Situational Crime Prevention through Architecture and Urban Development: Strategies

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ABSTRACT
Undoubtedly, the issue of safety is one of the important and basic principles of sustainable development and one of the dominant concerns in each society which uses all of its tools in order to achieve it. Currently, the condition of the human society clearly shows that the arms of the government are not able to provide the necessary safety for the societies it governing alone and it needs the participation of people and public institutions in the respect of the realization of this phenomenon. Intervention and performance of the engineers and designers of the urban spaces, in the respect of reducing the rate of crime commitment as well as victimization, is one of the necessities of our time and here it has been attempted to provide practical strategies of this type of performance which has architectures and construction engineers as well as briefly expressing the theories and thoughts related to this issue. And this article has been called crime prevention through architecture and urban development. Thus, this paper is a descriptive – analytical one and the information has been gathered by using library method.

Keywords: Situational Prevention, Architecture, Environmental Design, Crime

INTRODUCTION
Today, this thought that civil engineers and architecture authorities of urban development and design and construction of the spaces used by the government and people has nothing to do with the decrease or increase and also type of the crimes committed by the criminals or that the discussion of crimes is not associated with these, is rejected. In the not too distant past, the tissue of the cities was dense so that citizens would live in a more limited and more concentrated spaces so that they would be able to defend themselves against their attackers. Also, the principle of realm in the city is a very important principle for creating the feeling of belonging in the people for facing the crimes. Of course, desert cities of Iran such as Yazd had another specification. In other words, each house is completely protected against being seen by the strangers and invaders in such way that their women and girls were able to work and be active easily without having to worry about invaders, strangers and those who are not their family in particular. This issue is perfectly clear in the architecture of the desert. Houses are separated from the outside spaces with tall walls without any windows to the outside space. They had two kinds of door knockers in their entrance one belonging to women and another one to men. The entrance was a small space in the corner of the yard. The house itself was divided into two
sections, inside and outside and the inside section was smaller than the outside space. The inside space belonged to women and children and the outside section belonged to the owner and man of the house and his guests. In the past, architectures built the cities with traditional principles and they transferred these principles to the next generations. All of the spaces were clear and the dimensions of the cities had smaller scales and were more humanistic. But after the development of the cities, the natural supervision over the cities reduced. Today, the issue of the cities of Iran has changed, neighborhoods and friendly relationships of the past have been lost and this has led to lack of supervision. You can't know familiar from the unfamiliar and the realm and ownership do not have their previous meanings. This issue is seen more in large cities. Crimes happen more and easier in the large cities. Safety, which is an important factor for residency and is considered as one of the pillars of sustainable development, is only created by the protector and police and residents are not responsible for creating safety through public supervision. Now, our public spaces are more or less places for buying and selling drugs and accumulation of gangs and commitment of other crimes.

In the past, in Iran and in other countries, urban spaces include squares and streets which were designed, defined and specified. But, in the recent period, when the accessibilities (highways, bridges and cross-roads) want to find their place in the city, then it is necessary to create spaces which have been lost and it is not possible to monitor them or it is slick and therefore they turn to spaces which cannot be defended. In other ways, we can say that a space which cannot be defended is the cause of occurrences and evaluations which happen in the cities. They have special performances which are undesirable from various aspects and include throwing garbage and drug abuse, theft, begging, accumulation of gangs, rage, distribution of drugs and selling it and so on. When the heat of constructing highways was cooled off, western countries started reviewing the quality of the urban development of the cities and found out that these lost spaces creates various issues in such way that they tried finding some solutions for spaces and defining these spaces as urban spaces which itself led to the emergence of new theories in criminology in the field of crime prevention.

In the recent decades, paying attention to the modern approaches and new tools in crime prevention has focused the attention of criminologists on the role of architecture and urban development and shape of residencies and public and private spaces in the emergence and occurrence of crimes and numerous theories have been provided in this field a total of which can be put into two main categories: (Rahmat, 2011: 94)

a- Criminology theories associated with the environment: studies related to crime
Theories of environment determinism, human ecosystem, stationary of small societies and the theory of social control of individuals are in this category.

b- Criminology theories associated with the environment: studies associated with designed spaces
Theories of the association of crime with density of population, association of crime with social and economic statuses, classification of residential unit, environment, poverty, special place, suitable environment, vulnerable areas, broken windows, travel due to crime, geographical display, crime-arising places, crime prevention through environment design, design against crime, defendable spaces against crime, logical choice, crime pattern and theory of daily activity is in this group.

Therefore, it is seen that not only engineers and designers have roles in the discussion of crime prevention, but in a type of the types of prevention, which has come to be known as situational prevention, has an important and
undeniable and non-negligible role. It is true that a designer or a person who builds buildings prioritizes beauty, welfare, strength and safety of the construction and attempted to use these features in the best way in their artistic work; but it is time to consider the safety factor of the construction in order to reduce crime and victimization of the individuals for them not to be neglected.

Although the topic of this article to review and express the practical strategies of situational crime prevention through architecture and urban development and the author is not attempting to express and explain the theoretical and historical principles of situational crime prevention in details; but defining and recognizing the mentioned issue briefly seems necessary.

**Concept of situational prevention, its background and position**

Situational prevention is one of the types of prevention in the science of criminology and prevention is basically the most important purpose of this science. Public, penal and private preventions are other types of prevention (Najafi Tavana, 2005: 50 and 52). The issue of prevention is one of the significant differences between penal rights and criminology as well. Whereas penal rights only has the less effective weapon and even in some cases ineffective weapon in most cases for preventing and fighting the crimes and reforming criminals; criminology considers crime as the cause of the complicated factors and causes where the punishment contains no useful point in the respect of neutralizing the causes and factors. In other words, the goal of penal rights is to fight the effect which lacks value from the criminology perspective because with the survival of cause or causes, fighting the effect will never have the desirable outcome (Keynia, 2006: 35). The purpose of situational prevention is to prevent occurrence of crime through reducing the chances, increasing the risks caused by arrests, minimizing the benefits of criminals, approval of the laws in association with the non-negligibility of some crimes and offering help to potential and actual victims (Mohammad Nasl, 2014: 47).

Thus, the word "situation" refers to a field where behavior exactly happens and "situational analysis" refers to searching organizations in the relations between behaviors and situations (Valad, 2001: 211). In this regard, situational prevention includes the following items when exemplified:

Installing security systems in the houses, stores and banks, using security guards (Segel, 2006: 202), changing and moderating building designs (Safari, 2001: 283), destroying the accumulation of tramps, prostitutes, drug distributors, bandits and criminals, deployment of police forces around the parks, schools and squares and installation of surveillance cameras (Najafi Tavana, 2005: 55), protecting potential victims such as women, children, and the elderly in the respect of protecting properties and families against rapists and invaders. For instance, in the case of children, it shall be considered that due to their physical conditions and mental sensibilities, are the most vulnerable group of the society against violent crimes. Also, the age rate is considered to be the main victims of exploitation and sexual assaults as well (Najafi Tavana, 2003: 45-48).

Situational prevention, which was mentioned in England in 1980s scientifically, given the various conditions interfering in the occurrence of crime, suggests some attempts and the process of these attempts will be loss or at least weakness of the situations and chances of the commitment of the crime (Najafi Tavana, 2005: 55). In this type of prevention, control and innovation have replaced punishment and passivity and by adopting numerous attempts suitable for each purpose might be the victim of the crime, it is tried to prevent its violation (Safari, 2001: 283). In fact, in this new approach, the priority is educating the victim as the cible of the crime. The situational prevention project is attributed to three
prominent characters named Roland Clark, Mi Hiu, and Cornish as a scientific theory (Safari, 2001: 290).

From the perspective of demographists and criminologists of northern America, cible has an important role since the risk of passage to a criminal action is caused by creating a connection between the deceptive unprotected target (cible) with a potential criminal who generally commit a crime after the strategic analysis of the available benefits and risks. Therefore, if cible is protected well with defense and offense methods, the risk of criminal action reduces (Lopez and Philisola, 2000: 65).

In other words, criminal actions will be unavoidable if a) purposes are protected carefully, b) the tools of crime commitment are controlled and c) potential criminals are watched carefully. Dangerous individuals might intend to break laws but only those who are completely illogical attack the unavailable purpose which is well protected and don't care about the risk of hard punishment (Segel, 2006: 203).

Crime prevention programs have been developed in many places of the world and they have attracted the participation of thousands of experts of law enforcement, public and private officials, leaders of the volunteer groups, specialized and labor organizations and millions of citizens (Mohammad Nasl, 2012: 148). Of course, let it be said that situational prevention has its own critics who have mentioned the disadvantages such as axis tools instead of prevention effects' being human-orientation, sectional and temporary, conflict with citizenship rights, creating fear in the society, developing injustice, transferring crime and also weakening social control (Mohammad Nasl, 2014: 159-164).

Methods of situational prevention

One of the theorists of this type of prevention recommend four groups of actions in determining the methods of situational prevention each of which contains the related groups and examples (Safari, 2001: 293-296).

Briefly, the four groups drown by Clarke are as follows:
1- Increasing the required difficulty for the criminal to reach the target like installing security lock on steering wheel.
2- Increasing the required risks for committing the crime such as deployment of border patrols.
3- Reducing the achievements expected from crime or the profit of the crime such as the car owner picking out the changer of the car.
4- Eliminating factors that lead to the encouragement or stimulation of individuals to commit a crime such as the necessity of registering while entering a hotel.

Among other methods, we can refer to Oscar Newman's "defendable space", C. Ray Jeffrey's "prevention through environment" and also Marcus Felson's "collective share" strategy (Segel, 2006: 203-206)

Among various methods of situational prevention, here in proportion with the discussion, we briefly review the Crime Prevention through Environmental Design with CPTED abbreviation and "defendable space".

Concept of Crime Prevention through Environmental Design with CPTED abbreviation and "defendable space"

Crime prevention through environmental design can be defined in this way: suitable design and an effective usage of the space and built environment which leads to the reduction of criminal opportunities, fear of crime and improvement of the quality of life (Mahmoodi Janki and Ghoorchi Beygi, 2009: 345). In fact, some criminologists have focused on a method in which the design of the buildings and urban architecture can affect the rate of crime. They argue that lack of a defendable space or supervision in the architecture of the buildings can lead to the prevalence of deviations and crimes. This type of theories about buildings and their designs was firstly mentioned as a theory by Newman who was an architecture engineer. He
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criticized the design of buildings that were built collectively for various reasons and claimed that such complexes are more vulnerable against crimes due to having various entrances and exits and public and uncontrolled areas compared to other buildings (Mirkhalili, 2008: 302).

Mechanism of crime prevention through environmental design

This theory has a special analysis of crime commitment such as other mechanical strategies of crime prevention. The background of these analyses can be traced back in the philosophy of benefit originality and thoughts of persons such as Bentham and before him Hobs. This theory is a kind of return to the classical views. Bentham mentioned the criminal accounting principle and gave an economic and account-oriented role. In other words, Bentham believed that the criminal measures the joy and pain of the commitment of crime and penalty, if the punishment is severe, the criminal will refuse to commit the crime (Pradel, 2002: 62-63). In this theory, the criminal is considered as a rational and rerouting person who is after maximizing his or her satisfaction; therefore he or she evaluates advantages and expenses of crime commitment. In other words, criminals evaluate the expenses associated with the crime in the decision-making processes. This expense can be the risk of being arrested or the intensity of punishment; although researches show that criminals think more about the risk of being arrested than the intensity of punishment at the time of committing the crime (Mahmoodi Jankar, et al. 2009: 353).

Economic justification of the crime prevention programs

Various strategies of crime situational prevention, in addition to effectiveness, are more economic than traditional strategy of controlling the crime (such as imprisonment). Comparative studies about control and preventive attempts show that reduction of opportunities and therefore reduction of victimization have an economic profit whose ratio varies from a minimum of 1.83 dollars to a maximum of 7.14 dollars for an expense of one dollar. These strategies also create economic benefits for various governmental sections. In England, a research was conducted by the inspection commission on the ratio of expenses and the profit of various attempts to treating teenaged criminals which shows that judicial intervention costs 10542 dollars; whereas the cost of school’s advanced program (helping the teenage runaways from school to return to it) is 6950 dollars and the programs for helping the adults find work only costs 1167 dollars (Mohammad Nasl, 2012: 182). Although these statistics do not belong to our country, but our statistics are more or less the same.

Solving the crime through penal justice is very expensive where the cost of crime is equal to 5 percents and 14 percent of domestic gross production in developed countries (Moghimi, et al. 2010: 66).

Here, it is suitable to recognize some of the principles of prevention through environmental design before reviewing the strategies.

Principles of crime prevention through environmental design

Crime prevention through environmental design is supported through the following principles which are applied in specific situations: (Mahmoodi Janki, et al. 2009: 355-363).

Determination of realm (territorialism)

Realm is a concept which clearly specifies the private space from the semi-private spaces and creates the sense of belonging. Therefore, ownership creates an environment where the presence of strangers and invaders would be specified and it is defined easier through the following methods:

A: the sense of developing legitimate ownership through reinforcement of the natural supervision available in the strategies of controlling natural accessibility through symbolic items (nonphysical) or social factors.
B: space design for letting the constituent usage and required purposes.
C: using the sidewalk, constructing an area, visual arts (painting and scripture), signs, plates and fences mention and determine the space ownership.

Of course the rate of dependency of people to the environment has various degrees and it starts from being indifferent to a place and varies to attachment to a place and even loyalty to the preserving a place (Falahat, 2006: 61).

**Supervision or protection**

Natural supervision is a design concept based on which the invaders are watched. Creating natural supervision helps the creation of an environment which creates various opportunities for the natural behaviors of the people of that place.

Spaces can be designed in such way that they are seen easily through the following methods:
A: designing and placement of physical features for maximizing the view.
This can include: direction of the building, windows, entrances and exits, parking, sidewalks, guarding gates, trees and bushes constructing an area, using fences or walls, signs and other physical obstacles.
B: placement of individuals or activities for maximizing the possibility of supervision.
C: the minimum of the standards of repairing and maintaining light which makes the creation of light at the night time in the garages, entrances, exists and other areas associated with the creation of an environment necessary.

**Controlling accessibility or entrance**

Controlling accessibility is a concept in designing which is basically applicable for reducing the accessibility of crimes and it means preparation of controlling natural accessibility and increasing natural supervision in order to limit the entrance of criminals especially in areas that are not easily seen.

With this method, the invaders are identified more easily in the following ways:
A: using sidewalks, various coatings of the floor, gate, lighting, and constructing an area in order to give clear guidance to the public about the entrances and exits.
B: using gates, fences, walls, area construction and lighting for preventing or not encouraging individuals' access to dark areas or unsupervised areas.

An environment which has been designed for a private space has two functions.
First: it creates the sense of belonging, owners have mutual benefits and it is more probable for them to fight the invaders or report them to the police.
Second: the sense of ownership space creates an environment where the strangers or invaders are specified and are seen easily.

Natural realm is reinforced by using buildings, fences, coatings of the floors, signs, lighting and also landscaping with the purpose of specifying the owner and defining the private and semi-private space.

The CPTED theory supports this issue that before involvement to organizational and mechanical solutions there should be a discussion about all of the equipment for natural prevention of crimes. The CPTED method is way friendlier than the method of making the crime commitment more difficult.

**Supporting activity**

Supporting the activity is a programmed work for the space. Supporting the activity is placing the activity where the person becomes involved in an activity and this will become a section of natural supervision system. Examples include these items:
A: placing safe activities in areas which deprive the invaders from their courage to invade, in order to increase the natural supervision over these activities and the feeling of security for normal users and the sense of danger for the invaders.
B: placing dangerous activities in safer places in order to overcome the vulnerability of these
activities for using the natural supervision and controlling the accessibility to the safe space.

C: placing the spaces of the society in places which have been arranged in such way the natural supervision in it or controlling the created accessibility or placing this type of spaces in places that are not visually available to the invaders.

D: reforming the spatial program for the possibility if an effective usage and creation of a suitable density for accepted behaviors.

**Repairing and maintaining the space**

Properly repairing and maintaining area construction, lighting and other items can facilitate the principles of CPTED which are reinforcement of realm, natural supervision and controlling natural accessibility. These include:

A: properly repairing and maintaining the lighting equipment according to the standards.

B: recognizing these principal concepts can help guide the owners, architects, programmers and constructors in designing the constructed environment which fulfills the purposes of CPTED.

A multiple-floor building has a lobby, some elevators and a designed information center and it is supposed to be self-service, after a while, such crimes occur in the lobby such as mugging and intended sabotage and so on. The owner of the building installed a surveillance camera for watching the area. Finally, some guards were hired to watch the cameras and the people coming in and going out. Until now, people who have come here did not feel comfortable, they feel unsafe and are seen all the time through the camera and now it is so bad that a part-time security guard shall be present at the time of inspection.

A better method: the CPTED method was designed with the possibility of natural supervision; for example, through placing a registry or a cafeteria, putting a few types of activity in unexpected spaces for them to intend to prevent naturally crimes. In addition, the CPTED method is very customer-oriented. This method does the same thing as a guard but it does not seem as annoying. In fact, this method is way more acceptable.

**Principles of reduction of crime opportunity**

In 1970, Wilbur Rykert gathered the following principles while attempting to prepare an executive philosophy about reduction of crime (Mohammad Nasl, 2012: 154).

1. Delinquency is an acquired behavior.
2. Reduction of crime opportunity reduces the opportunity of learning a criminal behavior.
3. Criminal opportunity can be reduced by reforming safety strategies and also through increasing the level of supervision by the society.
4. Crime prevention is not accessible in the long-term unless the criminal opportunities reduce nationally.

Now, given the issues mentioned previously, it can be understood that currently citizens, the police and government leaders have come together so that they would fulfill this truth that crimes, drugs, and issues associated with them exceed the individual power of the police. Thus, directing the sources of all of the society is necessary for encountering these issues. Although police specialists continue playing the role of executing the law and maintaining order; but they restore the crime prevention strategies by designing and executing them by attempting to work with the society (Mohammad Nasl, 2012: 132). Therefore, here we provide two categories of practical strategies of crime prevention through environmental design a) associated with the authorities of crime prevention matters (government) and b) strategies associated with the designers and engineers of construction projects which have been extracted from the theories of criminologists.

**Practical strategies of crime prevention through environmental design**

a) Recommendations associated with the authorities of crime prevention matters
(government) in association with citizens and especially designers and engineers

Article 2 of the crime prevention bill approved in 2009, in the execution of paragraph 5 of the principle 156 of the constitution of Islamic Republic of Iran and for preparing and adjusting coordinated and comprehensive policies in the field of preventing crime and also monitoring its execution and supporting people's participation and public institutions and assemblies have ordered the formation of the Supreme Council of crime prevention with the following composition:

The chairman of the judiciary, first vice president (subprincipal), Attorney General, the head of IRIB, the police chief, the head of the state inspectorate, head of the Prisons Organization and Security and Correctional Measures of the country, head of the Armed Forces of the Judicial Organization, chairmen of the welfare and social security organizations, commander of the Basij Resistance Force of the Revolutionary Guards of the Islamic Revolution, the head of the crime prevention organization (council member), two of the deputies of the Islamic Parliament of the legal, judicial and social commissions each one with the approval of Parliament as an observer, chairman of the Supreme Council of the provinces, chairman of the organization of Islamic advertisements, two of the university professors of the criminology trend of law, psychology or demography recommended by the chairman of crime prevention organization and selection of the chairman of the crime prevention Supreme Council.

It is expected from the Supreme Council of crime prevention to consider the following items in the respect of the given responsibilities written in article 3 of the mentioned bill and the rest of it:

1. Items that increase, prepare and distribute public information in terms of methods of crime prevention.
2. They maintain the relationship with local and national institutions and organizations of crime prevention and they exchange the required information with others.
3. In order to prepare the estimates of environmental and physical security of the neighborhoods exposed to the risk of crime and issues associated with it, they shall cooperate with other governmental and social institutions. These estimates shall be reflected in the design to reduce the crime opportunities.
4. They shall provide education and technical help to other governmental institutions, businesses and societal organizations so that they would be enabled to design systems of providing crime prevention services in their components.
5. If possible, police officers make the conferences on crime prevention for the society, businesses, schools and governmental institutions their objection in order to make them more informed about the crime and methods of preventing it.
6. Crime prevention authorities, with cooperation with the city's cartography office, shall review the design of the area and buildings in the local development projects (Mohmmad Nasl, 2012: 133-140).
7. Since many people cannot financially afford to fulfill the requirements of criminology or do not have the necessary information, the government shall act and assign a proper budget to this matter. A part of this budget can be spent on the creation of complementary spaces throughout the cities.
8. Issuing laws in terms of accurate architecture for architects is effective for accurate designing and municipalities can set the condition of considering the situational technical points of crime prevention in that building, residential or official complex for offering the license.
9. Insurance companies shall also consider these principles while issuing their regulations and tariffs and given lack of
consideration of the principles of a design lacking crime, the possibility of occurrence of crime shall be increased and insurance tariffs shall be in proportion with the rate of considering these principles.

10. In terms of judicial measures, given the rules of civil responsibility, the courts can consider the compensation based on considering the principles of accurate architecture. Therefore, while arranging the responsibility at the time of occurrence of crime, in places where the safety points are not considered, a part of this responsibility shall be focused on the manufacturer or the owner.

11. Undefended spaces turn into defended spaces after recognizing and applying the proper methods by the municipalities and in this respect, exchange of the information of cultural representatives, psychologists, criminologists, architects and urban developers (Rahmat, 2011: 249-251).

**b) Recommendations associated with architects and construction engineers**

1. Paying attention to the effect of the options of urban design on effective supervision. The space shall be designed in such way that places and their borders are clear. It shall have proper views and landscapes for human and technical supervision and it shall be accessible and make supervision possible for the authorities.

2. Paying attention to supervision since the preliminary stages of the project. Intervention of individuals who are responsible and beneficiary in supervision which means that their project shall consider the required facilities for their doing responsibilities including operational methods and their limitations. For example, by concluding an agreement, the police should be able to enter the site (Mohammad Nasl, 2014: 122).

3. The great professor Dr. Rahmat, in his book called "crime prevention through architecture and urban development", suggested some check-lists for designing the apartments and also designers of business centers which can be a very good practical strategies for respected designers and architects and since this article cannot go to the detail of mentioning all of the check-lists, they are not written down (Rahmat, 2011: 258-265).

**CONCLUSION**

Realization of the issue of security, as one of the basic pillars of sustainable development, requires a two-sided cooperation and contribution of authorities and people. In 2009, the Islamic parliament approved the crime prevention bill and this showed that the representatives of the nation are concerned with this matter. However, a few years after the issuance of the mentioned law and its execution throughout the whole country, we are still observing a wide spectrum of crimes which can be prevented through preventive methods. The realization of the intentions of the programs of crime prevention requires serious commitment of specialists and thinkers of this country to the issue while cooperating with the triple forces. Preventive guidance of the external resources such as the European Council is indicative of this matter that the European countries have also understood this cooperation and participation and have made it a priority in their prevention programs. Therefore, it is valuable for the Iranian not to neglect this and show their art for art it is only theirs!

**REFERENCES**