



THESIS REPORT ON  
**“Smart-Sky Residences:  
Elevating High-Rise Living in Lucknow.”**

A THESIS SUBMITTED  
IN PARTIAL FULFILLMENT OF THE REQUIREMENT  
FOR THE DEGREE OF

**BACHELOR OF ARCHITECTURE**

BY  
**GAURAV PANDEY**  
**(1190101012)**

THESIS GUIDE  
**AR. ANKUR SAXENA**

SESSION  
2023-24

TO THE  
SCHOOL OF ARCHITECTURE AND PLANNING  
BABU BANARASI DAS UNIVERSITY  
LUCKNOW.



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**SCHOOL OF ARCHITECTURE AND PLANNING  
BABU BANARASI DAS UNIVERSITY, LUCKNOW (U.P.).**

**CERTIFICATE**

I hereby recommend that the thesis entitled “Smart-Sky Residences: Elevating High-Rise Living in Lucknow.” under the supervision, is the bonafide work of the student and can be accepted as partial fulfillment of the requirement for the degree of Bachelor’s degree in architecture, School of Architecture and Planning, BBDU, Lucknow.

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## **ACKNOWLEDGEMENT**

FIRST AND FOREMOST, GRATITUDE TOWARDS THE ALMIGHTY GOD FOR HIS BLESSINGS.

I AM GRATEFUL TO ALL OF MY FACULTY COLLEAGUES, ESPECIALLY **PROF. SANGEETA SHARMA (HOD)** AND **PROF. MOHIT AGARWAL (DEAN)**, WHO HAVE BEEN INCREDIBLY COOPERATIVE FROM THE START AND HAVE ENABLED ME TO FULLY UTILIZE MY ABILITIES AND CREATIVITY.

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I WANT TO EXPRESS MY GRATITUDE TO ALL OF MY FRIENDS FOR THEIR SUPPORT WHILE WRITING MY THESIS. THEY'VE ALL MADE A CONTRIBUTION, AND I WILL ALWAYS TREASURE THE TIME I SPENT WITH THEM.

I AM APPRECIATIVE OF ALL THE STAFF AT THE BBDU SCHOOL OF ARCHITECTURE AND PLANNING FOR THEIR COLLABORATIVE AND ENCOURAGING WORK ENVIRONMENT, WHICH GREATLY AIDED IN THE ACCOMPLISHMENT OF THIS RESEARCH PROJECT.

THANK YOU TO EVERYONE WHO PLAYED A ROLE IN THIS PROJECT, MAKING IT A REWARDING AND ENRICHING EXPERIENCE.

**- GAURAV PANDEY**

## SCOPE AND LIMITATION

- THE SCOPE TO STUDY COLLEGE OF ARCHITECTURE WOULD BE LIMITED TO THE STUDY OF VARIOUS DEPARTMENTS OF ARCHITECTURE AND PLANNING DEPARTMENT AT UNDERGRADUATE AS WELL AS POST GRADUATE LEVEL.
- IT WOULD INCLUDE THE CURRICULUM OF PLANNING FOR THE DEGREE OF B.ARCH.
- IT WOULD INCLUDE THE CURRICULUM FOR MASTER IN ARCHITECTURE FOR A DEGREE OF M.ARCH. IN VARIOUS DEPARTMENT

## METHODOLOGY

- SITE ANALYSIS
- SITE & SURROUNDINGS
- SITE CLIMATE
- CASE STUDY
- LITERATURE STUDY
- AREA ANALYSIS
- STANDARD SHEET
- CONCEPT SHEET
- DESIGN
- ELECTIVE
- VIEW

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# SYNOPSIS



## **1. INTRODUCTION OF THE PROJECT-**

This project, titled "Smart-Sky Residences: Elevating High-Rise Living in Lucknow," explores the concept of resilient design strategies for smart group housing buildings. It acknowledges the crucial role architecture plays in creating sustainable and adaptable living environments, especially in an era defined by climate uncertainties and rapid technological advancements.

The core of this research lies in effectively implementing a combination of resilient design principles and smart technologies. This approach aims to foster the development of robust and intelligent group housing buildings in Lucknow, ultimately elevating the quality of life for its residents.

### **1.1 AIM-**

To design a Smart High-rise apartments.

To analyzing the term Smart building & the constraints/ challenges developed by the unique context of the land selected and design luxury based residential complex.

### **1.2 OBJECTIVES-**

- Kisan Path a developing Area of Lucknow, offering a Large scope of Variety of Projects.
- The site falls under Mixed-use Category of Land, running along the Indira Canal giving the scope of SMART Highrise group housing project with a landscape belt.
- Studying the Bye-laws of the area, designing with its accordance and analyzing the requirements of projects WRT site and land use.
- Analyzing, using new design techniques, compact Development.
- Analyzation of Luxury design principles.



### **1.3 SCOPE OF THE STUDY-**

- Analyzing SMART BUILDING as a concept in regards with architecture and designing and designing the space in accordance with the needs of Higher end of Society.
- Designing while making sure to get maximum Water Facing apartments.
- Understanding the Context of Land, its Complexities and designing accordingly.
- Developing required set of drawings to cater all the needs of the project.
- To design spaces which bring closer to nature and harmony.

### **1.4 LIMITATIONS-**

- The land comes under the mixed-use category, hence, 5% of total Site area needs to be consumed by commercial complex, which will be designed as a part of this thesis.
  - A certain portion of land has to be used for landscaping as it falls under the **GREEN BELT** area as proposed in master Plan.
  - Limiting the site development/ designing only upto 9.6 Acres in Lucknow.
  - Since the place is in a developing state, there are no market places hence a commercial needs to be designed catering the needs of the residents.
  - Not all apartments will be river facing.

## **1.5 METHODOLOGY-**

### **IDENTIFICATION OF TOPIC**

- Brief understanding of the topic selected
- Defining the aim and objectives of the project.
- Listing down the attributes and challenges of the project.

### **THEORETICAL STUDIES**

### **LITERATURE STUDY-**

- Design standards and guidelines
- Study of bye-laws and specialized services.

### **CASE STUDY-**

- Selection of study
- Live case study.

### **SITE ANALYSIS**

- Study of climatic data.
- Sun path and orientation.
- Site surroundings.
- Geographical study of site.

### **INFERENCES**

- Extracting inferences from literature study, case study and site study.

### **REQUIREMENTS FORMULATION**

- Formation of a project brief that includes detailed requirements of the project.
- Area calculations of all the spaces that have to be incorporated in the project.

### **INITIAL DESIGN STAGES**

- Site zoning
- Design brief
- Area statement
- Concept.

## **1.6 RELEVATION OF CONCEPT WITH SMART BUILDING -**

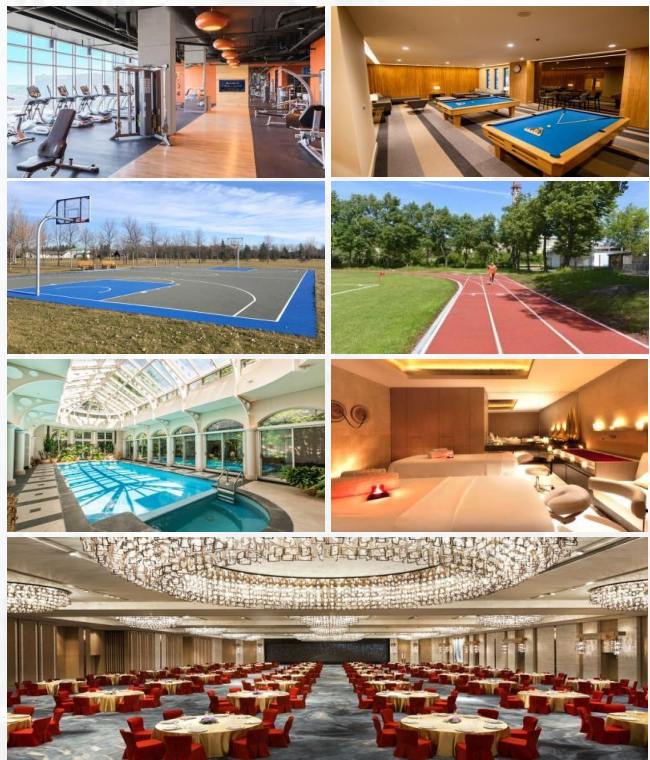
- COMFORT: ADVANCED HVAC AND AUTOMATED SYSTEMS ENHANCE LIVING COMFORT.
- ECO-FRIENDLY LUXURY: USE OF GREEN MATERIALS AND ENERGY-EFFICIENT SYSTEMS.
- SPACE AND LIGHT: INTELLIGENT LIGHTING AND ADAPTABLE LAYOUTS OPTIMIZE SPACE AND AMBIANCE.
- POSITIVE BUILDING IMPACT: SMART TECH IMPROVES ENERGY, WATER MANAGEMENT, AND SUSTAINABILITY.

## **1.7 AMENITIES FOR GROUP HOUSING-**

A Highrise apartment is a type of apartment that is intended to provide its occupant with higher-than average or some exceptional levels of comfort, quality and convenience.

Some of the amenities may include-

- Banquet hall
- Club house
- Gymnasium
- Kids play area
- Outdoor games
- Indoor games
- Jogging track
- Swimming pool
- Steam & Sauna room
- Spa
- Meeting room
- Café
- Fields & courts
- Advance security
- Theater
- Health club
- BBQ area
- Games room
- On site Restaurant
- On site retail spaces
- On site medical clinic
- On site super market



# **CHAPTER 02**

# **SITE ANALYSIS**



## 1. INTRODUCTION TO THE SITE-

Context of site with respect to the Project-

The site is a 9.6 acre plot, which is an ample area for a luxurious housing project with numerous high-end amenities and luxuries.

It is mixed use land as per Land use plan of Lucknow. The project proposed is a Smart Highrise group housing.

How does my site justify the project-

- Site lies on the main highway- Outer Ring road Kisan Path which is a developing area of Lucknow and 100+ projects like housing, hotels etc. are being planned.
- A 50 m wide Indira canal flows along the site giving the possibility of some beautiful water facing apartments.

**Smart Sky Residences, Lucknow**

**PLOT AREA-** 9.6 Acres

**GROUND COVERAGE-** 30%

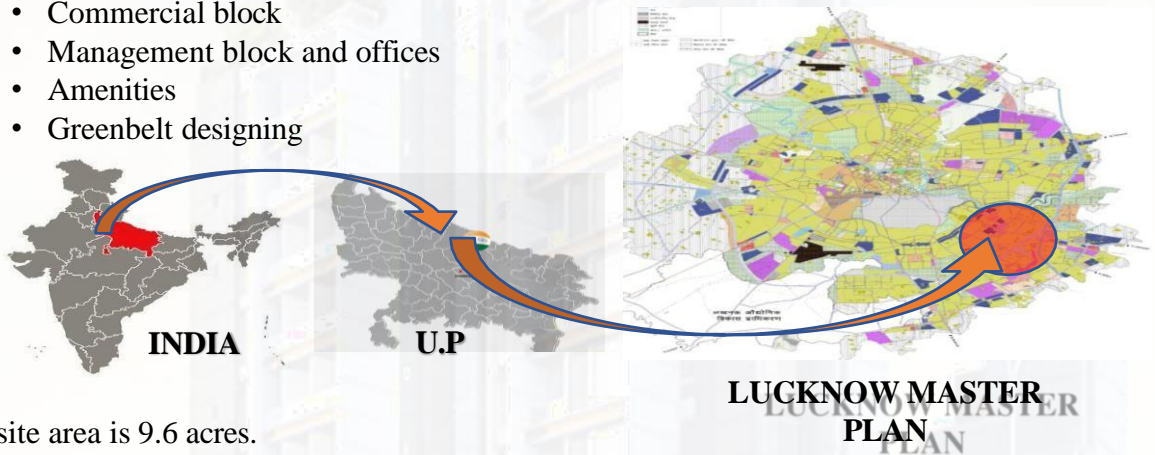
**F.A.R. - 2.5**

**SETBACKS-** 16m from each side, 50m greenbelt area from front.

**LOCATION OF PROJECT-** Outer Ring road Kisan Path, Near Malookpur Dhakwa

**FUNCTIONAL AREAS/BLOCK-**

- Residential Block
- Commercial block
- Management block and offices
- Amenities
- Greenbelt designing



The site area is 9.6 acres.

FAR- 2.5

Site location-







## **LAND USE PLAN-**

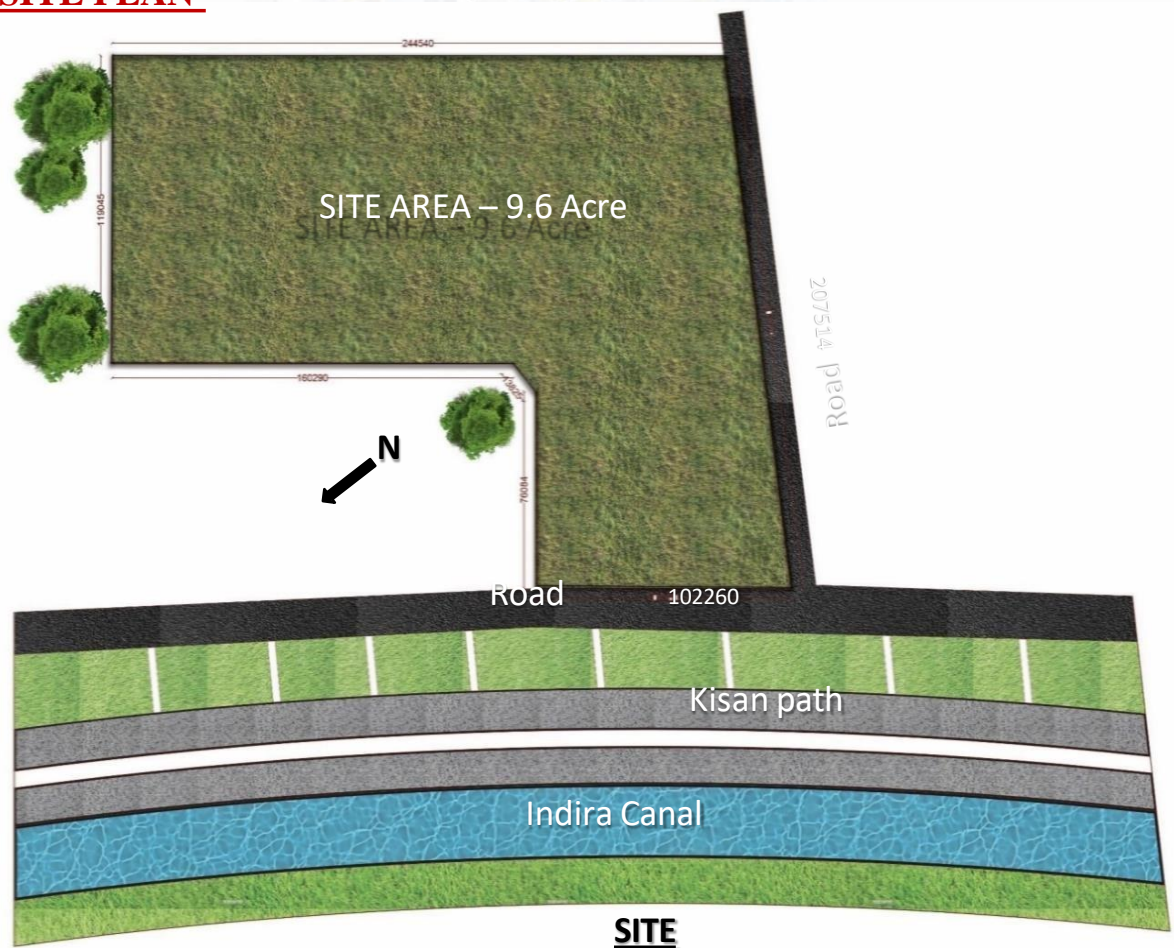
The site lies in Mixed use category 2 Land use as per the Lucknow masterplan 2031.

This land use gives the possibility of a Highrise mixed use residential complex along with 10% of the total site area specified for commercial block.

Situated along the main highway with a 50 m wide Indira canal running along the road.

50 m Wide Greenbelt needs to be designed as per the Masterplan 2021 and 2031.

## **2.2 SITE PLAN-**

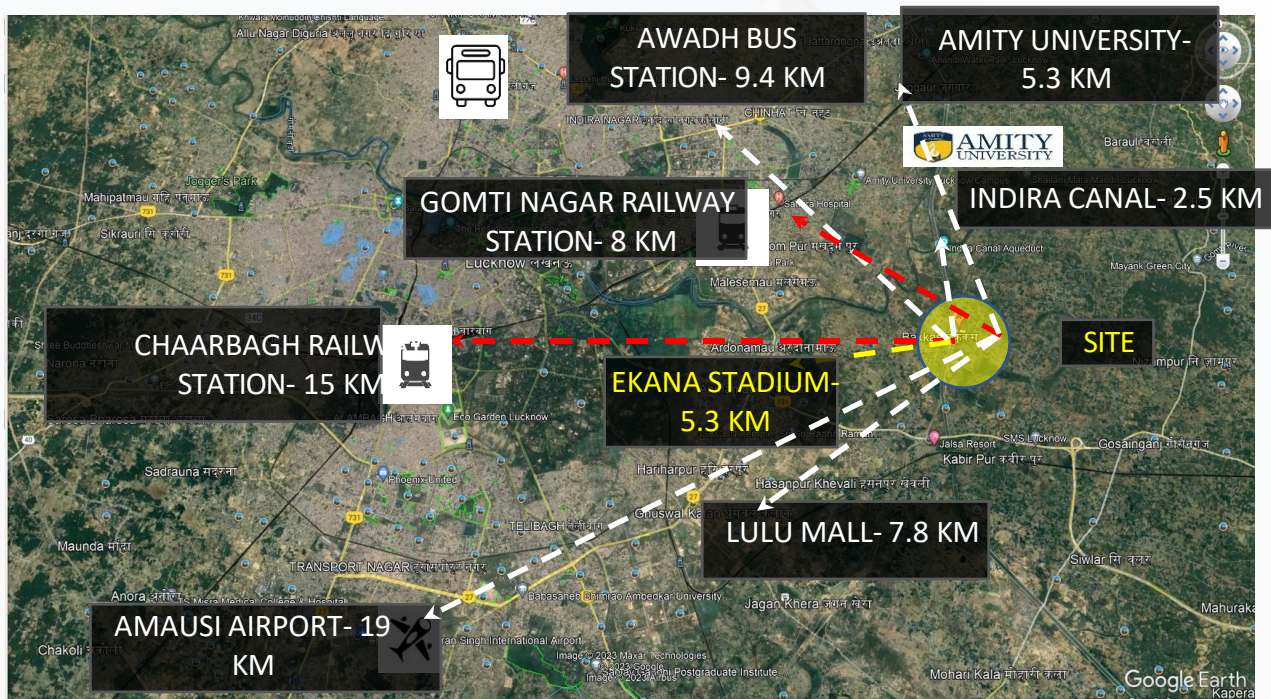


## **2.3 SITE LOCATION-**

- The site is located along the Outer Ring road of Lucknow known as Kisan Path.
- Kisan path is a hotspot for upcoming and fully developed projects. The area is well connected and has many residential properties around 100+ properties with a total budget of 800 cr.
- Kisan path is directly accessible via- NH24A, NH28, NH56, NH58
- Other connecting roads- Lucknow Sultanpur road, Amar Shaheed path, Kisan path has 2 lanes with 1 service lane
- (Provision for 1 more lane in future)



## 2.4 SITE ACCESSIBILITY-

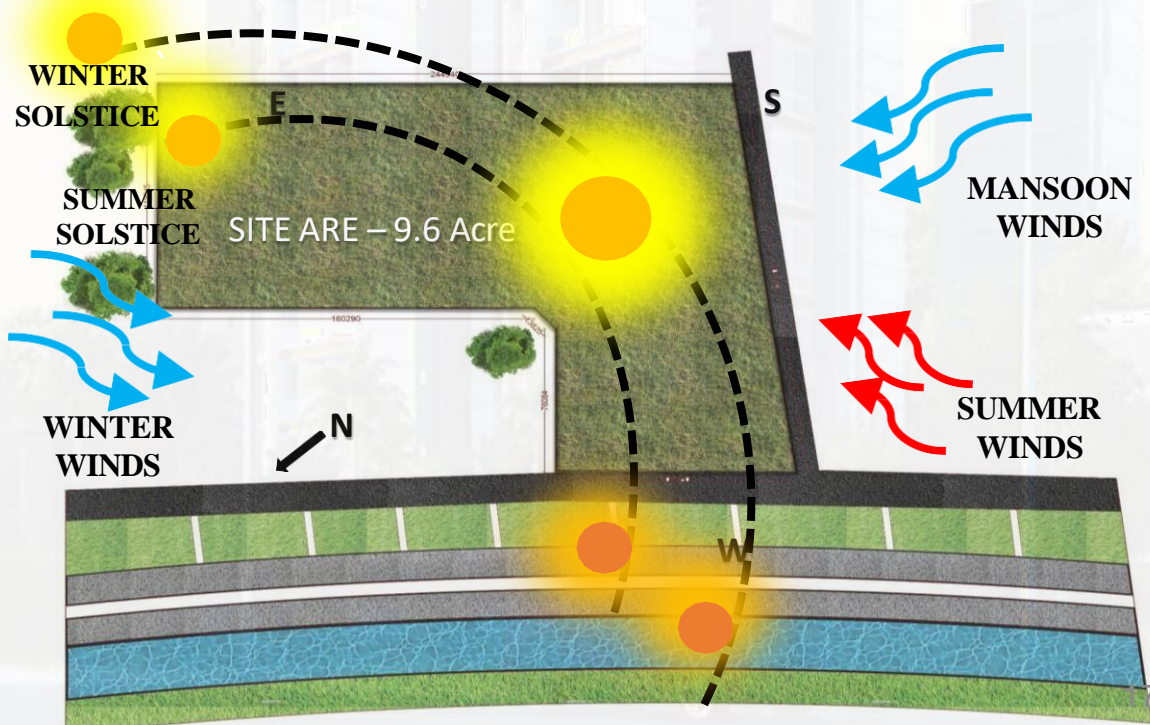


Awadh bus station- 9.4 km  
Gomti Nagar railway station- 8 km  
Charbagh Railway station- 15 km  
Ekana stadium- 5.3 km

Amausi Airport- 19 km  
Amity University- 5.3 km  
Indira Canal- 2.5 km  
Lulu Mall- 7.8 km

## 2.5 SUN PATH AND WIND ANALYSIS-

- In a hot and humid climate, the orientation of the building should be along the long axes in the east-west direction.
- Water body may be provided in order to cool down the Warm Summer Winds.
- Building blocks



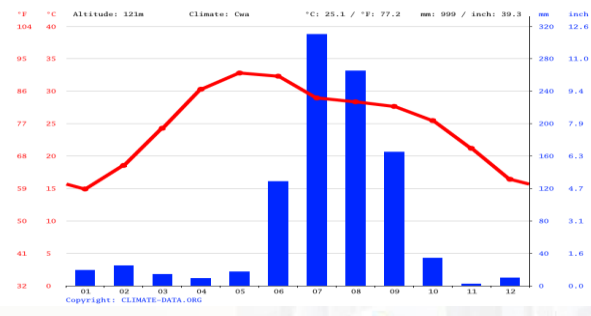
SUN-PATH DIAGRAM-

The diagrams normally comprises of 8, 16 or 32 radiating spokes, which represent wind direction in terms of the cardinal wind directions ( North East South West ) and their intermediate directions. Meteorologist wind rose diagrams to summarize the distribution of wind speed and direction over a defined observation period. Lucknow comes under zone 3 -44-47 m/s (Damage risk zone)

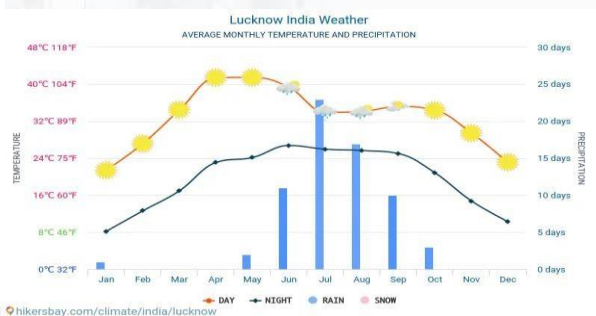
2.6 CLIMATE ANALYSIS-

- Temperature Warm & Humid Sub-Tropical Climate, with cool dry Winters. Lucknow's location is responsible for its diverse weather patterns.
- The climate here is mild, and generally warm and temperate. In winter, there is much less rainfall than in summer.
- Temperature in Lucknow is 25.1 °C I 77.2 °F
- Precipitation here is about 999 mm I 39.3 inch per year.
- Precipitation is the lowest in November, with an average of 2 mm, 0.1 inch. most precipitation falls in July, with an average of 310 mm, 12.2 inch.

CLIMATE GRAPH-WEATHER BY MONTH



CLIMATE GRAPH-WEATHER BY MONTH



- **RAINFALL-** Rainy Season from Mid-June to Mid-Sep.
- Avg- 999 – 1010 mm (39.3 – 40 in)
- South-west Monsoon winds.

WEATHER AVERAGE LUCKNOW

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	14.9 °C (58.9) °F	18.6 °C (65.4) °F	24.3 °C (75.7) °F	30.3 °C (86.6) °F	32.8 °C (91.1) °F	32.3 °C (90.2) °F	29 °C (84.1) °F	28.4 °C (83.1) °F	27.7 °C (81.8) °F	25.5 °C (77.9) °F	21.2 °C (70.1) °F	16.4 °C (61.6) °F
Min. Temperature °C (°F)	9.1 °C (48.3) °F	12.2 °C (54) °F	16.9 °C (62.4) °F	22.6 °C (72.6) °F	26.1 °C (78.9) °F	27.5 °C (81.5) °F	26.2 °C (79.2) °F	25.8 °C (78.4) °F	24.5 °C (76.2) °F	20 °C (68) °F	14.9 °C (58.8) °F	10.3 °C (50.6) °F
Max. Temperature °C (°F)	21.3 °C (70.3) °F	25.2 °C (77.4) °F	31.5 °C (88.8) °F	37.7 °C (99.9) °F	39.2 °C (102.6) °F	37.1 °C (98.9) °F	32.3 °C (90.2) °F	31.7 °C (89) °F	31.4 °C (88.5) °F	31.1 °C (88) °F	27.7 °C (81.9) °F	23.1 °C (73.5) °F
Precipitation / Rainfall mm (in)	19 (0)	25 (0)	14 (0)	9 (0)	17 (0)	129 (5)	310 (12)	265 (10)	165 (6)	34 (1)	2 (0)	10 (0)
Humidity(%)	67%	60%	44%	30%	38%	54%	79%	82%	80%	66%	58%	64%
Rainy days (d)	2	2	2	2	3	8	18	18	13	2	0	1
avg. Sun hours (hours)	8.4	9.6	10.6	11.5	11.9	10.7	8.4	8.0	8.4	9.6	9.6	9.0

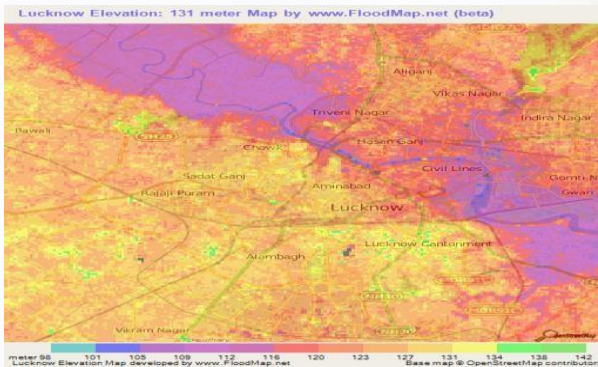
- The average temperatures vary during the year by 17.9 °C I 32.3 °F.
- The month with the **HIGHEST RELATIVE HUMADITY** is August (81.82%)
- The month with the **LOWEST RELATIVE HUMADITY** is April (29.59%)
- Between the driest and wettest months, the difference is precipitation is 308 mm I 12 inch



## 2.7 TOPOGRAPHICAL ANALYSIS-

Lucknow is Capital of Uttar Pradesh , located between 26.30 & 27.0 N & 80.30 & 81.13E, altitude approximately 128m from sea level.

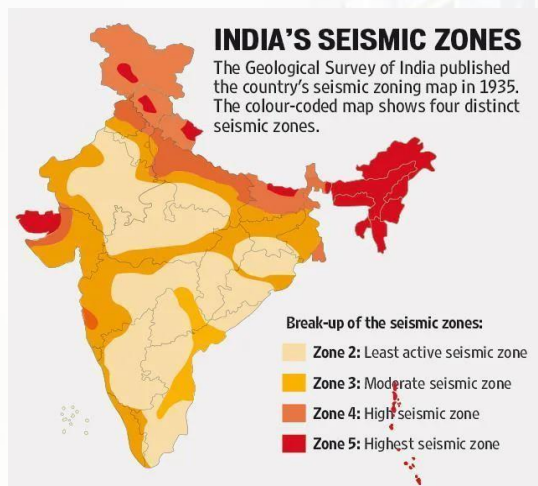
### LUCKNOW TOPOGRAPHIC MAP



The city stands at an elevation of approximately 123 m (404 ft.) above sea level.

- Minimum Elevation - 106m
- Maximum Elevation - 161m
- Average Elevation - 123m.

## 2.8 SEISMIC ANALYSIS-



India has been divided into 5 major seismic Zones according to the intensity & frequency of earthquakes.

Lucknow comes under zone - 3 (moderate) according to its seismic activities hence building needs to be designed catering to structural needs of this specific seismic zone.

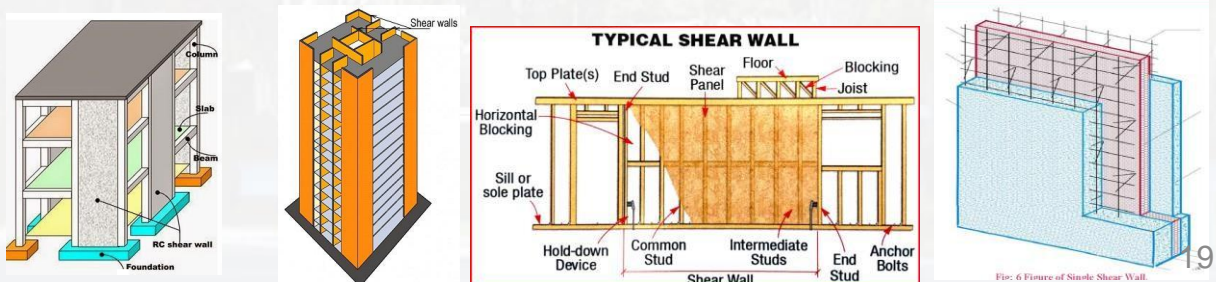
### PROPOSED STRUCTURE- Shear wall system

- I used SHEAR WALL in my High-Rise GROUP HOUSING.
- I also used mega columns (Vertical member) & Beam (Horizontal member) for provide a Lateral rigidity in order to with stand Wind Stresses.

It is continuous vertical wall constructed from reinforced concrete or masonry wall. Shear wall with stand both gravity and lateral loads, and it acts as narrow deep cantilever beam.

Shear wall system is a appropriate for hotel and residential building where the floor by floor repetitive planning allows the walls to be vertically continuous.

It may serve as excellent acoustic and fire insulators between rooms and apartments.



## 2.9 SITE LAND DETAILS-

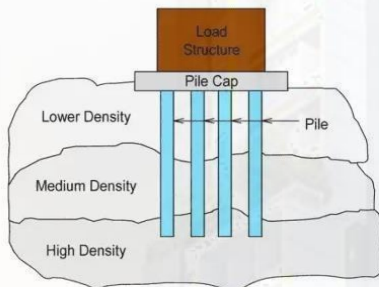
### 1. SOIL ANALYSIS

**Types of Soil-** Extremely fertile Alluvial soil in this specific region on Lucknow along Indira Canal. Those extremely fertile alluvial soils range from sandy to clayey loom.

**Types of Soil-** maximum load that a soil can bear per unit area (usually Tonnes per sq m.)  
Bearing capacity for Alluvial soil- **5-7.5 tonnes/m<sup>2</sup>**

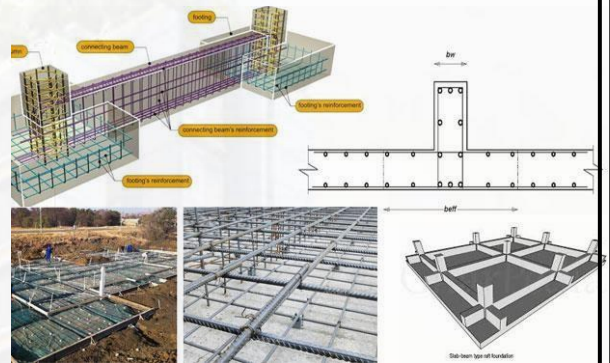
The commonly used foundation systems in alluvial deposits in the Indian scenario are:

- Raft foundation: Loads are transferred to the ground through a raft slab covering the whole footprint of the building.
- Pile foundations: Piles below the columns can transfer the loads to the deeper more competent stratum. The pile caps cast over each pile group are usually connected through a beam to give rigidity to the structure.
- Hybrid piles-raft system: This is an economical solution for tall building with high foundation loads.



#### **PILE FOUNDATION**

“ A pile foundation is defined as a series of columns constructed or inserted into the ground to transmit loads to a lower level of subsoil. ”



### 2.9.2 TOPOGRAPHY

- Site is a flat land. There are no contours on the site.
- There was a water pond within the site which has been cleared and being filled to level the ground.
- Site is 2 m below the main highway with a green belt slope leading towards the site.

### 2.9.3 VEGETATION

- The vegetation comprises of various bushes, wild grass, and trees.
- There is a dense plantation along the borders of main highway which comes under the green belt.
- Wild grass and weeds run throughout the site





## **10. SITE SERVICES-**

### **1. ELECTRICITY-**

- Electricity will be supplied through Goshaiganj power Grid.
- 2000 KV load to be sanctioned as per the proposal.
- 2 backup generators on site already present.

### **2.10.2 WATER SUPPLY-**

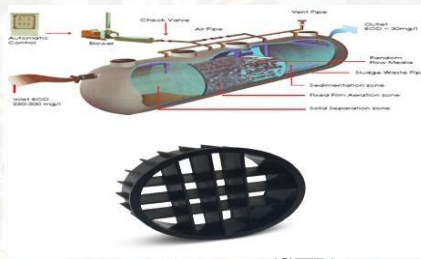
- No direct supply from government.
- Source of water supply therefore in Boring-2 nos. of borewells to be Dugged as per the project requirement to ensure 24 hours water supply.
- The system for water supply will be so that the pump runs for 8-10 hours and the supply is continuous.

### **2.10.3 DRAINAGE-**

- A Sub-Canal flows 100m from the Site which will be used for drainage at the time of construction.
- 15 meter SS Drainage Pump, max Flow Rate: 400 Lpm- used for dewatering the site.
- Sintex Sewage treatment Plant(STP)- used for drainage. It has therefore become imperative to evolve decentralized treatment system that take care of proper treatment and disposal of sewage.



Sintex Sewage Treatment  
Plant (STP)



(STP)

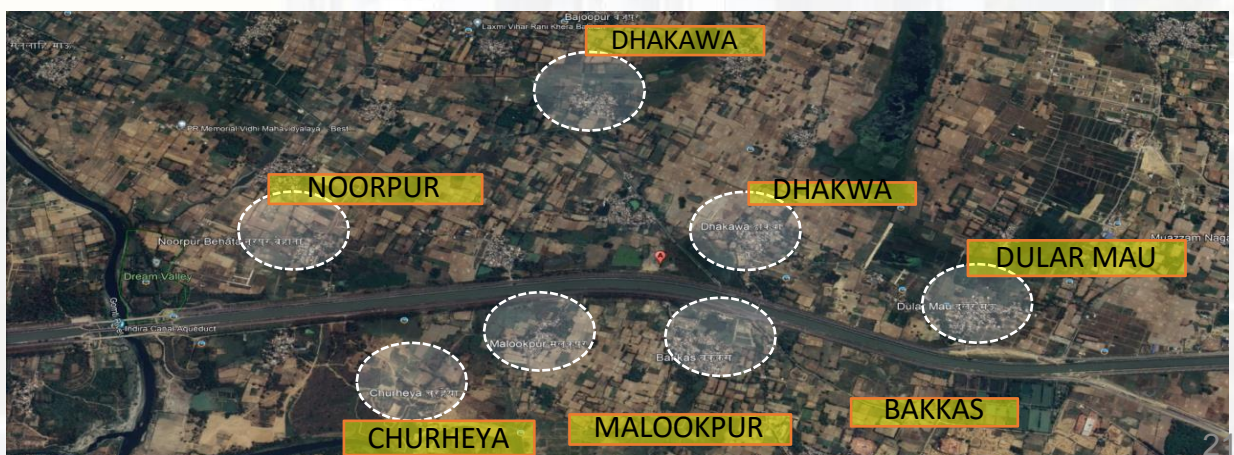


Drainage Pump

### **2.10.4 FIRE FIGHTING-**

- Nearest Fire station- Fire Station, Chinhat Tirai Road, Vastu Khand, Gomti Nagar.
- Distance from Site- 12 km
- Overhead Fire Tank and Underground Fire pump rooms will be made as per design progression.

### **2.11 SITE CONTEXT-**





Site is located on kisan path and has various villages around the site.  
The Kisan path Development project has various proposals for housings, however currently the lands are barren and there are numerous villages around the site.

- **MALOOKPUR - 650 M**
- **DHAKHAWA - 160 M**
- **BAKKAS - 400 M**
- **CHURHEYA - 1.7 KM**
- **NOORPUR - 2.1 KM**
- **INDIRA CANAL - 2.6 KM**

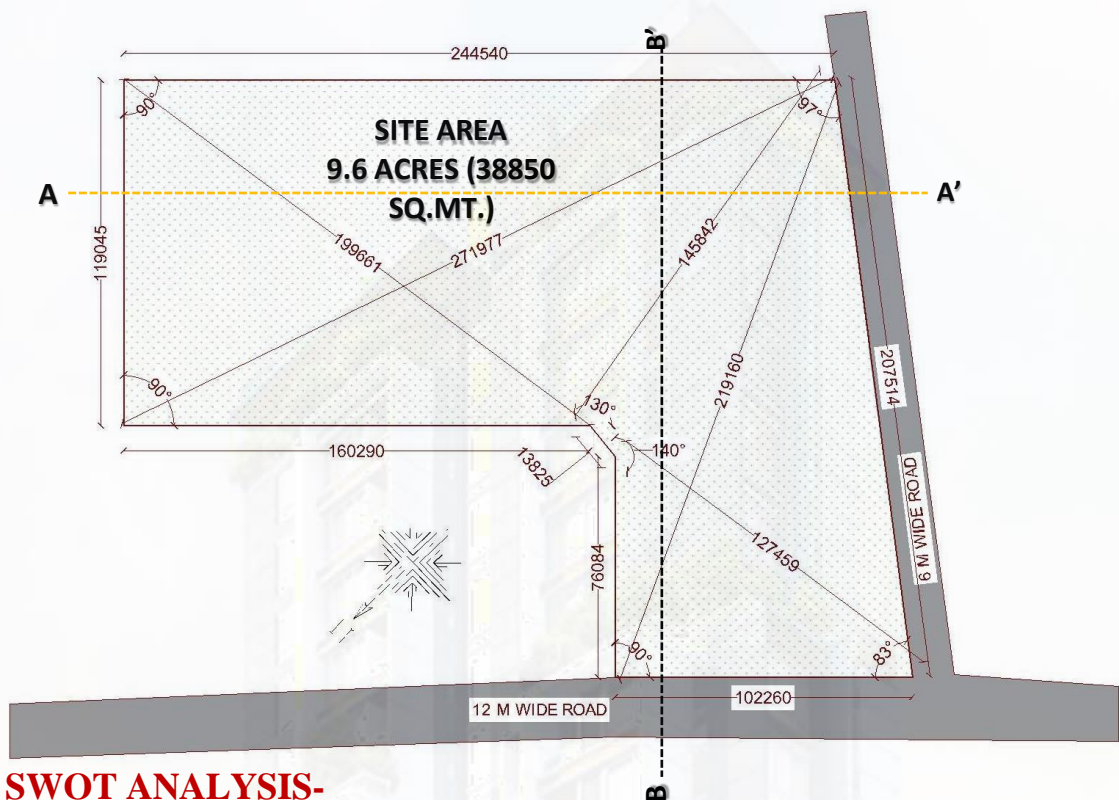
### **SITE SURROUNDINGS-**



### **2.12 SITE IMAGES-**



## SITE DIMENSIONS



### 2.13 SWOT ANALYSIS-

**S**

- Site lies on main highway, Approachable land.
- Well connected
- Low traffic density area
- Amity University, Ekana complex lie within 10 km radius.

**W**

- The site is far off from market-places. Nearest marketplace is Chinhat Market which is 12 km away from site.
- Waterlogging on site is a problem, Levelling of the site needs to be done
- Distant from heart of the city hence needs to be designed catering to all the issues.
- Site lies 2m below the main highway.

**O**

- It is a Developing area and hence provide Opportunities for new projects
  - The good road network and connectivity gives opportunities to new projects
  - The Indira Canal running along the site gives the Opportunity of beautiful Waterfacing views from apartment
- The area left for green belt has various Opportunities for development.

**T**

- Threats from canal overflowing in Monsoon
- If not designed properly the location can be a treat
- Needs to be designed keeping in mind the comfort and necessities of the residents.

## **2.14 INFERENCES-**

- Greenbelt should be designed so that it acts as the barrier for harsh Climate conditions.
- STP/ETP should be provided
- Since the land is Mixed-Use type-II according to the land use plan, 5% of the Total Site Area will be dedicated to Commercial.
- Since the site is distant from city heart and marketplaces, amenities should be designed so as to provide comfort to the residents.





## **CHAPTER - 03** **CASE STUDIES**

# 1. CASE STUDY - 01 ORANJE CASTLE GOMTI NAGAR, LUCKNOW

## INTRODUCTION

The Oranje Castle is a thoughtfully planned one, equipped with all amenities for a comfortable living. It is spread over a sprawling area of 7.2 Acre. The property comprises of 436 units which are enclosed within a peaceful environment.

A professionally conceptualized Residential property, this state-of-the art project is visually appealing. The available project units are in Under Construction state. The project boasts of a range of configurations viz Flat which are charming, yet durable. The property offers units in different configurations and sizes. This well-designed area has a total of 16 towers, each with its own benefit. 01 November 2015 is the project's launch date. The year and month of possession of this flat is December 2022.

The commencement certificate of Oranje Castle has been granted. The occupancy certificate of this planned project not granted. Oranje Castle is a high-quality yet affordable residential project by Suraj Infraventures. The Oranje Castle is equipped with all the modern facilities and amenities, such as Rain Water Harvesting, Kids Play Pool With Water Slides, Flower Gardens, Event Space & Amphitheatre, Piped Gas, Cafeteria/Food Court, Banquet Hall, Waste Disposal, Security, Park. Gomti Nagar Extension road, Lucknow. is the official address of this project.

## 1. ACCESSIBILITY-

- Panacea Hospital- 3 kms
- Phoenix Palladio- 3 kms
- Sai medical store- 3 kms
- Canara bank ATM- 3.4 kms
- Gomti Nagar electricity board- 3.4 kms
- St. Francis School- 4 kms
- Axis Bank- 4.2 kms
- Delhi Public School- 4.7 kms
- Indian Oil- 5.3 kms
- Janeshwar Mishra Park- 8.1 kms.



### 3.1.2 LOCATION-

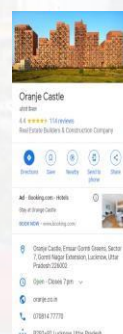
**Location:** Emaar Gomti Greens, Gomti Nagar Ext. (Shaheed Path), LKO **Landscape Design**

by Topotek 1 Germany

**Architect:** MVRDV Architects,  
Netherlands

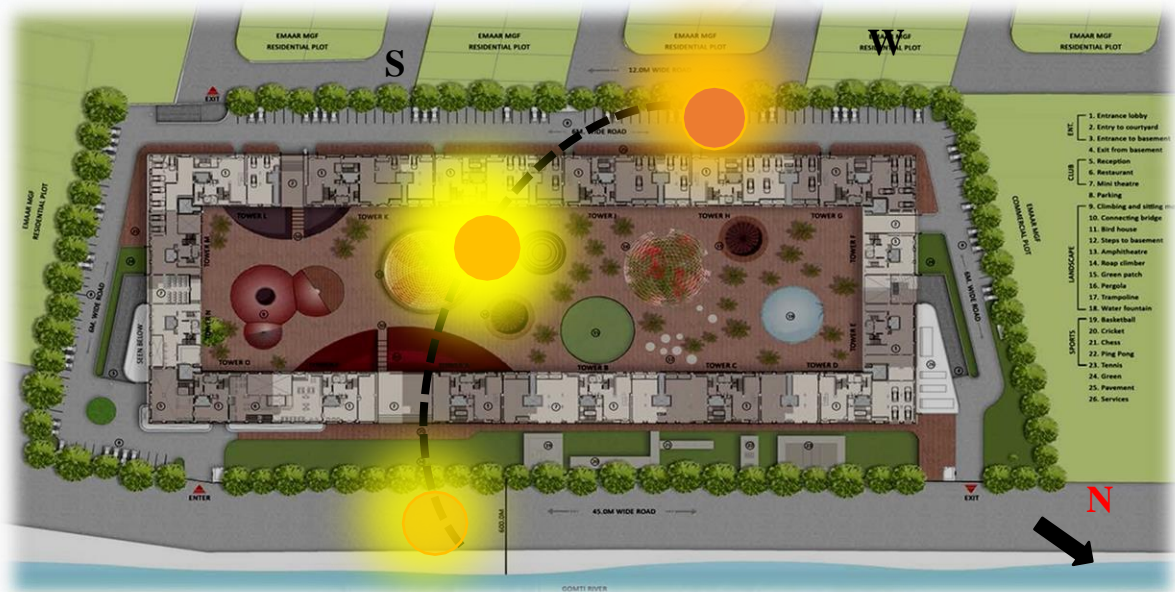
**Consultant:** Archohm Consults Pvt Ltd

**Structure Designer:** Shekhar Design Center





3.1.3 CLIMATE ANALYSIS-

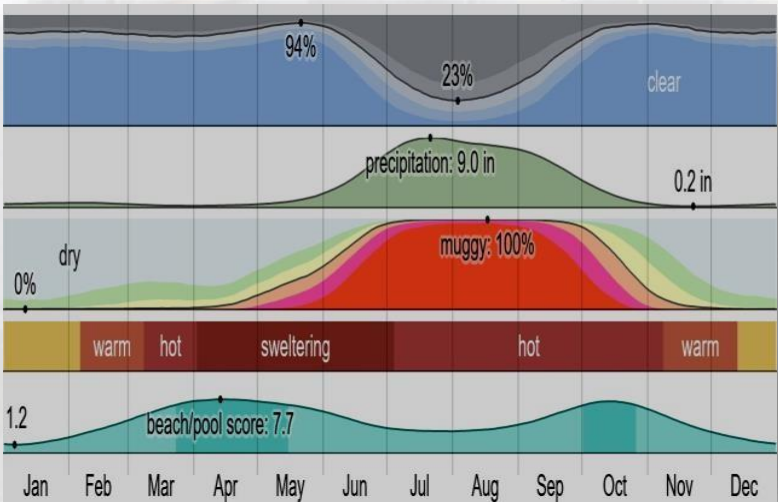


3.1.4 CLIMATE OF LUCKNOW-

- **Lucknow** has a Composite climate with cool, dry winters from mid-November to February and dry, hot summers with sunshine from March to mid-May.
  - The average temperatures vary during the year by 17.9 °C I 32.3 °F.
  - The month with the **LOWEST RELATIVE HUMADITY** is April (29.59%)
  - Between the driest and wettest months, the difference is precipitation is 308 mm I 12 inch
- The month with the **HIGHEST RELATIVE HUMADITY** is August (81.82%)

SITE DETAILS

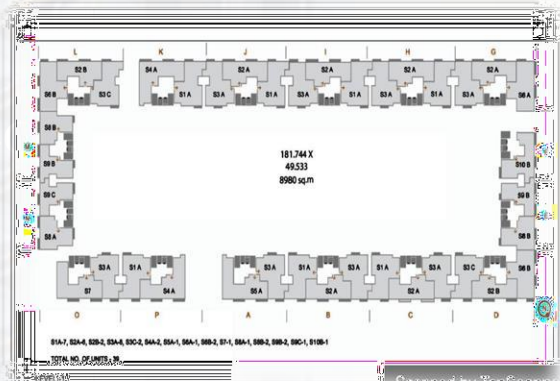
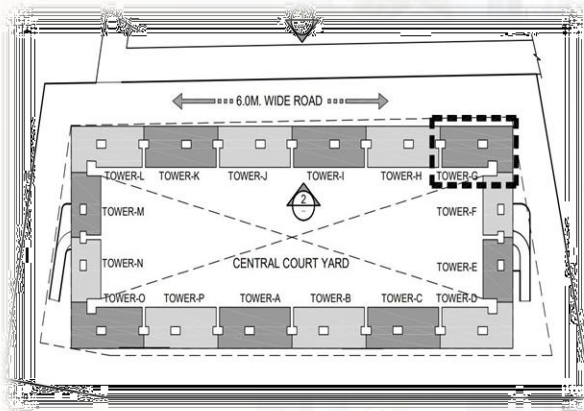
Project type	Apartment
Sub-type	3, 4&5 BHK
Orientation site	North
Built up Area	7.2 acre
Area	20138 sq.m
Entry & Exit	1, 2
Floors	Stilt+17
Towers	16
Possession	Dec 22
Cost proximity	650 Cr. ++



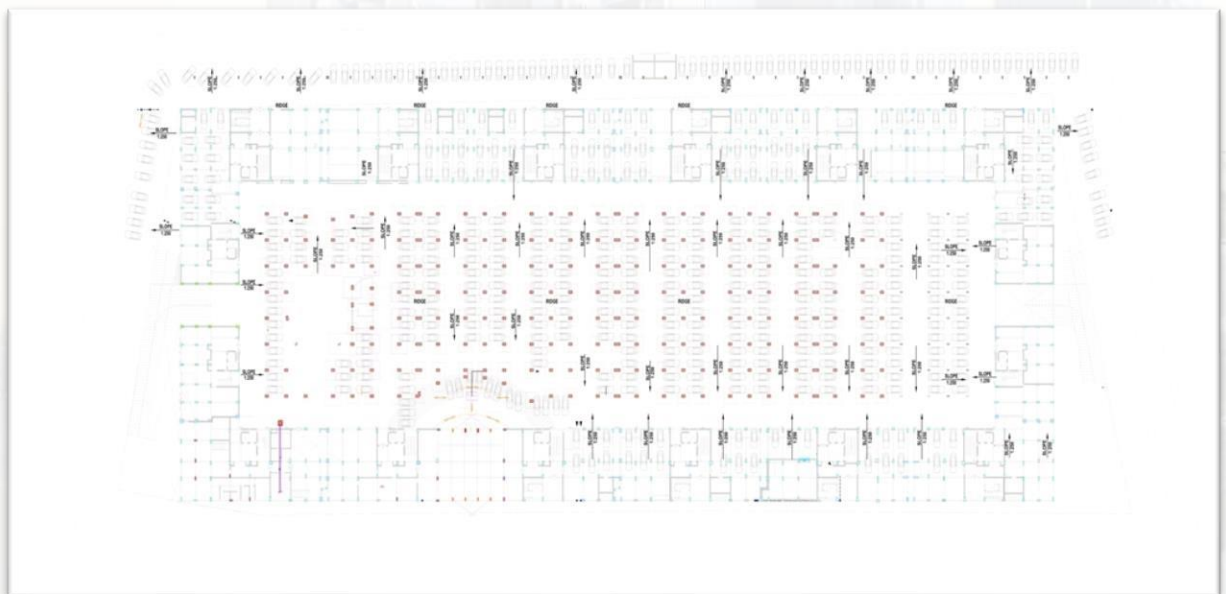
### **3.1.5 PLANNING INTRODUCTION-**

#### **Bye-Laws (LDA)-**

- **Ground coverage -** 35% up to 40,000 sq. m and 40% above 40,000 sq. m
- **Floor area ratio -** 2.75
- **Height -** no limit for buildings above 30m in height  
clearance from airport authority shall be taken  
Projection into Open Spaces without counting towards FAR.
- All open spaces provided either in interior or exterior shall be kept free from any erections thereon and shall open to the sky. Nothing except cornice, chhajja or weather shade (not more than 0.75 m. wide) shall overhang or project over the said open space so as to reduce the width to less than minimum required. Note: Such projections shall not be allowed at height less than 2.2 m. from the corresponding finished floor level:
- One canopy per block on the ground floor not exceeding 4.5 m. in length and 2.4 m. in width  
Balcony at roof slab level of 1.2 m. width and area not exceeding 3.5 sq m. per bedroom but not exceeding 3 in number per flat.
- Balcony having entrance from the toilet/bathroom and width as 1.2 m. for drying clothes



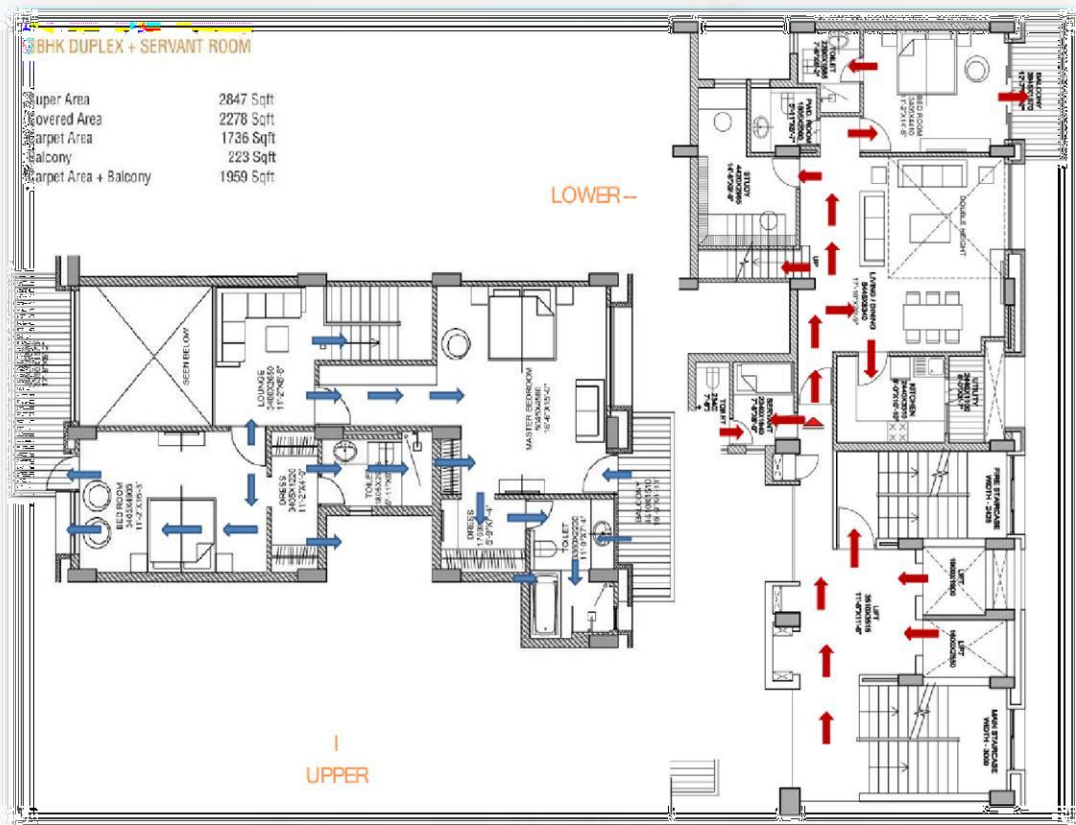
**BLOCK PLAN**



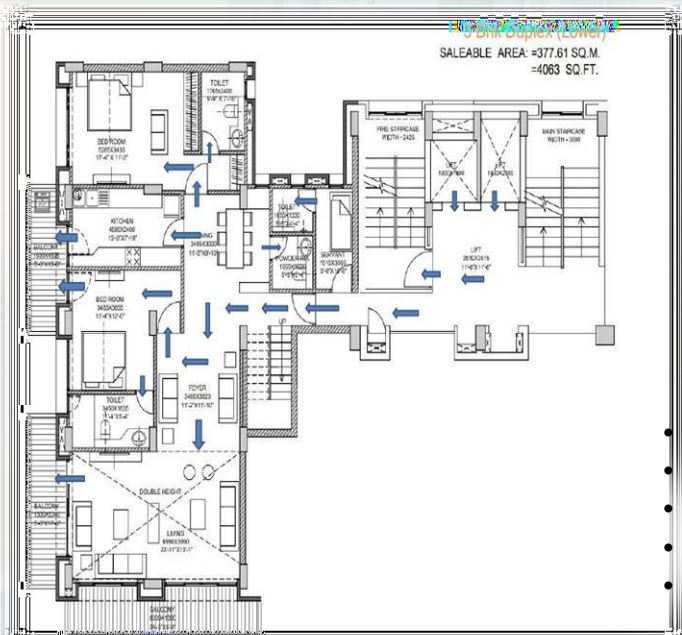
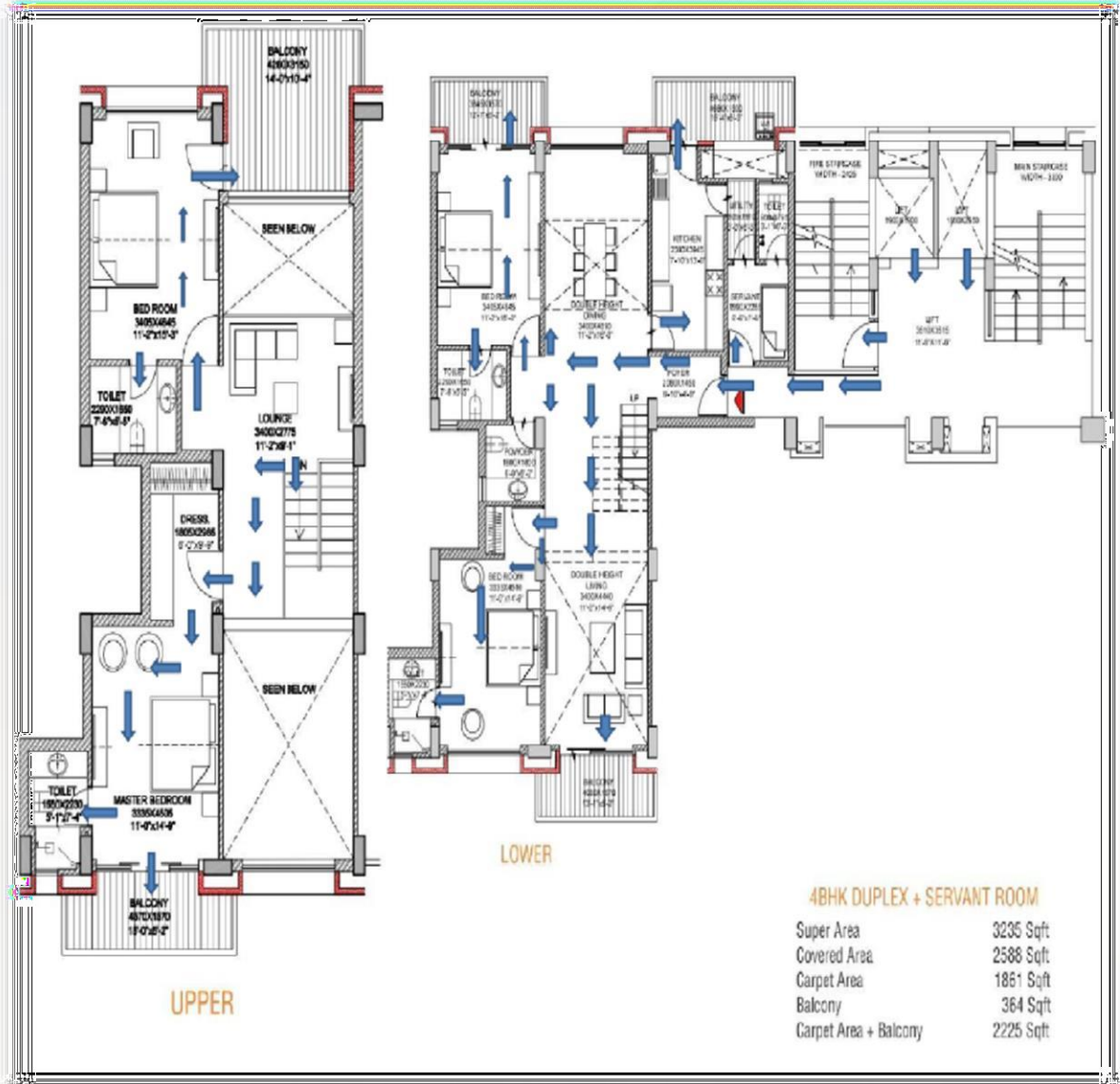
**PARKING PLAN**



# FLOOR PLANS



## FLOOR PLANS



### FLAT COST-

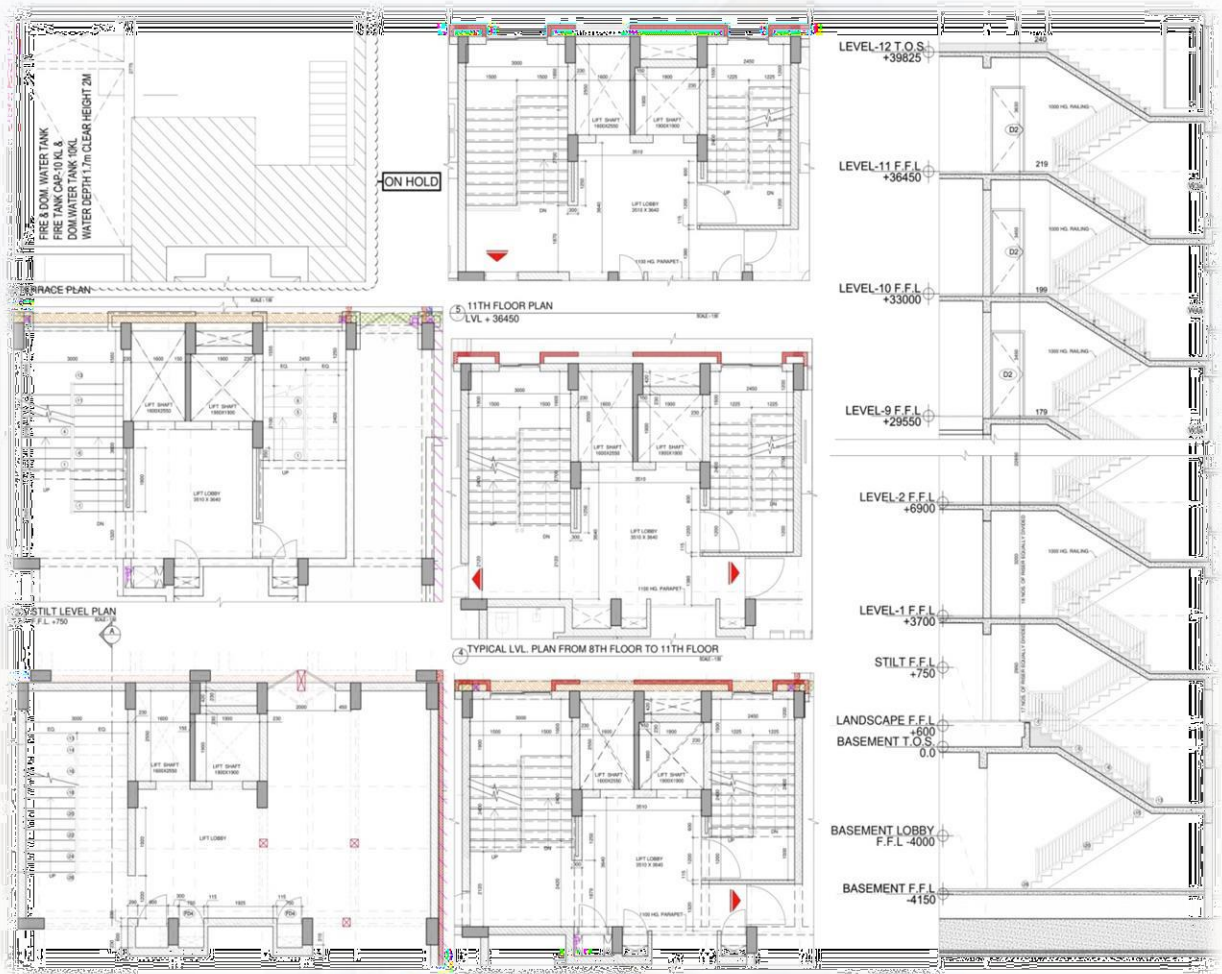
- 3 BHK - 1.2 Cr ++ (1800 sq ft □..)
- 4 Bhk - 2.3 Cr. ++ (4030 sq ft □)
- 4 Bhk duplex - 4.2 Cr ++ (4500 sq ft)
- 5 Bhk penthouse - 5.5 Cr. (5000 sq ft)

### UNIQUE FEATURES-

- European Style Castle Structure
- A Large Bird Home in Central Park
- Sky Lounge
- External Facade of Belgium Bricks
- Double External Wall with Cavity for Heat & Sound Insulation



### 3.1.6 STAIRCASE DETAILS & SECTION-



### 3.1.7 AMENITIES



#### ENTERTAINMENT

- Multi - Purpose Party Hall
- State - of - the - Art Club
- Amphitheatre
- Mini Theatre
- Restaurant / Cafeteria
- Kids Gaming Zone

#### HEALTH

- Spa & Salon
- Steam & Sauna
- Room with Massage Room
- Gymnasium with Modern Equipment
- Jogging Track
- Children Play Area
- Climbing Mounds for Children

#### SPORTS

- Cricket Cage
- Basketball Court
- Tennis Court
- Squash Court
- Badminton Court
- Table Tennis
- Card Room
- Billiards / Snooker Room

#### SECURITY

- 24 \* 7 Manned Security
- Intercom & Camera in
- Lifts : Connected with
- Guard Room
- CCTV Surveillance
- Boom Barrier for Restricted Entry at Main
- Gate



**3.1.8 SITE IMAGES & VIEWS-**



**3.1.9 STRUCTURAL ANALYSIS-**

Pile Foundation, Earthquake resistant RCC frame structure exterior, RCC Frame double brick wall structure for better sound and heat insulation.



**FOOTING JALL**



**COLUMN BEAM**



**FOUNDATION**



**EXPOSED BRICK**



### 3.1.10 TYPES OF FLAT-



3 BHK flat  
1663 Sq.ft (154.5 Sq.m)  
Price- 1.1 Cr.



A Sub-Canal

3 BHK flat  
1859 Sq.ft (172.71 Sq.m)  
Price- 1.21 Cr.



3 BHK flat  
2086 Sq.ft (193.8 Sq.m)  
Price- 1.37 Cr.

3.2 CASE STUDY - 02 UNITECH HORIZON, NOIDA

INTRODUCTION

Welcome to Unitech Horizon Apartments, an abode of magnificent Apartments in Greater Noida with all modern features required for a contemporary lifestyle. These Residential Apartments in Greater Noida flaunts a resort like environment. It is now easy to experience how modern comforts blend seamlessly with magnificent ambience and how lifestyle amenities combine with refreshing green views. Unitech Horizon by Unitech Limited in Sector PI I & II ensures privacy and exclusivity to its residents. The reviews of Unitech Horizon clearly indicates that this is one of the best Residential property in Greater Noida.

- This housing is owned by the UNITECH LIMITED which is Indias largest real estate building.
- Location- Sector Pi II Greater Noida, Uttar Pradesh.
- Total Site Area- 25 Acres or 101171.40 sq.mt.
- Ground Coverage- 20% = 20234.28
- Maximum FAR- 2, Achieved- 1.8
- No. of blocks- 8 nos.
- No. of floors- 16 nos.
- No. of Basements- 01 nos.
- No. of parking ( in basement)- 1550 nos.
- On site Parkings- 350 nos
- No. of Entry gates- 2 Gates 1 Service Entry.
- Unit Type- 3 BHK (160-165 sq.mt or1700-1750 Sq. ft.)



1. ACCESSIBILITY-

- Sector - Phi2 is a very prime locality and well connected with the other parts of the city.
- Transport facility is also good in this locality. School, bank, ATM and Hospital are available nearby the locality. (Within 1-2 kms).

DISTANCE FROM DISTANCE IN K.M.

Botanical Garden metro	30 km
Sector 8 (Commercial area)	32 km
Pari Chowk	5 km
Kalandi Kunj	30 km
New Delhi Railway station	48 km
Indira Gandhi International Airport	52 km



INFERENCES

Each Building is oriented differently,  
Hence not in accordance with Climate of the site.  
Most flats are south facing.  
Water bodies are provided on site that help to create a micro climate.

- SITE BOUNDARIES
- UNITECH HORIZON ROAD 20M WD



### 3.2.2 SUNPATH-



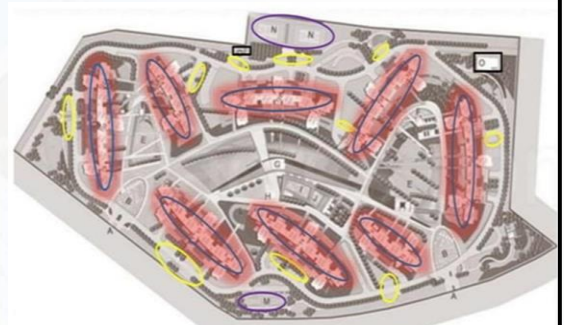
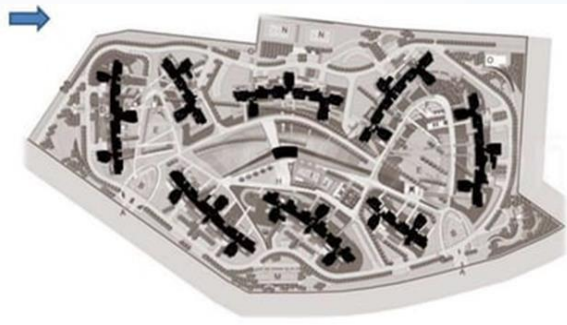
### 3.2.3 ACCESSIBILITY-



### SITE MOVEMENT-



## BUILT-UNBUILT AREA



- LANDSCAPE 70%
- BUILT - UP AREA 20%
- CIRCULATION & SURFACE PARKING 10%

- Building block
- Service area
- Sports area
- Surface parking

## WATER SUPPLY

Water is supplied through 0 Overhead Water Tank near the Site.

Water is stored in two Underground water Storage Tank capacity of 50000. Lr. for Drinking supply and the other of 10000. Lr. For domestic Supply.

## ELECTRICITY

The Sub Station on Site takes electricity supply from main line.

From sub stations the electricity is supplied to meter

boxes for each flat from the Electrical panel room in Basement.

Backup generators provided.

H.T. Panel in the basement.

L.T. Panel on each floor.



L.T. Panel



H.T. Panel

### 3.2.4 PLANNING-

No. of floors- G+15

No. of Towers- 23

No refuge area provided.

Penthouse are not provided.

Public terrace.

Private balconies in every dwelling.

Staircases- 02.



Type A4 - 3BR

Sale Area - 177.34 Sq.m. (1908 Sq.ft.)

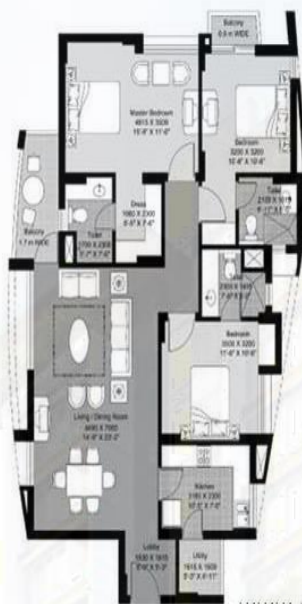


Type A5 - 3BR

Sale Area - 177.55 Sq.m. (1910 Sq.ft.)



Type B1<sub>3 BR</sub>  
1695 Sq.ft. (157.45 Sq.mt.)



11-103°-503°, 1003°-1603°  
 12-103-503, 1003-1603  
 13-103°-503°, 1003°-1603°  
 14-103-503, 1003-1503  
 15-103-503, 1003-1403  
 16-103°-503°, 1003°-1403°  
 17-103-503, 1003-1503  
 18-103-503, 1003-1603  
 19-103°-503°, 1003°-1603°  
 20-103-503, 1003-1503  
 21-103°-503°, 1003°-1403°  
 22-103-503, 1003-2003  
 23-103-503, 1003-2103  
 24-103-503, 1003-2003  
 25-103-503, 1003-1903  
 26-103°-503°, 1003°-1803°  
 27-103°-503°, 1003°-1903°  
 28-103°-503°, 1003°-2003°  
 29-103-503, 1003-1603  
 30-103°-503°, 1003°-1703°  
 31-103-503, 1003-1803

\* - flipped floor plan of the shown image.

www.pro

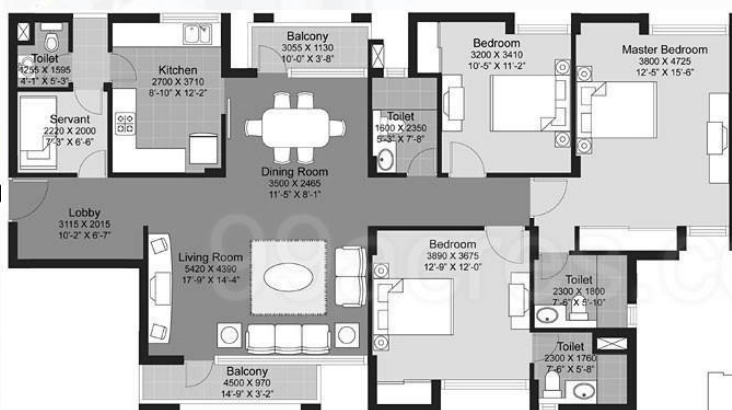


Tower T2 - GAS

Tower T5, C05

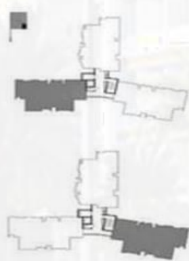
\*Flipped floor plan of the show's image.

<b><u>S.NO.</u></b>	<b><u>SPACES.</u></b>	<b><u>AREA</u></b> <b><u>(sq.ft.)</u></b>
2	Type A	
3	Type A1	1800
4	Type A2	1760
5	Type A3	1740
6	Type A4	1740
7	Type A5	1760
8	Type A6	1760
9	Type A7	1740
	Type B	1740
10	Type B1	1695
11	Type B2	1695
12	Type B3	1695



## Type A1 - 3BR

Sale Area - 177.96 Sq.m. (1915 Sq.ft.)



TYPE	AREA
3 BHK A3	180 Sq.m.
3 BHK A4	180 Sq.m.



### **3.2.5 AMENITIES-**

Located at the center marked by a lawn on the top is an attraction of the site. Area- 1565.75 sq.mt.

- Swimming pool
- Fitness Center
- Indoor games room
- Multipurpose hall (approx.- 635 sq.mt.)
- General store (45 sq.mt.)



Separate kids & adults Swimming pool, with changing areas, Semi covered sitting spaces and beautiful landscaping add to the beauty of the project.

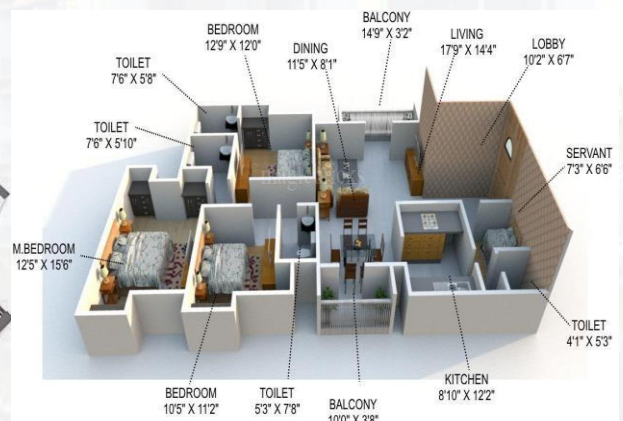
### **3.2.6 INFERENCES-**

#### **PRESENT CONDITION**

- Ventilation is not proper in all rooms.
- No proper Terrace in each room.
- Orientation is not climate responsive.
- Each block has a different orientation which is architecturally not sound.
- Refuge area is not provided.
- Only 3 bhk flats are designed.
- Most of the blocks are south facing.

#### **OPINION**

- Each room should have attached balconies
- Proper terrace should be provided.
- Orientation of each tower should be keep in mind.
- Refuge area should be provided.
- Variations in unit types not present, penthouse are not present.
- Louvers could have been provided so as to get diffused sunlight.





### 3.3 CASE STUDY - 03 KANCHANJUNGA APARTMENT, MUMBAI

#### INTRODUCTION

Kanchanjunga is a condominium of 32 luxury apartments of three to six bedrooms each. The basic interlock is that of a three and four bedroom apartment with the larger flats formed by the addition of another half level.

- The structure is built around a central service core which was constructed first.
- Each of the flats have large usable garden-terraces which have dramatic city views.

**Began:** 1970

**Completion:** 1974

**Architect:** Charles Correa

**Associate Structure Engineer:** Shiris Patel & Association  
Construction Pvt. Ltd

**Structure Type:** HighRise Building

**Location:** India, Mumbai, Cumballa Hill

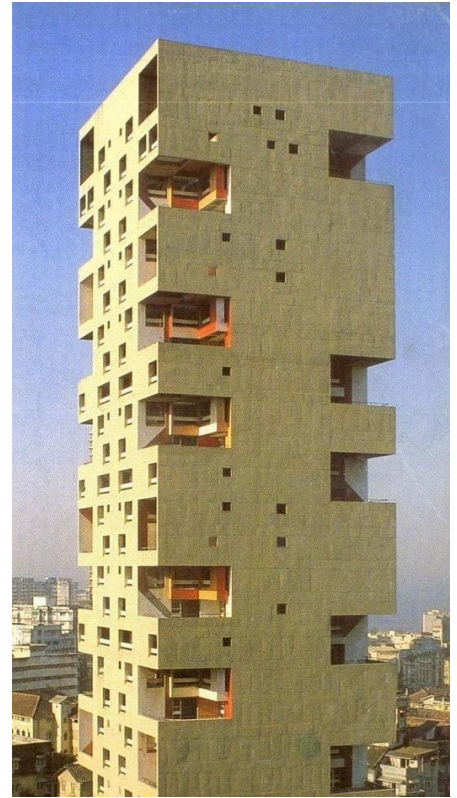
**Height:** 84 Meters, **Floor:** 27

**Function:** Housing (Residential)

**Type:** Modern Structure

**Material:** Concrete

**Architecture Style:** Modern, Brutalism



#### **1. ACCESSIBILITY AND LOCATION-**

- The site has a separate road for individual approach which is connected to the main road.
- Building is approachable from two opposite sides, one from east and one from west.
- KANCHANJUNGA APARTMENT 72, G Deshmukh Road Mumbai MH India.



- The apartments are located south west of downtown Mumbai in an upscale suburban setting.
- Bombay lies on the western coast of India and its major Commercial center for the country.

In Mumbai, building are ideally oriented east-west to catch the prevailing sea-breezes, and views out to the Arabian Sea on one side and the harbour on the other, the same directions as the hot afternoon sun and heavy monsoon rains.

#### STYLE OF KANCHANJUNGA

The style certainly is not rigid.

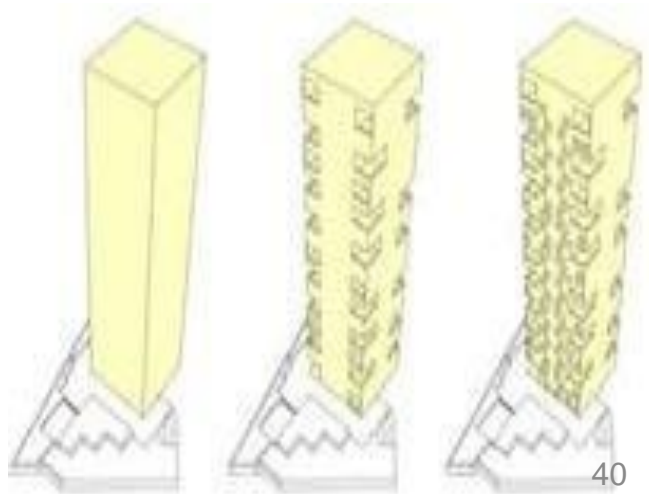
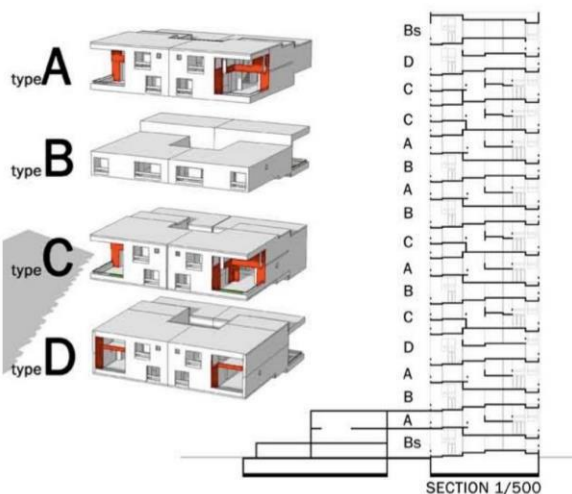
It has both aspects of traditional vernacular style through the experience of a bungalow and modern style in terms of its exterior and form.

### 3.3.2 PROJECT IMAGES-



### 3.3.3 CONCEPT & PLANNING-

- He mainly worked on the sectional displacement by bringing changes in the floor surfaces.
- He applied circular planning by using interlocks in one and half story 3 & 4 bedroom units with two and half story 5-6 bedroom units.
- Small displacements in level differentiated the external earth filled terraces with internal elevated living volumes.





## PLANNING TYPOLOGY-

### Basic Structural Units:

Type A - 3 Bedroom

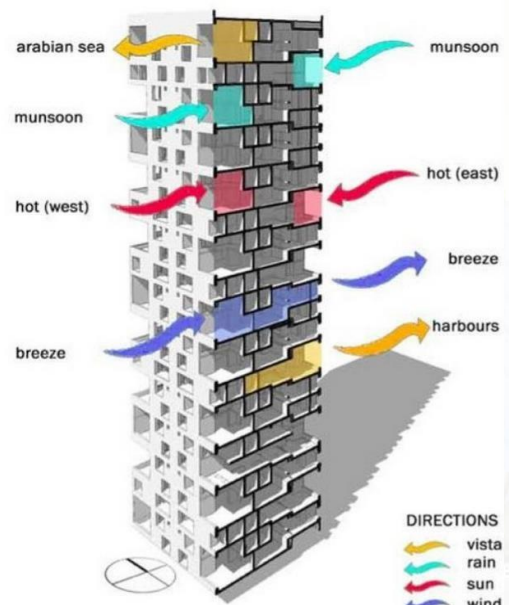
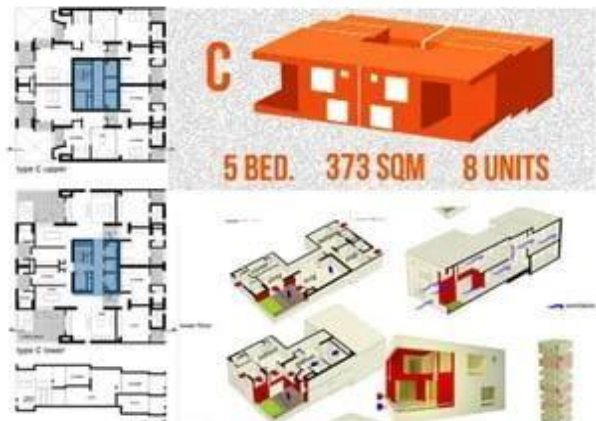
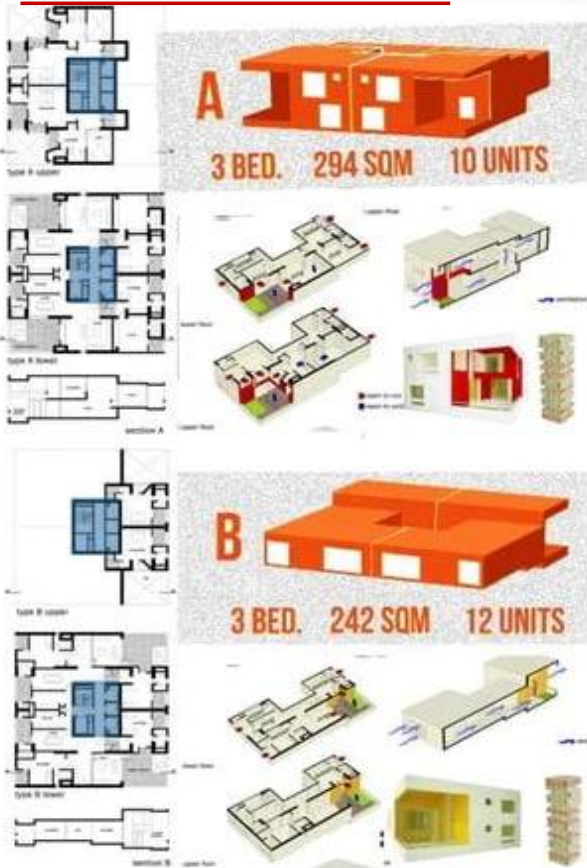
Type B - 3 Bedroom

Type C - 5 Bedroom

Type D - 6 Bedroom

### The shaping of towers:

- The building is a square tower.
- Charles Correa created gaps in that tower.
- The two floors high loggias are created to keep out the sun and take in the cool sea breeze.



### KEY FEATURES-

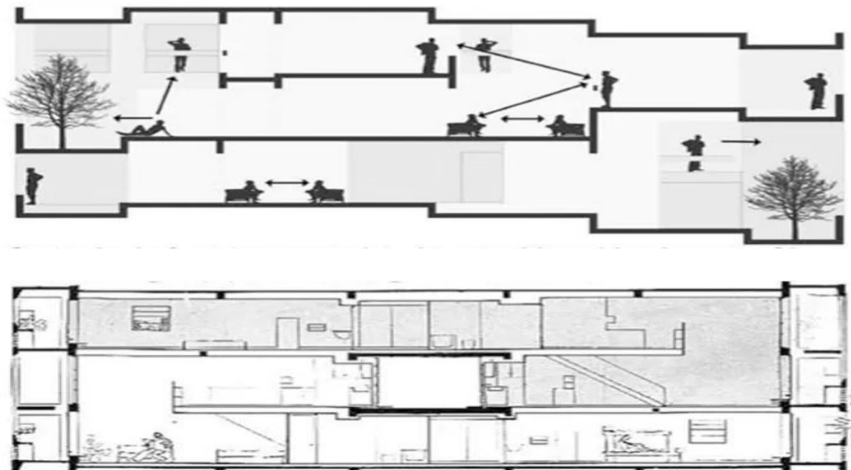
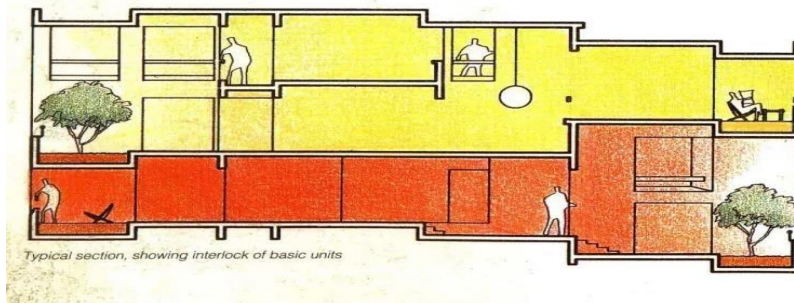
- 32 unique apartments with four kinds of flats ranging from 3 to 6 bedrooms.
- Shear end walls holding the cantilevered terrace while visually connecting the floors.
- The base of the tower is 21 square meters and height is 84 meters which makes it a proportion of 1:4.
- The double-height terraces are oriented against the sun to protect each apartment unit.
- Large openings and terrace gardens provide transparency.

### **3.3.4 STRUCTURAL OVERVIEW-**

It is made from reinforced concrete.

- 32 stories high with 6.3 m cantilevered terrace garden.
- Central core of 7.8X6.9 m house the lifts & service areas.
- This central core also acts as a main structural element in resisting lateral load.
- Central core was const. ahead of the main structure using slip method of construction.

### **SECTIONS-**



### **3.3.5 INFERENCES-**

#### **PROBLEM**

- The location and climate of Bombay dispense architects with a dilemma in design.
- The east-west axis provides ample sightings of the Arabian Sea and the harbor with the added benefit of receiving all the sea breezes.  
The axis also harbors harsh afternoon sun and troublesome monsoon rains.  
The situation was unavoidable as the typology of the building is high-rise due to urbanization and high land prices.  
There was a need to seize the opportunities while carefully designing with limitations in mind.

#### **SOLUTION**

- Correa used an indigenous approach to the spatial organization of a typical bungalow.
- The main living spaces with an enclosed verandah whilst turning that buffer zone into a garden, thriving on the problem. Because of climatic considerations with existing views, the massing settled upon a configuration facing east and west.
- Correa interlocked four different apartment units with small variations in levels on the floor leading to the eventual garden verandah suspended in the air.
- 32 apartments stacked over 28 stories form an interlock of 3 with 4 bedroom units and 5 with 6 bedroom units which reveal themselves through sheer end walls that support the cantilevers.



3.4 COMPARATIVE AREA STATEMENT-

S.NO.	PROJECT	CASE STUDY-1 UNITECH HORIZON (G-NOIDA)	CASE STUDY-2 ORANJE CASTLE LUCKNOW	VIRTUAL CASE STUDY KANCHANJUNGA APARTMENT MUMBAI	INFERENCES
1.	LOCATION	SECTOR Ph Greater Noida, Uttar Pradesh	ORANJE CASTLE GOMTI NAGAR, LUCKNOW	KANCHANJUNGA APARTMENT MUMBAI	-
2.	ARCHITECT	AR. Timothy Siew	MVRDV ARCHITECTS NETHERLANDS	AR. CHARLES CORREA	-
3.	TPOLOGY	Housing apartment	LUXURY APARTMENTS	LUXURY APARTMENT	LUXURY HOUSING
4.	CAPACITY	-	-	-	-
5.	SITE AREA	101171 SQ.MT., (25 ACRES)	29137 SQ.MT., (7.2 ACRES)	5260 SQ.MT (1.3 ACRES)	-
6.	SITE SURROUNDING	NEAR ACHER MARKET, GOOD SOCIETY, POLICE HOUSING SOCIETY, NOIDA METRO DEPOT.	NEAR POLICE HEADQUARTERS, PHOENIX PLASSIO, SAHEED PATH	ANTILIA BUILDING, TATA GARDEN PARK, VIP SOCIETY, CUMBALA HILL, TELE, SOPHIA COLLEGE	(COMMERCIAL, INSTITUTIONAL, RESIDENTIAL & MIXED USE DEVELOPMENT, RECREATIONAL, HOSPITAL)
7.	BUILDING ORIENTATION	NORTH - SOUTH	NORTH-SOUTH	EAST - WEST	BUILDING SHOULD USUALLY BE ORIENTED EAST-WEST RATHER THAN NORTH-SOUTH.
8.	APPROACH	GREATER NOIDA WEST 20M WD ROAD & UNITECH HORIZON ROAD	POLICE HEADQUARTERS ROAD CONNECTED TO SAHEED PATH	THE ENTRANCE FROM EAST, KANCHANJUNGA APARTMENT 72, G Deshmukh Road Mumbai MH India.	-
9.	SITE PLANNING	CENTRALISED PLANNING BUILDING BLOCK ARRANGED LINEAR PATTERN	CENTRALISED COURTYARD PLANNING	CENTRAL COURTYARD PLANNING, SQUARE PLANNING SHAPE WITH DOUBLE HEIGHTED TERRACE GARDEN	INTER RELATIONSHIP BETWEEN BUILT AND OPEN MASS. FORMAL SPACES SHOULD BE SURROUNDED BY INFORMAL SPACES
10.	MATERIAL	LOCALLY AVAILABLE MATERIALS	LOCALLY AVAILABLE MATERIALS	It is made from reinforced concrete WITH CENTRAL CORE, RCC BASED MATERIAL & NORMAL BRICK MATERIALS	LOCAL MATERIALS USED
11.	FACADE TREATMENT	CONVENTIONAL BRICK, GLASS RAING, M.S RAILING, TEXTURE FINISHES.	EXPOSED BRICK, CERAMIC TILES, ITALIAN MARBLE, M.S RAILING WITH SYNTHETIC ENAMEL PAINT	WALL TREATMENTS WITH GOOD PLASTER SYNTHETIC PAINTS, ETC	-
12.	REQUIREMENTS	3 TYPES 3 BHK FLATS, CLUB HOUSE, SWIMMING POOL,ADMIN BLOCK, BASEMENT AND SITE PARKING.	3 TYPES 3 BHK FLATS, 4 BHK DUPLEX, 5 BHK PAINHOUSE CLUB HOUSE, SWIMMING POOL,ADMIN BLOCK,KIDS PLAY AREA, BASEMENT AND SITE PARKING.	3 BHK, 4 BHK ,5 BHK & 6 BHK WITH OPEN DOUBLE HEIGHTED TERRACE, KIDS PLAY AREA, LANDSCAPING	-
13.	ZONNING	BUILDING IS CONNECTED WITH INTERNAL ROAD OF SITE	BUILDING IS CONNECTED WITH CENTRAL COURTYARD	SQUARE BUILDING SHAPE IN CENTER OF THE SITE	BUILDING SHOULD BE CONNECTED WITH BETTER ACCESS AREA & WITH GOOD SURROUNDINGS
14.	PARKING	BASEMENT & ON SITE PARKING	BASEMENT & ON SITE PARKING	STILT & ON SITE PARKING	PARKING SHOULD BE IN BASEMENT & AROUND SITE LEVEL, AROUND THE

3.4 COMPARATIVE AREA STATEMENT-

S.NO.	PROJECT	CASE STUDY-1 UNITECH HORIZON (G-NOIDA)	CASE STUDY-2 ORANJE CASTLE LUCKNOW	VERTUAL CASE STUDY KANCHANJUNGA APARTMENT MUMBAI	INFERENCES
15.	CIRCULATION	VEHICULAR AND PEDESTRIAN MOVEMENT ALLOWED	ALLOWED VEHICULAR MOVEMENT ALONG THE BUILDING BLOCKS, PEDESTRIAN MOVEMENT IS FREE ON SITE	VEHICULAR & PEDESTRIAN MOVEMENT	CIRCULATION SHOULD BE EASILY ACCESSIBLE
16.	LANDSCAPING	WATER PAVILLION, SWIMMING POOL, MOUNDS, CHILDRENS GARDEN, PLANTATION, ETC	MOUNDS, LAVISH GREEN AREA, BIRD HOUSE, KIDS GARDEN, ROPE CLIMBERS, VEGETATION ETC	GARDEN AREA, KIDS AREA	GARDENS, TREES & WATER BODIES, SWIMMING POOLS TO FORM AN INTEGRAL PART OF DESIGN
17.	SERVICES	MOSTLY SERVICES ON SITE	SERVICES IS IN BASEMENT & ALSO SOME SERVICES ON SITE	MOSTLY UNDERGROUND SERVICES	SERVICES SHOULD ALWAYS BE OUT OF SIGHT OF GENERAL PUBLIC
18.	SHADING DEVICES	TERRACE, PROJECTED RCC SLABS, LARGE WINDOWS, LARGE OPENINGS, PARGOLAS ETC	TERRACE GARDEN, LARGE OPENINGS, LARGE BALCONY, DOUBLE BRICK WALL STRUCTURE FOR BETTER SOUND AND HEAT INSULATION	LARGE DOUBLE HIGHTED TERRACE ON EVERY FLOOR	WINDOW SHOULD BE PLACES SUCH THAT NECESSARY AMOUNT OF LIFE IS UNDERTAKEN INSIDE THE BUILDING,
19.	POSITIVE FEATURES	GOOD LANDSCAPING, WATER BODIES, FITNESS CENTER, GENERAL STORE, GOOD SECURITY, PLAYING AREA, ONLY 3 BHK FLATS, SWIMMING POOL, CONFERENCE ROOM ETC	EUROPEAN STYLE CASTLE STRUCTURE, A LARGE BIRD HOME IN CENTRAL PARK, SKY LOUNGE, EXTERNAL FACADE OF BELGIUM BRICKS, DOUBLE EXTERNAL WALL WITH CAVITY FOR HEAT & SOUND INSULATION	THE RESIDENTIAL TOWER ACCOMPLISHES THIS BY POSITIONING ITSELF EAST-WEST TO CAPTURE PREVAILING SEA BREEZES AND A MAGNIFICENT VIEW OF THE CITY, DOUBLE HEIGHTED TERRACE	LOUVERS COULD HAVE BEEN PROVIDED SO AS TO GET DIFFUSED SUNLIGHT, REFUSED AREA SHOULD BE PROVIDED.

# **CHAPTER- 04**

## **AREA ANALYSIS**

4.1 PROJECT DETAILS-

PROJECT NAME-	Smart Sky Residences, Lucknow
LOCATION-	KISANPATH, NEAR INDIRA DAM LUCKNOW
FUNCTIONAL AREAS-	RESIDENTIAL TOWERS, COMMERCIAL BLOCK, ON-SITE SERVICES, CLUB HOUSE
PLOT AREA-	9.6 ACRES = 38,850 SQ.MT
F.A.R-	2.5
SETBACKS-	16 M
GROUND COVERAGE-	30% MAX = 11,655 SQ.MT
TOTAL BUILT-UP AREA-	97,125 SQ.MT
GREEN-BELT AREA-	6172.38 SQ.MT

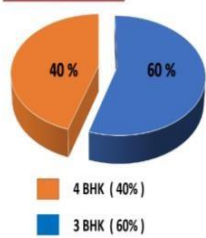
4.2 AREA CALCULATION-

AREA CALCULATION-

PERMISSIBLE COVERED AREA- Plot area x F.A.R.  
= 38,850 x 2.5  
= 97,125 Sq.mt. (Total Built up Area)  
GROUND COVERAGE = 30% Max  
GROUND COVERAGE = 7%  
= 7/100X38850  
= 2719.5 SQ.MT  
NO OF FLOORS = 97125/2719.5  
= 35 Floors  
TYPES OF DWELLING UNITS- 3 BHK – 220 SQ.MT.  
4 BHK – 260 SQ.MT.  
NO OF UNITS = 3 BHK (140 nos.)  
= 4 BHK (100 nos.)  
= 240 units  
TOTAL NO. OF DWELLING UNITS = 240 Units  
NO. OF FLOOR = G + 35 & G + 25  
COVERED AREA FOR DWELLING UNIT = No of units x area of 1 unit  
= 140 x 220  
3 BHK = 30,800 Sq.mt  
4 BHK = 100 x 260  
= 26,000 Sq.mt  
TOTAL AREA OF DWELLING UNITS = 56,800 SQ. MT.  
CIRCULATION SPACE 15% = 8,520 SQ.MT.  
TOTAL DWELLING AREA = 65,320 SQ.MT.

HOUSING DENSITY = Under the category of mid density housing.  
9.6 Acres = 3.9 Hectares  
TOTAL POPULATION = 7 person in 3 BHK (Assuming)  
= 7 x 140  
= 980 Person  
= 9 Person in 4 BHK (Assuming)  
= 9 x 100  
= 900 Person  
= 12 Person in Penthouses (Assuming)  
= 12 x 4  
= 48 Person  
TOTAL= 1928 PERSON

UNITS BIFURCATION

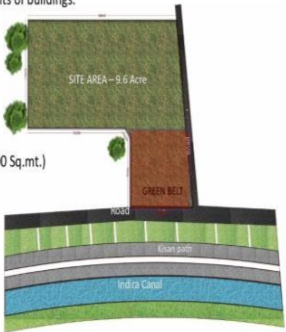


GREEN BELT SPECIFICATION-

- 75 M wide green belt is to be designed as proposed in LUCKNOW MASTERPLAN 2031.
- Area covered by green belt 6172.38 sq.mt.
- No permanent structure to be constructed in the designated green belt area.
- The types of plants, the distance between trees/plants from the building and the distance between plants shall be care fully worked out keeping in view the structural safety and aesthetic requirements of buildings.

SOLID WASTE MANAGERMENTS-

- Total no of Flats – 360 units
- Assuming-  
500 gm/Flat ( More than 200 Sq.mt.)  
360 x 500 = 1,80,000  
= 180 Kg / Day



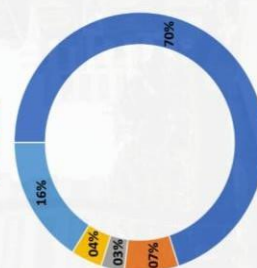


### 4.3 COMPARATIVE AREA TABLE-

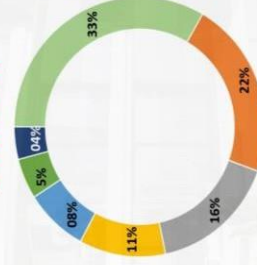
S.NO.	REQUIREMENTS/FUNCTIONAL AREAS	CASE STUDY-1 UNITECH HORIZON G-NOIDA	CASE STUDY-2 ORANJE CASTLE LUCKNOW	VIRTUAL CASE STUDY KANCHANJUNGA APARTMENT MUMBAI	STANDARDS	NO. OF USERS	PROPOSED AREA	REMARKS
1.	ADMIN BLOCK- <ul style="list-style-type: none"><li>RECEPTION</li><li>GUARD ROOM</li><li>MEETING ROOM</li><li>TOILET(M/F)</li><li>TOTAL AREA-</li></ul>	-	<ul style="list-style-type: none"><li>9 Sq.mt</li><li>7.5 Sq.mt</li><li>-</li><li>4.5 Sq.mt</li></ul>	<ul style="list-style-type: none"><li>-</li><li>-</li><li>-</li><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li><li>5.04 Sq.mt.</li><li>-</li><li>5.75 sq.mt.</li></ul>	-	<ul style="list-style-type: none"><li>20</li><li>5.04</li><li>21.6</li><li>6.3</li><li>52.94 Sq.mt.</li></ul>	<ul style="list-style-type: none"><li>STANDARDS</li><li>STANDARDS</li></ul>
A	AREA ANALYSIS-							
A1	SITE AREA	<ul style="list-style-type: none"><li>25 ACRES</li></ul>	<ul style="list-style-type: none"><li>7.2 ACRES</li></ul>	<ul style="list-style-type: none"><li>1.3 ACRES</li></ul>	<ul style="list-style-type: none"><li>NOT LESS THAN 2000 sq.mt</li></ul>	-	<ul style="list-style-type: none"><li>9.6 ACRES</li></ul>	<ul style="list-style-type: none"><li>STANDARDS+BYE LAWS</li></ul>
A2	FAR	<ul style="list-style-type: none"><li>1.8 (ACHIEVED)</li></ul>	<ul style="list-style-type: none"><li>2.75</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>2.5</li></ul>	-	<ul style="list-style-type: none"><li>2.5</li></ul>	<ul style="list-style-type: none"><li>CALCULATED</li></ul>
A3	GROUND COVERAGE (%) & in sq.mt	<ul style="list-style-type: none"><li>20 % &amp; 20234 SQ.MT</li></ul>	<ul style="list-style-type: none"><li>35 % &amp; 40000 SQ.MT</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>35 %</li></ul>	-	<ul style="list-style-type: none"><li>30 % &amp; 11655 SQ.MT</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>
A4	TOTAL BUILT-UP AREA	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>20138 SQ.MT</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	-	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>
A5	NO. OF FLOORS	<ul style="list-style-type: none"><li>5+16</li></ul>	<ul style="list-style-type: none"><li>5+17</li></ul>	<ul style="list-style-type: none"><li>5+27</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	-	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>
A6	GREEN BELT AREA	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	-	<ul style="list-style-type: none"><li>7114 Sq.mt = 1.33 Acres</li></ul>	<ul style="list-style-type: none"><li>MASTERPLAN</li></ul>
A7	COMMERCIAL	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>Front setback .75 m to be developed</li><li>5% Site Area</li></ul>	-	<ul style="list-style-type: none"><li>1942.5 Sq.mt</li></ul>	<ul style="list-style-type: none"><li>CALCULATED</li></ul>
B	3 BHK FLAT-							
B1	ENTRANCE FOYER	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>8.3</li></ul>	<ul style="list-style-type: none"><li>8</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	-	<ul style="list-style-type: none"><li>3</li></ul>	<ul style="list-style-type: none"><li>CASE STUDY</li></ul>
B2	DRAWING AREA	<ul style="list-style-type: none"><li>10.8</li></ul>	<ul style="list-style-type: none"><li>25.5</li></ul>	<ul style="list-style-type: none"><li>21</li></ul>	<ul style="list-style-type: none"><li>15</li></ul>	-	<ul style="list-style-type: none"><li>25</li></ul>	<ul style="list-style-type: none"><li>CASE STUDY</li></ul>
B3	SERVANT ROOM	<ul style="list-style-type: none"><li>3.9</li></ul>	<ul style="list-style-type: none"><li>15.4</li></ul>	<ul style="list-style-type: none"><li>5.6</li></ul>	<ul style="list-style-type: none"><li>4.2</li></ul>	-	<ul style="list-style-type: none"><li>8</li></ul>	<ul style="list-style-type: none"><li>CASE STUDY</li></ul>
B4	SERVANT TOILET	<ul style="list-style-type: none"><li>1.92</li></ul>	<ul style="list-style-type: none"><li>4.3</li></ul>	<ul style="list-style-type: none"><li>4</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	-	<ul style="list-style-type: none"><li>3.45</li></ul>	<ul style="list-style-type: none"><li>CASE STUDY</li></ul>
B5	MASTER BEDROOM	<ul style="list-style-type: none"><li>17.86</li></ul>	<ul style="list-style-type: none"><li>18.9</li></ul>	<ul style="list-style-type: none"><li>17</li></ul>	<ul style="list-style-type: none"><li>15</li></ul>	-	<ul style="list-style-type: none"><li>30</li></ul>	<ul style="list-style-type: none"><li>CASE STUDY</li></ul>
B6	MASTER BATHROOM	<ul style="list-style-type: none"><li>4.15</li></ul>	<ul style="list-style-type: none"><li>5.04</li></ul>	<ul style="list-style-type: none"><li>4.5</li></ul>	<ul style="list-style-type: none"><li>8.57</li></ul>	-	<ul style="list-style-type: none"><li>9</li></ul>	<ul style="list-style-type: none"><li>STANDARDS</li></ul>
B7	CHILDREN'S BEDROOM	<ul style="list-style-type: none"><li>11.2</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>12</li></ul>	<ul style="list-style-type: none"><li>12</li></ul>	-	<ul style="list-style-type: none"><li>20</li></ul>	<ul style="list-style-type: none"><li>CASE STUDY AVG</li></ul>
B8	BEDROOM 3	<ul style="list-style-type: none"><li>14.8</li></ul>	<ul style="list-style-type: none"><li>19.25</li></ul>	<ul style="list-style-type: none"><li>12</li></ul>	<ul style="list-style-type: none"><li>12</li></ul>	-	<ul style="list-style-type: none"><li>20</li></ul>	<ul style="list-style-type: none"><li>CASE STUDY</li></ul>
B9	KITCHEN WITH UTILITY	<ul style="list-style-type: none"><li>13.8</li></ul>	<ul style="list-style-type: none"><li>9.2</li></ul>	<ul style="list-style-type: none"><li>8.5</li></ul>	<ul style="list-style-type: none"><li>7.5</li></ul>	-	<ul style="list-style-type: none"><li>20</li></ul>	<ul style="list-style-type: none"><li>CASE STUDY</li></ul>
B10	DINING AREA	<ul style="list-style-type: none"><li>23</li></ul>	<ul style="list-style-type: none"><li>25.5</li></ul>	<ul style="list-style-type: none"><li>20</li></ul>	<ul style="list-style-type: none"><li>13</li></ul>	-	<ul style="list-style-type: none"><li>15</li></ul>	<ul style="list-style-type: none"><li>CASE STUDY</li></ul>
B11	STUDY	<ul style="list-style-type: none"><li>4.5</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	-	<ul style="list-style-type: none"><li>7</li></ul>	<ul style="list-style-type: none"><li>CASE STUDY</li></ul>
B12	TOILET 2.3	<ul style="list-style-type: none"><li>4.14 &amp; 3.84 sq.mt</li></ul>	<ul style="list-style-type: none"><li>3.6 &amp; 5.04 sq.mt</li></ul>	<ul style="list-style-type: none"><li>3.5, 3.3 &amp; 3.6</li></ul>	<ul style="list-style-type: none"><li>5.75</li></ul>	-	<ul style="list-style-type: none"><li>3.6 &amp; 3.9</li></ul>	<ul style="list-style-type: none"><li>STANDARDS</li></ul>
B13	POWDER ROOM	<ul style="list-style-type: none"><li>3.85</li></ul>	<ul style="list-style-type: none"><li>3.9</li></ul>	<ul style="list-style-type: none"><li>3.8</li></ul>	<ul style="list-style-type: none"><li>1.85</li></ul>	-	<ul style="list-style-type: none"><li>3.6</li></ul>	<ul style="list-style-type: none"><li>STANDARDS</li></ul>
B14	LAUNDRY ROOM	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>2.5</li></ul>	-	<ul style="list-style-type: none"><li>8</li></ul>	<ul style="list-style-type: none"><li>STANDARDS</li></ul>
B15	STORE AREA	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	<ul style="list-style-type: none"><li>3</li></ul>	-	<ul style="list-style-type: none"><li>3</li></ul>	<ul style="list-style-type: none"><li>STANDARDS</li></ul>
B16	BALCONY/TERRACE AREA	<ul style="list-style-type: none"><li>14.5 % of covered Area</li></ul>	<ul style="list-style-type: none"><li>All 18.85</li></ul>	<ul style="list-style-type: none"><li>50</li></ul>	<ul style="list-style-type: none"><li>-</li></ul>	-	<ul style="list-style-type: none"><li>20% Of Cvr'd Ar.=36.7</li></ul>	<ul style="list-style-type: none"><li>CASE STUDY AVG</li></ul>
	TOTAL AREA-	<ul style="list-style-type: none"><li>130.35 SQ.MT</li></ul>	<ul style="list-style-type: none"><li>163.65 SQ.MT</li></ul>	<ul style="list-style-type: none"><li>177.2 SQ.MT</li></ul>		-	<ul style="list-style-type: none"><li>220.2 SQ.MT</li></ul>	

#### **4.3 COMPARATIVE AREA TABLE-**

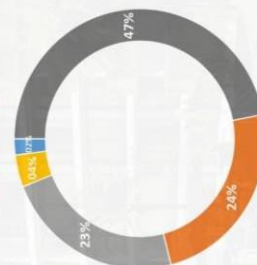
S.NO.	REQUIREMENTS/FUNCTIONAL AREAS	CASE STUDY-1 UNITECH HORIZON G-NOIDA	CASE STUDY-2 ORANJE CASTLE LUCKNOW	VIRTUAL CASE STUDY KANCHANJUNGA APARTMENT MUMBAI	STANDARDS	NO. OF USERS	PROPOSED AREA	REMARKS
C	4 BHK FLAT-							
C1	▪ ENTRANCE FOYER	-	▪ 2.8	▪ 2.5	▪ -	-	▪ 4	CASE STUDY
C2	▪ DRAWING AREA	-	▪ 14.9	▪ 13.5	▪ 15	-	▪ 25	CASE STUDY
C3	▪ SERVANT ROOM	-	▪ 3.3	▪ 4	▪ 4.2	-	▪ 8	CASE STUDY
C4	▪ SERVANT TOILET	-	▪ 1.9	▪ 1.8	▪ -	-	▪ 3.5	CASE STUDY
C5	▪ MASTER BEDROOM	-	▪ 15.1	▪ 16	▪ 15	-	▪ 30	CASE STUDY
C6	▪ MASTER BATHROOM	-	▪ 3.5	▪ 3	▪ 8.57	9	▪ 9	STANDARDS
C7	▪ CHILDREN'S BEDROOM	-	▪ 14.8	▪ 13	▪ 12	-	▪ 20	CASE STUDY AVG
C8	▪ BEDROOM 3	-	▪ 15.6	▪ 12	▪ 12	-	▪ 20	CASE STUDY
C9	▪ BEDROOM 4	-	▪ 15.9	▪ 12	▪ 12	-	▪ 20	CASE STUDY
C10	▪ KITCHEN WITH UTILITY	-	▪ 8.9	▪ 7.5	▪ 7.5	-	▪ 20	CASE STUDY
C11	▪ DINING AREA	-	▪ 16.3	▪ 14.2	▪ 13	-	▪ 15	CASE STUDY
C12	▪ STUDY	-	-	-	-	-	▪ 7	CASE STUDY
C13	▪ TOILET 3,4	-	▪ 3.5,3.3 & 3.1	▪ 3.5, 3.2 & 3.3	▪ 5.75	-	▪ 3.6,3.9 & 3.6	STANDARDS
C14	▪ POWDER ROOM	-	▪ 2.7	▪ 2.5	▪ 1.85	-	▪ 3.6	STANDARDS
C15	▪ LAUNDRY ROOM	-	-	-	▪ 2.5	-	▪ 8	STANDARDS
C16	▪ STORE AREA	-	-	-	▪ 3	-	▪ 5	STANDARDS
C17	▪ BALCONY/TERRACE AREA	-	▪ 65.2	▪ 70	▪ -	-	▪ 25% Of Cvr'd Ar.=52	CASE STUDY AVG
	TOTAL AREA-		▪ 185.2 SQ.MT	▪ 182 SQ.MT			▪ 260 SQ.MT	
D	▪ PENTHOUSE							
D1	▪ AS PER DESIGN	-	▪ 350 sq.mt	-	-	-	AS PER DESIGN	-



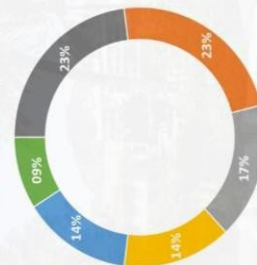
**TOTAL AREA = 180 SQ.MT**



**TOTAL AREA = 910 SQ.MT**



**TOTAL AREA = 810 SQ.MT**



**TOTAL AREA = 64.8 SQ.MT**





4.3 COMPARATIVE AREA TABLE-

S.NO.	REQUIREMENTS/FUNCTIONAL AREAS	CASE STUDY-1 UNITECH HORIZON G-NOIDA	CASE STUDY-2 ORANJE CASTLE LUCKNOW	VIRTUAL CASE STUDY KANCHANJUNGA APARTMENT MUMBAI	STANDARDS	NO. OF USERS	PROPOSED AREA	REMARKS
E	CLUB HOUSE-							
E1	RECEPTION	-	-	-	20	-	20	Restaurants, Banquet Hall, Theater Room, Area Analysis with additional spaces done later in Amenities Bifurcation section.
E2	OFFICE	-	-	-	15	-	15	
E3	MULTIPURPOSE HALL	435	150	-	1.5 Sq.mt/Person	200	300	
E4	BANQUET HALL	-	525	-	2.5 Sq.mt/Person	200	510(+300=810)	
E5	GYMNASIUM	350	240	-	1.5 Sq.mt/Person	200	200	
E6	SPA	-	150	-	1.65 Sq.mt/Person	50	82	
E7	POOL	-	250	-	4 Sq.mt/Person	100	400	
E8	SQUASH ROOM	-	-	-	62.5	1 COURT	65	
E9	BILLIARDS ROOM	-	-	-	19.61	1 TABLES	20	
E10	CARDS/CHESS	-	-	-	30	6 TABLES	30	
E11	CHANGE ROOMS	6.5	6.5	-	3.5 Sq.mt/ Cubicle	6 CUBICLES	20	
E12	LOUNGE	150	-	-	2.55 Sq.mt/Person	200	510(+490=1000)80	
E13	DECK AREA	175	250	-	0.8 Sq.mt/Person	100	180	
E14	THEATER ROOM	-	50	-	0.6 Sq.mt/Person	100	40	
E15	TOILETS	-	-	-	1 WC/ 50 Person	2 TABLES	100	
E16	TABLE TENNIS	-	-	-	98	-	13.4 x 6.1	
E17	BADMINTON COURT	18m x 8.8 m	13.5 m x 6.5 m	-	13.4 x 6.1	-	1050	
E18	CIRCULATION SPACE	-	-	-	30%	-	4332	
F	TOTAL							
F1	OUTDOOR SPACES-							
F2	BASKETBALL COURT	15 m x 20m	30m x 18m	-	26m x 14m	12	26m x 14m	STANDARDS
F3	VOLLEYBALL	-	-	-	16m x 6m	6	16m x 6m	STANDARDS
F4	INTERACTIVE SPACE IN OUTDOOR	-	-	-	-	-	As per design	-
F5	WATER FOUNTAIN	As per design	As per design	As per design	-	-	As per design	-
F6	LUXURIOUS LANDSCAPING	As per design	As per design	-	-	-	As per design	-
F7	MOUNDS	-	As per design	-	-	-	As per design	-
F8	BIRDS HOUSE	As per design	As per design	As per design	-	-	As per design	-
F9	KIDS PLAY AREA	As per design	As per design	-	-	-	As per design	-
F10	WATER BODY	As per design	As per design	-	-	-	As per design	-
G	SERVICES OF BLOCKS-							
G1	GUARD ROOM	-	1.8 m	1.5 m	1.5	-	1.5	-
G2	STAIRCASE	Width 1.5 m	Width 1.8 m	Width 1.5 m	Width 1-1.25 m	-	Width- 1500 mm	CASE STUDY
G3	LIFT	1.2 x 1.5 , 1.2 x 1.8 m	2.4 m 2.6 m	2.4 m 2.6 m	Shaft size- 1.9 x 1.9 m, Car size 1.3 x 1.1	3 Lifts	2.85 x 2.25	CASE STUDY
G4	LIFT LOBBY	2 m	2.4 m	2 m	0.8 / person. Min Width- 2m	-	12 sq.mt, 2.4 m width	STANDARDS
G5	ELECTRICAL SHAFT	1 m x 0.75 m	0.6 x 2 m	0.6 x 2 m	2.2 x 0.8 m	15	2.2 x 0.8 m	STANDARDS
G6	FIRE FIGHTING SHAFT	-	0.6 x 2 m	0.6 x 2 m	0.6 m x 0.3 m	-	0.75 x 0.75 m	CASE STUDY AVG
G7	PLUMBING SHAFT	-	-	-	1.2 m x 0.8 m	-	1.2 m x 0.8 m	STANDARDS
G8	RECEPTION	45 sq.mt	100 sq.mt	50 sq.mt	5 sq.mt (Reception desk)	-	45 sq.mt	CASE STUDY
G9	TENTATIVE CORE AREA-						75.2 SQ.MT	
H	ON-SITE SERVICES-							
H1	INFIRMARY	-	-	-	64.8	-	64.8	NEUFERTS
H2	SUPER MARKET	-	-	-	125	-	125	NEUFERTS
H3	LAUNDRY	-	-	-	135	-	135	NEUFERTS
H4	ATM	-	-	-	-	-	-	-
	TOTAL-						324.8 SQ.MT	



4.3 COMPARATIVE AREA TABLE-

S.NO.	REQUIREMENTS/FUNCTIONAL AREAS	CASE STUDY-1 UNITECH HORIZON G-NOIDA	CASE STUDY-2 ORANJE CASTLE LUCKNOW	VIRTUAL CASE STUDY KANCHANJUNGA APARTMENT MUMBAI	STANDARDS	NO. OF USERS	PROPOSED AREA	REMARKS
I	<b>THEATER-</b>							
I1	CAPACITY	150	150	-	-	150 Person	100 Person	STANDARDS
I2	SEATING AREA	-	-	-	0.8-1.5 / Person	-	100	STANDARDS
I3	STAGE AND SCREEN	-	-	-	-	-	15	STANDARDS
I4	PROJECTION ROOM	-	-	-	6 (min)	-	6	STANDARDS
I5	SOUND AND LIGHT ROOM	-	-	-	9	-	9	STANDARDS
I6	CIRCULATION	-	-	-	20 %	-	35	STANDARDS
	<b>TOTAL</b>						<b>180 SQ.MT</b>	
J	<b>RESTAURANT IN CLUB HOUSE-</b>							
J1	CAPACITY	100	70	40	-	200	70	STANDARDS
J2	ENTRANCE LOBBY	30	25	-	0.8 / Person	-	120	STANDARDS
J3	DINING AREA	1.8	1.8	-	1.8 / Person	-	360	STANDARDS
J4	KITCHEN	-	-	-	50% of dining	-	180	STANDARDS
J5	PANTRY/STORAGE	-	-	-	50% of kitchen	-	90	STANDARDS
J6	WASH	-	-	-	-	-	50	STANDARDS
J7	TOILET MALE & FEMALE	-	-	-	1 WC/20 Person, 1 WB/30, IU/50 Person(M)	-	20	STANDARDS
J8	CIRCULATION	-	-	-	1 WC / 50 Person	-	20	STANDARDS
	<b>TOTAL</b>				20%		<b>910 SQ.MT</b>	
K	<b>BANQUETHALL-</b>							
K1	CAPACITY	300	250	-	-	200	-	-
K2	FOYER	15	20	-	-	-	20	-
K3	SEATING AREA	2.5	2.5	-	2.5 Sq.mt / Person	-	500	-
K4	KITCHEN+PANTRY	-	-	-	50% of dining	-	250	-
K5	TOILET MALE & FEMALE	-	-	-	1 WC / 50 Person, 1 wc/p	-	20, 20	-
K6	CIRCULATION	-	-	-	30%	-	243	-
	<b>TOTAL</b>						<b>810 SQ.MT</b>	
L	<b>INFIRMARY-</b>							
L1	CAPACITY	-	-	-	-	12	-	STANDARDS
L2	RECEPTION	-	-	-	5 sq. mt. (Reception Desk)	-	9	STANDARDS
L3	WAITING AREA	-	-	-	12	-	15	STANDARDS
L4	DOCTOR'S ROOM	-	-	-	7 sq.mt-9 sq.mt	-	9	STANDARDS
L5	PHARMACY	-	-	-	12	-	15	STANDARDS
L6	TOILET MALE	-	-	-	1 WC/ 6 Person, 1 WB/12 P.	-	3	STANDARDS
L7	TOILET FEMALE	-	-	-	1 WC/ 6 Person, 1 WB/12 P.	-	3	STANDARDS
L8	CIRCULATION	-	-	-	20%	-	10.8	-
	<b>TOTAL</b>						<b>64.8 SQ.MT</b>	
M	<b>PARKING-</b>							
M1	TOTAL PARKING	1900	-	-	ECS-1.5 / 100 SQ.MT	-	1.5 ECS/100 SQ.MT	-
M2	BASEMENT	1550	-	-	32 sq.mt.(+Circulation)	-	-	-
M3	ON-SITE PARKING	350	-	-	23 sq.mt.(+Circulation)	-	-	CASE STUDY
N	<b>MISCELLANEOUS-</b>							
N1	GUARD ROOM	20	16	1.5 X 1.5	1.2 X 1.2	-	1.2 X 1.2	STANDARDS
N2	ELECTRICAL PANEL ROOM	70	140 SQ.MT	-	-	-	140 SQ. MT	CASE STUDY
N3	AHU ROOM	-	25	-	-	-	30	CASE STUDY
N4	TRANSFORMER ROOM	-	-	-	39	-	39	STANDARDS



## **CHAPTER 05**

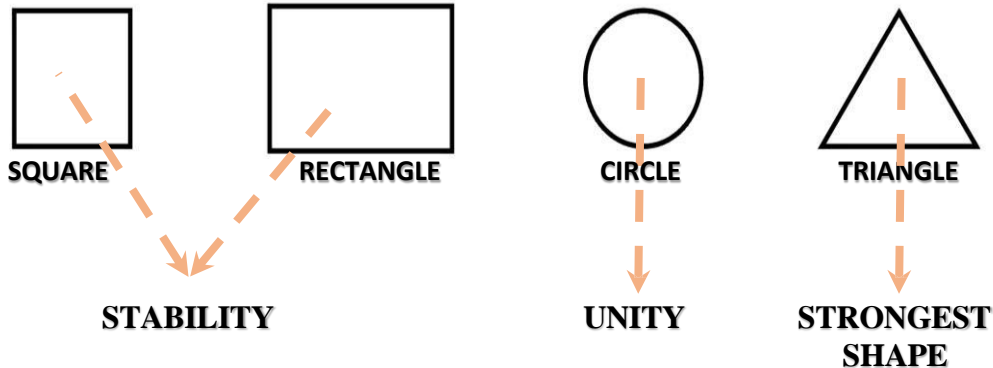
# **CONCEPT AND ZONING**

## **5.1 CONCEPT-**

### **CONCEPT DEVELOPMENT**

A concept is an idea, theory or notion, In architecture concept provide a direction or approach to the design.

**Concepts are the backbone of the overall design.**



Square & rectangles shapes represents stability, also represent honesty & solidity.  
**Usually Less Waste**

#### **RECTANGLE USED IN ARCHITECTURE**

The reason most commercial, high rise design are rectangular.  
Easier & faster to build ordinary materials.

#### **TRIANGLE USED IN ARCHITECTURE**

Triangles are the strongest shape in architecture.  
To make roof, trusses, building, bridges etc.

Architects can use the strength of the circle while manipulating its appearance .  
**Circle is strongest 2-dim shape.**  
**Symbol of unity.**

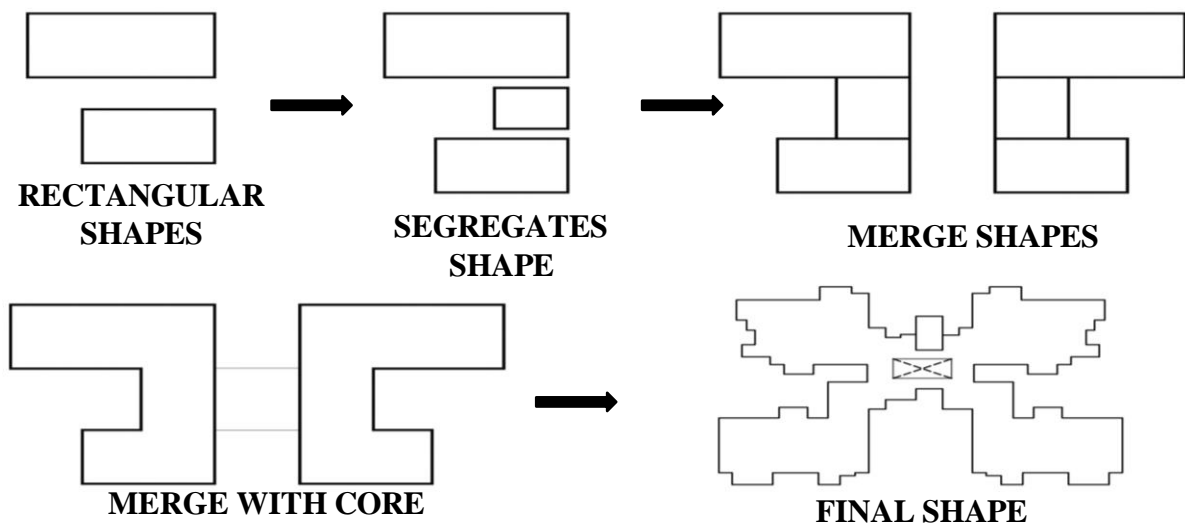
#### **CIRCLE USED IN ARCHITECTURE**

Architects use circle when designing buildings especially when designing decorative features like Domes, Arches etc.

#### **WHY I CHOOSE RECTANGLE**

Rectangle is good shape in high rise building & represents honesty, solidity & stability.  
**Usually Less Waste.**

### **FORM EVALUATION**





## PHILOSOPHY AND PRINCIPLES-

### FUNCTION



The use of the object

### FOLLOWS



Form comes before function

### FORM



The design of the object or building

- I follow the FUNCTION FOLLOWS FORM in my design.
- I take one rectangle then splitting it in four parts, then segregate it.
- The concept is having a vertical movement with lifts & staircases which have divided into four parts each having an apartment.
- Thus all of these face different directions, thereby providing complete privacy to all.

### RECTANGLE IN ARCHITECTURE

The reason most high rise, commercial, mixed use designs are rectangular or square, is because they are easier, faster and more economical to build out of ordinary materials-stone, concrete, brick or wood. Square and rectangular shapes are also exponentially easier to reconcile, and there is usually less waste.

### STRUCTURAL SYSTEM

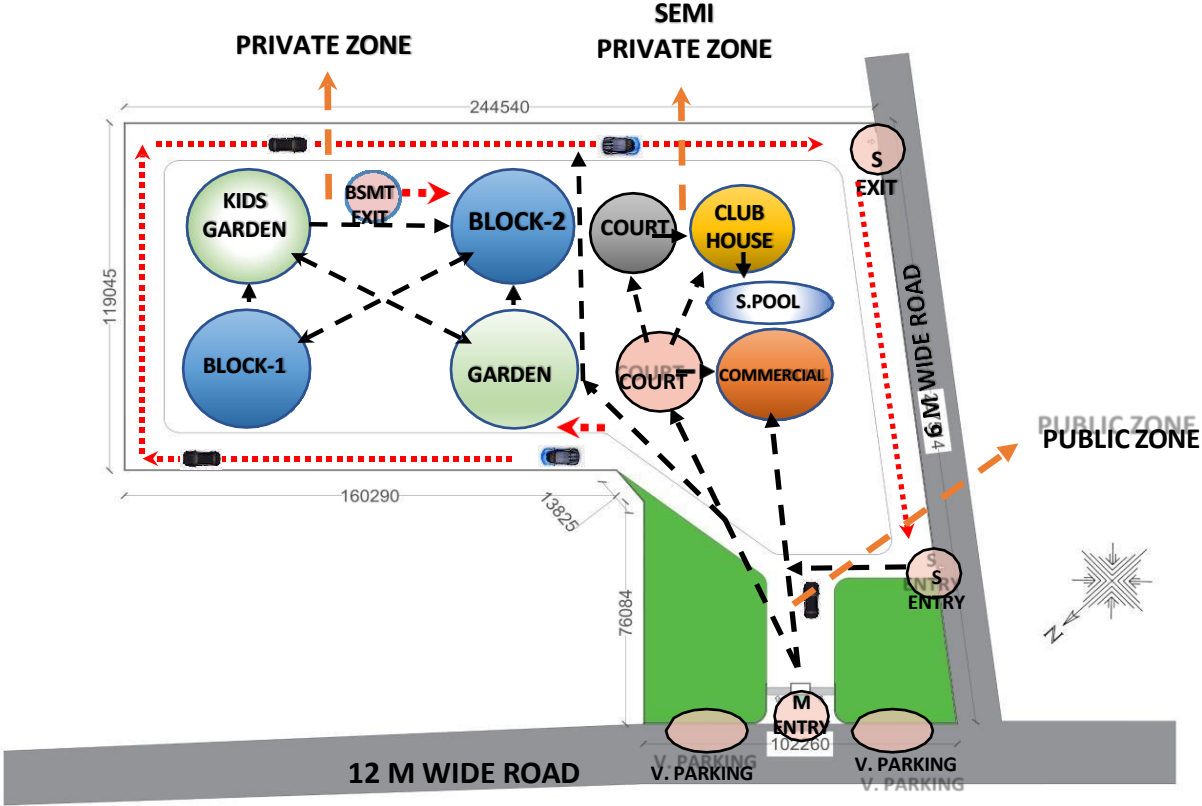
- I used SHEAR WALL in my High-Rise Luxury Apartment.
- I also used mega columns (Vertical member) & Beam (Horizontal member) for provide a Lateral rigidity in order to with stand Wind Stresses.

### RELEVATION OF CONCEPT WITH SMART BUILDING –

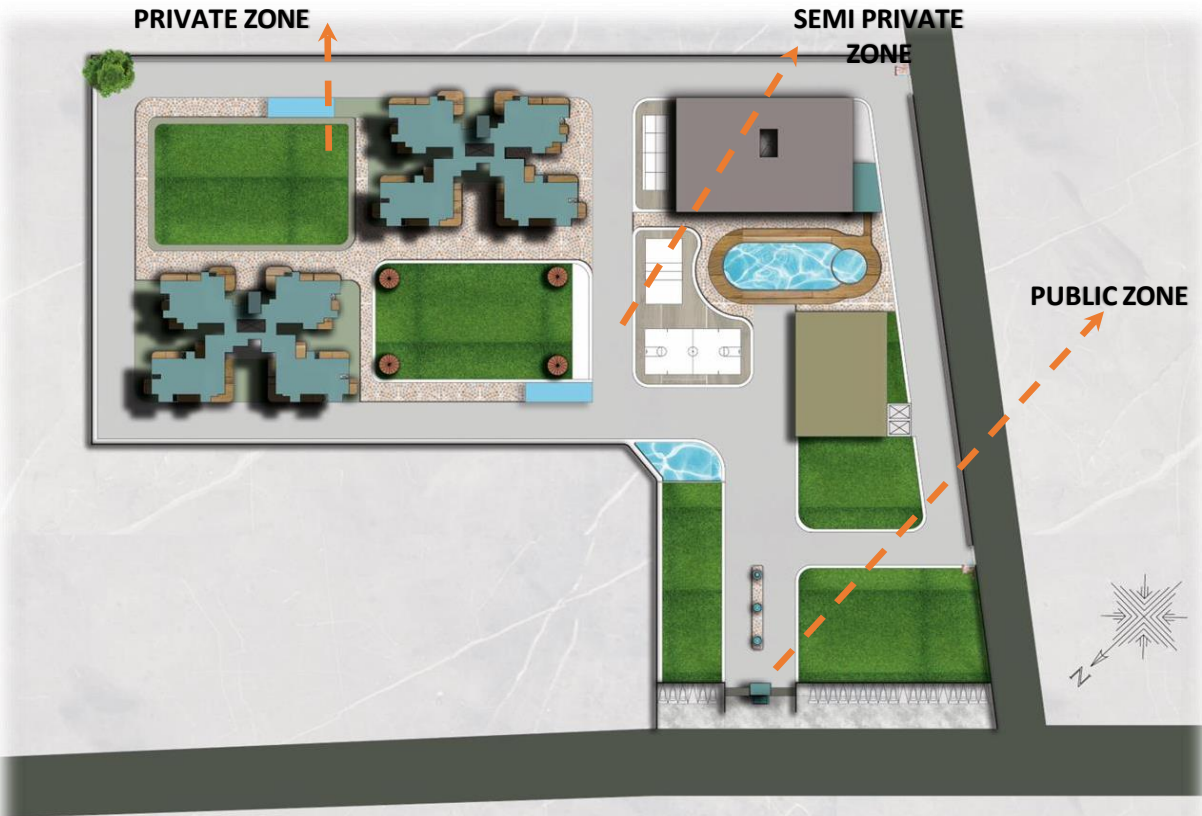
- Comfort: Advanced HVAC and automated systems enhance living comfort.
- Eco-Friendly Luxury: Use of green materials and energy-efficient systems.
- Space and Light: Intelligent lighting and adaptable layouts optimize space and ambiance.
- Positive Building Impact: Smart tech improves energy, water management, and sustainability



5.2 ZONING-



SITE ZONING





## **CHAPTER 06**

# **ARCHITECTURAL DRAWINGS**



# SITE DETAILS

## 1.1 Introduction of the project-

### Lucknow city and high-rise buildings

This thesis focuses on "resilient design strategies for smart group housing buildings," acknowledging the critical role of architecture in creating sustainable and adaptable living environments.

In an era marked by climate uncertainties and technological advancements, the synthesis of resilience and smart design becomes imperative. This research seeks to explore and propose strategies that not only enhance the durability of group housing structures but also integrate intelligent technologies to elevate the quality of life for inhabitants.

## 2. AIM-

This thesis focuses on "Resilient Design Strategies for Smart Group Housing Buildings," acknowledging the critical role of architecture in creating sustainable and adaptable living environments. In an era marked by climate uncertainties and technological advancements, the synthesis of resilience and smart design becomes imperative.

### OBJECTIVES-

- Kisan Path a developing Area of Lucknow, offering a Large scope of Variety of Projects.
- The site falls under Mixed-use Category of Land, running along the Indira Canal giving the scope of High-end luxurious housing project with a landscape belt.
- Studying the Bye-laws of the area, designing with its accordance and analyzing the requirements of projects WRT site and land use.
- Propose practical strategies for architects to implement resilient and smart features in the design and construction of group housing projects

### 1.5 LIMITATIONS-

- The land comes under the mixed-use category, hence, 10% of total Site area needs to be consumed by commercial complex, which will be designed as a part of this thesis.
- A certain portion of land has to be used for landscaping as it falls under the **GREEN BELT** area as proposed in master Plan.
- Limiting the site development/ designing only upto 9.6 Acres in Lucknow.
- Since the place is in a developing state, there are no market places hence a commercial needs to be designed catering the needs if the residents.
- Not all apartments will be river facing.

### STRUCTURAL SYSTEM-

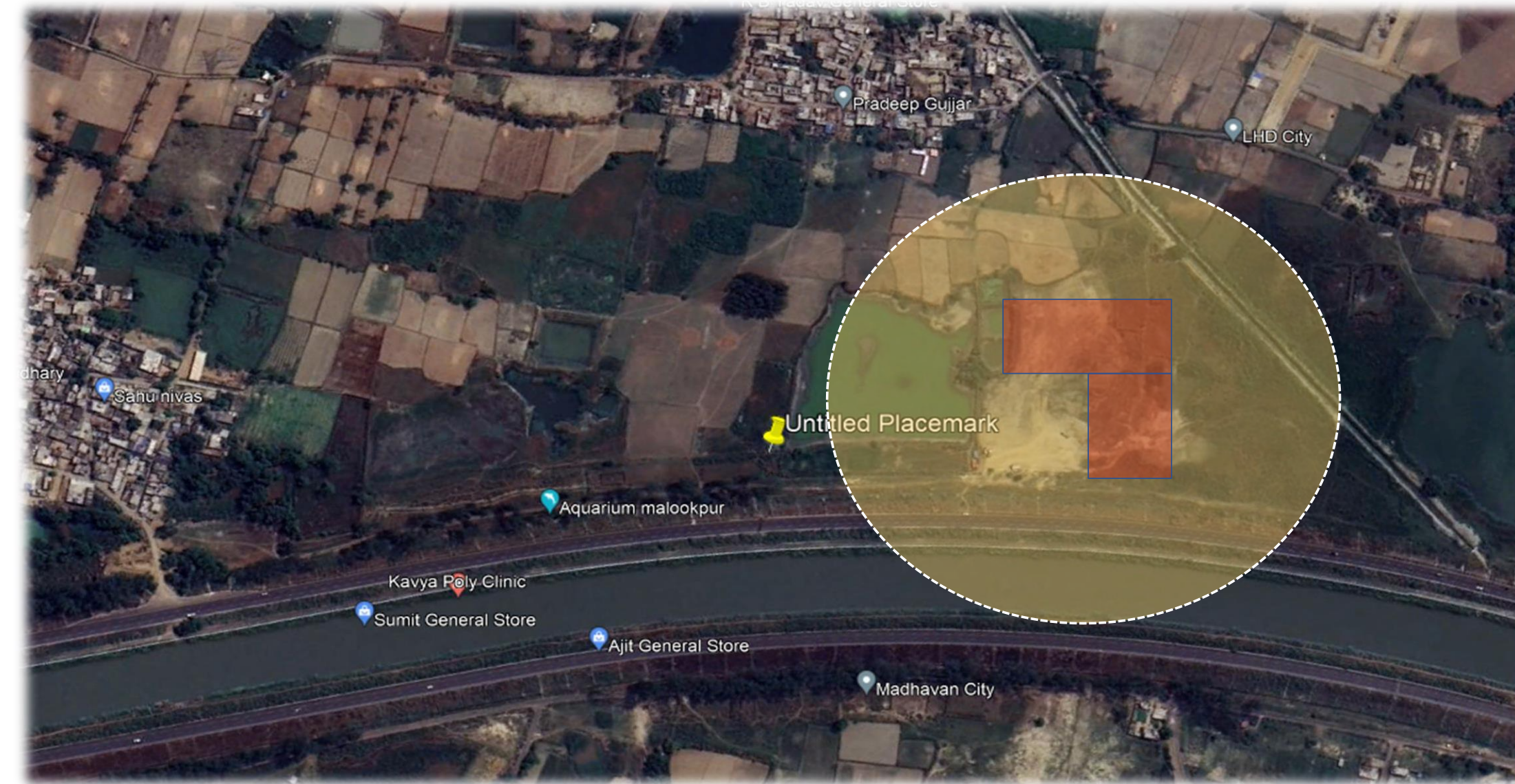
- I used SHEAR WALL in my Smart-sky residence.
- I also used mega columns (Vertical member) & Beam (Horizontal member) for provide a Lateral rigidity in order to with stand Wind Stresses.

### LANDUSE PLAN-

The site lies in Mixed use category 2 Land use as per the Lucknow masterplan 2031. This land use gives the possibility of a Highrise mixed use residential complex along with 10% of the total site area specified for commercial block.



SITE IMAGES-



**PROJECT NAME-** SmartSky Residences, Lucknow.

**PLOT AREA-** 9.6 Acres

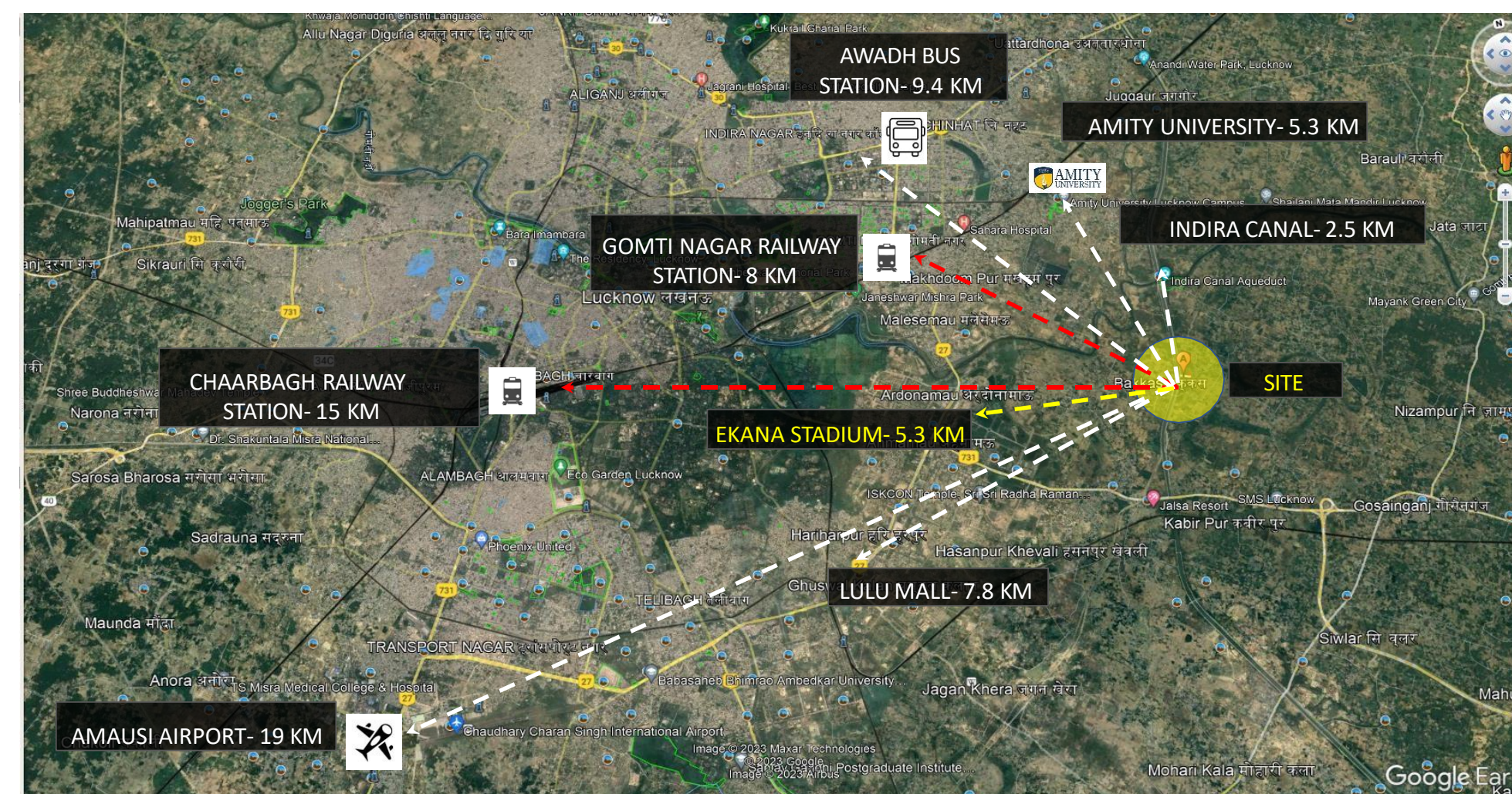
**GROUND COVERAGE-** 30%

**F.A.R. –** 2.5

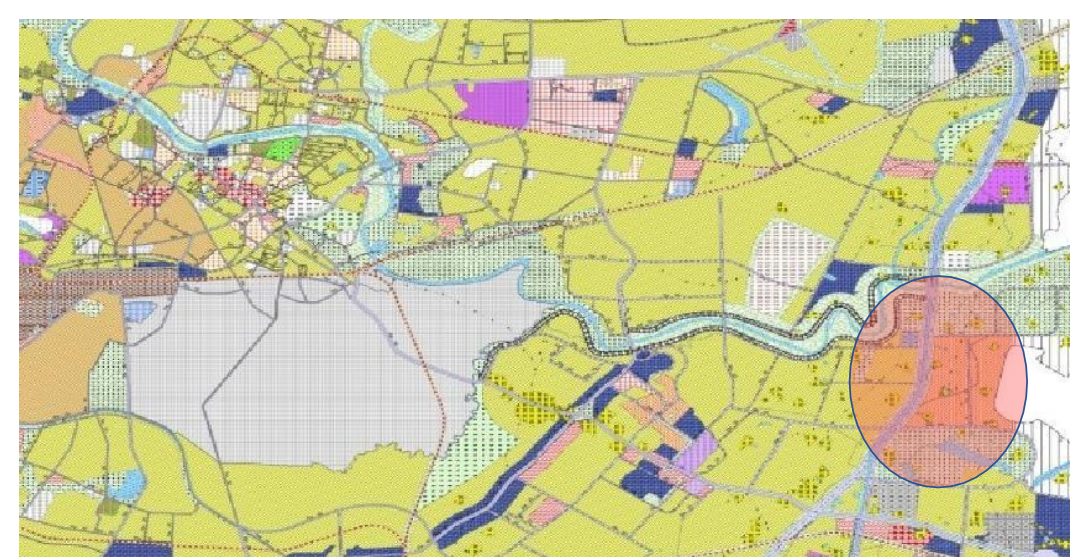
**SETBACKS-** 13m from each side, 50m greenbelt area from front.

**LOCATION OF PROJECT-** Malookpur Dhakwa, Outer Ring road kisan path, Lucknow

- It lies on the Malookpur Dhakwa, Kisan path, Lucknow, in khasra number - 83,84 and 85
- Situated along the main highway with a 50 m wide Indira canal running along the road.
- 50 m Wide Greenbelt needs to be designed as per the Masterplan 2021 and 2031.



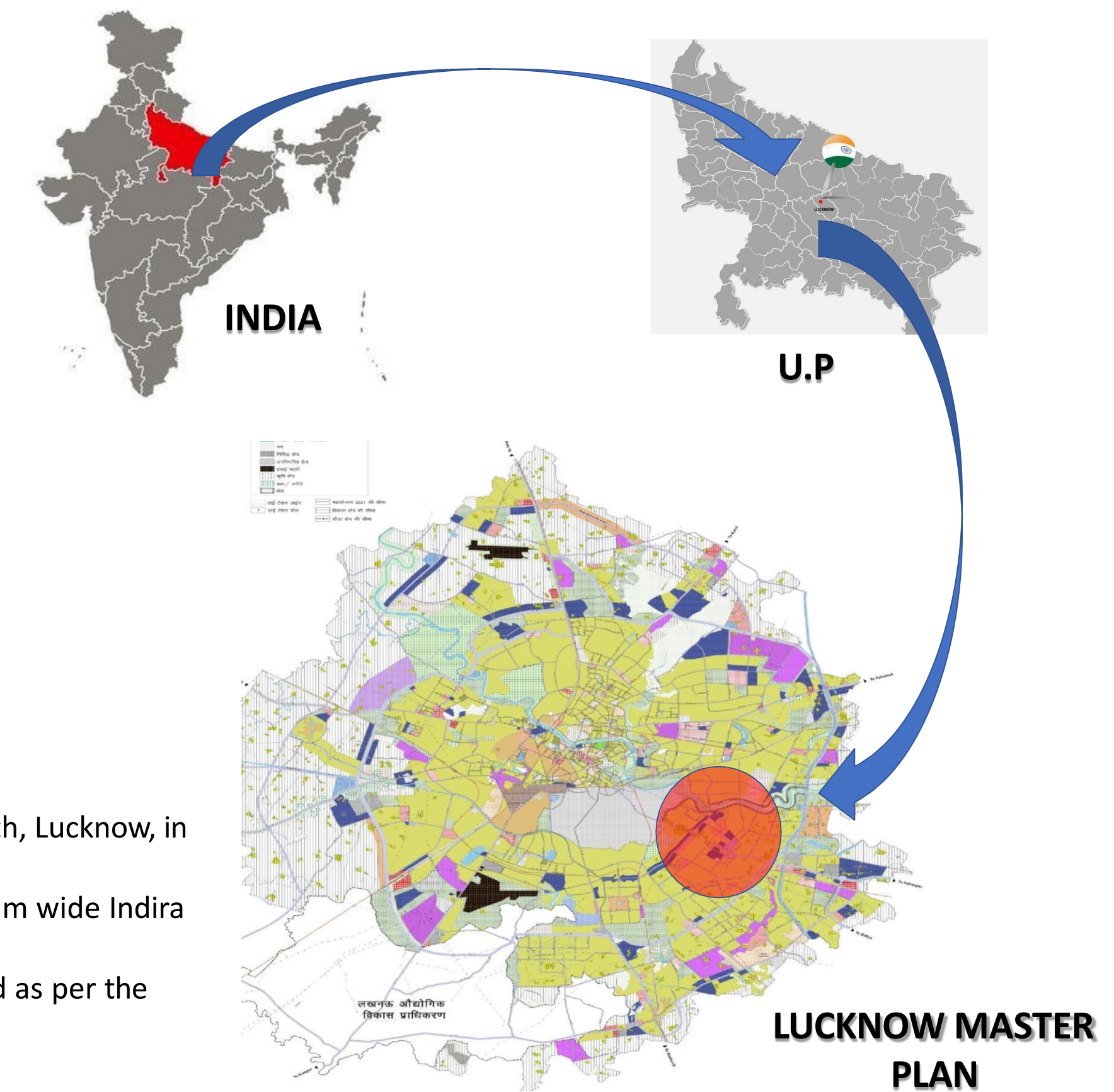
SITE ACCESSIBILITY



### SOIL ANALYSIS-

**Types of Soil-** Extremely fertile Alluvial soil in this specific region on Lucknow along Indira Canal. Those extremely fertile alluvial soils range from sandy to clayey loom.

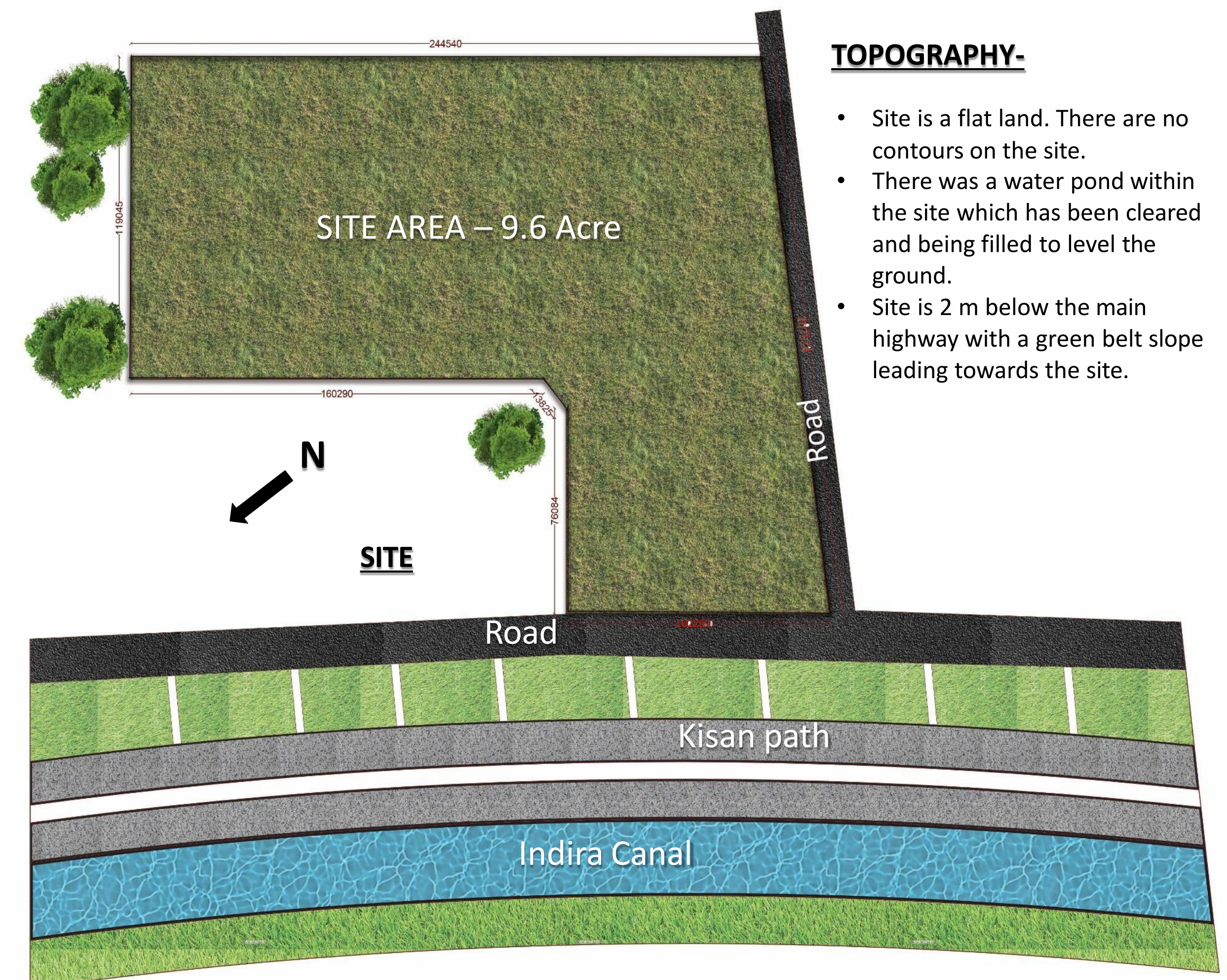
**Types of Soil-** maximum load that a soil can bear per unit area (usually Tonnes per sq m.) Bearing capacity for Alluvial soil- **5-7.5 tonnes/m2**



LUCKNOW MASTER PLAN

### TOPOGRAPHY-

- Site is a flat land. There are no contours on the site.
- There was a water pond within the site which has been cleared and being filled to level the ground.
- Site is 2 m below the main highway with a green belt slope leading towards the site.



### VEGETATION-

- The vegetation comprises of various bushes, wild grass, and trees.
- There is a dense plantation along the borders of main highway which comes under the green belt.
- Wild grass and weeds run throughout the site

**Smart-Sky Residences: Elevating High-Rise Living in Lucknow**

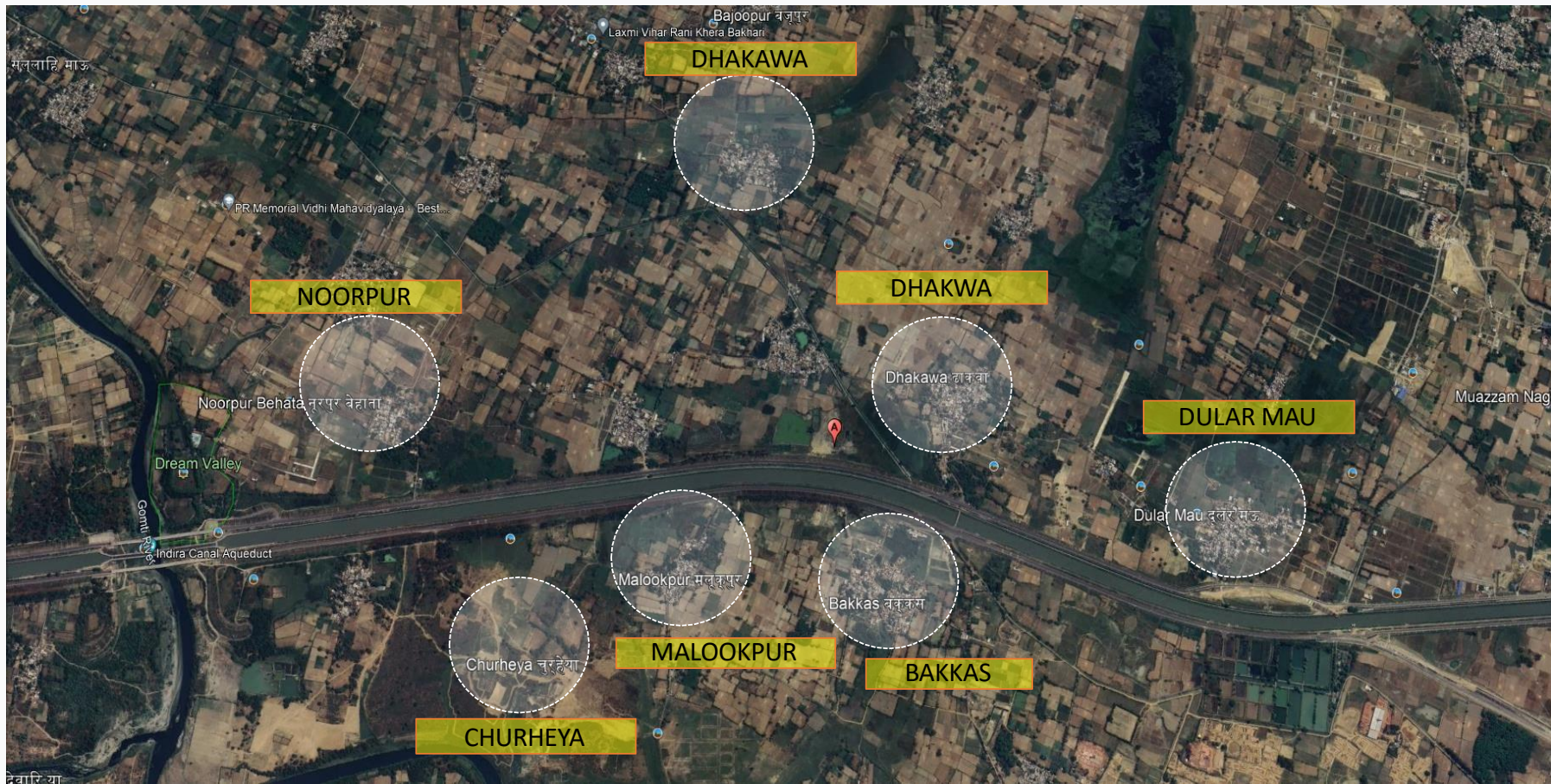
**GUIDED BY:**  
AR. ANKUR SAXENA

GAURAV PANDEY  
B.ARCH 5<sup>TH</sup> YEAR (2019-24)  
1190101012  
BBD UNIVERSITY, LUCKNOW



SITE DETAILS

SITE CONTEXT-



Site is located on kisan path and has various villages around the site.  
The Kisan path Development project has various proposals for housings, however currently the lands are barren and there are numerous villages around the site.

- MALOOKPUR – 650 M

▪ DHAKHAWA – 160

▪ BAKKAS – 400 M

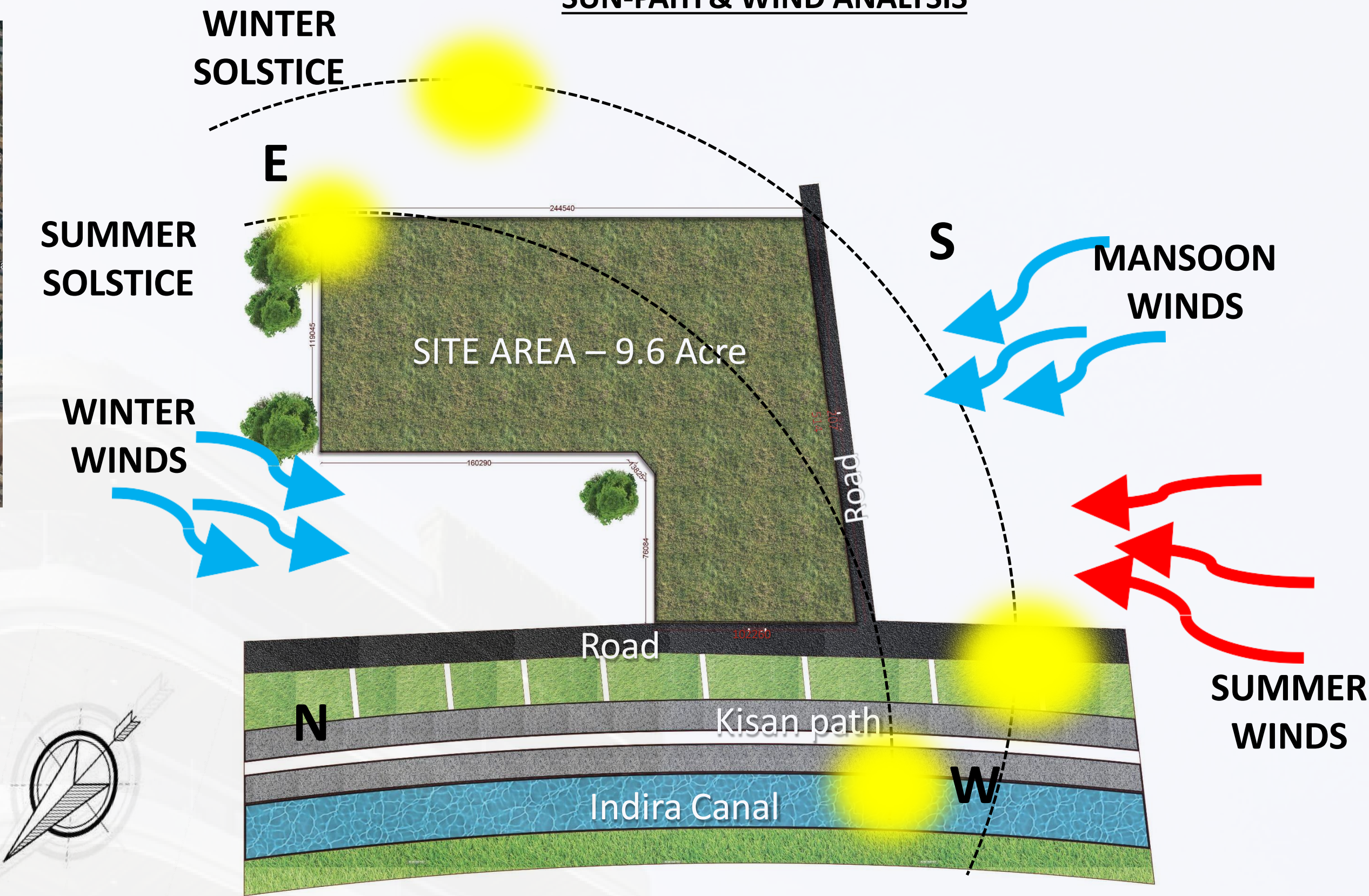
▪ SITE SURROUNDINGS-
- CHURHEYA – 1.7 KM

▪ NOORPUR – 2.1 KM

▪ INDIRA CANAL – 2.6 KM



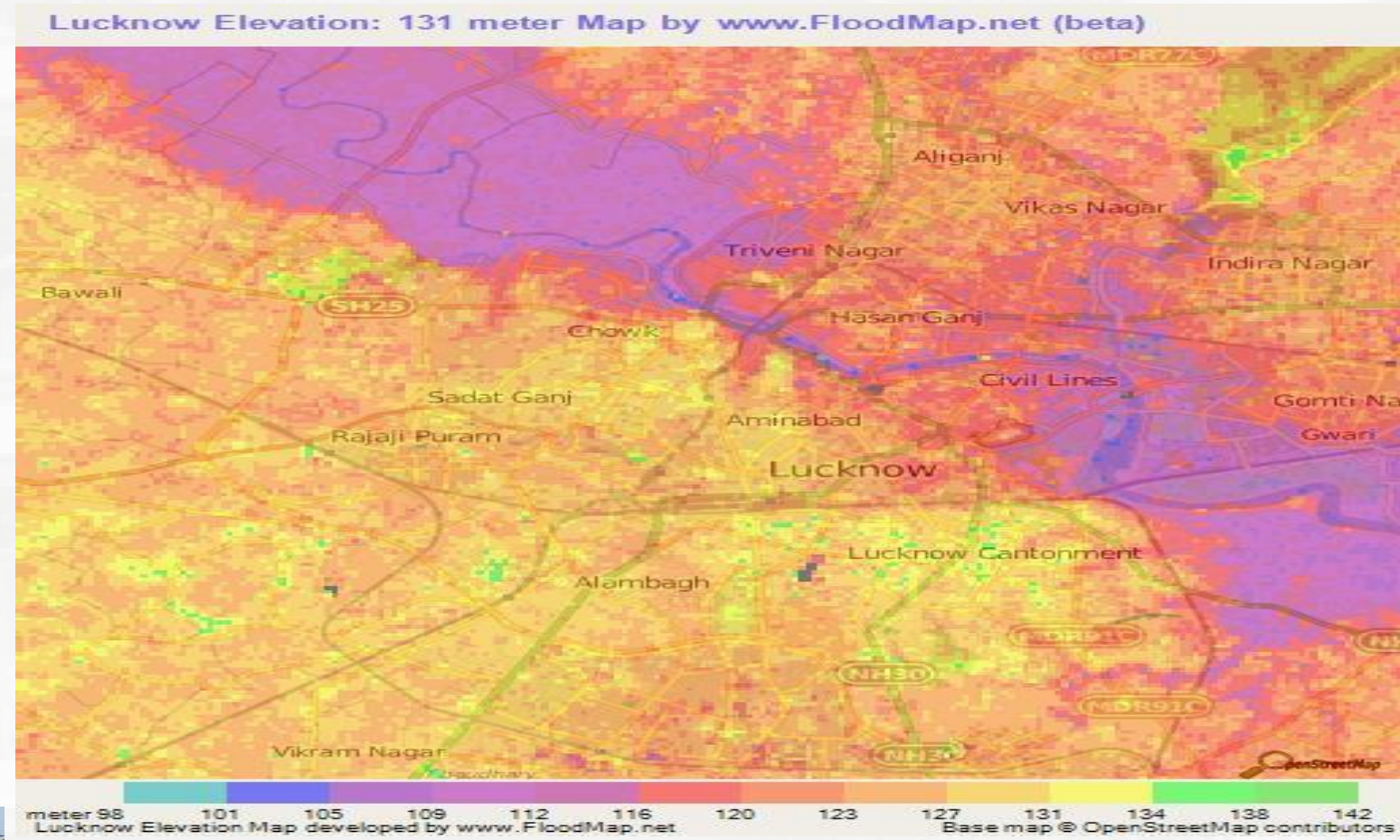
SUN-PATH & WIND ANALYSIS



The diagrams normally comprises of 8, 16 or 32 radiating spokes, which represent wind directions in terms of the cardinal wind directions (North East South West ) and their intermediate directions. Meteorologist use wind rose diagrams to summarize the distribution of wind speed and direction over a defined observation period.

Lucknow comes under zone 3 – 44-47m/s (damage rise zone)

TOPOGRAPHICAL ANALYSIS-

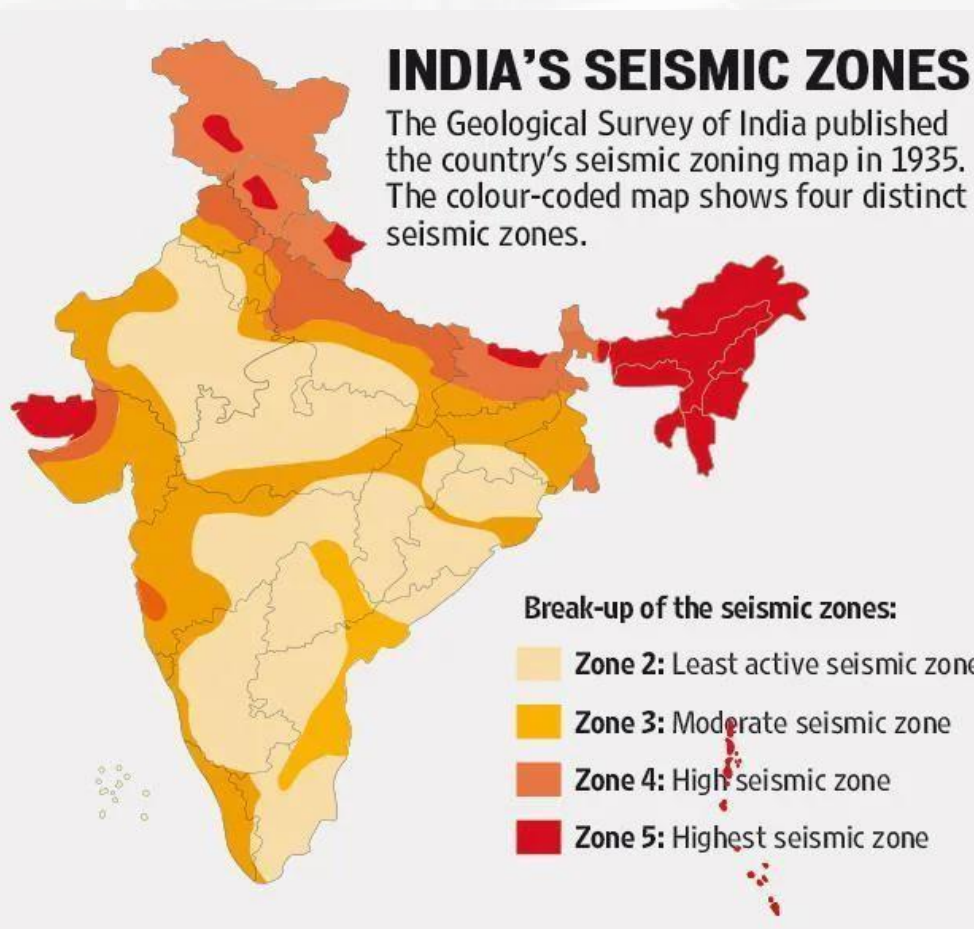


Lucknow is Capital of Uttar Pradesh , located between 26.30 & 27.0 N & 80.30 & 81.13E, altitude approximately 128m from sea level.

The city stands at an elevation of approximately 123 m (404 ft.) above sea level.

- Minimum Elevation – 106m
- Maximum Elevation – 161m
- Average Elevation – 123m.

SEISMIC ANALYSIS-



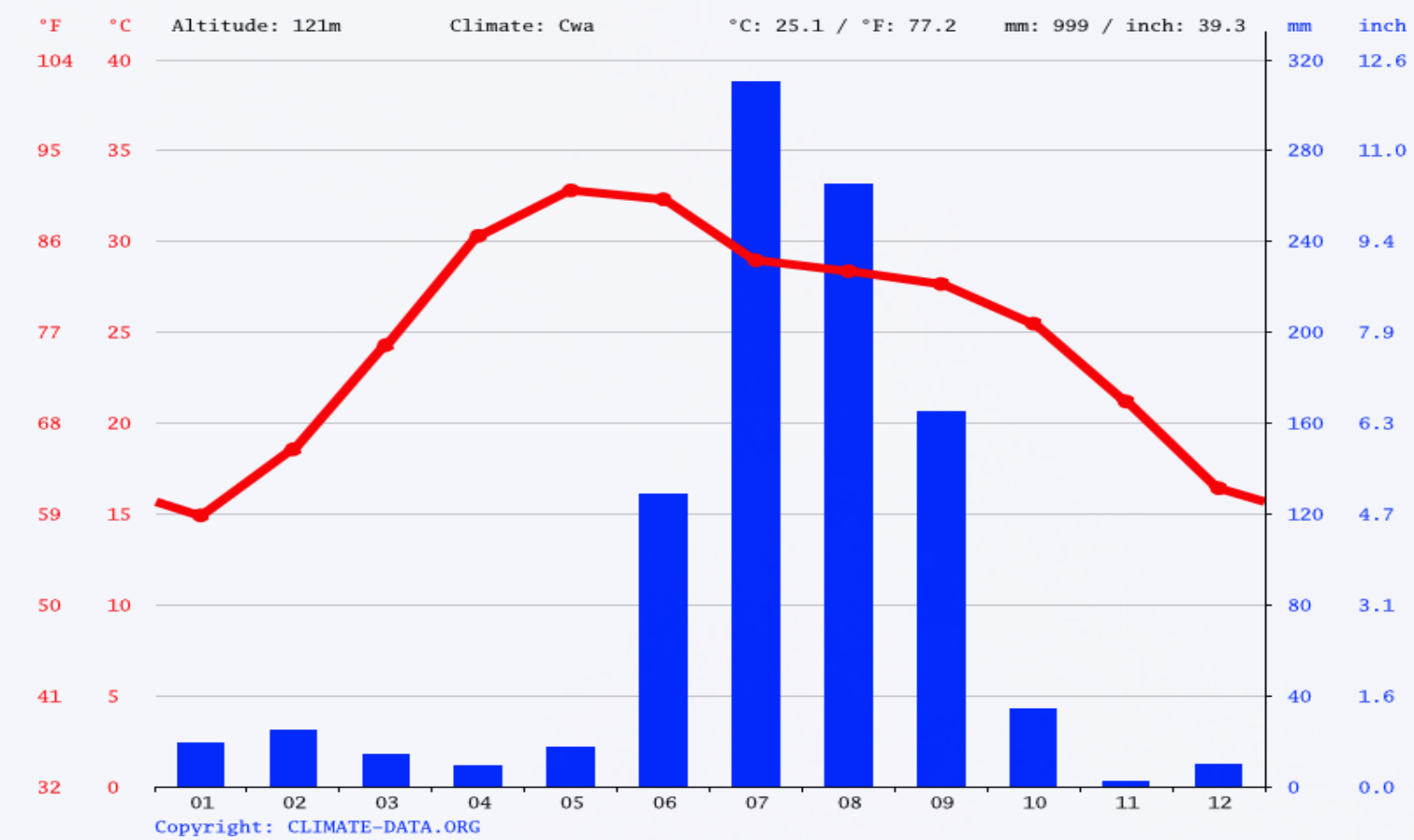
India has been divided into 5 major seismic Zones according to the intensity & frequency of earthquakes.

Lucknow comes under zone – 3 (moderate) according to its seismic activities hence building needs to be designed catering to structural needs of this specific seismic zone.

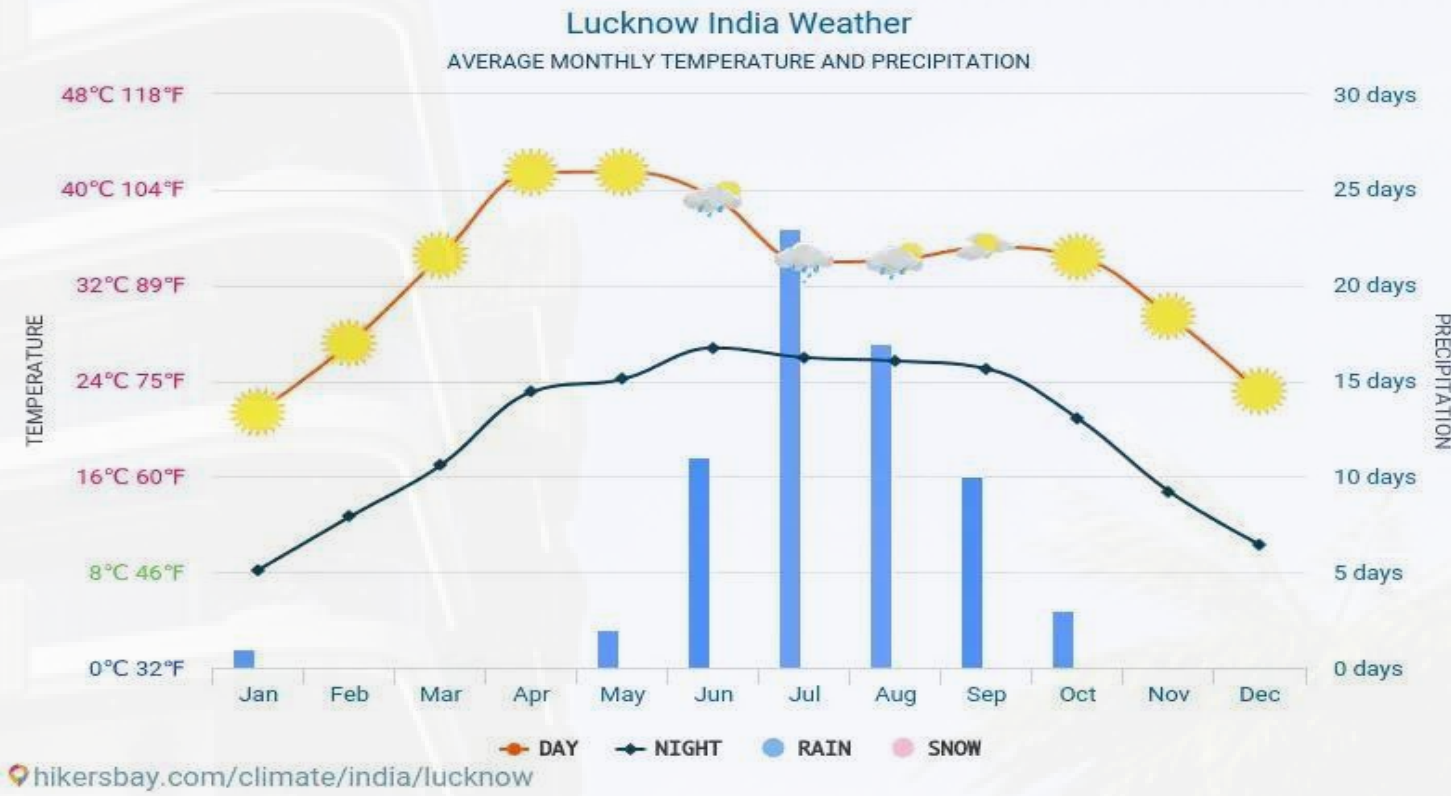
CLIMATE ANALYSIS-

- Temperature Warm & Humid Sub-Tropical Climate, with cool dry Winters. Lucknow's location is responsible for its diverse weather patterns.
- The climate here is mild, and generally warm and temperate. In winter, there is much less rainfall than in summer.
- Temperature in Lucknow is 25.1° I 77.2 ° F
- Precipitation here is about 999 mm I 39.3 inch per year.

CLIMATE GRAPH – WEATHER BY MONTH



- **RAINFALL-** Rainy Season from Mid-June to Mid-Sep.
- Avg- 999 – 1010 mm (39.3 – 40 in)
- South-west Monsoon winds.



WEATHER AVERAGES LUCKNOW

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	14.9 °C (58.9) °F	18.6 °C (65.4) °F	24.3 °C (75.7) °F	30.3 °C (86.6) °F	32.8 °C (91.1) °F	32.3 °C (90.2) °F	29 °C (84.1) °F	28.4 °C (83.1) °F	27.7 °C (81.8) °F	25.5 °C (77.9) °F	21.2 °C (70.1) °F	16.4 °C (61.6) °F
Min. Temperature °C (°F)	9.1 °C (48.3) °F	12.2 °C (54) °F	16.9 °C (62.4) °F	22.6 °C (72.6) °F	26.1 °C (78.9) °F	27.5 °C (81.5) °F	26.2 °C (79.2) °F	25.8 °C (78.4) °F	24.5 °C (76.2) °F	20 °C (68) °F	14.9 °C (58.8) °F	10.3 °C (50.6) °F
Max. Temperature °C (°F)	21.3 °C (70.3) °F	25.2 °C (77.4) °F	31.5 °C (88.6) °F	37.7 °C (99.9) °F	39.2 °C (102.6) °F	37.1 °C (98.9) °F	32.3 °C (90.2) °F	31.7 °C (89.1) °F	31.4 °C (88.5) °F	31.1 °C (88) °F	27.7 °C (81.9) °F	23.1 °C (73.5) °F
Precipitation / Rainfall mm (in)	19 (0)	25 (0)	14 (0)	9 (0)	17 (0)	129 (5)	310 (12)	265 (10)	165 (6)	34 (1)	2 (0)	10 (0)
Humidity(%)	67%	60%	44%	30%	38%	54%	79%	82%	80%	66%	58%	64%
Rainy days (d)	2	2	2	2	3	8	18	13	2	0	1	
avg. Sun hours (hours)	8.4	9.6	10.6	11.5	11.9	10.7	8.4	8.0	8.4	9.6	9.6	9.0

- The average temperatures vary during the year by 17.9 °C I 32.3 °F.
- The month with the **HIGHEST RELATIVE HUMADITY** is August (81.82%)
- The month with the **LOWEST RELATIVE HUMADITY** is April (29.59%)
- Between the driest and wettest months, the difference is precipitation is 308 mm I 12 inch



CASE STUDY -01 ORANJE CASTLE GOMTI NAGAR, LUCKNOW

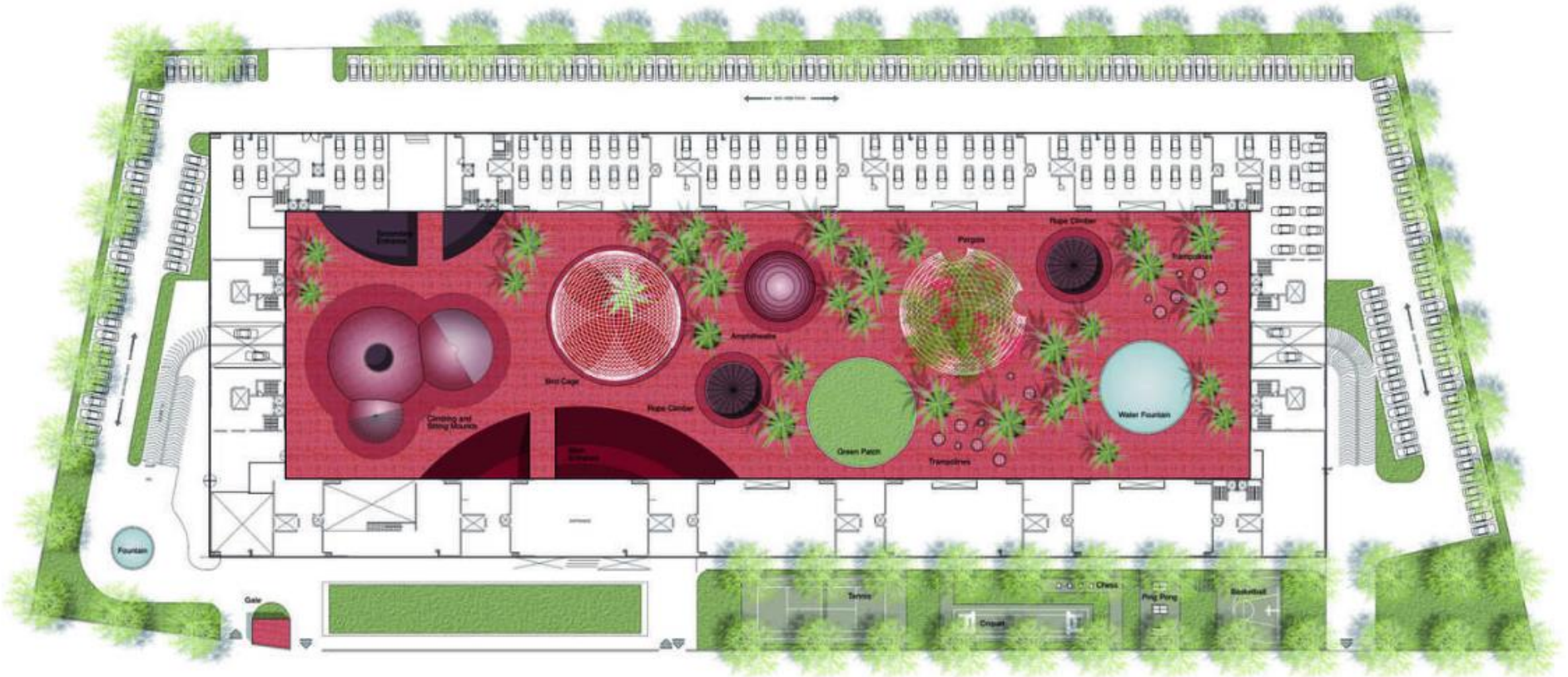
INTRODUCTION-

➤ The Oranje Castle is a thoughtfully planned one, equipped with all amenities for a comfortable living. It is spread over a sprawling area of 7.2 Acre. The property comprises of 436 units which are enclosed within a peaceful environment.

➤ A professionally conceptualized Residential property, this state-of-the art project is visually appealing. The available project units are in Under Construction state. The project boasts of a range of configurations viz Flat which are charming, yet durable. The property offers units in different configurations and sizes . This well-designed area has a total of 16 towers, each with its own benefit. 01 November 2015 is the project's launch date. The year and month of possession of this flat is December 2022.

➤ The commencement certificate of Oranje Castle has been granted. The occupancy certificate of this planned project not granted. Oranje Castle is a high-quality yet affordable residential project by Suraj Infraventures. The Oranje Castle is equipped with all the modern facilities and amenities, such as Rain Water Harvesting, Kids Play Pool With Water Slides, Flower Gardens, Event Space & Amphitheatre, Piped Gas, Cafeteria/Food Court, Banquet Hall, Waste Disposal, Security, Park. Gomti Nagar Extension road, Lucknow. is the official address of this project.

GROUND FLOOR PLAN 1:750  
TREES VISIBLE



SITE



GOOGLE MAPS IMAGE

**Location:** Emaar Gomti Greens, Gomti Nagar Ext. (Shaheed Path),LKO  
**Landscape Design** by Topotek 1 Germany  
**Architect:** MVRDV Architects, Netherlands  
**Consultant:** Archohm Consults Pvt Ltd  
**Structure Designer:** Shekhar Design Center

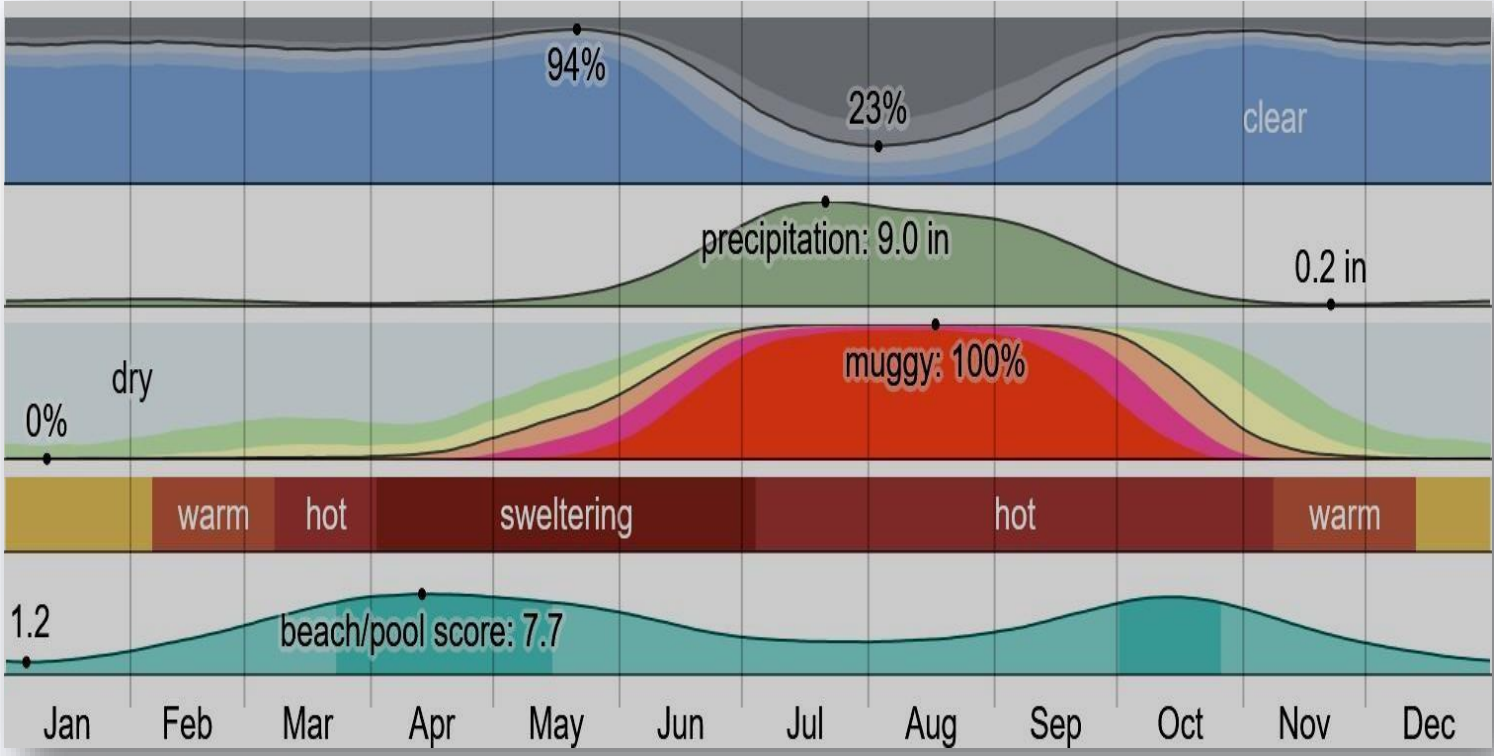


BUILDING CHARACTERISTICS -

- COURTYARD TYPE BUILDINGS ARE VERY SUITABLE
- LARGE PROJECTING EAVES AND VERANDAHs
- ROOF INSULATION AND WALL INSULATION
- THICKER WALLS
- AIR LOCKS AND BALCONIES
- WEATHER STRIPPING
- PALE COLOURS AND GLAZED CHINA MOSAIC TILES
- EXHAUSTS
- TREES AND WATER BODIES FOR EVAPORATIVE COOLING
- DEHUMIDIFIERS AND DESICCANT COOLING
- LARGE OPENINGS IN OPPOSITE WALLS
- APPROPRIATE OREINTATION AND SHAPE OF BUILDING
- CAVITY WALLS, TERRACE GARDENS



LUCKNOW WEATHER BY MONTH



- **Lucknow** has a Composite climate with cool, dry winters from mid-November to February and dry, hot summers with sunshine from March to mid-May.
- The average temperatures vary during the year by 17.9 °C | 32.3 °F.
- The month with the **HIGHEST RELATIVE HUMADITY** is August (81.82%)
- The month with the **LOWEST RELATIVE HUMADITY** is April (29.59%)
- Between the driest and wettest months, the difference is precipitation is 308 mm | 12 inch



SITE IMAGES

Project type	Apartment
Sub-type	3, 4&5 BHK
Orientation site	North
Built up Area	7.2 acre
Area	20138 sq.m
Entry & Exit	1, 2
Floors	Stilt+17
Towers	16
Possession	Dec 22
Cost proximity	650 Cr. ++



# CASE STUDY - 01 ORANJE CASTLE GOMTI NAGAR, LUCKNOW

## Bye-Laws (LDA)-

- **Ground coverage** - 35% up to 40,000 sq. m and 40% above 40,000 sq. m
- **Floor area ratio** - 2.75
- **Height** - no limit for buildings above 30m in height clearance from airport authority shall be taken Projection into Open Spaces without counting towards FAR.
- All open spaces provided either in interior or exterior shall be kept free from any erections thereon and shall open to the sky. Nothing except cornice, chhajja or weather shade (not more than 0.75 m. wide) shall overhang or project over the said open space so as to reduce the width to less than minimum required. Note: Such projections shall not be allowed at height less than 2.2 m. from the corresponding finished floor level:
- One canopy per block on the ground floor not exceeding 4.5 m. in length and 2.4 m. in width Balcony at roof slab level of 1.2 m. width and area not exceeding 3.5 sq m. per bedroom but not exceeding 3 in number per flat.
- Balcony having entrance from the toilet/bathroom and width as 1.2 m. for drying clothes

## ACCESSIBILITY-

- Panacea Hospital- 3 kms
- Phoenix Palassio- 3 kms
- Sai medical store- 3 kms
- Canara bank ATM- 3.4 kms
- Gomti Nagar electricity board- 3.4 kms
- St. Francis School- 4 kms
- Axis Bank- 4.2 kms
- Delhi Public School- 4.7 kms
- Indian Oil- 5.3 kms
- Janeshwar Mishra Park- 8.1 kms.

## GENERAL FEATURES-

- Earthquake Resistant RCC Framework
- Central Park Area Equivalent to Two Football Ground
- Beautiful Landscaping with Water Bodies
- LED Lights in Landscape and Common Area
- Automatic Elevators With High Ceiling by Schindler / OTIS
- Thyssenkrupp / KONE
- Provision for Business Lounge - 24 Hours Water Supply
- Temperature Controlled Indoor Swimming Pool
- WiFi Enabled Campus
- 100 % Power Backup
- Car Free Central Park
- Kids Creche Area I
- ntercom Facilities in Each Flat Connected with
- Guard Room



### ENTERTAINMENT

- Multi - Purpose Party Hall
- State - of - the - Art Club
- Amphitheatre
- Mini Theatre
- Restaurant / Cafeteria
- Kids Gaming Zone



### HEALTH

- Spa & Salon
- Steam & Sauna
- Room with Massage Room
- Gymnasium with Modern Equipment
- Jogging Track
- Children Play Area
- Climbing Mounds for Children



### SPORTS

- Cricket Cage
- Basketball Court
- Tennis Court
- Squash Court
- Badminton Court
- Table Tennis
- Card Room
- Billiards / Snooker Room

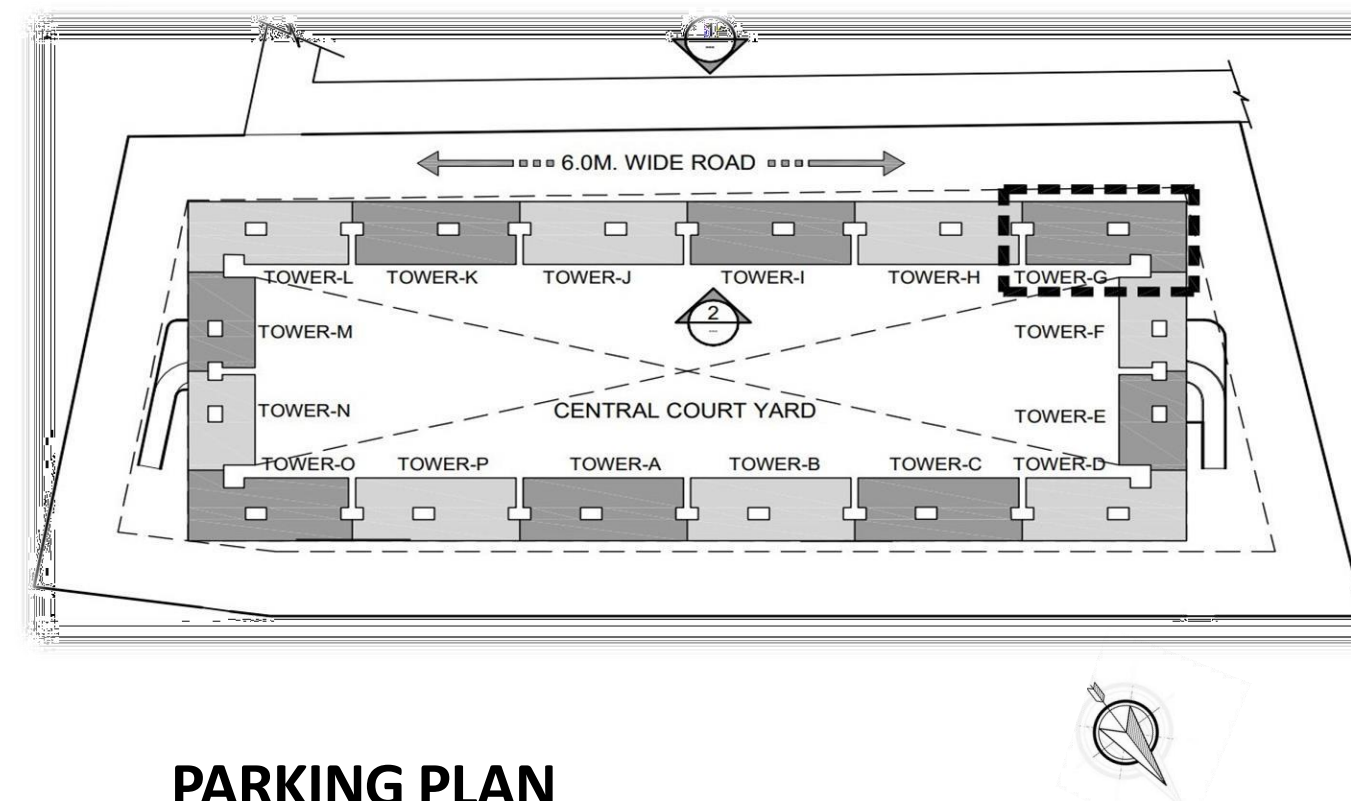


### SECURITY

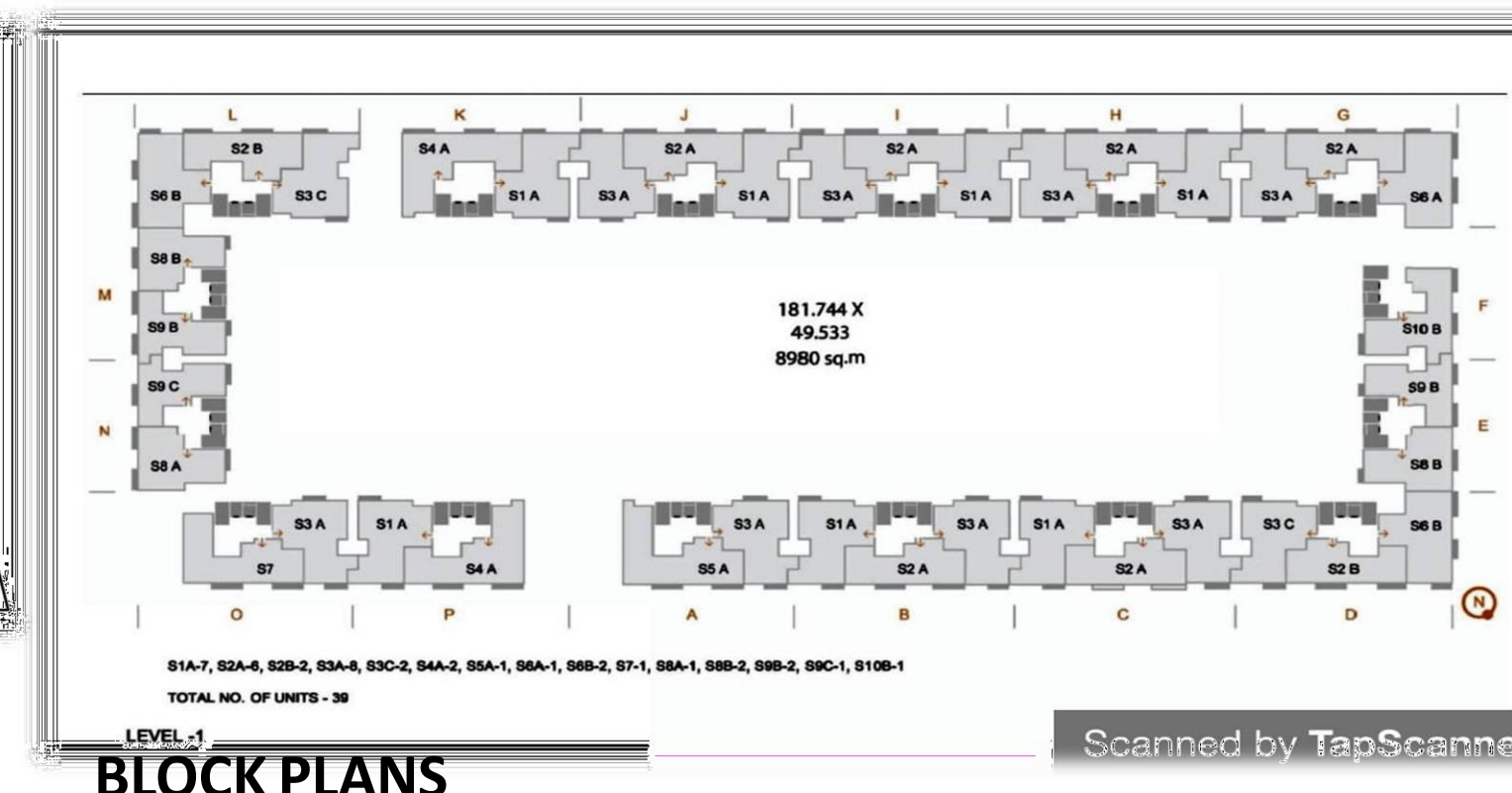
- 24 \* 7 Manned Security
- Intercom & Camera in
- Lifts : Connected with
- Guard Room
- CCTV Surveillance
- Boom Barrier for
- Restricted Entry at Main Gate

## A M E N I T I E S

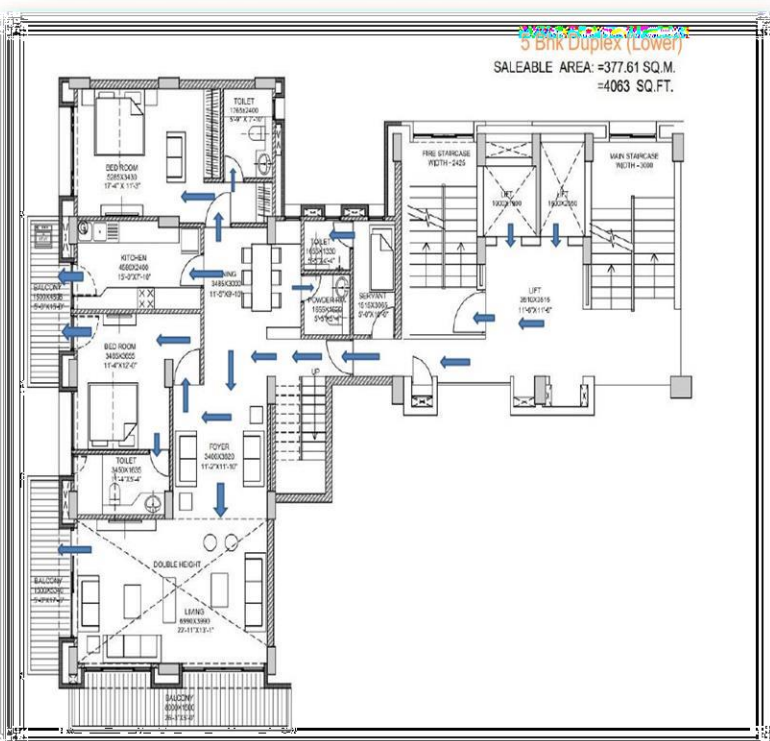
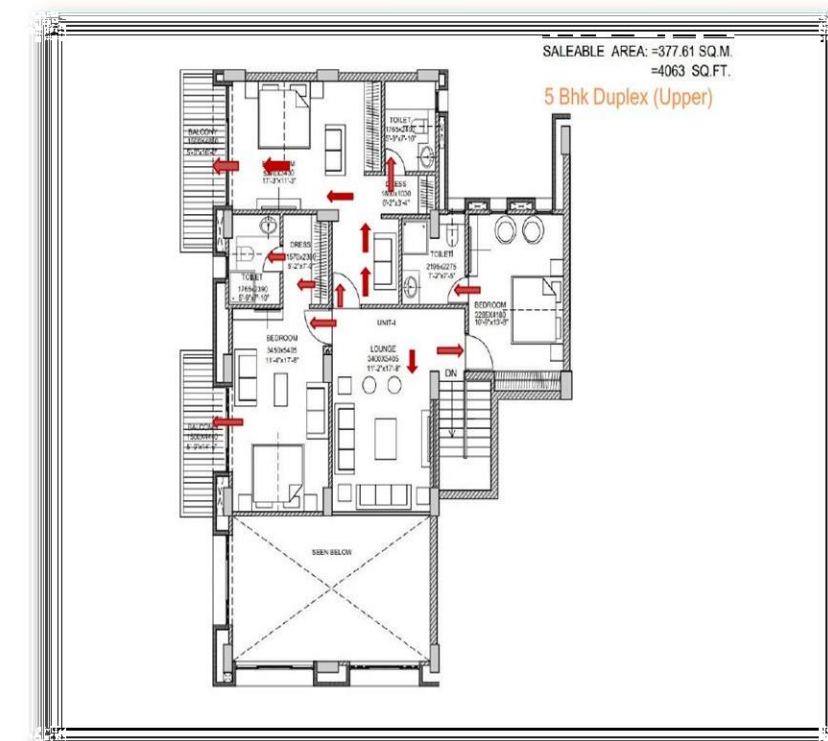
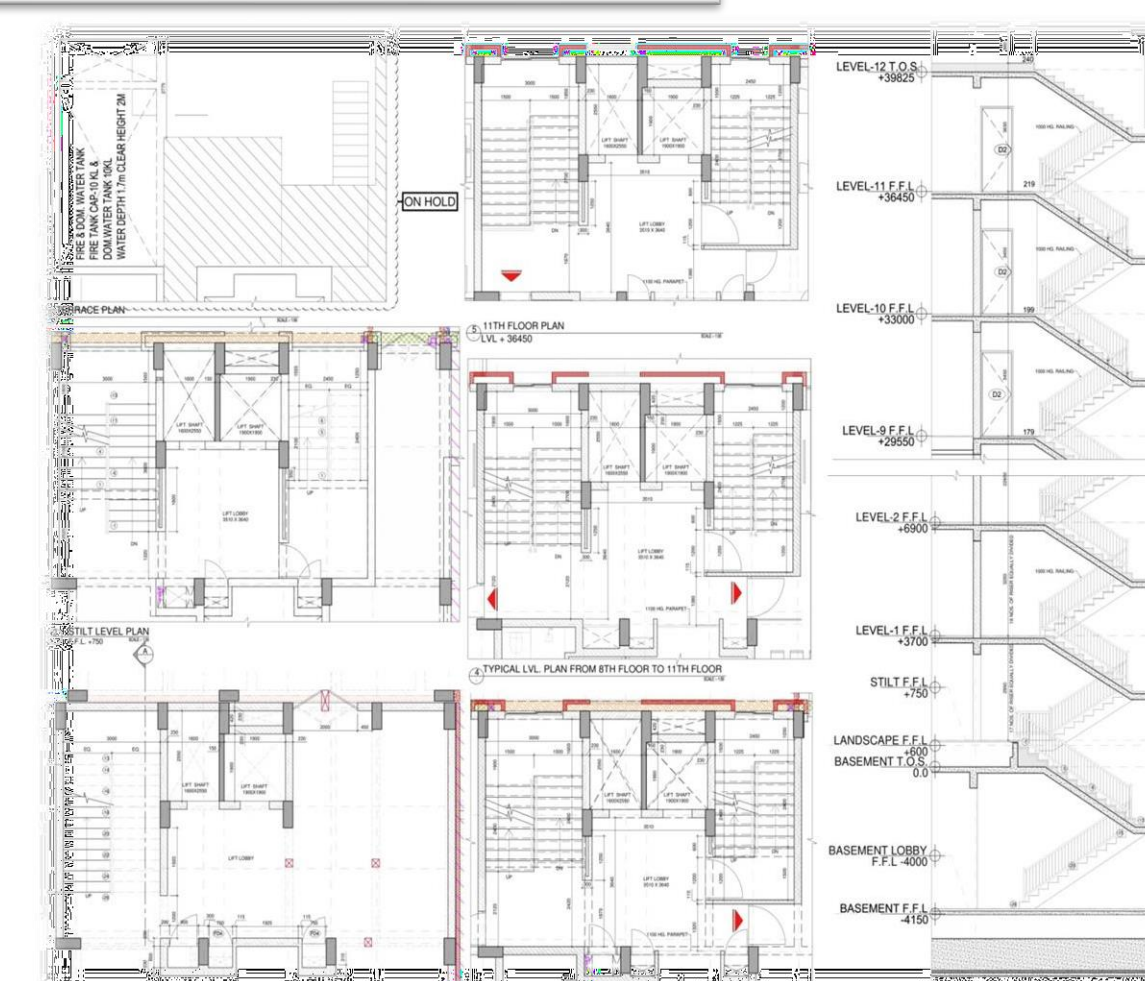
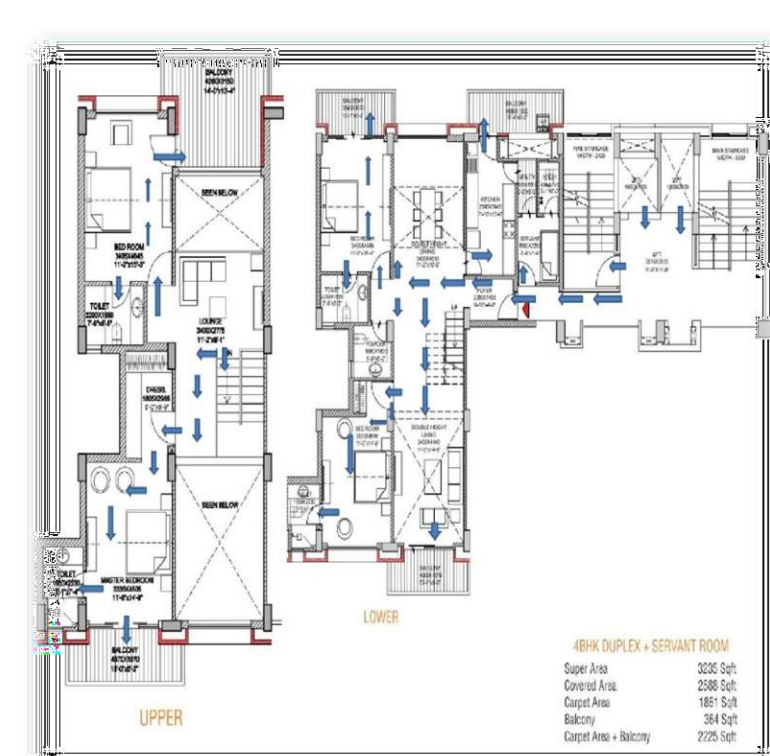
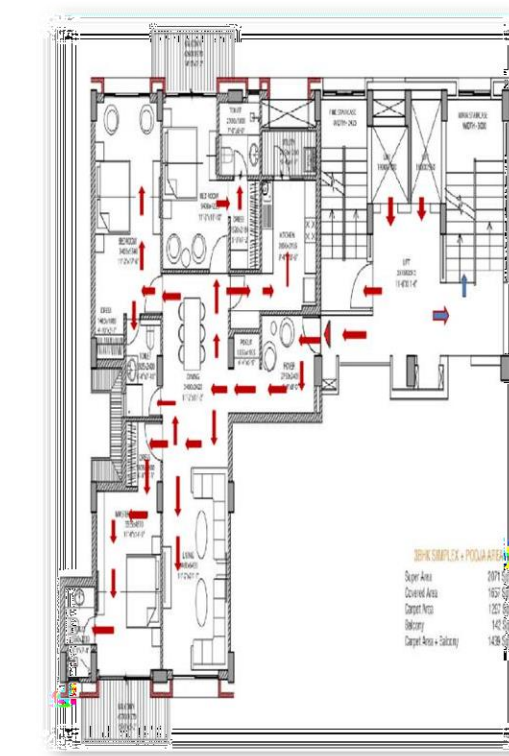
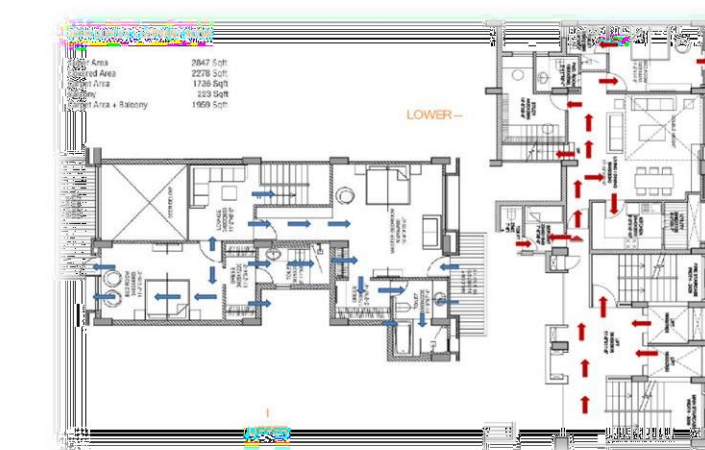
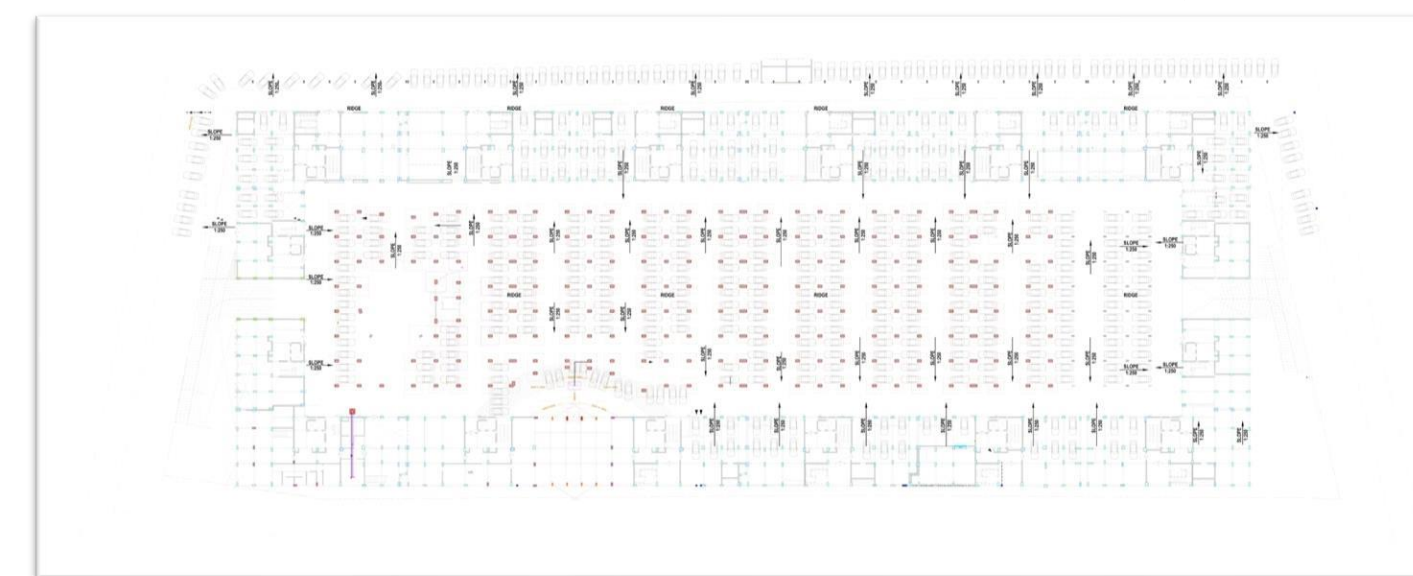
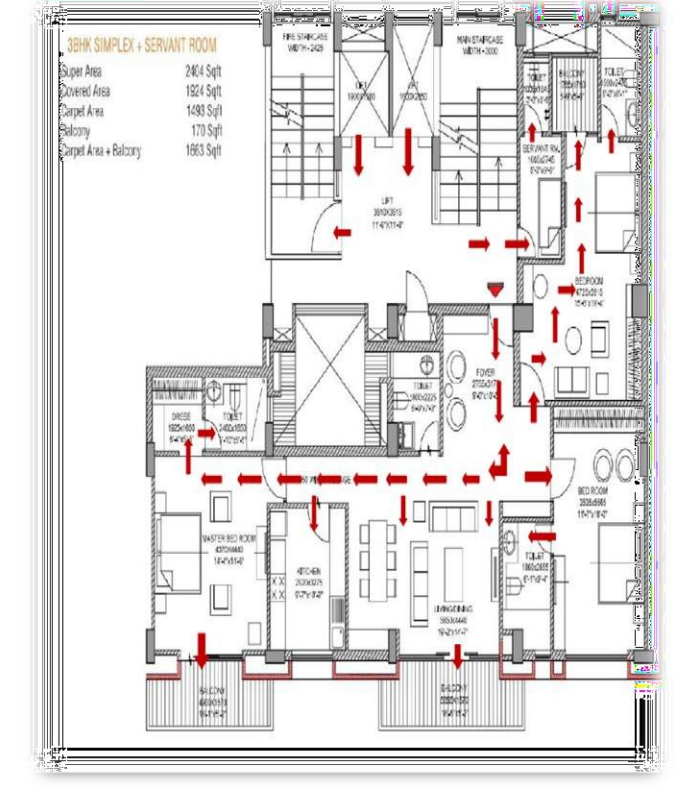
## BLOCK ARRANGEMENTS



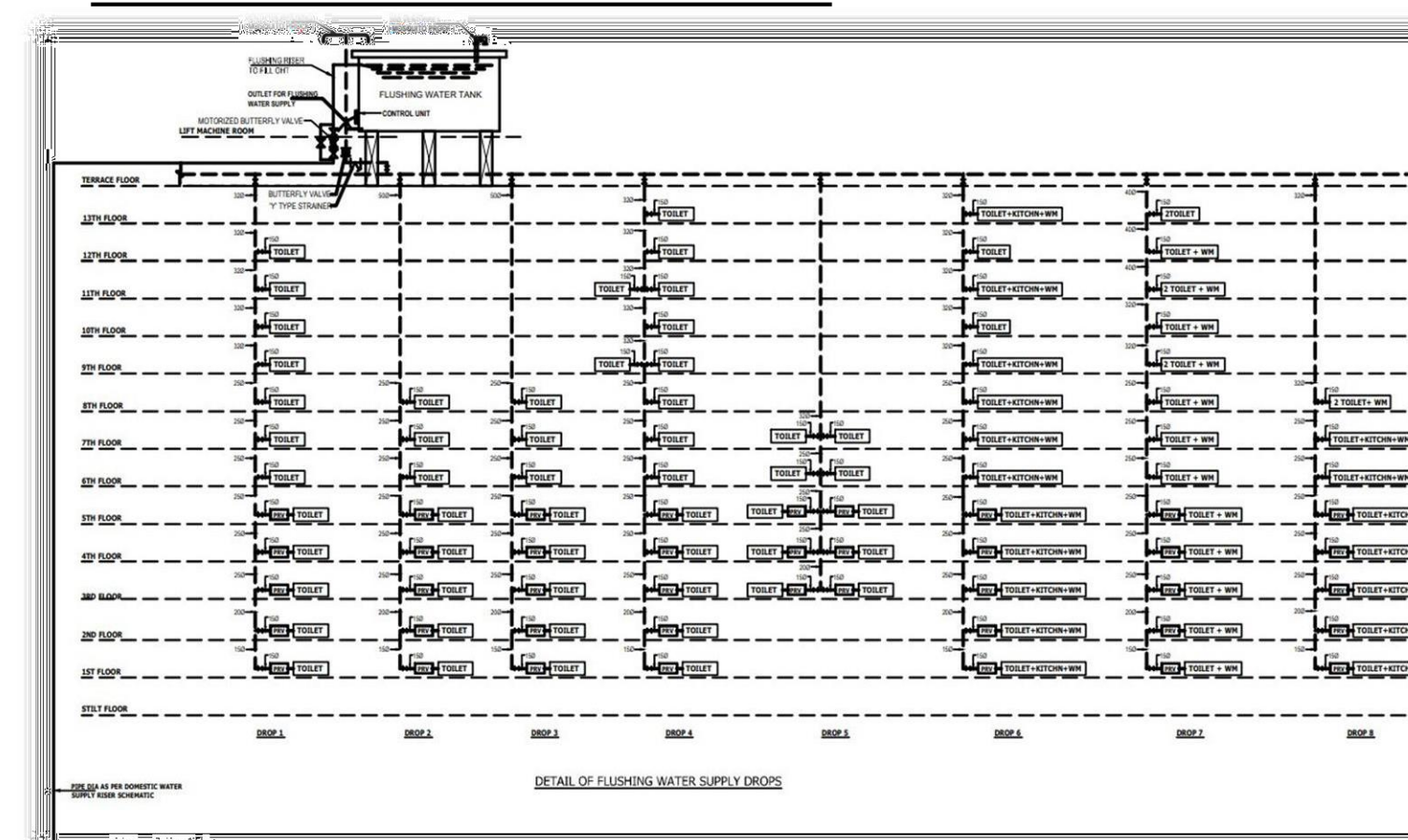
PARKING PLAN



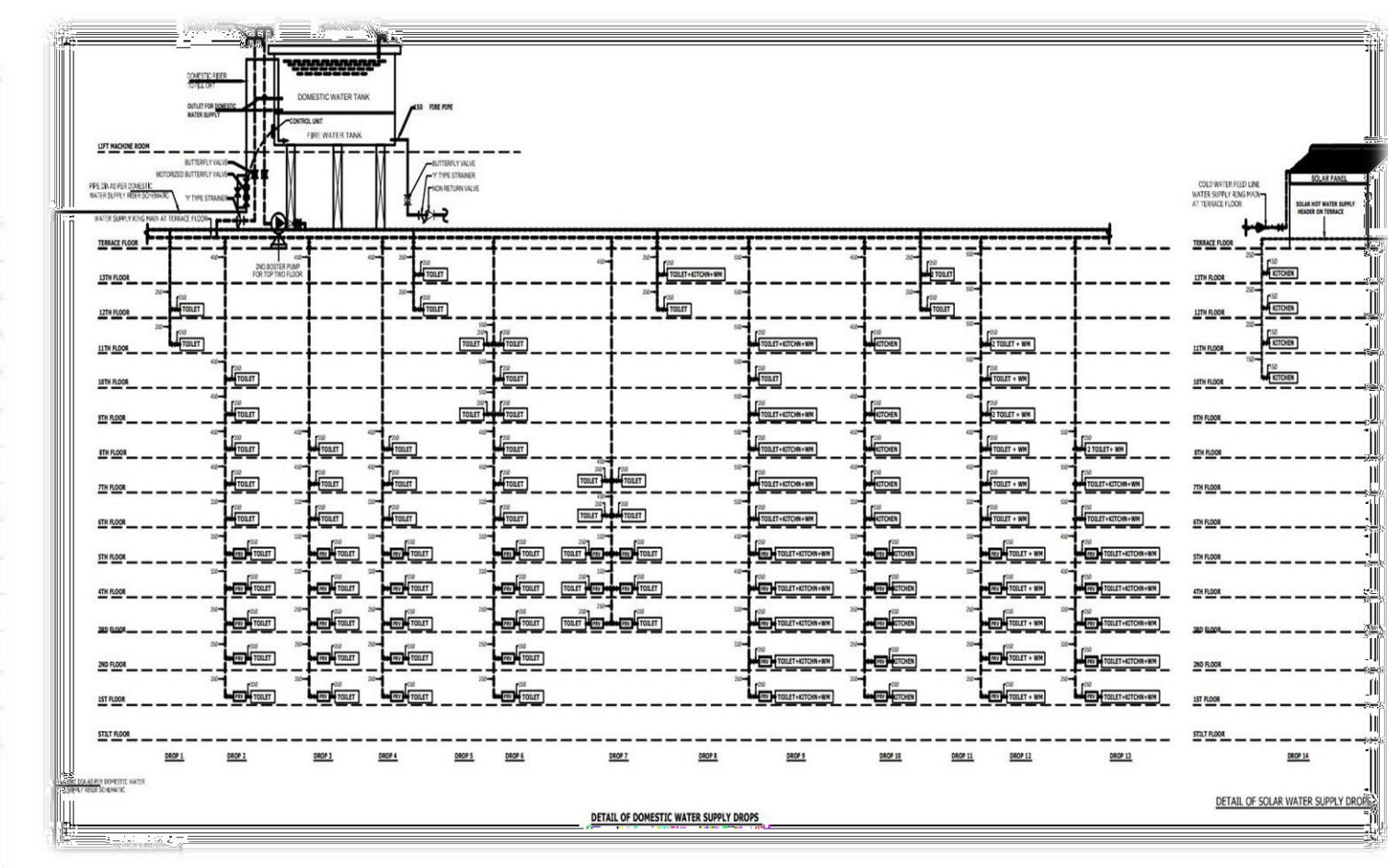
BLOCK PLANS



## STAIRCASE DETAILS & SECTION



PLUMBING LAYOUT (FLUSHING WATER)  
TOWER K (B+S+13)



PLUMBING LAYOUT (DOMESTIC WATER)  
TOWER K (B+S+13)



# CASE STUDY - 01 ORANJE CASTLE GOMTI NAGAR, LUCKNOW

## MATERIALS-

### ENTRANCEFOYER LIVING/DINING ROOM

**Flooring/skirting:** Italian/imported marble

**Wall finishes:** POP punning on plastered surface painted with plastic emulsion paint.

**Ceiling:** False ceiling/punning as per requirement finished with plastic emulsion paint.

### BED ROOMS

**Flooring/skirting:** Vitrified tiles.

**Wall Finishes:** POP punning on plastered surface painted with plastic emulsion paint.

**Ceiling:** False ceiling/punning as per requirement finished with plastic emulsion paint.

### TOILETS

**Flooring:** Antiskid ceramic tiles.

**Ceiling finishes:** False ceiling with plastic emulsion paint.

**Vanity counter:** Granite.

**Fittings/fixtures:** Wash basin with counter, wall hung WC with concealed cistern, geyser, mirror, CP brass fittings by kohler/roca.

**Walls:** Ceramic tiles upto ceiling height.

### KITCHEN

**Flooring/skirting:** Antiskid vitrified tiles

**Platform:** Pre polished granite with stainless steel sink

**Wall finishes:** Ceramic tiles upto 2 feet height above kitchen top and balance painted with plastic emulsion paint.

**Ceiling:** Punning painted with plastic emulsion paint

**Fittings/fixtures:**

Modular kitchen cabinets, SS finish chimney and hob, geyser, RO purifier system, CP brass fittings by kohler/grohe/roca or equivalent make.

### LIFT AND LOBBY AREA

Airconditioned entrance lobby at ground floor with Italian or equivalent stone flooring with 4 persons sitting arrangement

### BALCONIES

**Flooring:** Antiskid ceramic tiles.

**Railing:** MS railing with synthetic enamel paint.

### DOORS AND WINDOWS

**Main entrance door:** Teak wood with german hardware.

**Internal doors hardware:** Flush door shutter with designer laminates.

**Windows and external glazing:** UPVC /aluminium.

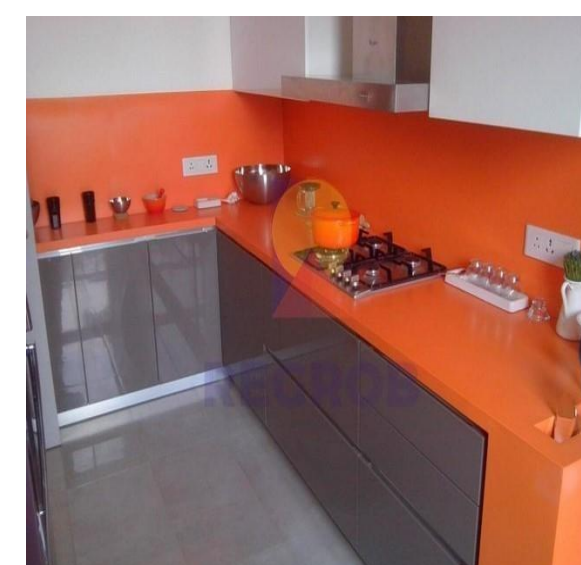
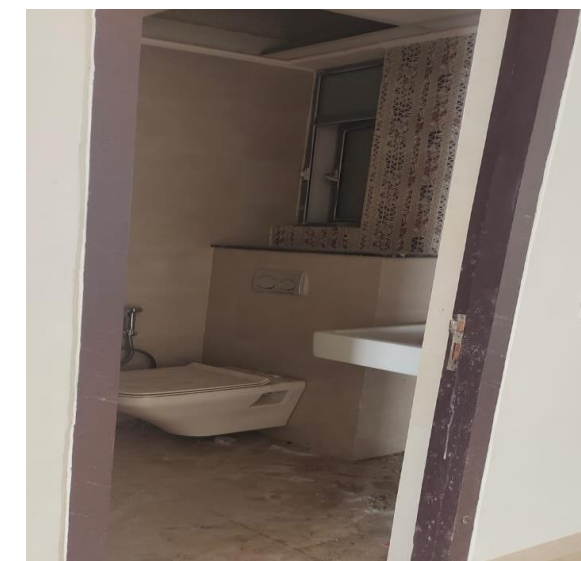
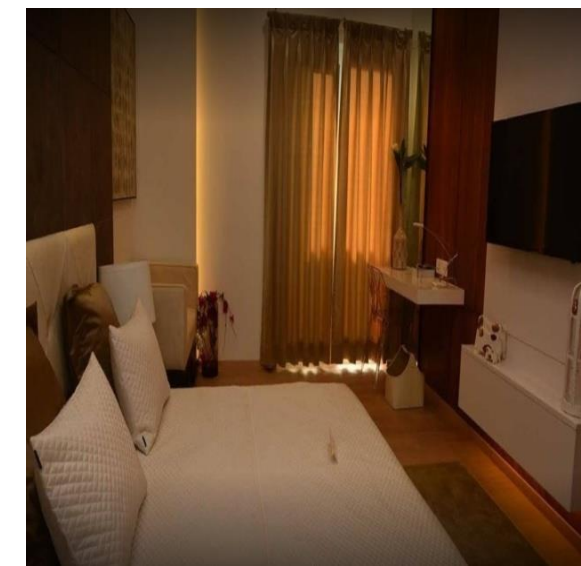
### ELECTRICAL WIRING AND SWITCHES

**Electrical switches:** ISI modular fire resistant switches from standard makes and brands

**Point and wiring:** ISI copper concealed wiring, light points, fan points, 6/15 sockets A/C points. in living/dining and bed rooms Suitable number of light and plug points in each bedroom /drawing /dining /lounge Fittings/fixtures: Decorative fans and fancy lights.

### SEWAGE TREATMENT PLANT

**Capacity-**1,00,000 L, **Depth-** 3.05m



## STRUCTURAL ANALYSIS-

Pile Foundation, Earthquake resistant RCC frame structure exterior, RCC Frame double brick wall structure for better sound and heat insulation.



FOOTING JALL



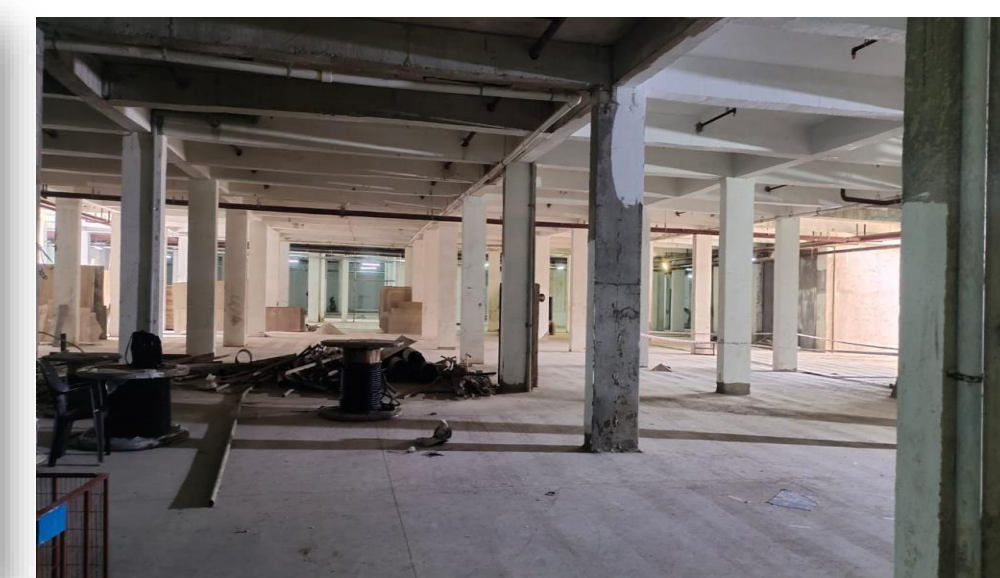
COLUMN BEAM



FOUNDATION



FOUNDATION



BASEMENT



EXPOSED BRICK

## SERVICES-

<b>Water Supply Including Drinking Water Facilities</b>	Tube-well, Under Ground Water Tank, overhead water tank.
<b>Sewer System</b>	Sewer Line and STP
<b>Drain</b>	Covered Drain and Catch Basins
<b>Water Conservation System</b>	Rain Water Harvesting. STP Treated Water Used in Flush & Gardening
<b>Fire Safety System</b>	Fire Fighting / FA & PA System
<b>Treatment and Disposal System of Sewage and Sullage water</b>	Sewage treatment plant water
<b>Solid Waste Management And Disposal System</b>	Collection from Door to Door

## TYPES OF FLAT-



3 BHK flat  
1663 Sq.ft (154.5 Sq.m)  
Price- 1.1 Cr.



3 BHK flat  
1859 Sq.ft (172.71 Sq.m)  
Price- 1.21 Cr.

3 BHK flat  
2086 Sq.ft (193.8 Sq.m)  
Price- 1.37 Cr.

## TOP FACILITIES-



Swimming pool



Business lounge



Salon



Card Room



Squash Court



Restaurant



Sauna



Spa



Creche/ Day care



Earthquake Resistance



Multipurpose hall



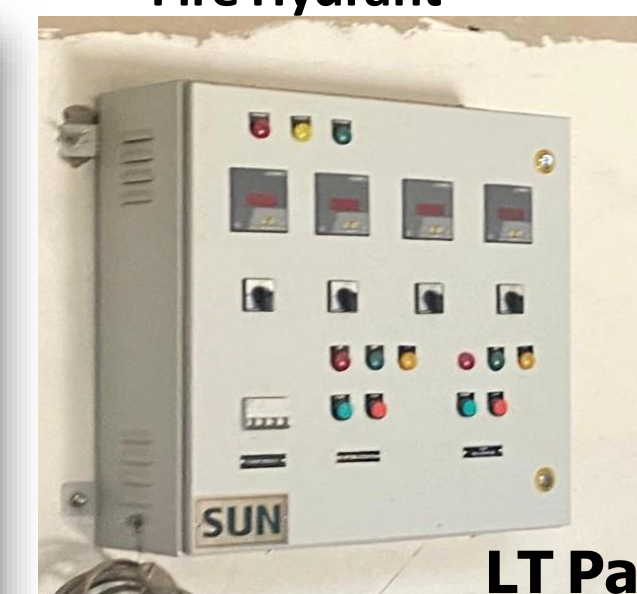
24X7 Security



Lift



Fire Hydrant



LT Panel

STP Plant Pump



Smart-Sky Residences: Elevating High-Rise Living in Lucknow

GUIDED BY:  
AR. ANKUR SAXENA

GAURAV PANDEY  
B.ARCH 5<sup>TH</sup> YEAR (2019-24)  
1190101012  
BBD UNIVERSITY, LUCKNOW

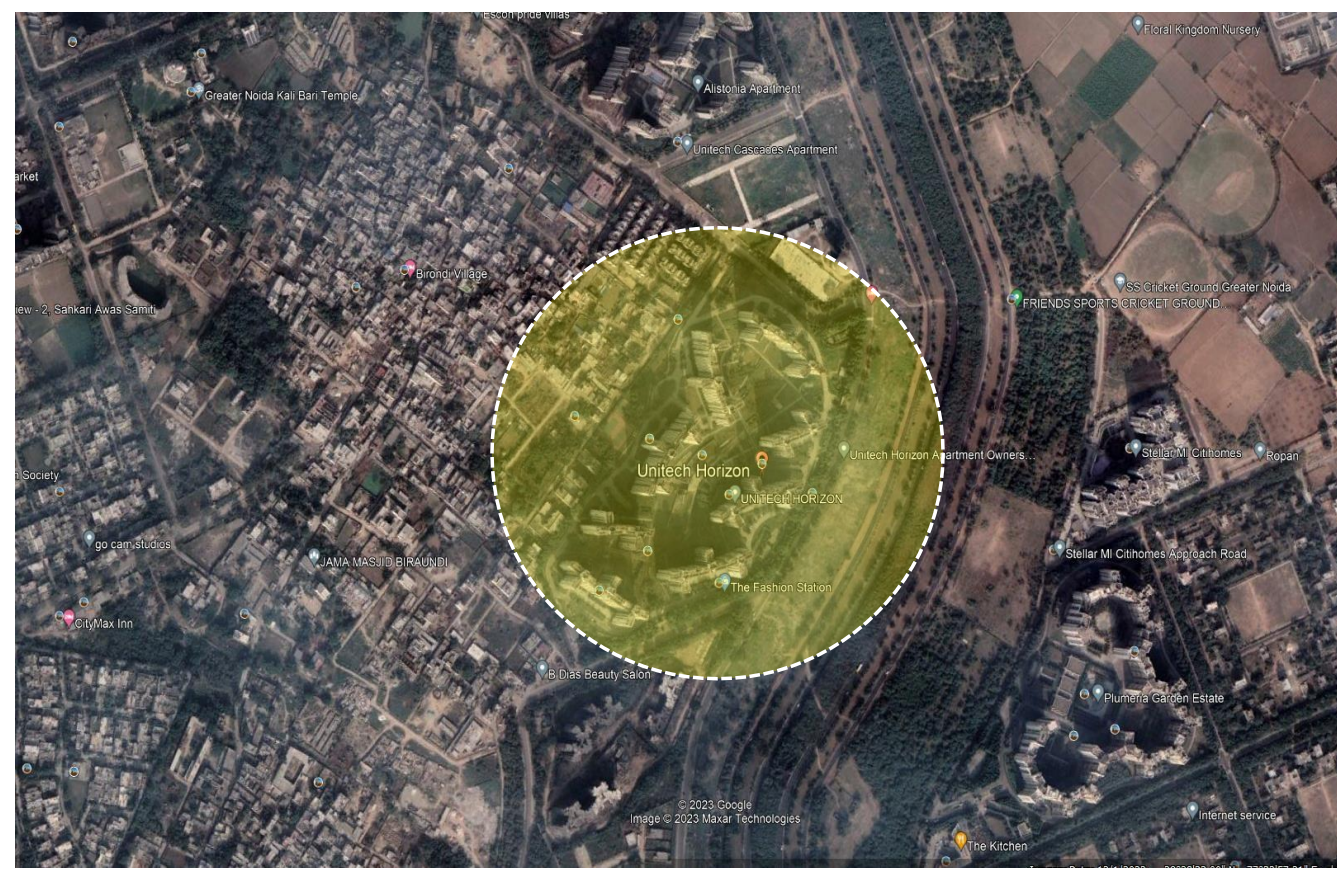
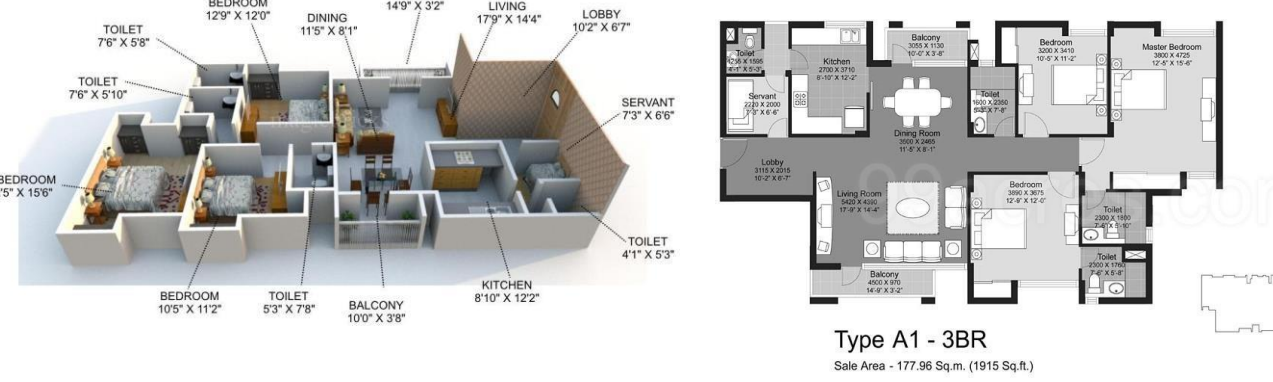


# CASE STUDY - 02 UNITECH HORIZON, NOIDA

## INTRODUCTION-

Welcome to Unitech Horizon Apartments, an abode of magnificent Apartments in GreaterNoida with all modern features required for a contemporary lifestyle. These Residential Apartments in GreaterNoida flaunts a resort like environment. It is now easy to experience how modern comforts blend seamlessly with magnificent ambience and how lifestyle amenities combine with refreshing green views. Unitech Horizon by Unitech Limited in Sector PI I & II ensures privacy and exclusivity to its residents. The reviews of Unitech Horizon clearly indicates that this is one of the best Residential property in GreaterNoida.

- This housing is owned by the UNITECH LIMITED which is india's largest real estate building.
- Location- Sector Pi II Greator Noida, Uttar Pradesh.
- Total Site Area- 25 Acres or 101171.40 sq.mt.
- Ground Coverage- 20% = 20234.28
- Maximum FAR- 2, Achieved- 1.8
- No. of blocks- 8 nos.
- No. of floors- 16 nos.
- No. of Basements- 01 nos.
- No. of parking ( in basement)- 1550 nos.
- On site Parkings- 350 nos
- No. of Entry gates- 2 Gates, 1 Service Entry.
- Unit Type- 3 BHK (160-165 sq.mt or 1700-1750 sq.ft.)



## ACCESSIBILITY-

- Sector – Phi2 is a very prime locality and well connected with the other parts of the city.
- Tranport facility is also good in this locality. School, bank, ATM and Hospital are available nearby the locality. (Within 1-2 kms).

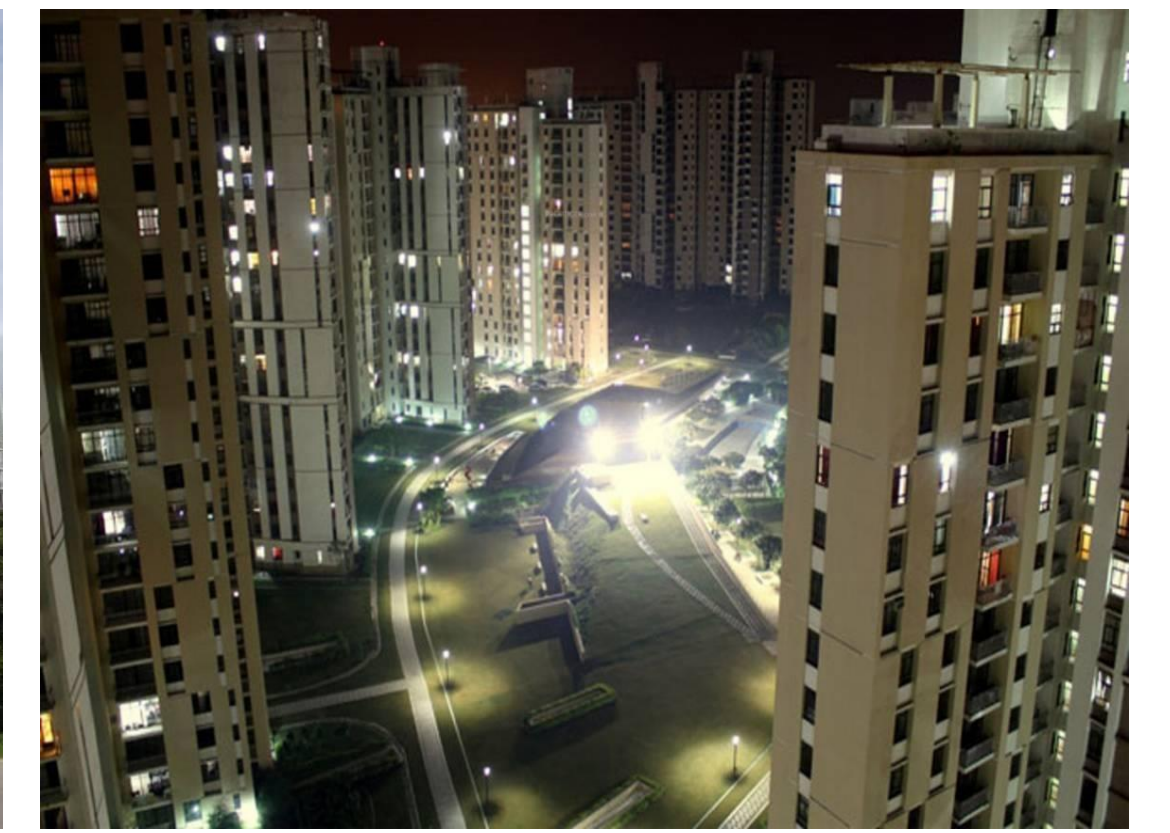
## DISTANCE FROM

Botanical Garden metro  
Sector 8 (Commercial area)  
Pari Chowk  
Kalandi Kunj  
New Delhi Railway station  
Indira Gandhi International Airport

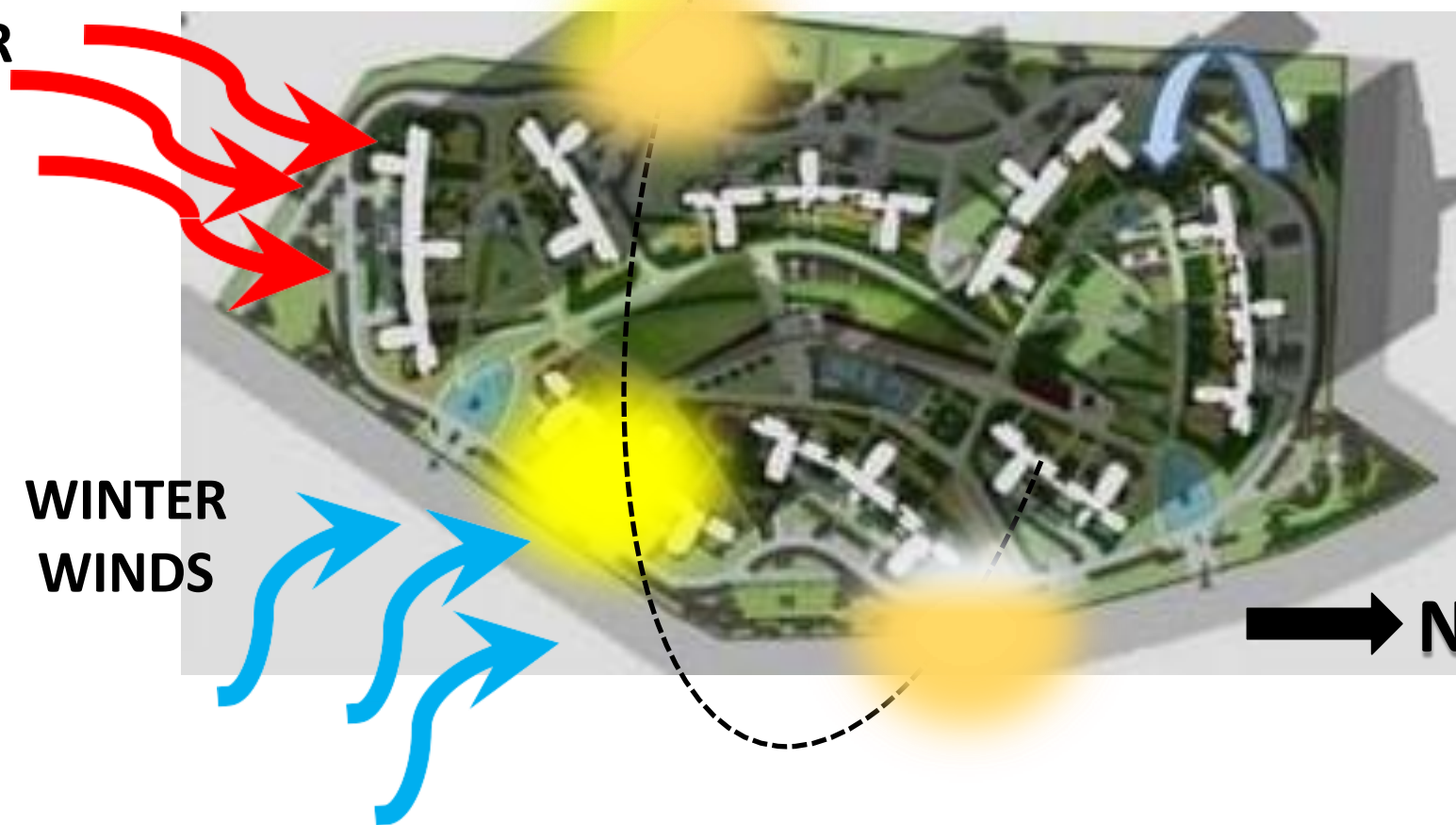
## DISTANCE IN K.M.

30 km  
32 km  
5 km  
30 km  
48 km  
52 km

## SITE IMAGES-



## SUMMER WINDS



## WINTER WINDS

## SUNPATH

## MORNING

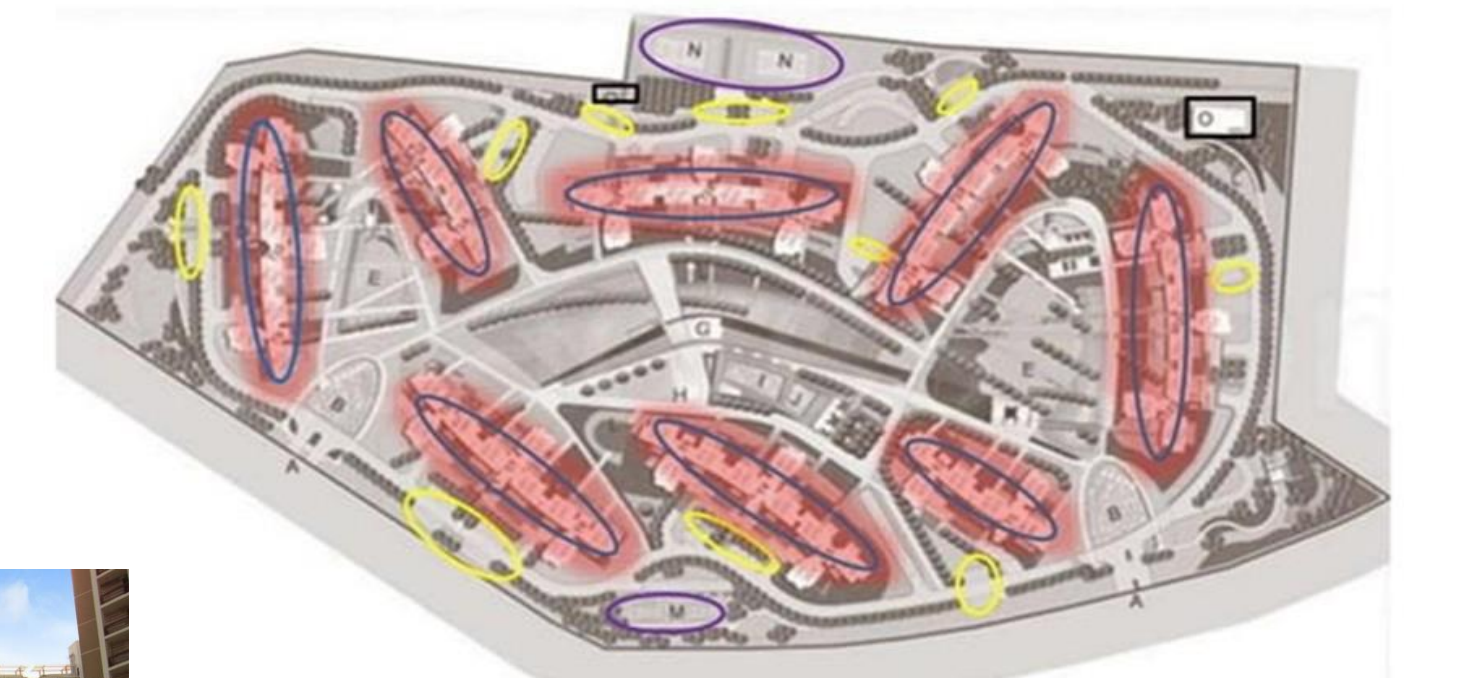
## AFTERNOON

## EVENING

## SITE MOVEMENT



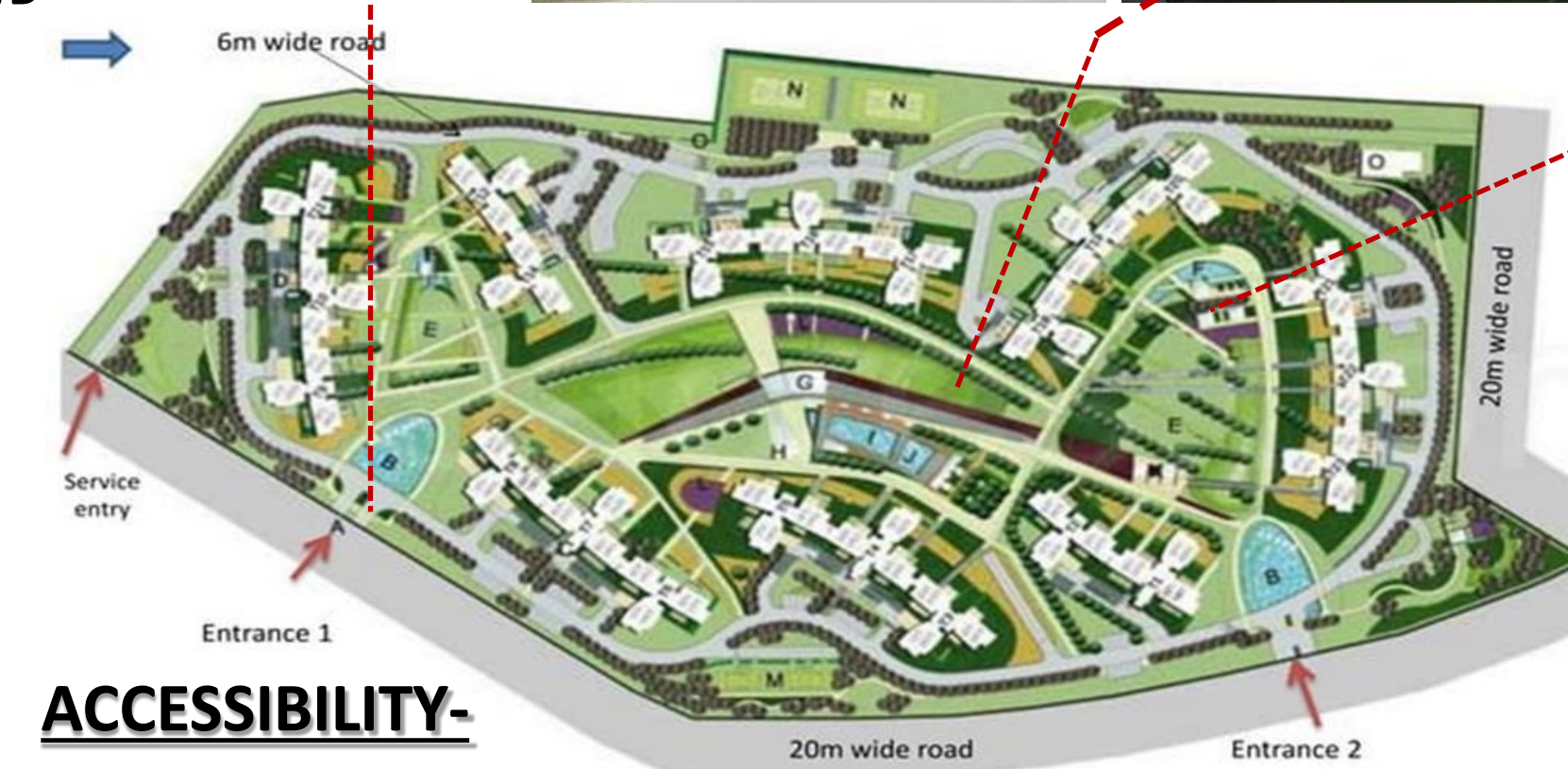
## DIFFERENT AREAS DEMARCATION



- Each block has its own surface parking which are connected to the peripheral road

## INFERENCES-

Each Building is oriented differently,  
Hence not in accordance with Climate of the site.  
Most flats are south facing.  
Water bodies are provided on site that help to create a micro climate.



## ACCESSIBILITY-

- A- MAIN ENTRANCE
- B- MAIN ENTRY WATER FEATURE
- C- ENTRY COURTYARD TYPE 1
- D- ENTRY COURTYARD TYPE 2
- E- MAIN CENTRAL LAWN
- F- WATER PAVALLION
- G- CLUB HOUSE MOUND WITH PATH OVER
- H- FORMAL LAWN EVENT SPACE

- I- SWIMMING POOL
- J- CHILDRENS POOL
- K- TYPICAL SHADE PAVALLION
- L- EXERCISE/ PLAYGROUND AREA
- M- BADMINTON COURT
- N- TENNIS COURT
- O- SERVICE AREA

## Interiors

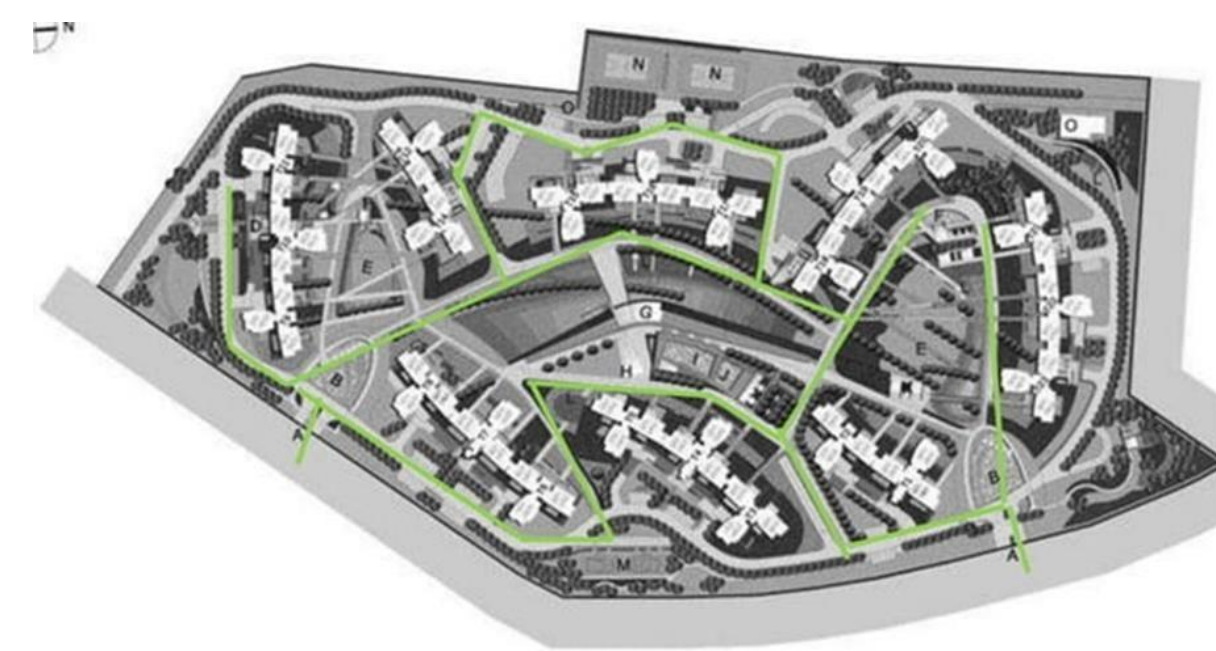
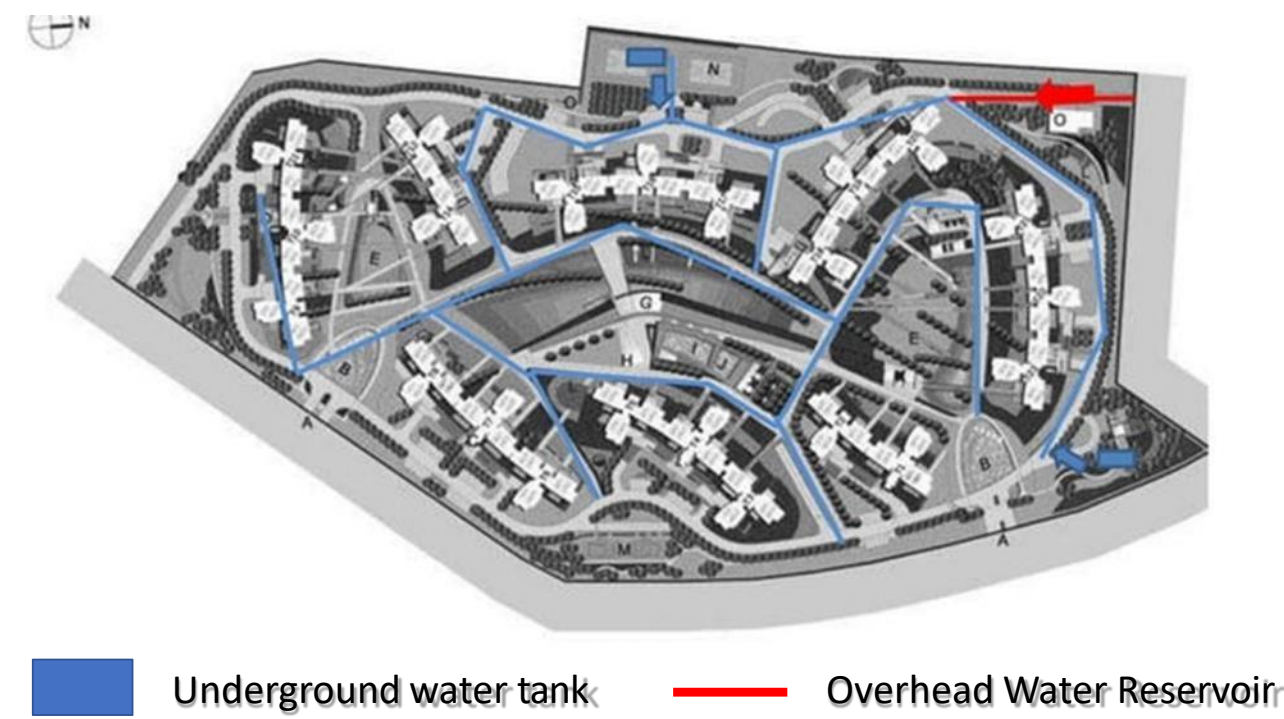




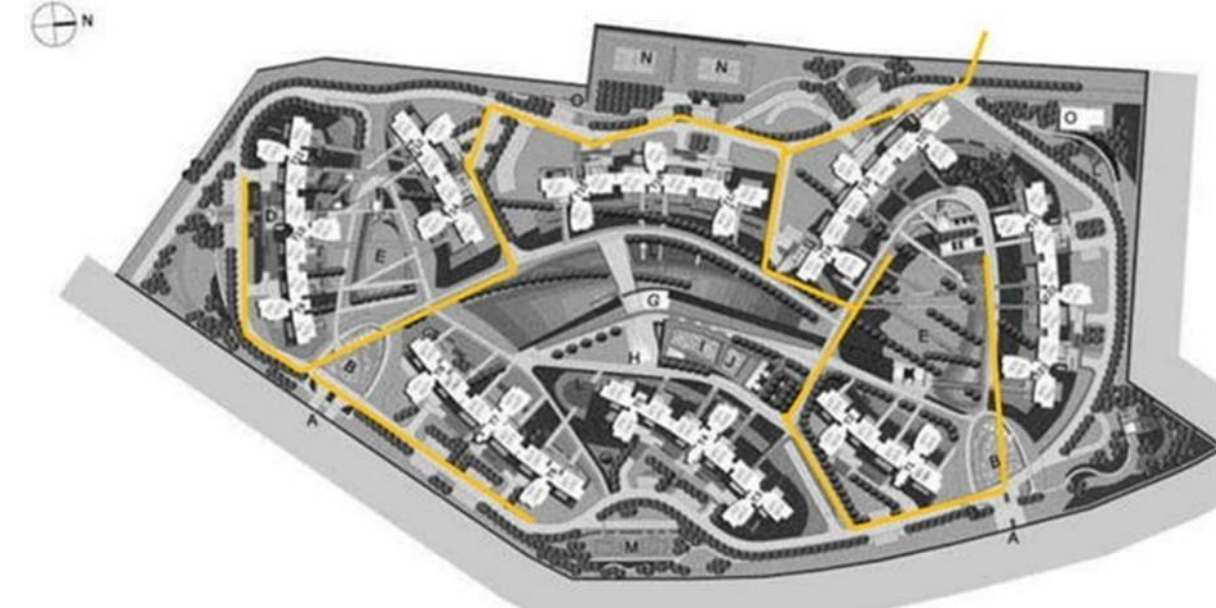
# CASE STUDY - 02 UNITECH HORIZON, NOIDA

## SERVICES-

### Domestic water supply



### Drainage



### SEWAGE



### Hose reels

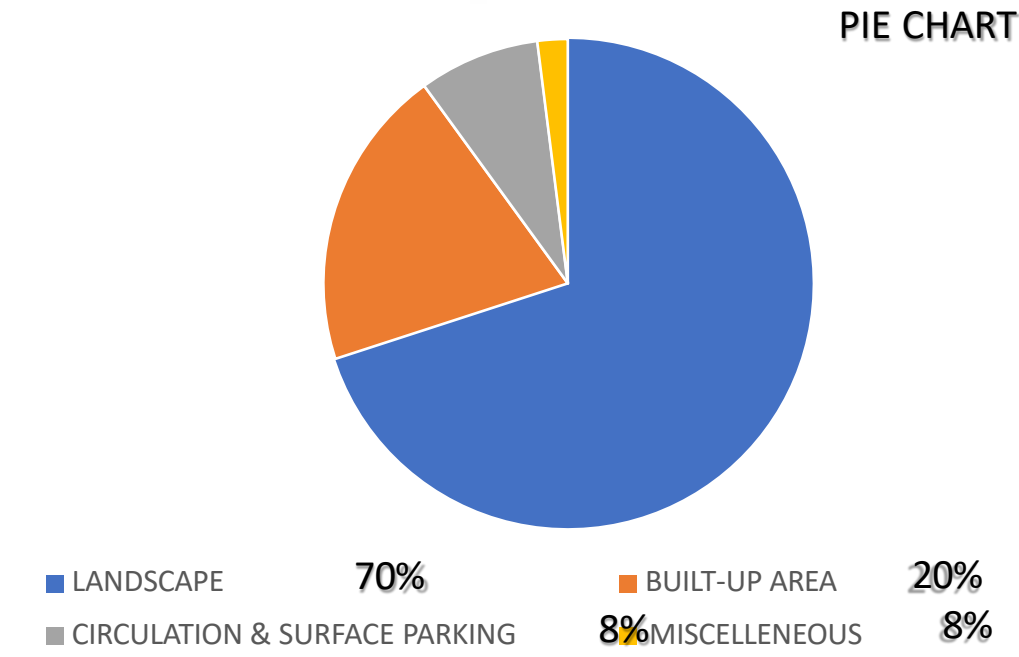
### Fire hydrant



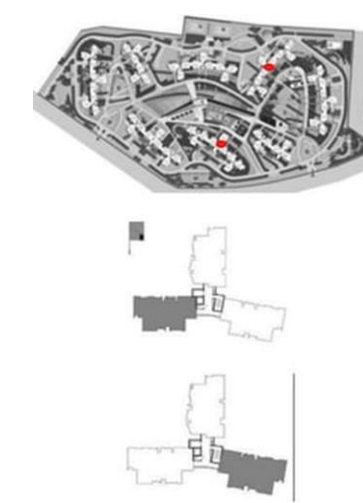
### Electric Supply

Electric substation Backup generator

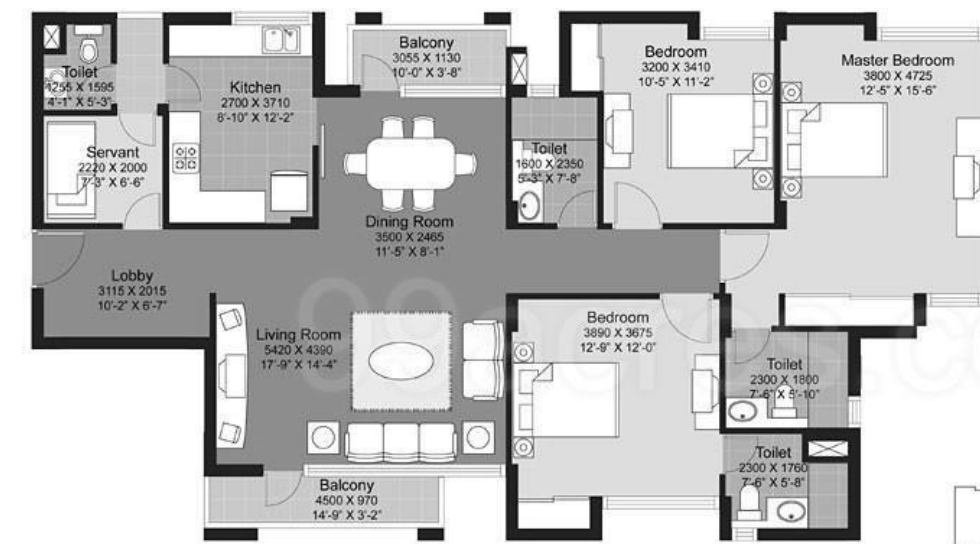
## BUILT-UNBUILT AREA-



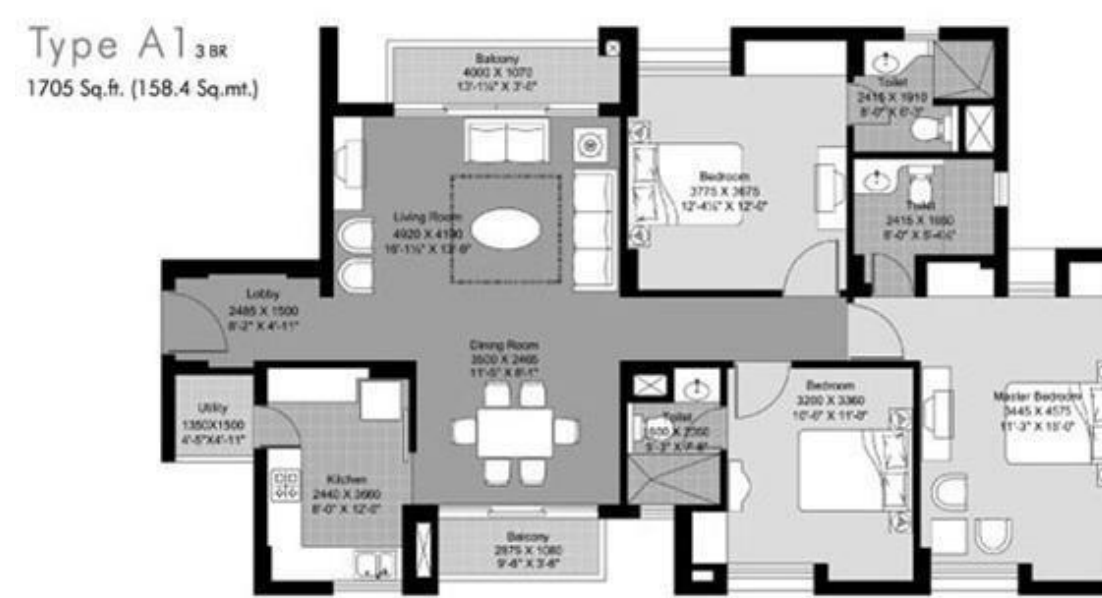
## PLANS TYPE-



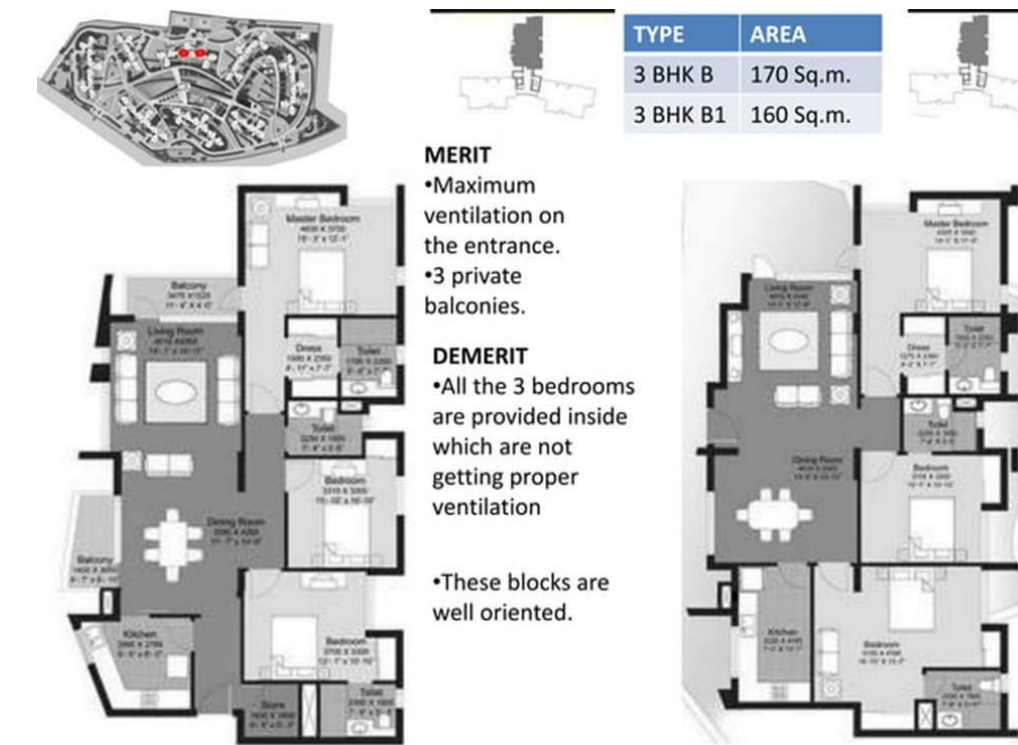
TYPE	AREA
3 BHK A3	180 Sq.m.
3 BHK A4	180 Sq.m.



Type A1 - 3BR  
Sale Area - 177.96 Sq.m. (1915 Sq.ft.)



Type A3 - 3BR  
1705 Sq.ft. (158.4 Sq.mt.)



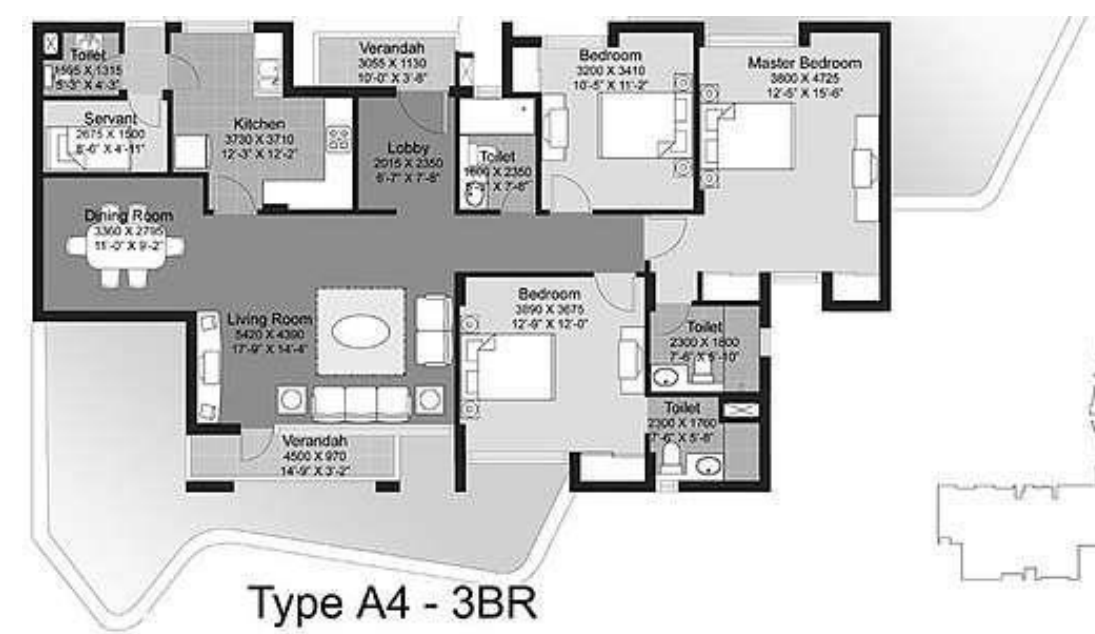
Type B1 - 3BR  
1695 Sq.ft. (157.45 Sq.mt.)



Type B3 - 3BR  
1695 Sq.ft. (157.45 Sq.mt.)



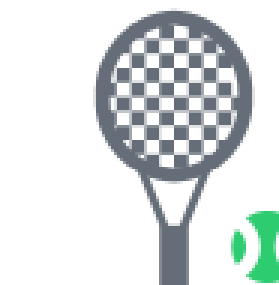
Type B3 - 3BR  
1695 Sq.ft. (157.45 Sq.mt.)



Type A4 - 3BR  
Sale Area - 177.34 Sq.m. (1908 Sq.ft.)



Swimming pool



Lawn Tennis Court



Earthquake Resistance



Badminton Court



Multipurpose hall



Entrance lobby



Indoor games



Jogging Track



24X7 Security

## AMENITIES-

Located at the centre marked by a lawn on the top is an attraction of the site. Area- 1565.75 sq.mt.

- Swimming pool
- Fitness Center
- Indoor games room
- Multipurpose hall (approx.- 635 sq.mt.)
- General store (45 sq.mt.)

- Separate kids & adults Swimming pool, with changing areas, Semi covered sitting spaces and beautiful landscaping add to the beauty of the project.

## INFERENCES-

### PRESENT CONDITION

- Ventilation is not proper in all rooms.
- No proper Terrace in each room.
- Orientation is not climate responsive.
- Each block has a different orientation which is architecturally not sound.
- Refuge area is not provided.
- Only 3 bhk flats are designed.
- Most of the blocks are south facing.

### OPINION

- Each room should have attached balconies
- Proper terrace should be provided.
- Orientation of each tower should be keep in mind.
- Refuge area should be provided.
- Variations in unit types not present, penthouse are not present.
- Louvers could have been provided so as to get diffused sunlight.

## PLANNING-

No. of floors- G+15 No. of Towers- 23  
No refuge area provided. Penthouse are not provided. Public terrace. Private balconies in every dwelling. Staircases- 02.

## UNIT TYPES (AREA TABLE)-

S.NO.	SPACES.	AREA (sq.ft.)
2	Type A	1800
3	Type A1	1760
4	Type A2	1740
5	Type A3	1740
6	Type A4	1760
7	Type A5	1760
8	Type A6	1740
9	Type A7	1740
10	Type B	1695
11	Type B1	1695
12	Type B2	1695
13	Type B3	1695

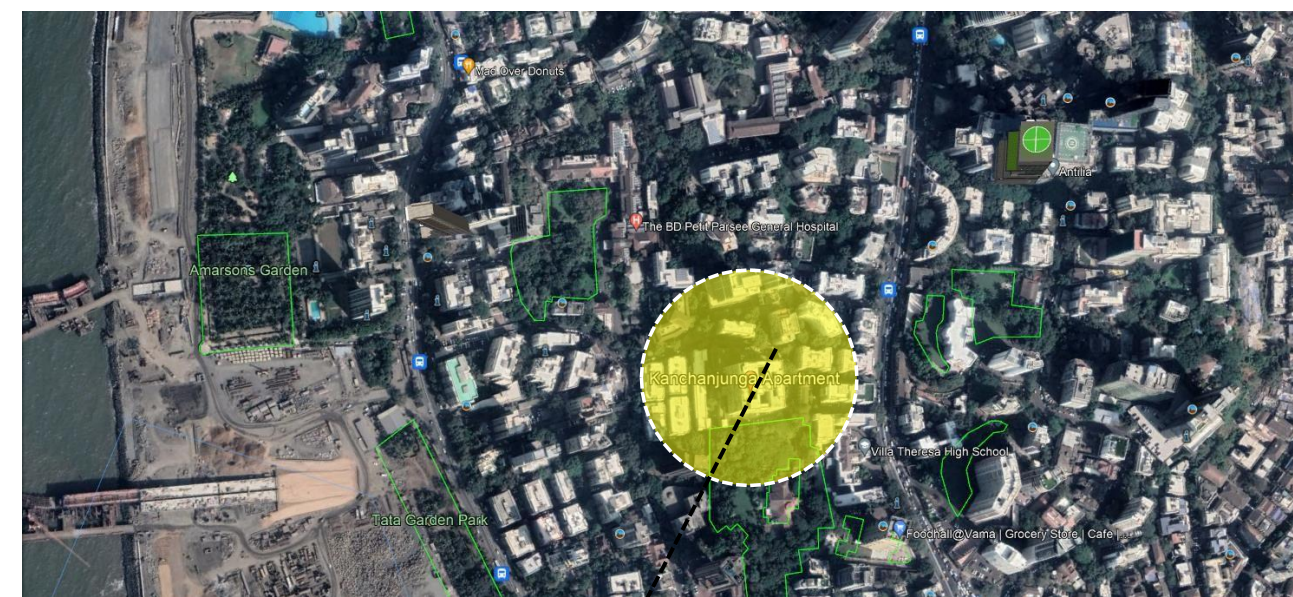
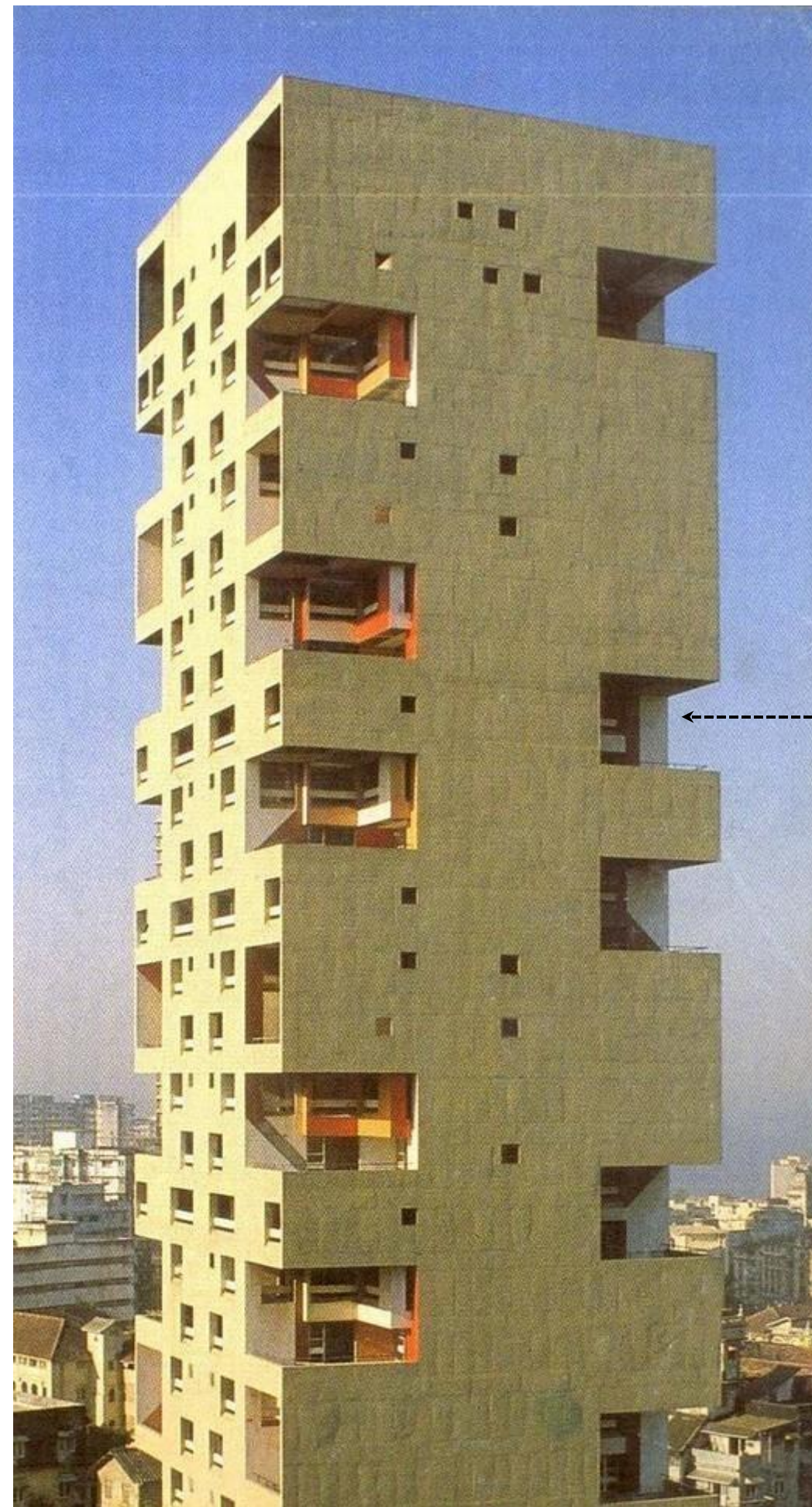


# LITERATURE STUDY - 01 KANCHANJUNGA APARTMENT, MUMBAI

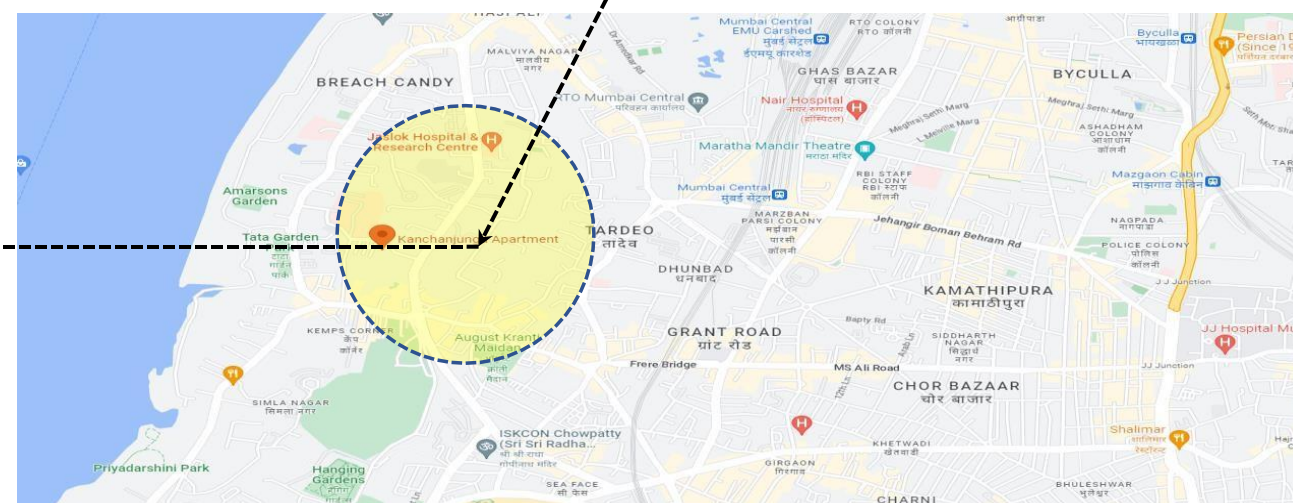
## INTRODUCTION-

Kanchanjunga is a condominium of 32 luxury apartments of three to six bedrooms each. The basic interlock is that of a three and four bedroom apartment with the larger flats formed by the addition of another half level.

- The structure is built around a central service core which was constructed first.
- Each of the flats have large usable garden-terraces which have dramatic city views.



GOOGLE IMAGE-



Began: 1970

Completion: 1974

Architect: Charles Correa

Associate Structure Engineer: Shiris Patel & Association Construction Pvt.Ltd

Structure Type: HighRise Building

Location: India, Mumbai, Cumballa Hill

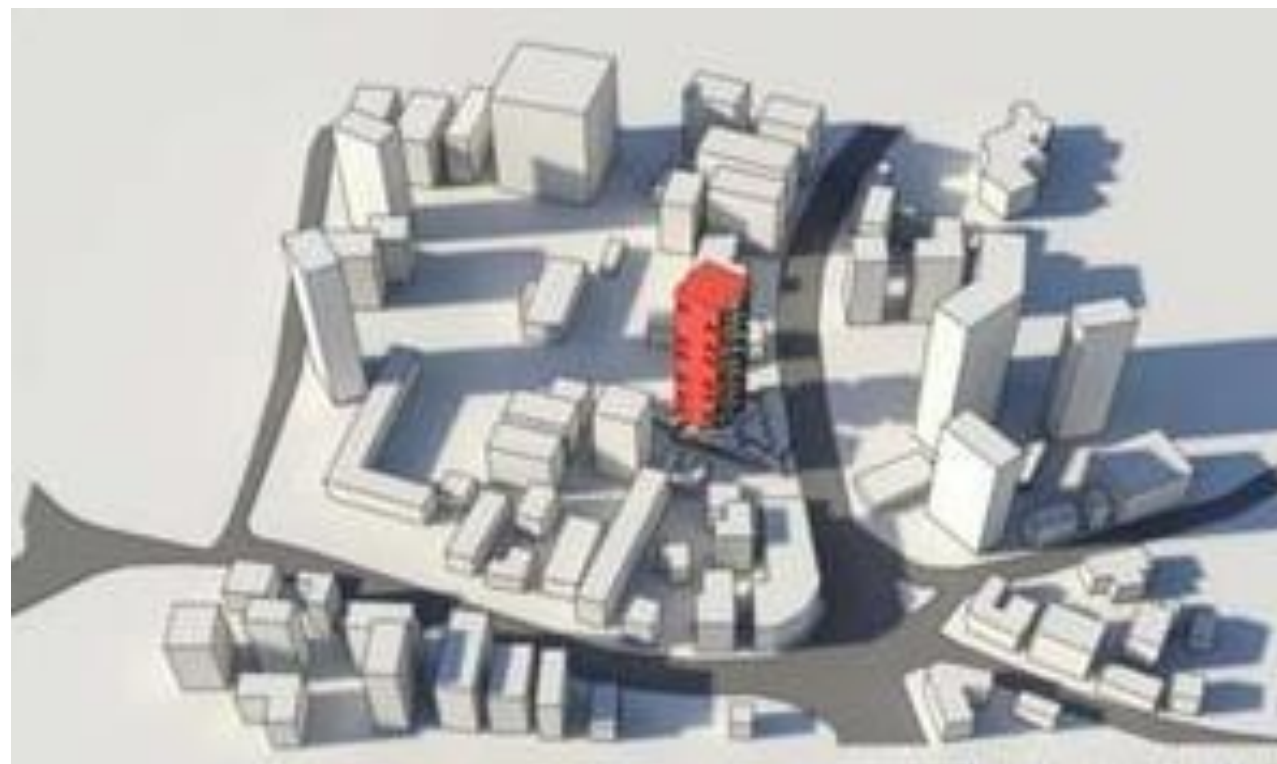
Height: 84 Meters, Floor: 27

Function: Housing (Residential)

Type: Modern Structure

Material: Concrete

Architecture Style: Modern, Brutalism



In Mumbai, building are ideally oriented east-west to catch the prevailing sea-breezes, and views out to the Arabian Sea on one side and the harbour on the other, the same directions as the hot afternoon sun and heavy monsoon rains.

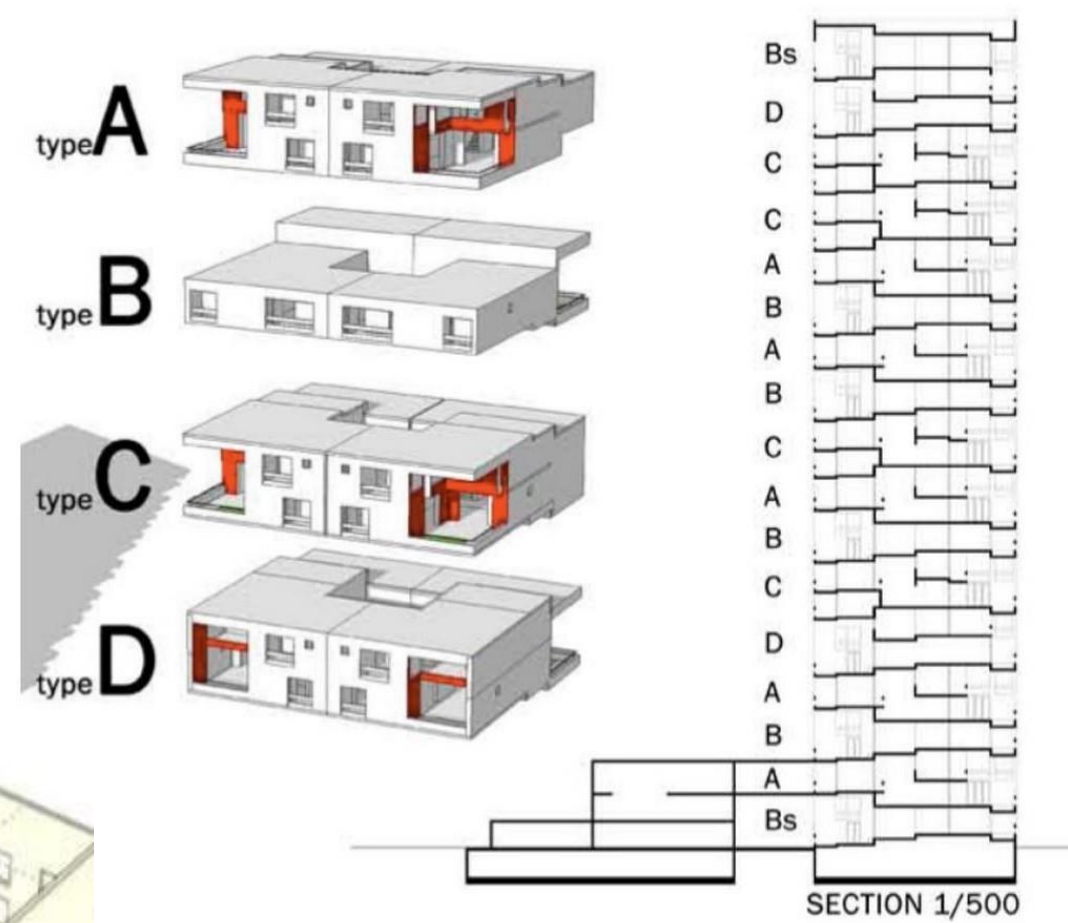


## LOCATION-

- The apartments are located south west of downtown Mumbai in an upscale suburban setting.
- Bombay lies on the western coast of India and its major Commercial centre for the country.

## CONCEPT

- He mainly worked on the sectional displacement by bringing changes in the floor surfaces.
- He applied circular planning by using interlocks in one and half story 3 & 4 bedroom units with two and half story 5-6 bedroom units.
- Small displacements in level differentiated the external earth filled terraces with internal elevated living volumes.



## STRUCTURAL OVERVIEW-

- It is made from reinforced concrete.
- 32 stories high with 6.3 m cantilevered terrace garden.
- Central core of 7.8X6.9 m house the lifts & service areas.
- This central core also acts as a main structural element in resisting lateral load.
- Central core was const. ahead of the main structure using slip method of construction.

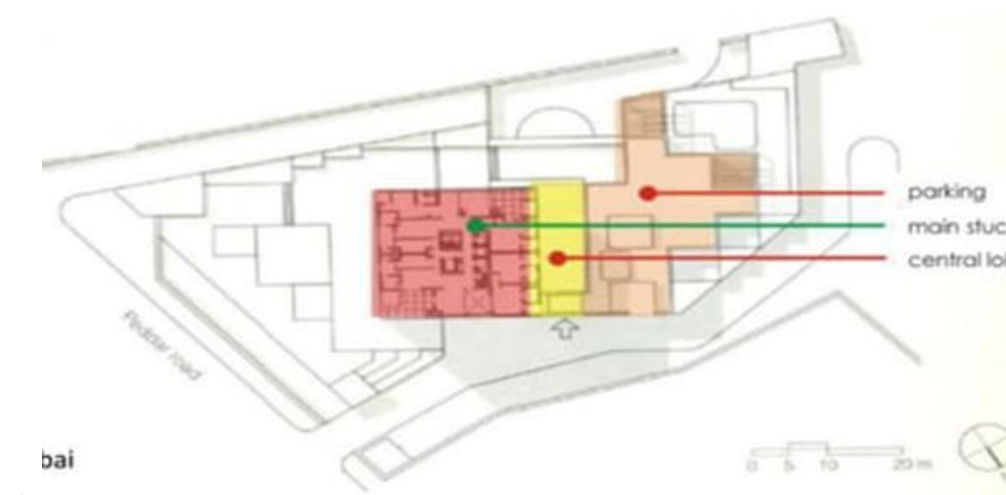
## INFERENCES-

### Problems:

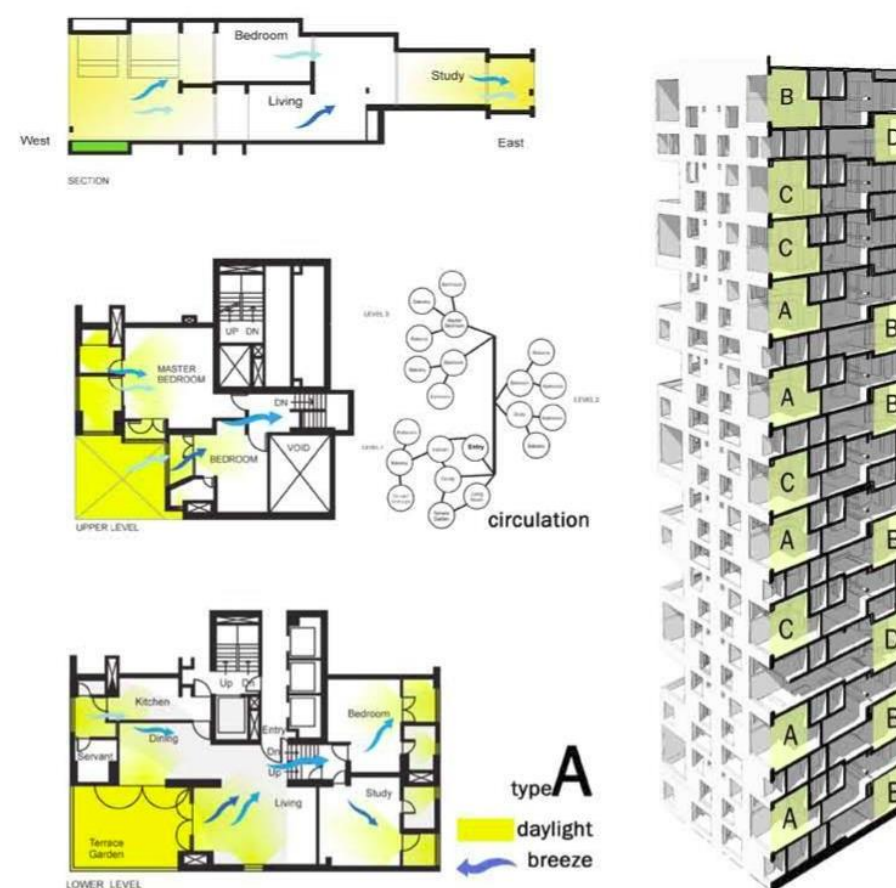
- The location and climate of Bombay dispense architects with a dilemma in design.
- The east-west axis provides ample sightings of the Arabian Sea and the harbor with the added benefit of receiving all the sea breezes.
- The axis also harbors harsh afternoon sun and troublesome monsoon rains.
- The situation was unavoidable as the typology of the building is high-rise due to urbanization and high land prices.
- There was a need to seize the opportunities while carefully designing with limitations in mind.

## APPROACH-

- The site has a separate road for individual approach which is connected to the main road.
- Building is approachable from two opposite sides, one from east and one from west.
- KANCHANJUNGA APARTMENT 72, G Deshmukh Road Mumbai MH India.



## Orientation and organization of spaces



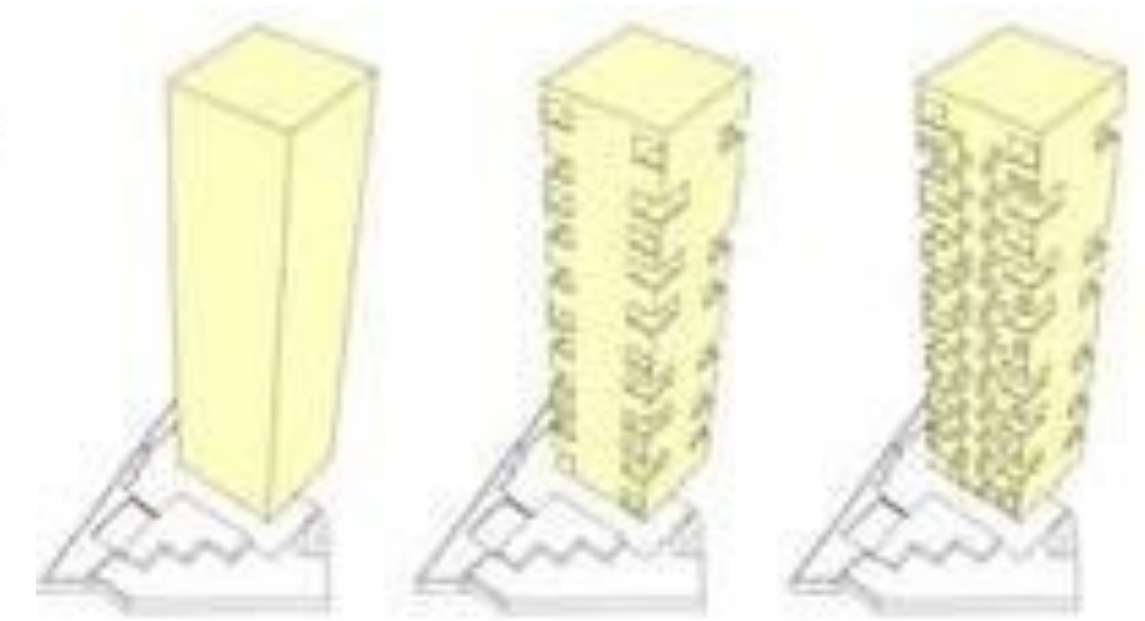
## KEY FEATURES-

- 32 unique apartments with four kinds of flats ranging from 3 to 6 bedrooms.
- Shear end walls holding the cantilevered terrace while visually connecting the floors.
- The base of the tower is 21 square meters and height is 84 meters which makes it a proportion of 1:4.
- The double-height terraces are oriented against the sun to protect each apartment unit.
- Large openings and terrace gardens provide transparency.

## Solution:

- Correa used an indigenous approach to the spatial organization of a typical bungalow.
- The main living spaces with an enclosed verandah whilst turning that buffer zone into a garden, thriving on the problem. Because of climatic considerations with existing views, the massing settled upon a configuration facing east and west.
- Correa interlocked four different apartment units with small variations in levels on the floor leading to the eventual garden verandah suspended in the air.
- 32 apartments stacked over 28 stories form an interlock of 3 with 4 bedroom units and 5 with 6 bedroom units which reveal themselves through sheer end walls that support the cantilevers.

## DEVELOPMENT-



### The shaping of towers:

- The building is a square tower.
- Charles Correa created gaps in that tower.
- The two floors high loggias are created to keep out the sun and take in the cool sea breeze.

## Program & typology-

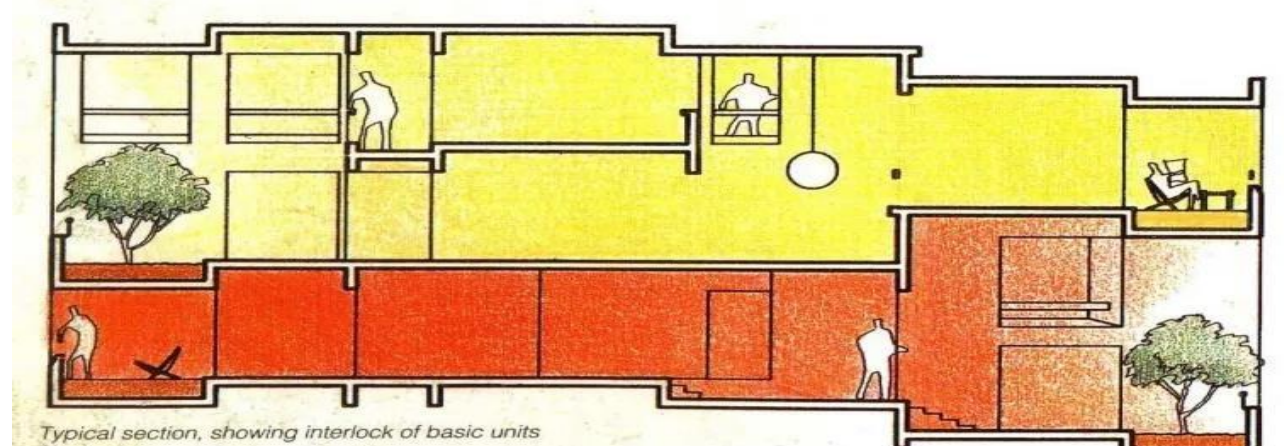
### Basic Structural Units:

Type A – 3 Bedroom

Type B – 3 Bedroom

Type C – 5 Bedroom

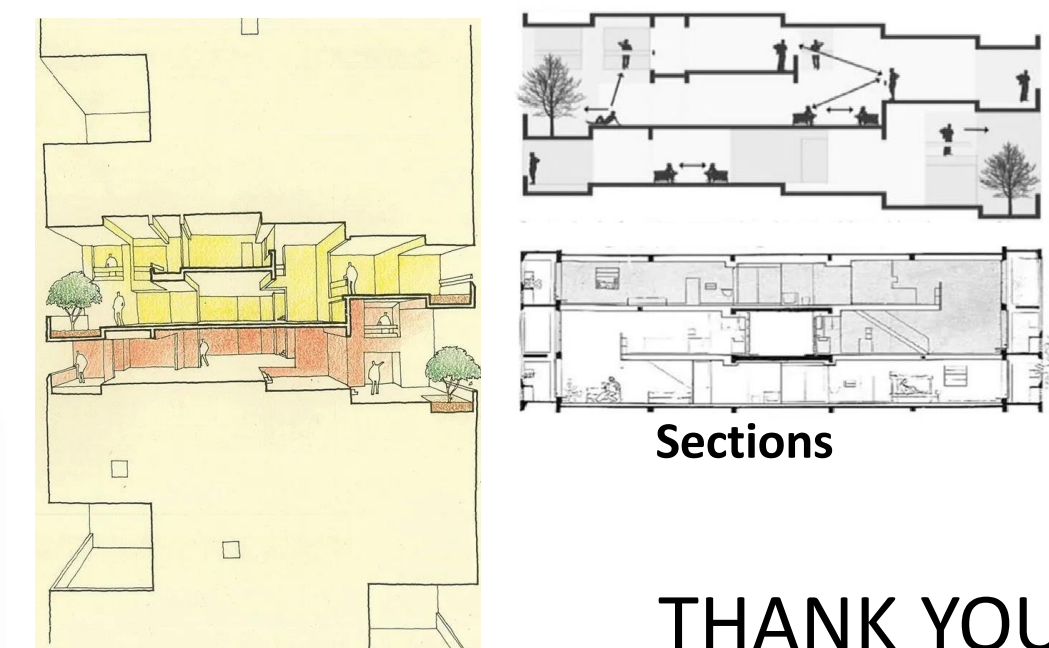
Type D – 6 Bedroom



Typical Section

## THE STYLE OF KUNCHANJUNGA APMT-

The style certainly is not rigid. It has both aspects of traditional vernacular style through the experience of a bungalow and modern style in terms of its exterior and form.

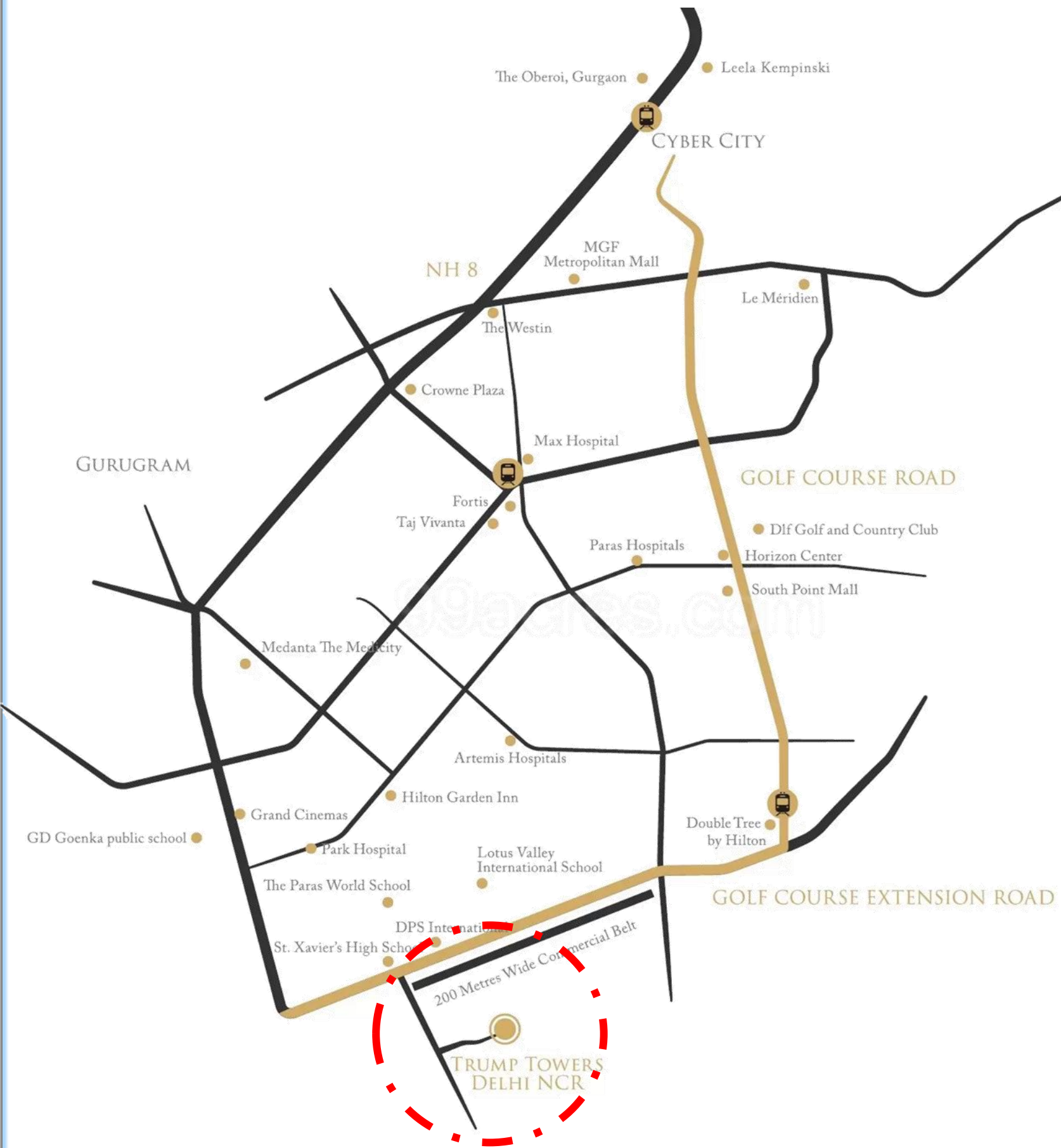


Sections



LITERATURE STUDY -02 TRUMP TOWERS, GURGAON

The Trump Towers in Gurugram are set to become the tallest twin towers in North India soaring to a height of 200 metres. This landmark project aims to redefine the luxury housing typology in India by infusing the essence of bungalow living into a vertical format. The site, the main determinant of the built form, overlooks a golf course on its western face, this posed a challenge of harsh solar ingress. The design morphology is achieved by breaking down the rectilinear form into two tower blocks – which are further articulated to create a six-tower form. This helps open up the apartments on all of their faces, providing panoramic views of the city, while huge verandah-like balconies cut-off the West sun. The luxury and opulence associated with quintessential bungalow living are recreated with the help of double-heighted free-flowing spaces, articulated terraces, private lift lobbies and panoramic views overlooking the Golf Course. Besides the residential towers, multiple recreational facilities have been provided, including a club featuring an Olympic size all-weather elevated infinity pool. The Trump Towers establish a unique identity by altering the genre of residential housing with their use of a high-performance façade. This fully unitized system that is wind and waterproof, incorporates daylighting, solar heat gain control, ventilation and space conditioning whilst catering to much-needed structural stability in a high-risk seismic zone.



T1 & T2 - Trump Tower Delhi NCR

- (a) Entry/Exit
- (b) Water Garden
- (c) Arrival Plaza
- (d) Entrance Lobby
- (e) Kids Play Area
- (f) Secondary Entry/Exit
- (g) Sunset Mirror Pool
- (h) Glass Covered Heated Pool
- (i) Community Building-Trump Club
- (j) Services - HSD Yard
- (k) Services - DG Cooling Tower
- (l) Residential Building C1-11 (G+20)
- (m) Primary/ Nursery School



Core A & D : 6050 SQ.FT.  
Core B & E : 4550 SQ.FT.  
Core C & F : 3525 SQ.FT.

Smart-Sky Residences: Elevating High-Rise Living in Lucknow

GUIDED BY:  
AR. ANKUR SAXENA

GAURAV PANDEY  
B.ARCH 5<sup>TH</sup> YEAR (2019-24)  
1190101012  
BBD UNIVERSITY, LUCKNOW

\*Refer Disclaimer  
This is an indicative master plan



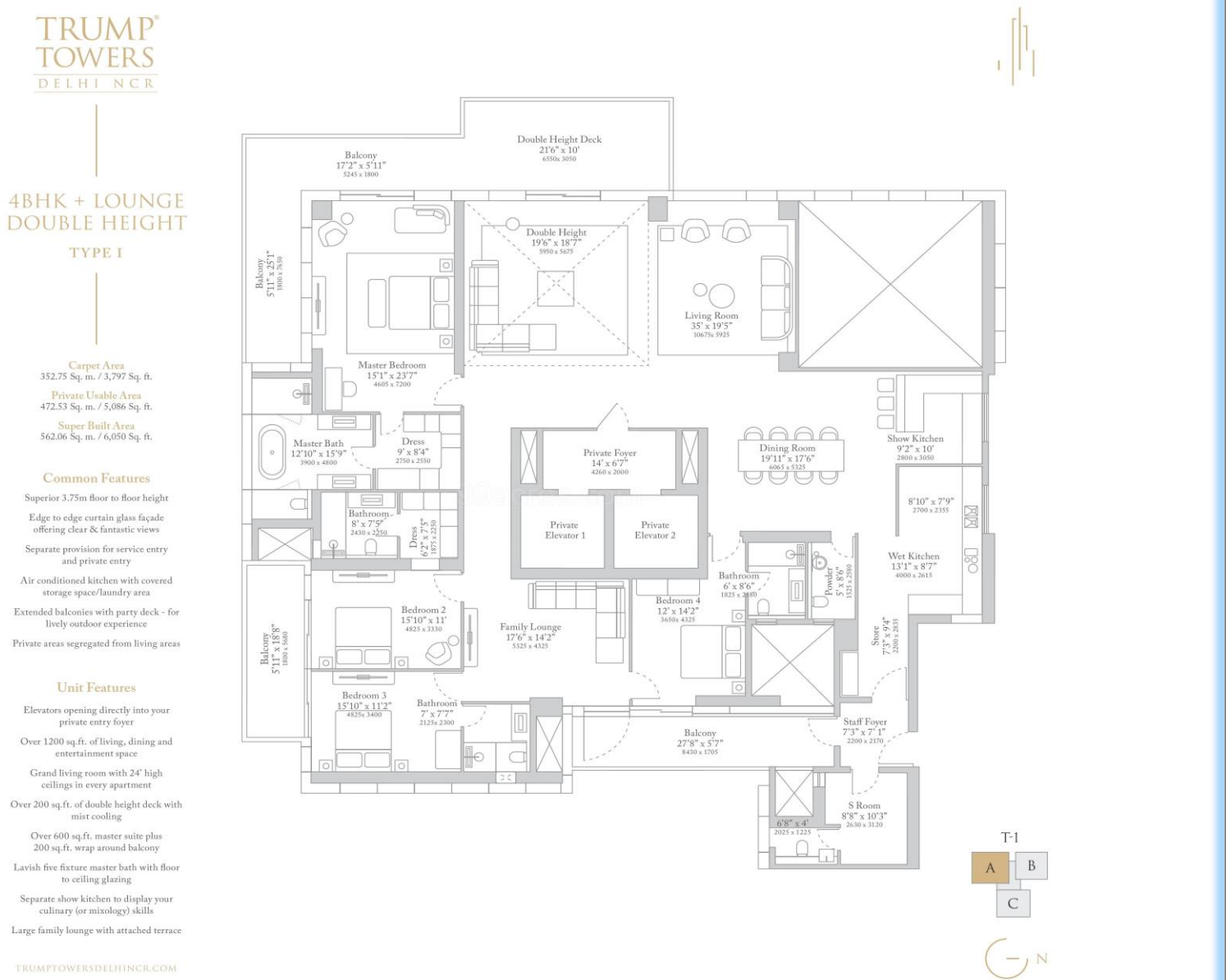
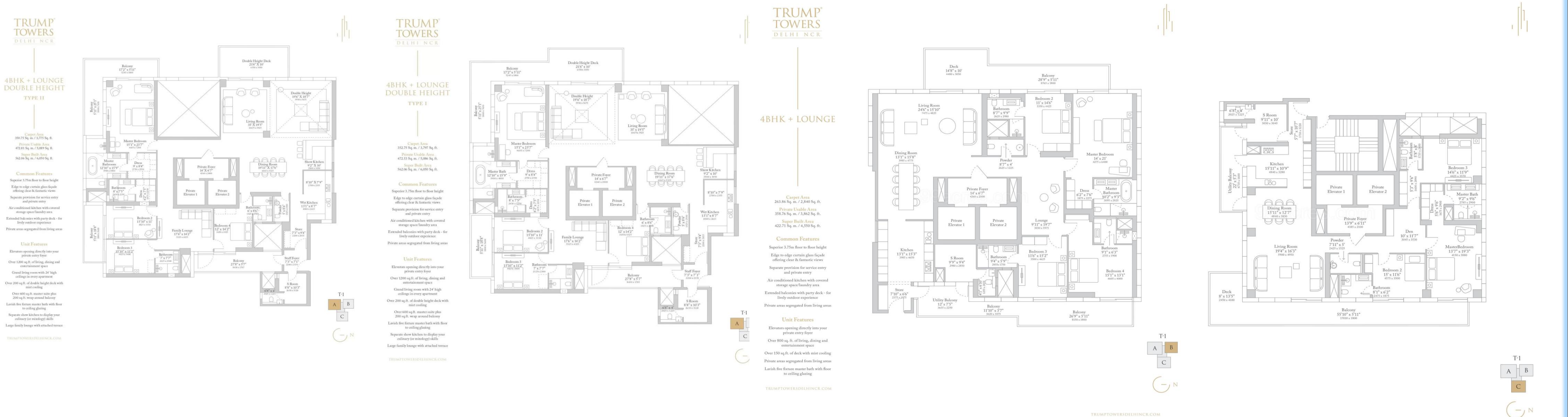
LITERATURE STUDY -02 TRUMP TOWERS, GURGAON



The Residential Luxurious Flats gurgaon also features an exclusive 32,000 sq.ft. approx. infinity edged temperature-controlled indoor pool, a spa and fitness center, a fine-dining restaurant, business center, and in-residence catering.

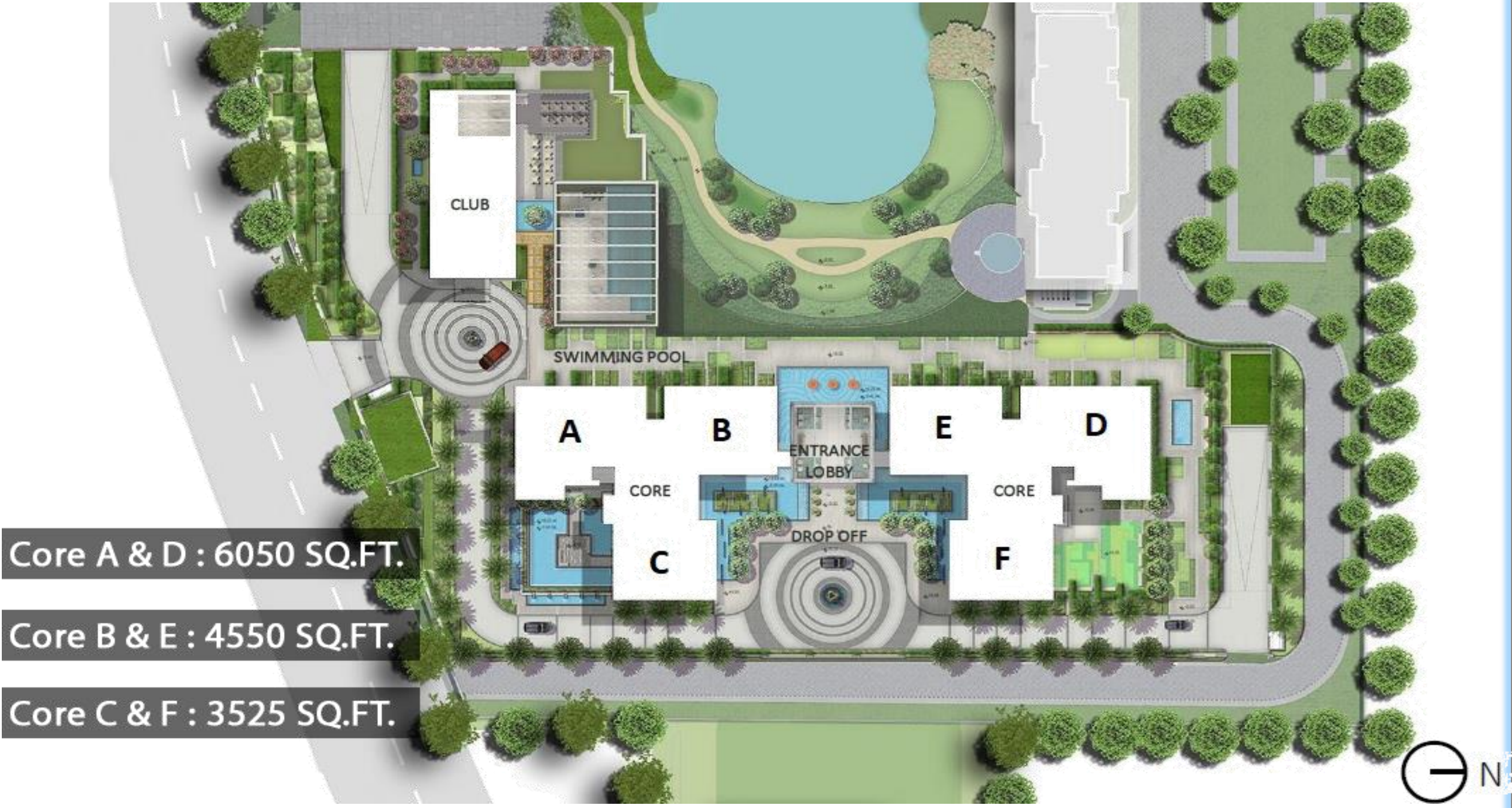
The development also offers a BBQ area connected to a multipurpose hall, an outdoor cafe, restaurant and bar with exclusive cigar lounge. Location advantages include M3M Cosmopolitan Mall (2.1Km), Drona Sports Village (2.7Km), DPS International Edge (2.8Km), Sohna Road (3Km), SCC Drive-In Cinema (3.2 Km), Genpact Badshahpur (4.6Km), W Pratiksha Hospital (4.9Km) and IGI Airport (17Km).

Trump Property in Gurgaon is the perfect destination for those looking for luxurious living in the heart of the city with all the modern amenities and services at their disposal.



his project is being developed by the renowned developers of India i.e. M3M developers.

Trump Towers, located in Sec — 65, is a luxurious residential development offering 3 & 4 BHK customizable residences. Possession of these ultra-luxury apartments is expected to be in 2023. It is India's fourth Trump Tower and is located at GCER. Each apartment comes with a family lounge and a private lounge with 22 feet double height ceiling and Trump signature style glass facade. The exclusive Trump Card provides worldwide access to privileged, concierge and valet services.





COMPARATIVE MATRIX

S.NO.	PROJECT	CASE STUDY-1 UNITECH HORIZON (G-NOIDA)	CASE STUDY-2 ORANJE CASTLE LUCKNOW	VIRTUAL CASE STUDY KANCHANJUNGA APARTMENT MUMBAI	INFERENCES
1.	LOCATION	SECTOR Pi II Greater Noida, Uttar Pradesh	ORANJE CASTLE GOMTI NAGAR, LUCKNOW	KANCHANJUNGA APARTMENT MUMBAI	-
2.	ARCHITECT	AR. Timothy Siew	MVRDV ARCHITECTS NETHERLANDS	AR. CHARLES CORREA	-
3.	TPOLOGY	Housing apartment	SMART & LUXURY APARTMENTS	LUXURY APARTMENT	LUXURY HOUSING
4.	CAPACITY	-	-	-	-
5.	SITE AREA	101171 SQ.MT. , (25 ACRES)	29137 SQ.MT. , (7.2 ACRES)	5260 SQ.MT (1.3 ACRES)	-
6.	SITE SURROUNDING	NEAR ACHER MARKET, GOOD SOCIETY, POLICE HOUSING SOCIETY, NOIDA METRO DEPOT.	NEAR POLICE HEADQUARTERS, PHOENIX PLASSIO, SAHEED PATH	ANTILIA BUILDING, TATA GARDEN PARK, VIP SOCIETY, CUMBALA HILL TELE, SOPHIA COLLEGE	(COMMERCIAL, INSTITUTIONAL, RESIDENTIAL & MIXED USE DEVELOPMENT, RECRETIONAL, HOSPITAL)
7.	BUILDING ORIENTATION	NORTH - SOUTH	NORTH-SOUTH	EAST - WEST	BUILDING SHOULD USUALLY BE ORIENTED <b>EAST-WEST</b> RATHER THAN NORTH-SOUTH.
8.	APPROACH	GREATER NOIDA WEST 20M WD ROAD & UNITECH HORIZON ROAD	POLICE HEADQUARTERS ROAD CONNECTED TO SAHEED PATH	THE ENTRANCE FROM EAST, KANCHANJUNGA APARTMENT 72, G Deshmukh Road Mumbai MH India.	-
9.	SITE PLANNING	CENTRALISED PLANNING BUILDING BLOCK ARRANGED LINEAR PATTERN	CENTRALISED COURTYARD PLANNING	CENTRAL COURTYARD PLANNING, SQUARE PLANNING SHAPE WITH DOUBBLE HEIGHTED TERRACE GARDEN	INTER RELATIONSHIP BETWEEN BUILT AND OPEN MASS. FORMAL SPACES SHOULD BE SURROUNDED BY INFORMAL SPACES
10.	MATERIAL	LOCALLY AVAILABLE MATERIALS	LOCALLY AVAILABLE MATERIALS  INTEGRAL UNIVERSITY, LUCKNOW	It is made from reinforced concrete WITH CENTRAL CORE, RCC BASED MATERIAL & NORMAL BRICK MATERIALS	LOCAL MATERIALS USED
11.	FACADE TREATMENT	CONVENTIONAL BRICK, GLASS RAING, M.S RAILING, TEXTURE FINISHES.	EXPOSED BRICK, CERAMIC TILES, ITALIAN MARBLE, M.S RAILING WITH SYNTHETIC ENEMEL PAINT	WALL TREATEMENTS WITH GOOD PLASTER SYNTHETIC PAINTS, ETC	-
12.	REQUIREMENTS	3 TYPES 3 BHK FLATS, CLUB HOUSE, SWIMMING POOL,ADMIN BLOCK, BASEMENT AND SITE PARKING.	3 TYPES 3 BHK FLATS, 4 BHK DUPLEX, 5 BHK PAINHOUSE CLUB HOUSE, SWIMMING POOL,ADMIN BLOCK,KIDS PLAY AREA, BASEMENT AND SITE PARKING.	3 BHK, 4 BHK ,5 BHK & 6 BHK WITH OPEN DOUBBLE HEIGHTED TERRACE, KIDS PLAY AREA, LANDSCAPING	-
13.	ZONNING	BUILDING IS CONNECTED WITH INTERNAL ROAD OF SITE	BUILDING IS CONNECTED WITH CENTRAL COURTYARD	SQUARE BUILDING SHAPE IN CENTER OF THE SITE	BUILDING SHOULD CONNECTED WITH BETTER ACCESS AREA & WITH GOOD SURROUNDINGS
14.	PARKING	BASEMENT & ON SITE PARKING	BASEMENT & ON SITE PARKING	STILT & ON SITE PARKING	PARKING SHOULD BE IN BASEMENT & ALSO ON SITE WITH ACCORDING TO NORMS



AREA ANALYSIS AND REQUIREMENT FORMULTION

S.NO.	PROJECT	CASE STUDY-1 UNITECH HORIZON (G-NOIDA)	CASE STUDY-2 ORANJE CASTLE LUCKNOW	VIRTUAL CASE STUDY KANCHANJUNGA APARTMENT MUMBAI	INFERENCES
15.	CIRCULATION	VEHICULAR AND PEDESTRIAN MOVEMENT ALLOWED	ALLOWED VEHICULAR MOVEMENT ALONG THE BUILDING BLOCKS, PEDESTRIAN MOVEMENT IS FREE ON SITE	VEHICULAR & PEDESTRIAN MOVEMENT	CIRCULATION SHOULD BE EASILY ACCESSIBLE
16.	LANDSCAPING	WATER PAVILLION, SWIMMING POOL, MOUNDS, CHILDRENS GARDEN, PLANTATION, ETC	MOUNDS, LAVISH GREEN AREA, BIRD HOUSE, KIDS GARDEN, ROPE CLIMBERS, VEGETATION ETC	GARDEN AREA, KIDS AREA	GARDENS, TREES & WATER BODIES, SWIMMING POOLS TO FORM AN INTEGRAL PART OF DESIGN
17.	SERVICES	MOSTLY SERVICES ON SITE	SERVICES IS IN BASEMENT & ALSO SOME SERVICES ON SITE	MOSTLY UNDERGROUND SERVIVES	SERVICES SHOULD ALWAYS BE OUT OF SIGHT OF GENERAL PUBLIC
18.	SHADING DEVICES	TERRACE, PROJECTED RCC SLABS, LARGE WINDOWS, LARGE OPENINGS, PARGOLAS ETC	TERRACE GARDEN, LARGE OPENINGS, LARGE BALCONY, DOUBLE BRICK WALL STRUCTURE FOR BETTER SOUND AND HEAT INSULATION	LARGE DOUBLE HIGHTED TERRACE ON EVERY FLOOR	WINDOW SHOULD BE PLACES SUCH THAT NECESSARY AMOUNT OF LIFE IS UNDERTAKEN INSIDE THE BUILDING,
19.	POSITIVE FEATURES	GOOD LANDSCAPING, WATER BODIES, FITNESS CENTER, GENERAL STORE, GOOD SECURITY, PLAYING AREA, ONLY 3 BHK FLATS, SWIMIMG POOL, CONFERENCE ROOM ETC	EUROPEAN STYLE CASTLE STRUCTURE, A LARGE BIRD HOME IN CENTRAL PARK, SKY LOUNGE, EXTERNAL FACADE OF BELGIUM BRICKS, DOUBLE EXTERNAL WALL WITH CAVITY FOR HEAT & SOUND INSULATION	THE RESIDENTIAL TOWER ACCOMPLISHES THIS BY POSITIONING ITSELF EAST-WEST TO CAPTURE PREVAILING SEA BREEZES AND A MAGNIFICENT VIEW OF THE CITY, DOUBLE HEIGHTED TERRACE	LOUVERS COULD HAVE BEEN PROVIDED SO AS TO GET DIFFUSED SUNLIGHT, REFUSED AREA SHOULD BE PROVIDED.

AREA CALCULATION-

**PERMISSIBLE COVERED AREA-** Plot area x F.A.R.  
= 38,850 x 2.5  
= 97,125 Sq.mt. (Total Built up Area)

**GROUND COVERAGE** = 30% Max

**GROUND COVERAGE** = 7%  
= 7/100X38850  
= 2719.5 SQ.MT

**NO OF FLOORS** = 97125/2719.5  
= **35 Floors**

**TYPES OF DWELLING UNITS-** 3 BHK – 220 SQ.MT  
4 BHK – 260 SQ.MT.

**NO OF UNITS** = 3 BHK (140 nos.)  
= 4 BHK (100 nos.)  
= **240 units**

**TOTAL NO. OF DWELLING UNITS** = **240 Units**

**NO. OF FLOOR** = G + 35 & G + 25

**COVERED AREA FOR DWELLING UNIT** = No of units x area of 1 unit  
= 140 x 220  
3 BHK = 30,800 Sq.mt  
4 BHK = 100 x 260  
= 26,000 Sq.mt

**TOTAL AREA OF DWELLING UNITS** = **56,800 SQ. MT.**

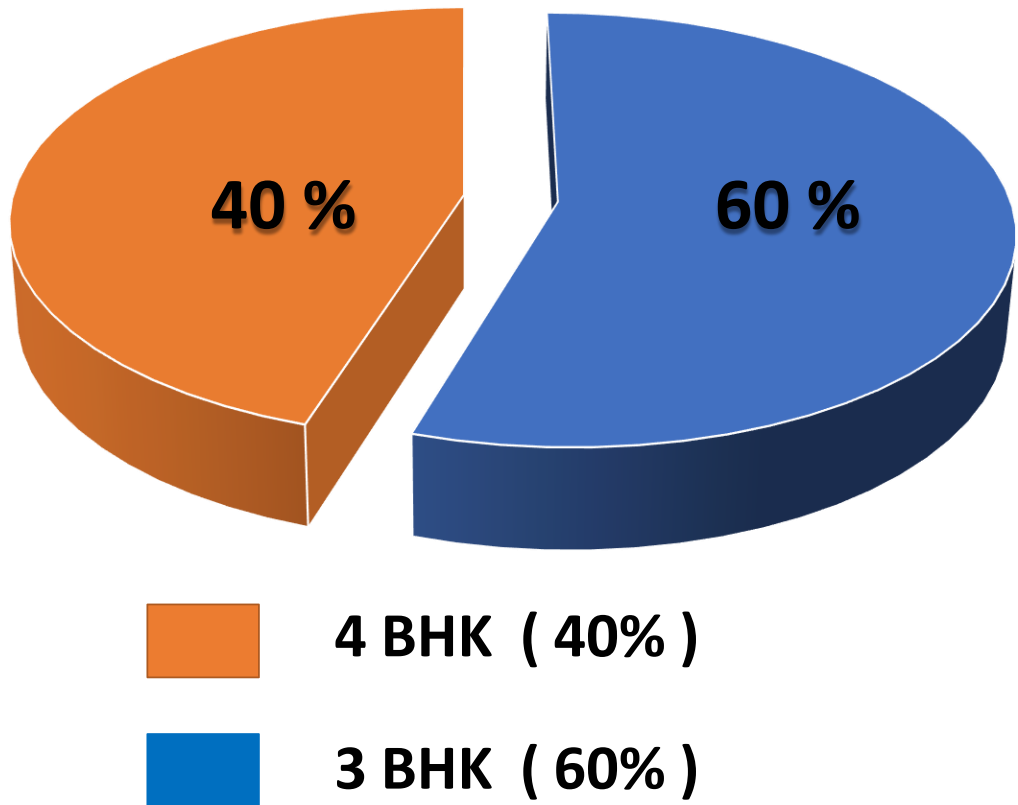
**CIRCULATION SPACE** 15% = 8,520 SQ.MT.

**TOTAL DWELLING AREA** = 65,320 SQ.MT.

**HOUSING DENSITY** = Under the category of mid density housing.  
9.6 Acres = 3.9 Hectares

**TOTAL POPULATION** = 7 person in 3 BHK (Assuming)  
= 7 x 140  
= **980 Person**  
= 9 Person in 4 BHK (Assuming)  
=9 x 100  
= **900 Person**  
= 12 Person in Penthouses (Assuming)  
=12 x 4  
= **48 Person**  
**TOTAL= 1928 PERSON**

UNITS BIFURCATION

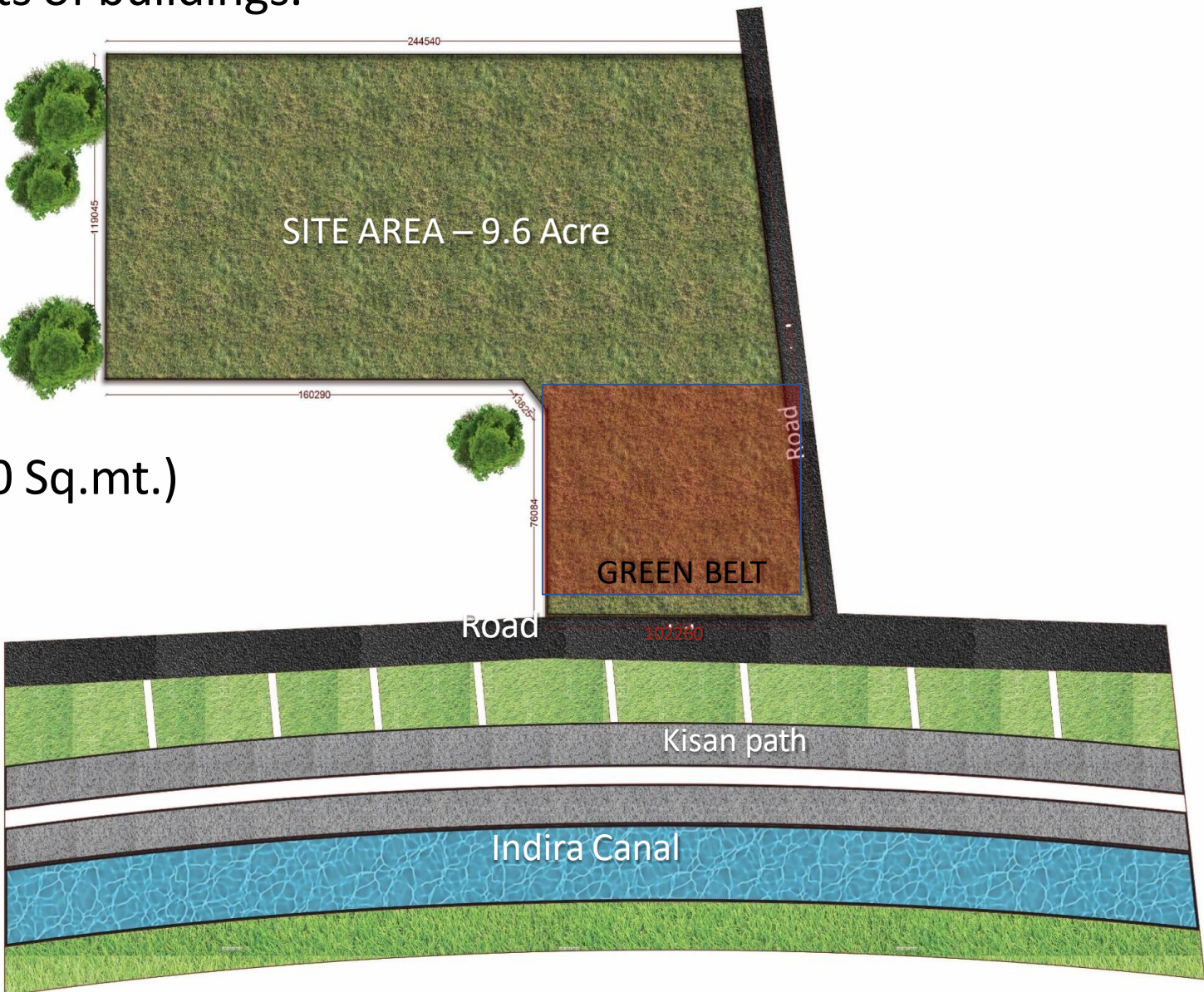


SOLID WASTE MANAGERMENTS-

- Total no of Flats – 360 units
- Assuming-  
500 gm/Flat ( More than 200 Sq.mt.)  
360 x 500 = 1,80,000  
= **180 Kg / Day**

GREEN BELT SPECIFICATION-

- 75 M wide green belt is to be designed as proposed in LUCKNOW MASTERPLAN 2031.
- Area covered by green belt 6172.38 sq.mt.
- No permanent structure to be constructed in the designated green belt area.
- The types of plants, the distance between trees/plants from the building and the distance between plants shall be care fully worked out keeping in view the structural safety and aesthetic requirements of buildings.

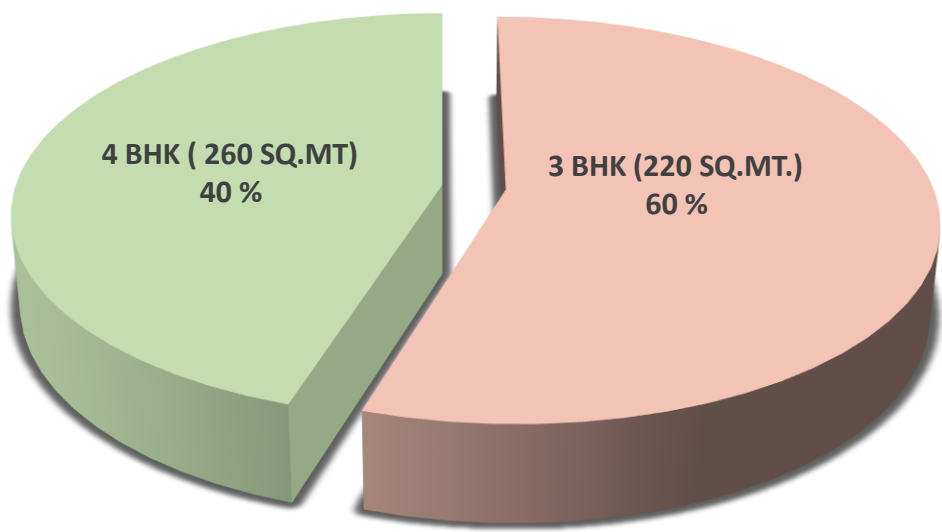




AREA ANALYSIS AND REQUIREMENT FORMULTION

S.NO.	REQUIREMENTS/FUNCTIONAL AREAS	CASE STUDY-1 UNITECH HORIZON G-NOIDA	CASE STUDY-2 ORANJE CASTLE LUCKNOW	VIRTUAL CASE STUDY KANCHANJUNGA APARTMENT MUMBAI	STANDARDS	NO. OF USERS	PROPOSED AREA	REMARKS
1.	<b>ADMIN BLOCK-</b> <ul style="list-style-type: none"><li>RECEPTION</li><li>GUARD ROOM</li><li>MEETING ROOM</li><li>TOILET(M/F)</li><li><b>TOTAL AREA-</b></li></ul>	- - - -	<ul style="list-style-type: none"><li>9 Sq.mt</li><li>7.5 Sq.mt</li><li>-</li><li>4.5 Sq.mt</li></ul>	<ul style="list-style-type: none"><li>-</li><li>-</li><li>-</li><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li><li>5.04 Sq.mt.</li><li>-</li><li>5.75 sq.mt.</li></ul>	- - - -	<ul style="list-style-type: none"><li>20</li><li>5.04</li><li>21.6</li><li>6.3</li><li><b>52.94 Sq.mt.</b></li></ul>	- STANDARDS - STANDARDS
A A1 A2 A3 A4 A5 A6 A7	<b>AREA ANALYSIS-</b> <ul style="list-style-type: none"><li>SITE AREA</li><li>FAR</li><li>GROUND COVERAGE (%) &amp; in sq.mt</li><li>TOTAL BUILT-UP AREA</li><li>NO. OF FLOORS</li><li>GREEN BELT AREA</li><li>COMMERCIAL</li></ul>	<ul style="list-style-type: none"><li>25 ACRES</li><li>1.8 (ACHIEVED)</li><li>20 % &amp; 20234 SQ.MT</li><li>-</li><li>S+16</li><li>-</li><li>-</li></ul>	<ul style="list-style-type: none"><li>7.2 ACRES</li><li>2.75</li><li>35 % &amp; 40000 SQ.MT</li><li>20138 SQ.MT</li><li>S+17</li><li>-</li><li>-</li></ul>	<ul style="list-style-type: none"><li>1.3 ACRES</li><li>-</li><li>-</li><li>-</li><li>S+27</li><li>-</li><li>-</li></ul>	<ul style="list-style-type: none"><li>NOT LESS THAN 2000 sq.mt</li><li>2.5</li><li>35 %</li><li>-</li><li>-</li><li>-</li><li>Front setback .75 m to be developed</li><li>5% Site Area</li></ul>	- - - - - -	<ul style="list-style-type: none"><li>9.6 ACRES</li><li>2.5</li><li>30 % &amp; 11655 SQ.MT</li><li>-</li><li>-</li><li>7114 Sq.mt = 1.33 Acres</li><li>1942.5 Sq.mt</li></ul>	- STANDARDS+BYE LAWS CALCULATED - - MASTERPLAN CALCULATED
B B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16	<b>3 BHK FLAT-</b> <ul style="list-style-type: none"><li>ENTRANCE FOYER</li><li>DRAWING AREA</li><li>SERVANT ROOM</li><li>SERVANT TOILET</li><li>MASTER BEDROOM</li><li>MASTER BATHROOM</li><li>CHILDREN'S BEDROOM</li><li>BEDROOM 3</li><li>KITCHEN WITH UTILITY</li><li>DINING AREA</li><li>STUDY</li><li>TOILET 2,3</li><li>POWDER ROOM</li><li>LAUNDRY ROOM</li><li>STORE AREA</li><li>BALCONY/TERRACE AREA</li><li><b>TOTAL AREA-</b></li></ul>	<ul style="list-style-type: none"><li>-</li><li>10.8</li><li>3.9</li><li>1.92</li><li>17.86</li><li>4.15</li><li>11.2</li><li>14.8</li><li>13.8</li><li>23</li><li>4.5</li><li>4.14 &amp; 3.84 sq.mt</li><li>3.85</li><li>-</li><li>-</li><li>14.5 % of covered Area</li><li><b>130.35 SQ.MT</b></li></ul>	<ul style="list-style-type: none"><li>8.3</li><li>25.5</li><li>15.4</li><li>4.3</li><li>18.9</li><li>5.04</li><li>-</li><li>19.25</li><li>9.2</li><li>25.5</li><li>-</li><li>3.6 &amp; 5.04 sq.mt</li><li>3.9</li><li>-</li><li>-</li><li>All 18.85</li><li><b>163.65 SQ.MT</b></li></ul>	<ul style="list-style-type: none"><li>8</li><li>21</li><li>5.6</li><li>4</li><li>17</li><li>4.5</li><li>12</li><li>12</li><li>8.5</li><li>20</li><li>-</li><li>3.5, 3.3 &amp; 3.6</li><li>3.8</li><li>-</li><li>-</li><li>50</li><li><b>177.2 SQ.MT</b></li></ul>	<ul style="list-style-type: none"><li>-</li><li>15</li><li>4.2</li><li>-</li><li>15</li><li>8.57</li><li>12</li><li>12</li><li>7.5</li><li>13</li><li>-</li><li>5.75</li><li>1.85</li><li>2.5</li><li>3</li><li>-</li></ul>	- - - - - - - - - - - - - - - - -	<ul style="list-style-type: none"><li>3</li><li>25</li><li>8</li><li>3.45</li><li>30</li><li>9</li><li>20</li><li>20</li><li>20</li><li>15</li><li>7</li><li>3.6 &amp; 3.9</li><li>3.6</li><li>8</li><li>3</li><li><b>20% Of Cvrdr Ar.=36.7</b></li><li><b>220.2 SQ.MT</b></li></ul>	CASE STUDY CASE STUDY CASE STUDY CASE STUDY CASE STUDY STANDARDS CASE STUDY AVG CASE STUDY CASE STUDY CASE STUDY CASE STUDY STANDARDS STANDARDS STANDARDS STANDARDS CASE STUDY AVG

UNITS BIFURCATION



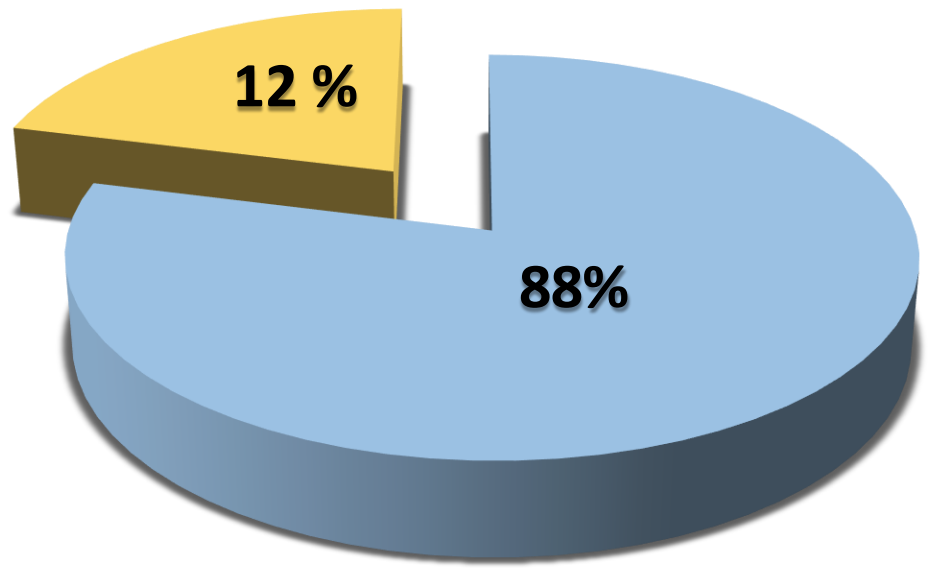
4 BHK Units 260 Sq.mt  
3 BHK Units 220 Sq.mt

Units / Floor - 4  
2 Nos. 3 BHK & 2 Nos. 4 BHK

Total Floor Area-  
Dwelling Unit + Core Area  
= 960 Sq.mt.

No of Floors- 35  
No of flats in 1 Tower (3 BHK & 4 BHK)= 70x2=140 units & 50x2=100 units  
Area of 1 Tower = 520x25 (4 BHK )  
= 13,000x2= 26,000 Sq.mt  
= 440x35 ( 3 BHK )  
= 15400x2= 30,800 Sq.mt

Total Area of 2 Towers- 65,320 Sq.mt.

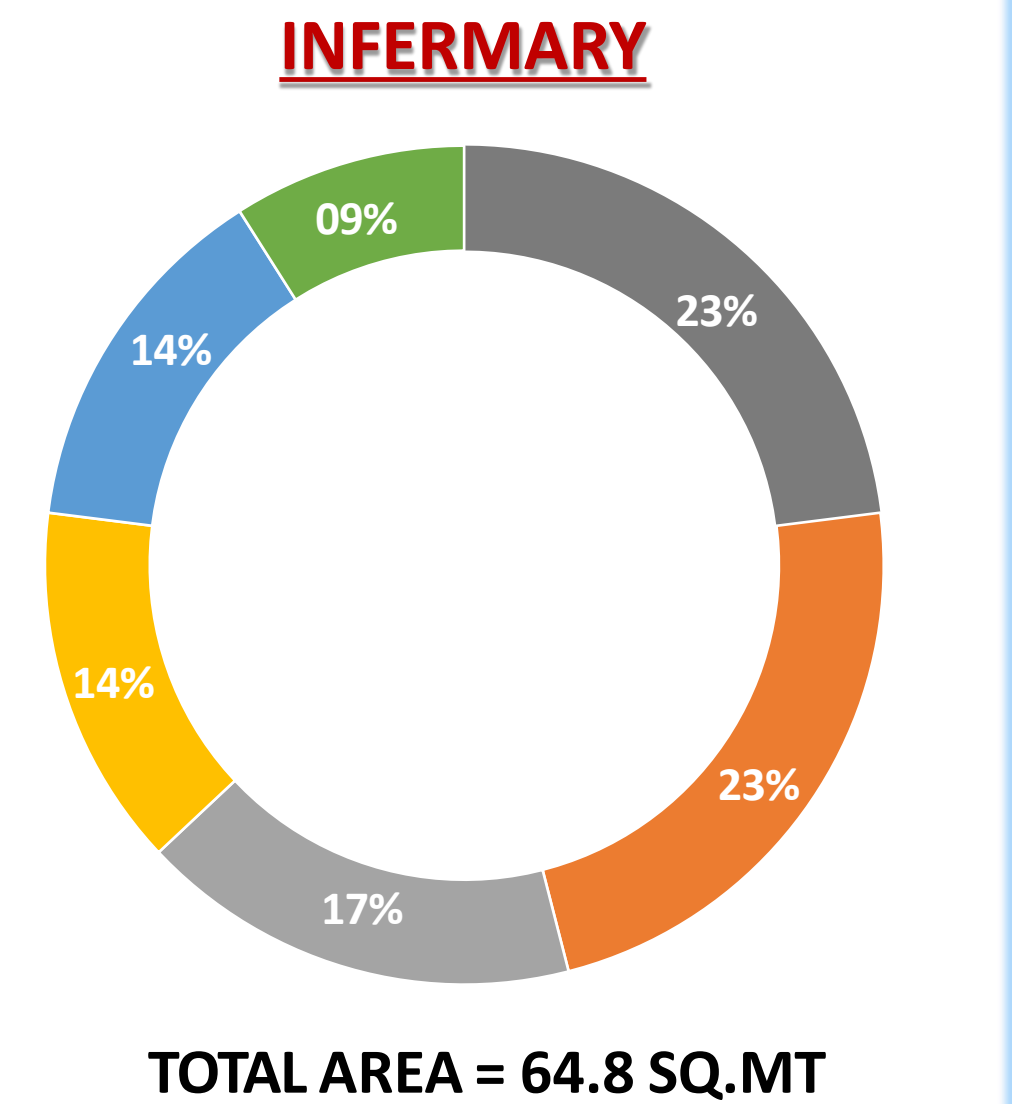
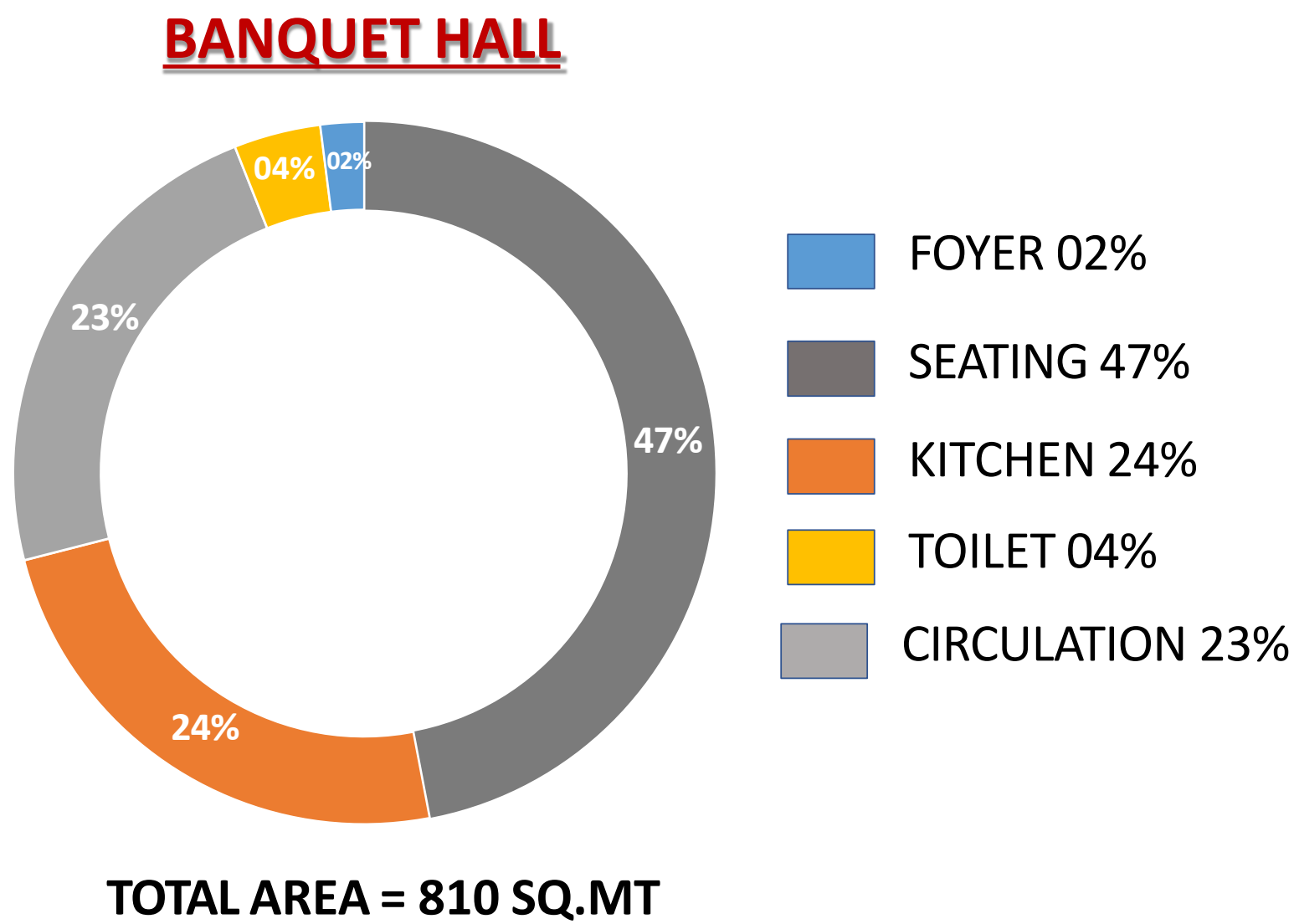
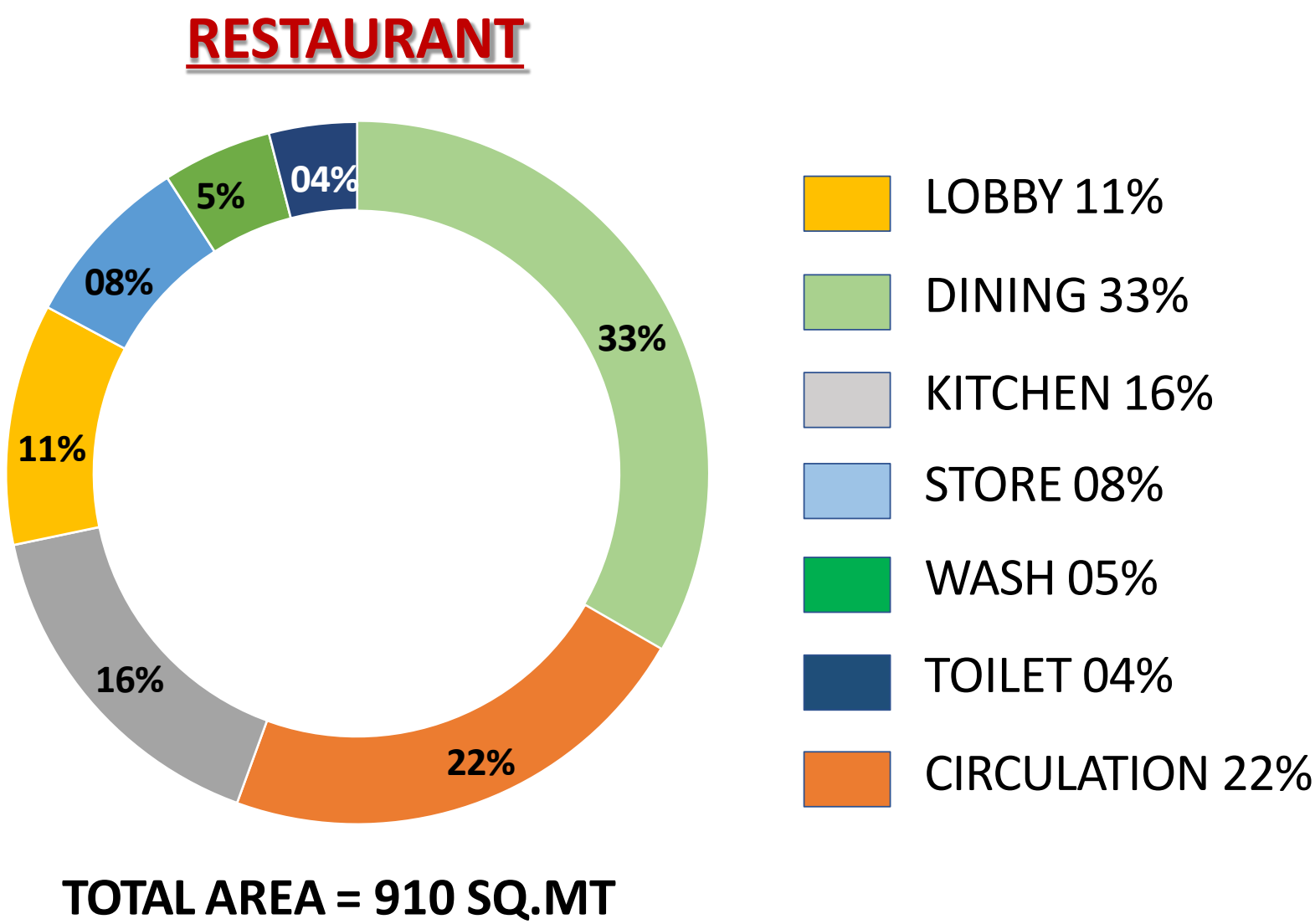
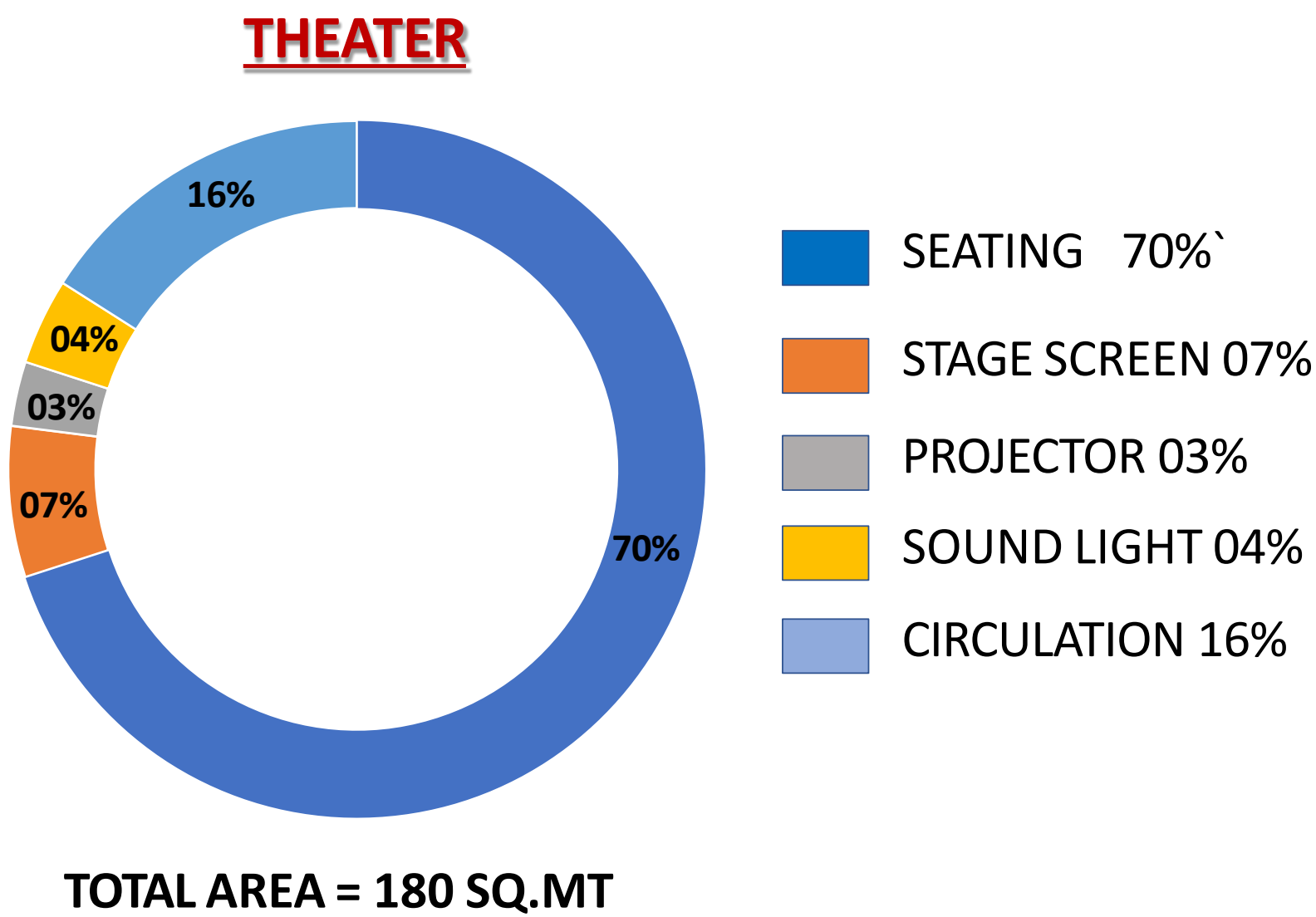


3 BHK  
Core Area



AREA ANALYSIS AND REQUIREMENT FORMULTION

S.NO.	REQUIREMENTS/FUNCTIONAL AREAS	CASE STUDY-1 UNITECH HORIZON G-NOIDA	CASE STUDY-2 ORANJE CASTLE LUCKNOW	VIRTUAL CASE STUDY KANCHANJUNGA APARTMENT MUMBAI	STANDARDS	NO. OF USERS	PROPOSED AREA	REMARKS
C C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13 C14 C15 C16 C17	<b>4 BHK FLAT-</b> ▪ ENTRANCE FOYER ▪ DRAWING AREA ▪ SERVANT ROOM ▪ SERVANT TOILET ▪ MASTER BEDROOM ▪ MASTER BATHROOM ▪ CHILDREN'S BEDROOM ▪ BEDROOM 3 ▪ BEDROOM 4 ▪ KITCHEN WITH UTILITY ▪ DINING AREA ▪ STUDY ▪ TOILET 3,4 ▪ POWDER ROOM ▪ LAUNDRY ROOM ▪ STORE AREA ▪ BALCONY/TERRACE AREA <b>TOTAL AREA-</b>	- - - - - - - - - - - - - - - - - - -	▪ 2.8 ▪ 14.9 ▪ 3.3 ▪ 1.9 ▪ 15.1 ▪ 3.5 ▪ 14.8 ▪ 15.6 ▪ 15.9 ▪ 8.9 ▪ 16.3 ▪ - ▪ 3.5,3.3 & 3.1 ▪ 2.7 ▪ - ▪ - ▪ 65.2 ▪ <b>185.2 SQ.MT</b>	▪ 2.5 ▪ 13.5 ▪ 4 ▪ 1.8 ▪ 16 ▪ 3 ▪ 13 ▪ 12 ▪ 12 ▪ 7.5 ▪ 14.2 ▪ - ▪ 3.5, 3.2 & 3.3 ▪ 2.5 ▪ - ▪ - ▪ 70 ▪ <b>182 SQ.MT</b>	▪ - ▪ 15 ▪ 4.2 ▪ - ▪ 15 ▪ 8.57 ▪ 12 ▪ 12 ▪ 12 ▪ 7.5 ▪ 13 ▪ - ▪ 5.75 ▪ 1.85 ▪ 2.5 ▪ 3 ▪ -	- - - - - - - - - - - - - - - - - - -	▪ 4 ▪ 25 ▪ 8 ▪ 3.5 ▪ 30 ▪ 9 ▪ 20 ▪ 20 ▪ 20 ▪ 20 ▪ 15 ▪ 7 ▪ 3.6,3.9 & 3.6 ▪ 3.6 ▪ 8 ▪ 5 ▪ <b>25% Of Cvrdr Ar.=52</b> ▪ <b>260 SQ.MT</b>	CASE STUDY CASE STUDY CASE STUDY CASE STUDY CASE STUDY STANDARDS CASE STUDY AVG CASE STUDY CASE STUDY CASE STUDY CASE STUDY CASE STUDY STANDARDS STANDARDS STANDARDS CASE STUDY AVG
D D1	▪ <b>PENTHOUSE</b> ▪ AS PER DESIGN	-	▪ 350 sq.mt	-	-	-	AS PER DESIGN	-





AREA ANALYSIS AND REQUIREMENT FORMULTION

S.NO.	REQUIREMENTS/FUNCTIONAL AREAS	CASE STUDY-1 UNITECH HORIZON G-NOIDA	CASE STUDY-2 ORANJE CASTLE LUCKNOW	VIRTUAL CASE STUDY KANCHANJUNGA APARTMENT MUMBAI	STANDARDS	NO. OF USERS	PROPOSED AREA	REMARKS
E E1 E2 E3 E4 E5 E6 E7 E8 E9 E10 E11 E12 E13 E14 E15 E16 E17 E18	<b>CLUB HOUSE-</b> ▪ RECEPTION ▪ OFFICE ▪ MULTIPURPOSE HALL ▪ BANQUET HALL ▪ GYMNASIUM ▪ SPA ▪ POOL ▪ SQUASH ROOM ▪ BILLIARDS ROOM ▪ CARDS/CHESS ▪ CHANGE ROOMS ▪ LOUNGE ▪ DECK AREA ▪ THEATER ROOM ▪ TOILETS ▪ TABLE TENNIS ▪ BADMINTON COURT ▪ CIRCULATION SPACE ▪ <b>TOTAL</b>	▪ - ▪ - ▪ 435 ▪ - ▪ 350 ▪ - ▪ - ▪ - ▪ - ▪ - ▪ - ▪ 6.5 ▪ 150 ▪ 175 ▪ - ▪ - ▪ - ▪ 18m x 8.8 m ▪ -	▪ - ▪ - ▪ 150 ▪ 525 ▪ 240 ▪ 150 ▪ 250 ▪ - ▪ - ▪ - ▪ 6.5 ▪ - ▪ 250 ▪ - ▪ - ▪ 50 ▪ - ▪ 13.5 m x 6.5 m ▪ -	- - - - - - - - - - - - - - - - - -	▪ 20 ▪ 15 ▪ 1.5 Sq.mt/Person ▪ 2.5 Sq.mt/Person ▪ 1.5 Sq.mt/Person ▪ 1.65 Sq.mt/Person ▪ 4 Sq.mt/Person ▪ 62.5 ▪ 19.61 ▪ 30 ▪ 3.5 Sq.mt/ Cubicle ▪ 2.55 Sq.mt/Person ▪ 0.8 Sq.mt/Person ▪ 0.6 Sq.mt/Person ▪ 1 WC/ 50 Person ▪ 98 ▪ 13.4 x 6.1 ▪ 30%	▪ - ▪ - ▪ 200 ▪ 200 ▪ 200 ▪ 50 ▪ 100 ▪ 1 COURT ▪ 1 TABLES ▪ 6 TABLES ▪ 6 CUBICLES ▪ 200 ▪ 100 ▪ 100 ▪ 40 ▪ 2 TABLES ▪ - ▪ -	▪ 20 ▪ 15 ▪ 300 ▪ 510(+300=810) ▪ 200 ▪ 82 ▪ 400 ▪ 65 ▪ 20 ▪ 30 ▪ 20 ▪ 510)+490=1000)80 ▪ 180 ▪ 40 ▪ 100 ▪ 13.4 x 6.1 ▪ 1050 ▪ <b>4332</b>	Restaurants, Banquet Hall, Theater Room, Area Analysis with additional spaces done later in Amenities Bifurcation section.
F F1 F2 F3 F4 F5 F6 F7 F8 F9	<b>OUTDOOR SPACES-</b> ▪ BASKETBALL COURT ▪ VOLLEYBALL ▪ INTRACTIVE SPACE IN OUTDOOR ▪ WATER FOUNTAIN ▪ LUXURIOUS LANDSCAPING ▪ MOUNDS ▪ BIRDS HOUSE ▪ KIDS PLAY AREA ▪ WATER BODY	▪ 15 m x 20m ▪ - ▪ - ▪ As per design ▪ As per design ▪ As per design ▪ - ▪ - ▪ As per design ▪ As per design	▪ 30m x 18m ▪ - ▪ - ▪ As per design ▪ As per design ▪ As per design ▪ As per design ▪ As per design	▪ - ▪ - ▪ - ▪ As per design ▪ - ▪ - ▪ - ▪ As per design ▪ -	▪ 26m x 14m ▪ 16m x 6m ▪ - ▪ - ▪ - ▪ - ▪ - ▪ - ▪ - ▪ -	▪ 12 ▪ 6 ▪ - ▪ - ▪ - ▪ - ▪ - ▪ - ▪ - ▪ -	▪ 26m x 14m ▪ 16m x 6m ▪ As per design ▪ As per design ▪ As per design ▪ As per design ▪ As per design ▪ As per design ▪ As per design	▪ STANDARDS ▪ STANDARDS ▪ - ▪ - ▪ - ▪ - ▪ - ▪ - ▪ - ▪ -
G G1 G2 G3 G4 G5 G6 G7 G8 G9	<b>SERVICES OF BLOCKS-</b> ▪ GUARD ROOM ▪ STAIRCASE ▪ LIFT ▪ LIFT LOBBY ▪ ELECTRICAL SHAFT ▪ FIRE FIGHTING SHAFT ▪ PLUMBING SHAFT ▪ RECEPTION ▪ <b>TENTATIVE CORE AREA-</b>	▪ - ▪ Width 1.5 m ▪ 1.2 x 1.5 , 1.2 x 1.8 m ▪ 2 m ▪ 1 m x 0.75 m ▪ - ▪ - ▪ 45 sq.mt	▪ 1.8 m ▪ Width 1.8 m ▪ 2.4 m 2.6 m ▪ 2.4 m ▪ 0.6 x 2 m ▪ 0.6 x 2 m ▪ - ▪ 100 sq.mt	▪ 1.5 m ▪ Width 1.5 m ▪ 2.4 m 2.6 m ▪ 2 m ▪ 0.6 x 2 m ▪ 0.6 x 2 m ▪ - ▪ 50 sq.mt	▪ 1.5 ▪ Width 1-1.25 m ▪ Shaft size- 1.9 x 1.9 m, Car size 1.3 x 1.1 ▪ 0.8 / person. Min Width- 2m ▪ 2.2 x 0.8 m ▪ 0.6 m x 0.3 m ▪ 1.2 m x 0.8 m ▪ 5 sq.mt (Reception desk)	▪ - ▪ - ▪ 3 Lifts ▪ - ▪ 15 ▪ - ▪ - ▪ -	▪ 1.5 ▪ Width- 1500 mm ▪ 2.85 x 2.25 ▪ 12 sq.mt, 2.4 m width ▪ 2.2 x 0.8 m ▪ 0.75 x 0.75 m ▪ 1.2 m x 0.8 m ▪ 45 sq.mt ▪ <b>75.2 SQ.MT</b>	▪ - ▪ CASE STUDY ▪ CASE STUDY ▪ STANDARDS ▪ STANDARDS ▪ CASE STUDY AVG ▪ STANDARDS ▪ CASE STUDY
H H1 H2 H3 H4	<b>ON-SITE SERVICES-</b> ▪ INFIRMARY ▪ SUPER MARKET ▪ LAUNDRY ▪ ATM ▪ <b>TOTAL-</b>	- - - -	- - - -	- - - -	• 64.8 • 125 • 135 • -	- - - -	• 64.8 • 125 • 135 • - • <b>324.8 SQ.MT</b>	NEUFERTS NEUFERTS NEUFERTS -



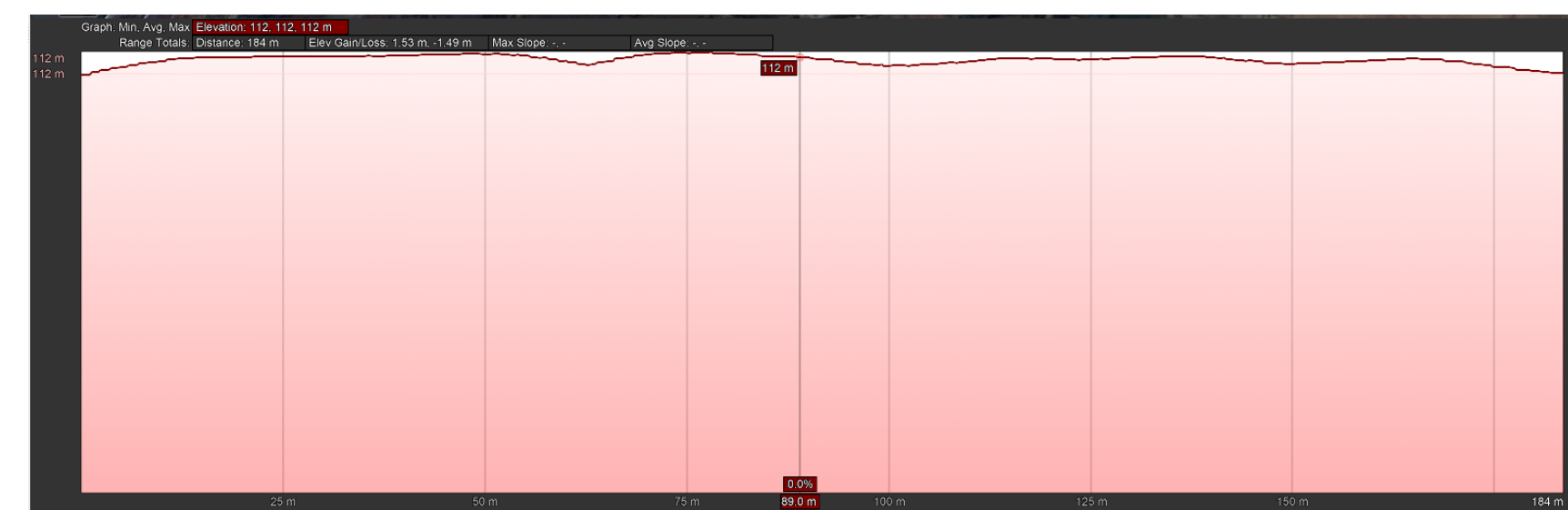
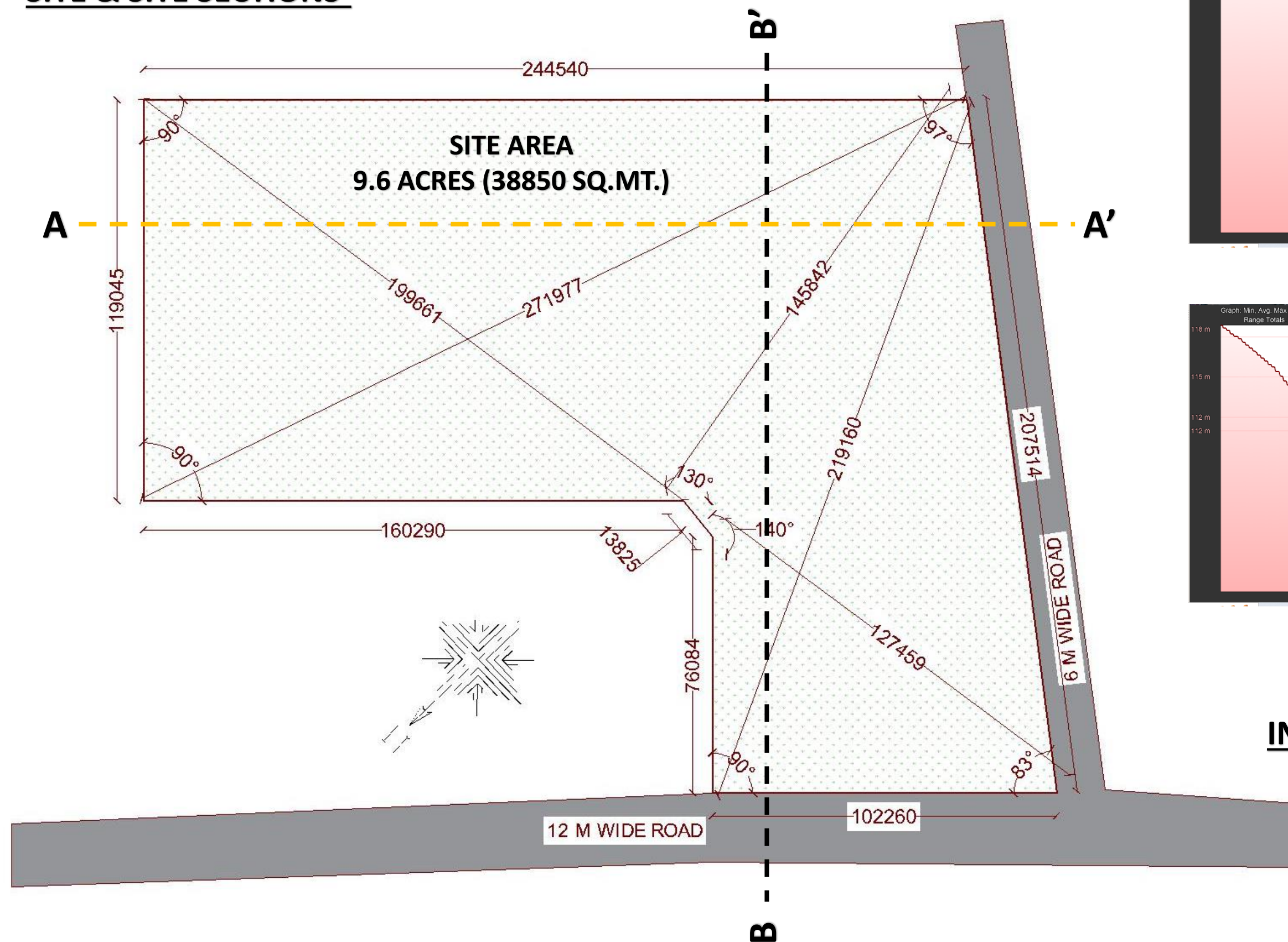
AREA ANALYSIS AND REQUIREMENT FORMULATION

S.NO.	REQUIREMENTS/FUNCTIONAL AREAS	CASE STUDY-1 UNITECH HORIZON G-NOIDA	CASE STUDY-2 ORANJE CASTLE LUCKNOW	VIRTUAL CASE STUDY KANCHANJUNGA APARTMENT MUMBAI	STANDARDS	NO. OF USERS	PROPOSED AREA	REMARKS
I 11 I2 I3 I4 I5 I6	<b>THEATER-</b> CAPACITY SEATING AREA STAGE AND SCREEN PROJECTION ROOM SOUND AND LIGHT ROOM CIRCULATION <b>TOTAL</b>	150 - - - - -	150 - - - - -	- - - - - -	<ul style="list-style-type: none"><li>-</li><li>0.8-1.5 / Person</li><li>-</li><li>6 (min)</li><li>9</li><li>20 %</li></ul>	<ul style="list-style-type: none"><li>150 Person</li><li>-</li><li>-</li><li>-</li><li>-</li><li>-</li></ul>	<ul style="list-style-type: none"><li>100 Person</li><li>100</li><li>15</li><li>6</li><li>9</li><li>35</li><li><b>180 SQ.MT</b></li></ul>	<ul style="list-style-type: none"><li>STANDARDS</li><li>STANDARDS</li><li>STANDARDS</li><li>STANDARDS</li><li>STANDARDS</li><li>STANDARDS</li></ul>
J J1 J2 J3 J4 J5 J6 J7 J8	<b>RESTAURANT IN CLUB HOUSE-</b> CAPACITY ENTRANCE LOBBY DINING AREA KITCHEN PANTRY/STORAGE WASH TOILET MALE & FEMALE CIRCULATION  <b>TOTAL</b>	100 30 1.8 - - - -	70 25 1.8 - - - -	40 - - - - - -	<ul style="list-style-type: none"><li>-</li><li>0.8 / Person</li><li>1.8 / Person</li><li>50% of dining</li><li>50% of kitchen</li><li>-</li><li>1 WC/20 Person, 1 WB/30, IU/50 Person(M)</li><li>1 WC / 50 Person</li><li>20%</li></ul>	<ul style="list-style-type: none"><li>200</li><li>-</li><li>-</li><li>-</li><li>-</li><li>-</li><li>-</li></ul>	<ul style="list-style-type: none"><li>70</li><li>120</li><li>360</li><li>180</li><li>90</li><li>50</li><li>20</li><li>20</li><li>-</li><li><b>910 SQ.MT</b></li></ul>	<ul style="list-style-type: none"><li>-</li><li>STANDARDS</li><li>STANDARDS</li><li>STANDARDS</li><li>STANDARDS</li><li>-</li><li>STANDARDS</li><li>STANDARDS</li><li>-</li></ul>
K K1 K2 K3 K4 K5 K6	<b>BANQUETHALL-</b> CAPACITY FOYER SEATING AREA KITCHEN+PANTRY TOILET MALE & FEMALE CIRCULATION <b>TOTAL</b>	300 15 2.5 - - -	250 20 2.5 - - -	- - - - - -	<ul style="list-style-type: none"><li>-</li><li>-</li><li>2.5 Sq.mt / Person</li><li>50% of dining</li><li>1 WC / 50 Person, 1 wc/p</li><li>30%</li></ul>	<ul style="list-style-type: none"><li>200</li><li>-</li><li>-</li><li>-</li><li>-</li><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li><li>20</li><li>500</li><li>250</li><li>20, 20</li><li>243</li><li><b>810 SQ.MT</b></li></ul>	<ul style="list-style-type: none"><li>-</li><li>-</li><li>-</li><li>-</li><li>-</li><li>-</li></ul>
L L1 L2 L3 L4 L5 L6 L7 L8	<b>INFIRMARY-</b> CAPACITY RECEPTION WAITING AREA DOCTOR'S ROOM PHARMACY TOILET MALE TOILET FEMALE CIRCULATION <b>TOTAL</b>	- - - - - - -	- - - - - - -	- - - - - - -	<ul style="list-style-type: none"><li>-</li><li>5 sq. mt. (Reception Desk)</li><li>12</li><li>7 sq.mt-9 sq.mt</li><li>12</li><li>1 WC/ 6 Person, 1 WB/12 P.</li><li>1 WC/ 6 Person, 1 WB/12 P.</li><li>20%</li></ul>	<ul style="list-style-type: none"><li>12</li></ul>	<ul style="list-style-type: none"><li>-</li><li>9</li><li>15</li><li>9</li><li>15</li><li>3</li><li>3</li><li>10.8</li><li><b>64.8 SQ.MT</b></li></ul>	<ul style="list-style-type: none"><li>-</li><li>STANDARDS</li><li>STANDARDS</li><li>STANDARDS</li><li>STANDARDS</li><li>STANDARDS</li><li>STANDARDS</li><li>-</li></ul>
M M1 M2 M3	<b>PARKING-</b> TOTAL PARKING BASEMENT ON-SITE PARKING	<ul style="list-style-type: none"><li>1900</li><li>1550</li><li>350</li></ul>	- - -	- - -	<ul style="list-style-type: none"><li>ECS-1.5 / 100 SQ.MT</li><li>32 sq.mt.(+Circulation)</li><li>23 sq.mt.(+Circulation)</li></ul>	<ul style="list-style-type: none"><li>-</li><li>-</li><li>-</li></ul>	<ul style="list-style-type: none"><li>1.5 ECS/100 SQ.MT</li><li>-</li><li>-</li></ul>	<ul style="list-style-type: none"><li>-</li><li>-</li><li>CASE STUDY</li></ul>
N N1 N2 N3 N4	<b>MISCELLANEOUS-</b> GUARD ROOM ELECTRICAL PANEL ROOM AHU ROOM TRANSFORMER ROOM	<ul style="list-style-type: none"><li>20</li><li>70</li><li>-</li><li>-</li></ul>	<ul style="list-style-type: none"><li>16</li><li>140 SQ.MT</li><li>25</li><li>-</li></ul>	<ul style="list-style-type: none"><li>1.5 X 1.5</li><li>-</li><li>-</li><li>-</li></ul>	<ul style="list-style-type: none"><li>1.2 X 1.2</li><li>-</li><li>-</li><li>39</li></ul>	<ul style="list-style-type: none"><li>-</li><li>-</li><li>-</li><li>-</li></ul>	<ul style="list-style-type: none"><li>1.2 X 1.2</li><li>140 SQ. MT</li><li>30</li><li>39</li></ul>	<ul style="list-style-type: none"><li>STANDARDS</li><li>CASE STUDY</li><li>CASE STUDY</li><li>STANDARDS</li></ul>

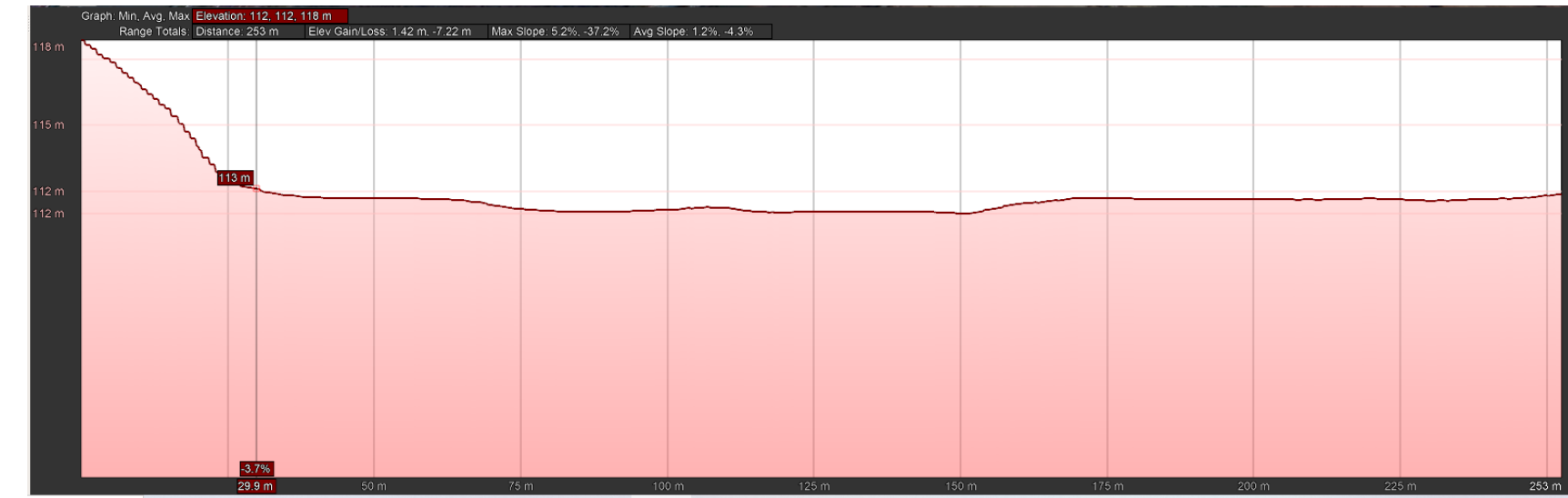


# SITE ANALYSIS

## SITE & SITE SECTIONS-



SECTION AA'



SECTION BB'

## INFERENCES-

- Smooth Vehicular Movement around the Site area as the site is directly accessible through main highway.
- Services such as Electricity and water supply are well planned
- In execution Raft-Pile Foundation to be designed as the soil bearing capacity is low in alluvial soils.

## TOPOGRAPHY-

- Site is a flat land. There are no contours on the site.
- There was a water pond within the site which has been cleared and being filled to level the ground.
- Site is 6 m below the main highway with a green belt slope leading towards the site.

## SITE SERVICES-

### ELECTRICITY

- Electricity will be supplied through Gosainganj Power Grid.
- 2000 KV load to be sanctioned as per the proposal.
- 2 Backup generators on site.

### WATER SUPPLY

- No direct supply from the government.
- Source of water supply therefore is Boring 2 Nos. of borewells to be Dugged as per the project requirement to ensure 24 hours water supply.
- The system for water supply will be so the pump runs for 8-10 hours and the supply is continuous.

### DRAINAGE

- A Sub-Canal flows 100m from the Site which will be used for drainage at the time of construction.
- 15 Meter SS Drainage Pump, Max Flow Rate: 400 Lpm- used for dewatering the site.
- Sintex Sewage Treatment Plant (STP) – Used for drainage.

### FIRE FIGHTING

- Nearest Fire Statin – Fire Station, CHINHAT Tiraha Road, Vastu Khand, Gomti Nagar.
- Distance from site – 12 KM
- Overhead Fire Tank and underground Fire pump rooms will be made as per design progressions.

## SWOC ANALYSIS-

**S**

- Site lies on main highway, Approachable land.
- Well connected
- Low traffic density area
- Amity University, Ekana complex lie within 10 km radius.

**W**

- The site is far off from market-places. Nearest marketplace is Chinhat Market which is 12 km away from site.
- Waterlogging on site is a problem, Levelling of the site needs to be done
- Distant from heart of the city hence needs to be designed catering to all the issues.
- Site lies 2m below the main highway.

**O**

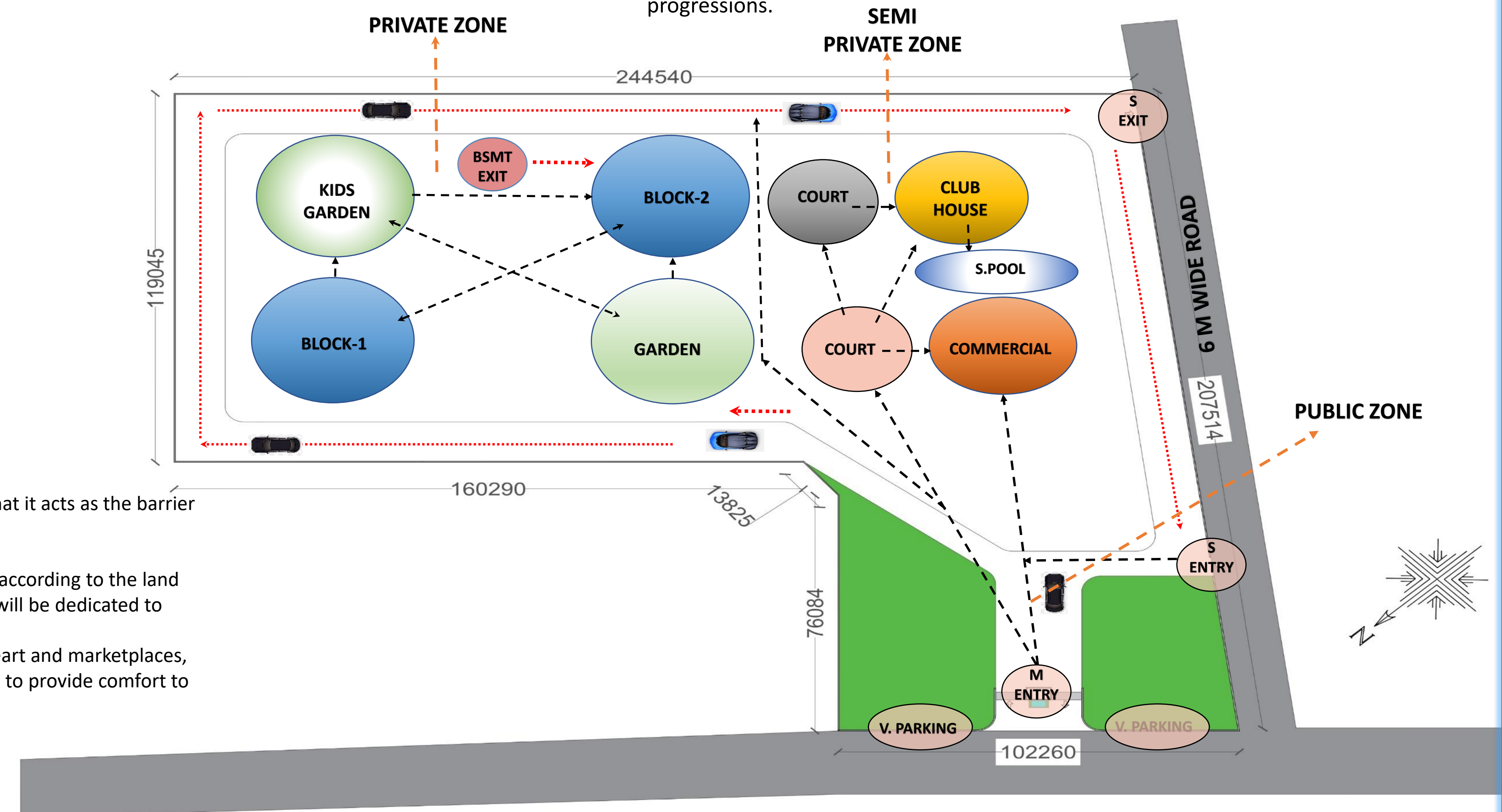
- It is a Developing area and hence provide Opportunities for new projects
- The good road network and connectivity gives opportunities to new projects
- The Indira Canal running along the site gives the Opportunity of beautiful Waterfacing views from apartment
- The area left for green belt has various Opportunities for development.

**T**

- Threats from canal overflowing in Monsoon
- If not designed properly the location can be a treat
- Needs to be designed keeping in mind the comfort and necessities of the residents.

## INFERENCES-

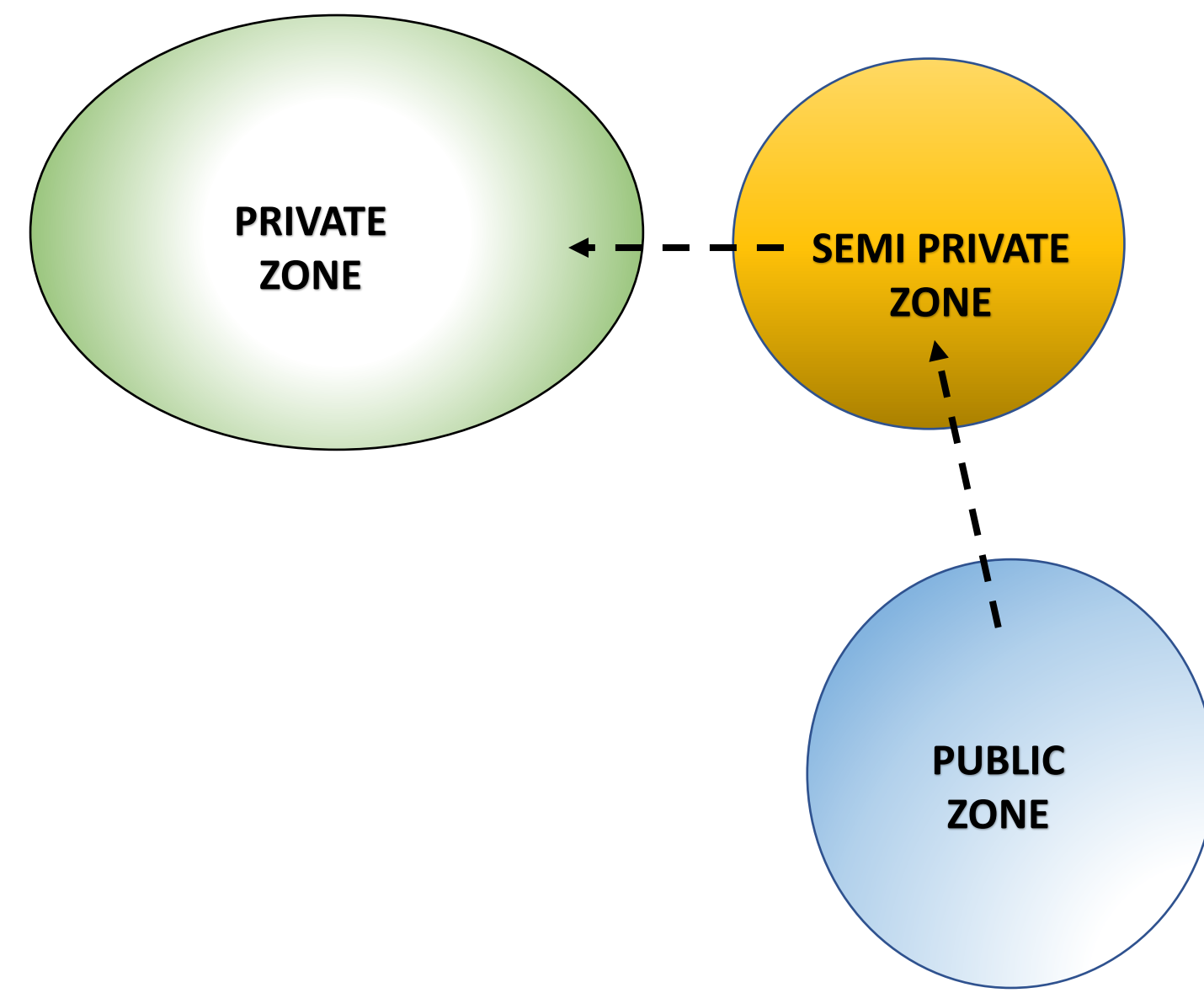
- Greenbelt should be designed so that it acts as the barrier for harsh Climate conditions.
- STP/ETP should be provided
- Since the land is Mixed-Use type-II according to the land use plan, 5% of the Total Site Area will be dedicated to Commercial.
- Since the site is distant from city heart and marketplaces, amenities should be designed so as to provide comfort to the residents.



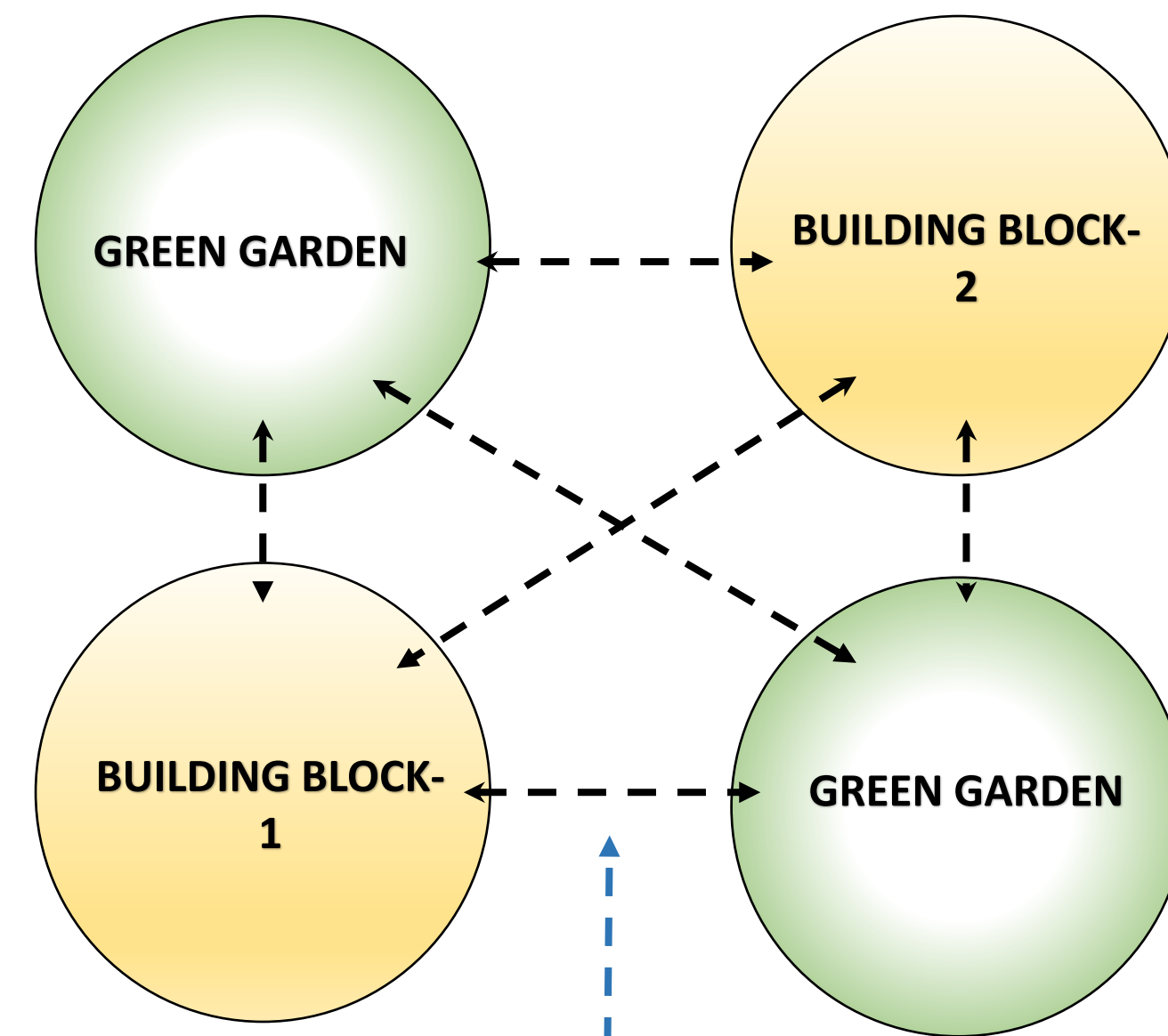


# DESIGN DEVELOPMENT

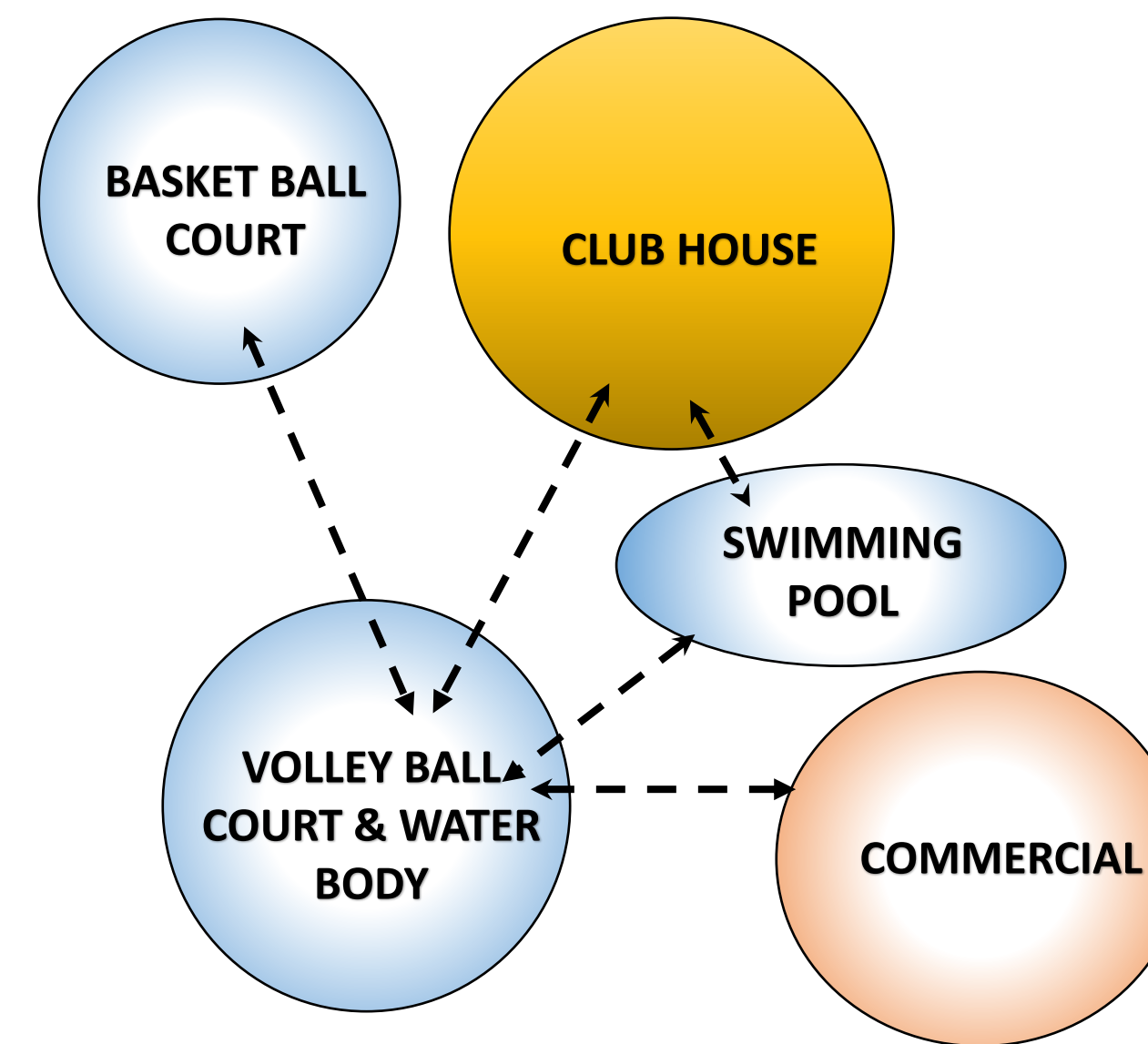
**BUBBLE DIAGRAM-**



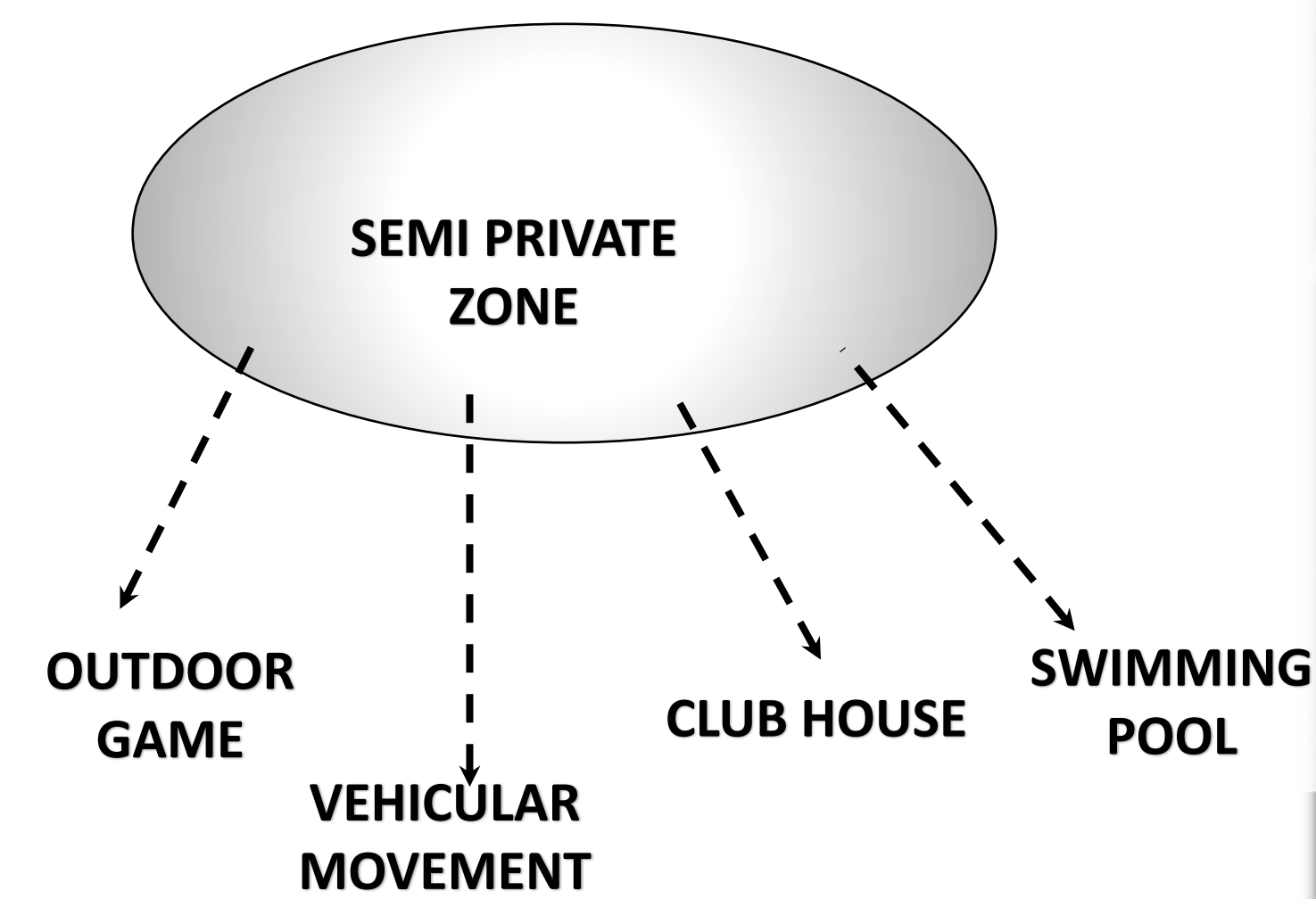
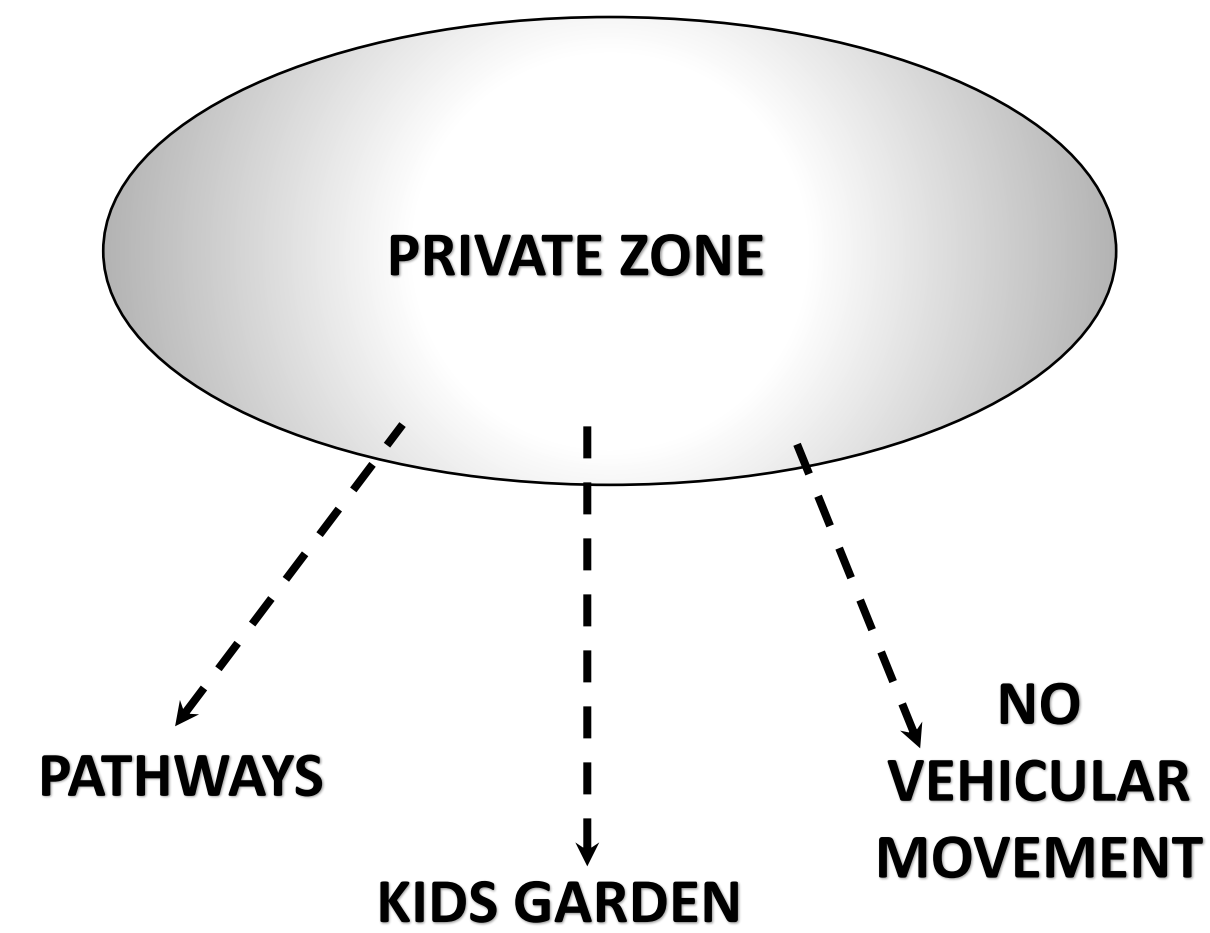
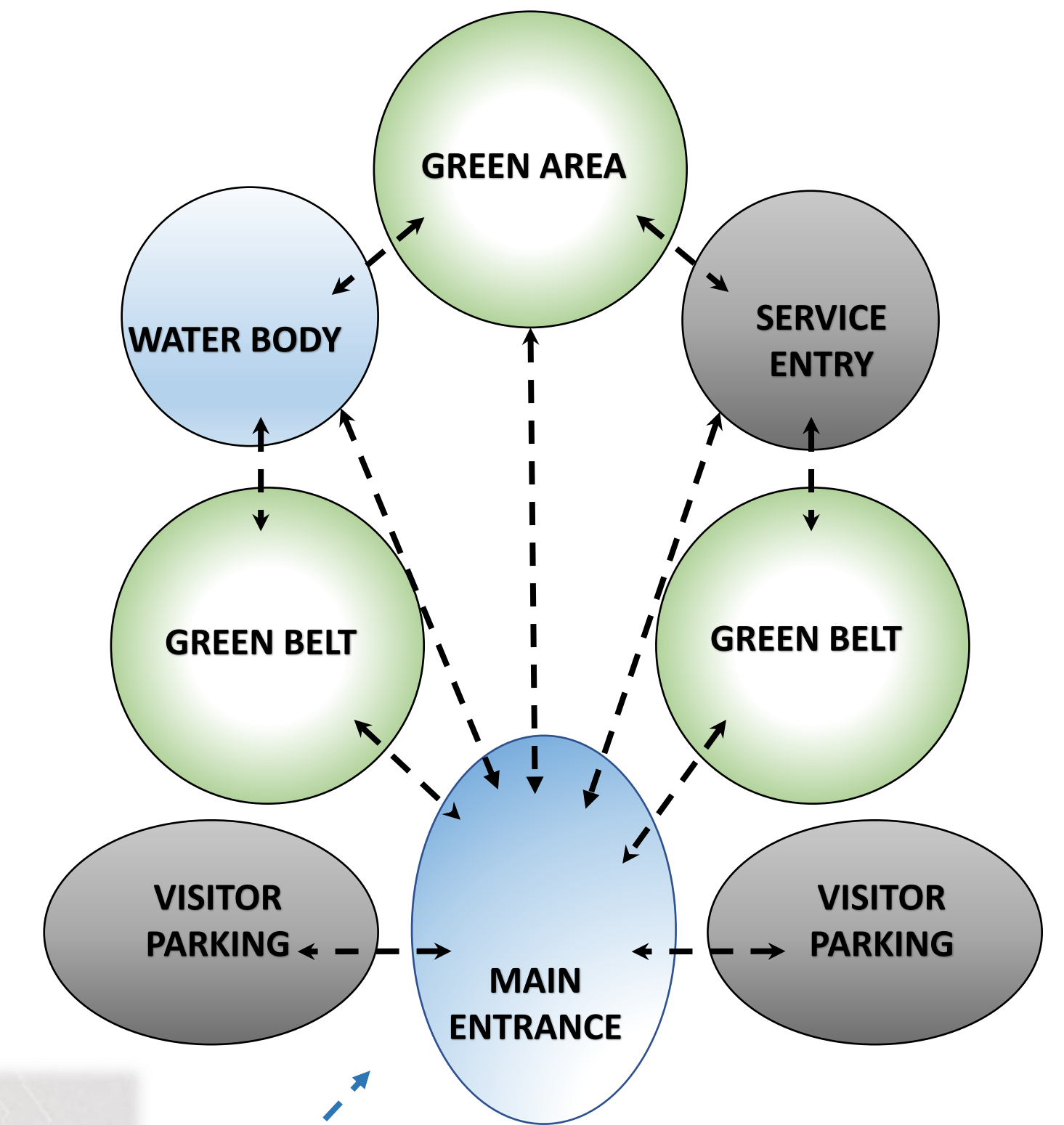
**PRIVATE ZONE**



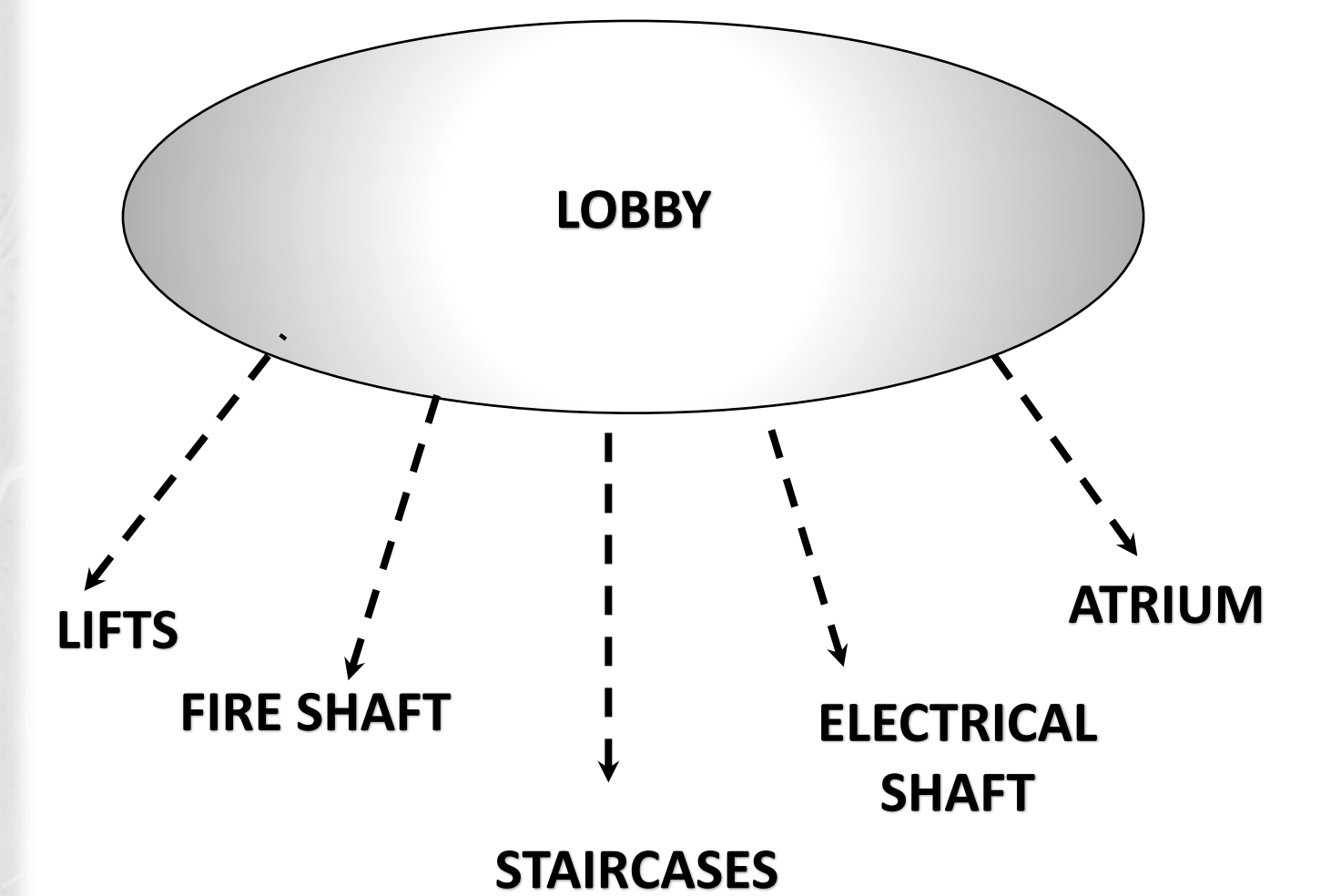
**SEMI PRIVATE ZONE**



**PUBLIC ZONE**



**CORE AREA ZONING**



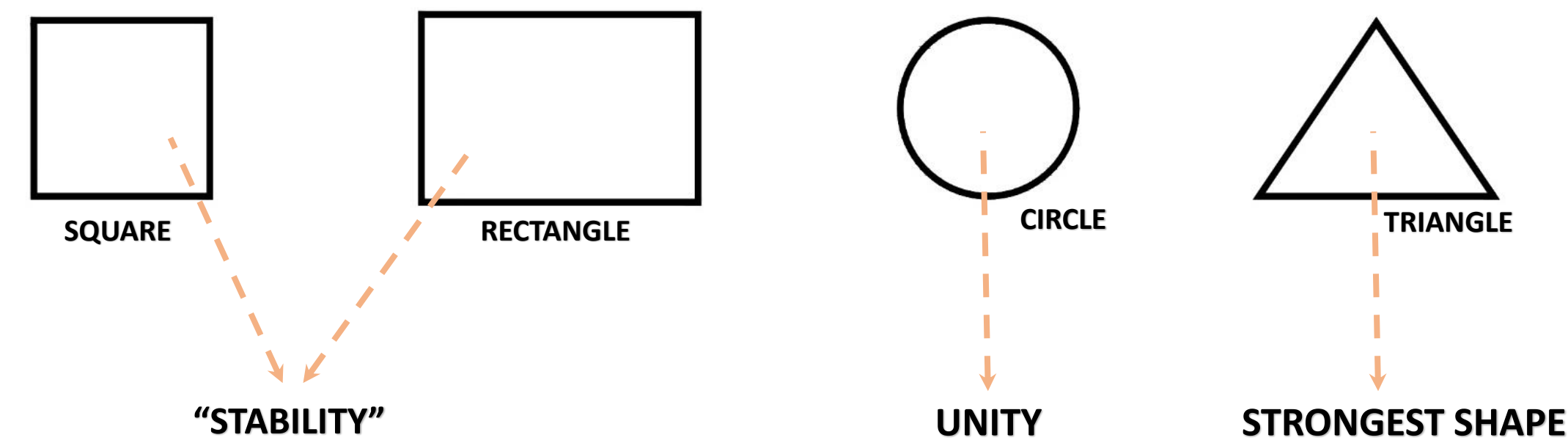


# CONCEPT DEVELOPMENT AND ZONING

## CONCEPT DEVELOPEMENT-

A concept is an idea, theory or notion, In architecture concept provide a direction or approach to the design.

**"Concepts are the backbone of the overall design".**



Square & rectangles shapes represents stability, also represent honesty & solidity.  
**"Usually Less Waste"**

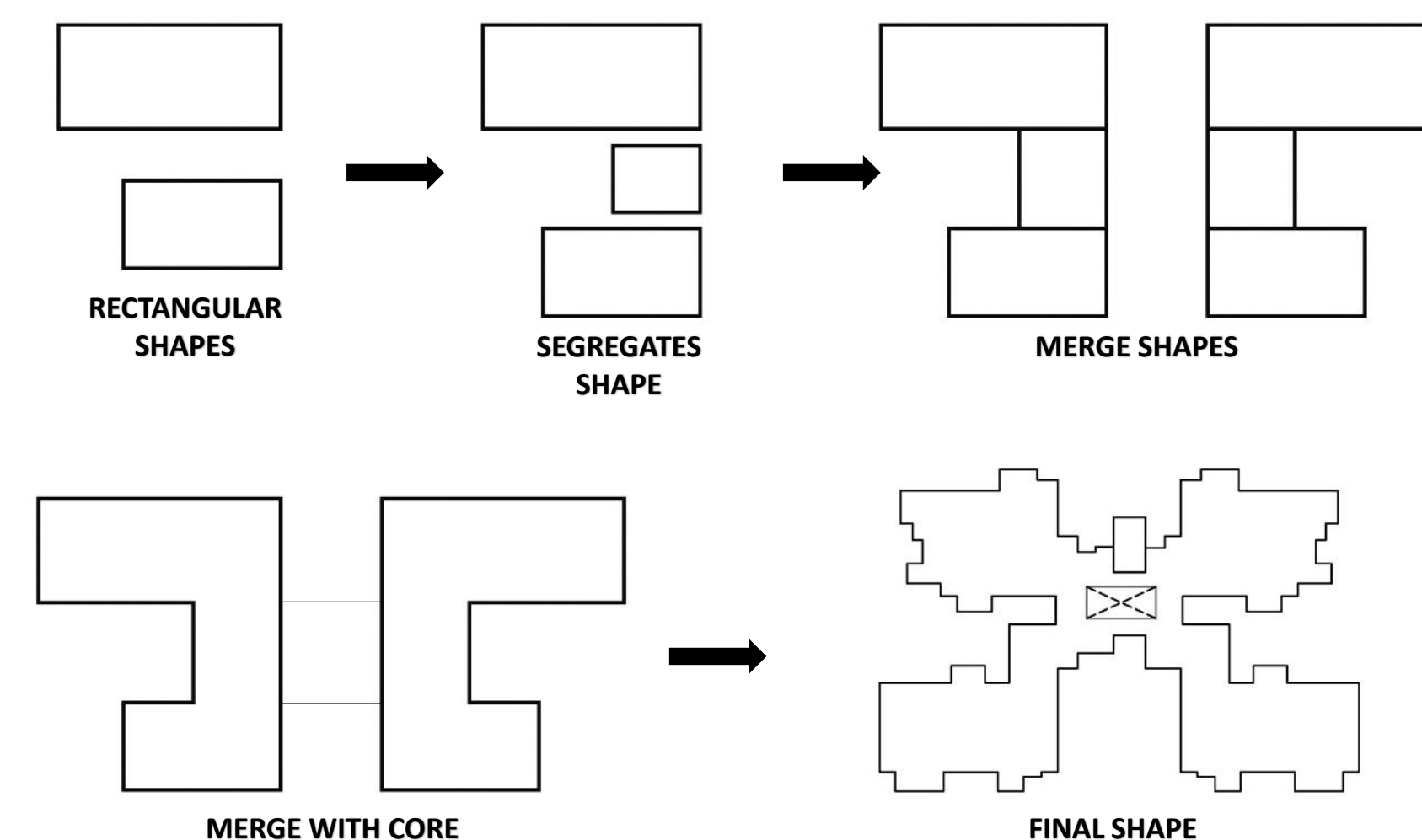
### RECTANGLE USED IN ARCHITECTURE

The reason most commercial, high rise design are rectangular. Easier & faster to build ordinary materials.

### TRIANGLE USED IN ARCHITECTURE

Triangles are the strongest shape in architecture. To make roof, trusses, building, bridges etc.

## FORM EVALUATION



### PHILOSPHY OR PRINCIPLES-

**FUNCTION**

The use of the object

**FOLLOWS**

Form comes before function

**FORM**

The design of the object or building

- I follow the 'FUNCTION FOLLOWS FORM' in my design.
- I take one rectangle then splitting it in four parts, then segregate it.
- The concept is having a vertical movement with lifts & staircases which have divided into four parts each having an apartment.
- Thus, all of these face different directions, thereby providing complete privacy to all.

### RECTANGLE IN ARCHITECTURE

- The reason most high rise, commercial, mixed-use designs are rectangular or square, is because they are easier, faster and more economical to build out of ordinary materials- stone, concrete, brick or wood. Square and rectangular shapes are also exponentially easier to reconcile, and there's usually less waste.

### SQUARES & RECTANGLES

- Square and rectangular shapes represent stability. In fact, the rectangle is the most used area shape in design. The reason is its popularity is because it is a trusted familiar shape that represents honesty, solidity and stability.

## STRUCTURAL SYSTEM-

- I used SHEAR WALL in my Smart-Sky Residences.
- I also used mega columns (Vertical member) & Beam (Horizontal member) for provide a Lateral rigidity in order to with stand Wind Stresses.

## RELEVATION OF CONCEPT WITH SMART BUILDING -

- **Comfort:** Advanced HVAC and automated systems enhance living comfort.
- **Eco-Friendly Luxury:** Use of green materials and energy-efficient systems.
- **Space and Light:** Intelligent lighting and adaptable layouts optimize space and ambiance.
- **Positive Building Impact:** Smart tech improves energy, water management, and sustainability.





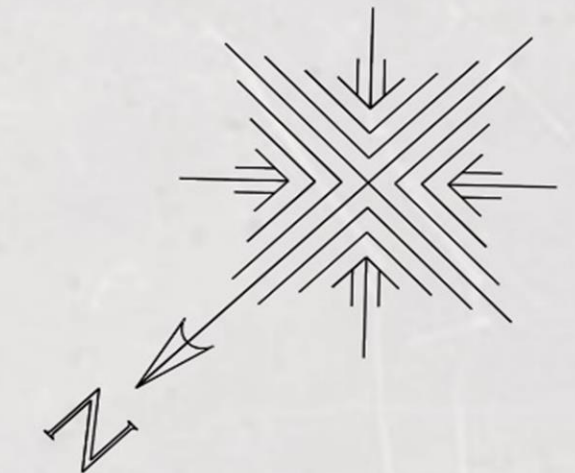
# SITE PLAN



## LEGENDS-

- APARTMENT BLOCKS
- CLUB HOUSE
- COMMERCIAL BLOCK
- INTERNAL ROAD
- EXTERNAL ROAD

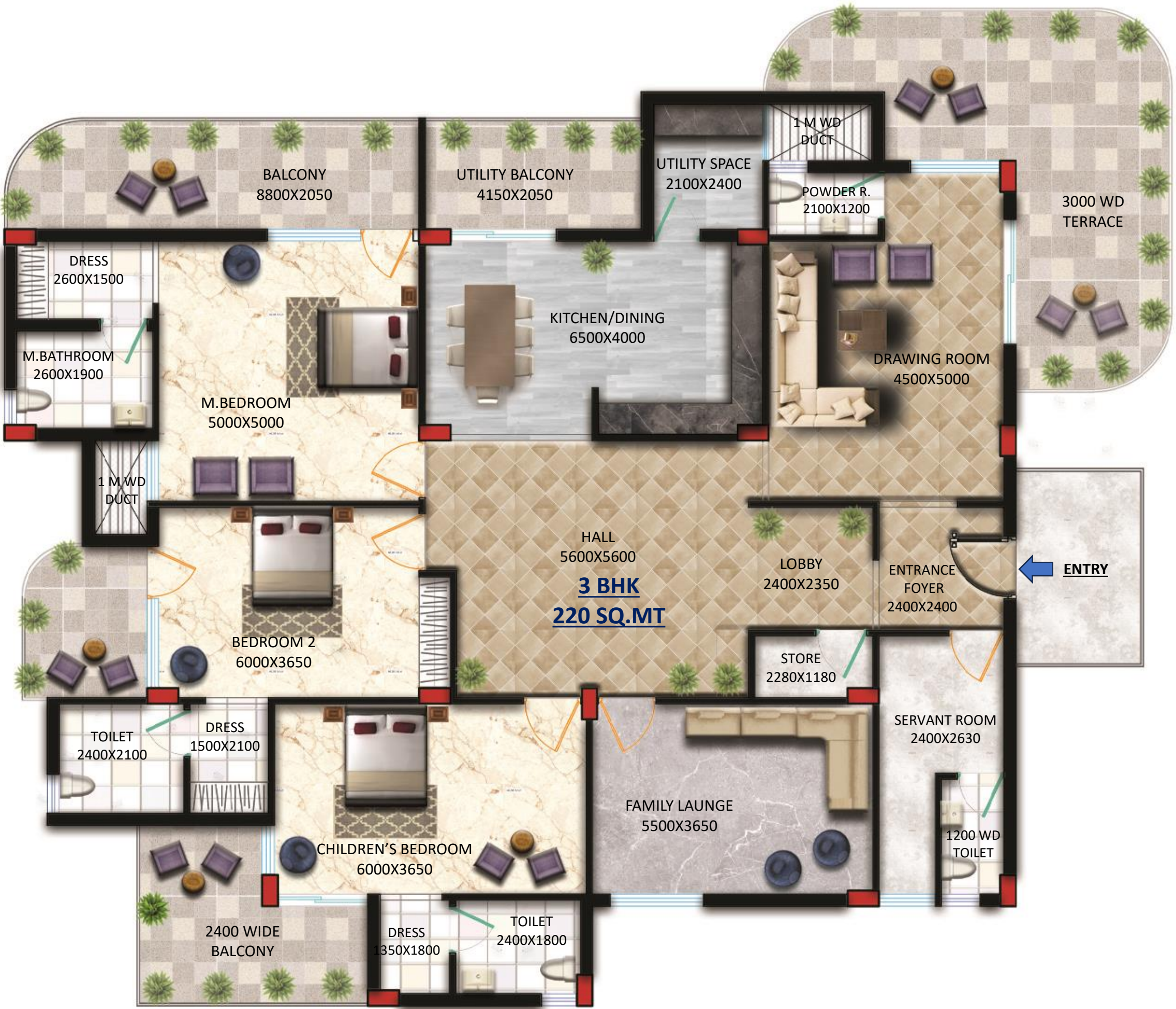
- 1- PATHWAYS
- 2- OUTDOOR GAMES
- 3- TRANSFORMER
- 4- ENTRY RAMP
- 5- EXIT RAMP
- 6- BASKETBALL COURT
- 7- VOLLEYBALL COURT
- 8- TENNIS COURT
- 9- FOUNTAINS



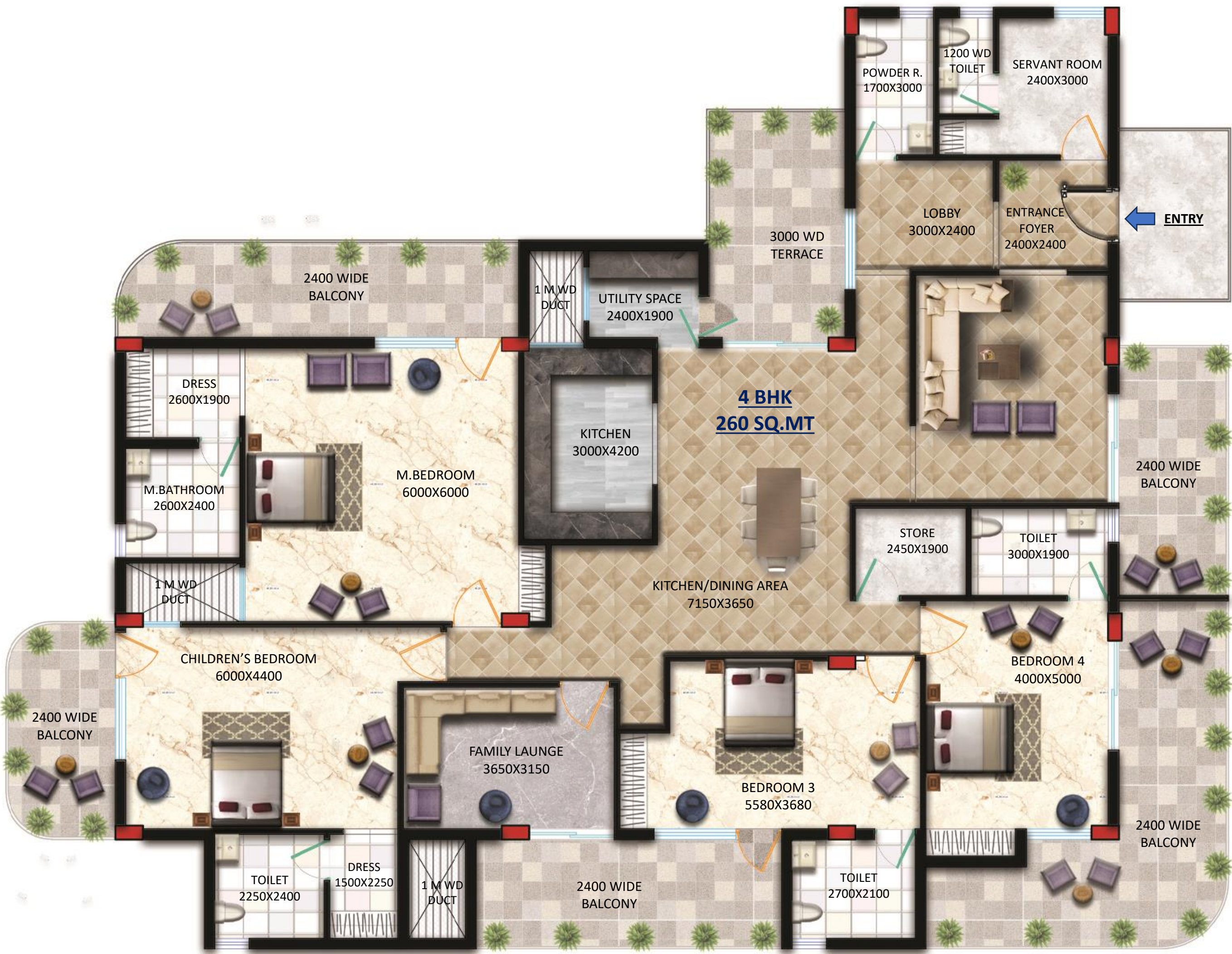
## SITE PLAN



FLOOR PLANS



3 BHK  
AREA- 220 SQ.MT



4 BHK  
AREA- 260 SQ.MT

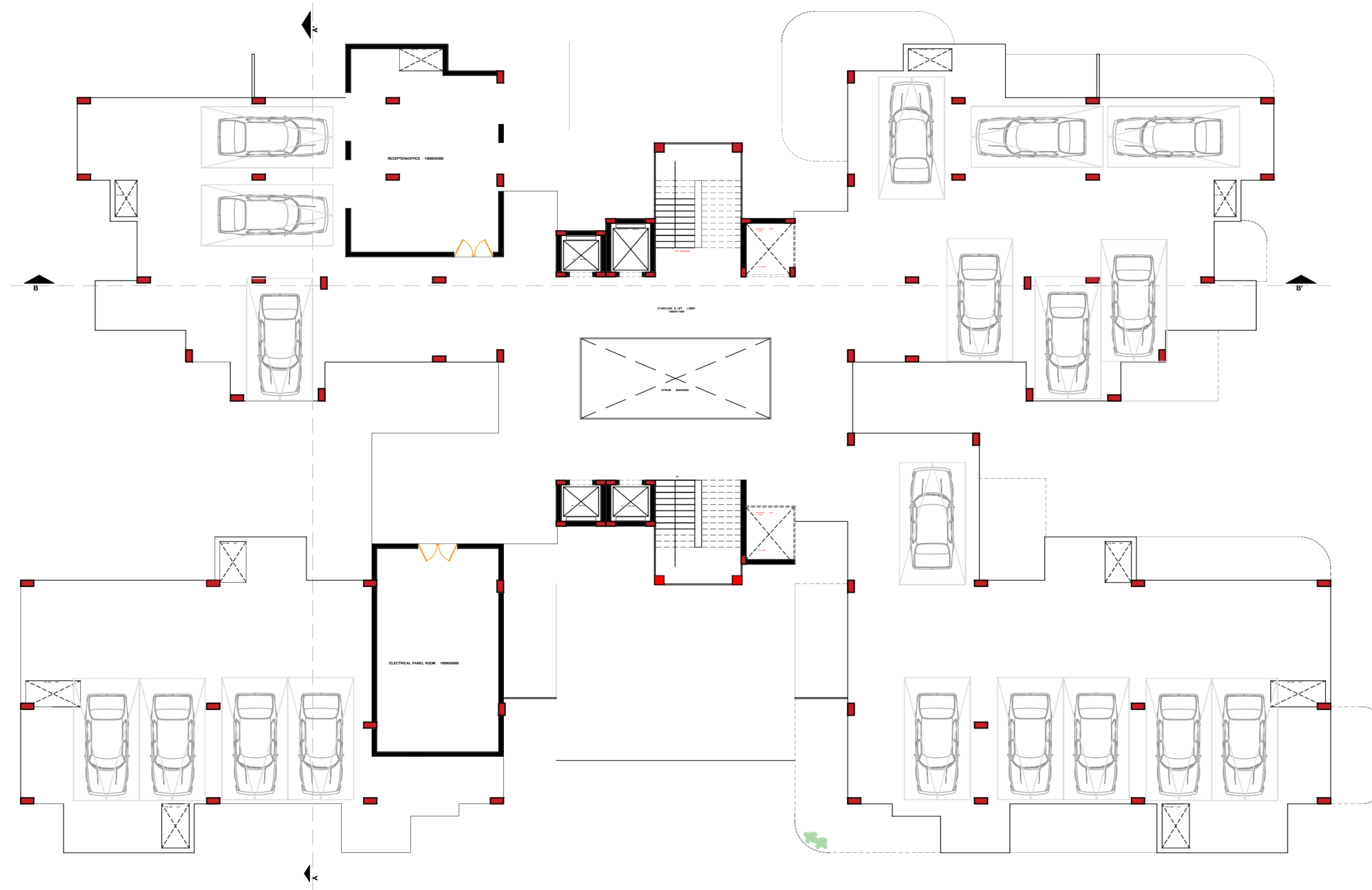


# FLOOR PLANS





# STILT FLOOR PLAN

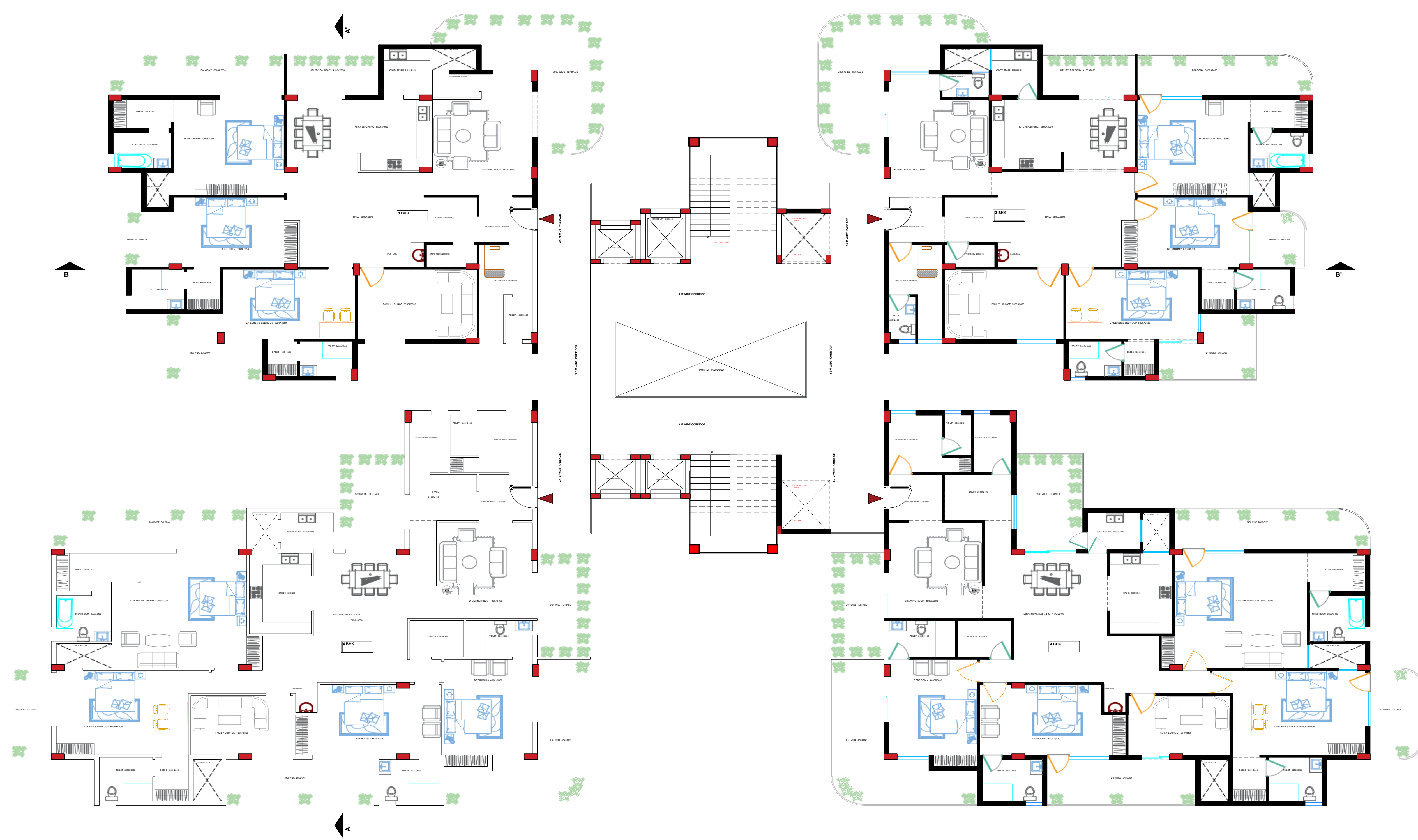


STILT FLOOR PLAN

SCALE 1:200



# TYPICAL FLOOR PLAN

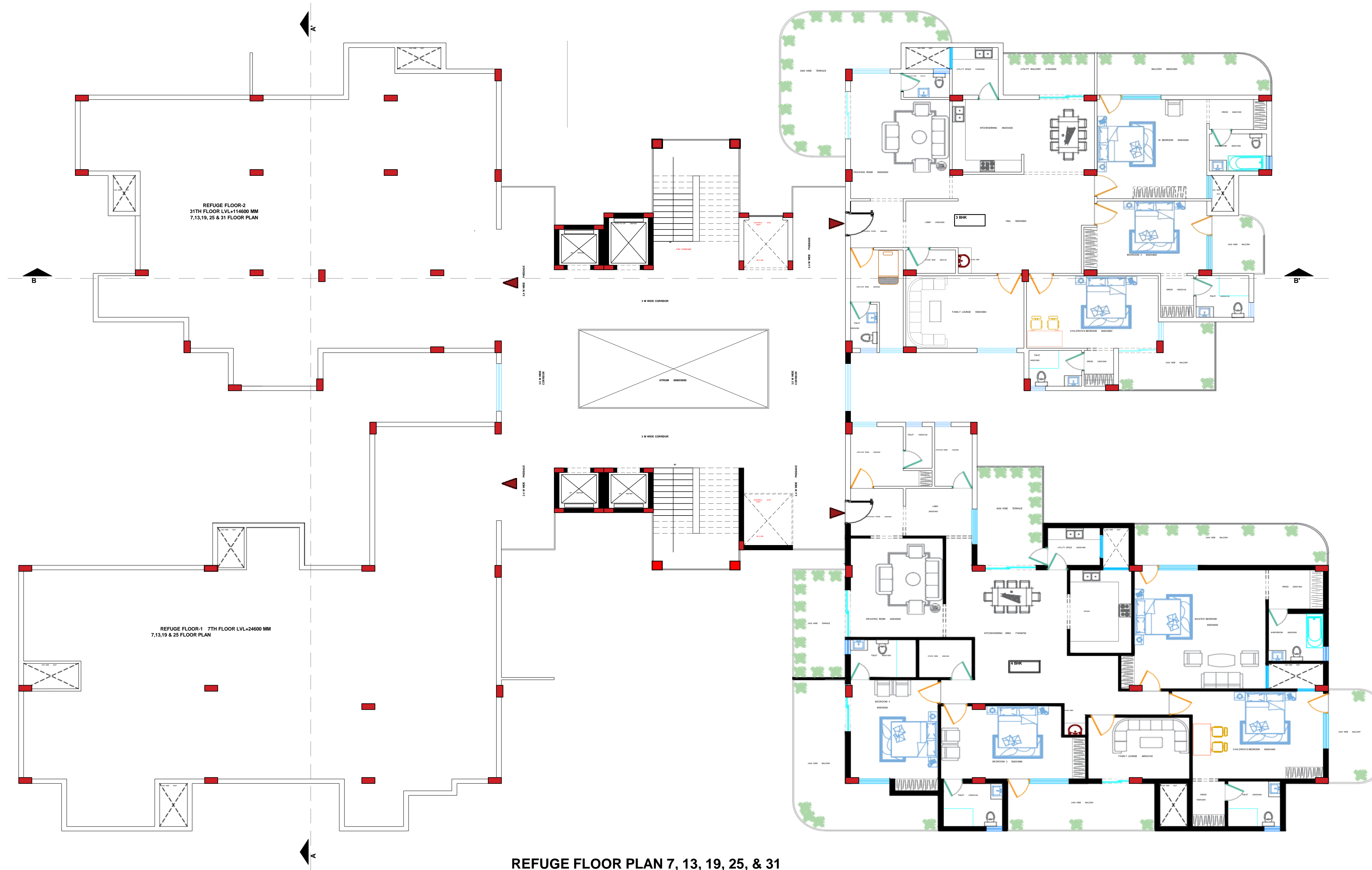


TYPICAL FLOOR PLAN BLOCK 1 & 2

SCALE 1:200



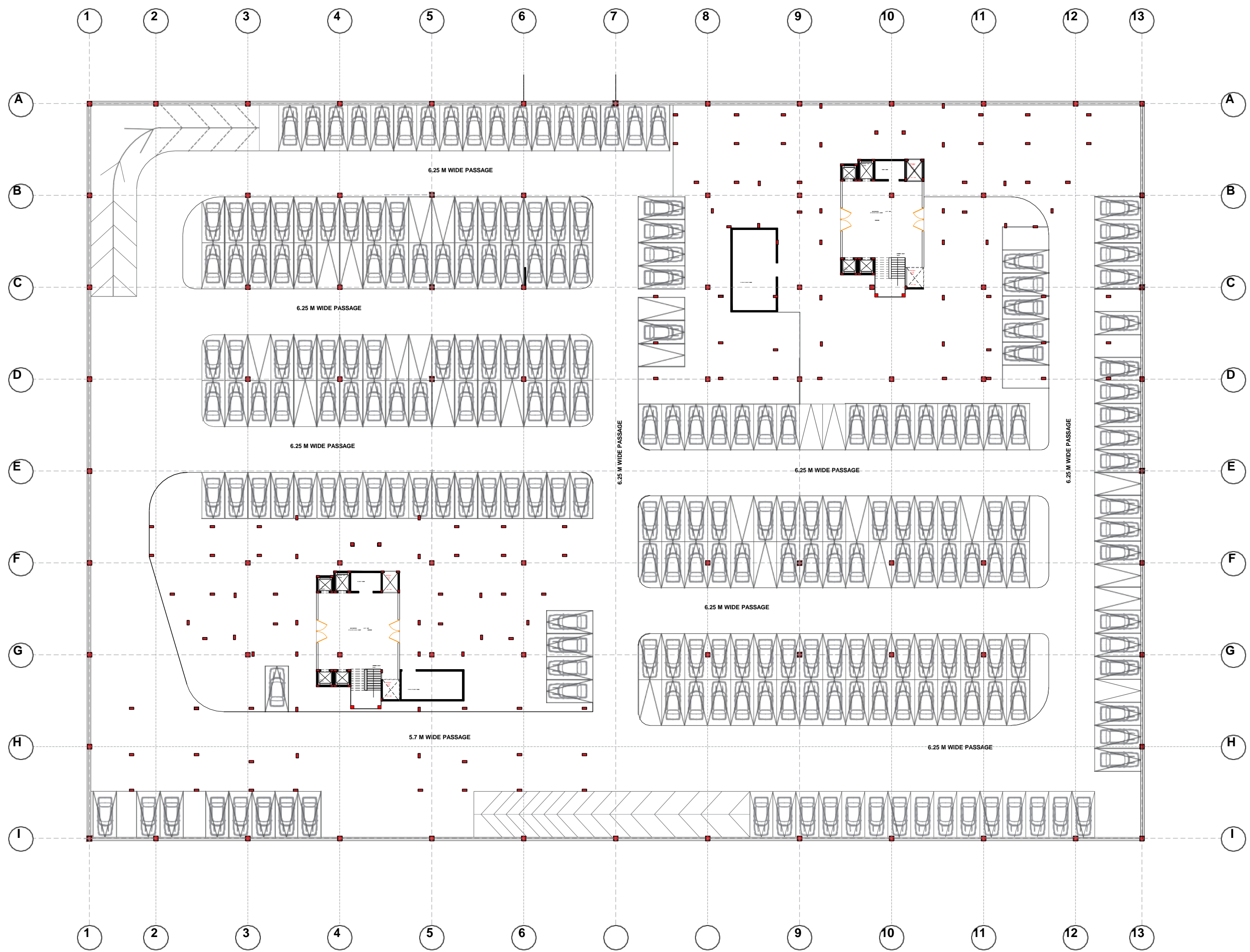
# REFUGE FLOOR PLAN



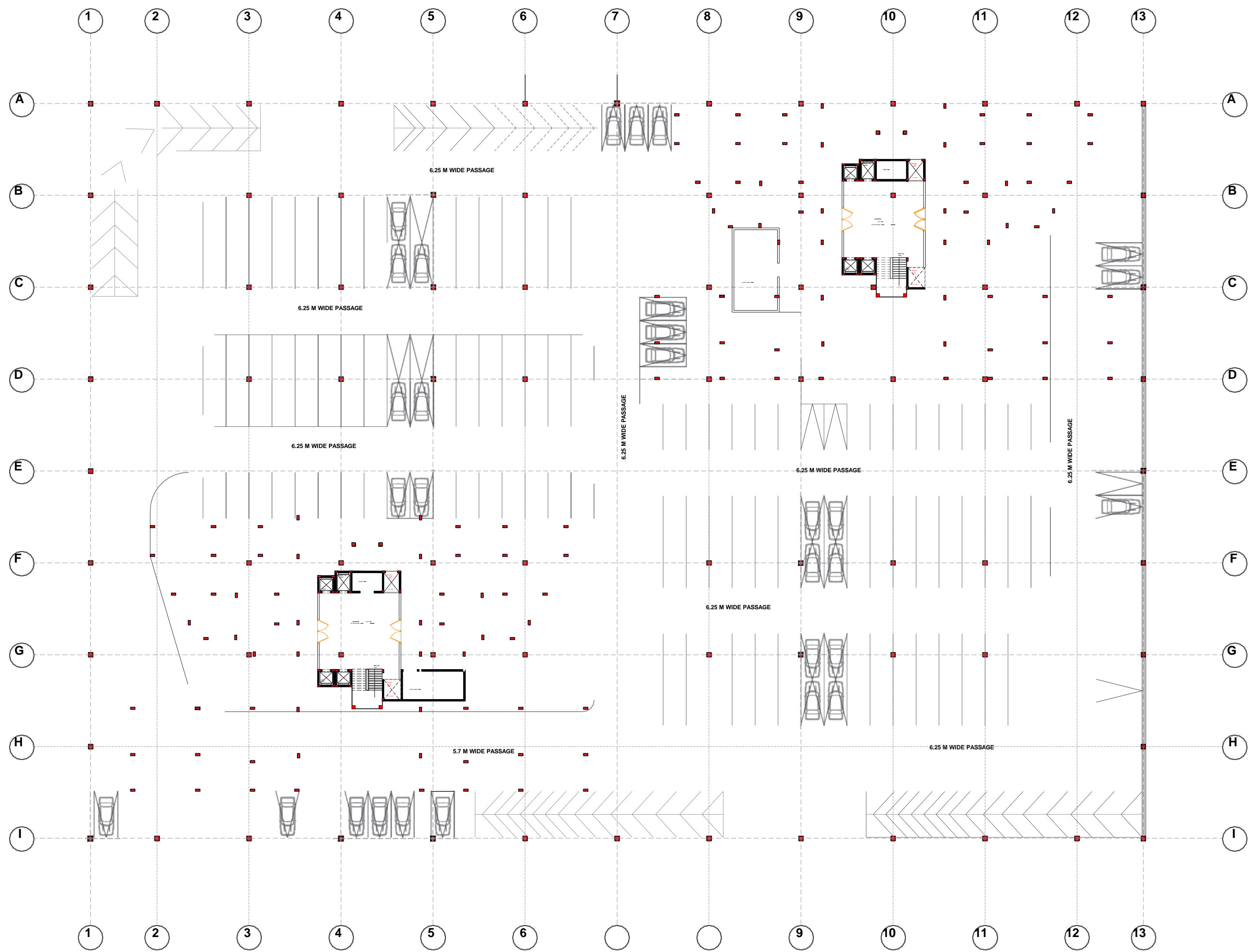
SCALE 1:200



# BASEMENT PLAN



LOWER BASEMENT PLAN

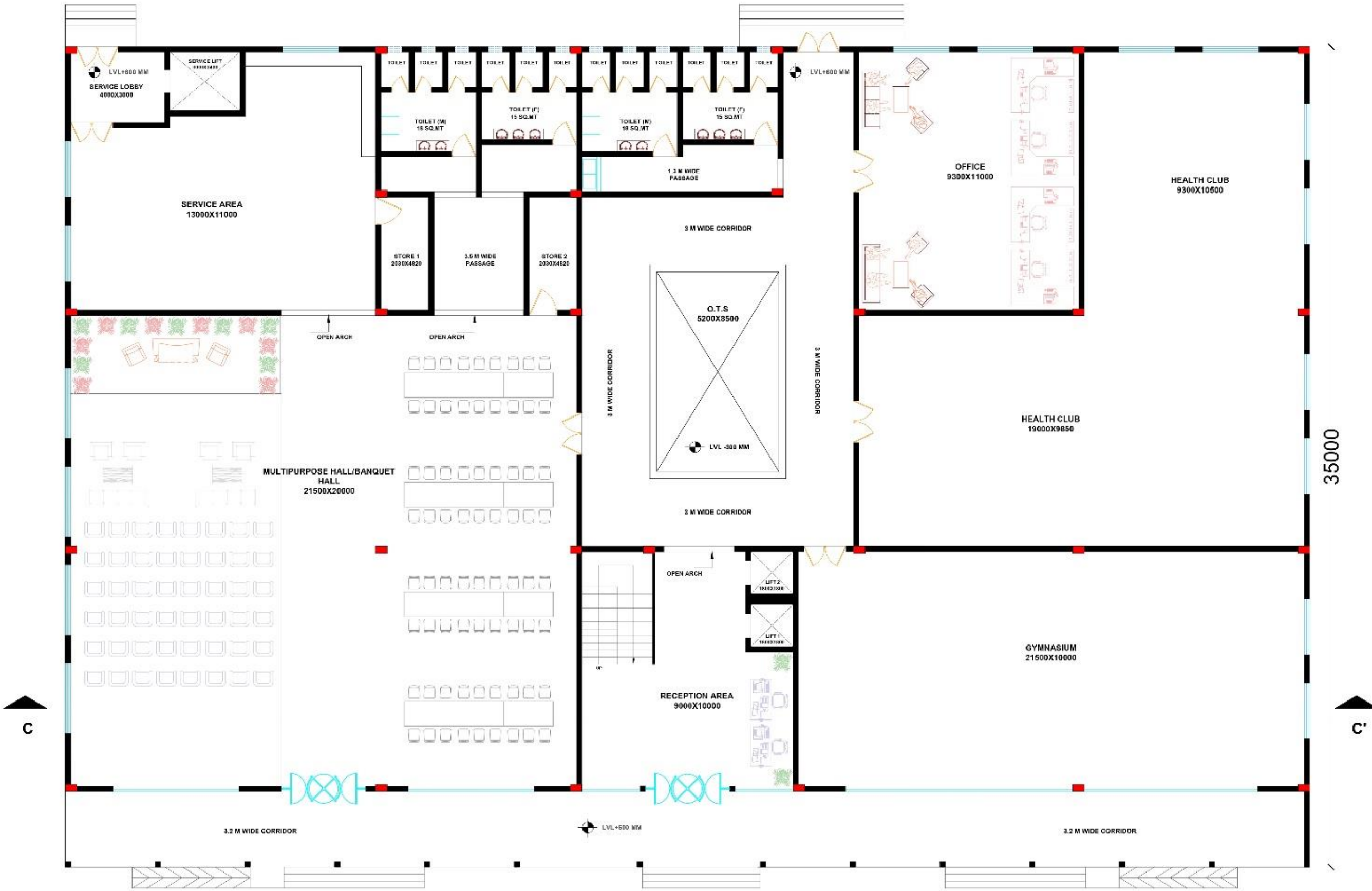


UPPER BASEMENT PLAN

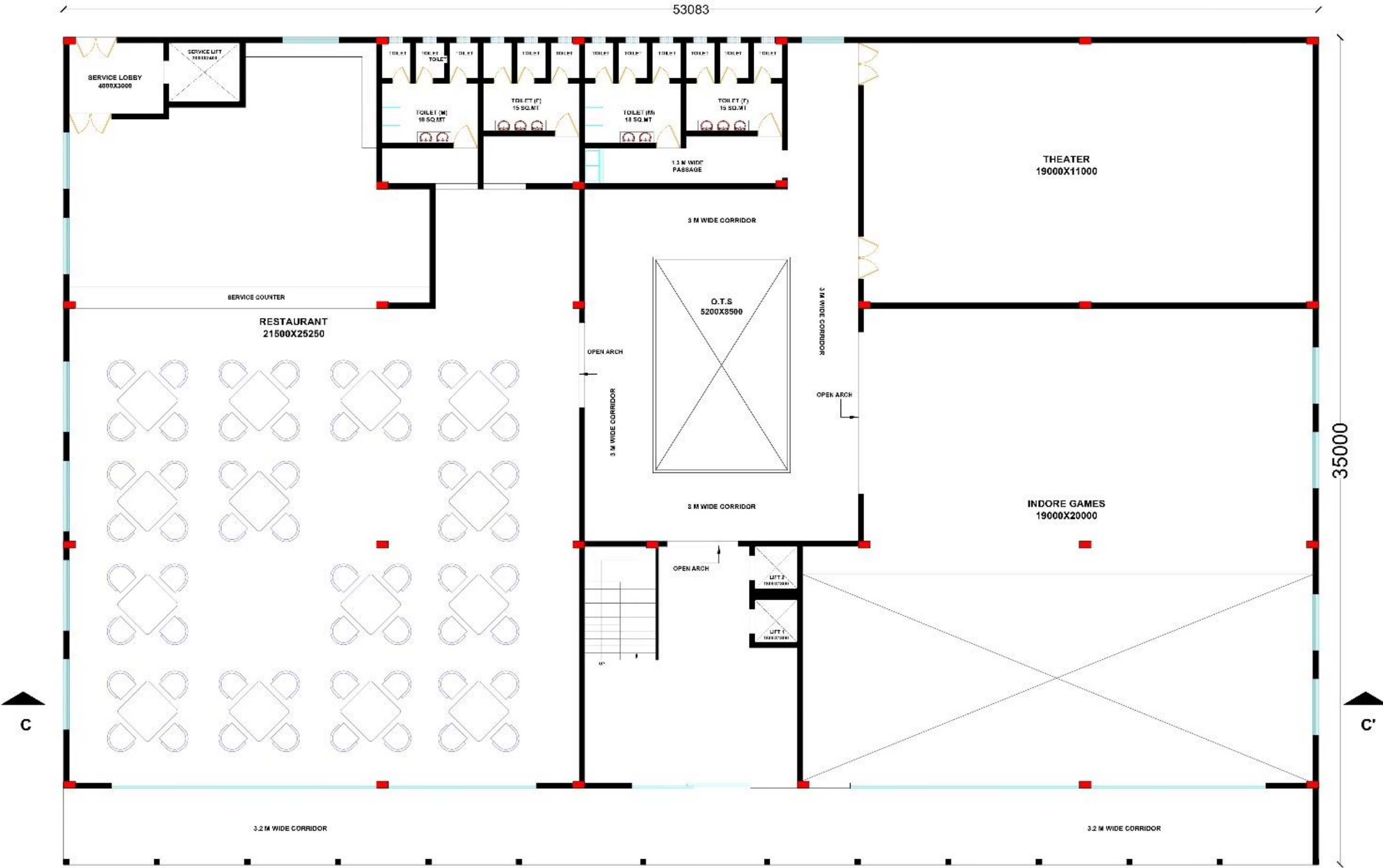
SCALE 1 : 500



CLUB HOUSE PLAN



CLUB HOUSE  
GROUND FLOOR PLAN



CLUB HOUSE  
FIRST FLOOR PLAN

SCALE 1:300



# 3D VIEWS





## 3D VIEWS



### SITE & VIEWS

**Smart-Sky Residences: Elevating High-Rise Living in Lucknow**

**GUIDED BY:**  
AR. ANKUR SAXENA

GAURAV PANDEY  
B.ARCH 5<sup>TH</sup> YEAR (2019-24)  
1190101012  
BBD UNIVERSITY, LUCKNOW

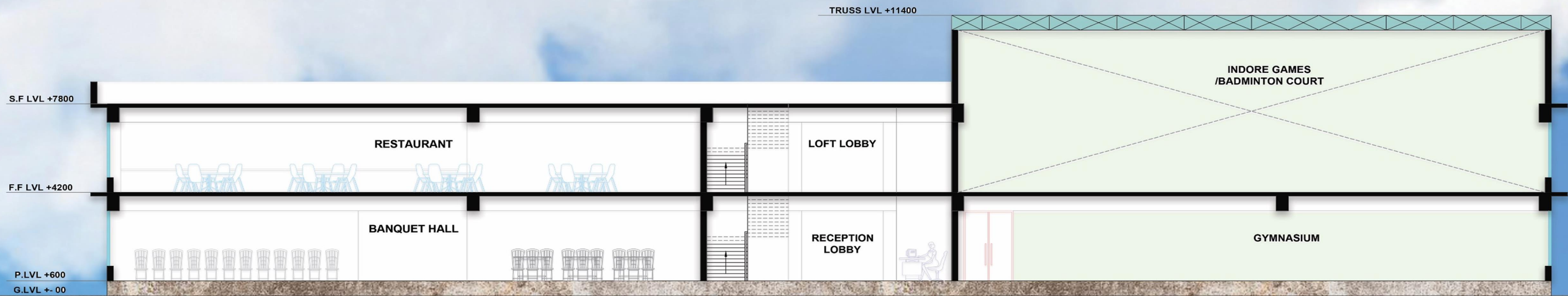


# SECTIONS

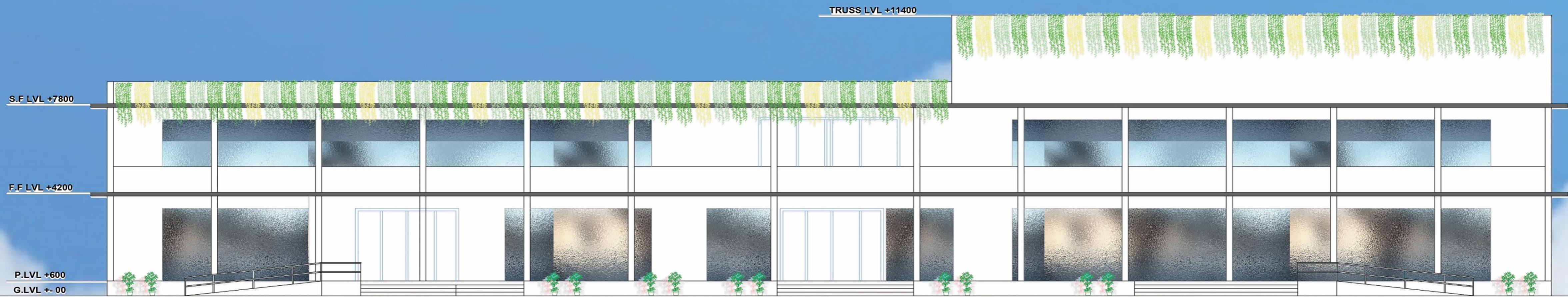




**CLUB HOUSE**



**SECTION CC'**



**FRONT ELEVATION**



**SITE SECTION**

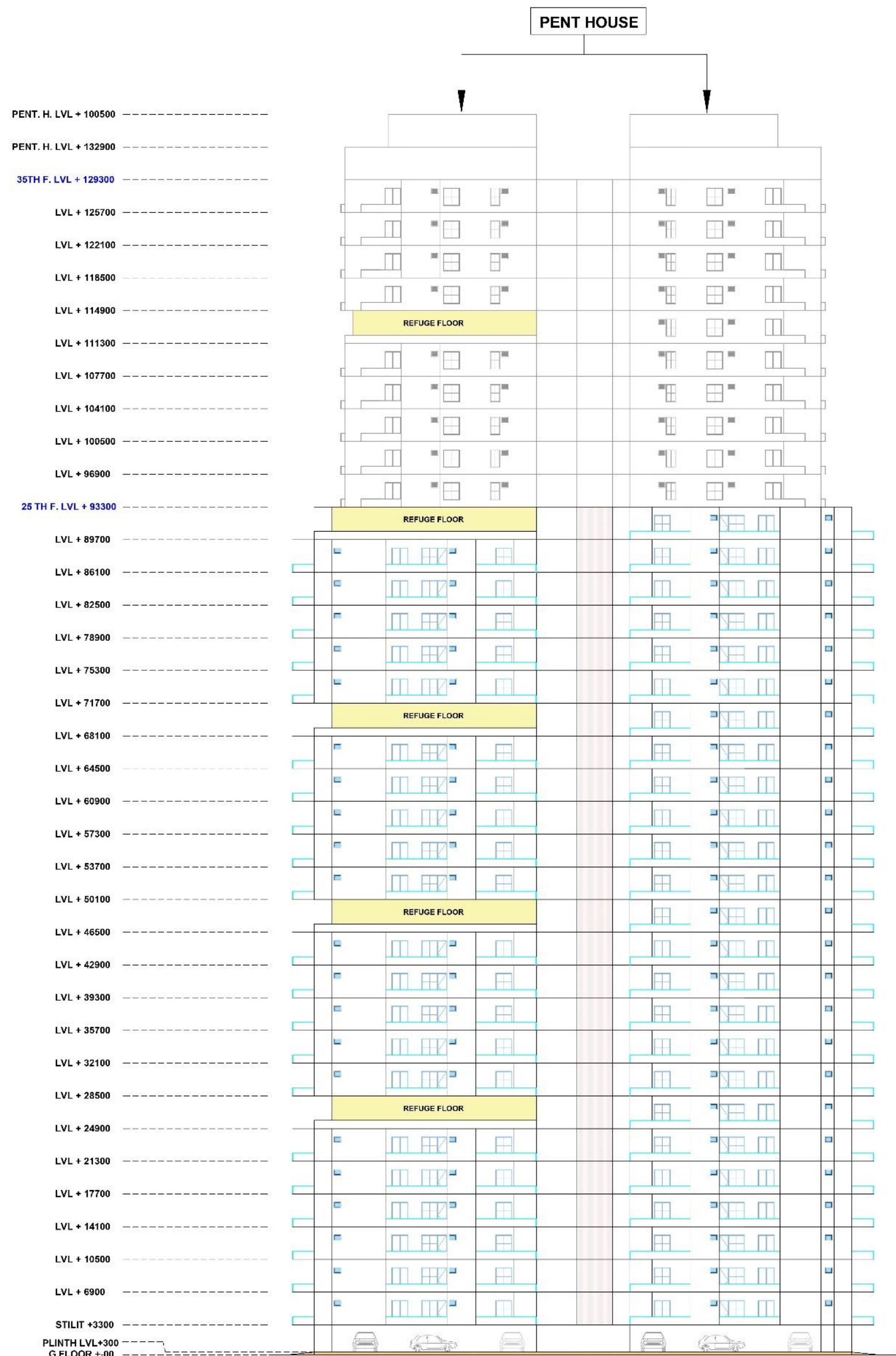


**SITE SECTION**

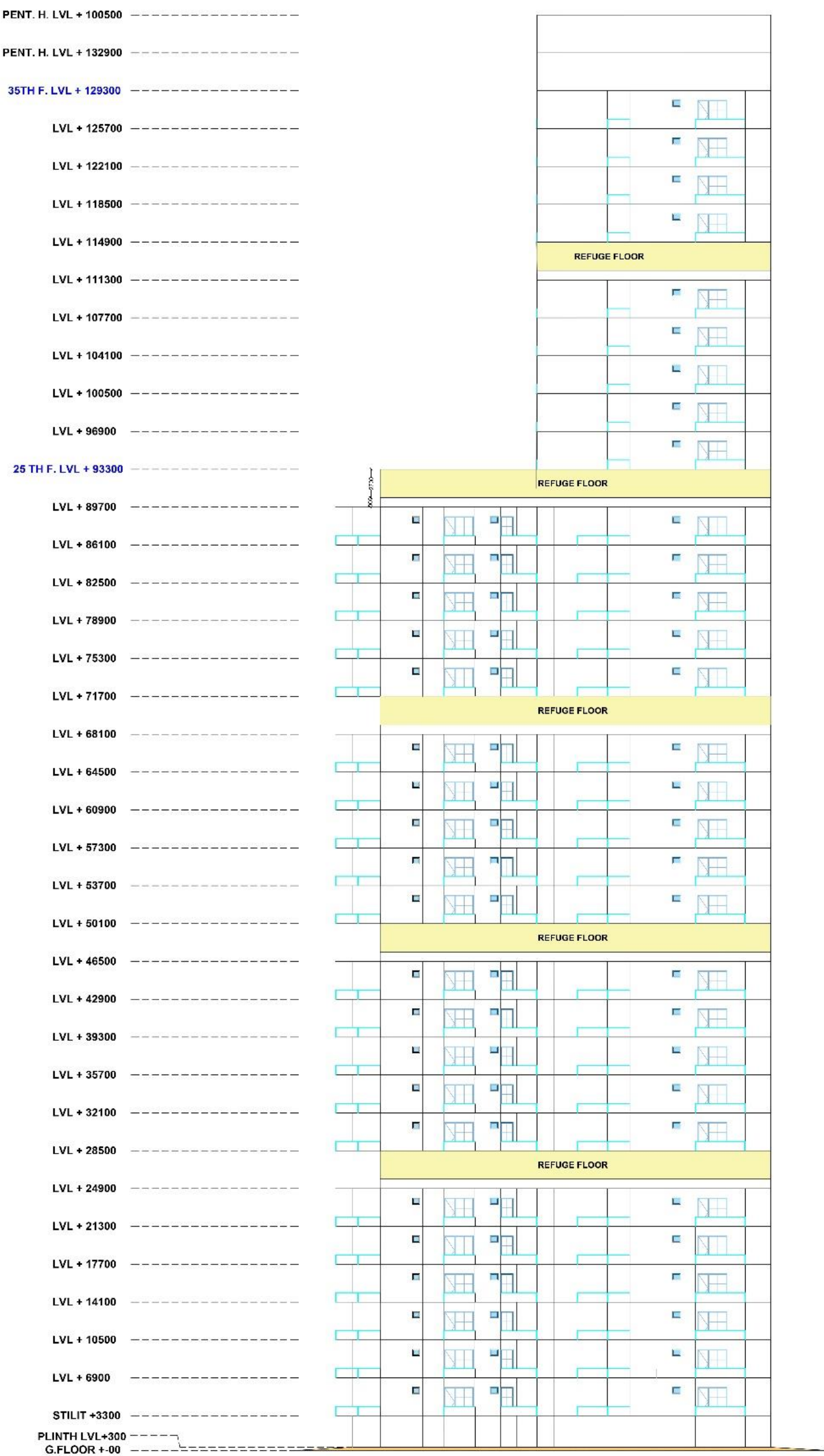
SCALE 1:500



ELEVATIONS



FRONT ELEVATION



SIDE ELEVATION



## ELECTIVE 2 : INTERIOR DESIGN

