APPENDIX S - SECURITY REFERENCES

This Appendix is referenced in Facilities Design Guideline **GR.2.2.1 - SECURITY GUIDELINES FOR DESIGNING A SAFER UNIVERSITY**.

APP S.1. CPTED (CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN)

APP S.1.1 CPTED Introduction - Concepts

CPTED is the practice of designing and the effective use of the physical, built environment, to deter and reduce the incidence of crime; thereby, enhance the quality of life. The application of CPTED principles during the design processes is simple and seamless when incorporated into the early phases of design. If the site and the building are planned well, the opportunity for crime and bad behavior can be suppressed or eliminated.

The concepts of CPTED are based on three simple precepts:
Natural Access Control
Natural Surveillance
Territoriality

These concepts should be considered during site planning and internal planning of the project. Issues of safety and security will be initially programmed and brought up during design development. The implementation of these concepts is achieved through developing and applying strategies during the design process. These strategies are unique and specific to each project; therefore the designer must thoughtfully evaluate the concepts and their application.

The reader is encouraged to read the GR.3 Security for other specific design requirements of the University. The concepts presented here are theoretical and the designer must still comply with the requirement of the Virginia Uniform Statewide Building Code in effect.

a. Natural Access Control

Natural access control limits the opportunity for crime by taking steps to clearly differentiate between public space and private space. By selectively placing entrances and exits, fencing, lighting and landscape to limit access or control flow, natural access control occurs.

This design concept is directed to decreasing the opportunity for crime by placing obstacles to potential targets and therefore creating a perception of risk to the potential offender. People are physically guided through a space by the strategic design of streets sidewalks building entrances, landscaping and gateway. Within buildings the design of interior spaces and there interaction and adjacencies of programmatic functions have similar effects. Design elements are also useful tools to clearly indicate public routes and discourage access to private areas.

Natural access control also utilizes physical and mechanical means of controlling access through locks, alarm systems, signs, etc.

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

b. Natural Surveillance

Natural surveillance is a design concept that limits the opportunity for crime by taking steps to increase the perception that people can be seen. Natural surveillance occurs by designing the placement of physical features, activities and people in such a way as to maximize visibility and foster positive social interaction among legitimate users of private and public space. This design concept is directed towards keeping intruders under observation, and therefore less likely to commit criminal acts making offenders behavior easily noticeable. Potential offenders feel increased scrutiny and limitations on their actions.

Natural surveillance utilizes design features to increase the visibility of a property or a building. Features that maximize the visibility of people, parking areas and building entrances include unobstructed doors and windows, pedestrian-friendly sidewalks and streets, and appropriate nighttime lighting.

Designers should provide a good visual connection between public and private environments or functions with the placement of high activities functions adjacent to potential isolated areas.

c. Territoriality

Territoriality is the concept of promoting social control through increased definition of space and reinforcing ownership. An environment designed to clearly delineate private space does two things. Owners have a vested interest and are more likely to challenge intruders or report them to the police. Second, the sense of owned space creates an environment where "strangers" or "intruders" stand out and are more easily identified. Additionally, these objectives can be achieved by assignment of space to designated users in previously unassigned locations. Territorial reinforcement measures make the normal user feel safe and make the potential offender aware of a substantial risk of apprehension or scrutiny.

By using buildings, fences, pavement, signs, lighting and landscaping to express ownership and define public, semi-public and private space, natural territorial reinforcement occurs.

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.

APP S.1.2 CPTED APPLICATION-STRATEGIES

Strategies are unique and site specific to each design. They must be developed to address the circumstances that are created as a consequence of the design process.

Listed below are some examples of design strategies for each of the concepts above. The list is not meant to be inclusive.

a. Natural Access Control

- Use a single, clearly identifiable, point of entry
- Use structures to divert persons to reception areas
- Incorporate maze entrances in public restrooms (where permitted by building program). This avoids the isolation that is produced by an anteroom or double door entry system
- Use low, thorny bushes beneath ground level windows.
- Eliminate design features that provide access to roofs or upper levels
- In front yards, use waist-level, picket-type fencing along residential property lines to control access, encourage surveillance.
- Use a locking gate between front and backyards.
- Use shoulder-level, open-type fencing along lateral residential property lines between side yards and extending to between back yards. They should be sufficiently unencumbered with landscaping to promote social interaction between neighbors.
- Use substantial, high, closed fencing (for example, masonry) between a backyard and a public alley.

Natural access control is used to complement mechanical and operational access control measures, such as target hardening.

b. Natural Surveillance

- Place windows overlooking sidewalks and parking lots.
- Use passing vehicular traffic as a surveillance asset.
- Create landscape designs that provide surveillance, especially in proximity to designated points of entry and opportunistic points of entry.
- Use the shortest, least sight limiting fence appropriate for the situation.
- Use transparent weather vestibules at building entrances.
- When creating lighting design, avoid poorly placed lights that create blind-spots for potential observers and miss critical areas. Ensure potential problem areas are well-lit: pathways, stairs, entrances/exits, parking areas, ATMs, phone kiosks, mailboxes, bus stops, children's play areas, recreation areas, pools, laundry rooms, storage areas, dumpster and recycling areas, etc.
- Avoid too-bright security lighting that creates blinding glare and/or deep shadows, hindering the view for potential observers. Eyes adapt to night lighting and have trouble adjusting to severe lighting disparities. Using lower intensity lights often requires more fixtures.
- Use shielded or cut-off luminaries to control glare.
- Place lighting along pathways and other pedestrian-use areas at proper heights for lighting the faces of the people in the space (and to identify the faces of potential attackers).

Natural surveillance measures can be complemented by mechanical and organizational measures. For example, closed-circuit television (CCTV) cameras can be added in areas where window surveillance is unavailable.

c. Territoriality

- Maintained premises and landscaping such that it communicates an alert and active presence occupying the space.
- Provide trees in residential areas. Research results indicate that, contrary to traditional views within the law enforcement community, outdoor residential spaces with more trees are seen as significantly more attractive, safer, and more likely to be used than similar spaces without trees.
- Restrict private activities to defined private areas.
- Display security system signage at access points.
- Avoid using cyclone fencing and razor-wire fence topping, as it communicates the absence of a physical presence, and cues a reduced risk of being detected.
- Placing amenities such as seating or refreshments in common areas in a commercial or institutional setting helps to attract larger numbers of desired users.
- Programming activities in common areas increases proper use, attracts more people and increases the perception that these areas are controlled.

Territorial reinforcement measures make the normal user feel safe and make the potential offender aware of a substantial risk of apprehension or scrutiny.

APP S.1.3 Resources (Crime Prevention through Environmental Design)

BOOKS

Crowe, Timothy. *Crime Prevention Through Environmental Design*. Stonehan, MA: Butterworth-Heinemann, 1991.

Jacobs, Jane. *The Death and Life of Great American Cities.* New York, NY: Random House, 1961.

WEB PUBLICATIONS

General Guidelines for Designing Safer Communities
City of Virginia Beach
Municipal Center/Police Department
2509 Princess Anne Rd
Virginia Beach, VA 23456-9064
www.vbgov.com
(757) 563-1066 FAX (757) 563-1064 bjeaton@vbgov.com

Crime Prevention Through Environmental Design: A guide to creating safer environments in Chesterfield County, Virginia
Chesterfield County Police Department
Support Services Division/Crime Prevention Unit
Clover Hill Police Support Facility
2730 Hicks Road
Chesterfield, Virginia 23235
(804) 674-7006 eicherj@chesterfield.gov

Safety by Design: Creating a safer Environment in Virginia, Crime Prevention Through Environmental Design: Guidelines
Virginia CPTED Committee
Virginia Crime Prevention Association
Clover Hill Police Support Facility
2730 Hicks Road
Chesterfield, Virginia 23235
(804) 674-7006 eicherj@chesterfield.gov