Crime Prevention Through Environmental Design

A Basic Training Manual

Timothy D. Crowe

CRIME PREVENTRION THROUGH ENVIRONMENTAL DESIGN

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This manual was provided courtesy of the National Crime Prevention Institute, College of Urban and Public Affairs, University of Louisville.

1.0 Goals and Objectives

1.1 Goals

The goals of this module on Crime Prevention Through Environmental Design (CPTED) are to alter and expand the participants' perception of immediate physical environment. By altering the perception of the physical environment, the participant will be more capable of understanding the direct relationship of the environment to human behavior and to crime. An increase in this basic understanding should result in the increased likelihood of the individual to confidently question or challenge decisions that are made which affect his/her immediate environment – particularly those which may have a direct bearing on the safety of the individual, his/her family and neighborhood.

An understanding of the direct relationship of the environment – its design and management – to human behavior is a prerequisite to increasing the success of citizen's efforts in crime prevention. It is the key to effective community organization, because it gives the citizen(s) the power to protect and control their physical environment and quality of life. 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.

1.2 Learning Objectives

CPTED does not require an extensive technical background or understanding. To be effective as a community strategy, basic CPTED concepts have to be understood by as many people as possible (in laymen terms). Otherwise, true public policy setting will remain in the hands of technocrats and politicians.

The following learning objectives should be considered as the absolute minimum for successful completion of this module:

1. The participant should be able to recall the meaning of the pseudo-acronym CPTED: Crime Prevention Through Environmental Design.

2. The participant should be able to:
   A. Recognize the CPTED underlying premise.
   B. Recall the two underlined words in the definition as key CPTED descriptors.

   CPTED premise: "That the proper design and effective use of the built environment can lead to a reduction in the incidence and fear of crime -- and to an increase in the quality of life."

3. The participant should be able to recognize and define (in a brief one sentence definition or example) the three basic CPTED strategies of:

A. Natural access control
B. Natural surveillance
C. Territorial reinforcement

4. The participant should be able to distinguish (by definition or example) between the crime prevention strategy classifications of:

- Organized
- Mechanical
- Natural

5. The participant should be able to recall the reference to the CPTED approach to space assessment and list the components:

Reference - 3-D Concept

Components - Designation, Definition, Design

6. The participant should be able to demonstrate his/her new awareness and understanding of CPTED concepts by providing a descriptive example(s) of a good and a bad CPED setting in at least one of the following types of locations:

- a residential neighborhood that is near a major street intersection
- neighborhood parks
- neighborhood schools
- public parking lots
- public housing area
- industrial/commercial center

7. The participant should be able to describe the functions and location of the following types of information:

- crime analysis data
- demographic data
- land use
- observations
- resident or user interviews

8. The participant should be able to draw a simple map of hls/her residential or business neighborhood showing:

- street layout
- land use

- pedestrian and vehicular usage
- crime (or fear) problem areas
- current boundaries of geographic, ethnic or neighborhood identities

These objectives are the minimum that is necessary for self-sufficiency in the use of CPTED concepts. The meeting of these objectives would be a clear indicator of an altered perception of the relationship of the environment to human behavior -- particularly criminal behavior. It should be expected that any sort of overview presentation of limited duration (1/2- to 1-hour) will not suffice. A longer period of a combined seminar and workshop - preferably with a field trip or exercise -- would be needed. However, some change should be expected, even in a relatively short, non-participation session.

2.0 CPTED Background and Description

2.1 Background

Do you know that the signaling of the traffic light at the end of your block, or just down the street from your intersection, has a lot to do with the amount of control you and your friends have over your neighborhood? .Are you concerned with scheduling on park programs for youths and the locations of these activities? Were you aware of the fact that the locating of bus stops can help to make or break the businesses nearby, thus contributing to the perception that an area is not stable -- and is unsafe? Everyone knows that zoning and business regulation contributes to a more controlled and safe community, but do they know that the size, shape, landscaping and exterior design of local buildings has an impact too? The design and management of parking lots, storefronts, parks, schools and just about everything in your community has important connections to the problems of crime and the fear of crime.

What can you do about it? Does it take a lot of expertise to understand the relationships between the environment, the roles of non-criminal justice agencies and crime? The answers to these questions are simple. All it takes is an awareness that there is a relationship between the things that people do naturally – just everyday things – and the amount of surveillance and access control that exists. Offenders and normal users of space alike, recognize the environmental cues that say, "this is a safe place – or an unsafe place." It does not take a whole lot of experts and sophisticated technology to think about what is going on and to take advantage of natural opportunities to make your community safe. It just makes good sense to be concerned!

Environmental approaches to crime prevention and security were made popular by Oscar Newman in his book Defensible Space. These concepts have been successfully demonstrated in schools, commercial, residential and transportation areas. They art now being widely adopted by industry because they contribute to productivity. City governments are finding out that it is a lot cheaper to design crime prevention into the way things are done than to hire extra police, or to pay for extra protection that really only makes the community look like a fortress - instead of a nice place to live!

But, is this just a new fad that will go away in time? No! As a matter of fact, the current attention to CPTED is merely an attempt to bring this man/environment awareness back into the forefront in community planning. For several thousand years, an awareness of how the environment shapes mans behavior has been used by architects, city planners and residential dwellers to elicit desired behaviors. Greek temples in the large Sicilian colony were designed to produce fear through the absence of light. Early city states, such as Florence, designed assembly chambers to create the impression that the roof would cave in, literally to speed-up the legislative process. Modern day commercial establishments use sound, color and furniture design to create the illusion of fast service (if not the reality). McDonalds hamburger restaurants and, even eyeglass stores, are using their physical environments to manipulate your senses and behavior – to enhance their sales.

At a national level, the CPTED Program is a synthesis and extension of reports, investigations, studies, and initial demonstrations sponsored by the National Institute of Law Enforcement and Criminal Justice (NILECJ). In turn, many of these activities trace their conceptual content to a variety of crime prevention and environmental design-related documents, texts and articles that date back many years, with many sponsored by NILECJ. The most significant antecedents of the CPTED Program, dating from 1969, related to the following sampled areas:

> Studies - crimes against small business, neighborhood design techniques for crime prevention, burglary prevention studies, public safety in urban dwellings, architectural design for crime prevention, private police, public housing, patterns of robbery and burglary, street lighting, hardware performance and standards, and "defensible space."
>
> Programs - the Federal Crime Insurance Program, development of Model Security Codes and Guidelines, equipment standards program, vertical policing programs in public housing, architectural design experiments in public housing and residential areas, and training in crime prevention.

These prior efforts led NILECJ to initiate the CPTED Program as a comprehensive effort to create physical and social conditions through environmental design demonstration in selected environments (residential, school, commercial, transportation) aimed at reducing crime and fear of crime, and improving the quality of life in these environments.

2.2 CPTED Concepts

The conceptual thrust of the CPTED Program is that the proper design and effective use of the physical environment can 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.

Environmental design, as used in the CPTED Program, is rooted in the design of the man/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/or system limits. The term design include physical, social, management, and law enforcement directives that seek to positively affect human behavior as people interact with their environment. Thus, the CPTED Program seeks to prevent certain specified crimes (and the fear attendant on them) within a specifically defined environment by manipulating variables that are closely related to the environment itself. The Program does not purport to develop crime prevention solutions in a broader universe of human behavior but rather solutions limited to variables that can be manipulated and evaluated in the specified man/environment relationship.

CPTED involves design of physical space in the context of the needs of bona fide users of the space (physical, social and psychological needs), the normal and expected (or intended) use of the space (the activity or absence of activity planned for the space), and the predictable behavior of bona fide users and offenders. Therefore, in the CPTED approach, that design is proper which recognizes the designated (or re-designated) use of the space, defines the crime problem incidental to, and the solution compatible with, the designated use; and designs the crime prevention strategy(ies) that enhances (or at least does not impair) the effective use of the space along with preventing crime. Thus, CPTED draws only on physical and urban design but also on contemporary thinking in behavioral and social science, law enforcement, and community organization.

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 environment hardened. 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 by-product of the normal and routine uses of the environment. Thus, it is possible to adapt normal and natural uses of the environment to accomplish the effects of artificial or mechanical hardening and surveillance. Nevertheless, CPTED employs pure target-hardening strategies, either to test their effectiveness as compared to natural strategies or when they appear to be justified as not unduly impairing the effective use of the environment.

As an example, a design strategy of improved street lighting must be planned and evaluated in terms of the behavior it promotes or deters and the use-impact on the lighted (and related) areas in terms of all users of the area (offenders, victims, other permanent or casual users). Likewise, any strategies related to the lighting strategy (e.g., block-watch, 911 emergency service, police patrol) must be evaluated in the same regard. This reflects the comprehensiveness of the CPTED design approach in focusing on both the proper design and effective use of the physical environment. Additionally, the concept of proper design and effective use emphasizes the desired relationship among strategies to ensure that the desired results are achieved. Illustratively, 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). Therefore, applicable to this general example, CPTED involves the effort to effectively integrate design, citizen

and community action, and law enforcement strategies to accomplish surveillance consistent with the design and use of the environment.

2.3 CPTED Strategies

There are three overlapping strategies in CPTED. They are:

- Natural access control
- Natural surveillance
- Territorial reinforcement

Access control and surveillance have been the primary design concepts of physical design programs. At the outset of the CPTED Program, access control and surveillance – pre-existing as conspicuous concepts in the field of crime prevention through environmental design – received little focus. Access control and surveillance are not mutually exclusive classifications since certain strategies achieve both, and strategies in one classification typically are mutually supporting the other. However, the operational thrust of each is distinctly different, and the differences can 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., guards), mechanical (e.g., locks), 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 aimed primarily at keeping intruders under observation. Therefore, the primary thrust of a surveillance strategy is to facilitate observation, although it may accomplish the effect of an increased perception of risk. Surveillance strategies are typically classified as organized (e.g. patrol), mechanical (e.g., lighting), and

natural (e.g., windows). These typical concepts and strategies are illustrated in Figure 2-1.

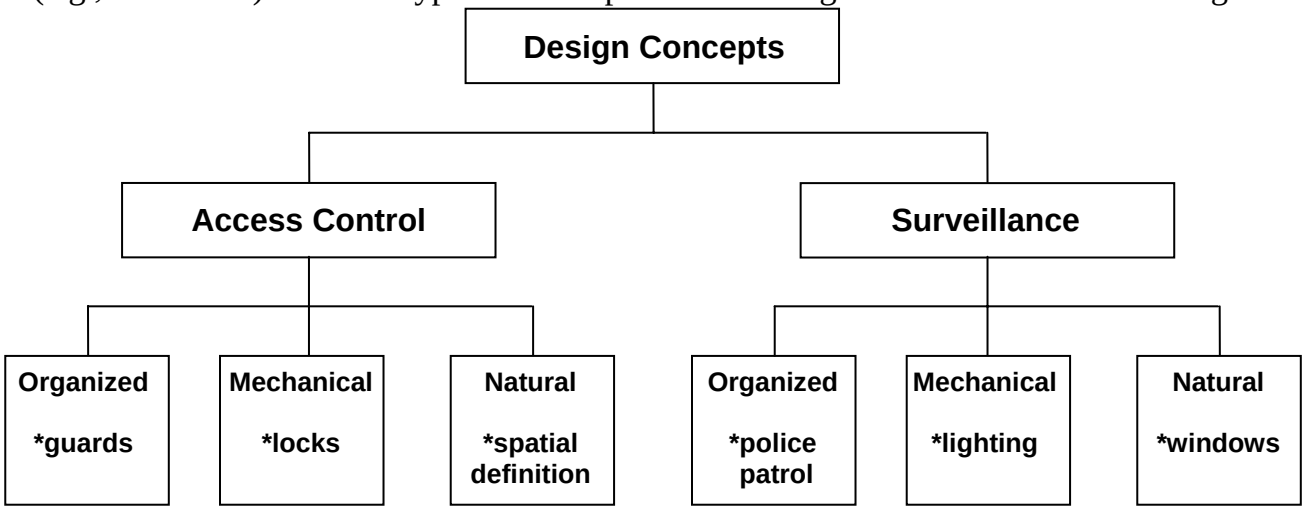

Figure 2-1. Typical Access Control and Surveillance Concepts and Classifications

Traditionally, access control and surveillance, as design concepts, have emphasized "mechanical" or "organized" crime prevention techniques 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 sphere 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, reacting) and promote greater perception of risk by offenders.

Also, striving to achieve a balance 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 CPTED Program to develop plans that emphasize natural access control and surveillance and territorial reinforcement. The conceptual relationship suggested by this shift is reflected in figure 2-2.

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, embodying all natural surveillance principles, which in turn, embody all access control principles. It is not practical to think of these as independent strategies, because, for example, access control, as defined here, 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.

Similarly, natural surveillance operates to increase the likelihood that intrusion will be observed by individuals who care but are not officially responsible for regulating the use and treatment of spaces. If people observe inappropriate behavior, but do nothing about it, then the most "elegant" natural surveillance tactics arc useless in terms of stopping crime and vandalism.

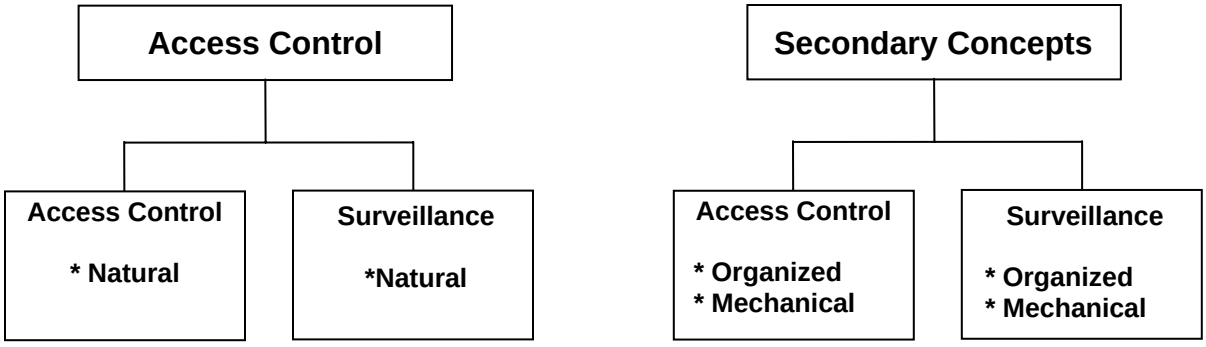

Figure 2-2. CPTED Concept Relationships

2.4 "Three-D" Approach

For CPTED to be a success, it must be understandable and practical for normal users of space. That is, the normal resident of a neighborhood and the people who work in buildings or commercial areas must be able to use these concepts. Why? Because these people know more about what is going on in that environment and they have a strong, vested interest (their own well being) in assuring that their immediate environment operates properly. The technologist or "so called" 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. They need to follow the dictates of the users of the space, because they can often be swayed by misperceptions or by the conflicting demands of their professional competition.

The "Three-D" approach to space assessment provides a simple guide for the laymen 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:

1. All human space has some designated purpose.

2. All human space has social, cultural, legal or physical definitions that prescribe the desired, and acceptable behaviors.

3. All human space is designed to support and control the desired behaviors.

By using the “Three-D's" 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 docs the space support its current use?
  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 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?

Of course, the three CPTED strategies of territorial reinforcement, natural access control and natural surveillance are inherent in the "Three-D concept. Does the space clearly belong to someone or group? Is the intended use clearly defined? Docs the physical design match the intended use? Does the design provide the means for normal users to naturally control the activities, to control access and provide surveillance?

Once a basic self-assessment has been conducted, the “Three-D's" may then be turned around as a simple means of guiding decisions about what to do with human space. 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 assure that the intended activity can function well and it has to directly support the control of behavior.

2.5 Example of Strategies in Action

There are many hundreds of examples of CPTED strategies in practice today. In each, there is a mixture of the three CPTED strategies that is appropriate to the setting and to the security or crime problem. Some of the examples were created in the direct application of CPTED concepts. Others were borrowed from real life situations that were observed to be working. The most basic, common thread is the primary emphasis on naturalness – simply doing things that you already have to do a little better.

Some examples of CPTED strategy activities are:

- Provide clear border definition of controlled space.
- Provide clearly marked transitional zones which indicate movement from public to semi-public to private space.
- Relocate gathering areas to locations of natural surveillance and access control; as to locations away from the view of would be offenders.
- Place safe activities in unsafe locations to bring along the natural surveillance of these activities (to increase the perception of safety for normal users and risk for offenders).
- Place unsafe activities in safe spots to overcome the vulnerability of these activities with natural surveillance and access control of the safe area.
- Redesignate the use of space to provide natural barriers to conflicting activities.
- Improve scheduling of space to allow for effective use and appropriate "critical intensity."
- Redesign or revamp space to increase the perception or reality of natural surveillance.

- Overcome distance and isolation through improved communications.

2.6 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 are collected and used. Unless a rational basis is used to make informed decisions, the same mistakes will continue to be made that generated the original problem.

The five basic types of information needed for good CPTED planning are:

- Crime Analysis
- Demographic
- Land Use
- Observations
- 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 anyway. For instance, very little can be done with a statistical measure that says burglaries are up by 5%. A lot more can be done with a crime map that shows a clustering of burglaries in a specific block (See Figure 2-3 for example). Even more can be done when one finds that the burglar used an alleyway as his/her approach to a series of related offenses because it afforded a good cover for his/her vehicle.

Likewise, the other bits of information that are needed can and should be available in simple, usable formats. Following is a simple guide to each type of information:

- Crime Analysis – This type of information is available in every police department; it is obtained by plotting offenses on a wall map and organizing the information on crime reports for the major purpose of identifying patterns of criminal activity; there are two basic types of patterns: geographic and similar offense.

- Demographic – This is information that describes the nature of the population for a given city, district or neighborhood; it is available through city planning departments or the city manager's/mayor's office; another source of this type of information is through the Census Bureau and related publications of city/county data books which may be found in most public libraries.

- Land Use – City planning departments, zoning boards, traffic engineering and local councils of government have information and maps that describe and depict the physical allocations and uses of land; simple wall maps with colored in sections showing residential, commercial,

industrial, parks, schools and traffic flows can be of immeasurable assistance in understanding the physical setting; natural boundaries and neighborhoods are easier to view, especially in relation to land use and pedestrian/traffic flows.

- Observations – It is very helpful to conduct either formal or informal visual reviews of physical space to get first-hand knowledge of how that space is used, when, by whom and where problems may be; environmental cues are the key to normal user and offender behavior; observations may include pedestrian/vehicle counts, on and off-street parking, maintenance of yards and fences, the degree of proprietary behaviors exhibited by residents and/or users, the presence of either controlling or avoidance behaviors and other potential indicators of territorial concern such as the percent of window blinds drawn overlooking parks or schools.

- Resident or User Interviews – This source of information is needed to balance the other data sources; people's perceptions of where they feel safe or in danger often vary from the locations on crime maps where the most offenses occur; it is vital to determine the resident's or user's perception of extent of identity with the surrounding space, what affects their behavior or reactions as they move about and what they think the needs are.

It really does not take a skilled professional to collect and use these types of information. Moreover, any attempt to skip the basics in lieu of more complex forms of information or analysis often affuscates the picture. Professionals usually unwittingly suppress the active participation of residents or space users by relying on complex modes of analysis. This is dangerous because it can often cause some very basic ideas or explanations to be overlooked. It is an overriding concern that very little good will be accomplished without the full and active involvement of the users of the space.

The best way of understanding the information and presenting it to others is through some visual means. Maps and transparent overlays are useful means of comparing the five types of information that are needed in CPTED planning. (Figure 2-3 contains an example of a crime map.)

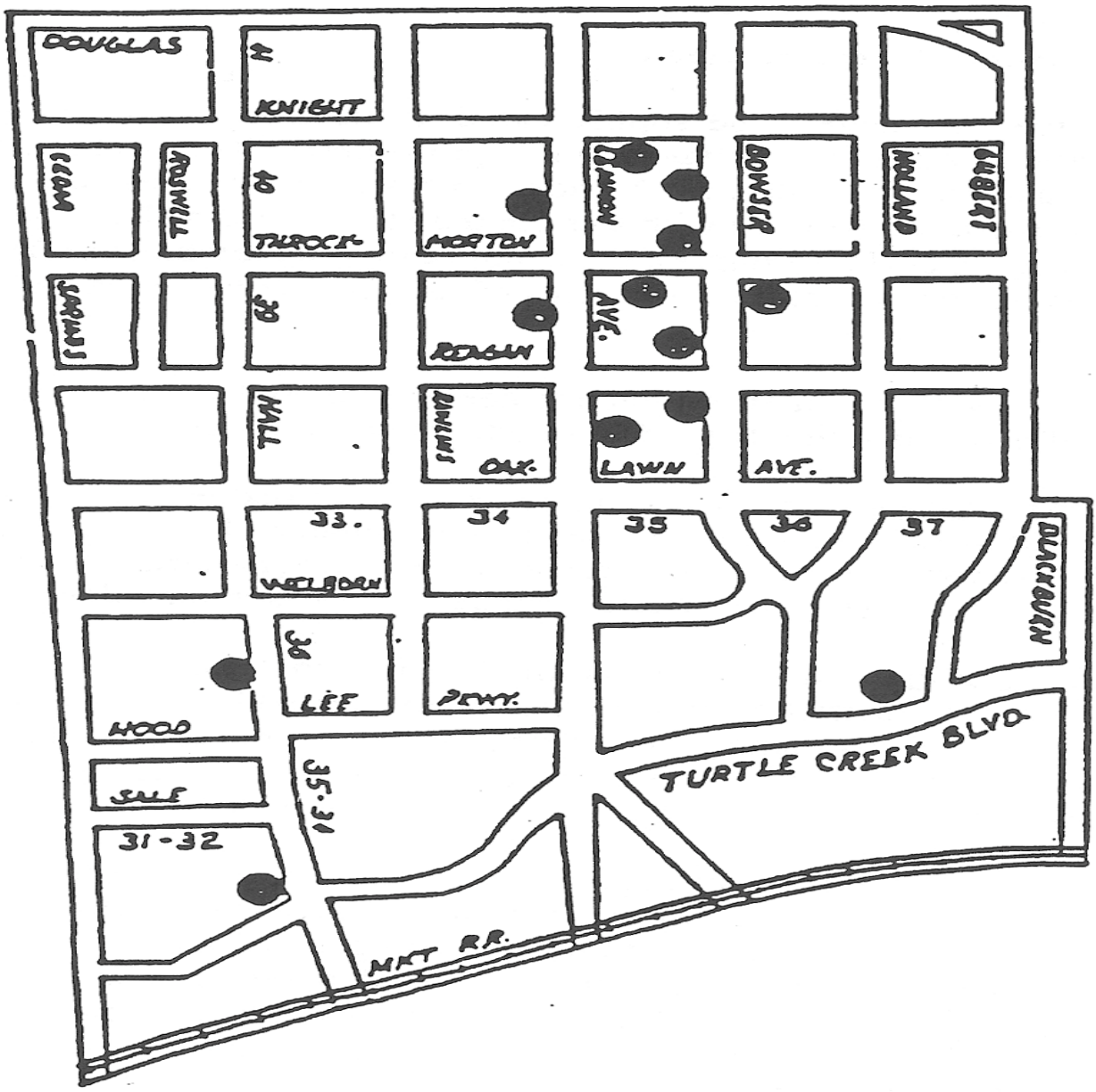

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Figure 2-3. Geographic-Concentration Pattern

2.7 Some Benefits of CPTED Planning Activities

In addition to dealing with the reduction of crime and fear problems, some other benefits are:

- Treatment of Crime Problems at Various Environmental Scales - The CPTED process for identifying crime/environment problems, selecting CPTED strategies, and initiating, implementing, and evaluating anti-crime 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 as well to a small geographic area or to one particular institution.

- Integration of Prevention Approaches – CPTED principles are derived from an opportunity model of criminal behavior which 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 like CPTED have ultimate goals that may take years to accomplish. Unlike CPTED, however, many programs take fail to develop short-term or proximate goals and adequate measures thereof. The CPTED 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 CPTED 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 assures effective cooperation among diverse city departments such as public works, social services, economic development, police, etc. 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 anti-crime program that is not solely dependent on enforcement agencies.

- Development of Security Guidelines and Standards – CPTED programming 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 crime.

- Assistance in Urban Revitalization – CPTED can be instrumental in revitalizing communities, including downtown areas, with its impact on physical, social, and economic conditions. Once business leaders, investors, and other citizens perceive that a. comprehensive effort is under way to reduce crime and fear, there will likely be an improvement in community identity and cohesiveness.

- Acquisition of Development Funds – The incorporation of CPTED into existing programs can provide additional justification for awarding grants, loans, and community development funds.

- Institutionalization of Crime Prevention Policies and Practices – CPTED 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.

Not all of these situations will apply to every local jurisdiction, and there may be additional applications not covered by the above examples: It is important that local decision makers establish objectives that they hope to achieve through a CPTED project. CPTED can be initiated with narrow and single-purpose objectives, or it can be expanded into a broad and comprehensive focus with multiple benefits. Hence, a decision about the project and its objectives will be an important determinant of the type of CPTED project to be initiated, its management requirements, its resource commitments and similar policy decisions.