

A NOVEL APPROACH FOR OPEN SPACE DESIGN IN RESIDENTIAL COMPLEXES (WITH SPECIAL ATTENTION TO CHILDREN)¹

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ABSTRACT

One of the overwhelming and inevitable issues since human civilization has been housing. Due to growing urbanization in the world in recent decades, housing production pattern has changed and the need for mass housing, decreased the quality and utility of designs. Design of today's residential complexes due to lack of attention to human needs and to ignore its psychological consequences, residents personal and social life have encountered with some problems, including their social interactions. The main purpose of this research is a new method for open space design in residential complexes with special attention to children and the elderly and has been tried to attention a set of principles and criteria of social-public spaces design in a spatial format for people's psychological needs to make dialogue and interaction between people especially children and elderly with a sense of comfort to improve neighborly relations between residents in residential complexes. The research method is descriptive and analytical and information collected by library method as well. In this study, random sampling method is used given that the exact number of users of this space was not identified by age and sex. Therefore, the number of 69 questionnaires randomly filled by users of the space.

Keywords: Architectural, Residential Complexes, Outdoor space, Social Interaction, Sense of Belonging to a Place, Peace and Comfort

1. Introduction

One of the overwhelming and inevitable issues since human civilization has been housing and in terms of quality and quantity have passed an evolutionary path and as the original position of the family, has a great importance to survival of human and society. Housing issue among architecture subjects is the exact case that have the strongest links with the heritage and cultural-environmental features and have a particular importance. Unfortunately, due to increased physical attention, a lots of psychological needs of many human, like sense of security, privacy, interaction with each other etc. has been neglected which this threatens the security and the growth of social discontent.

Housing production pattern has changed and the need for mass housing, led to decrease in quality and utility of designs due to growing urbanization in the world in recent decades. Design of today's residential complexes faced with problems in resident's social and personal life due to lack of attention to human needs and to ignore the psychological consequences, including their social interactions. On the other hand, in contemporary societies, homes, schools and urban spaces for education and socialization of children are important social units but unfortunately, in today's modern cities with the passage of time, attention to such issues become less and less and despite significant technological advances of human

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society, social relations still moving social relations backward. Given that homes and residential environments are providing the suitable natural growth areas for children, residential outdoor spaces should meet the needs and activities of children with diverse needs and life styles.

Children's first experience public spaces in residential open spaces and start social interaction with peers and adults. With this assumption, social interactions in outdoor residential complexes, is the effective and efficient background in providing games and activities in line with the growth and development of children's personality and increase their abilities. In recent years a worrisome change in daily habits of children and also comfort of elderly has been seen. Children less participate in open and public spaces games and spend most of their time at home, extra-curricular classes and under the direct supervision of their parents.

In many cities interference commutes mounted and dismantled and safety, the environment makes it difficult for children to use independently. (Prezza et al. 2005, 438) have conducted studies about the children underrepresentation in residential and open spaces neighborhoods, but most studies have been done on this issue, were based on the social aspects of the child's absence in residential spaces and few studies have been made on the role of children in the understanding of space and environment conditions (Blinkert, 2004, 100).

These developments have brought up a new discussion titled "Modern Childhood" (Jones, 2002, 18). In recent years movements for attention to children comfort in situations of everyday life have been made which led to appearance of several theories to search for compatibility of living environment for the presence of children (Chawl & Heft, 2002, 202).

Rappaport, in a survey in 1977 on measuring social interactions in five local areas in Australia following eight elements identified and defined. "Participation in the local community, actively involved in the community, a sense of security and trust, neighborhood communication, friends and family association, acceptance and tolerance of differences, the value of life, a working relationship. "Among the items listed presumably, we can see how social relationships affect the architectural space. It may be thought that the people who live next door are able to communicate with each other but near place is only one of the fields of social interaction.

1-2. Questions and Hypotheses

- A) In what way the research can help to design spaces for social interaction?
- B) What places and spaces can be reinforcing a sense of connection between people?

Hypotheses

According to the collective interaction and dialogue can be assembled according to today's needs of space and increase the presence of people can be effective with identity and social interaction space as a public space at the service of the public can strengthen the role of the people in the group and their social role. Communal space and attention to the psychological needs of users can be together side by side in a parallel way to design and achieve the desired objectives and respond to them appropriately.

1-3. Research Objectives

- 1- A new method for the design of open spaces in residential complexes with special attention to children and the elderly, to discuss and interaction between people on the basis of past culture and to increase the sense of neighborly relations between residents of residential complexes.
- 2- Explore ways to reduce congestion and increase the sense of privacy of residents in residential complexes.

- 3- To explore ways to improve comfort and tend to the children and elderly in open spaces residential complexes.

Other Objectives:

- 1- Dialogue space in order to enhance the interaction and face-to-face communication on a small scale for resident complexes to enhance the communication and understanding between them.
- 2- Check and access to open spaces in residential design methods in order to increase the presence of neighbors in these spaces.

1-4. Research Method

In the first level of theoretical principles would be done based on the descriptive and analytical methods. The information is obtained from library method. In the second experimental studies (case studies) based on survey research and field studies are conducted.

In this study the principles received from field studies, observations and interviews with case studies have been analyzed and are used in the design process.

1-5. Literature

From about the 1970s in parts of the world the idea of returning to normal life and necessity of human social life grew over the past. Including action on this field was the creation of housing complexes as cohousing. Due to the term "cohousing" which made by the combination of two words home and social, the purpose of its creation was to encourage people to social life. In fact, the main objectives of this type of human social life are enhancing and providing coordination and subscription-based lifestyle experience for residents as well as democratic methods to achieve a high level of stability.

In this such series people are encouraged to live together and have a collective activity but residents control over individual life and personal thoughts on the best way to do so. So a balance is established between private and social life of human beings. After the formation of the idea, many studies to revive and strengthen social relationships humans have been conducted in various spheres which will mention some of them as follow.

Some of these studies include a study that was conducted in 1995 in America by Jack.el.nesar et al. They examined the various factors affecting social interactions in their residential neighborhood and have been accomplished through comparative tests between residential set designers. According to the results of questionnaires to the residents of multi-functional single set of performance as well as families with children than families without children were far more neighboring relationships. As well as apartments that have a green space and landscaping were significantly more social interaction between residents of the apartment without a yard was established. Min Lee of South Korea in 2006 in a study, examined the various children's spaces in residential complexes in a psychological perspective.

According to a report of 91 children live in a neighborhood in Seoul with high-rise apartments open spaces, including spaces of the game and park were most children's favorite spaces. Another study in 2006 by researchers from Taiwan took the name Haung which this study examines the relationship between the design area and the social interaction of residents of housing complexes have been paid. For this purpose, questionnaires were distributed among residents of three housing complexes. The results showed that the design of campus spaces, such as scenic green spaces, play spaces, greenery spaces and spaces which are perfect places to sit, can have a great impact on increasing social interactions. Due to population growth and density in the apartment of South Korea, Yenseuk Lee and colleagues in a study conducted in 2010 which by using some implementation in the design plan apartments can increase resident's public health. On the other hand, in recent years, a worrying change in daily habits of children observed. Children at play and free activities in open spaces and public spaces are participating less and most of its time at home, classes programs and spending under the direct supervision of parents. In many

cities, overlapping trips by horse malls and safety, independent use of children in difficult environments. Underrepresentation of children in the neighborhoods and residential spaces, studies have been conducted. Most studies done on this subject, based on the social aspect is the lack of involvement of children in residential spaces. And few studies on the role of children in changing perceptions of space and the environment has been done.

In recent years, movements for attention to comfort children in environments that have evolved to everyday life. The emergence of numerous theories to search for compatibility environment for the children's everyday life. Although a lot of discussion about children's living conditions are discussed critically important, but it seems that the main issue, suspension and detailed look at the concept of childhood and in new urban living conditions.

For conclusion, the simplest element of human life is social interaction. Social action is the range of desirable behaviors done by a human towards another to achieve a goal. People have an innate need to establish social relationships and therefore, they can provide opportunities so they can experience the social relationships. Social relationships occur with a variety of purposes. They are emotional which include relationships with friend, relatives and neighbours or rational in seeking to maximize the chances of individuals to reach the goal or they are based on social values which set attainable goals without paying attention to its costs or the traditions and customs (Table 1):

Researcher	Theory
Forgas (2000)	Architecture spaces can be an important component of human interaction with others. As organized, dynamic and talented creature, human is able to modify his behaviour in the face of the changes in the architectural space.
Altman (2003)	The amount of social interaction of people in different social position and even at different times of the day varies and changes occur to obtain the desired level of privacy.
Kasidi (7991)	If individuals are homogeneous in space, they are more likely to interact and heterogeneity decreases the possibility of communication.
Gans (7991)	A potential architectural space provides a wide range of opportunities to satisfy personal needs.
Abu-Ghazzehe (7999)	Multiple-family housing design method is effective on the way people interact. The more people are at a distance closer to each other, they are more likely to have social interaction.
Marcus (0222)	He investigated the aspects of people's vicinity as a means to increase social interactions in Denmark.
PPS (0272)	Social spaces are places that allow

	individuals to meet friends and acquaintances and attend group activities.
Habermas (2002)	Public sphere is a social sphere or realm in which issues of interest are discussed.
Arnedt (7991)	Public sphere is the main factor of being extrovert and in general and political life.
Zucker (1959)	A square is not merely a gathering place but it's a place to make people communicate.
Jacobs (7997)	Sidewalks are the places to enhance the security and social order.
Whyte (7912)	Emphasizes on the social role of urban spaces.
Gehl (7911)	Suggested three activity groups in urban areas: Necessary, Selective, Social.
Oldenberg (7919)	Emphasis on public areas of the city, as the third place.

Table (1): Design theories for social interactions

2- Principles and Theoretical Concepts

According to many researches we divided factors influencing social interaction in housing estates into two general areas of focus: social variables and physical elements of communal outdoor spaces:

Social Variables

Presence of children at home, owner-renter status, length of residence and annual income are relevant sociodemographic characteristics presumably associated with social interaction. Nevertheless, similarity is a precondition of the development of social ties. People are more likely to engage in interactions and develop friendships with homogeneous, like-minded others. (Haggerty, 1982).

Physical and Spatial Elements

The physical elements which may affect the patterns of social contact among neighbors include layout pattern, site plan, scale and proportion, land use mix and physical features:

Layout Pattern

Refers to the spatial arrangement of a neighborhood. The layout plan of housing estates can contribute to interact among residents within housing estates and turn the interaction into a social relationship. In 1960, Jacobs, drew attention on the arrangement of traditional neighborhoods that can enhance social life, she asserted that physical features such as sidewalks afford social activities. (Jacobs, 1961). (Gehl,1986) found that 'long duration activities' in a residential street occurred in semiprivate zones, what he called soft edges (e.g. front gardens).

This point of view is supported by Newman's "defensible theory". (Newman, 1972) According to this theory, territoriality is a critical mechanism for creating a cohesive residential environment, making it well contained and easier to monitor and control.

More intimate scale stimulates people more for spontaneous activities, neighboring can be engendered by having small-scale, well-defined neighborhood with clear boundary. In order to avoid "confused spaces"

around the blocs in which it was unclear what the land was used for and who policed it, Newman proposed two critical components:

- Territorial definition of the physical environment: by subdividing the residential environments into zones toward which adjacent residents can easily adopt proprietary attitudes.
- Territorial markings and signage: zones of control can be created through the use of physical or symbolic barriers that disrupt movement between public and private spaces.

Newman proposed many design guidelines that have been incorporated to residential environments for enhancement of social interaction while providing security. (Newman, 1996).

Mixed Land Uses

Jacobs was the first one who articulated the relationship between mixed land uses, social interaction and sense of community. She argued that public housing complexes destroyed the traditional mixed-use communities that produce a vibrant street life. (Choay, 1965)

When place of residence is juxtaposed with places to shop or recreate, social interaction is encouraged since people tend to walk more. The mixture of residential and commercial land uses increases opportunities for "chance encounters". When there is nothing to do there a space will be empty and unused.

Physical Features

A high quality of outdoor space can enhance social interaction, it invites people to come and stay for some time.

The more time people spent outdoors, the more activities may be grown. (Knack, 2000). Visual appearance of common outdoor spaces is important for neighborhood relations (Skjaeveland et al, 1997).

Physical features have been identified as efficient design elements in outdoor spaces for encouraging social contacts. They can attract people to stay in the places and stimulate their conversation. The existence of interesting objects or events: water features, appropriately arranged seats encourages peoples' use of public space.

The provision of greenery in residential communities increases the opportunity for social activity and enhances the social bonding among the residents (Shu-Chun Lucy Huang, 2006) In addition, playgrounds containing recreational facilities, especially those attractive to children, is more likely to make their custodians interact. (Lau, 1997).

3- Methodology

Categories fundamental factors affecting the physical design of housing complexes, three distinct major scale are:

First scale: external link residential complex with adjacent environments.

The second scale relationships and communication within the set out of the housing units are included.

Third scale: the inner spaces of residential units and coordinate their relations with the culture and tradition of residence and consider them.

Since the focus of this study is on the outdoor unit residential complexes, so the second scale means "relationships Communication within the set and out of the housing units "is intended to design the scale. These issues are Included the following:

Privacy and social interaction in housing design, privacy and social interaction, the concept of mutual by the focus is too much on privacy can lead to isolation and engagement beyond the control of exposure would be the loss of private life. The study shows the relationship between man and environment that more privacy and feel more human control over the private lives of discretion in the treatment of social interaction can be achieved. The scale sets, how to control the privacy of life, providing a defined hierarchy of spaces open to the public, semi-public, semi-private and private. This hierarchy, which prevents unwanted harassment through the spaces between residential units and common spaces provides

access. The more given control to the private sphere to the other, is more likely to achieve optimal privacy. Security: psychological sense of security in residential environments must be recognized in every culture study. They are influenced by a number of factors such as socio-cultural features make it simple, the physical access to potential intruders, definition and control of the airspace and territory housing, access routes and other places of care through which there is the possibility of interruptions. While the role of physical design on the reform of social issues should not be overstated, Design and management and community participation to protect the security environment in residential care and gives it more success. The definition and scope of privacy is one of the most important points of total residential ways to secure a crucial role to play. Controlled territory, taking space through a particular area is defined as the private domain Housing is usually defined and controlled and maintained it is usually desirable, semi-private territory more often vague and poorly controlled and maintained. Activities: ongoing activities in residential open spaces in three groups of activities, selection and classification are social. Studies have shown that levels of essential activities, the quality of physical space to hold relatively steady. Reforms in the environment lead to a dramatic increase in the levels of activity of choice and this in turn will lead to evidence of association between individuals more.

3-1. Population and Sampling

One of the most important parts of any scientific research, sample selection. For the sample represents the population, it is necessary to select the appropriate method of sampling and sample size. Generally, random and non-random sampling done by two methods. According to the definition, a statistical population consists of a set of units that have at least one common trait. (Sarmad et al., 7336, p.) The population of the community of 333 people from households in Tehran a few examples of residential complexes that are randomly selected. Sampling Methods: In this study, given that the exact number of people using the space was not identified by age and sex of the random sampling method is used. Therefore, the number of 69 questionnaires randomly by users of the space is filled. Descriptive analysis includes a set of methods that aim to describe the conditions or phenomena is investigated. Descriptive research can be simply for the recognition or enforcement of existing conditions is to help the decision-making process. Descriptive research is both practical and fundamental aspects. In the application of the results in decision-making and planning on the foundation or basis to prove the facts and realities of the world's creation.

4- The Design of Open Spaces in Residential Complexes

Since many people crowded cities like Tehran, have lived in residential towers, one of them survey the methods proper, positive and negative points of shortcomings and existing buildings as well as preferences for a better life and greater prosperity need. For this reason, the questionnaire was designed in part to the number of towers in Tehran residents went and their views about various issues that may affect social relationships they asked. The results of their place of residence to show their satisfaction spaces and helps us to understand what areas need more in this respect are valued. First results of the overall survey of residents in connection with factors affecting social relations show in graph form. Factors such as satisfaction rates they dedicated to outdoor spaces in the courtyard, green space, public space and cultural, sports area, space for children and the elderly will be considered in this section.

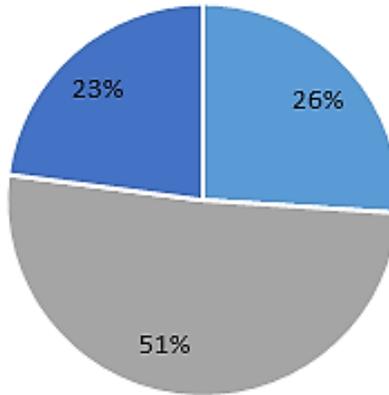


Chart 1: Outdoor consent of the residents of the area, source: author

As seen in the graph, satisfaction of residents from the area of open spaces in the area tends more towards low, because 51% of the sample believe that this space is low, 26% to 63% too low and medium voted. This suggests that more than half of the people who use many of the open spaces are not satisfied with it. In fact, according to the survey, a lot of open spaces in the area, such as walking, talking to neighbors, children's games etc. And devoted little space to it, lands in need of daily living people in residential towers is in trouble and the lack of available spaces is causing their satisfaction is to spend time and money to the city's parks and remote areas have to be resolved to their needs and family. As a result of these activities, as well as social interaction between neighbors living in the towers eclipse occurs and the surface becomes gradually less.

Natural green spaces are spaces which, according to most people, there are different uses in them. Leisure activities such as the elderly, family friendly games, jogging and exercise, enjoyment and practice of increasing the level of social interaction ... all the people in the towers and apartment buildings Unfortunately, according to residents of the green spaces, the spaces of children and the elderly are limited to the area towers creating interactions neighborhood, this additional layers of security responses green spaces to improve the aesthetics are set. So given the green spaces inside and outside the residential tower issue that have to be addressed in the design.

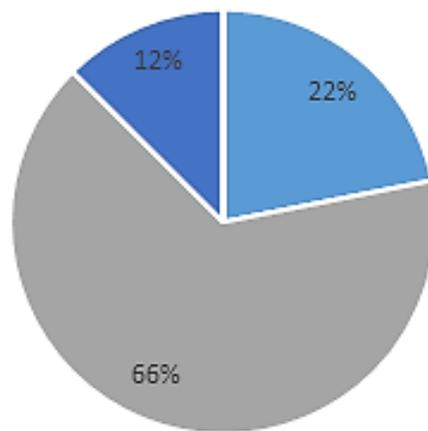


Chart 2: Satisfaction of the inhabitants of the amount of green space, Source: Author

Other space that is needed in any complexes are sports spaces, This places a great addition to the effects of the health of people in their neighborhood are caused by interactions and friendly relations exercise different groups of friends and community factors that cause have been seen in the graph, A relative

satisfaction about sports spaces. In fact, according to residents and sports spaces have been partly due and it eliminates the major part of the needs of but there are more and more diverse people are more facilities and spaces to encourage physical activity and presence in such places. The spatial variation, allocate space for various sports such as swimming, basketball, volleyball, fitness clubs, skating and so on. According to the views of residents, allowing various user tastes different sports coverage and all members can easily use the sports facilities of the tower.

Moreover, when most of the inhabitants of a series of sports activities and sports spaces in its turn, the possibility of the formation of social interactions in such places is increased manifold. Public spaces are said to spaces in which collective action takes place.

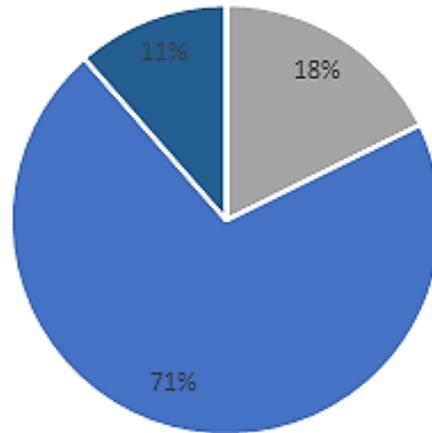


Chart 3: Residents satisfaction of the sports spaces, Source: Author

Spaces such as lobbies in different classes, restaurants, amphitheatres etc. that in the space of social and cultural activities will take place. Satisfaction of residents of public spaces. According to survey they mean more public spaces, lobby furniture collection that has a relatively good facilities, provides the possibility of social relationships and leisure.

But other areas such as the amphitheater below the set design, especially in Iran are concerned. Spaces such as bars and restaurants are also effective in increasing the level of social relations and should be considered in the design of housing complexes.

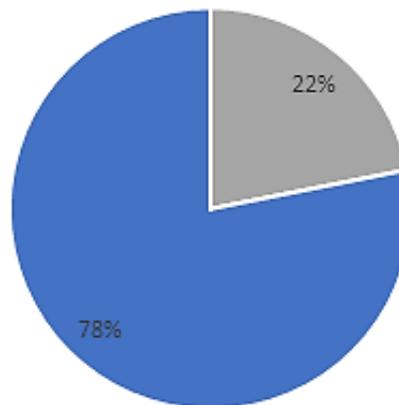


Chart 4: Residents satisfaction of the public spaces. Source: Author

There is another space that it is important for residential spaces, play areas for children, because a space in which children are playing and milling should have adequate security and environmental separate children's noise nuisance to residents is not residential tower. For this reason and because of the presence of children in all residential areas, something else about which to survey the satisfaction of the inhabitants of the games areas discussed for children. Unfortunately, the sample is considered a separate space for children's games and entertainment is not intended, children may be playing anywhere tower enclosure and noise and this addition may be dangerous for other people is disturbing. As a result of these activities, as well as social interaction between neighbors living in the towers eclipse occurs and the surface becomes gradually less. Some residents were upset about this topic that children in the lobby and hallways spend time to play, and this for pedestrians and especially in periods of quiet is problematic.

It should also be noted that the embedded spaces for children to play, in addition to the possibility of establishing social relations among them increases, the social relationships between the parents and families through them. That is why there is such an atmosphere can be designers placed on the agenda and to increase the level of social relations in the residential complex to be effective. Because elderly activity and have no preoccupation, often faced with the problem of leisure, as a result, residential towers consideration for them is very useful spaces and cause social interactions with each other and in their leisure time. Given the large spaces that are not crowded and the possibility of activities such as playing chess, reading newspapers and books, etc. is provided. But according to residents, such spaces have been introduced in series and the elderly, along with other ongoing activities in the area to relax or walk on. Due to the presence or absence of said spaces, the consent of the residents of housing complexes studied leads the components in the following table have been studied.

Poll component	Satisfaction Percent	Poll component	Satisfaction Percent
Neighborhoodly relations	35%	leisure time	17%
Nuisance neighbors	26%	Unity and group	26%
Meetings and conferences	42%	Sports & Entertainment	56%
The aesthetics	25%	Social interactions	42%
Privacy	78%	Overall satisfaction	47%

Table 2: The satisfaction of residents of the components related to the social spaces required, source: author

Architectural spaces	residents pros and cons Comments	A significant aspect of design
Open Spaces	The open space is small compared to the number of units Different paths for different activities undefined Semi-open spaces inside the tower is not installed.	Open and semi-open spaces designed to size They are of sufficient scope for various activities.

Green Spaces	Green spaces are available but not enough Green space planning has been done for different applications	Green space planning and flexible to use Create the aesthetics public good
Sports spaces	Designed for sports activities tend to be more space allocated among the inhabitants of these areas is observed.	Devoted more space to exercise and separating them in the design collection
Public Spaces	Lobby for public use with furniture for sitting. Spaces not designed for events and meetings.	Design Towers lobby and repeat it in classes and space for events and meetings
Children's play area	Space for children to play in the categories not considered. Children everywhere are games that may not be safe Children's noise and nuisance to the neighbors.	Space for the interior and exterior design and design kindergarten that periods of special needs residents to solve.
Elderly space	There are spaces for leisure seniors. Designed to meet the needs of the elderly have been neglected.	Space is designed for the elderly and the possibility of interaction with the security of their leisure time to be realized.

Table 4: The results of surveys of spaces and impressive set design, source: author

5- Conclusions

As noted, these housing complexes have considerable appeal because the balance due established between privacy and community residents themselves, each family in addition to his personal life, private life their homes or participate in social activities in public space is set.

Also according to the design of gardens, spaces and courtyards that early in providing conditions that all work together and play and all together, sharing emotions and feelings, a sense of social responsibility as well as voluntary cooperation and promote people found ultimately, leads to isolation and loneliness in a modern city.

The idea of a public house, designed and built various spaces and group communal spaces for children, sports spaces, places for creating neighborhood centers, commercial spaces, library and other spaces which were required for a citizens residing in the series provides well-being, Increased level of social interactions among them, and each of these spaces play a major role in their social relationships between people.

Notable cases in which the residential complex is summarized as follows:

- Create green ecosystem and ability to perform activities such as planting trees and vegetables and other products in the green areas by residents

- Optimized design of paths for pedestrians and prevent the entry for security
- Create a public house that actually is a place for all kinds of gatherings and meetings.
- Access to commercial facilities near the site of collection, treatment, education and so on.
- Create a play space for children and the possibility of sharing these spaces, with the elderly being adapted for security and moral qualities of the two ages.

Principles and criteria adapted from the samples according to the characteristics of this Research topic

In the previous section to review and analyze examples of collections and foreign residential towers to addition to the information discussed efforts to establish social relations in other communities, they can be useful to design a residential tower with social interaction approach to achieve. Important points of view of different design each of the sets available which may be used in the design of their kind. In this section together, these tips and put them together, to discuss mining issues in connection with the project approach and can be useful to draw conclusions and optimized design. In the studied samples of common items that may have different views, have a different design, but uses a similar principle to include all of them ultimately contribute to social relationships.

Addressing issues such as green spaces, in which a series inviting residents and defining activities such as gardening helps to establish social interactions and elsewhere combined with other public performance, possibility of using it as recreation or entertainment the game provides a place where she is walking through the formation of social and neighborly relations. There are other spaces that have emerged in all categories in different forms and helps to create social relations, public spaces where the definition of a public house, trying to hold rallies and meetings in the series elsewhere in the gallery, cinema and conference hall and helped to gather people living in the complex social relationships to pave.

Children are other causes of relationships between families. The reason for their spaces in residential complexes makes in addition to creating their relationships, families find a way to establish neighborly relations among each other. According to a number of other factors that can be considered in the design of residential towers by including them in the planning and pre-design can be used to achieve a more complete systematic step toward establishing social interactions. Because the experience in similar cases right conclusions from best practices and principles.

collection	Principles of interest	Principles adopted in the design
Hybrid Link residential towers	<ul style="list-style-type: none"> - Become a city within the city with the creation of the necessary facilities and spaces. - Design of different stores to meet business needs - Landscaping and creating open spaces and green spaces at different levels for different applications - Creation of green roof garden for use by residents of each tower and create the aesthetics right -Combining public performance in the courtyard with green space - Designing different sports such as swimming pools and ... - The design of public spaces such as cafes, galleries, cinemas - Design kindergartens and play areas for children - Designed and built the bridge height set at different levels and different elements to create diversity in the area 	<ul style="list-style-type: none"> - The design of various commercial and cultural spaces in the essential requirements set - Landscaping and ample green spaces - Create diversity and flexibility in site - Designed public spaces with different functions - Design kindergartens and children's play space
Earth Song Residential Complex	<ul style="list-style-type: none"> - Establishing a green ecosystem and ability to perform activities such as planting trees and vegetables and other products in the green areas by residents - Designed to prevent the flow paths for pedestrians and vehicles for security - Design a network of footpaths to connect homes and also for dialogue and interaction neighborhood - Creating a public house and a place for all kinds of gatherings are - More accessible to commercial facilities collection, treatment, education - Creating space for children and the possibility to share this space with the elderly 	<ul style="list-style-type: none"> - Landscape designer and flexible enough to create a variety of activities - Pay attention to landscaping and pedestrian priority in its use - The design of public spaces for social interaction - Pay attention to children and their play spaces required

Table 5: The principles are derived from samples for use in design Source: author

Acknowledgment

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