence, school safety and a number of other applications. Any designer or interior

²⁰ibid.

²¹<http://www.nytimes.com/1982/10/19/science/color-has-a-powerful-effect-on-behavior-researchers-assert.html>

decorator can tell you how important color is for setting the mood for an environment.

Research has shown that different colors affect blood pressure, pulse, respiration rates as well as brain activity and biorhythms.²²

Psychological Properties of Colors²³

RED – Red is a powerful color. Its effect is physical, strong, and basic. Red is stimulating and lively as well as friendly. A person wearing a red tie does so because it's called a power tie.

Positives: Physical, Courage, Strength, Warmth, Energy, Basic Survival, Fight or Flight, Stimulation, Masculinity, Excitement.

Negatives: Defiance, Aggressive & Aggression, Visual Impact, Strain.

BLUE – Blue is the color of the mind and is essentially soothing. It affects us mentally, rather than the physical reaction we have to red. Strong blues will stimulate clear thoughts and lighter, soft blues will calm the mind and aid concentration. The world's favorite color is blue, but it can be perceived as cold, unemotional and unfriendly.

Positives: Intellectual, Communication, Trust, Efficiency, Serenity, Duty, Logic, Coolness, Reflection, Calm.

Negatives: Coldness, Aloofness, Lack of Emotion, Unfriendliness.

YELLOW– The yellow wavelength is relatively long and essentially stimulating. The wrong color scheme with yellow can cause fear and anxiety,

Positives: Emotional, Optimism, confidence, Self-Esteem, Extraversion, Emotional Strength, Friendliness, Creativity.

Negatives: Irrationality, Fear, Emotional Fragility, Depression, Anxiety, Suicide.

GREEN – If a green color scheme is used incorrectly it can indicate stagnation.

Positives: Harmony, Balance, Refreshment, Universal Love, Rest, Restoration, Reassurance, Environmental Awareness, Equilibrium, Peace.

Negatives: Boredom, Stagnation, Blandness, Enervation.

VIOLET – The excessive use of purple can bring about too much of the wrong tone faster than any other color of it communicates something cheap and nasty.

²² Ibid.

²³<http://www.colour-affects.co.uk/psychological-properties-of-colours>

Positives: Spiritual Awareness, Containment, Vision, Luxury, Authenticity, Truth, Quality.

Negatives: Introversion, Suppression, Inferiority.

ORANGE – Orange focuses our minds on issues of physical comfort---food, warmth, shelter & sensuality. It's a fun color. Too much orange suggests a lack of serious intellectual values.

Positives: Physical Comfort, Food, Warmth, Security, Sensuality, Passion, Abundance, Fun.

Negatives: Introversion, Decadence, Suppression, Inferiority.

BLACK - Black is all colors, totally absorbed. It creates barriers, as it absorbs all the energy coming towards you. **BLACK IS THE ABSENCE OF LIGHT.** Many people are afraid of the dark. In cowboy movies . . . the good guys wear what color hats? The bad guys where what color hats? We wear a black tie to a funeral. We wear black to look thinner however in 2016 a fashion designer stated multi-color clothing was the way to go. Black race horses look faster.

Positives: Sophistication, Glamour, Security, Emotional Safety, Efficiency, Substance.

Negatives: Oppression, Coldness, Menace, Heaviness.

GRAY – The heavy use of gray usually indicates a lack of confidence and fear of exposure.

Positives: Psychological Neutrality.

Negatives: Lack of Confidence, Dampness, Lack of Energy, Depression, Hibernation.

PINK – Being a tint of red, pink also affects us physically, but it soothes rather than stimulates. Pink is a powerful color, psychologically.

Positives: Physical Comfort, Food, Warmth, Security, Sensuality, Passion, Abundance, fun.

Negatives: Inhibition, Emotional Claustrophobia, Emasculation, Physical Weakness.

WHITE – White is total reflection. It reflects the full force of the spectrum to the eyes. White is purity, the negative effect of white on warm colors is to make them look and feel garish.

Positives: Hygiene, Sterility, Clarity, Purity, Cleanness, Simplicity, Sophistication, Efficiency

Negatives: Sterility, coldness, barriers, unfriendliness, elitism. White is total reflection.

BROWN – Brown usually consists of red and yellow with a large percentage of black.

Positives: Seriousness, Warmth, Nature, Earthiness, Reliability, Support.

Negatives: Lack of Humor, Heaviness, Lack of Sophistication.

PURPLE - Throughout her 2016 presidential campaign, Hilary Clinton's outfits have been symbolic. A popular color for her has been white; the color of the suffragette movement.²⁴ She wore it when she accepted the nomination at the Democratic National Convention; at the final presidential debate; and on Election Day itself.

While making her concession speech to President-Elect Donald Trump and the nation on Wednesday however, Clinton went with another color: Purple.²⁵ This color too, holds a tremendous amount of symbolism.

Purple, along with white and gold, are the colors of the National Women's Party²⁶ according to the New York Times. An early statement by the party said that purple symbolizes "loyalty, constancy to purpose, and unswerving steadfastness to a cause."²⁷

Example: A Local Bank

At a local bank, we noticed the warm color scheme of the bank interior and the lighting levels were designed to help customers feel safe and comfortable. We could tell that someone had certainly done their homework. Additionally, the bank manager was in the lobby greeting customers. The comfort zone they were hoping for definitely worked. They earned an A+! Many hospitals and other medical facilities use green as an interior color to project calmness and relaxation to help patients feel less nervous and anxious.

²⁴ <http://www.nytimes.com/2016/11/07/fashion/hillary-clinton-suffragists-white-clothing.html>

²⁵

<https://www.romper.com/p/what-does-hillary-clintons-purple-suit-mean-her-concession-speech-outfit-was-symbolic-22329>

²⁶ <http://www.nytimes.com/2016/07/30/fashion/hillary-clinton-democratic-national-convention.html>

²⁷

<http://nationalwomansparty.org/the-national-womans-party-and-the-meaning-behind-their-purple-white-and-gold-textiles/>

When discussing the psychology of color, remember that blue and green have a relaxing effect, while red and orange are stimulating. Warm colors are perceived as being protective and clear and saturated colors are experienced as more pleasant. Dark colors are perceived as more dominant and more strongly suggest hostility and aggression. The psychology of color is complex. There are differing opinions about color as well as scientific research on colors and the combinations of colors.

Colors and Lighting for Parking Garages

The ceiling of parking garages should be painted white to get the best reflection possible from lighting. Additionally, consider LED Lighting because it is the most cost-effective. Also, painting the walls white will enhance the effect and strength not only the CPTED principle of surveillance but also that of access control (due to visual sense of place) and maintenance, as related in the “Broken Windows Theory”²⁸ of crime and disorder. Remember that the placement of lighting must be carefully considered in conjunction with video surveillance to avoid conflicting uses, obscuring or making images undetectable due to glare and possible “hot spots” when using warm lighting sources.

Street Lighting

Recent study proved an increase in light provide a safe and reduce the fear of becoming victimized in a particular environment as well as a reduction in crime. Street lighting is generally seen as the most important physical feature of an environment to affect *perceived* personal safety. The general consensus is that adequate street lighting can help reduce crime rates and also help to reduce the fear of crime. Consideration again must be given to the environment that is addressed and its intended use. Over-lighting or too much light in a neighborhood may have a

²⁸<http://www.britannica.com/topic/broken-windows-theory>

negative consequence on the surveillance principle of CPTED because residents may close their blinds or curtains to block out the offending, trespassing light which will limit natural surveillance.

CPTED Landscape Security Recommendations

Adequate lighting, in conjunction with clear access to walkways and entryways to buildings should be clearly visible for members of the community utilizing the space. Landscape should be maintained to minimize obstacles to clear observability and places of concealment for potential assailants. This is achieved by trimming bushes so they are no higher than 36 inches in height and trimming tree branches to 8 feet from the ground.

Sidewalks, streets and parking lots must be clean (power washed) and free of graffiti. Ensure that there is proper signage and adequate lighting.

Parks should have a 360-degree view of the area and park benches should be designed to not allow someone to sleep on the bench. Create a venue for after school activities that encourage youth to take ownership of the space for socializing, such as small shelter areas with cell phone chargers and Wi-Fi access.

Signage plays an important role in park security. There should be signs indicating the hours the park is open and rules for those utilizing the space. Proper signage removes the excuses for unacceptable behavior, draws attention to the illegitimate activity and legitimizes police involvement, thus making the violation of the information on the posted signs an excellent crime prevention tool.

There is a vast array of traffic calming devices, such as speed bumps and raised crosswalks. These areas should be painted yellow and proper signage posted. At the entrance to neighborhoods or communities, post Neighborhood Watch or Block Watch signs.

Eliminate “Hot Spots” by planting thorny bushes (Barberry, Holly, etc.) in problem areas. Use boulders or bollards to control vehicular access. Consider adding community art or sculptures which not only control access, but also reinforce the purpose by giving implied ownership to the artists.



Photo 1.9 shows an effective use for bollards to control vehicular access.

For security purposes, perimeter fencing should be 7 feet in height, with 3 strands of barb wire on the top, spaced 6 inches apart, for a total fence height of 8 feet. We would not make this recommendation unless it was a large property and the perimeter was a significant distance from the buildings on the property. Careful consideration must be given to the type of fencing, the desired impact (boundary definition vs. security) and the location of the facility (rural vs. urban) must be taken into account and there should be at least 10 feet of clear space on both sides of the fence.



Photo 1.10 shows an 8 foot security fence with clear space on both sides of the fence.

LED lighting is cost effective and should meet lighting standards and guidelines for illumination, but may not be appropriate for all applications.

Bus stops should be located in areas where at least one open business can clearly observe the area. Alternatively, this problem may be addressed by contacting the school or bus company to monitor the space via video surveillance.

Don't allow tagging or graffiti in public spaces. Consider the use of paint or coatings that will allow for easy removal of graffiti. All graffiti or tagging should be removed within 24 hours.



Photo 1.11 shows graffiti/tagging that should be removed.

Hot Spots

“Hot Spots” should be eliminated. If they cannot be completely eliminated, develop a program to keep unauthorized users or unwanted individuals out of the area.

Community Policing Programs, including the formulation of Public-Private Sector Partnerships²⁹ can be used to fight disorder and crime.

Vacant lots are best monitored by citizens that we give “ownership” of them. One example is a place in Richmond, VA where a community flower garden was placed. People that worked in the garden monitored the space. Another option is for the city to share the property via giving the lot to Habitat for Humanity to build a structure on within a given time frame, thus resulting in tax revenue. Inspections from local government agencies can also result in the owners of vacant property being held responsible for the upkeep of the property or pay fines for non-compliance.

Redesign properties using CPTED principles to make them more crime resistant by reducing the criminal opportunity within the community.

There are some properties, such as HUD properties that may need a higher level of protection, such as additional lighting and video surveillance systems. Law enforcement support is also needed as to address specific issues and to support a safe community.

Locate open spaces and recreational areas in neighborhoods so they are visible (natural surveillance) from nearby homes as well as the street. Avoid landscaping that might create blind spots or hiding places. Make sure there is effective lighting. Design streets to discourage cut through or high-speed traffic using “traffic calming” measures. Join or start a Neighborhood Watch in your neighborhood.³⁰

²⁹http://www.policechiefmagazine.org/magazine/index.cfm?fuseaction=display_arch&article_id=902&issue_id=5
2006

³⁰<http://www.ncpc.org/topics/home-and-neighborhood-safety/neighborhood-watch>

In apartment buildings, ensure that interior hallways are well lit with a secure front door. Install good quality, deadbolts locks and provide door viewers (peepholes) on individual apartment exterior doors. Provide a secondary locking device to any sliding glass doors, windows on ground floor and fire escapes. Provide a common space in central locations to encourage tenant interaction. Join or start an Apartment Watch or Neighborhood Watch in your building.

For retail businesses, locate checkout counters near the front of the store, clearly visible from outside. Window signs should cover no more than 15% of the windows to provide clear visibility into and out of the store. Use shelving and displays no higher than 4 feet to help see who is in the store.³¹ Avoid creating outdoor spaces that encourage loitering. Install mirrors at strategic locations as well as a security surveillance system.

Measuring and Evaluation of CPTED

Very little has been written on how to measure the effectiveness of CPTED programs. Some work was done in 2005 – see references for this material.

An Example:

Let's call the site in question "The Complex" since CPTED concepts will cover the full spectrum. First, obtain three years of crime data from the local police department for the area around the property and compare year over year changes in crime. Secondly, obtain internal incident reports (whether or not they were reported to law enforcement) to identify issues that have occurred on the property. Conduct a full security assessment and be sure to pay close attention to natural surveillance, (landscape security) natural access control and territoriality, to help determine how to best "harden" the target.

³¹ <http://www.ncpc.org/topics/workplace-safety>

The job of security is becoming more proactive. Security awareness programs and Neighborhood Watch or similar programs can be implemented in neighborhoods with monthly law enforcement follow-up, by analyzing crime and incident data to determine the effectiveness of physical security measures currently in place and where changes need to be made.

Awareness

- Become aware of your community and who the strangers are. The guy walking down the street with the black dog - who is he?
- Look for signs of behavior that doesn't fit the normal pattern. Ask, "Can I help you?" Then evaluate the response.
- Have you ever gone for a walk and see four newspapers on the lawn? What does that tell you? Thieves also do assessments and evaluate your house.

Fear of Crime

- We have seen fear many times, such as on television when a school is in lock-down mode and anxious parents are waiting outside to see their child and wanting reassurance that their child has not been harmed. This is not a pretty sight.
- It is interesting to note that research has shown that the fear of crime is actually much higher than actual crime victimization rates.³²

CPTED Strategies

- The above discussion suggests a series of general design strategies that can be applied in any situation to improve natural access control, natural surveillance and territorial behavior.
- Provide a clear border definition of controlled space.
- Provide a clearly marked transition from public to semipublic to private space.
- Locate gathering areas in places with natural surveillance and access control and away from the view of potential offenders.

³² https://www.ncjrs.gov/criminal_justice2000/vol_4/04i.pdf

- Place safe activities in unsafe locations and unsafe activities in safe locations.
- Provide natural barriers to conflicting activities.
- Improve the scheduling of space to provide the effective and critical intensity of uses.
- Design spaces to increase the perception of natural surveillance.
- Overcome distance and isolation through improved communications and design efficiencies, e.g., emergency telephones, pedestrian paths.
- Turn soft targets into hard targets.

Obtaining results

After all of the above items have been completed and security is maintained at the highest level, you should have a reduction in crime risks and crime as well as a reduction in fear of crime. Then, after three years, compare the data with the previous three years to see your results (Fennelly & Perry 2016).

Conclusion

CPTED involves the design of physical space in the context of the needs of legitimate users of the space (physical, social, and psychological needs), the normal and expected (or intended) use of the space (the activity or absence of activity planned for the space), and the predictable behavior of both intended users and offenders. Therefore, in the CPTED approach, a design is proper if it recognizes the designated use of the space, defines the crime problem incidental to and the solution compatible with the designated use, and incorporates the crime prevention strategies that enhance (or at least do not impair) the effective use of the space.

CPTED addresses the potential victim and the potential criminal's mindset in preventing crime through manipulating the built environment and better planning for its intended use.

A security assessment is the process of evaluating a site for security vulnerabilities, and making recommendations to address said vulnerabilities. The goal is to either remove or reduce the potential vulnerability.

- Reduce opportunities for crime and fear of crime by making open areas more easily observable, and by increasing activity in the neighborhood.
- Provide ways in which neighborhood residents, business people, and law enforcement can work together in partnership to more effectively to reduce opportunities and incentives for crime.
- Increase neighborhood identity, investor confidence and social cohesion.
- Provide public information programs that help schools, businesses and residents protect themselves from crime.
- Make the area more accessible by improving transportation services.
- Improve the effectiveness and efficiency of governmental operations.
- Encourage citizens to report crimes so they can be a part of the problem-solving process.

The steps taken to achieve these objectives include:

- Improved, cost-effective outdoor lighting
- Sidewalk and landscaping improvements.
- Partnerships with law enforcement and other local officials.
- Neighborhood Watch, Business Watch and School Watch Programs.
- Neighborhood cleanups.
- A campaign to educate businesses about safe cash handling procedures and how to discourage robberies.
- Improve and expand public transportation.

Basic improvements in neighborhoods and communities can enhance “quality of life” and provide an atmosphere of cohesiveness. The application of CPTED concepts have been used successfully throughout the world to reduce not only the incidence of crime, but also to reduce the fear of crime as well. This leads to an improvement in the quality of life for everyone who lives, works or visits the neighborhood or community.

Second Generation CPTED

“Second-Generation CPTED is a new form of ecological, sustainable development.”³³ It includes a focus on building neighborhoods on a small, local scale and then incorporating community building and the social aspects of the environment. To a large extent, this goes back to C. Ray Jeffery’s CPTED model, which included engineering the social environment and the built environment as well as recognizing the importance of rewards and disincentives for behavior. This model also includes the role of enforcement.

The Second Generation of CPTED consists of four strategies referred to as the four C’s:³⁴

1. Social Cohesion
2. Community Connectivity
3. Community Culture
4. Threshold Capacity

Social Cohesion is the core of Second Generation CPTED. A safe community is the goal and it incorporates a wide range of strategies in order to reach this goal. These

³³ Saville, G., and Cleveland, G., 1998, Second Generation CPTED: An Antidote to the Social Y2K Virus of Urban Design, Paper presented to the 3rd International CPTED Association conference, Washington DC, 14-16 December.

³⁴ Atlas, R., 21st Century Security and CPTED: Designing for Critical Infrastructure, Protection and Crime Prevention, Florida, 2008.

include emotional intelligence training (Salovey and Myer 1990, Goleman, 1995) that develops self-esteem and personal confidence. Cohesion strategies will enhance relationships between residents.

Community Connectivity is when the neighborhood has a positive relations and influence with outside agencies such as local law enforcement, fire department and EMT'S. Plus access to grant-writing services, regular activities with outside groups, social media, shared pathways and facilities for bike paths and walking to the beach or other locations within the community.

A **Community Culture** is formed when residents come together to share a sense of cohesion to display territorially. Together, residents participate in community events, such as festivals and flea markets.

Threshold Capacity is a strategy intended to keep the neighborhood ecosystems within suggested levels and also promoting human-scales and pedestrian oriented neighborhood functioning through effective management. If neighborhood ecosystems exceed their carrying capacity, the result will be increased levels of crime.

The Second Generation of CPTED focuses on strategies to eliminate the reasons for criminal behavioral and create a sustainable, livable environment.

Third Generation CPTED

The basic premise of Third Generation CPTED is that a sustainable, green urban environment is perceived by community members (as well as outsiders) to be safe. The focus is on building a sustainable green environment that is safe from not only crime, but the fear of crime also.³⁵

³⁵ <http://safe-growth.blogspot.com/2015/12/green-answers-for-crime-3rd-gen-cpted.html>

Third Generation CPTED suggests that a sustainable environment utilizes strategies that use green technologies. This strategy focuses on reducing the fear of crime and increasing the perception of security in the community.³⁶

What is Green Technology?

- Harvesting of Natural Energy
- Incorporating Zero-carbon & Clean Energy such as Nuclear Energy
- Reduce Carbon Footprint
- Hybrid vehicles
- Wireless Services & Wireless Networks
- Target Energy Consumption
- Harvested energy as a power source for street lighting
- Use of energy efficient light sources like LED bulbs and fixtures
- Enhancing a citizen sense of Belonging through lectures and training
- Digital Water Pavilion
- The Cloud
- Urban Furniture

Kerry Kirpatrick, the Social Media Director for Buildings Magazine, stated that research has revealed that increased productivity is a benefit of green buildings through a study that was designed to reflect indoor environments encountered by large numbers of people every day. “These findings have far ranging implications for worker productivity, student learning, and safety.”³⁷

³⁶ P.M. Cozen “Sustainable Urban Development and CPTED for the British City towards an effective urban environment for the 21 st Century Cities. The International Journal of Urban Policy & Planning, Vol. 19, No. 2 (2002) p. 129-132

³⁷<http://energyalliancegroup.org/author/kerry/>

It's efficient and economical to use "green environment designs," but keep in mind that when you use these strategies they must also lead to safer and more secure environment. Applications for "green" answers to crime and fear of crime are still evolving, but it appears as though this strategy is a viable approach.

Below is a QR-Code with material prepared by Diane Zahm, entitled, *Using CPTED in Problem Solving Tool Guide No. 8 (2007) POP Guide*. A special thanks to Rick Draper for designing this QR-Code.



Glossary

MISSISSAUGA CPTED PRINCIPLES ³⁸

Abnormal User: Person whom you do not desire to be in a certain space.

Crime: An act or commission of an act that is forbidden or the omission of a duty that is commanded by a public law and that makes the offender liable to punishment by that law. Crime can be divided into four main categories: Reported Unreported Unacknowledged (store shrinkage) Undetected

³⁸ http://www6.mississauga.ca/onlinemaps/planbldg/UrbanDesign/MississaugaCPTEDPrinciples_Nov2014.pdf

The majority of crime is represented by the last three categories. For CPTED purposes, crime is simply the by-product of a human function that is not working properly.

Crime Prevention: The anticipation, recognition and appraisal of a crime risk and the initiation of some action to remove or reduce it. For crime prevention to work, it must effectively remove or reduce one (or more) of the three essential components found in the 'crime triangle'.

Criminal Desire Opportunity Victim By removing or effectively reducing any one of these components, you can effectively prevent crime.

Defensible Space: A term used to describe a residential environment whose physical characteristics—building layout and site plan—function to allow inhabitants themselves to become key agents in ensuring their own security.

Design: A term which, within the CPTED context, encompasses people and their physical and social surroundings.

Environmental Design: A term which, within the CPTED context, is rooted in the design of the man/environment relation.

Natural: A term which refers to deriving access control and surveillance as a by-product of the normal and routine use of the environment.

Normal User: Persons whom you desire to be in a certain space.

Safe Activity: A target neutral activity that results in increased natural surveillance.

Spatial Definition: A natural form of access control that relies on space to control access to the property.

Graffiti: The name for images or lettering scratched, scrawled, painted or marked in any manner on the property. Defacing property without the property owner's consent is considered vandalism, which is punishable by law. Vandalism: The willful damaging or defacing of property belonging to another person or to the public.

http://www6.mississauga.ca/onlinemaps/planbldg/UrbanDesign/MississaugaCPTEDPrinciples_Nov2014.pdf

Keywords: Designation, Definition, Design, territorial reinforcement, natural access control, natural surveillance, image and/or maintenance, activity program support target hardening and geographical juxtaposition, (wider environment) Harvesting of Natural Energy,,Incorporating Zero-carbon & Clean Energy such as Nuclear Energy, Reduce Carbon Footprint, Hybrid vehicles, Wireless Services & Wireless Networks, Target Energy Consumption, Harvested energy as a power source for street lighting, Use of energy efficient light sources like LED bulbs and fixtures, Enhancing a citizen sense of Belonging through lectures and training, Digital Water Pavilion, The Cloud, Urban Furniture, Social Cohesion, Community Connectivity, Community Culture, Threshold Capacity. Second Generation and Third Generation CPTED.

Suggested Reference Materials:

[Effective Physical Security, 5th edition, Elsevier Publishers, 2017](#)

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