The Effect of Color on Urban Beautification and Peace of Citizens

Elaheh Molanaie

Department of Architecture, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran

Abstract: *Color has the most important role in the behavior pattern of urban human and is a social powerful element that in addition to the mission and task of conveying messages has the task of visual appeal of the city. Despite the importance of color elements, primarily, this issue and its spatial impact on city residents have less been taken into consideration, and in some cases, they have totally been ignored. Thus, the aim of the present paper is to study the effect of color on city beautification and peace of citizens, which is conducted based on documents and library studies. The results showed that the correct application of colors in the cities beautifies the city and softens the mood and brings about the calmness of the citizens. Thus, with the proper use of local materials and combining them with the new conditions of construction and utilizing the experience of efficient experts, one can revive and expand the architecture consistent with the culture and climate of the region.*
Keywords: *color, beautification, urban space, peace.*

I. Introduction

City is an environment in which people live, work, commute, meet each other in social interactions with each other, increase their knowledge, entertain them, think, and cherish their dreams. However, city dwellers depending on the origin, education, life records, belonging to various spheres of culture, professional interests, and their objectives have different perceptions of the urban environment around them, so have different attitudes towards and behaviors with their city (1).Colors are the language of our feelings and can make urban life lively. Color in architecture is not only an essential feature but also forms a part of legacy that is beyond pure aesthetic values, and considered a cultural value in terms of anthropology. Color, unlike the form, size, façade, or flooring, is in a hidden layer, and most of us are affected by the existing colors while viewing an urban landscape, unconsciously or consciously. Today, color choices of buildings are often based on the taste of the owner or the goods on the market, regardless of the climate and culture. This is while in the past, people were interested in being meek and extroversion, which were seen in the simple and unadorned façade, so that a specific color or texture was a kind of certificate of that city's identity (2).

Psychologists have conducted many studies on the effects of color and light on our understanding of space and time. Everyone is aware of the effects of color on weight (lightness and heaviness), temperature (heat and cold), distance (far and near) and dimensions (large and small). Even time scale is different in spaces with different colors. For example, listeners of a speech at a blue hall consider it as long and tedious, while the same speech at a red hall seems thrilling and shorter (3). Regardless of other environmental factors and spatial features, the set of these factors leads the same spaces with different color combinations to have different effects on human perception. Red color strongly affects the nervous system, increases blood pressure, heart rate, and rhythm of breathing. This is while blue has the opposite effect. One study in Norway showed that people in a blue room set temperatures four times higher than the red room thermostat with the same degree (3).

The intensive use of different colors from the profile of doors and windows to reflex glasses doors with strong and stunning colors is tangible and familiar to each of us. These colors add to the confusion of the person in space, because each color has a certain meaning and message. When colors are used without considering the hidden meanings of them, the environment becomes an unpleasant and uncomfortable place for the person. Color, which is an identity element and a factor for enhancing readability, is used so randomly and arbitrarily in all cities and neighborhoods today that the newly built parts of a desert city or a city in at the edge of the Caspian Sea are not much different with Tehran. This is while in each city, depending on the climate, local materials, technology and resources and interests and tastes and culture, paint facades, windows and doors, urban furniture, flooring, roofing structures, basically, all the urban elements are limited to certain colors showing color certificate of the city (4).

II. Color In City

Today experts consider the city as the point of economic and social development and believe that urban problems can be solved with proper management and organization. In this regard, the use of color in graphics or urban environment is particularly important because it has a direct impact on the quality of the urban environment. Color in the city organizes urban space and urban thus changes individual and social life. Designing urban space, especially dealing with color is a creative approach and much of the knowledge of color topics is a creative approach that many graduates of art and artists such as architects, industrial designers,

graphic artists, designers of landscapes and environment even visual artists have a contribution. In fact, city managers and planners try to provide and integrate artwork in the city to calm harsh and stressful life of modern urban environment and contribute to mental relaxation of the citizens and city beauty. Attention to weather conditions and climate, local materials, culture, the type of spaces, and so on affect the decisions of a manager to direct the use of color in the city (3). Urban graphics is a part of the art of organizing urban space that deals with various scientific disciplines and artistic urban planning, architecture and landscaping, graphics, electrical engineering, traffic engineering and transportation, psychology, sociology and economics, and at the same time communicates with politics and culture. In fact, the mission of these areas is changing the process of shaping the surrounding space (5).

Colors with the aim of creating a perfect visual communication between citizens can directly or indirectly play an important role in many cases including facades of buildings, fountains, urban furniture, road signs, outdoor advertising design and positioning, synchronizing signs, assimilation of benches, garbage cans and green space, playground equipment, warning signs, information signs, kiosks, and so on. In order to avoid these visual color disturbances in environmental graphic of a city both objective and subjective aspects of the city, the urban fabric structure and function of its economic, public spaces, etc., as well as the subjective factor, i.e. groups of communities, level of social consciousness and perception and expectations and their demands, citizenship status, homogeneous groups and the like need to be studied (6).

III. The Aesthetic Aspects Of Color

Color impression
Impression or visual effects known as using colors and mixing different effects on the human visual system: for example, a dark color when placed in bright areas and vice versa.
Color expression (emotion and sorrow)
Expression or express of a feeling includes the knowledge and use of physiological and psychological effects of color on the human nervous system. Expressionists believe in the effectiveness of different colors to express mixed feelings are telling.
Construction or building (coded and symbolic)
This is the symbolic use of colors. Symbolic use of color is a phenomenon that has emerged during thousands of years of mixing psychological, physiological, and contractual aspects in different human communities.
Cases that cause confusion and disharmony in the body of the city are as follows:
A) Applying tastes and non-professional interventions include:
- Domination of non-professional construction culture (jerry building)
- Applying the tastes of the owner or employer
- Lack of use of architectural experts in designing and implementing
- Exaggerated performance of some designers
B) Theoretical weakness:
• Lack of knowledge of the principles of Iranian architecture
• Failure to use modulation
• Anomalies related to non-compliance with the design principles
• Lack of consistency of form and functionality
• Redundant and unprincipled attachments
• Use worthless and without identity architectural trends.
Each color has three variable visual attributes or aspects:

Hue, brightness, and richness
Hue is an attribute of color that identifies its place in color hierarchy (from red to violet) equivalent to the light of different wavelengths in the visible spectrum. Red, yellow, and blue are called primary hues, and as they are the base of other hues are called primary colors as well. Secondary hues are orange, green and purple obtained by mixing equal amounts of two primary hues. Tertiary hues are obtained by mixing primary and secondary hues: yellow-orange, red-orange, red-violet (Purple), violet-blue (azure), blue-green (turquoise), and green-yellow (pistachio kernel). He shows a sequence of twelve hues in color cycle in a definite order. In color cycle, secondary and tertiary hues placed between primary hues have kinship ties and beside each other form the easiest color harmony. If these colors are mixed with pure white and black colors, they create countless combinations of colors and their various shades (7).

Visual, spiritual, and psychological phenomena in color sphere and art have a lot in common. When a subject is taken as common, the project must follow this primary theme ruling working. If color is the most important means of expression and the concept mode, color combinations should start from color levels, and these levels will determine the lines. The one, who first draws the lines and then adds color to them, would never be able to portray a colorful nice and sharp work. Colors have their own dimensions and directions and

draw lines in their own way. Colors are not only effective in our psychological sense, but they also influence our physical sense of the environment. They even disturb physical form and space architecture visually and show the environment to audiences in another form. So far, our attitudes towards color have been by considering superficial measures. Often we consider a color for our room space that is consistent with decoration supplies available and our opinions and tastes.

However, we think less of its main role in building architecture and the consequences that the use of that color can have on the environment. However, any color, besides its evident appearance has different characteristics, and in this regard, it has various effects on the space around that according to these features and the results of their application, color selection for a setting with its own circumstances cannot happen solely on emotion and aesthetic criteria, but the purposes of its application must be determined. Then, on the way to achieve the desired goal, selecting the type of color and method of using color should be addressed. The correct application of colors in the cities leads to beautification and softening spirit of people. With accelerating development of cities, minimum effort of an architect is softening the outer space to minimize the visual damage and the use of specific and desirable views in order to create beautiful pleasant and visual effects harmonious with social psychology and neighborhoods (8).

The use of color in the city
Maintaining and improving readability and identity in the city and in every space is always of the most important goals that are independent of type or location and must be considered about design and urban managers. There are many tools to achieve a goal that attention to any one of them can bring the desired result. Color is one of the most important elements that can help easily and with the least costs to define spaces to create readability and a sense of unity and creating a sense of place. One of the main purposes is access to identity and prospects and the determined outlook of the city. Studying color history of the city, or more precisely, its color palette, helps us to able to preserve it or define a special color palette for each city whose constituent elements are colorful words or in fact a variety of colors that in combination with each other define face color of urban spaces.
Even now that our cities are strongly colored with confusion and lack of identity, by naming specific cities, specific color spectra in the minds of all of us become alive. This is the same expectation that we have of the city's identity and its role and designers must work to strengthen it. Many cities, villages, and regions over the years have earned their own colorful traditions and different parts of the cities, even neighborhoods can have different colored mood.

Decision for the use of color in the city
Attention to the context, weather and climatic conditions, local and cultural materials, type of spaces and the like affect design decision or manager to guide the effective use of color in the city. Studies of color history have been conducted in some European cities such as Turin, Lyon and Marseille to find a way to combat "color pollution" in the cities. The background of environmental design and environmental graphics can be viewed simultaneous with the creation of man. Creation of the world is a prime example of environmental design. Paintings found in Lascaux cave BC are of the earliest examples of environmental graphics, paintings that Phoenician merchants wrote on the rocks to advertise their goods are more modern examples of the ancient world environmental graphics (8).
Environmental graphics today, which is a part of the environmental design, has its roots in the industrial revolution in the course of science and technology progress and formed today's cities and life took a faster pace. These big cities require order and logic so that their inhabitants live in comfortable conditions. Before the Industrial Revolution, building large cities such as Rome, Athens, and ancient Greece was with the aim of glory and power of government. After the industrial revolution, in the concept of creation of applied cities was proposed. The cities of this period could not simply pay attention to sheer beauty and the question of what elements should be based on the order and logic in which part of the city found a very important position. In modern cities, beyond the design, the use issue is important: whatever we build should make life easier, have strong notification and deterrent legal systems. Due to population growth, mass production, and industrialization, we need rules and laws to be able to live well and not face chaos. In addition, in designing a city, it should be acted in such a way that the urban environment is made more psychologically tolerable to people living in it (8).

The impact of color on the psyche of the citizens
Colors can be cold or heat, show off or humility, create relaxation or tension and create weight in space. The impact of colors on our morale makes an important part of our relationship with our environment. Some colors create a certain reaction in our psyche. For example, bright colors such as red and orange in the environment increase hope and vitality in humans, and colors towards dark and gray increase boredom and

frustration reduce constant fatigue of motivation, and over time, this stress and fatigue lead to depression or aggression.

Blue: sacredness, sweetness, hopefulness, and refreshing are of the features of this color. Due to its relieving effect, blue lowers blood pressure, reduces pulse and respiration and grants inner peace to people.
Red: This color is positive and exciting, with a lot of elasticity and strength, increases blood pressure and breathing, is appetizing, but soon tires human. Yellow: This color is a mental stimulant. Although it is a very good color, in Iran it is much undervalued. Yellow satisfies mental states and mediates sympathetic and parasympathetic nerves. Yellow has a small amount of blue and stimulates that part of the brain that stimulates the intellectual mutation. Orange: it has dual effect both relaxing and rousing appetite. Purple: it is a sign of withdrawal, impartiality, sorrow, and grief. It is hypnotic and due to his extremely powerful electrochemical ray, it affects heart, lungs, and blood vessels and increases the tissue resistance. Green color: it is created from the combination of blue and yellow. It can be warm, cool or hot. Yellow is prominent and dominant, young, and green growth recommended to treat neurological and psychiatric disorders (2).

The impact of color on readability and spatial perception
Color perception in general, depends on three factors:
1. Condition and environment where the color can be seen.
2. Reflector surface characteristics, such as texture and its ability to absorb or reflect light
3. The ability to perceive colors: everyone is aware of feeling the effects of color on weight (light and heavy), temperature (heat and cold), distance (far and near), and size (large and small). Even the scale of time is different in spaces with different colors. For example, listeners of a speech at a blue hall see it as long and tedious, while the same speech at a red hall is evaluated as thrilling and shorter. The sum of these factors leads to, regardless of other environmental factors and spatial characteristics, the same spaces with different color combinations have very different effects on human perception. Red strongly affects the nervous system and increases blood pressure, breathing, and heart rate, and this is despite the fact that blue is quite the opposite. Color is one of the most important elements that can help easily and with the least costs to define spaces to create readability and a sense of unity and creating a sense of place. Moreover, identification of color identity can help legibility of space for city planners. In many cities, in some countries the appropriate use of color as a symbol of the bond between man and the environment is the easiest and most effective factor in the city's vitality and readability. This is while in our cities, colors are used less to create a sense of identity and cities have a gray face with disturbances (9).

The role of color in urban space
Colors are of the elements affecting the visual quality, beautification, readability of urban space, the correct application of which in city leads to beautification and softening spirit of people in bustling cities and makes a good feel of the city. Color in architecture is not only a key feature, but forms a part of the heritage that is beyond pure aesthetic values, and is considered a cultural value in terms of anthropology. The importance and necessity of using colors in urban facades, making the right decisions about its urban design, implementation and maintaining vivid style of management require a correct management process that is the basic requirement of our cities today. Color is an important visual element that can have an effective representation in public view of a city (2).

The effect of color on the human understanding of the environment
By being cold and hot, show off or humility, creating tension or relaxation creates weight in the space. The effect of colors on our morale is an important part of our relationship with our environment. In general, there is very sensitive relationship between mental tendencies of persons and human mind is affected by colors. One of the easiest ways to restore peace to the human is the use of harmonious colors, especially in the context of urban beautification (2).

IV. Conclusion
Urban environment and spaces should meet the needs of citizens as urban spatial and physical appearance affect the spirit and calmness of the individuals. Building facades, as the boundary between interior and exterior, are usually the subject of assessment of pedestrians of urban neighborhoods and a matter of great impact on the image of citizens. The results show style architecture style, color, and materials are the most important visual elements in forming mental images of urban building facades respectively. However, their impact on the protection or development of buildings in the future should not be ignored. The building facade history affects the roots and historic mental image and increases quality and visual richness, because people with this mental landscape in terms of the number of images, people experience different sensations. Colors not only affect our psychological sense, but also our physical sense of the environment. They even disturb physical form

and architectural space on a physical level induces them in another way. Any color, aside from the appearance that is visible, has different characteristics, and in this regard, has various effects on the space around that with regard to these features and the results of their application, color selection for an environment with its own circumstances, cannot be solely on emotion, and be done with aesthetic criteria. However, at first, the purposes intended of its application in the environment should be specified, and then on the way to achieve the desired goal, we deal with the choice of color and method of using it. The correct application of colors in the cities leads to beautification and softening spirit of people. With accelerating development of cities, minimum effort of an architect is softening the outer space to minimize the visual damage and the use of specific and desirable views in order to create beautiful pleasant and visual effects harmonious with social psychology and neighborhoods. Hence, with the use of local materials and combining them with the new conditions of construction and utilizing a highly experienced team, one can restore and expand architecture consistent with the culture and climate of the region.

References

[1]. Tachrman, W. "Urban experience" UNESCO, No. 48, twenty-second year, Tehran, 1990.
[2]. Bahadori, M. "The reasons for the importance of color in urban spaces", 2013.
[3]. Porter, Tom, Mikellides, Byron, Color in Architecture, Van Nostrad Reinhold, 1976.
[4]. Ethan, J, coloring book, translated by Mohammad Hossein Halimi, Tehran, Printing and Publishing Ministry of Culture and Islamic Guidance, Second Edition, 1988.
[5]. Sadrmohamadi, A.R. Why outdoor advertising? Tehran, Compound publication, first edition, 2008.
[6]. Eshghi Sanati, A. The role of color in the beautification of the city and its impact on sustainable architecture city (Case Study: Complex), the first international conference and the third national conference on architecture and urban landscape sustainable, Mashhad, International Institute for Architecture, Urbanism architect in 2016.
[7]. Ebrahimzadeh, H. Plant Physiology, vol. 3, Tehran University Press, 2007.
[8]. mujtahid, d. H. Language, living green plants, Tehran University Press, 2007.
[9]. Habib, Farah. "Unison of light and color in urban space of Persia", Journal of Fine Arts, Issue 27, 2006.