



## Evaluation of spatial structure of Boroujerd, from the historical structure point of view

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**Abstract.** The quality of public environment in most cities in Iran is very low from the respective of structural and social indicators. Central parts of old cities which are known as timeworn textures by the managerial system, although have a lot of prominences, but they have steel structural and functional depletion such as ruinous buildings, undesirable environmental quality, narrow paths with undesirable shapes and etc. In these sectors, resident migrate as soon as possible. Local economy is inactive everywhere but at the margins of the market, reconstruction and renovation is not favorable, real estate is inexpensive, social and cultural situation is in the lowest level, and urban understructures are imperfect or incomplete. Hence, because of inattention of urban managers in two last decades, quality improvement of districts and markets of Iranian cities is fallen into oblivion among the urban strategies. Recently, the quality of public environment of cities is getting more important for the ministry and the municipality, and civil organization as a responsible organization and organizations which are related to historical issues of the cities are paying much more attention to this subject. The main goal is renewing the timeworn part and also making the market as an active place. The results of this study indicate that structural-spatial improvement of the market of Boroujerd has a lot of problems. The situation of central district and historical texture, and structural attributes, specially the usage system in these textures showed that improvement of structural-spatial improvement of historical texture of Boroujerd have a lot of problems with the respect of critical management. In fact, one of the most important reasons which accented the damaging of the bazar is the inhabitation of those who do not have any dependency to such these districts and it is not very important for them to save these old and historical textures. But in the other parts of the city there are many old people and inhabitants those who pay attention to this subject.

**Keywords:** Timeworn texture, dynamic programming, design framework, revision, interference districts

### 1. INTRODUCTION

Urban experience means that somebody put himself deeply in the city so that he can easily and accurately understand the city environment. In fact, urban experience means searching in unfamiliar environment in order to get familiar with the situation. In the beginning, this picture is same as what the person sees in those unfamiliar areas and after a while, these pictures revolve into imaginary form. This fact helps that the person finds his situation in that environment and get familiar with any other environment and scape from baffling. Conceptions will not be forgotten. They will be even a place for permanent referral of the mind and makes it possible to save them as memories.

The old texture of the new city is full of old pictures and conceptions and for this reason it can be a new place for another city experiment. An experiment which is not the same as what can be in the cities, and so, the old texture can get a new threshold for creating public memory for the people who gain their city experiences in cities which they do not belong to them. By recalling their memories in new places they can create a new memory and also create a new public memory for the new city which is a grown memory in a specific place. Moreover, city experience can be resulted only by roaming through the city and passing through different parts of that and touching different urban places. In this way, through watching different

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aspect of the city, that person can understand whatever there is about the city. By roaming in the city he can touch whatever that is cold, hot, smooth, or severe. He understands smelt of the city and can hear the tumult or feel the silence. He watches the perspectives of the city and finally can design an image of the city in the mind. The similarities of the imaginations and pictures among different people make public memory of the city. The city gets full of reality and imagination. At this time, one can talk about urban life and it's events.

## **2. DEFINITION OF THE PROBLEM AND RESEARCH DESIGN**

Spatial structure strategy of the city's market is part of the urban programming process that general concept of development is based on that. In urban programming strategy, parts of the city which are prone of transmission and parts of the city which are included in cultural patrimony and show the identity of citizens and need to be preserved are identified to make urban design and programming. Spatial texture is prepared base on recognition and analysis of local information (e.g. density, usage, capitation, society, demand, offer, services, etc.).

## **3. METHODOLOGY**

Different methods which are used in this research are compound of science and usage methods. These researches by using the findings of the basic researches help to solve the human needs and improve the methods and tools to increase the level of living mode of the citizens. Basic researches are crucial for applied researches. Applied researches use rules, theories and findings of the basic researches.

Some of the attributes of applied researches:

- Need less time to catch the results
- Are useful for making money and for this reason they have many fans.
- Usually state and private organizations, corporations, industries and sometimes academic centers use these kinds of researches.

Method of finding information:

In library researches: studying similar samples, using vast world of the internet, magazine, newspaper, etc. in order to define specifications, standards, base of researches and using traffic researches.

Following topics are discussed in field studies:

- Comparative studies on all of the paths, paying attention to factors which exist on them by observation, attendance in those places and getting familiar with similar samples in different cities.
- Challenges, potentials and propose suitable ways based on questionnaires, survey and etc.

The purpose of these is mentioning standards in a scientific way and comparing it with internal and external samples.

### **Method of finding information:**

For library research: using tables, books, lectures, thesis, brochures, etc.

For field research: using questionnaires, survey, observation, image, video, etc.

For comparative research: using magazines, translations, microfilms, etc.

### **3. LAND USAGE DESIGN**

#### **3.1. Meaning of land usage**

Land usage generally refers to all spatial aspects and human activities on land, and different ways that the land can be used for different purposes. In the other words, it means the understanding of current situation of different urban activities, definition of portion of each usage from the whole of the city, recognition of their relationship and finding that how much these relationships are correct and logical.

#### **3.2. Programming land use**

Designing land use means “knowledge of land division for different usages in life”. The main objective of programming land use is the correct usage of the land and finally making that ready for different urban usages.

#### **3.3. Land use plan (hybrid plan)**

Hybrid plan is the most complete plan which had been used from the last decade of 20 century in which planning, policy and management are linked together. These plans are compound of advantages of previous plans.

#### **3.4. Definition of experts about historical texture**

Dr Talebian:

From the cultural patrimony point of view, every texture which has more than 100 years is historical texture. But historical values are important too. For example, maybe a texture is not older than 60 or 70 years old, but it has some values which are important for the people of that city. If a tradition or a certain culture continue in a distinct part of the city and the people have found its value, that part of the city will be included in historical values of that city.

Dr khoshnevis from Qazvin international university:

Disaster of Bam earthquake that had happened nearly a month after brick conference showed that cultural patrimony organization has some problems in doing its duty. We will not say that their work is worthless, but we will find to have a way for useful results which can save life of 30 or 40 thousands of people. In the mentioned conference brick was called as a valuable object, but in fact a structure which is made of brick can't tolerate an earthquake with magnitude of 6.5. What was mentioned in that conference, is preparing a repair charter in Iran, which is very good decision. Australia, Brazil, Sri Lanka are pioneer for having repair charter. It means that Iran doesn't have any charter for renewing historical structures. In our charter we should have exact rules and definitions for this aim.

About what Dr Sarafraz has told about defining the values of cultural patrimony, we can say that in all over the world like Athens and Venice there is a charter for this aim. We say repairmen of historical structure, but we don't know what to repair and how to do that. The only rule that we have among the cultural patrimony is the 100 years old structures. It means that value of a structure depends on its antiquity of 100 years. But some of the valuable structures are not involved in this definition. For example professor Shahriar's house is not older than 100 years, but has national and cultural values. I believe that the first step in defining historical structures is defining a system to discern the values which may be compound value.

### 3.5. Land usages id historical texture of Boroujerd

Capitati	%	Hectare	Usage
31/6	58	20.14	Residential
3/5	6	2.23	Commercial
13/8	25	0	Parking
1/3	2	0.82	Educational
0/5	0/9	0.31	Official
0/1	0/1	0.063	Hygienic
0/2	0/4	0.12	Remedial
0/1	0/1	0.063	Cultural
0	0/01	0	turism
0/4	0/7	0.25	Religious
1/1	2	0.70	Park and green space
0/5	1	0	Sport
0/2	0/3	0.12	Financial

Table 1. Land use of Boroujerd.

### 6.3. Quality of structures and studding in historical texture of Boroujerd

Based on sampling, the basic studding of 45% of residential is steel and concrete, 40% wood, 14% iron and other fugitive studding.

Most of residential structures with concrete and steel frames are 52% and they are in Dodangeh, and the least is 31% for Razan and Ghadaghon. Most residential structures with fugitive studding 52% in Yakhchal and least is 30% for Dodangeh (table No.15).

Surveying exterior situation of residential samples (with total visit of the texture) shows that 22% of residential structures are new, 29% retainable, 34% repaired, 15% destroyed. The highest portion for destroyed portion belongs to Soufiyan district (20%) and the least portion belongs to Razan and Ghadaghoun. The most new portion for structures (23%) belongs to Yakhchal and the least of that (15%) belongs to Razan and Ghadaghoun.

%	Area	Quality
3	67475	New
82	1610024	Retainable
9	177275	Destroyed
3	59124	ruined
2	41627	worthv
100	1955525	total

Table 2. Quality of structures in Boroujerd.

Yakhchal		Razan		Dodangeh		Soufian		Quality
درصد	سطح	درصد	سطح	درصد	سطح	درصد	سطح	
5	19144	3	8548	1	8915	5	29968	new
81	213028	86	225260	82	565434	82	503302	Retainab
7	28445	9	23472	11	74987	8	550371	destroyed
4	15322	2	4793	4	24157	2	14852	ruined
1/3	13122	0/4	1055	2	15182	2	12268	Worthy
100	392062	100	263127	100	689575	100	610760	Total

Table 3. Quality of structures in old texture of Boroujerd.

Number	Destroy		Repair		Retainable		New		No answer		Main district
	کل	درصد	تعداد	درصد	تعداد	درصد	تعداد	درصد	تعداد	درصد	
138	20	28	40	55	18	25	21	28	0/7	1	Soufian
208	15	21	25	52	41	86	23	48	0/5	1	Dodangeh
86	8	11	45	39	27	23	15	13	0		Razan & Ghadaghoon
73	12	16	36	26	16	12	26	16	0		Yakhchal
505	15	76	34	172	29	146	22	109	0/4	2	total

Table 4. Quality of residential buildings in four areas and total texture.

Number	Fugitive material		Wood		Iron		Steel or concrete		No answer		Main district
	کل	درصد	تعداد	درصد	تعداد	درصد	تعداد	درصد	تعداد	درصد	
138	1	2	48	66	5	7	43	59	3	4	Soufian
208	1	3	30	62	15	32	52	109	1	2	Dodang
86	0		38	33	30	26	31	27	0		Razan & Ghadghoon
73	0		52	368	7	5	41	30	0		Yakhchal
505	1	5	39	199	14	70	45	225	1	6	total

**Table 5.** Main materials for constructing residential buildings in four areas and total texture.

#### 4. ANALYSIS OF INTEGRITY BETWEEN STRENGTH AND PROBLEMS OF THE TEXTURE

In this section we will have an integrated vision on result of all different researches and studies, and a detailed plan is necessary. The most important aspects of this analysis include following topics.

##### 4.1. Strength of the texture

- Formation and exploitation of the city based on natural and geographic characteristics, similar to other old cities.
- City district show that this city had been formed over an old situation.
- Residential texture as the most prevalence kind of texture
- Reasonable functions in district
- Responsibility of the people in taking part in decisions and kind of management of the city
- Existence of important spaces in joint connections
- Existence of native people and sense of belonging to old areas of the city

##### 4.2. Problems of the texture

- Changing the life styles and integrating villages in the city
- Low quality of the integrated areas caused problems for natural environment and existence of disorders
- New construction out of rules
- Existence of timeworn structures and its problems in texture
- Lack of coordination in development

- Existence of visual, social and environmental problems in areas.
- Traffic problems in central part of the city as the financial area of the city
- Lack of parking and public transportation
- Concentration of official centers in detailed plans as a factor which cause traffic inside the texture
- Problems in implementing the plans and weakness in finding a good way to know how to spend in a correct way.
- Interferences in texture in modern life
- Lack of some urban services and capitation of crucial usages and its distribution
- Lack of attention to environmental qualities
- Lack of exact definitions related to value bounds

## **5. METHODOLOGY OF PLANNING ABOUT SPECIAL-STRUCTURAL MARKET OF BOROUJERD**

### **5.1. Factors which influence of city environment**

City space is the main place of event that influence in linking past time to now time. Urban space is a place which past, now and future meet each other. This space has 4 main elements which is consist of following factors:

- 1- Inhabitants or passengers
- 2- Manmade factors
- 3- Structural characteristics
- 4- Activity characteristics
- 5- Relationships
- 6- Time

### **5.2. Definition of Bazar**

Bazar that couldn't be able to answer all of the needs of the people inevitably had other parts that each one was for a purpose. Bazar is consisted of stores which have roofs. Also along this set of stores there are other public places such as bath rooms, schools, mosque, café, etc. so there is a complete texture in bazar which can answer different needs of the people such as financial, social, political needs. For this reason, most of the people lived around the bazar. But businessmen another rich ones lived somehow far from that crowded place. Nowadays bazar is not that mush active at night or holidays but in the past it was much more active in any time.

#### *5.2.1. Different kinds of bazar*

Considering different kinds of needs, people attend different kinds of bazars.

- 1- Seasonal bazar

In the past, some of the products were produced only once a year such as wool.

People would go to seasonal bazars and bye whatever they need.

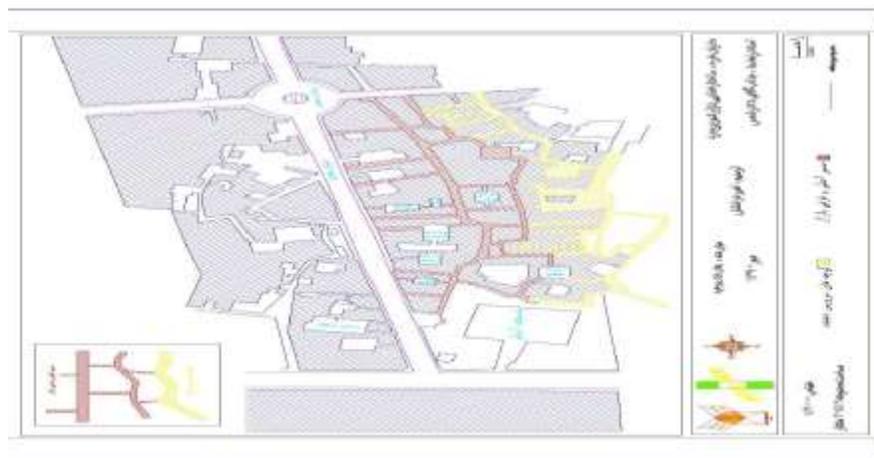
Nowadays there are sometimes similarities with the past. For example near Andimeshk, a lot of cars sell watermelon.

## 2- Daily bazar

Some of the bazars take place in some specific days. This kind of bazar is usually in areas in which the population is not concentrated in a specific area.

### 5.4. Recognition and analysis of Boroujerd bazar

As you can see in the pictures, bazar of Boroujerd has 20416 hectares and width of the paths is not adequate for those crowded areas



Map 1. Plan of Boroujerd bazar.



Map 2. Current situation of bazar.

## 5. CONCLUSION AND PURPOSED STRATEGIES

### 5.1 conclusions

As we can see from the experiences, systematic attitude can be a useful way to analysis this problem. Besides definitions and expressions, we also discussed about the current situation and strengths and weaknesses of that subject. Guidance in this situation was a special attitude toward the central and historical texture, and by using the findings of the researches we concentrated on designing the margin and historical texture.

The most important results are:

- a) The findings of this study showed that improvement of structural-spatial aspects of Boroujerd bazar has a lot of problems.
- b) The situation of central area and historical texture and also structural characteristics and especially the usage system showed that organization of structural-spatial texture Boroujerd bazar has a lot of problems such as:
  - Communicational links
  - Lack of hospital in central part
  - Lack of equipment in 8 clinics
  - Lack of health and remedial equipment
  - Lack of green parts in central zone
  - Using poor material in historical structures
  - Vulnerability of the structures because of not having a suitable pattern for constructing
  - Using flammable material
  - Lack of fire equipments
  - Damaged installations
  - Vulnerability of the mosque in the middle of the old part

#### *5.1.1. Strengths of central part and historical part of the Boroujerd*

- The inhabitants of that part are native people

In fact one of the reasons which cause damaging of such parts is that the people do not belong to that part of the city. But in Boroujerd bazar most of the people are native and have enough motivation to preserve that.

- As mentioned before, in central part of Boroujerd there are not gas stations or other dangerous equipments and so it is must more safe if earthquake happens.
- Changing circular form of the bazar to linear form acted as a suitable background for preparing useful links
- After the earthquake that happened on 1384, people and officials decided to repair old and damaged parts and new structures appeared.

### 5.2. Suggestions And Strategies

#### *5.2.1. Suggesting detailed plan for central texture of Boroujerd*

In this plan by considering the importance of old texture and its financial activity, it concentrates on reconstruction of central areas besides other aspects of improvement, parking, etc.

Designing was influenced by rules and criteria such as:

- Preserving the organic form and identity of the structure
- Paying attention to local situation of components in defining the situation
- Modification of passengers' design
- Making the texture more clear
- Paying attention to green space and relation between human and environment
- Management of traffic
- Shape variety
- Considering urban arena (public, private, partly public, partly private)

Hence, the old detailed plan is 16732hectares and the middle texture is 2734hectares.

By considering that most of the organic paths and sideways pass through the residential texture, and by current shape the paths have some problems we should consider other spaces and convert them to useful structures.

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