

Crime Prevention Through Environmental Design



*your guide to creating
a safe environment*

This *Crime Prevention Through Environmental Design (CPTED)* guide is provided to you for reference purposes. *CPTED*'s national recommendations cannot and do not give information applicable to every jurisdiction, municipality, local planning ordinance or building code. This guide can help you identify potential problem areas for a variety of types of properties. It then suggests proven alternatives for ensuring a safer environment, a more livable community and an improved quality of life.

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I. Introduction

We live with crime every day. It has become, unfortunately, a fact of life. Discussions on the subject have traditionally focused much less on prevention than on arrest and punishment; measures that cannot be taken until after a crime has been committed.

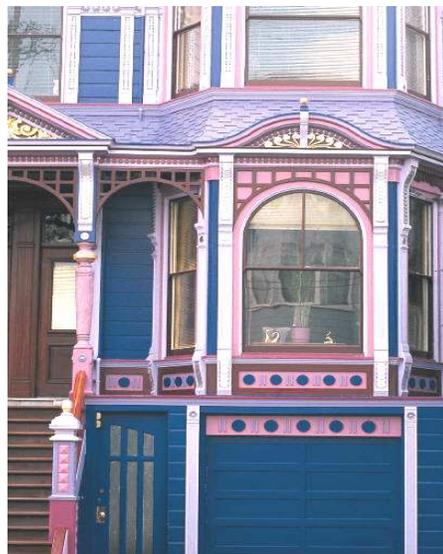
Only in the last 20 years have designers and architects begun to see the need to plan and build with more than just the traditional threats of nature—fire, earthquakes and hurricanes—in mind. They must now consider the threat of crime.

Enter a new approach to crime prevention—Crime Prevention Through Environmental Design—or CPTED. Much more far-reaching than dead bolts on doors and locks on windows, CPTED principles can be applied easily and inexpensively to building or remodeling, and have been implemented in communities across the nation. The results have been impressive; in some CPTED communities, criminal activity has decreased by as much as 40 percent.

What is the secret to CPTED? Design that eliminates or reduces criminal behavior and at the same time encourages people to “keep an eye out” for each other. These are just a few of the ingredients that go into creating an effective CPTED environment...that is, a safer, more livable community.

“The proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime, and an improvement of the quality of life.”

-CPTED, as defined by the
National Crime Prevention
Institute



II. CPTED Strategies

Crime Prevention Through Environmental Design

There are four overlapping CPTED strategies.

1. Natural Surveillance

A design concept directed primarily at keeping intruders easily observable. Promoted by features that maximize visibility of people, parking areas and building entrances: doors and windows that look out onto streets and parking areas; pedestrian-friendly sidewalks and streets; front porches; adequate nighttime lighting. *Note: Adequate lighting is even and does not cast shadows which allow concealment.*

2. Territorial Reinforcement

Physical design can create or extend a sphere of influence. Users then develop a sense of territorial control while potential offenders, perceiving this control, are discouraged. Promoted by features that define property lines and distinguish private spaces from public spaces using landscape plantings, pavement designs, gateway treatments, and “CPTED” fences.

3. Natural Access Control

A design concept directed primarily at decreasing crime opportunity by denying access to crime targets and creating in offenders a perception of risk. Gained by designing streets, sidewalks, building entrances and neighborhood gateways to clearly indicate public routes and discouraging access to private areas with structural elements.

4. Target Hardening

Accomplished by features that prohibit entry or access: window locks, dead bolts for doors, interior door hinges.

Presented along with each of these CPTED strategies are the guidelines which, as a homeowner, builder or remodeler, you can apply to reduce the fear and incidence of crime and improve the quality of life.

III. CPTED Techniques for Various Land Uses

Single Family Houses

Residential areas are the heart of a city. Our homes are the centers of our lives, where we should feel most safe. And, while we may have multiple choices when it comes to walking through a certain part of town or using public transportation, we have few choices when it comes to the streets where we live.

The guiding principle here is “know thy neighbor.” Streets and homes should be designed to encourage interaction between neighbors: good examples of these design elements are the front porch and property lines that are defined simply by low shrubbery instead of high fences.

CPTED Guidelines

Natural Access Control

- ✓ walkways and landscaping direct visitors to the proper entrance and away from private areas

Natural Surveillance

- ✓ all doorways that open to the outside should be well lit

- ✓ the front door should be at least partially visible from the street
- ✓ windows on all sides of the house provide full visibility of property
- ✓ sidewalks and all areas of the yard should be well lit
- ✓ the driveway should be visible from either the front or back door and at least one window
- ✓ the front door should be clearly visible from the driveway
- ✓ properly maintained landscaping provides maximum viewing to and from the house

Territorial Reinforcement

- ✓ front porches or stoops create a transitional area between the street and the home
- ✓ property lines and private areas should be defined with plantings, pavement treatments or fences
- ✓ the street address should be clearly visible from the street with numbers a minimum of five inches high that are made of non-reflective material

Target Hardening

- ✓ interior doors that connect a garage to a building should have a single cylinder dead bolt lock

Crime Prevention Through Environmental Design

- ✓ door locks should be located a minimum of 40 inches from adjacent windows
- ✓ exterior doors should be hinged on the inside and should have a single cylinder dead bolt lock with a minimum one-inch throw
- ✓ new houses should not have jalousie, casement or awning-style windows
- ✓ all windows should have locks
- ✓ sliding glass doors should have one permanent door on the outside: the inside moving door should have a locking device and a pin



Subdivisions

Often the safety measures taken in subdivision communities, such as high fences and video monitored gates, can have a negative instead of positive effect on residents. CPTED guidelines, when applied to subdivisions, can create a safe-environment without the use of the more common, conspicuous methods.

For instance, streets designed with gateway treatments, roundabouts, speed tables and other “traffic calming” devices discourage speed and cut-through traffic. And by keeping public areas observable, you are telling potential offenders they’d better think twice before committing a crime.

These measures are simple, inexpensive to implement and will have a much more positive effect on residents than gates and bars.

Natural Access Control

- ✓ access should be limited without completely disconnecting the subdivision from adjacent subdivisions
- ✓ streets should be designed to discourage cut-through traffic
- ✓ paving treatments, plantings and architectural design features such as a columned gateway can guide visitors away from private areas
- ✓ walkways should be located in such a way as to direct pedestrian traffic and should be kept unobscured

Natural Surveillance

- ✓ landscaping should not create blind spots or hiding spots
- ✓ open green spaces and recreational areas should be located so that they can be observed from nearby homes





- ✓ pedestrian scale street lighting should be used in high pedestrian traffic areas

Territorial Reinforcement

- ✓ lots, streets and houses should be designed to encourage interaction between neighbors
- ✓ entrances should be accentuated with different paving materials, changes in street elevation, architectural and landscape design

- ✓ residences should be clearly identified by street address numbers that are a minimum of five inches high and well lit at night
- ✓ property lines should be defined with post and pillar fencing, gates and plantings to direct pedestrian traffic
- ✓ all parking spaces should be assigned

Multifamily Homes

Single and Multiple Buildings

Multiple buildings pose the same problems as single buildings, although these problems can easily be compounded by the number of dwellings and residents. Here, we have a much greater number of public areas to consider: shared interior hallways, elevators, laundry rooms and parking areas.

But multiple dwelling buildings don't necessarily mean multiple problems. There's a certain amount of truth to the old saying, "There's safety in numbers," and with neighbors who take responsibility for each other there's no reason why a multiple dwelling building cannot be a safe place to live.

CPTED Guidelines

Natural Access Control

- ✓ balcony railings should never be a solid opaque material or more than 42 inches high
- ✓ entrances into parking lots should be defined by landscaping, architectural design, or monitored by a guard
- ✓ dead end spaces should be blocked by a fence or gate

- ✓ common building entrances should have locks that automatically lock when the door closes
- ✓ hallways should be well lit
- ✓ no more than four apartments should share the same entrance
- ✓ elevators and stairwells should be centrally located
- ✓ access to the building should be limited to no more than two points

Natural Surveillance

- ✓ exterior doors should be visible from the street or by neighbors
- ✓ all doors that open to the outside should be well lit
- ✓ all four facades should have windows
- ✓ parking spaces should be assigned to each unit, located adjacent to that unit, and not marked by unit numbers
- ✓ visitor parking should be designated
- ✓ parking areas should be visible from windows and doors
- ✓ parking areas and pedestrian walkways should be well lit
- ✓ recreation areas should be visible from a multitude of windows and doors
- ✓ dumpsters should not create blind spots or hiding areas
- ✓ elevators and stairwells should be clearly visible from windows and doors

- ✓ shrubbery should be no more than three feet high for clear visibility
- ✓ buildings should be sited so that the windows and doors of one unit are visible from another
- ✓ stairwells should be well lit and open to view; not behind solid walls
- ✓ elevators and stairwells should be clearly visible from windows and doors

Territorial Reinforcement

- ✓ property lines should be defined by landscaping or post and pillar fencing
- ✓ low shrubbery and fences should allow visibility from street
- ✓ building entrances should be accentuated by architectural elements, lighting and/or landscaping
- ✓ door knobs should be 40 inches from window panes
- ✓ all buildings and residential units should be clearly identified by street address numbers that are a minimum of five inches high, and well lit at night
- ✓ common doorways should have windows and be key-controlled by residents

- ✓ mailboxes should be located next to the appropriate residences

Target Hardening

- ✓ single cylinder dead bolt locks should be installed on all exterior doors
- ✓ door hinges should be located on the interior side of the door
- ✓ sliding glass doors should have one permanent door on the outside and the inside moving door should have a locking device and a pin



Commercial

Storefronts

For a neighborhood to remain healthy, its local businesses must flourish; and for businesses to do well, they must be safe places to frequent.

With the increase in separating commercial areas from residential ones, and the decline which often accompanies this separation, it is essential that CPTED guidelines be followed when building or remodeling a commercial property. Simple design features, such as positioning cash registers near the main entrance and keeping pay phones visible, can accomplish much in the way of making customers feel safe and secure.

CPTED Guidelines

Natural Access Control

- ✓ cash register should be located in front of store near main entrance
- ✓ public paths should be clearly marked
- ✓ signs should direct patrons to parking and entrances
- ✓ there should be no easy access to the roof
- ✓ rear access to shops should be provided from rear parking lots

Natural Surveillance

- ✓ windows should face rear parking lots for increased visibility
- ✓ window signs should cover no more than 15% of windows





- ✓ interior shelving and displays should be no higher than five feet for increased visibility
- ✓ exterior of building should be well lit
- ✓ loading areas should not create hiding places
- ✓ clear visibility should be maintained from the store to the street, sidewalk, parking areas, and passing vehicles
- ✓ retention area should be visible from the building or street—it should be a visual amenity, not hedged or fenced off
- ✓ all entrances should be under visual surveillance or monitored electronically

Territorial Reinforcement

- ✓ property boundaries, where possible, should be marked with hedges, low fences or gates
- ✓ private areas should be easily distinguishable from public areas
- ✓ shops should be identified by wall signs for those parking in the rear
- ✓ awnings should be installed over rear doors and windows
- ✓ parking area should be clearly visible from the building or street

Management

- ✓ operating hours should coincide with those of other neighboring businesses
- ✓ pay phones should be call-out only and under surveillance at all times
- ✓ interior space should be well lit

Commercial

Shopping Malls

Shopping malls often provide much of the public space in suburban communities and as such can be a mixed blessing. On the one hand, they perform the important function of town center, serving as a gathering place for the community. On the other, a mall can serve as an attraction for criminal activity.

While the shopping mall continually grows in size and popularity, it also becomes a haven for abnormal users and the site of a growing number of parking lot crimes. It is now more important than ever that designers and remodelers implement CPTED principles.

CPTED Guidelines

Natural Access Control

- ✓ signs should clearly mark public entrances
- ✓ sidewalks and public areas should be clearly marked by way of special paving and/or landscaping
- ✓ loading zones, with designated delivery hours, should be separate from public parking areas

- ✓ the parking garage should provide no exterior access to adjacent rooftops

Natural Surveillance

- ✓ restroom doors should be visible from main pedestrian areas and away from outside exits
- ✓ parking areas should be well lit
- ✓ loading areas should not create dead end alleys or blind spots
- ✓ all levels of the parking garage should be visible from the street or ground floor with high intensity lighting to minimize hiding places

Territorial Reinforcement

- ✓ property perimeters should be defined by landscaping, post and pillar fencing or gates
- ✓ signs should clearly identify interior businesses

Management

- ✓ close-in parking should be available to nighttime employees
- ✓ business associations should work together to promote shopper and business safety

Commercial

Drive throughs

The drivethrough is potentially the perfect place for criminal activity. They are often used at odd hours, are hidden from view, and those using them will almost certainly be carrying cash.

The rule of thumb in the design of a drivethrough can be reduced to one word: visibility.

CPTED Guidelines

Natural Surveillance

- ✓ locate ATM's in front of banks facing main roads or as a drivethrough in the drive-in teller lanes
- ✓ put ordering station for a restaurant within sight of interior

Offices

The 1993 bombing of Manhattan's World Trade Center sent a clear message to the planners and designers of office buildings: as structures grow in size and pedestrian and vehicle traffic increases, safety becomes an extremely important issue.

Facilities now are planned for safe and secure office building construction, regardless of the size of the structure being built. For instance, at some locations tenants must show photo identification upon entering. Metal grills with letter-sized slits cover mail slots. Garage and loading areas even can be secured by steel, anti-ram barricades.

With these types of measures, there is a fine line between a safe office building and a fortress.

CPTED Guidelines

Natural Access Control

- ✓ public entrances should be clearly defined by walkways and signage
- ✓ building entrances should be accentuated through architectural elements, lighting, landscaping and/or paving stones.

Natural Surveillance

- ✓ restrooms should be observable from nearby offices
- ✓ all exterior doors should be well lit
- ✓ hallways should be well lit
- ✓ dumpsters should not create blind spots or hiding areas
- ✓ windows and exterior doors should be visible from the street or by neighbors
- ✓ all four facades should have windows
- ✓ parking spaces should be assigned to each employee and visitor
- ✓ parking areas should be visible from windows; side parking areas should be visible from the street
- ✓ parking and entrances should be observable by as many people as possible
- ✓ parking area and walkways should be well lit
- ✓ dumpster should be clearly visible
- ✓ shrubbery should be kept under two feet in height for visibility
- ✓ the lower branches of existing trees should be kept at least ten feet off the ground
- ✓ windows should not be obstructed with signs
- ✓ windows and doors should have views into hallways

Territorial Reinforcement

- ✓ perimeters should be defined by landscaping or fencing
- ✓ fences should be designed to maintain visibility from street
- ✓ exterior private areas should be easily distinguishable from public areas
- ✓ security and/or reception area should be positioned to screen all entrances

Target Hardening

- ✓ exterior door knobs should be a minimum of 40 inches from adjacent windows
- ✓ case hardened dead bolt locks should be installed on all exterior doors with a minimum of one-inch throw
- ✓ door hinges should be
- ✓ installed on the interior side of the door or tamper-proof hinges used



Industrial

In most industrial design, the most important issue is the safety of those who will be working or traveling to these areas. Unfortunately, safety is often given little consideration. After work hours, industrial areas are, for the most part, badly illuminated, seldom under any type of surveillance, and virtually deserted, which in itself can be problem enough. Add to this isolation the industrial danger areas—loading docks, service entrances, blind alleys and expansive parking areas—and you have the potential for an extremely unsafe environment.

CPTED Guidelines

Natural Access Control

- ✓ dead ends should be avoided
- ✓ site entrances should be easily securable
- ✓ entrances to parking areas should be controlled by fence, gate or attendant
- ✓ parking should be assigned by shifts and planned to favor late workers with close-in spaces
- ✓ pedestrian and vehicular direct access to railroad tracks should be restricted

- ✓ storage yards should be planned for vehicular access by patrol car
- ✓ access to roofs via dumpster, loading docks, poles, stacked items, etc. should be restricted
- ✓ building entrances should be kept to a minimum
- ✓ delivery entrances should be separate, well-marked and monitored
- ✓ employee entrance should be close to employee parking and work areas
- ✓ nighttime parking should be separate from service entrances
- ✓ access to one area of building should not allow access to others
- ✓ access should be provided to both front and back so that building can be patrolled

Natural Surveillance

- ✓ all entrances should be well lit, well defined and visible to public and patrol vehicles
- ✓ parking area should be visible to patrol cars, pedestrians, parking attendants and/or building personnel
- ✓ parking attendant should be positioned for maximum visibility of property
- ✓ reception areas should have a view of parking areas

- ✓ walls should be used only where necessary and should be high enough to prevent circumvention blind alleys, storage yards, etc. should not create hiding places

Territorial Reinforcement

- ✓ gateway effect or formal entrance should be created with plantings, fences, gates, etc.
- ✓ delivery hours should be limited to daytime hours
- ✓ vehicle entrances should be defined by different paving materials and signage

Target Hardening

- ✓ delivery bays should be secured with locks

Management

- ✓ operating hours should be the same as those of neighboring businesses



Parking Garages/Structures

Studies show that in both urban and suburban environments, parking structures are the most problematic. These structures isolate people. Most garages are not only badly designed—with many blind spots and hiding areas—but badly maintained as well.

CPTED guidelines can do much in the way of improving parking structure safety without tremendous cost. With the simple addition of high intensity lighting, for example, a garage can quickly become a much safer place.

CPTED Guidelines

Natural Access Control

- ✓ garages should be attended or monitored openly with cameras and sound monitors indicated with signs
- ✓ all pedestrian entrances should be adjacent to vehicle entrances
- ✓ stairwells should be visible, without solid walls
- ✓ elevators should be close to the main entrance with the entire interior of the elevator in view when the doors are open
- ✓ there should be no permanent stop buttons installed in elevators

- ✓ ground floor should be designed to provide a view of the garage using wire mesh or stretch cable
- ✓ access should be limited to no more than two designated, monitored entrances

Natural Surveillance

- ✓ all elevators should be monitored by cameras and sound or utilize clear materials for the entire car
- ✓ retaining walls should be replaced with stretched cable railings for maximum visibility
- ✓ parking areas and driving lanes should be well lit

Management

- ✓ there should be no free access to adjacent buildings without direct monitoring
- ✓ public and private parking spaces should be designated
- ✓ hours of use should reflect that of local businesses, with secure closing during non-use hours

IV. Conclusion

Crime Prevention Through Environmental Design guidelines can go a long way in making an environment safe. As stated earlier, criminal activity in CPTED cities is on the decline, but these principles alone cannot make, and more importantly keep, a community safe.

CPTED can eliminate problem areas: the badly lit parking lot, the blind alley and the public telephone stuffed in the dark corner. Hopefully, along with the feelings of safety and security that CPTED brings, will come a feeling of responsibility for our neighbor. That is the greatest crime prevention technique of all.

“CPTED is not the total answer to community problems, but it does provide the community with the means to eliminate or reduce environmental obstacles to social, cultural or managerial control.”

-Timothy D. Crowe
Criminologist &
CPTED Practitioner

