

LAKEPIA UNIVERSITY

CRSS 423: PHYSICAL SECURITY II

Topic I: Introduction to Security Design

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

The term environment includes the people and their physical and social surroundings. However, as a matter of practical necessity, the environment defined for demonstration purposes is that which has recognizable territorial and system limits. The term design includes physical, social, management, and law enforcement directives that seek to affect positively human behavior as people interact with their environment.

Space

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

- **Public.** Space that, whatever its legal status, is perceived by all members of a residential area or neighborhood as belonging to the public as a whole, which a stranger has as much perceived right to use as a resident.
- **Semipublic.** Space accessible to all members of the public without passing through a locked or guarded barrier. There is thought to be an implied license for use by the public, and strangers will rarely be challenged. This is generally associated with multifamily housing.
- **Semiprivate.** Space restricted for use by residents, guests, and service people on legitimate assignments. In multifamily housing, this is usually secured by protection officers (or doormen), locks, or other forms of physical barriers. Strangers can be expected to be challenged as potential trespassers.

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

Target Hardening

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

Moreover, the traditional approach tends to overlook opportunities for natural access control and surveillance. The term *natural* refers to deriving access control and surveillance results as a byproduct of the normal and routine use of the environment. It is possible to adapt normal and natural uses of the environment to accomplish the effects of artificial or mechanical hardening and surveillance. As an example, a design strategy of improved street lighting must be planned, efficient, and evaluated in terms of the behavior it promotes or deters and the use impact of the lighted (and related) areas in terms of all users of the area (offenders, victims, other permanent, or casual users). Any strategies related to the lighting strategy must be evaluated in the same regard.

Additionally, the concept of proper design and effective use emphasizes the designed relationship among strategies to ensure that the desired results are achieved. It has been observed that improved street lighting alone (a design strategy) is ineffective against crime without the conscious and active support of citizens (in reporting what they see) and of police (in responding and conducting surveillance).

Access Control

Access control and surveillance have been the primary design concepts of physical design programs. At the outset of the physical security program, access control and surveillance systems—preexisting as conspicuous concepts in the field of physical security—received major

attention. Access control and surveillance are not mutually exclusive classifications since certain strategies achieve both, and strategies in one classification typically are mutually supportive of the other. However, the operational thrust of each is distinctly different, and the differences must be recognized in performing analysis, research, design, implementation, and evaluation.

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

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

The concept of territoriality (elaborated most fully to date in the public housing environment) suggests that physical design can contribute to a sense of territoriality. That is, physical design can create or extend a sphere of influence so that users develop a sense of proprietorship—a sense of territorial influence—and potential offenders perceive that territorial influence. At the same time, it was recognized that natural access control and surveillance contributed to a sense of territoriality, making it effective for crime prevention. Natural access control and surveillance will promote more responsiveness by users in protecting their territory (e.g., more

security awareness, reporting, and reacting) and promote greater perception of risk by offenders.

Maintenance

Finally, care and maintenance allow for the continued use of a space for its intended purpose, as well as contributing to territorial reinforcement. 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 standards, best practices, as well as a master plan. Maintenance is the responsibility of the facilities manager, owners, and occupants.

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

The conceptual shift from organized and mechanical to natural strategies has oriented the physical security program to develop plans that emphasize natural access control and surveillance and territorial reinforcement. Although conceptually distinct, it is important to realize that these strategy categories tend to overlap in practice. It is perhaps most useful to think of territorial reinforcement as the umbrella concept, comprising all natural surveillance principles, which in turn comprises all access control principles.

It is not practical to think of territorial reinforcement, natural surveillance, and access control as independent strategies because, for example, access control operates to denote transitional zones, not necessarily impenetrable barriers. If these symbolic or psychological barriers are to succeed in controlling access by demarcating specific spaces for specific individuals, potential

offenders must perceive that unwarranted intrusion will elicit protective territorial responses from those who have legitimate access.

The Three-D Approach

For physical security program design to be a success, it must be understandable and practical for the normal users of the space. That is, the normal residents of a neighborhood and the people who work in buildings or commercial areas must be able to use these concepts. This is because these people know more about what is going on in that environment and they have a vested interest (their own well-being) in ensuring that their immediate environment operates properly. The technologist or specialist, who may be a traffic engineer, city planner, architect, or security specialist, should not be allowed to shoulder the responsibility alone for safety and security but needs to follow the dictates of the users of the space because he/she can often be swayed by misperceptions or by the conflicting demands of his professional competition.

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

- (i) All human space has some designated purpose.
- (ii) All human space has social, cultural, legal, or physical definitions that prescribe the desired and acceptable behaviors.
- (iii) All human space is designed to support and control the desired behaviors.

By using the Three Ds as a guide, space may be evaluated by asking the following types of questions.

Designation

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

Definition

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

Design

- How well does the physical design support the intended function?
- How well does the physical design support the definition of the desired or accepted behaviors?
- Does the physical design conflict with or impede the productive use of the space or the proper functioning of the intended human activity?
- Is there confusion or conflict in the manner in which the physical design is intended to control behavior?

The three CPTED strategies of territorial reinforcement, natural access control, and natural surveillance are inherent in the Three-D concept. The proper functions have to be matched with space that can support them—with space that can effectively support territorial identity, natural access control, and surveillance and intended behaviors have to be indisputable and be reinforced in social, cultural, legal, and administrative terms or norms. The design has to ensure that the intended activity can function well and it has to directly support the control of behavior.

Use of Information

It goes without saying that all important decisions should be based on good information. Especially where the design and use of the physical environment is at stake, it is imperative that at least five basic types of information be collected and used. Unless a rational basis is used to make informed decisions, the same mistakes that generated the original problem will continue to be made.

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

Benefits of a Sound Physical Security Design

In addition to dealing with the reduction of crime and fear problems, other benefits of physical security design include the following:

- *Treatment of crime problems at various environmental scales.* The physical security process for identifying crime/environment problems; selecting physical security strategies; and initiating, implementing, and evaluating anticrime projects can be applied to entire neighborhoods or types of institutional settings within a city, such as secondary schools, or the process can be applied equally well to a small geographic area or to one particular institution.
- *Integration of prevention approaches.* Physical security principles are derived from an opportunity model of criminal behavior that assumes that the offender's behavior can be accounted for by understanding how, and under what circumstances, variables in the environment interact to induce crime. Once an assessment of the opportunity structure is made, then appropriate strategies can be designed and integrated into a coordinated, consistent program.
- *Identification of short- and long-term goals.* Comprehensive broad-based programs have to develop short-term or proximate goals and adequate ways to measure their success. The physical security approach includes an evaluation framework that details proximate goals relating to increased access control, surveillance, and territorial reinforcement. The rationale is that the ultimate program success is directly related to its success in achieving the proximate goals.
- *Encouragement of collective responses to problems.* The physical security emphasis is on increasing the capacity of residents to act in concert rather than individually. Strategies

are aimed at fostering citizen participation and strengthening social cohesion.

- *Interdisciplinary approach to urban problems.* An explicit policy of interdisciplinary teaming ensures effective cooperation among diverse departments such as public works, social services, economic development, police, and so forth. Each participant benefits from exposure to the responsibilities, jurisdiction, and skills of the others.
- *Encouragement of better police/community relations.* A key strategy is to coordinate law enforcement and community service activities with the result of improving police/community relations and developing an anticrime program that is not solely dependent on enforcement agencies.
- *Development of security guidelines and standards.* Design can lead to the creation of security criteria for newly constructed or modified environments to avoid planning and design decisions that inadvertently provide opportunities for threats.
- *Assistance in urban revitalization.* Through its impact on physical, social, and economic conditions, it can be instrumental in revitalizing communities including downtown areas. Once business leaders, investors, and other citizens perceive that a comprehensive effort is underway to reduce crime and fear, there will be an improvement in community identity and cohesiveness.
- *Acquisition of development funds.* The incorporation of physical security design into existing programs can provide additional jurisdiction for awarding grants, loans, and community development funds.
- *Institutionalization of crime prevention policies and practices.* Physical security projects can create a local management capability and expertise to maintain ongoing projects. This capability can be incorporated into existing citizen organizations or municipal agencies.