

Providing the Design Criteria to Achieve Defensible Spaces Using the Urban Design Methods

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ABSTRACT

Feeling of security is one of the most important indicators of place quality. Security issues were important in the cities from the early settlements formation in different scales using various strategies such as building fence around them and in many periods of history, has been the main axis forming the main structure of the cities. The fences in old towns are one of the large-scale physical reflections to create safety, but in addition, social and physical structure of the historical cities provided sense of security, serenity and the experience of living in a safe environment for its residents. By the hierarchical of spatial organization in historic neighborhoods, the possibility of objective and subjective definition of dominions and also possibility of space supervision has been provided. According to many scholars nowadays, physical environment has a great impact on reducing or increasing the amount of crime in a neighborhood and its safety. Above article using the reviews of theories of architectural and urban planning scholars, studies on the relationship between physical environment and crime rates and analyzes the commonalities and differences between their opinions and specifies the characteristics of a safe and defensible spatial environment. Research results indicate that by enhancing the sense of belonging to neighborhood residents using the strategies such as increasing participation in the affairs of their neighborhood and encouraging long-term residence in the neighborhood, the most important factor is the safety upgrade. Normal surveillance of residents in public areas also is one of the basic techniques of urban safety and this issue will be strengthened especially at night through the proper lighting and neighborhood equipment. .

KEYWORDS: Urban space, defensible space, security, design criteria.

INTRODUCTION

Expectation for security in the human needs, after the primary needs, has the most important status. Jon Lang, the renowned American theorist, raises the issue of safety along with other physiological human needs like food, shelter and health. Sensitivity of this need is enough unlike the disruption of providing other needs, reflecting the rapid method and inducing the individual reactions quickly, because absence or lacks of safety feel threatened and defensive mode is adopted. A safe and secure environment for life is vital and a gift causes insecure in the environment and concerns arising from unsafe places affect on the other human activities. Social dissonance and crime in urban environments are the major causes for insecurity in cities and environment of life, and are deprived safety and disrupting the peace and comfort for people. as the issue of healthcare and human communities and prevention of disease have been accepted prior to the issue of their treatment and this content is the major radically, crimes also crime prevention has taken precedence over all the government and judiciary and law enforcement actions during the full cost of doing so after the person convict of the crime or punishment and exile modification and educate them.

Definitions of Words and Phrases

A) Urban space:

If we want to offer purely physical definition from urban space, all locations between buildings in urban can be considered urban spaces, but two elements of aesthetic and interaction withdraw us from the above definition. Basic condition for a space, to be considered as an urban space, is social interaction and reciprocity. in fact urban space is a page, that life story of a group begins and in this space there is a chance that some of the social boundaries will be broken and attitudes will not pre-prepared to join the event .urban space is an artificial, organized, regular and adorned one that acts as a context for activities and human behavior (pak zad, 2006).

B) urban space without defense:

Undoubtedly, the multiplicity of definitions and dimensions of concept of urban space is also affected on the concept of urban space without defending. Representation physical definition from a defenseless urban space seems

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difficult .but it can be said that, any defenseless urban area outside of our space and public space are not formed. functional definition of non-urban space can be provided as follows: urban space that the crime is more capable than the other spaces .indeed without defense, urban space is a spatial in terms of form and structure such that its visibility will be minimized and therefore due to not being seen, it is potentially ready to accept social damage or abnormal action .without defense urban spaces are generally formed from growth of three factors (Taherkhani, 2002):

- Lack of consistency between form, function and meaning:

Every physical space comes forth in order to determine replacing a specific activity to respond the needs and demands of users and its shape in addition to its probation by the aforementioned factors will be influenced by other factors such as characteristics of the natural environment, social, technical facilities and the dominant social culture , following the principle that every activity is performed in an area physical and semantic features appropriate by its specific activity , even the relationship between form and meaning of performance can be realized . Creating compatibility between form and function is easier than giving meaning and guidance that is part of the urban spaces.

- Spaces without function or with intermittent function

Abandoned buildings, semi construction projects of all and such spaces are considered non-functional and provide the incidence of crime in urban areas. Another type of without defense spaces, in this category is spaces which have intermittently functioned and in section of the day or season or year, it converted into the dead spaces.

- The lack of visual view: missing spaces are the spaces that are out of sight for physical reasons. Impossibility of visual view due to the lack of lighting, disguise of form due to darkness are the first step towards creating the space without defense. The first step towards creating the space is without defense.

C) Defensible urban space:

Urbanism culture considers that the defensible space is the spatial residents of neighbor buildings that have the ability to monitor and control it. (Cowan, 2005) Jane Jacobs sees the existence of defensible space existence depends on an element that is street eye and loafer named. Shovai 2005, (Oscar Newman) believes that when strangers walking through inside of your home, space are not defensible (Turner, 1995). Broadbent believes that defensible space is a space that is controlled where everyone has the potential of crime and can be seen by residents as a nuisance. (Broadbent, 1995) Carmona stated that the idea of defensible space is the physical environment surrounding the reduction of criminal behavior that is effective in reducing fear of crime. (8) So perhaps the defensible urban space can be defined as spaces in the city that is less capable for acts of crime and abnormal abuses (Carmona at al, 2003).

D) Factor of starting physical investigation and prevention of crime

in the United States in the late 1960s and early 1970s statistics and the rate of crimes unprecedentedly increased, so that politicians and researchers were looking for practical and immediate solutions to solve the problems of crime in society, solutions were presented by researchers between all the solutions, proposed solutions of architects and urban designers contain all the necessary criteria and suitable alignment than other solutions. This solution was very simple: changes in the form of urban environment and the next step find an approach for people using the space created. Starting to work on the assumption in public and residential areas, sociologists and owners of ideas, seeking to urban conditions and changes made as knew as a strategy to avoid urban crimes .although in the theoretical framework and administrative methods were different, but in the some fields were in agreement (Heshmati 2005):

1-urban design, through the creation of the barriers in crime situations, it is difficult to commit a crime and prevent crimes from occurring.

2- The physical environment through the elimination of unsafe places can prevent crime and criminal behavior.

3- Urban design and physical environment can change behavior of citizens in order to increase probability of view or prevent and arrest the offenders.

4-the physical environment through the care and control of public areas and streets and squares, and social interventions and continuity at the time of occurrence of crime used by citizens

Domain of studies was conducted in European and American countries and the studies of by "Oscar Newman" and earlier by Wood (1961) and Jacobs (1961) and Angel (1969), were named as first-generation theorists of physical environment and the second generation of the theoreticians in the form of theory of crime prevention by environmental design came to the field that the early commentators Geoffrey (1971) and later Taylor and Harl (1992) were raised and believe that there is a new element in the opinions of criminology further than crime factor, it focuses on the surrounding conditions of an incident or crime (Heshmati,2005).

Genesis and evolution of defensible urban spaces theory

1. The first generation of defensible space theoreticians:

-wood:

"Wood" was the first person to mention the relationship between crime and physical environment. He discussed about how structural characteristics related to the construction of public housing and prevented contact and

connection between the residents of that area (which is the foundation of informal social control) (Violis, 1379). Wood's opinion about social control is based on the presence and supervision by residents (Salehi, 2008, 136).

- Jane Jacobs:

Subsequent studies of Wood, Jane Jacobs from the American urban design scientists, wrote the book *Death and Life of Great American Cities* with a skillful manner expressed the relationship between crime and structural design of the human life environment. In his theory, he was admitted to observe and care of the street and eyes belonging to the natural owners of the street is needed (Salehi, 2008).

Jacobs stated that the main public places of a city are its streets and sidewalks and that's most vital organs. If city streets be safe from the brutality and fear, city is immune from fear. This means, safety of a city is the basic task for its streets and sidewalks (Jacobs, 2007). Jane Jacobs believes that the essence of life, are amount of diversity, plurality and choice and these factors will cause vitality and safety. He believes that the problem of insecurity cannot be solved by reducing the presence of people and exchanging characteristics of the city and suburbs. Jacobs in this regard also provides rules for the city, including (Jacobs, 2007):

1-each zone and region allocated to the various functions and domains wasn't single-function and is not restricted to a specific activity.

2-length of building blocks is not more than 900 feet and it increases the possibility of social impacts and permeability.

3-Existing several old buildings in place, because the old building will greatly help the credibility of the site.

4-accumulating a high density of people is in place. Street safety coincidentally without doubt or suspicion is reluctant exactly wherever people use from the streets voluntarily with low knowledge of the care and enjoy it. Essential prerequisite for this care is significant quantity of shops and other public spaces that are scattered along the walking routes. Next issue is care of street by residents and employees in urban studies. In some of the richest neighborhoods in the city as there is less self-care, guards are hired for the street. These streets have no eyes and it is devoid of any objective reason for use or view (Jacobs, 2007).

Jacobs mentioned sufficient light in the streets and neighborhoods and he raises the necessity of that issue, but stated that without the eyes, the light efficiency does not have any value on safety of places. He is also renouncing a tool such as paling in the neighborhood and he says view of an urban neighborhood paling in a civilized city, it means it is in-concinnity and far from imagination.

-Oscar Newman

The idea of defensible space raised about 30 years ago by Newman .neighborhood that had attract his attention, was from Protego that goes through destruction. Protego is one of the most prominent architects and as a new intellectual approach in the design was built. This scheme followed the planning principles of Le Corbusier and the International Congress of Modern Architecture. Despite that its density was not high, 11 floors were height, and project ideas include maintaining the ground and releasing the first floor for social activities. After single-headed and poor households occupied units, many problems such as high levels insecurity and crime emerge. In Protego Street, there were older residential complexes, smaller and a row one that people with identity were living. This complex still remains at the disposal of old inhabitants and had no problem in terms of structure. So it seemed that the important physical difference that the person was able to remain that is to be non-habitable (Pakzad, 2010). It can be concluded that residents maintain and take care from places that are only "property" of their own.

Newman in addition suggested that any space must have a custodian and empty and without custodian spaces providing crime situation, he also believes that public and semi-public spaces also should be monitored by residents. Newman also in the comparison between tall multi-floor complexes and short up to 4 floor complexes concluded that with that in both cases in terms of density of residential units in a unit area are equal, but the tall complexes have lower safety and higher crime rates (Pakzad, 2010).

Oscar Newman in his studies found that crime in residential neighborhoods often occurs in the places where is hard to observe and viewing the complexes activities and public access to these places is not easy. He concluded that if the buildings are designed in a form that residents can see the entrance doors and public places, crime decreases. He also found that residents' participation and encouraging a sense of responsibility towards the public spaces around their residence and also creating instinct of property and territory residents of the residential neighborhoods is very effective in reducing crimes. In total Newman's theory relies on four concepts to describe defensible space: readability, sense of territory, natural surveillance and the safe zones (Pakzad, 2010).

It is noteworthy that the criticism and cavil are also entered on Newman's work. Opponents believe that although the improper physical environment will increase violent behavior, but if when you create a better environment, the amount of these behaviors will be reduced or not, but it is not proven yet.

2- Second generation of defensible space theoreticians

-Patterns of crime prevention by environmental design:

One of the first theoreticians of crime prevention is environmental design (CPTED) by Geoffrey (1971), which is the beginner of a new era of criminology; he has focused on circumstances surrounding the crime more than crime and the criminal element. CPTED theorists can be considered the second generation of environmental theoreticians that studied on the models crimes prevention in the stage before the attempts to integrate social and cultural variables and realistic assumptions about ownership and territory behavior argued during the years 1974 to 1987 that they completed their studies. A committee consists of urban planners and sociologists and criminologist's research on changes in the physical and social environment based on four principles underlying the observance of the principles of crime prevention:

1. Surveillance: creating physical conditions is suitable for users of urban spaces so that their ability to observe criminals and people suspected and disturb increase thereby preventing accidents or crimes is on the verge of happening.
2. 2. Citizen participation in the urban spaces: encouraging and persuading citizens to use as much of urban spaces created so that it causes to reduce vulnerability of environment against the crime.
3. 3. Access control: in order to prevent the entrance of suspicious or disturb people who are at risk of crime of physical barriers such as walls and fences and plant bushes and ... using and designing of pavement and sidewalks and building entrances that should be changed.
4. 4. Provocatively factor: all the factors that encouraged criminal to commit a crime such as easy access to high profit and no risk of arrest should be eliminated.

Strategies for improving safety and creating defensible spaces with urban design tools Major results obtained represent that changes in the structure of the urban environment through urban design can prevent crime and the criminal behavior. Urban design has the necessary tools in this regard such as restricting and accessing control, blocking the crime situation, difficult criminal purposes, care of public areas, public spaces lighting and etc. Defensible spaces without interference from government and police systems are somewhat along with the safety and comfort. Safety in these spaces relies on their existence. Of course it is important to note that defensible urban space design does not intend to play the role of law enforcement systems. The most essential action to achieve the safety in residential neighborhoods is strengthening a sense of belonging residents to neighborhood. So it would not be in vain if we encourage long-term residence in the neighborhood as an effective step to increase the sense of belonging and safety. Long-term residence if not combined with fixation, singly increases the sense of belonging and safety in the neighborhood that is not very effective. To achieve this fixation is very important due to the existence of solidarity among the residents. The most basic condition in terms of residents is the relative similarity between the cultural, social and economic conditions. Of course in cities of these days that are the focus similarity of different people, to achieve this similarity does not seem so easy, but at least something that can be done to involve the residents in the public areas of this community is through cultural exchange and strong communication. One way to encourage this participation is divestiture of public field's management to the citizens. Residents of a neighborhood can take care of their neighborhood spaces and organize them. Another way is partake in a semi-public space. Attachment of residents to neighborhood has the equal amount of importance to residents between them. Because Neighborhood is a place that can be a bed for person memories and through his link with the past, he will get rid of the Insouciant and placeless. Accordingly, maintaining and strengthening the memorable factors is a tool that would link residents to the neighborhood and deepening the sense of belonging in them. Memorable factors can be physical or activity.

A single market or a small tree of neighborhood square, belonging to individual residents of that neighborhood is the field of plenty memories. Maintaining these physical factors cannot be done by method of a museum, but they owe their survival to a role that continuously have in life of residents of neighborhood. Forums and places of gatherings and collective action of residents are also memorable factors that need attempt to maintain and strengthen them, including other factors that strengthen a sense of belonging to the neighborhood residents; it should be mentioned to obvious neighborhood limits. Naturally, no one can belong to own tissue that extends from each side and everyone from any point come in and it comes out. Sense of belonging to a neighborhood is a factor People out of apathy towards the local residences and it encourages them to supervise their neighborhood. This supervision is the most important guarantor of safety in neighborhood. From this perspective, individual residents are responsible to supervise the public areas.

One way to increase participation is encouraging people to stroll through the pedestrian paths or accessing daily needs, it is difficult to move through the drivers in the neighborhood, ,because in pedestrian mode time, the amount of contact with the environment will increase. If this feature combined with the stop and pause, they are intensifying. so with aid predicting of space furniture and equipment appropriate for using various social groups and encouraging them to non-movement activities such as sitting and standing slow their movement with spaces appealing that can increase the attend of Neighborhood residents to the public arena. If in the neighborhood complexes, we pay enough attention to input places, so without the possibility of dealing with troublesome peers

increase, anyone excuses due to the presence of another one and finds it more motivated to leave the private sector. If the movement between private and public areas is also facilitated, this proposition takes the more serious aspects. Additionally it should be added that if urban spaces be single functional or use of them is in the monopoly of a definition group that will have less power to attract people. So spaces of Neighborhood should be possible to carry out various activities simultaneously by different people. More people have a desire to participate in that space. Although the presence of residents is most direct and efficient way for Supervision of space, but we cannot expect to participate at all hours of day and night a year round place continuously and without fault. So in addition, we have the need for public visibility space at least through being seen to be continuously controlled and monitored, that ensures its safety. Vegetation cover located in the neighborhood spaces must also be such a way that after the full growth, it won't be obstacle of seeing the space by residents in the grains. More importantly, if frameworks of public fields have the necessary pores and a barrier does not block the visibility but in behind of these frameworks anyone is not present to see space, virtually all the arrangements applied is useless. Therefore, mode of establishment of spaces within the private areas has a role in the securing the public areas and is better, spaces such as kitchen or living room that in the most hours of day activity, be in less distance from public areas.

Resident's sense of belonging and their surveillance on neighborhoods, in fact are the tools that they can be used to help control the disruptive behavior of safety. The most important issue that has openly threatened safety is crime. Hence the elimination of criminal behavior to achieve the safety context is necessary. Hidden corners, low crossing and low-light places of neighborhoods have great potential for the crime occurring. Therefore they must be eliminated in different ways. Lighting, creating an attraction for this corner to participate of residents and make them visible is actions to eliminate to decriminalize them. Not created lands and ruined and abandoned aggregates are also suitable places for criminal acts, because there are fewer criminals that have the courage and inclination to engage in criminal acts under the eyes of people. It was said that the occurrence of crime is less likely under the view of eyes when a person is trespassing know by observers, this probability falls to lowest level possible. Despite the friendship between individuals in a community makes it easier to identify strangers and being strangers, whether willingly or unwillingly, it puts behavior under magnifier of observation. For this reasons increasing mutual recognition of each resident to each other has an important role in controlling the behavior of strangers. Therefore it is better to establish suitable activity centers and community spaces and local services that may increase the impacts in the neighborhood areas. In a neighborhood whatever we are going through the public areas to the semi public areas, we encounter their place to friendship and even intimacy to allow people to have more sensitivity to privacy of the place which they are partners. It should not forgotten that most schemes listed such as presence of residents in place or their supervision on public areas do not have much effect on the night. Therefore safety of neighborhood is so weak and fragile during the night. Feeling security in a neighborhood at night also is too strong. Existence of activity in neighborhood at nights is an element that takes out that place from the passive mode of night. In this regard, the activities like taxi or pharmacy services that are active at night or activities such as restaurants that until midnight are open play an important role in strengthening the sense of security in neighborhood residents. We cannot expect in residential neighborhood activities to exist all night, but can be supplied with lighting of neighborhoods in the dark to reduce the negative impact of night. In this regard, public areas must have the minimum brightness which is proportional to the role and structure of spaces. Besides all contents mentioned, the physical aspects of safety as well as the psychological aspect are important. If a person does not know himself safe from the risk of physical threats, certainly does not feel safe and secure psychologically too. For this reason, ensuring public areas safety is important. Fast moving vehicles are one of the dangers. The drivers and pedestrian are also dangerous for mutual immunity against both with the slowing of vehicles and rule of pedestrians. In public areas, there is significant impact on the resident's sense of safety. Providing safety of people in private areas is also imperative. If easily from aggregates or public spaces can intrusion into nearby aggregates, certainly the safety of their residents is not enough. With the boundaries in public live areas and surveillance of roof spaces and with considering to establishment of full and empty units to each other, it can help to secure the private areas.

Conclusion

Despite the confirmation of many scholars' terms of this issue and providing solutions for more secure living environment again the question comes to mind whether urban planning and design tools to reduce the incidence of urban crimes where the poverty and limited opportunities for undue discrimination is effective there?

According to what was said and from the summarizing the ideas of theorists, strategies to promote sustainability in urban spaces provided in table below and regulations required to achieve each of the strategies offered.

Brian Anson (1985) reported defending meeting of those who were hurt by standard civilization. He saw the bomber of gas station, spray wall painting, vandal and thief, rapist, criminals as offenders. He believed that none of

the things that Coleman and others say, widespread use of drugs and indifference towards the environment full of unemployment does not explain. In his opinion, lack of money at first changes the proud mother of a home to a sloppy and unresponsive person to her surrounding, then house and after neighborhood, and eventually the whole town. But kid (new generation) probably will convert frustration to the anger and ends that with throwing a ground bomb and of course us mark him with a criminal label. our objective is not murdering or kidnapping ,abusing or suffering physical nuisance that are tolerable, but converse is that ,if expense of avoiding this actions is loss of shaded area, its price is very high and intolerable.

objectives		
Strengthen the sense of belonging to the neighborhood	Encouraging the long-term residence in neighborhood	- Replacement of permanent ownership instead of periodic capturing - Changing neighborhood to adapt to local needs to prevent migration of residents
	Correlation between residents	- Equality of residents in social class and income level - Privatization of public area management to residents - participating several house in a semi-public space
	Maintaining and enhancing factors memorable	- Maintaining and strengthening the Forums and places of community and gatherings and Collective activities in the neighborhood - Maintaining memorable artificial and natural elements
	Being known neighborhood borders and boundaries	- Ascertaining neighborhood confine - Being defined neighborhood inputs - Following the hierarchy of urban spaces in the neighborhood
Supervision of residents on public area	Increasing residents presence in the public area of neighborhood	- Encouraging people to walk the route for access to daily needs or recreation - Existence of equipment, furniture and suitable space for various social groups in the public area in the neighborhood - Possibility of easy movement between private and public areas - reducing the speed of residents in the neighborhood and encourage them to pause and stop - Suitable establishment for input location of aggregates to each other in a neighborhood complex - Avoiding from the single functional urban spaces
	visibility of the public area	- Avoidance from the solid and closed frameworks in the vicinity of public spaces - Suitable establishment of living spaces within the private areas compared to the public area - Lack of inhibition vegetation from visibility of public area
control of safety disruptive behaviors	Elimination of the criminal behavior contexts	- Eliminating, low movement, hidden and low light corners - Eliminating not designed and abandoned regions - Eliminating dilapidated and abandoned aggregates
	Increasing the mutual recognition of residents to each other	- Increasing the possibility of residents collision with each other in public areas with suitable deployment of activities and community spaces - Suitable establishment for input of aggregates to each other and their accumulation in a semi-private area - users of each public area be ascertain - Limitation of extent and boundaries of the neighborhood and its population
Residents feel safe at night and providing safety conditions	Existence of activity in night	- Presence of activities in all night or part of that in neighborhood - Establishment of active in night part in private area in vicinity of the public realm
	Lighting of neighborhood in night	- providing necessary lighting or using of lighting in required areas of the neighborhood - Considering to role of light penetration from inside of private areas to public areas
	Providing safety in public area	- Mutual safety of rider and pedestrian against both with slowing the car and rule of pedestrian in public area - Riders safety against themselves with limiting maneuverability of rider view at the intersection - Safety against the natural effects of inside and around the neighborhood - Safety against the construction and maintenance operations at the neighborhood area
	Providing safety in private area	- Prevention of without control penetration into the aggregates from public spaces or adjacent aggregates - Reduce the number of families Participate in a part for increasing participation control - Penetration possibility of private movements to inside of aggregates

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