



# Crime Prevention Through Environmental Design

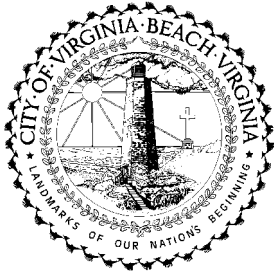
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## General Guidelines For Designing Safer Communities

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January 20, 2000



# Crime Prevention Through Environmental Design

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*General Guidelines For Designing Safer Communities*

City of Virginia Beach  
Municipal Center  
Virginia Beach, VA 23456-9040

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## Introduction

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# Crime Prevention Through Environmental Design

Crime Prevention Through Environmental Design, CPTED, is based on the idea that the proper design and effective use of the built environment can lead to a reduction in the incidence and fear of crime, and an improvement in the quality of life. In other words, if a site is laid out well, the likelihood of it being targeted for a crime may be reduced.

Crime Prevention is defined as the anticipation, recognition and appraisal of a crime risk and the initiation of some action to remove or reduce it. CPTED takes crime prevention one step further by studying the site design and working with the development community and public development agencies in an attempt to create safer designs in new and existing developments.

The following guidelines were prepared by the City of Virginia Beach's CPTED Committee to be used as a tool for planners and design professionals to build a "Quality Physical Environment" with the idea of reducing opportunity for crime to occur.

It is the CPTED Committee's desire to disseminate this information to design professionals and the development community so that these principles can be incorporated whenever possible in the design phase.

## **Disclaimer:**

The CPTED document is a guideline providing techniques and strategies. In a few areas this guide may conflict with the Uniform Statewide Building Code (USBC) in some occupancy types, in that instance the USBC will be the prevailing document.

Some of the CPTED techniques and strategies relate to hardening of security devices on windows and doors. Careful attention must be given to this activity as it could lead to the inability of occupants or firefighters to use normal escape routes. When a modification to a required means of egress is preferred in an existing structure a permit is required from the Division of Permits and Inspections.

*"The proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime, and improvement of the quality of life." - CPTED, as defined by the National Crime Prevention Institute*

# Understanding CPTED

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CPTED design strategies have evolved over time. While many of the actual techniques have been in use for hundreds of years, it has only been in the last few decades that urban experts such as Jane Jacobs and Oscar Newman have explored the relationship between the built environment and criminal behavior.

Each of the following CPTED strategies offer guidelines which, as a property owner, builder, or remodeler, you can apply to reduce the fear and incidence of crime and improve the quality of life.

These design guidelines are intended to stimulate design professionals to address urban security problems. Project teams are encouraged to be innovative in developing solutions which limit the exposure of urban communities to incidences of crime.

## Purpose Of Design Guidelines:

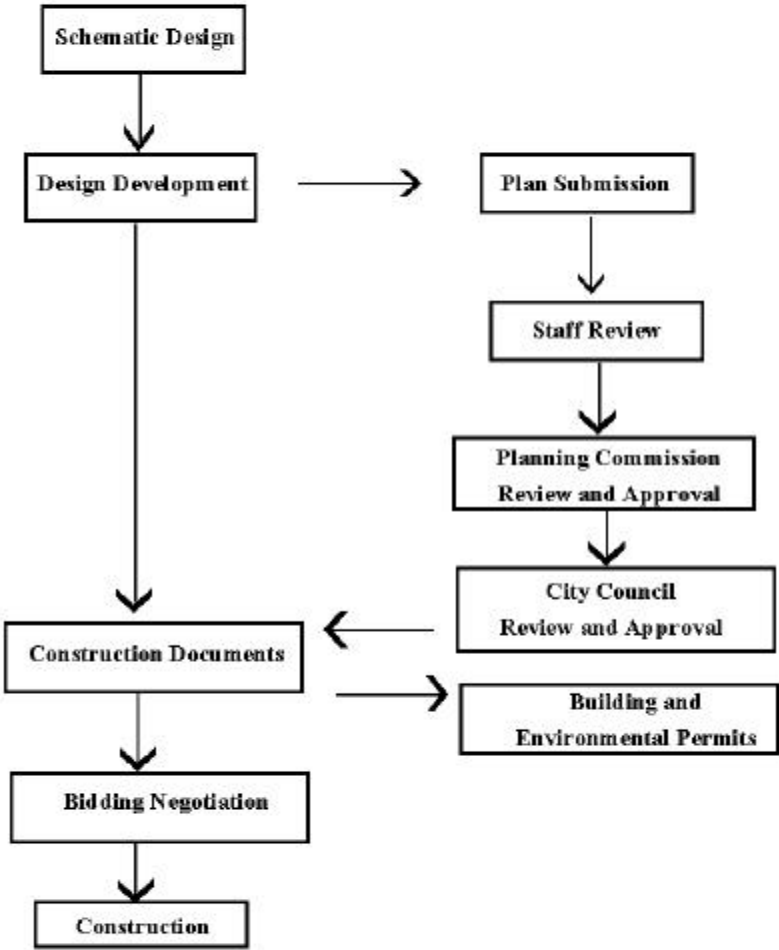
- To make members of the Development Community and City Staff aware of Crime Prevention Through Environmental Design and implement creative solutions whenever possible.
- To inform developers, design professionals and the public of the possible reduction of criminal opportunity when CPTED principles are used during the initial planning stages of a development.
- To describe design alternatives which could have an adverse affect on opportunities for criminal activity.

Effective participation depends upon understanding the design and planning process (See Design and Planning Process Chart following page). These include the individual planning activities and their sequence, the timing of various decisions, who makes the decisions, and how to incorporate these CPTED principles into the process. The ability to incorporate these principles depends also on the information available to communicate roles, and authorities that influence the design and construction of new development. This guide is intended to share information on terminology and the process with partners from other agencies, identify steps in the development process where CPTED concepts can be introduced, and help clarify how agencies and outside groups can work together during the review of projects.

# DESIGN AND PLANNING PROCESS

## Design Process

## Plan Review Process



# CPTED STRATEGIES:

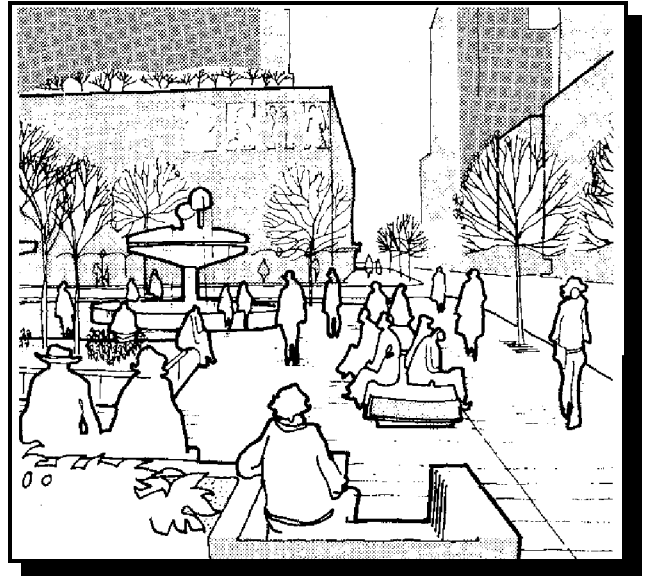
CPTED is based on four elements:

## **Natural Surveillance**

Natural Surveillance is a design concept directed primarily at keeping intruders under observation. It utilizes design features to increase the visibility of a property or building. The proper placement and design of windows, lighting, and landscaping increases the ability of those who care to observe intruders as well as regular users, and thus provides the opportunity to challenge inappropriate behavior or report it to the police or the property owner. When natural surveillance is used to its greatest advantage, it maximizes the potential to deter crime by making the offender's behavior more easily noticeable to a passing individual, police patrol, or private security detail.

### **Natural Surveillance - The Visual Connection:**

Provide a good visual connection between residential and/or commercial units and public environments such as streets, common areas, parks, sidewalks, parking areas and alleys. Place activity rooms such as kitchens, living/family rooms and lobbies to allow for good viewing of parking, streets and/or common areas. Managers, doormen, attendants, and security personnel should have extensive views of these areas.



## **Natural Access Control**

Natural access control employs elements like doors, shrubs, fences, and gates to deny admission to a crime target and to create a perception among offenders that there is a risk in selecting the target. The primary thrust of an access control strategy is to deny access to a crime target and to create a perception of risk to offenders. Physical and mechanical means of access control—locks, bars, and alarms can supplement natural access control measures if needed. A fence around a neighborhood playground is an example of an access control measure that protects children from wandering off and inhibits entry of potential offenders.

### **Natural Access Control - The Spatial Definition:**

Locate common areas as centrally as possible or near major circulation paths within the project. Avoid remote locations for common areas.

## **Territorial Reinforcement**

Territorial reinforcement employs such design elements as sidewalks, landscaping, and porches to help distinguish between public and private areas and helps users exhibit signs of “ownership” that send “hands off” messages to

would-be offenders. The concept of territorial reinforcement suggests that physical design can create or extend a sphere of territorial influence and potential offenders perceive that territorial influence. For example: low walls, landscape and paving patterns to clearly define the space around a unit entry as belonging to (and the responsibility of ) the residents of the unit.

**Territorial Reinforcement Fosters A Sense Of Ownership:**

People take more interest in something they own or when they feel intrinsically involved. Therefore, the environment should be designed to clearly delineate private spaces. Provide obvious defined entries, patios, balconies and terraces. Use low walls, landscape and paving patterns to delineate ownership and responsibility.

**Maintenance**

Lastly, care and maintenance allows for the continued use of a space for its intended purpose. Deterioration and blight indicate 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 requirements and acceptable standards. Maintenance is the responsibility of the owners, operators and occupants.



# DESIGN QUESTIONS

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## During Schematic Design

### Questions about neighborhood conditions

- Who lives in, works in, uses, or travels through this neighborhood?
- How many people are likely to be in the neighborhood during the day? In the evening? Late night?
- Will neighborhood conditions have any impact on the proposed development?
- Will the proposal positively or negatively affect its surroundings?

### Questions about site conditions

- Who will live on, work on, or visit the site?
- What time of the day is the site likely to be used? What days of the week?
- How will people get to the site? On foot? By car? By bus?

### Questions about access, circulation, and parking

- Are there separate entrances for employee vehicles, visitor vehicles, and delivery trucks?
- Can entrances be closed, locked, or blocked during off hours?
- What provisions are there for emergency access to the site? To the building?
- Is there conflict between access to the property and the normal flow of traffic on adjacent streets and through nearby intersections?
- Is pedestrian movement separated from automobile traffic?
- Are parking stalls and bicycle racks located on the site and oriented to allow for surveillance from the street? The building? Entrances and exits? Adjacent sites or buildings?

### Questions about proposed buildings?

- Will buildings and their numbered address be visible from the street(s)? From adjacent properties or buildings?
- Will building entrances and exits be visible from parking areas and pedestrian paths?
- Are there opportunities to gain roof access?

### Questions about landscaping

- What kinds of trees, shrubs, or other plants are proposed for the site?
- Where will each of the different kinds of plants be installed? Will trees be planted adjacent to fences or walls?
- What are the recommendations or requirements for plant maintenance?
- Are walls, fences, plazas, fountains, berms or other landscape elements included in the plan?
- Will plants, walls, fences, plazas, berms or other landscape elements reduce or remove opportunities to see entrances and exits?
- Will they provide places to hide?
- Will they be attractive to outsiders?
- How are the dumpsters screened (if this is required)?
- Have signs been provided? Where?

### Questions about lighting?

- Where will light fixtures be located? Along streets? In parking lots? Near buildings? Attached to the building?
- What kind of lamp is proposed? How bright?
- How tall will the light poles be?
- Where are the lights relative to the building? Parking? Loading areas? Entrances and exits? Pedestrian paths?
- Will trees or other landscape elements block some or all of the light falling on the buildings? On the ground?
- Are entryways well lit?

## **During Preparation of Construction Drawings**

### Questions about floor plans

- Does the interior space appear to be oriented in a logical fashion? Have functional areas been grouped together?
- What is the relationship between space that can be accessed by the public and space that is reserved for employees?
- Where are doors and windows located?
- Where are restrooms located (especially public restrooms)?
- Are there pay phones or public phones in the building?

### Questions about materials and products?

- What style doors and windows will be installed?
- Are mirrors, cameras, alarms, or other security devices shown on the plan or in detail drawings?
- Does the facility use vandal-and graffiti-proof wall coverings or other materials?

# **Residential Design Recommendations**

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## Single Family Homes

Residential areas are the heart of the city, where we should feel most safe. 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 principle here is “know thy neighbor”. Promote neighborhood watch programs and design streets and homes to encourage interaction between neighbors.

### **Natural Access Control**

Use walkways and landscaping to direct visitors to the proper entrance and away from private areas.

### **Natural Surveillance**

Fully illuminate all doorways that open to the outside. Place the front door to be at least partially visible from the street. Install windows in living areas to provide visibility of the property. Provide appropriate illumination to sidewalks and all areas of the yard. Place the driveway to be visible from either the front or back door and at least one window. Properly select and install landscaping so that it allows unobstructed views of vulnerable doors and windows from the street and other properties.

### **Territorial Reinforcement**

Use front porches or stoops to create a transitional area between the street and the home. Define property lines and private areas with plantings, pavement treatments, or fences. Make the street address clearly visible from the street and public way.

### **Maintenance**

Keep trees and shrubs trimmed back from windows, doors and walkways. A good rule to apply when visibility is an issue is keep shrubs trimmed to three feet in height and prune the lower branches of trees up to seven feet to maintain clear visibility. Use exterior lighting at night, and keep it all in working order. Keep litter and trash picked up and the yard neat at all times. The house and garage should be kept in good repair.



This residence defines ownership of the property, an important CPTED Strategy.

# Multi-Family Homes

Multi-family homes (townhomes, duplexes, tri-plexes and apartment complexes) pose the same problems as single-family structures, although these problems can be compounded by the number of dwellings and residents. Public areas: shared hallways, elevators, laundry rooms, and parking areas present a design challenge for crime prevention.

Multi-family buildings do not necessarily mean multiple problems. There is a certain amount of truth to the saying “there’s safety in numbers.” Management may need to create opportunities for neighbors to get to know one another and create neighborhood watch programs. When neighbors take responsibility for themselves and each other it creates a safer environment.



Open stairwells and stair landings are easily visible.  
Balconies and windows provide good surveillance.

## Natural Access Control

- Keep balcony railings and patio enclosures as low as possible using opaque materials. When addressing railing heights and construction features comply with Uniform Statewide Building Code .
- Define entrances to the site and each parking lot with landscaping, architectural design, or symbolic gateways.
- Block off dead-end spaces with fences or gates.
- Discourage loitering by non-residents; enforce occupancy provisions of leases.
- Use devices which automatically lock upon closing on common building entrances.
- Provide good illumination in hallways.
- Allow no more than four apartments to share the same entrance; individual entrances are recommended.
- Limit entrance access to the building to only one or two points.

## Natural Surveillance

- Design buildings so that exterior doors are visible from the street or by neighbors.
  - Use good lighting at all doors that open to the outside.
  - Install windows on all four facades of buildings to allow good surveillance.
  - Assign parking spaces to residents. Locate the spaces next to the resident’s unit, but not marked with their unit number. This makes unauthorized parking easier to identify and less likely to happen.
  - Designate visitor parking.
  - Make parking areas visible from windows and doors.
  - Adequately illuminate parking areas and pedestrian walkways.
  - Position recreation areas (pools, tennis courts, club houses) to be visible from many of the units windows and doors.
  - Screen or conceal dumpsters, but avoid creating blind spots and hiding places.
  - Build elevators and stairwells in locations that are clearly visible from windows and doors.
  - Allow shrubbery to be no more than three feet high for clear visibility in vulnerable areas.
- 
- Site buildings so that the windows and doors of one unit are visible from another (although not directly

opposites).

- Construct elevators and stairwells to be open and well lighted.
- Place playgrounds where they are clearly visible from units, but not next to parking lots or streets.

### **Territorial Reinforcement**

- Define property lines with landscaping or decorative fencing.
- Use low shrubbery three feet maximum and fences to allow visibility from the street.
- Accentuate building entrances with architectural elements, lighting and/or landscaping.
- Clearly identify all buildings and residential units using street numbers that are easily observed from the street. Provide Arabic numerals at least three inches (76 mm) high with an half inch (13 mm) stroke.
- Where possible, locate individually locking mailboxes next to the appropriate units.

### **Maintenance**

- Maintain all common areas to very high standards, including entrances, and right-of-ways.
- Prune trees and shrubs back from windows, doors and walkways.
- Use and maintain exterior lighting.
- Strictly enforce rules regarding junk vehicles and inappropriate outdoor storage. Disregard of these rules will make a site appear uncared for and less secure.

## **Neighborhoods**

CPTED guidelines, when applied to neighborhoods, can create a safe environment without the use of intimidating methods such as high fences and video monitoring.

For instance, streets designed with gateway treatments, roundabouts, speed humps, and other “traffic calming” devices establish territories and discourage speeding and cut-through traffic. By keeping public areas observable, you are telling potential offenders that they should think twice before committing a crime. Criminals prefer low-risk situations, and public visibility increases the chances a perpetrator will be caught.

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



### **Natural Access Control**

- Limit access without completely disconnecting the subdivision from adjacent subdivisions.
- Design streets to discourage cut-through or high-speed traffic.
- Install plantings, and architectural design features such as a columned gateway to guide visitors to desired entrances and away from private areas.
- Install walkways in locations safe for pedestrians, and use them to define pedestrian bounds.

### **Natural Surveillance**

- Avoid landscaping that might create blind spots or hiding places.
- Locate open green spaces and recreational areas so that they are visible from nearby homes and streets.

- Use pedestrian scale street lighting in high pedestrian traffic areas to help people recognize potential threats at night.

### **Territorial Reinforcement**

- Design lots, streets, and houses to encourage interaction between neighbors.
- Accentuate entrances with the subdivision name, different paving material, changes in street elevation, architectural, and landscape design.
- Clearly identify residential buildings using street numbers that are easily observed from the street. Provide Arabic numerals at least three inches (76 mm) high with an half inch (13 mm) stroke.
- Define property lines with post and pillar fencing, gates, and planting to direct pedestrian traffic to desired points of access only.

### **Maintenance**

- Maintain all common areas to very high standards, including entrances, and right-of-ways.
- Enforce deed restrictions and city codes.

# **Educational Facility Design Recommendations**

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# Educational Facilities

Arson and vandalism cost schools dearly - between five and ten percent of some education authorities' maintenance budgets are spent repairing vandalism damage. The money could be spent elsewhere by reducing vandalism through good design and sensible security measures.

## Natural Access Control

- Locate the site so all areas can be observed during off-school hours to detect unauthorized activities.
- Limit access to only one controlled entrance which is easily observable from the main office during the school day.
- Define the property by using chain link fence, landscaping or a type of open design barrier to control access.
- Eliminate or design covered walkways to restrict access to the roof and avoid other structural (such as door overhangs and fences or landscaping features) that provide roof access.
- Arrange student lockers to allow casual observation, with plenty of room between rows and no dead-ends.
- Provide two-way communication throughout the building.



Low landscaping, pedestrian scale lighting and open space at the front entrance allows for clear visibility both during the day and evening.

## Natural Surveillance

- Designate a main area to secure bike racks that is easily observed from a normally occupied area of the building.
- Avoid landscaping that might create blind spots or hiding places
- Secure all out buildings and locate them in areas that can be easily observed.
- Provide uniform lighting without glare for scheduled nighttime activities and to permit good observation by neighbors and patrol units during non-school hours.
- Design hallways to be easily observed with very few offsets.
- Locate visual panels in all classrooms to allow teachers to observe the hallway with minimal visual distractions to the seated students.
- Design an open access to the rest rooms with no need for a hallway door.

## Territorial Reinforcement

- Locate the main entrance so it is easily identified when approaching the building.
- Locate office near main entrance with plenty of usable glass to allow observation of entrance doors as well

as the visitor parking areas.

- Secure the parking areas when the school is not in use.
- Locate signs on and around the premises stating Drug Free Zone and No Trespassing.
- Use pavement markings to identify traffic patterns, faculty, student and visitor parking areas.

### **Maintenance**

- Maintain all lighting equipment.
- Frequently empty trash receptacles.
- Keep buildings and walks clean and repaired.
- Keep lines of sight open. Prune trees and shrubs to allow visual access to all parts of the site.
- Maintain parking areas to a high standard without pot-holes or trash.
- Keep plantings and grounds in good condition.

## **Commercial Design Recommendations**

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# Commercial Storefronts

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

As land uses become less mixed, and residents are less able to watch over commercial properties; it is essential that CPTED guidelines be followed when building or remodeling a commercial property. Safety is often cited as an important consideration in choosing one store over another. Ideas such as keeping customers and employees in view of each other can accomplish much in the way of making customers feel safe.

## Natural Access Control

- Locate check-out counters at the front of the store, clearly visible from the outside. When positioned near the main entrance, employees can better watch activities.
- Clearly mark public paths. Make private areas harder for non-employees to access.
- Use signs to direct patrons to parking and entrances.
- Prevent easy access to the roof or fire escape from the ground.
- Provide rear public access to shops if rear public parking is offered.



Outdoor seating allows for natural surveillance.

## Natural Surveillance

- Install rear windows to face rear parking areas for increased visibility.
- Allow window signs to cover no more than 15% of windows.
- Use interior shelving and displays no higher than five feet, even less in front windows.
- Fully illuminate the exterior of the building and grounds at night.
- Design water retention areas to be visible from the building or street. They should be visual amenities neither hedged nor fenced which could allow undesirable activities to be hidden.
- Place all entrances under visual surveillance.
- Place any pay telephones within clear view of employees.



Clean, maintained and well lighted areas promote a concern for clientele and employees.

## Territorial Reinforcement

- Mark property boundaries, where possible, with hedges, low fences or gates.
- Make private areas distinguishable from public areas.
- Identify shops with wall signs for those parking in the rear.
- Install awnings over rear doors and windows.
- Position parking areas to be clearly visible from the building or street with neatly marked spaces.

### **Maintenance**

- Keep buildings and walks clean and repaired.
- Maintain parking areas to a high standard without pot-holes or trash.
- Remove faded posters, broken signs, and other displays that are beyond their useful lives.
- Keep plantings in good condition.

## **Shopping Malls**

Shopping Malls often provide much of the “public” space in communities and as such can present mixed opportunities. On the one hand, they perform the important function of serving as a gathering place for the community, and on the other hand a mall can be an attraction for criminal activity.

In an effort to deter criminal activity, it is important that designers and remodelers implement CPTED strategies.

### **Natural Access Control**

- Clearly mark public entrances with landscape, architecture, and graphic/signage.
- Designate sidewalks and “public” areas with special paving and/or landscaping.
- Use landscaping to divide the parking areas into smaller lots.
- Separate loading zones, with designated delivery hours, from public parking areas.
- Allow no unsecured access to roof tops from within or from adjacent structures such as parking garages.

### **Natural Surveillance**

- Position restroom entrances to be visible from main pedestrian areas, but away from outside exits and pay telephones.
- Illuminate parking areas at night to increase visibility and eliminate shadows.
- Avoid creating dead end alleys or blind spots in loading areas.
- Design parking garages so that all levels, including the staircase, are visible from the street or ground floor.
- Equip garages with high quality lighting.
- Use perpendicular parking in front of stores rather than parallel to allow greater visibility between cars.
- Place water retention areas in locations visible from the building or street.
- Avoid exterior walls without windows.
- Use baffle type restroom entrances - no doors to hinder surveillance. Restrooms as well as areas leading to them should be well lighted.

### **Territorial Reinforcement**

- Define property perimeters with landscaping, decorative fencing, gates, and signs.
- Have signs that clearly identify the interior businesses and use site signage to mark public entry points.

### **Maintenance**

- Maintain high visual quality on site. Use appropriate landscaping to control maintenance costs.
- Keep buildings and walks clean and repaired.
- Maintain parking areas to a high standard with no pot-holes or trash.
- Install attractive displays in windows of vacant stores to avoid creating an abandoned image.
- Keep lines of sight open. Prune trees and shrubs to allow visual access to all parts of the site.

## Office Buildings

As office buildings grow in size and pedestrian and vehicle traffic increases, safety becomes an extremely important issue. Regardless of the size of the structure being built, it can be safe and secure. For instance, all tenants must show photo identification upon entering. Metal grills with letter-sized slits should cover mail slots. Garages and loading areas should be secured by steel anti-ram barricades.

It is important to avoid the adverse images which come with fortress hardware, but recognizable security should be present.

### Natural Access Control

- Clearly define public entrances with architectural elements, lighting, landscaping, paving, and/or signage.
- Reduce the number of public access points to those which are watched by guards, receptionists, nearby tenants, or passing traffic.

### Natural Surveillance

- Position restrooms to be observed from nearby offices.
- Install and use good lighting at all exterior doors, common areas, and hallways.
- Keep dumpsters visible and avoid creating blind spots or hiding places, or place them in secured, locked areas.
- Design windows and exterior doors so that they are visible from the street or by neighboring buildings.
- Install windows into all facades except where in conflict with building code.
- Place parking as to be visible from windows.
- Keep shrubbery under three feet in height for visibility.
- Prune the lower branches of trees to at least seven feet off the ground.
- Do not obstruct views from windows.



A well maintained office building with good visibility around the entire perimeter.

### Territorial Reinforcement

- Define perimeters with landscaping or fencing.
- Design fences to maintain visibility from the street.
- Differentiate exterior private areas from public areas.
- Position security and/or reception areas at all entrances.

### **Maintenance**

- Keep all exterior areas neat and clean.
- Keep all plantings looking well managed.

## **Industries**

In most industrial site design, the most important issue is the safety of those who will be working or traveling to these sites. Unfortunately, safety regarding crime 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 a problem. Add this isolation to industrial blind alleys and expansive parking areas and you have the potential for an extremely unsafe environment.

### **Natural Access Control**

- Avoid dead end driveways and design streets to increase surveillance opportunities from passing traffic and patrols.
- Use easily securable site entrances. Install entrance controls to employee parking areas (fence, gate, attendant).
- Assign parking by shifts, and account for late night workers with close-in spaces.
- Plan storage yards for vehicular or visual access by patrol cars.
- Restrict access to roofs by way of dumpsters, loading docks, stacked items, ladders, etc.
- Keep building entrances to a minimum, and monitor them.
- Use a separate, well marked, monitored entrance for deliveries.
- Have the employee entrance close to the employee parking and work stations.
- Keep nighttime parking separate from service areas.
- Provide access to both the front and the back of the site so that the grounds can be patrolled.
- Use separate docks for shipping and receiving.



This manned guardhouse allows for both access control and surveillance.

### **Natural Surveillance**

- Illuminate and define all entrances so that they are visible to the public and patrol vehicles.
- Make parking areas visible to patrol cars, pedestrians, parking attendants, and/or building personnel.
- Position parking attendants for maximum visibility of property.

- Design the reception area to have a view of parking areas, especially the visitor's parking.
- Use walls only where necessary and, if used, make them high enough to prevent circumvention.
- Avoid creating hiding places in alleys, storage yards, loading docks, etc.

**Territorial Reinforcement**

- Create a well-defined entrance or gateway with plantings, fences, gates, etc.
- Limit deliveries to daylight hours only, if possible.
- Define vehicle entrances with different paving materials and signage.
- Separate visitor parking from employee parking and shipping and receiving areas.

**Maintenance**

- Keep all exterior areas neat and clean.
- Keep all plantings looking well managed.

## Parking Structures

Studies show that in both urban and suburban environments, parking structures are the most problematic. These structures isolate people. Many structures 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 area.

**Natural Access Control**

- Use attendants or cameras and sound monitors. Indicate their presence with signs.
- Position all pedestrian entrances next to vehicle entrances but design the entrances to clearly define and separate each as to avoid potential vehicle/pedestrian conflicts.
- Construct stairwells to be open and visible, without solid walls.
- Place elevators close to the main entrance, with the entire interior in view when the doors are open.
- Do not install permanent stop buttons in elevators.
- Limit access to no more than two designated, monitored entrances.

**Natural Surveillance**

- Monitor elevators with cameras and microphones, or use see-through material for the car walls.
- Fully illuminate all parking spaces and driving lanes. Maintain a minimum of five foot candles. Metal halide lamps provide the best color rendition.

**Maintenance**

- Keep all surfaces clean and light colored to reflect light



This open stair provides good visibility from store entrance as well as the parking area.

- (paint white if necessary, particularly if underground).  
Carefully maintain all lighting equipment.

## Commercial Drive-Through

Drive-through facilities, especially automatic teller machines (ATM), are 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 for designing a drive-through should be to emphasize visibility.



The openings cut into this wall allow views of the parking area.

### Natural Surveillance

- Locate ATM's to face main roads.
- Put the ordering station for a restaurant within sight of the interior and the street.
- The area should have adequate lighting at both the ATM and along the queuing lane.
- Avoid fencing, landscaping, and walls whose design might provide hiding opportunities for those preying on patrons.



This ATM is well lit and is located for visibility from the main parking area and the public street.

## Landscaping Recommendations

- Planting and selection of landscape material should be such that sight lines remain open and clear, and places of concealment are not fostered.

- Keep shrubs trimmed to three feet, or at least below window sills, when safety is an issue.
- Prune the lower branches of trees to at least seven feet off the ground
- If graffiti is a known problem in the area, specify thorny landscape plants as a natural barrier to deter unwanted entry.
- Specify vines or planted wall coverings to deter graffiti. Avoid blank spaces which may be an invitation to graffiti vandals.
- Provide landscape and fencing that do not create hiding places for criminals. Discourage crime by creating an inhospitable environment for criminals.
- Provide attractive and durable (masonry) fencing whenever possible. Consider creative solutions to fencing schemes which work aesthetically as well as functionally.
- Use lighting in the landscaping both for security and aesthetics.



## **Lighting Recommendations**

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Lighting is an important element in any site design. Whether a single house or a shopping mall, appropriate lighting techniques should be used. Good lighting will help people to feel more comfortable with their

surroundings. It should provide clear paths for movement and highlight entryways without creating harsh effects or shadowy hiding places.

- Provide lighting systems which provide night time vision for motorists to increase the visibility of pedestrians, other vehicles and objects which should be seen and avoided.
- Design lighting systems for pedestrians, homeowners and business people to permit pedestrians to see one another, and to see risks involved in walking at night.
- Provide lighting systems which will enhance the ability for surveillance and observation.
- Provide lighting systems that minimize glare, shadow, light pollution and light trespass.





# Appendix

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Law Regulation and Policy Supporting CPTED

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Research Briefs/ Resources/ Reference Materials

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Acknowledgments

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**LAW REGULATION  
AND  
POLICY  
SUPPORTING CPTED**

**Virginia Crime Prevention Association**

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# PREFACE

Early in 1996, the Criminal Justice Services Board embarked on a mission to develop a strategic planning guide for the criminal justice system in Virginia. *Community - Oriented Justice: Strategies for Virginia* is designed to focus debate on future goals and strategies for the improvement of the administration of justice. Community-oriented justice is an ideal, not an agenda or mandate. The intent is to emphasize the critical role of citizens and the community to assist in establishing and maintaining public safety, justice and the quality of life. Community-oriented justice encourages citizen involvement through acceptance of responsibility as an individual and by supporting the work of law enforcement professionals.

These are not the goals of the Board or the Department. They are your goals. They were developed for your use from the ideas and suggestions of hundreds of criminal justice practitioners and other concerned citizens who provided input individually, as well as through focus groups and associations. The document advocates active partnerships among citizens, government and businesses to solve community problems, prevent crime and accept civic responsibility. We believe it constitutes an important development in the evolution of a justice system where the rights of all citizens are considered and honored.

The plan is divided into five categories: 1) Community Enhancement and Cooperative Efforts; 2) Program Support, 3) Planning, Evaluation and Research, 4) Technology, and 5) Training and Education. Within each category are suggested goals, objectives and implementation strategies featuring icons to focus particular areas of interest upon a strategy. Readers are encouraged to review the entire document and not only those areas represented by their icon. Our hope is that you will find one or two, or even twenty ideas that will work well in your community to address your challenges.

A special thanks is extended to members of the Board, DCJS and the focus groups for their interest and participation in this collaborative effort. We hope you will agree that their time spent developing this guide was worthwhile.

Henry E. Hudson  
Chairman  
Criminal Justice Services Board  
Bruce C. Morris  
Director  
Department of Criminal Justice Services

# Program Support

## *Goal*

Incorporate crime prevention principles in community planning and service delivery.

## *Discussion*

While citizen-based crime prevention (e.g., Neighborhood Watch, Community Crime Prevention Councils) is essential in helping to reduce the opportunity for crime, crime prevention principles can also be incorporated into the community planning process and service delivery functions of a locality. Concepts such as CPTED (Crime Prevention Through Environmental Design) can be utilized by community planners to help zone and design safer business and residential areas by having them consider crime risks in the design process. CPTED can also be employed by architects to help design safer buildings and homes in a community. A CPTED CD-ROM has been developed which provides guidance in tutorial form for those individuals seeking to learn more about CPTED programs in general.

Crime prevention can also serve as a focus for those agencies responsible for enforcing city and county codes. Localities can form code enforcement teams, consisting of representatives of all agencies concerned with public safety and health, to help identify problem areas and properties that are crime risks or could become future crime risks without appropriate attention. These teams can then focus on eliminating factors which attract crime and violence, such as improper zoning, trash accumulation and health and fire hazards, thereby reducing future victimization.

## *Objectives*

1. Foster partnerships between crime prevention practitioners, community planners, architects and public safety/health agencies.
2. Provide CPTED training to individuals and agencies involved in the community planning and maintenance process.
3. Encourage the development of code enforcement teams to serve as a crime prevention tool in localities.

## *Implementation Strategies*

! Enhance the CD-ROM tutorial in CPTED and distribute it, upon request, to interested agencies and individuals.

! Provide regional and statewide multi-disciplinary training in CPTED.

! Develop a CPTED curriculum for architecture, engineering, urban planning and public administration students.

! Provide grant opportunities to Virginia localities interested in establishing code enforcement teams.

! Establish local code enforcement teams to help reduce the opportunity for crime.

## Department of Criminal Justice Services

# Governor's Comprehensive Crime Prevention Plan for Virginia

### **GOAL**

To establish the safer by design approach as a routine practice in Virginia.

#### **! Action**

- ! Establish a Safer By Design Consortium of architectural and urban planning programs within Virginia's universities to develop a curriculum for architecture, engineering, urban planning and public administration students which incorporates Crime Prevention Through Environmental Design (CPTED).
- ! Encourage localities to incorporate CPTED practices into the master planning process, development, zoning requirements and site plan reviews.
- ! Sponsor an annual Governor's Crime Prevention Student Design Competition for students of architecture.
- ! Promote crime prevention as a critical component of economic development.
- ! Promote the expansion of proven CPTED practices in the Uniform Statewide Building Code
- ! Require a CPTED component in all master plans of state facilities and CPTED reviews for construction of all new state buildings.

#### **! Impact**

- ! Lessens property owners' exposure to negligent security lawsuits.
- ! Reduces rates of victimization without driving up construction costs.
- ! Addresses crime at the front end, or primary level, much like fire prevention and public health do very effectively.
- ! Saves costs to the taxpayers by reducing the number of investigations, arrests, prosecutions and prison commitments.

#### **! Justification**

The Safer By Design, or CPTED, concept is one of the most impressive and cost effective primary prevention strategies available. It considers crime risks at the front-end when designing buildings. While it might also involve the application of traditional security measures, the concept focuses on making buildings less crime-prone without turning them into fortresses. This is achieved through subtle changes in design based on how, when and where crimes typically occur. The best example of a successful application of CPTED is the low crime rate experienced in the Washington Metro compared to the high crime rate in the New York City Subway.

**VIRGINIA ACTS OF ASSEMBLY -- CHAPTER**  
**An Act to amend the Code of Virginia by adding a section**  
**numbered 22.1-278.1, relating to school safety audits.**

[H 1851j]  
**Approved**

Be it enacted by the General Assembly of Virginia:

1. That the Code of Virginia is amended by adding a section numbered 22.1-278.1 as follows:  
§22.1-278.1. School safety audits required.

A. For the purposes of this section, "school safety audit" means an assessment of the safety conditions in each public school to (i) identify and, if necessary, develop solutions for physical safety concerns, including building security issues and (ii) identify and evaluate any patterns of student safety concerns occurring on school property or at school-sponsored events. Solutions and responses may include recommendations for structural adjustments, changes in school safety procedures, and revisions to the school board's standards for student conduct.

B. The Superintendent of Public Instruction shall develop a list of items to be reviewed and evaluated in the school safety audits required by this section. Each local school board shall require all schools under its supervisory control to conduct school safety audits as defined in this section and consistent with such list.

C. The school board may establish a school safety audit committee to consist of representatives of parents, teachers, local law-enforcement agencies, judicial and public safety personnel, and the community-at-large. The school safety audit committee shall evaluate, in accordance with the directions of the local school board, the safety of each school and submit a plan for improving school safety at a public meeting of the local school board.

**Zoning § 15.1-489**

Zoning ordinances shall be for the general purpose of promoting the health, safety or general welfare of the public and of further accomplishing the objectives of §15.1-427. To these ends, such ordinances shall be designed to give reasonable consideration to each of the following purposes, where applicable: (i) to provide for adequate light, air, convenience of access, and safety from fire, flood, crime and other dangers;....

**Landlord Tenant Act § 55-248.13:1**

The governing body of any county, city or town may require by ordinance that any landlord who rents five or more dwelling units in any one building shall install:

1. Dead-bolt locks which meet the requirements of the Uniform Statewide Building Code (§ 36-97et seq.) for new multi-family construction and peepholes in any exterior swinging entrance door to any such unit; however, any door having a glass panel shall not require a peephole.
2. Manufacturer's locks which meet the requirements of the Uniform Statewide Building Code and removable metal pins or charlie bars in accordance with the Uniform Statewide Building Code on exterior sliding glass doors located in a building at any level or levels designated in the ordinance.

3. Locking devices which meet the requirements of the Uniform Statewide Building Code on all exterior windows.

Any ordinance adopted pursuant to this section shall further provide that any landlord subject to the ordinance shall have a reasonable time as determined by the governing body in which to comply with the requirements of the ordinance.

**Neighborhood Assistance Act § 63.1-321**

Definitions "Crime prevention" means any activity which aids the prevention or reduction of crime in an impoverished area.

**Neighborhood Assistance Act § 63.1-322**

It is hereby declared to be public policy of the Commonwealth of Virginia to encourage direct investment by business firms in offering neighborhood assistance and providing job training, education, crime prevention, and community services to neighborhood organizations to benefit individuals living in impoverished areas or impoverished people.

# Research Briefs/Resources/Reference Materials

Reference Material	Notes
J. Q. Wilson and G. L. Kelling, "Broken Windows," <i>The Atlantic Monthly</i> , March 1982, pp. 29-38.	At the time of its publication, this article was instrumental in changing attitudes about the role of law enforcement and its approach to problem solving.
C.R. Jeffery, <i>Crime Prevention Through Environmental Design</i> , Beverly Hills, CA: Sage Publications, 1971.	This book gave crime prevention through environmental design its name. It calls for a change in the way the criminal justice system deals with offenders by evaluating the offender's surroundings and opportunities for crimes.
<i>Crime Prevention Through Environmental Design, Crime Prevention Thorough Environmental Design in Convenience Stores</i> (videos), Tallahassee, FL: Office of the Attorney General, 1988.	Two videos: one covers basic CPTED concepts, the other addresses their application in the convenience store setting.
T.D. Crowe, <i>Crime Prevention Through Environmental Design</i> , Stoneham, MA: Butterworth-Heinemann, 1991.	A basic text and practical that defines concepts and terminology, provides both simple and both complex examples and offers models for evaluating schools or other environments.
Dan Fleissner and Fred Heinzlmann, <i>Crime prevention Through Environmental Design and Community Policing</i> , Washington, DC: US Department of Justice, August 1996.	Evaluated the role of police in the context of crime prevention. The move to community policing resulted in many officers dealing with a broad range of neighborhood problems and CPTED concepts may be valuable for identify appropriate solutions.
M.S. Smith, <i>Crime Prevention Through Environmental Design in Parking Facilities</i> , Washington, DC: US Department of Justice, National Institute of Justice , April 1996.	Discuss those elements of parking lot and parking garage design that promote security.
J. Jacobs, <i>the Death and life of Great American Cities</i> , New York, NY: Vintage Books, 1961.	An important book that describes lively and safe neighborhoods and those that are unsafe. Jacobs' observations influence professionals in many fields and changed their approaches to planning, design, housing, and criminology.
O. Newman, <i>Defensible Space: Crime Prevention Through Environmental Design</i> , New York, NA: Macmillian, 1972	An early book documenting Newman's work in public housing. He examines both physical and social characteristics of that housing - size and scale, open space, degree of ownership and responsibility - and offers recommendations for improving the public housing environment. Newman's defensible space concepts are the foundation for most later work in crime prevention through environmental design.
B. Poyner, <i>Design Against Crime: Beyond Defensible Space</i> , London: Butterworths, 1983	
P. J. and P. L. Brantingham, ed., <i>Environmental Criminology</i> , Beverly Hill, CA: Sage, 1981	A collection of articles that describes how offenders perceive space, how they use their environment, and the relationship between the physical environment and opportunities for crime.
J. Q. Wilson and G. L. Kelling"Making Neighborhoods Safe, <i>The Atlantic Monthly</i> , February 1989, pp. 46-52.	A sequel to "Broken Windows," describing actions throughout the country to improve community quality of Life.



# Acknowledgments

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These guidelines were researched and prepared by the Crime Prevention Through Environmental Design Committee to disseminate to design professionals and the development community so that these principles can be incorporated in the design process. The Committee consisted of the following stakeholders:

## **PLANNING DEPARTMENT**

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