

Study of the Impact of Culture on Qualitative Structure of Residential Complexes in Tehran

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Received 10.04.2013; Accepted 01.16.2014

ABSTRACT: It is not long time that residential complexes have been built in Tehran. Although during this time, always influenced by some factors, configuration of the residential complexes has undergone fluctuations, rate of which has been very fast especially in recent decades considering the fundamental changes that have emerged in the housing debate. turning housing into an investment commodity. Residential complexes are generally evaluated qualitatively and quantitatively from two viewpoints. Qualitative issues that are often in connection with quality of living environment and its effects from social and especially cultural issues of residents have been given little attention in the past few decades and in contrast, quantitative issues have been more attractively motivated by profitability and economic benefits. The result of this imbalance is the housing status that we can see in all aspects. The present studies indicate that in recent decades, the rising rate of construction and lack of sufficient control over housing sector resulted in the formation of the residential complexes regardless of cultural context, approval of settlement inconsistent with the culture and traditional attitudes of the residents and as a result, low quality of life in residential complexes. This paper is an attempt to assess several condominiums in different years in terms of quality and the effect taken from cultural concepts in all stages, including studies, planning, design and operation using field study and questionnaires and then to find a correct relationship between various components and finally, some recommendations are provided to improve the current situation.

Keywords: Culture, Qualitative Spaces, Residential Complexes, Identity.

INTRODUCTION

Formation of residential complexes in Iran and consequently, the phenomenon of living in apartment date back to several decades ago. The first residential complexes built in Iran cannot be assumed as dependent on functional, social and cultural conditions, but mostly were blind imitation of the West Architecture. However, over the years, especially in recent decades, construction of these buildings can be attributed to factors like population growth, rise of urbanization, increase in land price, and shortage of suitable land for construction. The rapid growth of construction as a result of considering the quantitative aspects of space and ignoring the quality of life have led to many problems in different areas the cultural problems of the residents of these buildings can be mentioned as the most significant issue. These problems are mainly caused by the mismatch of life style from short to tall buildings that

today it is referred to as a lack of culture of urbanization. This paper has been carried out to 1) identify the factors affecting high-rise architecture, 2) to present guidelines to improve the quality of architecture in residential complexes.

The phenomenon of urbanization (living in apartment) has its own social demands and considering that the phenomenon has not a long history in Iran and has become prevalent mainly in recent decades. The origin of the cultural problems arising from it are divided into two general categories: 1) Physical features: lifestyle, residential behaviors and culture of users are not considered in construction of residential units in mass-construction projects. Satisfaction with dwelling in these units is merely because of financial difficulties and wish to have a residential unit (Shokouhi, 2003, 2) Lack of Residents' knowledge: Lack of knowledge about the culture of urbanization, which in turn is resulted from rapid transition of a lifestyle from short to high-rise buildings, today has become one of the most important problems in the world. Therefore,

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having acquaintance with lifestyle of the residential complex is considered to be a solution to solve the problems.

This paper mainly investigates the physical properties of high-rise architecture using cultural concepts and its evolution over the past five decades.

MATERIALS AND METHODS

This article is a qualitative research in which tall buildings are particularly evaluated and finally the relationship between the impact of cultural concepts on high-rise architecture and improvement of spatial quality and residents' satisfaction as a result. On this basis, 3 complexes will be reviewed. The research domain includes residential complexes taller than 10 floors among which A.S.P Residential Complex, Behjatabad Residential Complex, Tehran International Tower can be mentioned.

RESULTS AND DISCUSSION

Identity in Residential Complexes

Settlement can be considered as one of the most basic needs of human being. Diversity in housing demonstrates the influence of various factors like economic, environmental, social, and especially cultural issues because housing is somehow affected by settlement culture.

Also, any social and cultural system lives in a specific habitat which undoubtedly influences the cultural system (Habib & Khastoo, 2014).

One of the major problems in the formation of high-rise housing is considering local properties and traditional architecture in the face of globalization such that ignoring

this issue in construction of tall buildings has become one of the major challenges of architects. In other words, violation of construction rules and regulations in design, using layperson¹ and especially inattention to re-identification of culture and its criteria in Iran led us to the situation that today we are witnessing in architecture. Therefore, paying attention to culture can be seen as one of the key issues in the design of such buildings because taking this factor into account makes it related to the context in which it is located and is representing traditional and old design of buildings of each region.

Residential apartments have different aspects that should be consistently considered in all stages of these structures construction including planning and studies, design and operation, in order to achieve a desired environment and improve quality of life. Factors affecting the formation of residential complex in any design process are mainly divided into two categories: Internal and external factors. External factors are concrete and tangible factors that affect the design process but internal factors are basic concepts that affect direction of design and external factors follow them. What is today discussed as "anonymity" in architecture, particularly construction of tall buildings, pertains to lack of attention to basic concepts or in other words, the cultural implications in its formation process. At present, we examine the role of cultural concepts in each of the above mentioned steps (Fig.1).

Planning and Studies

This step can be assumed as the first step in design on which configuration and strategies of design are based. The recent

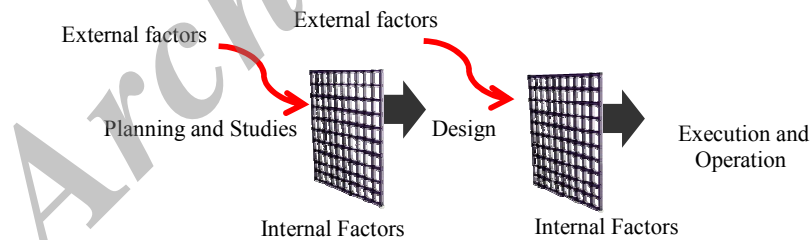


Fig.1: Diagram of the design process

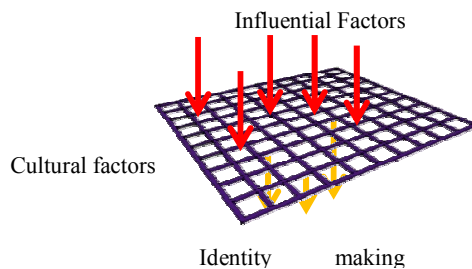


Fig.2: Diagram of selection of factors affecting the process of design

constructions (especially in tall building construction) indicate lack of enough attention to this stage of design. To do proper planning, three main indicators of socio - cultural, economic and environmental factors are influential but what is important in this regard is evaluation of factors derived from fundamental concepts that play key role in identification of these buildings (Fig.2). Some of are mentioned as follows (Fig.3).

Location

In high-rise buildings location depends on economic, socio - cultural, environmental, and physical criteria but spatial identity or protection of social quality of neighborhood is another important factor in this regard.

Prediction of people's participation in construction

Involvement of users in the design process (Fig.4) and considering man's needs, will, and decision causes formation of a favorable environment for living and the residents' satisfaction with the condition and improvement of quality of life as a result. This is a manifestation of return to the tradition principle, i.e. paying attention to human (Eslami, 2003).

Taking Social and Cultural Class of Residents into Account

Migration to the big cities, especially to Tehran in recent decades, has caused too many problems in the housing sector. The need for mass housing on one hand, and integration of people with different cultures, on the other hand, have been the result of these displacements because the new phenomenon of urbanization requires its own social relations. In this lifestyle, social distance is the first problem that people face. People, instead of having a culture of citizenship, are actually city dwellers who are separated from (rural) life and meanwhile, the new culture seems strange to them and they have not been so-called "urban-oriented". Therefore, they involve in contradiction in transition from one culture to the new culture and in practice, they have been pushed to the cultural margin of cities (Ebrahimzade & Sargazi ,2007).

Education of Culture of Living in apartment (Urbanization)

Given that the constructions carried out in the last few decades have been primarily motivated by economic interests, population growth, etc. and it has had very rapid rate, its social

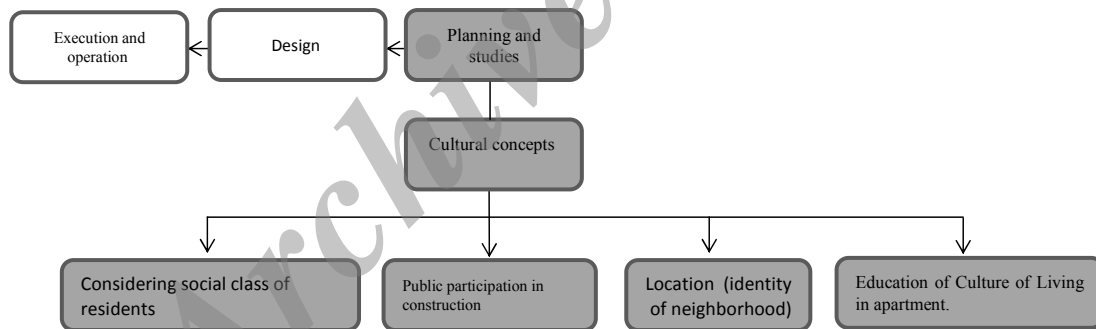


Fig.3: Separation of planning and studies phases according to identity making factors.

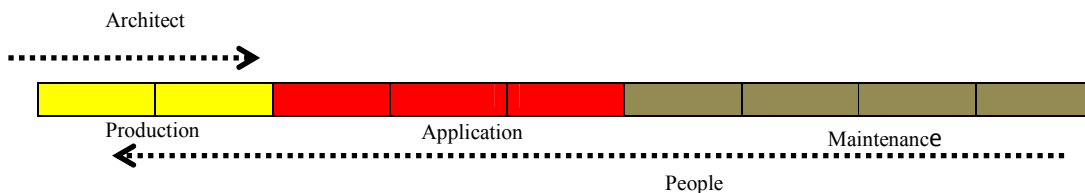


Fig.4: Assignment of the role of architect and addressee in the process of design

Table 1: Design process

| | | |
|------------------|--------------------------------------|--|
| Factors | Beliefs (Basic concepts) Criteria | Basic concepts that are rooted in the worldview and culture and are a continuous motion which always evolves over different periods of time and in each period, developed as civilization. Therefore, architecture of each period must be born of civilization. Peter Smith compares the basic concepts with deep marine currents in which huge masses of water flow and all of what is going on the surface has not the slightest effect on them. |
| Idea and Concept | | The Oxford Dictionary generally defines concept as the main idea which is related to an abstract object. Concept is possible and conceivable in mind (Kamel Nia & Taghaboni, 2009). Therefore ,concept is a mental process and an outcome of beliefs and criteria. |
| Plan | | Design is an attempt to devise solutions before implementing them (Lang, 2004, 64). In this stage of design, putting the focus on the concept and considering all the factors affecting the design through schemes, patterns, models , etc., for which designer provides the plan. |

and cultural aspects have not been considered enough and consequently, mismatch of lifestyle from short to tall buildings has been occurred and this dichotomy has become one of the problems of living in apartments. Training and compliance with culture of urbanization will lead to overcoming a lot of problems related to collective residence and as a result, higher quality of life in such complexes. Balance between individual and collective interests, accepting the limitations by the residents, familiarity with the rules and regulations of urbanization and respect for the rights of residents, etc. are important points in this regard.

Design

Design² is the second step of the design process which is influenced by economic, socio - cultural and environmental issues. Housing and the manner of its formation are directly related to the culture of any society because culture always affects the housing as the essence and nature of shape and spatial organization.

Therefore, culture as an important internal factor has a very important role in the design of residential spaces.

Considering the principle of internal and external factors, design process is divided into two parts: 1)The essence and idea of design which is derived from the basic concepts and it is a pivotal factor that gathers all the elements together, and it is a subjective issue. 2)The project objective that depends on the nature and concept. In this section , all designable levels will be analyzed according to the extent of applying cultural concepts. Position and role of cultural concepts in the design process:

Design is an essential process that is in fact objective and physical embodiment of opinions and has a spiral motion from the depth to the surface (Fig.5).

In general, the design process can be divided into the following steps (Table 1).

Design which is an objective manifestation of ideas and concept should be drawn from the beliefs and criteria and reflects cultural concepts on the one hand and the architecture of their time on the other hand (Fig.6).

The plan and its objective manifestation in its physical frame are presented via the following items (Fig.7) among which factors derived from cultural concepts and their influence



Fig.5: Diagram of the design process according to cultural concepts

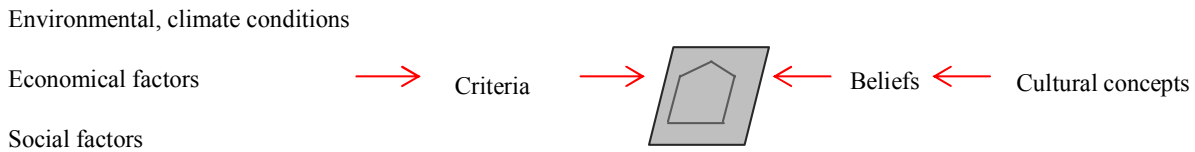


Fig.6: Diagram of all the factors affecting the design

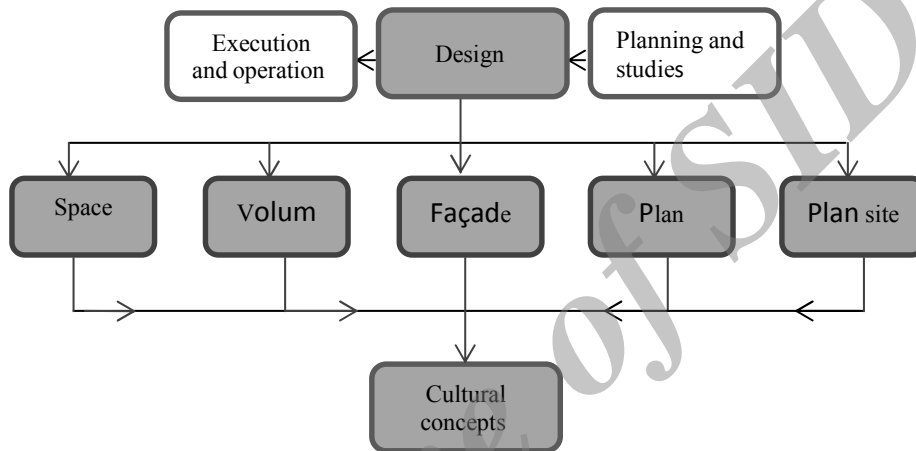


Fig.7: Separation of design processes regarding identity making factors

domain are considered.

The relationship between cultural concepts and design (Regarding each of its stages)(Table2).

Operation

After design and implementation, operation can be considered as the last step in the process of building formation. At this stage, physical (physical welfare) and spiritual (providing a space proportional to culture and customs) aspects of residents should always be considered. Meeting spiritual and material needs of human will result to higher quality of life (Fig.8).

Kastanza defines quality of life as the rate of satisfying human being's needs in relation to people's perception of the subjective well-being (Mehdzadeh, 2003).

In the present architecture of Iran, what has been largely ignored is taking spiritual aspects into account, i.e. presence of the addressee and their relationship with architecture and as a result, what has been obtained is low quality of life and low satisfaction of people (because quality of life pertains to the interaction between the body and the operator) which is one of

the fundamental concepts in traditional Iranian architecture. In recent years, by the faint of modernization and development of anthropological sciences, much attention has been given to human, his tendencies, and also his relationship with the architecture (in the relationship between designer, addressee and product), especially in residential areas.

In traditional architecture of Iran, relaxation, comfort and overall satisfaction of residents have always been considered. Literally satisfaction means satisfactory, pleased with, happiness of something or some place (Sayah, 2008). Satisfaction is a broad concept influenced by various factors including personal, social, economic, cultural and physical factors.

The relationship between cultural concepts and operation (Regarding each of its stages)(Table3):

At last Three residential complexes of Behjat Abad Residential Complex , Tehran Tower and Coye Nobonyad Residential Complex(regarding to the points said above) were studied in this research. The questionnaires were provided with 40 questions in 4 parts aiming at evaluation of the residents' satisfaction. Five persons residing at each complex were

Table 2: The relationship between culture and design

| Design | Site Plan | Environmental factors (climatic), social - cultural factors and economic factors are determinant criteria in the design of site plan. Today, polarization of architecture and attention to profitability and maximum use of land has caused site design neither based on cultural contexts nor based on any criteria and rules. Some of cultural concepts affecting site design are as follows. | |
|--|-------------------------------------|--|--|
| | Plan | | Hierarchy |
| Compatibility with the environment | | Nature | Harmony and balance with nature |
| | | Artifact | Paying attention to the surrounding urban context (local identity) and designing in harmony with the environment in terms of culture |
| Providing space for residents' interaction | | Designing some space in the site for social activities among residents and thereby increase in understanding and relationship between them (their manifestations in traditional architecture are the same neighborhood, archway, and lean-to) | |
| Presence of green space | | The human relationship with nature and respect to it, and definition of garden in architecture has had always a great position in traditional architecture | |
| | | Hierarchy | Hierarchy means putting different spaces together according to their application and the use of intermediate spaces. In traditional architecture, the path of reaching interior spaces underscores the importance of this issue. (Entrance, porch, patio, internal, external and etc.) |
| | Separating public and private areas | Iranian traditional architect has been always adhered to principles such as introversion and privacy and these principles have been formed to meet Iranian culture in architecture and have been established over the years. Separation of private (bedrooms and bathrooms) and public (living room, kitchen, etc.) areas which were called internal and external in traditional architecture should be always considered. | |
| | The presence of green space | Presence of private landscape and relation with nature should be always considered in the contemporary architecture of Iran. Garden and central yard in traditional architecture of Iran, in addition to their essential role i.e. interaction between family members, have been connection of architecture with nature. | |

Contue of Table 2: The relationship between culture and design

| | | | | |
|--------|--------|---|--------------------------------------|---|
| Design | Façade | <p>Facade in architecture, since past , has been very important and always attracted people’s attention. Therefore considering the importance of this aspect of building in expression of identity and architecture of each city, its basics and fundamentals should be discussed and considered.</p> | Materials and motifs | Architecture in any society is full view mirror of the culture of that region and this culture and identity manifests in its architecture during decades and using identity making physical elements mixed with new architecture is one of the most important ways to protect it and Materials and motifs are the most important physical elements. |
| | | | Proportions | Proportions mean creation of a sense of order between components of a visual composition. The proportions and harmony is one of the most important features of traditional architecture of Iran that has been realized in Iranian architecture using modular and modules and geometry. |
| | | | The presence of green space | Respect and connection with nature is one of principles of traditional architecture of Iran and its manifestation in architecture underscores the link of architecture with nature. |
| | Volume | Urban scale | Its position from urban perspective. | Harmony with the sky line and improvement of the quality of urban landscape |
| | | | Typology | Quality improvement is a sign of this type of buildings from urban perspective and influence in the creation of identified place (Karimi, 2010, 2) |
| | | | Adjacency | Harmony of the building with the surroundings |
| | Volume | Street scale | Volumetric proportion | Observing some percentage of coordination and compatibility with other existing buildings (if desirable) |
| | | | Overlooking | It mean shadowing and its proportion with other spaces surrounding the building |
| | | | Respect for human scale | It is one of the most important factors to interact with the surroundings and volumetric understanding of the addressees. Usually two solutions are proposed: 1-division of the building body and complying with volume hierarchy, 2-Shortening the height and increasing width of the building (Atisaz Complex) |

Contue of Table 2: The relationship between culture and design

| | | | | |
|-----------------|---|--------------|-----------------------------|--|
| Design Space | Architecture is the art of shaping space. Space like culture has a social structure which is made via people's perception of themselves. Space plays an important role in strengthening and development of culture. Space can be measured mainly from two aspects of quality and quantity. The quantitative dimension of space that can be measured and is related to its physical features and qualitative aspect which objectively exists out of human's mind and has certain intellectual and emotional impact on human. | Quantitative | Available capita | Supply of necessary privacy and appropriate spaces proportional to human activities is very important in the design of architectural space. |
| | | Qualitative | View and perspective | Design of appropriate landscapes that can be investigated from two perspectives: 1- Natural landscape that is always considered by designers.2- Urban Landscape: that is physical landscape of the city. |
| | | | Relaxation and Comfort | According to different domains of human life, human being needs an environment for comfort and relaxation supply of which is one of necessities of a desirable housing. |
| | | | Security | It is important to establish different degrees of security for residents in design of qualitative space, security against natural and unnatural disasters, guarding against violations of other sections of the society, and its other aspects. |
| | | | Interaction with nature | One of criteria for desirable space for residence is supplying the relationship of human with nature. |
| | | | Privacy | Housing as a shelter and place of comfort must be such that privacy and territory of each member of the family are provided and be safe from the eyes of foreigners. |
| | | | human friendly Space design | Paying attention to the man and his needs, including material (meeting body requirements), psychological (self-meeting) and spiritual (meeting spirit requirement) is very important in the design of living space |
| | | | Strength | Strength which is called Nyareh in traditional Iranian architecture (as Professor Pirmia mentioned it as one of principles of Iranian architecture) has an important role in creating spatial quality and psychological security for the residents |

Table 3: Separation of operation steps according to identity making factors

| | | | |
|-------------------------------------|--------------------------------|---|---|
| Execution-operation Satisfaction | Management features | Security | The need for security can be considered the first motivation of human in shaping residential space. Sense of security is one of human - environmental factors that can play an important role in human satisfaction with the place in which they live. (Rezaei Moghadam et al., 2012) Security can be verified from multiple perspectives including security against invasions, disasters and accidents as well as cultural and psychological security. |
| | | Maintenance | Maintenance is one of the main stages after operation which is connected with the manner of management on the one hand, (legislation and adjudications) and with the residents (law enforcement) on the other hand. |
| | Performance -physical features | In proportion to Needs of residents | Function in architecture is a very important issue that has a special position in traditional architecture of Iran. People protection, avoiding uselessness, etc. underlines this subject. Therefore performance of the architecture is related to the users' needs on one hand and potential power of physical form and shape of the environment. In other words, the concept of performance-orientation in architectures is involved with a wide range of human characteristics on one hand and the architect's attitude towards a set of related phenomena, on the other hand (Motalebi, 2006). |
| | | Beautiful and Imaginable | |
| | Social features | Social sustainability | Social sustainability in the residential complexes can be considered as product of satisfaction resultant from existing conditions in which the residents enjoy neighborhood with other people. As a result, human interaction and collaboration and coordination, etc. grow among residents. |
| | | Interaction of residents | One of the consequences of modernization can be seen as diminishing of human interactions and relationships and given the importance and role of interaction spaces in residential architecture in Iran that is manifested in the form of elements like lean-to, central patio, etc., should always be stressed in high-rise architecture in order to strengthen human relations and cultural interactions among residents. |
| | | Partnership | Participating in neighborhood activities and visiting neighbors frequently have direct ties with residential satisfaction (Amerigo&Aragones,1997). |
| | Environmental features | Identity | Anonymity and addressing related problems has become a challenging issue in the architecture in Iran. Identity in architecture has been studied by many scientists. As Christopher Alexander defines the identity as physical visualization of anonymous qualities in structures, qualities that are the basis of life and soul of every human being, city, building and or pristine nature but you can not put a name on them (Alexander, 2002). Identity in the present architecture can be interpreted as to satisfy material and spiritual needs of residents on the one hand and harmony with the environment and existing conditions on the other hand so that architecture speaks more about thoughts and culture of its time rather than representing the body and form. Then residential environment as one of the most important needs of people, represents culture of residents that expresses and interprets some characteristics of them. |
| | | A sense of belonging | A sense of belonging is the effect of sense of satisfaction. In other words, when people, because of special social, cultural, physical, etc. characteristics, fine themselves in harmony with the surroundings, they feel satisfaction and willingness to continue their presence in the environment and this feeling is called sense of belonging. |
| | | Peace and comfort | Favorable housing is an environment that provides peace and tranquility for its residents. |
| | | Sustainability and Environmental Design | Design of the environment is primarily the effect of human impact on the environment and the environment impact on human. Study of human-environment impacts in the architecture is a step toward sustainability in architecture. |

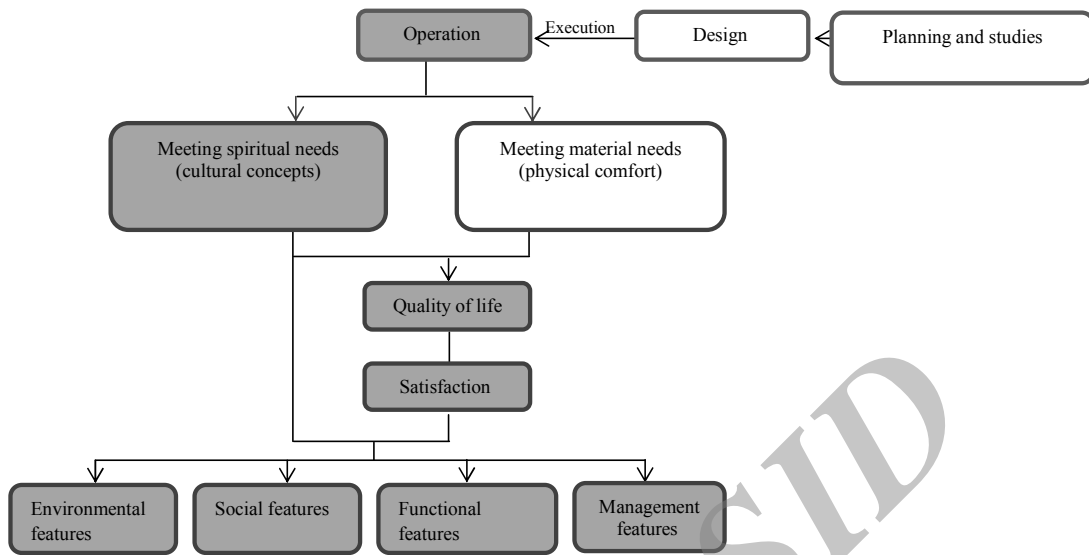


Fig. 8: Separation of operation steps according to identity making factors

provided with these questionnaires and the results are shown below (Table 4).

CONCLUSION

The results of the polling in each case indicate that there is a clear relation between increase in satisfaction of the residents and use of cultural concepts in each subject of study.

In addition, the rate of utilization of cultural concepts in any residential complexes will be as follows:

Behjat Abad Residential Complex
 Stage1(Planning and studies):2.5%
 Stage2(Design):39.5%
 Stage3 (Execution- Operation in terms of Residents' Satisfaction):15.7%
 Total percentage: 52.7%

Quarter of Nobonyad Residential Complex (A.S.P)

Stage1(Planning and studies):2.5%
 Stage2(Design):39.2%
 Stage3 (Execution- Operation in terms of Residents' Satisfaction):18.7%
 Total percentage: 60.4%

Tehran International Tower

Stage1(Planning and studies):0/4%
 Stage2(Design):34%
 Stage3 (Execution- Operation in terms of Residents' Satisfaction):15.4%
 Total percentage: 49.8%

According to the above facts ,it can be concluded that there is a direct relationship between utilization of cultural concepts and quality improvement. In the quarter of Nobonyad residential complex, the rate of utilization of cultural concepts in each part of the triple sections is higher than that in the other 2 condominiums and these have resulted in increase in satisfaction and more tendency to social interactions among residents. As in Tehran International Tower, despite the spaces designated in the site including sports and children's play ground, tennis court, body building gyms etc., people do not show tendency to perform group activities.

Therefore , culture is one of the most important factors affecting residence which must be considered in design process for new houses the greatest benefits of which are increasing social interaction and the sense of place among residents.

AKNOWLEDGMENT

This paper is based on the author s Ph.D. thesis in the Science and Research Branch of Islamic Azad university, Tehran, Iran, which was supervised by prof. Iraj Etessam and advised by Dr.Farah Habib.

ENDNOTES

1. There is a difference between aesthetic evaluations of architects and lay persons (Gifford et al.,2000).
2. A collaborative approach to the preplan, design, and creation of temporary and transitional communities following large-scale events is discussed (Spokane et al.,2013).

Table 4: Rate of utilization of cultural concepts in any residential complexes according to its stages

| STAGE 3 | | | STAGE 2 | | | | STAGE 1 | | | |
|---|-------------------------------------|--------------------------|-------------------------------|------------------------|--|--|--|--|--|------------------|
| Execution- Operation | | | Design | | | | Planning and studies | | | |
| Environmental features | Residents' Satisfaction | | Space (Internal and External) | | Volume | | Plan | | Cultural concepts | Number of floors |
| | Physical-practical features | Management features | Quantitative | Qualitative | Street Scale | Neighborhood scale | Cultural concepts | Cultural concepts | | |
| Peace and comfort | Identity | Security | Usable capita | View and perspective | Its position in urban landscape | Harmony wit surrounding (in case of desirability) | Hierarchy | Respecting the nature (landscape) | Considering social and cultural class of the residents | 14 |
| | | Maintenance | View and perspective | Relaxation and Comfort | Typology | Hierarchy (public, semi-public, private, semi-private) | Separation of public and private areas | Prediction of public participation in the construction | | |
| | In proportion to Needs of residents | Security | Interaction with nature | Volumetric Proportions | Providing spaces for interaction between | Respecting the nature (landscape) | Education of Culture of Living in apartment (Urbanization) | | | |
| | Beautiful and Imaginable | Privacy | human friendly Space design | Observing human scale | Respecting the nature (landscape) | Materials | Education of Culture of Living in apartment (Urbanization) | | | |
| Sustainability and Environmental Design | Social sustainability | Partnership | Strength | Strength | Observing human scale | Elements and motifs | Respecting the nature (landscape) | Nature | 23 | |
| | | Interaction of residents | Strength | Strength | Observing human scale | Elements and motifs | Elements and motifs | | | Artifact |
| | Social sustainability | Strength | Strength | Observing human scale | Observing human scale | Proportions | Elements and motifs | A.S.P Complex | | 1971-78 |
| | Interaction of residents | Strength | Strength | Observing human scale | Observing human scale | Proportions | Elements and motifs | | | |
| Peace and comfort | Strength | Strength | Observing human scale | Observing human scale | Landscape | Landscape | Tehran International Tower | 2005-11 | | |
| Sustainability and Environmental Design | Strength | Strength | Observing human scale | Observing human scale | Landscape | Landscape | | | | |

| | |
|-----------------------|---|
| Non compliance | ○ |
| Weak compliance | ◐ |
| Relative compliance | ◑ |
| Acceptable compliance | ◒ |
| Full compliance | ● |

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