

The Analysis of Construction of Contemporary Houses in Sirjan

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Abstract: A house can't fulfill the ideal needs of its settlers unless it can provide the first and primary needs of them. Thus in this paper we are going to analyze the construction of contemporary houses in Sirjan and determine the amount of sensibility and acceptability of the present constructions. In this respect researcher tried to find a general understanding of cultural, social, and economical elements in Sirjan that directly and indirectly influence the design of the house, and then researcher carried on some descriptive and analytical searches and found the pattern of changing the construction and the way of rebuilding the contemporary houses in Sirjan. Finally researcher simplified the common construction and Clite Plan of the city and compared them with good and suitable houses to have better efficiency. The result of this study finally will give the architects a general framework diagram that is based on the values of a good and standard place, this is done by verifying the construction and skeleton of recent houses in Sirjan either by comparing with old and figurative patterns and following a logical way or by having an appropriate structure that is based on modern needs. Of course more effort is needed to determine the other criteria of housing in Sirjan to add good information to present findings.

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Key words: Sirjan, The Pattern of Construction, The Way of Changing Recent Houses, The Construction of Contemporary Houses, The Appropriate Patterns.

Introduction

Iran's traditional architecture specially in designing houses always had a logical trend and with a gradual and contiguous procedure adapted itself with new conditions and new needs. But in special period of time suddenly the logical and contiguous patterns of houses transformed completely and new designs and new houses appeared because designs should have been sensible and houses should have been economical and bureaucratic (Fazeli, 1989).

This new evolution continued up to present with some slight changes and we can get this general and common structure by simplifying the structure of the present houses in Sirjan. Now this question can be raised that if this present structure connected to the imaginary experiences and needs of people in Sirjan or it is just an imposed pattern that has been imported to the city. Therefore in this study we tried to analyze the present structure based on its connection to the past and also based on the extent that it is favorable, so that we can show the efficiency of it.

Regarding its connection to past we should analyze the patterns of construction and the way that housing took to achieve the present structure, because in case existing a connection between the new and old patterns, it can be a claim to accept the new patterns. Regarding the amount in which a new house is favorable, we compare it with the simplified,

suitable houses and cultural, social and economical features and in case of any conformity; there will be great emphasis on acceptance of the new designs that are based on people's needs.

Objective of the study

This study tries to form the mind of people and architects and make an imaginary procedure to simplify the design through the analysis and identifying contemporary houses in Sirjan.

Method of the study

The research method in this study is descriptive and analytical, though in this respect there is more emphasis on the analytical part due to lack of written theoretical elements. Library based findings also shape the base information.

Background of the Study

The issue of house and Iranian traditional houses always took the attention of experts due to its importance and lots of effort has been done in this respect such as books of Gholam Hossein Me'marian, Pirnia (passed). But most of the written works were about the type of traditional houses and sometimes they compare the house with new conditions and they less tried to compare the situation in past and present at the same time. Although there have been no study about special case in analyzing Sirjan's houses to find a connection between the structure of new and old

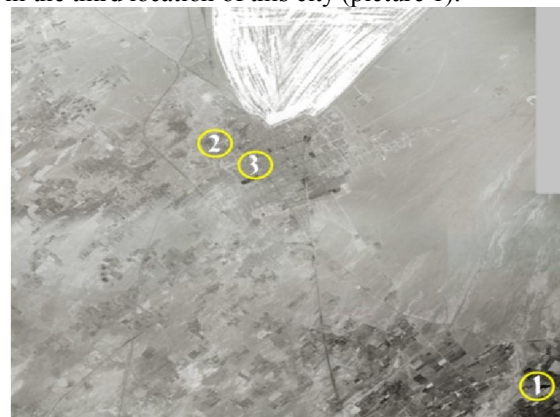
houses and evaluating the degree of their favorable standards.

Sirjan in short look

The existence and destruction of civilizations and their impact and mental recognition have always been the greatest teacher for human during history, so that if scientists leave the heritage of their people from past. They condemned to be stopped in time. Thus at first it is crucial to introduce Sirjan as a city with great history in Iran. Sirjan is an old city in the history of Iran, the name of this city in past was Sirgan and Shahrigan. Name of this city before Islam has been in Geographic maps until second half of 4th century has been the center of Kerman province in 7th and 8th centuries, especially in the time Teymourian and Deylamian dynasty. It had a great condition and they called Sirjan, Darolzarb. Saffarian and Alebouyeh tried a lot to flourish the city and made a lot of water wells. In Hakhamaneshi period it was called Shahrigan. In the time of Sasani this city was called Sirgan or Sirkan (since it had lots of wells and mineral material). When Muslims attacked, this name was arabicized and changed to Sirjan (Vosougi 2001, p.15). Of course some think the root; Kaan is related to celebration and believe that Sirjan was a place for holding big celebrations because it had a lot of temples and the term Sirkan was formed based on this (Bakhtiar, 2008, p.11).

When the old city of Sirjan in stone fortress (Galee' Sang) in 796, lunar year (e.i. 773, solar year) was completely destroyed by Idko, the commander of Teymour the settlers of this city transferred the remain to a place named Bghbamid, and this city was set on the ruins of this place. After some time, Mohammad Afghan invaded this city and destroyed it. Since then they expanded and settled people in different places and till a long time people lived in the villages around city, the Mirza Saeed Kalantar in the south of Baghbamid made a village named Saeed

Abad, and this site is place of Sirjan now and in fact in the third location of this city (picture 1).



Picture 1: Sirjan Displacement on Aerial Photograph 1993 (Reference: National Cartographic)

1. The old city (Galee Sang) had been before Islam until Teymour Lang attacked Iran (796 lunar year).
2. The Middle city (Bghbamid) existed after Teymour's attack until Afghani invaded it. (1135 solar year).
3. The present city (Saied Abad) had been from 1210 until 1211 and still exists.

Identifying cultural, social, and economical characteristics of Sirjanian people

In summary and based on the history of Sirjan, the geographical features and common characteristics of city (Table 1) about social, cultural features we can say that Sirjanian people are: patient, have endurance and stoicism, these people also have low expectations, and tend not to harm others (feature of people live in desert), they are hospitable and welcoming, warm-blooded and also generous. We can say that since in this place there lots of water wells, people live more comfortably. Apart from this feature, Sirjan is a city with lots of immigrants and also there is high flow of cash in here, so there is less cultural prejudice.

Table 1: Grouping Of Important Factor in Formation and Development of Sirjan

Important source of economic life	Major ways of city communication
GolGohar Mine- Pistachio Plantations Farm-Tangouiyeh- Military- Special Economic Zone- Higher Education	Toward Yazd, Bandar-E Abbas, Baft, Kerman

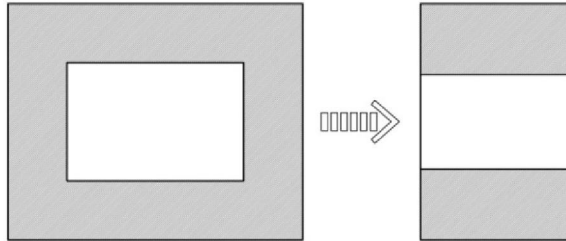
In addition to above features, there are some other reasons that made this city progress, some of these factors included: 1. Special military condition, religious and strategic reasons. 2. The suitable climate and closeness to Bandar Abbas (Sirjan is like a basement for the south port). 3. The vast plain, sufficient water, wells, good soil for farming. These reasons show the high rate of immigration and cash flow in this city and it all can be a good reason for

having new designs of housing. Now the question that can be raised is that if the new pattern of architecture is based on old designs. To answer this question, first we should analyze the pattern and way of changing old designs.

Changing the designs of architecture in Sirjan's houses

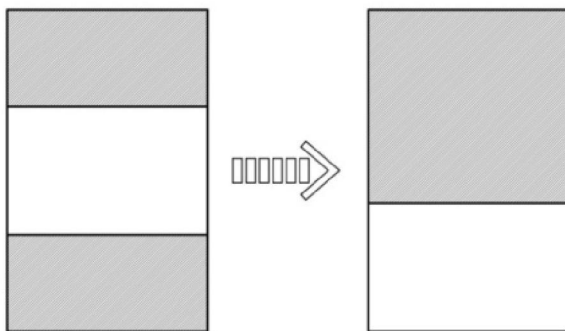
The style of traditional housing in Iranian cities like Sirjan is in a way that have yard in the

center. This style conceptually and functionally and based on climatic factors could fulfill people's needs. But this style little by little changed because families became smaller and then expanded houses changed to centralized housing, also people had smaller land for constructing and they used unsuitable lighting in the east and west angles, so this form changed to mutual linear style (picture 2).



Picture 2: Changing the Design of Architecture in Sirjan Houses from Central Yard to Linear Two-Way (Reference: Negarandegan)

Looking to the general structure of Sirjan and aerial maps in 1335, we can see the checkered design of the city that is due to transferring it for three times and because it was easy to expand. In analyzing the patterns of housing we can see that central yard is changing to mutual lines. (Picture 4) Although this new design has some conceptual and climatic advantages like having yard in the center and the ease for settlers to move around the house, it had some faults like uncontrolled space, disagreement between settlers and also the uselessness of spaces. That wasn't in accordance with the moral of Sirjanian who seek a comfortable life, on the other hand with modernization rules and regulations of City Hall we can see that gradually the pattern of mutual lines changed to one-way lines (Picture 3).



Picture 3: Changing the Design of Architecture of Sirjan Houses from Linear Two-Way to Linear One-Way (Reference: Negarandegan)

These gradual changes of constructing houses in maps of 1335 are clear (Picture 4).



Picture 4: Gradual Change in the Pattern of House Architecture in Sirjan City, 1956. (Reference: National Cartographic).



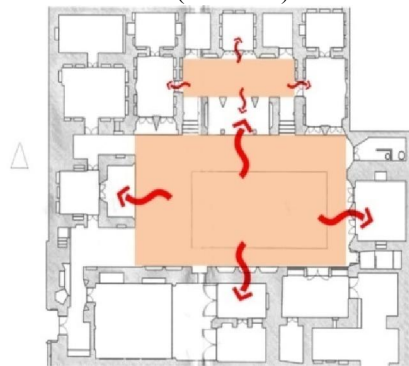
1. Central courtyard pattern (first step of city architecture).
2. Central courtyard pattern and two-way linear (second step of city architecture).
3. Two-way linear pattern and one-way linear pattern (third step of city architecture).
4. One-way linear pattern (final step of city development and architecture)

On the whole although the one-way line pattern is opposed with conceptual and climatic factors, it ignores a lot of space reactions like heights, being surrounded (either with bodies or with various degrees), using natural lighting for space verification, various covering and lighting, view of rooms, the possibility of mixing space particles, flexibility and linking of house spaces even though they are separate. But due to consensus of operators and changing the way we look at housing and more importantly forming the rules of architecture, there are acceptable patterns in society. Thus we are going to analyze the change in house with one-way lines in special way.

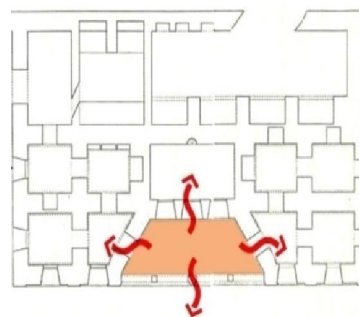
The three-dimensional analysis of houses in one-way line patterns

After introducing the linear pattern as the common pattern in construction of Sirjan, we're going to describe it. The one-way pattern offered three-dimensional and Planny structures in general way. Although this structure conceptually is different from the patterns of old houses, we can see two-dimensional and similar closed spaces because their height is the same and the bulk changes to surface, also the whole structure separates from the small parts and we can see the only columns in corners of house. It is interesting that open and closed spaces are separated; each space is given to special person with fixed furniture, by having more care to outer design. But the common point of the structure

of old house and suggested design is a changeable, multi-functional space among others. In all Sirjan's traditional houses, we can see a central yard (picture 5). Although yard had various functions as the sign of private ownership and coordinator of other spaces, making a green pleasant place, ventilation for passing fresh air and a place that you can have various uses of it (Mee'marian 1388, p.5), the main role of yard is organizing other spaces. This flexible space is extra to other spaces and takes different functions inside it. In the half open space of old houses we can see this function as well (Picture 6).

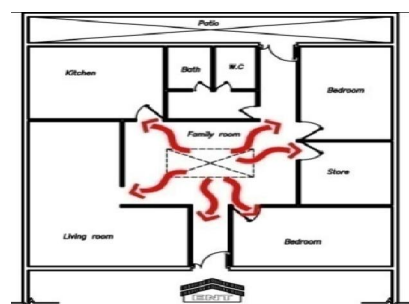


Picture 5: Collector and Distributors of Central Yard, Balcony, Dr.Sadeghi Traditional House (Reference: Kerman Cultural Heritage).

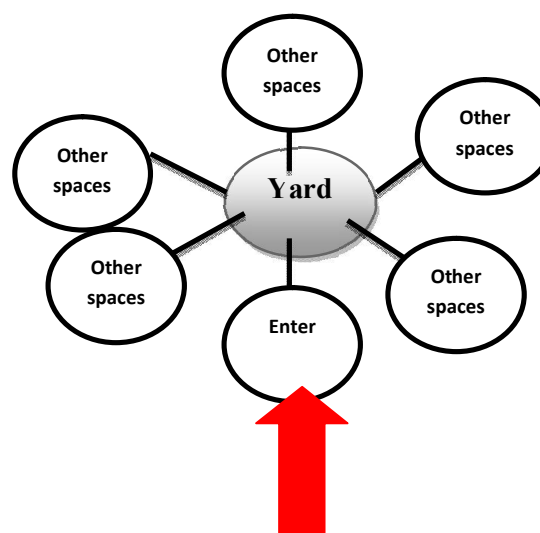
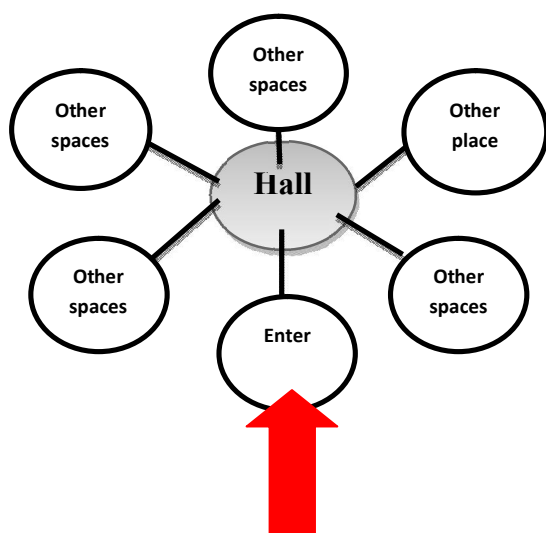


Picture 6: Collector and Distributors of Central Yard, Balcony, Nazem Traditional House (Reference: Esfandyad Pour, 2007).

In new one-way linear pattern the role of middle yard is played by a space named Hall that usually has a lighting area through ceiling (picture 7). The main function of this covered space is like the function of one of those central yards that expands the activities in the house (picture 8).

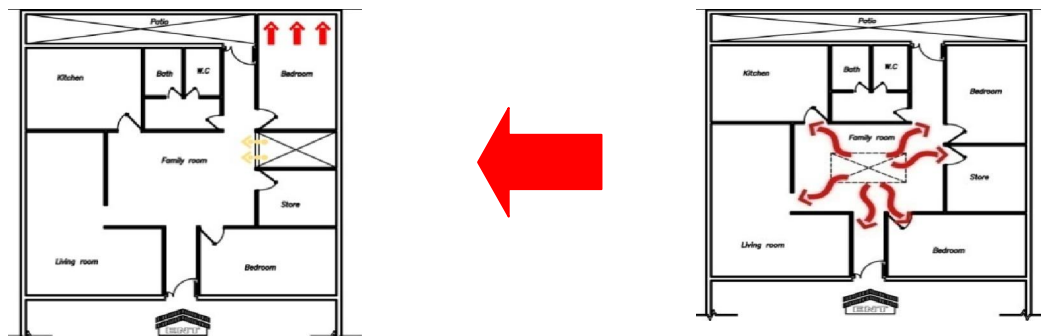


Picture 7: the basic structure of the central hall with one-way linear pattern (Reference: Negarandegan, House with Archaism of 40 Years Old)

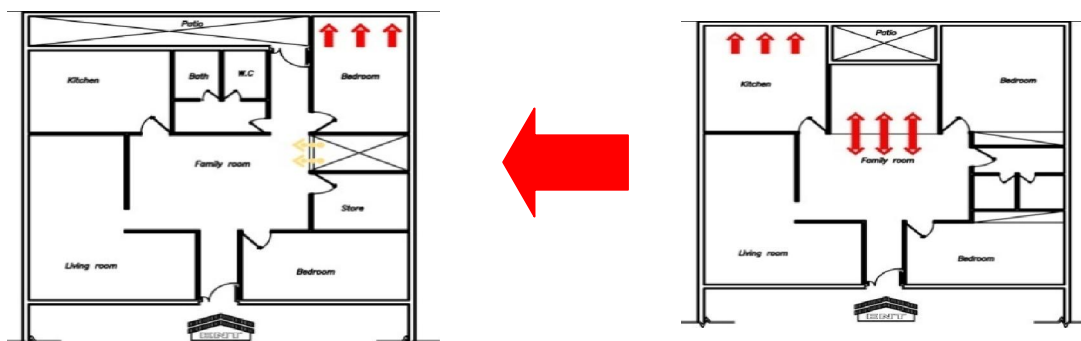


Picture 8: Comparative Study of Central Yard and Canter Hall (Reference: Negarandegan)

This similarity to some extent could satisfy people to accept this way of organizing, but this structure adapted some changes to fulfill various needs that we will later explain it graphically. The suggested Plan in first phase was removing lighting area (Nourgir) from ceiling because it is an inappropriate way of lighting and has some disadvantages like breaking of glass, and difficulty to clean it. Removing this part made house dark and less pleasant. Then to remove this fault (no lighting house), they transferred it to side Plans in house (picture 9).

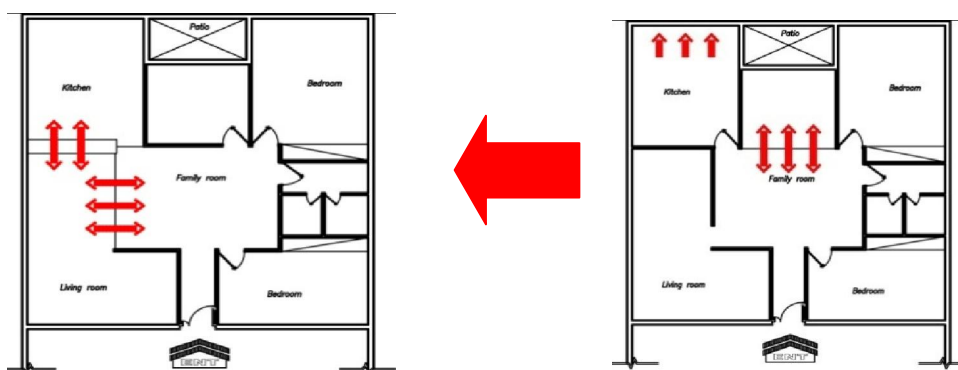


Picture 9: The Development of Contemporary House, Relocation Site Light (Reference: houses plans available)
In the next step they removed this light house to have better house and have the most use of the spaces, the they deleted spaces like oven(Tanoor) (picture 10).



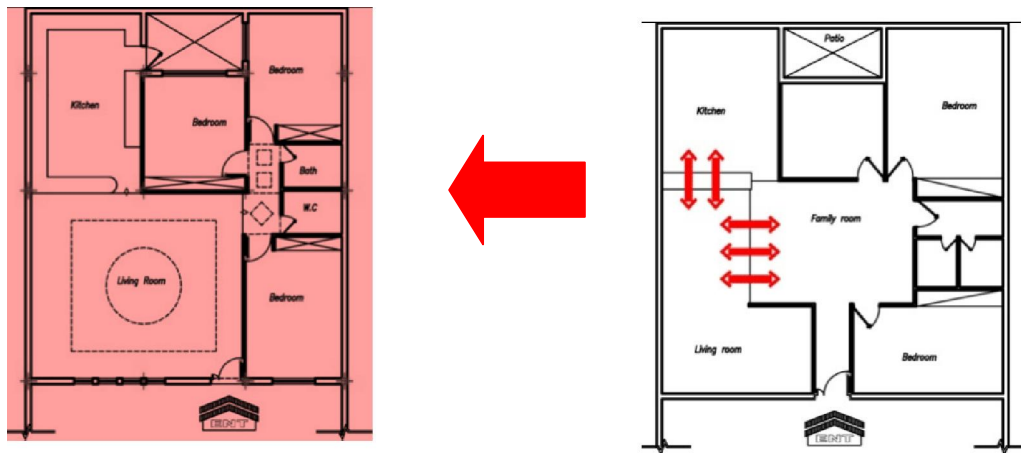
Picture 10: The Development of Contemporary House and Move Light And Remove Some Spaces. Reference: houses plans available.

Next step of changing houses in Sirjan was about decreasing the separating walls between Hall and Guest room and making more open areas in front of kitchen. The reason for this change is because Sirjan is a city full of immigrants, diverse culture; it also has a great culture of competition in families (Picture 11).



Picture 11: The Development of Contemporary House Contemporary House, Reduction of Walls Separating (Reference: houses plans available).


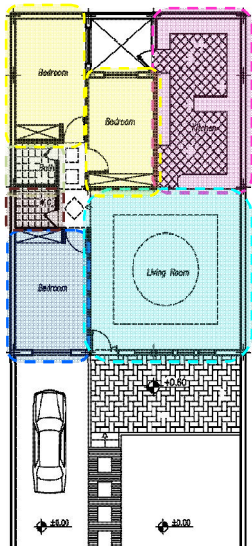










Finally we see more harmonic spaces in houses (Picture 12). This general structure with small changes is formed the plans of most houses in Sirjan (Table 2).



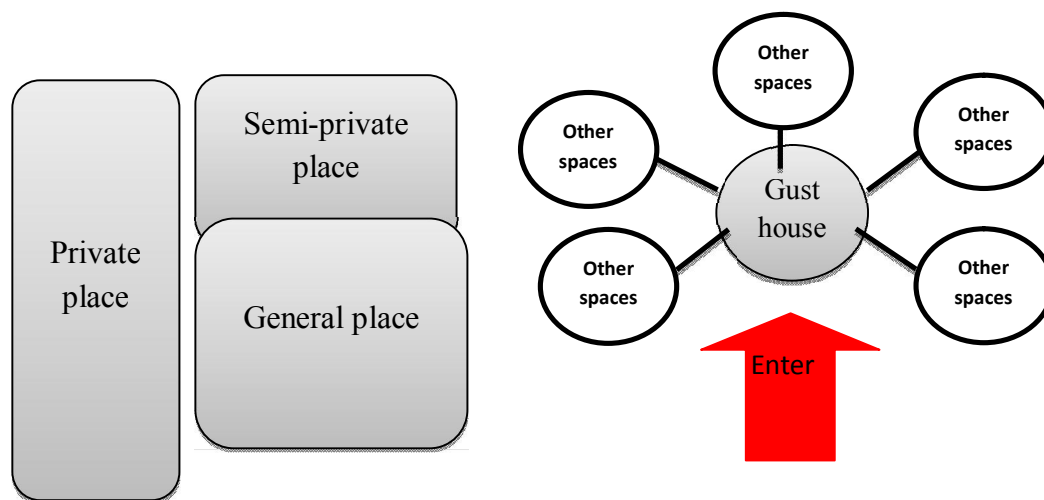
Picture 12: Final Houses Development and Overall Structure of Contemporary Houses. (Reference: houses plans available)

Table 2: Plan Colit Of Contemporary Houses in Sirjan City

Plan type Private Semi-private General	Name of place	Percentage of place size to entire building total	Lighting Southern Northern indirect	Ventilation Natural Artificial	Location spaces in plan
1-One Unit Door To Building (North Block)	Guest house	33%	Southern	Natural	
	Kitchen	14%	Northern	Natural	
	Parent's bedroom	8%	Southern	Natural	
	Bedroom	7%	Northern	Natural	
	Bathroom	2%	No	Artificial	
	Toilet	2%	No	Artificial	
	Guest bedroom	8%	Southern	Natural	
	Hall	5.5%	Indirect	Artificial	
	Diner room				
	Future development	6.5%	Northern	natural	

2--One Unit Door To Building (South Block)	Guest house		30%	Southern	Natural	
	Kitchen		17%	Indirect	Natural	
	Parent's bedroom		10%	Northern	Natural	
	Bedroom		19%	Indirect	Natural	
	Bathroom		2%	No	Artificial	
	Toilet		2%	no	Artificial	
	Guest bedroom					
	Hall					
	Diner room					
	Future development					
						

On the whole we can see the general structure and construction in all Plan (Picture 13).




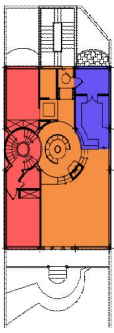

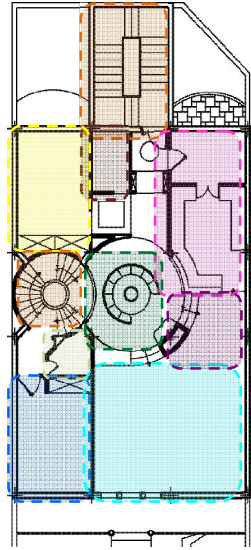











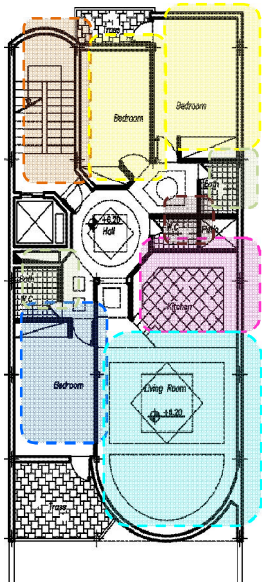









Pictur13: Contemporary Skeletal and Structure Houses in Sirjan City (Reference: Negarandegan)

The steps which explained here and efforts for making Plans on time based on needs of people shows that people accepted this structure well and adapt it based on their social, cultural, and economical needs. The present study is going to analyze this Plan and the related diagrams and the planned structure in Sirjan's favorable and suitable houses.

The adaptation of new houses with the diagram and Planned structure of acceptable houses in Sirjan

Acceptable good houses of the city can be an issue for evaluating and testing because they fulfill needs of people in the best way.

Table 3: Graphic Evaluation Plans in Sirjan's Acceptable House

Plan type Private Semi-private General	Name of place		Percentage of place size to entire building total	Lighting Southern Northern indirect	Ventilation Natural Artificial	Location spaces in plan
1-One Unit Door To Building (North Block) 	Guest house		22%	Southern	Natural	
	Kitchen		12%	Northern	Natural	
	Parent's bedroom		9%	Southern	Natural	
	Bedroom		9%	Northern	Natural	
	Bathroom		2%	No	Artificial	
	Toilet		2.5%	No	Natural	
	Guest bedroom		9%	Indirect	Natural	
	Hall		4%	Indirect	Natural	
	Diner room		17%	Northern	natural	
	Future development					
2--One Unit Door To Building (north Block) 	Guest house		22%	Southern	Natural	
	Kitchen		9%	Indirect	Artificial	
	Parent's bedroom		10%	Southern	Natural	
	Bedroom		18%	Northern	Natural	
	Bathroom		2%	No	Artificial	
	Toilet		2%	Indirect	Artificial	
	Guest bedroom					
	Hall					
	Diner room					
	Future development		11%	Northern	Natural	

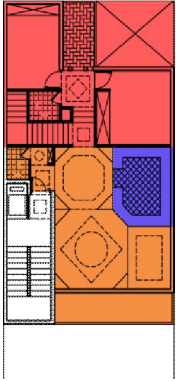

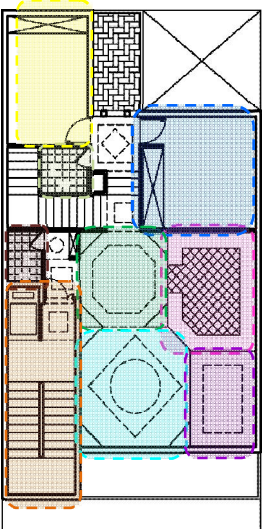









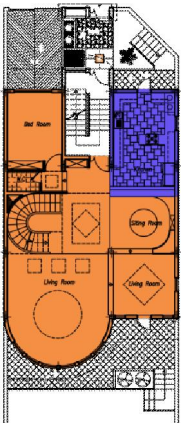
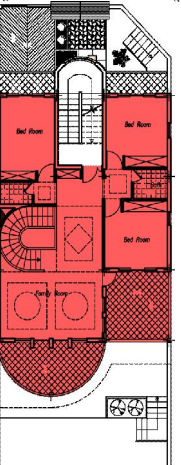

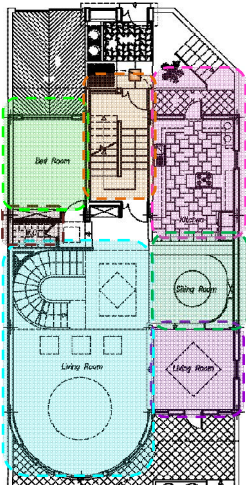
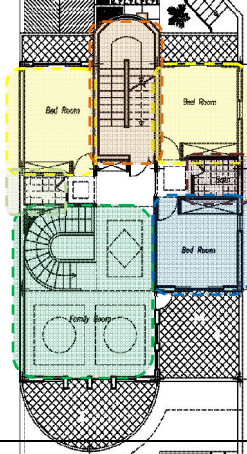









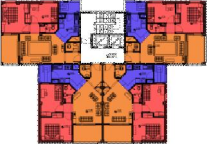

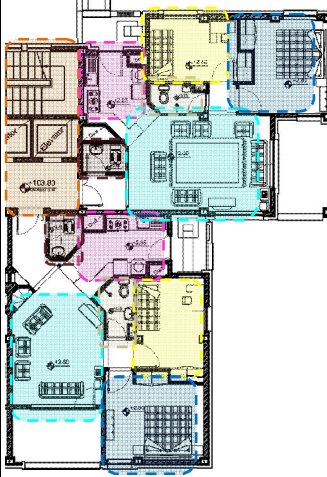

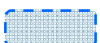







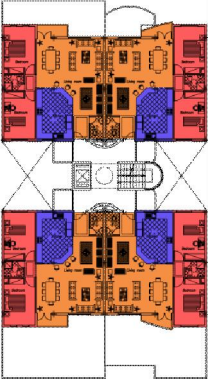
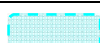
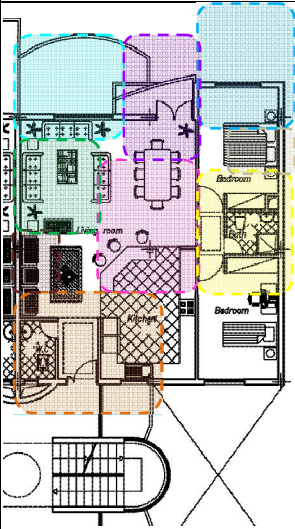
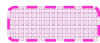
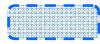



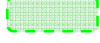
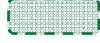

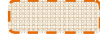
3-One Unit Door To Building (south Block) 	Guest house		13%	Southern	Natural	
	Kitchen		10%	Indirect	Artificial	
	Parent's bedroom		12%	Northern	Natural	
	Bedroom		10%	Indirect	Natural	
	Bathroom		2%	No	Artificial	
	Toilet		2%	No	Artificial	
	Guest bedroom					
	Hall		8%	Southern	Natural	
	Diner room		6%	Southern	Natural	
	Future development		13%	Southern	Natural	
4- Duplex Door To Building (South Block)  	Guest house		15%	Southern	Natural	 
	Kitchen		8%	Northern	Natural	
	Parent's bedroom		5%	Southern	Natural	
	Bedroom		10%	Northern	Natural	
	Bathroom		1.5%	No	Artificial	
	Toilet		2%	No	Artificial	
	Guest bedroom		5%	Northern	Natural	
	Hall		15%	Southern	Natural	
	Diner room		5%	Southern	Natural	
	Future development		6%	Northern	Natural	

Table 3: Continue

Plan type Private Semi-private General	Name of place	Percentage of place size to entire building total	Lighting Southern Northern indirect	Ventilation Natural Artificial	Location spaces in plan
	Guest house	 23%	Southern	Natural	
	Kitchen	 10%	East northern	Natural	
	Parent's bedroom	 15%	Southern	Natural	
	Bedroom	 12%	Northern	Natural	
	Bathroom	 3%	No	Artificial	
	Toilet	 2%	No	Artificial	
	Guest bedroom	 11%	Northern	Natural	
	Hall	 11%	Northern	Natural	
	Diner room	 11%	Northern	Natural	
	Future development	 11%	Northern	Natural	
	Guest house	 11%	Southern	Natural	
	Kitchen	 14%	Indirect	Natural	
	Parent's bedroom	 12%	Southern	Natural	
	Bedroom	 12%	Southern	Natural	
	Bathroom	 3%	No	Artificial	
	Toilet	 3%	No	Artificial	
	Guest bedroom	 10%	Northern	Natural	
	Hall	 10%	Northern	Natural	
	Diner room	 10%	Northern	Natural	
	Future development	 9%	East	Natural	

Conclusion

The present study can be a reason to accept the common style of housing because it can link the simplified contemporary houses in one-way linear pattern with the traditional housing styles and old ideas. Also by conforming this structure to the structure of favorable and acceptable houses in Sirjan, we can verify the amount of efficiency and consistency of it. In fact the result of this paper is the structure and connection that not only relates to past but also can fulfilling the needs and expectations of people regarding house. Although this effort is to reach the whole structure that directs the architect's mind and emphasizes on the identity of the society, each family has its own needs and should be analyzed carefully so that the best decision can be taken. In the end we should say that this paper wants to verify the contemporary houses of Sirjan and still is in the first of this long path and it should consider some factors like climatic elements, typology, and study of forms. They should be analyzed carefully in parameters and should be used in structures of the city so that they can make the valuable concepts rich in this respect.

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