

Shelters In Ancient Literatures And Modern Urban Housing

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***Abstract-**Providing housing to all is a major challenge for the policy makers in modern India. A big chunk of the population does not have good housing. This is not only the case that applies to rural India but also the urban centres and metropolis. Poor income and nearly 32 percent of the people living below the poverty line it appears to be a daunting task for the policy makers indeed. The mushrooming of slums in the urban centres due to migration of population from the rural India speaks of the magnitude of the problem. Low cost housing to all seems to be a distant dream. This paper documents and provides insight into how housing was developed and cities were built in India in the past. Most of the cities were developed along the river and the housing had definite impacts of climatic conditions across the regions. Further, cities happened to be the hub of the settlements and trade and there happened to be a graded hierarchy between villages, towns and royal cities. The paper is content analysis, entirely based on the published literature.*

Keywords: Shelters, Ancient Literature, Urban Housing

The history of shelter is very old and it probably coincides with the evolution of the modern human. The earliest human had diversified his activities with increasing brain size, and therefore, felt the requirement for shelter to live. One of the earliest humans who developed the ability to live was the Homo habilis and he existed roughly 1.7 million years ago. This early man is considered the direct ancestor of modern humans. The larger brain size enabled him to use stone tools for hunting, cutting plants and slicing scavenged meat. After this type, evolved the Homo erectus man. This was an erect man and lived between 1.7 to 1 million years ago. During this stage he made the technological advancement from crude stone tools to hand axes. He began to roam more extensively, engaged in collective hunting and learned how to use fire. Probably from here he migrated out of Africa and started peopling the Earth. The Homo erectus made most of the sounds we do with the larynx because in collective hunting use of sound was probably most needed for cooperation. Between 1 million to 2 lakh years ago, the Homo erectus evolved into Homo sapiens and then came the Neanderthal man roughly 1 lakh years ago. He was a skilled tool maker and crafty hunter.

The Neanderthal man was the first to build

shelters out of tree branches and dwelled in caves. He lived in the prehistoric age called the Palaeolithic. The Palaeolithic man lead a savage life, using stone weapons for hunting. There was no family life and people lived in caves like the one at Sanghao (north-west Pakistan), or in Kurnool (Andhra Pradesh) and wandered in jungles. They also lived in rock shelters, which have been frequently discovered in Bhimbetka, in Madhya Pradesh, and in other parts of India. In the earliest stage, food was obtained by hunting animals and gathering edible plants and tubers. Settlements tended to be close to scrub jungles and watering places, for e.g., at Hungsi. A few rock paintings at Bhimbetka, discovered alongside other later paintings, are thought to be of this period and reflect a connection between success in hunting and fertility. People of the earth entered a new stage of culture when, instead of depending entirely on the resources of nature for survival, they started producing their own food by cultivating cereals like barley, wheat and rice and started domesticating some species of animals. The beginning of domestication is quite significant in the sense that men did it both for supplies of milk and meat as well as for harnessing labour for various purposes. Domestication of plants and animals led to the emergence of village communities based on sedentary life, the beginning of agriculture

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technology and greater control over nature by exploitation of natural resources. The transition from hunting to food gathering to food production also meant manipulating nature. Through human intervention, some plants were made to grow intensively, while others were excluded. Now people were bound to stay at a particular place and wait for the plan to grow to reap the harvest. This probably led humans to live in shelters.

Shelter, other than caves, thus began to be made in the agriculturally fertile area, normally bereft of rocky mountains. This period is known in history as the Neolithic age characterised by pit-dwellings with well-made floors smeared with red-ochre as well as dwellings in the open. Excavations at Chirand, Chechar, Senuwar and Taradib, etc. throw significant light on the life pattern of the Neolithic people of this region. At Senuwar in Rohtas District, Neolithic farmers cultivated rice, barley, field pea, lentil and some millet. The Neolithic levels at Chirand in Saran District situated on the left bank of the Ganges revealed the structural remains of mud floors.

Harappan Housing

One of the earliest evidences of housing in a planned way is of the Harappan civilization, also well known as the Indus valley civilisation. It is from this time that we start distinguishing between a village and a town as this civilization is distinguished by its system of town planning. But the proportion of people living in towns was very less. At present it is said that almost seventy five percent of the Indian population lives in rural area and this figure was eighty five percent just after independence. On this basis we may presume that the proportion of people living in villages was much more than this and the average man in ancient India was a countryman. Six Harappan sites which may be regarded as cities are Harappa, Mohenjodaro, Chanhudaro, Lothal, Kalibangan and Banawali. Of these, Harappa and Mohenjodaro are the most important from the point of view of town planning. The general layout of these two cities seems to have been similar. Each city had its own citadel or acropolis to the west, fortified by crenelated walls. At

Harappa, the citadel was roughly a parallelogram, 460 yards in length from north to south and 215 yards from east to west. It was 45–50 feet high. At both the places, the citadel was based on a mound. The citadel was possibly occupied by members of the ruling class. Below the citadel in each city lay a lower town containing brick houses which were inhabited by common people. The remarkable thing about the arrangement of the houses is that they followed the grid system. This is true of almost all Indus settlements regardless of size. The towns, in each case, were at least a square mile in area. The main streets, some as much as 30 feet wide, were laid out on a grid plan. They were quite straight and intersected each other at right angles, thus, dividing the city in large rectangular blocks. This rectangular town planning was a unique feature of the two cities and was not known in Mesopotamia or Egypt.

In neither of the great cities has any stone building been found. Standardised burnt brick of good quality was the usual building material for houses. The average size of brick used for houses was 7 x 15 x 30 cm. but for the construction of fortification walls the size of the brick was of, bigger size viz. 10x20 x40 cm. Both sizes of bricks have identical proportions, 1:2:4, that the width is double the thickness and the length four times the thickness. The doors, windows were made of wood and mates. The floors of houses were generally hard-packed earth that was often plastered. Bathing areas and drains were made with baked bricks or stone. Some rooms were paved with bricks or fired terracotta cakes. Doorways and windows rarely opened out into the main street, but faced side lanes. Only in Lothal, doors and windows opened in the main street. The view into the house was blocked by a wall or a room around the front door. This was done to keep private the activities in the central courtyard from the view of passerby. Many houses were at least two storied and some scholars think that some of the houses may have been three storied. Hearths were commonly found in the rooms and almost every house had a bathroom, and in some cases there is an evidence of bathrooms on the first floor. The doors

were made with wooden frames and a brick socket set in the threshold served as door pivot. Adjacent houses were separated by a narrow space of "no man's land". Almost all big houses had a well within their courtyard. Deep grooves on the bricks at the top edge of the well show that ropes were used to draw the water up, probably with leather or wooden buckets.

The houses of varying sizes, often of two or more stories, consisted of rooms constructed round a rectangular courtyard. Average size of the ground floor of a house was 30 square feet. These were often based on much the same plan. The parallel rows of two-room cottages unearthed at Mohenjodaro and Harappa were perhaps used by the poorer sections of society and anticipated the „coolie“ lines of modern Indian towns. From this, may be inferred, class differences in Harappan society.

The drainage system of Mohenjodaro was very impressive. In almost all cities, every big or small house had its own courtyard and bathroom. In Kalibangan, many houses had their own wells. Water flowed from the house to the streets, where there were drains. Sometimes, these drains were covered with bricks and sometimes with stone slabs. The street drains were equipped with manholes. The remains of drains have also been found at Banwali. The drainage system of Harappa is almost unique which indicates that the Harappans paid a great deal of attention to health and cleanliness.

One of the largest buildings discovered so far and the most important public place at Mohenjodaro is the Great Bath, comprising a tank which is made of beautiful brick. It measures 11.88x7.1 m. and is 2.43 m. deep. At the north and south ends of the Great Bath, brick steps led to the bottom of the tank, which could be emptied by a drain. It is suggested that the Great Bath was meant for some elaborate ritual of vital importance for the people.

To the west of the Great Bath, there is a large granary, originally 150 feet long and 75 feet wide. This was divided into storage blocks of 50 × 20 feet each. It was used for storing corn. In the

citadel at Harappa, we find as many as six granaries, each measuring 15.23 m. × 6.09 m. In an age when money was not in use, granaries must have reflected the solvency of the administrative organisation. Chanhudaro is another important city which is about 130 km. south of Mohenjodaro in Sindh. It does not have a citadel like the other two cities, but there is evidence of the use of drains and baked brick houses. Kalibangan is in the district of Ganganagar in Rajasthan. It has a citadel and a lower town. Brick platforms have been found at several places. Lothal is at the head of the Gulf of Cambay in Gujarat. Excavations have revealed a great artificial platform with streets and houses of regular plan. In addition to the urban settlement, a brick dockyard connected with the Gulf of Cambay by channel has also been discovered here. Sutkangendor consisted of a formidable citadel and a lower fortified settlement. It was a coastal city and people traded with Babylonia from here. Other Harappan coastal towns include Sotka Koh, Surkotada and Balakot.

Vedic Housing

Historians believe that with the decline of the great Harappan civilization the city culture also underwent decline and there were no towns in existence for centuries. The Aryans living in the age of the Vedas were leading more of a semi nomadic lifestyle with mixed pastoral and agricultural economy, in which cattle-rearing played an important role. Cattle formed their most-valued possessions and chief form of their wealth. Though cattle-breeding seems to have been the chief occupation of early Aryans, they also practised agriculture.

The extent of the geographical knowledge of the Aryans at the time of the Rigveda can be ascertained by reference in the hymns to various rivers. From this it would appear that the early Aryans lived in the geographical area covered by eastern Afghanistan, Punjab and fringes of Western U.P. In the text, the western tributaries of the Indus, the Gomati (modern Gomal), the Krumu (modern Kurram), and the Kubha (modern Kabul) are mentioned. The Suvastu (Swat) is the most important river mentioned to

the north of Kabul. But the main focus of the Rigvedic culture seems to have been the Punjab and Delhi region. Here, the most frequently mentioned rivers are the Sindhu, the Saraswati, now lost in the Rajasthan sands, the area probably represented now by the Ghagghar river, and the five streams which collectively gave their name to the Punjab. These five rivers are Shutudri (Sutluj), Vipas (Beas), Parushni (Ravi), Asikni (Chenab) and Vitasta (Jhelum). The Sindhu, identical with the Indus, is the river par excellence of the Aryans and it is repeatedly mentioned. The geographical knowledge of the early Aryans did not extend beyond the Yamuna, which is thrice mentioned in the Rigveda. Ganga is mentioned only once in a late hymn. Thus, the focus of the Aryan culture during Rigvedic times was between the region of Yamuna and Sutluj and along the upper course of the river Saraswati. The Later Vedic Literatures show that the Aryans, during the later Vedic period pressed further eastwards and expanded from Punjab over the whole of Western U.P., covered by the Ganga-Yamuna drab. They set up kingdoms in Kosala, to the east of the Doab and in Kasi the region of Varanasi. Towards the end of the later Vedic period, around 600 B.C., the Vedic people spread from the doab further east to Kosala in eastern U.P. and Videha in Northern Bihar. By the time Gautama Buddha a number of reference to towns such as Kaushambi, Champa, Rajgriha, Sravasti, Kasi appear. Throughout these regions the Aryans lived in thatched roof houses.

Basing his work on India's long tradition of ritual literature a French scholar, Louis Renou (1896-1966), published his article on "La Maison Vedique" in 1939. Louis Renou has tried to visualize the kind of houses that existed during vedic period on the basis of descriptions given in the Vedic texts. Renou tries to understand the practical aspects of houses in the Vedic period in the texts on ritual like Grihasutras which has passing reference to the rites that accompany house construction. From these he learns about materials - bamboo, thatch, straw mats, rope and their binding together. He then links up the description given in a further set of texts that deal with the staging of sacrifice and ritual

(Shrautasutras), where sheds and huts used in ritual performance are described. In the Shrautasutras it is also mentioned that the site of the house should be of such a nature as to allow water flowing from all directions toward the center to form an ambulatory path pradakshina around the bedroom and the water should drain without noise toward the east.

Renou also tries to analyse few mantras to see if there is some trace of the house and its organization. He is able to find out technical terms that have been used as metaphors in one passage of a funerary hymn. In the mantra it is prayed that the earth allows a thousand pillars to be raised in the cavity where the dead repose, so that her weight will not crush those who take refuge in her breast.

Louis Renou on the basis of Vedic literatures explains that the kitchen used to be a place where the water drains i.e., on the east side of the house, north of the bedroom. The general siting of the house is to be chosen such that the draining of water should be the same everywhere and no side should be lower or higher than any other. He also mentions that the construction of the house itself begins first by digging a certain number of holes. These post-holes are to have a depth equal to the distance from the ankle to knee so that the water drains well from here. Grihasutra also instructs that the pillar to the south side of the door be first erected, then that to the north. These posts that support the door on the north and south and their post-holes are referred dvar or main entrance to the house. It is also mentioned that the door can be to the east, north, or south, meaning thereby that a door to the west is not recommended. In the foundation posts, bamboo sleepers are laid so as to connect posts to one another and to help support the roof. Grihasutra also recommends that the rooms should be arranged in the spaces between the beams. The roofing system consists of nine roofs. The central roof, which rests on the central post, is secured first and then the two side roofs to the east and west. Then comes the turn of the three units to the south, and finally three to the north. The edges of the roofs to the north are inserted under those at the center so that the front

edges of the southern roofs would be slightly above the others. Thus according to the Vedic texts, the walls are woven mats and stones or bricks were not used as opposed to the earlier Harappan civilization houses.

Housing During The Mauryan Period

Later descriptions in the historical literatures from the Post Vedic period we get reference to houses constructed on both sides of the broad roads and were made with bricks. The larger houses used to have central courtyards. The Arthashastra of Kautilya recommends for the construction of planned city. According to A.L.Basham, it advises for a „square gridiron plan? divided into wards or sectors by six main roads – three north to south roads and three east to west roads. The main temple is to be located in the centre. Different category of people have been recommended to be located in separate sectors. The houses of the richer section of society were bigger in size than that of the poor people. Kautilya also recommends that fort should be surrounded by a high wall followed by deep gorge. Such conception of Kautilya is evident in Pataliputra (in modern Patna) which was the capital of the Mauryan dynasty. Strabo, a Greek traveler, has given similar description of the city of Pataliputra in his account.

The archeological evidence suggest that in the pre - Mauryan Period, Indian architects worked in wood but during the Mauryan period they started experimenting with rock-cut architecture. At present we are not in a position to say definitely whether this change in medium was caused by the Indian architects and sculptures independently or under the influence of the Greek and other counterparts who by this time had become adapted to at that medium. The evidences available to us, however, seems to favour the second alternative. The remains of the palace at Pataliputra (modern Patna) which were discovered first in 1914 -15 and then again in 1951 are very fragmentary. But they definitely indicate the presence of a large pillared hall as a part of a large building complexes. The floor and the roof of the hall were made of timber. The round and tapering pillared halls were made of

chunar sandstone. The pillers halls were arranged in parallel rows, 15 feet apart dividing the hall measuring 140 X 120 feet. The similarities between this palace at Pataliputra and the Achemenian palaces at Persia are too close. However, the rise of timber for the construction of floor and roof was totally indigenous tradition. Both Magasthenes and Fa Hsien have praised the beauty of this palace. In fact, from this period onwards we start getting evidence of pillared halls. The Mauryan period also witnessed the growth of rock cut caves for living. The earliest specimens of the rock cut architecture of the Mauryan period are the three caves found at Barabar hills, cut out of hard granite. These are (1) Rarna Choupara (2) Sudama and (3) Visvajhopri. The most important from architectural point of view is Sudama. It has several Chambers. The outer chamber is rectangular with a vaulted roof while the inner chambers are circular with a hemispherical domed roof. The caves in Nagarjuna hills were carved out on the same pattern. The best among these is the Gopika cave. All these caves are worked by the typical Mauryan architectural characteristics of a bright polish shining from their roof as well as walls.

Stupa construction in hemispherical shape also began under the Mauryas. Of the stupas, the Sanchi stupa and the Bharhut stupa are most important. Both were made of bricks. The proper height of the Sanchi Stupa would have been 77 1/2 feet and the diameter at the base of the dome is 110 feet. The Bharhut stupa was nearly 68 feet in diameter. Both the stupas have a hemispherical dome placed on a low circular wall which is further crowned by a parasol. The structures are surrounded by a passage of circumambulation fenced off by a railing wall.

In the villages and towns, homes were mostly one room huts made of wood or bamboo, with thatched roofs. Even the palaces were made of wood. Larger homes had several rooms and balconies. Streets between the homes were narrow and twisted. Stalls for selling things were located on both sides of the street. People mostly walked where they wanted to go inside their

village. The village normally consisted of a group of houses, made of brick and mud with thatched roof, and were quite close to each other. The adjacent house structures were deliberately done so for safety. Each group of house was surrounded by some kind of hedge as a protective barrier against enemies and wild beasts.

Housing During The Gupta Period

We start getting reference to three storey houses in bigger towns with tiled roofs in the Post-Mauryan period. Such houses became common from the Gupta period onwards. The housing style in villages remained the same, but a number of towns emerged with features such as brick structures, drainage system, roads and sometimes they were surrounded by brick and mud walls as well.

The construction of free standing temples (as opposed to cave-excavated chaityas and viharas) in architecture are regarded as the artistic breakthrough of the Gupta age. Numerous stupas were built during this period and the famous ones include the stupa at Mirpurkhas in Sindh, Dhamekh stupa at Sarnath and two stupas at Rajgir. The stupa at Sarnath consists of a circular stone drum with cylindrical mass of brickwork above it. It rises to a height of 128 feet and has four niches at the four cardinal points for the images of Buddha.

The rock-cut architecture of this period is represented by the chaitya hall (the shrine) and the vihara (the monastery). They are mostly found at Ajanta, Ellora and Bagh. The chaitya is marked by an imposing, colossal image of Buddha seated between two standing attendants while the vihara has rows of cells surrounding a central court. The caves of this period belong to Brahmanism, Buddhism and Jainism. The hills of Udaygiri, near Bhilsa (Bhopal) contain nine cave-shrines, which are partly rock-cut and partly stone-built. There are two inscriptions that belong to the reign of Chandra Gupta II. Cave No. 1 is also known as the „false cave?, and in it a natural ledge of the rock is converted into a primitive shrine with an additional pillared structural portico projecting from the front. The

other caves, indicating a gradual improvement in design, consist of a plain and rectangular sanctum cell, dug out of the rock and are preceded by a shallow structural portico with pillars in front. They have richly carved doorways of the typical Gupta style. The rock-cut and structural styles have been combined. Cave No. IX, locally known as the Amrita cave, is the largest, 22 feet by 19 feet 4 inches, i.e., nearly twice the size of other caves. Due to this huge size, there are four massive pillars in the interior, which have been naturally hewn, in the center of the hall and serve as additional supports for the mass of rock that forms the roof.

Among the caves of the Gupta period, the best belong to Ajanta, notably vihara cave No. XVI and XVII and chaitya cave No. XIX. Provided with a large number of pillars, their beauty is as remarkable as their variety, and no two pillars are alike. In spite of this, there is pleasing harmony in design and form. The walls of the caves were covered with painted scenes from the life and times of the Buddha (some of them are still there). Another group of rock-cut monasteries and chaitya halls are those of Ellora.

Dressed stone along with brick as a constructional element was probably used for the first time by the Gupta architects and in this respect the Gupta age can be regarded as the beginning of a new epoch in housing construction. This also gave rise to brick laid roofs supported by wooden slabs.

Towns and cities in the ancient period developed as per the economic and social needs of the regions and, as a result, socio-economic disparity between rural and urban areas was not discernible in the ancient culture. Also, there was not much variance in rites, rituals, culture, etc. in urban areas from those in rural areas, and the urban areas were just a little refined and sophisticated versions of those already prevailing in a particular region.

Modern Urban Housing

Modern urban vocabulary such as slum was not at all heard or witnessed in ancient literature. B.D.Chattopadhyaya in fact says that the dichotomy between rural and urban terminology, was not definitely visible. He says literature gives two initial impressions about the city. As an apex centre, it is not at a distance from other settlements; in other words, the essence of the city is in its centrality in the togetherness of settlements. Second there is a graded hierarchy, between villages, towns and royal city and not simply a sharp distinction between the village and the city¹.

After independence, Government of India has adopted a number of policies and programs to solve ever-escalating housing problem of the country. The ultimate outcome of these policies has been quite dismal as is evident from the continuing worsening of housing situation especially for the poor and mushrooming of *jhuggis* or slums in urban areas. Percentage of urban population living in slums had increased from 17 per cent in 1981 to 27.8 per cent in 2001². According to the 2001 Census, population living in slums was as high as 61 million³. Similarly, the percentage of households having no exclusive room increased from 0.04 in 1991 to 2.3 per cent in 2001. Thousands of families in the city have been residing in the slums without basic amenities such as safe drinking water, power connection and other facilities, and neither do they have any pacca houses.

The evidences of shelter and its organization could be taken as useful tip to construct houses in both urban and rural areas even today. We may give consideration to the humbler dwellings of the poorer folks in the villages and in towns or the still humbler shelters for economically weaker sections of society as per the prevailing climatic conditions in a particular region. The system of counting roofs or roof lines described in the Shrautasutras could still be used for the modern days buildings. Cities could also be developed in line with suggestions given in Kautilya Arthashastra. The emergence of cities near the source of water could also be taken as a guide to

understand the sustainability of a city for longer period of time. Ancient literatures give us a good idea of coexistence of poor and rich people dwellings.

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