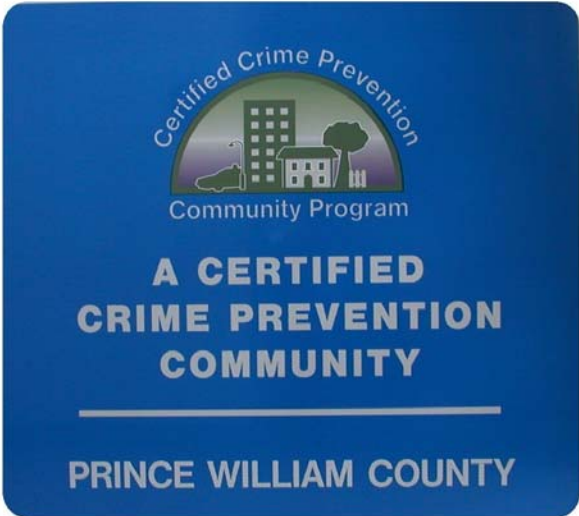


CPTED STRATEGIES

Crime Prevention Through Environmental Design

A guide to safe environments in
Prince William County, Virginia.



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A NATIONALLY ACCREDITED LAW ENFORCEMENT AGENCY



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I. INTRODUCTION

We live with crime every day. Unfortunately, it has become a fact of life. Discussions on the subject have traditionally focused more on arrest and punishment than on crime prevention measures that cannot be taken until after a crime has been committed. Preventing crime offers tremendous savings to everyone. Traditionally, most people think of crime prevention in terms of target hardening or fortification. There are other options.



Crime Prevention Through Environmental Design, or CPTED, is a different approach to preventing crime. Much more far-reaching than dead-bolt locks on doors, or locks on windows, CPTED principles are applied easily and inexpensively during the design phase of development and have been implemented in communities across the nation. Design professionals have always integrated into their work resistance to natural threats such as fire, earthquakes, floods and harsh weather. In recent years, design professionals have begun to recognize crime as a man-made hazard that can be resisted through quality design.

“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.

Disclaimer

This manual presents a wide selection of CPTED techniques and strategy guidelines, as well as some traditional crime prevention methods. In any area where suggested guidelines conflict with the Uniform Statewide Building Code (USBC), the USBC will be the prevailing document.

II. CPTED STRATEGIES

CPTED design strategies have evolved over time. While many actual techniques have been in use for hundreds of years, it has only been in the last few decades that urban planning 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 offers guidelines that property owners, design professionals, developers or remodelers may apply to reduce the fear and incidence of crime and improve the quality of life.

There are four overlapping CPTED strategies. They include Natural Surveillance, Natural Access Control, Territorial Reinforcement and Maintenance.

NATURAL SURVEILLANCE

The placement of physical features, activities and people in a way that maximizes visibility is one concept directed toward keeping intruders easily observable, and therefore less likely to commit criminal acts. Features that maximize the visibility of people, parking areas and building entrances are unobstructed doors and windows, pedestrian-friendly sidewalks and streets, front porches and appropriate nighttime lighting.

NATURAL ACCESS CONTROL

Natural Access Control is another design concept directed primarily at decreasing crime opportunity by denying access to crime targets and creating a perception of risk for offenders. People are physically guided through a space by the strategic design of streets, sidewalks, building entrances, landscaping and neighborhood gateways. Design elements are very useful tools to clearly indicate public routes and discourage access to private areas.

TERRITORIAL REINFORCEMENT

Physical design can also create or extend a sphere of influence. Users are encouraged to develop a sense of territorial control, while

potential offenders, perceiving this control, are discouraged. This concept includes features that define property lines and distinguish between private and public spaces using landscape plantings, pavement designs, gateway treatments, appropriate signage and “open” fences.

We normally recommend a six foot high straight bar tubular steel fence. This type of fencing will deter graffiti, would be attractive and not obstruct common observation. If there were a large area that would be fenced, chain link fencing could be used but it is less attractive and the maintenance cost for repairs and removal of graffiti would be higher.

If chain link is used it should be a minimal of 8 feet high. The fence fabric should be a 9 gauge or heavier with the mesh opening not larger than 2 inches with twisted selvage at the top and bottom. The fence posts should be spaced no farther than 10 feet apart. The depth of the post holes should be a minimum of 2 feet (plus 3 inches deep for each foot over 4 feet the fence is). The posts should be set in concrete. The space between the ground and the fence fabric should not exceed 2 inches and the fence should be secured at 2 foot intervals. A 3-strand barbed wire fence top is optional. We normally wouldn't recommend a wooden fence due to the high cost of repairs and graffiti removal. Signage should be placed at the entrance and along the fence line. The signs should state no loitering or trespassing and that all violators will be prosecuted and by whom. All signage and fencing should be well maintained and repaired promptly.

MAINTENANCE

Lastly, care and maintenance enable 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 prevents reduced visibility due to plant overgrowth and obstructed, or inoperative, lighting, while serving as an additional expression of territoriality and ownership.

Inappropriate maintenance, such as over-pruning shrubs, can prevent landscape elements from achieving desired CPTED effects. Communication of design intent to maintenance staff is especially important for CPTED to be effective.

- Select and install appropriate landscaping that will allow unobstructed views of vulnerable doors and windows from the street and other properties.

III. CPTED TECHNIQUES

NATURAL ACCESS CONTROL

SINGLE FAMILY HOMES

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

Residential areas are the heart of a community. Our homes are the center 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.

TERRITORIAL REINFORCEMENT

The guiding principle here is, “know thy neighbor.” Streets and homes should be designed to encourage interaction between neighbors. Good examples include front porches, sidewalks and property lines that are defined simply by low shrubbery rather than high fences.

- Use front stoops or porches 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, (at least 3 inches high and reflective at night).

NATURAL SURVEILLANCE

- Fully illuminate all doorways that open to the outside.
- The front door should be at least partially visible from the street.
- Install windows on all sides of the house to provide for full visibility of the property.
- Provide appropriate illumination to sidewalks and all areas of the yard.
- The driveway should be visible from either the front or back door and at least one window.

MAINTENANCE

- Keep trees and shrubs trimmed back from windows, doors and walkways. Keep shrubs trimmed to 3 feet and prune the lower branches of trees up to 7 feet to maintain clear visibility.
- Use exterior lighting at night and keep it in working order.
- Keep litter and trash picked up and the yard neat and free of items that might attract theft.

The house, garage and storage buildings should be kept in good repair.

CPTED Strategies - Prince William County, Virginia



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



Neighborhoods actively involved in Neighborhood Watch programs take pride in their area and put the would-be criminals on alert.

NEIGHBORHOODS

Often, the safety measures taken in subdivision communities, such as high fences and video-monitored gates, can have a negative effect on residents. The presence of security devices sometimes implies a need for them. CPTED guidelines, when applied to neighborhoods, can create a safer environment without the use of more common, intimidating methods.

For instance, streets designed with gateway treatments, roundabouts, speed bumps and other “traffic calming” devices establish territories and discourage speeding and cut-through traffic. And 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 chance that a perpetrator will be caught.

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

NATURAL SURVEILLANCE

- Avoid landscaping that might create blind spots or hiding places.
- Centrally 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.

NATURAL ACCESS CONTROL

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

TERRITORIAL REINFORCEMENT

- Design lots, streets and homes to encourage interaction between neighbors.
- Accentuate entrances with the subdivision name, different paving materials, changes in street elevation and architectural and landscape design.
- Clearly identify homes with street address numbers that are a minimum of 3 inches high and reflective at night.
- Define property lines with post and pillar fencing, gates and plantings to direct pedestrian traffic to only desired points of access.

MAINTENANCE

- Maintain all common areas to very high standards, including entrances, esplanades and rights of ways.
- Enforce deed restrictions and covenants in addition to all county codes.

MULTI-FAMILY HOMES, SINGLE BUILDINGS AND COMPLEXES

Multi-family homes - duplexes, triplexes and apartment complexes - pose the same problems as single-family structures, although the number of dwellings and residents can compound these problems. Public areas – shared hallways, elevators, laundry rooms and parking areas – present opportunities for crime and crime prevention.

Multi-family buildings do not necessarily mean multiple problems. There is a certain amount of truth to the old saying, “There’s safety in numbers.” Management may need to create opportunities for neighbors to get to know one another. When neighbors take responsibility for each other, multi-family dwellings may be safer place to live.

NATURAL SURVEILLANCE

- Design buildings so that the exterior doors are visible to the street or neighbors.
- Use good lighting at all doors that open to the outside.
- Install windows on all four facades of buildings to allow for good visibility.
- Assign parking spaces to residents. Locate the spaces next to the residents’ unit but not mark with the 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.



This complex successfully utilizes all of the CPTED concepts.

- Adequately illuminate parking areas and pedestrian walkways.
- Position recreation areas - pools, tennis courts, club houses and playgrounds, 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 doors and windows.
- Allow shrubbery to be no more than 3 feet high for clear visibility in vulnerable areas.
- Locate buildings so that the windows and doors of one unit are visible from another.
- Construct elevators and stairwells to be open and well-lit, not enclosed behind solid walls.
- Centrally locate playgrounds where they are clearly visible

from units, but not directly next to parking lots or streets.

- Where possible, locate individually locking mailboxes next to the appropriate units.

NATURAL ACCESS CONTROL

- Keep balcony railings and patio enclosures less than 42 inches high and avoid using opaque materials.
- 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 and enforce occupancy provisions.
- Use devices that 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).
- Centrally locate elevators and stairwells where many users may observe them.
- Limit access to the building to only one or two points.

MAINTENANCE

- Maintain all common areas to very high standards, including entrances, esplanades and rights of way.
- 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 issues will make a site appear uncared for and less secure.

TERRITORIAL REINFORCEMENT

- Define property lines with low landscaping or decorative fencing.
- Accentuate building entrances with architectural elements, lighting and landscaping.
- Clearly identify all buildings and residential units using street numbers that are a minimum of 3 inches high and well-lighted at night.



Natural Surveillance provides for more “eyes and ears” in high traffic areas.

INSTITUTIONS

Churches, libraries, schools and other institutions present unique challenges to crime prevention. While safety at these locations is often a high priority within a community, few desire installation of oppressive, high-security devices and programs. The varied hours and variety of patrons and activities make good design all the more important.

NATURAL SURVEILLANCE

- Avoid constructing large blank walls, which limit visibility and can serve as targets for graffiti. Use walls with windows, architectural details or foliage instead.
- Do not cover the entrance windows with posters, announcements or other signage that obstructs visibility.

NATURAL ACCESS CONTROL

- Highlight the main entrance in the design.
- Keep bus drop-off areas, employee parking and visitor parking separate from each other and away from busy streets.
- Limit the number of entrances and exits, both to the building and parking lots.
- Require that visitors pass through a “checkpoint” attended by those in authority.

TERRITORIAL REINFORCEMENT

- Include highly visible, architecturally appropriate signage in the design.

- Make sure to clearly mark the boundaries of the property.
- Keep parking lot surfaces in good condition. Clearly mark the parking spaces to convey a neat and orderly image.



This library is a good example of CPTED with its defined separation from the adjacent apartment complex, its low landscaping, abundance of windows and ample lighting.

MAINTENANCE

- Use landscape plants that mature within the available space and don't obstruct light fixtures.
- Remove graffiti within 24 hours of its appearance.

MANAGEMENT

- Ensure that all employees and volunteers are familiar with the security system to avoid false alarms.

COMMERCIAL DRIVE-THROUGHS and ATM's

Drive-through facilities, especially automatic teller machines, are potentially the perfect place for criminal activity. They are often used at odd hours and are hidden from view. Those using them will certainly be carrying cash. Emphasis should be placed on visibility when designing drive-throughs.

NATURAL SURVEILLANCE

- Locate ATMs to face main roads.
- Locate the ordering station for a restaurant within sight of the interior and street.
- Lighting should be especially good both at the window or ATM and the queuing lane.
- Avoid fencing, landscaping and walls that might provide hiding places for criminals.



Location is key for ATM's and drive-throughs. Good Natural Surveillance, lighting and Access Control measures should be incorporated to limit potential criminal activity.



A fast food drive-through in view of other businesses.



A bank drive-through facing a well-traveled intersection.

COMMERCIAL STOREFRONTS

For a healthy neighborhood to remain healthy its local businesses must flourish. 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 make customers feel safe and secure.



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.

NATURAL SURVEILLANCE

- Install rear windows to face parking areas for increased visibility.
- Allow window signs to cover no more than 15 percent of window.
- Use interior shelving and displays no higher than 5 feet; even less in front of windows.
- Fully illuminate the exterior of the building and grounds at night.
- Design loading areas to avoid creating hiding places for people and merchandise.
- Maintain clear visibility from the store to the street, sidewalk, parking areas and passing vehicles.
- Design water-retention areas to be visible from a building or street – they should be visual amenities, neither hedged nor fenced, which could conceal undesirable activities.
- Place all entrances under visual surveillance, monitored electronically if necessary.
- Place any pay telephones within clear view of 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 above doors and windows.
- Position parking areas to be clearly visible from the building or street with neatly marked spaces.



MAINTENANCE

- Keep buildings and walkways clean and repaired.
- Maintain parking areas to a high standard without potholes or trash.
- Remove faded posters, broken signs and worn displays.
- Keep plantings in good condition.

Regular maintenance shows that a property is cared for.

MANAGEMENT

- Set operating hours to coincide with those of neighboring businesses.
- If public phones are available, use call-out types only.
- Fully illuminate interior spaces.
- Avoid shifts and situations where only one employee is present.



SHOPPING MALLS

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

While shopping malls continually grow in size and popularity, they also become a haven for undesirable users and contribute to a growing number of parking-lot crimes. It is now more important than ever that remodelers and designers implement CPTED principles.

NATURAL SURVEILLANCE

- Position restroom entrances to be visible from main pedestrian areas, but away from outside exits and pay telephones.
- Brightly illuminate parking areas at night.
- Avoid creating dead-end alleys or blind spots in loading areas.
- Design parking garages so that all levels, including staircases, are visible from the street or ground floor.
- Equip garages with high-quality lighting and bright paint.
- 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 – they should be visual amenities, not hedged or fenced, if possible.

- Avoid exterior walls devoid of windows.
- Use baffle-type restroom entrances – no doors to hinder surveillance. They should be well-lighted.

NATURAL ACCESS CONTROL

- Clearly mark public entrances with landscape, architecture and signs.
- Designate sidewalks and public areas with special paving 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.

TERRITORIAL REINFORCEMENT

- Define property perimeters with landscaping, decorative fencing, gates and signs.
- Use signs that clearly identify the interior businesses and place signs marking public entry points.
- Awnings provide for territorial reinforcement as well as protection from weather.

MAINTENANCE

- Maintain high visual quality by using appropriate landscaping to control maintenance costs.
- Keep buildings and walkways clean and repaired.
- Maintain parking areas to a high standard with no potholes, trash or graffiti.
- 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.



Maintaining landscaping prevents concealment locations.

MANAGEMENT

- Close-in parking should be available to nighttime employees.
- Business associations should work together to promote shopper and business safety and the appearance of safety.
- Morning walkers provide additional natural surveillance before shops open.



Bus stop shelters provide for safety using CPTED concepts.



Many malls utilize security cameras in parking areas as well as inside the building.

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 should show photo identification upon entering. Metal grills with letter-sized slits should cover mail slots. Steel, anti-ram barricades should secure garages and loading areas.

NATURAL SURVEILLANCE

- Position restrooms to be observable from nearby offices.
- Install and use effective 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 corrals or garages.
- Design windows and exterior doors so that they are visible from the street or by neighboring buildings.
- Install windows into all facades.
- Place parking as to be visible from windows.
- Keep shrubbery under 3 feet in height for visibility.
- Prune lower branches of trees to at least 7 feet of the ground.
- Do not obstruct views from windows.
- Design interior windows and doors to provide visibility into hallways.

NATURAL ACCESS CONTROL

- Clearly define public entrances with architectural elements,

lighting, landscaping, paving or signs.

- Reduce the number of public access points to those that are watched by guards, receptionists, nearby tenants or passing traffic.

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 or reception areas at the main entrance, if not at all entrances.



Planters can serve as a good form of Natural Access Control and prevent vehicles from getting too close to the building.

MAINTENANCE

- Keep all exterior areas neat and clean.
- Maintain all plantings.

INDUSTRIES

In most industrial site designs, 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. 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.

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 building personnel.
- Position parking attendants for maximum visibility of property.
- Design the reception area to have a view of parking areas, especially 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.

NATURAL ACCESS CONTROL

- Avoid dead-end driveways and street designs to increase surveillance opportunities from passing traffic and patrols.

- Use easily securable site entrances. Install entrance controls to employee parking areas, (fence, gate or attendant).
- Assign parking by shifts and provide late-night workers with close-in spaces.
- Restrict direct pedestrian and vehicular access to railroad tracks.
- Plan storage yards for vehicular or visual access by patrol cars.
- Restrict access to roofs by way of dumpsters, loading docks stacked items, 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 employee parking and work stations.
- Keep nighttime parking separate from service areas.
- Restrict access between different areas internally and externally.
- Provide access to both the front and back of the site so that the grounds can be patrolled.
- Use separate docks for shipping and receiving.



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 employee parking from visitor parking and shipping and receiving areas.

MANAGEMENT

- Schedule operating hours to coincide with those of neighboring businesses.



Good signs can direct customers and visitors where to go while placing potential criminals on notice. They are positive Territorial Reinforcement tools.



PARKING GARAGES/STRUCTURES

Studies show that in both urban and suburban environments, parking structures are most problematic. These structures isolate people. Many garages or structures are not only poorly designed – with many blind spots and hiding areas – but also poorly maintained.

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

NATURAL SURVEILLANCE

- Monitor all elevators with cameras and microphones, or use see-through materials for the car walls.
- Replace solid barrier walls with stretched cable railings for maximum visibility.
- Fully illuminate all parking areas and driving lanes. Metal Halide lamps provide the best color rendition.



NATURAL ACCESS CONTROL

- Use attendants or cameras and sound monitors. Indicate their presence with signs.
- Position all pedestrian entrances next to vehicle entrances.
- Construct stairwells to be visible, without solid walls.
- Place elevators close to main entrances, with the entire interiors in view when the elevator doors are open.
- Do not install permanent stop buttons in elevators.
- Limit access to no more than two designated and monitored entrances.

MAINTENANCE

- Keep all surfaces clean and light-colored to reflect light. Use white paint, if necessary, particularly if underground.
- Carefully maintain all lighting and surveillance equipment.

MANAGEMENT

- Allow no unmonitored access to adjacent buildings without direct visual contact.
- Differentiate between public and private parking spaces.
- Set hours of use to reflect those of local businesses, with secure closing during non-use hours.

The openings cut into this wall allow views of the parking area, increase natural light and allow sound to travel.

PARKS, TRAILS and OPEN SPACES

Parks, trails and open spaces provide a number of design challenges for personal safety, as they are typically large and used by a variety of people. Direct observation is not always possible or even desired in natural settings. Often, there is a conflict between safety principles and preserving the naturalness of the resource.

Designing for safety in these areas should be focused on pathways, parking areas and other areas of concentrated activity.



Placing children's activities in a highly visible location provides safe play areas and limits unwanted activities.

NATURAL SURVEILLANCE

- Locate parking lots, picnic areas and facilities used at night near streets and other activity centers so they are easily observable by police patrols and other park users. Cluster compatible activities to avoid conflict and to increase social observation.

- Locate children's areas and public restrooms near staffed areas to make observation of these areas easier.
- Tot lots shouldn't be placed near streets, roadways, pedestrian trails or secluded areas. The tot lot should be fenced using tubular steel fencing.
- Positioning some bike trails and walking paths near areas of park activity or at places where parks meet commercial or residential uses, or pairing them with active streets can make users more observable by others.
- Recognize that some natural park areas cannot be observed or made safe during night hours.
- Provide good lighting for areas that can be safely used at night.

NATURAL ACCESS CONTROL

- Provide clearly visible entries to park buildings. Light them if used at night.
- Provide a clear distance of at least 10 feet between the trails and wood-lines to offer decent sight lines and distance from potential attacks.
- Provide a clear separation between regional trails and private property. The separation should permit leaving the trail in an emergency.
- If a particularly attractive portion of the trail is isolated, making its users vulnerable, create and clearly mark an alternate, observable path that gives users a choice for safer mobility.
- Clearly mark the areas to be used only during the day with entrance signs or gates to control accessibility.

TERRITORIAL REINFORCEMENT

- When people see certain facilities they receive certain cues as to which uses are appropriate. Providing children's play areas encourages family use of a park.
- Clearly define paths between parking lots and other facilities.
- Erect maps to provide a sense of where one is and where one can go. These maps should clearly identify trail names, distances to facilities, emergency phones, and the characteristics of trails, e.g., "this is an isolated walking trail."
- Post park rules at access or gathering points in the park. Rules give the ability to designate acceptable uses and discourage unacceptable uses of the park.
- Trails should also have signs with trail names, directional signs to areas of public activity and even mile markers to help orient users. Trails need to be marked for use, such as biking or walking.

dividers to discourage long-term usage, such as sleeping.



MAINTENANCE

- Locate and trim trees and bushes to keep paths open and to eliminate the potential for areas of entrapment and concealment.
- Design parks to make maintenance easier by locating an adequate number of trash receptacles in areas where people congregate and by using durable, vandal-resistant materials.
- Provide prompt trash and graffiti removal.
- If park benches are planned, choose benches that have seat



IV. TARGET- HARDENING TIPS AND TECHNIQUES

Traditional security measures, such as good locks and alarms, are important tools in the prevention of crime. Generally they work in harmony with CPTED concepts and recommendations. However, installation of such things as security gates, barbed or razor-wire fences and barred windows can create an impression of high crime and danger. This deters those with legitimate business from coming to an area and making it safer by their presence. Such elements also indicate to criminals that criminal behavior is expected or at least anticipated.

Regardless of how well designed a structure is, it should still be locked when unattended. The Police Department can help with the selection of security devices to protect property, often at more reasonable costs than so-called high-security measures. If heavy fortification is deemed necessary, CPTED principles can still be used to lessen the visual impact on the surrounding neighborhood. For example, decorative metal fences may be used rather than chain link fences.

RESIDENCES

- Install double-cylinder dead bolt locks to interior doors that connect a garage to the interior living quarters. Keep keys handy, but concealed, for emergencies.
- Locate door locks a minimum of 40 inches away from adjacent windows or glass if possible.
- Use single-cylinder dead-bolt locks with a minimum 1- inch

throw on doors used as primary ground floor exits and install 3 inch screws into the strike plates.

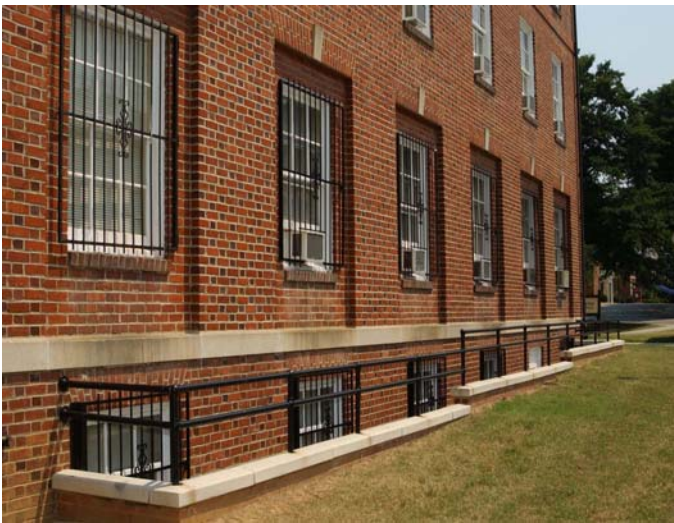
- Replace any Jalousie (glass louvered) windows with more secure windows.
- Use two locking devices on all windows.
- Install glass sliding doors with the fixed position door on the outside and equip the interior sliding panel with a locking pin and one or two more locks.
- Equip all solid exterior doors with 180-degree door viewers.
- Periodically change the code to garage door openers and combination, or keyed, locking and alarm devices.
- Store ladders, scaffolds and other climbable equipment when not in use.



Good working locks and lights incorporated with the CPTED concepts will make it more difficult for criminal activities to occur.

INSTITUTIONS

- Minimize entrances and position work-stations within view of the entrance.
- Lock up and identify with engravings expensive musical instruments, audio-visual and computer equipment. These are commonly targeted during burglaries.
- Light all exterior grounds, particularly if nighttime activities are scheduled.
- Install magnetic sensors in library materials if theft is a problem.
- Use security cameras to monitor low-visibility areas. Note: If cameras are installed, they must be monitored.
- Use baffle-type restroom entrances – no doors, with motion sensor lights.
- In extreme or special situations metal detectors, or trained dogs, may be employed.



Decorative security bars help prevent entry on belowground and first floor windows at this University residential building.

COMMERCIAL STOREFRONTS

- Use cash drop safes during low traffic hours.
- Avoid having a single employee making after-hours bank deposits.
- Install and monitor video cameras, but hide or secure VCRs (supply a decoy).
- Provide employees with safety training (personal safety, robbery prevention, how to report a crime, etc.).
- Securely lock rear-door entrances.
- Put 180-degree door viewers in rear security doors.

MALLS

- Install monitored video cameras.

OFFICE BUILDINGS

- Have security personnel vary patrol schedules and routes.
- Take measures to keep unmonitored exits from being propped open.

INDUSTRIES

- Change locks frequently and limit the number of keys available.
- Do not leave open padlocks hanging in gates. Thieves may have keys made or replace locks with similar locks for which they have keys.

PARKING GARAGES

- Provide emergency telephones with lights that flash upon activation on each level.
- Use bright colors and large numbers to identify levels to reduce user disorientation and confusion.
- Use flashing lights to identify courtesy patrols.



PARKS, TRAILS and OPEN SPACES

- Provide emergency telephone call boxes.



V. LIGHTING and LANDSCAPING

LIGHTING

Lighting is an important element in any site design. Whether a single house or an industrial complex, appropriate lighting techniques should be used. Proper lighting will help people feel more comfortable with their surroundings. It should provide clear paths for movement and highlight entryways without creating harsh effects or shadowy hiding places.

LIGHTING CONSIDERATIONS

- Provide lighting systems, which can make pedestrians more visible to motorists and can illuminate other vehicles and objects that should be avoided.
- Design lighting systems for homes and businesses located along walkways to permit pedestrians to see risks involved with walking at night.
- Provide lighting systems that will enhance the ability to observe surroundings.
- Provide lighting systems that minimize glare, shadow, light pollution and light trespass.

We recommend at least a 2.0 foot candles minimum maintained lighting level, while we would prefer a 3-5 foot candles minimum maintained level. These levels should apply to all parking and pedestrian areas. We would also recommend the use of cut off fixtures with diffusers to focus the lighting where needed to minimize or eliminate light trespass. Street lighting should meet a .5 foot candle minimum maintained lighting level. The lighting levels can be reduced after business hours/closing to .5 foot candles minimum maintained for burglary and vandalism resistance. Shrubs and trees should not

interfere with security lighting or common observation from the streets or buildings.

LANDSCAPING

- Planting and selection of landscape materials should be such that sight lines remain open and clear and places of concealment are not fostered.
- Keep shrubs trimmed to 3 feet, or at least below windowsills, when safety is an issue.
- Prune the lower branches of trees to at least 6 - 8 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.
- Provide attractive and durable (masonry) fencing whenever possible. Consider creative solutions to fencing schemes that work aesthetically, as well as functionally.
- Use lighting in the landscaping, both for security and aesthetics.



Alternate landscape and light islands within parking areas to prevent trees from growing up into the light fixtures.

Neighborhood Watch Program

The Neighborhood Watch program is designed to reduce crime and enhance the quality of life for residents of Prince William County. The concept is simple, it involves cooperation between the Police Department and the community where the residents become the “eyes & ears” of the Police Department. The program has many benefits:

- Creates a greater awareness of crime
- Increased support from Police Department
- Greater community pride
- Brings neighbors closer together
- Potential increased property value
- Crime Prevention training
- Increases reporting of crime and suspicious activities
- Sign serves as a warning to criminals
- Provides residents with access to crime pattern and trends that may affect them
- Home security inspections
- Gives residents a contact within the Police Department
- Results in a better and safer community

Business Watch

Business Watch is one of the most effective and inexpensive ways to prevent crime and reduce fear. Business Watch fights the isolation that crime creates and feeds upon. It creates bonds among area businesses and helps reduce burglaries, robberies and vandalisms. It also increases the knowledge of frauds and scams which improves the relationship between the police and the business community.

Benefits of Business Watch:

- Creates a greater awareness of crime
- Greater community pride
- Brings businesses together
- Crime Prevention training
- Sign serves as a warning to criminals
- Provides business owners with access to crime patterns and trends that may threaten them
- Business security inspections
- Results in a better and safer community

Worship Watch

The purpose of the Worship Watch program is to involve members of a church, synagogue, mosque, or temple, with the Police Department and the surrounding community in working together to create and maintain a safe environment by utilizing accepted crime prevention practices.

Fleet Watch

This is a program which uses businesses with mobile communication capabilities. The employees have been trained by the Police Department to report suspicious or dangerous activity. This program enhances the safety of the community by putting hundreds of extra “eyes” on the streets of Prince William County.

For more information on these programs or to start a Watch program in your area, you may contact the Prince William County Police Department Crime Prevention Unit at 703-792-7270 or web site www.pwcgov.org/police.

VI. CONCLUSION

Crime Prevention Through Environmental Design guidelines can go a long way in making a community safe.

It is not considered possible to make a building or area crime-proof. The recommendations included in assessments should, however, reduce the probability of crime if the CPTED strategies and concepts are properly applied and maintained. There may be instances where information in this document conflicts with local building and fire codes. Consult a crime-prevention-trained police officer or security professional for suitable alternatives.

CPTED can eliminate problem areas: the poorly lighted parking lot, the blind alley, and the public telephone stuffed in the dark corner. Hopefully, along with the feeling of safety and security that CPTED brings, will come a feeling of increased social responsibility. 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 and CPTED Practitioner.

For more information or for a free CPTED Security Assessment or to review site development plans, contact:

Prince William County
Police Department
Special Operations Bureau
Crime Prevention Unit
8900 Freedom Center Boulevard
Manassas, VA 20110-2220
(703) 792-7270

