

Rural Dwellings and House Types in Desert Land of Haryana: A Case Study of Bhiwani District

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Abstract

In the present paper an attempt has been made to study the distribution of rural dwellings, their types and distribution based on shape and size, functional characteristics, building materials and house plan in Bhiwani district, a prominent part of desert land of Haryana. The eastern sector of the study region is fertile while western sector is dotted with sand dunes of various shapes and sizes. The district has been divided into four sub-zones viz; (1.Northeastern, 2.Southeastern, 3.Northwestern, 4.Southwestern) on the basis of density of rural population, growth of rural population, rural literacy, rural sex ratio and rural work force. The average rural densities in the four sub-zones were 38; 40; 22; and 25 dwellings per sq. km respectively. The density differs from eastern sector to western sector because eastern sector has fertile soil and better transportation facilities as compared to western sector. It has also been observed that 51 % of total rural dwellings are pacca while 20 % are mixed and 29 % are kaccha. Street pattern in the region is unplanned and irregular. The general condition and the architectural design of the houses in the eastern sector are good and attractive because of prevailing prosperity of the local people. On the other hand in the western sector, being inhabited by the poorer people, houses are generally kaccha and lack modern facilities.

Introduction

Dwellings are the universal and basic element of settlement geography. Many geographers have also studied the dwellings in different forms in India as well as abroad. House is also a social concept, its nature and cognition are varying with caste, class, religion and region [Unni, 1965]. The word has been used as a synonym for census house, which is defined as, "a building or part of a building having a separate main entrance from the road or common courtyard or staircase etc., used or recognized as a separate unit. It may be occupied or vacant. It may be used for residential or non-residential purpose or both". Brunhes advocated in 1920 "the houses are the product of cultural traditions and natural conditions. In 1946, Finch and Trewartha have further explained that "as a geographic element 'house' is meant to include not only the residential house, ranging from the humblest huts

of the poor to the most elaborate and massive city mansions, but all other human structures as well, where people congregate or where their grains or goods are stored, such as warehouses, stores, schools, factories and churches etc".

In the classic studies, 'house and building' were a part of human geography [Jackson, 1952]. But in geographic literature it is the most important component of cultural landscape, which reflects the cultural heritage, cultural styles, functional needs, positive and negative aspects of non-cultural environment [Kniffen, 1965]. While Rapoport (1969) described that a house is the "direct and unself-conscious translation into physical form of a culture, its needs and values as well as the desires, dreams and passions of a people."

Here an attempt has been made to study the distribution of rural dwellings, their types and

distribution based on shape and size, functional characteristics, building materials and house plan in Bhiwani district, a prominent part of the desert land of Haryana.

Study Area and Research Methodology

Bhiwani district lies between 28° 22' and 29° 4' 35" North latitude and 75° 28' and 76° 28' 45" East longitude, flanked by the districts of Hisar, Rohtak, and Mahendergarh on its north, east and south respectively. On its southwest and west, it has a common state border with Rajasthan. The district had 439 villages, including six uninhabited villages in 1991.

The district has a semi-arid type of climate. It is dotted with sand dunes of various shapes and sizes, particularly in the western parts, which form a thirsty land covered with steppe vegetation. The soils in the district are sandy, loamy sand (*Bagar*) and light sandy loam. The average ground water level in the eastern half of the district is low (10) meters and even more so in the western half (35 meters).

The data for the present work involves both published and unpublished sources. The census data for the year 1981 and 1991 has been used for demographic structure. The district has been divided into four sub-zones, viz; 1. North-eastern, 2. South-eastern, 3. North-western, and 4. South-western, on the basis of density of rural population, growth of rural population, rural literacy, rural sex ratio, rural working force, and rural occupied house density [see Table. 1]. Following this, 17 samples, that is 4% of the total villages, have been selected on the basis of different village characteristics like population and areal size, literacy and dominant caste (by population), covering all the above mentioned four sub-zones. The list of sample villages and selected sub-groups of population size, areal size and dominating caste is represented in table 2. For house plan and building materials used, nine questionnaires were filled from each village (three each from HIG, MIG and LIG people).

Some illustrations of selected houses of different income groups have been prepared by the author for visualizing the house types of the four sub-zones of the study region.

Distribution of Dwellings

The distribution of dwellings and their formation are influenced by natural environment and social and economic status of people. In the study region the total number of rural occupied residential houses were 1,33,178 in 1991. The regional patterns of houses are as complexes of interrelated socio-economic and religio-ritual factors.

The average rural density of houses in Bhiwani district was 29 houses per sq.km, while in different zones that is north-eastern, south-eastern, north-western and south-western, the average densities were 38, 40, 22, and 25 houses per sq.km respectively. The zones of higher density of houses are obviously due to fertile soil, and good means of irrigation and transportation etc. The density differs from eastern sector to western sector. The lowest density is found in the north-western zone probably due to inhospitable terrain of permanent sand dunes and the related adversities in soil fertility and communications network.

House Types and Their Regional Distribution

House form and function are the result of "choice among existing possibilities, the greater the number of possibilities, the greater the choices but there is never any inevitability, because man can live in many kinds of structures [Rapopart, 1969]. The variations occur in distribution of dwellings according to the building materials available and used, which are mostly determined by the natural environment and socio-economic status. The main type of houses and their distribution pattern has been classified on the basis of shape and size and building materials.

Table 1: Distribution of Different Population Parameters: 1991.

PARAMETRES	SUB- ZONES				District Average
	N E	S E	NW	SW	
Population Density/ Sq.Km.	258	285	154	189	207
Relative Growth (%)	22.9	18.4	18.2	27.1	20.9
Rural Literacy (%)	41.6	46.9	36.9	39.6	41.2
Rural Sex Ratio	855	893	881	896	881
Rural Main Workers (%)	28.8	25.8	29.6	28.7	28.2
Rural House Density/Sq. Km	38.0	40.0	22.0	25.0	29.0
Number of Villages	61	108	156	114	-

Table 2: Sample Villages and Selected Sub-Categories: 1991

Sr. No.	Name of Village	Population size	Area in (%)	Literacy Sq.km	Dominant Caste
1	Chang	>5000	>20	40-50	Refugee
2	Ranila	>5000	>20	40-50	Jat
3	Jui Khurd	>5000	10-20	<40	Jat
4	Manheru	>5000	10-20	40-50	Rajput
5	Bamla	>5000	10-20	40-50	Jat
6	Sanga	3000-5000	10-20	40-50	Jat
7	Kitlana	3000-5000	<10	40-50	Jat
8	Legha Banan	1000-3000	10-20	40-50	Rajput
9	Naki Purr	1000-3000	10-20	<40	Jat
10	Nigana Kaolin	1000-3000	10-20	<40	Chamar
11	Jawa	1000-3000	<10	>50	Ahir
12	Jitwanbas	1000-3000	<10	40-50	Jat
13	Nimri	1000-3000	<10	40-50	Rajput
14	Atela Kaolin	1000-3000	<10	<40	Jat
15	Ahmedwas	1000-3000	<10	<40	Jat
16	RahimPur	<1000	<10	40-50	Jat
17	Mayen Khurd	<1000	<10	40-50	Brahmin

Source: Compilation by the Author.

Table 3: Distribution of Rural Dwellings

Type of House	Dwellings (in Percent)	Average Members (Per Household)
One room	28 (18.3)	5.3
Two rooms	51 (33.3)	5.3
Tree rooms	40 (26.1)	5.4
Four rooms	11 (07.2)	5.6
Five rooms	14 (09.2)	8.2
More than Five rooms	09 (05.9)	8.4
Total	153 (100.0)	6.3

Source: Personal Survey

Dwellings Based on Shape and Size

The shape and size of the dwellings gives an image of the economic level of the people. The houses are grouped into six categories on the basis of number of rooms in each house. The study reflects that one, two, and three room dwellings are larger in occurrences [Table.3]. About 52 % of houses have one or two rooms with 5.3 persons per household in the study region and most of the people in this category belong to low-income group. The scheduled castes like Balmiki, Dhanak and Chamar etc. and the small cultivators cum agricultural labour class have such type of dwellings. The lower middle class and slightly well off people occupy the three room dwellings, which cover 26.1% of the total houses having 5.4 persons per household. The dwellings, which have four rooms, cover only 7.2% with 5.6 persons per household. Such a type of house is generally occupied by middle class people, cultivators of high castes like Jat, Ahir and Gujjars etc. and few service class people. The dwellings having five or more than five rooms belong to high-income group, mostly cultivators of upper castes like Rajput, Jat and Ahirs. This forms only 5.9% of the total dwellings with an average household of 8.3 members.

The shape of the dwellings in the district is mainly rectangular with different sizes. In

general, it is found that one or two room dwellings have either I-shapes or L-shapes. The I- and L- shape dwellings are built by the poor class people who mostly belong to Balmiki caste. U-shape houses generally have more than four rooms and are common in the high-income group, which belong to Jat and Rajput castes.

Dwellings Based on Functional Characteristics

In general, it has been observed that the high caste people both in terms of social and economic status have good quality and spacious dwellings rather than the low caste people. The economy of low caste people like Balmiki, Danak and Chamars etc. does not enable them to built large size houses. Most of their houses have one to three rooms; in some cases there may be only a thatched type house locally called '*Chhaind*'. In the study region most of the rural buildings (69.4%) are residential. About one/sixth (17.9%) of the rural buildings are categorized as cattleshed, stores, hospitals, educational institutions etc. While the rest of them are occupied by shop cum- residence (0.9%), hotels, *sarai*, *dharamshala* etc. (0.2%), shops, excluding eating houses (1.8%), factories (0.9%), and only 0.3% of buildings are used for the purpose of worship for example, temple, church, mosque and gurdwara etc. [Table. 4].

Dwellings Based on type of Building Materials

The environmental and economic conditions of the people are reflected in the use of building materials [Singh, 1985]. Generally, the houses in a rural set up are built by using materials available locally. However, affordability may produce exceptions in the afore-mentioned rule. If the owner of a house can afford to bring materials from other areas, by bearing the cost of transportation and the materials, he may construct his house of choice, not restricted to locally available material.

Table 4: Distribution of Rural Census Houses and Its Uses (1991)

Census Houses	Houses (number)	In %
Census houses vacant at the time of house listing	11105	5.6
Residence	136430	69.4
Shop-cum-residence	1855	0.9
Workshop, factory-cum-residence including household industry	830	0.4
Residence in combination with other uses	3900	2.0
Hotels, sarais, dharamshalas, tourists homes etc.	400	0.2
Shops excluding eating houses	3535	1.8
Business houses and offices	380	0.2
Factories, work-shops and work-sheds	1675	0.9
Restaurants, sweetmeat shop and eating places	300	0.2
Places of entertainment and community gathering excluding places of worship	385	0.2
Places of worship (e.g. Temple, Church, Mosque, Gurdwara etc.)	655	0.3
Other non-residential houses (e.g. cattleshed, godowns etc.)	35160	17.9
Total	196610	100.0

Source: Tables on Houses and Household Amenities, census of India, 1991, Series-8, Haryana, Part-vii (1996), pp.138-142.

Table 5: Building Materials of the Rural Dwellings

Building Material	Wall (%)	Roof (%)	Floor (%)
Mud or Mud brick	45 (29.4)	-	75 (49.0)
Burnt brick	108 (70.6)	11 (07.2)	55 (36.0)
Timber	-	91 (59.4)	-
Thatch	-	37 (24.2)	-
Cement (RCC and RBC)	-	14 (09.2)	23 (15.0)
Total	153 (100.0)	153 (100.0)	153 (100.0)

Source: Personal Survey

In the study area, building materials of houses are classified into three groups, viz.;

- (i) Materials for wall: which includes mud, mud bricks and burnt bricks etc.
- (ii) Materials for roof: which includes timber, burnt bricks, tiles, cement and concrete.

- (iii) Materials for floor: which includes mud, burnt bricks, tiles, cement and concrete, and marbles.

The use of tiles and marbles are however, restricted to few houses. Thus, these building materials are not listed in the general table.

The walls of most of the houses (71%) are built of burnt bricks and relatively a smaller percentage of houses have mud walls (29%) [Table 5]. House roofs are generally (67%) built of burnt bricks and timber, followed by thatched roof (24%), cement (RCC and RBC) 9.0 per cent. It is found that 49 % of the house floors are made of mud, 36% burnt bricks and tiles and remaining 15% of the floors are made of cement concrete and marbles chips.

On the basis of building materials three types of houses have been identified in the Bhiwani district;

- (a) Kaccha House: (mud walls, thatched roof with mud floor),
- (b) Pacca House: (burnt bricks walls, timber and burnt bricks or cement concrete roof with cement and marble floors),
- (c) Mixed House: (burnt bricks walls, timber roof with mud floor).

(a) Kaccha House:

A common feature of low economic groups in the region is the Kaccha house, because its construction is simple and cheap, these type of houses have relatively low occurrences (29%). Generally, such houses belong to Balmiki, Danaks, Doms, Chamars and Kumhars etc. Most of these people depend upon the local building materials, that is soil and vegetation etc. Reeds (*sarkanda*) are commonly used for thatching. The mud wall is plastered with mud mixed with cow dung and straw to ensure safety from rains.

(b) Pacca House:

This type of house is more widespread, 51 % of the total rural houses belong to this category. The high income group of people use the burnt bricks for walls, iron rods, wooden beams, cement concrete etc. for the roof and cement tiles and marble chips for the floor. Such type of houses generally belongs to high castes like Jats, Rajputs, Brahmins, Gujjars and Ahirs.

(c) Mixed House:

Mixed houses are mostly occupied by middle class people. They account for 20 % of the total rural dwellings. Most of the service class or some upwardly mobile low caste people with better standard of living have such types of dwellings. Among the scheduled castes the *Chamar* is the only caste who have better economic conditions, all over the region. Next to the Chamar, some Jats, Rajputs and Gujjars of high castes have also mixed dwellings.

House Plan

The most important aspect of traditional rural dwellings in India as well as in the study area is the courtyard or *angan*. The "*courtyard is where most of a family's life is lived and the house is where property is secured and shelter sought from the rigours of the weather*" [Mitra, 1966]. Most of the houses in the study area have open space, which is used for cattle, agricultural activities, and storage of fuel- wood and general assembly of villagers in the morning and evening. Mitra has also remarked that the quality of Indian rural houses and architecture is mainly determined by:

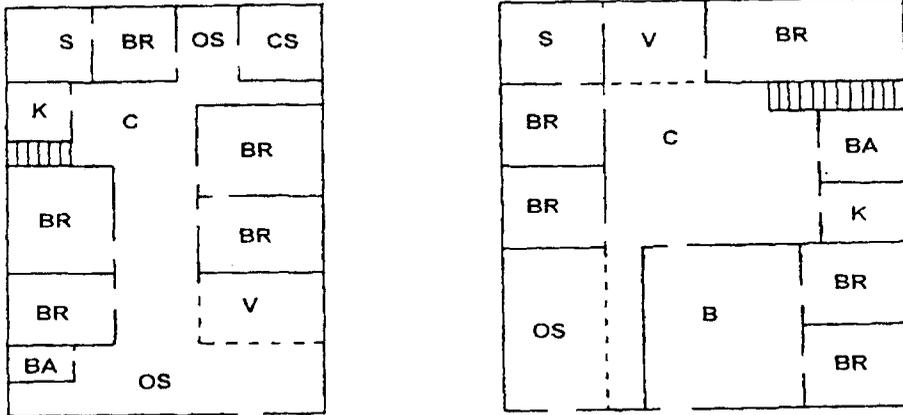
- (i) The commanding position occupied by the courtyard or quadrangle;
- (ii) The need to safeguard livestock and draft cattle, the harvest, the household goods and the kitchen;
- (iii) By the availability of local material for wall and roof.

Many scholars have tried to analyze the role of these factors in the formation of different house plans. In 1957, Singh has analyzed the role of different cultural factors like architectural styles, traditional beliefs, and rituals and caste system etc. in the plan formation of different types of houses in his study of the '*typical rural dwellings in the umland of Varanasi*'.

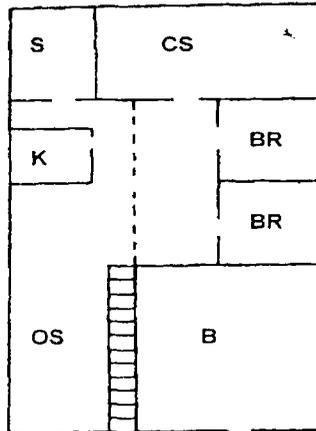
The magnitude, the level of use and the structural formation of these components are the

DISTRICT BHIWANI GROUND PLAN OF HOUSES

HIGH INCOME GROUP (A)

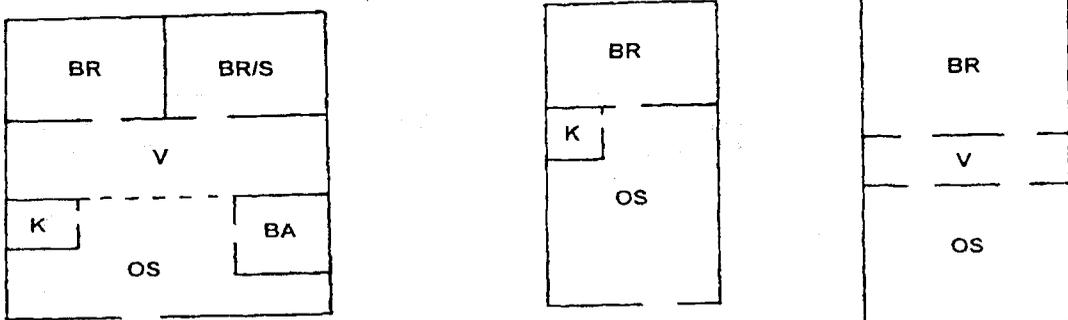


MEDIUM INCOME GROUP (B)



- BR BED ROOM
- B BAITHAK
- K KITCHEN
- S STORE
- C COURTYARD
- V VERANDAH
- OS OPEN SPACE
- CS CATTLE SHED
- BA BATH ROOM

LOW INCOME GROUP (C)



CHAMAR

subjects of socio- economic values and the traditional bonds, which can be clearly represented through the house plan of different communities or income groups.

In the study region most of the higher and economically advantaged castes for example Jat, Rajputs and Brahmin etc. have houses with courtyards or *angan*, open space and a separate building for male residence called *Ek Karia / Du Karia or Saal*. The main living rooms for ladies called *Sopa* are situated in the back of the house plan. However, these local terms are hardly used by the new generation of occupants. They are flanked by two small rooms in which grains (*anaj*) and household goods are kept, which is locally referred to as *Kotha*. Generally, such type of houses have more than four rooms of different sizes. They are generally occupied by higher caste people of high economic status [Fig.1A].

The second type of houses consists of three to four rooms and a courtyard. Most of the families belonging to the medium income class lived in such type of houses [Fig. 1B]. The front room generally of 18' x 18' size is used as the sitting room for guests, called *baithak*. One or two rooms at the back of the *baithak* are used for the main living room. A portion in front of the living room is used for kitchen called *rasoi*. Another room is used for keeping household goods and fodder for the cattle.

The third type of houses have slanting roofs of thatch showing low economic condition of the households [Fig.1C]. The front room with a sloping thatched roof is generally 14' long and 12' wide. The range varies from 14' to 18' long and 12' to 14' wide. Such types of houses have one or two rooms of varying size. These rooms also have a thatched roof and are known as *khudi*. Generally, rural houses have no lavatory, only a few houses in the region have such type of facilities.

Space Allotment

Generally, the middle class families have three to four rooms including a *baithak* (guestroom), ladies room, gents room, kitchen, store, cattleshed and *angan* or open space. The *baithak* covers 23.5 % area of the house while, rest of the rooms (ladies room, gents room, store) cover almost the same area, that is 6 per cent. Open space carries maximum share of the area (24.8 %) [Table.6].

Street Pattern

The street pattern in the region is unplanned and irregular. Most of the villages have *kaccha* streets. These are dirty due to unsanitary conditions. The upkeep of the *pacca* streets is not quite satisfactory. In general, sanitation in the study region is not very

Table 6: Space Allotment of a House

Functional Space	Percentage of Total Area	Functional Space	Percentage of Total area
Baithak	23.5	Kitchen	3.3
Room (Gents)	6.5	Cattleshed	15.9
Room (Ladies)	6.5	Stairs	3.3
Verandah	10.4	Open space	24.8
Store	5.8	Total	100.0

Source: Compiled by author

satisfactory. Most streets have dead ends and are laid in a zigzag manner.

House Types

The house types of the four recognized sub-zones can broadly be described as under [Fig. 1]. The representative houses of the four sub-zones have been selected on the criteria of predominant caste and the average standard of living in a particular sub-zone.

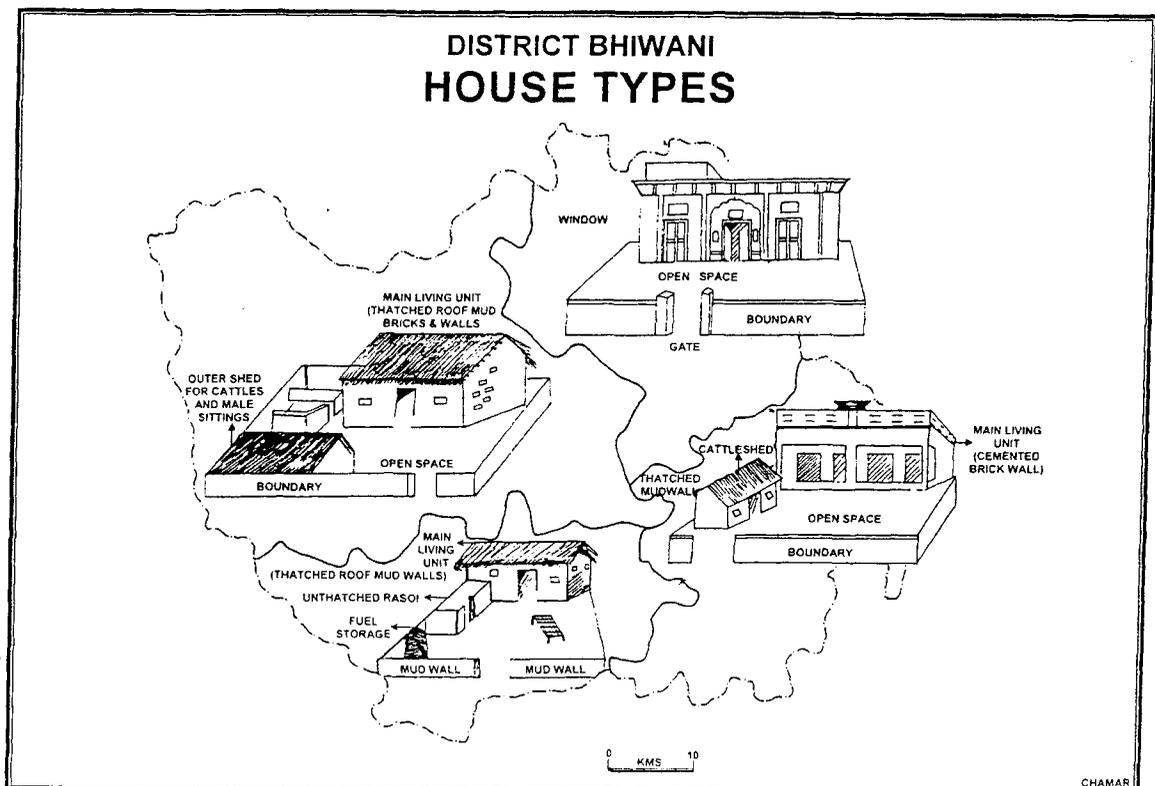
North-eastern Part:

This part is characterized by the communities of *Jat* and *Rajput*, the houses reflect distinct Rajasthan architecture.

There is an imposing gateway to the house, marked by an arcuate and ornamented entrance with resting seats on both sides of the door.

Such a pattern is perhaps taken from the chieftains of Rajasthan. There is an inclined projection in the front with regular support of ornamented slabs. This is also a symbolic expression of palaces of Rajasthan. There is a wide-open ground in the front, with cemented boundary and imposing gate pillars. Most of the social space is confined to the premises of the house and the open ground is used for evening and morning daily activities and socializing.

Houses are well ventilated and decorated with wood carvings and masonry works. The houses are generally in a good condition with modern facilities because of the high socio-economic status and high literacy of the inhabitants. (Fig. 2)



South-eastern Part:

In this part, the house type can be distinguished by the open space with a boundary wall in the front, modern building design, separate cattle sheds made of thatched mud wall. Most of the dwellings are pucca in this sub-zone and normally each have two to three rooms. High literacy rate and fertile land are also important factors that have influenced the house type in this area.

North-western and South-western

In the western sector the houses are mostly kaccha and mixed type. In the houses of both the sub-zones, one to two rooms, kitchens without roofs are located near the main room and the outer shed for males and the cattle shed are the major components.

Conclusion:

The house type of the eastern sector is markedly different from the western sector. The general condition and the architectural design of the houses in the eastern sector is good and attractive because of prevailing prosperity of the local people. On the other hand in the western sector, being inhabited by the poorer classes, houses are generally kaccha with lack of modern facilities.

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