

Comparative Study on Transformation and Changing Pattern of Rural Homestead: Case of Rajshahi City

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ABSTRACT

Human always changes their environment every time for living. Bangladesh is a country of deltaic formation, the early settlements were established alongside the rivers and canals. Villagers are the initial settlement pattern in this deltaic plain. Their settlement pattern changes because of the Culture, the Climate, the Resources. In Bangladesh 70% of people live in rural areas. Bangladesh has steadily improved its social and economic indicators. Its effects look in their house. Now a day's rural homestead changes rapidly because of the necessity of space required and availability of different materials. In the rural areas, social gathering space also changes because of modern technology, improved road network, development of the agricultural sector and many more. This article investigates the transformation of the rural homestead in Mohanpur, Rajshahi & try to find out the reasons for changing pattern of rural homestead. This transformation is find out in the homestead's case study, photographs, field survey and information collected from the local people.

Key Words: Rural Housing, Housing Transformation, Homestead, Settlement Patterns

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INTRODUCTION

House is the most important object for social position that most economist's belief. Safety, security and also comfort are still the basic criteria of a house that every human's most valuable matter in daily life. There are different types of the house like single-family house, duplex house, apartment, row house, permanent house, semi-permanent house, temporary house. One century ago Dr. F. Buchanan (1810) (cited by Muktadir and Hasan, 1985) described the rural house as, "Among the natives the poor man has one hut for himself and cattle, the richer man increased the number without altering the plan of the building and there is no contrivance by which a person can go from one apartment to the other without being exposed to sun and rain."

A traditional rural 'Bengali House', according to Muktadir and Hasan (1985) is an inheritance from the past that exists in the present and has a potential for the future. The traditional house in its basic form is a cluster of small 'shelters' or 'huts' around a central court-yard called the 'Uthan'. Different huts are constructed for different functions; such as, the outer house (Out-house or Baithak Ghar); the inner house (Dwelling unit or Ghar); the kitchen; the cattle-shed. For larger houses there appear two more huts- the store house (fuel storage, granary etc.) and the rice husking shed or the 'Dheki Ghar'.

A rural homestead or BARI is a single story closely spaced single or double story one or two-roomed rectangular building around a rectangular or square open to sky courtyard named UTHAN. In a rural area, homestead is start with flat land. If it's a mud building a pond is excavated for the soil to raising the land. Initially a raised land with a backyard pond for bathing mean PUKUR GHAT found in a large homestead. This pond allows them not only bathing but used for fishing and ducks for the household income.

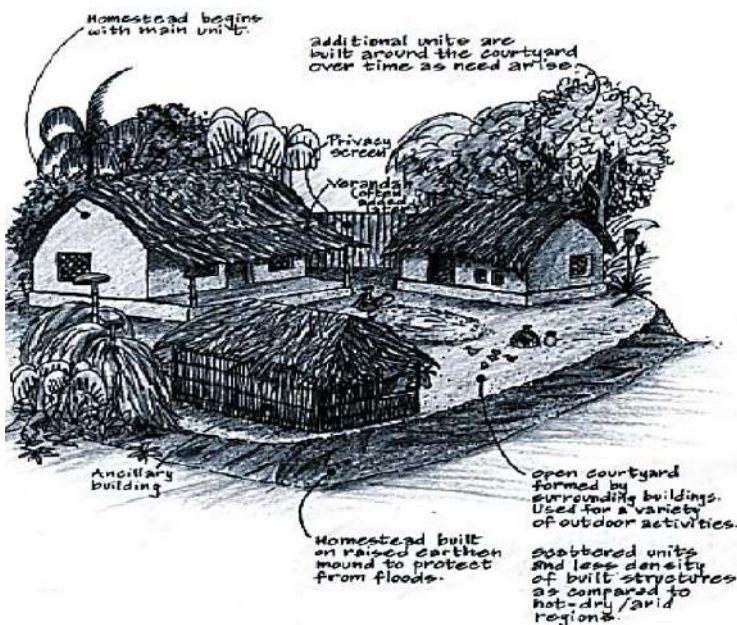


Figure: Sketch showing the typical rural house-hold, Source: Ahmed, 2005.

After rising that land, every homestead starts with the main dwelling unit mean BOSHOTH GHOR. Other structures such as kitchen mean Ranna Ghor, Granaries mean Gola Ghor and cowsheds mean Goyal Ghor is built gradually over the time around a central open space called UTHAN. The word GHOR mean "ROOM," that indicates the individual units are perceived actually as rooms with specific functions and not really as buildings; the BARI (House) consisting of several Ghors around a courtyard is considered the unit of home. The main Ghor is usually a well-built structure on the homestead and the ancillary structures tend to be semi-permanent, built of perishable materials. As the family grows, these are moved to peripheral locations and more dwelling units are added around the courtyard. The courtyard serves as the main circulation space between the buildings arranged around it (Ahmed, 1999).

According to Muktadir and Hasan (1985), the two types of domestic space are the "shelter" and the "yard". Their layout reflects daily household function, gender division of labor, religious instructions and presence of local culture.

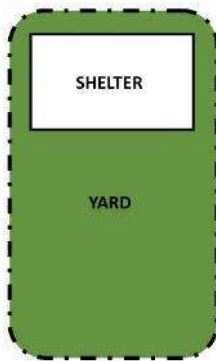


Figure: Basic layout of a traditional Bengali house (Source: Muktadir and Hasan (1985))

The basic layout of a traditional Bengali house has two zones without considering the changes in locations, materials, climate, etc. and their impact on the house forms. All the activities of a house are arranged by following these zones (Muktadir and Hasan, 1985). These are:

- FORMAL ZONE (For Male, Outer part of the house)
- FAMILY ZONE (For Female, Inner part of the house)

These zones are organized on the basis by social, cultural, religious and climatic considerations, which are representing a “Bengali Society.”

FORMAL ZONE is the outer part of the most houses. All the activities related to agriculture like crop preparation for cultivation and selling are take place in this space. The built forms like an outer house or BAITHAK GHOR, cowsheds, toilets, general storage and food storage for cattle are organized in this zone to support those agricultural activities. Male persons occupy this portion of the house generally. Women also used this space for different household works during the time of absence of the outsiders. The outer house is use for the socialization of male persons from out sides and for the persons like KAMLA mean labor who are employ here for the cultivation. Sometimes this rooms used for taking rest and sleeping for them also. The outer house is also use as a buffer between formal and informal zones. An additional toilet is take place in this zone for the use of male persons of the family, workers, and visitors.



Figure: Formal zone of rural homestead (Photograph by Author)

FAMILY ZONE is the central open to sky courtyard is a symbol of regional architectural identity in rural Bangladesh. Although it has characteristics similar to courtyard housing in other parts of world, such as maintaining privacy within a traditional setting and as a climatic device, the Bangladeshi courtyard is unique because of the particular type of layout of individual buildings. Bangladeshi rural homestead is composed of some closely spaced buildings around an open space. But the courtyard layout extends beyond that because it arises from a specific context of social and environmental conditions and represents a unique regional typology. In addition to serving as a bounded space for women, the courtyard here provides a sense of belonging and weaves a collective bonding between the individual dwellings and thereby family member that comprise the homestead (Islam, 2003).



Figure: Family zone showing the burner in the open to sky court (Photograph by Author)

METHODOLOGY

The study is qualitative in nature. It is principally based on some anthropological techniques, i.e., prime information is collected from interview and survey method. The area was select from north-western part of Bangladesh, which is a village named Tilahari under the Keshorhat Pourashava, Mohanpur Upazila in Rajshahi district. High concentration of current research problem is find out in this area. A large number of new homestead are built in the last 20 years in this village as well as surrounding villages. The place is located in Latitude $24^{\circ}35'39.62''\text{N}$ longitude $88^{\circ}38'34.67''\text{E}$ and shown in the figure below.

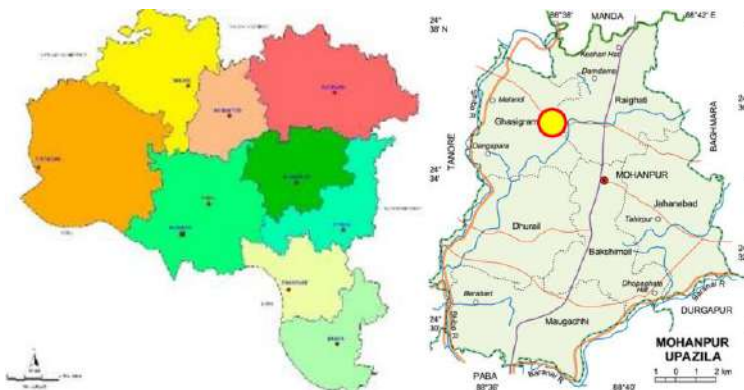


Figure: Map of Rajshahi district & Mohanpur Upazila (Source Google 2017)



Figure: Location map of case study area (Source Google Earth 2017)

The ethical issues for conducting this research have been maintained strictly so that the research findings are more informative. The case study includes a physical survey, memories of the senior persons of the surveyed homestead, photographs, sketches and interview with the village people. It is a significant factor that this village is the own village of the author and the studied homestead is the author's village house. So he also has some childhood memories about the homestead. For comparison with old homestead [Homestead in 1997] layout with present-day layout authors' childhood memories and the interview with this homestead people is very much important.

OBJECTIVE OF THE STUDY

Bangladesh is a developing country, and its rural and urban areas are developed day by day. So the main aim of the article is to find out the reason of transformation of a rural homestead. The main goals are:

- To find out the reasons behind the changing of old homestead.
- To find out the transformation pattern of present days.
- To find out the impact of changing pattern of the village.

DESCRIPTION OF CASE STUDY HOMESTEAD IN 1997



Figure: Layout plan of case study homestead-1997, showing the front yard and back yard (Sketch by author)

According to the member of this case study homestead, it was built in around 1950-1960. That time the only 10-15 family lived in this PARA (a small part of a village), and the population was 100-120. The main occupation of this village people was the farmer but some people were businessmen too. People suffering from poverty that time. The primary building materials of this village were mud, for roofing straw and mud tiles. But most of the homestead was mud and straw roofing. That time this was the only mud made two-storied building in this village. In the figure above layout of case study homestead, front building was Baithak Ghor with a front veranda and in front of that it there was a yard. In this front yard and veranda, all the meetings about the PARA were held here. That time all the people were gathered in this front yard. Inside part of Baithak Ghor in the ground floor, there were a living space and a dining room. West part of this homestead was a one-storied mud building used as a main living area for family member another space was used as living area that was the first floor of the Baithak Ghor.

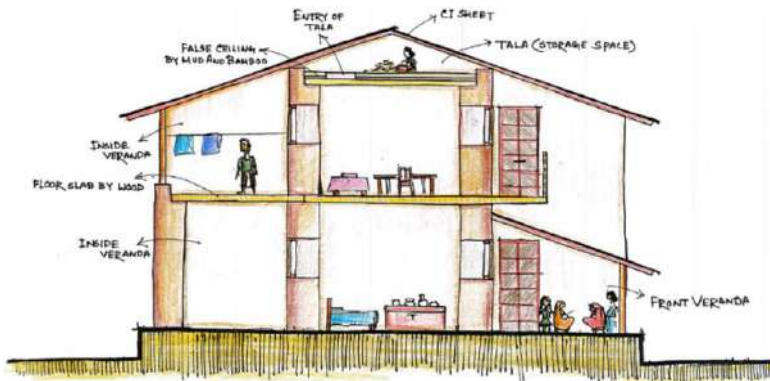


Figure: Section Showing the Front Veranda and Baithak Ghor of Two Storied Building of Case Study Homestead 1997. (Sketch by Author)

Eastern part used as service zones like the shaded kitchen and Dhaki Ghor and in the south-eastern corner, there was a tube well, and a bathing area. There was a long continuous veranda at the northern part. Outside part of that veranda was used as a Goal Ghor. So the four-sided building creates a central open to sky courtyard. In the eastern part of this court, there was a Gola Ghor a large pomegranate tree and an open to sky burner. That Gola Ghor was three feet high from ground level, and a CI sheet roofed structure. The materials of that Gola Ghor were bamboo frame covering with mud so that it looked like a mud building. There was two chamber of that Gola Ghor so that two different types of paddy can keep at a time. The below three feet space of Gola Ghor used as a space for chicken and ducks.



Figure: Present homestead's open to sky central courtyard created by mud made Baithak Ghor of Homestead -1997 (Photograph by Author)

Except two-storied front building, all that building roofing material was mud tiles and the two-storied building and Gola Ghor were the CI sheet shaded building and the flooring materials of the two-storied building were wood in the case studied homestead. Again there was also a back yard in that homestead. In that back yard all the agriculture related work are done here. A toilet was just beside the back yard. All the building's roof was Dochala and Chowchilla. In this area, there was up storage space between the false ceiling and the main roof that is called TALA, shown in below figure. In every homestead of this village TALA was a common feature because it's an agriculture-based village and every homestead didn't have Gola Ghor, so they used that TALA (space between the main roof and the false ceiling) for storage space. One also climatic factor were related with that TALA because it can protect the indoor environment from direct sun heat so that the indoor environment was always comfortable.

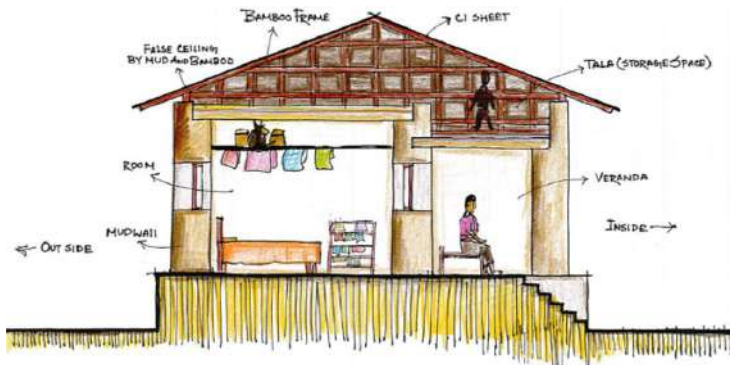


Figure: Section show the TALA and all detail materials of the main living building of case study Homestead 1997. (Sketch by author)

DESCRIPTION OF CASE STUDY HOMESTEAD IN 2017

Transformation is a continuous process in all sectors in the world. So the case study homestead was also transforming day by day and this homestead village also transforming as usual. In this article, we described the present situation that means 2017. Now the case study village population is increased, according to the Pourashava report the population of this PARA is 560, and there are 42 families lived here. All the families are lived here from their origin. So no new family come to live here from last 20 years. So the new increased family of this PARA is the result of increasing number of family member.



Figure: Showing the Formal & Family zone in studied homestead (Photograph by author)

The case study homestead-1997 was single-family house, but now the four sons of that family need their own house, so the main homestead is divided in to four new homestead. Three of that homestead now totally completed and the little son got his land but he not built his own house. Below figure shows the three new homestead which was the division of the main homestead-1997.



Figure: 1st image shows the entry of the case study homestead and the 2nd image shows the inside veranda. (Photograph by author)



Figure: Present Condition of Case Study Homestead 1997 showing Transformed Homestead-1, Homestead-2 and Homestead-3 (Sketch by Author)

Now the three new homesteads are built with the brick structure and CI sheet roofing without kitchen structure. Kitchen structure is mud tiles roofing that showed in the old main homestead.

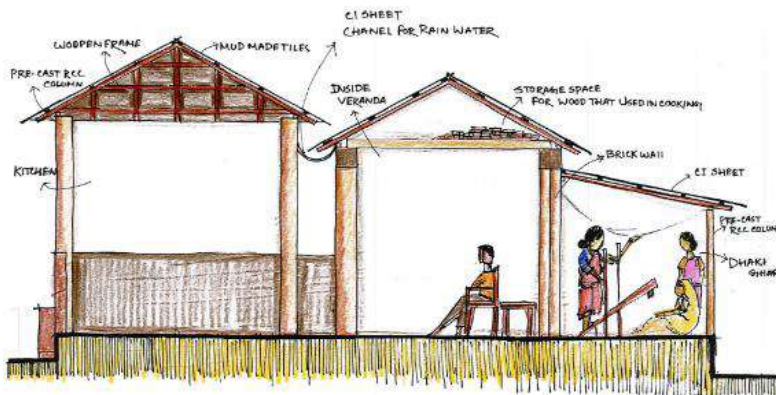


Figure: Section Showing the Kitchen, Inside Veranda and Dhaki Ghor with Materials of Case Study homestead 2017. (Sketch by Author)

The new homestead has a Baithak Ghor, a front veranda, and also a have an open to sky courtyard. TALA is common features in this village so in this case study homestead there is also a TALA. But one thing changes in this homestead. People used MOI (Ladder) for used TAAL but now new homestead, a stair is built for using the TAAL space.

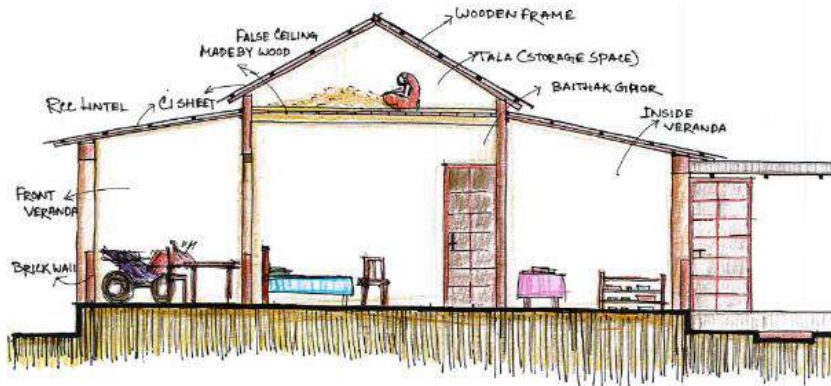


Figure: Section showing the detail materials and TALA space in new Homestead 2017. (Sketch by author)

Two of this homestead also have a front yard and a back yard but one homestead has no front and back yard. Every homestead has an open to sky central courtyard, and two of them have a Gola Ghor, but one change shown in the Gola Ghor is the materials.

Now the Gola Ghor is made with brick structure but in the inside part of that building is cover with the bamboo frame and that bamboo frame is covered with mud so from the outside its look like a brick building with the concrete flat roof but inside of that building is look like a mud building. They change the materials of the Gola Ghor because of the rat. Rat destroy the stored paddy, so the change the materials of the building but they did not change the interior mud materials because of the thermal environment that the stored paddy need. Today also there is a two-chamber Gola Ghor with two feet high from ground level and the below two feet is used as a space for chicken and ducks.



Figure: Transformed Gola Ghor with modern materials and non-transformed kitchen's roof materials (Photograph by author)

One homestead has the brick building with the old two-storied building also keep to create a central courtyard. But now two-storied building break down in one-storied and that is

now a single-storied mud building. The mud building used the all old two storied buildings materials. This old mud building is kept conserved because of the childhood memories of the family persons. All the three homestead have a kitchen with mud tiles roofing in a side of the open to sky courtyard.



Figure: Space for chicken, duck under Gola Ghor and fire wood storage (Photograph by author)

COMPARATIVE ANALYSIS OF HOMESTEAD 1997 AND 2017

Layout

The basic design of the old and new layout is mostly same. There are four-sided building create an open to sky courtyard, and the kitchen area is one side of the courtyard. In the front there is a Baithak Ghor in all homestead, then the living zone the Gola Ghor is one side of the courtyard. The new homestead also a Dhaki Ghor in the back yard side. The old and the new homestead have a front and back yard. One common feature of the old and new homestead are TALA (Storage space above false ceiling).

Home Stead	Basic Layout
Homestead Year: 1997	<ul style="list-style-type: none"> → Main Building → Courtyard → Gola Ghar → Kitchen
Homestead Year: 2017	<ul style="list-style-type: none"> → Main Building → Gola Ghar → Courtyard → Kitchen



Figure: Section of case study homestead 2017 showing the Formal Zone and Family Zone. (Sketch by author)



Figure: Detail showing the TALA of main living space which is used for storage space for agricultural items and second image showing the TALA above the inside veranda which is used for cooking fire wood. (Sketch by author)



Figure: Showing the Dhaki Ghor and a small structure beside the back yard for storage space for cooking wood for the rainy season. (Photograph by author)



Figure: Showing the TALA space where some paddy is keep for drying and second image showing the below part or TALA. (Photograph by author)

Materials:

Now a day’s brick is a very available material, and there are two brick filed beside the village, so brick is very cheap. New homestead is made with brick, and the roofing materials is CI sheet only the kitchen is made with mud made tiles roofing and the Gola Ghor is made with brick and the roof is flat concrete materials. The inside part of the Gola Ghor is made with mud and bamboo frame.

Homestead	Location	Wall Materials	Roofing Materials	False Ceiling	Floor Materials
Homestead Year: 2017	Baithak Ghor	Mud	Mud Made Tiles	Wood/ Bamboo	Mud
	Main Living	Mud	CI sheet and Mud made tiles	Bamboo	Mud
	Dining Space	Mud	CI sheet	Bamboo	Mud
	Kitchen	Mud	Mud made tiles	Bamboo	Mud
	Gola Ghor	Mud	Mud made tiles	No	Mud
	Varanda	Mud	Mud made tiles	Bamboo	Mud
	Toilet	Bamboo	CI sheet	No	Net Cement Finish
	Dhaki Ghor	Mud	Mud made tiles	No	Mud
Homestead Year:1997	Baithak Ghor	Brick	CI sheet	Wood	Net Cement Finish
	Main Living	Brick	CI sheet	Wood	Net Cement Finish
	Dining Space	Brick	CI sheet	Bamboo	Mud
	Kitchen	Brick	Mud made tiles	No	Mud
	Gola Ghor	N/A	N/A	N/A	N/A
	Varanda	Brick	CI sheet	No	Net Cement Finish
	Toilet	Brick & Tiles	CI sheet	Wood	Floor Tiles
	Dhaki Ghor	Brick	CI sheet	No	Mud

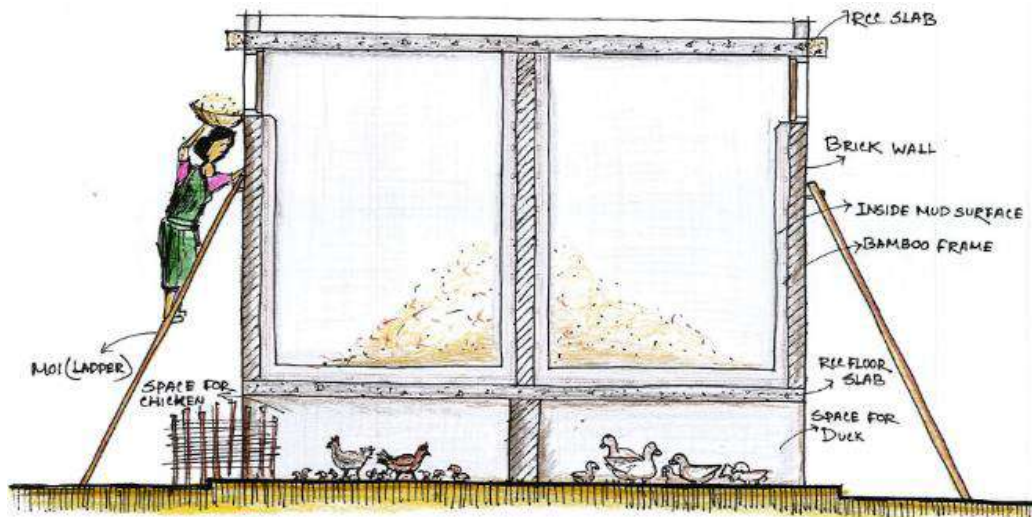


Figure: Section of showing the RCC made Gola Ghor, Homestead 1997. (Sketch by author)

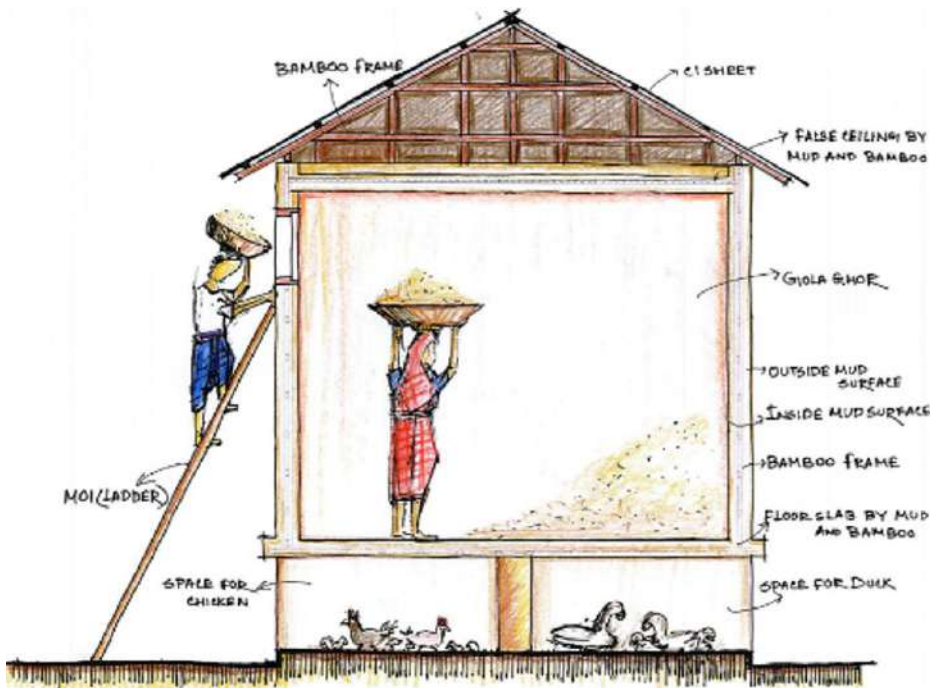


Figure: Section of showing the detail materials Gola Ghor, Homestead 1997. (Sketch by author)

FACTORS EFFECTING TRANSFORMATION OF HOUSING

Hossain (2008) mentioned two factors for the diversification of the forms of rural houses. They are as followings:

Socio-Economic Factors

In case study the village people were very poor in 20 years past, but now every people of this village have to ability to make a new homestead for their own. They try to build a new homestead with the brick because it brings their social values. Now they find different construction materials in their locality so the new homestead we found that have used different construction materials.

Environmental factor

The local climate is playing an important role for transforming the homestead. In past years' that village facing flood, cyclone and other natural disaster, but now this types of disaster are not attacked regularly. So now people want to build the permanent house. Soil condition is another factor that effects the transformation because where the soil is good, that area we saw the mud building but where the soil condition is not good they not build the permanent house with soil. Their building materials are also temporary like straw, bamboo frame, CI sheet, etc.

Islam (2003) expanded these factors affecting rural house forms into three categories. They are:

- The differences in land characteristics, climate and available construction material
- The differences in cultural factors
- The differences in religious factors

SETTLEMENT PATTERN OF THE STUDY AREA

Distinct cultural and social factors along with differences in geophysical characteristics, materials, climate and technology guided the spreading of human settlements in the South Asia region, especially in Bengal (Islam, 2003).

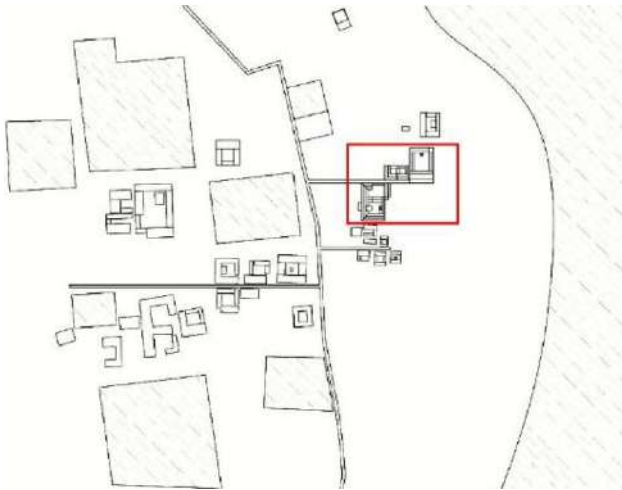


Figure: Layout plan of case study village (Drawn by author)

The footprint of the homestead of that village showed in the above figure. If we observed every homestead, then some clear issues find out from there. Every homestead has an open to sky courtyard and also has a four-sided building, and homestead is placed in a group in the village, no single homestead is placed alone. Homestead materials of this village are mud, CI sheet, mud tiles but modern building materials like brick, flat concrete roof and metal grill for window also seen in this village.

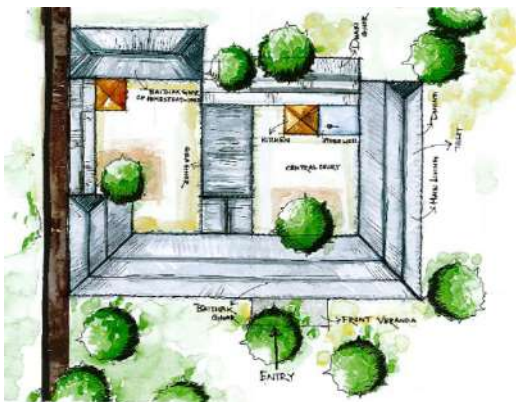


Figure: Homestead 2017

(Sketch by author)

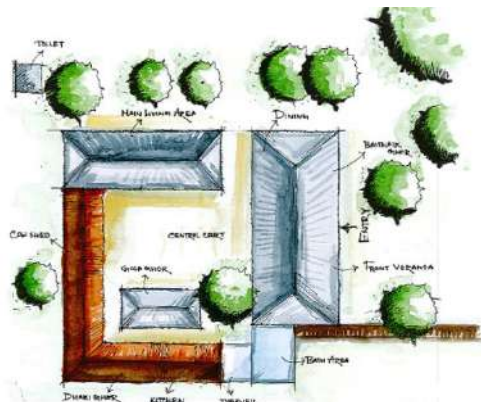


Figure: Homestead 1997.

But if we back 20 years past then the homestead materials are mud and straw. One another findings also were seen in this village that's materials of the kitchen, all homestead's kitchen made with mud tiles. Now because of electricity facilities, almost every homestead has a modern sanitary facility and also have a proper water supply system in this rural area.

Orientation is not focused in this village homesteads. Most of the homesteads are east-west oriented. But they have some knowledge about micro-factor for thermal comfort. The case study homestead has 60 years old mud house. If we observed that the window of that building have a depth of two feet from outer façade. And the main roof is extended so that the direct sun's heat couldn't heated the outer façade of that building. And the wall depth of this building is two and half feet. So heat couldn't reach in the interior space.

CONCLUSION

Transformation is a common scenario all over the world. In the case study area now all the infrastructural takes place. The people now use all the modern materials. But they follow the layout of their origin. Because their old layout is fulfilling their all requirements. People of this case study village are led their life on agriculture. Transformation takes place all over the village. Now they use electricity and many other modern facilities, but they didn't forget their origins homestead layout. So it's very important to follow the transformation to be with the present situation, but we should maintain the requirement because whatever we did that we must fulfill our necessity. So the main observation of the case study homestead is that the new homestead follows the old homestead's layout and in the village. They try to conserve the old thing like this new homestead keep the old two-storied mud building now to remember the old memories. In this village we also observed the main layout of the homestead, materials selection in different parts of the building as same as the old one, because they take the good thing from the tradition.

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