THESIS REPORT ON

“AFFORDABLE GROUP HOUSING, LUCKNOW“

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

BACHELOR OF ARCHITECTURE

BY

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THESIS GUIDE

AR.ANKITA GUPTA

SESSION

2024-25

TO THE

SCHOOL OF ARCHITECTURE & PLANNING

BABU BANARASI DAS UNIVERSITY

LUCKNOW.

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

CERTIFICATE

I hereby recommend that the thesis entitled "AFFORDABLE GROUP HOUSING, **LUCKNOW** "under the supervision, is the bonafide work of the students and can be accepted as partial fulfillment of the requirement for the degree of Bachelor's degree in Architecture, School of Architecture & Planning, BBDU, Lucknow.

Prof. Sangeeta Sharma
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Recommendation Accepted

Not Accepted

External Examiner

External Examiner

BABU BANARASI DAS UNIVERSITY, LUCKNOW (U.P.).

Certificate of thesis submission for evaluation

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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. Sumit Wadhera (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.

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- ABHIJEET SINGH

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

INDEX:

Sr. No.	Content	Page No.
	CERTIFICATE	
	ACKNOWLEDGEMENT	
1	**SYNOPSIS**	
1.1	AIM	
1.2	OBJECTIVES	
1.3	SCOPE	
1.4	LIMITATIONS	
1.5	METHEODLOGY	
1.6	SITE DETAILS	
1.7		
2	**SITE ANALYSIS**	
2.1	INTRODUCTION	
2.2	SITE PLAN	
2.3	SITE LOCATION	
2.4	SITE ACCESSIBILITY	
2.5	SUN PATH & WIND ANALYSIS	
2.6	CLIMATE ANALYSIS	
2.7	TOPOGRAPHICAL ANALYSIS	
2.8	SESMIC ANALYSIS	
2.9	SITE LAND DETAILS	
2.9.2	TOPOGRAPHY	

INDEX:

Sr. No.	Content	Page No.
2.9.3	VEGETATION	
2.10	SITE SERVICES	
2.11	SITE CONTEXT	
2.12	SITE IMAGES	
2.13	SWOT ANALYSIS	
2.14		
3	**CASE STUDIES**	
3.1	ORANJE CASTLE, LUCKNOW	
3.2	TARA HOUSING GROUP ,NEW DELHI	
3.3	KANCHANJUNGA APPARTMENTS, MUMBAI	
3.4	GAUR CITY 7TH AVENUE,GREATER NOIDA	
4	**AREA ANALYSIS**	
4.1	PROJECT DETAILS	
4.2	AREA CALCULATION	
4.3		
5	**CONCEPT**	
5.1	CONCEPT	

INDEX:

Sr. No.	Content	Page No.
6	**ARCHITECTURAL DRAWINGS**	
6.1	SITE PLAN	
6.2	FLOOR PLANS	
6.3	ELEVATIONS	
6.4	SECTIONS	
6.5	3D VIEWS	
6.6	ELECTIVE -1	
6.7	ELECTIVE – 2	
6.8	BIBLIOGRAPHY	

SYNOPSIS

Sustainability and Affordable Design Considerations

INTRODUCTION-

The rapid urbanization and population growth in cities have led to a significant demand for housing, especially in developing regions. However, the challenge remains to provide affordable housing solutions while ensuring sustainability. Sustainable and affordable group housing integrates eco-friendly design principles, energy-efficient solutions, and cost-effective construction techniques to create livable communities for all socio-economic groups. Additionally, incorporating urban green spaces and sustainable landscapes enhances the overall quality of life, improves environmental health, and fosters community well-being. This project aims to explore innovative architectural strategies that balance affordability with environmental responsibility while integrating urban green spaces.

HISTORY & BACKGROUND-

Housing has been a fundamental need for human civilization since ancient times, with different societies developing unique strategies to address the shelter crisis. The concept of group housing evolved as an efficient way to accommodate growing populations in limited urban spaces. Historically, traditional housing relied on locally available materials and passive design strategies, which inherently made them sustainable. However, with industrialization and urban migration, mass housing projects emerged, often prioritizing quantity over quality. In the modern era, sustainable group housing initiatives have gained traction due to the increasing environmental concerns and rising cost of urban living. Governments and urban planners worldwide are now shifting towards sustainable housing policies that incorporate green building practices and innovative financing mechanisms.

Parallelly, urban green spaces have played a crucial role in enhancing city living. Public parks, community gardens, and sustainable landscapes contribute to ecological balance, urban cooling, and mental well-being. Historically, green spaces have been integral to city planning, but rapid urbanization has led to their decline. Integrating these spaces within sustainable housing developments is essential for long-term environmental and social benefits**.**

AIM OF THE TOPIC-

The aim of this project is to design a sustainable and affordable group housing model that provides quality living spaces while minimizing environmental impact and reducing construction and operational costs. Additionally, it seeks to incorporate urban green spaces and sustainable landscapes to improve ecological and social sustainability.

OBJECTIVES OF THE TOPIC-

To explore architectural strategies that integrate sustainability and affordability in group housing.

To analyze energy-efficient building materials and construction techniques suitable for mass housing.

To incorporate renewable energy solutions, water conservation techniques, and waste management systems.

To examine case studies of successful sustainable housing projects worldwide.

To integrate urban green spaces and sustainable landscaping to enhance the quality of life.

To design a prototype model demonstrating innovative design solutions for low-cost, high-quality housing with green infrastructure.

METHODOLOGY

The research methodology will include a combination of qualitative and quantitative approaches to analyze existing sustainable housing models and propose an innovative design solution.

Literature Review-

- Analysis of academic papers, books, and reports on sustainable and affordable housing.

- Study of government policies, green building standards, and affordability indices.

- Review of emerging trends in eco-friendly construction materials and technologies.

-Examination of research on urban green spaces and their impact on sustainability and public health.

Case Study Analysis-

- Examination of national and international group housing projects that successfully balance affordability and sustainability.
- Analysis of architectural layouts, materials, and energy-efficient strategies used in these projects.
- Study of successful urban green spaces and their integration into housing projects.
-Identification of best practices and challenges faced in implementation.

Qualitative Research-

- Interviews with architects, urban planners, and housing developers.
-Surveys with residents of existing sustainable group housing to understand their experience and feedback.

Field Visits and Observations-

- Site visits to existing affordable and sustainable housing developments.
- Documentation of construction methods, spatial planning, and green features used in real-life scenarios.
-Assessment of green spaces, landscape design, and their integration into urban housing projects.

Data Analysis-

- Comparative analysis of case studies to identify common elements in sustainable group housing.
- Cost-benefit analysis of different construction techniques and materials.
- Evaluation of green spaces' impact on community well-being and environmental sustainability.
- Synthesis of research findings to develop a design framework for the proposed housing model.

SCOPE-

•The project will focus on medium to high-density residential developments catering to low- and middle-income groups.
•It will incorporate sustainable design strategies such as passive cooling, renewable energy sources, rainwater harvesting, and modular construction techniques.
•The study will cover urban and peri-urban areas where housing demand is high.
•The proposed design model will be adaptable for different climatic conditions and socio-economic contexts.
•Urban green spaces will be integrated within the housing design to promote biodiversity, mental well-being, and environmental balance.
•Sustainable landscape design, including urban forests, vertical gardens, and rain gardens, will be considered to enhance ecological resilience.

SITE-

PROJECT NAME- Affordable group housing lucknow.
PLOT AREA- 8.9 Acres
Location-4, Mill Rd, Malviya Nagar, Aishbagh, Lucknow, Uttar Pradesh 226004

CHAPTER 02
SITE ANALYSIS

SITE ANALYSIS

1.1 Introduction of the project-

Affordable group housing lucknow

The Rapid Urbanization And Population Growth In Cities Have Led To A Significant Demand For Housing, Especially In Developing Regions. However, The Challenge Remains To Provide Affordable Housing Solutions While Ensuring Sustainability. Sustainable And Affordable Group Housing Integrates Eco-friendly Design Principles, Energy-efficient Solutions, And Cost-effective Construction Techniques To Create Livable Communities For All Socio-economic Groups. Additionally, Incorporating Urban Green Spaces And Sustainable Landscapes Enhances The Overall Quality Of Life, Improves Environmental Health, And Fosters Community Well-being. This Project Aims To Explore Innovative Architectural Strategies That Balance Affordability With Environmental Responsibility While Integrating Urban Green Spaces.

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2. AIM-

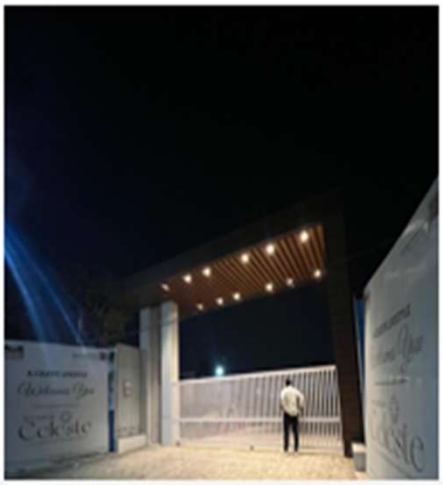
The aim of this project is to design a sustainable and affordable group housing model that provides quality living spaces while minimizing environmental impact and reducing construction and operational costs. Additionally, it seeks to incorporate urban green spaces and sustainable landscapes to improve ecological and socialm sustainability.

SITE ANALYSIS

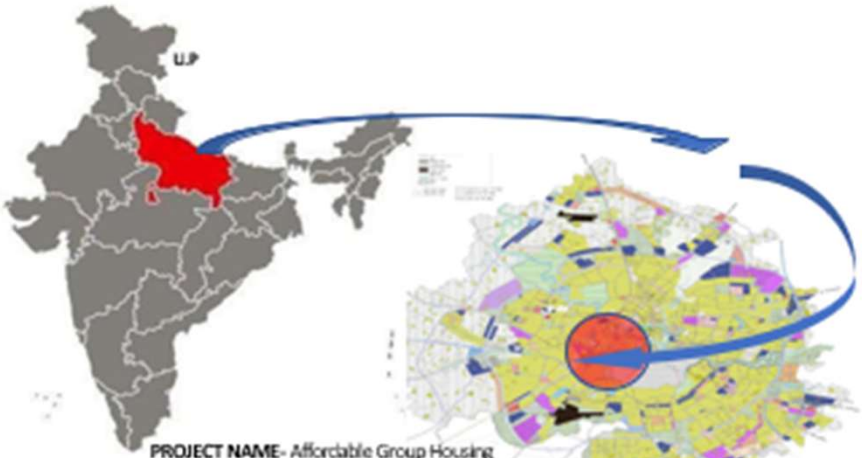
OBJECTIVES-

- To explore architectural strategies that integrate sustainability and affordability in group housing.
- To analyze energy-efficient building materials and construction techniques suitable for mass housing.
- To incorporate renewable energy solutions, water conservation techniques, and waste management systems.
- To examine case studies of successful affordable housing projects worldwide.
- To integrate urban green spaces and sustainable landscaping to enhance the quality of life.
- To design a prototype model demonstrating innovative design solutions for low-cost, high-quality housing with green infrastructure

SITE IMAGES-



SITE ANALYSIS



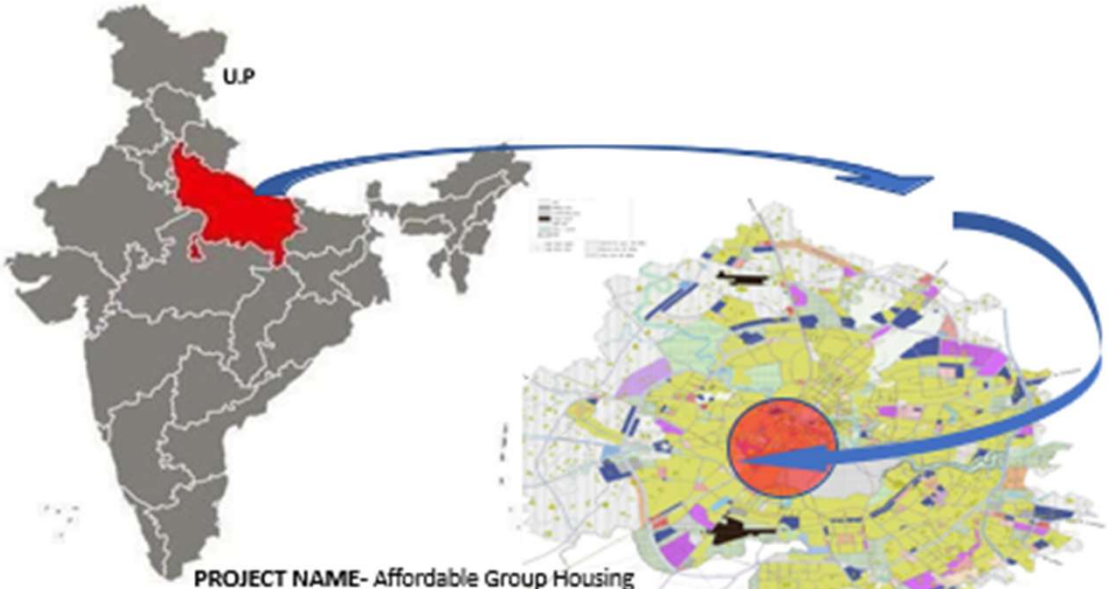
PROJECT NAME- Affordable Group Housing Lucknow.
Plot Area- 8.9 Acres
Ground Coverage- 30%
F.A.R – 2.5
SETBACKS- 13m From Each Side.
Location Of Project- 4, Mill Rd, Malviya Nagar, Aishbagh, Lucknow, Uttar Pradesh 226004

LUCKNOW MASTER PLAN

SITE SURROUNDINGS-

INDIA

SITE ANALYSIS



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LUCKNOW MASTER PLAN

INDIA

SITE ANALYSIS

SITE ACCESSIBILITY

- It lies on the Aishbagh near Charagh, Lucknow, in
- Situated along the main road with a 45 m wide mill road
- 50 m Wide Greenbelt needs to be designed as per the Masterplan 2021 and 2031.

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**

ROADS

SITE ANALYSIS

Place	Name / Landmark	Approx. Distance	Travel Time
Railway Station (Local)	Aishbagh Railway Station	~1 km	2-3 mins
Railway Station (Major)	Charbagh Railway Station	~2 km	5-7 mins
Nearest Metro Station	Durgapuri (Red Line)	~2.2 km	5-6 mins
Alternate Metro Station	Mawaiya Metro Station	~2.5 km	6-7 mins
Major Metro Interchange	Charbagh Metro Station	~3 km	8-10 mins
Bus Stand	Alambagh Bus Stand	~5-6 km	10-15 mins
Government Hospitals	KGMU, District Hospital	~5-6 km	10-15 mins
Local Medical Facilities	Nursing Homes / Clinics	~1-2 km	3-5 mins
Guest House / Hotel	Casa Aishbagh	~500 m	2 mins (walkable)
Airport	Chaudhary Charan Singh Intl Airport	~10 km	12-15 mins

VEGETATION-

Neem, Peepal, Ashoka, Mango, Babul, Shisham, Jamun, Kadamb, Kanak Champa, Tabebuia argentea. These all tree found on that location and many types of shrubs and bushes

SITE ANALYSIS

SWOT ANALYSIS

STRENGTH-

Strategic Connectivity: Aishbagh boasts excellent transportation links, with proximity to Aishbagh Railway Station, Charbagh Bus Station, and Amausi Airport. The recent inauguration of a two-lane bridge connecting Blunt Square in Durgapuri to Motinagar intersection has further eased traffic congestion, benefiting commuters from Rajendra Nagar, Aishbagh, and Chowk areas.

WEEKNESS-

Infrastructure Gaps: Despite the station's upgrade to a junction, Aishbagh Railway Station faces challenges such as inadequate passenger amenities, including limited waiting halls, insufficient washrooms, and poor lighting.

Limited High-End Retail: While Aishbagh offers essential services and amenities, it lacks upscale shopping centers and luxury residential options compared to other affluent neighborhoods in Lucknow.

OPPORTUNITY-

Real Estate Growth: Aishbagh has witnessed a 20.56% year-on-year rise in property rates, with average prices around ₹9,686 per square foot. This trend indicates a growing demand for residential properties in the area.

Commercial Potential: The presence of light industries, such as precision instrument factories and agricultural implement manufacturers, positions Aishbagh as a hub for small-scale industries, offering opportunities for business growth.

THREAT-

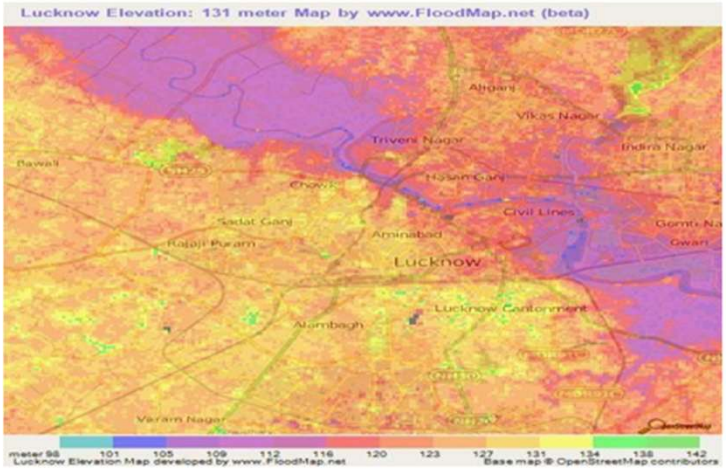
Environmental Concerns: The locality's numerous parks and green areas contribute to a higher mosquito population, posing health risks and affecting residents' quality of life.

Infrastructure Strain: The rapid urbanization and increased population density may strain existing infrastructure, leading to challenges in waste management, traffic congestion, and resource distribution.

SITE ANALYSIS

SUN PATH ANALYSIS

TOPOGRAPHICAL ANALYSIS-

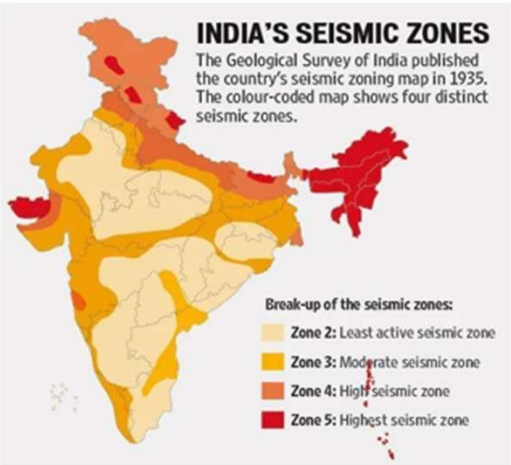


Lucknow is Capital of Uttar Pradesh , located between 26.30 & 27.0 N & 80.30 & 81.13E, altitude approximately 128m from sea level.

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-



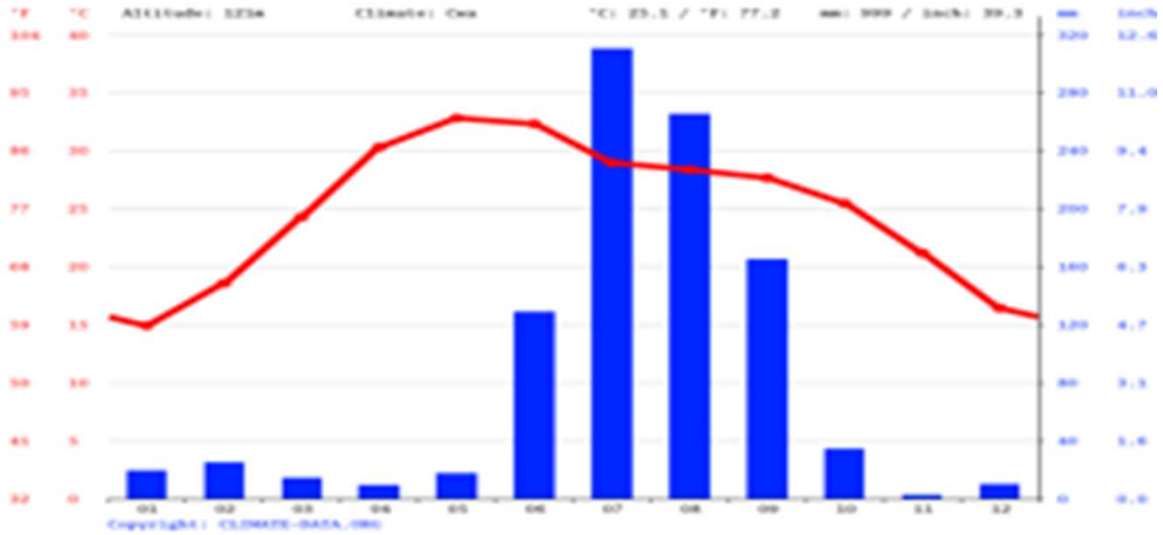
India has been divided into 5 major seismic Zones according to the intensity & frequence of earthquakes.
Lucknow comes under zone – 3 (moderate) according to its seismic activities hence building needs to be designed catering to structural needs of this specific seismic zone.

SITE ANALYSIS

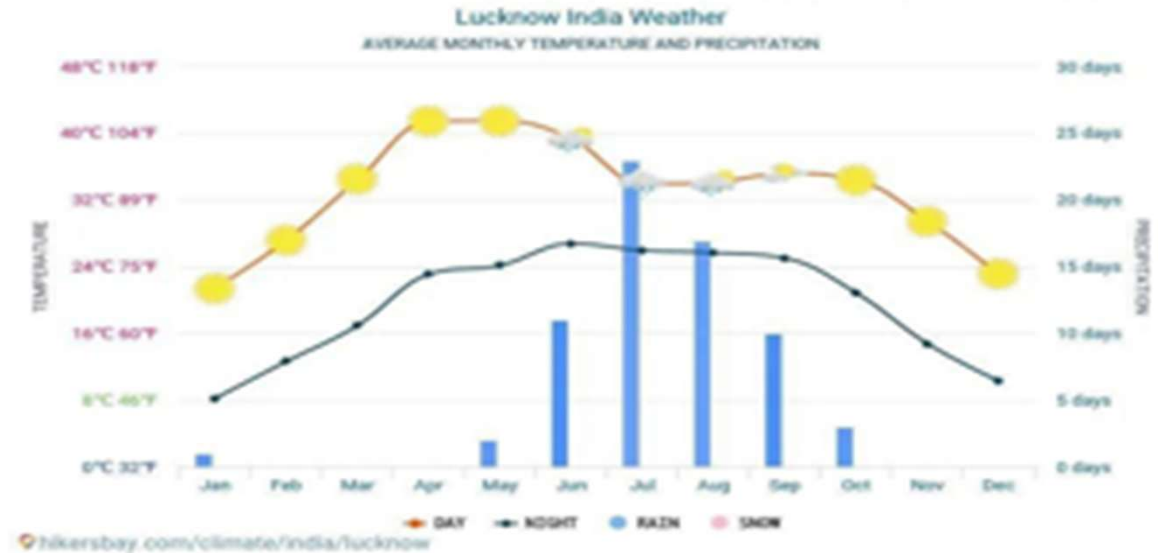
CLIMATE ANALYSIS-

Temparature 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 Mansoon winds.



SITE ANALYSIS

WEATHER AVERAGES LUCKNOW

	January	February	March	April	May	June	July	August	September	October	November	December
g. 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
n. 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
ax. 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%	38%	38%	54%	79%	82%	80%	66%	58%	64%
Rainy days (d)	2	2	2	2	3	8	10	10	13	2	0	1
vg. 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

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 Pallassio- 3 kms
- Sai medical store- 3 kms
- Canara bank ATM- 3.4 kms
- Gomti Nagar electricity board- 3.4 kms
- St. Fransic 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-

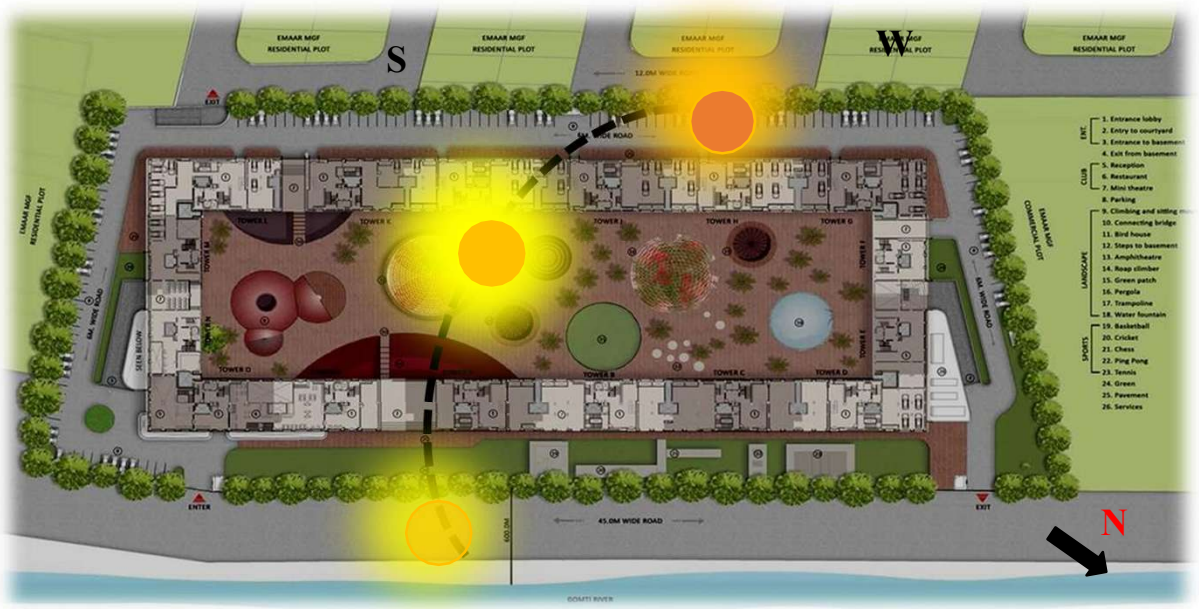
Location: Emaar Gomti Greens, Gomti Nagar Ext.(Shaheed Path),LKO **Landscape Design** by Topotek 1 Germany

Architect: MVRDV Architects, Netherlands

Consultant: Archohm Consults Pvt Ltd

Structure Designer: Shekhar Design Center

3. CLIMATE ANALYSIS-



4. CLIMATE OF LUCKNOW-

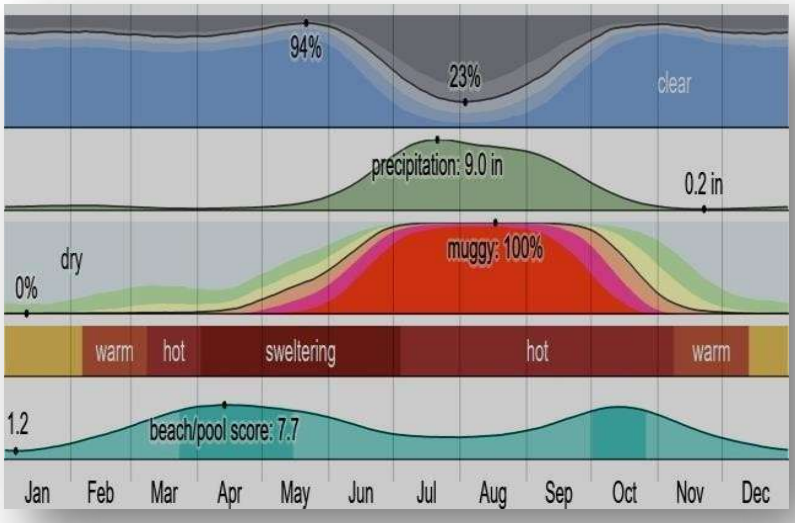
- **Lucknow** has a Composite climate with cool, dry winters from mid-November to February and dry, hot summers with sunshine from March to mid-May.

- 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-

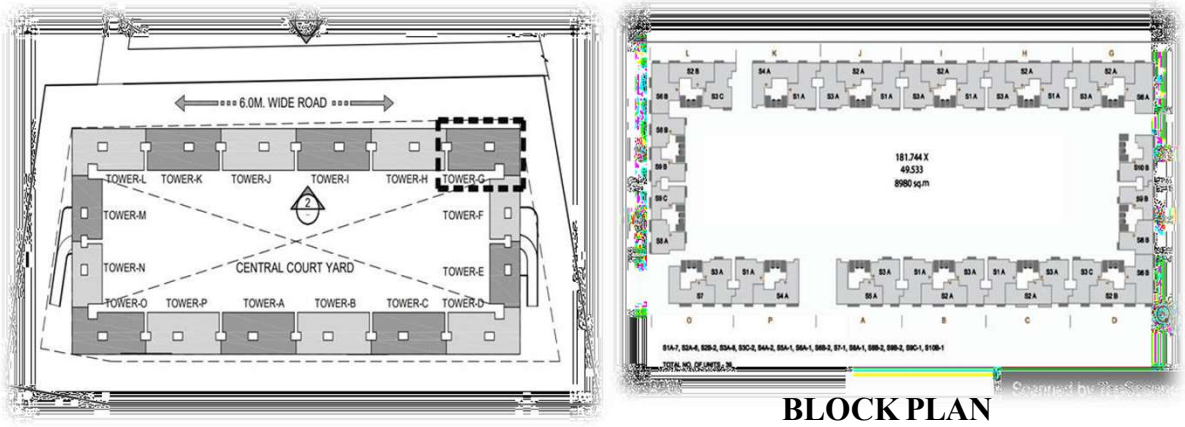
Bye-Laws (LDA)-

- **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

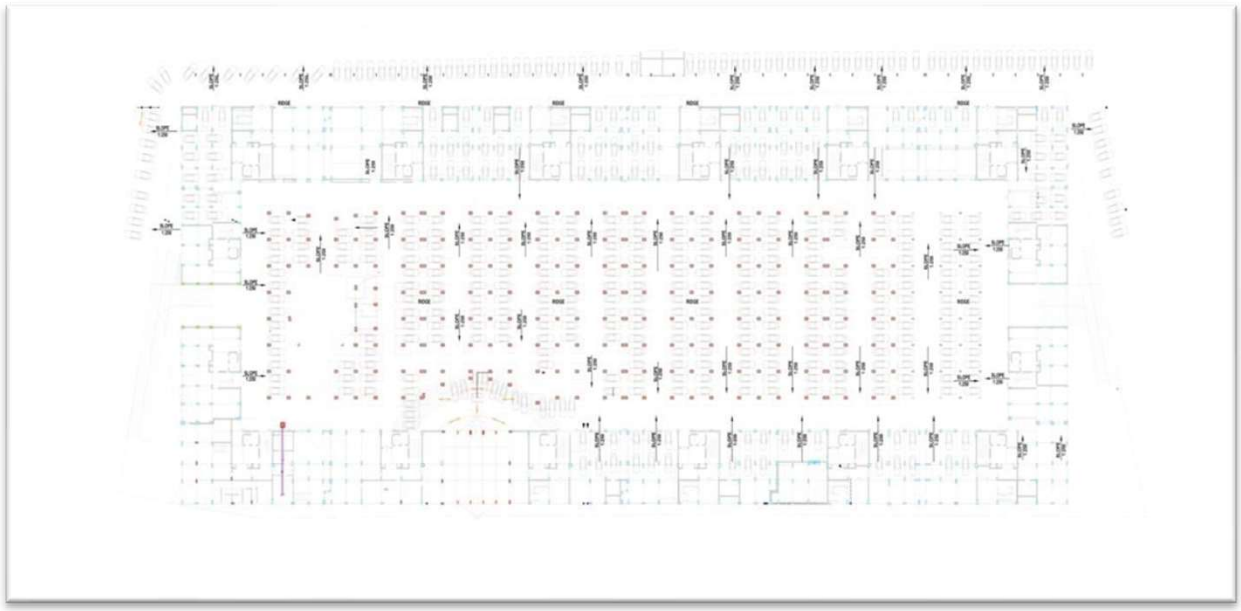
clearance from airport authority shall be taken

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

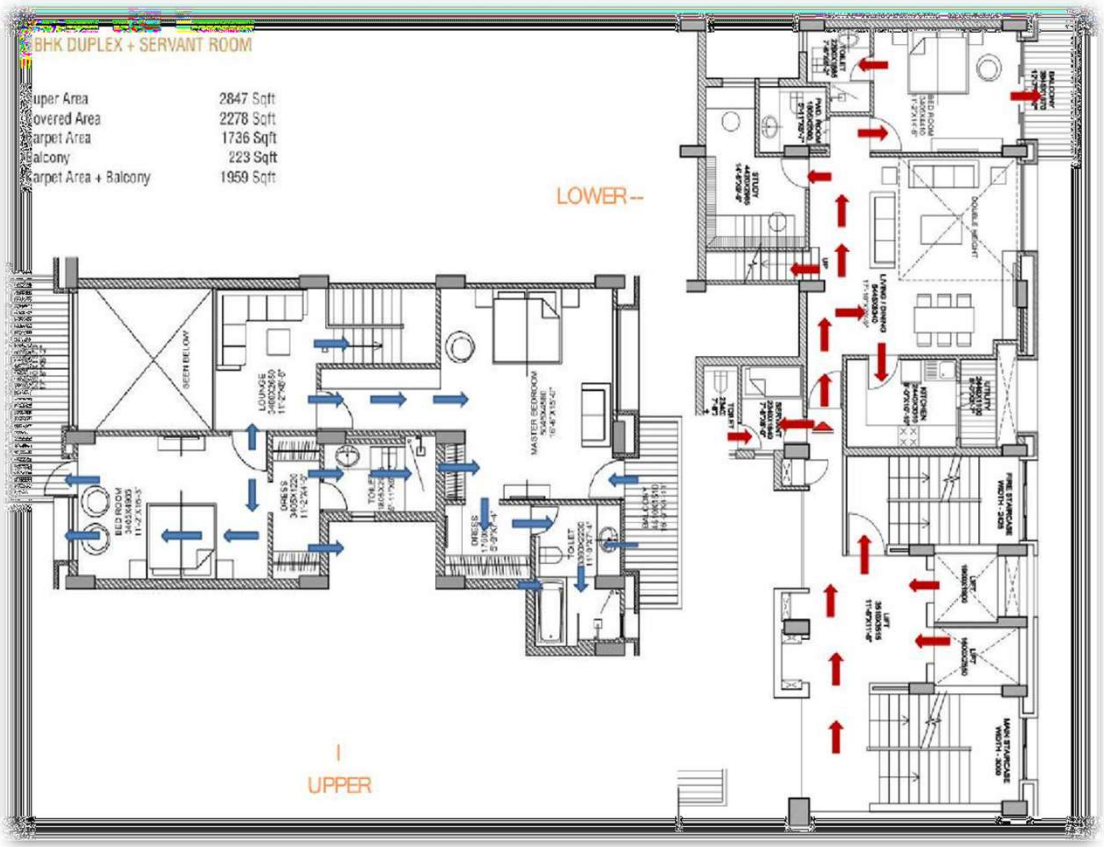


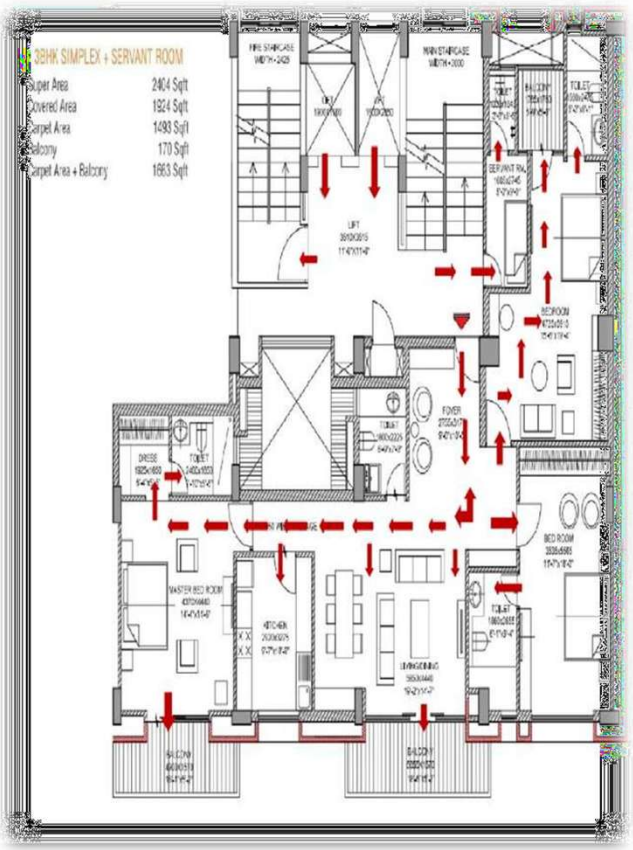
BLOCK PLAN

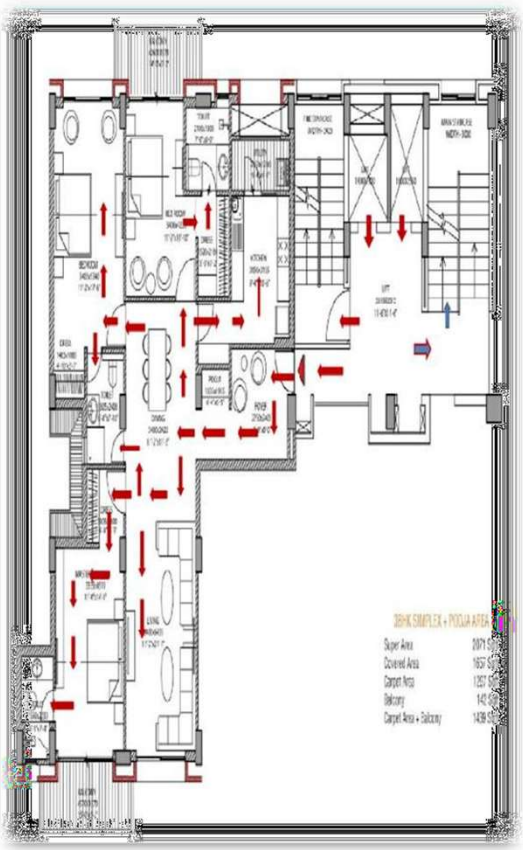


PARKING PLAN

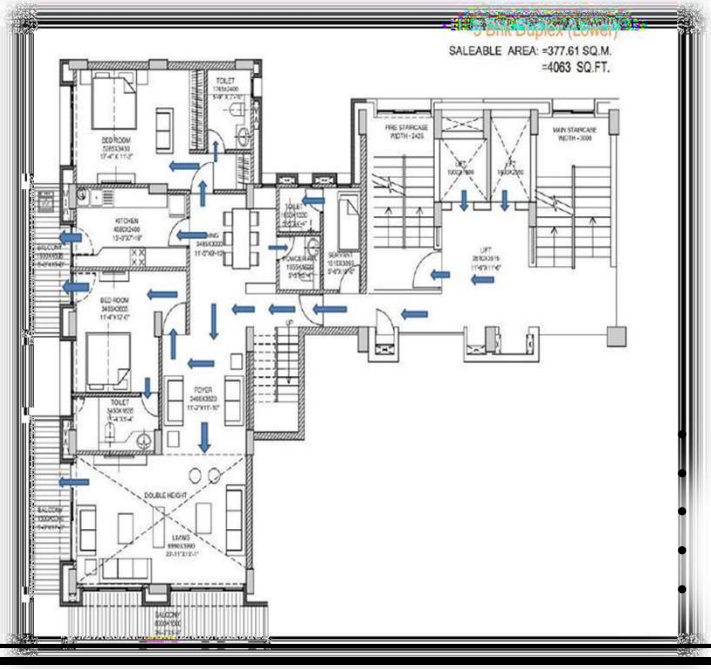
FLOOR PLANS


4 BHK DUPLEX + SERVANT ROOM
Super Area 2847 Sqft
Covered Area 2278 Sqft
Carpet Area 1736 Sqft
Balcony 223 Sqft
Carpet Area + Balcony 1959 Sqft
LOWER--
UPPER


3BHK SIMPLEX + SERVANT ROOM
Super Area 2404 Sqft
Covered Area 1924 Sqft
Carpet Area 1493 Sqft
Balcony 170 Sqft
Carpet Area + Balcony 1663 Sqft



FLOOR PLANS



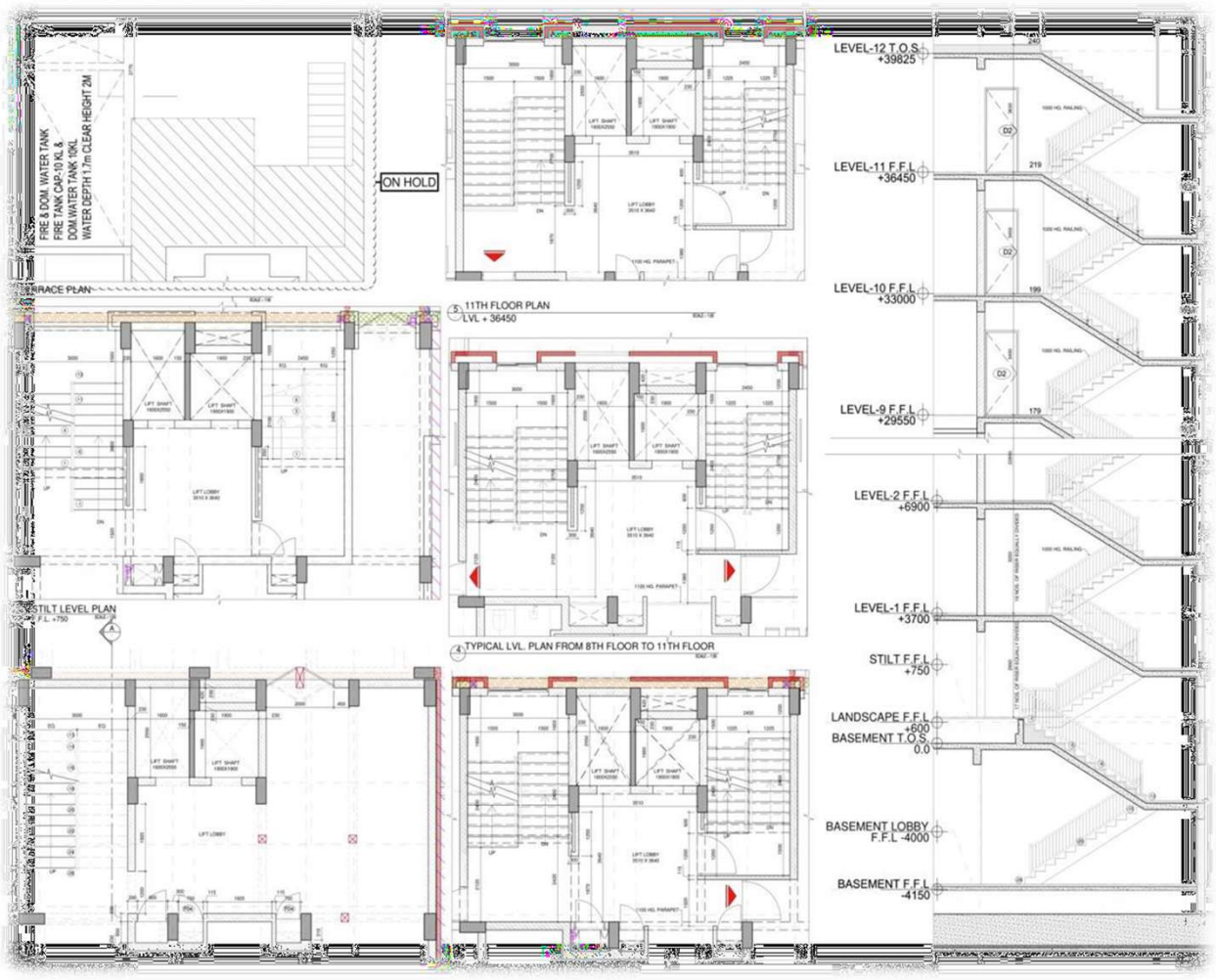
FLAT COST-

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-

PileFoundation, 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

CASE STUDY - 02 TARA HOUSING GROUP

Location: New Delhi, India Date: 1975-1978
Site: 1.48 ha
Program: Social housing with 160 units of two and three-bedroom flats
Client: Tara Housing Society
Architect: Charles Correa

TARA HOUSING GROUP

Charles Correa

Tara Apartment is one kind of social projects that is intended for the middle-class of Nehru center. This building is designed by one of the most famous Indian architects at this time, Charles Correa, and completed in 1978. Tara housing group has more than 125 units and 375 persons per hectare. The Tara pays deeply attention to the inner activities which are al- most happen in the central garden and leave the interaction of traffic behind a wall which is parallel to Guru Ravidas Marg Street(the South-East).

SITE

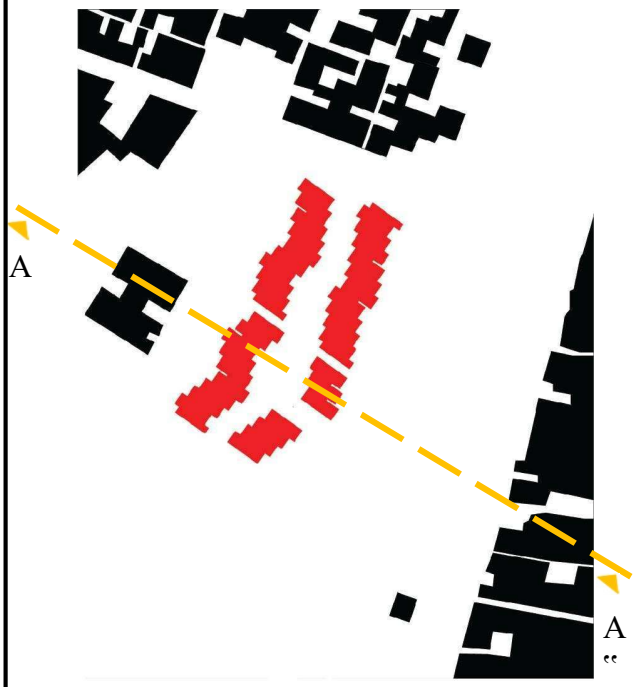
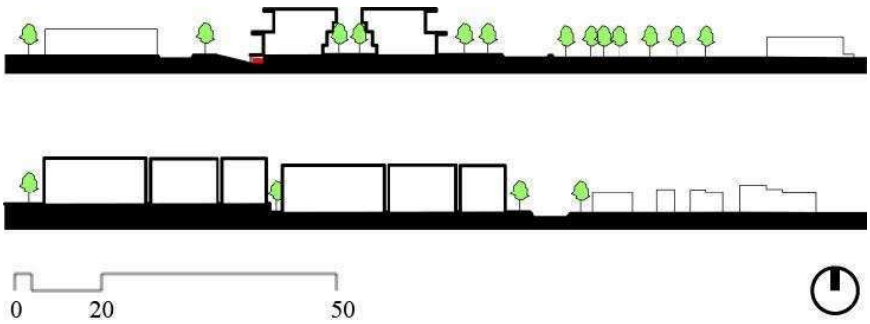


Figure Ground

Description: The project is located along Guru Ravidas Marg Street which leads to two big residential areas in the North and the South. It is in the suburb of middle-class. Therefore, it creates a harmonious and bal- ance volume with the existing fabric due to limited height and the form of the building. More than that, the project also plays an im- portant part in linking these other buildings with the adjacent park.

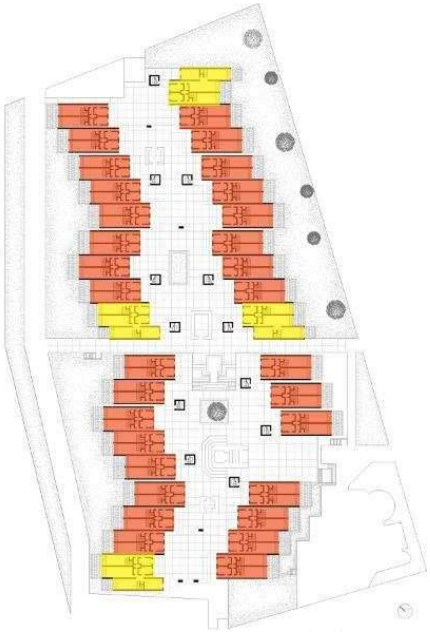
Evaluation: The building turns its back on the street to prevent noise, dust from the high flow vehicles. Being staked as a row, central garden, big overhangs and sharp edges, all give these buildings a sense of In- dian characteristic under hot sun, full of light without suffering from high temperature.



Section A-A‟

South East Section

BUILDING

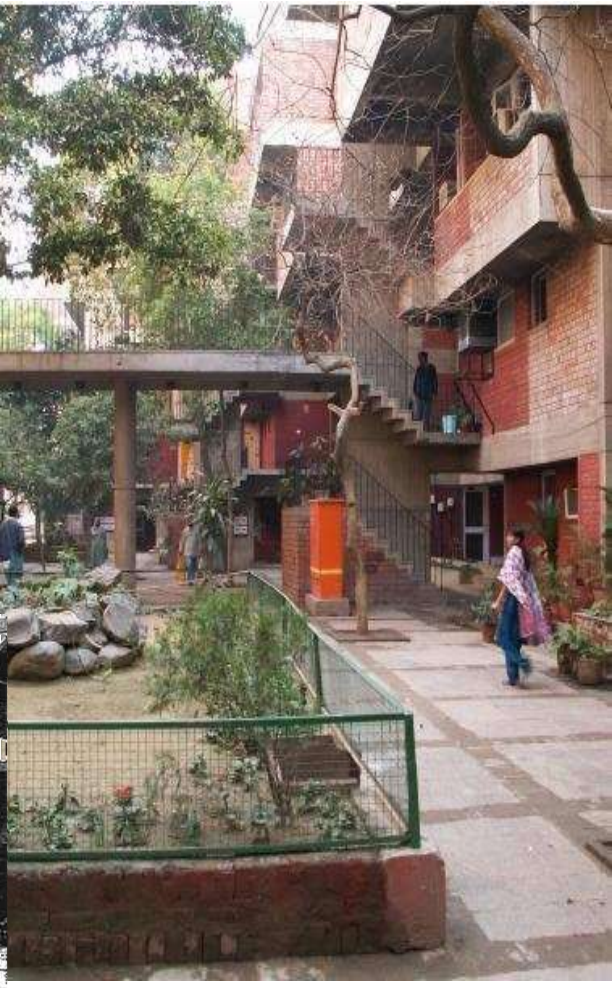


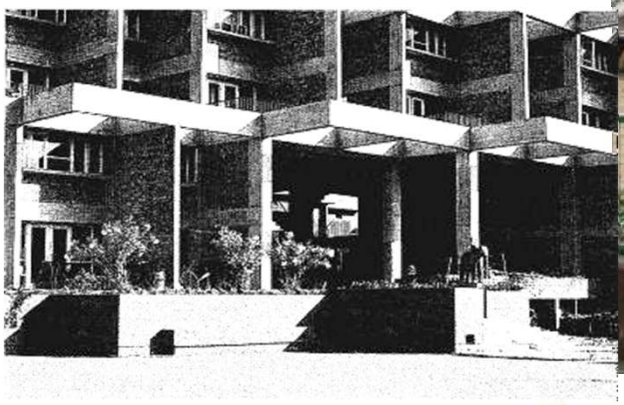
Two-bedroom flat

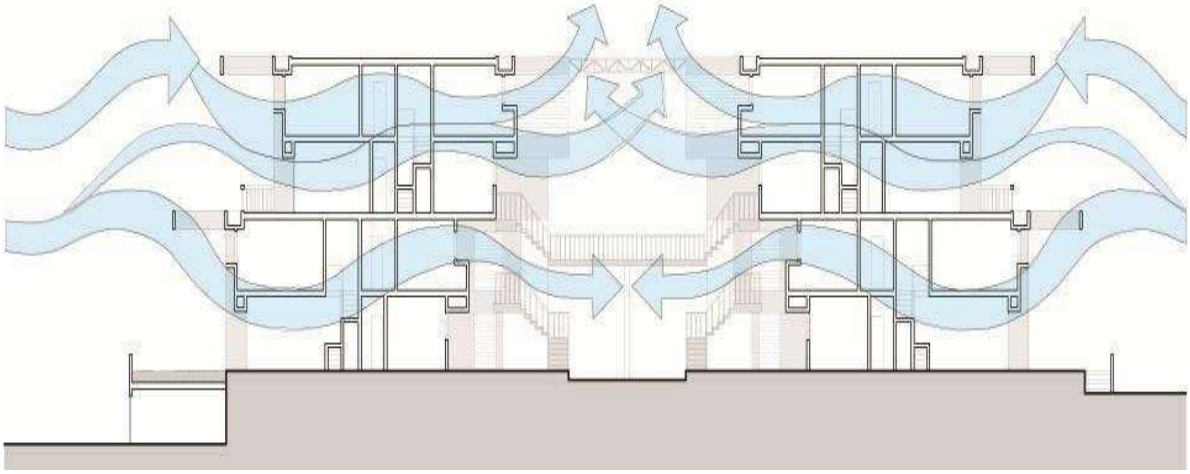
Three-bedroom flat

Description: The duplex units are accessed either at ground floor or second floor levels by outdoor stair cases. There are two kinds of flat: the two- bedroom flats with 84 square metres (3 metres wide, 6 metres high with two floors and 15 metres long, the three-bedroom flats with 130 square me- tres and have the shape of L, there are just only 16 three-bedroom flats were built. Each unit is pro- vided an open terrace which is protected by a per- gola and big overhangs. Two sides of the project are connected by staircases.

Evaluation: The concept of building allows people to access directly to the interior garden. More than that, everyone also has their own open-to-sky terraces with full filled shadow. By taking advantages of sun, wind directions and open spaces, hence lighting access and ventila- tion to each dwelling are maximized.







Natural ventilation

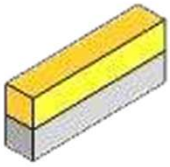
DWELLING

Description: The dwellings are grouped into some small and medium blocks. Some blocks are assembled only by two-bedroom flat, some are combined between two-bedroom type and three-bedroom type. It creates the diversity of form but still maintains the logic of dwellings‟ functions.

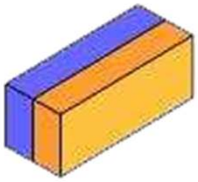
However, there are just 16 three-bedroom flats so that it is not sufficient for families which have more than 4 members.

3 metres wide and 15 metres long

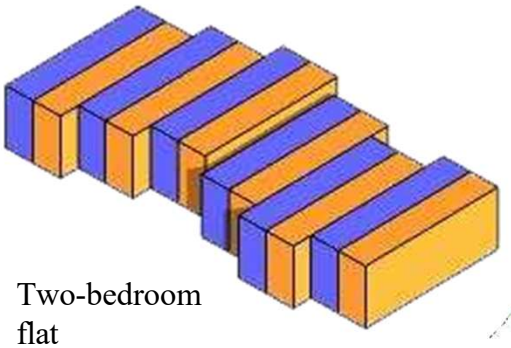
Ground floor



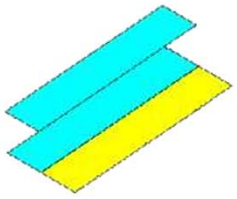
Two-bedroom type

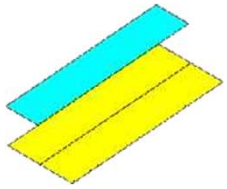


Combination

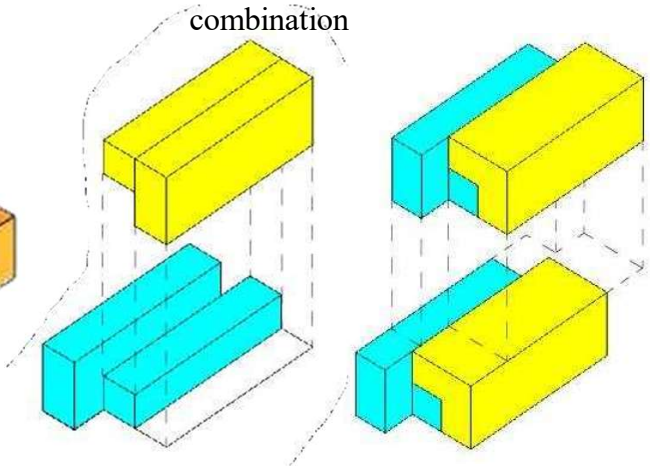


Two-bedroom flat

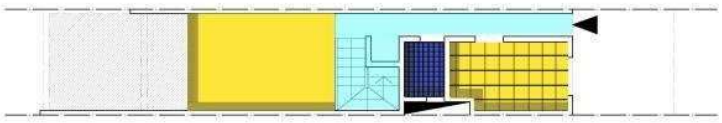




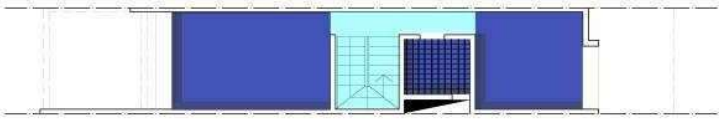
Three-bedroom type and combination



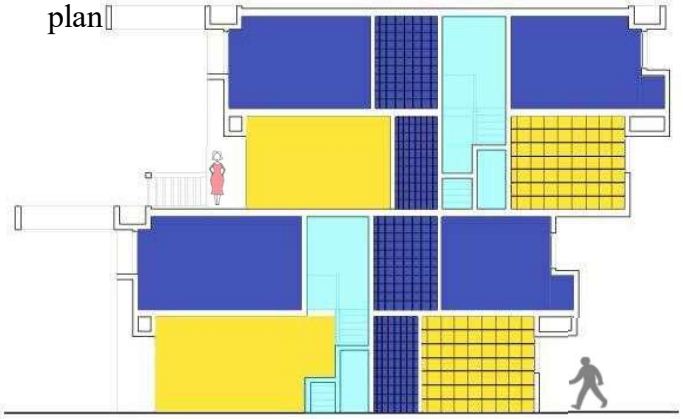
The complex is formed due to the combination between pairs of accommodation units.
The second floor which is larger than the ground one with a big overhang that rises further ap- proximately 6 metres gives the mixture between shadow and light. More than that, the duplex above is also push back hence front of the below one is pro- tected too. In that way, the whole central garden is full filled with shadow.



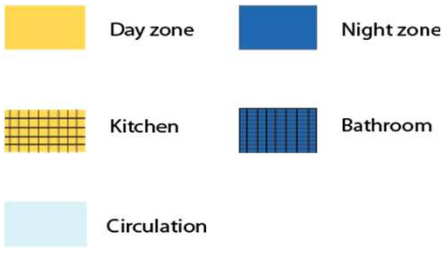
Ground floor plan

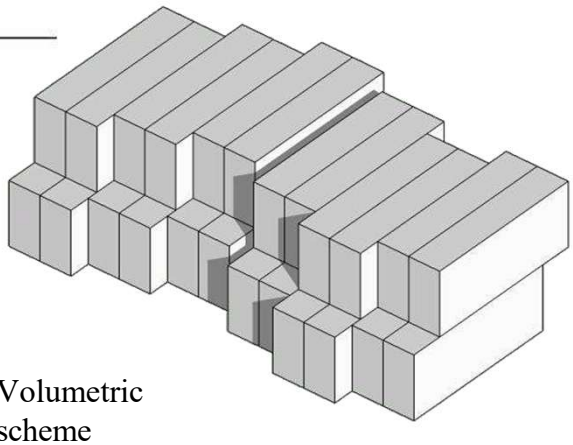


Second floor plan

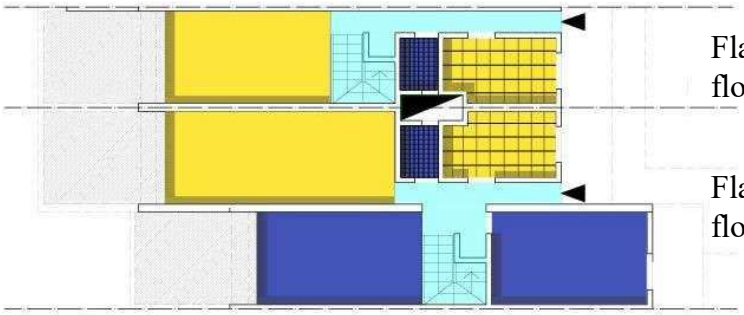


Secti on





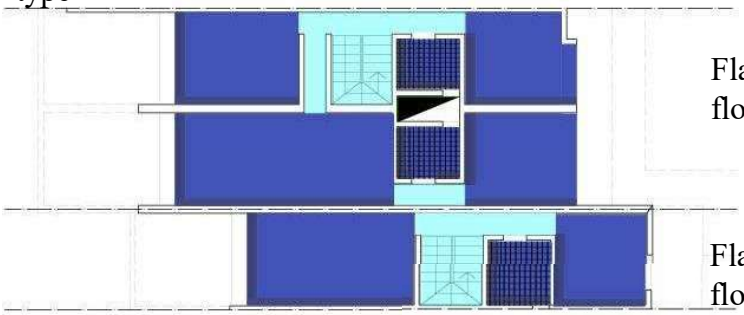
Volumetric scheme



Flat A„s ground floor plan

Flat B‟s ground floor plan

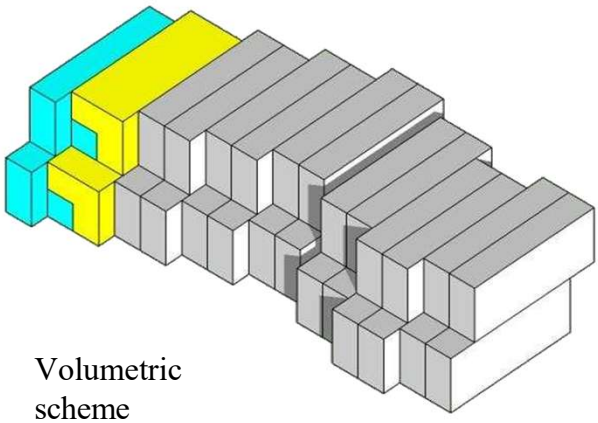
Three-bedroom type



Flat A‟s second floor plan

Flat two‟s second floor plan

In the shape of “L”, this type seems to be difficult to attach in the middle of a cluster and all of them are located in the outer- most.



Volumetric scheme

SERVICES

WATER SUPPLY-
- They had underground water supply.
-Water is supplied through pumping system.

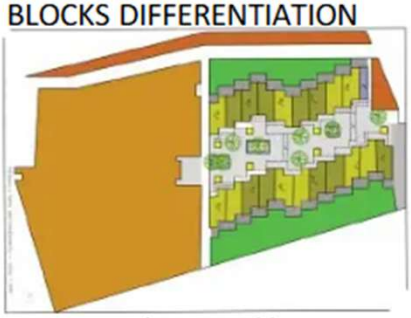
DRAINAGE -
-Waste water is directly drained into municipal sewer.

ELECTRICITY –
- Electric meter is provided at outside every block below staircase landing.

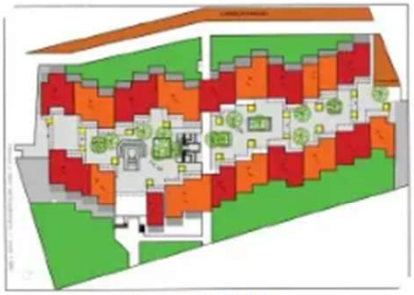
STAIRCASE –
-There were total 19 staircase for A -S blocks.
- 4 bridges that connects 2rows of housing

Housing Blocks	Units at -1500 mm	Units at 0.00	Units at +4500 mm	Nos. Of combined units	Connection of units through staircase	Total nos. Of unit in one block
A	-	5	4	0	4	9
B	-	4	3	0	3	7
C	-	2	6	0	6	8
D	-	3	4	2	4	7
E	2	2	4	0	6	8
F	2	3	4	1	7	9
G	2	3	4	1	7	9
H	2	4	4	0	8	10
I	2	4	4	0	8	10
J	1	2	2	0	4	5
K	2	4	5	0	9	11
L	2	2	4	2	6	8
M	1	2	2	2	4	5
N	3	4	6	0	10	13
O	1	2	4	2	6	7
P	-	4	6	1	6	10
Q	-	3	4	2	4	7
R	-	4	4	1	4	8
S	-	4	5	0	5	9

BLOCKS DIFFERENTIATION



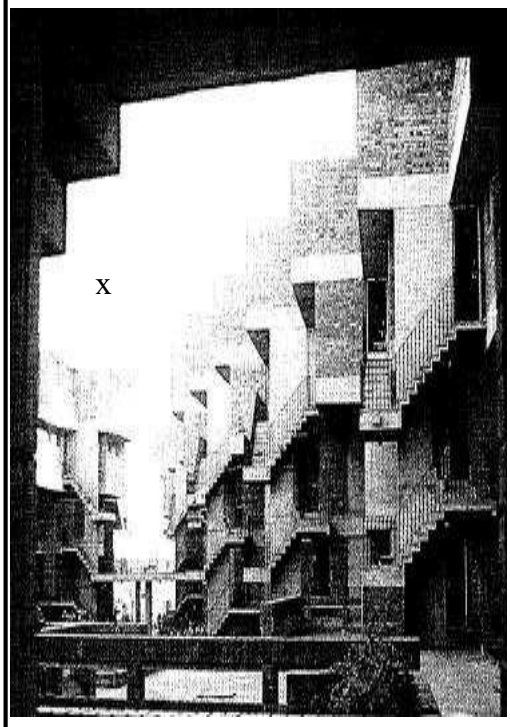
Plan at -1500 lvl



Plan at +1500 lvl

Plan at +4500 lvl

CONCEPT



x

The main concept in Tara housing group project is a crea- tive vernacular typology in term of arranging and piling the singular flat into united blocks. By separating with the outside world and providing an interior garden, the build- ing preserves well the private life of families within. More than that, just pedestrians are allowed go inside the hous- ing group and the parking lot is in the back of the build- ing.

In term of a social housing group, the project takes big advantages from natural resources like lighting and venti- lation and all families are equally shared these features.

Indian sense is illustrated in the use of concrete bands,

panels of exposed bricks, portals, overhangs and shape edges.

LITERATURESTUDY – 01 GAUR CITY 7TH AVENUE

➢ PROJECT DATA

- NAME : GAUR CITY (7TH AVENUE).
- TYPE : RESEDENTIAL APARTMENT.
- ARCHITECT : RSP ARCHITECT PLANNER & ENGINNERS (SINGAPORE).
- DEVELOPERS : GAURSONS INDIA LIMITED.
- LOCATION : GH-01, SECTOR – 4, GREATER NOIDA WEST

➢ PROJECT DETAIL

- No. of Towers: 11 Towers
- No. of Floors: 33 Floors
- No. of Units: 2995 Units
- Total Project Area: 8.87 Acres (35895.62 SQ. METRE).
- The Gaur City 7th Avenue is Semi Furnished.

Introduction-

Gaur City is built with a concept of walk to school, walk to work and walk to play where each resident will access all important places in a walking distance. An integrated smart city, Gaur City the first allotted township of Greater Noida (w) and Gaurs Group is the first developer to get the completion certificate in Greater Noida (West) and the first to give possession.

With a unique blend of excellent location, budget friendly pricing and amazing infrastructure, Gaur City has a lot to offer. The township is certified by the Indian Green Building Council and its master plan has been designed by the renowned Singapore based consultant. The township offers 2 and 3 BHK apartments and has a 72843 mtr. (18 acres) sports complex which includes open gym and a cricket academy run by Former Indian Crickerter-Mr. Madan Lal. Not only this, the township will look after all the daily needs of a resident which includes school, creche, gymnasium, restaurant, petrol station, multiplex and many more.

➢ FACILITIES :

- Lift(s) • 24/7 Water Supply
- 24/7 Power Backup
- Fire Fighting Systems
- Car Parking
- Gymnasium
- Club House
- Children's Play Area

CONNECTIVITY

➢ Gaur City 7th Avenue Is Situated At Prime Location At Noida Extension Is Easy To Connect With

➢ NH-24, Nearest Metro Station (7.5km)

➢ 11km From Kalindi Kunj

➢ Noida Expressway,

➢ Delhi

➢ Yamuna Expressway

DETAIL SPECIFICATIONS OF 7TH AVENUE, GAUR CITY, GREATER NOIDA (W)

7TH AVENUE
GH-01, SEC.-4, GREATER NOIDA

1.	**COMMON AREA IN BLOCK**		
A.	**LIFT LOBBY / CORRIDOR**		
a)	FLOORING	-	TILES / MARBLE (COMBINATION OF TWO COLOURS)
b)	PAINTING	-	OBD
c)	RAILING	-	MS RAILING
d)	LIFT FASCIA	-	TILES / MARBLE
e)	LIGHTING	-	CEILING MOUNTED LIGHT FIXTURE
B.	**STAIRCASE**		
a)	FLOORING	-	MARBLE FLOORING (STAIRCASE-1)
b)	RAILING	-	CONCRETE / IPS FLOORING (STAIRCASE-2)
c)	LIGHTING	-	WALL MOUNTED LIGHT FIXTURE
C.	**VISITOR TOILET - ONE IN EACH BLOCK**		
a)	FLOORING	-	VITRIFIED TILES
b)	PAINTING	-	OBD
c)	WALL CLADDING	-	GLAZED / CERAMIC TILES
d)	W.C	-	EUROPEAN TYPE
e)	CP FITTINGS	-	CHROME PLATTED
D.	**LIFT - 4 LIFTS (TWO - 13 PASSENGER + TWO - 8 PASSENGER) EACH BLOCK**		
a)	EXTERNAL DOOR	-	MS PAINTED
b)	INTERNAL FINISHES	-	STAINLESS STEEL FINISHES
E.	**TERRACE**		
a)	FLOORING	-	TILES
b)	PAINTING	-	TEXTURE PAINT
c)	PARAPET	-	RCC / MS RAILING
d)	WATER TANK	-	RCC
2.	**EXTERNAL AREA**		
A.	**LANDSCAPE**		
a)	HARD LANDSCAPE / ROAD PARKING	-	TILES / TRIMIX / PAVERS / CURVE STONE / STONE / CHECKERED TILES
b)	SOFT LANDSCAPE	-	NATURAL GRASS / ARTIFICIAL GRASS PAD / GRASS LAWN SHRUBS / PLANTS / TREES
c)	LIGHTING	-	POLE LIGHT
d)	SKATING RINK	-	1 NOS.
e)	KIDS' PLAY AREA	-	1 NOS.
B.	**BASEMENT AREA B1, B2, B3**		
C.			
a)	ROAD AND PARKING	-	TRIMIX FLOORING
b)	LIGHTING	-	CEILING MOUNTED LIGHT FIXTURE
c)	FIRE FIGHTING	-	AS PER NORMS
D.	**ESS**		
a)	REQUIRED LOAD	-	7510 KVA
b)	APPROVED	-	DG - 75- KVA (2 NOS.), DG - 500 KVA (2 NOS.) TRANSFORMER - 1600 KVA (6 NOS.)
E.	**COMMUNITY HALL**		
a)	ENTRANCE LOBBY	-	VITRIFIED TILES / MARBLE FLOORING (COMBINATION OF TWO COLOURS)
b)	GYMNASIUM	-	80 SQ. MTR. (860.80 SQ. FT.)
I.	FLOORING	-	VINYL / RUBBER FLOORING
II.	WALL	-	MIRROR / OBD PAINTS
III.	CEILING	-	PERFORATED GYPSUM TILES
c)	CHANGING ROOM AND SHOWER		
d)	PLAY ROOM	-	80 SQ. MTR. (860.80 SQ. FT.)
I.	TABLE TENNIS	-	2 NOS.
II.	POOL TABLE	-	1 NOS.
F.	**SWIMMING POOL**		
	MAIN SWIMMING POOL		
a)	SIZE	-	25 M X 12 M
b)	DEPTH	-	1.2 M
c)	FINISHES	-	TILES
	KIDS' SWIMMING POOL		
a)	SIZE	-	6 M X 5 M
b)	DEPTH	-	0.6 M
c)	FINISHES	-	TILES

Tower - K
Carpet Area - 52.68 SQ. MT. (567.00 SQ. FT.)
External Wall & Column Area - 6.12 SQ. MT. (65.85 SQ. FT.)
Balcony Area - 19.70 SQ. MT. (212.00 SQ. FT.)
Common Area - 24.20 SQ. MT. (260.00 SQ. FT.)
Total Area - 102.70 SQ. MT. (1105.00 SQ. FT.)

- 2 Bedrooms
- Drawing/Dining
- Kitchen
- 2 Toilets
- 2 Balconies

Tower - J & I
Carpet Area - 69.45 SQ. MT. (747.30 SQ. FT.)
External Wall & Column Area - 6.77 SQ. MT. (72.70 SQ. FT.)
Balcony Area - 21.78 SQ. MT. (235.00 SQ. FT.)
Common Area - 27.40 SQ. MT. (295.00 SQ. FT.)
Total Area - 125.40 SQ. MT. (1350.00 SQ. FT.)

- 3 Bedrooms
- Drawing/Dining
- Kitchen
- 2 Toilets
- 2 Balconies

Tower - I & J
Carpet Area - 69.45 SQ. MT. (747.30 SQ. FT.)
External Wall & Column Area - 6.77 SQ. MT. (72.70 SQ. FT.)
Balcony Area - 21.78 SQ. MT. (235.00 SQ. FT.)
Common Area - 27.40 SQ. MT. (295.00 SQ. FT.)
Total Area - 125.40 SQ. MT. (1350.00 SQ. FT.)

- 3 Bedrooms
- Drawing/Dining
- Kitchen
- 2 Toilets
- 2 Balconies

UNIT NO - 73,66,70 & 69

Tower - I

Tower - A & B
Carpet Area - 57.90 SQ. MT. (623.00 SQ. FT.)
External Wall & Column Area - 5.00 SQ. MT. (54.00 SQ. FT.)
Balcony Area - 22.40 SQ. MT. (241.00 SQ. FT.)
Common Area - 108.23 SQ. MT. (1165.00 SQ. FT.)

- 2 Bedrooms
- Drawing/Dining
- Kitchen
- 2 Toilets
- 2 Balconies

UNIT NO - 10,11,15 & 16

Tower B

Tower - I
Carpet Area - 69.45 SQ. MT. (747.30 SQ. FT.)
External Wall & Column Area - 6.77 SQ. MT. (72.70 SQ. FT.)
Balcony Area - 31.08 SQ. MT. (335.00 SQ. FT.)
Common Area - 27.40 SQ. MT. (295.00 SQ. FT.)
Total Area - 134.70 SQ. MT. (1450.00 SQ. FT.)

- 3 Bedrooms
- Drawing/Dining
- Kitchen
- 2 Toilets
- 2 Balconies

UNIT NO - 72 & 71

Tower - I

Tower - A & B
Carpet Area - 57.90 SQ. MT. (623.00 SQ. FT.)
External Wall & Column Area - 5.00 SQ. MT. (54.00 SQ. FT.)
Balcony Area - 22.40 SQ. MT. (241.00 SQ. FT.)
Common Area - 108.23 SQ. MT. (1165.00 SQ. FT.)

- 2 Bedrooms
- Drawing/Dining
- Kitchen
- 2 Toilets
- 2 Balconies

UNIT NO - 1,4,5 & 8

Tower-A

SITE PLAN


TOWARDS NH-24
60.00 MT. WIDE ROAD
ENTRY
GC-2
GC-3
P1
C2
4th AVENUE
1st AVENUE
5th AVENUE
6th AVENUE
GC 6/II
CRICKET GROUND
IST-2
IST-3
IST-4
TRACK & FIELD
C6
7th AVENUE
IST-1-A
IST-1-B
P3
GAUR CITY CENTRE C1-A
GAUR CITY MALL C1-B
TOWARDS G.NOIDA
TOWARDS DELHI/NOIDA
GAUR CHOWK
TOWARDS G.NOIDA
TOWARDS G.NOIDA
LEGEND:
C1- COMMERCIAL
C1-A [SHOPS, OFFICE, HOTEL]
C1-B MALL, MULTIPLEX , CLUB BANQUETS, OFFICE SUITES, HOTEL]
C2- COMMERCIAL [GAUR CITY PLAZA]
IST- INSTITUTIONAL
IST-1-A [OFFICE]
IST-1-B [PETROL PUMP]
IST-2 [TEMPLE]
IST-3 [CLUB, COMMUNITY FACILITIES MULTIPURPOSE HALL & INDOOR PLAY AREA]
IST-4 [SITTING PAVILION]
C6- CONVENIENT SHOPPING CENTRE
1.SCHOOL
2. PARKS
3. COMMUNITY HALL
4. NURSERY SCHOOL
5. NURSING HOME
6. SPORTS COMPLEX
7. ELECTRICAL SUB STATION
8. MILK BOOTH
9. DISPENSARY
P1,P3- PARKING
N
W
E
S

LAYOUT PLAN

LEGENDS

TOWER A - 108.23 SQ.MT. (1165 SQ.FT.)
TOWER B - 108.23 SQ.MT. (1165 SQ.FT.)
TOWER C - 99.86 SQ.MT. (1075 SQ.FT.)
TOWER D - 99.86 SQ.MT. (1075 SQ.FT.)
TOWER E - 99.86 SQ.MT. (1075 SQ.FT.)
TOWER F - 99.86 SQ.MT. (1075 SQ.FT.)
TOWER G - 99.86 SQ.MT. (1075 SQ.FT.)
TOWER H - 108.23 SQ.MT. (1165 SQ.FT.)
TOWER I - 125.40/134.70 SQ.MT. (1350 SQ.FT / 1450 SQ.FT.)
TOWER J - 125.40 SQ.MT. (1350 SQ.FT.)
TOWER K - 102.70 / 107.30 SQ.MT. (1105/1155 SQ.FT.)
TOWER L - 110.13 SQ.MT. (1185 SQ.FT.)

I. ENTRANCE GATE
II. BASKETBALL COURT
III. TENNIS COURT WITH SEATING TIER
IV. PATHWAY / JOGGING TRACK
V. LANDSCAPED LAWN
VI. KIDS' PLAY AREA
VII. SWIMMING POOL
VIII. KIDS' POOL
IX. POOL DECK
X. CRICKET PITCH
XI. AMPHITHEATER
XII. CLUB
XIII. E.S.S.
XIV. EXIT GATE
XV. COMMERCIAL - I (BELOW PODIUM FLOOR)
XVI. COMMERCIAL - II
XVII. COMMUNITY

3.3 CASE STUDY - 03 KANCHANJUNGA APARTMENT, MUMBAI

INTRODUCTION

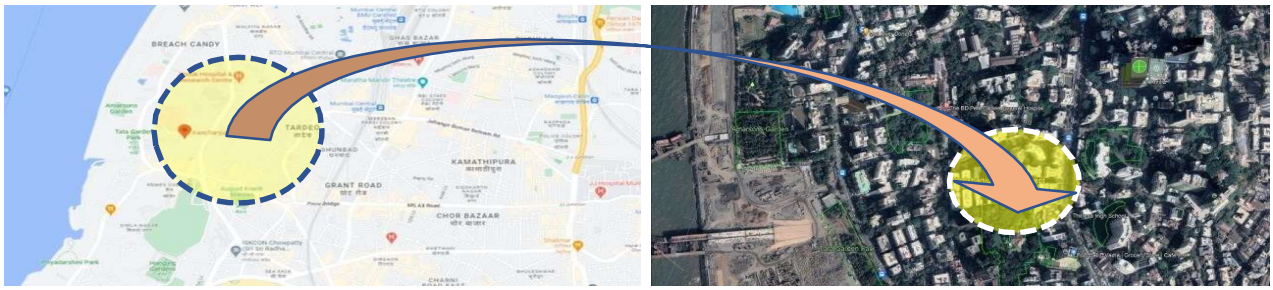
Kanchanjunga is a condominium of 32 luxury apartments of three to six bedrooms each. The basic interlock is that of a three and four bedroom apartment with the larger flats formed by the addition of another half level.

- 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 mansoon 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.

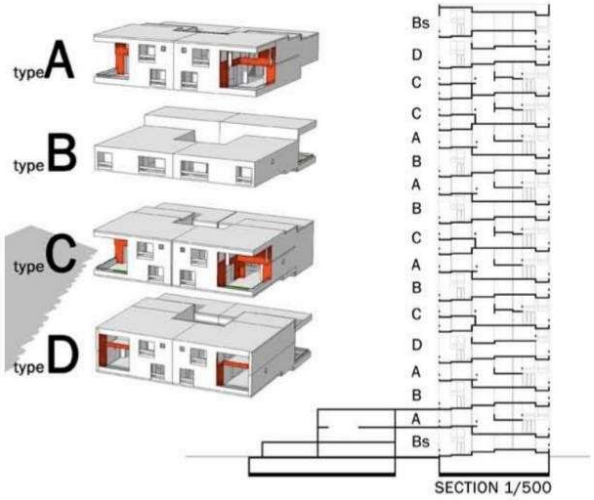
3.3.2 PROJECT IMAGES-

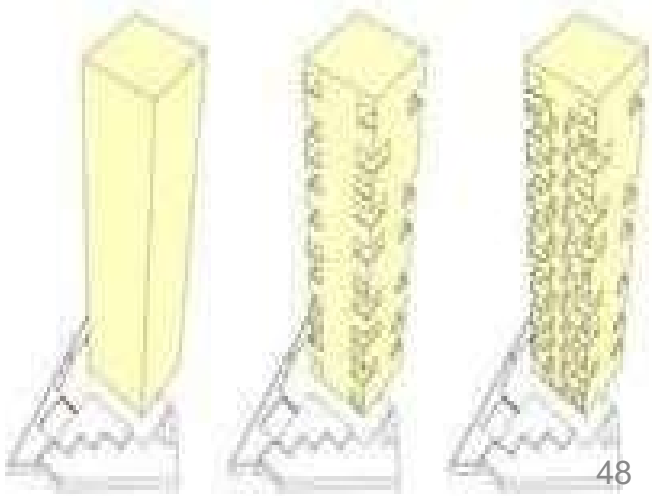




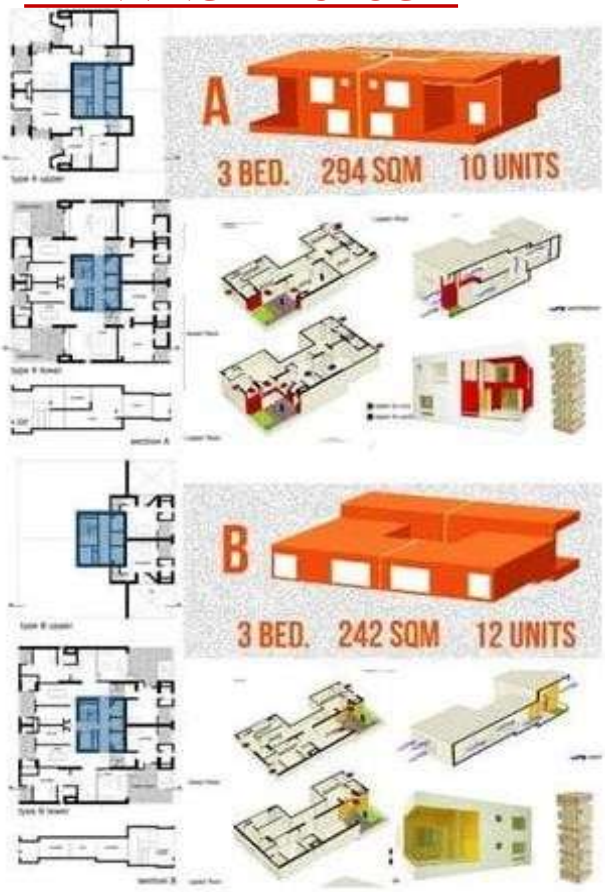

3.3.3 CONCEPT & PLANNING-

- 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.





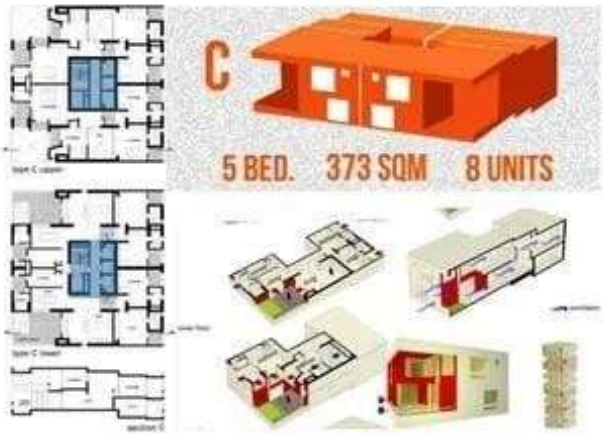
PLANNING TYPOLOGY-

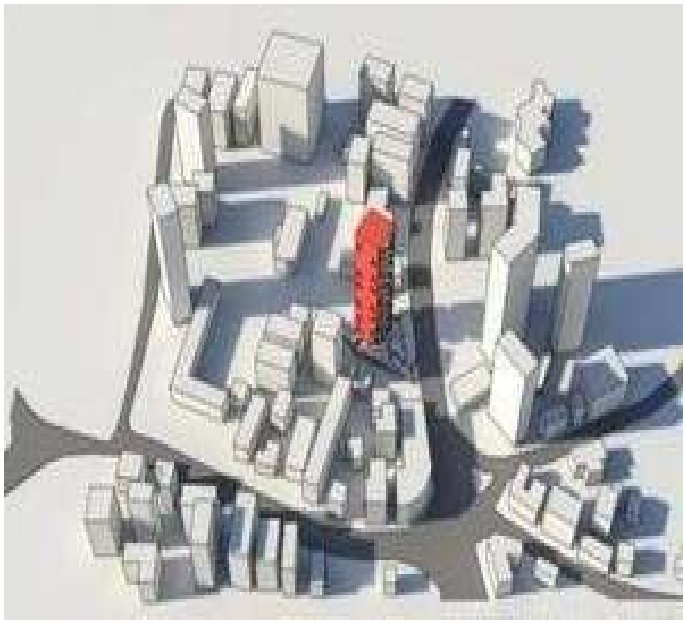


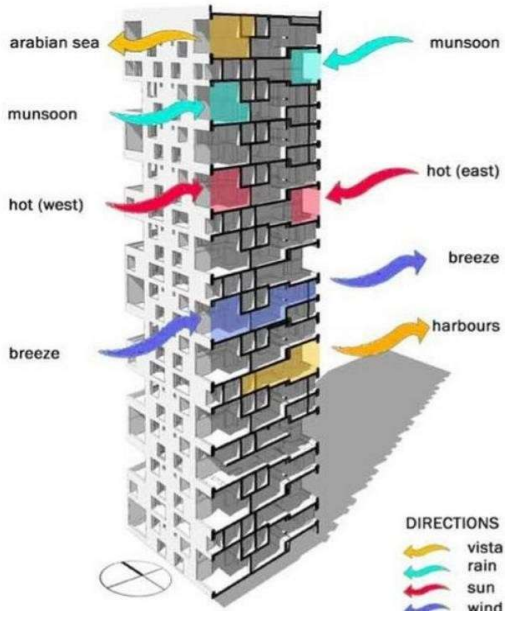
Basic Structural Units:
Type A - 3 Bedroom
Type B - 3 Bedroom
Type C - 5 Bedroom
Type D - 6 Bedroom

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.



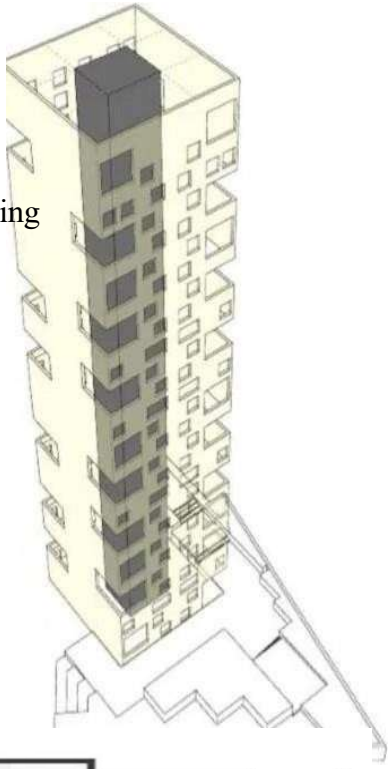




KEY FEATURES-

- 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.

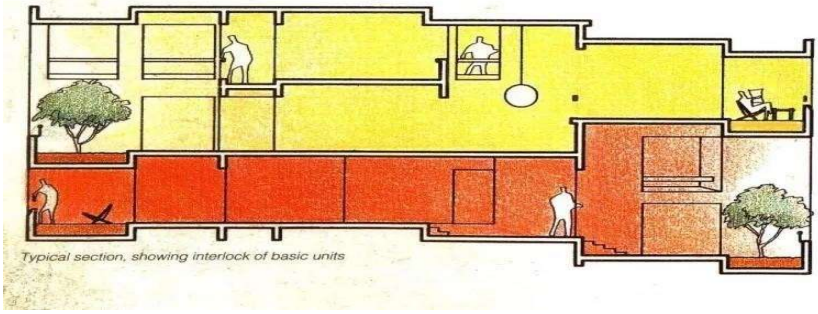
3.3.4 STRUCTURAL OVERVIEW-

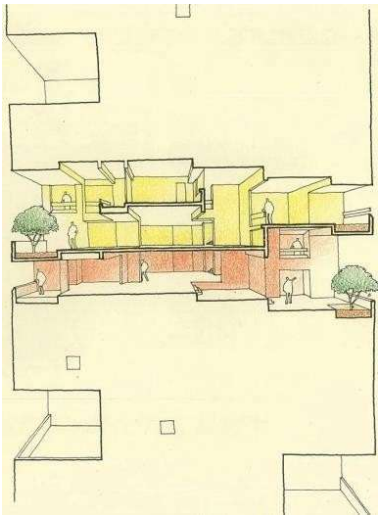


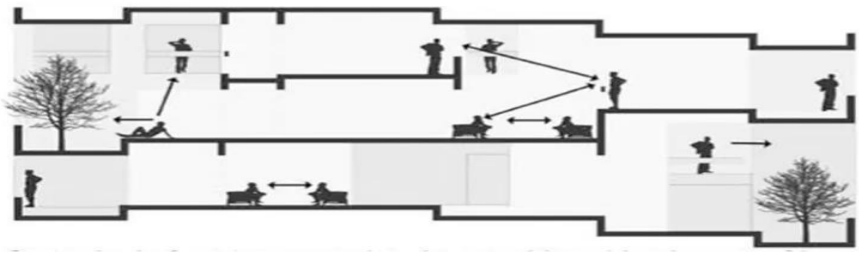
It is made from reinforced concrete.

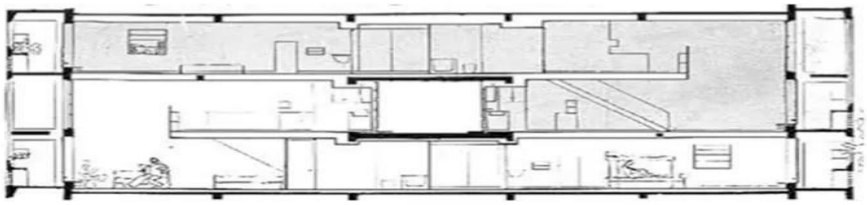
- 32 stories high with 6.3 m cantilevered terrace garden.
- Central core of 7.8X6.9 m house the lifts & service areas.
- This central core also acts as a main structural element in resisting lateral load.
- Central core was const. ahead of the main structure using slip method of construction.

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.

CHAPTER- 04
AREA ANALYSIS

4.1 PROJECT DETAILS-

PROJECT NAME-	**Affordable Group housing**
LOCATION-	**4, Mill Rd, Malviya Nagar, Aishbagh, Lucknow, Uttar Pradesh 226004**
FUNCTIONAL AREAS-	**Residential flat and shoping center**
PLOT AREA-	**8.9 ACRES = 36000 SQ.MT**
F.A.R-	**2.5**
SETBACKS-	**13 M**
GROUND COVERAGE-	**30% of (plot size)**
TOTAL BUILT-UP AREA-	**66015 SQ.MT**

4.2 AREA CALCULATION-

Area calculation-
permissible covered area-plot area x F.A.R.
=36000X2.5
=91500
Ground coverage=30%

No of floors= 9 FLOORS

Types of dwelling units=LIG=38 SQMT
2BHK=95.67SQMT
3BHK=133.49
No of unit=552
No of floor=G+8+8+8
Covered area of dwelling unit=no of unit x area of one unit

TOTAL AREA OF DWELLING UNITS=66015

CHAPTER 05
CONCEPT

5.1 CONCEPT-

CONCEPT DEVELOPMENT

Concept Introduction: "Air Flowing Form" – A Passive Design Approach for Sustainable Living-

This residential project is designed with a core focus on maximizing natural ventilation to enhance indoor comfort and reduce energy dependence. The architectural form evolves from a basic geometric plane into a strategically perforated and articulated structure that encourages passive airflow. As a low-cost, sustainable housing model, this design approach leverages climatic responsiveness to ensure thermal comfort without relying heavily on mechanical systems.

Concept Explanation-

1. **Form Evolution Based on Air Movement**
   - The design begins with a basic square plane, which is then modified by carving out the central core and edge segments to promote inward and cross ventilation.
   - This transformation results in a hollow inset plan that becomes the key driver for air movement throughout the building.

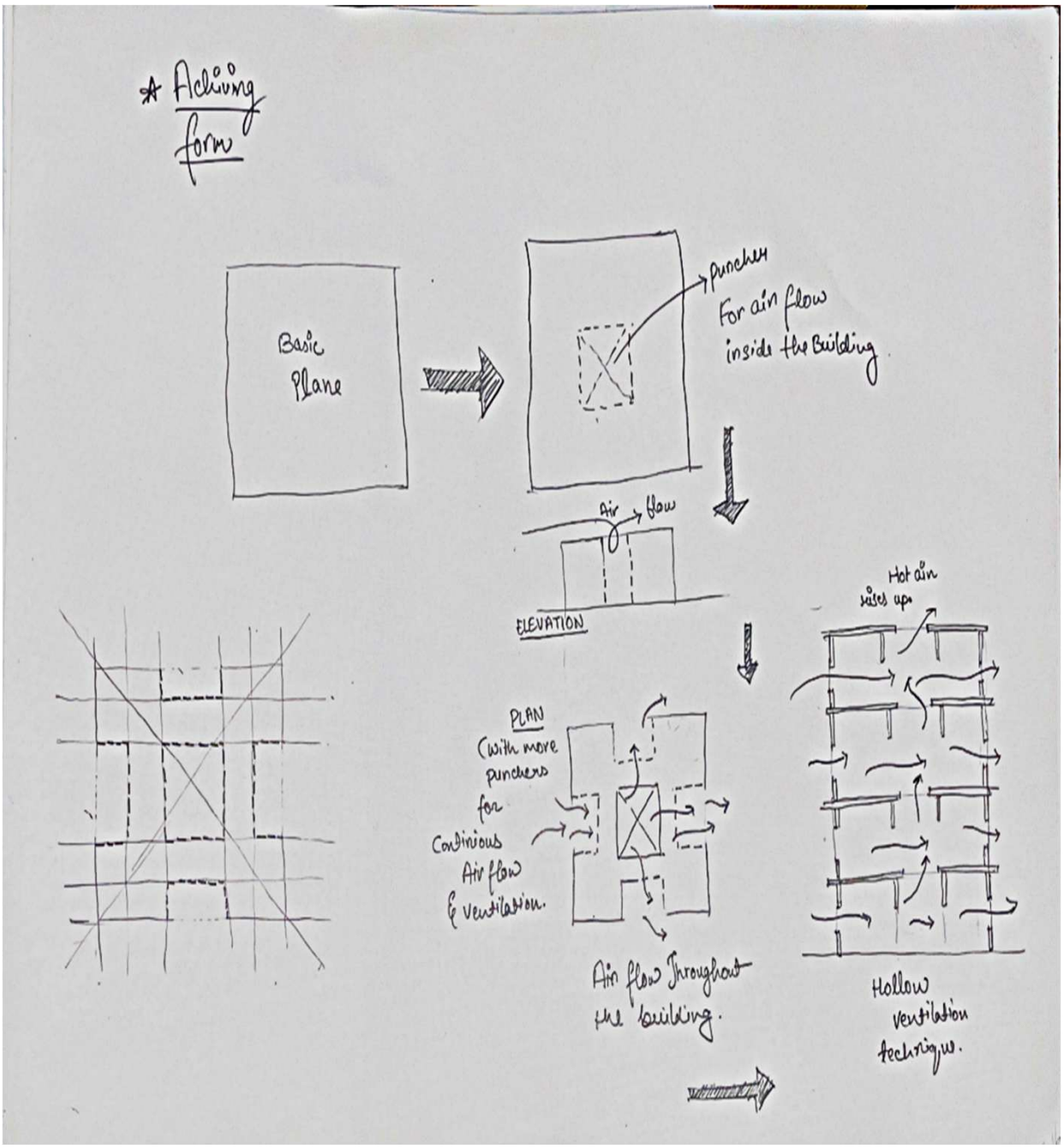
2. **Central Courtyard for Ventilation**
   - A central open void or courtyard is introduced within the massing to function as a natural ventilation shaft.
   - Hot air rises and exits through this core, while cooler air is drawn in from the periphery—creating a stack effect.

3. **Horizontal and Vertical Air Circulation**
   - The plan promotes airflow across multiple units, as openings and voids are aligned both horizontally and vertically.
   - This ensures each unit receives cross-ventilation, enhancing comfort and reducing internal heat gain.

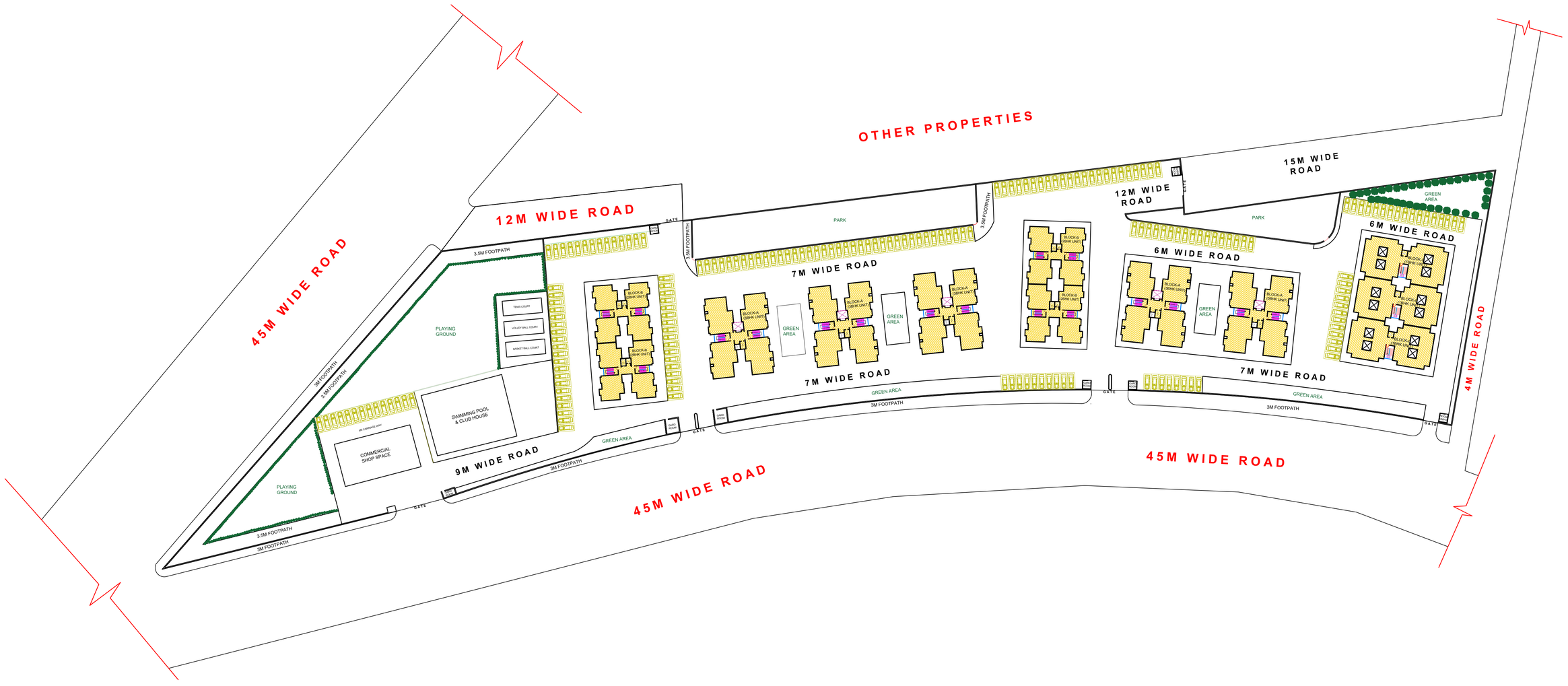
4. **Environmental & Economic Benefits**
   - Passive cooling techniques reduce the need for artificial air conditioning, thus lowering energy consumption.
   - The strategy aligns with low-cost housing objectives, ensuring sustainability without increased construction costs.

5. **Adaptability and Scalability**
   - The modular nature of the form allows replication in various site conditions and climates, making it a scalable solution for urban low-income housing.

Reducing energy consumption
Creating natural ventilation

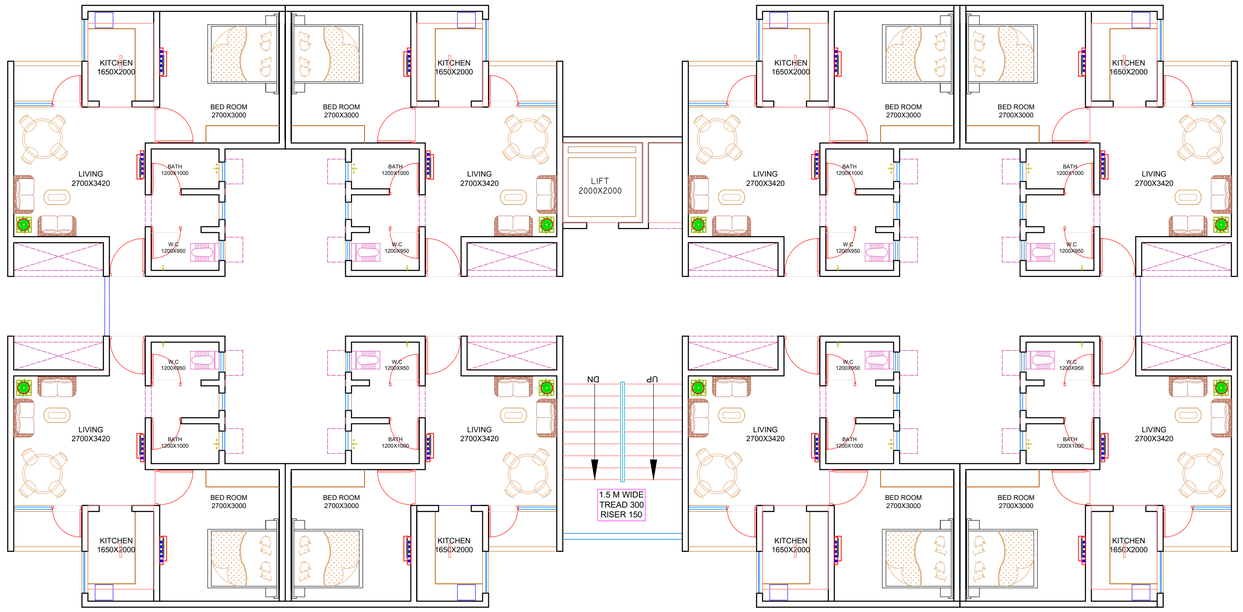


CHAPTER 06
ARCHITECTURAL DRAWINGS

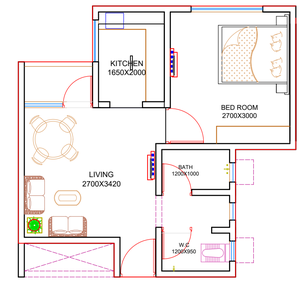


AFFORDABLE GROUP HOUSING
SITE PLAN

ABHIJEET SINGH	
B.ARCH 5th YEAR(10th) SEM	
1200101001	
AR.ANKITA GUPTA	



TYPE-C BLOCK
(1BHK)



TYPE-C
UNIT LAYOUT
(1BHK)

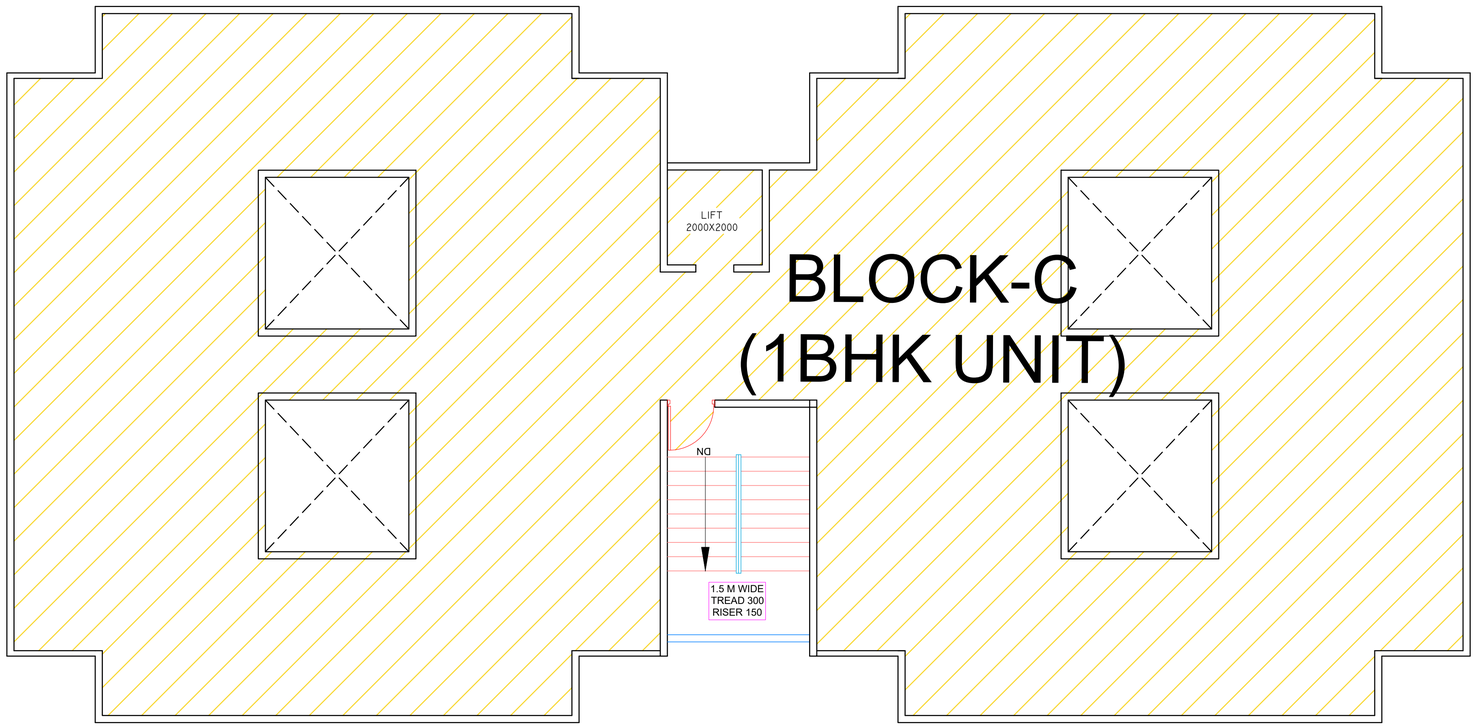
UNIT CARPET AREA- 36.5 SQ.MT.
CARPET AREA(8 UNITS)- 292 SQ.MT.

UNIT BUILT UP AREA- 38SQ.MT.
BUILT UP AREA(8 UNITS)- 304 SQ.MT.

CIRCULATION AREA (8 UNITS)- 66.99 SQ.MT.
SUPER BUILTUP AREA (8 UNITS)- 319.31 SQ.MT.

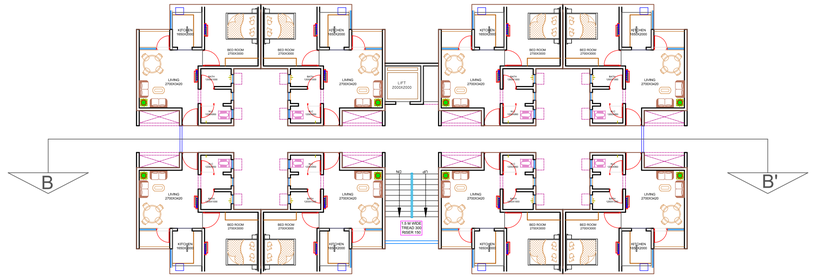
AFFORDABLE GROUP HOUSING
FLOOR PLAN

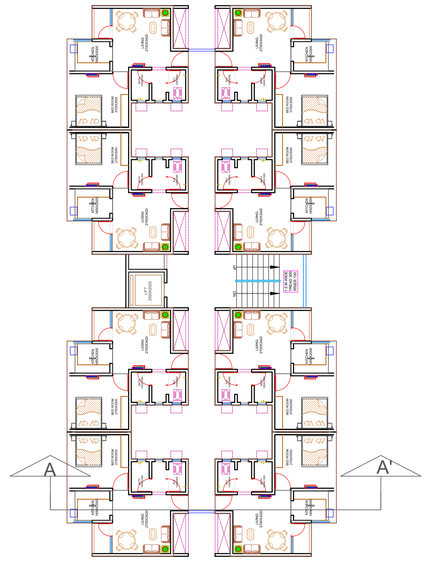
ABHIJEET SINGH
B.ARCH 5th YEAR(10th) SEM
1200101001
AR.ANKITA GUPTA



AFFORDABLE GROUP HOUSING
TERRACE PLAN BLOCK-C (1BHK)

ABHIJEET SINGH
B.ARCH 5th YEAR(10th) SEM
1200101001
AR.ANKITA GUPTA





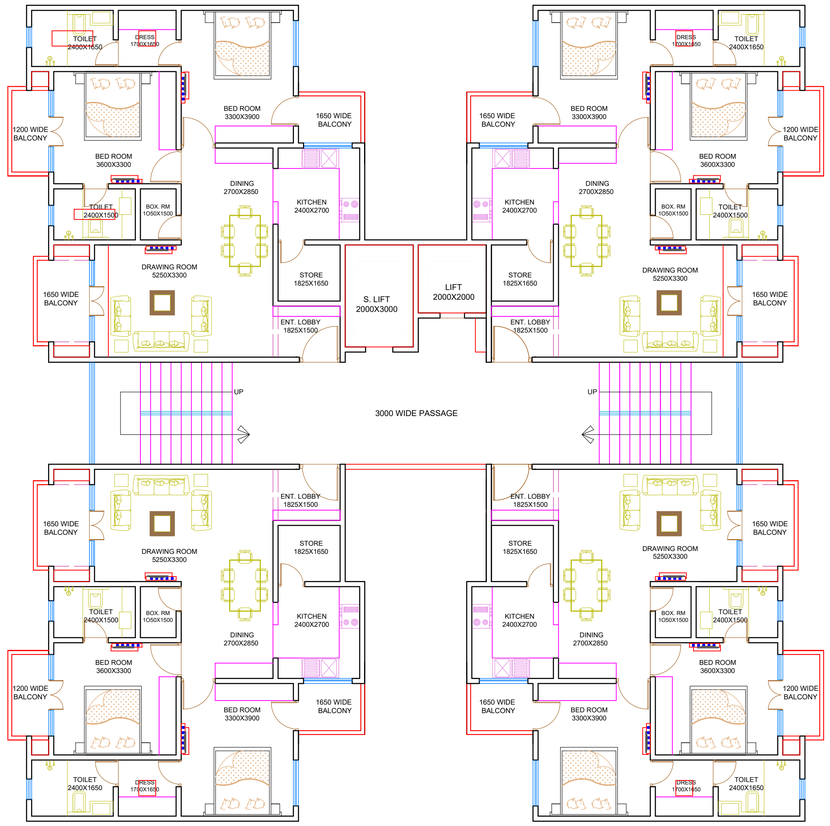
AFFORDABLE GROUP HOUSING
TYPE-C BLOCK (1BHK)
SECTION

ABHIJEET SINGH

B.ARCH 5th YEAR(10th) SEM

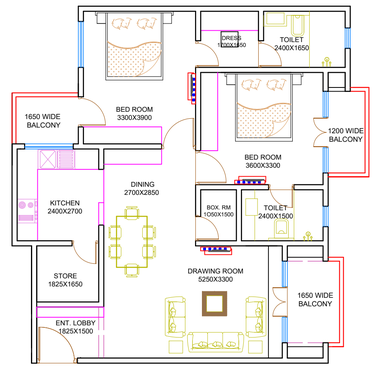
1200101001

AR.ANKITA GUPTA



TYPE-B BLOCK (2BHK)

TYPE-B UNIT LAYOUT (2BHK)



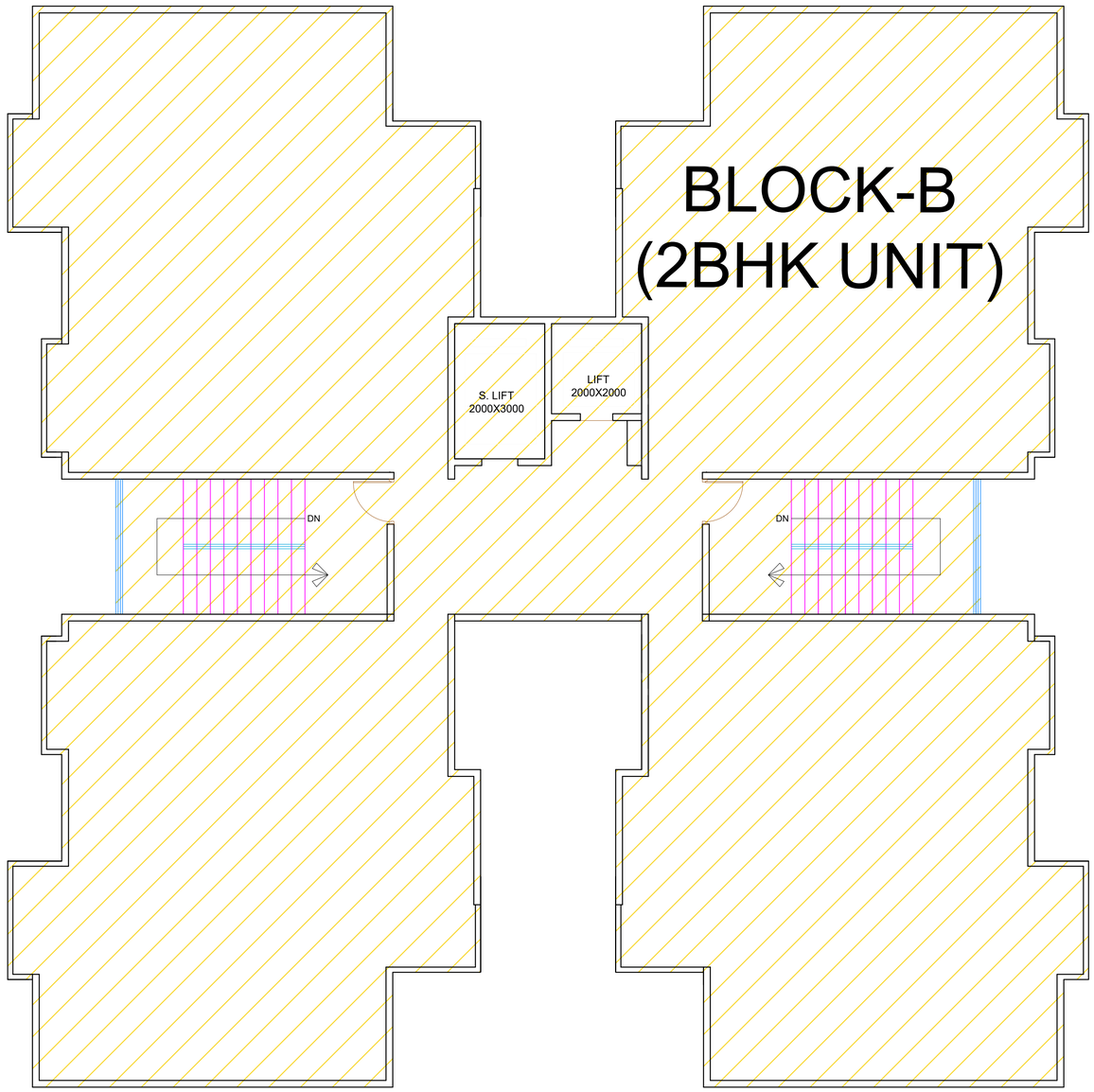
UNIT CARPET AREA- 84.59 SQ.MT.
CARPET AREA(4 UNITS)- 338.36 SQ.MT.

UNIT BUILT UP AREA- 95.67 SQ.MT.
BUILT UP AREA(4 UNITS)- 382.64 SQ.MT.

CIRCULATION AREA (4 UNITS)- 63.00 SQ.MT.
SUPER BUILTUP AREA (4 UNITS)- 445.64 SQ.MT.

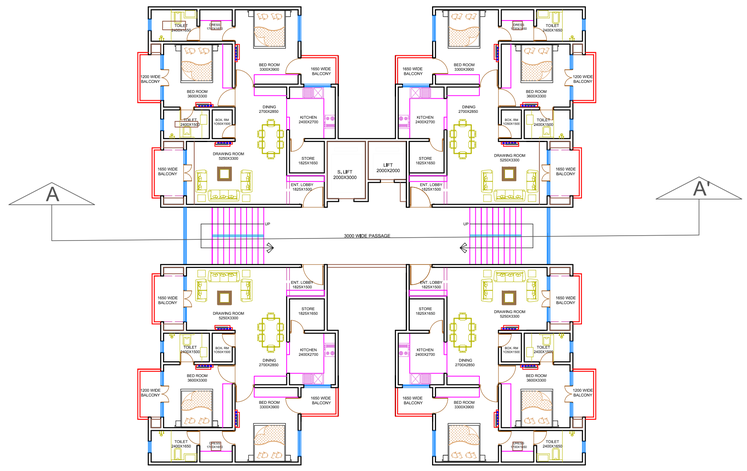
AFFORDABLE GROUP HOUSING
FLOOR PLAN

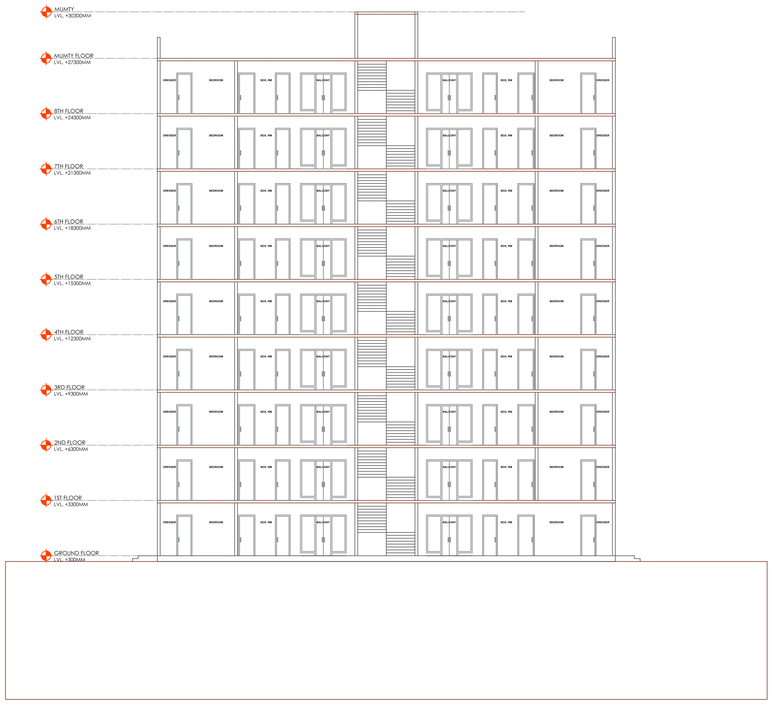
ABHIJEET SINGH
B.ARCH 5th YEAR(10th) SEM
1200101001
AR.ANKITA GUPTA

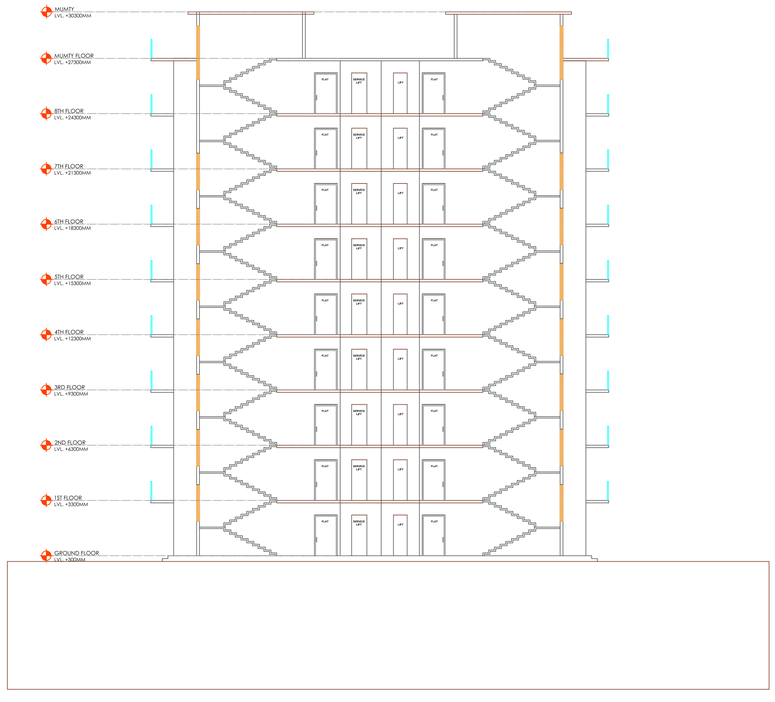


AFFORDABLE GROUP HOUSING
TERRACE PLAN BLOCK-B (2BHK)

ABHIJEET SINGH
B.ARCH 5th YEAR(10th) SEM
1200101001
AR.ANKITA GUPTA

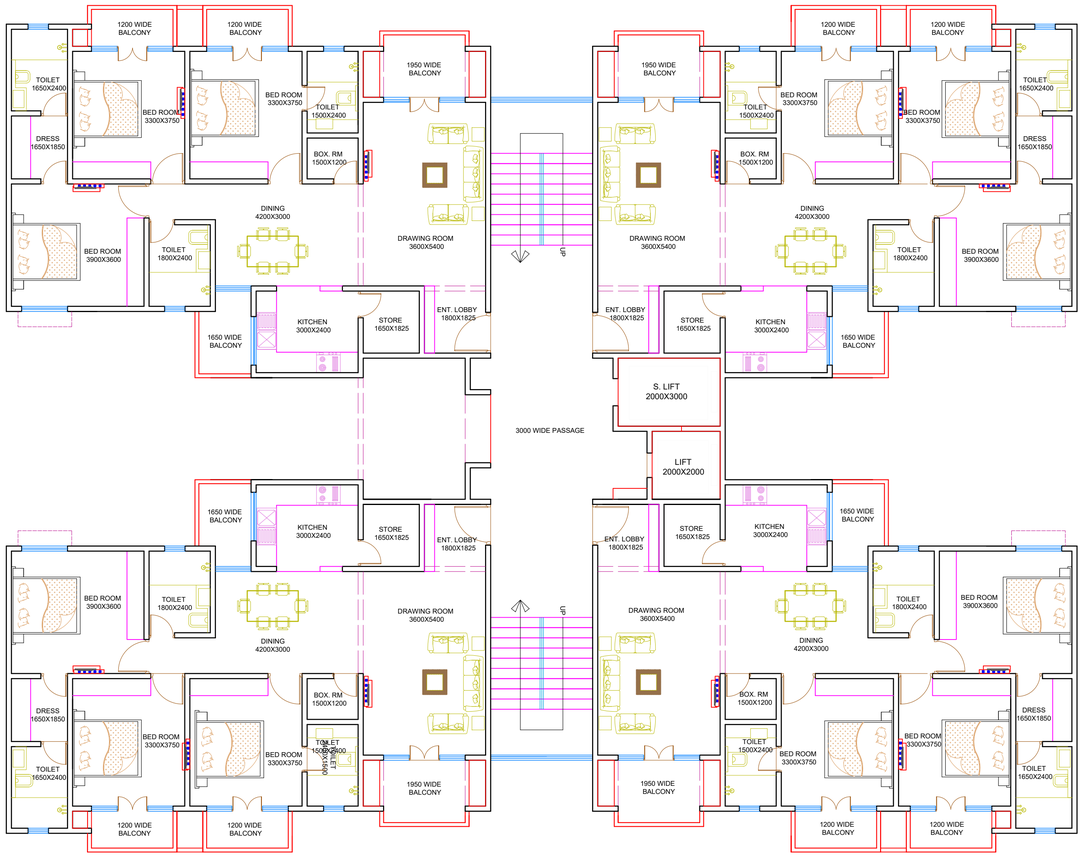






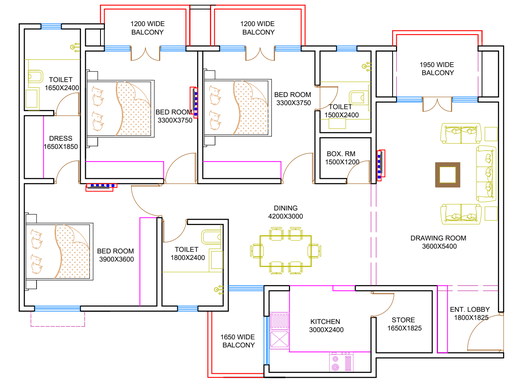
AFFORDABLE GROUP HOUSING
TYPE-B BLOCK (2BHK)
SECTION

ABHIJEET SINGH
B.ARCH 5th YEAR(10th) SEM
1200101001
AR.ANKITA GUPTA



TYPE-A BLOCK (3BHK)

TYPE-A UNIT LAYOUT (3BHK)



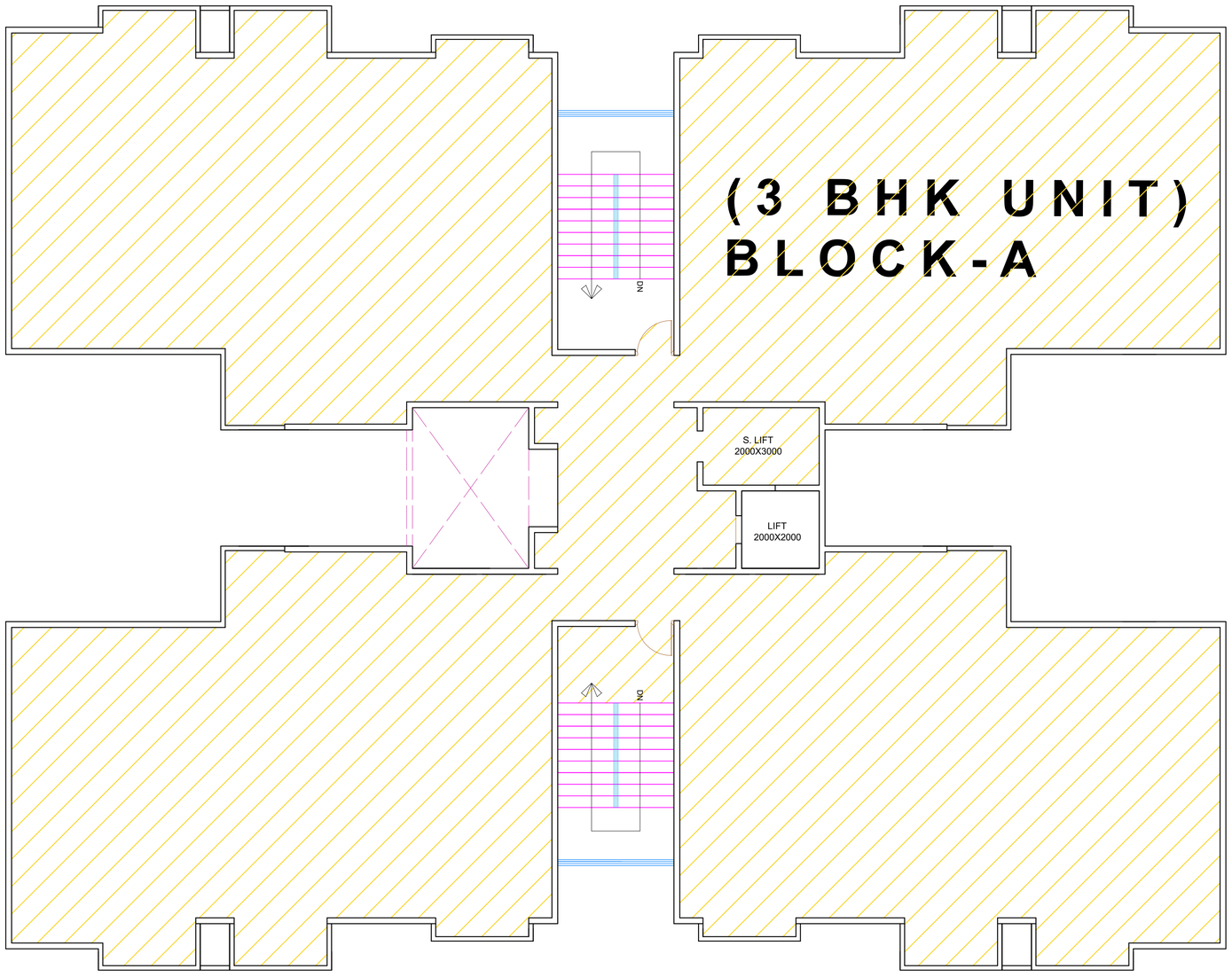
UNIT CARPET AREA- 119.07 SQ.MT.
CARPET AREA(4 UNITS)- 476.28 SQ.MT.

UNIT BUILT UP AREA- 133.49 SQ.MT.
BUILT UP AREA(4 UNITS)- 533.96 SQ.MT.

CIRCULATION AREA (4 UNITS)- 63.90 SQ.MT.
SUPER BUILTUP AREA (4 UNITS)- 589.13 SQ.MT.

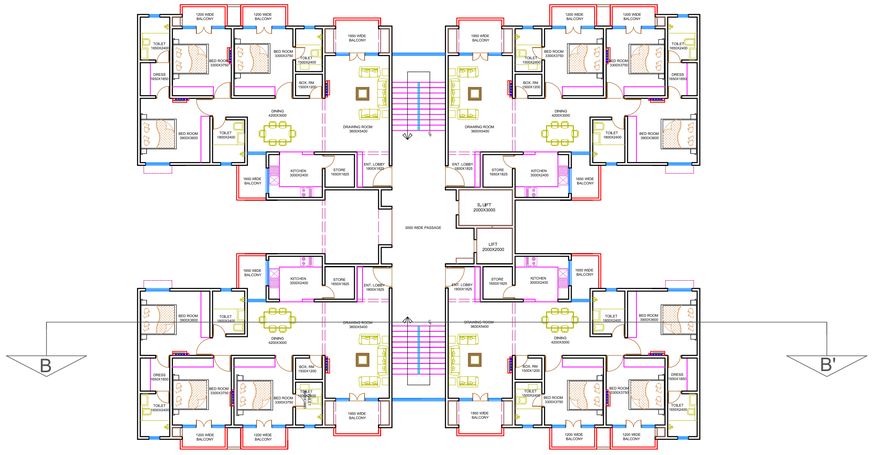
AFFORDABLE GROUP HOUSING
FLOOR PLAN

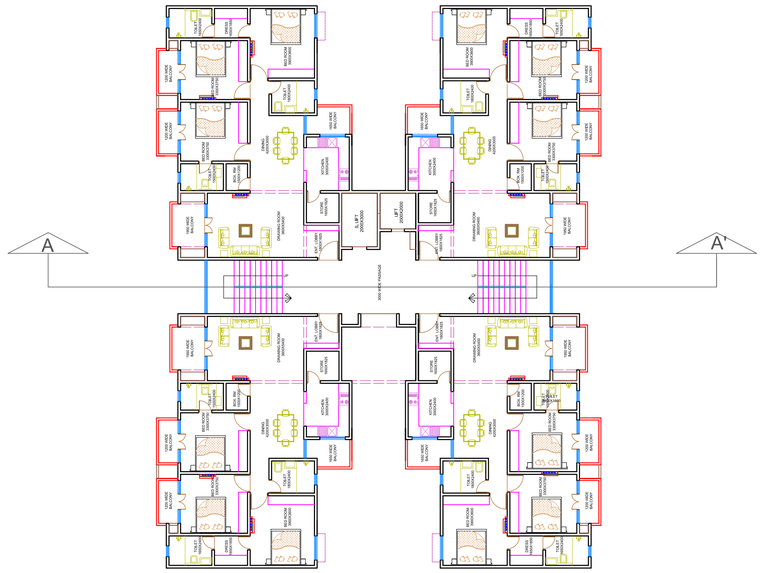
ABHIJEET SINGH
B.ARCH 5th YEAR(10th) SEM
1200101001
AR.ANKITA GUPTA

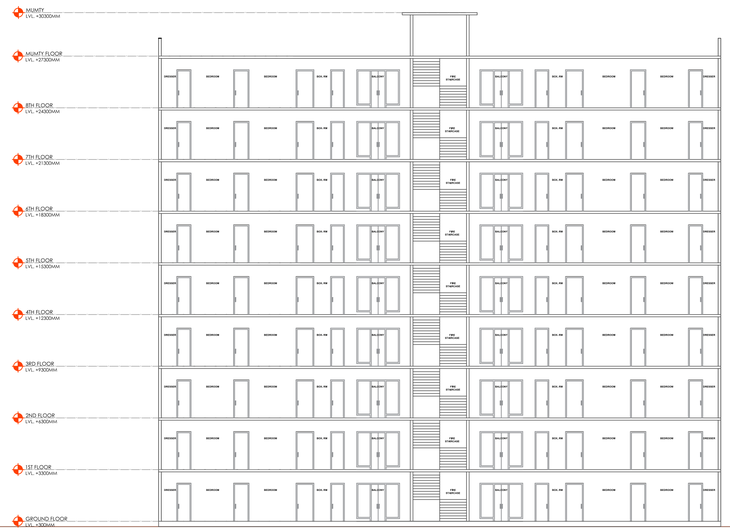


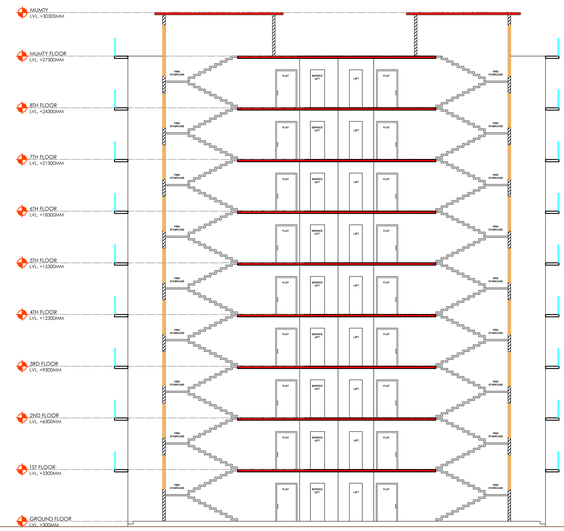
AFFORDABLE GROUP HOUSING
TERRACE PLAN BLOCK-A(3BHK)

ABHIJEET SINGH
B.ARCH 5th YEAR(10th) SEM
1200101001
AR.ANKITA GUPTA









AFFORDABLE GROUP HOUSING
TYPE-A BLOCK (3BHK)
SECTION

ABHIJEET SINGH

B.ARCH 5th YEAR(10th) SEM

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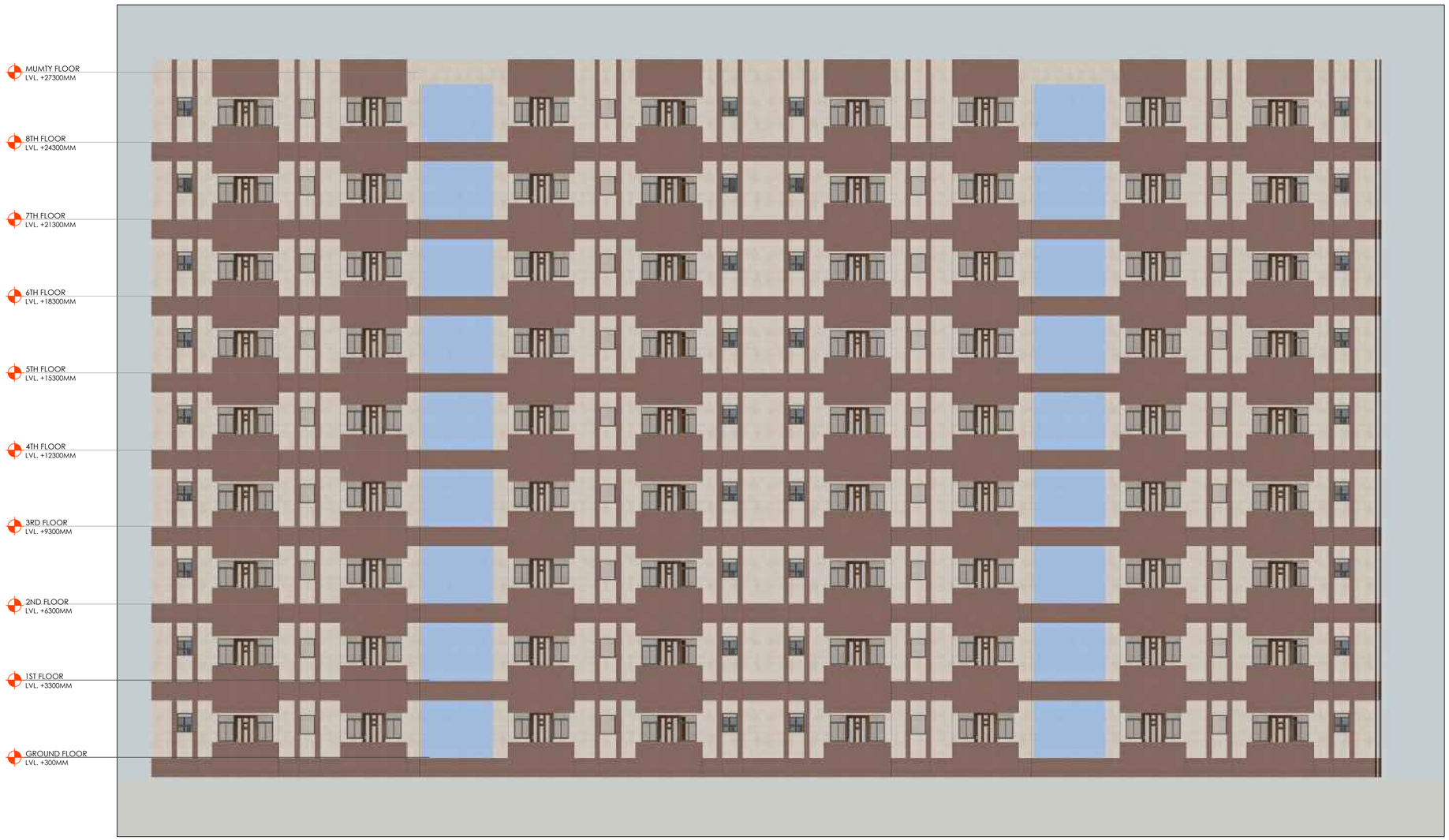

AFFORDABLE GROUP HOUSING
ELEVATION

ABHIJEET SINGH

B.ARCH 5th YEAR(10th) SEM

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AR.ANKITA GUPTA

Architectural Views

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B.Arch 5th Year.
10th Semester .
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SCHOOL BUS
309
309
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SCHOOL BUS
STOP