

A Study on Current Trends of Income and Its Impact on Affordability in Multi-Ownership Housing in Demra, Dhaka

Ali Akbar Razon¹, Ishtiaque Ahmad²

¹Premier University, Department of Architecture, 1/A, O.R. Nizam Road, Prabartak Circle, Panchlaish, Chittagong, Bangladesh

²Daffodil International University, Department of Architecture, 102 Shukrabad, Dhanmondi, Dhaka, Bangladesh

Abstract: *The concepts and definitions of housing affordability vary according to the economic and social contexts of specific countries. However, irrespective of the context, housing affordability is influenced not only by the market conditions or individuals income source, but also by the prevailing policy environment, among other social and economic factors. Providing housing for the city dwellers is very significant for ensuring sustainable urban development. High growth of population in Dhaka city is creating extra pressure on land and making an adverse impact on housing affordability. The high rental price of housing in Dhaka city makes it impossible for the people, especially middle income group to afford housing. The price-to-income ratio in Dhaka is one of the highest positions among the major South Asian cities. The middle-income group struggles to maintain a minimum standard of living and largely relies on rental housing. However, house rents are also unaffordable to them. The study intends to investigate the housing affordability and income trends of the middle-income groups in Dhaka and aims to identify the affordable limit to own a house with consideration of current pay scale (8th National pay scale). A qualitative approach is adopted for this research. Primary and secondary data were collected using various approaches such as document analysis, questionnaire survey and interviews.*

Keywords: Income trends, housing affordability, multi-ownership housing

1. Introduction

Housing is a physical commodity, which includes other than dwellings, various utility facilities and services such as water supply, electricity, sanitation and access provision. By housing it is meant not only a mere form of shelter but also it includes those qualities of comfort, convenience and amenities, which are essential for emotional and social wellbeing of families (Hasan, 2002). According to World Health Organization (WHO), housing is an enclosed environment in which man finds protection and feels safe and secured from hostile forces and can function with increased comfort and satisfaction as regards to privacy to the individual and his family. The environment must include all necessity, services, facilities, equipment's and devices needed for physical and social wellbeing of the family or the individual (Sarma and Mallick, 2005). But, housing affordability means the ability to afford housing. Affordability is the one indicator of housing adequacy which is a human right. Housing is one of the basic needs after food and clothing. It provides shelter, safety and a sense of belongingness to the owner. A commonly accepted guideline for housing affordability is a housing cost that does not exceed 30% of a householder's gross income. When the monthly carrying costs of a home exceed 30—35 % of household income, then the housing is considered unaffordable for that household (Wikipedia, 2010). The middle class is the broad group of people in contemporary society who fall socio-economically between the working class and upper class. The classifications of income group people in Bangladesh are mainly three types such as higher, middle and lower income group. The sub groups are defined as low-income TK 5,000 or less, lower middle-income TK 5,000 — 10,000, middle-middle income TK 10,000 — 25,000, upper middle-income TK 25,000 — 50,000 and high-

income TK 50,000 or more. In Bangladesh 50% of people are middle income group people (Islam, 2004). But after the 8th National pay scale the sub groups may be defined as low-income TK 20,000 or less, lower middle-income TK 20,000 — 40,000, middle-middle income TK 40,000 — 60,000, upper middle-income TK 60,000—80,000 and high-income TK 80,000 or more. Housing affordability of middle income group is decreasing day-by-day in Dhaka City. Affordable housing is very necessary for the planned growth of a city. Otherwise, informal housing will increase and destroy the formal growth of a city. If the affordability of the middle income group people can't ensure than in future the eviction of this group from the study area can't stop. The provision of affordable housing is must for all kind of people in a planned city. For that measuring housing affordability is very essential. Without knowing correct affordability scenario, the further steps cannot be taken to solve the problem.

2. Background

2.1 Present daylight situation in apartments in Dhaka

Dhaka is the capital of Bangladesh and it is one of the most densely populated cities in the world. The population of the city is increasing day by day. From a small city of only 336 thousand populations in 1951, it is now a mega city of over 10 million people- increased more than thirty times in just fifty (50) years' time (Islam, 2004). The average annual growth rate of Dhaka City's population during the last three decades has been over 7%, thus doubling the population in every decade (Islam, 2004). The ever-increasing population is creating an increasing demand for shelter. But being a government of the developing country, it is almost impossible to ensure housing for all. As public sector is failed to ensure their right, people have taken their own initiatives to ensure

their fundamental need for shelter. But individual housing cost is very high. For that reason housing rent is also increasing. The urban population increased rapidly from 2.64 million to 22.45 million between 1961 and 1991. By 2005, it is anticipated this number will rise to 45.4 million and by 2015 to 64.9 million. In 1974, only 7.86% of total national population lived in urban areas when the country started as an independent state. This reached 15.08% within less than a decade. In 1991, the urban population was 20.15% and it is anticipated that it will reach 36.78% by 2015 (ADB, 1999). The housing shortage is estimated in 1991 to be about 3.10 million units, composed of 2.15 million in rural areas and 0.95 million units in urban areas. The annual population growth rate of the city is 4.34% and the household size is 4.8 (BBS, 2001). So, it is generating the demand for 50,000 new houses annually. But the average rate of production is only 20,000 units per year (Seraj and Arefin, 2003). There is no magical solution to the present or future housing problem of Dhaka City. Nevertheless, in the light of the prevailing high growth rate in population as well as increasing housing rent in Dhaka city, it can be easily argued that measuring affordability should be encouraged to make Dhaka City affordable for middle class people in the coming years.

2.2 Aim and Objectives

The objective of the study is to measure the affordability of housing with respect to the current National pay scale. Both primary and secondary data are used to conduct this study. Personal interview, questionnaire is designed to collect information on socio economic information and mainly income expenditure information of selected households. Information is also collected on housing rent, other expenditure, about their priority of expenses to analysis the situation properly. In this study, a household is chosen as a sampling unit. Sample of 6 (six) households are taken from Demra Thana of Dhaka City for collecting primary data.

2.3 Scope and limitation of the work

The sample household for the study has been selected on the basis of middle income group housing. Only 6 apartments from different buildings in Demra Thana are taken for the study. Although the sample is quite small but it is itself a representative.

3. Research Method

3.1 Study Design

To achieve the objectives of the study some sequential steps have been followed. For primary data collection a detail questionnaire is prepared which is mainly focused on current income trends and their affordable limit to own an apartment. Sample 6 unit holders are surveyed for the study.

3.2 Study Area

Dhaka is situated between latitudes 24°40' N to 24°54' N and longitudes 90°20' E to 90°30' E. A substantial portion of the adjoining low-lying areas have recently been brought under

the structured zones of the city due to the accelerated rate of the urban growth in Dhaka. Dhaka Municipal Corporation & Surrounding Thana's, usually known as Dhaka Metropolitan Area (DMA); have an area of 300.97 square kilometres. According to Bangladesh Bureau of statistics (BBS) in 2011, this area has a population density of; 30,748.8 person/km. The population growth rate of Dhaka city is 4.34% per annum (BBS, 2008). Average dwelling size or family size is 4.9 persons per household. Dhaka is now growing with an 89 unprecedented growth accommodating 600,000 people per year (CIA- the World Fact book, 2011). (Seraj, 2012). Our study area is Demra which is located near Narayanganj and recently it has become the part of Dhaka City Corporation. Demra is located at 23.7083°N 90.4417°E. It has 102757 units of household and total area 19.36 km². At the 1991 Bangladesh census, Demra had a population of 521,160.

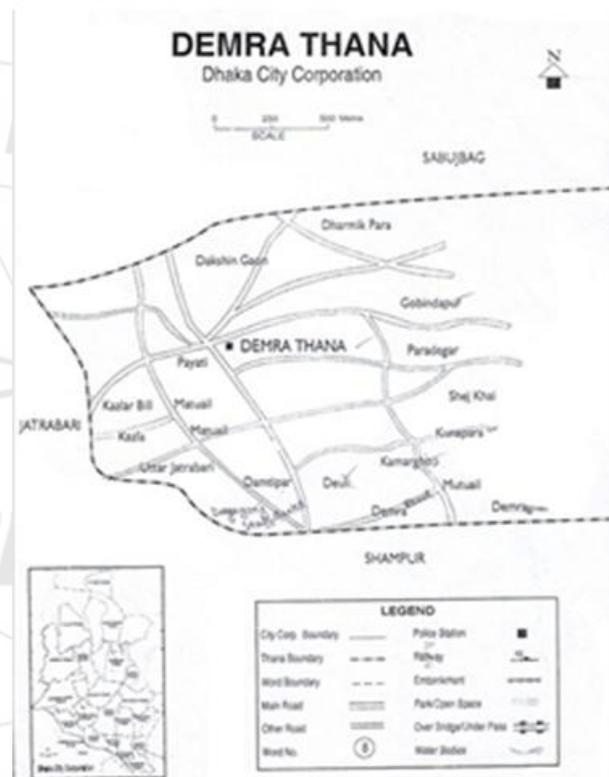


Figure 1: Location and boundary of study area

The system of multi-ownership housing delivery in Demra:

Multifamily residential (also known as multi dwelling unit or MDU) is a classification where multiple separate housing units of residential inhabitants are contained within one building or several buildings within one complex. The Process starts with the formulation of the system through which the work or project will be executed. Group effect comprises of many households which may be among the family and friends or relatives. Multi-ownership housing delivery process may be divided into five phases:

1. The land procurement phase,
2. Design phase,
3. Initial investment Phase,
4. Construction phase,

5. Handover phase (by lottery basis)

At first people of different ages and professions organize a committee for development a building. Among the members they select a leader by discussing with other members. He deals all the responsibility and handles the total project before and after finishing the project. The work started with an initial down payment of 25-30% of the total cost of building. The total cost is measured by experience of other build projects or by perception. It may vary project to project. At the starting point they select an appropriate land for developing. By collecting money from the all members (down payment 25-30%), they buy land and build necessary infrastructure like roads, drainage, solid-waste disposals etc.

After land procuring the members assign a professional body (Architect/civil engineer) to develop the building. Basically the people hire civil engineer to develop the build form. But recently it is shown that people assign Architect for developing the project. After completing the design phase they start the constructional work. The constructional works lasts 3 to 3.5 years. And all the members pay the rest of the amount of the building cost in instalments within 3 to 3.5 years.

From the investment point of view households are required to make the initial payment for land procurement and expert services. In our survey no one found to take loan from bank to own a flat. In the survey (among 6 units) they manage their initial investment from their own savings or other income sources or pension/provident fund. People have some misunderstanding about bank loan and the interest rate of bank. They think that it is a difficult task to manage loan or the interest is so high which is a burden for them. Multi ownership attempts to find out means to reduce the initial investment and to keep financing cost within the affordable limit of the target group. It also stresses the need for establishing an acceptable environmental quality.

After finishing the civil work (construction of floor, column, beam, roof, wall etc.), the all units are distributed to the unit members by lottery. The committee handover the unit to the members then and the members may complete the interior works (door, window, tiles, fixtures etc.) by his or her choice. After finishing all the constructional work both interior and exterior they can use the flat by completing registration process.

3.4 Income Trends and Expenditure

Reduction in the percentage of population living below the poverty line is conventionally assumed as the result of increased monthly household income over the years. The monthly household income has increased from Tk. 4366 in

1995-96 to Tk. 11,480 in 2010 at national level whereas it has increased from Tk. 3658 to Tk. 9648 in rural areas and Tk. 7979 to Tk. 16,477 in urban areas during the same period. Though, there is a declining trend in the percentage of population living below the poverty line, the progress is not matched due to the increase in the monthly household expenditure. During the last fifteen years (i.e. from 1995-96 to 2010) the monthly household expenditure has risen from Tk. 4090 in 1995-96 to Tk. 11,200 in 2010 at national level. In rural areas, this expenditure has increased from Tk. 3473 to Tk. 9612 and it has increased from Tk. 7274 to Tk. 15,531 during the same period in urban areas.

In our survey it is noticed that lower-middle, middle-middle and upper-middle class people are living in Demra. Flat or apartments are needed for mainly lower-middle and middle-middle income class people. Upper-middle income class people are not interested in developing apartments. They build 6 storied – 8 storied building by their own finance where they use one floor to live and the other floors are used to give rent to tenants. Basically the building acts as an income source for them. But lower-middle and middle-middle income class people are not capable to buy plot because of higher rate of land. They prefer to buy apartment as the price is comfortable to them. As the lower middle and middle-middle income class people are living here, their income range is 20,000/= to 70,000/=. The following table 1 show the income and grade (according to the 8th National Pay Scale) of the surveyed people (6 units of different Location)

Table 1: Savings and income surveyed group of people of Demra

SL	Grade to according to 8th National pay scale	Rent allowances	Total savings	Comments
01	Grade- 6	17,500/=	10,00,000/=	Sufficient
02	Grade- 8	11,500/=	3,00,000/=	Sufficient
03	Grade- 7	14,500/=	5,00,000/=	Not Sufficient
04	Grade- 7	14,500/=	7,00,000/=	Not Sufficient
05	Grade- 9	11,000/=	None	Sufficient
06	Grade- 9	11,000/=	50,000/=	Not Sufficient

From the survey we found a clear image of monthly household income and monthly expenditure of case 6 units of households. Besides family size, other income sources, more than one earning members list, percentage of savings, no. of flat owner owned etc. are also found in the survey. The following table 2 show the monthly household income and expenditure (according to the 8th National Pay Scale) of the surveyed people (6 units of apartment of different Location).

Table 2: Monthly household income and expenditure

SL	Monthly Household income (in BDT)				Family size	Earning member	No. of flat owned	% of savings per month	Monthly Expenditure (in DBT)
	Salary	Business/Flat rent	Tuition	Other earning members					
01	65,000				03	01	01	50%	33,000
02	45,000			30,000	06	02	01	40%	45,000
03	55,000	10,000		40,000	05	02	02	60%	40,000
04	55,000			36,000	05	02	01	35%	60,000
05	42,000				03	01	01	35%	27,000
06	42,000		15,000		05	02	01	30%	40,000

3.5 Land Value

Land is the principle commodity in Dhaka City that supports housing and other urbanization needs. The existing land use control measures proved ineffective against the disproportionate rise of land price. The demand for developed land in the city is growing, yet the supply is restricted by flood prone low laying areas both within the city and fringe areas. This may be one of the major causes responsible for the increasingly higher land costs.

In 1st decades of 21st century, per katha land increased unbelievably almost all over the Dhaka city especially in Demra Thana. Compared to the price increase of the earlier decade, the percentage increase in price almost doubled, and in some areas it is three to ten times the earlier price. The following table 3 shows that the price of per katha land in some areas of Dhaka City (especially Demra) from 1990 to 2010.

Table 3: Price of land (taka/katha) from 1990 to 2010

SL	Area	Price of land(taka/katha)				%Increase in price over the past two decades	
		Year				Between 1990-2000	Between 2000-2010
		1975	1990	2000	2010		
01	Dhanmondi	25000	600000	2200000	20000000	267%	809%
02	Mirpur	10000	200000	700000	4000000	250%	471%
03	Motijheel	50000	12000000	3500000	20000000	192%	471%
04	Demra	4000	200000	600000	18000000	200%	2900%

In Demra area the land price vary from location to location. Plots adjacent to larger are of higher prices than other area. In our surveyed area the price ranges from 16, 00,000/= to 20, 00,000/=. The surveyed areas are Shantibagh, Adorshobag, Rohomotgonj, Al-Amin Road and Basherpole. The land price is higher in Al-Amin Road and Adorshobagh and lower in Shantibagh, Rohomotgonj and Basherpole.

The land Price in Demra is lower than other areas (Dhanmondi, Motijheel, Mirpur Etc.) of Dhaka. And for this reason the apartment price is lower here than the other areas. As lower-middle and middle-middle income group people are living here, it is the best place to where they can own an apartment as their affordability they think. Some developers are also build apartments for this target group of people. But People do not show interest on them because of their higher rate of flat price. They prefer to build apartments by their own funding or create own committee for developing buildings. And it is shown that from our survey that the developer's price rate of building is 1.5 to 1.8 times higher than their price rate which they build by their own finance.

The Apartment price mainly depends on two parameters:

1. Price of land
2. Construction cost of Apartment

Table 4: Land Value of surveyed area (actual and registered) of Demra

Total Land Area	Actual Land Price per katha (in BDT)	Registered Land Price per katha (in BDT)	Total Land Price per katha (actual) (in BDT)	Total Land Price per katha(Registered)(in BDT)
9 katha	18,00,000	6,00,000	1,62,00,000	54,00,000
8 katha	18,00,000	6,00,000	1,44,00,000	48,00,000
8 katha	18,00,000	6,00,000	1,44,00,000	48,00,000
6 katha	18,00,000	6,00,000	1,08,00,000	36,00,000
5 katha	16,00,000	5,60,000	90,00,000	28,00,000
5 katha	16,00,000	5,60,000	90,00,000	28,00,000

3.6 Building/Construction Cost

Providing services in the form of roads, water supply, sewerage, drainage and other utilities makes the raw land

suitable for housing developments. The costs of the services become higher in small projects but have a lower average cost when these could be supply in larger quantities. Further there could be much saving and more efficiency derived when the

services are installed by a single organization or well-coordinated efforts rendered by various organizations.

Recently in Demra people use vacant lands for developing where there is no infrastructure. People manage roads, solid-waste disposal and other utilities for developing build form. From our survey we analyse the percentage of total building/construction cost spent for developing a building. People spend maximum cost in land procuring. That's why building cost increases day by day. In Demra the land price is lower than the other area, so middle income group people prefer to live here because the housing affordability is here within their budget limit. The following table 5 shows the total percentage of building cost (6 units from different Location).

Table 5: Break- Down of the cost

SL	Land Cost	Civil Cost	Infrastructure Cost	Finishing Cost	Total
01	10%	30%	5%	66%	100%
02	9%	30%	3%	57%	100%
03	8%	26%	6%	60%	100%
04	8%	29%	3%	60%	100%
05	7.5%	18.5%	6%	68%	100%
06	7%	17%	6%	70%	100%

Among the case study of 6 households we found that the larger size apartments are of 1200 sqft and the lowest size

Table 7: Flat Cost Detail (in BDT)

SL	Initial investment			Finishing Cost	Utility Cost				Total
	Land	Foundation	Column + Slab		Gas	Electricity	Lift	Metre	
01	500000	350000	600000	1500000	28000	10000	40000	10000	30,38,000
02	450000	300000	450000	1250000	28000	10000	40000	10000	25,38,000
03	450000	250000	500000	1200000	28000	10000	40000	10000	24,88,000
04	300000	250000	500000	1000000	28000	10000	4000	10000	20,50,000
05	222222	200000	500000	800000	28000	10000		10000	17,70,222
06	222222	200000	500000	850000	28000	10000	40000	10000	18,60,222

3.7 Housing Finance

People manage their maximum finance from their own savings or take loan from relatives. From the survey we found that most of the families manage their initial investment from

apartments are of 800 sqft. And also we found that apartments of 900- 1000 sqft are the most preferable apartments because maximum plot size is 6 katha and the affordable limit of maximum people is to own 900- 1000 sqft apartment. Also there is a tendency to rent flat to tenants for extra income, so small size apartments are the perfect in proportion to their income level. The following table shows the Flat size, land size and unit price of floor per sqft.

Table 6: Flat size, land size and unit price of floor per sqft

SL	Flat Size	Unit Price per Sft	Total Land	Total Floor	Unit no. per floor
01	1250 sft	2100/=	9 katha	10	4
02	1150sft	2100/=	8 katha	10	4
03	1100 sft	2100/=	8 katha	10	4
04	900 sft	2100/=	6 katha	10	4
05	800 sft	2000/=	5 katha	6	4
06	800 sft	2000/=	5 katha	8	4

We analyse the detail cost of 6 apartment buildings where we see the finishing cost is the maximum cost among the total building cost in Demra. But in other area we noticed that land price is much higher than the total construction cost. For the lowest price of land value middle income group people prefer here to own a flat. The following table shows the detail cost of building.

different income sources like business, tuition and other different sources. We found one family who manage the initial investment from provident fund and also take loan from relatives because he have no savings. The initial investment of the 6 units from survey are given below-

Table 8: Initial investment of surveyed area of Demra

SL	Amount of Initial investment (in BDT)	Savings from Salary & allowances	Business	Income from other sources	Provident Fund	Loan from relatives	Loan from Bank
01	8,00,000	✓					
02	7,00,000	✓		✓			
03	6,00,000	✓	✓	✓			
04	5,00,000	✓		✓			
05	5,00,000	✓			✓	✓	
06	5,00,000	✓		✓		✓	

People here are not interested to take loans from bank. In our survey we found no households who take loans from bank. They fear about the bank loan because of higher interest rates.

3.8 Alternative Sources of Finance for Multi-Ownership Housing

From survey it is found that among 6 households there are 4 households who have alternative income sources and 2 households have no other alternative income sources. The alternative income sources are mainly business, other earning family members, having more than one flat which is used as other income sources, some savings by selling their some property. But the 2 households which have no other alternative income sources, but they afforded flat within their budget and the flat sizes are within 800 to 1000 sqft. All the families pay their initial investment for flat by their own savings except one household who have managed loan from relatives. People have misconception about bank loan. They prefer taking loan from relatives or use provident fund rather than bank loan.

4. Discussion

From the study it is depicted that, to own a flat or apartment is affordable only to whom who have more than one income sources or the family have multiple earning members. In our study we have found, when there is only one earning member in the household, it is difficult for him to own a flat if his pay scale is grade-09 according to 8th National pay scale. He has to collect money for housing by taking loan from relatives and from his provident fund. People who have more than four family members and the children in the family who are studying in different universities or colleges and the earning member is only one person it is difficult for them to manage money to own a flat. From the study we have seen that the current income trends is not affordable to own a flat who don't have another income sources or don't have more than one earning members in the family and having more family members. Also who have no savings, they are not capable to own a flat because it is needed to pay 25-30% cost of total building cost as initial investment. On the other hand who have different income sources and the number of family member is below four, can afford a flat. As lower-middle and middle class people are living here, and the land value is lower in comparison with other areas, people prefer to live here and own an apartment because of the affordable limit. The population density is increasing here day by day because middle class income group people can easily own a flat within their ability in Demra area. That's why land price is also increasing rapidly day by day. From the study we have noticed that in Demra housing is comparatively affordable for lower-middle and middle-middle income class people with respect to other areas in Dhaka.

5. Conclusions

Affordable housing for middle income people in a city is very important. The middle income group people of Dhaka City live in an unaffordable housing condition making compromises in other essential expenses. These are no

successful housing projects for middle income group people in Dhaka City. Rather this non-affordability of the middle income group people creates negative impacts on the other aspects of their lives, such as health, education, recreation and workability. It is understood that there is no straight forward solution to the complex housing situation in Dhaka, there is however a serious lack of efforts in this sector. Policies and strategies in housing should therefore be directed towards middle and lower income group of people. Improving their affordability in housing will improve the over-all condition of liveability in the city.

References

- [1] Alonso, W 1964, Location and Land Use, Harvard University Press, Cambridge, Massachusetts. BBS. (2008). Bangladesh Statistical Year Book
- [2] CIA-The World Factbook, 2011. [Internet], Retrieved from <http://www.cia.gov/library/publication/> The World Factbook
- [3] Farzana, F. "Shortages of middle-income owner-occupied housing in Dhaka- failures of government or market?" Plan Plus, Vol. 5, 2009, pp. 12-25.
- [4] Friedman, J 1981, 'A Conditional Logit Model of the Role of Local Public Services in Residential Choice', Urban Studies, vol. 18, pp. 347-58
- [5] Hasan, M. 1991. Land Development Policy for Low-income Housing in Dhaka Metropolitan Area, Unpublished MURP thesis, Bangladesh University of Engineering and Technology, Dhaka.
- [6] REHAB. (2012). A Comprehensive Study on the Real estate Sector of Bangladesh. Retrieved from http://www.rehabbd.org/Comprehensive_Study_On_The_Real_Estate_Sector_Of_Bangladesh.pdf
- [7] Richardson, HW 1977, 'A Generalisation of Residential Location Theory', Regional Science and Urban Economics, vol. 7, pp. 251-66.
- [8] Seraj, T. M., 2011. Real estate development in Dhaka. In: Roxena, H. & Rabbani, A.K.M.G., ed. 2011. 400 years of Capital Dhaka and beyond : Urbanization and Urban development, Vol-III. Dhaka: The Asiatic Society of Bangladesh.
- [9] Seraj, T. M., 2012. Private sector housing, Parl publication, Dhaka.
- [10] World Bank (30 July 2010). Country Assistance Strategy for the People's Republic of Bangladesh for the Period FY11-14, page 4.

Author Profile



Ali Akbar Razon completed his B.Arch. degree from Ahsanullah University of Science and Technology in 2014. Currently he is working as Lecturer at Department of Architecture, Premier University, Chittagong, Bangladesh. He is involved in researches on Multi Ownership Housing.



Ishtiaque Ahmad received the B.Arch. degree from Bangladesh University of Engineering and Technology in 2013. Currently he is working as Senior Lecturer at Department of Architecture, Daffodil International University. He is involved in researches on Domestic House Form and Culture.