Topic of Dissertation

REVITALIZATION OF WORK SPACES AND BUILDING FACADE OF GOVERNMENT OFFICE BUILDING

A DISSERTATION

Submitted in Fulfilment

of the Requirement for the degree

of

MASTER OF ARCHITECTURE

by:

AR. SHREE NATH
Roll No:1200109012

Under the Supervision of
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SCHOOL OF ARCHITECTURE AND PLANNING

BABU BANARASI DAS UNIVERSITY LUCKNOW

JUNE 2023

ANNEXURE II

CERTIFICATE

It is certified that the work contained in this thesis entitled **"REVITALIZATION OF WORK SPACES AND BUILDING FACADE OF GOVERNMENT OFFICE BUILDING",** by **Ar Shree Nath** (Roll No. 1200109012), for the award of **Master of Architecture** from Babu Banarasi Das University has been carried out under my/our supervision and that this work has not been submitted elsewhere for a degree.

Shree Nath
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Date: June, 2023

Annexure IV
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2. Enrollment No. : 1200109012

3. Thesis title: **REVITALIZATION OF WORK SPACES AND BUILDING FACADE OF GOVERNMENT OFFICE BUILDING**

4. Degree for which the thesis is submitted: **Master of Architecture**

5. Faculty of the University to which the thesis is submitted:

Prof. Mohit Kumar Aggarwal & Respected Prof. Shailesh Kr. Yadav.

6. Thesis Preparation Guide was referred to for preparing the thesis. ☐ YES ☐ NO

7. Specifications regarding thesis format have been closely followed. ☐ YES ☐ NO

8. The contents of the thesis have been organized based on the guidelines. ☐ YES ☐ NO

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8. The contents of the thesis have been organized based on the guidelines. ☐ YES ☐ NO

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13. Submitted 4 hard bound copies plus one CD.

(Prof. Shailesh Kr. Yadav)
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Annexure III

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ACKNOWLEDGEMENT

First of all I wish to express my deep sense of gratitude to BABU BANARASI DAS UNIVERSITY, LUCKNOW for providing me this opportunity to undertake research studies in the field of Day Lightning for the partial fulfillment for the degree of M. Arch (Architecture).

I sincerely thank
Respected Prof. Mohit Kumar Agarwal Sir & respected Prof. Shailesh Kr. Yadav for guiding me in every stage.
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ABSTRACT

Municipal Corporation Administration Headquarter is probably one of the most important building in city. The Municipal Corporation provides all the necessary facilities and services right from the water and drainage to the public parks and other facilities which make a city more habitable one. Hence for a city to develop the administration building has to be designed with the understanding of the functioning of the Municipal Corporation, nature of work being carried out there comfort of the employees and visitors and also the security of the building.

The administration building of Municipal Corporation in Indian context lacks the basic connectivity of different spaces and departments. Most importantly the city's topmost important building lacks the connection to its citizen which is not taken into consideration in India. Therefore, the reformation and a different prospect are required while designing such an important building which could change the fate of the city.

The Municipal Corporation of any city is a very busy building as most of the work related to the city and its citizens like development, health, education, tax etc. are managed in the corporation building, making it the identity of the city, hence it should be designed in such a way that it becomes the landmark for the city. The building is used by the government officers, Councilors, other government employees and the public. Therefore it is very important to design the structure, considering the function, building envelop and accessibility of the employees and the public as a major aspect.

AKNOWLEDGEMENT

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CHAPTER - 1

INTRODUCTION

1. Introduction

Municipal Corporation Administration body constituted for the city of a certain population. It represents the region and its residents. Municipal Corporation is the supreme structure of local self- government. Establish act of the state legist and is charged with certain obligation and discretionary duties.

Municipal Corporation of Delhi is the municipal corporation that governs most of Delhi, India. The Municipal Corporation of Delhi was replaced by three new bodies, the North Delhi Municipal Corporation, the South Delhi Municipal Corporation and the East Delhi Municipal Corporation in 2012. But it was again reunified on 22 May 2022. The MCD is among the largest municipal bodies in the world providing civic services to an estimated population of more than 11 million citizens in the capital city. MCD is one of three municipalities in the National Capital Territory of Delhi, the others being New Delhi Municipal Council, and Delhi Cantonment Board. The municipal corporation covers an area of 1,397.3 km².

Every citizen of the particular region has an indirect or direct relationship with the governing body that citizen might have never visited a Municipal Corporation but has indirectly influenced by a governing body in day to day life. So, there is a need to bring transparency and allow the common man to access the government building.

During the last ninety years of its existence, this Civic Body has grown into an organization with the responsibility of beautifying the city and providing civic services. This civic body has always laid stress on quality of service. During this period the Municipality provided an building norms, façade, building shape and building envelop, in the area. Open land were covered and reclaimed land has been utilized for construction of public utility services as well as greenery.

1.1 Architectural Intervention

•The project is envisaged to be one of a kind administration headquarter which caters to all kind of need and requirement of the Municipal Corporation.

• The building will not only design as a social working spaces but also as a social gathering space and a venue for exhibition and interaction which shall include interactive space and landscaping to generate public interest.

• Design of administration headquarter would be such that it would mesmerize the public and create a strong visual impact on the visitors.

• Design and planning would be in such a way that the traffic flow would be hassle free.

•The proposal would be design oriented with proper detailing of structure and service that would be required for Municipal Corporation building.

•The interior of the building should be designed for the employees to provide a better work environment which could be achieved by well- planned massing and universal design.

•The building needs to be sustainable at a certain extent and must adopt green technologies as it will be the example for the upcoming developing in the city.

1.2 Scale in context

Scale is the most basic way of expressing the most fundamental meaning like, power or weakness. Through scale, building show the hierarchy of importance in context.

• **Size :** Larger the size means larger the power.

•**Height :** Taller the object means higher the Authority.

• **Weight :** More Weight stability and Domination.

•**Compatibility with surrounding :** More contrast means more the detachment peculiarity.

1.3 Formal Shape and Expression

Formal shape and formal language in buildings transform these fundamental meanings of scale to a higher level of expression, like a monumental neo-classical, totalitarian building trying to pass itself off as a continuation of an ancient value.

• **Symbolic Representation:** More Ornamentation means more it gets idealized.

• **Transparency and Visibility:** More Opaque means more Mysterious.

• **Complexity:** More Abstract means less Clear.
• **Spatial organization:** Spatial organization is used to censor the existing social structures.

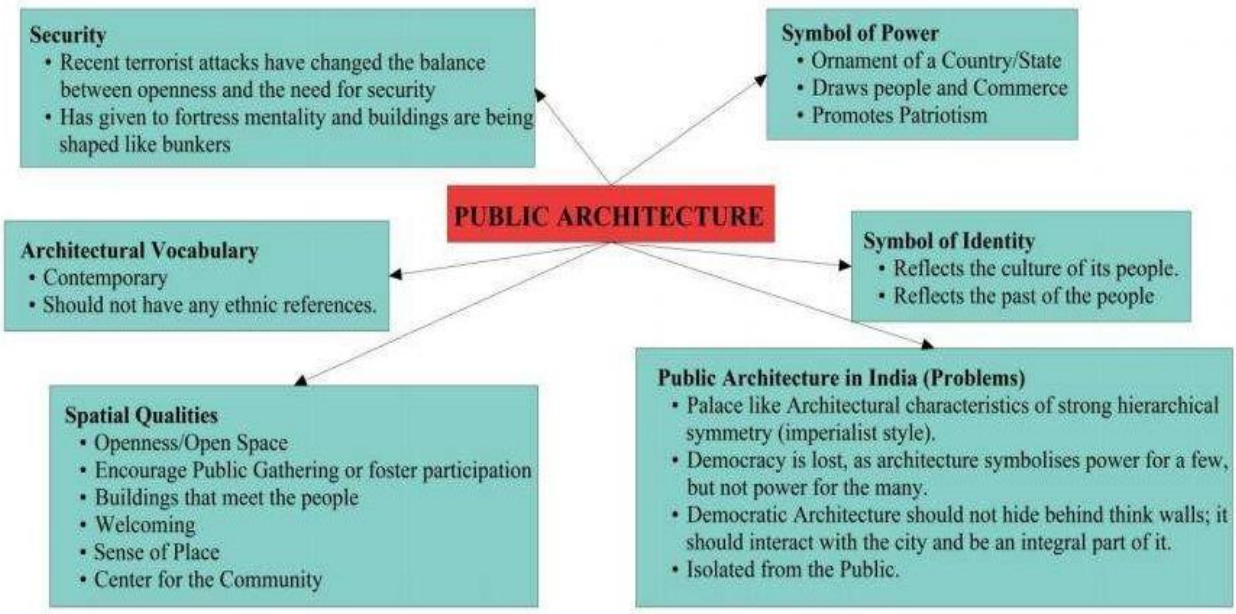
• **Accessibility and Invitation:** Definite access means more Segregation.

•**Complexity:** More complex means more Security.

• **Flow:** Formal flow means more Control.

1.4 Architecture of Democracy Security

The Ministry of Urban development drafted a Model Municipal Law, 2003 which was circulated to state governments.(Fig.1) The rationale for the lack of a centrally administered Municipal Model is that local bodies need to be flexible to respond better to local requirements. Two broad models are commonly in use.



(Fig. 1)

1.5 Functions of Government Corporation

Coming to the listing of functions which are assigned to a Municipal Corporation, there are two broad practices in trend in the country. Functions assigned to corporations, particularly the obligatory ones, are more or less the same in all states. Uniformity is, thus the key-note, any difference is uncommon. And, what is more, the difference may occur only in the listing of a certain functions. The following functions are generally assigned to corporations in all the states.

1.6 Obligatory Functions

1. **Supply of water:** The management and maintenance of all municipal water works and the construction or acquisition of new works necessary for a sufficient supply of water for public and private purpose.

2. **Supply of electricity:** The lighting of public streets, municipal markets and public buildings vested in the corporation.

3. **Road transport services:** The naming or numbering of streets and of public places vesting in the corporation and numbering of premises.

4. **The construction and maintenance of public hospitals and dispensaries:** For the isolation and treatment of persons suffering or suspected to be infected with a contagious or infectious disease and carrying out other measure necessary for public medical relief

5. Lighting, watering and cleaning of public streets and other public services.

6. Securing or removal of dangerous building and places

7. Removal of obstruction and projection in or upon streets and other public places.

8. Vaccination and inoculation

9. Registration of births and deaths.

10. Regulation of places for disposal of the dead: The maintenance, change and regulation of places for the disposal of the dead and provision of new places for this purpose and disposing of unclaimed bodies.

11. Provision for primary education: Maintaining, aiding and suitably accommodating stocks for primary education.

12. Maintenance of fire-brigade.

13. Publication of annual reports and returns on administration of the corporation.

1.7 Classification Of Municipal Corporation

Sr	Population	Number Of Councillors
1	Above 3 lakhs up to 6 lakhs	Minimum number of elected councillors shall be 65. For every additional population of 15,000 above 3 lakhs, one additional councillor shall be provided. Maximum number of elected councillor shall not exceed 85.
2	Above 6 lakhs up to 12 lakhs	Minimum number of elected councillors shall be 85. For every additional population of 20,000 above 6 lakhs, one additional councillor shall be provided. Maximum number of elected councillor shall not exceed 115.
3	Above 12 lakhs up to 24 lakhs	Minimum number of elected councillors shall be 115. For every additional population of 40,000 above 12 lakhs, one additional councillor shall be provided. Maximum number of elected councillor shall not exceed 145.
4	Above 24 lakhs	Minimum number of elected councillors shall be 145. For every additional population of 1 lakhs, above 24 lakhs, one additional councillor shall be provided. Maximum number of elected councillor shall not exceed 221.

Councillors are local representatives elected directly by people at ward election.

(Fig. 2)

1.8 Departments and Functions of Municipal Corporation

Departments	Department Head	Function
Accounts Department	Chief Account Officer	• Prepare a yearly budget. • Payment of bills. • Receipt and expenditure. • Account maintenance.
Audit Department	Chief Audit	• Financial advice. • Audit of various department of the Municipal Corporation as per the Maharashtra municipality act.
Education Department	Education Officer	• Provided all necessary thing required by the municipal school or private school. • Provide a published figure of student, teacher and school.
Electrical Department	City Engineer	• Installation and maintenance of street light high masts etc. In Municipal Corporation area. • Conversion of overhead lines to underground cables for road widening and new road projects. • Installations and maintenance of substations, generators, lighting and air conditioning of all Municipal Corporation of all Municipal Corporation building.
Election Department	Assistance Commissioner	• To conduct Municipal Corporation election as per Maharashtra Municipal Corporation act. • Provide published figure of population census. • Nodal department for Aadhar enrolment.
Legal Department	Legal Advisor	• All legal litigation, civil suit, wrong petitions, appeals and criminal cases in various are handling by the legal department.

(Fig. 3)

Water Supply Department	City Engineer	• Treatment of raw water and making it fit for drinking. • Supply of the treated water to the residents with adequate pressure and quantity • Maintenance of distribution network and providing a new supply system whenever necessary.
Town Planning Department	Deputy Director	• Preparation of draft development plan for the area included in Municipal Corporation area. • Implementation of the draft development plan.
Public Work Department	Executive Engineer	• Construction and development of municipal buildings. • Construction and development of community hall, samaj mandir etc. • Construction and maintenance of gardens, parks, playgrounds, etc.
Municipal Secretary	Municipal Secretary	• To arrange the meeting standing committee, the law committee, city improvement committee, etc. • To arrange a general body meeting. • To display the agenda and proceeding of the all committee meeting.
Solid Waste Management Department	Chief Engineer	• To ensure regular sweeping of the streets of the city. • Collection of garbage in the entire jurisdiction and disposal. • To process the bio-degradable waste and its disposal.
Establishment Department	Assistant Commissioner	• Appointment of various designations under Municipal Corporation. • Differentiating the employees in various classes.
Health Department	Medical Officer Of Health	• Responsible for providing medical facilities in the Municipal Corporation jurisdiction. • Provide other facilities such as blood bank, ambulance service, etc.

(Fig. 4)

1.9 PROBLEM STATEMENT

Delhi is the big metropolitan city and fast developing city in India the government has Delhi municipal corporation is divided into three bodies, East Delhi Municipal Corporation (EDMC), North Delhi Municipal Corporation (NDMC) and South Delhi Municipal Corporation (SDMC), 2022 as Municipal Corporation of Delhi. The head office of the unified MCD is located at Dr. S.P. Mukherjee Civic Center, JLN Marg, New Delhi.

Municipal Corporation of Delhi is one of the largest municipal bodies in the world providing civic services to approximately20 million citizens of Delhi. It occupies an area of 1397.3 Sq. Kms. which is sub- divided into 12 Zones i.e. **Centre, South, West, Najafgarh, Rohini, Civil Lines, Karol Bagh, SP-City, Keshavpuram, Narela, Shahdara North & Shahdara South.**

(Fig 5) Delhi Municipal Corporation office building at Town hall chandni chowk, Delhi

The present proposal of municipal building in Dwarka New Delhi for the municipal council office with large number of staff and various high class officers, therefore, planning new municipal building in the need of the time for representing as an iconic structure for the city to govern and manage the different function of Municipal Corporation.

Just like most of the other government buildings, the municipal Corporation of many cities is not well throught of in terms of functioning, accessibility, public involvement, the usability of spaces (restricted or public accessible) , building façade, envelop and ventilation.

(Fig 6&7) Delhi Municipal Corporation office building at Najafgarh permanent structure without any sustainable features.

(Fig 8&9) Delhi Municipal Corporation office building at Najafgarh no parking facilities were provided cars were parked any where.

1.10 AIM OF THE RESEARCH

To design a Municipal Corporation headquarter for the city of delhi to cater all the functions of city's governing by considering various design factors such as connectivity, aesthetics, circulation to increase public involvement & create an iconic building for the city to attract the much needed attention to such buildings.

- To plan public spaces in the complexes which can become a centre for community interaction and encourage public gathering.
- While at the same time providing security to the users through intelligent design and planning

1.11 OBJECTIVES

1. Design and Architectural Expression:-

- To design structures that reflects the culture of the people and can become the identity.
- To design structures with contemporary expression but taking inspirations from the rich architectural history of the region.
- To design a series of spaces within the buildings that promote public participation & intrest in working government building with better working environments.
- To design a public building considering all the architectural elements such as aesthetics, circulation, climate etc.

2.Sustainability:-

- To design structures that are climate responsive and energy efficient.
- To design structure using local materials that can hold against the weathering of several decades and help the buildings blend well with the natural environment.

1.12 SCOPE AND LIMITATIONS

Scopes

•The project scope is to designed 'A' grade administration headquarter for existing 'C' grade Delhi city Municipal Corporation.

•The scope to design iconic Sustainable green building which will set an example for rest of the city and promote **Sustainable architecture concept.**

• To create transference to allow the common man to access the municipal building

• The size and diversity of the project, suggests that each area will have unique features that define both, the challenges and opportunities to stimulate investment and generate a desirable level of success.

Limitations

During case study of Municipal Corporation it would be difficult to study the some of the internal spaces and services part of the Corporation due to its privacy concerns and also difficult to get information about total working strength and every individual function in particular Municipal Corporation to security & privacy concern

The design proposal would be limited to only A Grade Municipal Corporation not for A+ grade. The building will be sustainable to a certain extent only.

1.13 METHODOLOGY OF THE STUDY

The following schemes shall be adopted to evolve the Project:

1. Theoretical Background:-

Understanding administration of Municipal Corporation and their relationship with the city. Study of recent Municipal Corporation headquarters designs in India. Study of various techniques to achieve sustainable design solutions in Indian context.

2. Identification of Problem & Analysis:-

To be familiar with the major challenges in the problem. To study the major cultural and climatic context of the region. To be familiar with the major requirements for the government from the new administration headquarters Municipal Corporation.

3. Data Collection:-

▪To carry out case studies of similar projects built in India after independence. To carry out detailed library study to know the basic standards of each kind of required spaces to be designed.

▪ To carry out a visual and physical survey of the site and its surroundings. To know the soil bearing capacity, underground water table, vegetation, site topography, water bodies etc. To collect information about the site from government records, documents and satcllite imagery

▪To carry out a detailed study of Building Bye-laws of the area, and requirements of Building Design clearance from various authorities in the region.

▪To collect climatic and meteorological data about the area and know the various natural disasters the region is prone to

4. Data Analysis:-

•Defining the functions and framing out the detailed requirements of the buildings with areas required.

• Defining the correlation of different functions within the departments

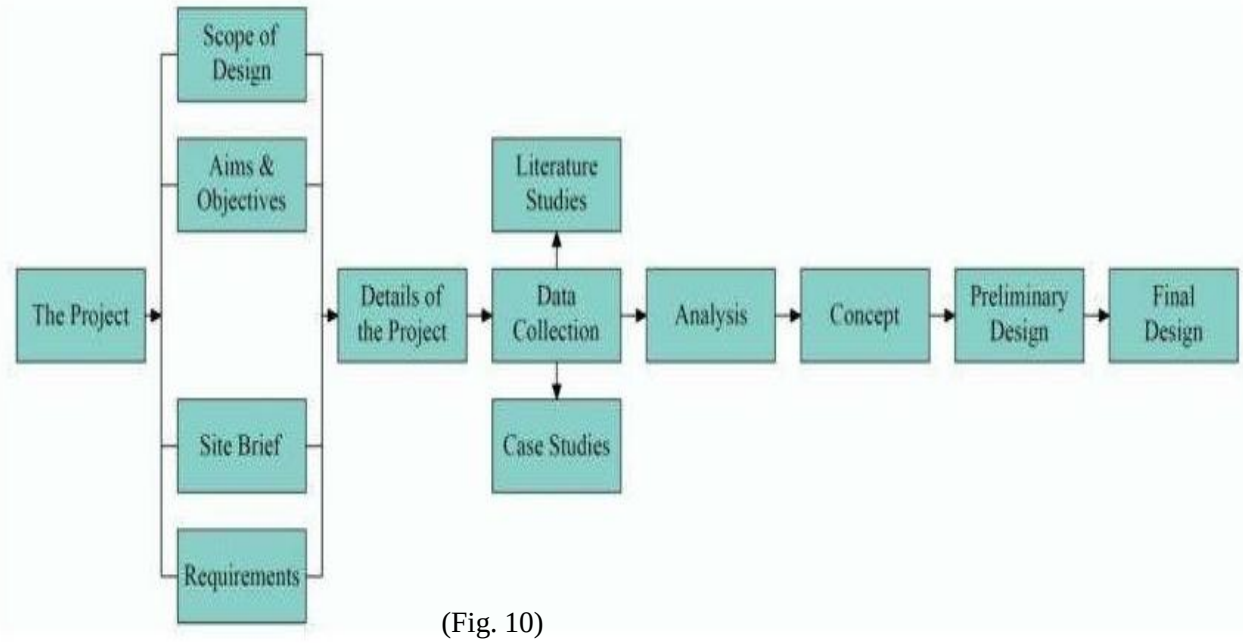
Analysing the site conditions to decide suitable orientation, entrance and landscaping required.

To analyse the local climatic conditions and decide suitable orientation for the buildings.

5. Design Process:-

•Formalate a conceptual design that meets the requirements.

• Refinement and detailing of the design.



(Fig. 10)

CHAPTER - 2

CASE STUDY -1

Navi Mumbai Municipal Corporation (NMMC)
Navi Mumbai

2.1 Intent of study

Navi Mumbai Municipal Corporation is the one of the newest of Municipal Corporation in India design with sustainable architecture feature. This following case study would help me understand the space division and circulation in Municipal Corporation.

Interaction with the municipal officer- understanding their needs, issues faced by them. As being the first case study it would help me understand the entire functioning of work carry on daily basis and to analyse the behaviour of visitors towards them.

(Fig.11) Navi Mumbai Municipal Corporation Office.

2.2 Introduction

The NMMC office is the most recently built example of government building. The NMMC office building is an iconic budding to fit the image of a well planned and designed city like Navi Mumbai, which stands apart from other structures in aesthetics. functionality and the structural design competencies associated with it A structure where the people of Navi Mumbai could avail better services all under one roof.

Area: 188.63 5q Km.
Total Population 11.20,547
Sex Ratio 1000 837
Population Density 5 X19 Person Sq. Km
Literacy. Rate 89.62%

Plot Area: 20,000 Sq Mt
Built-Up Area: 33.258 Sq Mt
Architect: Hiten Sethi Associates
Project Year, 2014
Project Cost 500 Crore

2.3 Location: - Plot No. 1 & 2, Section 15a, Belapur Village, Navi Mumbai.

(Fig.12) Location

• NMMC headquarter is about
• 3 km from the Belapur CBD railway station.

•.It is situated on the Palm Beach road and does not have a public transportation till the NMMC building, but private vehicles and also auto rickshaw can take us there.

(Fig.13) Entrance Gate

(Fig.14) Padestrian Entrance

(Fig.15) Cooling Plant & Service Entry

(Fig.16) Service Road

(Fig.17) Master Plan NMMC

•The NMMC office building is massive monolithic structure stand on a pedestal. It is surrounding by a service road along its length, which separates it from the highway.

•The actual building is raised from ground with help of a 3m plinth. Which create still for parking accessible from the rear side.

•The site area besides the structure is designed for the public, the building covers almost 33% of the plot area.

•The head quarter has 3 gates two gates are on the front side for entry and exit and third is service entry at rear side.

•The building features the typical circular footprint which has been used time and time again in government building all over India.

•The architects designed it as a cross between Rashtrapati Bhavan and parliament house. It also example of cross between a corporation office and govenment building.

• The design also feature a huge curtain wall on the facade made of glass. Acknowledging the idea of representing transparency in a govenment building.

(Fig.18) Huge Curtain Wall

(Fig.19) Entrance Foyer

•There are three entrances for main building

First - front entrance to foyer.
Second - VIP entrance through capsule lift
Third - through amphitheatre which is not secured
The high height of a building is quadruple height ceiling and informal seating at at entrance.

• The Organisation and hierarchy of Offices and department are designed on the periphery of a central space which is G+3 levels high.

(Fig.20) Atrium

- Ground floor has dedicated public spaces such as cafeteria and amphitheatre and Bank facility for the employees.

(Fig.21) Ground Floor Plan

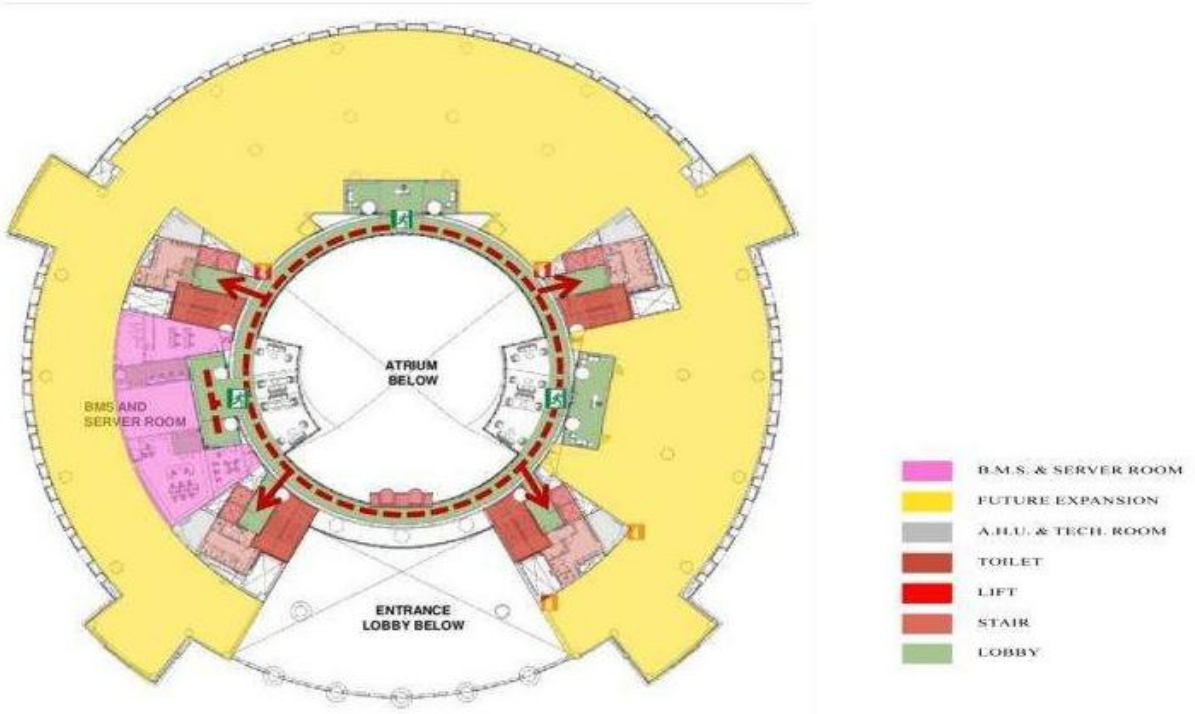
(Fig.22) Cafeteria

- Cafeteria is design for 252 people, 168 seat for visitors and 84 seat for staff
- Two dining hall for 15 people each with folding partition for VIP's
- Seats for VIP in cafeteria less than required.
- Passages to cafeteria from foyer is narrow in width

(Fig.23,24&25) VVIP Dinning Room, Washbasin Area & Kitchen For Cafeteria

(Fig.26) Bank Facilities

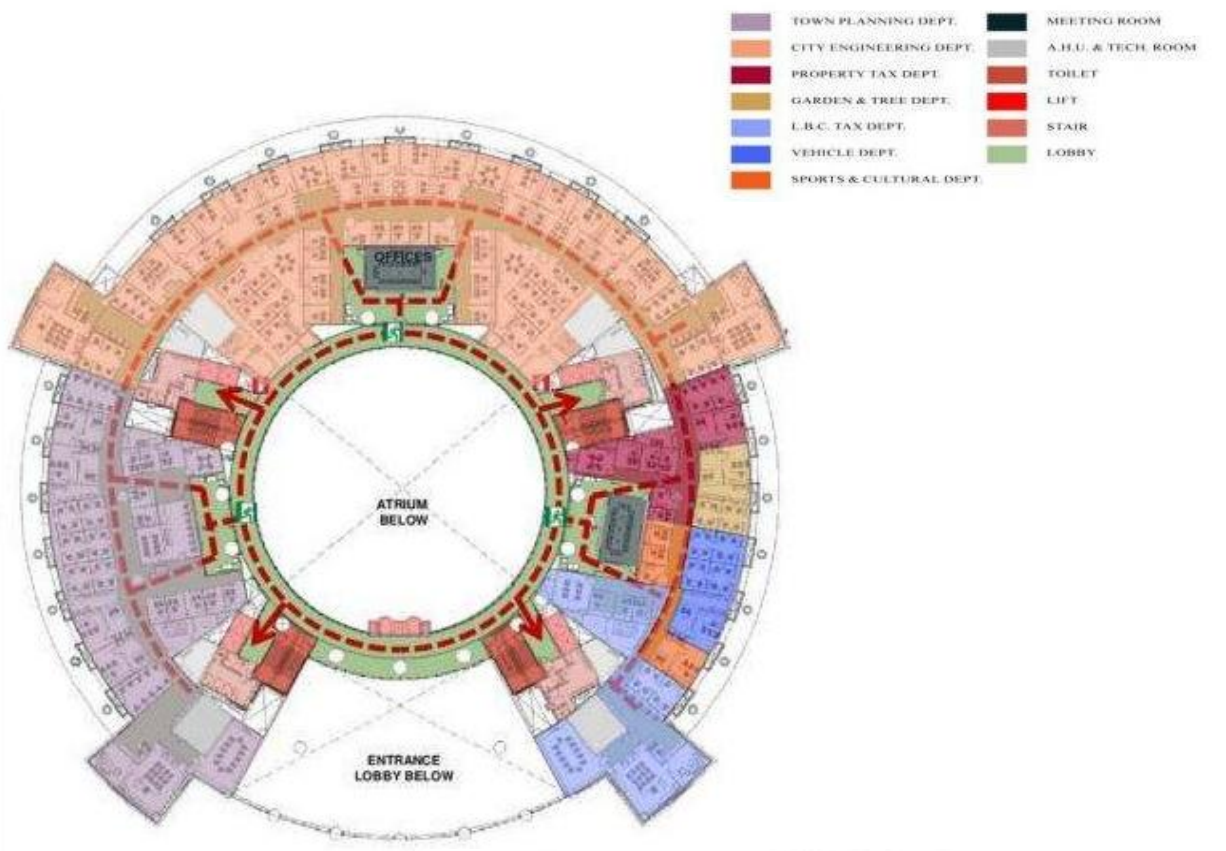
(Fig.27) Amphitheatre



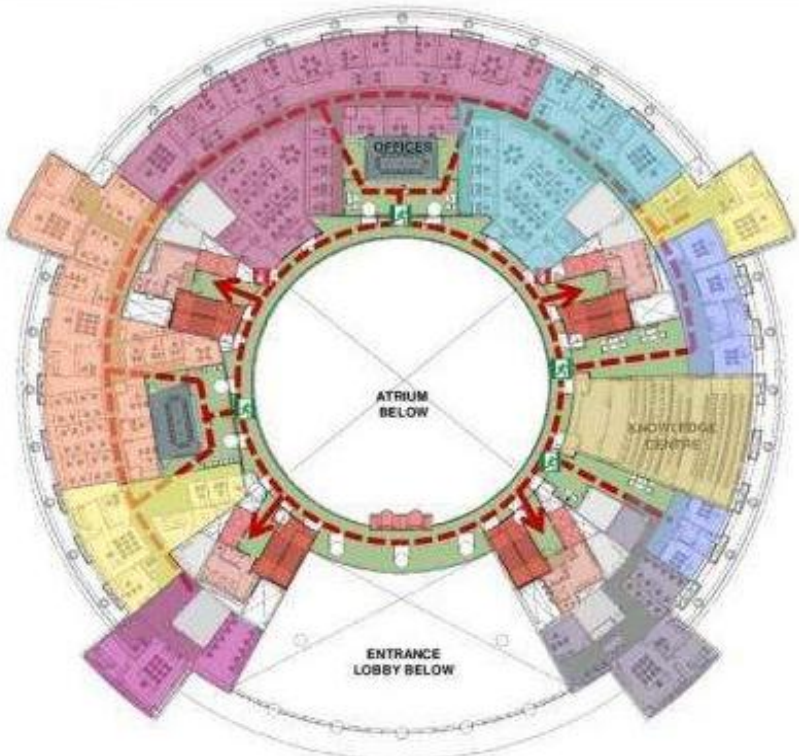
(Fig.28) First Floor Plan

(Fig.29)

- First floor is reserved for future expansion, which can be placed at third floor.
- All specialized services integrated on Building management services at first floor.



(Fig.30) Second Floor Plan



(Fig.31) Third Floor Plan

Services core

- No. of lift provided – 8 passenger lifts + 2 capsule lifts
- No. of staircase provided – 4 staircases
- Toilet blocks (per floor)
  - 2 ladies (4 WC + 1 handicraft each)
  - 2 gents (3 WC & 6 urinal + 1 handcraft each)

(Fig.32) Staircase

(Fig.33) Lift Lobby

(Fig.34) Staircase

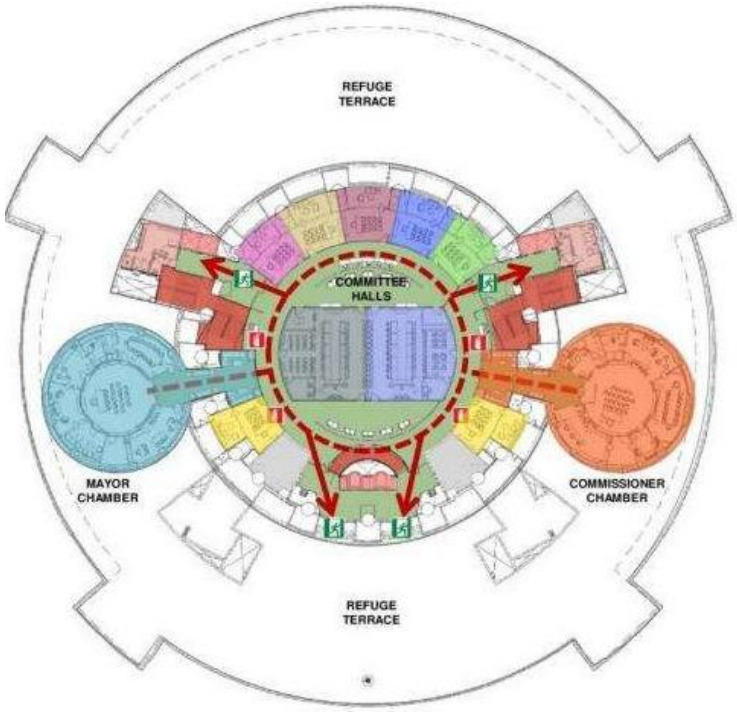
(Fig.35) Toilets

- Class 'A' officer's cabin for 1 + 14 people
- Class 'B' officer's cabin for 1 + 3 people
- Class 'C' officer's cabin for 1 + 2 people

(Fig.36) Class "B" Officers Cabin

- No separate toilet has been proved in class 'A' officer or Sabhapati's anti camber expect mayor and commissioner.

(Fig.37) Class "A" Officers P.A



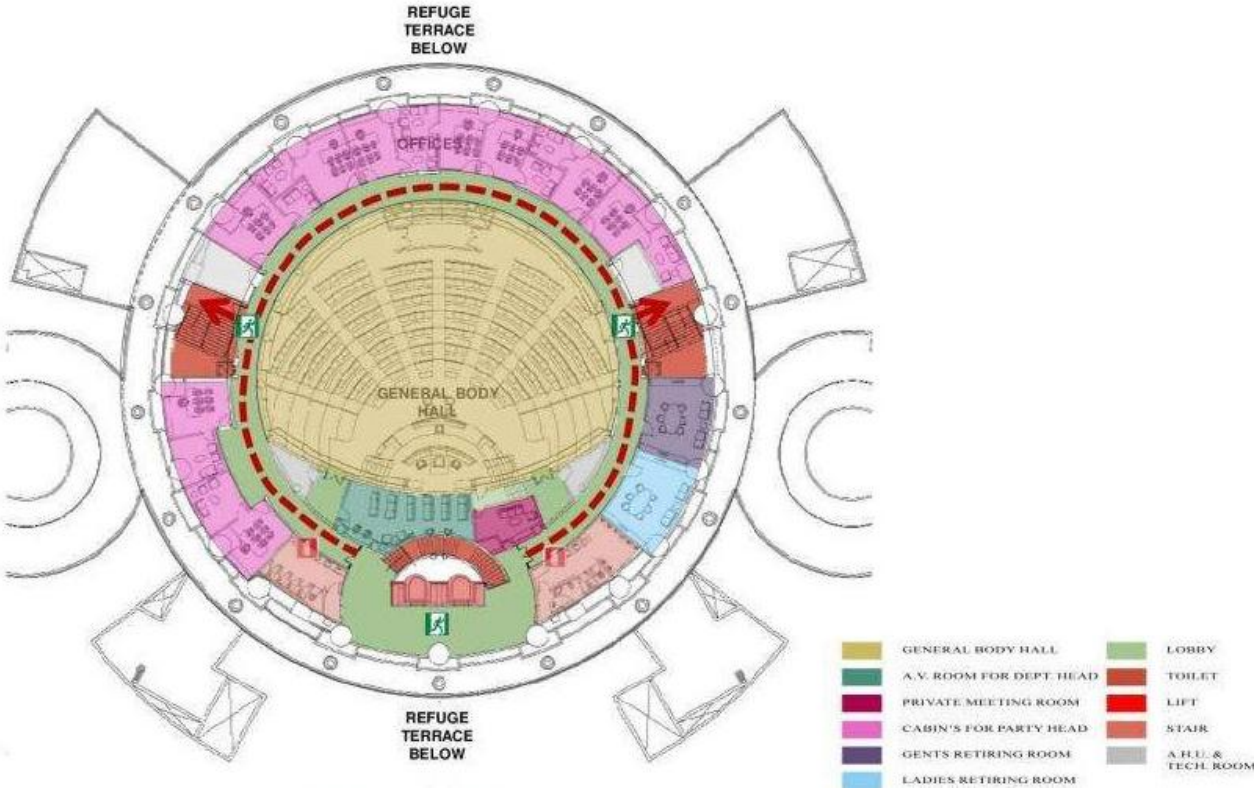
(Fig.38) Fourth Floor Plan

(Fig.39) Commissioner Chamber

- Mayor Circular cabin for 1 + 20 people with high tech technology.
- Anti- camber for 1 + 3 people with luxurious toilet.
- Meeting room for 15 people.
- P.A. Cabin for 1+ 5 people
- V.I.P Lounge for 5 people
- Reception & Waiting Area for 15 people.

(Fig.40) Commissioner Conference Room

(Fig.41) Mayor/Commissioner Room



(Fig.42) Fifth Floor Plan

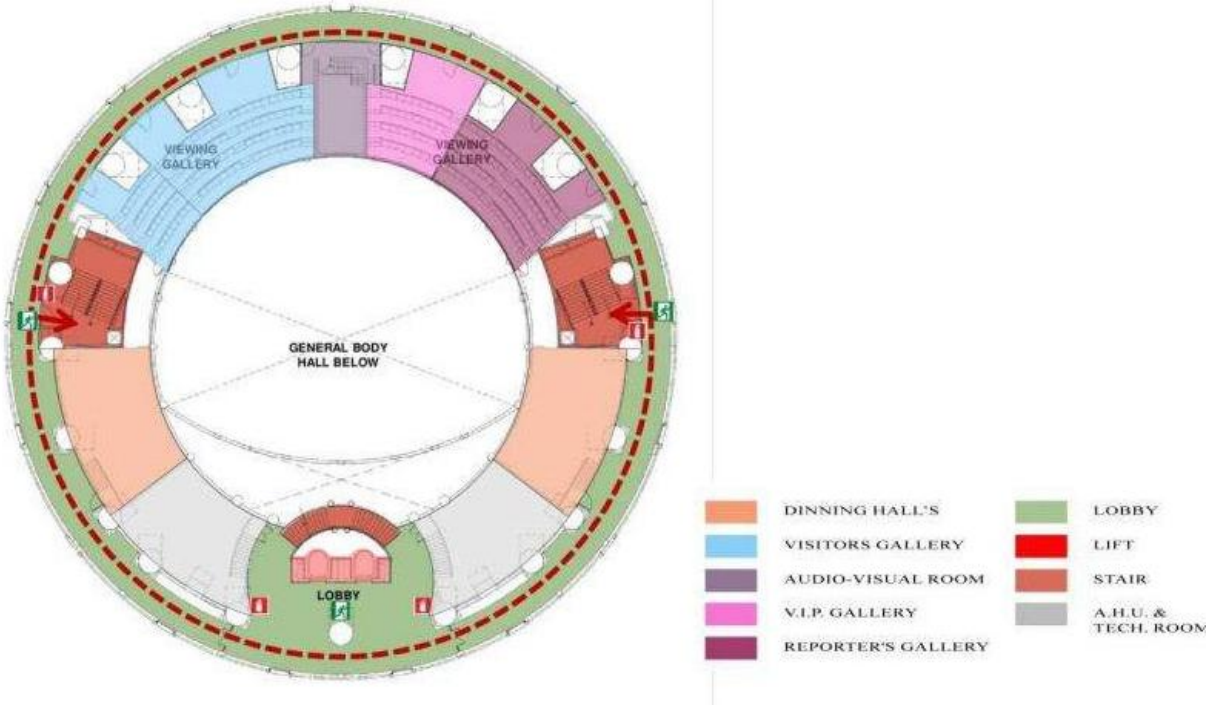
(Fig..43)

- Mahasabha is design for 230 councillors presently there are 111 councillors.
- Private meeting camber for Mayor, Deputy Mayor and Commissioner.
- VVIP entrance from back stage to private meeting camber and Mahasabha stage
- H.O.D. room with A.V. system for 20 peopl

MAHASABHA STAGE

(Fig..44) General Assembly Hall

(Fig..45) Councillors Seating



(Fig.46) Fifth Floor Plan

- Mahasabha Gallery
  - Visitor gallery for 90 people
  - VIP gallery for 30 people
  - Reporter gallery for 60 people
- Dining area is also use for party meeting

(Fig.47) Viewing Gallery

(Fig.48)

- The dome at the roof level is having a dia of 43.2m and the apex point is 15 m high.
- Such a large size dome was conceived with structural steel framing with GRC sheeting.
- This Dome has been recognized as the biggest dome by Limca Book of World records.
- There is a provision to use Dome for exhibitions propose.

CHAPTER - 3

CASE STUDY-2

Tata Consultancy Services
Lucknow, UP

2.4 INTRODUCTION

Tata Consultancy Services, Lucknow provides a good live case study as it is designed, thus helping to prioritize concerns and needs.

Tata Consultancy Services Ltd. Situated at TCS Awadh Park. Vibhuti Khand, Gomti Nagar, Lucknow.

•Owner - Tata Consultancy Services.
•Architect - S.A.A. Sikka Associates
•Site Area - 9296.00 sq.m. (2.30 Acres)
•Ground Coverage - 35%
•No. of Floors - Basement + 7
• Floors Typical Floor Area - 1980.00 sq.m.
•Total Built Up Area - 13860.00 sq.m
•Achieved FAR - 1.5
•Building Height - 25 m.
•Open Area - 65%

(Fig.49) Tata Consultancy Service

2.5 SITE SURROUNDINGS

▪The site is flanked by 30 m. wide road on the north east side.
▪Making it an adapted location for an office building.
▪Wave mall is on the north east side.
▪Lot of commercial buildings are present near the site.
▪Government building and hospitals are also present near the site.

2.6 LANDFORMS AND VEGETATION

The landform of the site is plain and the landscaping is a mixture of hard and soft landscaping on interior and exterior.

TRANSPORTATION:-

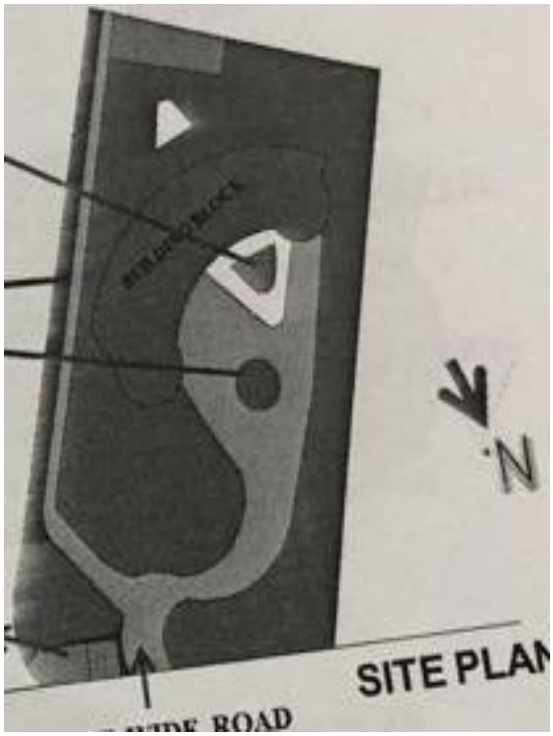
•Well connected with both government and private

•Transportation making, it easy to reach

ENTRANCE:-

•Entrance to the block is on the left passing through a water body aside.

•We enter into a double height waiting and reception area.



(Fig.50) Site Plan

CIRCULATION:-

•Only one access to the site is available.

•In Surface parking, there are 60 cars and in Basement are 225.

• There Is Basement Level.

(Fig.51) Site Plan

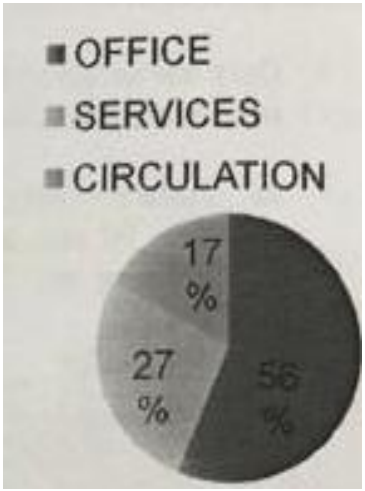
(Fig.52) Site Plan

2.7 OCCUPANCY AREA ANALYSIS:-

Typical Floor Area Total- 1980.00 sq.m
Occupancy on Floor - 1580 Persons

- First floor - 200
- Second floor - 280
- Third floor - 230
- Fourth floor - 230
- Fifth floor - 230
- Sixth floor - 230
- Seventh floor - 180

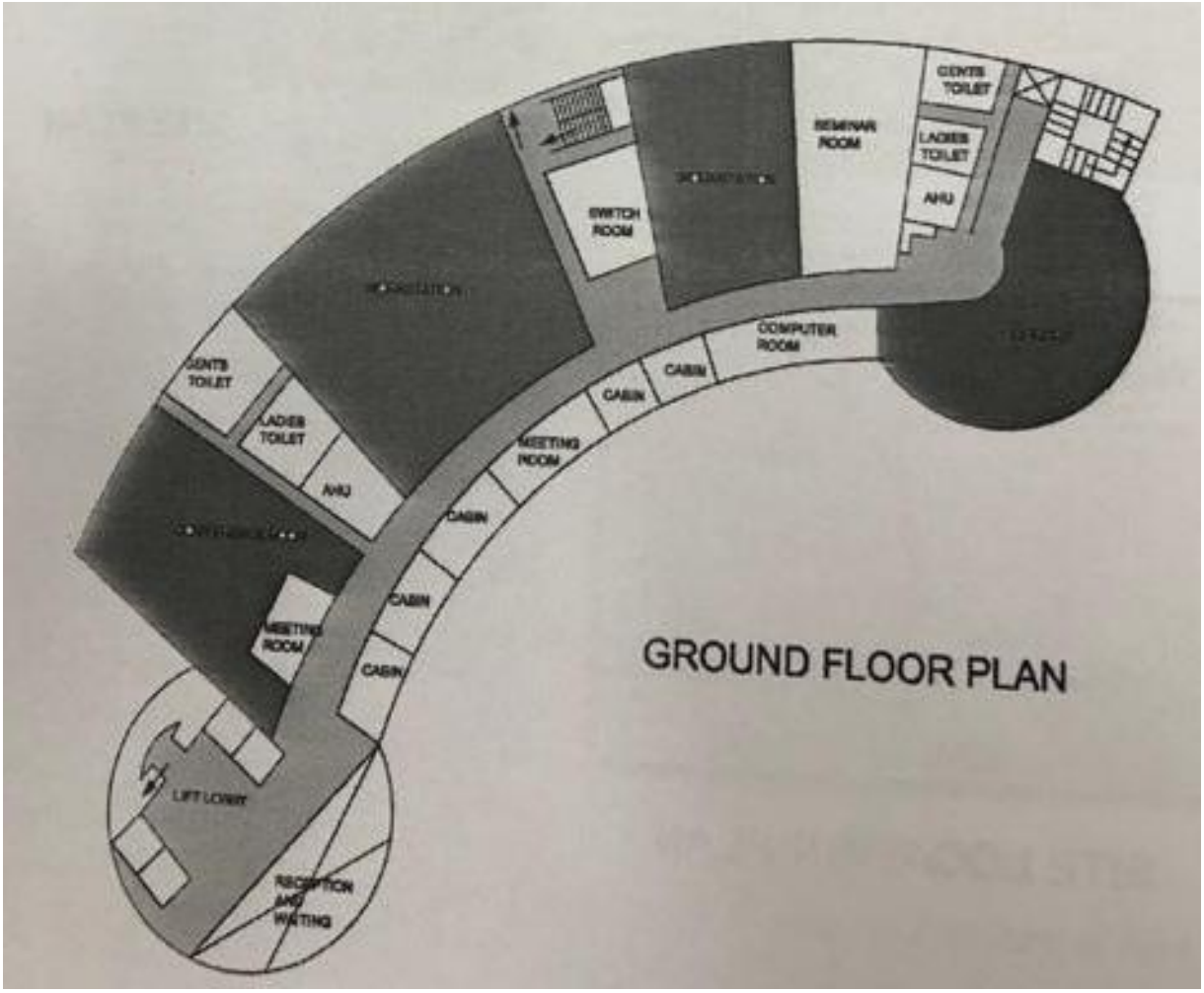
Area per Person - 8.77sq.m



(Fig.53)

STRUCTURE:-
Flat slab with column at 6 mtr. Grid interval.

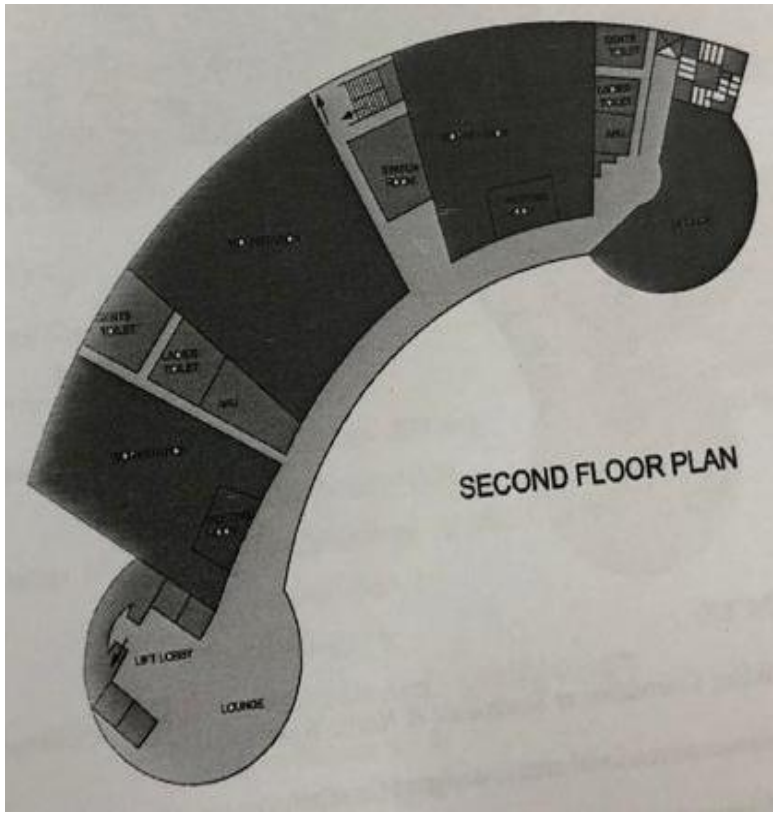
SERVICES:-
Fully air conditioned. And two AHU rooms are provided (2.6% of the floor area.



(Fig.54) Ground Floor Plan

SECOND FLOOR PLAN:-

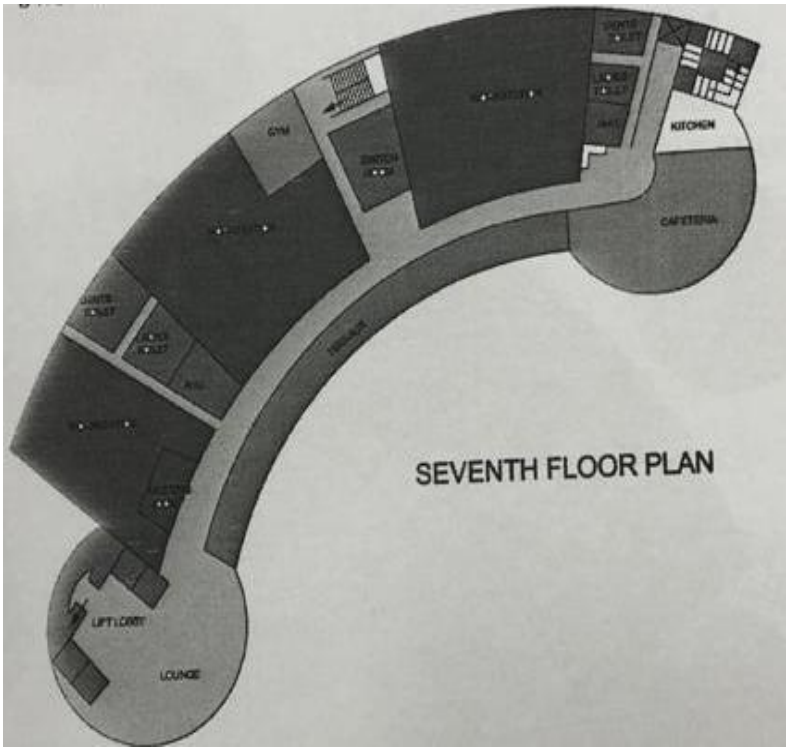
- Lounge
- Workstations
- Pantry
- Meeting room
- Toilets
- AHU
- Switch room



(Fig.55) Second Floor Plan

SEVENTH FLOOR PLAN:-

- LOUNGE
- WORKSTATIONS
- PANTRY
- MEETINGROOM
- CAFETERIA
- KITCHEN
- TERRACE
- TOILETS
- AHU
- SWITCH ROOM



(Fig.56) Seventh Floor Plan

CHAPTER - 4

LITERATURE STUDY-1

Pimpri Chinehwad Municipal Corporation (PCMC) Pune

2.8 Intent of study

The intent for the case study of this Pimpri Chinehwad Municipal Corporation was to analyse the old structure, design 25 year ago with sane potential population aroud and soon which is going to convert into "A° grade Municipal Corporation. It will help is to understand the changes done to fulfilled the further requirement and then the problem faced because by officer and common visions of it.

(Fig.57) Pimpri Chinehwad Municipal Corporation Office.

2.9 Introduction

Pimpri Chinchwad Municipal Corporation which is an urban. Agglomeration (UA) of Pune Pimpri Chinchwad Municipal Corporation is situated on the old Mumbai-P une Highway in the heart of Pimpri- Chinchwad which is one and a haft hours from Navi Mumbai. Pimpri Chinchwad Council was formed on 4 March 1990 covering area of about 87 km2 which is later on was established as municipal corporation in 1982, which now covers an area of about 181 km2

Area: 171,51q Km.
Total Population 117,27,692
Sex Ratio 1000 833
Population Density 9,353 Person Sq. Km
Literacy. Rate 89.22%
Plot Area: 11,565.5 Sq Mt
No. Floors : G+4 and the basement
Architect: kirloskar Consultant Ltd

Entrance:-

- There are three entrance doors to the main building. All of them are opening into main entrance Lobby.
- Front main entrance door is used by all visitors, employees and class A officers too.
- Second door is near to exit staircase and it is secured by metal grill, which always remains close in normal conditions.
- Third entrance is not a direct but it is through gathering hall People using hall can move into main lobby increasing pedestrian traffic Corporation for its profit gives Gathering hall so public and so addition load is always secured security guards.

(Fig.58) Main Entrance

General Planning Features:-

- Building is square in shape courtyard in centre. Size of courtyard is around10.50m x 14.50m and size of main entrance lobby is around 14.50 x 14.50m.
- On ground floor courtyard forms a main entrance lobby. Courtyard is covered on terrace level by transparent sheets.
- Vertical planning is preferred, meaning with help of staircase or lift.
- Departments are placed one above other and not horizontally. From lobby all departments are related to visitors are placed on ground and first floor.
- All such department which is not related to many visitors is placed on second and third floor.
- Registration for birth or death, tax collection etc. is done by window system.
- Offices like commissioner office, mayor's office etc. are placed on third and fourth floor.

(Fig.59) Dome Transparent Sheet

(Fig.60) Central Courtyard

(Fig.61) Passage

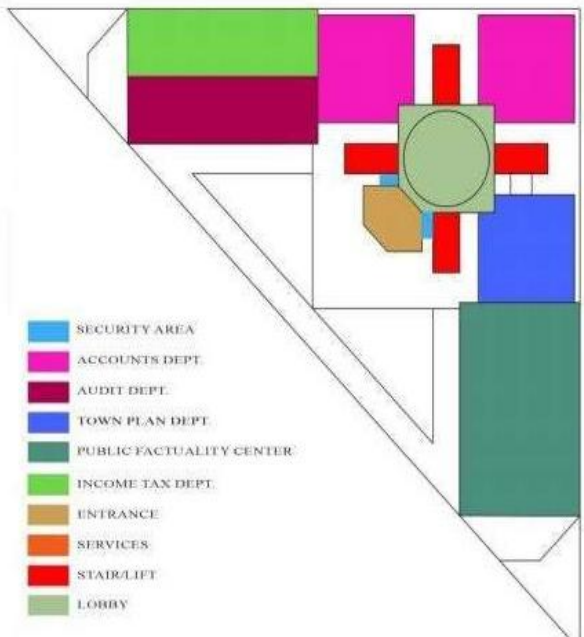
Staircase and Lifts

- As planning concept is based on vertical movements in building, staircases and lifts plays a major role. There are two staircase and four lifts.
- The main staircase is near the entrance and another staircase may be acting as emergency exit staircase it is provided opposite to main staircase.
- Both the staircases are dog legged type R.C.C. staircase finished with marble tiles and provided with fire fighting systems on mid landings and floor levels.
- There are 8 passenger four lifts cleverly grouped into two groups in two different sides of courtyard.
- Physically it divides an accumulation of people in two different areas reducing the crowding of people in certain area.
- And it automatically divides a class of people using these lifts. One lift is reserved for people of class A and for V.I.M.P.'S. and other three use by common people and staff of corporation.
- For convenience, in P.C.M.C; two lift are used only for third and fourth floor.

DESIGN OF FLOORS:-

Ground Floor Plan

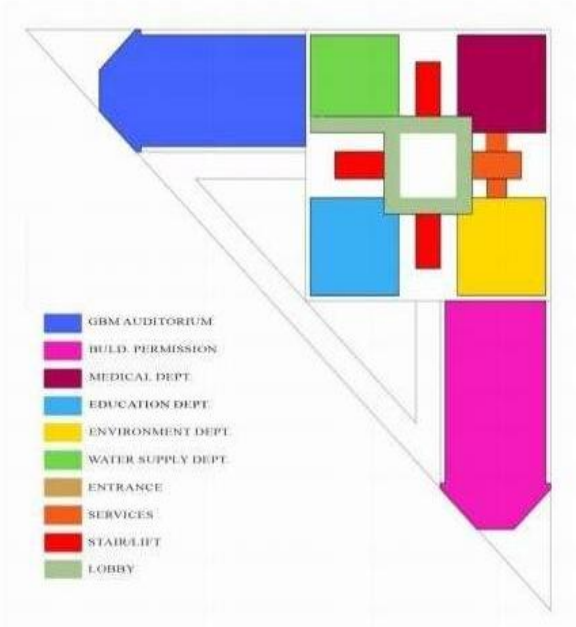
- Ground floor is square with two extending arms.
- Requirements of ground floor is properly worked out as parking, gathering hall, security cabin and all departments which are related to public, are placed on ground floor.
- For convenience of our understanding ground floor is divided into three parts.



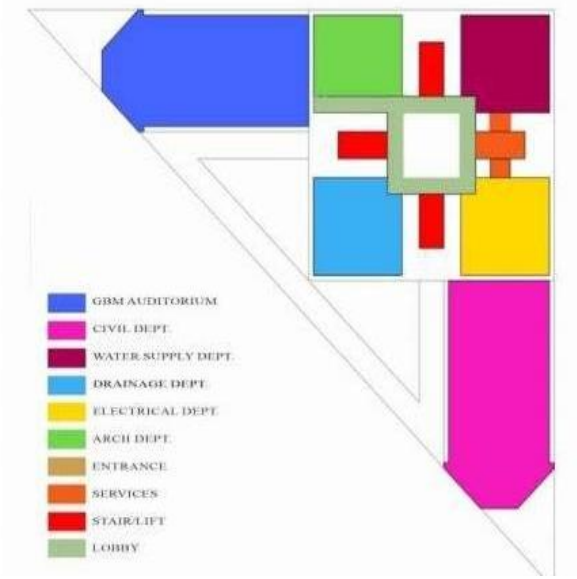
(Fig.62) Ground Floor Plan

Typical Floor (First and Second Floor plan):-

- First and second floor are square plans with a courtyard in the center.
- At each corner of square passage around the courtyard, entrances are then divided by partitions as per requirements.
- Coffered slabs are used in this building as to have long spans, beam depth on first and second floor are increase up to 1m.



(Fig.63) Second Floor Plan



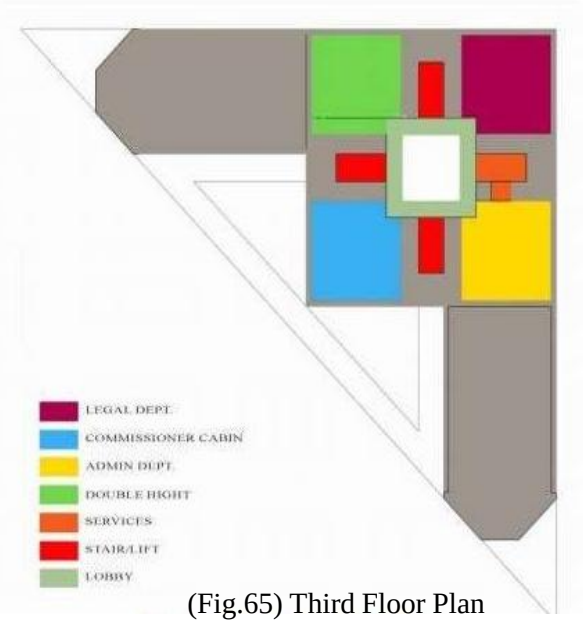
(Fig.64) Second Floor Plan

- To have a proper visual effect of spaces and volume, height of each floor is kept 4m.
- Because of this height provided per floor, window opening are very big and so they can provide sufficient nature light into deep side of room.
- Same as any other government office, interior of P.C.M.C. is not worked out.

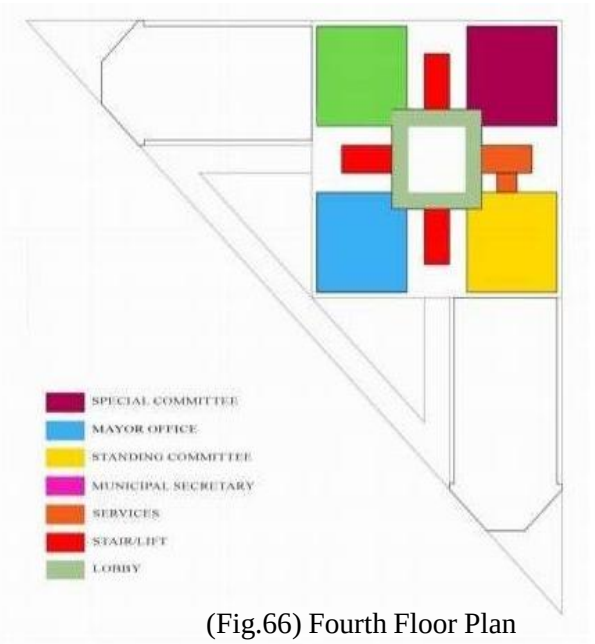
- Each department on firth and second floor has minimum two sides having exterior surfaces, but in all departments, cabin of officers are provided near to the exterior surfaces, blocking air and natural light other areas in room.
- Because of that majority off staff always department of office tables is also not correct as it changes as per requirements.
- All such adjustments are bound to done, as design was not prepared for future expansion of municipal limits.

Third and Fourth Floor:-

- On third floor cabins of important officers and elected members are placed as cabins of mayor, Deputy Mayor, Chairperson of standing committee, leader of ruling and opposition party. Etc.
- On the third floor assembly hall and standing committee's meeting hall are also placed.
- Assembly hall has public gallery on forth floor.



(Fig.65) Third Floor Plan



(Fig.66) Fourth Floor Plan

- On fourth floor commissioner's office with administration offices is placed.
- Recently new computer room is created on forth floor in education department.
- Commissioner's cabin and deputy commissioner's cabin are side by side and has common waiting area.
- There was no press room given near commissioner's office, but now it is created by a wooden partition in same waiting area.

- Third and fourth floor are totally occupied by important members and officials, so it requires security.
- But in P.C.M.C. any person entered in main lobby can go up to mayor's cabin or commissioner's cabin. So there is no restriction on movements of people inside the building.

CHAPTER - 5

LITERATURE STUDY-2

Bhiwandi Nizampur Municipal Corporation (BNMC)

2.10 Intent of study

The intent for the case study of this Bhiwandi Nizampur Municipal Corporation was to analyse the newly design Municipal Corporation administration headquarter..I will help me to understand the failure in design to full filled the future requirement as well as the problem faced by officers and common visitors because spaces in structure.

(Fig.67) Bhiwandi Nizampur Municipal Corporation Office.

2.11 Introduction

The BNMC office is the most recently built example of government building. the BNMC office design makes it unique amongst the municipal corporation in Maharashtra, but has common design element use in government building. A stucture where the people of Bhiwandi could avail better services all under one roof."The BNMC office building is reflecting typical government office.

Area: 26.4 Sq. Km.
Total Population: 7,09,665(2011)
Sex Ratio: 1000:709
Population Density: 26,871 Person/Sq. Km.
Literacy Rate: 69.19%

Plot Area: 8,183 Sq.Mt.
Built-Up Area: 9,820 Sq.Mt
Architect: Alim Fouzi Associates
Project Year: 2012
Project Cost: 200 Crore

2.12 Location: - Old Jakat Naka, Gokul Nager, Bhiwandi .

(Fig.68) Location

- BNMC headquarter is about 4.5 km away from the Bhiwandi road railway station and 0.5 km near to ST depot.
- It is stunted on the old Agra road and easily access by public or private vehicles from any part of city.

- Previously in 1966 DP the whole plot was revived for municipal building then the half of the plot reservation was converted for commercial propose.
- The site area is 8.183 sq.mt. And the build-up area is 9,820 sq.mt.
- 40% of the existence 8183 sq.mt. Plot is cover by structure.
- Parking is placed four side of building which reduce for green space surrounding building.

(Fig.69) Master Plan

- The head quarter has 2 gates: one gate on the front side at the east and other at the south use as service entry.
- The structure is G+6 storey structure with a still parking at rear side of building.
- As per area requirement parking for 75 cars is provide in structure but it is insufficient, as a result space left recreation ground is used for parking.

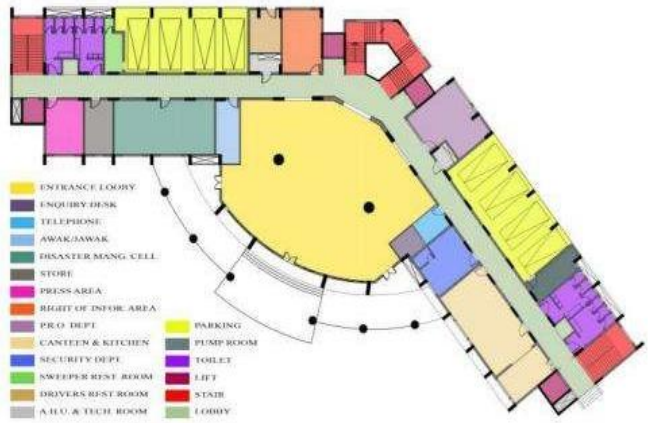
(Fig.70) Development plan

(Fig.71) Main Entrance

(Fig.72) Parking

Entrance and Atrium

- Building as three entrances, main entrance is from front open at atrium, second the rear side of building and third from east which is good convinces for people to entry in building.
- The entrance of a building has double height atrium with formal seating at periphery.



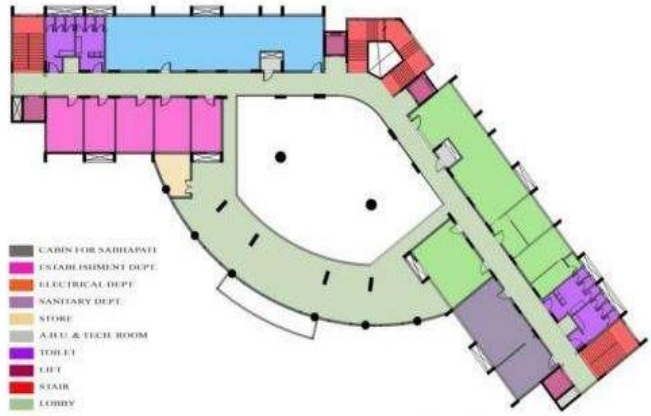
(Fig.73) Ground Floor Plan

(Fig.74) Entrance

(Fig.75) Atrium

- Building not as has security check post or metal detector at any entrance.
- Double height entrance lobby surround by 1meter narrow balcony at two side of atrium at first floor.
- The central part above the atrium caters to assembly, mayor's office and standing committee chamber.
- Canteen and kitchen area out of services, temporary use for changing and restroom by security guard as well as central store BMNC.

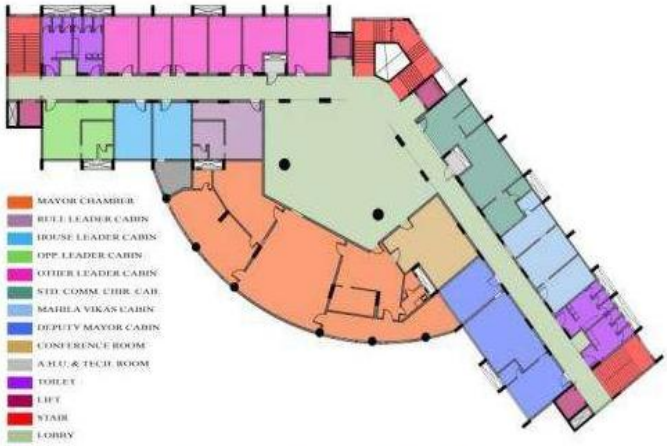
- One small uneducated press room at ground floor.
- PRO department consumed Very less area.
- The front entrance is to narrow to enter the atrium which is only 1.5 meter in width.



(Fig.76) First Floor Plan

Mayor Cabin

- Mayor cabin for 1 + 20 people with high tech technology.
- Anti- camber for 1 + 6 people with luxurious toilet.
- Meeting room for 15+10 people.
- P.A. Cabin for 1+ 3 people
- There is no V.I.P Lounge.
- Reception & Waiting Area for 10 people.



(Fig.77) Second Floor Plan

(Fig.78)

(Fig.79)

(Fig.80)

Commissioner Cabin

- Mayor cabin for 1 + 15 people with high tech technology.
- Anti- camber for 1 + 3 people with luxurious toilet.
- Meeting room for 15+10 people.
- P.A. Cabin for 1+ 3 people
- Reception & Waiting Area for 10 people.

Deputy Mayor Cabin

- Deputy Mayor Cabin for 1 + 10 people.
- Anti- camber for 1 + 5 people with luxurious toilet.
- P.A. Cabin for 1+ 3 people.

Reception & Waiting Area for 5people.

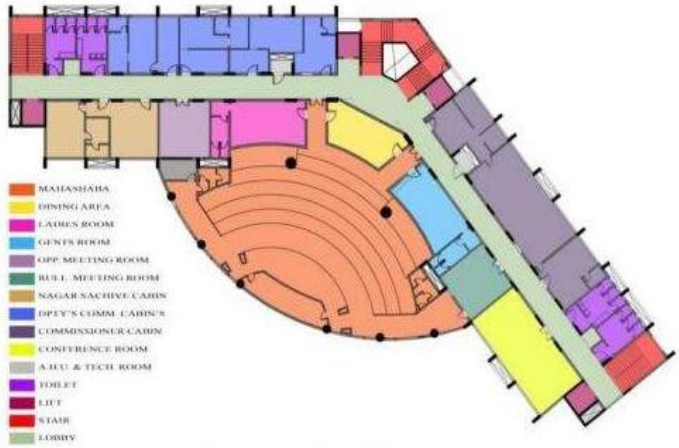
(Fig.81)

(Fig.82)

(Fig.83)

Assembly Hall

- Assembly hall is design for only 120 councillors presently there are 90 councillors.
- Assembly hall proved that architect as design Municipal Corporation by assuming that Bhiwandi population will not exceed more 14 lakhs populations.



(Fig.84) Third Floor Plan

(Fig.85)

(Fig.86)

(Fig.87)

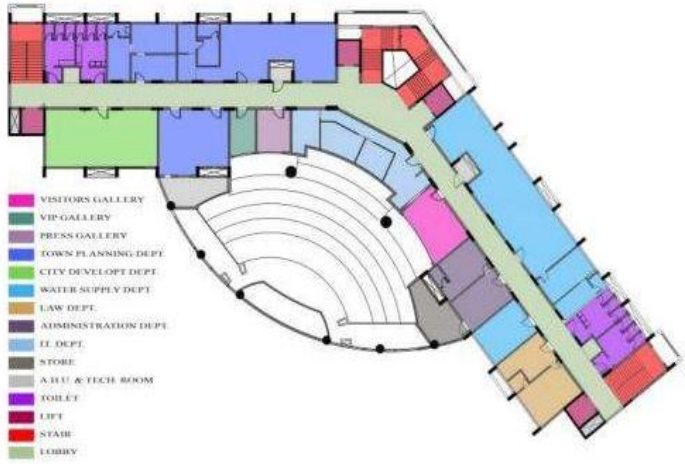
- No private meeting room and special entrance for mayor, deputy mayor and commissioner
- No special seating for HOD of department, at present chairs is place near wall next to stage in assembly.
- Dining room for 20 people which as no use, ladies and gents separate room are provide which are use as store room with improper toilet.
- Two separate meeting rooms are provided at two side of assembly for private party meeting for ruling party and opposition party.
- Oppositions party meeting room use for rest room for BNMC employees and officers.

(Fig.88)

(Fig.89)

(Fig.90)

- General and press viewing gallery for 25 people each both side of IT room.
- No special area for VIP seating in viewing gallery.
- IT room is places between two galleries; it should have places at other place and use as VIP viewing gallery for assembly.
- Conference room at 4th floor is out of service and use as store room.



(Fig.91) Fourth Floor Plan

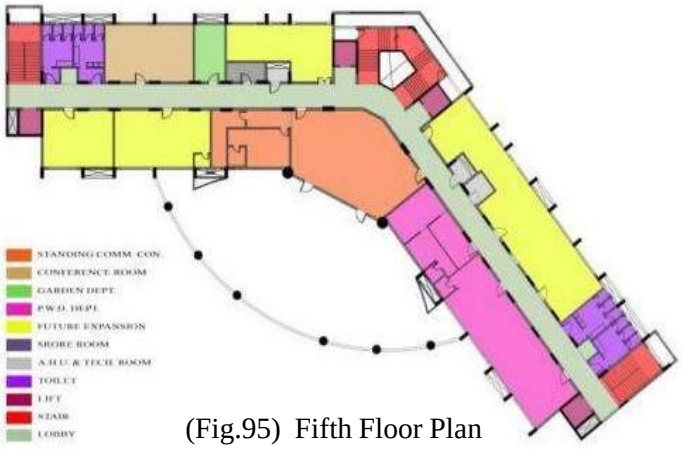
(Fig.92)

(Fig.93)

(Fig.94)

Standing Committee Conference

- Standing committee conference for 30 people each.
- Separate meeting room for 8 people with improper pantry.
- No Separate control room and Media room.



(Fig.95) Fifth Floor Plan

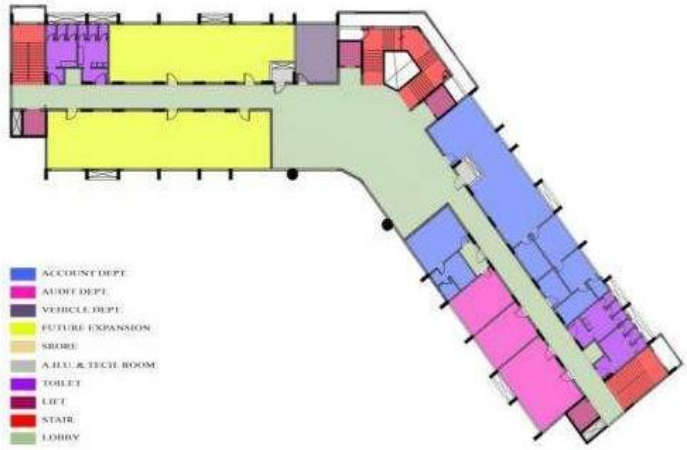
(Fig.96)

(Fig.97)

(Fig.98)

Cabin and Cubical

- Class 'A' officer's cabin for 1 + 14 people.
- Class 'B' officer's cabin for 1 + 3 people.
- Class 'C' officer's cubical for 1 + 2 people.
- Anti-camber and toilet has been proved in class 'A' officer or Sabhapati's cabin



(Fig.99) Sixth Floor Plan

(Fig.100)

(Fig.101)

(Fig.102)

(Fig.103)

(Fig.104)

(Fig.105)

(Fig.106)

(Fig.107)

(Fig.108)

CHAPTER - 6

INFERENCES, COMPARITIVE ANALYSIS OF CASE STUDIES & LITERATURE STUDIES CONCLUSION & REFERENCES

3.1 Comparative Analysis

Considerations	Navi Mumbai Municipal Corporation	Bhiwandi - Nizampura Municipal Corporation	Pimpri - Chinchwad Municipal Corporation	Ideal Scenario
Population Context & Design For Grade Of MC	11,20,547 at the 2011 census & design for " A " Grade MC.	7,09,665 at the 2011 census & design for " B " Grade MC.	17,27,692 at the 2011 census & design for " B " Grade MC.	Design as per growth potential design for "a" grade mc.
Urban Context	Low density urban	High density urban	Medium density urban secluded	Medium density, should not be secluded
Approach	Multiple entry gates from medium traffic road	Singular entry gate from a high traffic road	Singular entry gate from a high traffic road	Multiple entry gates from medium traffic zones
Entry Points	Multiple entry gates for different user groups	Single Entry and Exit for all users groups	Single Entry and Exit for all users groups	Different entry routes for different user groups
Visual Context	Huge curtain wall on the facade made of glass. Acknowledging the idea of representing transparency in a government building.	Use of concrete and abstract symbolism generates average connection with culture of architecture of region.	Use of concrete and abstract symbolism fails to generate any connection with culture of city	Should be seamlessly associated with the regional context and should fit right in
Concept & Form	A blend of traditional and modern architectural styles	Modern architectural styles	Modern architectural styles	Contemporary, but takes inspiration from local precedents

(Fig.109)

Zoning	Initially two levels Assembly and important office above three levels public related department block.	Initially two levels Assembly above double height atrium and public related department block.	Divided into two zones – important Offices and Chambers at upper floor and public related departments at lower floor.	Zoning based on function or activity, connected through seamless spaces on various levels
Circulation	Reliance on means of vertical circulation by dividing public and private place	Compact form, equal reliance on vertical and horizontal *circulation*	Compact form, equal reliance on vertical and horizontal circulation	Regularly commuted points should fall under horizontally circulated form should be compact
Chambers and offices	Chamber is centrally located with offices all around and equidistant	Separate distinct blocks, offices and chambers stacked on top	Both chambers seamlessly connected with office spaces, but some offices are vertical off	Chamber can be placed anywhere within the building but easily accessible from the offices.
Offices interior spaces	Welled planed furnishes interior with provision of store room for each department.	No habited interior spaces reflect typical government offices with worst working environments.	Some interior spaces are adjusted by using additional wooden planks for partition with no provision for future expansion.	Design a series of spaces that promote interest in working of government building with better working environments.
Services	BMS, AV system for Mahasabha, videoconferencing for VVIP, cafeteria, media centre & knowledge centre	No special services is provided and very less spaces for future expansion	No special services is provided accept common auditorium for list	Designs with all special services by adopting green technologies features.

(Fig.110)

3.2 Inferences

Green Building Feature:-

• The building has been registered with LEED- IGBC for certification and aims to receive the Gold rating for this project.

.• The project also features a rainwater harvesting system with 13 groundwater recharge pits for harvesting surface rainwater and collection tank for terrace rainwater.

• A biogas plant has also been constructed to generate cooking gas for the project.

• In addition, a sewage treatment plant of 0.150 mld along with a water purification system has been installed at the premises.

• The treated water is used for cooling towers, flushing and gardening.

• Sustainable materials in the form of GRC and manufactured stone have been used for dry cladding. This ensures a ventilated facade and keeps interiors cooler.

• The glass does not overpower the boldness of the structure; and a minimal percentage of glass in and around the structure has been kept.

• A white, single-ply roofing system was installed to reflect away unwanted solar gain. This strategy, coupled with the benefits provided by the collectors blocking the solar radiation from reaching the roof surface, greatly reduces the radiant heat gains on the roof.

•A 16.000 gallon rainwater collection system providing water for toilet flushing and site irrigation has been installed to reduce water needs and minimize rainwater run-off problems.

• Light shelves have been installed on the south facing windows in order to bounce light deep into the building and help balance the day lighting provided by the Power Roof's north facing glass. They also help shade the lower view glass.

•High-efficiency heat pumps have been equipped with solar hot water coils to provide cost effective heating as well as cooling.

•Suspended, indirect lighting fixtures have been installed to provide glare-free supplemental light doing the limited time that day lighting is not adequate.

3.2.1 Strength

• The circular design makes it unique amongst the Municipal Corporation in India.

• Public spaces are incorporated in the design both inside the building and landscape.

• Spaces inside the building are designed keeping human comfort and nature of work as
priority.

• The building has adapted sustainable characters and eco-friendly technologies.

• There is lot of scope for future expansion in building

.• Building environment effect the workability of corporation.

3.2.2 Weakness

• Accessibility to the location is also low with the nearest station being 3km away and only reachable using a rickshaw or a car.

• The building does not have enough natural light and has to be illuminated using artificial lights.

• The building design forces the use of HVAC system as most of the areas do not have natural ventilation including fire staircase.

• Group department are merging with their sizes, but not with their connectivity.

• Some public related offices like Public Relation Office (PRO) department & Health &Education department are placed at third floor. This can be provided at lower floors.

• In department work spaces of different head are merging together. This not creates flow or chain in departments. And a person has to move table to table.Only one smaller size press room is providing at ground floor.

• Helping desks are provided at entrance of each department with no helping person.• Public gathering spaces are placed at upper floor like knowledge centre (auditorium) at third floor & Mahasabha hall (assembly hall) at fourth floor.

• The dome in the structure is purely constructed for aesthetic purposes.

• The spaces designed for most times as it does not connect with people.

3.3 Conclusion

• It is ironic that the building truly manifests itself as an icon of today's ruling political economy; since the government building looks more like a corporate office. It does not hide itself.

• There has been a lot more investment concentrated towards making the building look like a modern monument. However, it fails in the sense as well as the building is more reminiscent of a cold corporate building rather than a monument.

• Hence, the building lacks any public interface almost as if the design is trying to keep the public out.

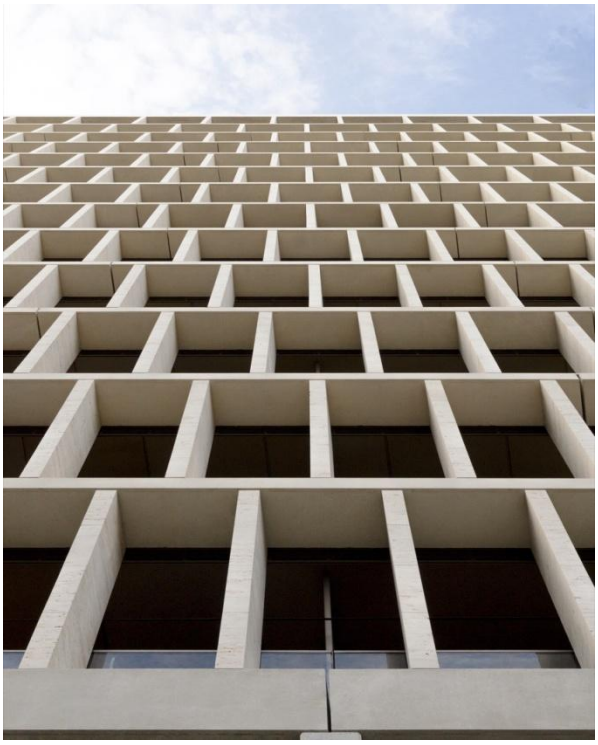
3.3.1 Building Façade

•Exterior wall cladding design has evolved quit a lot the past decade.

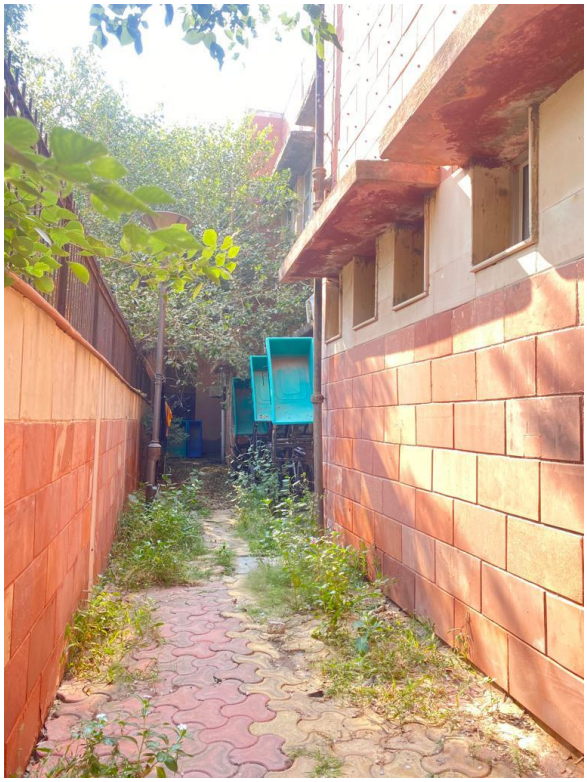
•Exterior wall cladding can made from all kinds of materials but with so many options.

(Fig.111)
wall cladding and shape of openings for proper ventilations and design aspects.

(Fig.112 &113) Elevations of sdmc office with plane stone stone cladding and normal openings.



(Fig.114 & 115) wall cladding and soalar panels on blank wall for sustailnable and design aspects.



(Fig.116 &117) Elevations of sdmc office which can be replaced by architectural fins and solar panels.

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(Fig.118) porch for modern building with architectural treatment and elements.

(Fig.119) porch which is not even protect rain, sunlight and have an heavy rcc structure.

.

(Fig.120) Solar panels on terrace which reduces the electricity bill and aslo a power backup for the building A Sustainable Architectural point.

(Fig.121 terrace were left out no use of solar panels empty terrace of mcd office..

3.3.2 Design Standard

Assembly hall includes debating chamber and other supporting spaces. These spaces are very important as it is in these places where people's representative debate, decide discuss and deliver legislation. While designing assembly hall, following considerations should be taken:

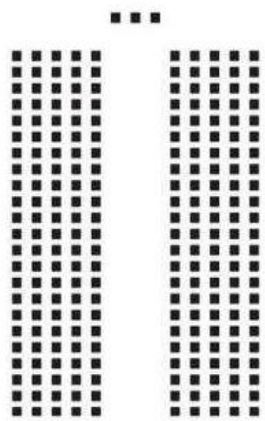
Shape of the Hall

Different types of shapes are used to perform conventions, meeting or conferences. Generally, square, rectangular, hexagonal, oval, circular shaped plans are used. For large assembly purpose, circular or oval plan is recommended mainly for assembly purpose. Since the stage requirement is very less and need of visibility of stage from every corner.

In different countries, shape of assembly hall has similar character of parliamentary politics practised in that particular nation. For example in west minster model of governance where there is strong opposition in debate between two major parties, the rectangular shapes and opposite seating layouts are preferred. Similarly in consensus based inclusive democracy the circular or oval shape of halls is preferred for more collaborative effort. From visibility and greater accommodation point of view, circular shapes is most appropriate with circular shapes, there will be two alternates to the inner seating layouts namely semi oval or semi-circular, the appropriate shape can be chosen.

Space requirements: From various studies and their inferences, the area standards have been ascertained and it has been found that Area of 1.5 -1.6 sq.m per user is adopted in the assembly hall. Area of 0.05-1.2 sq.m per user is generally adopted in the general seating gallery depending upon the type of user and requirement of space.

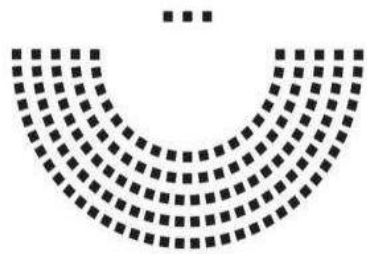
1) Opposite Arrangement



Generally countries with parliamentary systems like United Kingdom have this kind of seating arrangement. This type of arrangement encourages face to face debate. However this type of arrangement also likely to bring unnecessary opposing nature among the parliamentarians.

For example, Le Corbusier used it in the plenary chamber of the state legislative assembly building in Chandigarh, the capital of two Indian states, Haryana and Punjab.

2) Semicircle Arrangement



The most common shape is the "semicircle" layout, which goes back to classical antiquity. Like a good concert hall, a semicircle parliament room affords more people a decent view, creating a stronger sense of egalitarianism among its members. Democracies often meet and operate in this layout. The semicircle fuses the members of parliament into a single entity.

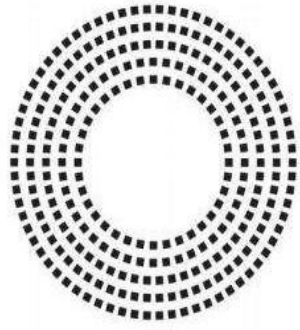
Rajya Sabah assembly hall in parliament of India is the example of semicircle layout. The newly constructed Navi Mumbai municipal corporation assembly hall follows same semicircle layout.

3) Horseshoe Arrangement

The "Horseshoe" layout is hybrid of the "opposing benches" and "semicircle" typologies. The opposing benches are added to the semicircle end side of the room to form a horseshoe layout, in which rows in semicircle layout is reduce. This type of arrangement encourages face to face debate but less opposing in nature than that of opposite seating arrangement it is reformed type of opposite seating type which is more interactive in nature.

One of the most beautiful parliament buildings in the world, the Jatiyo Sangshad in Bangladesh designed by the architect Louis Kahn, meets in a horseshoe setting. Lok Sabah assembly hall in parliament of India as well as Maharashtra and Karnataka state legislative assembly hall is example of horseshoe layout.

4) Concentric Arrangement



Seating arrangement is concentric and thus is more interactive with greater visibility. Moreover this type of arrangement is found to be more cordial and less opposing. Such types of seating arrangements are found in Scandinavian countries where parliamentary politics is mostly consensus based.

3.4. References

1. **Smart Materials and New Technologies.**
   Books-By- Michelle Addington and Danial Schodek.

2. **Understanding the General Principles of the Double Skin Façade System**
   By- Terri Meyer Boake (Associate Professor School of Architecture,
   University of Waterloo).

3. **Encyclopedia Of Smart Materials**

4. **Research Papers and journals:**

   1. Smart Structures and Material Technologies in Architecture Applications
   By- Sherif Mohamed Sabry Elattar (Architecture Department, Faculty of Engineering, Fayoum University, Egypt).

   2. Smart Materials - Toward A new Architecture
   By- Dr. Mona Mohammed Hosni Aggour (Department of Architecture, Faculty of Engineering, Mataria ,Helwan University, Egypt)
   Dr.OlfatAbdElghanySoliman(Department of Architecture, Faculty Engineering, Mataria, Helwan University, Egypt)

   3 Double Skin Facades for Office Buildings
   By- Harris Poirazis (Division of Energy and Building Design, Department of Construction and Architecture, Lund Institute of Technology,Lund University, 2004)

Internet

- Wikipedia
- Saint Gobain Glass (Performance Sheet and Rate)
- Mcd hand book pdf

photos

- Sdmc office photos
- Dwarka mcd office

.

CHAPTER - 7

SITE STUDY

Proposed Building For Intelligent Management Traffic System(ITMS) Project Office At Todapur, New Delhi

SITE INTRODUCTION

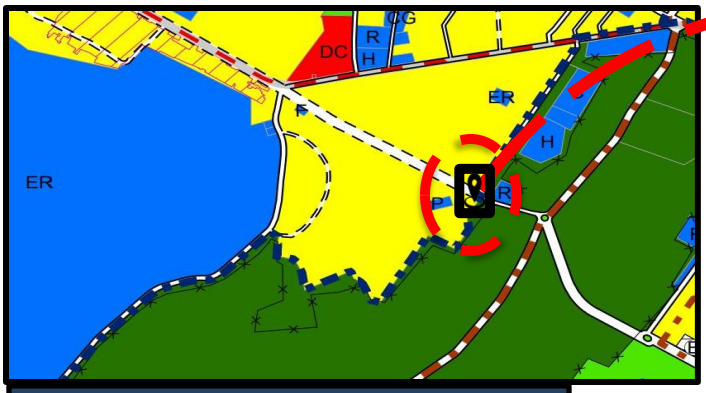
- **Site Area - 15580.41 Sqm.**
  (3.85 acres)

- **Access Road - 27.28 Mtrs. Wide Road**

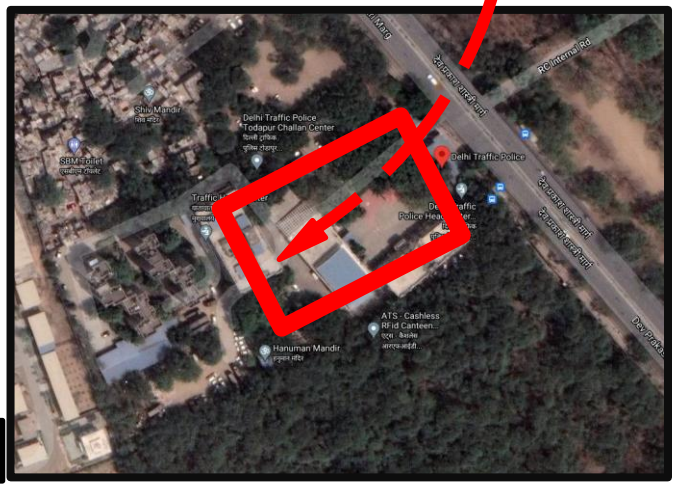
- Terrain Type - Flat Terrain

- **Site is located at Todapur, in the South-West Delhi , National Capital Territory of Delhi. It is a part of "Zone G-5" zonal development plan in the MPD-2021.**

- **Traffic Police Headquarters situated at Dev Prakash Shastri Marg, PUSA, Todapur, Delhi-110012.**

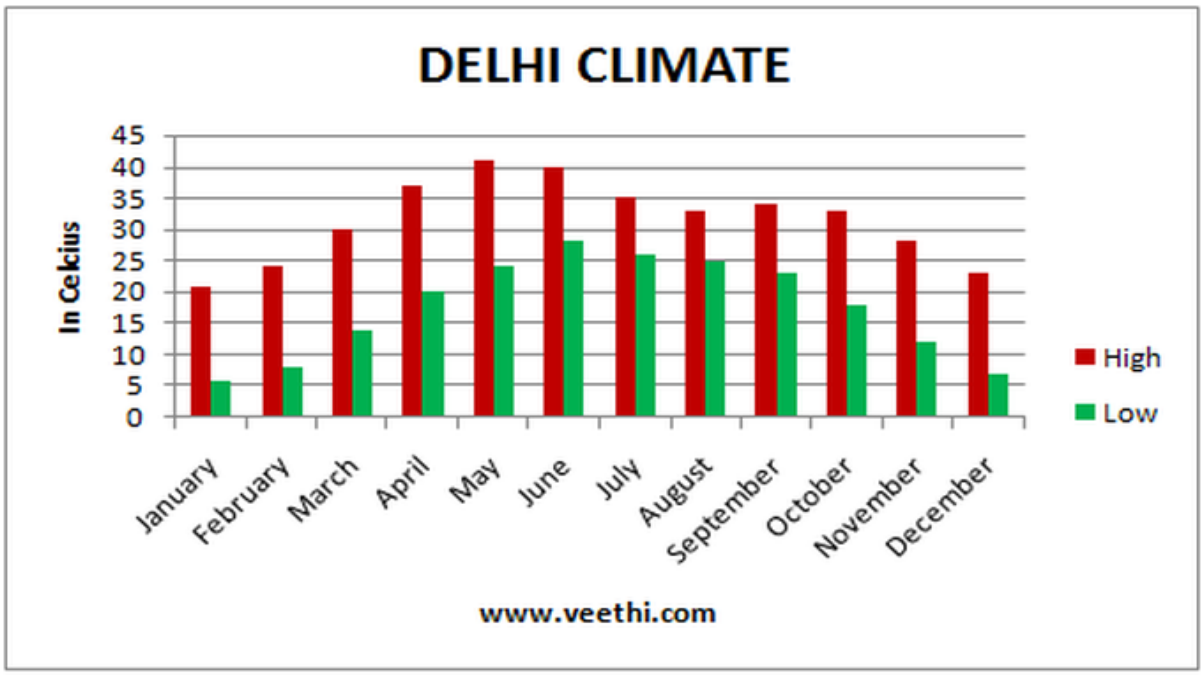


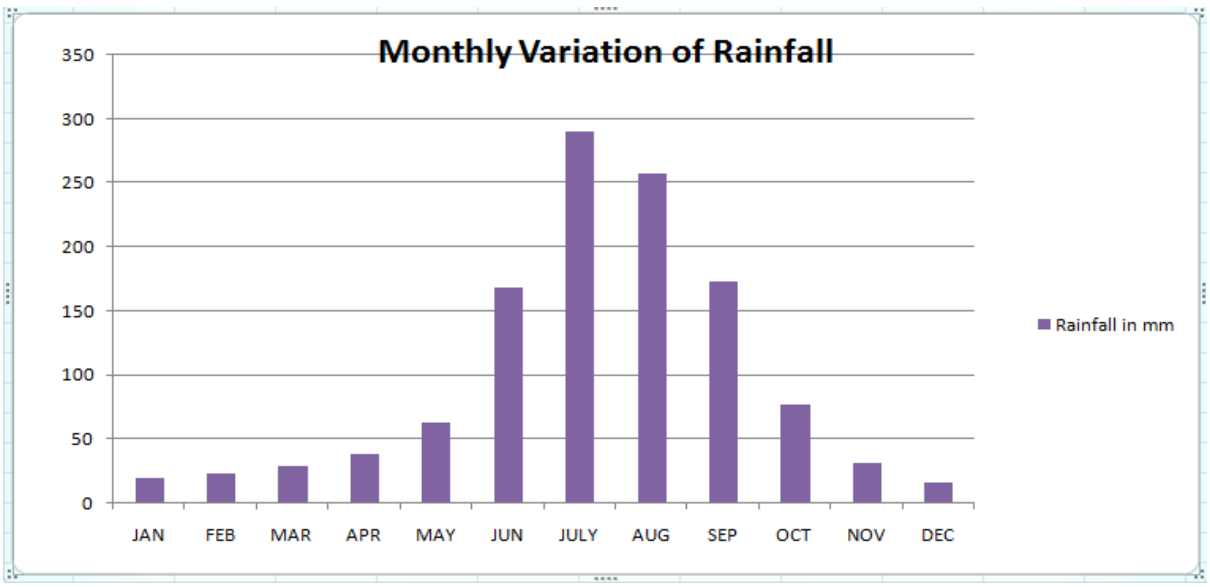
Zonal Development Plan (Zone G-5) MPD-2021



Site Location earmarked on Google map

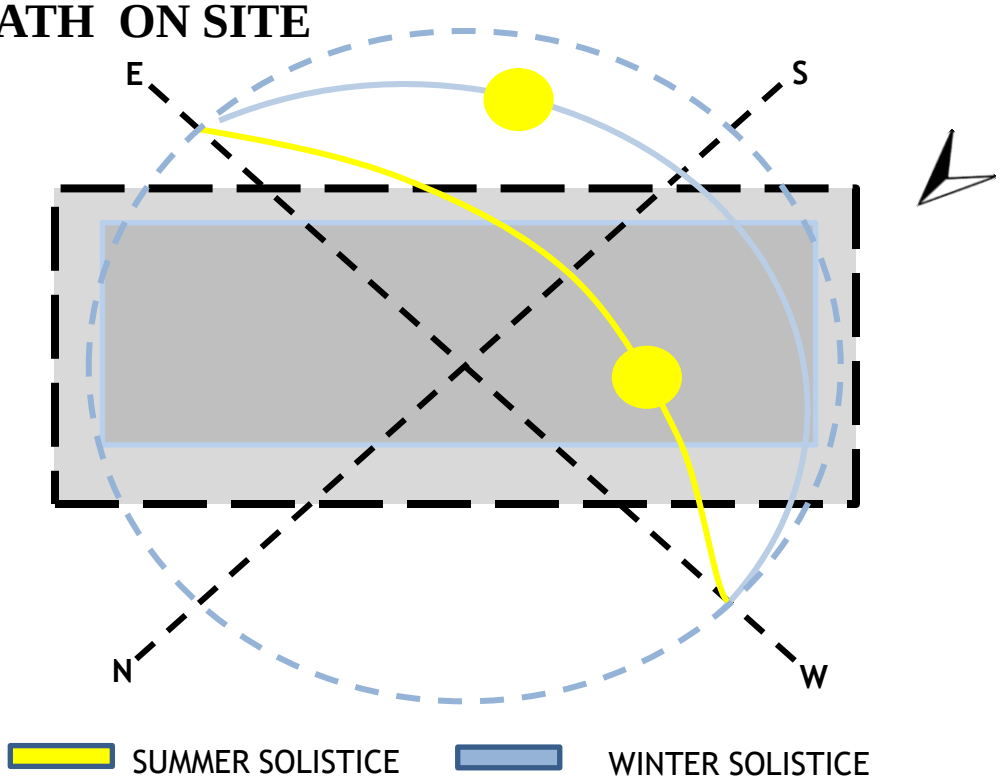
CLIMATOLOGY





CLIMATOLOGY

SUNPATH ON SITE



WIND MOVEMENT ON SITE

PREVAILING WIND DIRECTION- FROM NORTHEAST & SOUTHWEST

- Details of solar path and wind direction are shown in the above schematic diagram.
- Existing trees are detailed out in the Site Survey Plan along with the Girth and height.
- Landscape plan presents the new trees proposed in the green pockets located all along the site along with the existing trees.

PROJECT REQUIREMENTS

DESIGN BRIEF

Planning and designing for comprehensive development for Intelligent Traffic Management System (ITMS) Project Office At Pusa, Todapur, New Delhi.

CLIENT REQUIREMENTS

- Screens/LEDs for viewing 1000cctv cameras and seating arrangement of operators.
- Emergency Operations Centre having 15-20 workstations.
- Application servers, Recording servers, Analytics servers.
- Picture Intelligence unit having 6-10 workstations,
- Meeting Room & Multi-Agency Coordination Room.
- Supervisory officer's cubicles, mini pantry, records/documents room and store room for essential items.
- Add. CP/Mod.(Project Nodal Officer).
- DCP (Project Officer).
- Addl.DCP Office.
- 1 ACP
- 2 Inspectors
- 9 Consultants
- Meeting Room for regular meetings with consultants and vendors (space for seating of 20-25 persons).
- Conference Hall.

PLANNING CONCEPT

Concept

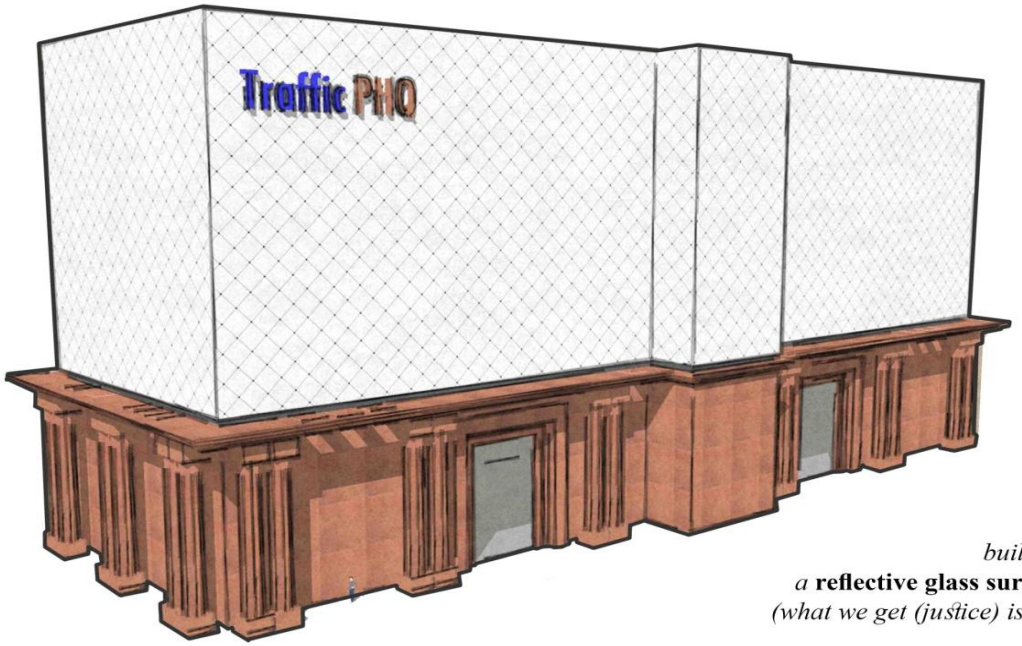
The building surface development is based on official motto of Delhi ,Police- **SHANTI, SEWA, NYAYA**

The elevation is also thought of as a **FUSION** *of* **past & future**

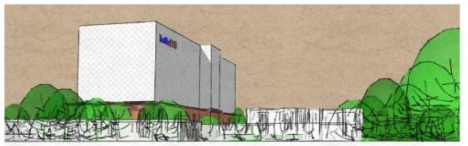
Conveys heritage **Appears Futuristic**

Colonnades

used are re representations of anicient stambhas, in our case represents the police force in service of Justice & .peace



Official motto of Delhi Police



Upper five story of the building is finished with off white zinc clading From a distance we first see the **off white surface***(top part of the building), which* **symbolizes peace**

1 **Peace** *Shanti*

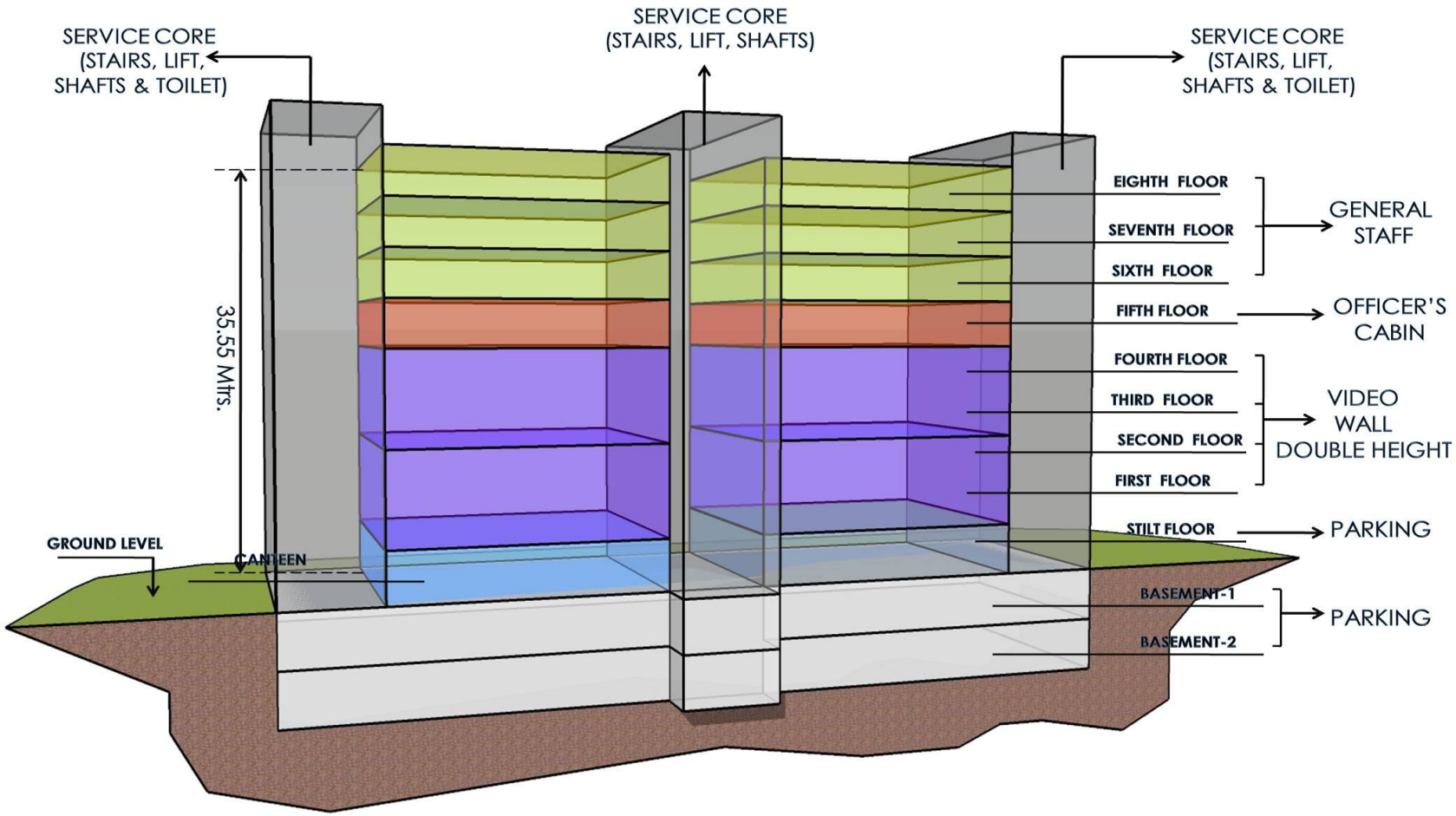
As we move closer to the building the lower part of the building also appears, where we see the row of stambhas, which symbolizes the **police force, who serves/ upholds the peace** *(white mass of the upper floors*

2 **Service** *Sewa*

As we move further closer to the building to approach the entry we see a **reflective glass surface,which reflects our image**. *As (what we get (justice) is based on who we are (our actions*

3 **Justice** *Nyaya*

VERTICAL ZONING



The permissible Ground coverage, FAR, setbacks etc. for the present site as per the Master Plan 2021 and the UBBL 2016 are given as under -

	Permissible		Existing Details	Proposed	Total
Area of Plot	15580.41 sq.mtrs 3.85 Acres	-	-	-	-
Max. Ground Coverage	50% of Plot Area	7790.20 sq.mtrs.	18.25% (i.e. 2844.21 sq.mtrs.)	8.29% (i.e. 1291.81 sq.mtrs.)	26.54% (i.e. 4136.02 sq.mtrs.)
(F.A.R)	300	46741.23 sq.mtrs .	47.35(i.e. 7378.35 sq.mtrs.)	64.31 (i.e. 10020.04 sq.mtrs.)	47.35 +64.31= 111.66 (i.e. 17398.39sq.mtrs.)
Setbacks	Front-15.0 Mtrs. Rear-12.0 Mtrs. Side -12.0 Mtrs. Side -12.0 Mtrs.	-	-	Front-15.0 Mtrs. Rear-12.0 Mtrs. Side -12.0 Mtrs. Side -12.0 Mtrs.	-
Building Height	No Restriction	No Restriction	-	35.55 Mtrs. (2Basement+Stilt + 8 storey)	-
Parking Required	@ 2 ECS/100 sq.mtrs	7378.35 X 2/100 = 147.56 ECS + 10020.04 X 2/100 = 200.40 ECS Total = 347.96 ECS	-	367.28 ECS (Open 61.02 ECS, Stack 130.36 ECS, Stilt 16.95 ECS, Basement 1+2= 142.93)	367.28 ECS
Green Area Required	50% of the Open Area	3895.20 sq.mtrs	-	4159.86 sq.mtrs. (i.e. more than Permissible)	4159.86 sq.mtrs.

CHAPTER - 8

DRAWINGS

PROPOSED BUILDING

EXISTING BUILDING

LEGEND

VEHICULAR DRIVEWAY

PEDESTRIAN WALKWAY

SOFT GREEN

PARKING GRASS PAVERS

SCULPTURE

9.5M MANDATORY SETBACK LINE FROM ADJACENT BUILDING

12M SETBACK LINE

FIRE TENDER MOVEMENT

PEDESTRIAN MOVEMENT

TENTATIVE CHART :

PERMISSIBLE DETAILS :

TOTAL PLOT AREA	= 15580.41 SQ.M.
PERMISSIBLE GROUND COVERAGE	= 7790.20 SQ.M.
PERMISSIBLE F.A.R.	= 46741.23 SQ.M.
PERMISSIBLE HEIGHT	= NO RESTRICTION

EXISTING DETAILS :

GROUND COVERAGE	= 2844.21 SQ.M.
F.A.R.	= 7378.35 SQ.M.

PARKING REQ. @2 ECS/100 SQ.M. OF COVERED AREA
= 7378.35 X 2 /100 = 148 ECS.

PROPOSAL DETAILS :

PROPOSED GROUND COVERAGE	= 1301.93 SQ.M.
PROPOSED F.A.R.	= 10085.77 SQ.M.
PROPOSED COV. AREA OF LOWER BASEMENT	= 18.1 SQ.M. (free from F.A.R.)
PROPOSED COV. AREA OF UPPER BASEMENT	= 18.1 SQ.M. (free from F.A.R.)
PROPOSED HEIGHT	= 30 M.

PROPOSED COVERAGE :

COVERED AREA ON STILT FLOOR	= 1301.93 SQ.M.
COVERED AREA ON FIRST FLOOR	= 1287.78 SQ.M.
COVERED AREA ON SECOND FLOOR	= 659.37 SQ.M.
COVERED AREA ON THIRD FLOOR	= 1287.78 SQ.M.
COVERED AREA ON FOURTH FLOOR	= 659.37 SQ.M.
COVERED AREA ON FIFTH FLOOR	= 1187.02 SQ.M.
COVERED AREA ON SIXTH FLOOR	= 1287.78 SQ.M.
COVERED AREA ON SEVENTH FLOOR	= 1126.96 SQ.M.
COVERED AREA ON EIGHTH FLOOR	= 1287.78 SQ.M.
TOTAL COVERED AREA ON ALL FLOOR	= 10085.77 SQ.M.

PARKING AREA REQUIRED DETAILS :

PARKING REQ. @2 ECS/100 SQ.M. OF COVERED AREA
= 10085.77 X 2 /100 = 202 ECS
PARKING PROVIDED OPEN = 72 ECS
PARKING PROVIDED STACK = 120 ECS
PARKING PROVIDED ON STILT = 19 ECS
PARKING PROVIDED IN FIRST BASEMENT = 74.52 ECS
PARKING PROVIDED IN SECOND BASEMENT = 74.52 ECS
TOTAL ECS = 360 ECS

TOTAL DETAILS : EXISTING + PROPOSED

TOTAL GROUND COV. = 2844.21 + 1301.93 = 4146.14 SQ.M.
TOTAL F.A.R = 7378.35 + 10085.77 = 10823.12 SQ.M.
TOTAL PARKING ECS REQ. = 148 + 202 = 350 ECS
TOTAL PARKING ECS PROVIDED = 360 ECS

GREEN AREA DETAILS :

PERMISSIBLE GREEN AREA = 50% OF OPEN AREA
= PLOT AREA - PERMI. GROUND COV. = $\frac{15580.41 - 7790.20}{2}$
= 3895.20 SQ.M.
PROPOSED GREEN AREA = 3924.18 > 3895.20 SQ.M.

SCHOOL OF ARCHITECTURE AND PLANNING, BBDU.

ASSIGNMENT

PROPOSED BUILDING FOR INTELLIGENT MANAGEMENT TRAFFIC SYSTEM (ITMS) PROJECT OFFICE AT PUSA TODAPUR, NEW DELHI

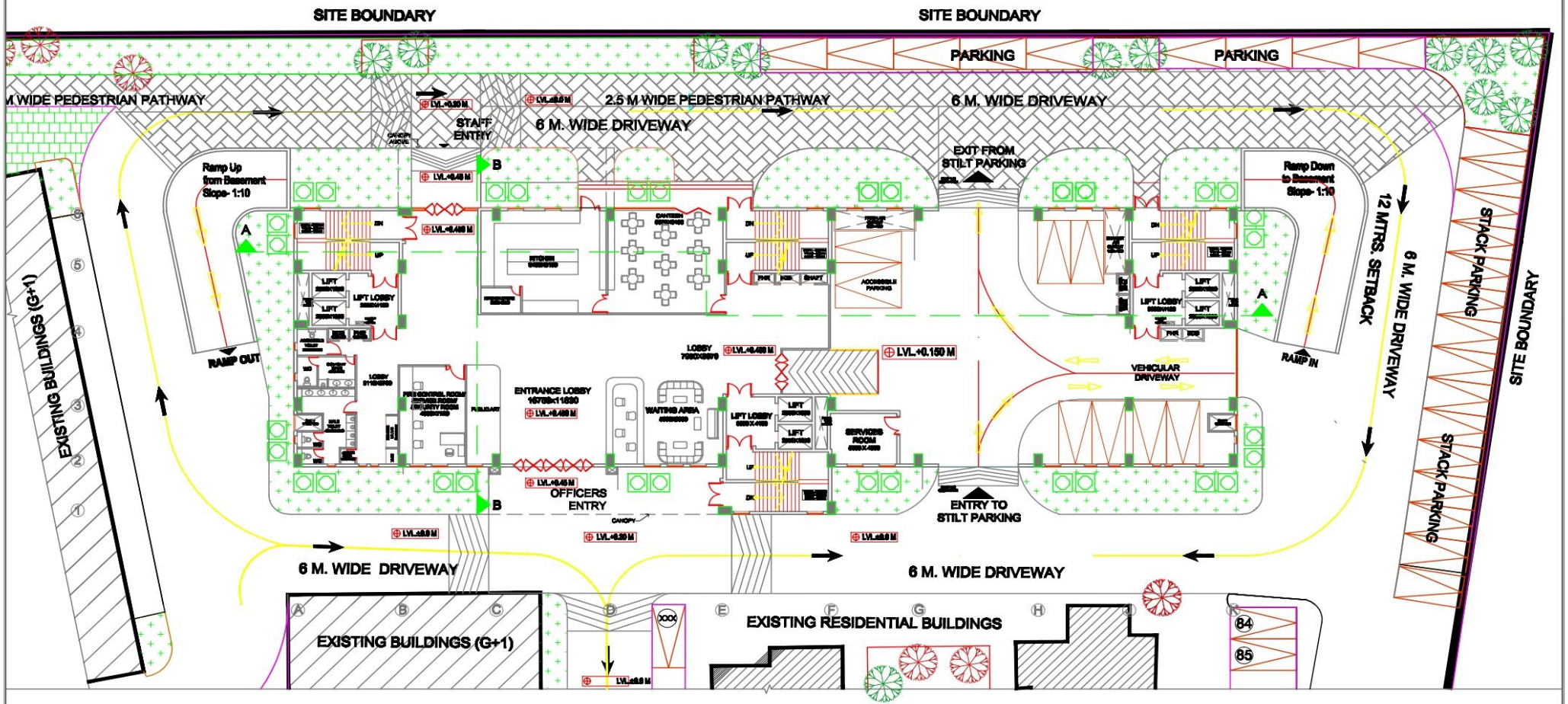
SUBJECT	DISSERTATION-II	LAYOUT PLAN	
SUBJECT CODE	MAR-202P	SCALE	
SUBMITTED BY	SHREE NATH		
ROLL NO.	1200109012	YEAR 3th YEAR	MASTER OF ARCHCHITECTURE (PART TIME)

NORTH

DATE OF INTRODUCTION
JUNE 2023

GUIDE NAME
Ar. SHAILESH YADAV

DISSERTATION-II COORDINATOR
Ar. KESHAV KUMAR &
Ar. SAURABH SAXENA



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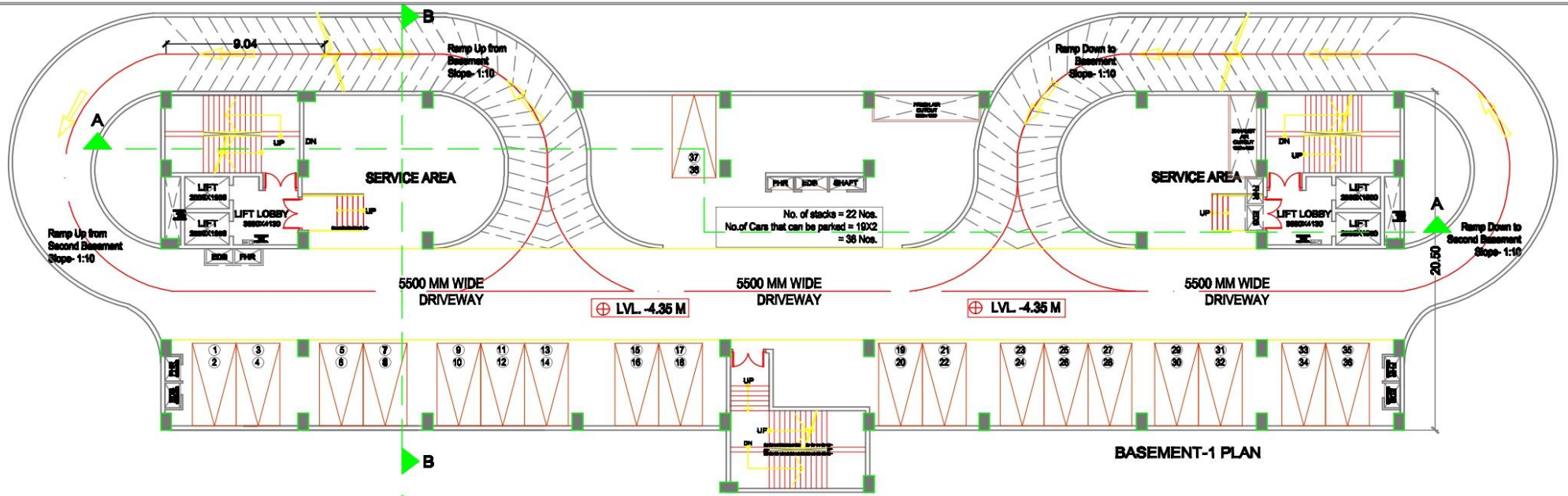
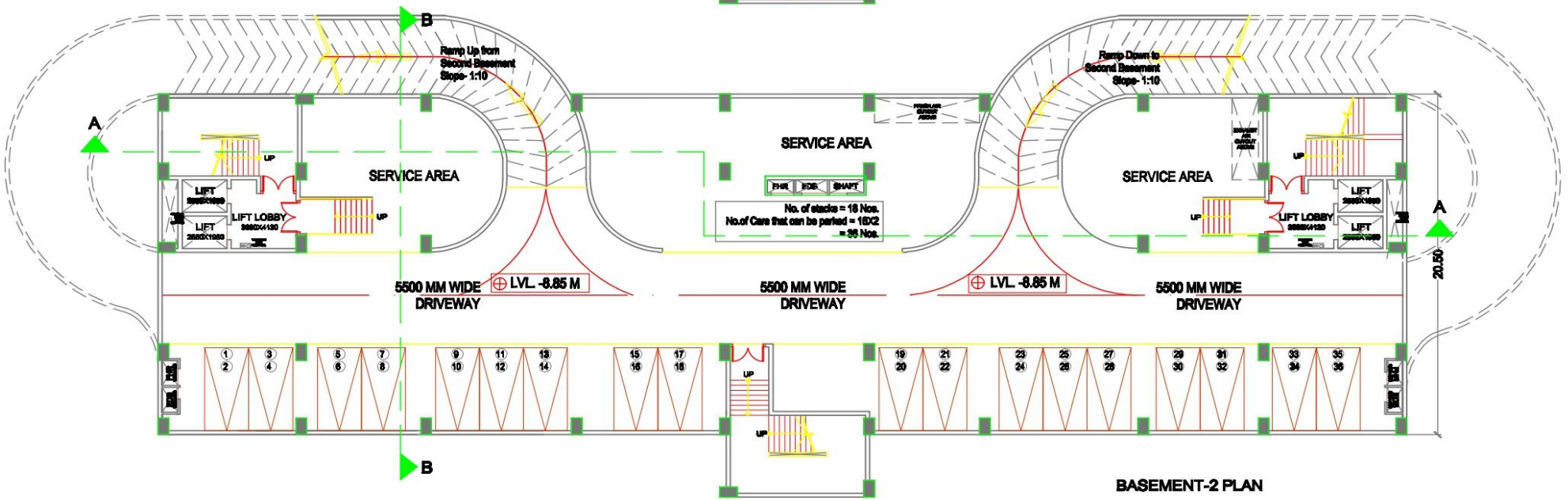
ASSIGNMENT: PROPOSED BUILDING FOR INTELLIGENT MANAGEMENT TRAFFIC SYSTEM (ITMS) PROJECT OFFICE AT PUSA TODAPUR, NEW DELHI	SUBJECT CODE: MAR-202P	SCALE	GUIDE NAME: Ar. SHAILESH YADAV
	SUBMITTED BY: SHREE NATH	NORTH	DISSERTATION-II COORDINATOR: Ar. KESHAV KUMAR & Ar. SAURABH SAXENA
	ROLL NO.: 1200109012 / YEAR: 3th YEAR / MASTER OF ARCHCHITECTURE (PART TIME)		





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ASSIGNMENT	SUBJECT CODE	MAR-202P	SCALE	
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	ROLL NO. 1200109012	YEAR 3th YEAR	MASTER OF ARCHCHITECTURE (PART TIME)	

DATE OF INTRODUCTION
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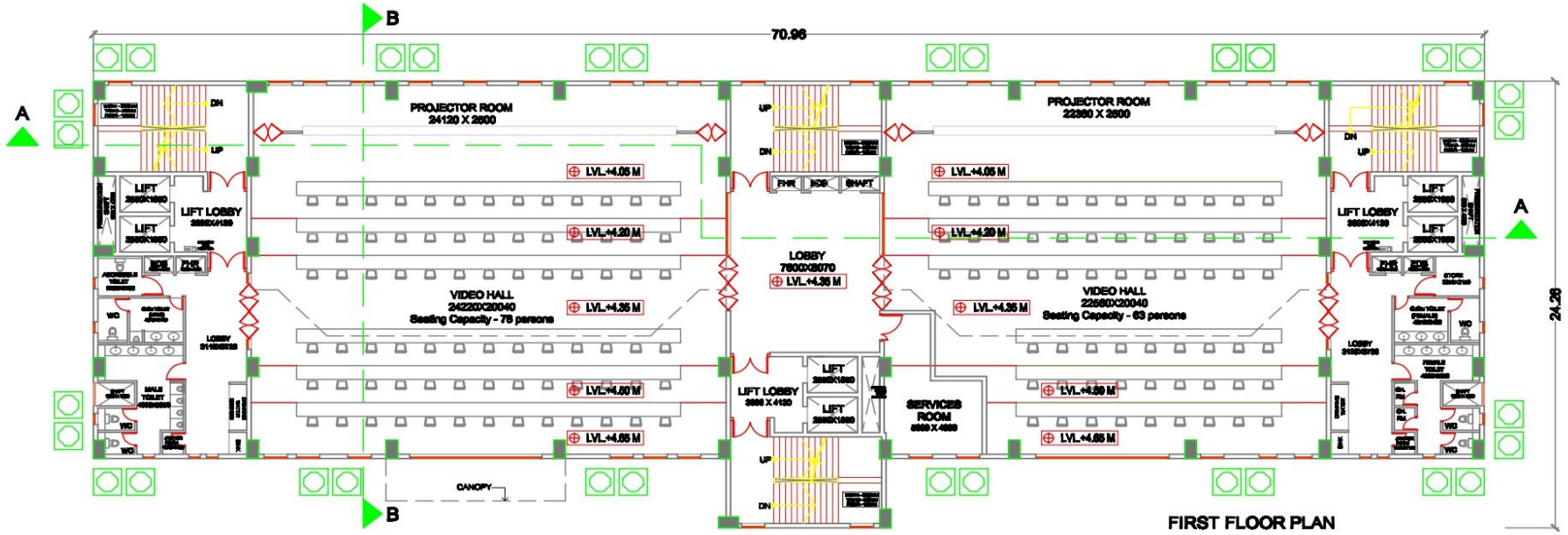

SCHOOL OF ARCHITECTURE AND PLANNING, BBDU.

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SUBJECT CODE	MAR-202P	SCALE	
SUBMITTED BY	SHREE NATH		
ROLL NO.	1200109012	YEAR 3th YEAR	MASTER OF ARCHCHITECTURE (PART TIME)

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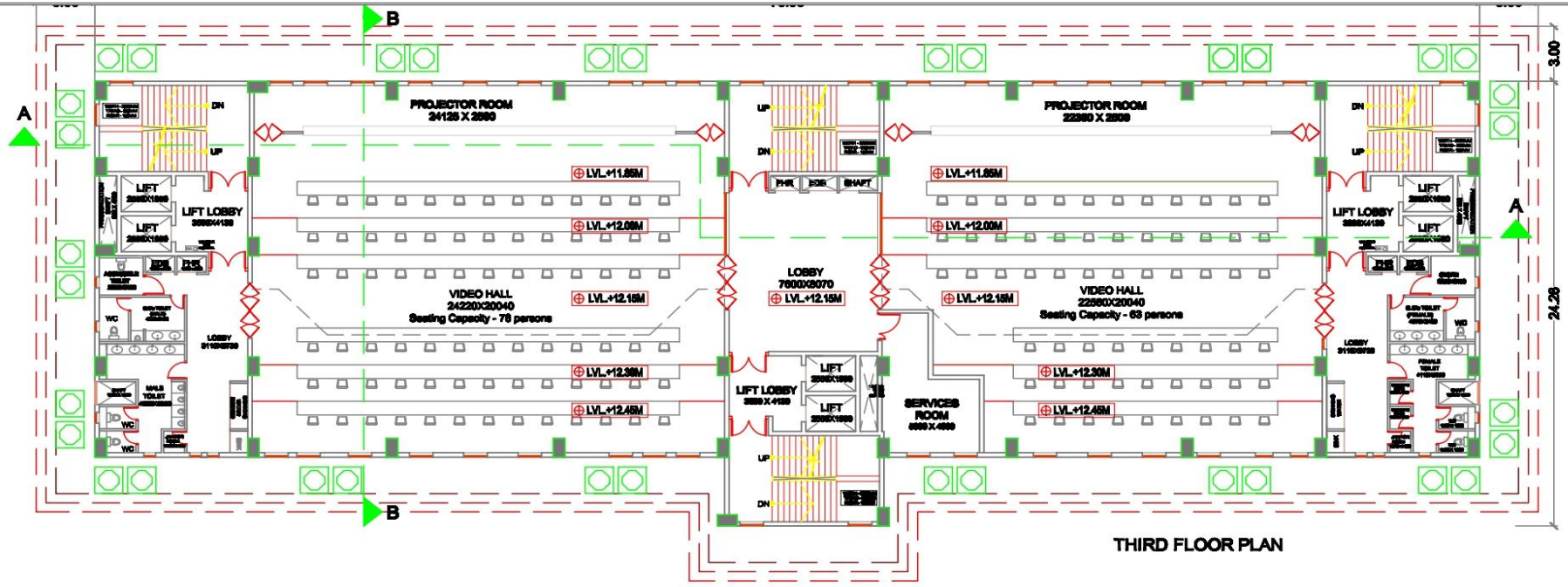
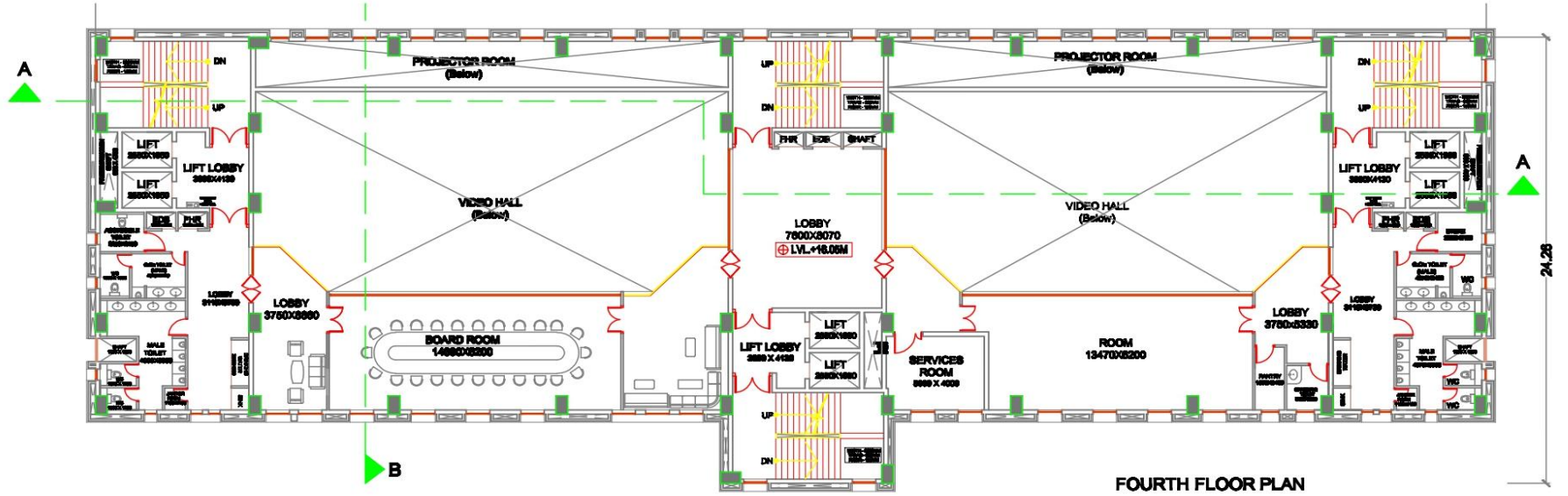


THIRD FLOOR PLAN



FOURTH FLOOR PLAN

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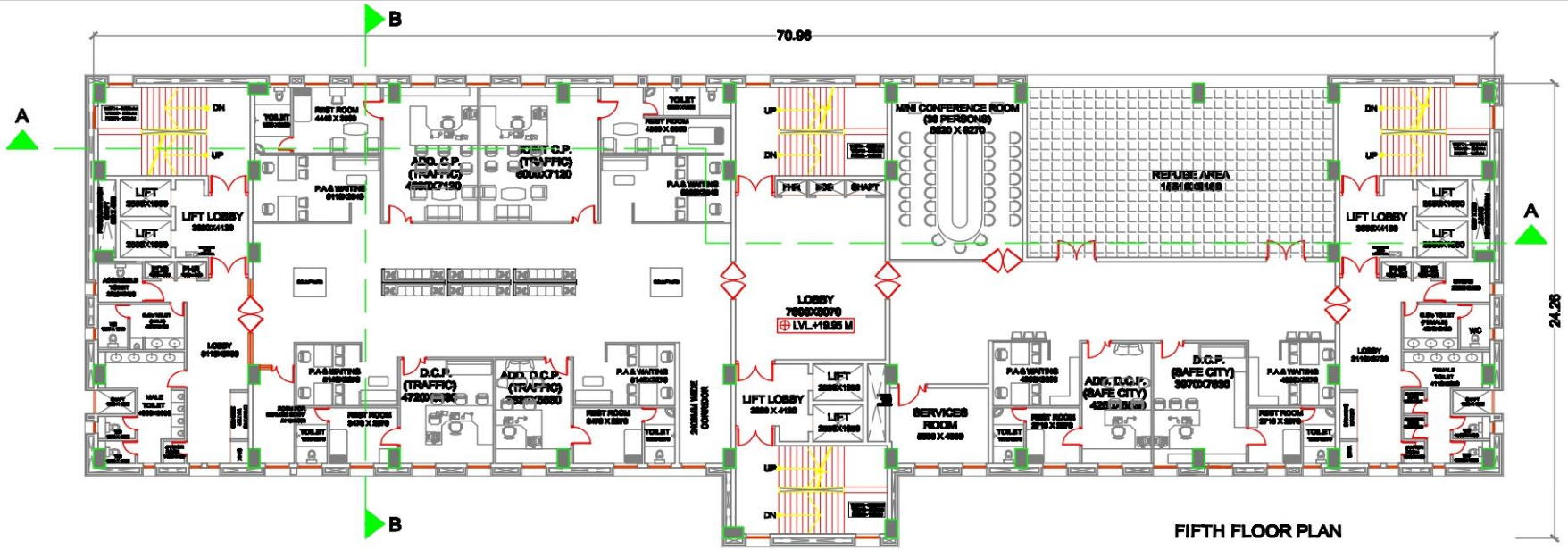
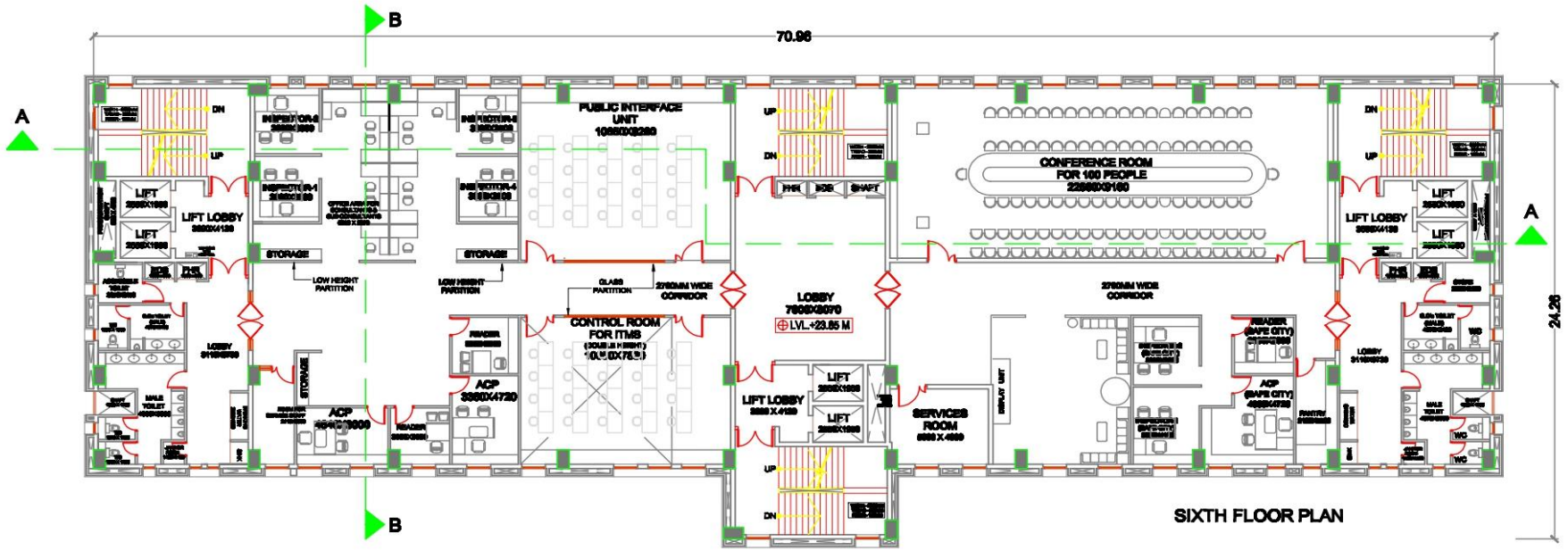
ASSIGNMENT: PROPOSED BUILDING FOR INTELLIGENT MANAGEMENT TRAFFIC SYSTEM (ITMS) PROJECT OFFICE AT PUSA TODAPUR, NEW DELHI	SUBJECT CODE: MAR-202P	SCALE	GUIDE NAME: Ar. SHAILESH YADAV
	SUBMITTED BY: SHREE NATH	NORTH	DISSERTATION-II COORDINATOR: Ar. KESHAV KUMAR & Ar. SAURABH SAXENA
	ROLL NO.: 1200109012 / YEAR: 3th YEAR / MASTER OF ARCHCHITECTURE (PART TIME)		





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ASSIGNMENT: **PROPOSED BUILDING FOR INTELLIGENT MANAGEMENT TRAFFIC SYSTEM (ITMS) PROJECT OFFICE AT PUSA TODAPUR, NEW DELHI**	SUBJECT CODE: MAR-202P	SCALE	DATE OF INTRODUCTION: JUNE 2023
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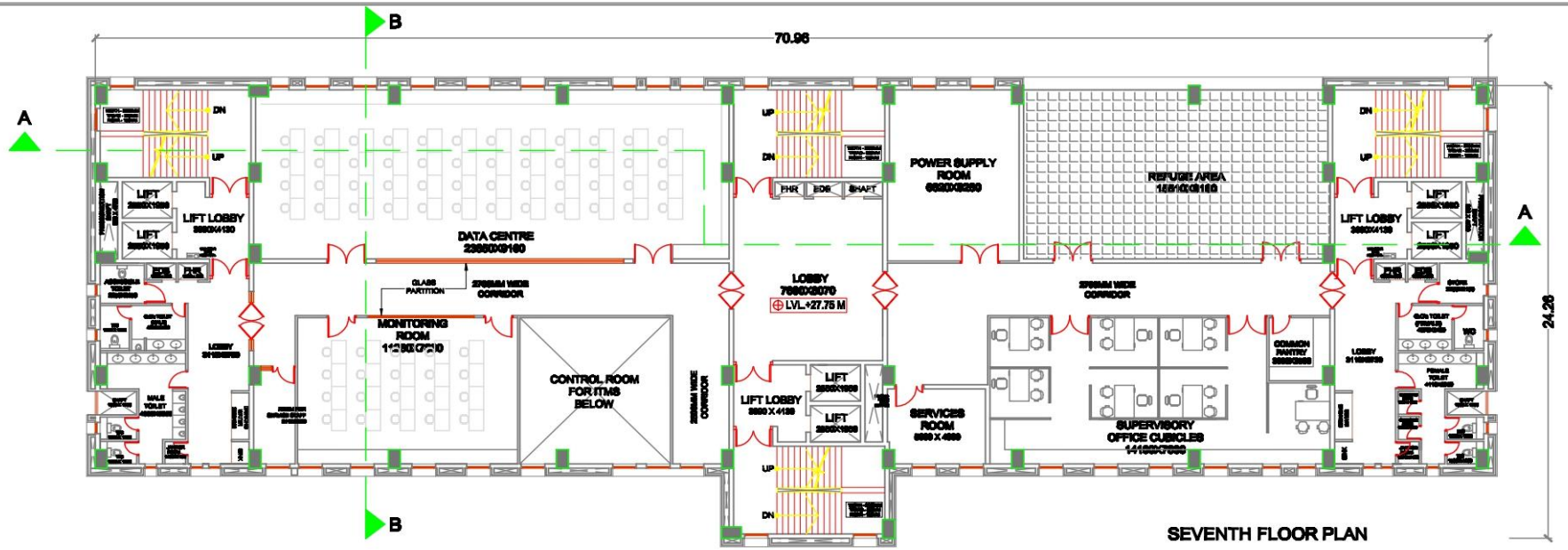
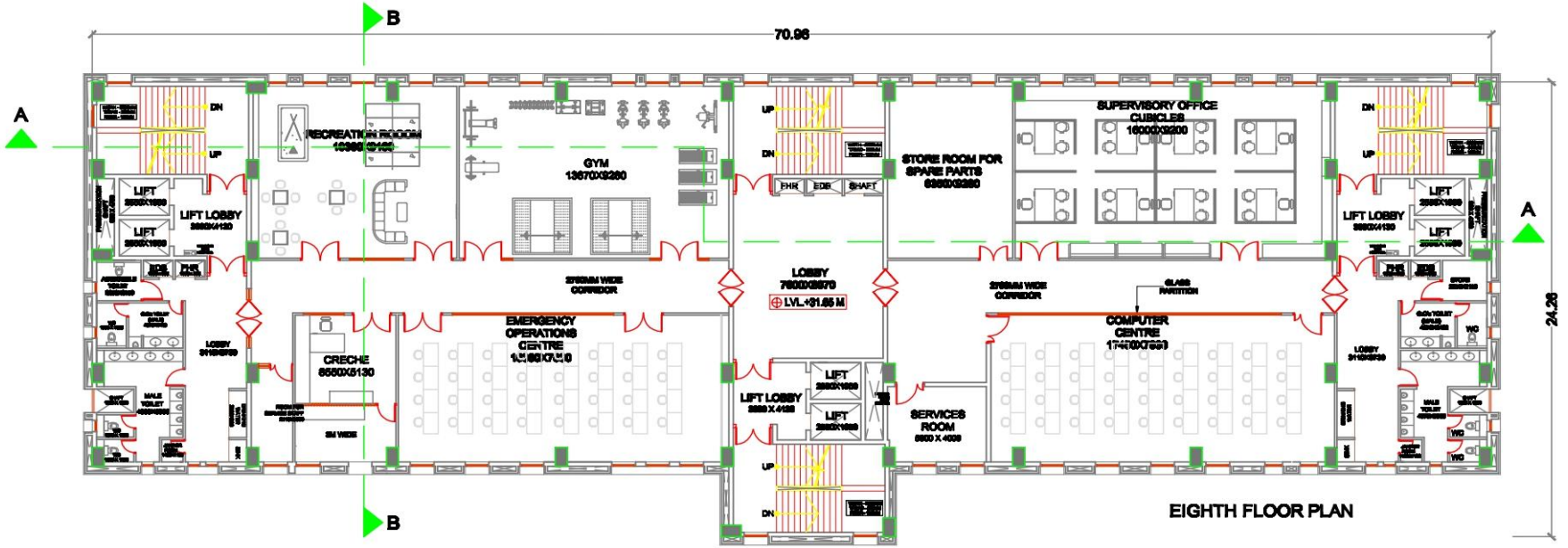
			DISSERTATION-II COORDINATOR: Ar. KESHAV KUMAR & Ar. SAURABH SAXENA



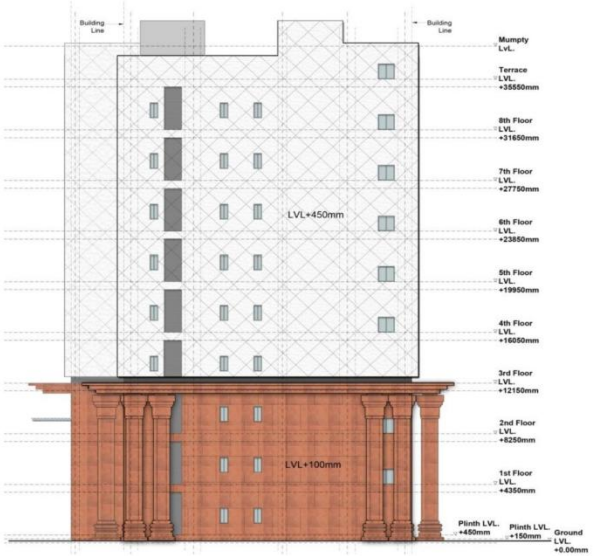
SEVENTH FLOOR PLAN



EIGHTH FLOOR PLAN

SCHOOL OF ARCHITECTURE AND PLANNING, BBDU.	SUBJECT: DISSERTATION-II	FLOOR PLANS	NORTH
ASSIGNMENT: PROPOSED BUILDING FOR INTELLIGENT MANAGEMENT TRAFFIC SYSTEM (ITMS) PROJECT OFFICE AT PUSA TODAPUR, NEW DELHI	SUBJECT CODE: MAR-202P	SCALE	DATE OF INTRODUCTION: JUNE 2023
	SUBMITTED BY: SHREE NATH		GUIDE NAME: Ar. SHAILESH YADAV
	ROLL NO.: 1200109012	YEAR: 3th YEAR	MASTER OF ARCHCHITECTURE (PART TIME)
			DISSERTATION-II COORDINATOR: Ar. KESHAV KUMAR & Ar. SAURABH SAXENA

FRONT ELEVATION



RIGHT ELEVATION

REAR ELEVATION

LEFT ELEVATION

SCHOOL OF ARCHITECTURE AND PLANNING, BBDU.	SUBJECT: DISSERTATION-II	**ELEVATIONS**	NORTH
ASSIGNMENT: PROPOSED BUILDING FOR INTELLIGENT MANAGEMENT TRAFFIC SYSTEM (ITMS) PROJECT OFFICE AT PUSA TODAPUR, NEW DELHI	SUBJECT CODE: MAR-202P	SCALE	DATE OF INTRODUCTION: JUNE 2023
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SECTION AT- XX'

SECTION AT- YY'

SCHOOL OF ARCHITECTURE AND PLANNING, BBDU.	SUBJECT: DISSERTATION-II	SECTIONS	NORTH
ASSIGNMENT PROPOSED BUILDING FOR INTELLIGENT MANAGEMENT TRAFFIC SYSTEM (ITMS) PROJECT OFFICE AT PUSA TODAPUR, NEW DELHI	SUBJECT CODE: MAR-202P	SCALE	DATE OF INTRODUCTION JUNE 2023
	SUBMITTED BY: SHREE NATH		GUIDE NAME Ar. SHAILESH YADAV
	ROLL NO. 1200109012 / YEAR 3th YEAR	MASTER OF ARCHCHITECTURE (PART TIME)	DISSERTATION-II COORDINATOR Ar. KESHAV KUMAR & Ar. SAURABH SAXENA

SCHOOL OF ARCHITECTURE AND PLANNING, BBDU.

ASSIGNMENT

PROPOSED BUILDING FOR INTELLIGENT MANAGEMENT TRAFFIC SYSTEM (ITMS) PROJECT OFFICE AT PUSA TODAPUR, NEW DELHI

SUBJECT	DISSERTATION-II	3D VIEW	
SUBJECT CODE	MAR-202P	SCALE	
SUBMITTED BY	SHREE NATH		
ROLL NO.	1200109012	YEAR 3th YEAR	MASTER OF ARCHCHITECTURE (PART TIME)

NORTH

DATE OF INTRODUCTION
JUNE 2023

GUIDE NAME
Ar. SHAILESH YADAV

DISSERTATION-II COORDINATOR
Ar. KESHAV KUMAR &
Ar. SAURABH SAXENA