AN INVESTIGATION INTO THE ROLE OF ENVIRONMENTAL DESIGN TO INCREASE THE SENSE OF SECURITY IN PARKS - A CASE OF CHAMRAN PARK IN SHIRAZ, IRAN

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Received on 05-08-2016
Accepted on 28-08-2016

Abstract

Parks are one of the best urban spaces. A place where men get away from the urban stress and noise, spend a few moments to relax and comfort. However, sometimes some harshness enters the parks. This article examined the factors affecting the sense of security in the linear park of Chamran located in Shiraz, Iran. To do this research which enjoys a naturalistic approach, first library research and investigation were done; then, 100 questionnaires were issued among citizens to account the effective factors on their sense of security in this park. At the end it was concluded that the lack of proper relation between this park and north and south walking paths has caused the vitality to lose, and therefore, natural surveillance which is one of the crucial factors in person’s sense of security became pale.

Keywords: Environmental Design, Linear Park, Safety, Shiraz.

Introduction

According to Abraham Maslow’s hierarchy of needs, the need for safety and security are considered as the second human need after the man's natural needs. Thus, to achieve security for obtaining satisfaction in life is vital (Lang, 1987). Security is one of the quality of life indicators in cities; feeling calm and comfort and lack of violation are among inalienable rights of life (Gharai, et al., 2010). Unsafe places and public spaces can disrupt vitality and health in everyday life and with creating a barrier to cultural development and public participation can imposesenormous costs on society (Eftekhari, 2002). Although fear of risk factors causes many people to avoid or reduce their exposure to these kinds of risks, it also leads to the absence of people in a particular place as well as in most public spaces. Urban spaces as a context for citizens ‘lives and activities should be able to provide a safe, healthy, interesting and
sustainable environment for everyone (with different similarities and differences, different social groups, age and sex) and to response to all social classes’ needs and to meet their minimum requirements (Shareati, 2005).

In urban areas, urban security means that citizens are able to move freely, communicate with their fellow citizens and do their social activities without facing any threat, violence, physical and psychological harassment and gender in equality. Sense of security means the citizen's sense of physical and financial security, etc. that illustrates a society’s organization, rule of law and stability (Rezaeimoghadam, et al., 2012).

It should be noted that in security is not a crime only but it covers alarge dimensions. If children's playground surfacing, for instance, does not have a flexiblemat, they may hurt when falling, and it causes to feel insecure. Although dangerous types of crime, such as stealing or selling drugs may also occur in the parks, its dimension, type and amount vary based on environmental conditions including culture of that region, land use and surrounding context. Applying questionnaire and field observations, this article tries to examine one of the urban Spaces, Chamran Park a linear park located in Shiraz from the viewpoint of security and to find in which parts it needs to be revised, and then by using environmental design guidelines it will propose some recommendations to make it a better place for citizens.

**Literature Review**

Crime Prevention through Environmental Design (CPTED) has begun first by Jacobs, Jeffrey and Newman’s works in 1960sand 1970s. Their works promoted the idea of urban design in reducing environmental crime. Newman (1973) counts some factors in increasing crime in residential areas such as alienation (the people do not know their neighbors) and lack of supervision (Salehi, 2008). The feeling of security in urban spaces and parks is also affected by environmental design and adjacent of park to other surrounding land uses. Fewer crimes occur in the parks near land uses which work day and night than ones which work during the day (Tekyekhah, et al., 2013). Organic and worn-out urban context contains weaker natural surveillance and lower safety coefficient since they lack proper permeability and have more obscure corners (Kazemi, et al., 2013).

In a society a lot of people live with different social class, attitudes, opinions, culture and economic condition, etc. Each of these characteristics sometimes can lead to crime. CPTED means that crime can be prevented through some design strategies such as a change in the physical structure and an appropriate urban design; its basic concepts include: territoriality, supervision, maintenance, access control, support activities and to make the purposes strong (Heidarzadeh, 2013).
Using access control can help you to control those areas in which there is a possibility of doing crime and then increase it. By strengthening the natural areas, the private spaces can be separated from public spaces; therefore, by creating a sense of ownership, intruders do not find a right to enter other’s territory. Through natural surveillance it is possible to create conditions in which different areas of urban space have been seen by others and, therefore, criminals do not allow themselves to do crime. Blind spots (i.e. an area that cannot be directly observed) should be prevented in designing (Pourjafar, et al, 2008).

Repeating familiar landscapes in urban public spaces not only overwhelming the sense of loneliness and anxiety but can help people find their ways easily and as a result prevent the fear of losing. In addition to construction of familiar urban spaces, designing urban furniture (such as benches, bins, phonebooths, bus stops, etc.) in a familiar style would be useful. Night and its darkness also can influence on doing crime; thus, appropriate lighting at nights one of the factors affecting people’s sense of security in the park (Elyas Zadeh Moghadam and Zabetian, 2011).

In a research conducted in the parks of Sanandaj, Tekyekhah, et al. (2013) states that there is a significant relationship between the levels of socio-economic status of visitors and doing crime in the park. This means that when people using parks are from a higher economic and cultural class the possibility of the occurrence of crime reduce since they avoid social tension and also they are more sensitive about the abnormal activities and report them the authorities. They found out that the security of a park may be under the influence of the adjacent land uses and environmental design. The adjacent land uses which have an activity day and night may cause little crime in the space that those works only during the day. The solutions can be include:it is better to put important park spaces near the entrance;pay attention to the planting trees with an appropriate distance to avoid creating visual obstacles;increase lights and various booths in the parks in order to provide security in the corners and centers. Farmer (2013) examined Chamran Park in Shiraz and expressed that using lightingin aspace is not only important at night, but in placeswhere there is a high density of plants lighting can play a vital role. In the early hours of the morning or in the eveningthat sunlight cannot pass through trees and foliage some places remains in darkness and thus need lighting. Kazemi, et al. (2013) also examined Chamran Park and Shah Cheragh Shrine. They state, although Shah Cheragh is a sacred place and men and women fully comply the Islamic and religious orders, it contains a minimum secure for women because of two reasons: a) social factor: the people live there seems to be of a lower class, and most of the Afghan immigrants who live there show some behavioral disorders such as addiction; b) physical factor: Shah Cheragh context is adjacent to worn-out context of the city. This organic texture lacks an adequate visual permeability and has more obscure corners,
and thus creates an insecurity place. In contrast, Chamran Park has some physical criteria to prevent crime like its viewable landscape which is derived from its shape-a linear form, though its length may reduce monitoring it. The solutions to solve the problems of spaces which lead to crime is listed as follow: avoid designing subspace and totally enclosed ones, using appropriate colors in the space, and increasing lighting.

Case Study

Shiraz the capital of Fars province covers an area of 10688km². Shiraz’s plainslope is from west to the east. Thus, there are some terrains created in the mentioned direction such as Roodkhaneye Khoshk (Dry River) and Chamran Mountain and Park. Chamran Park is located in region 1 of Shiraz and its length is approximately 6000 m. It is limited by Chamran Gardens from east, Gasrodasht Street and Dry River from west, Abiverdi Street from south and Maaliabad Crossroads from north (Fig. 1).

Chamran Blv. is important for the following reasons:

1. Because the lack of interesting land uses in this street, it faces a very smooth traffic flow, and this fast access is a reason to build most of the important hospitals in this street.

2. This street is linked to Sanaye Blv. which is a connector between central parts of the city with northwestern towns of Shiraz.

These characteristics can be both centrality and its strength points and a weakness. Because of the traffic lack, the access to the desirable places is faster. However, cars moving fast in the street can make difficulties for pedestrians and create a kind of insecurity. And even sometimes it is observed because of fast speed the driver lost his/her control and go to the sidewalk.
2. Material and Methods

For doing this research, first, a questionnaire surveyed 100 persons presented in the park on environmental factors affecting in the sense of security. Second, data analyzed by excel software and by chart these factors were indicated. Then, with field observation and photographing of park elements solutions were recommended to improve security.

3. Results and Discussion

The Analysis of the entrance of this park showed that most of the people entranced from Abiverdi Street (52%) located in the south part of the park. Maaliabad Crossroads and Gasrodasht Street also show 34% and 14% of entrances respectively.

The analysis of the question regarding how people come to the park most respondents (63%) declared that they drive their own car. 2% of people used bicycle, 12% walked and 23% used public transportation.

The analysis of the reason why people use private car to go to the park showed that good natural surveillance and security on car sparked is the most encouraging factors why people drive their own private cars (43%). The linearity of this park also make it possible for people to park in front of the place where they sit in the park. It is worth mentioning that incorrect design and lack of safety in the connection of this park to adjacent streets specially Abiverdi Street and Maaliabad Crossroads cause people not show any inclination to walking (24%).

Security of entrance analysis showed that disconnecting of park by the underpass in the south of it (33%) and not designing the extension of park in the north (38%) are among the most important reasons why people do not like use these entrances. Since this park is located in the part which is not exposed to the crime, thus a few criminal activities occur there.

Analysis of the reason why there is not security in the north of the park showed that the all choices includes: no physical barrier between the side walk and the street and the possibility of accidents, not having appropriate lighting, being quiet because the lack of interesting usages near the park, and the lack of designing a way and bad flooring obtained the same amounts. However all can be summarized in just one reason: the lack of suitable design and landscaping. Analysis of the required security in the park indicated that criminal activities such as Addiction, drug dealing, homeless and theft had the minimum score (19%) among choices. These kinds of activities mostly can be seen in the old and worn-out part of the city. Street disorder and dispute also are the reasons for insecurity (34%) that has their roots in culture and enjoying west culture like taking a pet to the park. Security in driving and accidents are another choice which obtained 47% of responses.
Guidelines and Suggestions

After analyzing data obtained from questionnaire and based on field observation some suggestions and recommendations are presented.

a) Natural surveillance: criminal activities or behaviors such as smoking can be reduced by putting them out of sight. It is not necessary to monitoring activities by police but by ordinary people it can takes place. So in designing, long and broad elements should be avoided since they close landscape. Using openings facing the park can increase natural surveillance too (Fig. 8). It should be avoided to design and createfully enclosed places and obscure corners(Fig. 9). Obsolete places are those areas which are outside view and direct way. Fully enclosed place is those areas where it is covered by trees, buildings, walls, etc. in two sides.

b) Providing appropriate lighting: One of the environmental factors increasing sense of security is to provide suitable lighting in urban space. Lighting can be provided both naturally and artificially. In day there should not be darkness under bridges or behind the elements to make it difficult to recognize the objects. At night the lightings much more important. Note that lighting should be indirect at night, i.e. the light hits the object and then its reflection reaches the eyes. In direct light the eye pupil become smaller, and the places around the light become dark and cannot be seen well (Fig. 10). The wall's color also is effective in the lighting by reflection and absorption of light, especially at night. Thus, it is better to use Bright colors.

c) Separation of territories:

Strengthen of territory’s border can remove the possible stress in the society by increasing the difference between the spaces and reforming their relationships. Separation of territories is possible through fences, roads, signs, lighting and landscaping. They can separate the public, semi-public and private spaces. The places where families sit are considered as semi-private domain. Therefore, to avoid any conflict between them these places should allocate to each family separately (Fig. 11). Each plat form serves one family.

Separation can occur both physically or non-physically. Fences, barbed wire, shrubs and signs can separate borders and territories physically, although for doing these bushes and natural soft barriers are recommended (Fig. 12). Designing play ground for women near the chapel for them and bathroom are among non-physical type of Separation since chapel for women can force men to getting away from women playground indirectly and unconsciously. Traffic signs such as cycling or walking out scan be considered as non-physical separation.
behavior-based security: Performance and behavior of people in the park should be managed in such a way that all ages spend their leisure time together without any tension and conflict. One way is to provide free play areas for young people to encourage them to stay away from tobacco and smoking. But in fact this goal cannot be met due to get tickets for sports ground (Fig. 13). Also to prepare ceremonies and gatherings in the park which have the potential to attract high population and doing interesting social and cultural programs can Ceremonies and gatherings in areas of the park that can prevent the spread of west culture in the park space (Fig. 14).

e) Traffic safety:
Although a slow traffic is a good point for Chamran and in general for the city and make it easier to access to the park, accidents occurring due to high speed can hurt security of people. This also leads to a weak connection between Chamran Park in one side and Dry River in another side (Fig. 14 right). Although using guard rail can guarantee the security of Park, it also can inspire the sense of insecurity. Instead the platform can be used (Fig. 14 left).
Fig. 5: Analysis of insecurity in the entrances.

Fig. 6: Analysis of insecurity in the north of the park.

Fig 7: Analysis of required security in the park.

Fig. 8: left: Natural surveillance in Chamran Park (source: authors); right: Natural surveillance (source: Laboratorio).

Fig. 9: left: obscure places under the bridge; right: obscure places inside the element.
Fig. 10: left: weak lighting; right: good and indirect lighting (source: Shiraz Municipality site).

Fig. 11: left: the Interference in the private territories and the possibility of creating conflict between people; right: Proper separation of private territories.

Fig. 12: left: weak territory separation by barbed wire; right: strong territory separation.

Fig. 13: left: smoking; right: playground (source: ISNA).

Fig. 13: left: Park amphitheater; right: Cultural conflict in the park (source: ISNA).
4. Conclusion

According to surveys and observations, it can be concluded that Chamran Park is one of the successful parks providing security and people's satisfaction in Shiraz. However, there can be find an exaggeration in some of the positive qualities which change them to negative features in the park and create insecurity. For instance, not giving the right to the houses next to the park to have openings like windows and balconies was done to keep the park naturally. However, the advantage of creating a natural surveillance by the house which is of one the principles of CPTED has been lost. Although because of the geographical location, the park’s length is long, it was one of the goals of its creators to record it and make it a famous park. It can be considered as an advantage, but it also reduce surveillance on the park and leads to staying away of this park to the central part of the city and as a result congestion and the safety of the park has been reduced. The north of the park is designed incomplete and its south (the place where it adjoins to the city) has a weak connection with residential areas and it leads to a weak access (Fig.15).

Park’s elements were built in accordance with the background color-the rock and the mountain of Chamran; however, it increases the concealment and in some cases it causes visual illusions which increases insecurity. But these do not clear the positive features of this park, and it can be corrected with just a few changes such as changing in the color and material of some elements, strengthening two sides of the Chamran Blv. like the construction of more pedestrian bridges, building a buffer between the sidewalk and the street with trees or change in the height of pavement to prevent cars enter to sidewalks, Planting in specific ocations to increase closeness for
women's exercise or remove it to increase read ability and visual permeability to enhanced security. Using appropriate designing can increase security of this park and make it an ideal environment for residents.

References: