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Assessment of old structural texture of Ghale Abkooh in Mashhad

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ABSTRACT

Historical cities of Iran like Mashhad consist largely of old textures which are structurally, socially and economically problematic. Ghale Abkooh is one the most vulnerable areas whose structure and performance-related issues are in risk of change, and is exceptionally located in the middle of Mashhad city, beside an affluent neighbourhood. Thus the present study aims to assess the old structural texture of Ghale Abkooh in Mashhad. This article is an applied survey research which utilized analytic-descriptive methods. Field operations and questionnaire were used for data collection. SWOT was also applied as an analytic model in order to recognize restrictions and facilities of structural system of Ghale Abkooh. The achieved findings of the research indicated that Ghale Abkooh had a rural texture which was gradually located in the urban space of Mashhad, and owing to the deep-rooted social and historical backgrounds, it could not correspond to the new structure of Masshad city and remained unchanged. Now, Ghale Abkooh is considered as an organic, old and condensed area which is widely different from its neighbourhoods and comprises specific structural, social, cultural and economic characteristics.

KEYWORDS: old texture, Ghale Abkooh, rehabilitation, renovation, reconstruction

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1. Introduction

Nowadays, rapid growth of urbanization has caused many adversities for big cities of the country which affected all aspects of urbanization, disorganized reasonable urban life, and decreased general quality and stability of urbanization (Arabshahi, 2003, 28). Old urban structure is one of the most considerable issues in all cities which are required of some changes apropos of their human and natural conditions. Due to the fact that cities' old structures comprise the primary core of a city formation, old structures can cause some disorders in the organization of spatial unity between center, inside and on the edge of the texture. Old structures are regarded as unifying elements of urban development which can guarantee healthy life in a city. Appraising old urban structures are essential to recognize a city and the process of its urbanization; therefore, each constructional activity is firstly required of the recognition of city's old structures (Shafaghi, 1997, 1).

The issue of old structures and their assessment dates back to many times ago all over the world. The emergence of automobiles and trains changed cities' appearance, and new and long roads were needed which were the first cause of urbanization. Cities became broadly vaster and the transformation of rural areas into urban ones was observed. Suburban areas were gradually devoured by the rapid physical growth of urban areas, for instance, Hesarak, Vanak, Farahzad, Souhanak, Darabad, Golabdareh, Darband, Velenjak, Saadat abad and Kan in the northernmost part of Tehran (Zare, 2004, 136). Such places can be also seen in Mashhad such as Ahmadabad, Golkhatmi, Alandasht, Eshratabad, Bagherabad, Shadkan, and Mehrabkhan. One of the most organic parts of Mashhad city is the rural area of Abkooh which is named 'Ghale Abkooh' and contains its specific and different architectural patterns.

2. Statement of the problem

Problematic urban textures are urban structures in which there are not adequate environmental and qualitative values. The decrease of residential services, rehabilitations and renovations restrict and gradually cease the operations; therefore, it rapidly changes into a stagnant, inactive and peripheral. Qualitative devaluation can be observed in various aspects of urban life which can be named in the following manner: structural, performance-related, environmental and economic-social indexes (Jahanshahi, 2003, 12). The current study applied analytic-descriptive methods to collect data with respect to Ghale Abkooh in Mashhad as its case study. Considering the results of data analysis, some general suggestions were also made.

3. Research objectives

This research aims to obtain some solutions to recognize and deal with structural, spatial and residential problems of Ghale Abkooh.

4. Research questions

Main question which is intended to be answered in this study is 'what are specific features of Ghale Abkooh which makes it distinct from its urban neighborhoods?'

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5. Research methodology

Nowadays, more heed is paid to the old structures of eastern cities, since a) their historical background and b) their inattention to cultural heritage in proportion to developed countries (Amirfazli, 2006, 48). Considering the objectives, questions and hypotheses, it is an applied research which used analytic-descriptive methods. Data collection was conducted through documentary-library methods, and field studies were accomplished through some tools such as observation, questionnaire, and photos. Documentary-library method was consisting of comparative and historical methodologies (Sarokhani, 1999, 177).

An affordable and appropriate sampling was needed to distribute the questionnaires which can be generalized on the whole population. According to census taken in 2006, 1911 families live in Ghale Abkooh. Studied area has fairly homogeneous features, so simple sampling was utilized which is calculated through the following equation:

N: target population; Z: normal variable for confidence level; d: acceptable error; σ : notice of variance; n: sample size estimating 0.3 for variance which is appropriate for the target population of Ghale Abkooh due to its homogeneity. n can be calculated applying the following formula.

$$n = \frac{N.Z^2\sigma^2}{Nd^2 + Z^2\sigma^2}$$

Regarding the amount of sample size, 135 questionnaires were filled in Ghale Abkooh.

6. Definitions

6.1. Oldness

Oldness refers to the inefficiency of a texture in proportion to other urban textures. Texture oldness and internal elements are resulting from old age or lack of development program or technical observation (Loosim, 1996, 79). Texture oldness can be considered as a result of social, economic and structural degradation which exacerbate each other and cause urban oldness. By and large, each phenomenon's inefficiency can cause its oldness. When a part of the city becomes old, it moves in the direction of decadence (Rosemary, 2005, 9). Spatial oldness is divided into two types of relative and absolute. Relative oldness is the result of some inefficiency in one of the elements of 'structure' or 'activity', but absolute oldness is the result of both of them.

Oldness is a multidimensional issue in which some elements are mutually affected by each other. But the most important dimensions of oldness can be listed in the following manner:

- Structural oldness: It happens when a part of the city is confronted with some structural problems due to lack of maintenance, inappropriate maintenance or unsuitable space (Varesi et al., 2012, 134).
- Functional oldness: It shows that a part of the city is not efficient or usable as much as before, since it had been planned for some objectives which are not now executable.

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- Relative or economic oldness: Absolute oldness mostly does not happen, but it is a relative concept with respect to other areas. So, when people are powerful enough to purchase or invest, but they invest outside the old historical texture, relative oldness happens. It can be arisen from the fact that investing in historical textures costs more and attracts less (Alvin, 1975, 65). It can be concluded that in order to decrease the level of oldness, more renovations are needed to enhance sustainability in urban areas (Amiri, 1995, 15).

6.2. Texture

It is a property relating to the structural character of buildings, roads, institutions, urban spaces, facilities, and services or a composition of all of them. Different types of texture are as follows: historical texture (with urban heritage), urban texture (without urban heritage), peripheral texture (formal residential areas) (Doiran, 2010, 14). The present study investigates just old urban textures.

6.3. Old (urban) texture

Old textures refer to urban textures in which qualitative values of environmental areas (such as structural, performance-related, environmental, economic and social aspects) decease, so residential services and renovations gradually cease resulting in obligatory migrations (Jahanshahi , 2003, 18). In other words, old texture stands for the texture whose urban values have decreased and residents are not satisfied with their life, assurance and essential needs (Andalib, 2007, 36). Urban old textures are located in legal areas of the city; they are owned officially and legally, but they are not safe, solid and serviced enough (Koulabadi, 1999, 2).

6.4 Necessity of serious attention to urban old textures

Due to low quality of life, safety reduction, traffic problems, defenseless areas, fear, and crimes, some drastic changes are essentially needed in structural, social, economic and environmental dimensions. These changes, which emphasize on education, enforcement and engineering, can be mostly made in a long term by expending large amounts of money. Specific needs should be also considered when determining the objectives and evaluating the changes (Anderson et al., 2007, 79).

From various perspectives, rehabilitation and renovation are complicated issues of old urban textures. People who live in this texture do not possess well-paid business opportunities; and few urban services are offered to them. Furthermore, owing to high level of oldness, user diversities (business, recreation, green fields, health care, and education) are not seen in this area. Fainstein and Gray believe that government, as a powerful agent, should intervene in the process of old textures' renovation and rehabilitation, and provide primary needs such as appropriate residential services, education, job opportunities, and daily needs of residents. Porter stated that social organizations necessarily have a great role in old textures' renovation if they take advantage of private sections. Applying Community Development Corporations (CDCs), social organizations aim to renovate old districts by financially supporting poor people and supplying their requirements by collaborating with residents, local institutions and the government (Vidal, 1996, 26).

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Paying attention just too economic structures, scattered and inconsiderable proceedings cannot be fruitful in old texture's renovation (Jude & Parkinson, 1990, 15). Successful renovation and reconstruction plans are dependent upon human capital and capacities in existing structures which are unfortunately paid less heed. Human capacities can result in noticeable growth in local economy by taking the specific residential condition of the people who live there into consideration (Robinson, 1997, 41).

By and large, old texture is alleged to date from a long time ago which has not been reconstructed. This conception of old urban texture is not comprehensive and do not comprise all definitions of old texture; therefore, if the objectives and problems are assessed carefully to promote the quality of urban textures, 'old urban texture' can be replace with 'problematic urban texture' (Jahanshahi, 2003, 15).

7. Theoretical background

According to theoretical and experimental background of old urban texture, various approaches can be employed to deal with old texture's adversities which can be listed as follows:

Rehabilitation: It refers to an action of bringing buildings, structures and their servicing back to a state of functional repair in a short term (Mehdizadeh, 2001, 18). It is needed when confronting with relative oldness of the area (Habibi et al., 2007, 47). Rehabilitation proceedings intend to avoid oldness in actions, structure and urban space. As a result, the building will remain solid. Mention must be made though that rehabilitation stands for corresponding the structures with contemporary buildings, rather than reconstructing them alike old buildings.

Renovation: The action of repairing or remodelling a building to change urban space (Smith, 1996, 85). Renovation is the action of bringing buildings, structures and their technical installations up to contemporary requirements or resorting them to meet current functional standards. Slight changes should be consistent to make new urban spaces.

Reconstruction: It stands for the rearranging of the urban area when confronting with absolute oldness (Shamaei & Pour Ahmad, 2005, 54). Reconstruction is the rearrangement of content or methods of operation of an old existing building to improve its performance or redefine it. Reconstruction is usually needed when fire, earthquake or war happen. The following table indicates the aim and conceptual meaning of three aforementioned approaches.

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Table 1 .Theoretical approaches when confronting with old urban textures

	word	Conceptual meaning	Objective	Rule	Time period
1	Rehabilitation	- To bring structures back to a state of functional repair as a consequence of performance and activity related oldness - To make some changes in the structure to be correspondent with modern spaces - To remove relative oldness of the space	- Protection and modernization -protecting and reviving aesthetic features of visual and spatial qualities' promotions - retaining and promoting old values	-usefulness of suggested performances - making changes in conditioned performances and promoting the quality and nature of texture - retaining and promoting the social values	Short-term
2	Renovation	- relative oldness of spatial structure which cause inefficiency in spite of appropriate function of urban space - proceedings which are done to reduce spatial relative oldness	- protection and modernization - providing optimal returns in urban spaces	- promoting visual quality and aesthetic features of existing situation - coordination - adaptability	Near-term
3	Reconstruction	- actions to rearrange old spatial organizations and avoid total decadence of urban areas - proceedings which are done to reconstruct the phenomenon's first shape by the application of old and new techniques. - proceedings which are needed due to natural and sudden calamities such as war.	- recreation of contemporary, modern and organized spatial urban area in order to make creative dialogue between past and future - modernization and recreation	- applying new possible techniques - making contradictions between past and present - documentation of the process of deconstruction	Long-term

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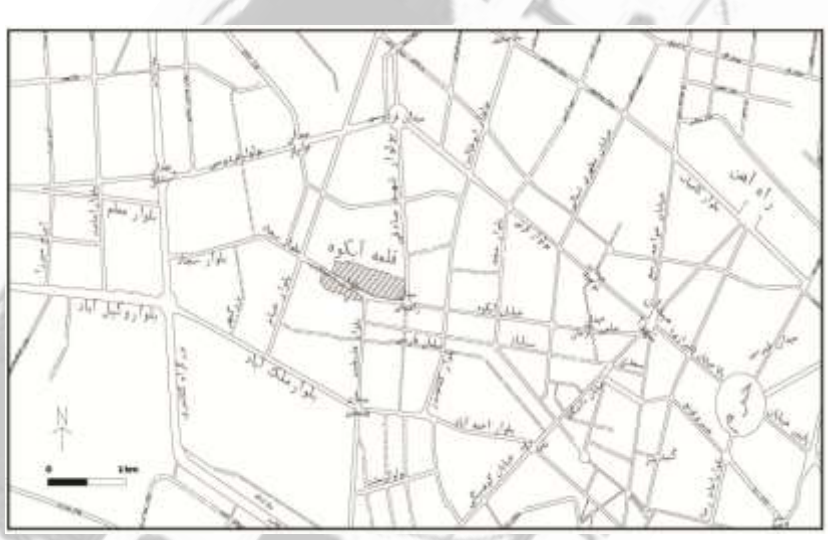
8. Research scope

Ghale Abkooh, which was assessed during the process of the present study, had been a rural space in the northwest of Mashhad city. Ghale Abkooh was gradually located in the urban space of Mashhad city. Dehkhoda encyclopaedia defined Abkooh as 'a village located around Mashhad city' (Dehkhoda, 1993, 26). It is located by Shahid Sadeghi Boulevard (Sazamane Ab) on the east, Apadana Street on the north, Shahid Dastgheib Boulevard on the south, and Farhad Street on the west. Shahid Dastgheib Boulevard passes through Ghale Abkooh texture (Felestin Boulevard) and divides it into two sections. Studied space is organically distinct from its neighbourhood (Saeidi Rezvani, 2006, 26).

Map 1. Location of Ghale Abkooh in Mashhad city



In the past, Ghale Abkooh was consisting of two villages named Abkooh and Sadabad. Abkooh village was located inside Astan Ghods lands, and Sadabad was located inside Oghaf organization (endowment organization). Abkooh village existed before Sadabad. Abkooh and Sadabad villages can respectively date from the year 1100 and 1200 (solar year). According to the old residents, Abkooh village was formed in the reign of Nader Shah Afshar which probably contained dozens of families as the firt core of the village. Then, more population were gradually attracted to the area due to the accessibility to water resources. Since the area was not safe, a castle was constructed to protect people. The castle was about 3.5 meters in height and contained 6 towers at a height of 5 meters (four towers were in the corners and two towers around the castle). So, Abkooh village changed into Ghale (castle) Abkooh.

In 1200, on the north of Ghale Abkooh and at a distance of about 400 meters, Sadabad village was shaped. Step by step, the population of Ghale Abkooh increased and its space was not enough for new inhabitants and immigrants; therefore, a new space was needed out of the castle. New space and Sadabad village became neighbouring areas which were unified into a village bit by bit. On the basis of local interviews, Abkooh and Sadabad were united in 1300. All inhabitants of Abkooh village were farmers and worked on Astan Ghods farms. They grew some plants such as wheat, grain, tomato, onion and poppy. Now, Abkooh and Sadabad villages are known as unifying organic area of Ghale Abkooh which is roughly old and located in the middle of Mashhad city. There is a 3 or 4-meter-street named Fatemiyeh (Dastgheib 9) in the central area of Ghale Abkooh (Saeidi Rezvani, 2006, 71).

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At the beginning of 60s, in order to make connections between Ghale Abkooh and central part of Mashhad city, a detailed plan was executed and Ghale Abkooh divided into northern and southern sections by a communicative axis (Dastgheib Street). Subsequently, around the axis faced some changes. Behind the axis could not develop as fast as the other side and became an old texture which was structurally, socially and economically in disagreement with its neighborhoods.

9. Recognition of structural system of Ghale Abkooh

The development of new areas around Ghale Abkooh and their economic growth, and also high price of housing in the new texture caused some irregularities in the structural space of Ghale Abkooh. In this study, some structural features of Ghale Abkooh are examined such as blocking, grading the buildings, bulking and building's height, building envelope, level of bulk occupation, building density, age, building quality, housing typology, architectural type, and the combination of bulk and space.

9.1. Blocking system

Dastgheib Street can be considered as a main axis of making shallow changes in urban texture and structures which divided Ghale Abkooh into two northern and southern sections. As a result, most of the activities are located around this street. This axis is regarded as a centered and equipped part of the texture which is formed irregularly.

Northern-southern axes are mostly passed by Dastgheib Street and lost their spatial and performance-related status. Entrance to and exit from Ghale Abkooh are respectively known as Dastgheib Street and Shahid Sadeghi Boulevard. It should be also mentioned that there is no distinctive and equipped entrance to Ghale Abkooh and all entrances are structurally the same.

All in all, Ghale Abkooh has a rural texture and specific features. Considering blocking and communicating ways, organic texture and irregular passages, streets and blocking of Ghale Abkooh can be noticed. This irregularity in the peripheral areas is less than the center and insider the texture. Inside passages are mostly made for pedestrian and handcarts' crossing through a complicated maze. Intersections and houses' entrances are located without regarding a place for pedestrian crossing.

9.2. Grading the buildings

Texture grading is one of the elements which distinguish the studies texture of Ghale Abkooh from its peripheral environment. The studied texture contains the fine-grained in proportion to the peripheral texture resulting from the fact that these fields are irregularly divided into smaller sections which is an indication of lack of effective supervision. The highest frequency of grading is related to fields with 50-100 area and comprises 40% of examined district. The sections with 75 square meters have had the highest frequency. Second high frequency is related to sections with 100-150 meters area which demonstrates the fine-grainedness of sections inside the texture that were applied for residential and commercial aims. It should be also pointed out that high buildings are mostly constructed with short width in this texture which is of considerable importance.

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9.3. Bulking and building's height

Full and empty spaces in Ghale Abkooh texture indicate that the buildings were formed without following any specific architectural pattern. The only considered issue was location and shape of the field to make the organic texture. Building patterns were alike central courtyards, L-shape, or rectangular. The nearer it is to the peripheral texture, the higher the volume of building bulks are and the more building density is. Full and empty patterns of the texture should be assessed more carefully in building developments to recognize visual aspects in new progresses.

Number of buildings in Ghale Abkooh is dependent upon the passages, and on the edge of the main streets and squares such as Dastgheib Street and Rahnamayi Square, buildings are higher. On Dastgheib Street, two or four-story buildings can be seen which are mostly regarded for commercial or administrative or combined applications. But on the edge of minor streets, residential four-story buildings mostly exist. On the edge of narrow alleys, buildings do not have more than one or two floors due to their old structure. Apparently, they are only residential but sometimes they are used as workshops and storehouses.

9.4. Building envelope

Building envelope is different in various parts of the old organic texture of Ghale Abkooh in which most of the buildings (72%) have just one floor. The combination of bulk, space and type of spatial ordering has enhanced spatial disconnection and social isolation.

9.5. Level of bulk occupation

9.5.1. Level of occupation on the first floor

Full and empty spaces are in two ways: **a)** averagely in each section about 67% of Ghale surface is allocated to the bulk, and 33% to the space or building courtyards. Higher percentage of bulk occupation can be seen on the edges of the texture. **b)** Pedestrian areas, narrow passages and dead-end streets assigned a large amount of empty spaces inside the texture. It should be mentioned that a paucity of local public spaces for people's aggregation or holding ceremonies can be felt. There is no equipped space to function as the center of Ghale Abkooh. The only empty spaces of this texture are passages, alcoves and some destroyed buildings which do not enhance the value of texture's location due to its accidental nature. It is worthy of consideration that historical and social process of Ghale Abkooh do not possess any specific structural or spatial characteristics which are seen in other historical cities such as Esfahan or Yazd. The only specific feature which follows Iranian urban planning is related to symmetrical association between the width of passages and aesthetic characteristics of being full or empty. So, the average amount of occupation level is about 66.88% in the studied area. Spatial distribution shows that the edges of Ghale Abkooh possess higher levels of occupation. According to statistical assortments, level of occupation on the first floor was about 8 sections (0-30%) among which four sections were residential, one was commercial-residential, one was commercial, and two were vacant. 43 sections were also at the occupation level of 31-60% among which 34 sections were residential, 6 were commercial-residential, one was commercial, and two were related to other applications.46 sections were at the occupation level of 61-80% among which 37 sections were residential, 6 were commercial-residential, two were commercial, and one was related to other applications.38 sections were at the

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occupation level of 81-100% among which 18 sections were residential, 10 were commercial-residential, 8 were commercial, and two were related to other applications.

Table 2 .Sections' frequency in grouping the level of occupation

Frequency percentage	**Frequency**			**Level of occupation**
		Frequency	Application	
5.93%	8	4	Residential	0-30%
		1	Commercial-residential	
		1	Commercial	
		2	Vacant	
		0	Other applications	
31.85%	43	34	Residential	31-60%
		6	Commercial-residential	
		1	Commercial	
		2	Other applications	
34.07%	46	37	Residential	61-80%
		6	Commercial-residential	
		2	Commercial	
		1	Other applications	
28.15%	38	18	Residential	81-100%
		10	Commercial-residential	
		8	Commercial	
		2	Other applications	
100%	135			Total

9.6. Building density

The average level of building density equals 134% in the studied texture. Buildings inside the texture have less density in proportion to the buildings near the edge. Statistically, 135 cases were studied among which 68 sections had low density (0-120%). 51 sections were related to residential applications, 7 were commercial-residential, 5 were commercial, 3 were vacant, and 2 were related to other applications.

Average density (120-180%) happened with the frequency of 38 sections among which 29 were residential, 6 were commercial-residential, two were commercial, and one was related to other applications.

Another average density (180-240%) had the frequency of 16 sections among which 8 sections were residential, 5 were commercial-residential, two were commercial, and one was related to other applications.

Level of density (240-360%) happened with the frequency of 8 sections. 3 of which were residential, 4 were commercial-residential, and one was commercial.

Level of density (360-735%) had the frequency of 3 sections among which one was residential, one was commercial-residential, and one was administrative.

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Distribution of building density demonstrates that sections inside the texture possess less density in proportion to the edges of the texture. Being surrounded by the buildings and passages' formation can be easily understood from the texture which has its own specific characteristics.

9.7. Buildings' age and quality

In proportion the peripheral texture, the studied texture had lower quality and older age. In Ghale Abkooh, most of the buildings were constructed by applying half-resistant or non-resistant materials without any proper facade which made it different from its neighborhoods.

Abkooh buildings can be assessed considering historical backgrounds, its age, and its changing from a rural space to an urban one. Although some of the buildings are about 50 or 60 years old, no historical value exists in them and they cannot be considered as cultural and historical heritages. Rural texture of Ghale Abkooh was not architecturally specific from the beginning, but the buildings were constructed improperly and temporarily. Most of the buildings inside the texture are about 25-30 years old which are older than the buildings on the edge of the texture.

Table 3. Classification of the buildings' age

Age	**Number**	**Percentage**
0-5	5	3.70
5-15	12	8.89
15-30	17	12.60
More than 30	97	71.85
Others	4	2.96
Total	135	100

Owing the fact that no constructive proceedings happened in the center of the texture, studied buildings can qualitatively divided into two scopes:

a) Inside the texture: Inside constructions of this scope do not possess any distinguished values and their quality is extremely low. Some extensions were non-technically added such as balcony or mezzanine. These buildings are not correspondent with each other and do not follow any specified and structured rule. Furthermore, there is no visual value for public views; no material was used for facades; and the buildings were left without taking any consideration.

b) On the edge of the texture: This scope, which is consisting of main streets and spatial area between the old and new texture, possesses higher quality and values, since it has been affected by its neighbourhood. Some buildings' facades and the applied materials, designs and architectural elements which are seen on the edge of Dastgheib Street can be considered as the characteristics of this scope. By and large, this scope's quality is average, but it does not have high values. Due to the texture's oldness and its structural features, the factors of age and structure were both applied to evaluate the texture's quality; therefore, a binary investigation was conducted and all studied buildings were classified into four following groups:

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1. New buildings in accordance with the standards
2. maintainable in accordance with the standards
3. maintainable, provided being retrofitted
4. non-maintainable and vulnerable to dangers

Table 4. Buildings' quality according to their age and types of the structure

	Structure/age	**0-5**	**5-15**	**15-30**	**More than 30 years**
1	Concrete	2	2	2	3
2	Metal	2	2	2	3
3	bearing walls with ceiling joist	3	3	3	4
4	Bearing walls with ceiling rails	3	3	3	4
5	Quadrel and thatched	4	4	4	4

As it can be noticed, 84.9 percent of the buildings are assigned to group 4 and non-maintainable. All in all, new and maintainable buildings allocated 10 percent of the buildings which are in accordance with the standards of construction quality. The findings show the texture's oldness and instability.

Table 5 .Classification of the buildings' quality

Building's quality	**Number**	**Percentage**
New buildings in accordance with the standards	5	3.70
Maintainable in accordance with the standards	9	6.68
Maintainable, provided being retrofitted	7	5.18
Non-maintainable and vulnerable to dangers	114	84.44
Total	135	100

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It can be observed that 85 percent of the building located in Ghale Abkooh are non-maintainable and vulnerable, and only 4 percent are correspondent with construction standards.

Table 6 .Classification of the buildings' structure

Type of the structure	**Number**	**Percentage**
Concrete	1	0.75
Metal	13	9.62
Cement	0	0
Brick and iron	115	85.18
Quadrel and thatched	2	1.48
Others	4	2.97
Total	135	100

The above table shows frequency and percentage of different structures in Ghale Abkooh. On the basis of the achieved findings, facade can be classified into the following six groups: aluminum, cement plaster, three-centimeter-bricks, plaque stone, combination of brick and plaster...

Table 7 .Classification of the facades

Type of facade	**Number**	**Percentage**
Three-centimeter-bricks	12	8.89
Plaque stone	21	15.56
Cement plaster	41	30.37
Combination of brick and plaster	2	1.48
Aluminum	1	0.75
Others	58	42.95
Total	135	100

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9.8. Assessment of housing typology, architectural type, and effective elements in new architectural structures

Organic and rural texture of Ghale Abkooh owns its specific patterns which made it distinct from its neighborhoods. Historical and social features and recent developments of Ghale Abkooh have made it an organic texture, despite some damages caused by new constructions. Owing to cultural backgrounds, residents and users of Ghale Abkooh have remained correspondent with the old structure of the area. They could live in the restricted area with few facilities due to their low subsistence level. Although they have no legal possession of the buildings, they historically and socially consider themselves as the owners of the texture received from their ancestry. This sense of possession is the specific characteristic of Ghale Abkooh residents. Full and empty spaces do not obey any legitimate or determined law in the old sections of the central part, but developed sections followed municipal laws in urban constructions. It can be alleged that applied architectural pattern in old and central sections is rural and organic which is distinct from new neighboring constructions. In peripheral areas, contemporary urban planning and constructions can be observed.

10. Conclusion

Considering theoretical background and field studies in Ghale Abkooh, following conclusions could be drawn and SWOT method was applied to evaluate integrated analysis of data. The obtained findings are classified into facilities and restrictions which are explained in the following table.

- Ghale Abkooh in the only informal residential area in Mashhad city which is not located in the peripheral area, but it is in a central part of the city. Other villages which are now a part of Mashhad city had gradually located in the urban space and their completely texture changed in accordance with the new urban area, or just a very small rural area remained. But Ghale Abkooh retained its specific rural features across a wide area (more than 20 hectares). Due to this fact, Ghale Abkooh is treated differently in proportion to other informal residential areas in Mashhad.
- Organic and autonomous texture which is independent of its neighbouring texture.
- Old age of existing buildings
- Old and unsafe buildings with the application of non-resistant materials
- Ghale Abkooh fields are in the possession of Astan Ghods Razavi. This reality is in conflict with residents' viewpoint and their sense of ownership.
- Improper passages with low capacity decrease the quality of urban and infrastructural services in Ghale Abkooh.
- In summary, structural oldness of the texture, its social isolation, and non-accordance between texture and its dynamic needs are considerable issues which can be investigated and resolved by the application of urban planning.

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Table 8. Restrictions and facilities of structural system

Facilities	Restrictions
Spatial expansions and the possibility of changing into urban areas. The height of Ghale Abkooh is less than its neighbourhood. Human appropriateness in some passages and making spatial surroundings Not being publicly affected by new urban structures High level of diversity	Organic and complicated texture Disconnection between structural features of studied texture and its neighbourhood Not being readable Non-consistency in the way of ordering law Long dead-end streets and asymmetrical proportion of length to width. Texture oldness and large number of buildings more than 20 years old Lack of readability in the texture entrances Fine-grainedness of sections (40% of the sections are between 50-100) Not being publicly affected by new urban structures Being drastically introverted Improper proportion of length to width Inappropriate occupation level of the sections Non-existence of facades in the buildings Illegal construction without any supervision

11. Suggestions

Considering the obtained findings, qualitative and quantitative dimensions of Ghale Abkooh and its residents' problems, the following executive policies are recommended:

- Intervening the texture should not be just structural proceedings of reconstruction (destroying and constructing again).

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- Recognizing new units which are in accordance with the construction standards and the application of appropriate approaches for each building
- applying old architectural patterns in reconstructing and repairing the texture
- paying more attention to urban sustainable development by reviving structural nature and architectural values
- optimal application of people's cooperation in rehabilitating and renovating a texture
- Rearranging of main content of the operations in the existing buildings, reflooring the passages, and making needed parking lots in appropriate places
- retaining local identity by remaining old residents
- Dealing with environmental problems which are resulting from destroying, innovating and rehabilitating in this part of the city
- Structural expansion of passages to offer better services to the residents and making rapid transfer possible to provide needed assistance to the people in disastrous situations
- determining relative laws and regulations to reconstruct valueless buildings, due to the risk of earthquake
- Rehabilitation of residential areas by the owners in cooperation with public and private sections by supplying banking facilities

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