



The Effect of Physical Pattern on Home's Life

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Abstract “different scales” that is one of the patterns that have been discussed by Alexander who explained it as a physical pattern which create life in buildings; and life means existence and essence is one of the God’ characteristics which has been given to all creatures. The home, the human’s shelter where he does his life activities and is the place of his release and comfort in which man does many activities , so if demonstration of physical pattern of home is suitable to these activities it can create human’s life appear in a balance with internal and special energies so that he will find a unique existence . In this present research through a correlational study, the relationship of different scales pattern and existence in three house samples from Qajar era in Fahadan neighborhood of Yazd has been considered. The results revealed that such a pattern exists in these houses, both is general characteristics as well as in specific details, which creates the conscious current of life in them so that the human soul of residents can develop. It is possible to follow such characteristics in modern homes made today and provide suitable physical pattern designs.

Keywords: Pattern, Physical pattern of different scales, Quality of life, Home

1. INTRODUCTION

Pattern literally means: lead, model, example and sample.¹ Pattern is a facial rule which provides a collection of relations in space and rule or pattern consists of some other relations among some other rules.² Such patterns have face, color, infinite variety of sizes, which they are space inspiring, rich and objective and they also have inseparable event pattern.³ Elements of space pattern are :relationship between length and width, proportionality network which is repeated through space, relationship between elements and specific factors of space that are space patterns themselves , event pattern , building body, social culture, social religion , social pattern, economical pattern, integrated combination of activity and space, significant context, significant system of energies, special combination.⁴ Life which means existence and essence is one of the God’ characteristics⁵ there is a characteristic in all creatures which is the source of conscious activities and it is found in all Fiona and fauna⁶. It is not restricted to eco-biological reproduction systems. Life is a quality hidden in the nature of space and its characteristics are: nature preservation, environmental adaption, habit and behavior, nutrition, growth and reproduction.⁷ Continuation of life through duration of results, objectivity and selection, awareness and ability⁸ in which there is no death and mortality, ⁹in nature, includes happiness, sudden excitement, ranking, permanence and uniqueness.¹⁰

¹ .Dehkhoda, Farsi dictionary ,1377

² .Christopher Alexander, The timeless way of building,1979

³ .Christopher Alexander, The timeless way of building,1979

⁴ .Christopher Alexander, The timeless way of building,1979

⁵ .Hakim Sabzevari, Name’s explanations,1380

⁶ .Ali Rabani Golpaiegani, logical believes ,1380

⁷ .Christopher Alexander, The nature of order,2002

⁸ .Ali Rabani Golpaiegani, logical believes ,1380

⁹ .Ragheb Isfahan, Individual Quran words ,1412

¹⁰ .Christopher Alexander, The timeless way of building,1979

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Life is one of the natural characteristics of God by whom it is given to all creatures.

Throughout history man has created building patterns to eliminate his need based on the qualities of received from environment; therefore, from ancient times, majority of architectural theoretician have analyzed the role of patterns in architecture and construction of buildings. Life is a quality of existence in which environment energies and human energies reach a balance, and this quality consciously or unconsciously has entered the architecture that makes the body of life.

What is neglected nowadays in designing houses in this country is the desirable relationship between special kind of physical pattern and people's life. Undesirable physical patterns which are entered in designing homes, due to different reasons have caused a shortage in the quality of Iranian's lives. Such a shortage did not exist in old houses of this country and paying attention as well as returning to desirable patterns with a reasonable attitude could be a solution to designing problems of modern houses.

Statement the problem

According to what has been mentioned so far, the problem is that today because of new requirements, settlement is different, so new physical structures are required, however, there is something in physical structure of old traditional houses which is neglected in new homes. In designing houses each one of spaces has a specific position in life. In the present research by analyzing the relationship of one of the physical patterns in the structure of traditional houses with life and evaluating effects on life, we are supposed to answer the following question: what is the effect of physical pattern of different scales in traditional houses on quality of life?

Introducing Fahadan Neighborhood

Among all the houses in Fahadan neighborhood, three houses of Alireza Arab, Arab Kermani and Arabha house, were selected since they were from Qajar era and they have special qualities of life and the mentioned physical patterns.

Alireza Arab's house:

This house is almost 120 years old. This house was built based on surround architectural pattern and it has frontispiece, hashti, hallway, main yard around which major spaces were located and other service areas like kitchen and storeroom are placed at the west and north of the yard. Other major space is in the underground floor. The house yard is in the shape of a rectangle and its direction is from north-east to south-west and the main spaces of the house are placed around it in three stories. The main story which is the ground floor faces the yard and its main rooms are placed in three sides as north-east, north-west and south-west of the yard. The fourth side which is the south-east is a shallow side and majority of its space is devoted to semi-open spaces. After the ground floor, the majority of the house space is in the underground floor. The third level of the house according to its area is the second floor, which has a small area and is restricted to south-west.

The place of plaster molding decorations in this house is significant. Generally speaking, rich decorative areas can be seen in the yard and in the upper state of elevation frames and on the doorways. So such decoration with beautiful shapes surround the upper space of the elevation.

Arab Kermani's house:

This house is 150 years old, and it is located next to Arabha's house. The house has three parts, two residential parts each one with a specific yard and the service part which is the stable. The

first house at the north-east is small and the second house is in the south-west, and it is huge. The two houses are located along each other from north-west to south-east.

Most of the closed and semi-open spaces of the houses around the two yards are in one floor. The bigger yard is surrounded with different rooms from three sides and all the fourth side (north-west side) is a narrow riwaq. In the smaller yard, in opposition to the bigger yard which has several different rooms around, in each side there is only one room. However, in both yards the spaces at angles are minor and service areas. Some parts of the closed spaces at the complex are underground. The two yards are completely separated and only one of the rooms is common between the two residential areas.

Arabha's house:

This house is 130 years old, a collection of several yards among closed and semi-open spaces. Except closed and semi-open spaces, it has six central yards, each of which is an independent center. The height of all areas is the same and creates an integrated complex.

This complex is almost expounded from northwest to south-east, so one side of each yard is in a rectangle shape towards the kiblah. This complex is made up of two houses. Mahmoodi house consist of a large yard at the center and rooms in four sides of it, all in one floor. A small yard is also placed in the southeast of the major yard which is only surrounded with some rooms from north-west to southeast, and it is limited by walls in the other side. Davarha's house has more but smaller yards in comparison to Mahmoodi's house. This complex has five yards, one of which is in the second floor. The main yard at the north-east and south-west of the yard and the other two sides are walls with repetitive similar pastiche blind arcature.

Pattern

The term pattern meaning: idea, sample, model, frame, design, method and plan was used with several different meanings .In a simple definition of pattern, we may say pattern or model is a simple facial representation of real world.¹¹Ali Akbar Dehkhoda has defined pattern as:" pattern, model, sample, leader, example, ...usually is referred to a small sample of a big object or to a limited collection of unlimited objects which has the major qualities of that big object or objects.¹²

Some people have defined pattern as a component that represents the shape or quality of a whole and some others, have defined it as a draft or diagram which represents the usual method of an action or behavior and a conceptual structure.¹³Anthropologists at least from 1871 have used a multi-dimensional meaning. Such a free usage has been continued up to now. On this base, pattern sometimes means qualities of behavior, ideal model of behavior and sometimes it is used in relation to cultural principles.¹⁴

The term pattern has a wide range of uses in Persian today and different fields of science use this term according to their needs and definitions, the common meanings of this term are sample, model and imitation.¹⁵Alexander defines pattern as an objective thing in the world, an integrated combination of activity and space which repeats itself several times in any hypothetical occasion and each time it has a little and different representation. Each pattern is a rule that expresses how its reference should be made. Each pattern is a facial rule which defines a collection of relations in space and each rule and pattern is a sample of relations among other rules, and those rules are again patterns of relations. Each pattern is not a fixed collection but it is a collection of relations

¹¹ .Dehghan,Memariam,Mahammad Moradi & Abdi Ardakani, Adaptive comparison of the meaning of ascensaion in ancient common meanings of pattern with architecture ,1390

¹² .Shabani, teaching and training skills,1385

¹³ .Hooman, Recognition of scientific methods in behavioral science,1386

¹⁴ .Gold & Coworkers, Dictionary of sociology,1376

¹⁵ .Soltani,Mansuri & Farzin, Adaptation of the role of pattern and concepts based on experience in architecture,1391

that can change each time that they happen, and at the same time it's rich that it gives life to the place where it takes place. Since each pattern is a part of the world, it is a relation between the certain context and specific system of energies which repeatedly occur in that context and it's a special combination that lets the energies release.¹⁶

Since each pattern is a part of language, it's an instruction which shows how it is possible to release the hypothetical energy systems repeatedly whenever the context is ready. In summary, pattern is both an object which exists in the world and a rule that tells us how that object can be created, and when to create it. It is both the procedure and the product, description of a live creature and have to create that creature. Discovering the pattern means discovering the relationship between the context and energies as well as relations in space which exist without any limitations. such a discover can be done just theoretically.

Patterns are different in different places, cultures and eras, they are all made by man and they are culture dependent .However, in all times and places, the structure of our world are necessarily a result of a collection of patterns which are repeated several times. Such patterns are not concrete objects like bricks and doors, but they are much deeper and more current, the unique, hidden essence based on which each building and each city is always built.¹⁷

The quality of life

In fact Alexander defines life as each form of regularity has a certain level of life there. For life is not a limited mechanical meaning which is used only for reproductive biological systems. Life is a quality in nature of space and is used for each brick, each stone, each person and each physical structure that exists in the space and everything has its own life.¹⁸

He mentions everything regardless of its components has a level of life and in general each part separated from the chain of material-space has a degree of life but in some things there is less life and in some others there is more life. In the meaning of life is general then we will be able to use it not only for mere nature as well as the corporation of nature and manmade world (roads, streets, gardens, farms) then we are able to expand its use to inside buildings (roofs, walls, windows, rooms) in such a mental word it would be easy to reach the meaning of architecture. From now on we can simply start designing with such a general idea that all our work should result in creation of life and all our attempts in each projects should be to make buildings as live as possible. Surely we feel the order of life in the current of human's life. Consider several social activities for example pay attention to people's shaking hands. Some people shake hands warmly while others shake hands commonly and lifelessly. Life which I'm talking about includes behavior and usual daily activities, the same way that an old restaurant in an ancient part of a city in Japan is lively in its daily life, the same way that an Italian center of neighborhood is alive in its daily life. Life exist in a playground or in a row of pillows next to the seats by a window and in each building in which we feel it and in every place that wild flowers grow freely and wherever people freely eat and drink and talk together. Quality of life includes some kind of liberty in actions and free soul inside buildings. This makes us feel relaxed and comfortable; above all it makes us feel lively and alive.¹⁹ Freedom takes place when life is at its highest spirituality when we feel God with all our existence as Sufis say happy and free from limitations²⁰

The quality which I name it life is like the character in them. It is clear that such a life is far different from what biologist use for living creature. Such a life is much bigger and general. In fact what we intuitively feel as life in such cases is a pure quality that exists in a production like

¹⁶ . Christopher Alexander, The timeless way of building,1979

¹⁷ . Christopher Alexander, The timeless way of building,1979

¹⁸ . Christopher Alexander, The nature of order,2002

¹⁹ .Christopher Alexander, The nature of order,2002

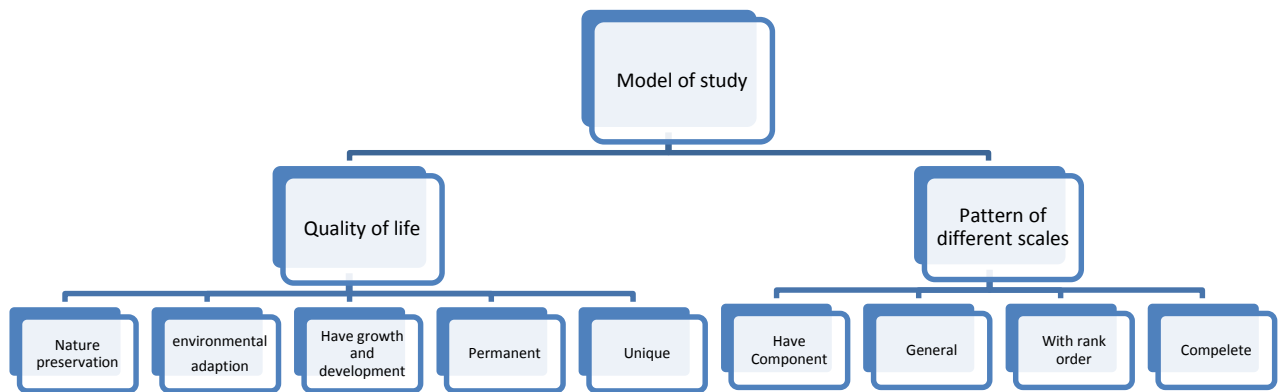
²⁰ . Christopher Alexander, The timeless way of building,1979

a building as well as in a biological live system such as a tree. To produce such a life first, we should see how life comes from a whole or in fact how life is a whole itself. Every things comes out of a whole even life. in any situation , even in the most materialistic worldly situations , that situation has the capacity of liveliness. Simply being common and avoiding usual mental imagination are the most important qualities that create life these days.

Physical pattern of different scales

Alexander defines different scales as objects possess different scales they are livelier. We define space pattern in this way as if our space as a whole includes components of different scales it can be more lively.²¹This means that for example if walls as the first physical elements of space include components and parts in different scales like frame, ledge for sitting and brick as material all together they create life.

To discover the relationship between physical pattern and life we analyzed life qualities with physical pattern of different scales so that we can understand the effect of the pattern on qualities of life. The model of study is illustrated in a simple diagram as follows.



Establish relationship between physical pattern of different scales and life quality:

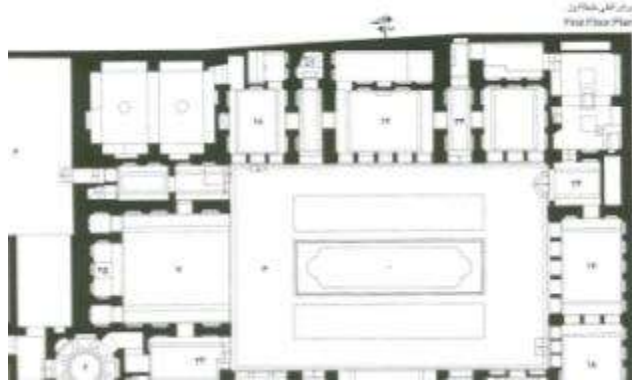
According to mentioned fundamentals about life quality and physical pattern of different scales, through establishment of the pattern’s aspects we can create life quality of home. In order to reach this goal, it is possible to analyze the pattern in old houses which have possessed quality of life to recreate a desirable pattern for modern houses at the present time.

After recognition of houses and analyzing them similarities and differences in plan, elevation, physical details, physical pattern of different scales was recognized and reviewed aspects of life in the pattern was reviewed to clarify the relationship between life and the mentioned pattern.

One of the aspects of life is nature preservation, which means physical body must preserve the general nature. this is found in all house plans, where all details keeps their nature while they are put together, the nature of house is present in plan as a whole as well as in each one of the spaces like; rooms , yard, walls and in the segment of elevation.

²¹ . Christopher Alexander, The nature of order,2002

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Picture 1. Alireza Arab's house plan (Haji Ghasemi, 1378).

The frames which make up the whole elevation, each has nature and together provide the general elevation.



Smaller parts like wood and glass with their various shapes in harmony with other materials create a whole with special nature while they preserve their own nature too.

Nature of wood in delicate cutting in variety of shapes is the place of production of wooden decoration and glass with its clear and comfort nature increases the beauty of wood and make up the whole crossi.



Picture 2. Crossi of Alireza Arab's house (Haji Ghasemi, 1378).

On the interior side of walls plaster which has the capacity of getting shapes and producing designs is present in room decorations and increases the room's beauty.

By integrating parts of different specific natures, spaces, elevations, plans and some segments are produced in a house each of which possess the new nature that is specific, unique and naturally preserved and different from similar cases.

Yard in general has its own nature, which is created by putting some parts together. Like mud brick, walls plaster with cob that are put together and provide their own substantial nature. Besides regarding various size and scales; square bricks with rectangular pool and garden have made up of the whole yard.



Picture 3. Room decorations of Arab Kermani's house (Haji Ghasemi, 1378).

One of the other aspects of life is adaptability with the environment .In general, the collection of houses is adapted to the environment of Yazd city, both in physical structure and in function, they are complementary to Fahadan neighborhood.



Picture 5. Structure of Fahadan neighborhood, Haji Ghasemi, 1378).

This aspect is found in each one of the components, both in geometry of plan and in elevation where squares and rectangles are put together in a harmony and made up the general rectangle space. Such environmental adaptability is obviously seen in the interior side of room walls in Arab Kermani's house, where plaster walls have some designs that are completed together as a whole and mirror decorations are placed inside plaster or where white, silver and green colors are put on plaster; however, adapted to it, mirror segments are set on plaster in harmony in design, geometry, color and material.



Picture 6. The northeast room in the small yard of Arab Kermani's house (Haji, Ghasemi, 1378).

In Alireza Arabs house, the color of cob plaster and the yellow color of bricks and wood are in harmony as a whole. The whole roof of hashti with stalactite (muqarna) components are in

harmony with the main circle and in fact it is deductive. Actually harmony means the mutual adaptation of whole and components.



Picture 7. The yard of Alireza Arab's house, Haji, Ghasemi, 1378).

Harmony with environment is not only in view but also is in function too. When the one of the Orossi, is in adaption with its surrounding parts in Arabha's house, plans and walls and orossi and material are in harmony with the environment like the other two houses. Another aspect of life is growth(development)which means physical body possess life and like live creatures .it has the capacity of growth. The growth is not physio-biologic development but structural as physical body starts from a module and grows and develops until the whole structure is produced. This feature is seen in house plans, where are Iranian architecture house elements like surround yard and front yard, yard and garden, corridor, hashti and so on are arranged based on modules. This module has developed in the plan and turned from component to whole. In Alireza Arab's house, karbandi module has developed from small to big. In fact a seed has grown to a big house.



Picture 8. Decorations of the door in Alireza Arab's house (Haji Ghasemi, 1378).



Picture 9. Orossi in northeast side of Alireza Arab's house.

In Alireza Arab's house the orossi has been made from development of one module and created window as a whole.

This aspect of life affects the building audience and growth and development in the physical structure is felt so it inspires his live soul. Another aspect of a desirable life is happiness. This aspect is related to physical pattern of different scales and the whole pattern when it causes inspiration and happiness.

Permanent (existing, eternal) is in relation to physical pattern of different scales as when a part is completed and forms a unit. The integrated whole made up of these units would be eternal and permanent if the units are put together in harmony, like what we see in these houses. So that whole would become permanent and nothing would threaten its entity. Uniqueness is one of the qualities of life which would be created based on the physical pattern of scales.

Alireza Arab house	Nature preservation	Plan and its components	
		Elevation and its details	
		Orossi's details	
		Elevation decoration	
	Environmental adaption	House body in the surrounding structure	
		Plan geometry	
		Elevation geometry	
		Adjustments of materials at walls and orossis	
		The color of brick , wood and cob plaster in the elevation	
	Growth and development	Hashti's ceiling moquarna	
		House's plan module	
		Hashti's karbandi module	
	Room's orossi module		
Houses	Aspects of life	Physical pattern at house spaces	
Arab Kermani house	Nature preservation	Plan and its component	
		Elevation and its details	
		Details of interior wall plaster	
		Elevation decoration	
	Environmental adaption	House body in the surrounding structure	
		Plan geometry	
		Elevation geometry	
		Adjustments of materials at walls and orossis	
	Growth and development	House's plan module	
		Room's interior design module	
	Arabha house	Nature preservation	Plan and its components
			Elevation and its details
Orossi's details			
Elevation decoration			

	Environmental adaption	House body in the surrounding structure
		House function at Fahadan neighborhood
		Plan geometry
		Elevation geometry
		Adjustments of materials at walls and orossis
	Growth and development	House's plan module
		Room's orossi module

2. CONCLUSION

The lost life in modern houses of present time made people not to understand many desirable qualities that elevate man's soul. In this study we used the life of various physical patterns of old houses which are eliminated from modern's homes.

Physical pattern which is brought up in this project in the different scales pattern that is complete with rank order, with components, which are in harmony with aspects of life quality and we conclude that physical pattern of different scales affects the quality of life. In different physical patterns excluded from a house such as plans, yard elevations and details of architectural elements like window and orossi aspects of life are found and these aspects exist in the integrated whole as well as all components and they create life.

This pattern produces the life at houses under consideration and since the existence of life at home cause elevation of home residents the pattern should be followed at modern homes too. The pattern can be used in the plan of the house, in plans of individual spaces as well as elevation. This can be followed in physical details of home which are made less in modern house and if the pattern is used in different scales it can elevate the quality of life that is neglected in the modern homes.

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