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Flexible Urban Public Spaces and their Designing Principles

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ABSTRACT: Urban public spaces are available for everyone regardless of race, age or gender and are democratic social places for citizens and the society. A public space in the neighbourhood is an available opportunity for neighbours to have communications, like friendly chats in a fenced garden or even public meetings in local parks, and social-cultural interactions as results. Although architectural landscapes and public spaces are totally specified places, but for various reasons, such as creating good connectivity with other spaces and between space users, they may need some changes in design patterns. For example, in some cases there is a need to change the dimension and increase or decrease the measurements. Therefore, possibilities of changes in both structure and functions of the spaces should be predicted in design process of the spaces. According to diminution in social interactions and the increasing isolation of people in societies, paying attention to the factors which can rise social interactions in public space design is an important issue. Flexibility is one of key elements in sustainable urban public spaces and paying attention to that can affect citizens' behaviours and surge interactions. In this regard, according to the available and predicted facilities for changing the spaces, the amount of flexibility will be different. Flexibility has become a tool for solving the social issues in urban spaces and also answering space requests in societies, which are speedily changing. Flexible architectural design of public spaces, is a way to promote social connections and sustainable development. This research is a descriptive-analytic study, with use of library research method for data collecting, and describes the importance of the flexible designs on social life in public spaces. Some practical solutions for designing a flexible urban public space are determined in the final section of the research.

Keywords: Social-Cultural Interactions; Sustainable Urban Public Spaces; Sustainable Development; Flexible Architectural Design.

INTRODUCTION

Nowadays urban planners and designers consider human-related aspects of public spaces more than before and also people are more enthusiastic in participation in these spaces (Gehl and Gemzøe, 2004). Due to gathering of people and then remaining in the space, physical quality of public spaces is the first factor to activate these spaces socially. Urban public spaces find their meanings with humans' presence and activities, and more than their physical roles, they are important for creating social interactions among citizens. Public spaces are set of elements, which cause a style of social life, and their most obvious feature is the need for flexibility and evolution of the space, both in physical and functional features. The present research is a descriptive-analytic study, which focuses on flexible architectural design, as one of effective methods in promoting social interactions in urban public spaces. It consists three major terms and concepts: public spaces, flexibility and social interactions, each of which has been the subject of numerous studies. To reach the goal of the research, it is necessary to examine and recognize each of these topics in previous studies and pay attention to their importance in the design of public spaces. Some design and management suggestions are extracted, then, which could be helpful increasing the flexibility of an urban public space. Library research method is used for data collecting. This article takes a look at each of the presented titles in previous studies and their importance in designing public spaces.

Public spaces

Public spaces in cities have long been the basis used for the expression of cultural values and social relations (Sanei et al., 2017). Public spaces are components of the public sphere (Habermas, 1989). The public sphere is where strangers meet; it stands in contrast to the private sphere, where close relationships, such as the family, flourish (Sennett, 1977). Like other components of the public sphere; such as the mass media, civic institutions, and informal civil behaviours; we conceptualize public spaces as an opportunity for the exchange of messages with diverse others. Public spaces include a city's streets, sidewalks, parks, and plazas to which all persons have

legal access (Lofland, 1973). Thus, the distinguishing feature that separates public space from private space is that it minimizes the segregation of people based on lifestyles, such as their opinions, income, gender, and race (Strauss, 1976). Urban public space is defined as the physical space and social relations that determine the use of that space within the non-private realm of cities (Brown, 2006). Urban public spaces play major roles in the real city life, from socio-economic issues to cultural and environmental matters (Khodadad and Sanei, 2016). Places can provide opportunities for social interaction, social mixing and social inclusion, and can facilitate the development of communities. In landscape architecture and urban planning, understanding of the contribution of public space in the urban area and the relationship between people and this environment have been developed as early as 1900s (Thompson, 1998, Thompson, 2002). The social value of public space is wide ranging and lies in the contribution it makes to people's attachment to their locality and opportunities for mixing with others, and in people's memory of places (Dines et al., 2006).

Flexibility in architecture and urban design

The concept of flexibility is obtained from Latin references in urban context studies conducted on environmental systems' behaviour usually against tensions and disorders rooted from exterior factors (Davic and Welsh Jr, 2004), and indicates "durability of relationships in system" (Barnett, 2001). Flexibility, in general terms, is defined as ability of bending, variability, being non-sensitive to modifications, readiness and capacity for compatibility with different purposes or conditions (Till and Schneider, 2005). A flexible urban space is positively coherent with certain limitations which can provide an optimum size and proper shape in a good relation with space characteristics and performance (Davic and Welsh Jr, 2004). Flexibility of public spaces depends on the amount of considered ways for passing from one point to another, which have to be clear and easy to see, unless it will be helpful just for people who are familiar with the space. Flexibility can be a strategic programme which makes optimal use of urban resources for developing and meeting the needs of cities in the future. Flexibility is generally referred to the ability of change in objects. In particular, in architecture, environmental design and other related research fields, the term "flexibility" means creating spatial adaptability and changing the human space organization in order to achieve new conditions, solutions and applications. On the one hand, some spaces provide many activities without re-organizing; on the other hand, some others can be changed to meet different needs. Environment designers have used the terms "versatility" and "flexibility" for these two cases. Adaptive spatial organization is a plan that provides behavioural patterns at different times without the need for physical changes for flexible and multi-functional spaces (Einifar, 2003).

Change is inevitable in today societies, and like all aspects of contemporary life, architecture should similarly offer an appropriate response to such changes for remaining sustainable, useful and appropriate (Khodadad and Sanei, 2017). According to the needs of the community and audiences, science of architecture always has seek creative ways to optimize the space for contacts in different fields (Khodadad et al., 2018). In fact, the goal of creating flexible spaces is to create new spaces for the required functions by simple structural changes (Mahdavinezhad et al., 2011). The flexibility of an environment is its capacity to adapt to changes made by users, and flexibility of the environment refers to its readiness to welcome users' effects (Turan, 2016). Therefore, the more an environment is responsive to changes, the higher flexibility it will have. In the book entitled "The Death and Life of Great American Cities", Jacobs stated that cities which could survive and become sustainable are those physical design of which has been efficiently corrected through basic changes in activity patterns (Jacobs, 1961).

Social life

Individuals shape social communication based on their own interests and act according to their expectations, norms and roles. Therefore, the presence of a person in a place along with others is a strong factor affecting one's decision on staying in that environment. In this regard, people may even search for places where individuals with similar characteristics, in terms of gender, religion, life style, education, income, and race, are present. However, while homogeneity of people encourages visits and increases interactions with physical and social places, and consequently promotes attachments to that location, non-homogeneous social places can be also beneficial for individuals to experience good and free social interactions (Cooper Marcus and Sarkissian, 1986).

The process of socialization is reachable by making social interactions between the users of architectural public spaces, and the ability to effectively interact with others, whether in private life or in public and professional life of humans, is vital (Forgas, 1985). Increasing of socialization is based on the presence of people in urban spaces, social interactions between them and the human need for a sense of social belonging and being with others (Hafezifar, 2011). In addition, communications in public spaces promote the spirit of solidarity, personal growth, and the development and improvement of appropriate behavioural patterns (Mardomi and Ghamari, 2011). Figure 1 represents important factors affecting social interactions among people in cities, according to Ghanbaran and Jafari's research.

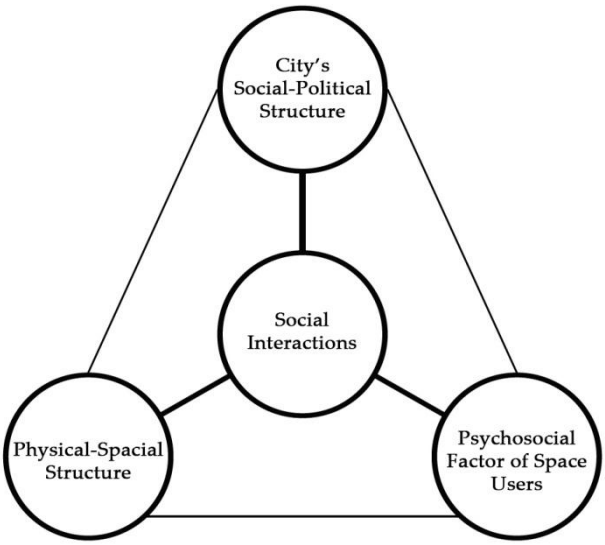

Figure 1. Significant features influencing social interactions in urban areas (Ghanbaran and Jafari, 2014).

Social spaces and social life in urban public spaces

In definition of urban social spaces, Jan Gehl emphasizes on space invitation more than other features, and he gives meaning to the city according to its attractiveness and massive crowds that come together in the public spaces and wherever they spend their time. In his opinion, an inviting urban space is a space that we can meet with our fellow citizens face-to-face and experiment it directly with our senses (Gehl, 2011). John Lang describes social spaces as "welcoming places," and believes that such spaces are environments that can improve human experiences. A social space has to have a human scale and be a platform for a variety of behaviours and activities, and has to have the ability to accept the citizens' desired behaviours (Lang, 1987). Social spaces that are the source of everyday life, are multipurpose and flexible spaces which provides many of the activities and uses of the users, and provides the coordination between its social users (Lennard et al., 1993).

FLEXIBLE URBAN PUBLIC SPACES: tools to improve social interactions

This paper argues for a flexible and organized use of urban public spaces to achieve more social communications among individuals within such spaces. The concept of flexibility in urban planning is defined as the compatibility and adaptability of planning thought and planning system to the random and daily needs of community. There should be much more flexibility and uncertainty in many aspects during the process of planning formulation, such as urban development strategies, land planning, population forecast and so on, in order to maintain the overall stability of urban development (Cheng, 1993). The increased complexity and change that characterize contemporary urban societies require a more flexible approach to urban design. According to Friedman (Friedman, 1997), plans should prescribe a clear development vision at a very general and large scale, while being flexible regarding the design of specific urban spaces. Ascher mentions, "new urbanisms should be a flexible urbanism, aesthetically opened, reflexive, with active participation and, formally speaking, an urbanism of devices able to elaborate and negotiate solutions rather than drawing specific plans" (Ascher, 2001).

Urban public spaces, as places for creating social interactions of citizens and generating a framework for facilitating social relationships, can expand obtaining common purposes in a society and develop the sense of solidarity, cooperation and public participation among the people in cities. These spaces are valuable in terms of sustainability and social, political and physical life, and can be used as locations for production and reproduction of culture and the collective identity. From this view, it has a close link with sustainability of a community and its cohesion. The possibility of diversity and change in the public space makes people involve more in space. Flexible spaces with such changes are more efficient and more dynamic than normal-designed spaces, and will directly affect the motivation of the society to create its presence. Several functionalities can be influential in increasing the spatial quality, collective satisfaction, people's communication and social interactions, shelf life of the space, and the sense of vitality and dynamism. Therefore, one criterion for increasing social sustainability is multi-functionality of the space. Multiple design criteria should be considered to make a space flexible. Flexible designing of urban public spaces can significantly influence citizens' lifestyles and expand the quality of their social lives, by giving the community the chance to participate more in common social activities and to have more effective social communications and interactions.

RESULTS AND DISCUSSION: Principles for designing a flexible urban public space

The following criteria should be taken into consideration during the design and management phases of a public space and can increase the flexibility of an urban public space:

- Increasing permeability of the space.
- Paying attention to access routes and increasing them as much as possible (increasing the right to choose).
- Using of diverse and extensive passing routes (increasing the right to choose).
- Predicting the possibility of using various behavioral patterns and paying attention to that at design time (e.g. creating edges on the walls for waiting and sitting).
- Creating the possibility of physical expansibility of the space if needed.

- Predicting the spaces needed to hold different events throughout the year.
- Predicting the possibility to set up temporary and street markets in different times.
- Placing static factors of spaces where they cause less constraint in flexibility of other spaces.
- Using changeable city furniture, such as changing benches.
- Utilizing mobile urban furniture alongside fixed furniture like giant chess fields.
- Using smart and multi-functional urban furniture to enhance performance of the space.
- Creating active frontage by making cooperation among buildings and the public space.
- Forecasting the places needed for connecting light partitions or metal bars to the floor for holding temporary exhibitions or putting volleyball tours and more.
- Predicting the possibility to install mobile canopies and ceilings in different atmospheric conditions.
- Creating social interaction between people and local managers through local surveys (e.g. installing on-site digital polling boards), designing a website or mobile app, and so on.
- Using public participation in holding local and urban exhibitions and ceremonies.
- Taking advantage of participatory design in the space and urban furniture design process, for example, through urban furniture design workshops.
- Creating the possibility of changing furniture and space organization, once in a while, using people's opinions or holding design contests for designers or students.
- Making the place open for public access at all times of the day and year (as much as possible).
- Creating the possibility of using different lighting in place to create different spatial senses.
- Creating the possibility of using other human senses in communicating with the spaces, such as smell, taste, touch, and so on (e.g. setting up cooking events or using different materials in space design).
- Using varied and changeable green spaces and vegetation.
- Using variability where using of water (e.g. ground fountains, …)
- Create suitable spaces for street arts and sports.

CONCLUSION

As the role of designed public spaces in public healthiness of a society is undeniable, it is necessary to ask ourselves how it is possible to reach an urban public space, which is always able to change according to the needs and make people interconnect. It is essential to come up with some solutions for designing public spaces that can increase the social capacity of the community. Flexibility is one of the factors that can affect the quality of the physical environment and promote social benefits. The presence of people in a more flexible environment will rise social sustainability, by increasing peoples' communication and social-cultural interactions.

In today's societies where interactions between people are low, paying attention to flexibility in the public environment can lead to more vitality in the area. A person wants to stay in a space which meets his needs; therefore, it is possible to cause his attendance in an environment by making him feel free in the organization of that space, according to his needs. Using suitable solutions can help public spaces to become more flexible and adaptable, and as a result, more inviting and sustainable, in social and architectural terms. This paper prepared an overview about flexibility in urban public spaces and described the important role of this factor in enhancing social communications of the society.

Finally, some effective guidelines are presented, which can alter an urban public space to a flexible place, where the organization of the space could be freely changed according to the needs of the users. A suggestion for future researchers in the field could be analysing the most successful flexible public spaces according to the community's opinion and compare the results with the suggestions expressed in this article.

DECLARATIONS

Authors' contributions

All authors participated equally in this research.

Competing interests

Authors declare that they have no competing interests.

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