

Understanding and Examination of Timeworn City Textures and Causes- Outcomes of its Occurrence

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Received: July 24, 2015
Accepted: September 31, 2015

ABSTRACT

Erosion of textures and their internal elements is caused either by age or by the lack of development projects and technical supervision on their formation. Consequences of textures erosion, which ultimately results in its status removal from minds of citizens, can be felt and recognized in such different forms as reduced and / or absent condition of habitability and safety as well as skeletal, social, economic and facility-based disorganizations. In present paper, we try to understand and examine any types of erosion of urban textures and to state as many causes and consequences of it as possible.

KEYWORDS: old Textures, Erosion, Traditional Textures, Causes of Erosion, Urban Architecture.

1. INTRODUCTION

Nowadays, with changed functions and altered attitudes, it is felt that addressing and organizing such textures are required because it is believed that modern cities are losing their identity without existing old textures. In the first half 1380s (2000s), term 'timeworn/eroded texture' was introduced into common literature through striking, devastating shocks of Bam city earthquake by backings derived from 1370s (1990) and theoretical supports from those specialized in urbanization disciplines. Urban eroded textures can be considered as some part of or whole city space whose habitat system suffers disorders and in efficiency with respect to its own vital elements constructs and functions relative to those of other city textures.

Concepts of Traditional Urban Texture

Traditional textures are an interconnected set of city components and elements including timeworn, repairable and destructible residential units; invaluable historical monuments; bazaars; facilities; passageways network; and architectural, skeletal specific form which are the product of gradual, organic growth of cities in pre- industrialization transportation technology –based historical times and which have a spatially distinct construct in terms of functions and features from new parts of city, therefore, they are less compatible with modern social, economic conditions, especially transportation technology, and among their major problems are their accessibility for vehicles, narrow passage network, shortage of green space and educational space, and erosion. In this part of cities, called primary core of cities, we observe unprecedented historical monuments with cultural, artistic value, called historical resources, that are objective symbols of the past civilizations and urban lives, requiring preservation and maintenance. Therefore, traditional urban textures are a mosaic consisting of different components and elements with variety of functions, whose spatial regularity gives a specific construct to this part of cities, change of which is impossible due to unilateral treatment so its organization, improvement and revival requires a multilateral treatment including all social, economic, physical and skeletal dimensions. That is, we should deal with texture erosion with respect to alteration of roles and functions as well as movement of activities to new parts of cities, including markets, working capital, etc[1].

Causes of Traditional Urban Texture Erosion

Traditional Textures mostly manifest themselves as inappropriate, and sometimes abnormal, environments within inner city, turning beautiful environments and prosperous houses into ruins. Once having urban patterns suitable for regional culture and climate, such a texture is being considered as an unfavorable city environment now. Although lifelines are running through these areas, increasingly more and more houses change into ruins and/or into places with undesirable performance [2].

It may be argued that major cause of such tragedy is imposition of planning regulations and new urbanization standards on traditional textures of old neighborhoods. It is easy to justify of course that this historical event is inevitable because originally rich and rooted households are forced to move into newly built and modern segments of cities, as a

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result of which timeworn places become vacant to receive immigrants or low-income people. But it is not an undeniable fact that such a movement of population can be directly related to reduce environmental indices, increased crimes, increased unemployment, and increased physical erosion; or it is probable that physical erosion of texture of traditional urban neighborhoods creates problems with central cores. What changes an antique neighborhood into a timeworn or quasi-ruin one when the rich abandon it, being replaced by the poor or low-income people? Just insufficient income of newcomers to rebuild the neighborhood? Maybe! But what about a market or an arcade? Are financial restrictions or inabilities causes leading to the lack of rebuilding and renewal? Maybe there exist some places in a market a square meter of which costs more than a big residential unit in an affluent part of a city, but its value cannot prevent its old building erosion. It is possible that this small piece has become eroded with no improvement, rebuilding, renewal and even repairmen during several decades while that big piece has been rebuilt many times and, ultimately, has been embedded by a high skyscraper probably. Why? Isn't the reason for that a regionally standard – based comprehensive and detailed plan which is an engineering factor in one case, but a discouraging one in another?[3]

For some decades, comprehensive plans and standards for regional construction of metropolitans virtually have prevented any renewal and improvements and even blocked prevention of erosion of traditional inner city neighborhoods, and so now. Generally, the major objective of design and implementation of this comprehensive project and regional standards has been to widen passages in order for vehicles to move conveniently. Implied assumption of this aim was that, with arrival of automobiles, other aspects of modern urban life would enter the region gradually, natural consequence of which would be transition from tradition to modernism. Additionally, it has been thought that physical renewal would entail reform of economic, social and cultural structures, extremely wrong thoughts.

History of regionally city planning and standards has thought us invaluable lessons, the most important of which is that a traditional neighborhood is so capable of resisting to un reasonably imposed regulations and standards that it can make them invalid executively in practice. It should be noted that such resistance has not been, and is not, free from a huge cost and a lot of hardship imposed on mentioned neighborhoods as well as on people living there, which is evidenced by current tragic states of traditional timeworn neighborhoods. Despite predictions and presumptions made by said detailed projects, virtually, no buildings not only retreated but also have been tired of resisting to erosion. At the same time, predicted modernism manifestations could not penetrate into the traditional textures of markets, arcades and surrounding neighborhoods. Although a great deal of transformation has been achieved with arrival of urban facilities and installation and communication, physical foundations and skeletal structures of neighborhoods remained unchanged and, with this physical stability, traditional essence of social and cultural ties also remained so [3].

Old Texture Particularity and Values

1. Old of which present generation is not the only one who takes advantages. Some part of the wealth belongs to its creators and most part of it belongs to the future generations.
2. It is necessary to formulate and define cultural, formal, historical and social values existing in old urban textures in such a way that they can be turned into modern ones, that is, new dynamics values need to be formulated and created.
3. In addition to historical value, of urban textures have following features:
 - a) Obsolescence of a timeworn and inappropriate skeleton, disorganized face / appearance of the city, and absence of proper connecting roads;
 - b) Lack of convenience required by vehicles;
 - c) No enjoyment of urban installation and equipment; and
 - d) Chaotic social, cultural construct of majority of residents.
4. Important thing is to understand and achieve values whose objective manifestation is skeletal organization of old cities. To discover times of an old city design in order to modernize it remains on the top the agenda.

Historical Value

Historically in valuable textures must exhibit clearly the period of history to which they belong. Although they themselves may not be representative of cultural transformation, they show a protective value due to being representative of their own times and to playing a role in expression of cultural transformation process.

Cultural Value

Texture is a kind of skeletal manifestation of life style in periods of time when it represented, and represents, evolved forms of resultant of societies exposure to natural and artifact environment as well as to current life.

Urban and Architectural Values

By urban architectural values, we mean values that play a role in creating urban texture, urban space, settings and building, due to especially exceptional skill(s) within the trend of architecture and urbanization transformation, which are pronounced in different aspects including construction, morphology, styles, technologies, use of materials, decorations, and/or a combination of them.

Political and Social Values

Political and social values reflect values some places and buildings have acquired throughout their lifetimes due to a historical, political and/or social event or phenomenon and/or due to the fact that their construction has been attributed to a family or a character having social, religious, political and/or academic value.

Economic Value

Economic value is a sort of value created and objectified by other values. Erosion represents ineffectiveness and reduced efficiency of one texture relative to others' in a city, which is caused by age or by the lack of development projects and technical supervision on its formation. Consequences of texture erosion, which ultimately removes its status from citizens' minds, can be felt and recognized in different forms such as reduction or absence of habitability conditions and of safety as well as skeletal, social, economic and facility disorganizations.

Erosion Degrees

In general, term 'erosion' is applied to some aged corrugation under natural erosion of effects, having different degrees.

Absolute erosion: The object death occurs and rebuilding is not possible.

Relative erosion: Repairment is possible

Complete erosion: Rebuilding is possible. Generally, urban space consists of shapes and activities or, in other words, of container and contained. Each of shape and activity elements may suffer erosion. Erosion equation varies given that erosion occurs on one or both elements.

First Equation:

Intact shape relative activity erosion=Relative space erosion

As an example, residential buildings located in inner cities are intact, but residents move into other parts of cities due to social matters and changes in population context so these buildings' uses turn into commercial, office, housewares and other from residential use.

Second Equation

Relative shape erosion + intact activity = Relative space erosion

Tehran Bazaar, for example, has maintained its major activity and use despite skeletal erosion, negating efforts made to change its activity in order to turn it into a tourist area.

Third Equation:

Relative shape erosion + relative activity erosion=complete space erosion

An example of this is abandoned city areas which not only have lost their residing population, but also suffered skeletal erosion because they have been underutilized and left without maintenance.

In 2006, Tehran city planning and study center initiated a research into the system of interventions with timeworn textures, identifying and classifying causes of erosion into following categories:

1. Economic
2. Social
3. Skeletal
4. Laws and regulations
5. Managerial
6. Cultural
7. Mental and psychological [4].

In general, reduced efficiency of and absence of care for, maintenance and revival of any phenomena entail their erosion. When the urban life within a city limit is stagnating with no efforts being made to boom it again, urban texture of that limit begins to be in erosion process. Erosion of urban textures affects texture skeleton and its socioeconomic activities. Skeletal erosion and erosion of social, economic life of a texture interactively intensify each other's effects, resulting in stagnation of urban life and in extreme degradation of life quality.

Study of erosion grounds and processes of creating timeworn urban textures

Grounds effective in creating timeworn urban environments include economic, social, skeletal, environmental, legal and urban management dimensions. Such cases, called erosion-facilitating factors, make living environment undesirable and bring destructively negative and functional appearance to these areas. Such factors and their different accompanied signs and appearances include followings:

1. Economic factors accompanying activity stagnation and settlement by low-income people, dropping housing and land prices, and stopping construction in these areas.
2. Social-cultural factors signs of which are social, cultural problems and disorders.
3. Skeletal factors signs of which are in sustainability of buildings and in effectiveness of infrastructures.
4. Environmental factors including air, water, sound, and visual pollutions as well as well as insufficient vegetation and natural elements.

Legal management factors which are of interest largely due to incompetency of management and organizations, of projects, of programs, of practices and of administrative methods, and to weakness and inadequacy of laws, standards and regulations [5].

Various Erosion dimensions

Erosion has various dimensions interrelated and interconnected, some of which relate to characteristics and functions of buildings while others relate to whole sphere. For each dimension, degree of erosion varies by building or sphere. Various erosion dimensions are:

Skeletal erosion of structure:

Erosion may be caused by dropped skeletal or structural quality of buildings, which is due to the buildings' quality drop because of a lapse of time, weathering, ground movements, vibrations due to traffic and inappropriate and undesirable maintenance.

Functional Erosion

Also, erosion can be caused by building functional qualities in the sphere. Building texture may be no longer suitable for functions for which it has been designed and/or for current uses, therefore, it does not match with modern standards or with potential occupant(s)' conditions. Such inefficiency can be related to the building texture itself. Functional erosion can also be caused by characteristics of the sphere. Inefficiency can be due to external factors on which functions of a building depend.

Mental (Subjective) Image Erosion:

Erosion of subjective image is a product of perceptions of buildings' and/or sphere's mental images. Over time, with transformed human, social, economic or natural environments, historically unchanged textures excepted by today's people lose their fit to the needs they serve. This perception is some sort of value judgment which, in reality, may have no true essence.

Legal and Formal Erosion

In addition, there exists some legal erosion, relating to functional and skeletal dimensions and occurring when a public establishment determines minimum functional standards. That is, relationship among new standards of health and safety, fire, and construction regulations may sentence a building to erosion.

Spatial erosion is one of characteristics of functional activity within sphere in question. To construct a building, it is necessary to select its site on the basis of levels of its access to other uses, complementary services it needs, and also of transportation and other facilities. But selected site may become eroded over time and in relation to activities based on which the building is to be constructed. This form of erosion may occur because of displacement of centrally commercial neighborhoods. Buildings are demolished not because of their physical lifetimes end, but because of their remaining economic life times are considered limited.

Relative or Economic Erosion

In most practical cases, erosion is not an absolute concept rather it is a relative one constantly in relation to other buildings and spheres. For this reason, concept of relative or economic erosion is developed. Basically, erosion is not limited/ specific to skeletons, rather it identifies conditions threatening human life in different aspects so that continuation of this process in timeworn textures is regarded as a catastrophic earthquake targeting future generations. Such conditions include high crime rates, social predicaments, economic poverty, and lack of skeletal proper infrastructure, to earthquakes, impossibility of rescue operations during emergency or crisis times, and many other cases. Such conditions always threaten southern part of Tehran city and its timeworn textures seriously, turning it into a bipolar city while creating a deep gap between its southern and northern areas. However, renewal of Tehran city timeworn textures faces serious difficulties including following cases:

1. Economic- social inequality and bipolarity of the city: eroded textures location in disadvantaged pole, and neglect toward realization of social justice creating inequality of growth and development opportunities.
2. Skeleton-based model of city planning: resulting in shortages and unfavorability of service and civic spaces within eroded textures.
3. Low proportion of passages: leading to reduced accessibility of timeworn textures internally and externally.
4. Low value of property: strengthening poverty cycle and absence of economic justification for renewal by people of such areas.
5. Utility shortage: reducing livings per capita and increasing damages, harms and deprivations.
6. Bad quality of construction: entailing early erosion of these areas.

Characteristics of timeworn textures

1. Erosion of skeleton
2. Inaccessibility to textures internally
3. Lack of appropriate underlying installation
4. Environmental problems and high pollution
5. shortage of leisure amenities
6. Poverty and deprivation
7. Vulnerability to earthquakes
8. Low service per capita

9. High density of population (over-populated)
10. Density of non-durable buildings
11. Insecurity and social predicaments

Measures to Determine Timeworn Textures

1. Blocks with more than 50% unstable and timeworn buildings.
2. Blocks with more than 50% passages <6 m wide.
3. Blocks with more than 50% buildings smaller than area surface of $200m^2$ [6].

General characteristics of timeworn textures

1-Age of buildings:

In such textures, more than 80% of buildings are > 50 years of old; or if they have been constructed during recent 50 years, no technical standards have been observed in construction, which is recognizable through appearance buildings. In addition, buildings of these textures largely cannot resist to earthquakes with medium intensity.

2- Granulation

Residential buildings located in such textures are typically superfine with less than $200m^2$ area on average.

3-Materials

Materials mostly used in these textures are largely adobes; adobes, bricks and wood; or bricks and iron beams, without observation of horizontal, vertical connections and structural systems.

4- Story number

Most buildings in timeworn textures are one-or two –story.

5-Access ways status

Largely not preplanned, timeworn textures possess some irregular construct and their access ways are mainly sidewalks so that most of their passages are either deadlocks or less than 6 m wide low permeability coefficient.

6- Status of urban services and infrastructures

Timeworn textures suffer seriously shortages in terms of services, infrastructures, open space, green space and public space, for which interventions like aggregation and renewal are employed [7].

Conclusion and Summation

A traditional neighborhood is capable of powerfully resisting to unreasonably imposed standards and regulations, negating their executive validity practically. By urban and architectural values, we mean those values that, in the process of transformation of architecture and urbanization, play a role in creating urban texture, urban space, settings and buildings due to some exceptional, special skill(s). When urban life within a city limit is stagnating for any reasons and no efforts are made to boom it again, urban texture of that limit is placed in the process of erosion. Grounds effective in creating erosion of urban environments encompass economic, social, skeletal, environmental, legal and urban management dimensions.

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