



## **Study of Physical Elements Affecting Spatial Hierarchy in the Residential Complex, to Enhance Residents' Satisfaction, Increase Sense of Privacy and Social Interaction**

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### **ABSTRACT**

*Today, advances in communication and technology and science exchange among nations with different cultures, as well as population growth, have led to skyscrapers and residential complexes construction. In these dwellings, man is considered as a machine, which is intended to be parked in any parking, and only the material dimension of the housing has been considered for, and the spiritual dimension, especially in Muslim societies with very different cultures, has been ignored totally, and people are forced to live in an environment not compatible with their needs. One the essential principles of Islamic architecture and urbanism which has been forgotten these days, is the spatial hierarchy principle. Failure to comply with respecting this principle causes unresponsiveness to privacy and social interaction needs in residents, and finally leads to dissatisfaction. So, it is necessary to study physical elements affecting spatial hierarchy, in order to consider the spiritual dimension of the housing, and consequently the residents' satisfaction. Through enhancing the residents' satisfaction, interest, the feel of belonging to the community, and the whole place essence will be improved. Providing residents with this place essence, make the apartments more resembling to the real houses, and not a mere dormitory. This study, as an archival research based on the available related documents, has investigated the physical elements of residential complexes affecting the spatial hierarchy, and also its relation to two needs of privacy and social interaction, through triple structure of human essence, and finally the satisfaction issue.*

**Keywords:** Human Needs, Dwelling, Satisfaction, Privacy, Social Interaction, Spatial Hierarchy, Physical Elements

### **INTRODUCTION**

The most essential factor always affecting and proceeding the architecture, is its audience, i.e. people. So, value, validity and success of an architecture work is dependant to the fact that how much it has contributed to people's welfare and satisfied their their needs. Human needs are categorized in three groups: physical, psychological, and spritual. A suitable dwelling should satisfy all these needs, and help people to reach to their welfare and calm as the final step of psychologival and spritual needs, while satisfying the physical needs as a secure place to live. It should also be noted that people are not only variant in physical and ethnic characteristics, family-members number, sex and etc, but also their needs (need of privacy, self territory and social interaction), desires, habits, believes and living styles are very different, which should be considered in architectural designs.

### **DWELLING**

Residence (root: reside) means peace and calm. Residence resembling terms includes dwelling (sedatives), comfort (consolation and comfort), residents (who are located in a calm place), housing (settlement in a place that is beyond the range of the spatial neighborhood of the village and city), accommodation (settlement), residential (dwell, reside), and where the family reside [1]. The dwelling synonymous in Iranian literature include shelter, home, college, home, house, room, tent or tents, pavilions, cottages, sara, dormitory and building. It can be concluded after investigating two words "Shelter" and "House", that dwelling has an environmental meaning, beyond a mere shelter; so, it needs another tool to join life, family and environment together.

### Shelter and its Historical Background

Study of historical documents, works and evidences of the remained shelters in deserts and mountains, related to prehistoric ages, shows that the first Iranian residents used natural caves as their shelters. So, "Shelter" could be interpreted as an environment in which men shelter, in order to have the minimum safety against environmental and weather factors. In these ages, men decorated internal walls of the caves, as a response to their innate needs. Establishment of the first human-made shelter in Iran goes back to 6000 B.C. In that time, men reached to the fertile plains, from their caves, and made their first shelters. But there was still a huge gap between the real "house" phenomenon and the mere shelter [2]. The concept of sedentary developed "Family", and led to the emergence of tribal, family, and individual identity. Through these developments in human life, only a safe place to settle couldn't satisfy the new needs, and so, interferences in environment to be adapted to these new needs were emerged in different dimensions. Occurrence of copper, iron and bronze and their capabilities in making new tools dominated human on the environment, and life styles were enhanced consequently through using new technologies and skills, which led to the thought of making a stable place as a house, and finally the quality of living. Need to the privacy of life and social, family and individual identity and living requirements were the elements entered the performance and meaning to the human residency, causing the environment having a role more beyond a mere "shelter" and "residency". Not only safety against environmental dangers, but also the need to a place to live in was the issues on the next phases. Thus, the beginning of the formation of "dwelling" can be seen to coincide with the time that people no longer seek shelter, but it should be set up [2].

### Material and spiritual Dimensions of Dwelling (Shelter Progress)

Dwelling is considered as a physical location and basic shelter of family. In this shelter, some of the basic needs of the household or person, such as sleep, rest, protection from weather and environmental conditions are satisfied. But if the dwelling is in a good form, can be the major place to meet the high level needs. As mentioned, house is the place of residence, and "residence" in Persian and Arabic and even in Hebrew means peace and calm. The word "Sakineh" rooted in the word "Sokoon=residence", which is contrary to the motion, is used in the stillness of heart and means "calm" of the heart and lack of anxiety in the decision and determination. Thus, the concept and meaning of the word "resident", in addition to have a reference to material dimension, links to spiritual and mental too; in other words, it is considering and concentrated to the fundamental aspect of human life [3].

"And Allah has placed your comfort in your houses ..." (Quran, Surah Nahl, verse 80)

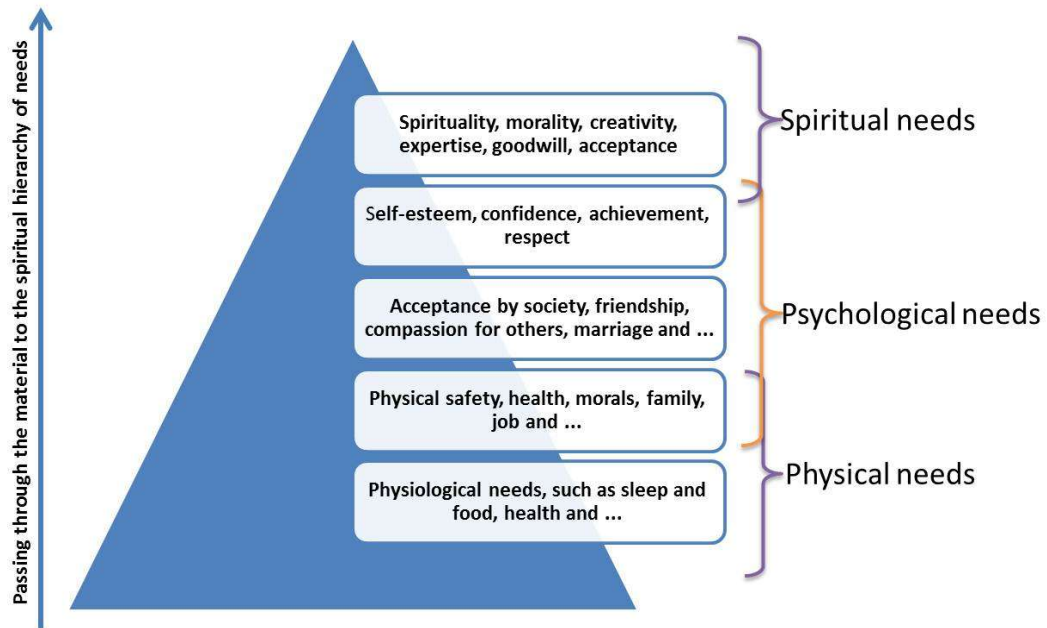
Fig1. Dwelling dimensions. Source: author, adapted from [3]



### Maslow's Pyramid of Human Triple Needs and the Role of Dwelling in Their Satisfaction

Human nature, due to its trilogy (consisting of body, soul and spirit) has triple needs that each of these needs belongs to a particular sphere of life. Providing the answer to each of them, in proportion to its importance, is necessary for life and accordance with human nature. It seems that it is necessary in the first place, is providing all the material needs (answer to the body), psychological needs (to soul) and spiritual needs (to the spirit) of man. Basically these three phenomena, is a kind of hierarchy within the scope of which stretches from the physical world to the spiritual world, and the absence or inattention to each of these human existence is disrupting the whole life. It is also necessary to note that as we go up in this pyramid, spiritual value increases. Achieving higher degrees without meeting the lower levels, if not impossible, is very difficult and even impossible [4].

Figure 2. Relationship with Maslow's hierarchy of needs pyramid of three branches



Maslow also introduced pyramid of five innate needs that motivate and drive the human behavior out. These needs include: physiological needs, safety, belonging, and of love, respect and self-actualization. These needs can be affected by learning, social expectations, and fear of disapproval. Although we are equipped with these needs at the birth time, the behaviors to satisfy them are learned, and hence are changed from one person to another. These needs are sorted from the strongest to the weakest. Before impacting high needs, low-level needs should be satisfied at least partially.

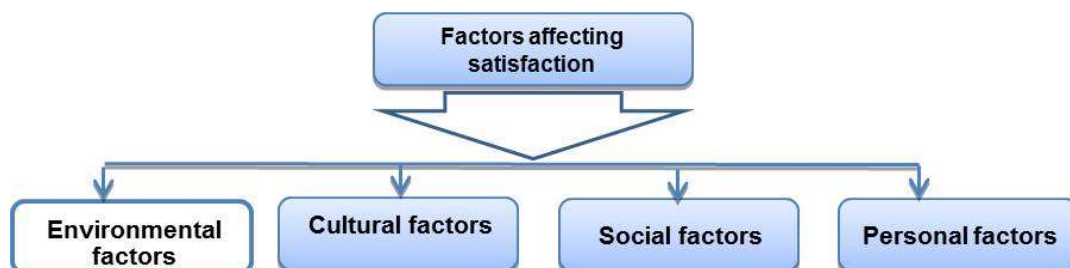
By combining these two models, the importance of the needs at the top of pyramid to reach to perfection, that is the goal of creation, is revealed.

House and dwelling environment, should not only be human settlements and satisfy the physiological needs, but beyond that, it should be a good ground for the growth of human dignity and psychological needs, such as the need for security and a sense of belonging, self-esteem, self-actualization and aesthetic. This way one can say that dwelling could meet human needs and successful in his satisfaction.

### Factors Affecting Residents Satisfaction (Residential Complexes)

In order to deduct the satisfaction from the residential place, it must be adequately measured. But this measure cannot be just a simple question, "Are you satisfied with your residential place or not". What causes a person to have a feel of dissatisfaction? In other words, what factors are involved in the level of satisfaction? Some factors contributing to the satisfaction include personal, social, cultural and environmental-architecture [5]. Because of its size, we will cover these factors in whole, and environmental factors will be described more extensively.

Fig3. Factors Affecting the Satisfaction of the Residents



### Personal Factors and their Impact on Satisfaction

Of course, taste and pleasures depend on the living person. Individual characteristics that affect satisfaction include demographic factors, personality, values, and expectations, compare to other settlements and hope for the future.

### Social Factors and Their Influence on Satisfaction

Interrelationships and connections with others (homogeneous neighbors), norms that are accepted, security, privacy and the type of private ownership have the important role in the residency.

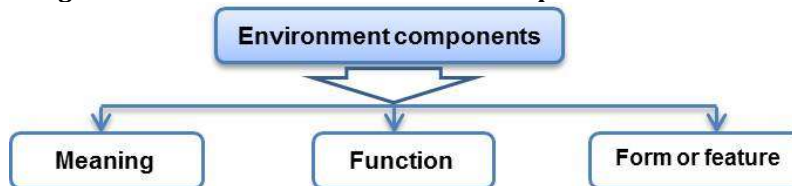
**Cultural Factors and Their Influence on Satisfaction**

These factors include family structure, how to perform the basic activities, attitudes to privacy, the culture and the customs of the dwelling.

**Environmental Factors and Their Impact on Satisfaction**

Architectural and environmental factors have a large impact on priorities and satisfaction in residency [5]. Given that this study is about one of the environmental factors of architecture (spatial hierarchy), we will discuss about it more detailed. Components of the environment (residential complex) are the form, performance and meaning [6].

**Fig4. Environmental Factors and their impact on satisfaction**



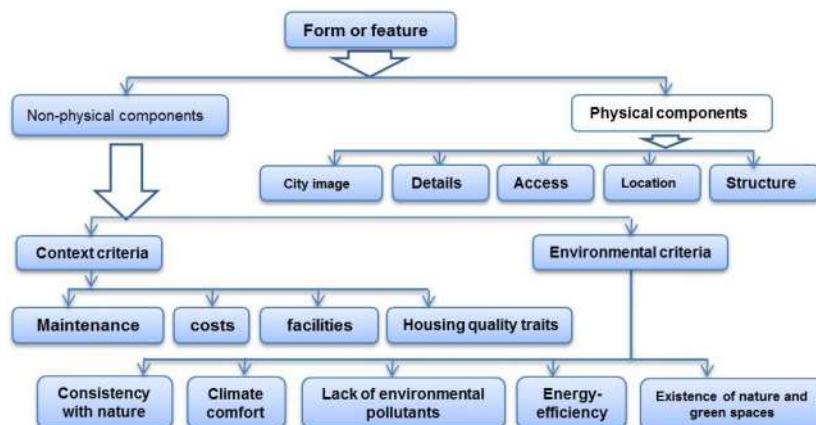
Form or Figure: is a part of the phenomenon that can be perceived by the senses. Form is the appearance, structure, and how to develop the content and its embodiment and expression. Aesthetic definition of the form is the clear sense manifestation of a phenomenon that puts her at judgments. The intuitive presentation is the potential appearance of a phenomenon that has put itself to actual state in the process of perception itself and is felt by human. This objective is evaluated by human perception and experience, and the person shows emotional and intellectual reactions to it. Form is not always physical. Form or figure is a unified totality of physical and non-physical parameters [6].

Physical Elements: when the quality of the environment is the issue, the first thing that comes to mind is the shape and physical appearance of the objects, and the physical appearance of the city is its identity; mainly through structural design we can achieve proper planning. In urban environments, form is observed naturally or artificially [7]. The most important physical elements include residential complex structure, location, access, and details of the city's landscape.

Non-physical Elements: According to the definition of the environment form, non-physical elements are the potential measures actually effective in resident satisfaction, but they cannot be categorized among the physical elements of the environment.

Non-physical elements include environmental criteria and standards which are discussed in whole, due to their big area of discussion.

**Fig5. For or Figure Elements**



Performance: man has needs which communicate with its surrounding environment. He had not only to work for their numerous needs, but find the environment as a dynamic system, able to respond to his needs. Because of this, he discovers a property of the environment that is responsive to the needs: Performance [6]. Generally, the functional elements of a residential complex, to improve the level of

satisfaction of its inhabitants, include permeability, safety, flexibility and adaptability for change, visual adaptation, social universality, diversity and richness of activities.

**Permeability:** Behzadfar defines permeability as the availability of space and limit of choice that gives people a place to go that way from one place to another. Permeability of a system of public spaces depends on the number of potential ways to pass from one place to another [8]. This potential should be clear and visible. "Visual" access depends on person's ability to see the environment, while the "physical" access is the availability of people to move through the environment. In some cases there may be some physical access but not visual and vice versa [9]. Important factors that are associated with improved permeability elements of residential and resident satisfaction include: clear and understandable boundaries of territories, restrictedness and spatial continuity (where public and private spaces are apart - strengthening the cohesion of the edges of streets - and spaces defined by different public and private places), maintaining a hierarchy of motion (communications), easily walking, public mobility and confidentiality [10].

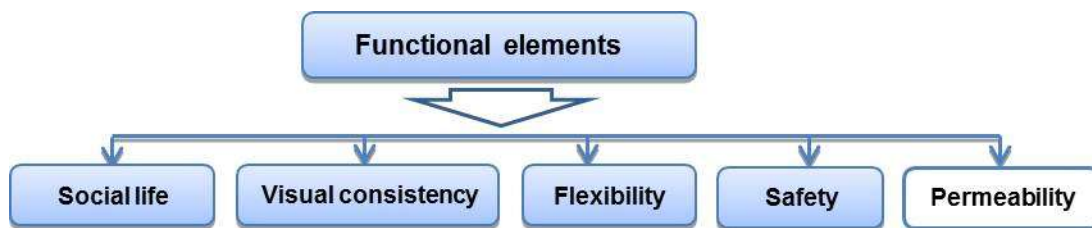
**Safety and Security:** features of an appropriate dwelling should be such that provide varying degrees of security for residents. This security includes protection against natural and artificial disasters, against aggression from other persons, against the effects of human activities, and other aspects of security.

**Flexibility and Adaptability for Continuous Change:** flexibility means complying with every situation and environment, and changeability in order to adaptation to the changes in different situation [11].

**Visual Adaptation:** here it means good visual appearance, so that people be aware of the options to choose provided by physical design.

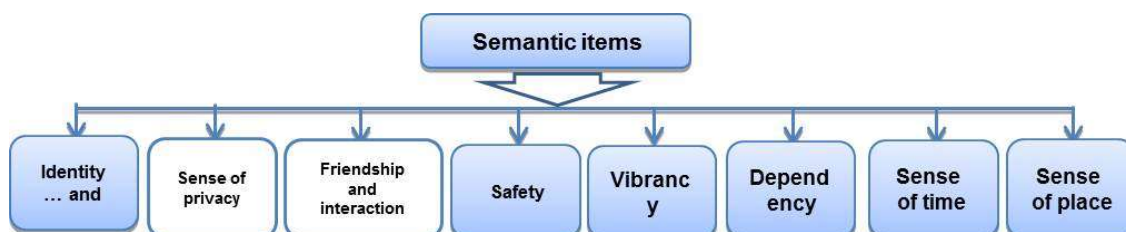
**Universality - Social Life:** includes the quality of the public realm (safe and suitable for all), social activity and social interaction (spaces with high quality design and providing opportunities for physical activity and recreation with optimal function), diversity enrichment activities, mixing functions and forms (pleasant and comfortable places that provide the diverse needs of users and community groups) [10].

**Fig6. Performance Elements of the Environment**



**Semantic:** a property of the environment which can connect people to other aspects of life (the concrete meanings of space, memories, etc). In a typical environment, most of the objects and phenomena that are understood have meaning. There are different possibilities for action. Some implications of the events that happened or may happen are embedded in them. These meanings are understood and perceived. These perceptions are very clear and straight; since we understand the meaning with no apparent physical detail [6]. Some meaning factors influencing the satisfaction of the residents of the residential complex can be expressed as follows, which feelings of privacy and social interaction are a part of them.

**Fig7. Semantic Factors of the Environment**

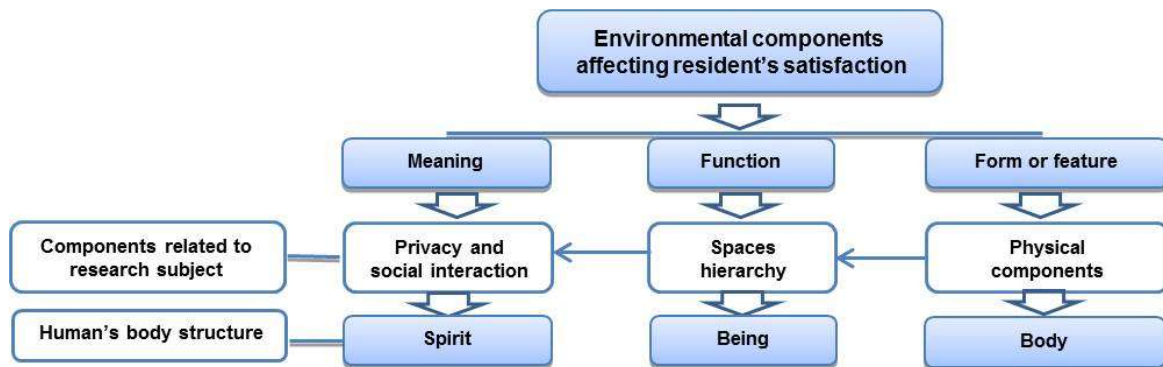


**Conclusion**

Regarding issues mentioned above in respect to favorable dwelling characteristics, and factors affecting the satisfaction of residents in a residential complex, privacy and social interaction can be discussed; also, the spatial hierarchy is one the environmental performance elements regarding satisfaction of the residents; to achieve these, the physical elements of the residential complex are considered that are part of

the form or figure elements. The following describes the relationship among the four mentioned elements and the way to achieve to all.

**Fig8. Relationship among Environmental Factors and Innate Human Aspects**

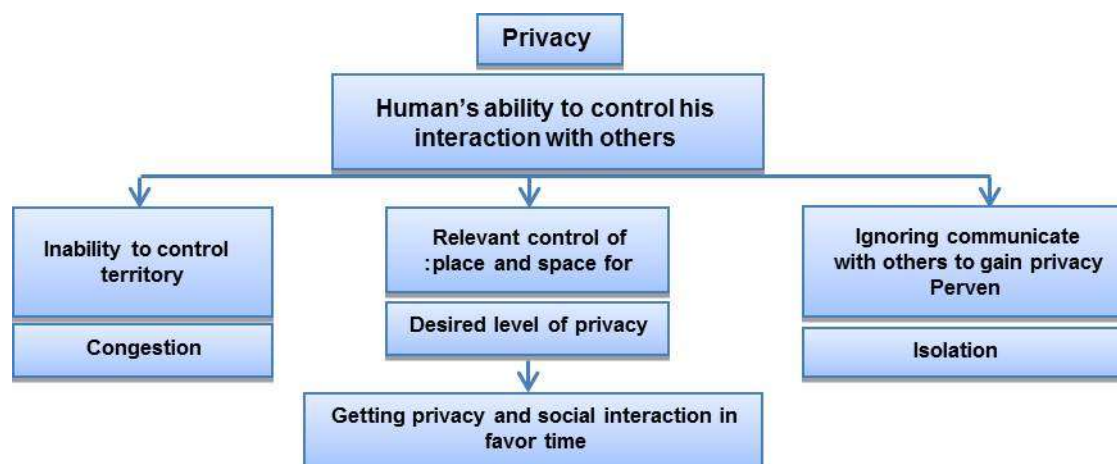


### Privacy and its Relation to Social Interaction

Privacy definitions have a common feature. The main point of all these concepts and definitions is the ability of an individual or group of individuals to control the behavior and audio - visual interaction of other people. In other words, privacy and social interaction ties to each other. Rapoport defines privacy as one's ability to control social interaction, choice and desired social interaction. So, privacy leads to separation. A number of theorists stated the need for privacy as a need for control and containment the boundary to others. Altman points to spatial territory not just as a place to provide privacy but also a place for social interaction [12]. Lang notes that if the social needs of people are in balance with a sense of independence provided by the privacy, social interaction will be easier. Unclear environments decrease the social interactions. Physical privacy is necessary for social behavior. In a place with physical privacy, there is a wide range of personal choice. One way to achieve privacy is through avoiding the contact with others, and another way is controlling the atmosphere. If the spatial environment and ownership rights have a clear boundary, measure and amount of social interactions are more than the privacy situation through cutting the relations. Type and level of privacy depend on cultural context. Watching the territory is still depends on social measures, though it has a biological basis [13].

Providing visual and audio privacy by controlling nuisance action is necessary but insufficient. Human and environment relation studies show that privacy is reached more through control on private life. A balance between privacy and social interaction is made through physical concepts and cultural - social concepts that make psychological context [14]. This balance in the definition of privacy has been expressed in self and own group. The need for privacy is different in variant cultures, and also between individuals within a particular culture and society depending on their mood. In other words, a condition that means privacy for someone maybe mean loneliness for someone else; and a condition that may be specified as "busy" for someone maybe is enjoyable for someone else in another situation [12].

**Figure 9: the relation between privacy and social interaction**



### Types of mechanisms applied to achieve privacy

People who tending to achieve the desired level of privacy, use various behavioral mechanisms such as verbal, nonverbal behavior, environmental behavior (such as defining personal space and territory), and norms and cultural practices.

1. Verbal mechanism: the individual uses verbal content to show the distance between existed privacy and desired privacy: “you are very noisy!” or “don’t you know what the closed door is?”

2. Non-verbal mechanism: such as using the body's organs and modes for communication, aggressive look.

3. Cultural mechanisms: the mechanisms to monitor privacy do not always include environmental approaches and require a change in the one’s surroundings, but often relies on general methods and ways of behavior and include norms and practices that facilitate the monitoring of privacy [12].

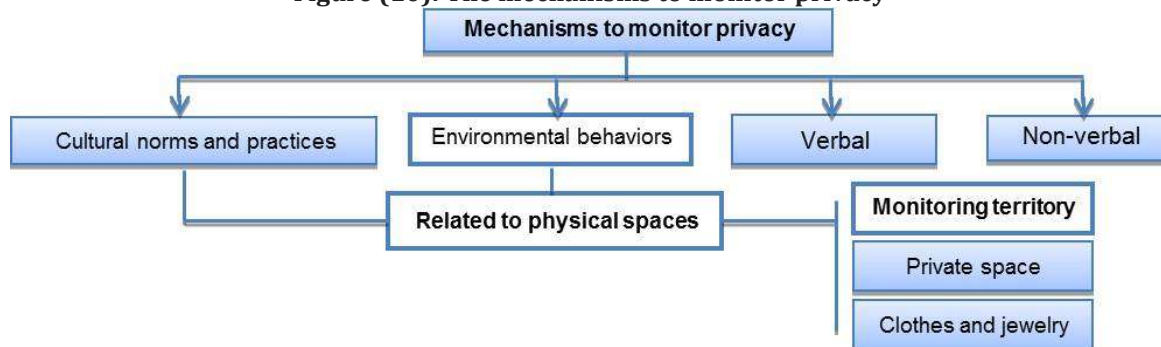
4. Environmental mechanisms: include 3 mechanisms (personal space, clothing and territories). The individual using environmental measures and by physically determining these areas or through signs, marks etc. shows the desired level of privacy.

Clothing and jewelry: individuals and groups of all ages, professions and different positions, select special clothing or uniforms to tell others who they were, what is their position and status in the community? They also through the clothes they wore show how easy or difficult to make relationship with them [12].

Private Space: private space as the second layer of the physical environment is one of the privacy mechanisms; a hypothetical bubble or space around the person which the oppression of others in it leads to tension and discomfort for him [15].

Territory: it is a limited place or space which individuals and groups use and defend it as an exclusive area. Territory with finds psychological identity by a place and becomes a symbol through the sense of ownership.

**Figure (10): The mechanisms to monitor privacy**



### Territory

The behavior of territory monitoring is a mechanism for setting boundaries between self and others which is defined through the personalization or markings of a place or an object and its possession to an individual or a group. Human territories are very different in size and location; they are not only a location concept but also are developed by human’s practices and tenets and are marked by a wide range of physical barriers and symbolic signs [16]. A variety of territory types, including:

The primary territory (private): The primary territories are possessed or inclusively used by particular individual or group, others know them as the owner of this territory, permanently are available and are essential in everyday life of them. Brouwer names this territory “private territory” and know it home. In such a territory, the owner’s identity is apparent, invasion or illegal entry of others will be counted as a serious issue and controlling others’ entry is valued. The invasion to the primary territory, especially if repeated and borders reconstruction won’t be successful, may be a serious insult to the owner’s individual identity. In fact, the lack of such a territory or the inability to regulate access to it, in the long term, can lead to a loss of self-esteem or self-identity [12].

The secondary territory: secondary territories include semi-private and semi- public spaces. The first type includes public spaces such as living room of accommodations, shared spaces of residential building or open spaces by private property like the porch of the house. The second type includes spaces such as local shops and walkways in front of the houses. There are ownership for semi-private spaces, while the users of semi-public spaces are not owner, but somehow they know it their own.

In fact, the secondary territories are a bridge between the primary territories – which the individual completely and comprehensively control it- and public realm which almost everyone can use it. Thus, it is possible that people become confused about the secondary territory boundaries and after establishment, the invasion to these borders leads to conflict and confrontation between the individuals. [16].

Neman called these districts as untenable realms. From the Altman's perspective, think of the users of these areas, which are assumed as the secondary domain, is that they are no control over it and the same feature leads to public use of them and their occupy by malicious people and street gangs. In fact, the territories will not be graded in these complexes, i.e. the house is the primary territory but the area outside of the entrance of houses is converted into public realm and there is no secondary domain where residents be able to relatively monitor it [17].

Public realm: the public realm is a temporary territory and almost everyone has access to it and can use it. This territory has been called the free territory or optional territory as well. Brouwer counts two kinds of public realms: possession of some places such as streets and parks without any limitation, it is possible until people have to respect some rules. Free occupying of some remote places like the sea shore has fewer restrictions and even is provided for everybody for a limited period [12]

### **The spatial hierarchy (from the private to the public territory)**

The hierarchy is of principles which plays a key role for the definition of the optimal order for each "total" and considering it in plans and projects leads to increase in the degree of efficiency, identity and achieving goals. The dominant hierarchy of complexes is a tool which helps the studies to define the position and the value of the components of a complex, to describe the features and functions of each of them, to determine the coordinates of the associated components together and to clarify the dependency of the components together or "total" and the function and role of each of them.

Thus, the appropriate use of this principle to select and define the elements and factors which involved to create a "complex" (total) and identify the desired "total" identity is necessary and the proportion of the hierarchy with elements and the complex has great effects on the value and performance of the complex and components as well [18].

The hierarchy in the form of an architectural building leads to the formation of the spatial domains with different functions and shapes the spatial layout. The hierarchy, namely the organization and composition of spaces and elements, according to some physical and functional features and their meaning, leads to create a hierarchy in the layout, usage or view of the elements [19]. To be able to sequentially perceive the hierarchy of spaces (territories), the individual by passing through a series of spaces, must recognize specific and distinguishable spaces and perceive them together. This means that while each space has a separate character and required diversity is seen in a series of spaces, connection between them are not missed. Otherwise, it causes distorted and diffused perceptions of spaces [6].

### **Physical criteria for space and territory**

According to studies, we extracted physical criteria of territory and domain based on urban design experts and theories related to the privacy and territory [20].

Discrimination and distinguishability: Madanipour knows spaces discrimination into public and private spaces as the factor which organizes the society. This separation affects the spirit and experiences of people, organizes behaviors and establishes a durable construction for human societies. From the perspective of Tavassoli, the spatial domain will be created when urban spaces with different characteristics are inseparable from each other. Privacy and territory in the neighborhood patterns provides the possibility of separation and the safety.

The distinction between public and private spaces has been observed since the inception of the first ancient city-states, this means that a direct communication exists between the public and private distinction and a way which links humans and social environment to each other. The distinction between public and private spaces is one of the main features of Islamic cities; this distinction between public and private lives has been derived from the Islamic Sharia and religion. Also the role of urban design parallel to the effect of the distinction between public and private has on forming of urban form and urban life features, becomes more and more important [20].

Here to create separation and distinction between public and private spaces the three sub-components: classification and non-interference of activities (different spaces of private / semi-private, semi-public / public in a housing complex are completely separated from each other and do not interfere with each other), privacy and lack of vision and phomenic privacy (preventing any phomenic and visual intrusion from one domain to another domain), different features of the physical symbols and physical signs for each domain( it is possible to consider different and effective physical characteristics for each territory that in addition to the distinction between the domains, the meaning of any territory be well stated) are used.

**Border:** One of the challenges to build the city is that the border between two territories are be held in a way that transparency be combined with permeability and interdependence between the public and private realms minimizes the financial risk of public and private interests. Realms can be identified through their clear and distinctive boundaries and borders and can have a positive impact on improving the promotion of identity. Madanipour knows borders as a tool for both separation and for communicating



simultaneously. From a psychological perspective, creating identity through the order, in a way that centralization is emphasized and makes up a kind of clear boundary against outside, is meaningful and understandable. Transforming the border to the realm, also instead of separating neighborhoods, enhances their relationship and their permeability [20].

Connection and linkage, passing through evolution: from the smallest and most private units in the city (home) to neighborhoods and the most popular parts of the city (market) they are all highly interdependent and connected together. Communicate with the internal empty space and public empty spaces in order to connect open areas to the neighborhood within an interwoven network, seem necessary. Also, the access of residents to all parts of the neighborhood is in the realm of public and semi-public areas, of course the pedestrian is prior in this accessibility.

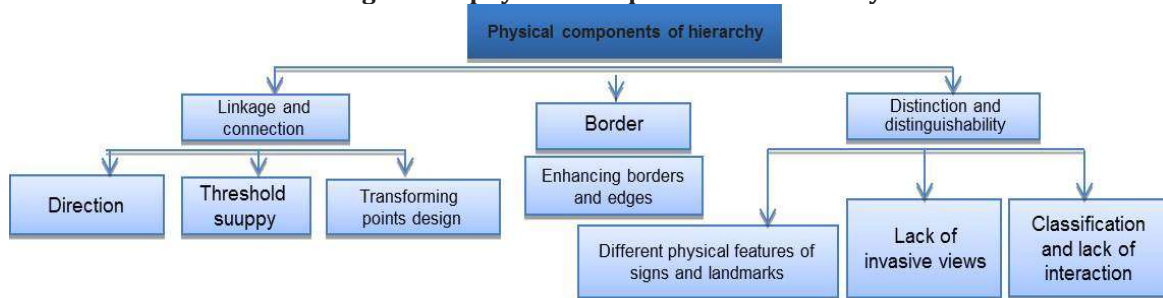
In historic towns a close relationship is seen between the life inside of buildings and activities of the street. Each of the constituent elements and parts of the city from the main public areas to residential and private sectors are complementary [20]. To make connections between different areas, the other three components should be considered: design of transfer points, supply the threshold and determining path direction.

**Factors influencing the formation of hierarchical structure in residential complexes**

According to the information collected by libraries and concluding them, in general, the four realms of private, semi-private, public and semi-public can be separated from one another in a residential complex. Beside of separating these spaces from each other, using some methods, a hierarchy should be created between these levels. Because these levels are interconnected and despite the need to separate and identify the boundaries of each space, the communication and continuity must be maintained between them.

Using the theoretical foundations of the hierarchy of spaces and also referring to studies, it is possible to provide the following components to create a hierarchy of public and private spaces, due to ensuring privacy, and at the same time, providing social interaction between residents.

**Figure 11: physical components of hierarchy**



**Table (1) physical components of hierarchy (strategies and policies)**

Items	Strategies	Policies
Distinction and distinguishability	1- classification and no activity interaction	<ol style="list-style-type: none"> <li>1. The separation of public space of courtyard, semi-public spaces of the building lobby and semi-private per floor and private per unit.</li> <li>2. Well-locating of housing interior spaces to each other and to the exterior space (both public and private).</li> <li>3. The spatial separation of noisy spaces of each unit from the spaces that require privacy (TV room, bedrooms).</li> <li>4. Well-locating and appropriate separation of private spaces (rooms) / semi-private (kitchen) / semi-public (living room) and services in units.</li> <li>5 Units' design in a manner that we do not cross other space to transfer.</li> <li>6. Existence of cozy spaces to sit in living and dining spaces.</li> <li>7. The use of private areas like balconies out of sight of passersby.</li> <li>8. Creating green open space for each apartment without outside and inside vision.</li> <li>9. Determining neighborhoods within residential units with private access.</li> <li>10. Determining the intimate and family friendly semi-public space</li> </ol>

Distinction and distinguishability		<p>nearby residential location that provides a better understanding possibility for people.</p> <ol style="list-style-type: none"> <li>11. The visual and physical separation between the neighborhood and staircase- filter space of elevator.</li> <li>12. The use of roof space as semi-private space.</li> <li>13. Forecasting sitting area in the neighborhood, the lobby and the courtyard.</li> <li>14. The decomposition of semi-public space into smaller spaces that have been allocated to certain categories of residents.</li> <li>16. Creating the privacy by the sound insulation or use of landscaping elements like the sound of water , music and ...</li> <li>17. Scope and privacy be fully separated from the surrounding streets that anybody don't enter the inside of the courtyard.</li> </ol>
	2- No invasive sight and vision	<ol style="list-style-type: none"> <li>1. Regarding the private spaces, such as balconies out of sight of passersby.</li> <li>2. Farming trees and green space to limit visibility to private spaces.</li> <li>3. The private spaces are hidden from guests view.</li> <li>4-Windows shouldn't be built overlooking to the other houses.</li> <li>5. The physical barrier against the entrance to see the rest of the house</li> <li>6- No invasive sight and vision from adjacent units to units' spaces and vice versa.</li> <li>7. Create a screw at the entrance to avoid direct view from inside the shared space.</li> <li>8. Windows which open to the public space be deep and not integrated.</li> <li>9. Units' entrance not to be opposite to each other.</li> <li>11. The distance of 28 meters behind the back blocks to ensure confidentiality.</li> <li>12. Existence of yard and garden in the northern and southern blocks (between blocks sub-corridors).</li> <li>13. The lack of a public road on the periphery of the building.</li> <li>14 - Placement of parking and the main road in ways that have little visibility into the private spaces.</li> <li>15. walls to a height of 2 meters should be built at the border of roads and courtyard</li> <li>16. Avoiding excessive height difference between high buildings to avoid invasive vision</li> <li>17. The lack of vision of building blocks for each other.</li> <li>18. Lack of visibility into units from public streets.</li> <li>19. Proper location to the buildings and open spaces and other buildings in the vicinity of the street.</li> </ol>
	2- No invasive sight and vision	<ol style="list-style-type: none"> <li>1-Privatization of personal spaces of units and semi-private in front door and lobby and neighborhoods, with marking, integrity and consistency of objects of one place.</li> <li>2. Create a physical similarity between units in a single neighborhood for more interaction with their neighbors.</li> <li>3. Variation (changing the landscape and creating non- uniformity) in spaces of different domains.</li> <li>4. The lighting variety (the use of light and shadow to enhance the continuity of space, applying light and movement elements, grid wall , etc.).</li> <li>5. Use the properties of geometric shapes to create a sense of community responsibility and community refusal and the sense of movement and pause.</li> <li>6. Changing the height of the ceiling in different places according to its functionality.</li> <li>7. Using spaces with a central organization (square, octagonal,</li> </ol>
	3 -The use of different physical characteristics ,symbols and physical signs for each domain	

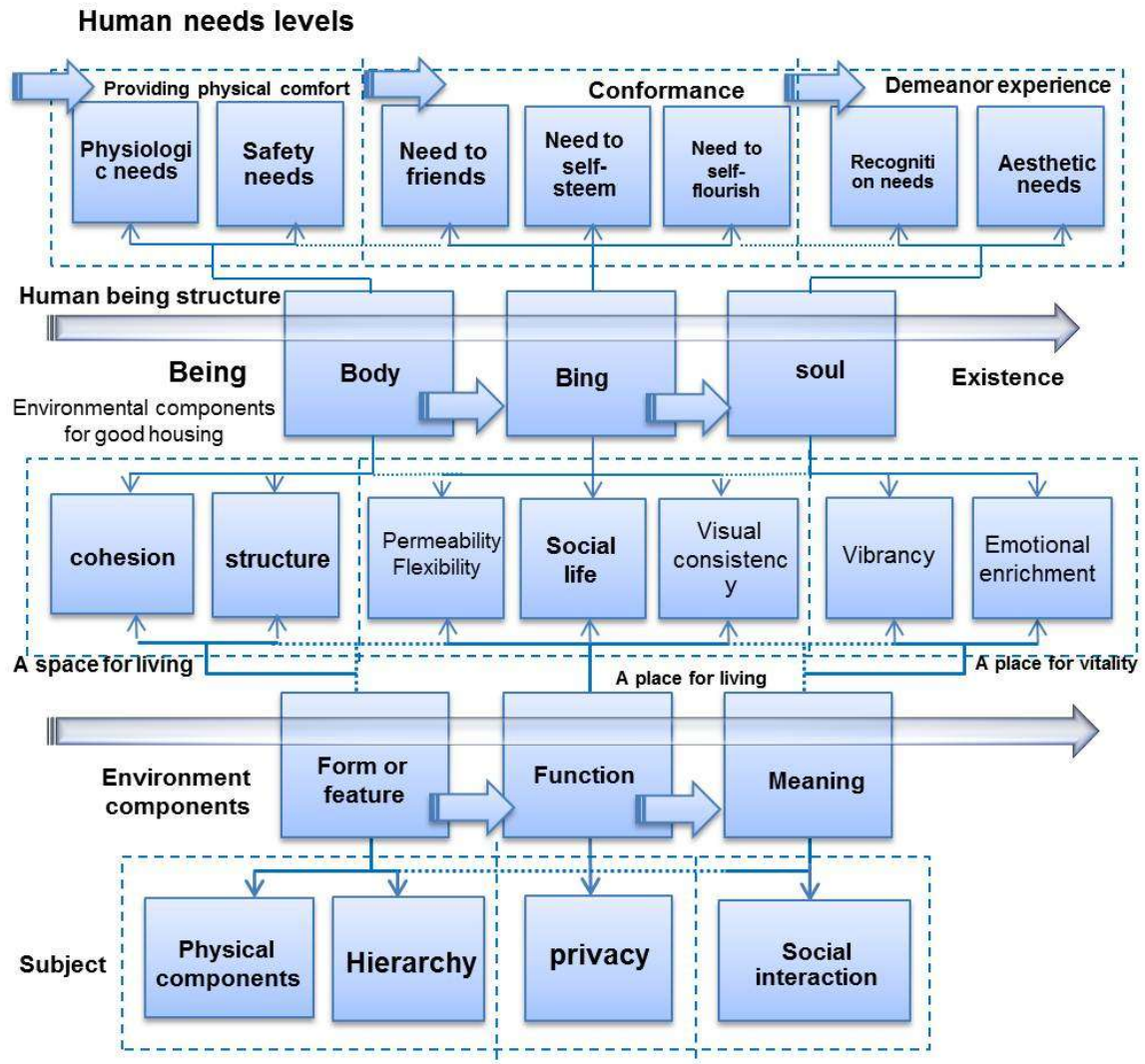
		<p>circular, etc.) for community friendly spaces.</p> <p>8. The existence of spaces in the center with pool, penthouse, fountains and columns etc. for community friendly spaces.</p> <p>9. The existence of semi- public open spaces with furniture and removable components (community friendly layout).</p>
Border	Enhancing borders and landmarks	<ol style="list-style-type: none"> <li>1. Defining and limiting the scope of territory through appropriate type (a short wall, a door, fence, a glass cover or even change in materials, etc.).</li> <li>2. Walls' legibility.</li> <li>3 - Level difference.</li> <li>4. Slope change.</li> <li>5. Change in width.</li> <li>6. Using green spaces to define and delimit territories.</li> </ol>
connection and lincage	1- Designing transforming points	<ol style="list-style-type: none"> <li>1. Building connector spaces, stop and waiting spaces for each territory (private / semi-private / semi-public).</li> <li>2. In each unit, after the entrance, a divider space exists for going to reception, private spaces and kitchen.</li> <li>3. The creation of intermediate spaces for public meetings and intermediate activities.</li> <li>4. Inserting a cozy and friendly and spacious space for friends and clients in the complex (some body want to see a family member, but don't want to enter)</li> <li>5. Forecasting arch and create vaulted roof and create narrowness, aperture and screws that all have gate status in order to create sub-domains in visual and mental terms.</li> <li>6. The use of landscaping elements and land-use to determine intersections' limitation.</li> </ol>
	2-Threshold supply	<ol style="list-style-type: none"> <li>1. The existence of gate and guard in the entrance.</li> <li>2. The entrance with a reserved lobby for clients, a good place to get mails and garbage collection.</li> <li>3. The entrance has traits such as independent and distinctive and provides enough pause.</li> <li>4. Entrance recess.</li> <li>5. Strengthening the entrance elements like platforms.</li> <li>6. Limiting visibility by brick, wood and plaster networks.</li> <li>7. The entrances of two units do not open in a joint area and each have its own space.</li> <li>8. Forecourt design which gives a sense of personalization to residents.</li> </ol>
	3- Set direction	<ol style="list-style-type: none"> <li>1. A direction using legibility of walkways and separation of roadway and pedestrian path.</li> <li>2. Increase the pedestrian access than roadway.</li> <li>3. separation of roadway and pedestrian path by the difference in level, landscaping , color, refuges and ...</li> <li>4. Redirecting</li> <li>5. Restricting access to certain areas.</li> <li>6. Split into semi-private space.</li> <li>7. Specifying the private roads through plants, paving, walls or fences.</li> <li>8 The space is so that entrants be directed to different spaces in terms of their relationships with family.</li> <li>10. Private and semi- private dead ends</li> <li>11. In the entrance of the complex, a visible map of directions and roads be located.</li> </ol>

## CONCLUSION

According to studies on human needs in Maslow's pyramid and human existence's triple construction, we could find a triple relationship between them. Then, the factors contributing to the satisfaction of the

residents of the residential buildings were determined which include personal, social, cultural and environmental factors. The environmental factor that is the subject of the research, contains three elements of the form or feature, function and meaning. Through a brief analyzing of micro- components of each of these factors, we could extract the following relation. In fact, using the physical parameters described in Table 1.. it is possible to reach the spatial hierarchy. As stated, the spatial hierarchy is the main strategy to provide privacy and social interaction among residents as well. Thus, it can be concluded that using the physical components of the residential complex, it is possible to meet the needs of human excellence and achieving high levels.

Figure (12): The relationship between general Mvzaat article



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