

**Thesis Report
On
Real Estate Business Practices in Bangladesh**

Submitted By:

Anik Islam

ID: MBA2501034012

Program: Master of Business Administration (MBA)

Major: Human Resource Management

Department of Business Administration

Sonargaon University (SU)

Submitted To:

Department of Business Administration

Faculty of Business

Sonargaon University (SU)

Submitted for the partial fulfillment of the degree of Master of Business Administration (MBA)



**Sonargaon University (SU)
147/1 Green Road, Panthapath, Tejgaon, Dhaka**

Date of Submission: January 03, 2026

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Supervised By:

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Submitted for the partial fulfillment of the degree of Master of Business
Administration (MBA)



**Sonargaon University (SU)
147/1 Green Road, Panthapath, Tejgaon, Dhaka**

Date of Submission: January 03, 2026

Letter of Transmittal

Date: January 03, 2026

To
Md. Fajle Rabbi
Lecturer
Department of Business Administration
Faculty of Business
Sonargaon University (SU)

Subject: Submission of thesis report titled “Real Estate business practice in Bangladesh”

Respected Sir,

I am hereby submitting my thesis paper entitled “Real Estate business practice in Bangladesh” which was assigned to me as a requirement for the completion of the MBA program. It was a great opportunity for me to acquire knowledge and experience through conducting the study.

I have concentrated with best efforts to achieve the objectives of the thesis statement and hope my endeavor will serve the purpose. However, I will always be ready to provide any further clarification that you may require.

I would be grateful if you kindly accept the thesis report.

With very best regards.

Sincerely yours,

Anik Islam

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Program: Master of Business Administration (MBA)

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Declaration of Student

This is to notify you that, the thesis paper on “Real Estate practice in Bangladesh” has been prepared as a part of my dissertation formalities. It is an obligatory part of my MBA program to submit a thesis paper. Moreover, I was inspired and instructed by Md. Fajle Rabbi, Lecturer, Department of Business Administration, Sonargaon University (SU). I am further declaring that I did not submit this report anywhere for awarding any degree or certificate.

Anik Islam

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Letter of Authorization

This is to certify that the thesis report “Real Estate practice in Bangladesh ‘ has been prepared as a part of completion of the MBA program from Department of Business Administration, Sonargaon University (SU), carried out by **Anik Islam** bearing **ID: MBA2501034012** under my supervision .The report or the information will not be used for any other purposes.

Md. Fajle Rabbi

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Without his help, co-operation and instruction it might not be possible for me to deal with such a topic. Therefore, I would like to convey my heartiest thanks to my near and dear friends, juniors and seniors who helped me several times in many ways to complete my thesis report. Finally I express thanks to my friends and well wishers.

Abstract Summary

Like any other country in the world, the housing sector plays an important role both in terms of Bangladesh's economy and the basic human rights of asylum. In addition to providing physical shelter, housing can have a significant impact on residents' lives in terms of efficiency, income growth, increased protection, health, confidence and human dignity. Actually this is call for the awareness and analysis regarding various pertinent issues involving in the real estate housing sector. These analyses include the size and contribution of the housing sector to the economy as well as the vulnerability relate to the people due to unplanned real estate housing. Despite significant growth in the housing sector in the recent past, there is a lack of good research related to the development of this sector. This is compounded by the fact that there is a lack of adequate statistical information. There is a need for real estate sector to meet the housing demand of this huge explosive population. The main focus of this study is the current scenario of the real estate business in Bangladesh. This paper also highlights some of the problems with prospects and high-rise buildings. The study was descriptive in nature and data was collected through primary and secondary sources. The results of this study show that the real estate business has been playing a very important role in providing housing benefits to the unemployed, high and middle and low income people for the last two decades and also created employment for the unemployed people of Bangladesh and made significant contribution to improving the overall economic condition of Bangladesh. Dhaka city has already been exposed to natural hazards such as floods and earthquakes and manmade hazard like fire, but the intervention of some government agencies, such as RAJUK and private housing companies, is affecting the environment in various ways. Not only the real estate company but also the technical person like architect, civil engineer or even flat owner does not panic about the severances of gas chamber explosion, light arrester, lac of space in ground floor, emergency exit stair for fie etc. Though the flat owner are very much cautious about the structural strength of the building. Government and other concerned organization should take step to make awareness among the people also need to apply rules of BNBC strictly.

List of Abbreviations

BNBC	- Bangladesh National Building Code
BSS	- Bangladesh Sangbad Sangstha
BUET	- Bangladesh University of Engineering and Technology
CDMP	- Comprehensive Disaster Management Programme
CE	- Civil Engineer
FGD	- Focus Group Discussion
JGC	- Japan Garden City
MoFDM	- Ministry of Food and Disaster Management
MoHFW	- Ministry of Health and Family Welfare
MoHPW	- Ministry of Housing and Public Works
RAJUK	-Rajdhani Unayan Katripakkha
REHAB	- Real Estate & Housing Association of Bangladesh
UNB	- United News of Bangladesh
WHO	- World Health Organization

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Chapter 1

Introduction

1.1 Background and relevance of the research

Bangladesh is a small country with very low per capita income. People here are still struggling with real estate products. While it is considered extremely expensive, it is an additional luxury to most of the public. However, the real estate sector has improved and is growing with a good one. The pace with the gradual increase of its contribution to total GDP. Investment in this sector is increasing over time and competition is intensifying. The sector is trying to create an appropriate framework for this business.

People with high income bonds are the main consumers of these real estate products. But day by day the middle class is involved in the society is increasing. In this situation, the government is also trying to involve the low income people. The government is trying to create an appropriate framework for this business sector.

People with high income bonds are the main consumers of these real estate products. But the involvement of the middle class in the society is increasing day by day. In this scenario, the government is also trying to involve low-income people by advising real estate companies to plan to accommodate these people. As engagement increases, the question of quality and contentment also comes into view. Urbanization is the result of both population growth and rural-urban migration. As urbanization increases, more and more people are becoming citizens. The growing urban population is creating a growing demand for shelter. The UN declaration and the constitution of Bangladesh recognize the right of asylum (Rehab, 2003). However, being a poor developing country, it is almost impossible for the government to ensure housing for all. People have taken their own initiative to ensure basic necessity of shelter as the public sector fails to assure their rights. This paper is an attempt to observe how private developers and real estate companies are affecting the urbanization pattern and the environment.

The background of this study is the factors that lead to the development of Bangladesh's real estate business along with analysis of earthquake protection and security issues. At the same time how people think about the quality of real estate products is also considered. This paper will also show the way real estate companies operate, the site that customers visit during construction, the quality of products used construction and people harassments by the real estate companies which sometimes violate human rights.

1.2 Objectives of the study

1. To find out the major players in the real estate sector in Dhaka city.
2. To identify the equity of the quality and the price of the material which are used by the Real Estate Company of Bangladesh?
3. To identify the Economic contribution of the real Estate company of Bangladesh.
4. Do the real estate companies take enough safety measures of the building by following BNBC Code ?
5. Are these urban housing environment friendly ?
6. Do the real Estate companies violate any kind of Human Rights?
7. Analyzing the safety perspective of government and non-government actors.

1.3 Identifying the problem, goals and added value of the research

This research is essentially a descriptive one that features some of the most recent studies focusing on the development of the real estate sector in Bangladesh. At the same time, the current security and security conditions are covered in the presentation of the customers as well as the views of the real estate business in Bangladesh as well as what the customers think about different aspects of the quality of the real estate product. The purpose of the study, therefore, is to discuss the factors that contributed to the development of Bangladesh's real estate business and how to take security measures in this building in case of earthquake.

The key values of the study come from the knowledge spillover system's contribution to the real estate business of Bangladesh. However the research worked eventually produced a report which is an academic requirement. At the same time, the study also generates building blocks for further study on the topic, as it can be a starting point from which policy makers can begin to move forward.

1.4 Research question

This section speaks to key research questions as well as sub-questions that may be raised to study the main research question. The main research question is,

- "How are residential building owners and developers disobeying building code laws?"

To answer this central question, some important issues related to this question are needed to be answered.

1. The influence of high price rate of construction materials in real estate sector?
2. The economic Contribution of the real estate to our GDP
3. Who are the main players in the Dhaka real estate sector?
4. 4.Security analysis from the perspective of stakeholders.
5. Analyze protection from the perspective of public and private actors

1.5 Limitations of the Study

Due to time and resource constraints, I only had to restrict my study to a residential building. I could not cover other aspects of Rajuk because of lack of time and proper response. I also could not travel the whole area due to lack of transportation and time.

1.6 Format of chapters

In Chapter 2, I gave some theoretical perspectives from a human rights-based perspective, because we know that government will also provide for the basic rights and protections of human rights and protection. Theories on urbanization and policy will also be demonstrated. Also try to mention the economic contribution of the real estate company to our GDP. Also the try to find the how much environmental impact our real estate sector has!

In the third chapter, I tried to give a brief discussion on the methodology of the paper.

In Chapter four, I tried to give some information that will be established by interviewing the primary stakeholders like the residents of the apartments, and then civil engineers, architects, and then government agencies who offer these services to some people.

In Chapter five, I tried to explore the issues and make some suggestions that will help us be more secure in our research question.

Chapter 2

Literature Review

2.1 Background

From the very beginning of human life, they had no place to stay or sleep for long because there were predatory animals around them. But as human beings began to possess different knowledge and actions over time, they understood the importance of society and they formed a society of hunting and collecting. Despite living in society, people have not been in a permanent place. But when they discovered the agricultural process, they had to make room for a long-term residence. That's how the village was built and then it started to get bigger. Their villages have become today's megacities, where millions of people are living in thousands of stories in different regions, in different economic conditions, in different cultures and societies.

2.2 Understanding of Real Estate

Real estate is the "integrated property of land and buildings and its natural resources such as crops, minerals or water; immovable property of this nature; interest in it; (also) items of real property; (more generally) buildings or housing in general. Also Real estate business; Buying, selling, or renting land, buildings or housing (Oxford English Dictionary Online) This is a real estate developer Unlike those who simply build and sell. Developer Louis Lesser drew the distinction in a 1963 New York Times article, "Developing is the key word. We don't build ourselves", Mr. Lesser stresses. 'we buy the land, finance the deal, and then we have the best builders build under bond at a fixed cost (New York Times, March 16, 1963). From this situation, we can clearly distinguish the two perspectives. Real estate developers are doing more with a business perspective. So now we see the key theories that we can relate to the real estate sector.

2.3 Housing as Human Right

Everyone shares the right to a decent standard of living. Essential to the achievement of this standard and therefore to the fulfillment of human life beyond simple survival is access to adequate housing. Housing fulfills physical needs by providing security and shelter from weather and climate. It fulfills psychological needs by providing a sense of personal space and privacy. It fulfills the social needs of a single unit of society by providing a gathering area and communal space for the human family. In many societies it serves as the center of commercial production and also meets the economic demands.

The human right to adequate housing is the right of every woman, man, youth and child to acquire and maintain a protected home and community so that they can live in peace and dignity. The right to housing is codified as a human right in the Universal Declaration of Human Rights (1948) "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control." (Article 25(1)).

Population growth, urban migration, conflicting needs for existing land and insufficient financial and natural resources have created massive homelessness and housing in inadequate housing. In every country, children, men and women sleep on the sidewalk, under bridges, in cars, underground railway stations and public parks, in slums or slums, or on "squats" or other people. The UN estimates that more than 5 million people are homeless and in excess of 5 billion people are inadequately settled worldwide. These figures are evidence of the difficulty governments have in guaranteeing their citizens 'access to housing, but they raise complex questions about the extent of

governments' obligation to do so. The need for shelter as a human need does not imply that governments must provide land, four walls and a roof to each of their citizens. Controversy may arise about exactly what governments should do to help people exercise their rights and get housing. Government action is generally country-specific, and depends on a variety of economic, cultural and social factors. In some cases, increasing access to education or the labor market is the best way to ensure housing rights, as these rights lead to greater access to earned housing. In other cases, governments need to provide physical protection to people directly. But regardless of past government steps, there are people in all countries who are unable to get housing because of social or physical problems such as physical or emotional disability, natural disasters or famine, or social problems like war or political instability. In these 4 situations, the government is responsible for helping make housing accessible. Governments are obliged to work in a fair and stable system whereby their citizens can achieve their rights satisfaction, and provide a way for their citizens to earn the right to a decent living that they can use through their free enterprise.

2.4 Human Right to Adequate Housing

Adequate housing is essential for the survival of people with dignity. Apart from the right to housing, many other basic human rights, including the right to family life and privacy, freedom of movement, the right to assembly and association, the right to health and development, will be compromised. In 1933, Human Rights in Vienna World Conference, the international community by including accommodation adequate living individual human rights was restored that this particular convention adopted by the program, in Article 31, paragraph, provision of food and medical care, housing and the necessary social services, including health and health enough to protect the rights of everyone.

Children's right to housing has special significance. They have special needs for their care and protection because of their vulnerability. Without decent secured housing, children cannot realize their right to grow and develop in a climate of moral and material security, free from abuse and neglect. The right to housing has been clearly upheld by international law, in fact the universal basis of the international human rights system in the Universal Declaration of Human Rights. This Declaration adopted by the United Nations in 1948 establishes a set of internationally recognized standards for all individuals without qualification.

This research paper focuses the issue of Urban Consolidation's and its prospect of application in Dhaka City. Burgess (2000) defines Urban Consolidation's as the process to increase built area and residential population densities; to intensify urban economic, social and cultural activities and to manipulate urban size, form and structure. It has been observed that it is a matter of debate whether the city will be sustainable if it is compacted. City compaction has both its positive and negative consequences in case of developing country cities. In some cases, it is the process of increasing or maintaining the density of housing in established residential areas. The Ultimate aim of consolidation is to reduce development on the fringe areas of the city. It increases the accessibility provision of services and facilities and ensures high quality of life by preserving the urban open space.

Again the high densities have obvious consequences in terms of the choice of transportation modes, living conditions, congestion and pollution. Denser living environments are associated with more traffic congestion and noise, more exposure to toxic releases, more environmental pollution. These negative externalities are also aggravated by inadequate infrastructure.

Besides, a common argument is that developing country cities are much more sustainable than developed country cities because material consumption per capita levels are much lower. Low income urban citizens are models of sustainable consumptions that they use very few non-renewable resources and generate very little waste. Considering the negative and positive aspects of consolidation, a careful selection of strategies can ensure positive impacts of consolidation in the cities of developing countries.

In case of Dhaka City, consolidation process has been started spontaneously by private initiatives about 15 to 20 years back in a most unplanned and sporadic way. Zaman and Lau (2000) describes that the city is developing to higher densities through urban consolidation by private initiatives in Dhanmondi residential area and in Sukrabad residential area. In recent years, replacement of old low story structures by high-rise apartments is a common phenomenon in most of the residential areas like Dhanmondi, Banani, Gulshan, Shantinagar, Shidhheswari, Mohammadpur, Kalabagan and many other localities. But the areas with poor accessibility to road network and other infrastructural facilities failed to attract developers for such kind of development. Though consolidation has been stated as a strategy in the DMDP Structure Plan 1997-2015 but no specific policy has yet been considered for the implementation process. There is a dearth of research work to explain the context of Dhaka in relation to consolidation process considering its physical setting, road network, infrastructure and other urban facilities. Consolidation is a complex process as it is associated with various elements like characteristics of built area and residential population densities, infrastructure and land capacity, transport, land use, intensification of activities, urban form, urban structure, activity pattern and settlement systems. This study attempts to explore the context of consolidation approach in Dhaka City. It primarily focuses on the availability of potential developable land, and its scope of development.

2.5 Economical Contribution of Real Estate Housing

The real estate and housing sector is one of the main drivers of any national economic development and industrialization. In Bangladesh the real estate has emerged as a critical sector of our economy. It has a huge multiplier effect on the economic activities and therefore, is a big driver of economic growth. It is one of the largest employment-generating sectors after agriculture. This sector has been contributing about 12-15 per cent to Bangladesh's gross domestic product (GDP). Not only does it generate directly and indirectly 2.5 million employment opportunities, but it also arouses the demand for over 250 ancilliary industries e.g. steel, cement, tiles and sanitary ware, cable and electric ware, paint, glass and aluminum, brick, building materials, consumer durables and so on. In addition, the real estate and housing sector is contributing 12 per cent to 15 per cent to the national GDP and the annual turnover about Bangladesh Taka (BDT) 20 billion.

Over the last 40 years, real estate sector played a significant role in shaping the Bangladesh economy. During this time we saw robust urbanization and growth of our population. As a consequence, our country had to provide additional housing solution to them. According to REHAB, in 2014, this sector contributed 12% of the GDP compared to the previous year of 7.04%. Additionally, REHAB data also shows that in 2016, the number of unsold flats came down to around

27,100 from 35,000. This indicates in that period, people had more demand and increase in purchase capacity. This ultimately led to more purchasing of flats. As people reinvest the money taken from the market, it boosts the economy and increases the contribution of this sector in the GDP of our country.

2.6 Environment and Real Estate of Housing of Dhaka

Real estate sector is one of the most fastest developing sector of the country as increase in demand for housing, growth of middle class group and rising per capita income plays the vital role of growth of real estate sector. But in most of the areas unplanned prolific growth of high-rise buildings also puts a dent on natural resources, resulting in water shortages, gas supply shortages, and load shedding. In addition, many commercial buildings do not have adequate parking space which means people are left with no choice but to park on roadsides creating traffic jam. Instead of focusing solely on building new structures, real estate companies also need to consider noise-free construction as well as building design to incorporate light and airflow. For construction of building some strategies need to take for eco-friendly construction, prioritizing environment safety as it is an important factor for sustainable development to ensure a healthy environment for both present and future generations.

Chapter 3

Methodology

3.1 Study Design

The study is descriptive in nature. Individual household interview and FGD techniques were applied. The details of research methods followed in solving the research problem, achieving the objectives. With these end in view, the design was covered the contents such as population, sample size, sample selection procedure and questionnaire preparation. The study design also focused on the field survey and investigation for primary data collection, sources of secondary data, verification of checklist and limitations of the study. The present study is a qualitative one. The whole study design was prepared in the following way

3.2 Research Methodology

The research methodologies that have been applied in this research is given below

- Data collection Method
 - ✓ Interview Method
 - ✓ Questionnaire Method
 - ✓ Observation of Data
- Data Analysis Method
 - ✓ Quantitative Method
 - ✓ Qualitative Method

3.3 Data collection method

Generally, we use three types of data collection method in this research. These are survey data, questionnaire data collection method and document analyzing method. This method mainly compares of two kinds. They are Quantitative and Qualitative method.

3.3.1 Quantitative Method

This is said to be the key method as it mainly works on the statistics of the data. This method helps in evaluating our topic and statistically represent our work on the research report.

3.3.2 Qualitative Method

This method is depended on the basic findings and characteristics of our research report. This method evaluates the information of the data and opinions and interviews of the consequences of the report (**Islam & Islam, 2013**).

Generally, we use three types of data collection method in this research. These are survey data, questionnaire data collection method and document analyzing method.

Interview method Collected necessary data from the local people through interviewing the general and key people.

Questionnaire method Talked to the Residents of selected Union and find out the actual cause of the hazards. Although the questionnaire method was basically designed for analyzing the statistical data, it is not always the same (**Morita, 2008**).

Observation method The observation method will be used to observe the various literatures, documents, articles, research papers on this topic.

3.4 Sources of Data

Data were collected from following two sources:

3.4.1 Primary Source

Primary data were collected through individual interview and focus group discussion.

3.4.2 Secondary Source

Under this study, the research agenda made it necessary to review the available literatures and documents. It should again be mentioned that enough secondary data have not been found due to unavailability of such data. Whatever the limited secondary data were incorporated effectively, logically and carefully in this study. To enrich the study, some relevant literatures related to the vulnerability on real estate building general was collected from different journals, internet, Wikipedia, Banglapedia, newspapers and some other sources indicated by Supervisor. Other published materials on the topic both from government and non-government agencies also provided some required information.

3.5 Techniques of Data Collection

To conduct this research data were collected from field. There were many tools for collecting data from the field. But in this study, all primary data were collected by set questionnaire and checklist. An English version of checklist was developed for the purpose of the study. Besides, one Moderator and note taker were engaged to collect data systematically.

3.6 Field Work (Duration and Interviewer)

Mainly primary data were used to conduct the study from August 2019 and the data were collected by the researcher himself in face to face situation.

3.7 Processing of Data

In this qualitative there were no statistically processing of data. Simply data were processed by the logical explanation and my own techniques. Individual household survey of 2 households and 4 FGDs were conducted.

3.8 Analysis and Interpretation of Data

A Qualitative technique was used to analysis and interpret the findings and draw conclusion in the light of the research problem and objectives. Data were analyzed into discrete up to topics and sub topics using the guide to outline the data analysis making the final report.

3.9 Limitations of the Study

It is a common that in every research project, research outcomes may face some limitations. This research project was not free from the limitation. As such, the following limitations faced by the researcher

1. The first and critical limitations of the study were the related documents with the samples selected for the study.
2. The second limitation was the sample respondents who were conservative to respond and provide necessary information.
3. The third limitation was unavailability required information on latest survey data on real estate housing in the website. The researcher fought to develop comprehensive insights into the problem under consideration.

Chapter 4

Data Analysis

4.1 Background

The real estate sector is often used as an index to measure the economic growth of a country. For example, the thriving economies in China and Dubai represent real estate markets emerging. Bangladesh's housing industry, especially in Dhaka, has made significant progress in the last ten years. The apartment-sales chart consistently shows a positive curve, with many predicting the housing industry as the next golden sector in the country. However, an assessment of the sector, based on an annual survey conducted by top real estate companies in the country, indicates a disturbing slowdown in the number of apartments sold in the sold-out company last year (**Daily Star, January 27, 2012**).

According to Sheltech's Managing Director Toufiq M Siraj, sales of apartments dropped nearly 40 percent last year. He claims that one of the main reasons behind this drop is the rapidly rising rate of apartments. "The cost of flats in Bangladesh is now one of the highest in the world and completely unaffected by the country's declining economy. Despite a number of factors behind the flat price rise, there are several prominent reasons for the high arrivals of developing companies over the past five years and the rising rate of construction materials.

Real estate businesses, especially apartment projects, began in the city of Dhaka in the late 1970s. From the early sixties, the business began to prosper and showed strong growth. Currently there are over 1000 companies operating in the real estate business in the country. The market is mainly in the upper division based on location, land value and size of apartments. The main reasons for the development of real estate business in Dhaka city are:

1. Lack of open space in important parts of the city
2. The danger of buying land.
3. Rapid growth of Dhaka's population
4. Increased remittance flow in recent years which has funded this sector

The real estate sector is currently generating employment for about over 40 million people who are directly or indirectly involved in the sector. According to the Labour Force Survey (LFS), in 2014-2015, 9.1% of the labor force was engaged in construction, whereas for 1995-1996 the figure was 1.8% respectively (Strengthening the Role of Private Sector Housing in Bangladesh Economy The Policy Challenges, 2016). According to Labor Force Survey (LFS) 2013-20014, conducted by Bangladesh Bureau of Statistics (BBS), projected labor force engaged in construction sector is 8.4 percent.

4.2 Contribution of the Real Estate Sector to the National GDP

Despite the political instability, poor infrastructure, corruption, inadequate power supply, slow enforcement of economic reforms, and the global financial crisis and recession of the global economy, Bangladesh's economy has grown every year since 1996. The construction industry is regarded as one of the fastest growing and largest sectors in Bangladesh. In 2020-21, the construction sector employed 2,220 million people, which is expected to increase to 2.5 million by this year (20) and 1.82 million by 2021 (reported by the WCC).

A construction boom began in the country due to the need for industrial buildings, corporate offices, housing units, roads and other types of infrastructure. Bangladesh has made great progress in recent years with sustainable macro-economic stability. The construction sector will debut as a new growth engine in Bangladesh, which now reaches \$ 20 billion in RMG sector and an annual \$ 1 billion remittance flow to migrant workers. According to the Bangladesh Bureau of Statistics, the construction sector had a record GDP of 9.1% (gross domestic product) in fiscal year 2012/2.

The private sector housing business started in Bangladesh in 3 housing○, where sector (capital) was the main focus of the private sector investors. It has grown in the last two decades and now the demand is increasing rapidly. Bangladesh is one of the fastest urbanizing countries due to the high migration of cities.

The following table shows the comparison between overall GDP growth and growth in real estate, rental and business services

Gross Domestic Product (GDP) is a measure of all products and services produced by the economy. The real estate sector contributes directly and significantly to the GDP, and thus to GDP. The two line items of GDP directly linked to the real estate sector are residential fixed investment and housing services.

Residential fixed investments include the placement of new housing units, the commissioning of existing residential property sales brokers, and the costs associated with the improvements and additions to existing units. Housing services are a component of personal expenditure, which residents of Bangladesh usually purchase as rent for rent or equivalent to rent for homeowners. It is important to note that the daily use of the flow of home-provided services by this method does not cost the homeowner (for fixing food, relaxing, entertaining, gardening, etc.) and not the value of investing in long-term wealth (home). Equivalent to rent or implicit rent is the amount of rent that a homeowner can lease if they are leasing to others instead of staying in the house. Since the underlying rent is not a market transaction, it is estimated by measuring the market rent change for a rented dwelling unit in the same location as the homeowner units, in order to pay for a rented landlord.

4.3 Structural Vulnerability of Real Estate Housing

4.3.1 Architectural Point of View

In the field of housing, architects work for human society, where developers or contractors like the building industry work for profit. When individual owners approach building design, they make a request that meets the requirements and can lead to a longer life. Now, when the same architects are contacted by the developers, they ask for a building that looks beautiful without questioning its life or durability. In addition to the design of the nice architects, the developer will be able to use low quality materials and make even more profit.

4.3.2 Design and manufacture of salable products

The properties of apartment buildings in two major areas in Apartment City have worsened (i) lifetime and (ii) security. Depending on these two qualities, the different design and construction processes are (a) architectural design, (b) structural design (c) used materials and (d) supervision and construction.

The efforts of a building owner are usually:

1. Emphasis on safety and longevity Owners such as architectural design, structural design, electrical and plumbing design, quality of materials used and supervision, care about the safety, durability and lifetime of the building.
2. Lesser importance on surface beauty In the case of financial constraints, owners go for inferior quality finishing materials and fixtures responsible for surface beauty. He knows that these can be changed later.

By all means, the goals and objectives of the business developer of a "marketable apartment" will be different. These could be

1. Lifetime or safety is of little or no importance In fact the lifetime and security of the building is not important to the developer of the business. The only thing he has to do is to meet the city authority rules. Fortunately for them, this national authority does not have consumer-friendly rules. Worse yet, many of the employees working at these companies are 'buy-in for money'. Developers generally believe that there is a profit in violation of Rajuk's rules.
2. The ultimate importance of giving beauty pageants Since buyers mostly evaluate the apartment based on its surface beauty, the developer ensures that the developer generally knows that surface beauty will be better through beautiful-looking finished materials, paintings, fixtures, etc.; More apartments will cost.
3. The developer also knows that designing reputable architects, attractive media ads, etc. can attract buyers.

The above facts render the Dhaka metropolitan multi-level apartment buildings somewhat, if any, very risky, even 'trapped' during the earthquake. The major areas shown here are those buildings that are faulty or weak.

4.3.3 Disadvantages due to faulty structural design Column size

RAJUK suggests car-parking at the bottom of the apartment building. This creates a "soft floor" on the lowest floor (less number of walls per floor is known as a soft floor), where frequent use of other floors makes them "hard". During the earthquake, hard floors act as a rigid body, and only exposed columns are exposed with trembling. In a thumb rule, 6 stories of a strong concrete frame-structure building and then less than one-sided in size but required at least 20 "X20" columns on the gold floor to withstand a 3.5 ich Richter scale earthquake "enough Dhaka Dhaka apartment buildings" to carry vertical loads Soft floors "are less prone to earthquake hazards than columns of this size.

The ability to carry a vertical load by a column is given by its cross-sectional area. The cross-sectional area of the 20 "X20" column is 400 square. Mahbub. Columns with different sizes (eg, 10 "X40", 15 "X27", etc.) can meet the condition of carrying a vertical load. Designers prefer 10 "on one side of the column because it is convenient to" flush "the walls with 10. The columns can withstand earthquake in its shortest direction. However, apartment buildings with fewer than 20 columns on either side of the soft floor are at risk of an earthquake coming from its larger side.

4.3.4 Alignment of Column

R.c.c Frame-Structure According to the structural principles of buildings, r.c.c. The columns need to be kept in regular (not necessarily equal) grid and order. This helps to achieve stability and group resistance against lateral loads. In the event of an earthquake that vibrates in a building, it will only begin to shake between the two main aspects of the building's rectangular or square plan. It is not difficult to understand that a building can easily resist the vibration in its direction according to its length. Even if the designer knows that an earthquake will come to his building from a certain direction, in most cases it is not possible to design the building simply by considering this aspect. The main function of the building must be oriented so that the entrance to the main road is fitted with views from inside and outside, climate etc. As a resistance to vibration, a column is stronger in its longer section. However, since it is not possible to orient columns in any direction, a good solution would be to use cross-sectioned columns where possible. Apartment buildings are weak and vulnerable to earthquake resistance, with no length of beam in columns (i) less or insufficient numbers and (ii) not standing in a straight line.

4.3.5 Beam continuity

Except for the cantilevers, all beams should be finished in columns only. It has been observed that in order to facilitate room-divisions many designers place columns places other than column junctions. this system can take care of vertical loads, apartment buildings having columns not at the and away from the junction or meeting place of beams are vulnerable to earth-quake.

4.3.6 Vulnerability Due to Low Quality Construction Materials

In addition to the simple structural design, the elements that contribute the most to the life and stability of a building are the elements. The main components of reinforced concrete are rod, coarse aggregate and cement. When a homeowner buys these things, he / she tries the best materials for obvious reasons. However, the market that aims to make profit from "deals" of acceptable items (ie, apartments) is low quality materials. Unfortunately all these types of materials are available in materials city. In this way the old rods, brick beds, coarse cement, etc. from the old building are found in the city. The level of honesty of the people of Bangladesh is not so high. In this national reality it is likely that many of the apartment buildings and then sold by the developers are at risk for earthquake due to low power due to low quality elements.

4.3.7 Other Reasons of Vulnerability

Another important reason for the weakness of buildings built with the best quality materials and sound design is due to the insufficient space surrounding this national building. City Authority (that is, RAJUK) is the space required to run a service line in determining free / open space within a multi-level building. Naturally multi-storied buildings can be built within a building at a distance of 1 or 2 meters.

In Bangladesh, there is a possibility of a building collapse due to earthquake, structural failure, fire incident etc. and the city authorities should have advised that minimum inter-building open space could not affect adjacent parts of a building. When buildings are built at a distance of 1 to 2 meters, good buildings are sure to collapse due to sudden demolition of ill-designed buildings. The case is even worse in a building with flat-plate floor slabs.

4.3.8 Scenes of Imagination Destruction

Since the earth will not change the habit of compression, there will be earthquakes. Weak and old buildings are expected to collapse as a result of the earthquake. At the same time, particularly strong rods can rust because of the risk of fire incidents or structural failure. According to the right or wrong decisions of the political government, the city of Dhaka has grown rapidly, various rules regarding built-form construction have been determined by the concerned authorities, the developers have built their buildings to the best of their integrity and social responsibility. Buyers of apartments had very little choice, as in the context of how the building was built and what kind of materials they had no chance of seeing, we can imagine what could happen to a city after a devastating earthquake struck the city.

- (A) Buildings, especially tall buildings, begin to tremble. The jerk is evenly spaced in all columns that stand on the edge of the regular grid. Buildings in which some columns have been removed from junction points seem unbearable, leaving great work on others. Thus, 5 columns in a bay in a building, only a few columns standing in a line, can contribute to energy. If the spill alone is sufficient for additional electricity, the entire building is likely to collapse.
- (B) The upper floors of the building are actually a solid rectangular mass adorned with walls. When the columns in contact with the ground are vibrating, the upper mass stays fixed or shifts to one side due to sedimentation. In these situations, only free length of ground columns (10 feet in flat-plate or 9 feet in frame structure) will be attempted. It is obvious that the sections and reinforcement of the columns will fail if they are not sufficient.
- C. The vibration during the earthquake comes from the lateral side and bottom. Buildings with longer piles on the ground naturally suffer more vibration. The piles within the soft clay itself suffer from shear failure. Now say, while throwing a pile, there was a 'cave' lying in the mud in a strong iron cage. Over time the rods started to rust. In the general case it can stand in the same position with the rusted rods. But they are likely to fail due to tremors during the earthquake.
- D. If a 20-storey building fails due to foundation failure, fracture of free columns, etc. If it leans to one side, what will happen to these side buildings? Should anyone expect to see the adjacent building, even if it falls directly into its base?

4.4 Civil Engineer

Few Reasons of Failure of Earthquake-proof Buildings. It is generally believed that few homes can be built as evidence of an earthquake. However, the reality is that the home earthquake resistance has been increased, so that they can withstand a certain degree of earthquake. These houses, too, could once face their earthquakes when the intensity was higher than they care about their design. Following are some of the reasons earthquake proof homes failed.

4.4.1 Vibrations

The movement inside the earth's crust manifests itself in the form of waves that reach the surface of the earth and cause vibration within the structure. The structures fail and break down in the operation of these vibrations. These vibrations can be in the horizontal direction, in the vertical direction or in a combination of both, which is usually the case. When the vertical component of the horizontal force induces the horizontal component, the weight of the structure changes frequently. This force receives the command of each cycle.

4.4.2 Inertia Force

Houses collapse as a result of intermittent energy. Under the earthquake action, the lower parts of the structures that are in direct contact with the earth vibrate more; The upper parts of the structure remain fixed due to the enclosure. As a result the stresses accelerate toward the failure of structures with an increased frequency of vibrations.

4.4.3 Poor Quality of Material

The Spectrum Sweater Factory, Savar, Dhaka, Bangladesh crashed when huge 9-storey stone boulder walls lowered the roofs covered with dense soil. The walls and the roofs were heavy; The masonry was made of poorly rounded stone. Collapse 8 workers were killed and 747 were injured in the incident on April 7, 2009. The enormous mass quality of construction materials created a catastrophic disaster.

4.4.4 Dead Load

The level of energy gathered increases directly as the weight of the house. The heavier the house, the heavier the destructive power. An important consideration in making a house more earthquake resistant is to reduce its mass and light it as much as possible.

4.5 Case Study

Sky View Paragoang Mirpur Kafrul Dhaka

Sky View Paragoang is 11 storied residential building which situated in Mirpur Dhaka along side with the Dhaka cantonment. This multi storied building have 60 apartment in where flat owner started to live in yet it is a under constructed building.

With the focus group discussion and interview with the Civil Engineer of the project and with the flat owner , it has found that the building construction was started almost 8 years before but the Developer company could not able to finish the construction work. The flat owners are almost were in deep trouble situation that they bought flat years ago but they could not able to live on it so many of the decided to live on it.

Some vulnerability are addressed below

1. Flat owner and Real Estate company are concern about the safety of the structural design such flat owner most of them were present when the foundation work went on.

2. The real estate company make one floor extra from the RAJUK plan though Rajuk notice them so many times but they do not pay any heed to it.
3. Huge amount of dust were kept in lift space in where ad is Mosquito produce.
4. The space between two flat are too narrow.



Figure 1: The Narrow space between two apartment

5. The emergency exit stair is just about 2 feet length so if there any fire broke out it will can create another disaster.



Figure 2: Emergency stair for fire (Length is to small)

6. People do not know properly how to use fire fighter though some Carbon di Oxide cylinder were in the main stair.



Figure 3: Carbon di Oxide cylinder for fire

7. Most of the flat owner and also the engineer does have little knowledge about the thunder storm disaster for they yet not think about to set up the light arrester.
8. As the government of Bangladesh does new connection pipe line of gas the flat owner use cylinder gas to cook but below picture will saw how much vulnerable they are if this cylinder burst once.



Figure 4: The gas cylinder in the ground floor

Chapter Five

Findings and Discussion

5.1 Background

With growing population and increasing demand for homes, the culture of Apartments in Shaka has intensified. The apartments were first introduced by traditional private developers in the early '80s in their 80's residential history. Over the last decade, the total volume of the real estate, rental and business services sectors has increased every year, reflecting a positive growth in the sector each year. The real estate housing business has a major contribution to our economy as other sectors develop frequently. The growth of this industry has allowed the rapid development of many connection industries such as glass and glass products industry, brick industry, cement industry, ceramic industry, iron and steel industry over the last decade. This steady growth in the real estate sector is mainly due to the consistent demand on the consumer side. Bangladesh is recognized as the earthquake prone country, Bangladesh National Building Code (BNBC, 1). Seven major earthquakes on the Richter scale, equal to or greater than .05, have affected Bangladesh in the last one and a half years. However, Bangladesh's housing appears to have been built to meet social needs, not as an earthquake resistant frame building or structurally sustainable building. After completing interviews, group discussions and case studies, there are some findings and recommendations regarding the real estate sector in the area of earthquake protection issues.

5.2 Findings from the study

The results obtained from interviews with the architect and civil engineer are given one by one.

1. Proper planning and programming for the construction project will be made based on the nature of the work.
2. With the help of professionals, the authorities should create general guidelines for building design. Special attention will be given to appropriate planning rules, building codes, etc. based on the character of the area. It will also cover building regulations and building related details and selection of materials.
3. Unplanned tall structures lose consistency in the sky line.
4. It puts pressure on utility services such as water supply, gas and electricity.
5. It aggravates traffic and parking problems.
6. It creates lighting and ventilation problems for adjacent small structures.
7. Firefighting problems in the building.
8. Insufficient number of lift related issues.
9. Problems due to inadequate parking space.
10. Lack of community space.

To raise awareness, not only the government, but also community-based organizations have to come forward.

1. Problems related to the first earthquake should be introduced in the education system at a very early stage, so that children can think about it. Such As architects set time slots to maximize their performance, all CEs and diplomas should have this national system in place.
2. The Bangladesh Meteorological Department needs to be equipped and modern equipment should be provided to them for the weather forecast.
3. In the absence of manpower, Rajuk will have to monitor the construction process from start to finish.
4. Awareness and preparation drills should be done from time to time.

Chapter Six

Recommendations and Conclusion

6.1 Recommendations

1. Under the CDMP, the Ministry of Health and Family Welfare (MHFW) is strengthening its ability to set up temporary medical centers in Dhaka city for earthquake victims. This kind of program should be run off and on.
2. There are about 1000 developer companies in Bangladesh, but most of them are dependent on diploma CE, so they do not build quality buildings.
3. The capital development Katripakhar (Rajuk) has made many important contributions to the creation of various laws and regulations, but failed to maintain it. BNBC-1993 is being strictly maintained to approve a building, although many low grade buildings are being built around the city.
4. BNBC-1993 should be disobeyed as a criminal offense.
5. Awareness among people is not very high. They only know the basics, but none of this is life-saving activity.
6. Earthquake ministries have a responsibility to make people aware of the earthquake's consequences.
7. Pre-disaster mitigation (CDMP) measures to reduce the impact of earthquake in three major cities of Dhaka - Dhaka, Chittagong and Sylhet.
8. During the earthquake, valuable equipment worth crores of crores has been handed over to the Armed Forces Department and the Fire Service and Civil Defense for rescue operations.
9. About 100 crore worth of equipment is in the pipeline for managing the respective departments.
10. The government plans to train 62260 volunteers to carry out rescue work after the earthquake.
11. Under the CDMP, the Ministry of Health and Family Welfare (MHFW) is strengthening its ability to set up temporary medical centers in Dhaka city for earthquake victims.
12. The government introduced awareness during the earthquake booklet, but people did not know it.
13. Create public access to public awareness.
14. Media must play an important role in raising awareness among the people.
15. Problems related to the first earthquake should be introduced in the education system at a very early stage, so that children can think about it. Such As architects set time slots to maximize their performance, all CEs and diplomas should have this national system in place.

16. The Bangladesh Meteorological Department needs to be equipped and modern equipment should be provided to them for the weather forecast.
17. In the absence of manpower, Rajuk will have to monitor the construction process from start to finish.
18. Awareness and preparation drills should be done from time to time.

To raise awareness, not only the government, but also community-based organizations have to come forward.

6.2 Conclusion

So Rajuk has introduced a number of code of conduct about real estate construction so that defective buildings are not built. However, experts from different perspectives have estimated huge losses in the event of large earthquake in Bangladesh. They are constantly asking authorities to take security initiatives in those buildings and take responsibility for the corrupt people who lack the ethics of their business. In developing countries like Bangladesh, local laws are not properly governed. If we want to maintain the international law of the United Nations, we must do a long day's work. A high-density country like Bangladesh can never meet enough housing rights. Preparations for natural disasters like earthquakes should be taken periodically so that people can cope with the life-saving process. A high-density city like Dhaka will always face the worst potential for major earthquakes. So we should be prepared to protect ourselves from earthquakes.

Despite of all those thing this apartment building are appeared as a gas chamber which can be blown away this building in a moment. Not only that air space between the two apartment. Most of the people don't know the how to use Carbon di Oxide cylinder. Authority should make awareness to the people immediately before this kind of disaster.

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Appendix

Interview Questioner of Civil Engineer

Name of the Interviewee

Educational Background

Occupation

Experience

Projects Done or ongoing

1.

2.

3.

Question 1 What do you think of the current situation of Real Estate Development in Dhaka City?

Comment

Question 2 How the Civil Engineers can contribute to it?

Comment

Question 3 There are both B. Sc and Diploma in Civil Engineering. What are the individual role in that work field?

Comment

Question 4 What are the key socio-economic issues that are kept in mind in time of construction of a project?

Question 5 In the case of earth quake or any other structural design, how you deal with safety issue?.

Comment

Question 6 There are almost 2000 developer companies enlisted in REHAB. REHAB claimed that only few of them are doing the quality work. What do you think of that?

Comment

Question 7 What do you think of RAJUK's contribution or dis-contribution in the case of maintaining safety in housing sector?

Comment

Question 8 Not following the BNBC code, do you think it is a criminal offense?

Comment

Question 9 What the CE are thinking of sustainability and environmental concern for their project?

Comment

Question 10 As you have gained experience in working with different situation, what do you think of awareness level among the mass regarding Earthquake?

Comment

Question 11 Do you think that consumer of the flat or apartment get harassed by the real estate company?

Comment

Question 12 Do u think under constructed building one of the production place of ADIS mosquito?

Comment

Questioner of Architect

Name of the Interviewee

Educational Background

Occupation

Experience

Projects Done or ongoing

1.

2.

3.

Question 1 What do you think of the current situation of Real Estate development in Bangladesh?

Comment

Question 2 Contribution of the architect professional in the Real Estate sector?

Comment

Question 3 What is the role of an Architect in designing a Project?

Comment

Question 4 How many Architects are currently working with licenses and how many are there without licenses?

Comment

Question 5 What will be the problem if we do not use architects to design a building?

Comment

Question 6 What are the key issues that the architect can talk with the owner of the project?

Comment

Question 7 How can an architect influence in the decision of the owner of the project?

Comment

Question 8 If there is a major earthquake, how the Urbanization can affect the Dhaka city ?-

Comment

Question 9 By doing what, an architect can maximize the sustainability of a project after an earthquake?

Comment

Interview Questioner of Focus Group Discussion

Names of the Participants

- 1.
- 2.
- 3.
- 4.

Professions of the participants

- 1.
- 2.
- 3.
- 4.

Years of living in the case study area

- 1.
- 2.
- 3.
- 4.

General Question

Question 1. Do you think this building is 100 % safe structurally according to RAJUK and BNBC?

Comment

Question 2. Do you think your apartment building environment friendly?

Comment

Question 3. How was the behavior of the company from whom you buy this apartment?

Comment

Question 4 Do you know how to run the Carbon di Oxide Cylinder in case of any fire break out?

Comment

Question 5 Do you have any complain about the narrow spaces of emergency exit?

Comment

Question 6 Do know about the thunder storm disaster and the benefit of light arrester ?

Comment

Question 7 What is your comment about the gas cylinder which are in the ground floor?

Comment

Question 8 Why the real estate company take so much time to build this project?

Comment

Question 9 Do you have any complain about with quality of the construction materials?

Comment

Question 10 Do you have satisfaction on the real estate company?

Comment

Any outside knowledge of this questioner is highly appreciated. The interviewer has the right to change any information at any time. If you have any concerns about the reference, feel free to provide it. Thank you for your valuable time.