

Designing a Cutting-Edge Residential Building for Low-Income People in Iran

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Available online at: www.isca.in, www.isca.me

Received 29th December 2013, revised 2nd March 2014, accepted 5th May 2014

Abstract

Expansion of apartment living and collective settlements has been considerable in recent decades in different cities of Iran. In urban development, with the increase of land price and particular problems, living at the floors is inevitable. It will bring many problems such as weakening of social interactions in the cities. In addition to these problems, designing these apartments would be so hard especially when talking about low-income settlements. Because we should decrease the cost of construction and design these apartments in such way to appropriating the fee for this people in the future. In this paper, the current status of the collective settlements in Kashan and social aspects of sustainable development will be studied. Accordingly, efforts to enhance the community's health, based on the two general ideas: At first, raising the possibility of social interaction between residents and at the second increase residents' opportunities for social relationships at higher levels. The development and implementation of both these ideas, certain provisions in residential building plans is required. Among them, the increase in public spaces in the floor plan and create spaces for social interaction as possible. It should be noted that it is differ from privatization. This research is trying to find ways to improve the design of apartments considering public health in Kashan. This paper focuses on the social aspects of sustainable development of settlements in Kashan. For this purpose Iran is investigated first, and then Kashan and then tells the nature of housing in this country. All these factors led us to design a residential complex for these people. For a more accurate evaluation this sample - Kashan - has been investigated and interpreted in different aspects of economic, cultural, historical, geographical and religious. This project is designed for low-income people. Therefore; we must bring down the costs for construction projects and designed in such way to appropriate for these people in terms of cost in the future. For the low cost in future some cases should be considered.

Keywords: Residential, low-income building, urbanization, public health, sustainable development.

Introduction

It seems that the traditional houses in the types of architectural spaces, most affected from environmental factors, climate, materials, and cultural and behavioral patterns. Thus, in each of the climatic zones of Iran, according to environmental and climate conditions, certain types of residential architecture formed that was different from the house in other climates¹. Since the first decade of the last century, the development of the city and architecture influenced by external factors, took on a new face gradually². Development of cities in suburban areas based on from foreign models and regardless of local contexts have some specific problems in the form of endogenous development issues³. Similarly, low-cost apartments and communal settlements with foreign models without adaptation to climate and local cultural and behavioral patterns were formed in Iranian architecture. Due to face with rising costs and facilitate access to urban land, it can be said that is not an escape from life in a city apartment and housing complexes. But providing comfort conditions in various aspects of social, environmental and economic in design and construction of buildings is necessary⁴. The lack of attention to these issues in

Iran's current building is clearly visible. Among them can mention to issues such as lack of attention to climate and environmental issues (eg impact on urban heat islands and climate imbalance and subsequent overuse of energy to provide thermal comfort conditions within the building), inattention to cultural issues (such as transfer thin walls and no sound proofing between units apartment), consider the lack of social and psychological aspects (such as identity, sense of neighborhood and community in the heart of residential satisfaction depends on location). One of the causes of social problems in the design of the apartments is the lack of attention to the needs of the people who will live there in the future. Attention to social aspects apartment, needs to consider the impact of residence and their communication with physical environment and social and economic attributes⁵. For a sustainable community, providing improved housing for all Social classes with different income levels is essential: the settlements that are not only affordable housing to meet the needs of today and are the key to success in the future in the larger scales. This paper focuses on social issues and social aspects of sustainable development in the form of apartments. It seems that quality of life in a sustainable society is recognizable

through consistent design, living environment and relations with those neighbors. Therefore, considering the wishes of the local community in the design and construction of settlements is essential, provided they have sufficient knowledge to identify and recognize their optimal conditions. Finally, try to provide good quality social housing and apartment complexes are. To achieve this, the general factors affecting housing utility such as the climate, comfort, safety, beauty, adapting to new technology and psychological and cultural adaptation are examined. As mentioned, culture is one of the most important issues in the design of houses. The house that does not conform to the culture and the way people lived in its spatial classification is not suitable house for its residents⁶. After a period of time some of these residents do some changes in the indoor plan of their homes according to their needs⁷.

Literature of Research: Desert cities in the desert regions of Iran always faced constant problems like extreme summer heat, extreme winter cold, high daily and annual temperature, extreme weather drought, cold winter winds and dust and scorching heat in the summer⁸. Human settlement in such situations is a difficult problem, however, we see that more than a thousand

years, people have continued to live and solve their own problems. Smart people in the desert adhere some principles in making their residential environment that not only conquered to unfavorable climatic conditions but provide a suitable environment. It is necessary to consider these principles as a basis for designing. The basic principles of the design are done as follows⁹:

Suitable direction for south and southwest winds is intended. Most openness and pathways have been observing the proper order in designs. The spaces are designed congested due to prevent heat and cold penetration in summer and winter and not entering unfavorable winds into the collection¹⁰.

Pruitt-igoe Project: The idea of defensible space was formed around 30 years ago when witnessing the gradual destruction of a new 2740 Units public housing shown in Fig.1. Project was designed by one of the greatest architects and was considered a symbol of modernism; its design would follow the Principles of International Congress of Modern Architecture. These complexes were not high density (50 units per acre), and residents had lived in the buildings of 11 floors figure-2¹¹.



Figure-1
Distortion of Pruitt-igoe Project



Figure-2
Pruitt-igoe Project

The main idea was to keep the ground and first floors remain open for social activities. In each three floor the building has a common room, laundry and a room for garbage collection (including shooting). In these integrated, poor and single-headed households families were settled and this was turned into a disaster. Because of all project lands were public and Because of their separation from units, residents in these areas were not detectable and unsafe spaces formed. The ground floor that was intended for social activities and the pleasant atmosphere created by beautiful trees immediately became a trash full of glass and bin. Drops on the ground floor were destroyed and hallways, lobbies, elevators and stairs were converted to unsafe spaces for travel. In addition, their walls are covered with writings of coal and human waste. Interestingly, these buildings were never being more than 60% of full capacity and finally, 10 years after the building were destroyed¹².

In contrast, a complex called Kara Secober Village consisting of row house, which was smaller and older with more identity residents, was across the street. This complex was completely filled and in all the construction, operation and demolition of project in across the street will continue to work with no problem. It was here that the question arose in the minds of certain physical differences between these two projects, what would be survivability, but it is the destruction of another¹³.

The apartments interior spaces also were clean and tidy without have expensive furniture. In response to the question that, what is the difference between the interiors of the apartments and common spaces can safely say that residents protect and control, which spaces that is clearly defined that belongs to them. The common landing between the two units is well-kept, while the corridor between twenty family member or lobby and elevators that shared by 150 families have many problems because these spaces have not induced the sense of having a certain identity to human. In such nameless spaces, even the residents are unable to define the limits of accepted behavior. In these spaces, the feeling of ownership and also recognizing the residents from annoying people is impossible.

Many of our have seen high-rise buildings where people in the middle class live there and are managed well. However, why these buildings cannot be held accountable for low-income families?

High-rise apartments for people with modest incomes continue to work properly due to the concierge, elevator operators, cleaners and maid and maintenance of public spaces. But high-rise complexes with low-income residents rarely have sufficient funding to provide 5 to 9 people and even make impossible the residents consistency in the definition of good behavior and agreed range. Residents Afford, will suffice only one of these options (protection of personnel, cleaners or elevator operator). Unfortunately, that is exactly why most crime of low-income residents of public housing occurs in this species of indoor and outdoor¹⁴.

Habitat Residential in Montreal, Canada: In 1967 in habitat the Canadian architect Moshe Safdy, design and construct a residential in terms of form and volume based on a combination of experimental and unexpected strange of concrete modular units, for the World Expo in Montreal. Safdy in this collection that was called Habitat 67, tried to achieve redefining the urban environment, low-cost residential complexes, and autonomous and manifestations trucks creating, including educational and commercial units. All units are based on robust prefabricated parts were made at that place. Each of them would benefit from the rooftop garden, which was actually the roof of their downstream components.

Unfortunately, despite of Safdy's predictions, Habitat 67 was not optimal in cost by no means. But ultimately, the project is yet one of best example of the progenitors of the large scale and Safdy's industrial construction model remains one of the best and most characteristic examples for all those who have tried on a large scale to their ideal¹⁴.

Research ideas

Designed in such a way that, while responding to housing needs, be responsive to revive the old neighborhoods. In this context, the following is considered: i. Horse and foot conditional access to the block and set, ii. According to the principle of building, materials and forms, fill and blank space, dimension for pathways towards climate issues

To start the design, it is need to identify individuals who were supposed to have lived in these units and knowing and studying the needs, wants, interests of them. For this reason, we have prepared a questionnaire to use it to help us to achieve these goals and seeing those who was the applicants of these units reaches the knowledge about their status and lifestyle.

The project is designed for low-income people, so we should be possible to lower the construction projects costs and designed in a way that is suitable in terms of cost in the future both for these classes of people. For the future low cost to residents, some items should be considered: For example, these groups have not the ability of such payments like janitor and cleaner for cleaning the premises and the input units and hallways and stairs. Also, because these houses are apartments and as many people are traveling in this area the security of the block is very important but residents will not be able to pay for the Guardian. Given that privatization creates a sense of ownership and leads to the responsibility therefore the residents are self responsible of their duty and clean up and beautify of the entrance to the apartments shown figure-3.

In addition the specific inputs are designed for the multi-unit separately, which makes more sense of ownership. This greatly reduces the need for janitors and cleaners. The next option was security, which it has been tried to design stairs as transparent shown in figure-4. There are balconies and windows that find

the open field and are toward the stairs and entrance of block, it



Figure-3
Privatization of designing

causing residents to be more secure which shown in figure-5. In this case the kids playing in the yard with indirect parental monitoring. Car park is also doing more comfortable due to good view of the unit. Spending on construction of project, some design issues should be considered. But given that many groups with different tastes, use these units, try to blocks have itself great variety in size, plan and design of units.

Another problem is the impossibility or difficulty of keeping pets in apartments and suites along with a decrease or cessation of direct contact with residents of SPAD nature, and direct communication of the residents with green spaces is reduced or cut off. It appears that this kind of living in apartments intersects relation of persons with nature or grossly reduces it. That being said, it also leaves a great impact on the psyche of people. The solutions are assigning to each housing unit separate garden and terrace, even in floors shown in figure-6.



Figure-4
Example of stairs designing



Figure-5
A secure model designing



Figure-6
Proposed designing example

Table-1
Proposed plan characteristics

The ideas used in the design plan	Plan components	Spatial domains
Variation in the design of the units will allow people to choose the best plan for their lifestyle	Residential Units	Private domain
Considering the window for residential unit to Floors Hallway, allowing communication between residents without having to leave their units	Floors Hallway	-
Considering the benches and green space for floors hall access, will provide allowing relaxation and social interaction between residents of the apartments	Floors Hall Access	Semi private-Semi public domain
Installation of safety boxes for fast delivery and waste separation bins also provided space for the residents of the building to relax and connect with their neighbors	Entrance hall on the ground floor of apartment building	-
Given an empty and flexibility space in the overall scheme of the apartment building offers a space to form based on the future needs and the community of residents	Apartment building	Connector space or community

The main emphasis of community facilities is on strengthening the sense of belonging and neighborhood in residents to create a social network and hence will be seen in the common areas of apartment more than houses. In addition, the proposal to consider a flexible space in the building with the aim of strengthening their community with social interaction of residents of complex based on their needs have been proposed.

As is described in the Table.1; about the range of private spaces, there are a diversity of housing units in the plans that has been suggested with the aim that people with a wide choice can select the best plan for their lifestyle. Hence, they are not forced to adapt their living conditions with the plan of their housing units and will choose the best option. As a result the feelings of social exclusion are taken away from them and they feel that their community is respected to them.

Conclusion

In this paper studying of planning and architectural design of residential complexes, has been developed with the aim to increase social interaction among residents, as a research method, the study is based on qualitative research with the approach of background theories was applied and then it's studied and evaluated practically in the design of residential complexes. In this paper some approaches was presented to development plans of collectively residential buildings, to promote public health by different ways of life, towards improving the quality of life of residents and linking their community. In particular, the plan of housing units were considered as private spaces and corridors, halls, lobby entrance and shared access spaces of each floor, was defined as semi-private and semi-public spaces (middle area). For privacy, the proposal was based on diversity of housing unit's plans. It seems that by this method, depending on individual lifestyles, different

options for appropriate housing units can place in front of them. That would result in preventing the creation of a sense of social exclusion and instead will create in them a sense of social Individuating. For semi private - semi public spaces with respect to privacy of each unit, defined specific entrance was designed for each unit. Given that privatization creates a sense of ownership and leads to the responsibility therefore the residents are self responsible of their duty and clean up and beautify of the entrance to the apartments. This has a significant impact on social health. In addition the specific inputs are designed for the multi-unit separately, which makes more sense of ownership. This greatly reduces the need for janitors and cleaners. It leaves a great impact on the psyche of people. For security it has been tried to design stairs as transparent. There are balconies and windows that find the open field and are toward the stairs and entrance of block, it causing residents to be more secure. The purpose of this paper is how to design the reach best live quality with respect of social aspects. It seems that making good quality housing for its residents, it is more important than how to design the building to achieve more profitable for the investors. This study is performed to overcome the feelings of social exclusion, which is clearly visible in apartment living in Iran. It has been attempted in order to propose solutions in the architectural settlements to cause social cohesion and social health. Eventually, we can say that the promotion of social health and with respect to social aspects of sustainable development can towards achieving sustainable urban development in Iran.

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