Evaluation of Visual Performance of Religious Urban Open Spaces

(Case study: Al- Sayyida Nafisa Mosque Square in Cairo, Egypt)

تقييم الأداء البصرى للفراغات العمرانية ذات الطابع الدينى

(دراسة حالة فراغ مسجد السيدة نفسية بالقاهرة - مصر)

Nourhan Mahmoud Mohammed Ibrahim Ali

Teaching assistant at Tanta University, faculty of engineering, architectural department

Abstract

The visual performance of Al- Sayyida Nafisa Mosque Square in Cairo is analyzed in this paper. The aim of the present study is to derive a proposed evaluation model that service as a tool for evaluating the visual performance of religious urban open spaces. The research also tries to reach the best visual basics and criteria which support the design and planning process that must be taken in consideration when dealing with the religious urban open spaces. Research results showed that legibility, identity, determinants, aesthetics consistency, sense of nature, and supplements of urban open space help in enhancing the visual performance of urban spaces. We concluded that urban designers can enhance the visual performance by achieving the mentioned components appropriately.

1. Introduction

Designing attractive spaces could be achieved by understanding the visual structure around us. Definitely, we gain information about the space by using our senses, such as sight, smelling, hearing, tasting and some other complex ones. The sight is the most important sense, as it represents 87% of human perception to surrounding space (Bell, 2005). Visual perception is a major component in developing the image of the city. Accordingly, we can identify cultures, social mores and common values of the built space through visual resources (Radovic, 2003).

Several researchers in different fields were curious to the perception process: psychology (Gibson, 1950; Tomaszewski, 1986; Bańka, 1999), specifically behavioral and environmental psychology represented by H.M. Proshansky, T. O'Hanlon, W.H. Ittelson, L.G. Rivlin. (1977) and others, who analyzed the use of behavioral maps; anthropology and sociology (Hall, 1966; Sommer, 1967; Lawson, 2001) furthermore, geography (Wood, 1992), urbanism of cities and town planning (Lynch, 1960; O. Simonds, 1961; G. Cullen, 1961; D. Appeleyard & J.R. Meyer, 1964; Venturi,

1966; Krier, 1975; Ch. Alexander,1977; A. Rapoport, 1977; Stea, 1978; Winters, 1999; and many others) indicated the significance of the interaction between man and place, and the significance of how the images are created in the human memory. The Gestalt theory interested in the overall perception of the space, which means realizing the visual components as patterns which are related to each other, instead of many separated parts (Perusich, 2010).

Perception is an active process of gaining information from the environment through observation (Lang 1994). According to Sudarmadi, perception is a relationship between knowledge and awareness. Knowledge is the principles which are gathered through information. Awareness is an attention or sensitivity to different issues (Sudarmadi, 2001). Firstly, people discover the structure of the scene, to the stage where we understand what we observe. Secondly, we correspond our pre-existing knowledge with our new experience. Finally, we compose meanings or values for what we observe (Bell, 2005).

The type of activity in urban space defines the character of space. The present study focuses on religious urban open spaces which are distinctive at the city scale due to their centralized position, large size, and their association with religious buildings. They play a critical symbolic role, and are used for multiple purposes, such as cultural events, local trade, and social interaction. They are the cultural products of the city in which they always present social, cultural and religious meanings to a great variety of people (Stanley, 2012).

Many researchers have investigated urban open spaces from different sides, such as Kevin Lynch who concerned with the visual quality, the mental image (Lynch, 1960), performance characteristics, and psychological and sensual satisfactions (Lynch, 1990); Gordon Cullen who concerned with the visual sequence (Cullen, 1961); Robert Venturi who concerned with the social and cultural dimension (Venturi, 1966); Leon Krier who concerned with space determinants (Krier, 1975); Donald Appleyard who concerned with the physical and social complexities; Ralph Erskin who concerned with the social-cultural relations; Philip Johnson and et al. who concerned with the natural components of landscape (Trancik, 1986).

Generally, the life quality in the city is determined by the level of its visual performance. Sense of place is the result of the visual perception of the urban space details. Precisely, space is realized visually through three levels. The first level is to realize either physical or incorporeal space details such as colors, textures, shape, furniture, light, vegetation, scale, enclosure, etc. The second level is achieved by realizing the relationships between space details (e.g., unity, variety, balance, rhythm, hierarchy, Symmetry etc.). The third level is achieved as a result of using two or

more elements of the second level. When variety, balance, symmetry, etc. are achieved in urban open space, this leads to legibility, meaning, identity and sense of space.

2. The Aim of the Research

The main purpose of the present study is to derive a proposed evaluation model that service as a tool for evaluating the visual performance of religious urban open spaces. This model also helps to improve the visual image of these places, thus the improvement of city image. After studying several theories dealing with visual performance of urban open space, we reached to a proposed evaluation model based on a theoretical background **(Figure 1)**. This model will further be used for evaluation of Al- Sayyida Nafisa Mosque Square in Cairo **(Figure 2).** The importance of the study has additional strength in the fact that the religious urban spaces of Egypt are often criticized by the local population of the city, so, based on their perception, we can be reached to desirable objective visual elements in space.

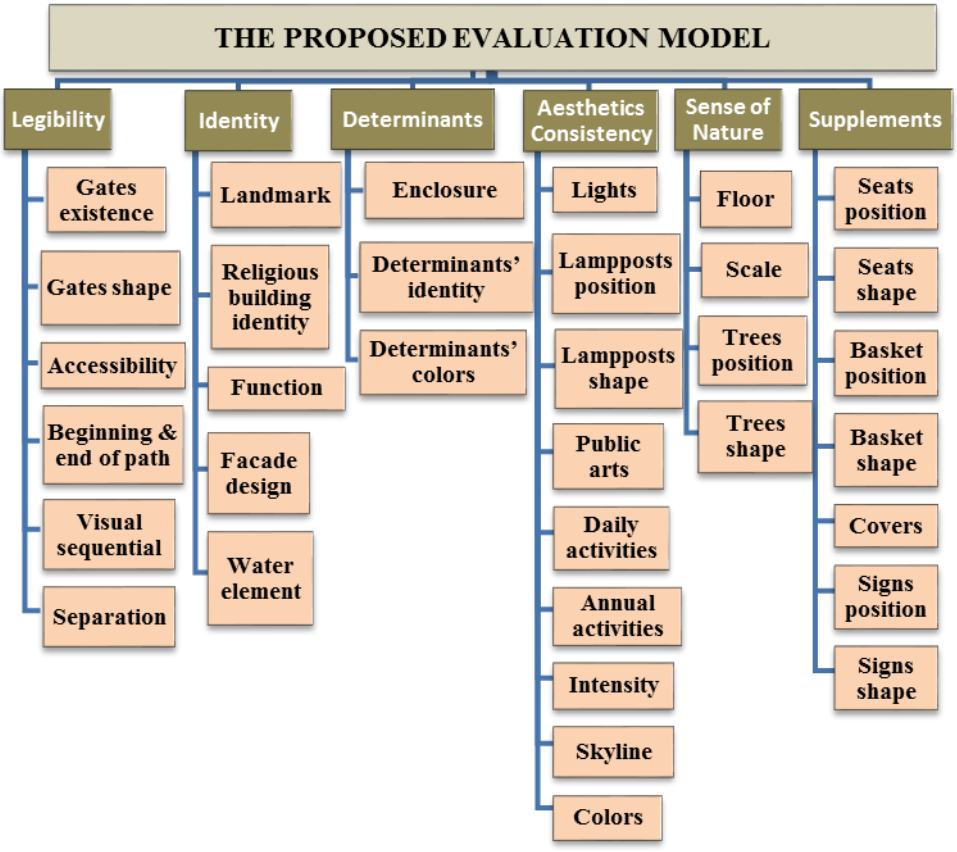

Figure 1. Shows the proposed evaluation model based on a theoretical background


Figure 2. Shows Al- Sayyida Nafisa Mosque Square in Cairo, Egypt

3. The Research Methodology

The research process consisted of several stages. The first stage included deriving a questionnaire which consisted of 34 items from previous approaches of studying space such as Kevin Lynch, Gordon Cullen, Robert Venturi, and etc. approach. The second stage: the questionnaire that consisted of 34 questions recording participants' perception for Al- Sayyida Nafisa Mosque Square. The participants were 50 Egyptian specialists in urban design, architectural design, and urban planning. They evaluated the space, by using a rating scale numbered from zero to four **(Table 1)**. This scoring method was derived from the one had been developed by CABE (2001), but was modified for the purpose of this research. The scale developed by CABE provided only a qualitative descriptor for the highest and lowest score and did not provide a descriptor that lent itself to numerical measurements. As some criteria in my checklist lend themselves to a subjective and qualitative response while others can be easily measured, and thus, quantified have included descriptors that address both situations.

Table 1. Shows the rating system

0	1	2	3	4
Not Existent (does not satisfy criterion at all)	**Poor** (satisfies criterion less than 25 percent of the time)	**Fair** (satisfies criterion 26 to 50 percent of the time)	**Good** (satisfies criterion 51 to 75 percent of the time)	**Excellent** (satisfies criterion 76 to 100 percent of the time)

Finally, we analyzed the answered questionnaire. The results showed that the space is suffer from the lack of its visual performance. Accordingly they need to be developed to enhance their visual performance.

4. The Results of the Research and Discussion

The research results show following:

Al- Sayyida Nafisa Mosque Square in Cairo (Table 2) (Figure 3)

Al- Sayyida Nafisa Mosque Square is a semi-circular square and has a total area of two acres. The space is surrounded by the mosque of Al- Sayyida Nafisa, youth center, school and the religious institution of Al-Sheikh Mohamed Metwally Al-Shaarawi. The space does not have fully developed shaped criteria that provide a desirable visual performance. The researcher evaluated it, and the majority of criteria were evaluated negatively. Also the reasons for negative evaluation are insufficient amount of natural elements, as well as the lack of gates, lights, seats, signs, and other supplements on the square. One of the essential problems there is the conflict between pedestrian movements and traffic that killing the space because they block pedestrian movement. The total result was 46/136 about 33.8%. The square needs to be developed to increase the efficiency of its visual performance.

Table 2. Shows summary of results

Legibility		**Identity**		**Determinants**		**Aesthetics Consistency**		**Sense of Nature**		**Supplements**	
Q1: Gates existence	1/4	Q7: Landmark	4/4	Q12: Enclosure	1/4	Q15: Lights	1/4	Q24: Floor	1/4	Q28: Seats position	0/4
Q2: Gates shape	1/4	Q8: Religious building identity	3/4	Q13: Determinants' identity	1/4	Q16: Lampposts position	1/4	Q25: Scale	1/4	Q29: Seats shape	0/4
Q3: Accessibility	3/4	Q9: Function	4/4	Q14: Determinants' colors	1/4	Q17: Lampposts shape	1/4	Q26: Trees position	0/4	Q30: Basket position	1/4
Q4: Beginning & end of path	1/4	Q10: Facade design	3/4			Q18: Public arts	0/4	Q27: Trees shape	1/4	Q31: Basket shape	1/4
Q5: Visual sequential	2/4	Q11: Water element	0/4			Q19: Daily activities	0/4			Q32: Covers	0/4
Q6: Separation	0/4					Q20: Annual activities	4/4			Q33: Signs position	1/4
						Q21: Intensity	3/4			Q34: Signs shape	0/4
						Q22: Skyline	3/4				
						Q23:Colors	2/4				
8/24		**14/20**		**3/12**		**15/36**		**3/16**		**3/28**	
Total result 46/136 =33.8 %											

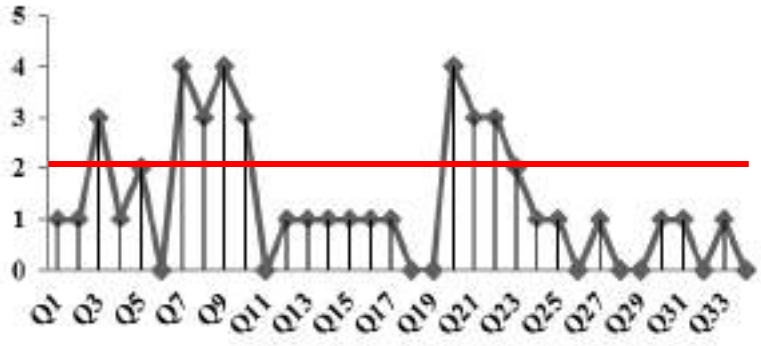

Figure 3. Diagram shows the lowest and highest scores of 50%

Finally, the results of the three urban spaces were convergent. The results showed that the three spaces are suffer from the lack of their visual performance. Accordingly they need to be developed to enhance their visual performance.

5. Conclusion

Visual performance of religious urban space directly reflects its value. Planning and design of the physical structure of the city, indicate the importance of an integrated approach to enhance the visual performance of religious urban open spaces. Religious urban open spaces of the city are seen as a visual aesthetic ambiences, as the center of religious activities, social interaction, as a place of rest, leisure, and inspiration that direct us for acquisitioning new impressions and experiences. Visual studies help in identifying the criteria for the design process of desirable religious urban spaces, with emphasis on visual - aesthetic dimension.

The analyzed religious urban open space (Al- Sayyida Nafisa Mosque Square) by specialists and experts, suggests that legibility, identity, determinants, aesthetics consistency, sense of nature, and supplement furniture of urban space, achieve desired visual effect on users. Spaces that do not have clearly defined visual identity in the structure of the city, and do not have legibility, were negatively evaluated. Also spaces which do not have aesthetic consistency between its components, and have low content of natural elements, were negatively evaluated. By the comparative analysis of results presented from Al- Sayyida Nafisa Mosque Square, it was concluded that there are many visual problems. Accordingly it need to be developed to enhance its visual performance.

Experts and users participate in the development of the city process. Religious urban open spaces are reflected as dominant through visual experience. Visual performance studies is indispensable factor in that process. It is concluded that a religious urban open spaces of Egypt as the primary visual resource of the city have potential, but it needs their revitalization, especially in terms of content and dynamics.

The contribution of this study is that the overall desirable visual performance of religious urban open space are identified on the basis of six factors (legibility, identity, determinants, aesthetics consistency, sense of nature, supplement furniture), which can serve as guidelines for the rehabilitation of existing and design of new religious urban open spaces of the city. Is desirable that the future directions of research would be based on the identification and analysis of specific religious urban open spaces independently and at the city level to identifying specific desired visual effects and criteria for the design of these spaces. Recommendations for appropriate design of religious urban spaces start from the fact that in this process should involve the user's premises and their needs. Visual performance of space is of primary importance for the creation of desirable urban spaces of the city.

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