

CPTED a considerable aspect in urban planning

Nasim Iranmanesh, Kouros Etaati

(Nasim Iranmanesh -Architect & urban designer, Islamic Azad university-west Tehran branch - Iran, niranmanesh@yahoo.com)

(Kouros Etaati, civil engineer, Tehran – Iran, k_etaati@yahoo.com)

1 ABSTRACT

Safety and security are the main purposes in creating cities and residential complexes. In past days people built great fortifications to make safety and security for their city.

In recent centuries, in spite of the great changes in urbanism and urbanization the problem of creating security and safety and promotion of life is one of the most important factors in urbanization and urban management. There are many crimes that occur in communities in different scales from global and regional terrorism to robbery and vandalism in residential complexes. Reduction and removing these crimes need a lot of time and money.

One of the criteria that is very important for city and citizens is the attendance of people in urban spaces and creating a sustainable and healthy civic vitality.

Civic vitality is a combination of experiences of relaxation and safety in city. Civic vitality includes the complex of contacts, relationship of people with their surrounding environment and with each other. Civic vitality forms in urban spaces. Relaxation is resulted from contacts which are pleasant and made satisfactory feelings.

So according to definition of civic vitality we can conclude that the first and the most important step to reach a good civic vitality is enriching the community or improving the urban spaces.

In summery an urban space is a place that besides of having an organized body, allows human connectivity and finally change the city to a vital and dynamic existent, where living there causes the promotion of man both physical and mental.

Safety and its feeling is the most important parameter to create this matter. In a space where people feel fear from being a victim of criminal activities, he will limit his attendance in there. In particular, some groups of people are more vulnerable to crime and the fear of crime, for example, older people, women, parents, teenagers, etc.

So the civic vitality won't occur in a manner that was mentioned before and city will become an unpleasant and unsafe place for citizens.

insecurity and crimes can be seen much more in indefensible spaces, indefensible spaces are some places that belong to no body and nobody care them. These places are safe places for illegal activities. Then in spite of the fact that the problem of creating safety and catching and punishment the convicts are the duty of police and the authorities of city, but we can prevent these problems by creating such a modern defensible space in designing and planning stage. In fact at first urban planner and urban designer can avoid from creating this spaces and criminal factors in urban design and residential complexes. This is the main discussion of this article.

“Crime prevention through environmental design” or CPTED has been presented in many communities and it should be discussed in developing countries such as Iran too.

In summery CPTED have four strategies as follows:

- 1- Territorial reinforcement
- 2- Natural surveillance
- 3- Natural access control
- 4- Maintenance and management

These four strategies that are overlap with each other. In this article we will explain CPTED and its strategies and how it can be imposed in residential complex and urban designing.

2 WHAT IS CPTED

CPTED has been defined by the national crime prevention institute as follows:

“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 is an urban design process that aim to prevent from crimes in design of neighborhood and developing countries. This is a direct relationship between designing and management of the human behavior. In means the behavior that reduce the fear of crime and will cause the improvement in the quality of life.

2.1 Strategies of CPTED

As before said CPTED have four strategies that are as follows in summery:

1- Territorial reinforcement:

People naturally protect a territory that they feel is their own, and have a certain respect for the territory of others. Clear boundaries between public and private areas achieved by using physical elements such as fences, pavement treatment, art, signs, good maintenance and landscaping are ways to express ownership. Identifying intruders is much easier in such well defined spaces.

Territorial reinforcement can be seen to work when a space, by its clear legibility, transparency, and directness, discourages potential offenders because of users' familiarity with each other and the surroundings.

2- Natural surveillance:

The fundamental premise is that criminals do not wish to be observed. Surveillance or the placing of legitimate 'eyes on the street' increases the perceived risk to offenders. This may also increase the actual risk to offenders if those observing are willing to act when potentially threatening situations develop. So the primary aim of surveillance is not to keep intruders out (although it may have that effect) but rather, to keep intruders under observation.

Natural surveillance can be achieved by a number of techniques. The flow of activities can be channeled to put more people (observers) near a potential crime area. Windows, lighting and the removal of obstructions can be placed to improve sight lines from within buildings.

One of the defenders of the theory of surveillance is Jane Jacob who in her book “Death and life of great American cities” states that in order to attain a safe and healthy life in the communities, the contact between neighbors and public space users is fundamental, and for this the urban space must provide certain permeability characteristics that will allow it. That is to say, Jacobs highlighted the relation between the design of urban space and social conduct patterns.

3- Natural access control:

Natural access control relies on doors, fences, shrubs, and other physical elements to keep unauthorized persons out of a particular place if they do not have a legitimate reason for being there. In its most elementary form, access control can be achieved in individual dwellings or commercial establishments by the use of adequate locks, doors and window barriers.

However, when one moves beyond private property to public or semi-public spaces, the application of access control needs more care. Properly located entrances, exits, fencing, landscaping and lighting can subtly direct both foot and vehicular traffic in ways that decreases criminal opportunities. Access control can be as simple as locating a front office to a warehouse.

While access control is more difficult on streets and areas that are entirely open to public use, there are other techniques for controlling access in these circumstances. For example, nonphysical or 'psychological' barriers can be used to achieve the objective of access control.

These barriers may appear in the form of signs, paving textures, nature strips or anything that announces the integrity and uniqueness of an area. The idea behind a psychological barrier is that if a target seems strange, or difficult, it may also be unattractive to potential criminals.

Because any strategy that fosters access control is also likely to impede movement, careful consideration should be given to access control strategies. Such strategies may limit the opportunity for crimes, but should not hinder the mobility of potential victims.

The strategies of natural access control in residential has been defined by Oscar Newman too. In 1972 Oscar Newman explains the theory of defensible space. In this thesis Newman defended from the clearness of boundaries between public and private spaces that leads to an excluding and confining urban model and residential areas with clear access controls. His models states the natural surveillance issue as one of the main axis of civic safety and urban space.

4- Maintenance and management:

This is related to the neighborhood's sense of 'pride of place' and territorial reinforcement.

The more dilapidated an area, the more likely it is to attract unwanted activities. The maintenance and the 'image' of an area can have a major impact on whether it will become targeted.

Another extension of the concept is that territorial concern, social cohesion and a general sense of security can be reinforced through the development of the identity and image of a community. This approach can improve not only the image of the population has of itself, and its domain, but also the projection of that image to others.

With clear spatial definitions such as the subdivision of space into different degrees of public/ semi-public/ private areas and the raising of standards and expectations, the level of social estrangement would decline. This is known to be related to reduction in opportunities for aberrant or criminal behavior, such as vandalism.

Maintenance and management need to be considered at the design stage, as the selection of materials and finishes will impact on the types of maintenance regimes that can be sustained over time. For example, plant material should be selected for its size at maturity to avoid blocking of sight lines.

2.2 The "three D" approach

CPTED involves the design of the physical space in the context of the normal and expected use of that space by the users as well as the predictable behaviour of people around the space. CPTED emphasizes the connection between the functional objectives of space utilization and behavior management. Conceptually, the four CPTED principles are applied through the 3-D approach i.e. Designation, Definition and Design. The 3-D approach is a simple space assessment guide that helps the user in determining the appropriateness of how a space is designed and used. The 3-D concept is based on the three functions or dimensions of human space:

- All human space has some designated purpose.
- All human space has social, cultural, legal or physical definitions that prescribe desired and acceptable behaviors.
- 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 questions:

1. Designation

- What is the designated purpose of this space?
- For what purpose was it originally intended?
- How well does the space support its current use or its intended use?
- Is there a conflict?

2. Definition

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

For example, in a given space, certain behavior or activities may be socially or culturally discouraged while others may be clearly prohibited by display of written instructions or rules.

On the other hand, what is not acceptable in a certain space may be acceptable in others.

3. Design

- How well does the physical design support the intended function?
- How well does the physical design support 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 physical design is intended to control behavior?

Consideration of these questions may reveal areas that require changes or improvements.

For example, a space may need to have a designated purpose; it may need to be more clearly defined, or it has to be better designed to support the intended function. Once these questions have been considered, the information received may be used as a means of guiding decisions about the design or modification of the space so that the objectives of space utilization as well as natural surveillance, natural access control, territorial reinforcement and maintenance and management can be better achieved.

3 OVERALL DESIGN

The design and management of the environment influences human behavior. A barren, sterile place surrounded with security hardware will reinforce a climate of fear, while a vibrant and beautiful place conveys confidence and care. Both the functional and aesthetic values of public and semi-public spaces contribute to a sense of safety. In particular, the degree to which users can find their way around influences the sense of security. Good design reinforces natural use of space and lessens the need to depend on signs in order to find one's way around.

1. Importance of quality and beauty

The design of the space, besides fulfilling functional objectives, should create an aesthetically pleasing environment that a person can enjoy. The security aspects should be considered as part and parcel of designing the space and fulfilling aesthetic values.

2. Design clarity

The design of the space should be easy to understand. The entrances and exits, the places to find people and the places to find services such as washrooms or telephones should be easy to find for a person visiting the place for the first time. The more complex a space, the more signs and other measures to improve accessibility need to be provided and this may lead to more confusion. An inviting environment creates an image that attracts people.

3. Avoid unusable spaces

The purpose for designing a space should be clear. Unused and unusable "dead spaces" should be avoided.

4. Night time use

The design of the space should address night time use.

5. Construction materials

For better public safety and security, the design of the space should take into consideration appropriate materials, its placement, color and texture to make the space inviting or uninviting. For example: bright and vibrant finishes create a sense of safety.

4 DEFENSIBLE SPACE

To provide maximum control, an environment is first divided into smaller, clearly defined areas or zones. These zones become the focal points for the application of the various CPTED elements. "Defensible space" is the term used to describe an area that has been made a "zone of defense" by the design characteristics that create it.

Under the defensible space guidelines, all areas are designated as either public, semi-private or private. This designation defines the acceptable use of each zone and determines who has a right to occupy it under certain circumstances.

Public Zones: These areas are generally open to anyone and are the least secure of the three zones. This is particularly true when the zone is located within a building or in an area with uncontrolled access and little or no opportunity for close surveillance.

Semi-private Zones: These areas create a buffer between public and private zones and/or serve as common use spaces, such as interior courtyards. They are accessible to the public, but are set off from the public zone. This separation is accomplished with design features that establish definite transitional boundaries between the zones.

Private Zones: These are areas of restricted entry. Access is controlled and limited to specific individuals or groups. A private residence is a good example of a private zone.

Division between zones is generally accomplished with some type of barrier. These can be either physical or symbolic.

Physical barriers, as the name implies, are substantial in nature and physically prevent movement. Fencing, some forms of landscaping, locked doors, and the like are examples of physical barriers.

Symbolic barriers are less tangible. Nearly anything could serve as a symbolic barrier. The only requirement is that it defines the boundary between zones. This type of barrier does not prevent physical movement. All that is required is that it leaves no doubt that a transition between zones has taken place. Low decorative fences, flower beds, changes in sidewalk patterns or materials, and signs are examples of symbolic barriers.

5 CONCLUSION

By including CPTED principles in new construction, from the design stage, we can make the built environment safer from the start, rather than waiting for crime problems to develop and depending on law enforcement to handle them after the fact. By reviewing existing problem areas and applying the CPTED principles, those problems can be turned around.

Of course these principles can't make a community safe lonely but by these principles we can find those spaces that heve problem and reduce them. By creating safety and security that are made by these methods, neighbors will have responsibility for their environment and this is the greatest tool to prevent crimes.

6 REFERENCES

- NEWMAN, Oskar: Creating defensible space. U.S. Department of Housing and Urban Development, 1996.
 NATIONAL CRIME PREVENTION COUNCIL: crime prevention through environmental design guide book. Singapore , 2003.
 IRANMANESH, Nasim: Using the Principles of Crime Prevention through Environmental Design in Iran . In: 9th Annual International CPTED Conference 13-16 September 2004, Australia Brisbane
 DORINDA R., Crime prevention through environmental design. National Crime Prevention Institute, 2002
 RAU, Macarena: Civic Safety and Residential Urban Space Natural surveillance in community appropriation limits, 9th Annual International CPTED Conference 13-16 September 2004, Australia Brisbane
 IRANMANESH Nasim: civic vitality & urban design, 40th ISoCaRP Congress 2004 , geneva