

Analysis of Housing Structure and Urban Form of Rajsamand Town, Rajasthan

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Abstract

Housing refers to a group of houses collectively which includes other activities too like commercial, public, semi-public etc. which is needed for the smooth functioning of the neighbourhood. Housing is necessary because it determines the quality of life of the people living in the area and also the economic characteristics of the town. Rajsamand town is at a distance of only 62km from Udaipur which is a major town in Rajsamand but it still holds a major share of the economic activity. The housing pattern in Rajsamand is still native and at a place where it can be regulated to avoid organic development. The urban form is dispersed and organic in growth. This paper analyses the housing situation and the form of the town with respect to the area and the spatial pattern of the town to help minimize spotty development.

Keywords: Housing, Slums, Housing Shortage, Urban design, Urban Structure

1. Housing

Housing aspect is an indicator of the social characteristics of the town. It is the core around which all the other aspects evolve and progress. The major component of any society is housing because dwelling is an essential part of any activity.

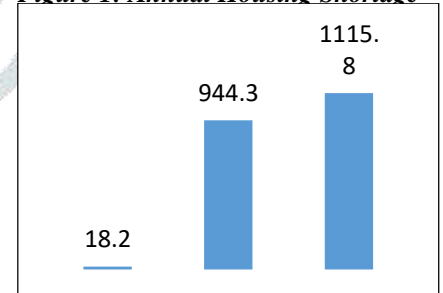
According to K.R. Thooyan, housing is a package of services comprising of land, public facilities, and access to employment and to other social services as well as dwelling structure itself. House or shelter for living in one of the man's primary need and as such is a matter of paramount importance to the human society from time when man stopped nomadic life and started settled life. The need for comfortable shelter became essential and today the housing is one of the basic needs of the family.

1.1 Housing Shortage

In this characteristic the housing is studied in relevance to the individual number of dwelling units as well as the households. The residential area includes a total area of 679.84 hectares which is 13% of the total area of the town. In the census of India 2011, the total numbers of houses are 12172 which are spread over the 35 wards in the town. The total numbers of households are 13766. [1]

Housing Shortage is defined as the gap between the number of households and the number of houses in the town. In this town, it is assumed that 30% of the people will be on rent due the presence of industries and mining areas nearby. Rajsamand town has a total shortage of 1116 houses. [2] The shortage of houses ward wise is also collected to understand the nature of the wards and the shortage condition. [3] Figure 2 shows the spatial distribution of the housing shortage in different wards in the town.

Figure 1: Annual Housing Shortage



Source: Census of India

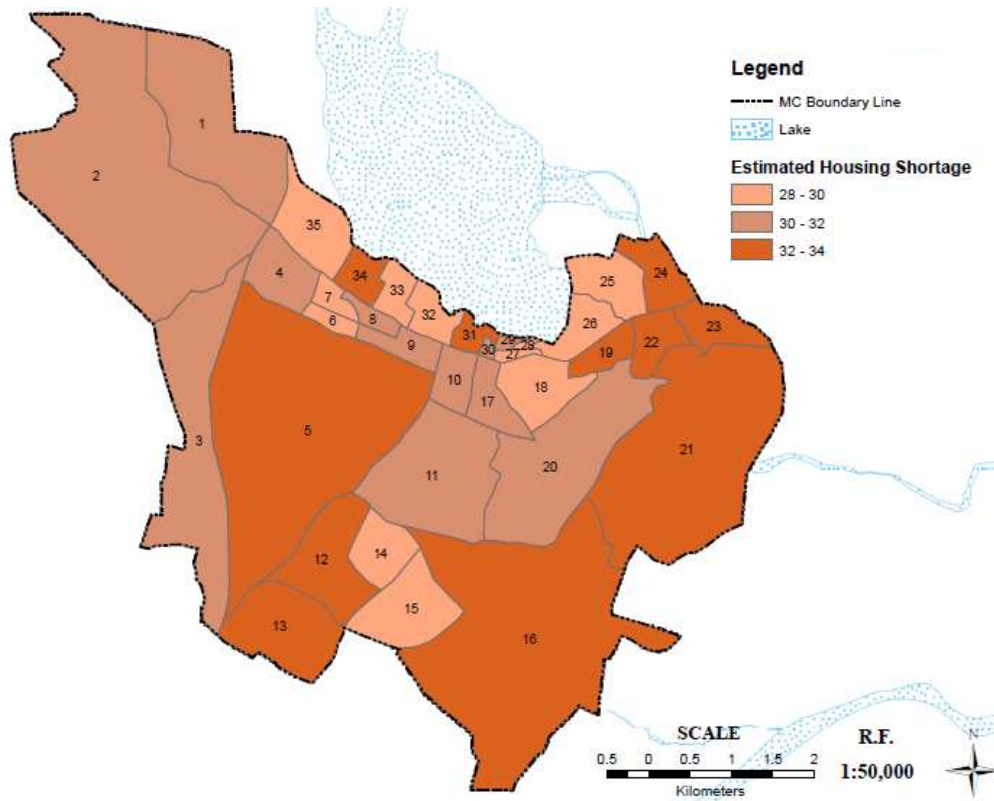
Table 1- Ward wise housing characteristics

Ward no.	Ward Population	Estimated no. of houses	Estimated no. of Households	Estimated Housing Shortage	Gross Density (DU per ha.)	Net Density (DU per ha.)
1	1889	339	384	31	1.6	34.7
2	1994	358	405	33	0.6	64.1
3	1999	359	406	33	1.5	37.9
4	1941	348	394	32	6.1	11.9
5	2020	363	410	33	0.6	17.2
6	1850	332	376	30	23.7	52.7
7	1764	317	358	29	19.8	36.0
8	1932	347	392	32	23.1	55.1
9	1973	354	401	32	11.8	17.9
10	1902	341	386	31	10.0	41.1
11	1958	352	398	32	1.8	17.2
12	2077	373	422	34	3.7	3.8
13	2109	379	428	35	3.3	7.6
14	1830	329	372	30	6.6	67.3
15	1814	326	368	30	3.7	3.8
16	2062	370	419	34	0.7	11.2
17	1921	345	390	32	8.8	109.0
18	1742	313	354	29	4.9	8.0
19	2111	379	429	35	13.1	21.6
20	1997	359	405	33	1.6	36.0
21	2106	378	428	35	0.9	49.2
22	2044	367	415	34	9.7	28.4
23	2081	374	423	34	8.9	117.7
24	2117	380	430	35	8.1	31.1
25	1818	326	369	30	6.0	20.5
26	1769	318	359	29	7.6	13.4
27	1829	328	371	30	54.7	148.2
28	1775	319	360	29	106.2	122.1
29	1887	339	383	31	67.8	79.6
30	1907	342	387	31	114.1	97.9
31	2070	372	420	34	23.2	29.5
32	1856	333	377	31	11.1	29.5

33	1764	317	358	29	3.1	47.1
34	2091	375	425	34	7.0	34.3
35	1799	323	365	30	4.4	24.1

Source: Municipal Council, Rajsamand ; Calculated Value

Figure 2: Map showing Estimated Housing Shortage in Rajsamand



1.2 Housing Density

Housing density means the number of dwelling units in an area. The housing density can be divided into two parts.

- a. Gross Housing Density- It means the number of dwelling units in the area which includes all the roads, other land uses i.e. the whole area of the town.
The ward with the highest gross density is ward no.30 with 114 DU per ha and ward with the lowest density is ward number 2 with 0.6 DU per ha. Map 8.2 shows the gross density of the town.
- b. Net Housing Density – It means the number of dwelling units in a residential area. It excludes all the other major roads and land uses. It included the minor roads. Ward number 2 has the lowest net density(3.7) and ward number 27 has the highest density(148.2). Map 8.3 shows the net density of the town.

The housing densities have been calculated ward wise with respected to the area of the ward and the residential built up area in the ward. Figure 3 and 4 show the elevation of the housing net and gross density respectively.

Figure 3: Elevation showing the housing net density

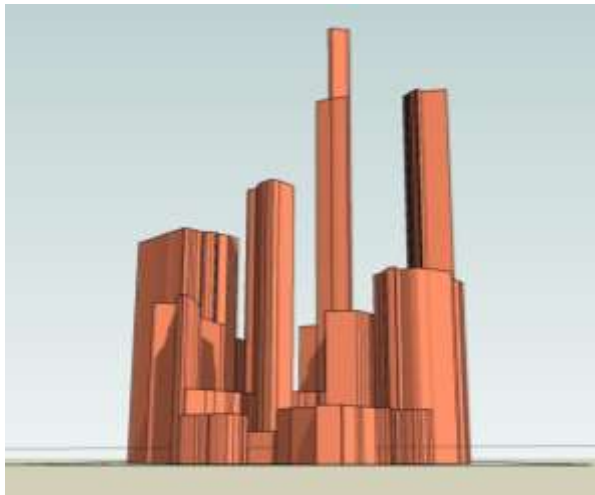
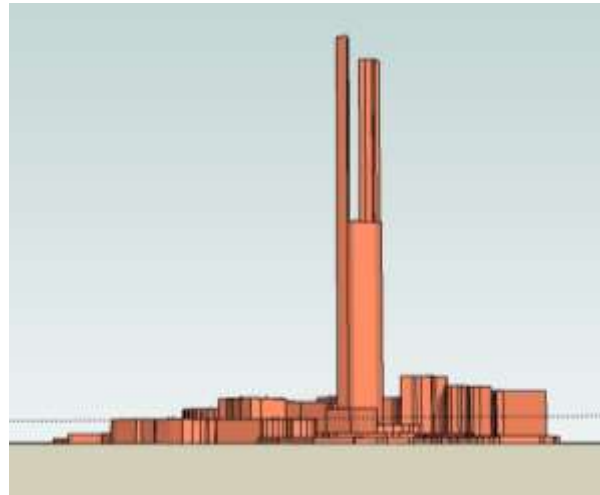


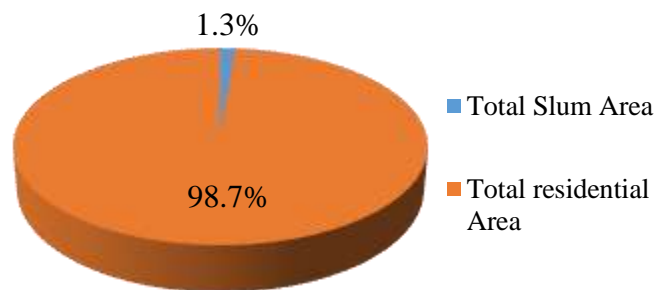
Figure 4: Elevation showing Housing Gross density



1.3 Slums

In the light of earlier aspect i.e. housing, this with the slums in the city. The term used for heavily populated urban settlement characterised by housing i.e. most lack in sanitation supply of clean water and other basic. The slums can be commonly seen in which are occupied by economically sections of the society. This study identifying the slum areas, their causes, characteristics and effects. To make the for all and to improve the condition of slums, this comprehensive study regarding slums plays a vital role in planning. The scope of this chapter incorporates the location of slum, their physical characteristics and schemes & projects related to slums which helps in study of the slum areas and the available infrastructure in these areas so that planning takes into considerations all sections of income group.

Figure 5: Pie chart showing the % of slum area to total residential area



Source: Self Calculated

aspect deals slum is informal substandard services, services. urban areas weaker helps in

city livable

There are total 14 notified slums identified by the municipal council. There locations have been marked in the map. The total population residing in these slums is 897 which is 1.3% of the total population. The total area of the slums is 8.48 hectares which is 0.2% of the total area of the area of the town and 1.43% of the residential area. The ward wise analysis of the slum and their population is given in the table below. Ward 3 has the highest number of slums with 3 slums. The total population of slums in ward 3 is 230 which is 25.6% of the total slum population. [3]

Table 2- Slums with their population

	Name of Slum	Population
1	Gudda	15
2	Sanwad Khadra/ Hanuman Mohalla	108
3	Gudli	5
4	Khano Ka Rasta Dhoinda	10
5	Palewa Magri Rameshwar Mahadev	98
6	Near Navodya Vidyalya	78
7	Devthadi Road, Kali Bawdi, Rajnagar	49
8	Gautamnagar	88

9	Taledi	103
10	Harijan Basti Indra Colony	15
11	Bhil Mangri Asotiya	172
12	Harijan Basti Mukherjee Nagar, Irrigation Department	25
13	Makson Marble, Rajnagar Highway	103
14	Koyad	29

Source: Municipal council, Rajsamand

1.4 Problems and Potentials

Most of the housing units are concentrated in the centre due to the origin of the settlement from there. The housing is mostly G+1 or at the maximum it goes upto G+2. Organic development can be seen in the housing sector. There is a shortage of 116 houses in the town. Since the houses are not constructed according to the bylaws, thus there is no mass space relationship in the housing. Due to the lack of parking space, there is an encroachment on the roads which further reduces the carriageway of the road. Petrol pumps are located in the middle of the residential area which can cause hazard for the nearby population.

Due to the provision of open area in the town, the housing shortage can be encountered on the open area. There are government schemes being implemented like Mukhya Mantri Awas Yojna and Pradhan Mantri Awas yojna which help in minimizing the shortage. Since it is a developing town, thus the housing can be created at places to reduce the density in the core and have a smooth structure of the city.

2. Urban Form

It is the collective 2d or 3d expression of an area as represented by the elements of built and open spaces, and their relation to each other. Rajsamand has more than 50pc of its area as open area which is used for agriculture. The built up area is placed at two parts in the city in the north and the south of the town.

Typology of space: Deals with the types of spaces over which the activities come in an urban area

- Density : The major activity zones are around the bus stands in Ranjnagar Kankroli and Dhoinda. The activity zones are equally distributed in the built up areas but there is a clear segregation of the open areas and the built up areas.
- Grain : The texture of the town is relatively fine with very less variations in the town no certain activity in the creates a chaos and stand out.

- Focal organization : The three bus stands are placed at a strategic location and are well connected triangularly.
- Space distribution : There is no separate commercial area in the town and commercial paths can be seen along the highway and along the main road of the city.

Figure 6: Skyline of the Main Road



Figure 7: Skyline of Nathdwara Road

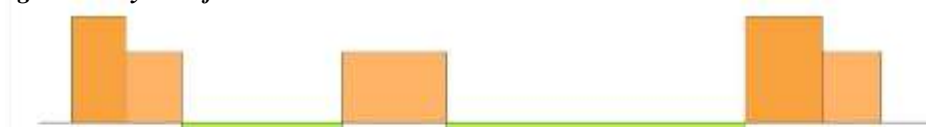


Figure 8: Skyline of 100ft. Road



Figures 6, 7 and 8 shows the skyline of the town through three major routes of the town. As the figures reflect that there is no high rise structure in the town and the skyline of the town is extremely smooth. Also, there are patches of wide open spaces along the roads.

2.1 Image Of The City

It includes the perspective of the city to the people, how individuals perceive and navigate the urban landscapes like paths, nodes, landmarks, edges, districts.

Kevin a. Lynch reported that users understood their surroundings in consistent and predictable ways, forming mental maps with five elements:

Paths: The two highways act as edges for the major settlements of the towns and triangularly shape the town. Two internal major roads run along the latitude and the longitudinal axis. All the major activity zones are placed on that.

Edges: The town is enclosed by the Rajsamand lake on the northern side, highway on the western side, and a railway line on the eastern side. Though there is a chance of development across the edges but the northern and the western side have less chance and area due to the presence of the lake and hills.

Districts: Two major districts are identified in the town i.e. residential and industrial. The residential districts are in three areas of Rajnagar, Kankroi and Dhoinda. The major industrial district is the JK Tyres industry in the southern part of the town. Also there are industries along the highway.

Nodes: The major nodes are The Phuwara Chowk, Hanuman Chowk, Maharana Pratap Choraha, Kankroli Chowk and Dhoinda Chowk. Out of these these Hanuman chowk and Phuwara Chowk, act as an entry to the town from the NH8.

Landmarks: Landmarks are the three bus stands of the city and a Rajsmaand lake. Also Dyal Shah Fort, Dwarkadheesh and Gupteshwar temple are the heritage temples.

The basic character of the town is a transition town which is being developed into a major urban area. There is acute shortage of parking facilities, particularly the core areas. The roads are not provided with sufficient lighting and road furniture. There is no commercial district in the town and the town is fairly smooth in function and activity. The Rajsamand lake is fairly unexploited and can be utilized to attract the local population as a leisure and recreational area. Figure 9 shows the basic character of the town with commercial shops at the ground floor and the residences at the upper floors. It is a typical characteristic of the medieval towns.

Figure 9: Conceptual street view of Rajsamand



Table 3: Districts

Districts	
Residential areas	Industrial complex
Rajnagar	JK Tyres
Kankroli	Along NH8
Dhoinda	

Source: Secondary data

Table 4: Landmarks

Major Landmarks	Local landmarks
Rajsamand	Hospitals
Rajnagar Bus Stand	MC office
Kankroli Bus Stand	Police stations
Dhoinda Depot	Mandi

Source: Primary survey

There are 6 major nodes which includes the traffic and the activity nodes of the town. The two major nodes are the entrance of the town from the NH58 i.e. Phuwara Chowk and Hanuman Chowk.

2.2 Urban Shape

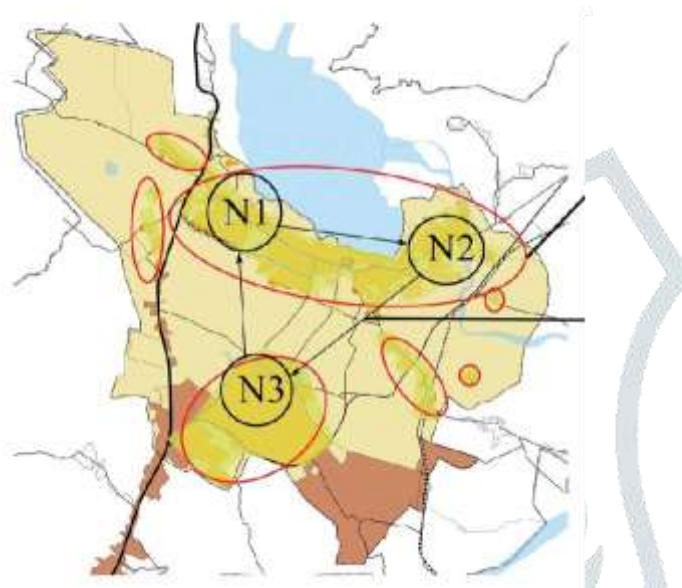
Urban shape is a two dimensional representation of the town. Dispersed Pattern, Star shaped are some of the growth patterns. It is based on the previous growth patterns and the recent development in the town.

Dispersed Pattern

The new growth occurs at the lowest densities practicable with substantial interstices of open land kept in reserve. At the low densities of the outer suburbs of a town, the old center and most subcentres could be dissolved, allowing city-wide activities to disperse throughout the

region, with a fine grain. Industries, housing, schools and bus stands would appear everywhere in the suburban landscape. The low density and the dispersion of activities would depend on and allow circulation in individual vehicles, as well as a substantial use of distant symbolic communication. Figure 9 shows the dispersed sheet pattern with the red ovals, marking the development in patches. Dhoinda is developing as an area to disperse the population of Ranjagar and Kankroli. This has already led to the low densities in most of the town. The future development is happening on the open reserve areas.

Figure 9: Plan Showing Multinuclei & Dispersed Pattern



Urban Structure

It is the underlying basic skeletal system around which the different parts of urban area are bound together. The system comprises of physical, functional, social and perceptual components which are instrumental in determining character of area. Figure 17.5 shows that multinuclei theory is found in the Rajsamand town. N1, N2 and N3 are the three main nuclei in the town due to the settlements. This theory was originally given by M.C. Kenzie in 1926 based upon theory of changing land use. He developed a typology of various ecological processes which had an important impact on social life of an area where a change occurs. This town has three main nuclei in the form of settlements, Rajnagar, Kankroli and Dhoinda. This reduces the traffic congestion in the towns and it does not put any extra pressure on the infrastructure at one place.

2.3 Problems and Potentials

The urban character of the town is very fine. There is no tourism so the urban streets are not developed with any special character. The electrical wires can be seen hanging across the footpaths and the perspective of the street is blocked. There is no unifying character in the facades of the town. Many diversifying name plates and sign boards give a variety to the town but also withhold its urban character. The heritage buildings are not maintained and are deteriorating. It is progressing to a generic image of an urban city and losing its potential.

The 5 heritage buildings are along the Rajsamand lake and pave a way to make an urban street. Also, there is a rough terrain on the north eastern side of the town and this whole area can be

converted into an activity zone. Also the street aligning the lake can have hawkers and the area can be developed into an activity zone for the locals for recreation.

3. Conclusion

Town rajsamand is divided into 35 wards which work as districts, main junctions act as nodes and roads act as pathways. 2-d and 3-d image of city is hard to understand because of unplanned development and the organic growth. City lacks a unifying image due to lack of height controls, facade controls and setbacks. Due to lack of setback controls organic street pattern is seen. Historical sites in the town are in very poor condition leading to almost no historic value in the town.

References

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