

BHUMI BHABAN

SATRASTAR MOR, TEJGAON, DHAKA

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SENINAR II

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for the degree of Bachelor of Architecture
Department of Architecture
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ABSTRACT

Under the ministry of Land there are many departments now working and these are Land Reforms Board, Land Appeal Board, Department of Land Records and Surveys and Land Administration Training Centre and some other departments too. Land Reforms Board and Land Appeal Board are accommodated in a 12 storied building of BIWTA building. Department of Land Records and Surveys is located in a separate building in Shatrastar mor, tejgaon. In this situation, Government aims to join all the departments of land ministry together to work in a better flow and to maximize the service for people. This project is going to be an attempt to fulfill all the requirements for the people in general to satisfy their land rights.

Acknowledgement

I have been always fascinated to the government buildings how they execute works for the people. I always wanted to design such a building for government works and in my thesis I got a chance to design it. I consider myself lucky to go through this project because of my Father, every time he guided me like my faculties. I would like to thank my teachers for whom I came this far. My special thanks to my studio faculties Shams Mansoor Ghani, Mohammad Habib Reza, Naim Ahmed Kibria and Sajid Bin Doza.

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CHAPTER 1: BACKGROUND OF THE PROJECT

1.1 PROJECT INTRODUCTION

Bangladesh is a land of culture, land of beauty, land of martyrs. After the war of nine months against former west Pakistan we achieved our freedom. Before that, we were part of them namely East Pakistan. Not only under the Pakistan rule, we have been through under many rulers from the beginning of the history of Indian subcontinent. We were ruled by the foreigners at first by the Muslims from west. Later the Mughals ruled their glorious reign for many years. After them, in 1757 the British came, we started to be ruled by the Europeans. It is undeniable that, we have learned many things from the different time frames. Beginning from the Sultanate period to British period. Since the British came to rule the lands, they had certain policies or systems to control it. In 1772, they established " Board of Revenue" as a central permanent organization for operating the revenue administration. After abolishing " Board of Revenue" in 1972, the department transferred to the Ministry of Land Administration and Land Reforms. And in 1989, two boards were created in the name of Land Reforms Board and Land Appeal Board instead of Land Administration Board. Till now, the different parts of Land Administration are located in different places, but it was necessary to unify all the departments together, so that, people coming for the service can get all together. In that vision, in 2006 in the meeting a decision was placed to construct a 13 storied building with 20 storied foundation with two basement floors at the settlement press compound of Department Of Land Records and Surveys (DLR&S). As a result, Land Administration can provide one stop service to the people.

1.2 PROJECT BRIEF

Name of the project : Construction of Bhumi Bhaban Complex

Site location : Shatrastar Mor, Tejgaon Industrial area, Tejgaon

Site area : 50495 sq. ft. or, approx. 1.16 acres

Sponsoring Ministry : Ministry of land

Executing agency : Departments of Land Records and Surveys

Public Works Department

1.3 AIMS AND OBJECTIVES OF THE PROJECT

The main objectives of the project are as follows

- Provide office accommodation to different Board/ Directorate at same premises
- Provide one stop services to stake holders
- Boost-up activities regarding land administration

1.3 PROPOSED PROGRAMS

To accommodate all the offices/ Directorate in one single building all different offices has provided their list functions according to their space needs. On the basis of that a common list of program has been set up.

- Department of Land Records and Surveys
- Land Reforms Board
- Deputy Land Reforms Board of Dhaka Division
- Court of Wards Vawal Raj estate
- Court of Wards Dhaka Nawab estate
- Five projects of Court of Wards
- Guchhogram prokolpo
- Tejgaon circle Land office
- Land Appeal Board
- Record room
- Conference and seminar room
- Cafeteria
- Prayer hall
- Bank and display room

CHAPTER 2: LITERATURE REVIEW

2.1 Development of 'Office': Greek to Present

An office is generally a room or other area where administrative work is done, but may also denote a position within an organization with specific duties attached to it. An office is an architectural and design phenomenon; whether it is a small office such as a bench in the corner of a small business of extremely small size, through entire floors of building, up to and including massive buildings dedicated entirely to one company (en.wikipedia.org/wiki/office)

According to Lucy Kellaway, "Many people might think of office-bound life as a modern phenomenon, but there's a long history of people chained to their desks." It indicates the term office has been used from many years ago or even centuries. the word 'Office' first came into use in around mid 13th century AD. "a post, an employment to which certain duties are attached," from Anglo-French and Old French office "place or function; divine service" (12c. in Old French) defines the dictionary.com. the website defines some specific origins that are shown the word office was used around 1200 to 1500 AD. In 1560's office was recorded as the 'place for conducting business'. And after that we can take the reference from British Dictionary definitions, they are defining the office as " a room or set of rooms in which business, professional duties, clerical work, etc, are carried out" or, "the building or buildings in which the work of an organization, such as a business or government department, is carried out" Though the word 'office' came recently in use but according to the functional use of office, the functions that are conducted in offices are being practiced from long time ago dated back to the ancient Greek and roman period.

The High Middle Ages (1000–1300) saw the rise of the medieval chancery, which was usually the place where most government letters were written and where laws were copied in the administration of a kingdom. The rooms of the chancery often had walls full of pigeonholes, constructed to hold rolled up pieces of parchment for safekeeping or ready reference, a precursor to the book shelf. The introduction of printing during the Renaissance did not change these early government offices much.

2.2 BUILDING STRUCTURE AND ITS CORE

According to the emergence of having a one place to provide one stop service to the people the government has taken a project to build a building to accommodate all the offices of Land Administration together. The proposal of this building is to have a foundation of 20 storey as a result it can be considered as a tall building. Now what is a tall building, to know that we can take the explanation of *Council on tall buildings and Urban Habitat*. According to them, there is no single definition for tall building rather it has some considerations. These are:

a) Height relative to Context : It is not just about height, but about the context in which it exists. Thus, whereas a 14-story building may not be considered a tall building in a high-rise city such as Chicago or Hong Kong, in a provincial European city or a suburb this may be distinctly taller than the urban norm.



source: Council on tall buildings and Urban Habitat

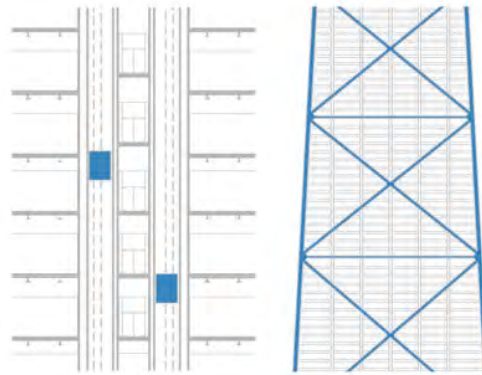
b) Proportion: Again, a tall building is not just about height but also about proportion. There are numerous buildings that are not particularly high, but are slender enough to give the appearance of a tall building, especially against low urban backgrounds. Conversely, there are numerous big/large footprint buildings that are quite tall but their size/floor area rules them out as being classed as a tall building.



source: Council on tall buildings and Urban Habitat

c) Tall Building Technologies: If a building contains technologies which may be attributed as being a product of “tall” (e.g., specific vertical transport technologies, structural wind bracing as a product of height, etc.), then this building can be classed as a tall building. Although number of floors is a poor

indicator of defining a tall building due to the changing floor to floor height between differing buildings and functions (e.g., office versus residential usage), a building of perhaps 14 or more stories – or more than 50 meters (165 feet) in height – could perhaps be used as a threshold for considering it a “tall building.”



source: Council on tall buildings and Urban Habitat

Core

Talking about the tall buildings the first and foremost element that come is the core. Core is the central of arterial art of a multistory building that integrates functions and services. Generally it is composed of toilet facilities, elevator banks, utilities, mechanical facilities, stair etc. According to the placement of cores the space inside the building changes and helps to receive multi directional challenges.

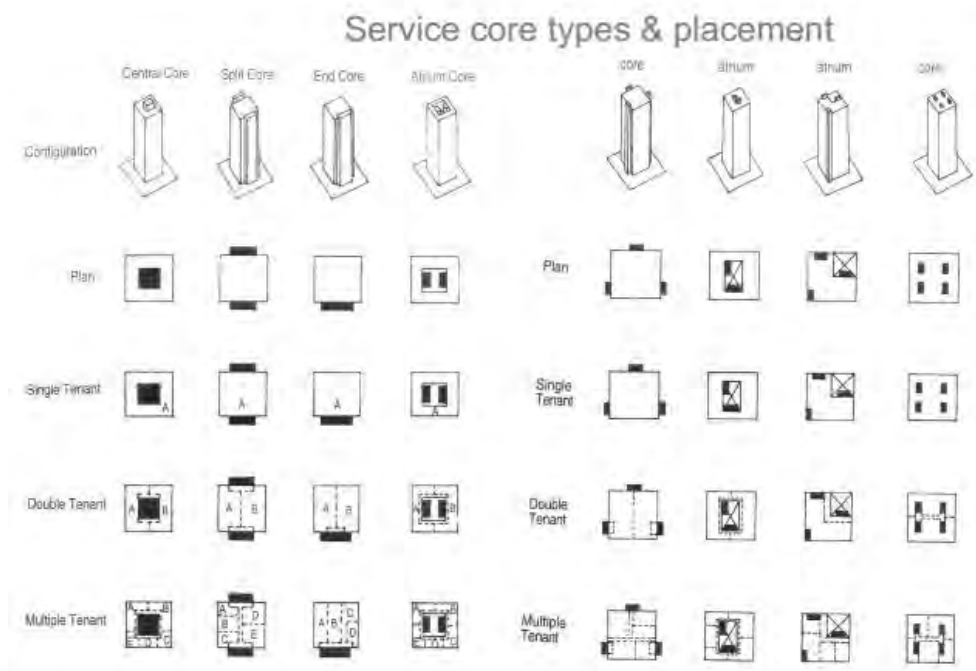
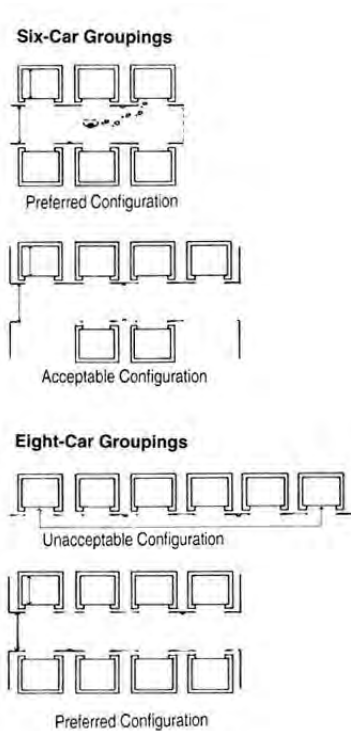


Image source: <https://www.sefindia.org/rangarajan/CoreDesign.pdf>



According to Designing Buildings Wiki," The concept of shell and core (or base build) originated in the USA where it was applied to office buildings built by developers for rent. USA developers initially fitted out offices, installing access floors, carpet tiles, ceilings, air conditioning and lighting on the basis of a notional layout for prospective tenants. However when the tenants came aboard, their ideas and requirements often differed from the developer's notional layouts and so money was wasted taking down ceilings and taking up floors. Additionally, mechanical and electrical services had to be altered to accommodate varying partition layouts unique to each tenant."

The another integrated part of core is its elevator banks. They also can be placed in different way.

In recent times the elevator cores are also being shifted for design purposes and these are widely being used.

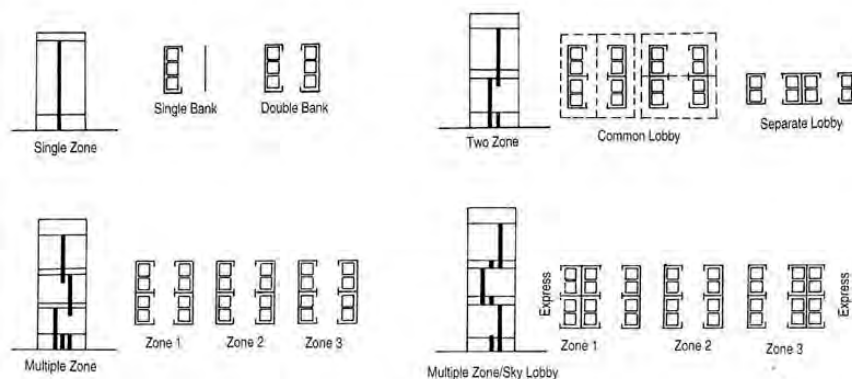


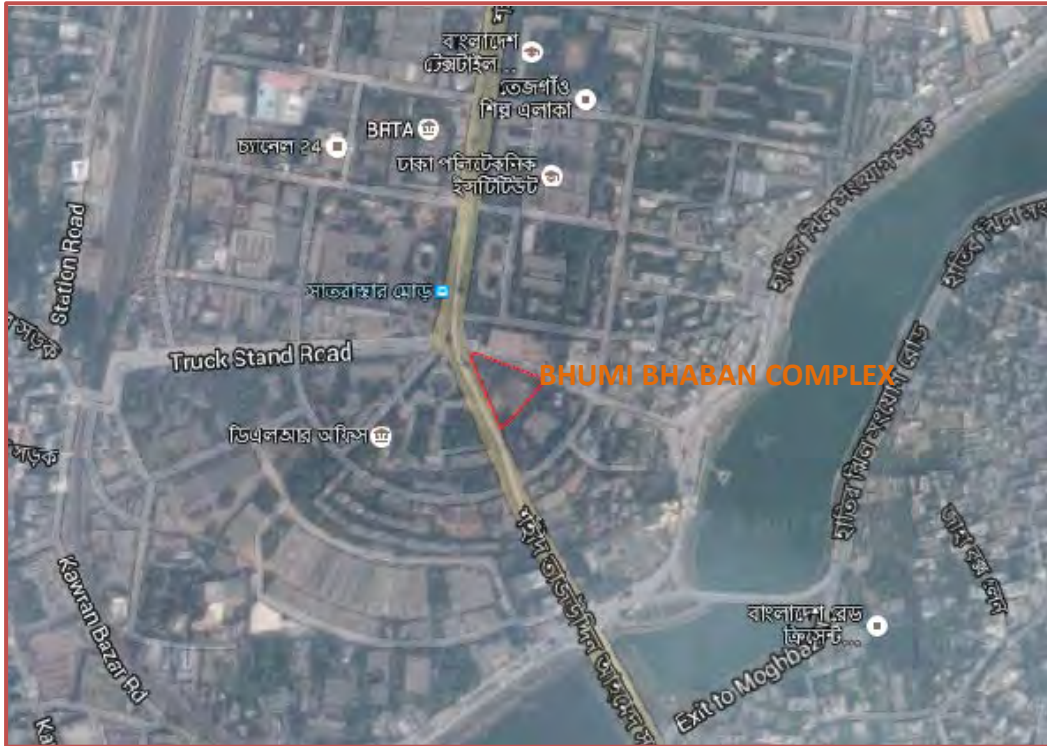
Image source: <https://www.sefindia.org/rangarajan/CoreDesign.pdf>

"A 'tall building' is a multi-story structure in which most occupants depend on elevators [lifts] to reach their destinations" (Challinger D.,2008). This elevators or lift cores are placed in different levels for structural and design purposes. where most of the commercial buildings place the core in one position, it can be in the centre or it can be on the sides. It is seen that, most of the government buildings in Bangladesh use central core, it has some benefit of placing it at the centre. But it has some disadvantages too. When the floor area becomes very big and there should also have a provision for fire exits , it is recommended that cores also should be there at those ends.

CHAPTER 3: SITE APPRAISAL

3.1 SITE INTRODUCTION AND LOCATION

The site for Bhumi Bhaban Complex is proposed at the settlement press compound of Department of Land Records and Surveys (DLR&S) at Tejgaon Industrial area.

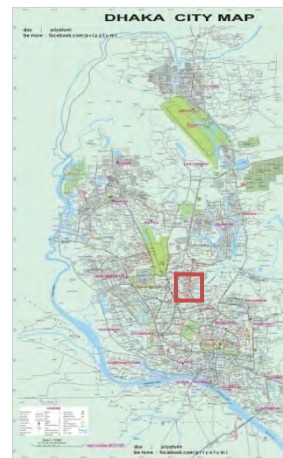


1.

Image source: Google Earth



1.



2.

The site is located in figure 3 with the references of geographical position of Bangladesh and Dhaka city respectively on figure 1 and 2. It is located at the adjacent plot of saat rastar mor. The land area of this site is 2.7 acre.

3.2 SITE SURROUNDING

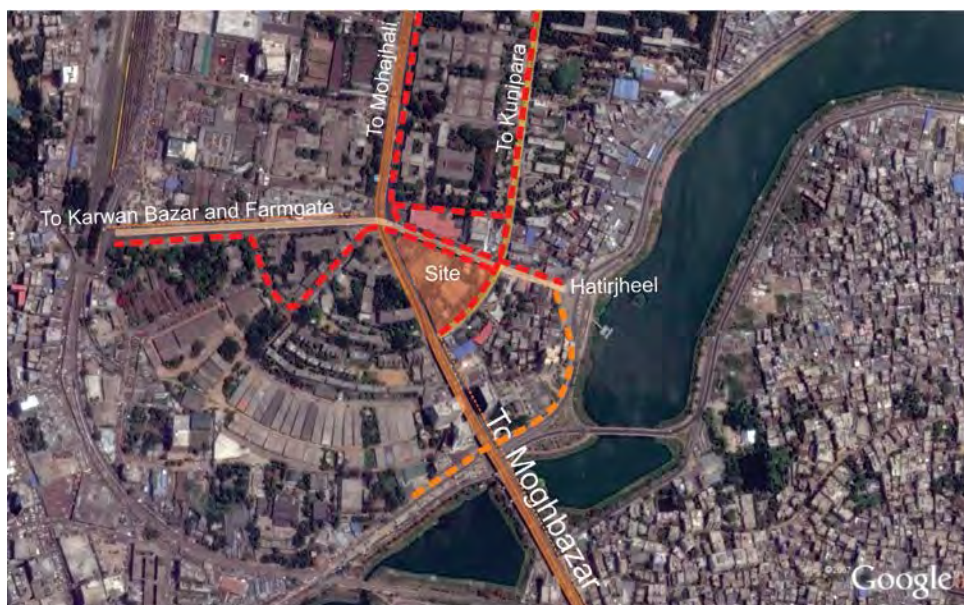
Tejgaon flyover has run from tejgaon to Ramna beside the site. On the west side of the flyover, existing DLR&S office is located. There is a CNG filling station on the north. A large space of trees are there on the south side of the site.

3.3 ADJACENT LAND USE

Since the site is located on Tejgaon industrial area, most of building around the plot is being used for industrial purposes. After the development of Hatirjheel lake, the land use pattern is going to change from industrial to commercial.

3.4 SITE ANALYSIS

A major road Shaheed Tajuddin Ahmed avenue connects mohakhali to the north and moghbazar to the south. Truck stand road intersects this road at saat rastar mor and connects directly farmgate area and hatirjheel. This road has the shortest and direct access to the hatirjheel lake front from saat rastar mor. In terms of vehicular usage this road can be considered as a secondary road while Shaheed Tajuddin Ahmed avenue acts as primary road because of heavy traffic flow. Another tertiary road connects truck stand road and Shaheed Tajuddin Ahmed avenue on the south side of the plot. Because of moderate pedestrian flow and less traffic use this road has considered as tertiary road.



Map 01: showing traffic and pedestrian usage

3.5 OPPORTUNITIES

After the site analysis some decisions are made which makes the site more pedestrian friendly and more open for the public and also which generates the core idea of developing the design.



Map 02: showing opportunities around the site

In 'Map 01' it is shown that the pedestrian usage is missing along the site which leads to moghbazar from saat ratar mor. There is a opportunity to link this pedestrian flow since the major portion is adjacent to the site [Shown in map 02]. Having a hatirjheel lake on the south it could have been the plus point for the site. Since the project holds several departments of Ministry of land, therefore more space is required to accommodate the functions. As a result, having multiple floors is the solution for that. In this situation Hatirjheel is the best view to get from the site. But, Due to the new plan of DAP, the industrial zone is turning into a commercial hub and according to that plan the height limit of new buildings are not restricted within 20 storey or less. As a result, a new scope for skyscrapers have opened up. It is undoubtedly a great achievement for Dhaka city. But this scope is going to block the visual connectivity of hatirjheel and the site since there are a lot of single storey buildings across the hatirjheel lake and they dont need much time to increase their height to the sky. In this situation, Only one direction of view of hatirjheel can be assured to get from the site and that is through the road which connects hatirjheel and farmgate.

CHAPTER 4: CASE STUDY

"The defining feature of The Leadenhall Building is its distinctive tapering shape, angled at 10 degrees, which RSH+P developed from the earliest design stage. This was a response to specific planning requirements protecting views of major London landmarks, especially St Paul's Cathedral in the City and the Palace of Westminster." stated on the official website of the Leadenhall building in the city of London. This building is also known as "The Cheesegrater" because of its wedge shape. It is considered as one of a number of new tall buildings recently completed in the city of London financial area. (wikipedia.org/122 Leadenhall building). This commercial skyscraper is located on 122 Leadenhall street and consists of 48 floors.

Architect : Rogers Stirk Harbour + Partners

Structural engineers : Arup Group

Status : Completed; July, 2014

Type : Office

Architectural style : Post - modern, High Tech

Roof : 225 meters, 738 feet

Floor count : 48

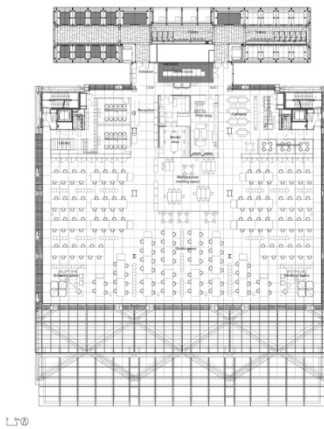
Floor area : 84,424 sqm / 908730sft



Image source: <http://www.theleadenhallbuilding.com/architecture/spaces/>

Analysis

The reason behind choosing this building is that, this building was built considering some detailed design decision such as providing a bigger space on ground across the narrow street and respecting the city heritage by not designing the edges straight, the front facade is inclined by 10 degree. It was also the clients requirement to provide wider visibility from the office floors. The design decision also came from the requirement. " The design also addresses the client's ambition to provide office space that can be configured in different ways. With the building's tapered shape, each office floor is 'stepped back' and 750 millimeters narrower than the one immediately below, providing office space in varied sizes to suit the needs of different businesses." stated on the official website.



Another decision that made the building to take as an example is its urban responsiveness. It is designed such a way, so that, the London's world famous St. Paul's dome could be seen. The aim of this design was to protect the views of London's major landmark St. Paul's Cathedral in the city and the palace of Westminster. It is stated on the official website (www.theleadenhallbuilding.com) that, " It is for this reason that the building, when seen from the key vantage point of Fleet Street to the west, appears to 'lean away' from the world-famous dome of St Paul's.

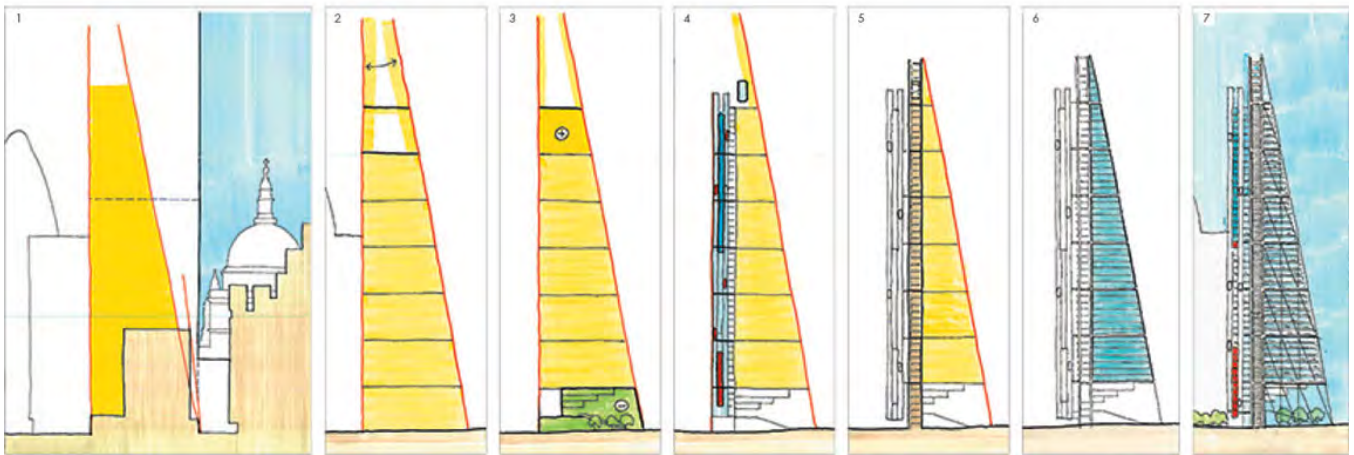


Image source: <http://www.theleadenhallbuilding.com/architecture/the-vision/>

CHAPTER 5: PROGRAM DEVELOPMENT

The project is aimed to serve people regarding any land issues within the shortest possible time and with efficient manner. For that reason, it is going to be a complex for Land Records and surveys, AC Land office of tejgaon area, land reforms board, land appeal board and courts of wards.

This is a office building for land related departments and people all over the country are attached here anyhow. A large crowd will be there always for their different problems of land. For the first filtration of the large amount of people AC land office for the tejgaon zone has been selected to place more on ground level where less important departments like Guchhagram project, Court of wards will be on higher places. Since the largest department is land records and surveys, it requires a separate block.

The detail functional charts are given below compiling all floor areas of different departments.

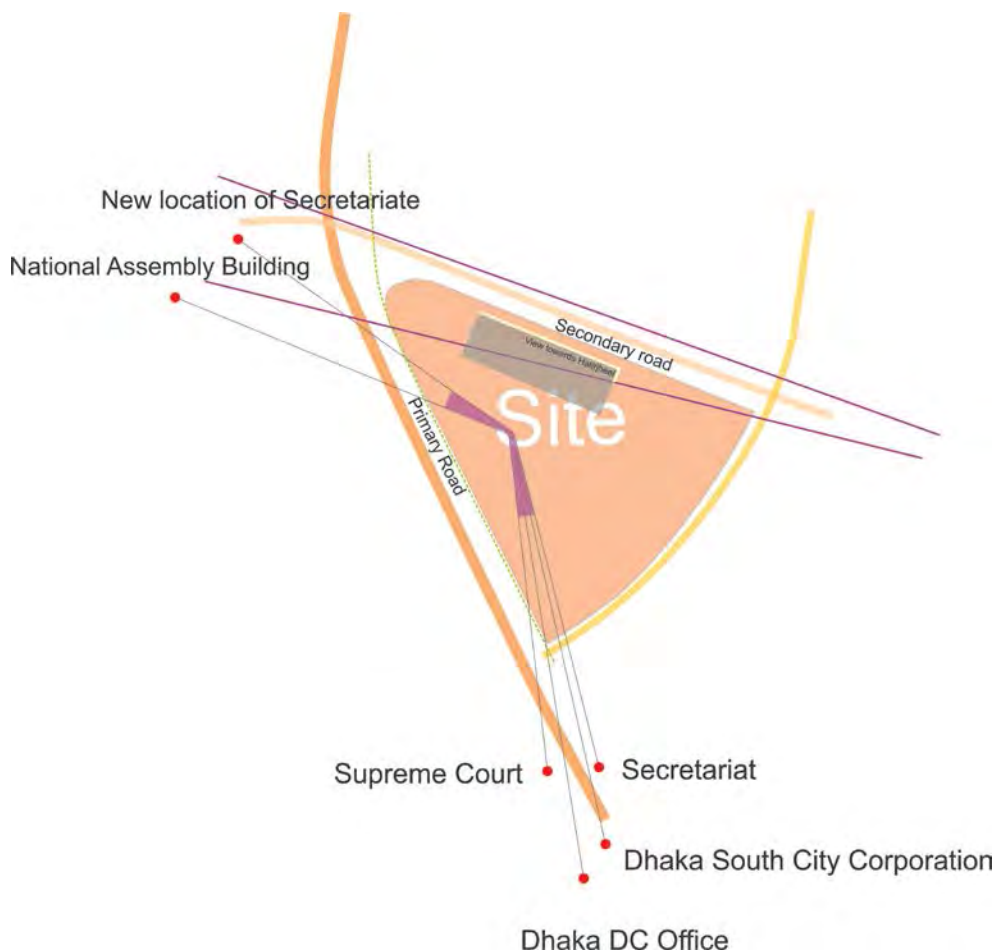
CHAPTER 6: DESIGN DEVELOPMENT

Introduction

Design development phase is the most important part since it shows the process of the final built form from a primary conceptual understandings. This segment is arranged with design phases, study models, architectural drawings and final models.

Phase I

The study of site analysis guided the initial stages of design development. Major decisions were taken from the site analysis. The secondary road was considered for vehicular drop off and the drive way was designed on the plaza so that the uniformity of the plaza remains all over same. In normal cases driveway leads to the drop off area and cuts the civilian flow on the footpath. Here it was considered to let the cars drive on the plaza as well keeping the speed limited. A volume of mass was set beside this secondary road to get access easily to the building.



Phase II

Bhumi Bhaban is going to be a hub of all land related departments. A single mass is not sufficient to hold the required office spaces. Therefore another volume of mass was required to place in coordination with the previous mass. Dhaka city map helped to develop the reference lines for the second mass. First volume was assigned for Land records and surveys where second volume accommodates Land Appeal board, Land Reforms board, AC land office. The reference lines were drawn from different important structures which are directly or indirectly connected with Bhumi bhaban. These are National Assembly building, Supreme court, Dhaka DC office, Dhaka South city Corporation And the Secretariat.



Fig 01

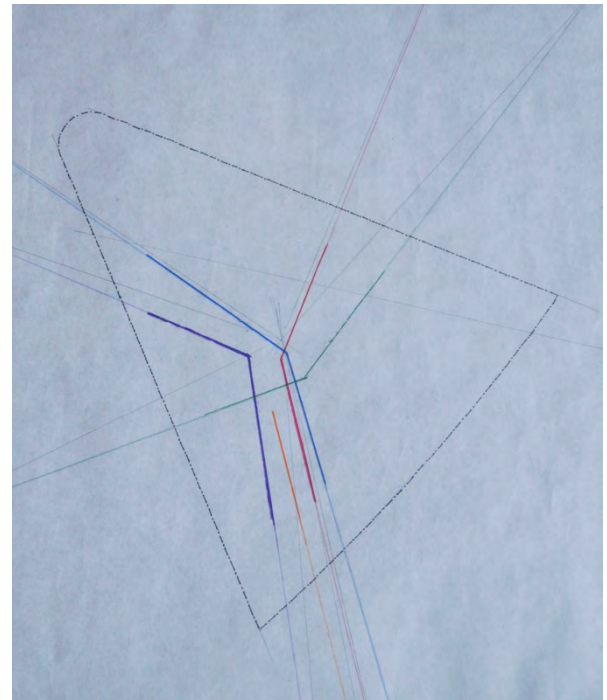
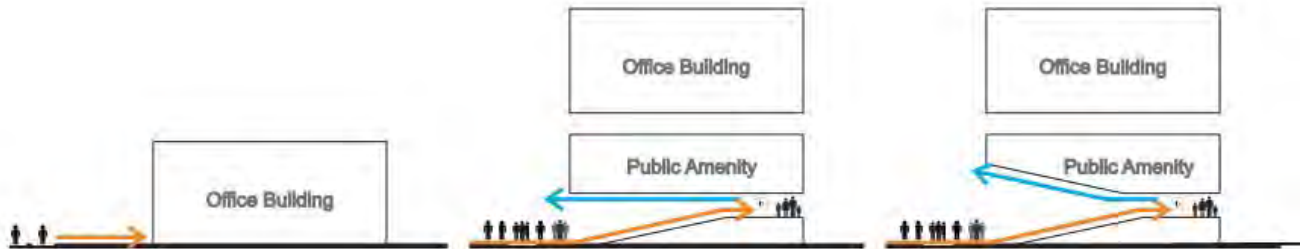


Fig 02

The lines which run through the site were manipulated in such a way that each line connects similar kind of functional structures shown on fig 01. Later these lines were transformed into walls which will face these important structures and will abstractly create a connection in the Dhaka city map.

Phase III

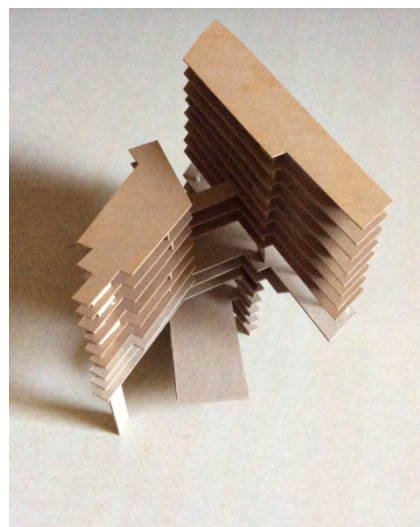
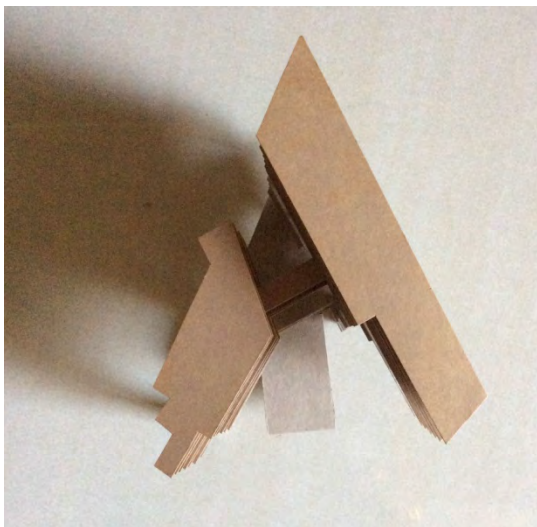
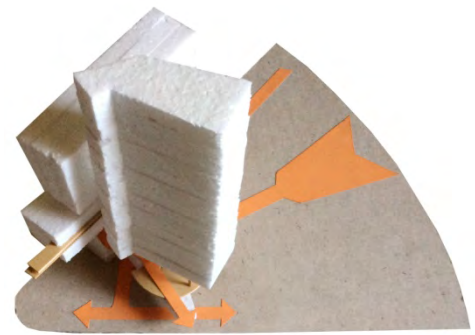
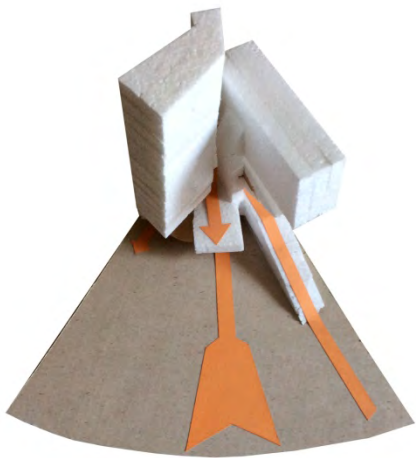
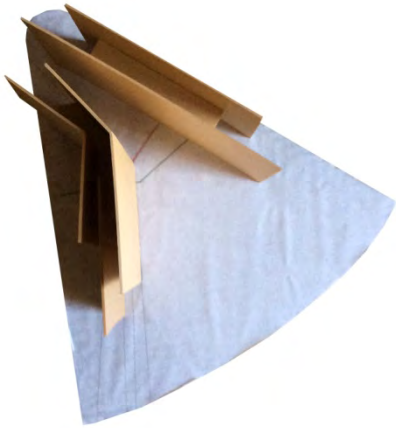
When two volumes were placed justifiably the next task comes with the connection of hatirjheel lake through the secondary road. It was found from the opportunity map that a partial view of the hatirjheel can be assured through this road. it was not enough just to connect visually when the site can pull crowd through this road.



Since the building is for full public access there is no restriction around or inside the building. Using this criteria a chance opened to invite people and let them explore the whole structure as an exhibit.

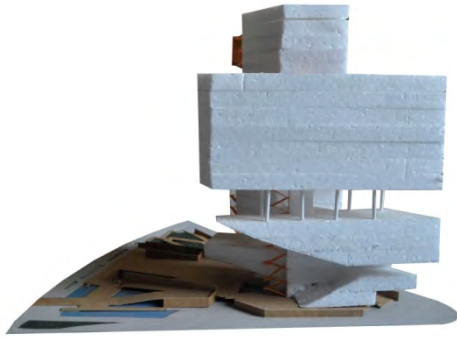
Pulling up the main office building and accommodating public amenity beneath it creates a scope for people to participate the space. As a result this space will be open for people all the time.

Study models (Phase I, II & III)

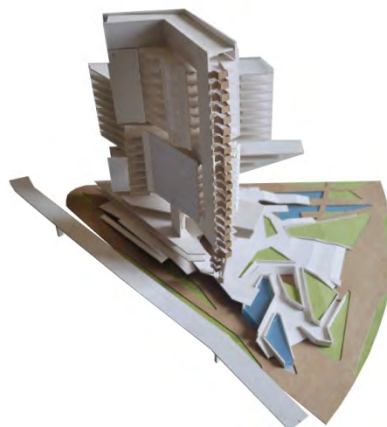
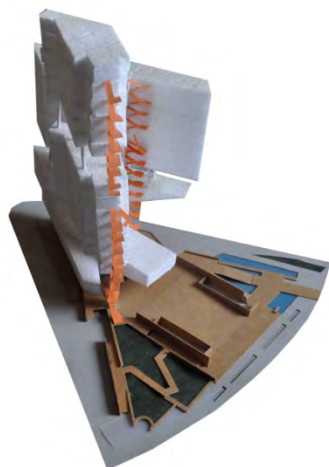
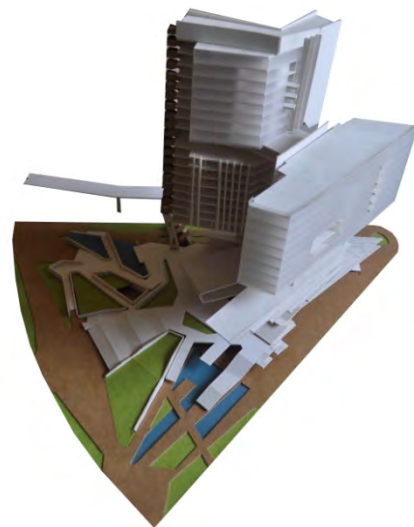


Study models (Phase IV & V)

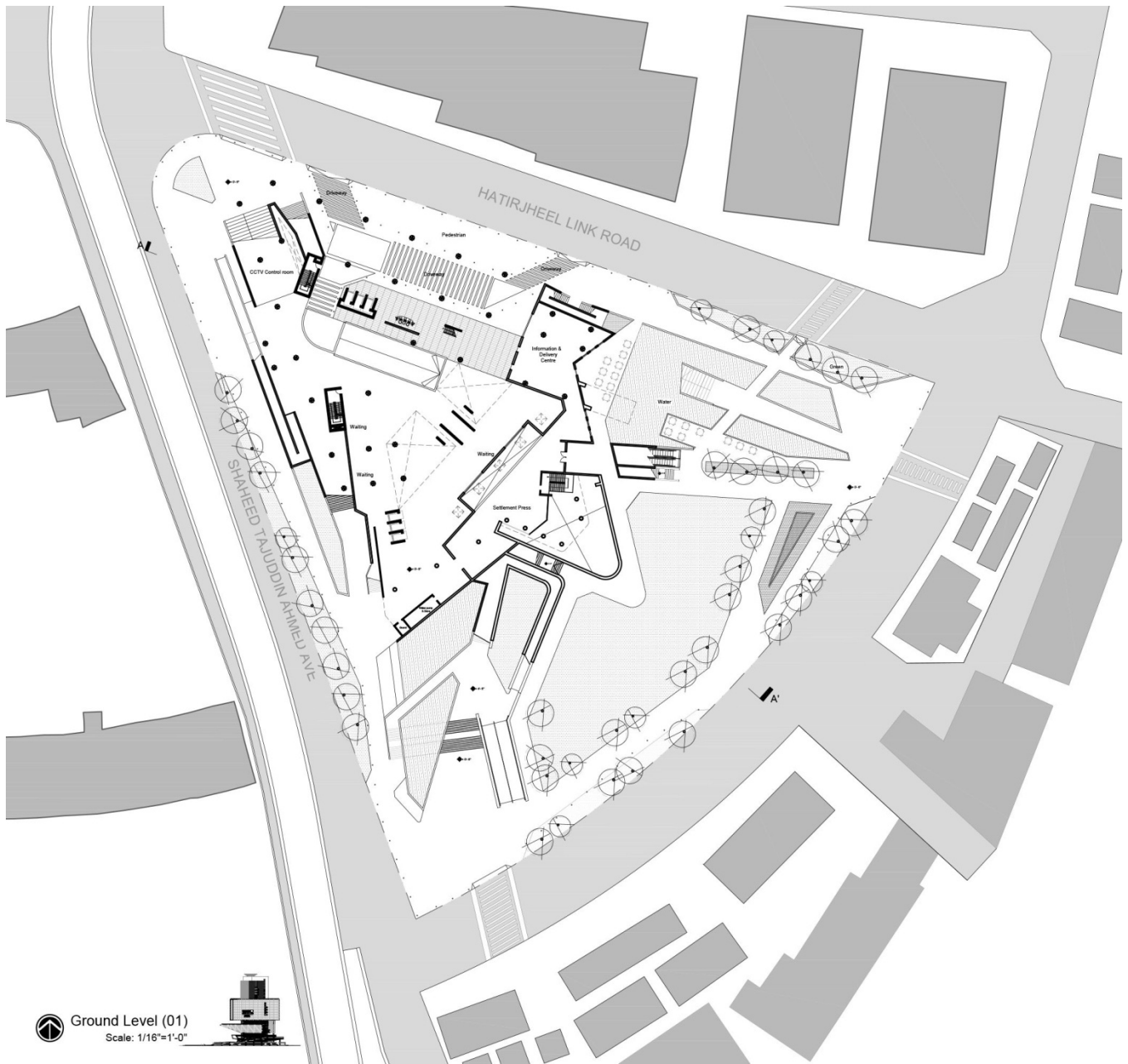
Phase IV

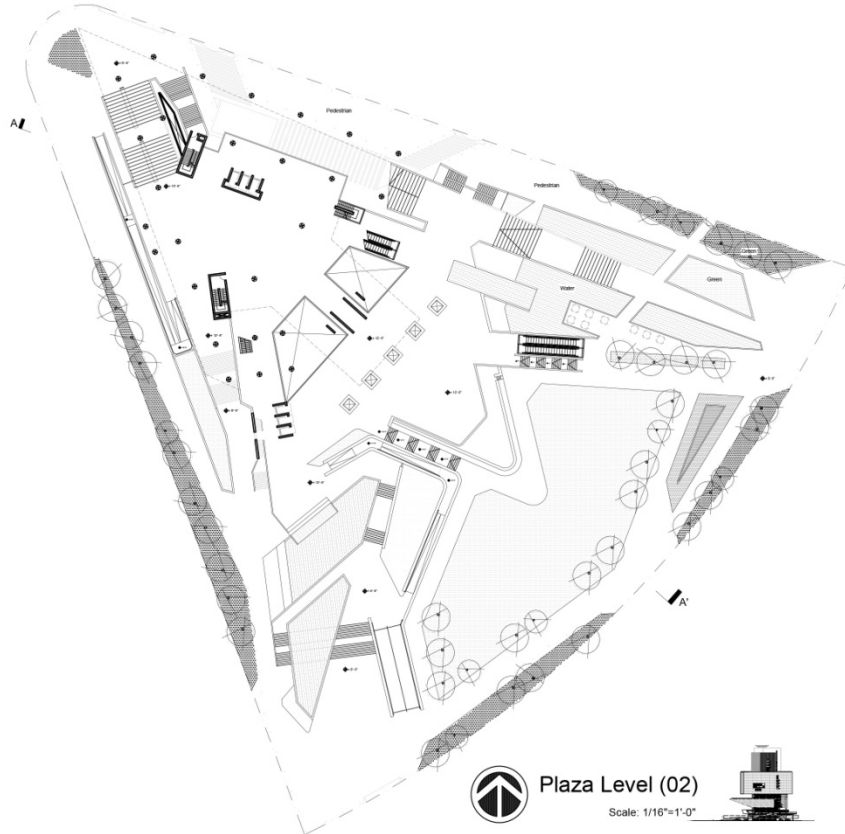


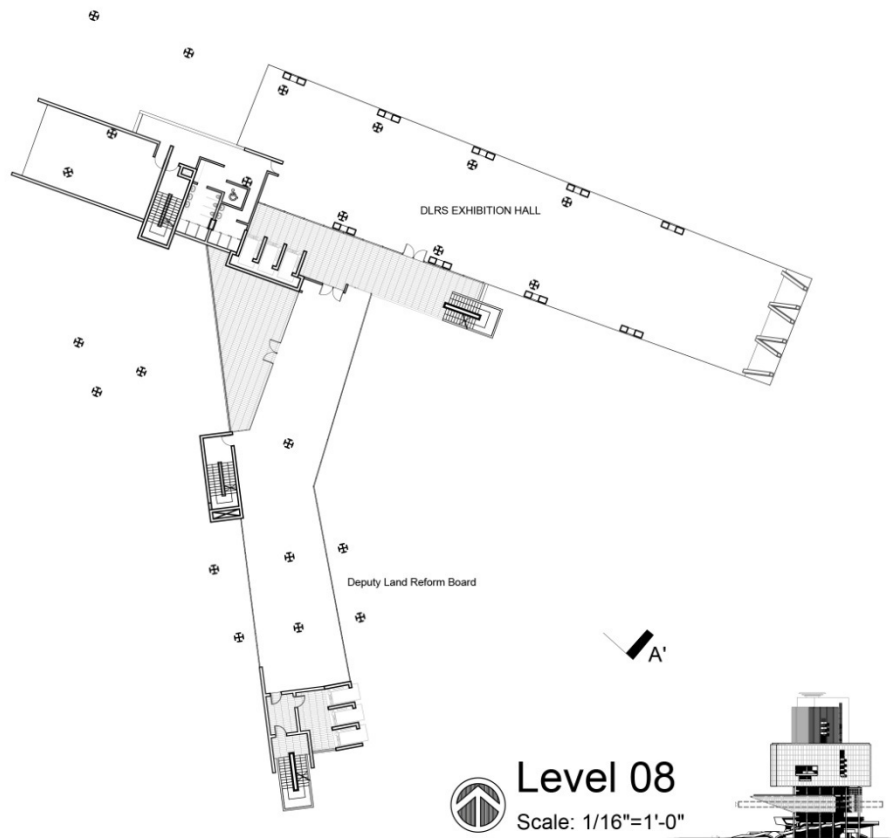
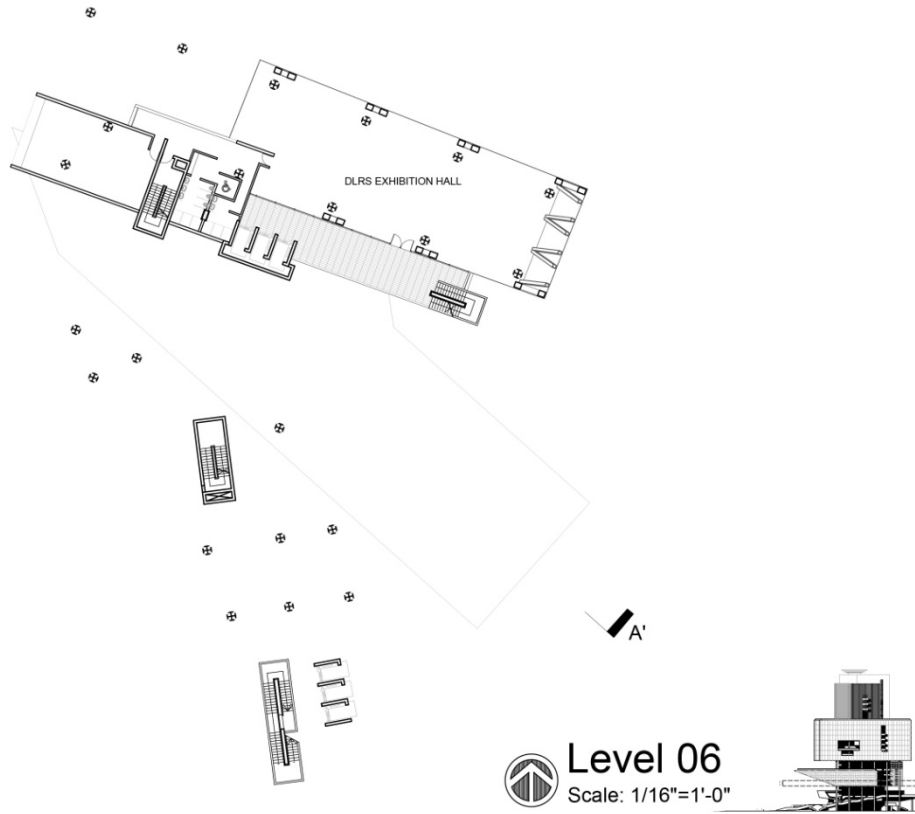
Phase V

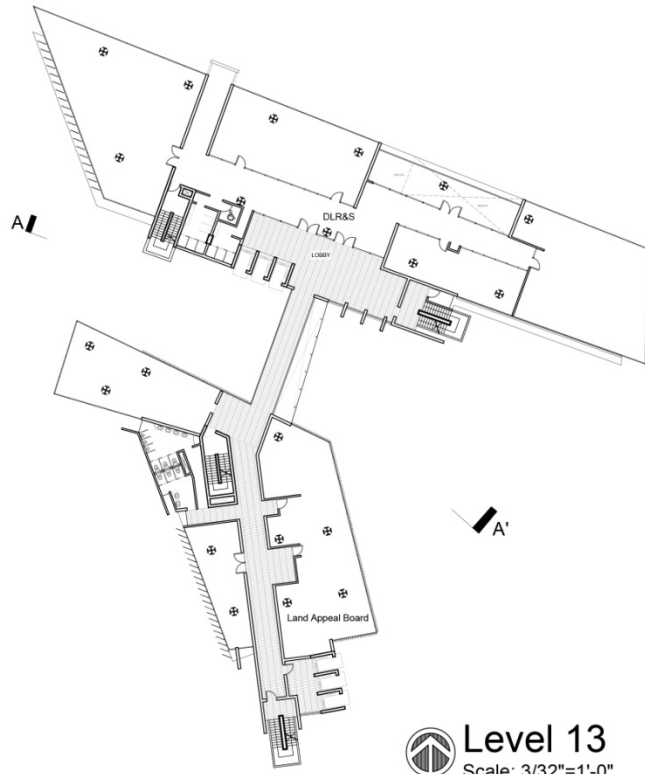


Final Design

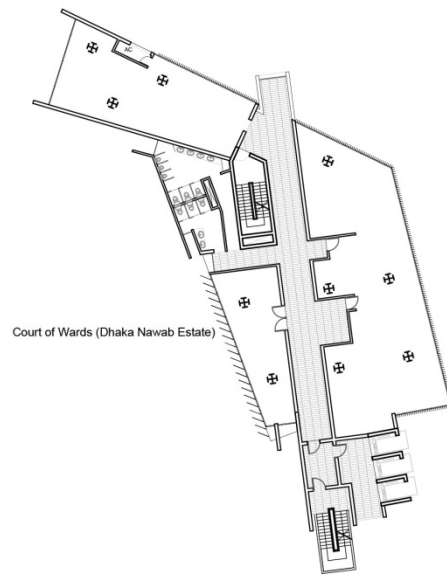




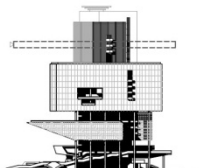


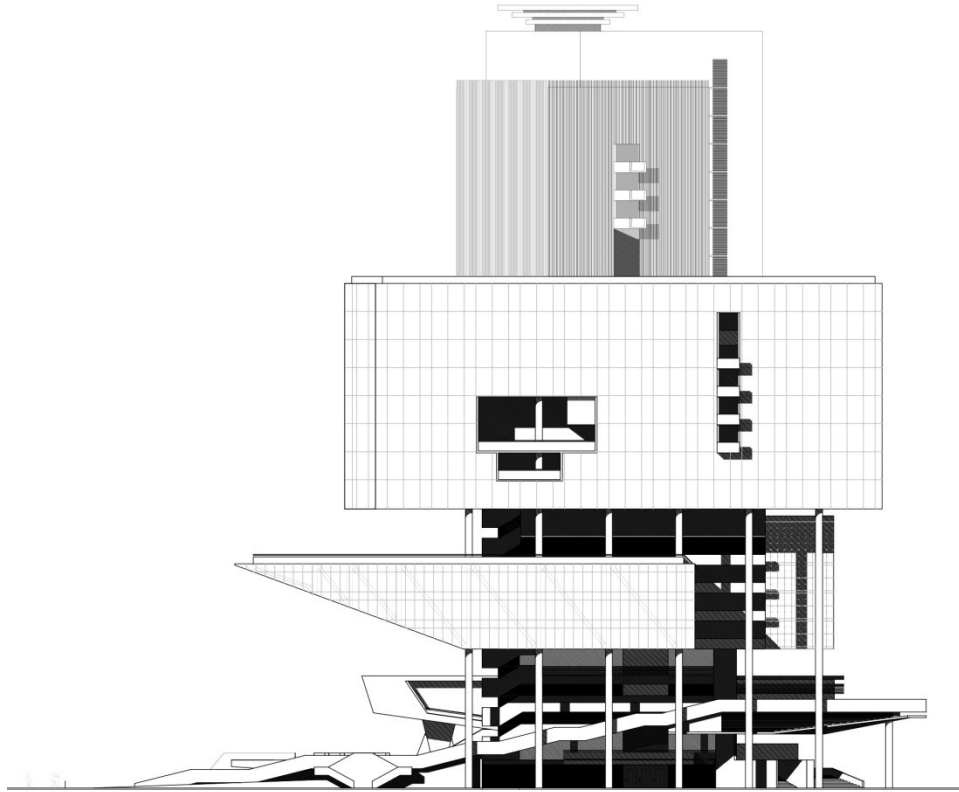


 **Level 13**
Scale: 3/32"=1'-0"



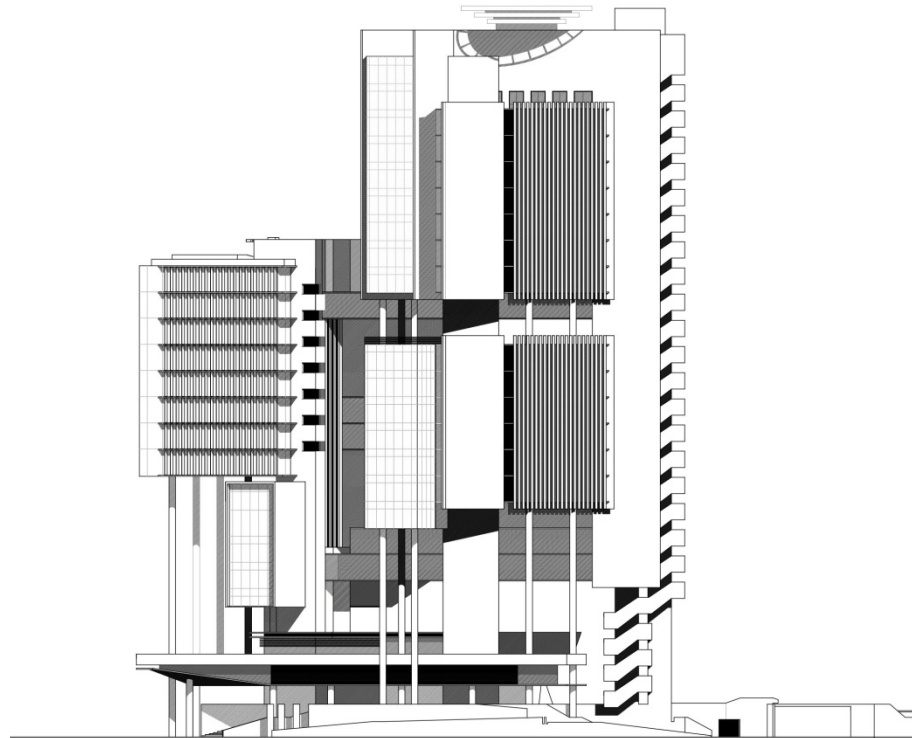
 **Level 22**
Scale: 3/32"=1'-0"





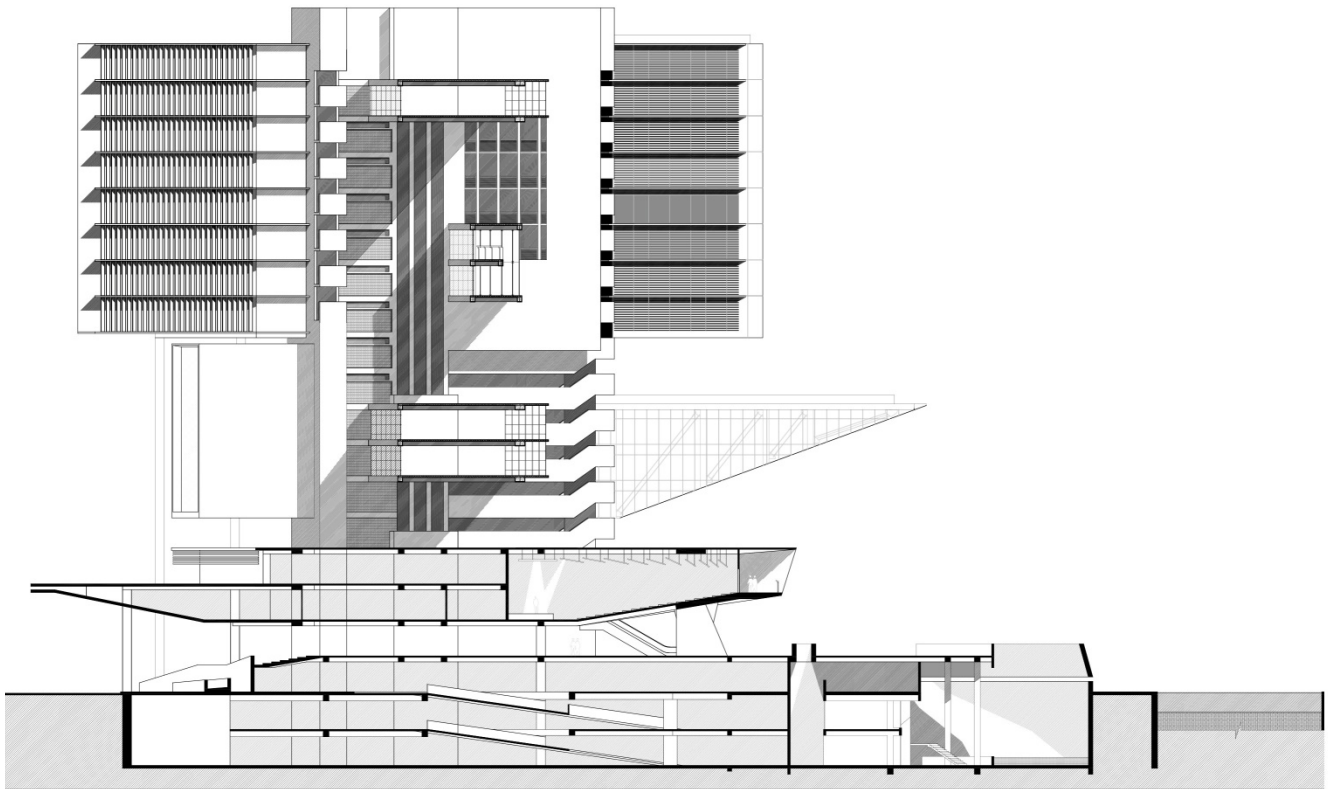
North-East Elevation

Scale: 3/32"=1'-0"



West Elevation

Scale: 3/32"=1'-0"



SECTION @ AA'
SCALE: 3/32" = 1'-0"



Functional Arrangement

3D Render



Final Model







Conclusion



The challenge of this design was to create an iconic building which can provide a breathing space within the super structures. It is going to be an example of a structure which was designed with the response of contextual values and ensuring the highest public participation with liberty.

REFERENCES

1. Challinger D. From the Ground Up: Security for Tall Buildings CRISP Report . Alexandria, VA: ASIS Foundation Research Council; 2008:4. 3As stated in Wikipedia Encyclopedia
2. Devnath, Narayan Chandra(Second edition 2007), Bangladesher Bhumi Byabosthapona
3. en.wikipedia.org/wiki/office. accessed on 24 July, 2016
4. How the office was invented, <http://www.bbc.com/news/magazine-23372401>
5. https://en.wikipedia.org/wiki/Sher_Shah_Suri
6. http://www.designingbuildings.co.uk/wiki/Shell_and_core, accessed on 29 June, 2016
7. https://en.wikipedia.org/wiki/Office#Middle_Ages
8. <http://www.dictionary.com/browse/office>
9. <http://www.theleadenhallbuilding.com/architecture/the-vision/>
10. <http://www.ctbuh.org/TallBuildings/HeightStatistics/Criteria/tabid/446/language/en-US/Default.aspx>
11. <https://www.sefindia.org/rangarajan/CoreDesign.pdf>
12. [https://en.wikipedia.org/wiki/Chancery_\(medieval_office\)](https://en.wikipedia.org/wiki/Chancery_(medieval_office))
13. International Code Council,
http://codes.iccsafe.org/app/book/content/2015_Minnesota/Accessibility/Chapter%204.html
14. Speaker's Platform, Athens Assembly, Pynx, Athens, <https://www.ancient.eu/image/403/>
15. Traditional office or flexible workspace, <http://raconteur.net/business/traditional-office-or-flexible-workspace>

