


# Transformation of Housing in a Low-income Settlement: A Study of Domestic Spaces in Ershad Nagar Resettlement Camp

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## ABSTRACT

 Housing transformation is a major strategy among low-income households in formal and informal settlements. Domestic spaces are produced for social unity. This study illustrates the analysis of domestic spaces in a low-income settlement and their impact on the inhabitants' ways of life. The factors that affect the physical organization of spaces and its quality are evaluated with respect to the survival strategy of the low-income dwellers. The space organization of the dwelling units illustrates different structures and forms that may not fit the conventional understanding of modern urban housing. The space organization of a dwelling reflects the user's needs and space requirements and the incremental developments that are experienced with a mutual understanding of the neighbors. In this respect, the physical characteristics of a low-income settlement, Ershad Nagar resettlement camp, in Dhaka are investigated. In addition to housing and neighborhood characteristics, the economic, social and cultural status of the residents in those areas are examined. The study shows that the domestic spaces of the low-income housing are being transformed. The transformation of domestic spaces reflects the overall housing transformation of the settlement.

**Key words:** *housing transformation, domestic spaces, low-income settlement, resettlement camp*

## INTRODUCTION

Housing is defined as the total residential environment or micro district including physical structures, all necessary services, facilities and apparatus for the total health and social well-being of the individual and family (Abrams, 1964). It is seen as the physical

environment in which the family and society's basic units develop and are sustained. Housing structures may be used as living accommodations, work places or a combination of both.

According to Abrams (1964, p. 13), "...housing is not only a shelter but also part of the fabric of the neighbourhood life and of the whole social milieu." It touches upon many facets of economic activity and development. Thus, housing provides social contacts, an image, a sense of belonging and an indicator of social status. Economically, housing represents a major portion of the family budget or that of an establishment, yet in the realm of private and public investment, the built environment represents a man's most tangible material asset (Kinyungu, 2004).

In formal and informal settlements, housing transformation is a major strategy among low-income households, and is carried out of due to residents' desperation. (Tippie, 2005). Transformation in housing can be related to the urge by one to create a personalized environment, to share with others, or to follow a fashion. "The need to give one's personal stamp is as important as the inclination to be obstructive." (Avi, 2002, p. 13). It all has to do with the need for a personal environment where one can do as one likes, indeed it concerns one of the strongest urges of mankind: "... the desire for possession, to possess something one has to take possession. We have to make it a part of ourselves, put our stamp on it. Something becomes our possession because we make a sign on it... because it shows traces of our existence" (Habraken, 1975, p. 12). Habraken argued that one cannot really identify with an area unless one has made some contribution in the way of construction or alteration and that a sense of belonging can only really be achieved through leaving physical traces. Tippie and Ameen (1999) consider any user-initiated extension and alteration made to the original form of a building or neighbourhood for whatever reason is a transformation.

Domestic spaces are produced for the social unit; the individual, family or clan and their dependents, human and animal. It provides shelter and security for the basic physical functions of life and at times also for commercial, industrial or agricultural activities that involve the family unit rather than the community.

In Bangladesh, the increasing number of urban-poor is alarming. The slum census preliminary report made in 2014 by BBS reveals that the number of slum dwellers increased four times in 17 years (Islam et al. 2016). The government has failed to provide livable housing conditions due to an improper housing policy. Scattered

attempts to house the poor have generally been unsuccessful and no remarkable achievement has been accomplished. It is high time to come up with a multi-disciplinary action to address low income housing issues. Design propositions for low-income housing and settlements has been an important topic in architecture disciplines. In order to address the design issues, one has to understand the life and living pattern of low-income people.

The Ershad Nagar Resettlement camp at Tongi was chosen for this study. As a part of the 'Dhaka Clean' project in 1974, this camp was a government initiative to house evicted illegal slum dwellers. Since 1974 to 2015 the camp's residents have gradually constructed and extended their houses. Therefore, the site gives various opportunities to explore incremental growth, adaptive living styles and aspirations of those who have a low income. Being in the peri-urban zone, this settlement has the potential to show imitations of village life within an urban density. By studying the houses and the community, this study intends to shed light on the lives of the urban poor who are living in a 40 year old settlement. This data could be useful to develop an understanding for improving the settlement camp itself or to develop designs for the urban poor elsewhere.

Transformation in domestic spaces is due to various reasons. This study is carried out to discover the transformations made in the Ershad Nagar resettlement camp of Bangladesh.

## BACKGROUND

Ershad Nagar is one of the three resettlement camps constructed by the former Prime Minister Sheikh Mujibur Rahman in Dhaka in 1975. The previous name of this settlement was 'Dattapara Rehabilitation Centre'. The camp was first established on an agricultural land of 101 acres (40.40 hectre). The purpose of the project was to evacuate people from their unauthorized occupation of valuable public land in the city center.

In 1975, the operation of demolishing 173,000 *busteebashees* (*bustee* households) was first implemented and these destitute people were transported to three resettlement camps, which are located in different areas in the city (Rahman, M. 1999). In the initial stage there was neither construction nor a plan. People constructed their own



Figure 1:  
Satellite view from Google earth view of Ershad Nagar Resettlement Camp.

temporary tents as the policy was assisted self-help housing as government, other than providing land, was unable to provide any houses. In a later stage, all housing materials at the site were a gift from various NGOs. Hommesdes-Terres (TDS) and the Salvation Army house-building programs provided the materials of 9' by 18' bamboo frames and matting for huts. These huts accommodated up to ten people each. In 1979, a storm destroyed about 100 houses; these had to be reconstructed by the agencies. Daily maintenance of the houses was strictly the responsibility of the householders.

In 1984, when the country was under Military regime, President General Ershad first proposed for the semi *pucca* (semi-permanent) houses and roads and changed the name Datta Para to Ershad Nagar, which means the City of Ershad. Although his intension was to provide housing for all 3444 families, only 1116 houses were constructed during his rule. Each house was constructed for two individual families and each family had two rooms with a kitchen, pit latrine, tube well and an open veranda. The plot for each family was approximately 8m X 8m.





Figure 2:  
The camp in 1975 and in 2017 (Source: internet and author respectively)

## METHODOLOGY

The objective of this research is to understand the domestic spaces and their transformation in the specific context of Ershad Nagar resettlement camp in the Gazipur district in Bangladesh. The possible outcomes are as follows:

- Understanding of general social and settlement profile
- Understanding of the formation and organization of domestic spaces and house forms in the households of the survey area
- An observation of housing transformation to know the process of negotiation of domestic spaces after 30 years of their settlement

This study is based on both primary and secondary data. Primary data has been collected through field surveys and interviews. The field survey data have been interpreted into an analysis of the houses through plans, photographs and descriptions. Interviews were collected from the dwellers, development partners, local leaders and local representatives.

Secondary data has been used to cross check the historical background the studied area with the primary data. This was done to understand and to establish the context of the study. Secondary data sources includes research papers and articles, dissertations, newspaper articles, and government census reports. Finally, observations of lifestyles and recommendations are presented.

The study has been designed in two parts: first, a review of literature concerning existing theories, key concepts, background and analysis to develop a working theoretical base; second an empirical section based on a field survey and interviews within the local context using the theories developed in part one.

Fourteen homesteads were selected as samples for the investigation. The selected cases are situated in Block-C of the Ershad Nagar resettlement camp. The households were considered in a random selection basis to investigate the housing transformation which is the main premise of this study. Collecting data was done via observational techniques. These were supplemented by active participation, informal interviews, questionnaire survey, photographs and drawings.

Informal interviews and semi-structured interviews were taken of the sample households' inhabitants. The informal pattern of the questions allowed the respondents to discuss their living patterns, employment, and income generation freely with less inhibitions. The conversations were all noted and, in some cases, taped to save time. The field work was done during a time when the respondents were most active in their daily domestic ventures. This timing allowed for good photographs, sketches and even interviews.



## CASE STUDIES

Ershad Nagar is divided into eight sectors from A-H. Here block C was taken as a case study. In the block

C 15 houses are surveyed on a random basis. Plans from 1987 and 2017 with charts that describes the demographic features as well as their living standard are given below.

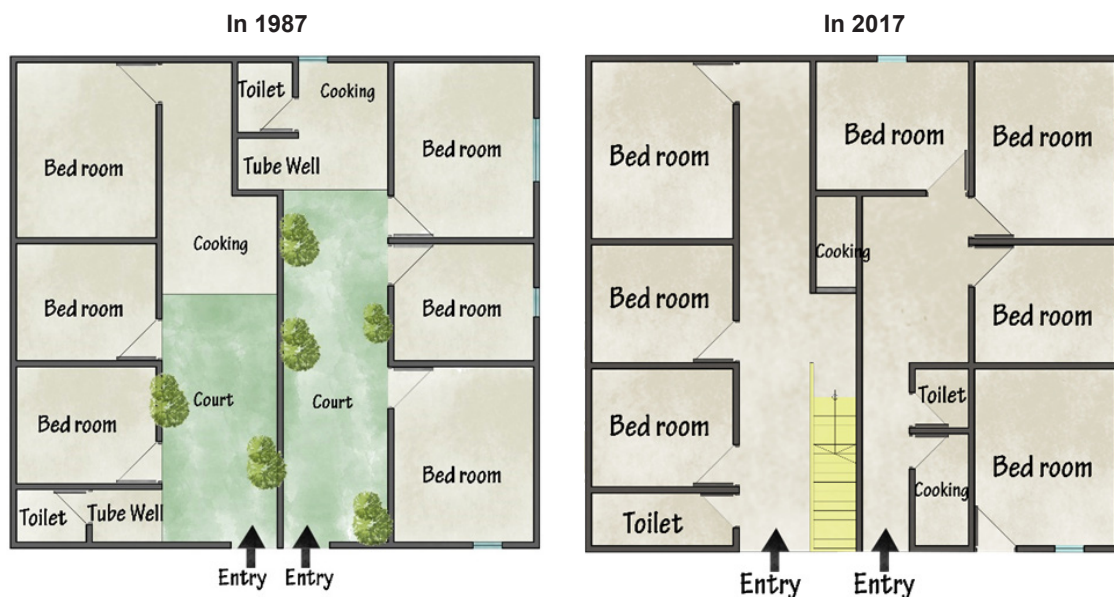


Figure 3:  
Room layout of case study 1 and 2

Case Study 1	Living Pattern			Income status		Housing tenancy
	Family member	Household type	Members	Occupation	Monthly income	Owner
	6	Combined family	Husband ,wife 2son,1 daughter,1 daughter in law	Garments worker Bus contractor Social work, computer shop	25000 Taka	
	Utilities			Facilities		
	Electricity		Water supply	Sanitation		Kitchen
	Meter connected 400 Taka per month		Tube well Submersible	1 toilet		1 stove

Figure 4:  
Chart of case study 1

Case Study 2	Living Pattern			Income status		Housing tenancy
	Family member	Household type	Members	Occupation	Monthly income	Owner
	9	Extended family	3 families with 3 children	C.N.G driver Work in a shop	20000 Taka	
	Utilities			Facilities		
	Electricity		Water supply	Sanitation	Kitchen	
	Meter connected 400 Taka per month		Tube well Submersible	1 toilet for 3 families	1 stove for 3 families	

Figure 5:  
Chart of case study 2



Figure 6:  
Room layout of case study 3 (surveyed family in dark shade)

Case Study 3	Living Pattern			Income status		Housing tenancy
	Family member	Household type	Members	Occupation	Monthly income	Tenant
	3	Single family	Parents with 1 children	Garments worker Bus conductor	5000 Taka	
	Utilities			Facilities		
	Electricity		Water supply	Sanitation		Kitchen
	Meter connected 400 Taka per month		Tube well Submersible	1 toilet for 3 families		2 stove for 3 families

Figure 7:  
Chart of case study 3

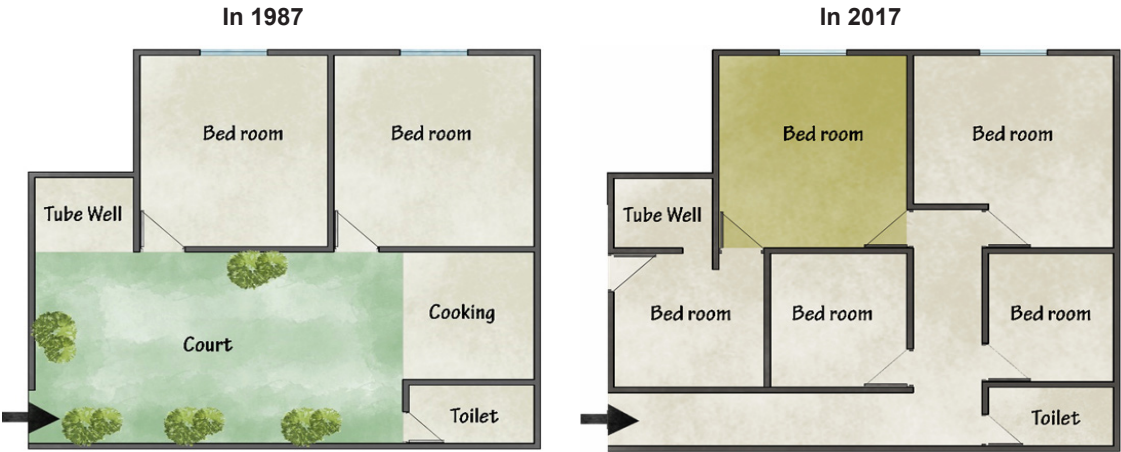


Figure 8:  
Room layout of case study 4 (surveyed family in dark shade)

Case Study 4	Living Pattern			Income status		Housing tenancy
	Family member	Household type	Members	Occupation	Monthly income	Tenant
	4	Single family	Parents with 2 children	Garments worker	10000 Taka	
	Utilities			Facilities		
	Electricity		Water supply	Sanitation		Kitchen
	Meter connected 400 Taka per month		Tube well Submersible	1 toilet for 3 families		2 stove for 3 families

Figure 9:  
Chart of case study 4

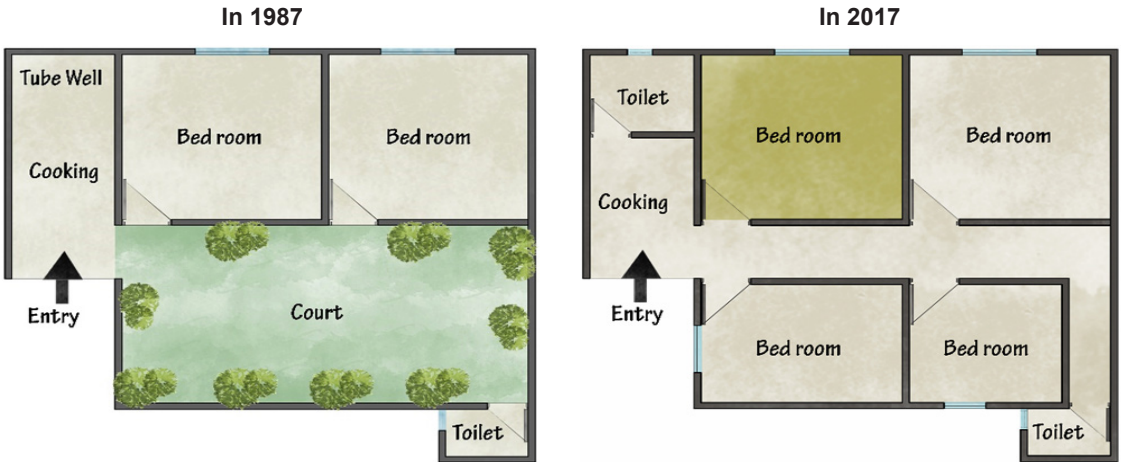


Figure 10:  
Room layout of case study 5 (surveyed family in dark shade)



Case Study 5	Living Pattern			Income status		Housing tenancy
	Family member	Household type	Members	Occupation	Monthly income	Tenant
	4	Single family	Parents with 2 children	Hawker	10000 Taka	
	Utilities			Facilities		
	Electricity		Water supply	Sanitation		Kitchen
	Meter connected 400 Taka per month		Tube well Submersible	2 toilets for 3 families		2 stoves for 3 families

Figure 11:  
Chart of case study 5

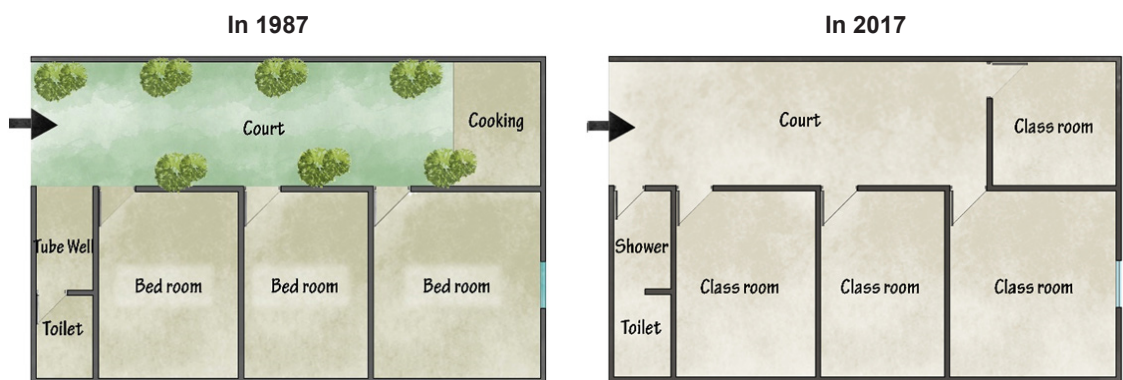


Figure 12:  
Room layout of case study 6

Case Study 6	Living Pattern			Income status		Housing tenancy
	Family member	Household type	Members	Occupation	Monthly income	Tenant
	X	Coaching Centre	X	X	20000 Taka	
	Utilities			Facilities		
	Electricity		Water supply	Sanitation		Kitchen
	Meter connected 400 Taka per month		Tube well Submersible	1 toilet		X

Figure 13:  
Chart of case study 6

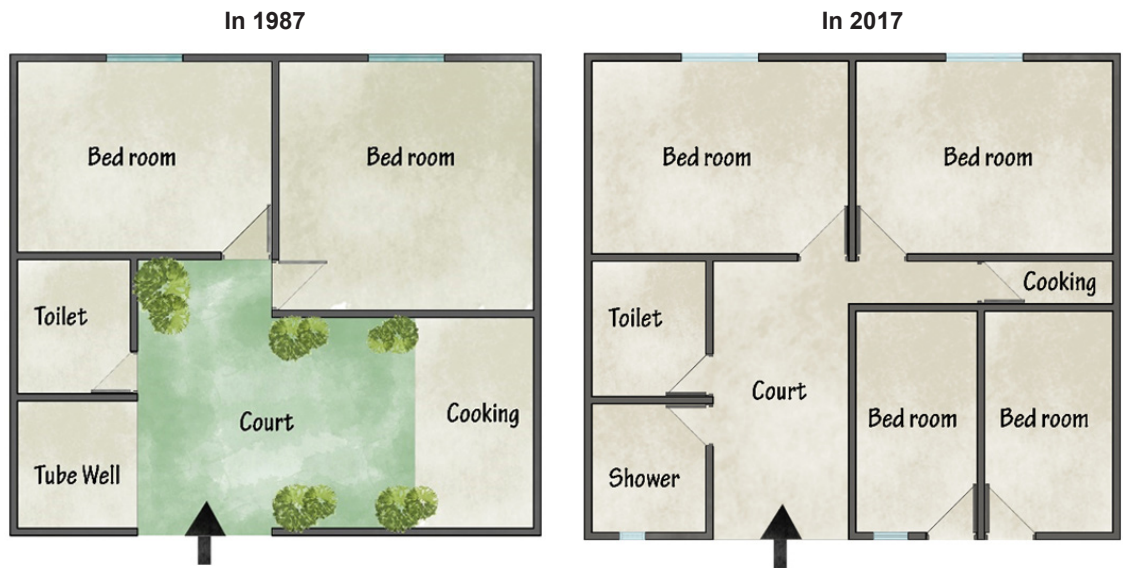


Figure 14:  
Room layout of case study 7

Case Study 7	Living Pattern			Income status		Housing tenancy
	Family member	Household type	Members	Occupation	Monthly income	Owner
	11	combined family	3family with 6 children and grandmother	Bus driver Garments worker	30000Taka	
	Utilities			Facilities		
	Electricity		Water supply	Sanitation		Kitchen
	Meter connected 400 Taka per month		Tube well Submersible	1 toilet for 3 families		1 stoves for 3 families

Figure 15:  
Chart of case study 7

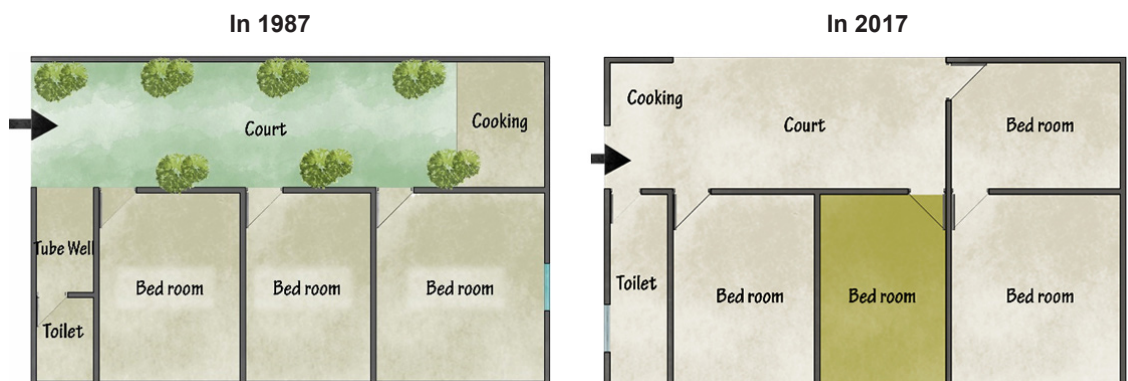


Figure 16:  
Room layout of case study 8 (surveyed family in dark shade)

Case Study 8	Living Pattern			Income status		Housing tenancy
	Family member	Household type	Members	Occupation	Monthly income	Tenant
	2	Single family	Husband and wife	Factory worker Garments worker	10000 Taka	
	Utilities			Facilities		
	Electricity		Water supply	Sanitation		Kitchen
	Meter connected 400 Taka per month		Tube well Submersible	1 toilet for 3 families		3 stoves for 3 families

Figure 17:  
Chart of case study 8

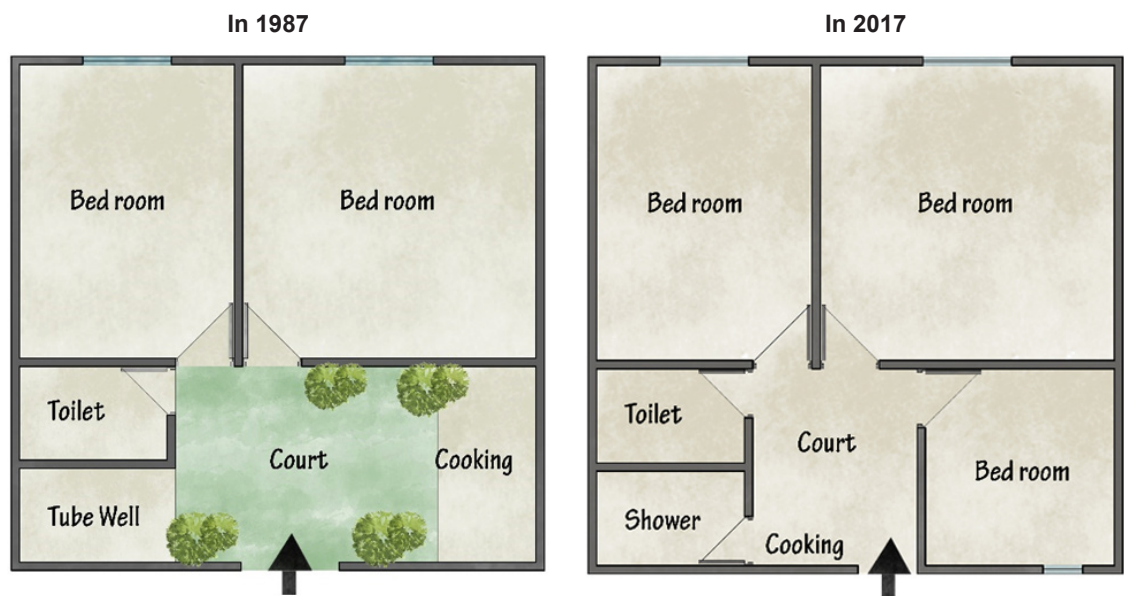


Figure 18:  
Room layout of case study 9

Case Study 9	Living Pattern			Income status		Housing tenancy
	Family member	Household type	Members	Occupation	Monthly income	Owner
	8	Combined family	2 families with 3 children, grandfather	Carpenter Garments worker	15000 Taka	
	Utilities			Facilities		
	Electricity		Water supply	Sanitation		Kitchen
	Meter connected 400 Taka per month		Tube well Submersible	1 toilet for 2 families		2 stoves for 2 families

Figure 19:  
Chart of case study 9



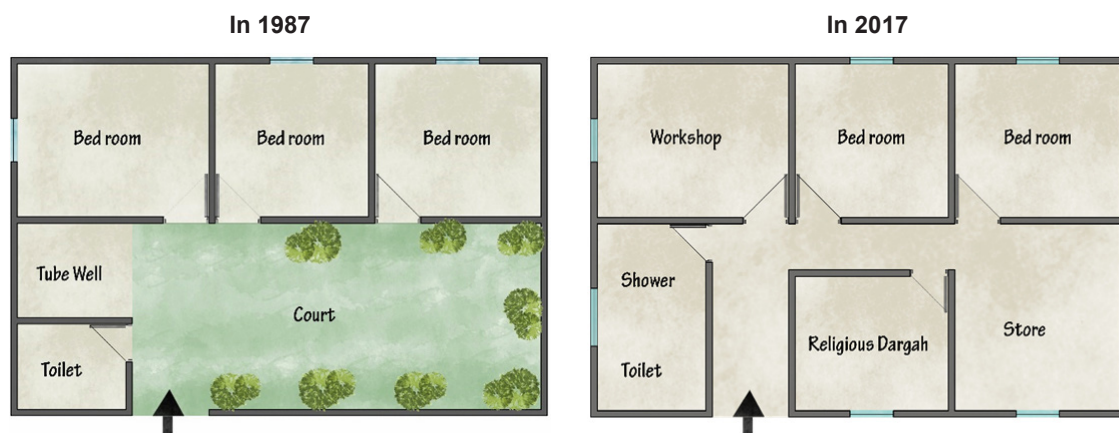


Figure 20:  
Room layout of case study 10

Case Study 10	Living Pattern			Income status		Housing tenancy
	Family member	Household type	Members	Occupation	Monthly income	Owner
	7	Combined family	2 families with 2 children, grandmother	Small business (cap) Garments worker	10000 Taka	
	Utilities			Facilities		
	Electricity		Water supply	Sanitation		Kitchen
	Meter connected 400 Taka per month		Tube well Submersible	1 toilet for 2 families		1 stoves for 2 families

Figure 21:  
Chart of case study 10



Figure 22:  
Room layout of case study 11 (surveyed family in dark shade)

Case Study 11	Living Pattern			Income status		Housing tenancy
	Family member	Household type	Members	Occupation	Monthly income	Owner
	4	Single family	Mother with 3 daughters	Garments worker Garments worker	7000 Taka	
	Utilities			Facilities		
	Electricity		Water supply	Sanitation		Kitchen
	Meter connected 400 Taka per month		Tube well Submersible	1 toilet for 2 families		1 stoves

Figure 23:  
Chart of case study 11



Figure 24:  
Room layout of case study 12 (surveyed family in dark shade)

Case Study 12	Living Pattern			Income status		Housing tenancy
	Family member	Household type	Members	Occupation	Monthly income	Tenant
	4	Single family	Parents with 1 child and an uncle	C.N.G driver	10000 Taka	
	Utilities			Facilities		
	Electricity		Water supply	Sanitation		Kitchen
	Meter connected 400 Taka per month		Tube well Submersible	1 toilet for 2 families		1 stove for 2 families

Figure 25:  
Chart of case study 12

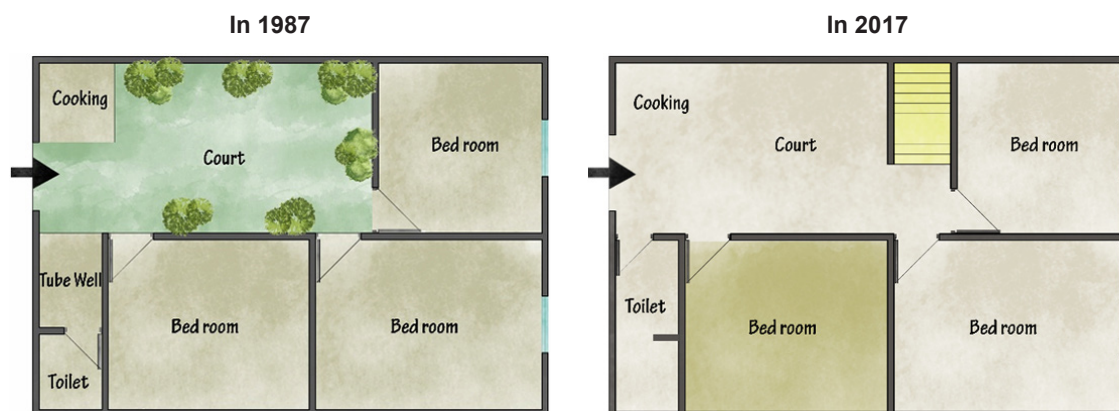


Figure 26:  
Room layout of case study 13 (surveyed family in dark shade)

Case Study 13	Living Pattern			Income status		Housing tenancy
	Family member	Household type	Members	Occupation	Monthly income	Tenant
	4	Single family	Parents with 2 children	House maid Carpenter	8000 Taka	
	Utilities			Facilities		
	Electricity		Water supply	Sanitation		Kitchen
	Meter connected 400 Taka per month		Tube well Submersible	1 toilet for 3 families		2 stove for 3 families

Figure 27:  
Chart of case study 13

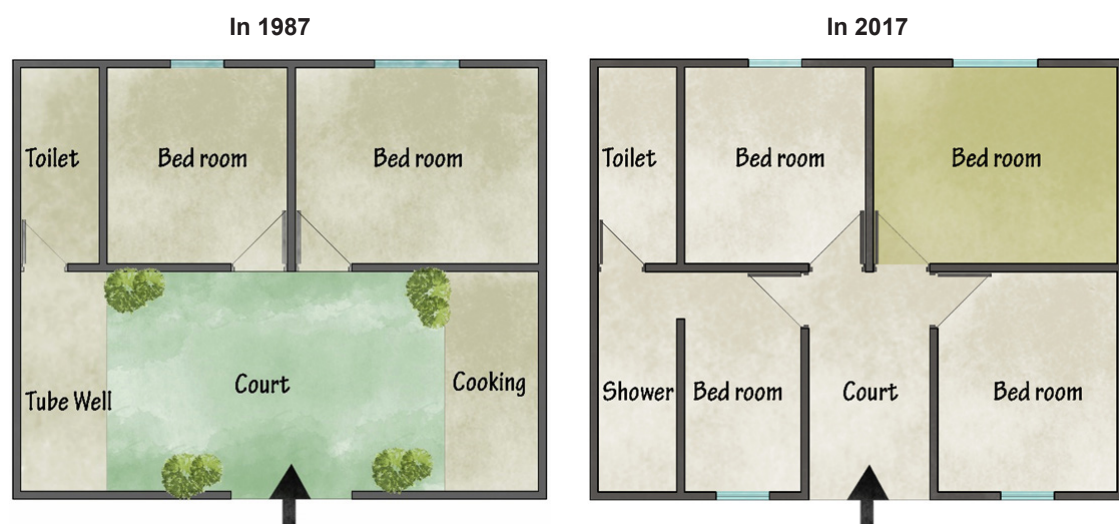


Figure 28:  
Room layout of case study 14 (surveyed family in dark shade)



Case Study 14	Living Pattern			Income status		Housing tenancy
	Family member	Household type	Members	Occupation	Monthly income	Tenant
	4	Single family	Parents with 2 children	Garments worker Garments worker	15000 Taka	
	Utilities			Facilities		
	Electricity		Water supply	Sanitation		Kitchen
	Meter connected 400 Taka per month		Tube well Submersible	1 toilet for 3 families		3 stove for 3 families

Figure 29:  
Chart of case study 14

## TRANSFORMATIONS AND THE REASONS

In Ershad Nagar change, alternations or additions are very common. A maximum number of families have changed their physical dwellings in the last 20 years. Almost all the families (except those who came late) have gone through a number of changes in the types of dwellings. In the initial stage all that was available were the tents. Then the second type

were the bamboo houses made available through the help of TDS. Later in mid 1980s semi- permanent attached concrete buildings were constructed. The richer families started to obtain bigger plots and today there are at least four or five different income groups in the settlement. The richer people usually cluster together. The increase in the number of family members is one of the important factors for increasing family spaces; changes are made due to such increases, either by births or by getting

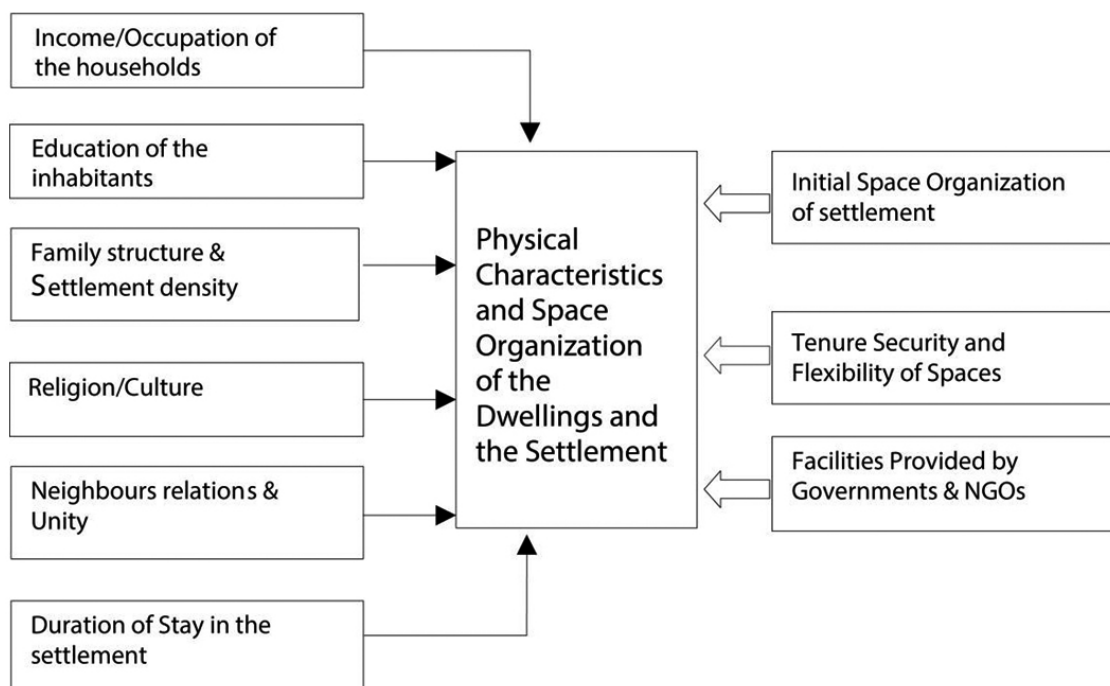


Figure 30:  
The factors that affect the physical organization of spaces in the low-income settlements (source: Mahmud, 2001)

married. Within our sample group some extended their houses for different commercial enterprises or restaurants. Some families changed their houses just to be more comfortable.

It is always difficult to measure the quality of physical spaces, especially in residential areas, as it depends on a number of different factors. It also differs due to the different geographical locations and cultures. However, one can at least measure the flexibility and the changing possibilities of such spaces according to the inhabitants' need and requirements. User satisfaction parameters in residential spaces includes building quality, dwelling plan, spatial adequacy, access to city center, work place and shopping, municipal services, social and educational services. By analyzing a particular settlement according to these criteria, one may evaluate the physical characteristics of a certain settlement. (Figure 30)

## Ownership Type

The government is the main controller of the settlement. Owners of houses received their allotment of a house from the government. Currently, in addition to living in their house, some house owners rent a portion or the full house to others. Since the governing control of Ershad Nagar is loose, people created and organized their spaces to generate income, and solve the unemployment problem to a certain extent, within their dwelling unit. The main advantage of the house owners is that they don't have to pay rent. Also, if family members have

a regular income, there is no point for them to move out. Moreover, if their economic condition improves and they can achieve a higher social status, they might move to a middle-income settlement outside of the Ershad Nagar.

In such establishments who is the controlling owner is an important criterion in changing physical spaces. In Ershad Nagar for example, the government is the owner and the controller. Its control is loose, so the inhabitants have more freedom to make changes in their own living spaces. Therefore, the ownership pattern is another important factor in measuring the freedom to change physical spaces.

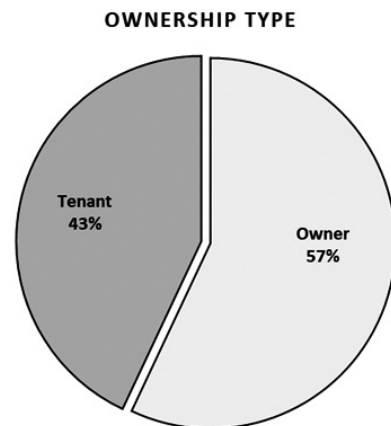


Figure 31:  
Ratio of ownership type



Figure 32:  
Vertical expansion of the existing building.



There can always be an argument that whether a loose control by the landowners helps in improving the quality of spaces or not. Again, it has been realized that despite legal authorities' intervention, illegal occupation of land is experienced in Ershad Nagar. In the case studies, the self-help improvements were done due to the loose control of the government authority in Ershad Nagar; however, lack of control often creates unplanned and unorganized spaces in the settlement.

Tenure security is one of the most important factors, without which certain necessary investments are not even done in these settlements. Although it was very difficult in the early stages, in the course of time, the households of Ershad Nagar showed great improvements in making and improving the quality of individual dwelling spaces. As the residents believed that they would not be evicted for the second time, they invested in bettering their environments in accordance to their savings and income. At present Ershad Nagar is occupied by both owners and their tenants. (Figure 31-32)

## Family Structure

In Ershad Nagar, the number of family members residing in one house can number up to eight persons. This is acceptable due to their dwelling spaces being bigger and because, unlike other settlements, the units are owner occupied. Therefore, the family structure of the Ershad Nagar still continues to follow the extended family model. This also indicates that the second generation who were born there and married did not move to other settlements. In most of the cases the owners extended their family's dwelling to accommodate an increase in family members.

Family structure and the family size are important criteria in understanding their way of living. It is important to understand how a family responds to its increasing numbers to understand the changes in the quality of the dwelling spaces. As grandparents, grandchildren and the in-laws are more likely to live together in Ershad Nagar, it certainly shows an extended family structure in the camp. The first generation of the settlers have now become grandparents as their children married and had children, expanding the original family. This affects the physical quality and the physical organization within a particular dwelling unit as more rooms had to be made within the same area or plot. The adult

son and daughter in almost every family married within the last ten years, and since they have not moved from this settlement, they continue to share the same housing unit. As the family increased, the re-structuring of their physical spaces has altered and changed. These changes to the house was possible due to empty spaces available in the existing plot. Most of the households of Ershad Nagar have lived in their particular dwellings for more than 30 years. During this period of tenure, families increased in size resulting in an increase the physical quality of their housing.

While discussing family structure, the percentage of male and female members may also be considered in evaluating quality of physical spaces. Kumbetoğlu (1992) pointed out that "Women's place is both at home and at the neighborhood". Women spend more time in their neighborhoods than men do thus women are the main architects of their dwellings and they are probably the ones who change the physical organization in such settlements. However, it is difficult to say whether women of Ershad Nagar contributed in their upgrading of physical spaces.

As far as the quality of physical spaces is concerned, the survey indicated that there is a drastic improvement in the quality of spaces both in the neighborhood and in the individual dwellings. (Figure 33)

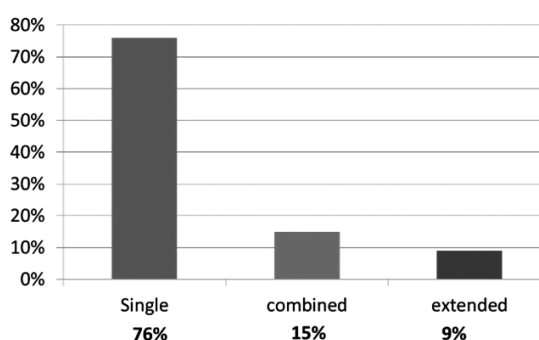


Figure 33:  
Different type of family in the surveyed area.



## Income Generating Activities

The survey indicated that there are some people involved in small or cottage businesses in their own dwellings. This implies that a home is not only a shelter for low-income people but is also a space for generating income. The camp residents can create jobs within the settlement or they may work in the city. The house is the main location for income generating activities in many low-income families. The accommodation of such activities indicates the quality of the physical characteristics.

In the area studied owner occupied dwellers have more chances in establishing income generating activities than the leasing tenants as the owners

have more flexibility in changing their own dwellings. Ershad Nagar structures have courtyard spaces, which are used for multipurpose activities. Availability of spaces also encouraged people to use their spaces for money generating activities.

Earning extra money by subletting or renting out space for economic activities are common practices in low income housing. Owner occupied dwellers have such options. In this study some owner-occupied families sublet rooms to either bachelors or small families. It is found that some domestic spaces are completely transformed into academic coaching centers and some are used for income generating activities, partially in day time.

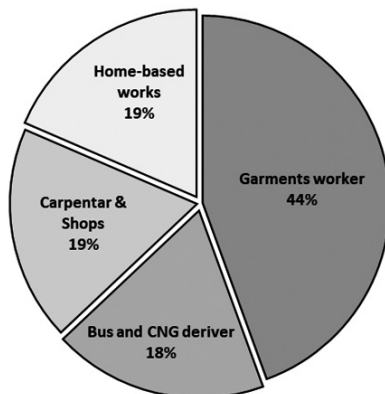


Figure 34:  
Source of income from different activities.

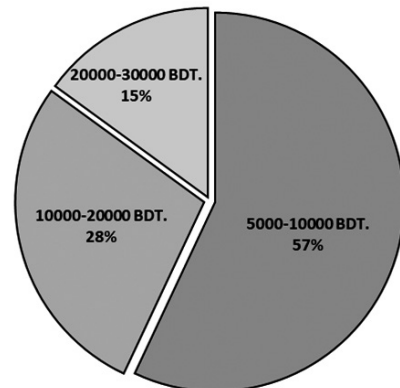


Figure 35:  
Range of income generation.



Figure 36:  
Income generating activities by private tuition.



Figure 37:  
Income generating activities by handicrafts.



Figure 38:  
Domestic spaces are converted into an academic coaching center.

## Economic development

The research found that some of the families earn more than 6000 Tk. This implies that in the last 20 years, some families could cross the boundary of the low-income category. They can be considered in the lower middle-income group as far as income is concerned. But this does not necessarily mean that their way of living has changed to that of a middle-income group. Due to a loose government intervention the residents of Ershad Nagar can realize drastic improvements in income and quality of their spaces.

Income and occupation happened to be an important factor in upgrading social status and thus changing living standards and consumption patterns of the households. In Ershad Nagar, the dwellers are mainly skilled laborers who work in the Tongi Industrial sector; however, the majority of people are involved in their own home-based enterprises. Therefore, both male and female members of the family contribute to the family income. Although transport workers can be seen in Ershad Nagar, their income indicates a big difference because most workers in the camp are baby taxis or bus drivers who earn more than a rickshaw puller.

As they have invested money for their dwellings, they prefer to stay in the same place; however, they want the residential environment to be improved. More earning does not necessarily mean improvement in physical quality of space; however, income may affect the quality of physical space, if the dwellers have tenure security. They would only invest their money to improve physical quality if security of tenure can be achieved one-way or another.

## Cooperation from outside

In this camp, some micro credit systems offer and encourages inhabitants to be involved in home-based jobs. These NGOs lend money to buy sewing machines, rickshaws or mechanic shops. Despite such help from NGOs, most inhabitants like to open their own business rather than taking micro credit loans. The shops along the road indicate the types of activities the residents are involved in and the way by which the households have extended their dwelling spaces. Finally, it can be claimed that the type and provision of home-based jobs have an impact on the organization of physical spaces, however, whether such jobs increase the quality of domestic spaces is still unrevealed. Income generation has an indirect effect on lifestyles and are expected to be reflected in the physical spaces.

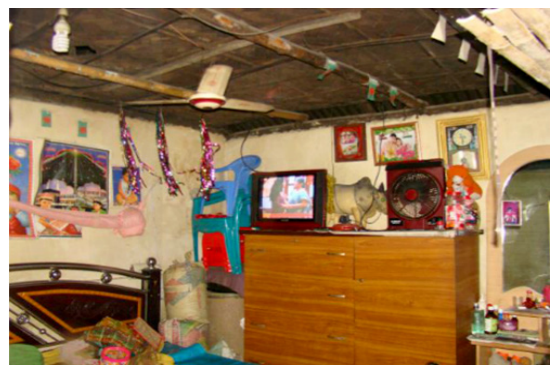


Figure 39:  
Economic developments reflect by the furniture and equipment.

## Physical Facilities

In Ershad Nagar there are some open spaces located in the dwellings. Some people who are not involved in a cottage industry prefer to transform parts of their houses into shops of different commercial enterprises. As the housing units in Ershad Nagar have defined boundaries, the households have the possibility of increasing the number of rooms using their empty spaces.

Ershad Nagar houses have some facilities; all households have their own kitchen and cooking areas within individual houses. Although most of the households have their own toilet and bathing facilities inside the house and some have to obtain water from outside. The room sizes and indoor activities of individual households show that houses fulfil basic requirements.

The availability of household facilities is one way of showing the quality of physical conditions and the characteristics in specific dwellings. The government is probably more efficient in providing certain household services that inevitably improve the settlements' physical conditions.

While evaluating the physical spaces, especially in housing and residential areas, it is obvious that certain basic household facilities would reveal the quality of the settlements. The water supply is probably the most important household service. Most of the families installed their own tube wells and solved the problem of carrying water from outside. However, in the initial stage of the camp, one tube well was provided for every eight families as a

donation from TDS. Installing a family's own tube well in respective houses in Ershad Nagar shows self-initiatives for better living conditions.

Cooking is another necessary household activity. Each household must budget the costs for cooking fuel from their monthly income. The government has installed a central gas line. One resident noted that families will eventually be supplied with natural gas. Government intervention seems to be necessary in improving the quality and basic services of the settlements.

Electricity is another essential requirement for residential use. As most of the families have electrical connections in this settlement, almost every household uses a TV, lights and electric fans. The cost of electricity is provided by the owner and included in their monthly rent.

Proper garbage collection and dumping is a basic household service that the city dwellers can get from municipalities. Unfortunately, it becomes a vital problem today in the camp. As no collection is being done, the dwellers use some of the vacant spaces, such as side drains, for these purposes. However, it creates bad smells and air pollution in all three settlements.

In Ershad Nagar all of the households have their own toilets and are sometimes shared by two families. It can also be observed that some households have added the toilets by their own efforts. The condition of such toilets is also very primitive as they are pit latrines without any sanitation system.



Figure 40:  
Source of water from the outside.



Figure 41:  
Tube well as a source of water.





Figure 42:  
Cooking arrangement in the open space.



Figure 43:  
Cooking arrangement inside a room.



Figure 44:  
Rain water is used for bathing in the open path.



Figure 45:  
Tube well is replaced by water tap.





Figure 46:  
Overhead domestic store.



## OUTDOOR SPACE

Like the indoor spaces, the outdoor spaces are similarly important to the households in any settlement. As all of these low-income settlements are single storied, extending to the outdoor spaces for different domestic activities is essential. Being in a warm-humid climate is an important factor in using the outdoors in a city like Dhaka. The inside of the houses are extremely humid during daytime, so people like to spend time outside their dwellings. The households in Ershad Nagar have individual outdoor spaces. Courtyards and verandas are the most common multipurpose working spaces in the camp. The courtyard is used in different ways. First, it is the space for working from home and other economic activities. Secondly, the courtyard is an empty space for future growth of the house. A good number of camp dwellers have extended and made new rooms in their courtyards either to accommodate families or for generating income. Therefore, the possibility of increasing the number of rooms can be a criterion in evaluating the quality of physical space. The size and the shape of such spaces have different features. The size of the courtyard indicates how the households use these spaces for different income activities; either by giving rent or by making commercial enterprises. In the summer time, verandas are the most suitable spaces for the households. So, due to lack of other workable spaces and areas for storage, the veranda is probably the most used space in the settlements. (Figure 47)

In this settlement, streets also seem to be the most popular space for all age groups, both male and female. Meeting in the club office to watch TV, drink tea and play indoor games after work is also common. However, this space is common for young

Common activity/ time spending area

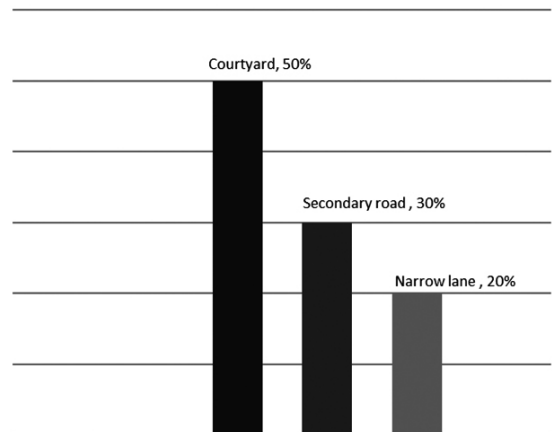


Figure 47:  
Chart shows the time spending in different spaces of the inhabitants.

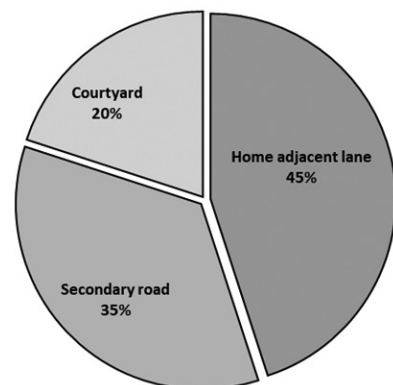


Figure 48:  
Use of different spaces as child play area

men within 26-35 age groups. Women tend to stay in the house they watch more TV than men. In this camp, most of the settlers have shops, therefore, these people also spend time in the bazaar areas. Due to their better economic conditions, selling goods on the street in their spare time is a lesser activity.

Despite the existing playground children also like to play either on the path or on the main street in the camp. School fields in the camp are important sports and meeting places among different age groups. Playing in the path is also common for children at different age groups.



Figure 49:  
Pathway is used as a space for domestic activities.



Figure 50:  
Shops on the pathway is used as a space for meeting.



Figure 51:  
*Children use the school field to play.*



Figure 52:  
*Small club of adults' play.*

## Female domination

As women in generally spend most of their time in their dwellings, it was the women who were questioned about the physical changes of the dwellings. The time factor or the duration of living in the city and particularly in dwelling unit was an important issue. Therefore, all the settlements chosen for this study have a history of at least 20 years in this settlement. Since most of the families have been living in the settlement for a long time, it is assumed that they have changed some portion of their house, making minor adjustments or radically changing their housing unit for comfort and convenience.

Due to social reasons, females are usually confined to their own dwellings and outdoor games are generally restricted for women in all three settlements. As purdah for women is important, it is unusual that women go to public places. Although they do go to their jobs and into the shopping areas almost every day. The only recreation for female members is to watch TV or movies and to gossip with peers. The majority of the women admit that their most common meeting spaces are either their own compound or friends' or neighbors' houses. The individual grocery shops around the houses are also a meeting places for women.

Privacy is another problematic issue that they faced in the new urban life. However, the women who were born and brought up here are used to this environment more than the others. This concern was voiced especially by the females who are more concerned about privacy. The ones who came from villages pointed out that they could maintain their privacy more in their village lifestyle because the houses were isolated and far from one another.

## Linkage with External Space

A questionnaire included questions pertaining to outside spaces that the camp inhabitants frequently visited. These questions were asked to learn of the necessary or optional activities that residents perform in other spaces in the city. The preferred spaces change according to age group and sex. However, beside the places of work, a number of different shopping centers situated outside of the neighborhood, especially the Tongi bazaar, are frequently visited. Outside spaces visited by women dwellers are more than men in low-income settlements. Men only go to their work places and meet their friends at the tea stall whereas women go to their work places, shopping centers, schools and also visit other neighborhoods. One interesting feature today is that it is possible for women to go to the hospital, shopping centers or work places by themselves, which they considered not possible in their village life. Now women have to visit other places for extra income that is necessary for their family survival. This also shows that women get more freedom in their city life, as they become cash earners for their families and shows a better integration with urban life.

## Education

Education levels of the inhabitants may not directly affect quality of the dwellings or settlements but it indirectly influences or makes people more conscious about better living environments. In Ershad Nagar the educational levels of women inhabitants are almost equal to their male counterparts. This indicates that once the tenure security is achieved, education is important for female members as they



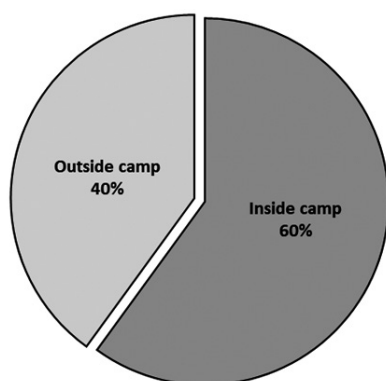


Figure 53:  
Source of children's education.

are adapting to city life and gradually changing their way of living. It is quite interesting to see that in the camp, that today, after 30 years of struggle, people are going to college and universities, which the inhabitants claim is a drastic improvement. It is also reported by one of the local leaders that a number of educated people from this camp are working as government officials. More women are encouraged to participate in educational opportunities, became more concerned about their health and instigate improvements of their physical environments. Therefore, education definitely has an impact on the organization of residential physical spaces. (Figure 53)

## Cultural practice

Religion and culture are two other important factors that have great impact in house formatting and design. In the case for low-income dwellers, there are tendencies for making traditional replication of the house format that reflects one's culture. Certain previous habits, such as cooking, bathing and relaxing outdoors come from a cultural background.

In the Ershad Nagar settlement, the majority of the population is Muslim. Like other Muslim cultures, in Bangladesh also, the female and male domains are separated as a religious obligation and Purdah, as an Islamic rule, is strictly followed by village women.

It is observed that due to more space availability, the dwellers are still practicing some of their previous domestic activities; food processing, making



Figure 54:  
Small vegetable garden as an old habit.

handicrafts or keeping domestic animals. Gardening was another popular activity in their previous settlements but it is not possible any more due to lack of spaces and security. However, some families in Ershad Nagar still continue with gardening in their vacant spaces or in the backyards. (Figure 54)

## Analysis Table

It is found that currently none of the houses in the case studies is used by a single family. One family occupies only one or two rooms of the house. The owners keep one or two rooms for themselves and rest they rent to others. By this, the same house is occupied both by owner and tenants. It is also found in few cases that the total house is used by a combined or an extended family developed through added generations. Multiple families use a single toilet and share cooking stoves, though it is found that in some cases each family has their own cooking stoves which they do not need to share.

Over time, to meet the increasing demand of accommodation and rent, all houses are full of bed rooms. The courtyard was transformed into bed rooms for rental or for the extended family's use. Also, some houses are two stories. A few houses or a part of a house are being used for commercial purposes. For this It is found that in one case the total house is transformed into an academic coaching centre and it does not need any kitchen or courtyard. In another case, a house is needed for a workshop and storage rather than for bedrooms or a courtyard. It is noted that the courtyard is the first major place which is transformed.



Case no.	House Plan	Family	Income (BDT)	Ownership Type	Utility	Facilities
1		Combined 6 members	25,000	Owner	Electricity Tube-well	1 Toilet 1 Stove
2		Extended 3 Families 9 members	20,000	Owner	Electricity Tube-well	1 Toilet (shared) 1 Stove (shared)
3		Single 3 members	5,000	Tenant	Electricity Tube-well	1 Toilet (shared) 1 Stove (shared)
4		Single 4 members	10,000	Tenant	Electricity Tube-well	1 Toilet (shared) 1 Stove (shared)
5		Single 4 members	10,000	Tenant	Electricity Tube-well	1 Toilet (shared) 1 Stove (shared)
6		Commercial use	20,000	Tenant	Electricity Tube-well	1 Toilet No Kitchen

Case no.	House Plan	Family	Income (BDT)	Ownership Type	Utility	Facilities
7		Combined 3 Families 11 members	30,000	Owner	Electricity Tube-well	1 Toilet (shared) 1 Stove (shared)
8		Single 2 members	10,000	Tenant	Electricity Tube-well	1 Toilet (shared) 1 Stove
9		Combined 2 Families 8 members	15,000	Tenant	Electricity Tube-well	1 Toilet (shared) 1 Stove
10		Combined 2 Families 7 members	10,000	Owner	Electricity Tube-well	1 Toilet (shared) 1 Stove (shared)
11		Single 4 members	7,000	Owner	Electricity Tube-well	1 Toilet (shared) 1 Stove
12		Single 4 members	10,000	Tenant	Electricity Tube-well	1 Toilet (shared) 1 Stove (shared)

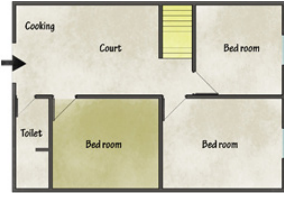
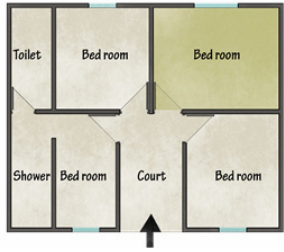
Case no.	House Plan	Family	Income (BDT)	Ownership Type	Utility	Facilities
13		Single 4 members	8,000	Tenant	Electricity Tube-well	1 Toilet (shared) 1 Stove (shared)
14		Single 4 members	15,000	Tenant	Electricity Tube-well	1 Toilet (shared) 1 Stove

Figure 55:  
Analysis table for the all 14 case-studies.

## CONCLUSION

In the physical quality analysis of the settlements in Ershad Nagar, the government and some NGOs played primary roles in providing certain basic infrastructure and facilities such as toilets, water, medical facilities, schools, markets, mosques, football grounds.

Although, in the initial stage, the government was unable to provide adequate housing for all, different authorities and foreign donations were a tremendous help in house building and accommodating people. With an assumption that the households will automatically improve their social and economic conditions, this has already been reflected in the physical spaces. Therefore, government intervention, especially in the low-income settlements, is important in creating policies and regulations so that, automatic improvements in physical quality may take place. In conclusion, it is perhaps the non-profit organizations such as the government or other local and foreign NGOs, who can extend their hands to assist and accelerate the improvements of the low-income settlements.

The flexibility of changing spaces helped the households of Ershad Nagar to use their homes for generating income and also to accommodate the second generation within the same dwelling unit. In addition, the housing of different generations together creates a kind of solidarity and can be a form of survival strategy.

It has been realized that the feeling of belongingness of inhabitants plays an important role in changing individual dwelling spaces and thus the improvement of the individual dwelling spaces are also possible. Certain infrastructure and necessary services can only be made possible by government intervention. At the same time, initial space organization is another important factor by which further development is possible. It has been seen that the Ershad Nagar camp has almost all the facilities and the individual ownership of the plot helped them in further developing economic stability. A conclusion can be drawn that beside physical and social factors, other factors also have substantial impact in changing and developing the physical space of this settlement.

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