THESIS REPORT ON

URBAN OASIS

NOIDA SECTOR 150, INDIA.

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

BACHELOR OF ARCHITECTURE

by
KAUSHLENDRA SINGH CHAUHAN
(1150101035)

Under the guidance of
AR. VARSHA VERMA

SESSION
2019/20

TO THE
SCHOOL OF ARCHITECTURE
BABU BANARASI DAS UNIVERSITY
LUCKNOW

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

CERTIFICATE

I hereby recommend that the thesis entitled, "**URBAN OASIS, NOIDA SECTOR 150**" 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.

Prof. Mohit Kumar Agarwal
Dean of Department

Prof. Sangeeta Sharma
Head of Department

Recommendation Accepted

Not Accepted

External Examiner

External Examiner

BABU BANARASI DAS UNIVERSITY, LUCKNOW

CERTIFICATE OF THESIS SUBMISSION FOR EVALUATION

1. Name :……...……...
2. Roll No.. : ……...
3. Thesis title: ……
……..…
4. Degree for which the thesis is submitted: ……...
……..
5. Faculty of the University to which the thesis is submitted.....
..……

6. Thesis Preparation Guide was referred to for preparing the thesis.	YES/NO
7. Specifications regarding thesis format have been closely followed.	YES/NO
8. The contents of the thesis have been organized based on the guidelines.	YES/NO
9. The thesis has been prepared without resorting to plagiarism.	YES/NO
10. All sources used have been cited appropriately.	YES/NO
11. The thesis has not been submitted elsewhere for a degree.	YES/NO
12. Submitted 4 spiral bound copies plus one CD.	YES/NO

……..
(Signature(s) of the supervisor)
Name:

……....
(Signature of the Candidate)
Name:
Roll No.:

ACKNOWLEDGEMENT

First and foremost gratitude towards the almighty "**GOD**" for his blessings.

I am thankful to **Ar. ARVIND KUMAR SINGH, Prof. Keshav Kumar, Ar SANGEETA SHARMA** and all my faculty members who have been extremely co-operative since the very beginning and who helped me to utilize my skills and creativity to the utmost.

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Special thanks to my seniors **AR. SHUBHA SHUKLA, AR. SHAKCHI SINGH, AR. TABISH KHAN** for their guidance and support regarding the studies for this project as well as the whole 5 years of study.

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At last but not the least, I have no words to express my gratitude for the love and affection of my parents who gave me support at every step of my life. So, this thesis is dedicated to them.

-KAUSHLENDRA SINGH CHAUHAN

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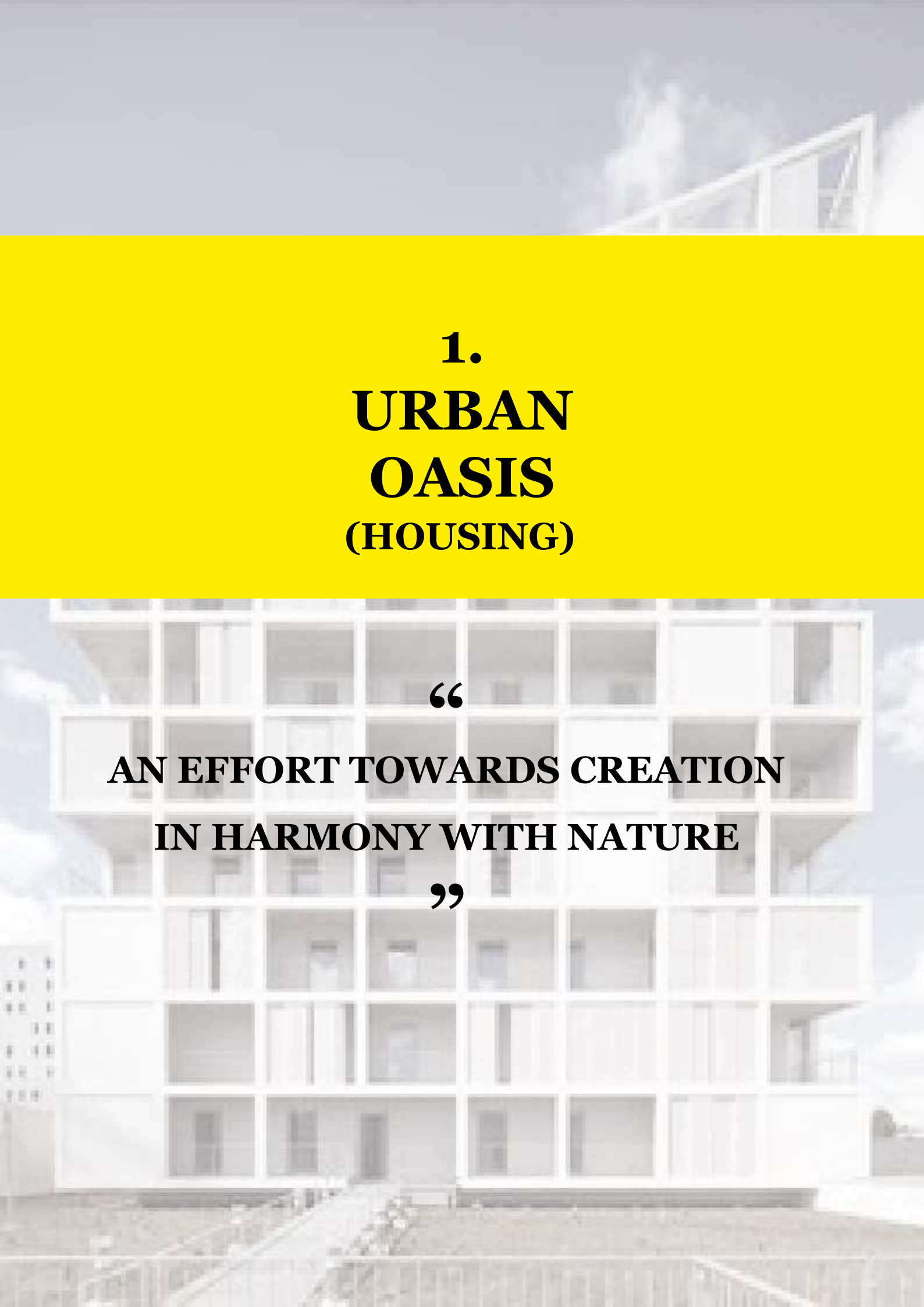
CONTENTS



1.
URBAN OASIS
(HOUSING)

“
AN EFFORT TOWARDS CREATION
IN HARMONY WITH NATURE
”

INTRODUCTION

The sustainability can be defined as MEETING THE NEEDS OF TODAY WITHOUT COMPROMISING THE NEEDS OF FUTURE GENERATIONS. Sustainable housing has the potential to produce good quality housing at a price that is affordable both in the short and long term. Thus, sustainable housing must aim at ECONOMIC, SOCIAL AND ENVIRONMENTAL SUSTAINABILITY FROM PLANNING TO IMPLEMENTATION PHASE and at the same time result in housing that is AFFORDABLE, ACCESSIBLE AND ENVIRONMENTALLY LESS DAMAGING

The National Urban Housing and Habitat Policy-2007 intends to promote sustainable development of habitat in India with a view to ensuring equitable supply of land, shelter and services at affordable prices to all sections of society

Not withstanding numerous attempts,sustainable housing has remained difficult to define, yet it should be coherent to certain

CHARACTERISTICS OF SUSTAINABLE DEVELOPMENT

(1) help for the very poor because they are left with no option other than to destroy their environment,
(2) the idea of self-reliant development, within natural resource constraints,
(3) the idea of cost-effective development, meaning thereby that development should not degrade environmental quality, nor should it reduce productivity in the long run,
(4) the issues of disease control, appropriate technologies, food security, clean water and shelter for all,
(5) the notion that people-centred participatory initiatives are needed; human beings in other words, are the resources in the concept.

FROM THIS PERSPECTIVE THE SUSTAINABLE HOUSING POLICY SHOULD INCORPORATE THREE OBJECTIVES :

- that future policies must provide the basis for household improvement.
- policies which could result in sustainable housing improvement is concerned with the empowerment of poor people.
- The third objective of such policies must be to psychologically give the lower segment of the urban society a feeling of self-worth.

Thus, in order to be sustainable, housing initiatives must be economically viable, socially acceptable and affordable, technically feasible and environmentally-friendly.

HISTORY AND BACKGROUND

Although many consider it a contemporary movement, fueled by the concerns of climate change, sustainability has been a component of architectural design throughout history.

Today's green designers are not the first to consider the importance of utilizing renewable or organic resources; architects have been building with the environment in mind for centuries.Simple and smart sustainable design methods, such as building with local materials or harnessing natural energy, were employed before technological advancements in construction. Built in the 12th Century, the Cambodian temple complex Angkor Wat, featured a rainwater irrigation system that collected water during monsoon season, which allowed for rice farming during the drier months.

Today's environmental and economic challenges have once again brought sustainability to the forefront of design and production methods. Many architectural firms and building contractors are now very concerned with creating eco-friendly structures

NEED OF TOPIC .....?

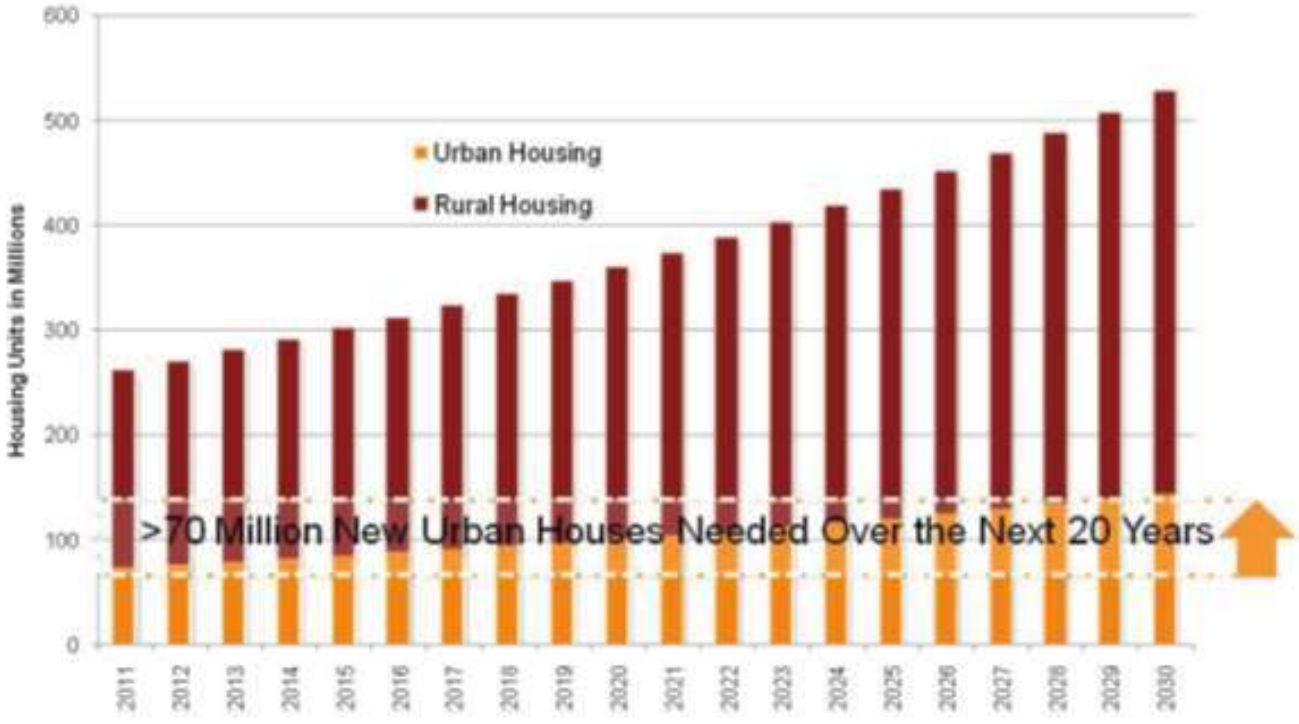
Potential contribution of housing to sustainability

It is pertinent to note that housing sector can significantly contribute to sustainability because of its close association with environmental aspects:

1. Buildings consume large amounts of natural and man-made resource in construction, maintenance and continued use by society.
2. Buildings are a fixed asset with a long operational lifespan.
3. Buildings are among the fundamental necessity for a good quality of life, and thus have implications beyond housing affecting transport, health, employment and community.
4. Buildings are amenable to numerous ways in which recycled materials can be reused for construction.
5. Large number of innovations are available for efficiently operating the buildings including use of recycled material for construction, wastewater treatment and use,energy efficiency, solar heating, passive solar heating, creating urban green spaces in proximity to compact housing.

URBANIZATION SCENARIOS

In 1950, developing nations accounted for less than 40% of the world's urban population. By 2005 that figure reached 70%. It is projected that urban population in developing nations will continue to grow reaching 80% by 2030. By 2050, 93% of the urban population growth will occur in developing countries [23]. One of the major challenges faced by cities today is the growing number of urban dwellers living in slum conditions. About one third of the world urban population live in these conditions and if populations continue to grow it is estimated that 889 million people will live in slums by 2020.The slum population faces challenges ranging from insecure tenure and poor shelter conditions to the lack of access to basic infrastructure facilities like water supply, sanitation and solid waste disposal.This is likely to intensify as over 70 million new
urban housing units will be needed over the next 20 years in India



Source: Planning Commission 11th Plan Report & EDS Analysis

BALANCING ENVIRONMENT WITH URBAN GROWTH

TO BALANCE ENVIRONMENT WITH URBAN GROWTH SEVERAL CONCEPTS NEED TO BE DERIVED THESE CONCEPTS PROVIDE US NETWORKED AND INTRICATELY LINKED ACTION POINTS THAT WOULD NEED TO BE INTEGRATED TO ACHIEVE A BALANCE BETWEEN URBANIZATION AND ENVIRONMENT. THESE INCLUDE:

1. **SUSTAINABLE COMMUNITIES**
2. SUSTAINABLE CITIES
3. LIVEABLE CITIES
4. GREEN CITIES
5. PROSPEROUS CITIES
6. ECO-CITIES
7. HEALTHY CITIES
8. RESILIENT CITIES

AIMS AND OBJECTIVES

AIM

TO CREATE A DEVELOPMENT THAT SEPARATES FROM CURRENT CONCRETE JUNGLE CONCEPT OF HOUSING

OBJECTIVES

- CREATE A DEVELOPMENT WHICH IS SUSTAINABLE, INNOVATIVE AND RESOURCE EFFICIENT THROUGH THE INCORPORATION OF A RANGE OF ENVIRONMENTAL FEATURES TO REDUCE THE DEVELOPMENT'S CARBON FOOTPRINT.
- PROMOTE TENANT/COMMUNITY INVOLVEMENT IN THE DESIGN AND DECISION MAKING PROCESS.
- OBSERVE THE SITE'S CONTEXT AND INTEGRATE ANY NEW DEVELOPMENT WITH THE SURROUNDING BUILT ENVIRONMENT AT BOTH A PHYSICAL AND COMMUNITY BASED LEVEL.
- PROVIDE A SAFE AND PLEASANT ENVIRONMENT PROVIDING SECURITY, AS WELL AS BEING MODERN AND ATTRACTIVE.
- RE-ESTABLISH CONNECTIVITY WITH THE EXISTING TOWN THROUGH ACCESSIBLE AND LEGIBLE PEDESTRIAN AND VEHICULAR ROUTES WITH APPROPRIATE SUPERVISION.
- PROVIDE A MIX OF HOUSE TYPES, WITH HOUSING DESIGNED ON A SCALE APPROPRIATE TO THE SURROUNDING ENVIRONS.

- MEET THE NEEDS OF THE COMMUNITY IN TERMS OF CHOICE OF HOUSING THROUGH MIXED TENURE AND AFFORDABILITY.
- PROVIDE HOUSING WHICH IS ACCESSIBLE AND ADAPTABLE BY OBSERVING BARRIER FREE AND HOUSING FOR VARYING NEEDS PRINCIPLES.
- CREATE A PLATFORM FOR THE ANALYSIS, INVESTIGATION OF NEED AND USE OF APPROPRIATE COMMUNITY FACILITIES, WITHIN THE WIDER KINCARDINE AREA.
- TO CREATE A "SENSE OF PLACE".

SCOPE

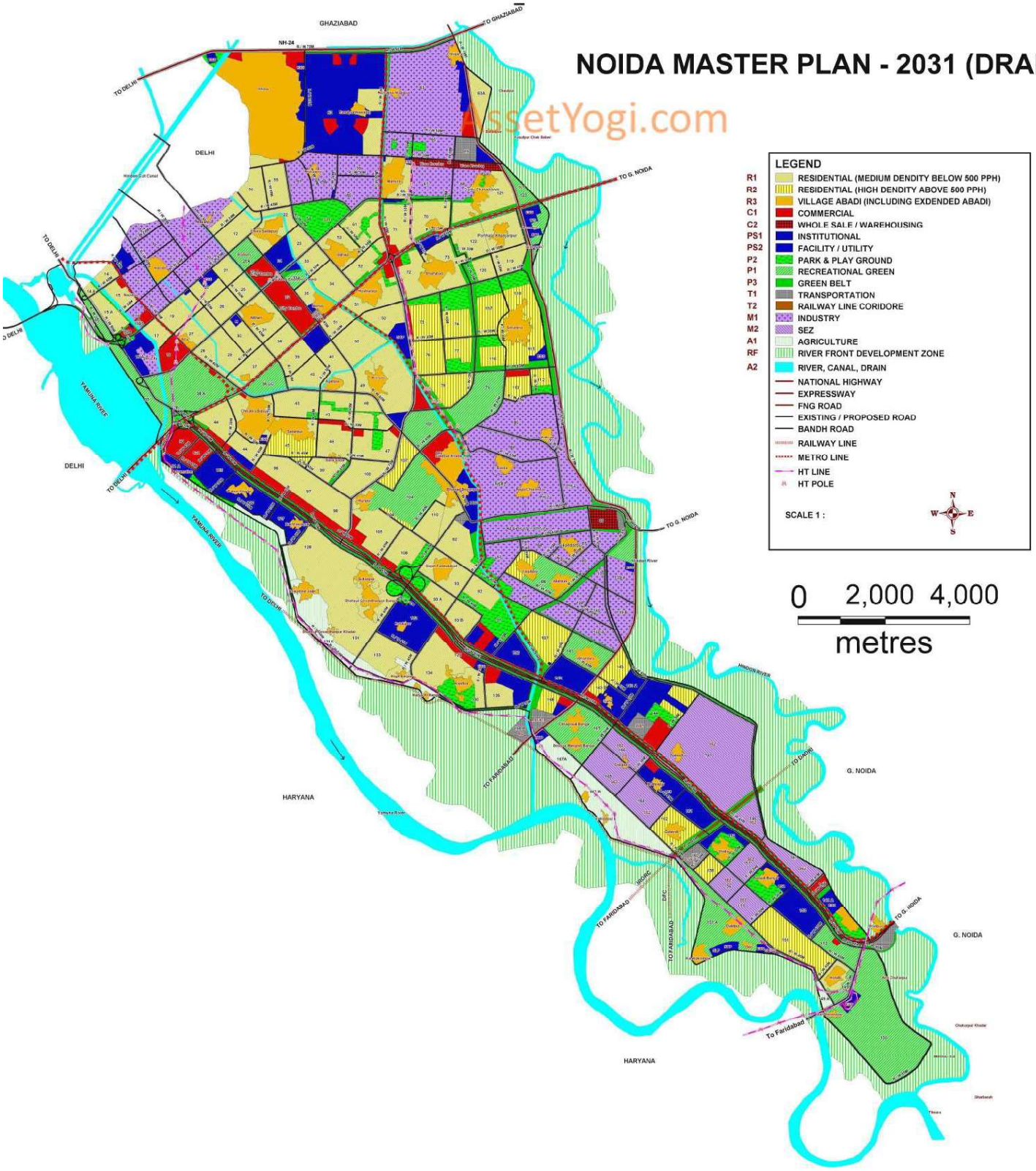
PROJECT WILL INCLUDE HABITAT FOR PEOPLE INSPIRED FROM URBAN SOCIOLOGIST RAY OLDENBURG PHILOSOPHY, ACCORDING TO HIM PEOPLE NEED THREE TYPES OF PLACES TO FEEL FULFILLED:

"HOME- PRIVATE RELIEF,
WORK - ECONOMIC ENGAGEMENT
LEISURE- SOCIAL INTEGRATION."

RISKS

PRODUCING ANOTHER VERTICAL CONCRETE TOWER THAT DOESNOT SUITS WITH CURRENT REQUIREMENT AND ALSO THREATEN THE FUTURE GENERATIONS NEEDS

NOIDA MASTER PLAN - 2031 (DRAFT)



Prepared By :-

New Okhla Industrial Development Authority &

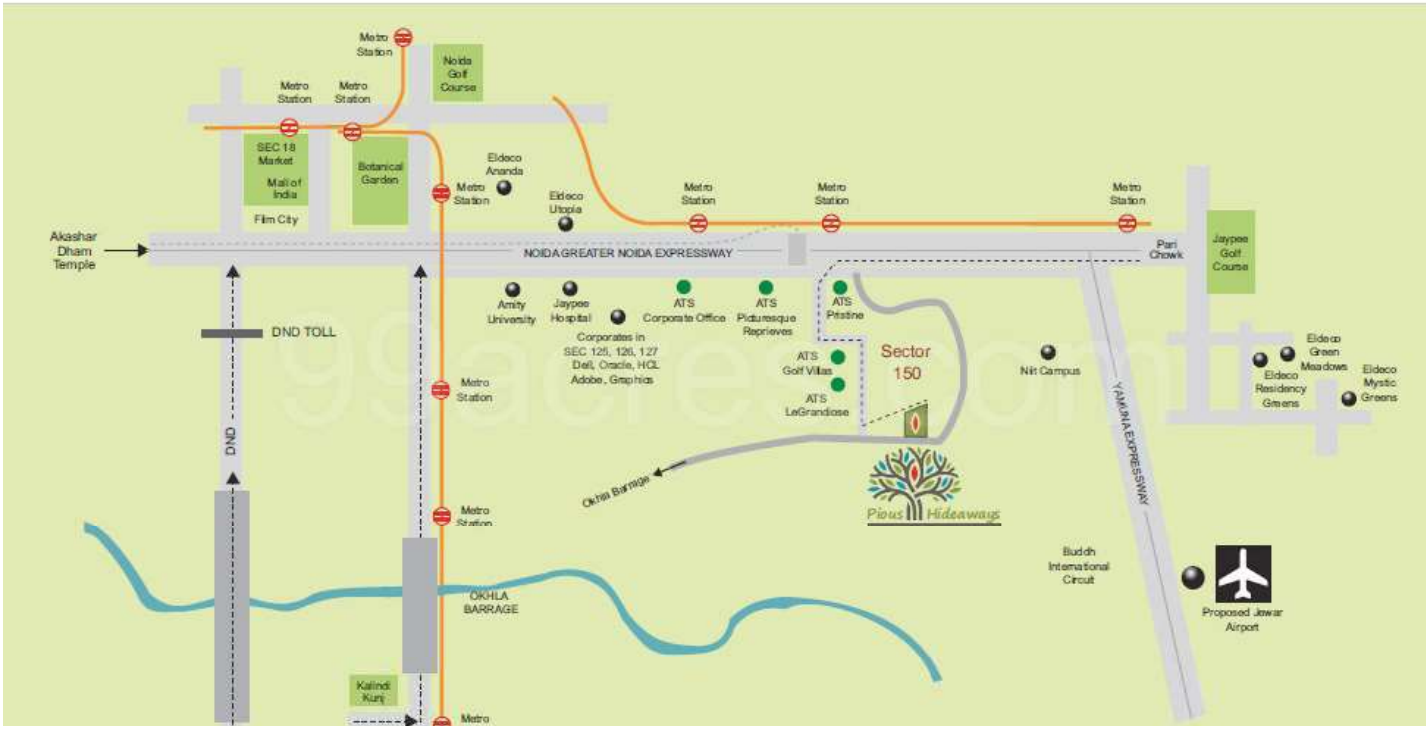
N.C.R. Planning Cell, Town & Country Planning Department, Ghaziabad

Note: -
1-Area of village abadi is indicative only. Its extents shall be determined on the basis of actual field survey and revenue records.
2- Boundary of Notified Area is Tentative. It shell be determined on the basis of revenue records.

SITE DETAILS-1

LOCATION

RERA Registered Phase 1 Registration No: UPRERAPRJ442430



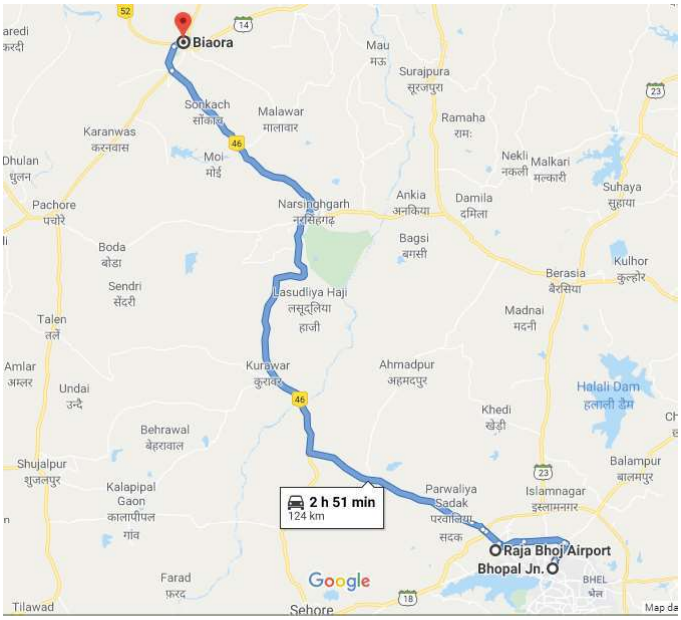
MAP VIEW

SATELLITE VIEW

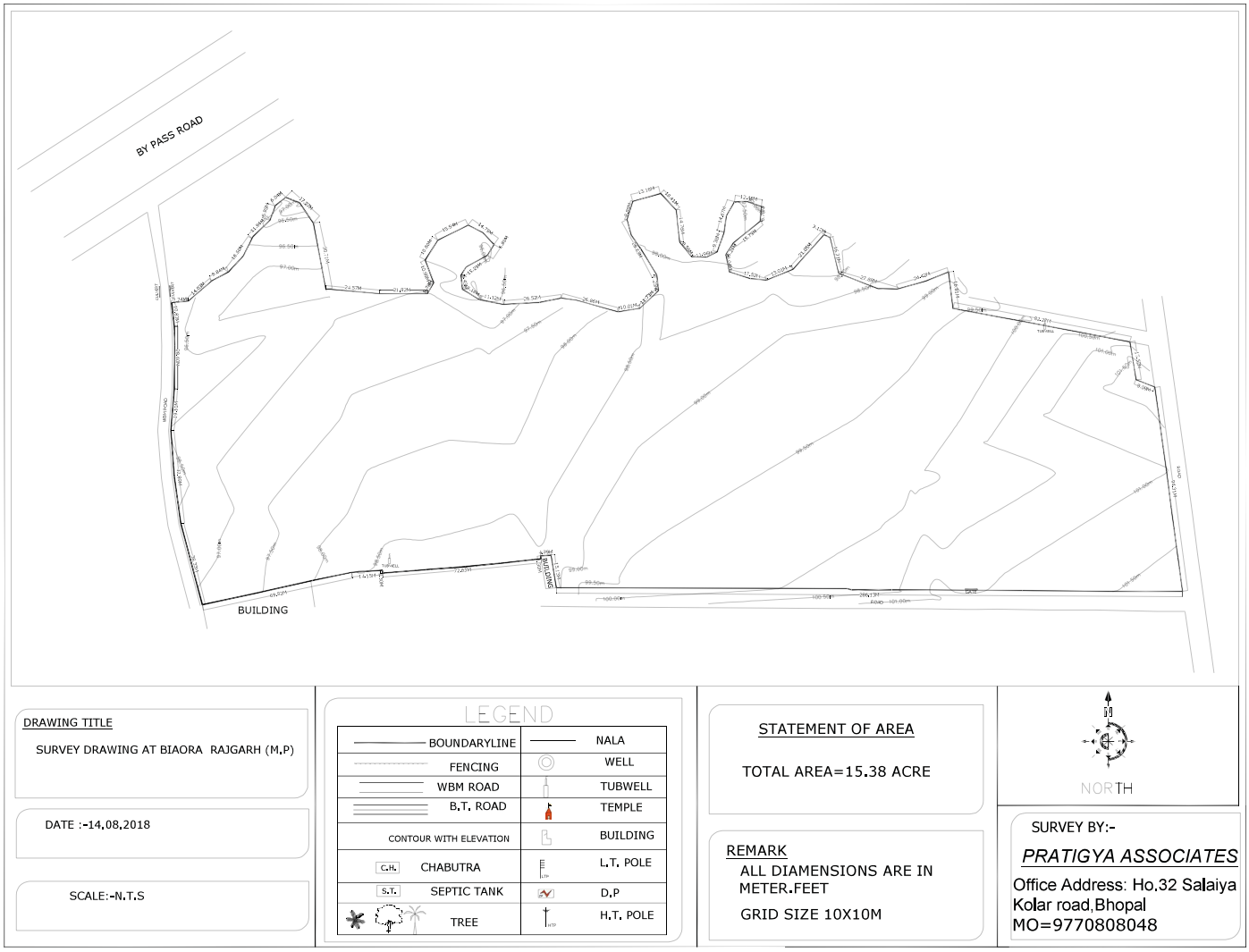
Possession Under Construction Mar 2026 No. of Towers: 12 Towers	Configurations Apartment 3 BHK No. of Floors: 32 Floors	New Booking Base Price ₹ 63 - 79.56 L As per project adver-tisers View Offers & Deals No. of Units: 749 Units	Total Project Area: 17.8 acres (72.03K sq.m.) Open Area: 80% by ATS BUILDERS

SITE DETAILS-2

SATELLITE VIEW



MAP VIEW



DRAWING TITLE

SURVEY DRAWING AT BIAORA RAJGARH (M.P)

DATE :-14.08.2018

SCALE:-N.T.S

LEGEND

BOUNDARYLINE		NALA	
FENCING		WELL	
WBM ROAD		TUBWELL	
B.T. ROAD		TEMPLE	
CONTOUR WITH ELEVATION		BUILDING	
C.H.	CHABUTRA		L.T. POLE
S.T.	SEPTIC TANK		D.P
	TREE		H.T. POLE

STATEMENT OF AREA

TOTAL AREA=15.38 ACRE

REMARK

ALL DIAMENSIONS ARE IN METER.FEET

GRID SIZE 10X10M

NORTH

SURVEY BY:-

PRATIGYA ASSOCIATES

Office Address: Ho.32 Salaiya Kolar road,Bhopal
MO=9770808048

PROOF FOR SITE

SITE DETAILS-3

SATELLITE VIEW

PROJECT DETAILS

APPROACH

IGI AIRPORT-T3	13 KMS
PROPOSED METRO LINES	1 KMS
NH-8	6 KMS
DWARKA EXPRESSWAY	1 KM

RAHEJA™

To,
The Secretary,
State Expert Appraisal Committee (SEAC),
Bays 55-58, Parytan Bhawan
Ist floor, Sector-2, Panchkula, Haryana.

Subject: Regarding Environmental Clearance for the Proposed Group Housing Project "Raheja Vanya" Village Gopalpur & Dhankot, Sector-99 A, District Gurgaon Haryana

Ref: Terms of Reference vide letter no. F.No. HR/SEAC/305/1679 dated 08/12/2016.

Dear Sir,

We are herewith submitting EIA/EMP Report incorporating general and specific points of Terms of Reference, along with the necessary annexures and documents.

Kindly, issue the Environment Clearance at your earliest.

Thanking You.

Yours Sincerely,

For M/s. Raheja Developers Ltd.

Sajal

Sajal Gupta
Deputy Manager Environment

(Authorized Signatory)

RAHEJA DEVELOPERS LTD.
Regd. Office : W4D, 204/5, Keshav Kunj,
Carippa Marg, Western Avenue,
Sainik Farms, New Delhi-110062 (INDIA)
Telefax : 91-11-29553230

Corporate Office :
Office Space # 406, 4th Floor 'Rectangle-One'
D-4 District Centre Saket, New Delhi - 110017 (INDIA)
Ph.+91-11-40611111, Fax +91-11-40611110
Website : www.raheja.com

S.W.O.T.
ANALYSIS

STRENGTH AND OPPORTUNITY

- HABITAT THAT INDULGE WITH NATURE
- PLANNING STRATEGIES TO USE AVAILABLE RESOURCES IN EFFICIENT MANNER
- SCOPE FOR INCORPORATING COMMUNITY SPACES THAT CAN BE ECONOMICALLY BENEFECIAL FOR HABITANTS
- CREATING SPACES THAT ARE MULTI-DISCIPLINARY

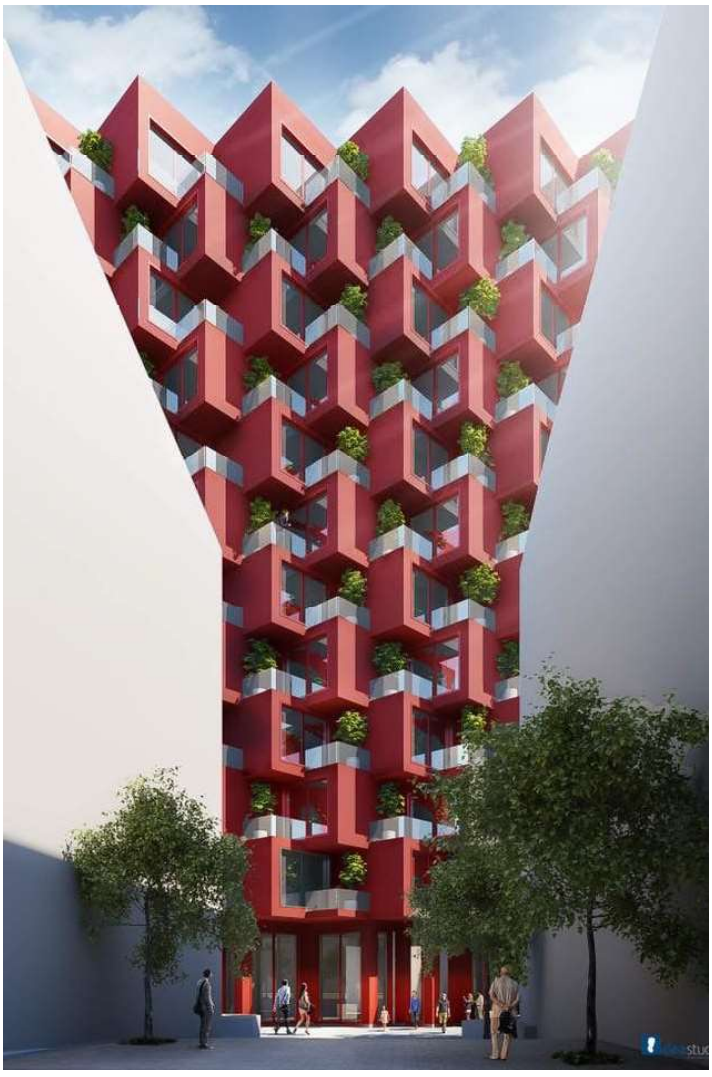
WEAKNESS AND THREATS

- IF DONE IN TYPICAL MANNER WITHOUT CONSIDERING FUTURE ASPECTS; MAY RESULT INCREAMENT OF - "CONCRETE JUNGLE"
- PROVISION OF COMMUNITY SPACES AT GROUND LEVEL DECREASES INTERACTION LEVEL BETWEEN UPPER FLOORS HABITANTS
- MOSTLY THE LAND LOOSES ITS INITIAL BIO-DIVERSITY AFFECTING ECOLOGICAL BALANCE

PROJECT REQUIREMENTS

- HOMES FOR HABITANTS
- GREEN SPACES AND RECREATIONAL SPACES AT GROUND LEVEL
- LIMITED COMMERCIAL SPACES FOR CONVENIANCE OF HABITANTS
- COMMUNITY GATHERING PLACES AT DIFFERENT LEVEL

REFERENCES



NEW DEA STUDIO BUILDING BUILDING IN RED ART & FUNCTION ... 2 IN 1.

AR.CHRIS PRECHT AND HIS WIFE FEI PRECHT HAVE DESIGNED A VERTICAL FARMHOUSE THAT CONNECTS ARCHITECTURE AND AGRICULTURE IN ONE TOWER, BY ONLY USING MODULAR TRIANGULAR VOLUMES.

AR.SANJAY PURI WAS THE WINNER IN THE COMMERCIAL CATEGORY FOR ITS RESERVOIR PROJECT IN RAJASTHAN

AR.SANJAY PURI; THE PRESTIGE UNIVERSITY

SITE STUDY, CASE & LITERATURE STUDY

URBAN OASIS
LIVING IN MIDST OF NATURE MOTHER

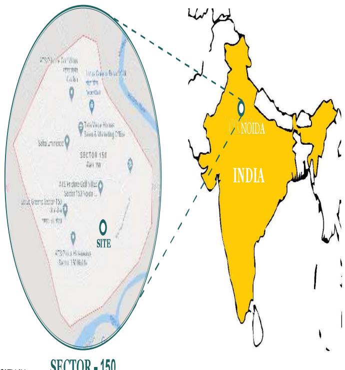
-: SUSTAINABLE ARCHITECTURE PRINCIPLE :-

ENVIRONMENT	ENERGY	EFFICIENCY
USE OF ENVIRONMENT FRIENDLY MATERIALS	ENERGY AND RESOURCE EFFICIENCY	EFFICIENT USE OF SPACE

- RENEWABLE ENERGY GENERATION
- WATER EFFICIENCY
- STORMWATER MANAGEMENT
- EASY MAINTENANCE
- SUPERIOR INDOOR ENVIRONMENT
- SUSTAINABLE MATERIALS
- EFFECTIVE WASTE MANAGEMENT
- SITE SUSTAINABILITY

NOIDA CONSTITUTED UNDER THE **U.P. INDUSTRIAL AREA DEVELOPMENT ACT, 1976** NOIDA, SHORT FOR THE **NEW OKHLA INDUSTRIAL DEVELOPMENT AUTHORITY**, IS A PLANNED CITY UNDER THE MANAGEMENT OF THE NEW OKHLA INDUSTRIAL DEVELOPMENT AUTHORITY (ALSO CALLED NOIDA). IT IS A SATELLITE CITY OF DELHI AND IS PART OF THE NATIONAL CAPITAL REGION OF INDIA. AS PER PROVISIONAL REPORTS OF CENSUS OF INDIA, **THE POPULATION OF NOIDA IN 2011 WAS 642,381.** NOIDA IS LOCATED IN GAUTAM BUDDH NAGAR DISTRICT OF UTTAR PRADESH STATE IN CLOSE PROXIMITY TO NCT OF DELHI. THE DISTRICT'S ADMINISTRATIVE HEADQUARTERS ARE IN THE NEARBY TOWN OF GREATER NOIDA.

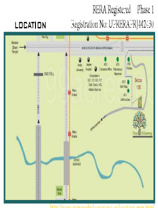
NOIDA WAS RANKED AS THE BEST CITY IN UTTAR PRADESH AND THE BEST CITY IN HOUSING IN ALL OF INDIA IN "BEST CITY AWARDS" CONDUCTED BY ABP NEWS IN 2015. NOIDA REPLACED MUMBAI AS THE SECOND-BEST REALTY DESTINATION, ACCORDING TO AN ANALYST REPORT. ROADS IN NOIDA ARE LINED BY TREES AND **IT IS CONSIDERED TO BE INDIA'S GREENEST CITY WITH NEARLY 50% GREEN COVER, THE HIGHEST OF ANY CITY IN INDIA.**



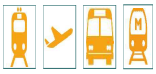
SECTOR - 150

WHY...? NOIDA

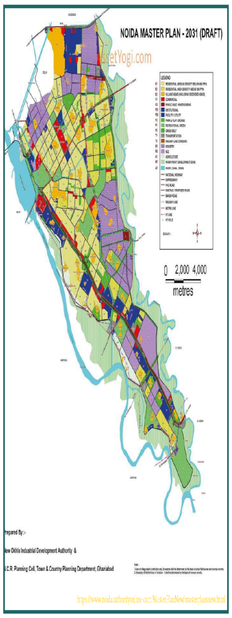
SINCE IT IS THE BEST CITY IN HOUSING AWARDED BY ABP NEWS WITH MORE AND MORE OF CONCRETE JUNGLES SUPPORTED BY MAX TO MAX 80% OPEN SITE SPACE, SO IT IS FAVOURABLE TO PROPOSE AN URBAN HOSUING PROJECT ACTING AS OASIS IN THAT AREA



APPROACH FOR THE SITE

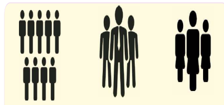


NEW DELHI RAILWAY STATION 12.5 KM	IGI AIRPORT 48.1 KM	IGI AIRPORT 48.1 KM	BUS SHELTER NO. 8 5.4 KM



MASTER PLAN NOIDA 2031

25 KMS SOUTH-EAST OF NEW DELHI	20 KMS NORTH-WEST OF DISTRICT HEADQUARTERS	NOIDA	457 KMS NORTH-WEST OF LUCKNOW



POPULATION 642,381	MALE POPULATION 352,577	FEMALE POPULATION 289,804

MALE LITERACY WAS 92.90% AND FEMALE LITERACY WAS 83.28%
MAJOR RELIGIONS-HINDUISM HANUMAN TEMPLE IN SECTOR 22, THE KALIBARI TEMPLE IN SECTOR 26, THE ISKCON TEMPLE IN SECTOR 33

PROCESS INVOLVED WHILE DERIVING THE IDEA

WHAT	WHY	HOW
"SUSTAINABLE URBAN OASIS"- A HOUSING PROJECT IN MIDST OF CONCRETE JUNGLE WITH INVOLVEMENT OF **TRADITIONAL AGRICULTURAL ACTIVITIES** CONTRIBUTING A RESIDENTIAL AREA WITH FARMLANDS GIVING OPPORTUNITIES FOR LOWER INCOME GROUP AS EMPLOYMENT AND ALSO PURE AND FRESH FOOD FOR NEARBY SOCIETIES THE FOLLOWING IDEA WOULD BE ACHIEVED THROUGH LISTED **SUSTAINABLE ARCHITECTURAL PRINCIPLES**	TO DERIVE A HOUSING WHICH ELIMINATE ISOLATION OF URBAN SOCIETY FROM AGRICULTURAL SOCIETY OF A AGRICULTURAL DOMINATING COUNTRY	AS URBANISATION IS INCREASING AT RAPID STATE A HIGH DEMAND OF HIGH DENSITY HABITABLE SPACES ARE NECESSITY OF FUTURE; HENCE INSPIRED FROM THE IDEA OF HIGH DENSITY HOUSING AND RAPID MOVEMENT OF AGRICULTURAL SKILLED PEOPLE TO CITIES, AN OASIS OF HABITATION IN URBAN SPACE IS PROPOSED WHICH WILL NOT ONLY MEET HIGH DENSITY HOUSING DEMAND BUT WILL ALSO CONTRIBUTE TO AGRICULTURAL SOCIETY

SCHOOL	UNIVERSITY	HOSPITAL	MULTIPLEX	SHOPPING	METRO STATION
DPS NOIDA, SECTOR 132, 19 KM; JBM INTERNATIONAL SCHOOL, SECTOR 132, 18 KM; SHIV NADAR SCHOOL, SECTOR 168, 14 KM; THE SHRI RAM MILLENIUM SCHOOL, SECTOR 135, 15 KM	AMITY UNIVERSITY, SECTOR 125, 24 KM; GAUTAM BUDDHA UNIVERSITY, YAMUNA EXPRESSWAY, 11 KM; SHARDA UNIVERSITY, YAMUNA EXPRESSWAY, BIMTECH, KNOWLEDGE PARK 22, GREATER NOIDA, 9.7 KM	JAYPEE HOSPITAL, SECTOR 128, 20 KM	PVR MALL OF INDIA, SECTOR 18, NOIDA, 28 KM; CARNIVAL CINEMAS, GREAT INDIA PALACE, SECTOR 38, NOIDA, 27 KM; PVR SUPERPLEX, LOGIX CITY CENTRE MALL, SECTOR 31, NOIDA, 29 KM	MALL OF INDIA, SECTOR 18, NOIDA, 28 KM; LOGIX CITY CENTRE MALL, SECTOR 18, NOIDA, 29 KM; GREATER INDIA PALACE, SECTOR 18, NOIDA, 28 KM	METRO STATION, SECTOR 143, 14 KM; KNOWLEDGE PARK, 7.7 KM

HISTORY AND BACKGROUND

ALTHOUGH MANY CONSIDER IT A CONTEMPORARY MOVEMENT, FUELED BY THE CONCERNS OF CLIMATE CHANGE, SUSTAINABILITY HAS BEEN A COMPONENT OF ARCHITECTURAL DESIGN THROUGHOUT HISTORY.

TODAY'S GREEN DESIGNERS ARE NOT THE FIRST TO CONSIDER THE IMPORTANCE OF UTILIZING RENEWABLE OR ORGANIC RESOURCES; ARCHITECTS HAVE BEEN BUILDING WITH THE ENVIRONMENT IN MIND FOR CENTURIES. SIMPLE AND SMART SUSTAINABLE DESIGN METHODS, SUCH AS BUILDING WITH LOCAL MATERIALS OR HARNESSING NATURAL ENERGY, WERE EMPLOYED BEFORE TECHNOLOGICAL ADVANCEMENTS IN CONSTRUCTION. BUILT IN THE 12TH CENTURY, THE CAMBODIAN TEMPLE COMPLEX ANGKOR WAT, FEATURED A RAINWATER IRRIGATION SYSTEM THAT COLLECTED WATER DURING MONSOON SEASON, WHICH ALLOWED FOR RICE FARMING DURING THE DRIER MONTHS.

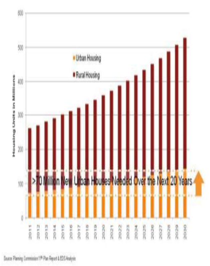
TODAY'S ENVIRONMENTAL AND ECONOMIC CHALLENGES HAVE ONCE AGAIN BROUGHT SUSTAINABILITY TO THE FOREFRONT OF DESIGN AND PRODUCTION METHODS. MANY ARCHITECTURAL FIRMS AND BUILDING CONTRACTORS ARE NOW VERY CONCERNED WITH CREATING ECO-FRIENDLY STRUCTURES

NEED OF TOPIC ....?

POTENTIAL CONTRIBUTION OF HOUSING TO SUSTAINABILITY
IT IS PERTINENT TO NOTE THAT HOUSING SECTOR CAN SIGNIFICANTLY CONTRIBUTE TO SUSTAINABILITY BECAUSE OF ITS CLOSE ASSOCIATION WITH ENVIRONMENTAL ASPECTS:
1. BUILDINGS CONSUME LARGE AMOUNTS OF NATURAL AND MAN-MADE RESOURCE IN CONSTRUCTION, MAINTENANCE AND CONTINUED USE BY SOCIETY.
2. BUILDINGS ARE A FIXED ASSET WITH A LONG OPERATIONAL LIFESPAN.
3. BUILDINGS ARE AMONG THE FUNDAMENTAL NECESSITY FOR A GOOD QUALITY OF LIFE, AND THUS HAVE IMPLICATIONS BEYOND HOUSING AFFECTING TRANSPORT, HEALTH, EMPLOYMENT AND COMMUNITY.
4. BUILDINGS ARE AMENABLE TO NUMEROUS WAYS IN WHICH RECYCLED MATERIALS CAN BE REUSED FOR CONSTRUCTION.
5. LARGE NUMBER OF INNOVATIONS ARE AVAILABLE FOR EFFICIENTLY OPERATING THE BUILDINGS INCLUDING USE OF RECYCLED MATERIAL FOR CONSTRUCTION, WASTEWATER TREATMENT AND USE ENERGY EFFICIENCY, SOLAR HEATING, PASSIVE SOLAR HEATING, CREATING URBAN GREEN SPACES IN PROXIMITY TO COMPACT HOUSING.

URBANIZATION SCENARIOS

IN 1950, DEVELOPING NATIONS ACCOUNTED FOR LESS THAN 40% OF THE WORLD'S URBAN POPULATION. BY 2005 THAT FIGURE REACHED 70%. IT IS PROJECTED THAT URBAN POPULATION IN DEVELOPING NATIONS WILL CONTINUE TO GROW REACHING 80% BY 2030. BY 2050, 93% OF THE URBAN POPULATION GROWTH WILL OCCUR IN DEVELOPING COUNTRIES [23]. ONE OF THE MAJOR CHALLENGES FACED BY CITIES TODAY IS THE GROWING NUMBER OF URBAN DWELLERS LIVING IN SLUM CONDITIONS. ABOUT ONE THIRD OF THE WORLD URBAN POPULATION LIVE IN THESE CONDITIONS AND IF POPULATIONS CONTINUE TO GROW IT IS ESTIMATED THAT 889 MILLION PEOPLE WILL LIVE IN SLUMS BY 2020. THE SLUM POPULATION FACES CHALLENGES RANGING FROM INSECURE TENURE AND POOR SHELTER CONDITIONS TO THE LACK OF ACCESS TO BASIC INFRASTRUCTURE FACILITIES LIKE WATER SUPPLY, SANITATION AND SOLID WASTE DISPOSAL. THIS IS LIKELY TO INTENSIFY AS OVER 70 MILLION NEW URBAN HOUSING UNITS WILL BE NEEDED OVER THE NEXT 20 YEARS IN INDIA



SCOPE

PROJECT WILL INCLUDE HABITAT FOR PEOPLE INSPIRED FROM URBAN SOCIOLOGIST RAY OLDENBURG PHILOSOPHY, ACCORDING TO HIM PEOPLE NEED THREE TYPES OF PLACES TO FEEL FULFILLED:

"HOME- PRIVATE RELIEF,
WORK- ECONOMIC ENGAGEMENT
LEISURE- SOCIAL INTEGRATION."

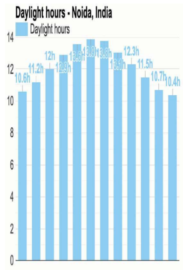
THE SOCIAL CONNECTIONS

TEMPORARY SITE ELECTRIC POLES | NPCL | EXTERIOR SITE PHOTO | WAY FROM ISOLATED VILLAGE AT OUTSKIRT | NTPC LTD. | DRAINAGE LINE | OTHER SIDE OF SITE | KNOWLEDGE PARK-2 METRO STATION

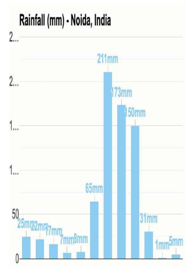
SITE SURROUNDINGS

THE NOIDA LIES ON 202M ABOVE SEA LEVEL THE CLIMATE HERE IS CONSIDERED TO BE A **LOCAL STEPPE CLIMATE OR SEMI-ARID CLIMATE** DURING THE YEAR, THERE IS LITTLE RAINFALL IN NOIDA. ACCORDING TO KÖPPEN AND GEIGER, THIS CLIMATE IS CLASSIFIED AS BSH. THE TEMPERATURE HERE AVERAGES 25.2 °C | 77.4 °F. THE RAINFALL HERE IS AROUND 728 MM | 28.7 INCH PER YEAR.

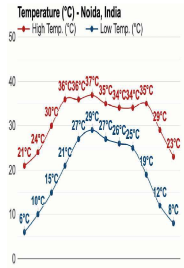
THERE IS A DIFFERENCE OF 254 MM | 10 INCH OF PRECIPITATION BETWEEN THE DRIEST AND WETTEST MONTHS. THE AVERAGE TEMPERATURES VARY DURING THE YEAR BY 19.8 °C | 67.6 °F.



THE MONTH WITH THE LONGEST DAYS IS JUNE (AVERAGE DAYLIGHT: 13.9H). THE MONTH WITH SHORTEST DAYS IS DECEMBER (AVERAGE DAYLIGHT: 10.4H).



THE WETTEST MONTH (WITH THE HIGHEST RAINFALL) IS JULY (211MM). THE DRIEST MONTH (WITH THE LOWEST RAINFALL) IS NOVEMBER (1MM).



THE MONTH WITH THE HIGHEST AVERAGE LOW TEMPERATURE IS JUNE (29°C). THE COLDEST MONTH (WITH THE LOWEST AVERAGE LOW TEMPERATURE) IS JANUARY (8°C).

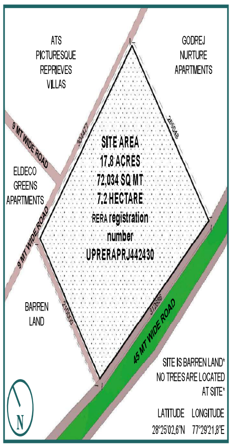
NOIDA CLIMATE SUMMARY

BYE LAWS

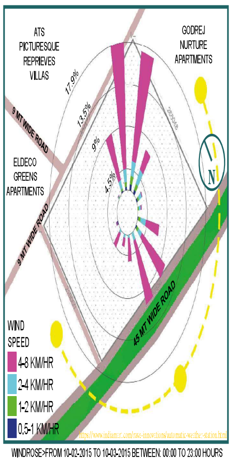
F.A.R. - 2.75 PERMISSIBLE GROUND COVERAGE - 40% ABOVE 40000 SQMTS PLOT AREA SET BACK-FRONT 16MT REAR 12MT SIDE 12 MT HEIGHT-NO LIMIT. FOR BUILDINGS ABOVE 30 METRES IN HEIGHT, CLEARANCE FROM AIRPORT AUTHORITY SHALL HAVE TO BE TAKEN. GROUP HOUSING ONE ECS/PARKING SPACE PER 80 SQ.MT OF PERMISSIBLE FAR AREA.	ALL THE COMMON FACILITIES PRESCRIBED BELOW WILL HAVE TO BE PROVIDED AND SHALL BE COUNTED IN THE PRESCRIBED FAR OF GROUP HOUSING SHOPS AND COMMUNITY FACILITIES AS PER POPULATION NORMS AS SPECIFIED IN THE EARLIER LEASE DEED. IN CASE OF PLOTS WHERE MINIMUM POPULATION REQUIRED FOR PROVISION OF CONVENIENT SHOPPING IS NOT ACHIEVED THEN:- (A) AREA FOR SHOPPING AND COMMERCIAL ACTIVITIES EQUIVALENT TO 1.0 PERCENT PERMISSIBLE FAR OF THE PLOT AREA SHALL BE ALLOWED. (B) MINIMUM FOUR KIOSKS OF 4 SQ.M OF CARPET AREA AND TWO SHOPS OF 10SQM CARPET AREA SHALL BE PROVIDED MANDATORILY. (C) MAXIMUM HEIGHT OF SHOPS AND KIOSKS SHALL BE 4.0 METRE FROM FLOOR TO CEILING. (D) HOWEVER SHOPS MAY BE ALLOWED AS INTEGRAL PART OF GROUP HOUSING BUILDING ON THE GROUND FLOOR.

PROJECT REQUIREMENT

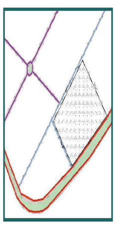
RECREATIONAL AREA	LIG UNITS
RECEPTION AND WAITING AREA	MIG UNITS
SEWAGE TREATMENT PLANT	HIG UNITS
PARKING	CLUB HOUSE
RAIN WATER HARVESTING	FARMLANDS
ORGANIC WASTE MANAGEMENT	VEGETABLE AND DAILY NEEDS STORE
COMMUNITY GATHERING SPACES	SWIMMING POOL
SECURITY ROOM	SPORTS FASCILITIES



SITE PLAN



WIND DIRECTION AND SUN PATH DIAGRAM



TRAFFIC MOVEMENT
FAST MEDIUM SLOW

SOIL ANALYSIS
NOIDA FALLS UNDER THE CATCHMENT AREA OF THE YAMUNA RIVER, AND IS LOCATED ON THE OLD RIVER BED. THE SOIL IS RICH AND LOAMY

CASE STUDY -1

ASIAN GAMES VILLAGE
NEW DELHI

INTRODUCTION

The Asian Games Village is located in the Siri Fort area, near Hauz Khas in New Delhi, India.

The site was developed as the athlete's village for the **1982 Asian Games** held in New Delhi. **This site was designed by Raj Rewal.** The village is the first of its kind in the Games series. Built on the remains of the 15th Century Khalji Dynasty's Siri Fort over an area of 35 acres, this residential colony has 900 housing units comprising 300 individual town houses and 600 apartments in two Floors to four Floors with each unit type has variations according to areas. **The average size of flats is about 1200 sq.ft., some 900 sq.ft. and some 1800 sq.ft.**
Former President of India **APJ Abdul Kalam** was resident in the colony prior to his nomination to that position.

Asian Games Village is one of the most desirable area of New Delhi as it is surrounded by the lush green spaces of Siri Fort Ridge and located next to the Siri Fort sports complex which hosted the squash and badminton tournaments during the 2010 Commonwealth Games. Asiad Village is directly accessible from within to Sirifort Sports Complex with an exclusive entrance. Asian Games Village consists of various blocks and lanes named after eminent sportspersons from India.

APPROACH AND SURROUNDINGS

NEW DELHI RAILWAY STATION	IGI AIRPORT	ISBT NEW DELHI	GREEN PARK METRO STATION	HOSPITAL MAXWELL MULTI-SPECIALITY HOSPITAL	PANCHSHIL MOTESSORI SCHOOL	ICICI BANK
12.5 KM	12.5 KM	18.7 KM	3.9 KM	2.5 KM	1 KM	2.3 KM

VALIDITY AND OBJECTIVE OF CASE STUDY

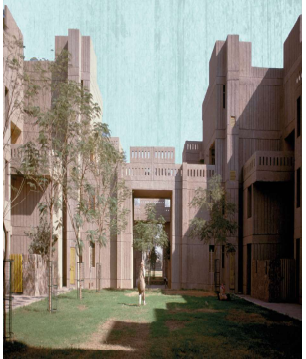
SUSTAINABLE PRINCIPLES POINTS THAT ARE COVERED IN THIS CASE STUDY

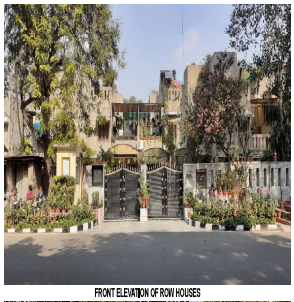
- **WATER EFFICIENCY**
  INITIALLY RAIN WATER HARVESTING SYSTEM WAS NOT INVOLVED IN DESIGN SCHEME BUT IN 2019 IT HAS BEEN PROPOSED WHICH IS UNDER CONSTRUCTION NOW IS INCORPORATED BASICALLY FOR COLLECTING RUNOFF FROM SITE ROADS AND FROM ROOF TOPS OF HOUSING UNITS TO USE THE RESERVE WATER FOR IRRIGATION OF LANDSCAPING PARTS OF THE SITE.
- **SUPERIOR INDOOR ENVIRONMENT**
  A CLUSTER IN ASIAN GAMES VILLAGE THE BASIC UNIT OF FOUR APARTMENTS IS DESIGNED IN SUCH A WAY THAT IT CAN BE LINKED WITH A COURTYARD IN BETWEEN TO CREATE A VARIETY OF INTERLINKING SPACES.
- **EFFECTIVE WASTE MANAGEMENT**
  USE OF ORGANIC WASTE(GENERATED FROM SHEDDING OF LEAVES) AS MANURE FOR ON SITE LANDSCAPING
- **SITE SUSTAINABILITY**
  SUFFICIENT OPEN SPACES,SHADED ROADS BY LARGE TREES ALONG THE ROADS,PROVISION OF THE PARKING ALONG THE ROADSIDE AS WELL AS FOR HOUSING UNITS ALSO, PROVISION OF 16 MT WIDE ROADS AS SETBACK AND 9 MT WIDE ROADS AS INTERNAL ROADS,WASTE DUMPING AREAS AT THREE CORNERS OF THE SITE GIVE EASY ACCESS TO WASTE DISPOSAL,USE OF E-BIKES WITHIN SITE FOR TRAVELLING PURPOSE IS ALSO INCORPORATED REDUCING POLLUTION LEVEL AT MICRO LEVEL.

ARCHITECT'S OBJECTIVE AND CONCEPT OF DESIGN

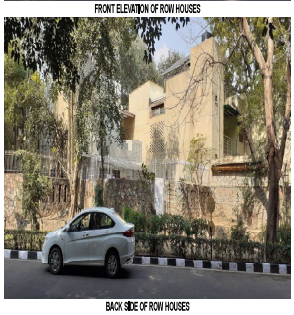
THE CONCEPT IS BASED UPON A SEQUENCE OF OPEN SPACES LINKED BY NARROW, SHADED PEDESTRIAN STREETS AND CONTAINING BOTH RECREATIONAL AND COMMERCIAL ACTIVITIES.

IDEA BEHIND THE CONCEPT
AN OBVIOUS SOURCE OF INSPIRATION FOR SUCH NARROW STREETS LINKING THE HOUSING UNITS IS THE TRADITIONAL STREET SCALE AND PATTERN FOUND IN MANY INDIAN CITIES, WHERE NARROW PATHS BECOME SPACES FOR ENCOUNTERS BETWEEN PEOPLE, AND THE OPEN SQUARES OFFER A SENSE OF NEIGHBOURHOOD.





FRONT ELEVATION OF ROW HOUSES

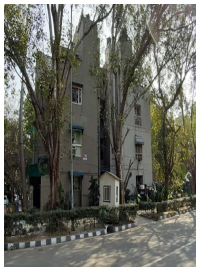


BACK SIDE OF ROW HOUSES

16 MT WIDE ROAD IN FRONT OF SOCIETY OFFICE

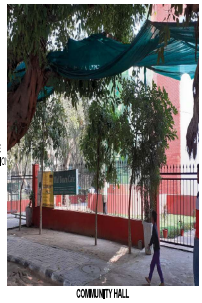
ASIAN VILLAGE SITE PHOTOS

RAIN WATER HARVESTING SYSTEM



16 MT WIDE ROAD IN FRONT OF SOCIETY OFFICE

INDOOR ENVIRONMENT CONNECTED TO EXTERIOR COURTYARD



COMMUNITY HALL

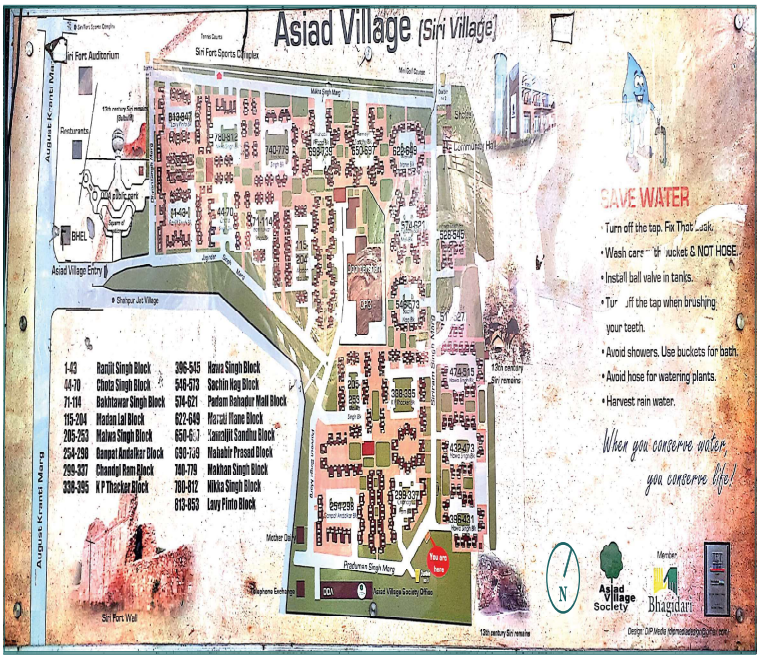
WASTE MANAGEMENT

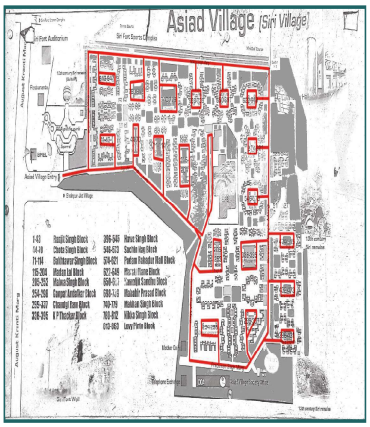
ATM AND GENERAL STORE SHOPS ALONG COMMUNITY HALL

STREET SCALE FOUND IN JAISALMER CITY WAS AN INSPIRATION FOR INVOLVING THEM IN ASIAN VILLAGE

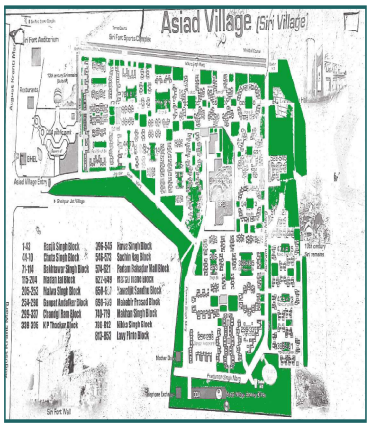
SKETCH OF STREET PATTERN IN ASIAN VILLAGE

SOCIETY OFFICE

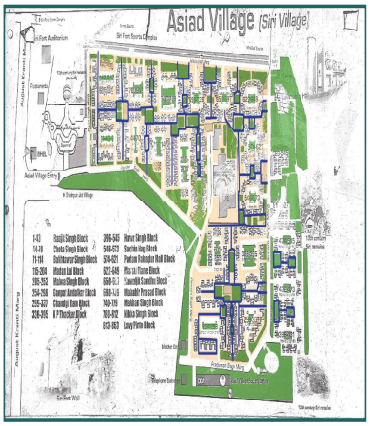




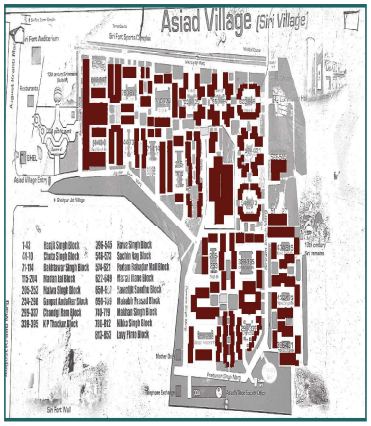
VEHICULAR MOVEMENT



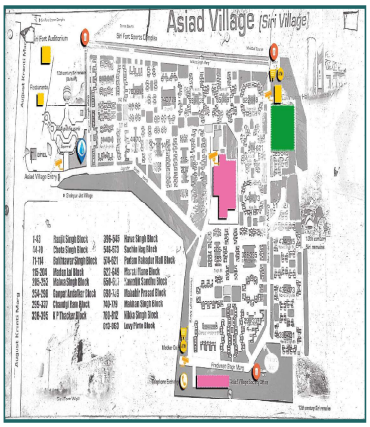
GREEN AREA



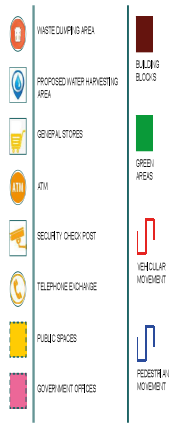
PATHWAY MOVEMENT



BUILDING BLOCK

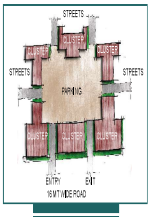


SERVICES AND AMENITIES



LEGENDS

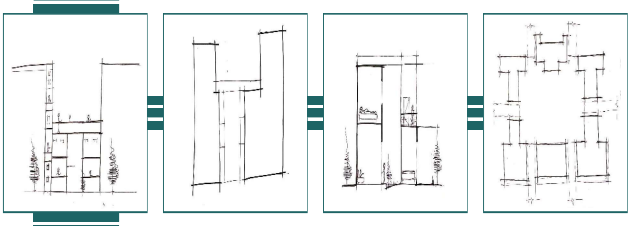
OVERALL ZONING OF SITE

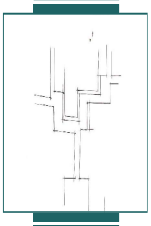


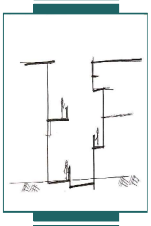
THE UNITS HAVE BEEN DESIGNED SO THAT IT CAN FORM A CLUSTER WITH EITHER FOUR OR SIX UNITS TO CREATE A VARIETY OF INNER SPACES.
TYPICAL CLUSTER FORMING GATEWAYS IN BOTH DIRECTIONS FOR SHADED PEDESTRIAN WALKING AND ARE ALSO USED AS TERRACE GARDEN

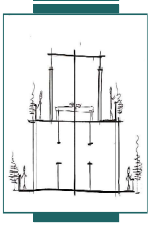
TYPOLOGIES

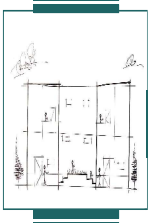
WIDE VARIETY OF UNIT-TYPES FROM INDIVIDUAL HOUSES TYPES 'A,B,C' TO APARTMENTS TYPES E,F,G NAD VARIATING ON THE SPECIAL ARRANGEMENT OF THESE

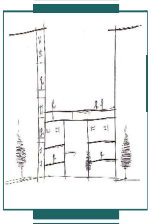


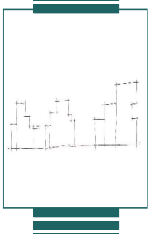


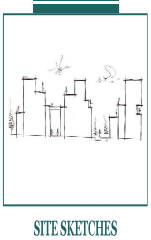




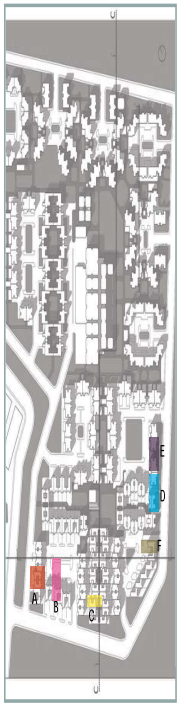




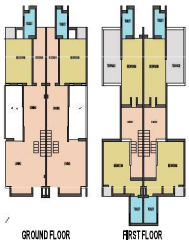




SITE SKETCHES



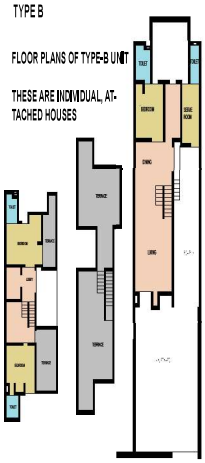
TYPE A-INDIVIDUAL HOSUES



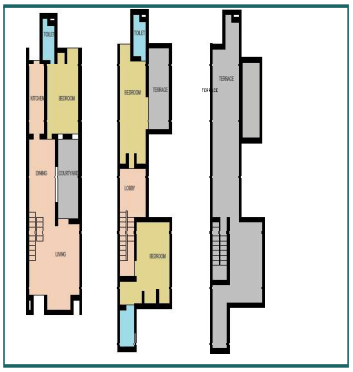
TYPE B

FLOOR PLANS OF TYPE-B UNIT

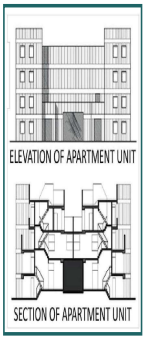
THESE ARE INDIVIDUAL, ATTACHED HOUSES

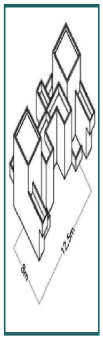


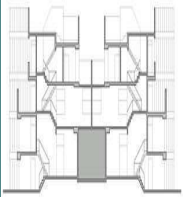
TYPE C

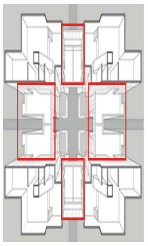


TYPE D APARTMENT UNIT



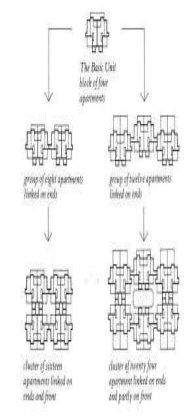


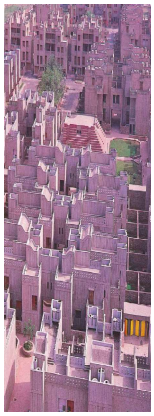




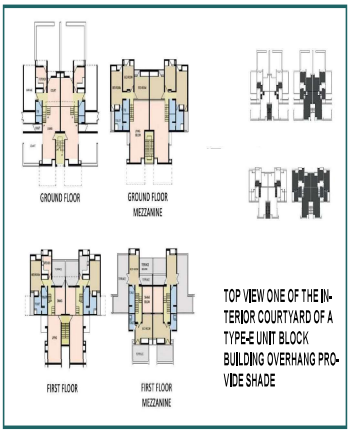
THE TERRAC FORM ON THE UPPER STORYS PROVIDE FOR THE SEMI-PRIVATE SPACE REMINDING OF HOUSES IN JAISALMER

THE UNIT HAVE BEEN DESIGNED SO THAT IT CAN FORM A CLUSTER WITH EITHER 4OR 6 UNITS TO CREATE A VARIETY OF INNER SPACES

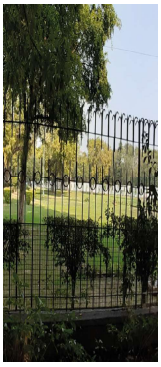




TYPE E

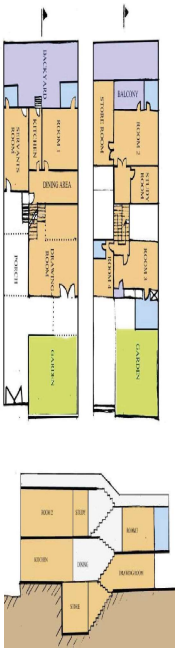


TOP VIEW ONE OF THE INTERIOR COURTYARD OF A TYPE-E UNIT BLOCK BUILDING OVERHANG PROVIDE SHADE

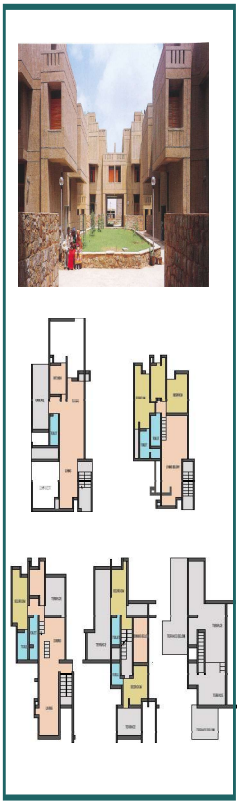


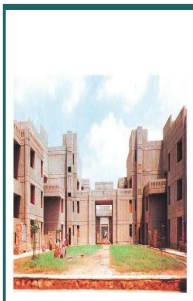
CRICKET GROUND VIEW

INDIVIDUAL UNIT TYPE-2



AREA : INDIVIDUAL UNITS 167 SQ MT





GATEWAY FRONT VIEW

GROUND FLOOR PLAN

FIRST FLOOR PLAN

SUCCESSIVE COURTYARD IN THIS BLOCK ESSENTUATE THE LINNEAR AXIAL PLANING OF THE "MOHALLAS"

ASIDE HOUSING IS A 4 STOREYS 3-BEDROOM FLAT ON THE GROUND FLOOR
A2 BEDROOM FLAT ON A FIRST FLOOR
AND A 3 BEDROOM DUPLEX NIT ON THE TOP TWO STOREYS, EACH UBIT HAS PRIVATE OPEN SPACE AS COURTYARD

SECCOND FLOOR PLAN

THIRD FLOOR PLAN

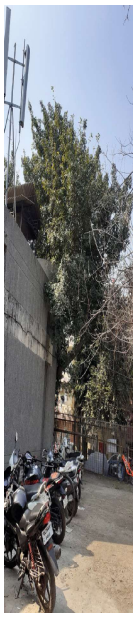
VEGETATION

PILKHAN TREE

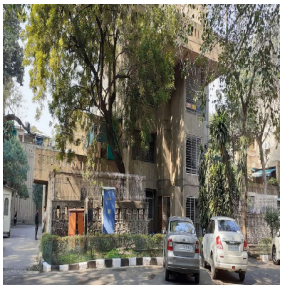
ARI PALM

SAHTUT TREE

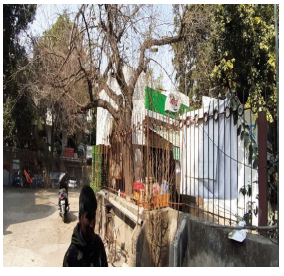
ASHOK



GULAR



NEEM



SAHTUT

JAMUN TREE

ARI PALM

HATHI PALM

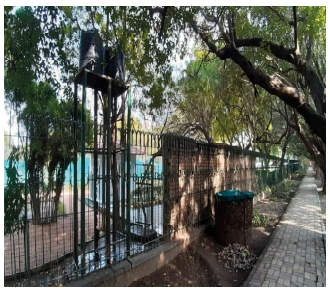
ANARMI PLANT

CROTON PLANT

CHAMELI

CHAMPA PLANT

DURANTA PLANT

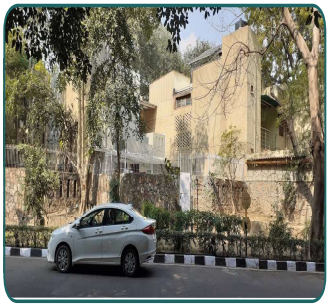


DENSE VEGETATION ALONG PATHWAYS RESULTING IN SHADED AREAS ALONG ROADS

SITE VEGETATION PICTURE

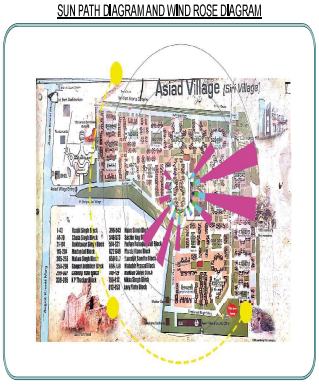
MATERIALS

SOME UNITS ARE CONCRETE FINISHED WHILE SOME ARE CONCRETE WITH STONE CLADDING



CLIMATE

SUN PATH DIAGRAM AND WIND ROSE DIAGRAM



New Delhi - Average precipitation

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Prec.(mm)	20	15	10	10	19	55	220	258	133	15	7	15	802
Prec.(in)	0.8	0.6	0.4	0.4	1.2	2.2	8.7	9.8	5.3	0.6	0.3	0.6	31.6
Days	3	2	2	1	1	4	12	11	6	2	0	1	45

New Delhi - Average temperatures

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Min (°C)	6	10	14	20	26	28	27	26	24	18	11	7
Max (°C)	21	24	29	36	40	39	35	34	34	34	28	23
Min (°F)	43	50	57	68	79	82	81	79	75	64	52	45
Max (°F)	70	75	84	97	104	102	95	93	93	93	82	73

New Delhi - Sunshine

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours	7	8	8	9	8	7	3	6	7	9	8	7

THE CLIMATE OF DELHI IS AN OVER-LAP BETWEEN MONSOON-INFLU-ENCED HUMID SUBTROPICAL AND SEMI-ARID WITH HIGH VARIATION BETWEEN SUMMER AND WINTER TEM-PERATURES AND PRECIPITATION.

REMARKS

WATER SUPPLY IS FROM NEARBY PUMP STATION AT HAUZ KHAS WITH NO STORAGE PROVISION

SURFACE PARKING IS PROVIDED IN BETWEEN EVERY CLUSTER WITH PARALLEL PARKING PROVI-SION ALONG ROAD

ELECTRICAL SUPPLY IS FROM SUB-STATION AT HAUZ-KHAS

FIRE TENDER CAN REACH THROUGH OUT THE SITE THROUGH SITE SETBACK

SOCIETY GUARDS,CCTV ARE USED AS SECURITY SYSTEM

MERITS

MICRO-CLIMATE IS DEVELOPED IN SITE THROUGH DENSE VEGETATION

ALMOST 80% OF UNITS HAVE ACCESS THROUGH PRIMARY ROADS

SUFFICIENT SURFACE PARKING IN BETWEEN CLUSTER AND ALONG ROAD AS PARALLEL PARKING SPACE

WASTE MANAGEMENT AT SITE

DISPOSAL AREAS AT REGULAR INTERVALS WITH ATM AND GROCERRY STORES

PROPER WIDTH OF ROADS ARE PROVIDED AT ALL SCALE

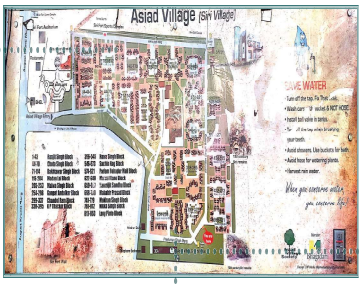
DE-MERITS

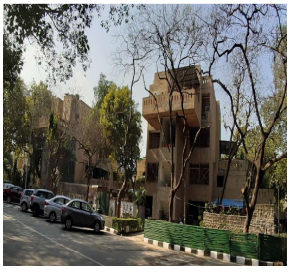
STORES ARE PROVIDED AT FAR DISTANCES

A SMALL COMMUNITY HALL IS PROVIDED WITH 24.23 MT X 14.6 MT

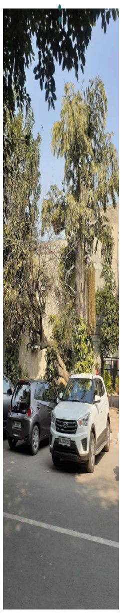
PROVISION OF OTHER ENERGY SOURCES ARE NOT INCLUDED

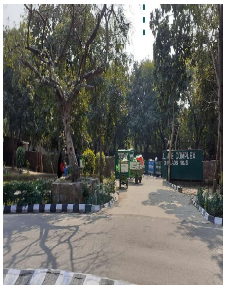
SITE SURROUNDING

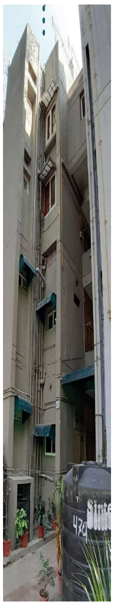


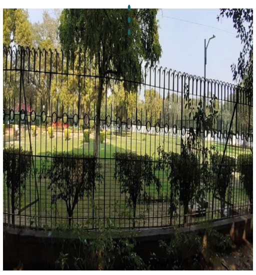


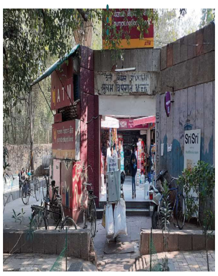
SITE LANDSCAPING ELEMENTS

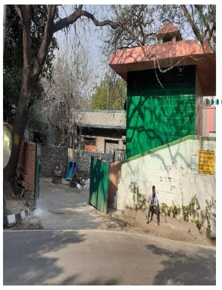












SITE SURROUNDING

CASE STUDY -2

ACE PARKWAY,SECTOR-150 NOIDA

INTRODUCTION

ACE PRESENTS ITS NEWLY LAUNCHED REMARKABLE PROJECT ACE PARKWAY NESTED ON THE NOIDA EXPRESSWAY. WITH **970 FLATS**, ACE PARKWAY FOCUS IT'S CENTRED AT INTERNATIONAL BUYERS AND INVESTORS. PEOPLE AT PARKWAY CAN AVAIL ALL THE 51 SPORTS FACILITIES RANGING FROM CROQUET, SQUASH, TRAMPOLINE TO HANDBALL, TENNIS OTHER THAN BASKETBALL, BADMINTON AND CRICKET TO SPEND THEIR LEISURE TIME ENJOYING AND RELAXING. DESIGNED BY THE REPUTED AND **PADMA BHUSHAN AWARDEE INDIAN ARCHITECT HAFEEZ CONTRACTOR**, ITS ELEVATION IS IN PROPORTIONATE IN THE ART DECO ESSENCE OF DESIGN. THE LANDSCAPE IS OUTLINED AND DETAILED BY THE RENOWNED LANDSCAPE DESIGNER **MS. SANJU BOSE.**

APPROACH AND SURROUNDINGS

NEW DELHI RAILWAY STATION	IGI AIRPORT	ISBT NEW DELHI	KNOWLEDGE PARK-2 METRO STATION	YATHARTH SUPER SPECIALITY HOSPITAL	GAUTAM BUDDHA UNIVERSITY	STATE BANK OF INDIABANK
37.2 KM	46.1 KM	40.3 KM	5.6 KM	5.6 KM	8.6 KM	5.6 KM

VALIDITY AND OBJECTIVE OF CASE STUDY

SUSTAINABLE PRINCIPLES POINTS THAT ARE COVERED IN THIS CASE STUDY

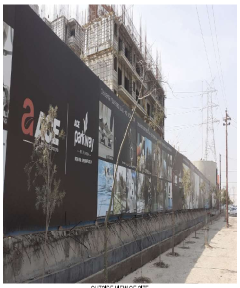
- RENEWABLE ENERGY GENERATION
- WATER EFFICIENCY
- STORMWATER MANAGEMENT
- EFFECTIVE WASTE MANAGEMENT
- SITE SUSTAINABILITY

ARCHITECT'S OBJECTIVE AND CONCEPT OF DESIGN

THE CONCEPT IS BASED UPON A SEQUENCE OF OPEN SPACES LINKED B

PROJECT OVERVIEW

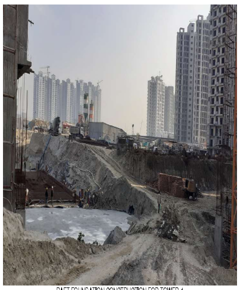
APARTMENTS TYPE	2BHK,3BHK & 4BHK
F.A.R	2.7
SITE AREA	11.26 ACRES(45,567.6 SQ MT)
OPEN SPACE	79% 8.89 ACRES(35,990.8 SQ MT)
NUMBER OF TOWER	11
MAXIMUM HEIGHT OF TOWERS	G+24
GROUND COVERAGE	
TOTAL BUILD UP AREA	
HEIGHT	
NUMBER OF UNITS PROPOSED	492
SIZE OF APARTMENTS	81.94 SQ. MT TO 299.15 SQ. MT
SET BACKS	6 MT ALL SIDES CLEAR



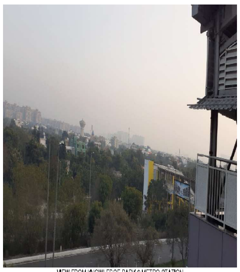
OUTSIDE VIEW OF SITE

VIEW FROM EXTERIOR BOUNDARY

VIEW FROM EXTERIOR BOUNDARY

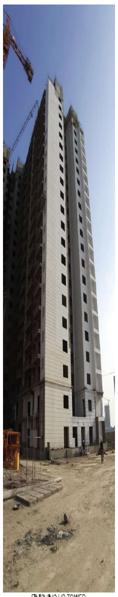


RAFT FOUNDATION CONSTRUCTION FOR TOWER-1



VIEW FROM KNOWLEDGE PARK-2 METRO STATION

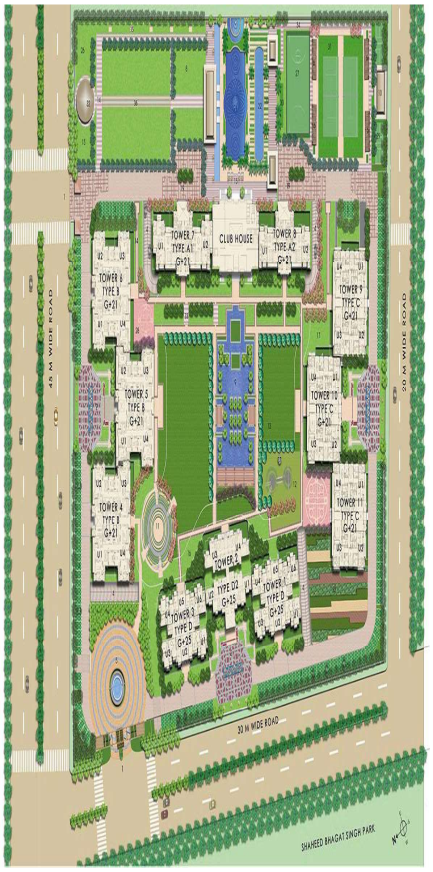
EXTERIOR ELEVATION OF TOWER-3 3BHK WITHOUT SERVANT ROOM



FINISHING UP TOWER

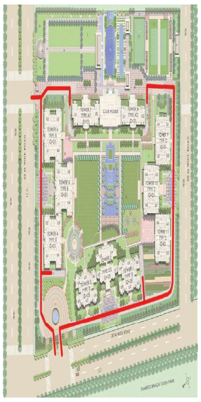
ACE PARKWAY APARTMENTS SITE IMAGES

PEDESTRIAN MOVEMENT · BUILDING BLOCKS · GREEN AREAS · SERVICES AND AMENITIES · VEHICULAR MOVEMENT

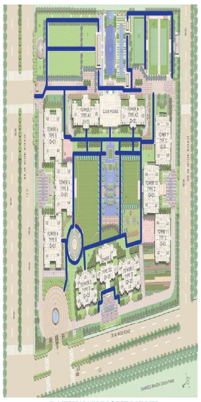


LEGENDS

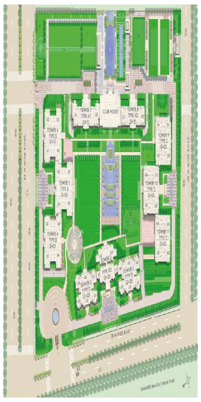
1. ENTRY/EXIT
2. DROP OFF
3. PARKING
4. RAMP WITH GREEN TRELLIS
5. ENTRY PLAZA
6. FEATURE PARGOLA
7. FEATURE COLUMNS
8. CELEBRATION LAWN
9. CENTRAL WATER FEATURE
10. PAVILION
11. AMPHITHEATRE
12. KIDS PLAY AREA
13. YOUTH GARDEN
14. PATHWAY JOGGING TRAIL
15. CLUB HOUSE
16. FITNESS AREA
17. TOT-LOT
18. BAMBOO SITOUT GARDEN
19. ROUND ABOUT
20. DECK
21. SWIMMING POOL
22. KIDS POOL
23. REFLEXOLOGY PARK
24. FEATURE PARGOLA
25. LAWN
26. MEDITATION AREA
27. BASKETBALL COURT
28. SKATING RING
29. BADMINTON COURT
30. CRICKET PRACTICE PITCH
31. TENNIS COURT
32. MANDIR
33. HOPSCOTCH
34. WALL CLIMBING
35. OUTDOOR GYM STATION
36. SOCCER GROUND
37. TRAMPOLINE



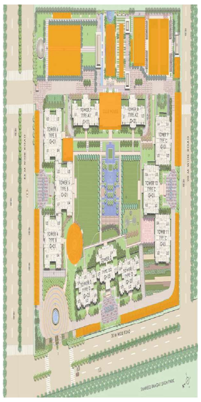
VEHICULAR MOVEMENT



PATHWAY MOVEMENT



GREEN AREA



SERVICES AND AMENITIES

BUILDING BLOCK

TYPE A1 TOWER-7

TYPE B TOWER-4,5,6

TYPE D TOWER-2

TYPE D TOWER-1,3

VIEW FROM 2ND FLOOR

TYPE A TOWER-8

TYPE C TOWER-9,10,11

TYPE D TOWER-1,3

INFORMATION GATHERED FROM

MR. BABAN KUMAR
SENIOR SITE ENGINEER
ACE PARKWAY, SECTOR-150 NOIDA

OVERVIEW OF QUESTIONNAIRE
AREA ANALYSIS
SERVICES MECHANICAL
PLUMBING SERVICES
ELECTRICAL SERVICES
CONSTRUCTION METHODOLGY

ROAD WIDTH
SET BACK 6 MT
INTERNAL ROAD 3MT

LANDMARK
BHAGAT SINGH PARK,-
SECTOR 150 NOIDA

FIRE PROTECTION

SPRINKLERS

FIRE HOSE REEL

FIRE HYDRANT AT SITE AT 30 MT DISTANCE FROM ONE ANOTHER

FIRE EXTINGUISHER AT EACH LOBBY AREA

FIRE PROTECTION

SPRINKLERS

FIRE HOSE REEL

FIRE HYDRANT AT SITE AT 30 MT DISTANCE FROM ONE ANOTHER

FIRE EXTINGUISHER AT EACH LOBBY AREA

OTHER ENERGY SOURCES

SOLAR PANELS ABOVE EACH TOWER

STREET LIGHTS SUPPORTED WITH SOLAR PANELS

PLUMBING SERVICES

PER TOWER
3 TANKS ARE PROVIDED
EACH OF 10,000 LTS CAPACITY
1 FOR RAW USE
1 FOR FLUSH PURPOSE
1 FOR FIRE FIGHTING PURPOSE

NO UNDERGROUND TANKS ARE PROVIDED

SUBMERSIBLE IS NOT ALLOWED IN THIS ZONE

FOR CONSTRUCTION PURPOSE TANKERS ARE BROUGHT AND WATER WOULD BE STORED IN UNDERGROUND TANKS

WATER SUPPLY THORUGH NEARBY PUMPING STATION

ELECTRICAL SERVICES

11000 KV SUPPLY TO SITE FROM N.P.C.L SUBSTATION 10 KM AWAY

↓

STEP DOWN TRANSFORMER AT SITE

↓

330 KV 1 TRANSFORMER MAY EXPAND IN FUTURE

FOR POWER BACKUP 10000 CAPACITY GENERATOR

CENTRALISED HVAC FOR TOWER

PLUMBING SERVICES

STP AREA 4000 SQ MT

DRAINAGE LINES ALONG TWO SIDES OF SITE

TOWER WASTE

↓

INSPECTION CHAMBER

↓

S.T.P SEWAGE TREATMENT PLANT

↓

TO DRAINAGE LINES

EACH TOWER HAS 2 LIFT WITH 12 PERSON CAPACITY

TWO STAIRCASE PER TOWER
ONE AS FIRE ESCAPE AND 1 FOR NORMAL USE
WHILE BOTH ARE INTERNAL

FOR SECURITY PURPOSE CCTV CAMERAS AT JUNCTION POINTS, ENTRANCE, FIRE ALARM SYSTEM, BIOMETRIC SYSTEM AT TOWER ENTRANCE, SOCIETY GUARDS

EACH TOWER HAS 2 LIFTS WITH 12 PERSON CAPACITY
(1300-1350 KG)

EACH TOWER HAS TWO STAIRCASE ONE MAIN AND OTHER FIRE STAIRCASE BOTH INTERNALLY PLACED

CONSTRUCTION METHODOLOGY
R.C.C. USED AS MAJOR CONSTRUCTION MATERIAL

UPTO 2ND FLOOR BRICK WORK USED AS WALLS THAN R.C.C IS USED FOR INCREASING WEIGHT TO ATTAIN MORE SELF BALANCE

ALUMINIUM FOAM WORK AS SHUTTERING KNOWN AS **MIVAN SHUTTERING OF MIVAN BRAND**
WALLS AND SLABS ALL MADE OF R.C.C

PROS

- PLANNED AND AVAILABLE WITH MODERN FASCILITES
- PLANNED SURROUNDING GIVE SENSE OF DISCIPLINE IN DAILY LIFE
- RIGHT OF WAY INSIDE AND OUTSIDE ARE SUFFICIENT
- PROPER ELECTRICAL AND WATER SUPPLY BACK UP
- RICH NATURAL ENIRONMENT VIEW FROM UNITS

CONS

- MONOTONOUS NATURE OF DESIGN
- ISOLATED FROM VARIOUS DAILY ACTIVITIES ZONE
- LACK OF MEANS OF TRANSPORT FROM NEARY AREAS

LITERATURE STUDY -1

OMAXE RESIDENCY-2
LUCKNOW

INTRODUCTION

HE OMAXE RESIDENCY 2 WILL HAVE A HUGE CLUBHOUSE WHICH WILL HAVE A SWIMMING POOL. THE SWIMMING POOL WILL ALSO HAVE A WET AREA DEDICATEDLY ALONG WITH AN AREA FOR THE SHOWER.IT WILL HAVE A RESTAURANT, BAR AND THERE WILL BE TENNIS TABLE AS WELL AS SNOOKER TABLE. ON THE TERRACE OF THE CLUBHOUSE IN OMAXE RESIDENCY 2 THERE IS A PARTY AREA DEDICATED EXCLUSIVELY FOR THE RESIDENTS AT OMAXE RESIDENCY 2. THE OMAXE RESIDENCY 2 WILL HAVE NEARBY AMENITIES LIKE SAHARA HOSPITAL, CITY MONTESSORI SCHOOL AND INTERNATIONAL STADIUM AS WELL. FOR SHOPPING THERE IS AN UPCOMING MALL IN OMAXE HAZRATGANJ ALSO THE SOCIETY WILL FULL OF SHOPS.

APPROACH AND SURROUNDINGS

CHARBAGH RAILWAY STATION	CHAUDHARY CHARAN SINGH INTERNATIONAL AIRPORT	CHARBAGH BUS STATION	POLYTECHNIC METRO STATION	JANTA POLYTECHNIC HOSPITAL	KIDZEE SCHOOL	ATM
10.7 KM	30.9 KM	10.7 KM	11.4 KM	750 M	500 M	1.3 KM

VALIDITY AND OBJECTIVE OF CASE STUDY

SUSTAINABLE PRINCIPLES POINTS THAT ARE COVERED IN THIS CASE STUDY

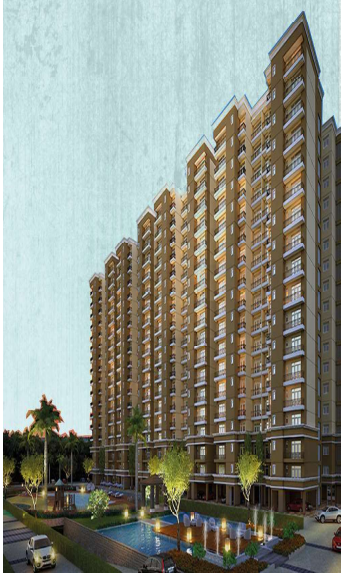
- RENEWABLE ENERGY GENERATION
- STORMWATER MANAGEMENT
- SITE SUSTAINABILITY
- WATER EFFICIENCY
- EFFECTIVE WASTE MANAGEMENT

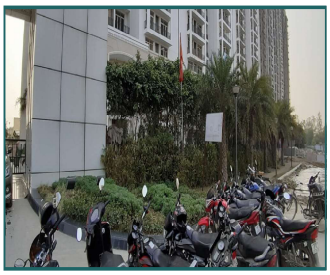
ARCHITECT'S OBJECTIVE AND CONCEPT OF DESIGN

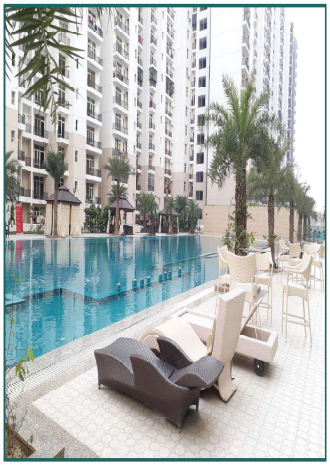
THE CONCEPT IS BASED UPON A SEQUENCE OF OPEN SPACES LINKED B

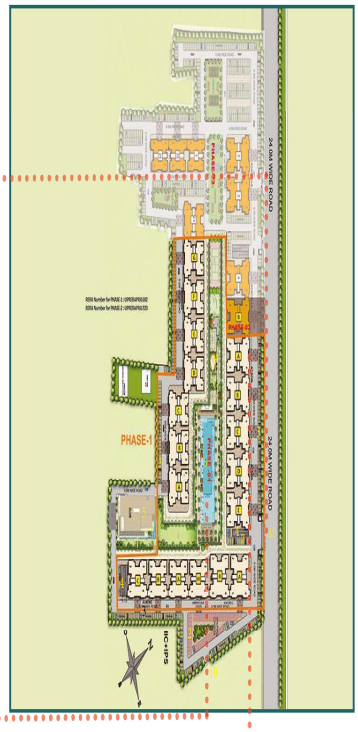
PROJECT OVERVIEW

APARTMENTS TYPE	3BHK(CONSTRUCTED) AND 2BHK
F.A.R	2.5
SITE AREA	17.07 ACRES(69,065.22 SQ.MT)
NUMBER OF TOWER	19 (APPROVED PHASE) TOTAL 26 TOWERS
MAXIMUM HEIGHT OF TOWERS	G+19 (CONSTRUCTED) FUTURE EXPANSION TO G+23 66.9 MT
GROUND COVERAGE	
TOTAL BUILD UP AREA	
HEIGHT	
NUMBER OF UNITS PROPOSED	2073 UNITS
SIZE OF APARTMENTS	118.91 SQ. MT TO 175.77 SQ. MT
SET BACKS	9 MT ALL SIDES CLEAR



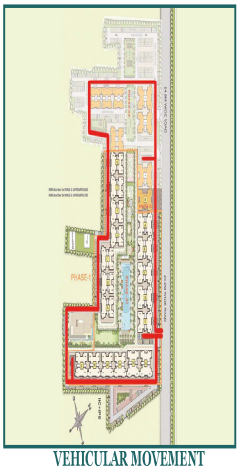






LEGENDS

1. TOWERS
2. SHOPPING COMPLEX
3. SURFACE PARKING
4. WAY TO BASEMENT
5. CLUB HOUSE
6. SWIMMING POOL
7. TOT-LOT AREA
8. OPEN GYM AREA
9. PLAY ZONE
10. ENTRY/EXIT



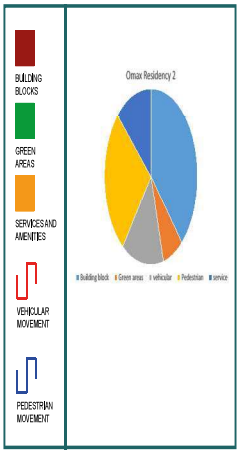
VEHICULAR MOVEMENT

GREEN AREA

PATHWAY MOVEMENT

BUILDING BLOCK

SERVICES AND AMENITIES



UNIT PLANS

AREA	UNIT-1 & UNIT-4	AREA	UNIT-2 & UNIT-3
Unit Super Area	1892 Sq. ft./ 175.77 Sq.m.	Unit Super Area	1775 Sq. ft./ 164.90 Sq.m.
Unit Built-Up Area	1402 Sq. ft./ 130.24 Sq.m.	Unit Built-Up Area	1340 Sq. ft./ 124.48 Sq.m.
Unit Carpet Area	1095 Sq. ft./ 101.72 Sq.m.	Unit Carpet Area	1095 Sq. ft./ 101.72 Sq.m.

3 BHK + SERVANT - SECOND FLOOR

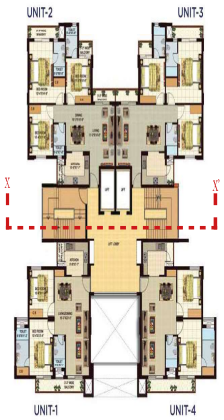
UNIT PLANS

AREA	UNIT-1 & UNIT-4	AREA	UNIT-2 & UNIT-3
Unit Super Area	1410 Sq. ft./ 130.99 Sq.m.	Unit Super Area	1775 Sq. ft./ 164.90 Sq.m.
Unit Built-Up Area	1047 Sq. ft./ 97.26 Sq.m.	Unit Built-Up Area	1340 Sq. ft./ 124.48 Sq.m.
Unit Carpet Area	863 Sq. ft./ 80.174 Sq.m.	Unit Carpet Area	1095 Sq. ft./ 101.72 Sq.m.

3 BHK + SERVANT - FIRST FLOOR

UNIT PLANS

AREA	UNIT-1 & UNIT-4	AREA	UNIT-2 & UNIT-3
Unit Super Area	1280 Sq. ft./ 118.91 Sq.m.	Unit Super Area	1575 Sq. ft./ 146.32 Sq.m.
Unit Built-Up Area	958 Sq. ft./ 89.00 Sq.m.	Unit Built-Up Area	1182 Sq. ft./ 109.81 Sq.m.
Unit Carpet Area	783 Sq. ft./ 72.74 Sq.m.	Unit Carpet Area	962 Sq. ft./ 89.37 Sq.m.



3 BHK - FIRST FLOOR

UNIT PLANS

AREA	UNIT-1 & UNIT-4
Unit Super Area	1775 Sq. ft./ 164.90 Sq.m.
Unit Built-Up Area	1340 Sq. ft./ 124.48 Sq.m.
Unit Carpet Area	1095 Sq.ft./ 101.72 Sq.m.

AREA	UNIT-2 & UNIT-3
Unit Super Area	1775 Sq. ft./ 164.90 Sq.m.
Unit Built-Up Area	1340 Sq. ft./ 124.48 Sq.m.
Unit Carpet Area	1095 Sq.ft./ 101.72 Sq.m.

3 BHK + SERVANT - TYPICAL FLOOR
(3rd Floor to 19th Floor)

UNIT PLANS

AREA	UNIT-1 & UNIT-4
Unit Super Area	1410 Sq. ft./ 130.99 Sq.m.
Unit Built-Up Area	1047 Sq. ft./ 97.26 Sq.m.
Unit Carpet Area	963 Sq. ft./ 89.74 Sq.m.

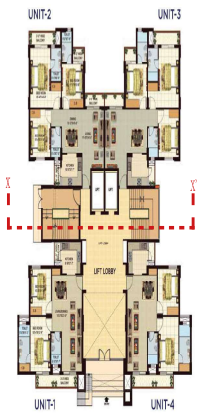
AREA	UNIT-2 & UNIT-3
Unit Super Area	1775 Sq. ft./ 164.90 Sq.m.
Unit Built-Up Area	1340 Sq. ft./ 124.48 Sq.m.
Unit Carpet Area	1095 Sq. ft./ 101.72 Sq.m.

3 DHK + SERVANT - GROUND FLOOR

UNIT PLANS

AREA	UNIT-1 & UNIT-4
Unit Super Area	1290 Sq. ft./ 119.91 Sq.m.
Unit Built-Up Area	958 Sq. ft./ 89.00 Sq.m.
Unit Carpet Area	783 Sq. ft./ 72.74 Sq.m.

AREA	UNIT-2 & UNIT-3
Unit Super Area	1575 Sq. ft./ 146.32 Sq.m.
Unit Built-Up Area	1162 Sq. ft./ 107.97 Sq.m.
Unit Carpet Area	962 Sq. ft./ 89.37 Sq.m.



3 BHK - GROUND FLOOR*

UNIT PLANS

AREA	UNIT-1 & UNIT-4
Unit Super Area	1575 Sq. ft./ 146.32 Sq.m.
Unit Built-Up Area	1162 Sq. ft./ 105.81 Sq.m.
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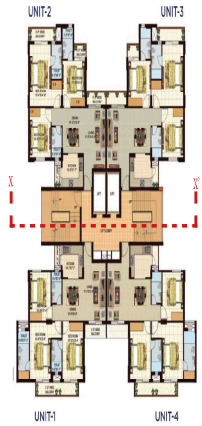

3 BHK - TYPICAL FLOOR*
(3rd Floor to 19th Floor)

UNIT PLANS

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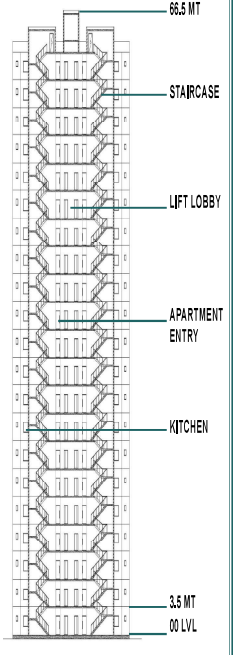
AREA	UNIT-2 & UNIT-3
Unit Super Area	1775 Sq. ft./ 164.90 Sq.m.
Unit Built-Up Area	1340 Sq. ft./ 124.48 Sq.m.
Unit Carpet Area	1095 Sq. ft./ 101.72 Sq.m.

* Including open terrace

3 DHK + SERVANT - SECOND FLOOR*



TYPICAL SECTION

SITE PICTURES

EXPANSION JOINT

OPEN GYM

FIRE AND ELECTRICAL SHAFT

RAMP

ENTRANCE TO TOWER

INFORMATION GATHERED FROM

MR. SHUBHAM SHUKLA
PROJECT MANAGER
OMAXE RESIDENCY-II, GOMTI NAGAR EXTENSION

OVERVIEW OF QUESTIONNAIRE
AREA ANALYSIS
SERVICES MECHANICAL
PLUMBING SERVICES
ELECTRICAL SERVICES
CONSTRUCTION METHODOLGY

OVERVIEW
G+19 TWO LIFTS FOR EACH TOWER
NO SERVICE FLOORS
HYUNDAI LIFTS ARE USED
PLUMBING SERVICES ARE CENTRRALISED

SERVICES DEPARTMENT BY
MR.BRIJBHUSHAN
OMAXE RESIDENCY-II,
GOMTI NAGAR EXTENSION

PLUMBING SERVICES

BASEMENT LEVEL WATER TREATMENT PLANT

150KL 2 CONTAINERS FOR RAW WATER TANK
OVERLOW
150KL 2 CONTAINERS FOR DOMESTIC WATER TANK
OVERLOW
150KL 2 CONTAINERS FOR FIRE WATER TANK

BOREWELL SUPPLY

OVERHEAD TANKS OF TOWERS

PER TOWER

13.56 KL CONTAINERS FOR FIRE WATER TANK
OVERLOW
23.85KL CONTAINERS FOR DOMESTIC WATER TANK
OVERLOW
10KL CONTAINERS FOR FLUSH TANK

FLAT SUPLLY
DOWNTAKE

DOWNTAKE

WASTE THROUGH UPVC PIPES TO IN-SPECTION CHAMBERS TO SEWAGE TREATMENT PLANT IN BASEMENT FOR PURIFICATION OF WATER

FLUSHING TANKS

WATER SUPPLY SYSTEM

ENTRANCE FOR WTP AND VENTILATION

INSIDE WTP PLANT

15KL TANKS IN WTP

REMARKS

CPVC PIPES FOR WATER SUPPLY
UPVC PIPES FOR WASTE WATER
GI PIPES FOR WATER SUPPLY

RAIN WATER HARVESTING : 3MT DIA TANK WITH 1500 MM DEPTH.
SIZE DEPEND UPON RAINFALL.
RUNOFF WATER FROM TOWER ROOFTOP, ROADS AND RUNOFF WATER

FIRE PROTECTION

IN FLATS
- SPRINKLER IN FLATS
- SIDE WALL AND PENDANT SPRINKLER IN FLATS

IN BASEMENT
- IN BASEMENT UPRIGHT SPRINKLER IS USED
- WATER CURTAIN SYSTEM

HYDRANT SYSTEM
- FHC SHAFT ELEMENTS
  - LANDING VALVE
  - CYLINDER
  - HOSERAIL
  - 16MT PIPE 63 DIA PIPE/30MT PIPE
  - 20DIA PIPE

AIR CONDITIONING : NO CENTRALISED SYSTEM

FEEDER PANELS FOR STREET LIGHTS

SECURITY
- SOCIETY GUARD
- FIRE ALARMS
- C.C.T.V

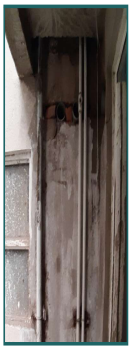
SOLAR PANELS AT EACH TOWER ROOFTOP

ELECTRICAL SUPPLY :
3 TRANSFORMER 2000KV

6 DIESEL GENERATOR
- 750KV -1 NOS.
- 1500KV-4 NOS.
- 500KV -1 NOS

LT PANEL FOR ALL TOWERL, STP AND WTP

ALTERNATE TOWER BASEMENT METER ROOM
[DUAL ENERGY METER LIGHT+DG READING BOTH] METER PANELS



PLUMBING SERVICE

LIFT LOBBY

FIRE PUMP ROOM
4 PUMP ARE THERE
- DIESEL ENGINE
- SPRINKLER PUMP
- HYDRANT PUMP
- JOCKEY PUMP
- WATER CURTAIN PUMP

LIFT : GROUND FLOOR TO 19TH FLOOR DIRECT WITH CAPACITY OF 15 PERSONS 1125 KG

SPRINKLER

FHC SHAFT

LITERATURE STUDY -2

MIRADOR, by MvRdv & Blanca Lleo

SANCHINARRO, SPAIN

INTRODUCTION

-THE ARCHITECT: MVRDV AND BLANCA LLEO
-THE CLIENT: EMV DEL AYUNTAMIENTO DE MADRID
-TIME: MAY 2001- APRIL 2005

-PROJECT: MAYOR OF MADRID, ALBERTO RUIZ-GALLARDON, INITIALIZED A HOUSING PROGRAM TO ADD DENSITY AND HOUSING TO THE QUICKLY GROWING SPANISH CITY OF MADRID. MVRDV IS ONE OF TEN EUROPEAN FIRMS HIRED TO COMPLETE PROJECTS UNDER THIS NEW PROGRAM.

-23,000 SQUARE METERS, HOUSING 157 APARTMENTS AND A 12 FLOOR CENTRAL COURTYARD THAT IS 580 SQUARE METERS IN AREA AND 13 METERS TALL

1 www.todoarquitectura.com/ v2/noticias/one_news.asp?IDNews=935 - 36k
2 http://www.materiamagazine.com/materia/progettoScheda2?id=1654495124

CONCEPT

MVRDV TOOK THE COMMON 5 TO 8 FLOOR NEIGHBORHOOD BUILDING BLOCK WITH A CENTRAL COURTYARD AND PATIO AND LITERALLY FLIPPED IT ON ITS END CREATING A COURTYARD IN THE AIR TO BRING THE COMMUNITY TOGETHER.

ORIGINALLY THERE WAS GOING TO BE AN ESCALATOR RUNNING FROM THIS

"A SERIES OF NEW CITIES THAT ARE MAINLY CONSTRUCTED OF LOCKS THAT SURROUND A PRIVATE PATIO, WITH A MORE OR LESS INTROVERTED ARCHITECTURE WITH SMALL WINDOWS, SOMEHOW IS ALLOWED TO OPPOSE THE TRADITIONALLY EXTRAVERTED SPANISH CULTURE."

1 Quotation and drawing out of KM3 by MVRDV

BESIDES ITS INNOVATIVE FORMAL CONCEPT, THE PROJECT ALSO TURNS THE IDEA OF SOCIAL HOUSING ON ITS HEAD.

9 DIFFERENT BUILDING BLOCKS ARE GLUED AND STUCK TOGETHER TO FORM WHAT THE ARCHITECTS CALL A "SUPERBLOCK".

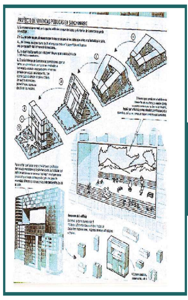
EACH OF THE DIFFERENT BUILDING BLOCK IS MADE UP OF FOUR TO EIGHT APARTMENTS AND EACH BLOCK IS A DIFFERENT TYPE OF APARTMENT.

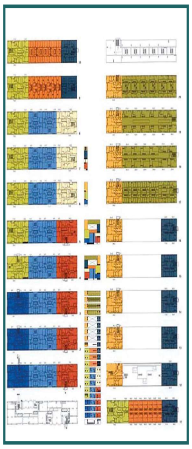
1 Plans found at http://www.people.cornell.edu/pages/gks26/works/mirador01.htm
2 Concept explained at MVRDV's website www.mvrdv.nl

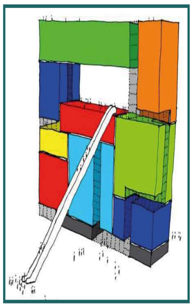
THE DIFFERENT FLOOR PLANS AND APARTMENT STYLES ARE REPRESENTED BY THE FAÇADE TREATMENT OF EACH OF THE BUILDING BLOCKS.

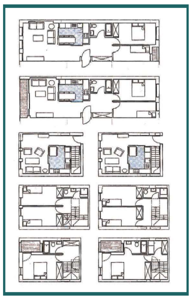
THE UNITS ON FLOOR NINE AND HIGHER ARE ALL DUPLEXES OR TRIPLEXES AND CAN ONLY BE ACCESSED BY END LIFT CORES ON ELEVENTH, EIGHTEENTH, AND NINETEENTH FLOORS.

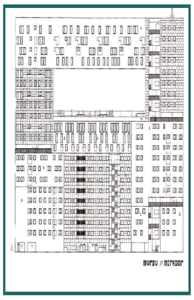
1 Plans and elevation from Privacy and Publicity by Aaron Betsky

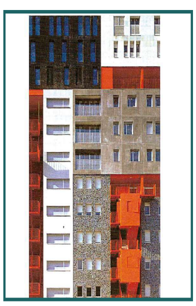






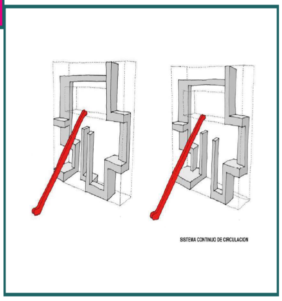






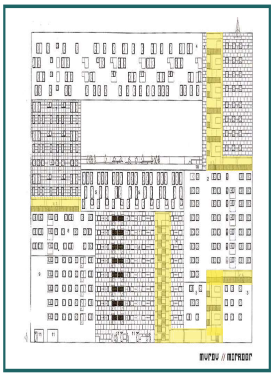
CIRCULATION

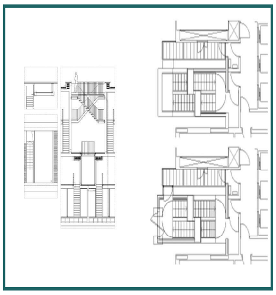
THE NINE BUILDING BLOCKS ARE CONNECTED BY A SYSTEM OF "VERTICAL STREETS" TO LINK THE NEIGHBORHOOD OF APARTMENTS TOGETHER.THE FIRE STAIRS WERE PULLED OUT OF THE INTERIOR OF THE TOWER MADE INTO OUTDOOR PLAZAS AND MEETING SPACES THAT ARTICULATED WITH THE BRIGHT ACCENT ORANGE COLOR.



THE CIRCULATION CORRIDORS WERE PAINTED A BRIGHT ORANGE WHICH CONTRASTED WITH THE GRAYSCALE OF THE MATERIAL USED TO CLAD THE REST OF THIS BUILDING.

THIS ORANGE RIBBON WRAPPED UP AND AROUND THE NINE BLOCKS TOFORM THEM INTO ONE UNIT ENDING FINALLY AT THE OPEN AIR COURTYARD ON THE 13TH FLOOR.

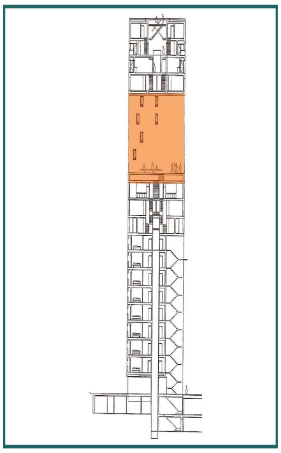


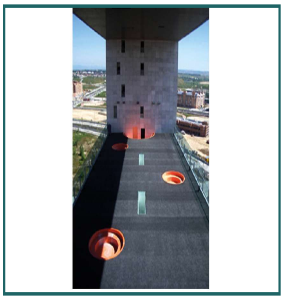


THE MIRADOR PLAZA

THIS SYSTEM OF EXTERNAL CIRCULATION ENDS AT THE 13TH STORY WITH A TALL OPEN AIR COURTYARD, THE MIRADOR, THAT PROVIDES VIEWS OF THE CITY OF MADRID AND ALSO OF THE SURROUNDING GUADARRAMA MOUNTAINS.

"THE LARGE LOOKOUT AT 40 METERS ABOUT THE GROUND PROVIDES OCCUPANTS AND NEIGHBORS WITH A COMMUNITY GARDEN AND A SPACE FROM WHERE THEY CAN CONTEMPLATE THE SKYLINE."
-MVRDV





STRUCTURE

THE STRUCTURE IS POURED CONCRETE WITH REINFORCEMENT OF REBAR. THE FLOOR PLATE HAS REBAR RUNNING IN BOTH DIRECTIONS IN ORDER TO KEEP THE FLOOR PLATES THIN AND THE SPACING OF THE COLUMNS ALSO HELPS TO KEEP THE FLOORS THINNER. THE COLUMNS WOULD HAVE A CONCRETE MESH WITH BENTREBAR ON BOTH THE TOP AND THE BOTTOM TO MAKE A PHYSICAL CONNECTION BETWEEN THE PIERS AND FLOOR WITH REBAR.

THIS SYSTEM IS CARRIED OUT UP UNTO THE 13TH FLOOR WHICH WAS THE SKY PLAZA. THE BUILDING IS STRUCTURALLY HONEST IN THE SENSE THAT THE WEIGHT IS CARRIED STRICTLY BY THE COLUMNS AND FLOOR SLABS. INFILL WAS THEN PLACED BETWEEN THE SLABS AND COLUMN TO MAKE THE WINDOW OPENINGS. THE CONCRETE PIERS ARE LEFT STRICTLY AS STRUCTURE IN THE MOVEMENT CORRIDORS REINFORCING THE IDEAS THAT EACH OF THE NINE BLOCKSARE SEPARATE UNITS AND SITTING ON THESE ORANGE CORRIDORS TO CONNECT THEM.

THE STEEL STRUCTURE SITS ON FOUR THICKER CONCRETE PIERS THAT ARE ONETHIRD THE WIDTH OF THE BUILDING.
THERE IS A MOMENT CONNECTION BETWEEN THE STEEL TRUSS AND THE CONCRETE PIERS.
TWO MAIN FOUR-STORY TRUSSES WITH CROSS-BRACING SUPPORT THE LATERAL LOAD OF THE CENTER SECTION WHILE STEEL BEAMS ARE PLACED ACROSS THE TRUSS BEAMS TO FORM THE FLOORS AT POINTS MARKED BY WELDED PLATES SHOWN STICKING OUT OF THE STRUCTURE IN THE PHOTO ON THE RIGHT.
THE SKELETAL STRUCTURE WAS ADDED AND THEN THE FINAL FOUR CONCRETE

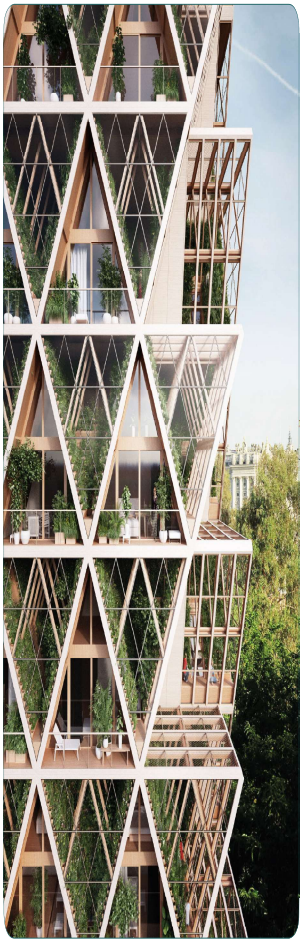
THE STRUCTURAL SYSTEM IS WORTH NOTING ESPECIALLY BECAUSE OF THE CLADDING USED TO FINISH THE BUILDING AND THE CONCEPTUAL DRAWING.
THE EXTERIOR FINISH AND THE CONCEPTUAL DRAWING REINFORCE THAT THE FOUR STORIES ABOVE THE PLAZA ARE CANTILEVERING OFF OF THE WHITE CLADDED BLOCK WHEN REALLY THE CENTER SECTION IS A SKELETAL STEEL TRUSS THAT IS SUPPORTED ON ALL FOUR CORNERS. MVRDV DOES EVERYTHING TO TRY TO FORCE THE FORM OF THE BUILDING OVER THE ACTUAL STRUCTURAL CONSTRUCTION. THE DARK GREY STRIP NEXT TO THE ORANGE STAIR CORRIDOR IN THE PHOTO STARTS TO SHOW WHERE STRUCTURAL CONSTRUCTION OF THE BUILDING STARTS TO ENFORCE THAT THE PIECE IS NOT A CANTILEVER IN COMPARISON TO THE LIME GREEN BLOCK'S LACK OF CONNECTION TO THE STAIR IN THE CONCEPTUAL

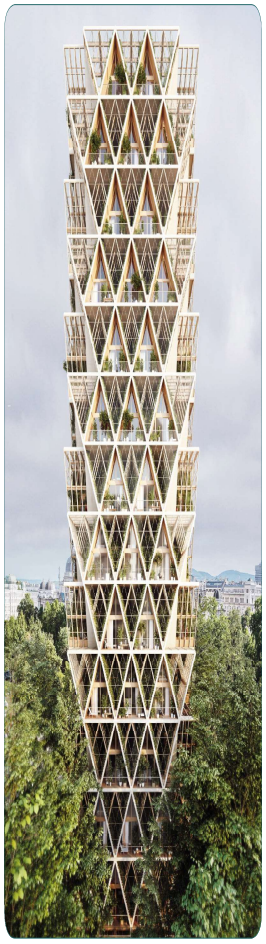
THE 13TH FLOOR THROUGH THE 17TH FLOOR THE BUILDING SPLIT INTO THE TWO PIERS AND THE TWO PIERS ON EITHER SIDE TAKE THE LOAD FROM THE CENTRAL 18TH THROUGH 21ST FLOOR.
THE 20TH FLOOR WAS A PRIVATE ACCESS CORRIDOR TO THE ROOF FOR THOSE APARTMENTS ON THE TOP OF THE COURTYARD.

COMPARATIVE ANALYSIS-SPACES

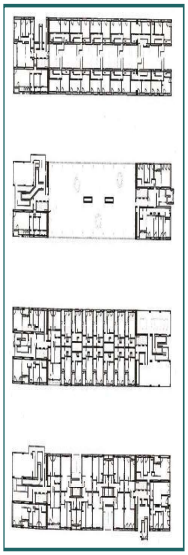
S.NO	SPACES	CASE STUDY-1						CASE STUDY-2						LITERATURE STUDY											
		ACE PARKWAY, NOIDA						ASIAN GAMES VILLAGE , DELHI						OMAX RESIDENCY 2, LKO											
		TYPE A1 TOWER 7	TYPE A2 TOWER 8	TYPE B TOWER 4-5-6	TYPE C TOWER 9-10-11	TYPE D TOWER 1-3	TYPE D2 TOWER 2	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	(3BHK) GROUND FLOOR		(3BHK+ SERVANT) GROUND FLOOR		(3BHK) FIRST FLOOR		(3BHK + SERVANT) FIRST FL		(3BHK +SERVANT) SECOND FLOOR		(3BHK) TYPICAL		(3BHK+ SERVANT) TYPICAL	
		(4BHK)	(3BHK)	(3BHK + UTILITY)	(3BHK)	(2BHK)	(2BHK)	(3BHK + SERVANT)	(3BHK	(3BHK)			(3BHK)	UNIT 1 & 4	UNIT 2& 3	UNIT 1 & 4	UNIT 2& 3	UNIT 1 & 4	UNIT 2& 3	UNIT 1 & 4	UNIT 2& 3	UNIT 1 & 4	UNIT 2& 3	UNIT 1 & 4	UNIT 2& 3	UNIT 1 & 4	UNIT 2& 3
1	COMMON AREA	65.8 SQ.M.	44.43 SQ.M.	42.92 SQ.M.	43.32 SQ.M.	32.94SQ.M., 35.97SQ.M.	33.42SQ.M.	52.10 SQ.M	106.55SQ.M.	32.85Q.M.	54.65Q.M.	58.59SQ.M.	38.45SQ.M	39.84SQ.M	31.48SQ.M	42.56SQ.M	28.46SQ.M	32.98SQ.M	33.67SQ.M	49.7SQ.M	44.39SQ.M	36.75SQ.M,37.66SQ.M	44.02SQ.M,40.18SQ.M	30.7SQ.M	31.11SQ.M	42.15SQ.M	33.3SQ.
2	PRIVATE AREA	74.26 SQ.M.	58.65 SQ.M.	50.56 SQ.M.	48.61 SQ.M.	23.11SQ.M., 24.38SQ.M.	25.08SQ.M.	42.09 SQ.M.	92.9SQ.M.	32.3SQ.M.	45.38SQ.M.	36.32SQ.M.	27.9SQ.M.	24.31SQ.M	35.76SQ.M	25.65SQ.M	37.99SQ.M	26.04SQ.M	36.35SQ.M	27.18SQ.M	40.66SQ.M	37.35Q.M,37.95SQ.M	37.89SQ.M,39.08SQ.M	36.99SQ.M	36.56SQ.M	36.43SQ.M	37.94SQ.
3	SERVICES	20.9 SQ.M.	23.4 SQ.M.	19.74 SQ.M.	12.98 SQ.M.	7.54SQ.M. , 10.27SQ.M.	10.92SQ.M.	10.59 SQ. M.	22.65SQ.M.	5.9SQ.M.	20.9SQ.M.	7.48SQ.M.	8.6SQ.M.	10.74SQ.M	11.72SQ.M	11.04SQ.M	12.99SQ.M	10.39SQ.M	11.35SQ.M	11.02SQ.M	10.9SQ.M	12.23SQ.M,13.04SQ.M	14.98SQ.M,12.88SQ.M	13.12SQ.M	14.16SQ.M	14.14SQ.M	10.78SQ.
4	UTILITY AREA	17.69 SQ.M.	24.75 SQ.M.	30.6 SQ.M.	13.08 SQ.M.	3.66SQ.M.	7.95SQ.M.	122.78SQ.M.	76SQ.M.	45.65SQ.M.	11.15SQ.M.	42.13SQ.M.	54.3SQ.M.	6.03SQ.M	7.07SQ.M	9.22SQ.M	10.05SQ.M	6.63SQ.M	9.79SQ.M	8.45Q.M	10.32SQ.M	14.21SQ.M, 18.63SQ.M	16.14SQ.M,10.20SQ.M	5.83SQ.M	7.25SQ.M	15.75Q.M	17.24SQ.
5	CIRCULATION	12.52 SQ.M.	10.8 SQ.M.	13.2 SQ.M.	12.45 SQ.M.	8.36SQ.M.	6.18SQ.M.																		

ELEMENTAL STUDY FOR REFERENCE





AR.CHRIS PRECHT AND HIS WIFE FEI PRECHT HAVE DESIGNED A VERTICAL FARMHOUSE THAT CONNECTS ARCHITECTURE AND AGRICULTURE IN ONE TOWER, BY ONLY USING MODULAR TRIANGULAR VOLUMES.



- A PROPOSAL CONSISTING OF COMMUNITY INTERACTIVE THEME
- A DESIGN THAT REDUCES THE GAP BETWEEN URBAN AND AGRICULTURAL SPACES
- A HOUSING THAT FOCUSES ON REDUCE-REUSE-RECYCLE
- GENERATING ITS OWN NEEDS TO MAXIMUM EXTENT
- BREAKING THE MONOTNY OF HOUSING WHILE PLAYING THROUGH PLAN OF BUILDING

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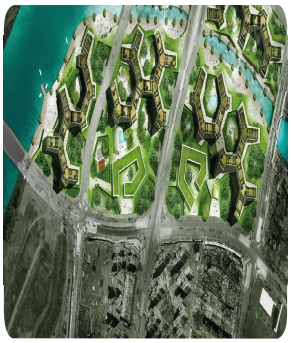
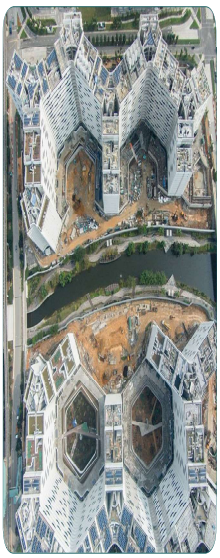
Competition International Competition for Singapore Public Housing Award First Prize Project NamePunggol Waterway Terraces Architects group BasiaLocationPunggol Waterway, Singapore 822313 Area225000.0 sqm Project Year2015 Photographs Darren Soh. Courtesy of GroupBasia

CONCEPT

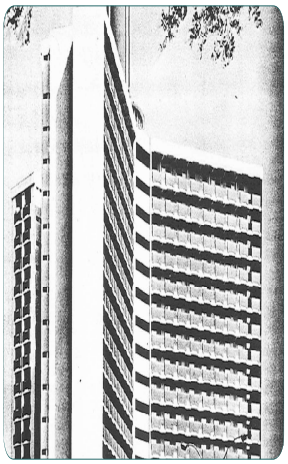
The Punggol Waterway Terraces, so named for the river on which they're set, will be a sustainable community that aims to echo the tropical exuberance of Singapore's first housing developments in the 1970's. Arranged around central courtyards, these high-rise apartments hope to create a sleek, graceful skyline that contrasts with the verdant greenery of their landscape.





COMPARATIVE ANALYSIS-SITE

S.NO.	PARTICULAR	CASE STUDY 1	CASE STUDY 2	LITERATURE STUDY



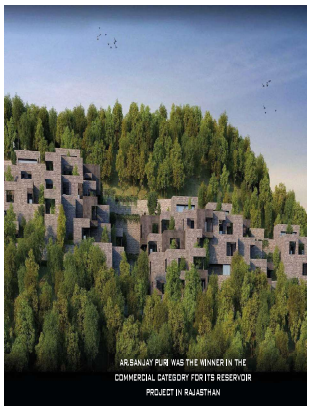
GROUPBASIA IS NEARING COMPLETION ON A FIRST-PRIZE WINNING PROPOSAL THAT IS MEANT TO REVIVE THE CONCEPT OF PUBLIC HOUSING IN SINGAPORE. THE PUNGGOL WATERWAY TERRACES, SO NAMED FOR THE RIVER ON WHICH THEY'RE SET, WILL BE A SUSTAINABLE COMMUNITY THAT AIMS TO ECHO THE UTOPIC EXUBERANCE OF SINGAPORE'S FIRST HOUSING DEVELOPMENTS IN THE 1970S. ARRANGED AROUND CENTRAL COURTYARDS, THESE HIGH-RISE APARTMENTS HOPE TO CREATE A SLEEK, GRACEFUL SKYLINE THAT CONTRASTS WITH THE VERDANT GREENERY OF THEIR LANDSCAPE.

THE MASTERPLAN FOR THE HOUSING DEVELOPMENT COVERS A SITE AREA OF ABOUT 70,000 SQUARE METERS, CREATING 1,876 RESIDENTIAL UNITS. LANDSCAPING PLAYS A LARGE PART IN THE DEVELOPMENT'S DESIGN; LARGE, HEXAGONAL VOIDS WITHIN THE STRUCTURE PROVIDES GARDEN SPACE THAT CAN BE SEEN AND SHARED BY THE BUILDING'S COMMUNITY. THE TERRACING OF THE BUILDINGS THEMSELVES IS MEANT TO RESEMBLE THE MOUNTAINSIDE RICE FIELDS THAT ARE SO COMMON ACROSS ASIA. THIS DESIGN CHOICE ALSO ALLOWS FOR EVEN MORE GARDEN SPACE ON THE BUILDINGS' ROOFTOPS.

THE HOUSING UNITS OF PUNGGOL WATERWAY TERRACES ARE MODULAR, ALLOWING FOR RESIDENCES TO CHANGE ALONGSIDE THE NEEDS OF THE FAMILY LIVING IN THEM. THE BUILDINGS' THIN PLANS ALLOW FOR GENEROUS VIEWS OF THE SURROUNDING GARDENS OR WATERWAY FROM EACH OF THE APARTMENTS. AT THE SAME TIME, THE BUILDING'S SHAPE AND ORIENTATION PREVENTS UNWANTED SOLAR GAIN FROM THE UNITS' WINDOWS, AND MAXIMIZES NATURAL VENTILATION.

Punggol Waterway Terraces is currently under construction. GroupBasia won the competition through a competition in 2013.

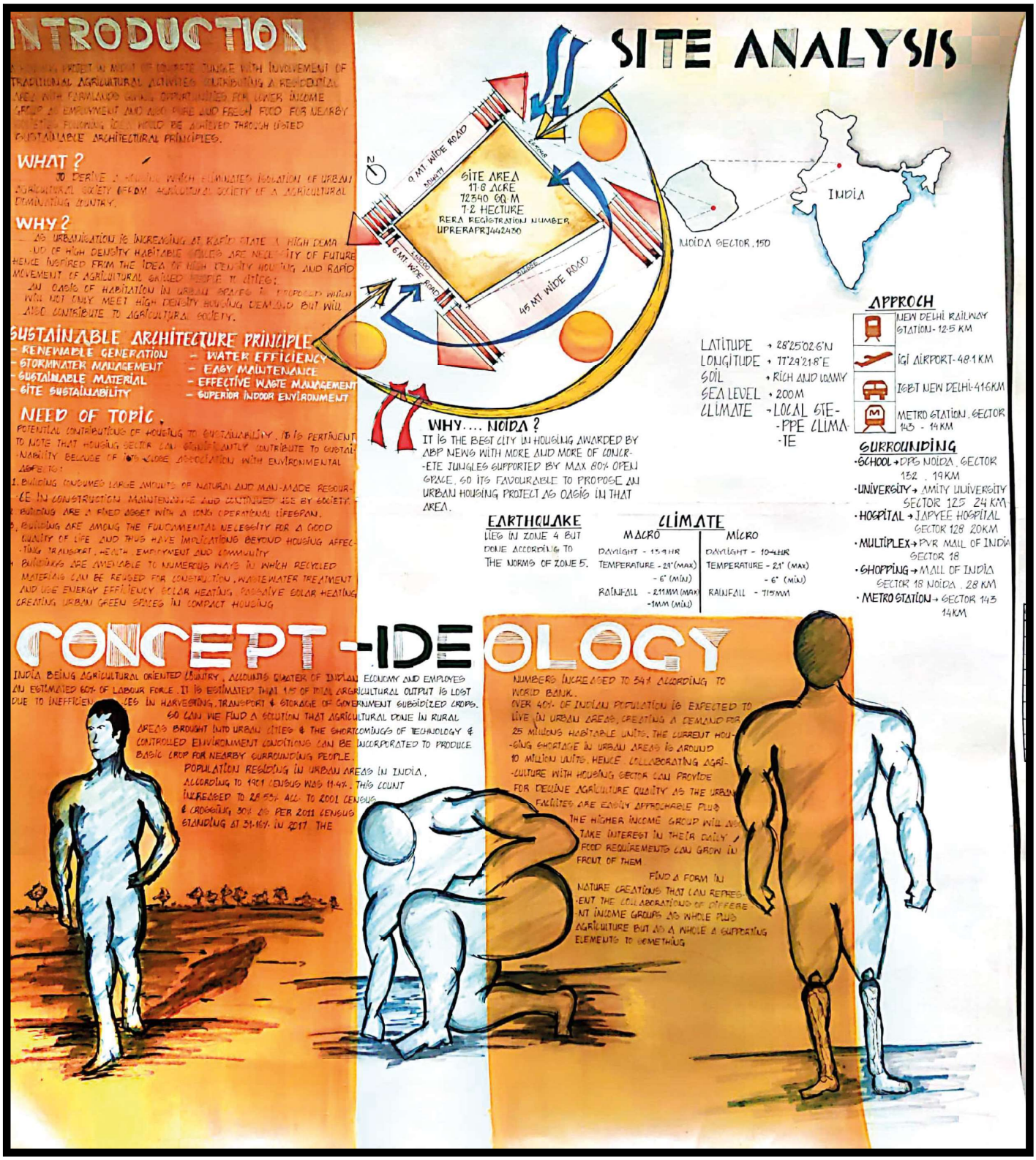
FUTURE TOWERS MVRDV IN PUNE



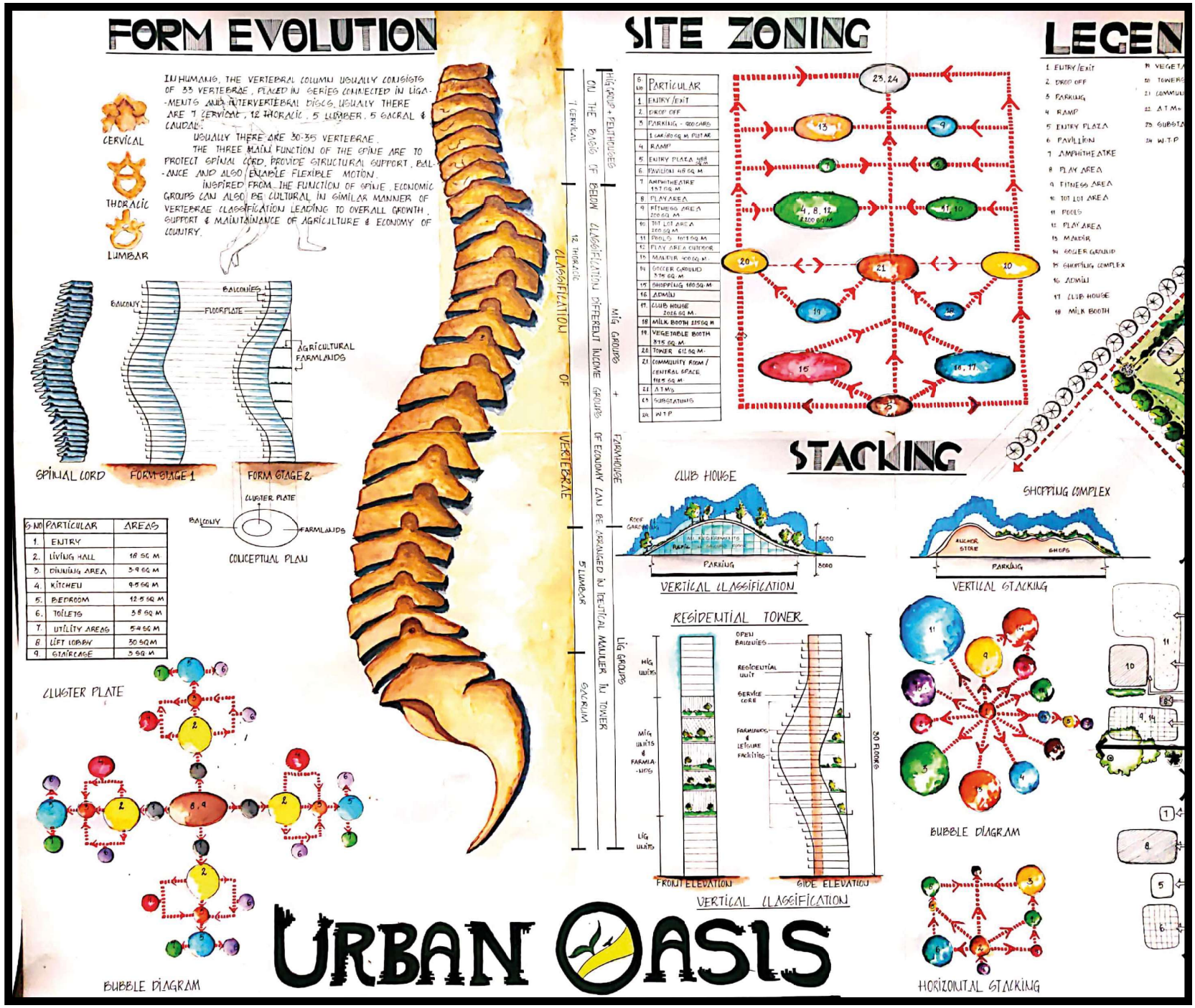
AR.SANJAY PURI WAS THE WINNER IN THE COMMERCIAL CATEGORY FOR ITS RESERVOIR PROJECT IN RAJASTHAN

CONCEPT

PANEL-1

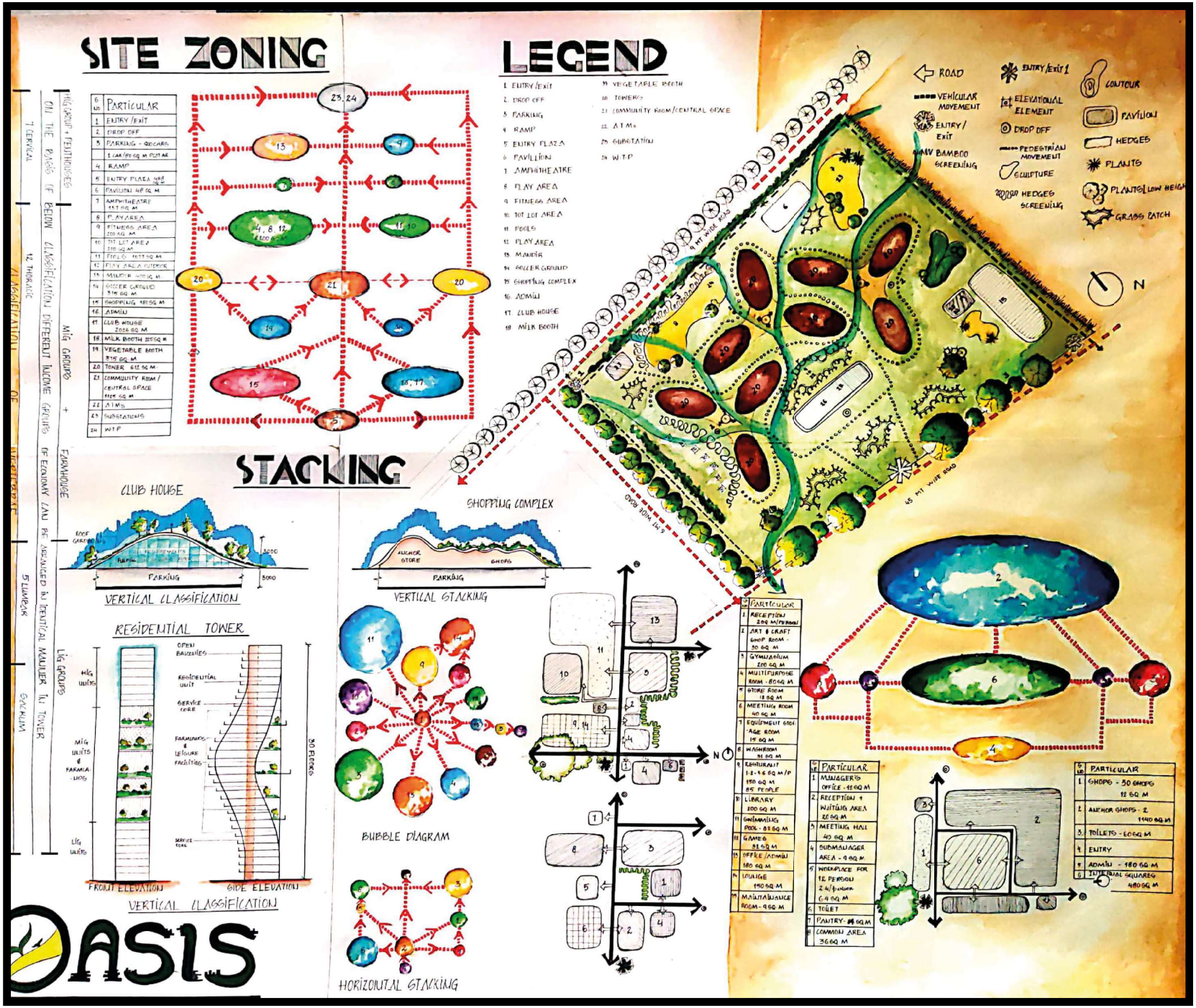


PANEL-2



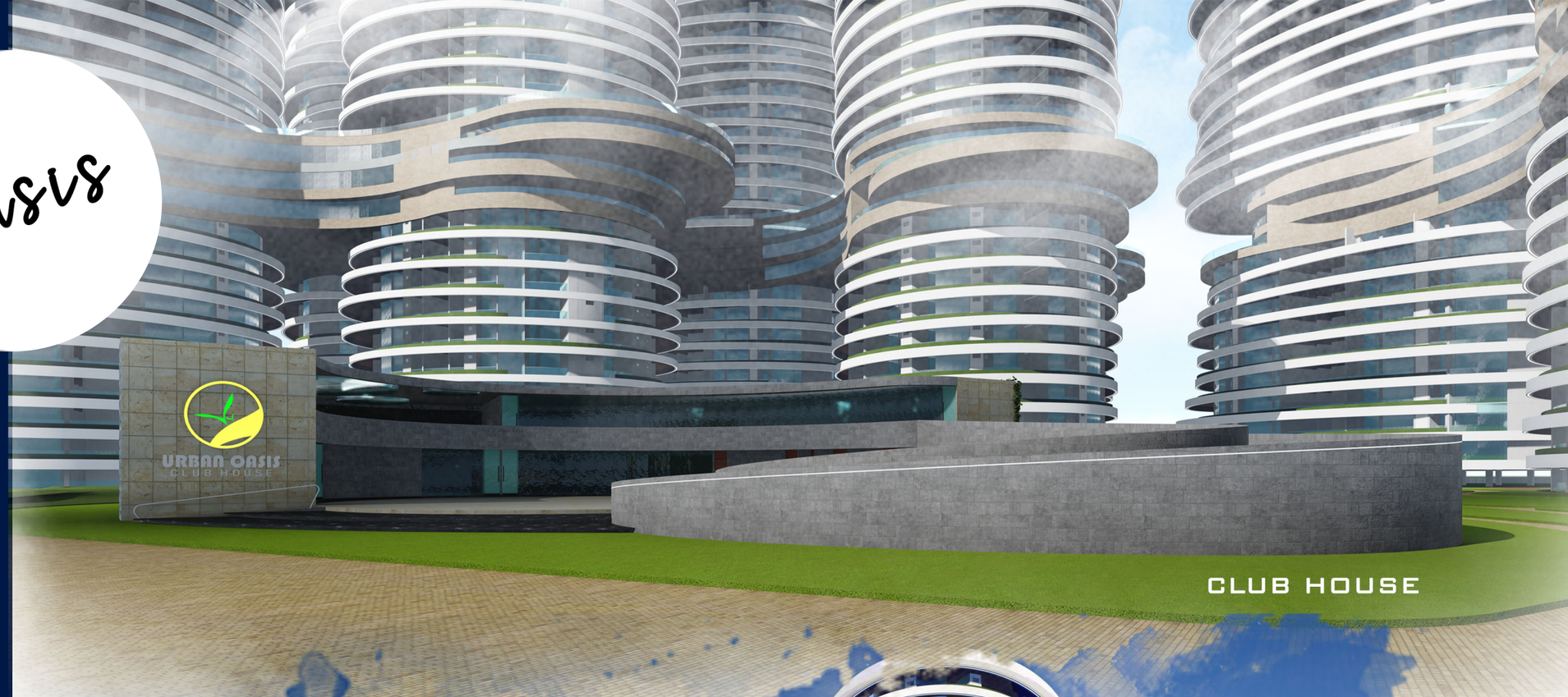
S.NO	PARTICULAR	AREAS
1.	ENTRY	
2.	LIVING HALL	18 SQ.M.
3.	DINNING AREA	3.9 SQ.M
4.	KITCHEN	9.5 SQ.M
5.	BEDROOM	12.5 SQ.M
6.	TOILETS	3.8 SQ.M
7.	UTILITY AREAS	5.4 SQ.M
8.	LIFT LOBBY	30 SQ.M
9.	STAIRCASE	3 SQ.M

PANEL-3


SITE ZONING
LEGEND
STACKING
CLUB HOUSE
SHOPPING COMPLEX
VERTICAL CLASSIFICATION
VERTICAL STACKING
RESIDENTIAL TOWER
VERTICAL CLASSIFICATION
BUBBLE DIAGRAM
HORIZONTAL STACKING
OASIS

Urban Oasis

MY THESIS TOPIC IS URBAN OASIS. I CHOSE THIS TOPIC AS I WAS LOOKING TO WORK ON A PRACTICAL PROBLEM THAT NEEDS TO BE HANDLED ,AS URBANIZATION INCREASING AT RAPID RATE AND AGRICULTURAL SECTOR DEPRIVING, SO I DECIDED WHAT IF BOTH SECTOR ARE GROUPED TOGETHER IN A SINGLE PROJECT. AN “URBAN OASIS” DEPICTING URBAN HOUSING AS DESERT AND AGRICULTURAL PRACTICE AS A OASIS IN DESERT.



CLUB HOUSE

SITE VIEW

SITE PLAN SCALE 1:650

AREA ANALYSIS

NOIDA BYE LAWS	
F.A.R	2.75
SITE AREA	17.8 ACRES[72,034 SQ MT]
GROUND COVERAGE	40%[28813.6 SQ MT]
PERMISSIBLE BUILD UP	198093.5 SQ MT
SET BACK FRONT	16 MTS
SET BACK REST SIDES	12 MTS
ACHIEVED AREA	
F.A.R	2.61
GROUND COVERAGE	19.4%[14004 SQ MT]
ACHIEVED BUILD UP	188134 SQ MT
TOTAL NO. OF FLATS	1348
HARDSCAPE AREA=20819.3 SQ MT	
DRIVEWAYS	8288 SQ MT
PATHWAYS	3939.6 SQ MT
SURFACE PARKING	6038 SQ MT
OTHER	2553.4 SQ MT
SOFTSCAPE AREA	25846.2 SQ MT
CLEARANCE BETWEEN TOWERS =16 MTS	

LEGENDS

	PEDESTRIAN PATHWAY
	DRIVEWAY
	SITE REFERENCE GRIDS STARTING POINT
D.T.	DOMESTIC TANK 2.7X2.7X3.0 MT
Fr.T.	FIRE TANK 2.3X2.2X3 MT
Fu.T.	FLUSHING TANK 2.25X2.25X2
	OPENINGS COVERED WITH MS-GRILL FOR BASEMENT VENTILATION 600MMØ
F.H.	FIRE HYDRANT
G.R.	GUARD ROOM 2000X3000 MM

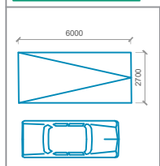
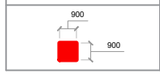
PLANTS ACCORDING TO THEIR USES

SHADING TRESS	
ORNAMENTAL	
HEDGES	

NOTE:DETAILED DESCRIPTION OF PLANT IN ELECTIVE-1 SHEET

DETAIL-A

LEGENDS

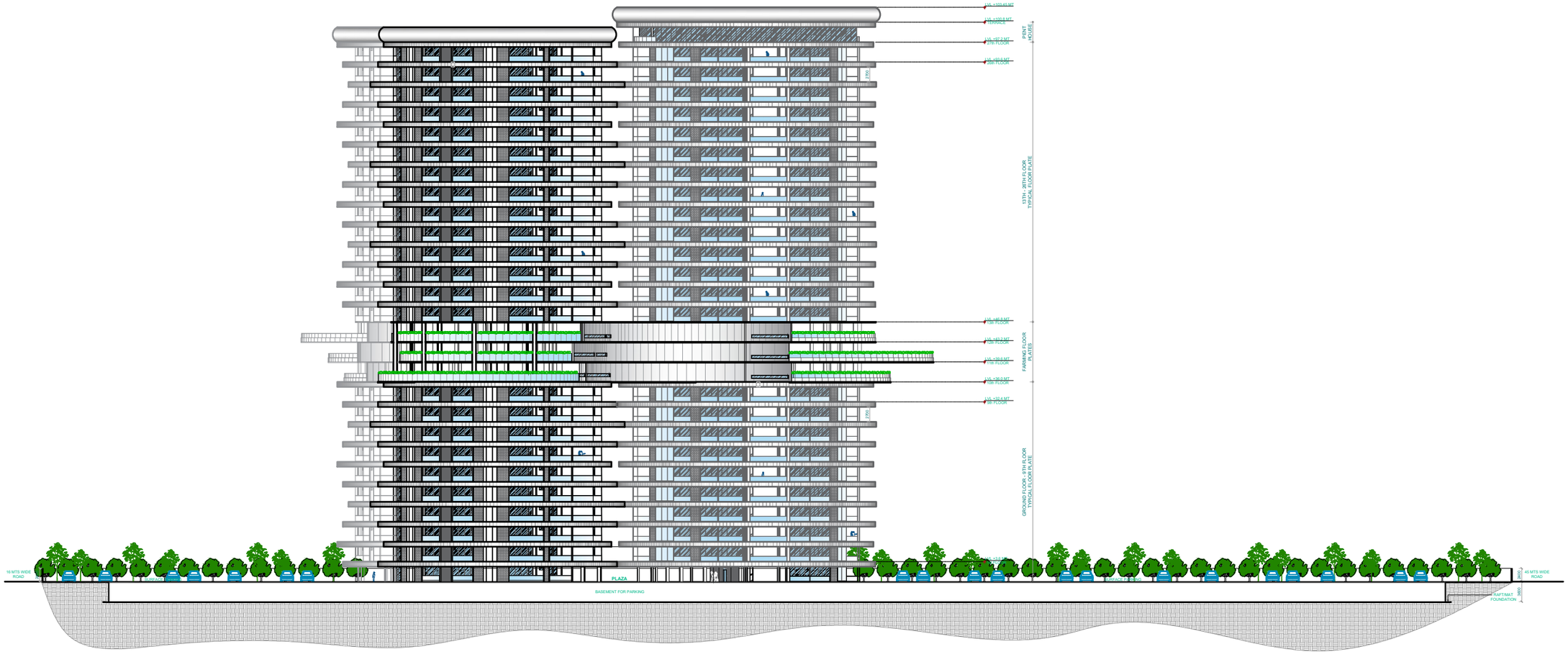
	CAR PARKING SPACE
	COLUMN SIZE

AREA
53314.5 SQ MT

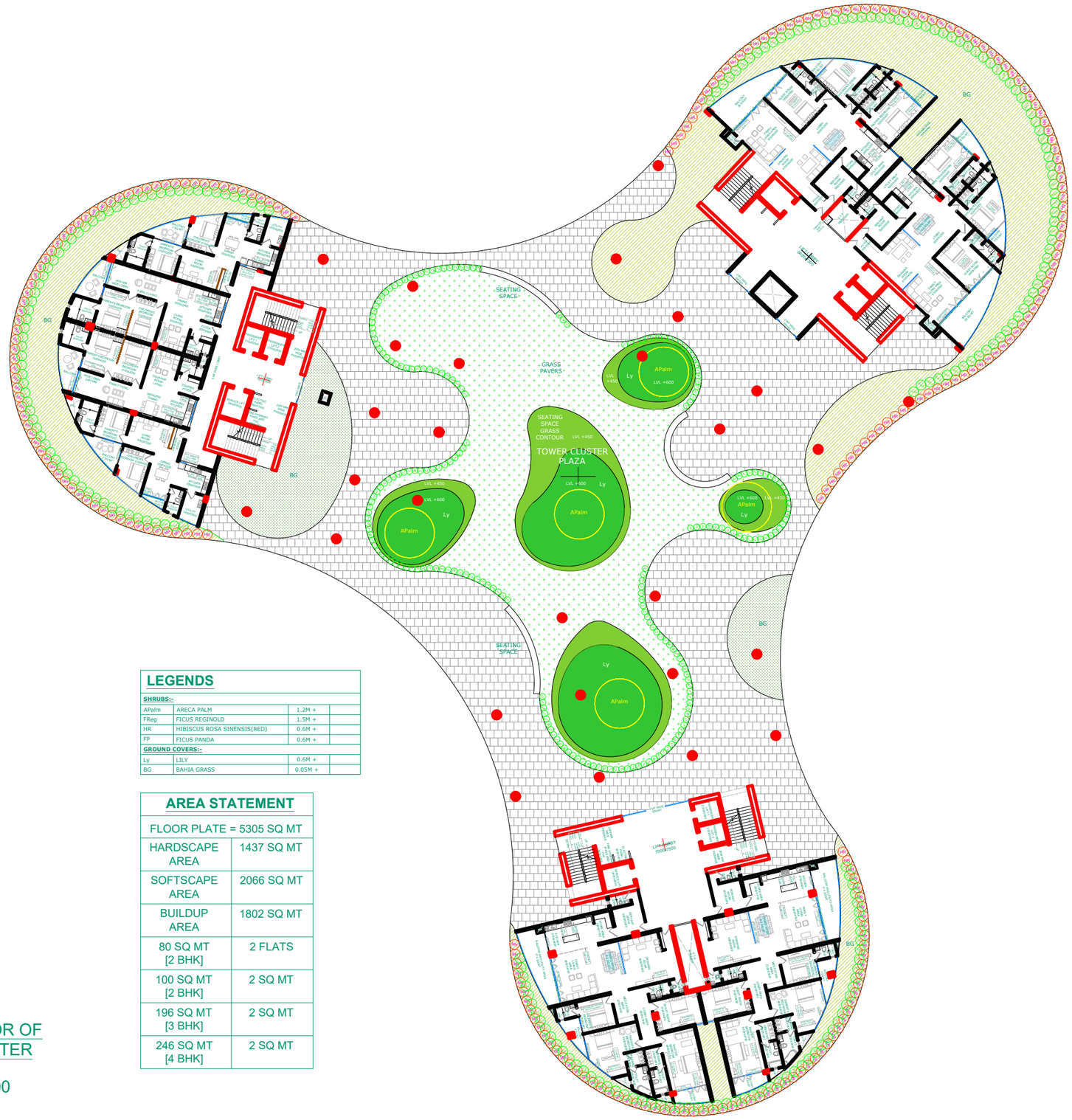
PARKING AREA	33156 SQ MT
DRIVEWAY	20158.5 SQ MT

BASEMENT PLAN

SCALE 1:200



SITE SECTION AA' SCALE 1:350



LEGENDS

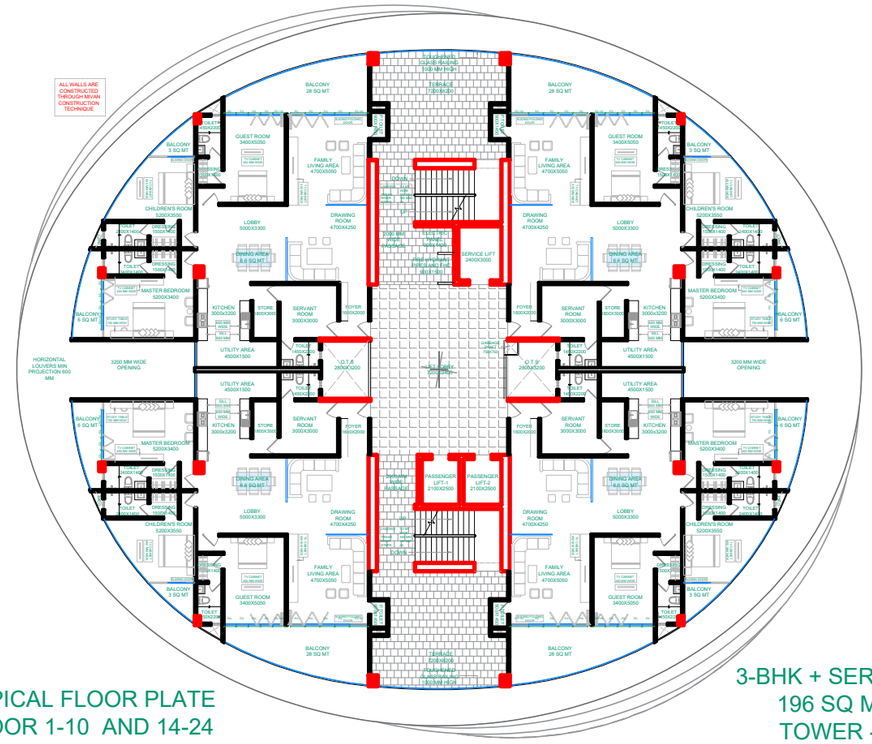
SHRUBS:-			
APalm	ARECA PALM	1.2M +	
FReg	FICUS REGINOLD	1.5M +	
HR	HIBISCUS ROSA SINENSIS(RED)	0.6M +	
FP	FICUS PANDA	0.6M +	
GROUND COVERS:-			
Ly	LILY	0.6M +	
BG	BAHIA GRASS	0.05M +	

AREA STATEMENT

FLOOR PLATE = 5305 SQ MT	
HARDSCAPE AREA	1437 SQ MT
SOFTSCAPE AREA	2066 SQ MT
BUILDUP AREA	1802 SQ MT
80 SQ MT [2 BHK]	2 FLATS
100 SQ MT [2 BHK]	2 SQ MT
196 SQ MT [3 BHK]	2 SQ MT
246 SQ MT [4 BHK]	2 SQ MT

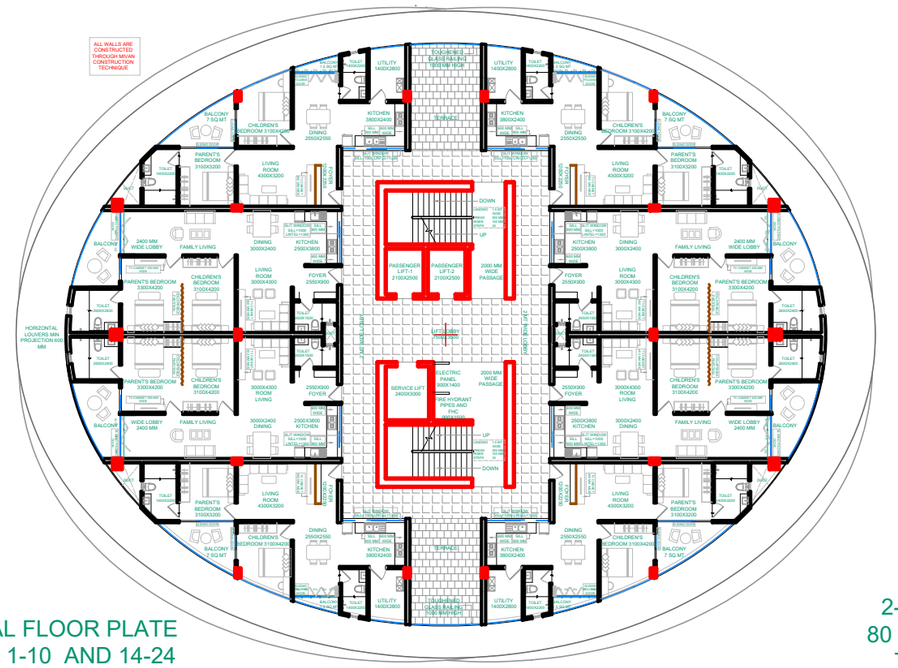
GROUND FLOOR OF TOWER CLUSTER

SCALE 1:200



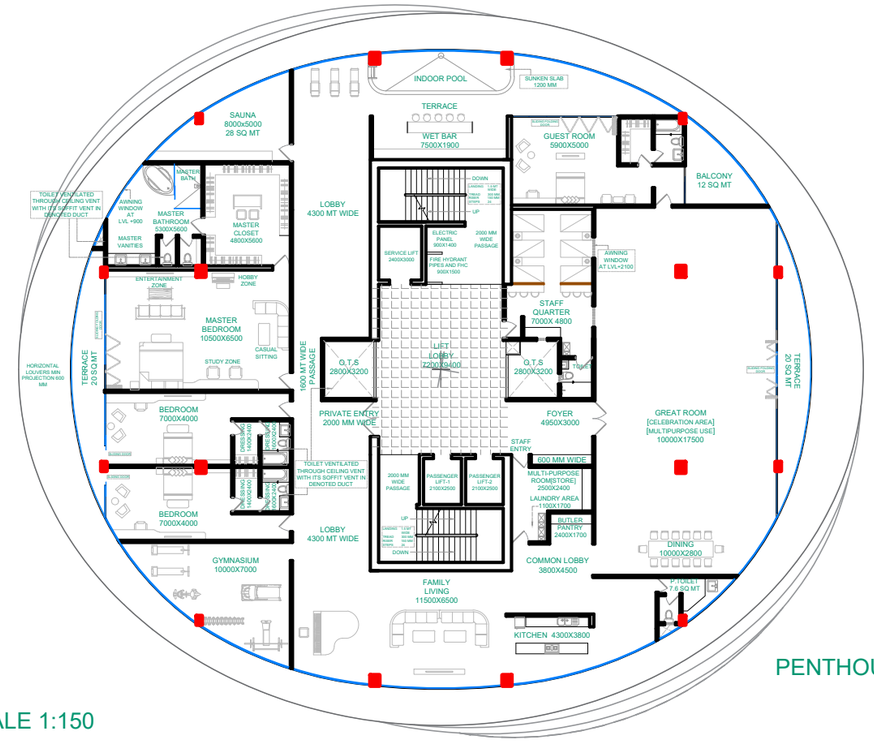
TYPICAL FLOOR PLATE
FLOOR 1-10 AND 14-24

3-BHK + SERVANT
196 SQ MT
TOWER - A



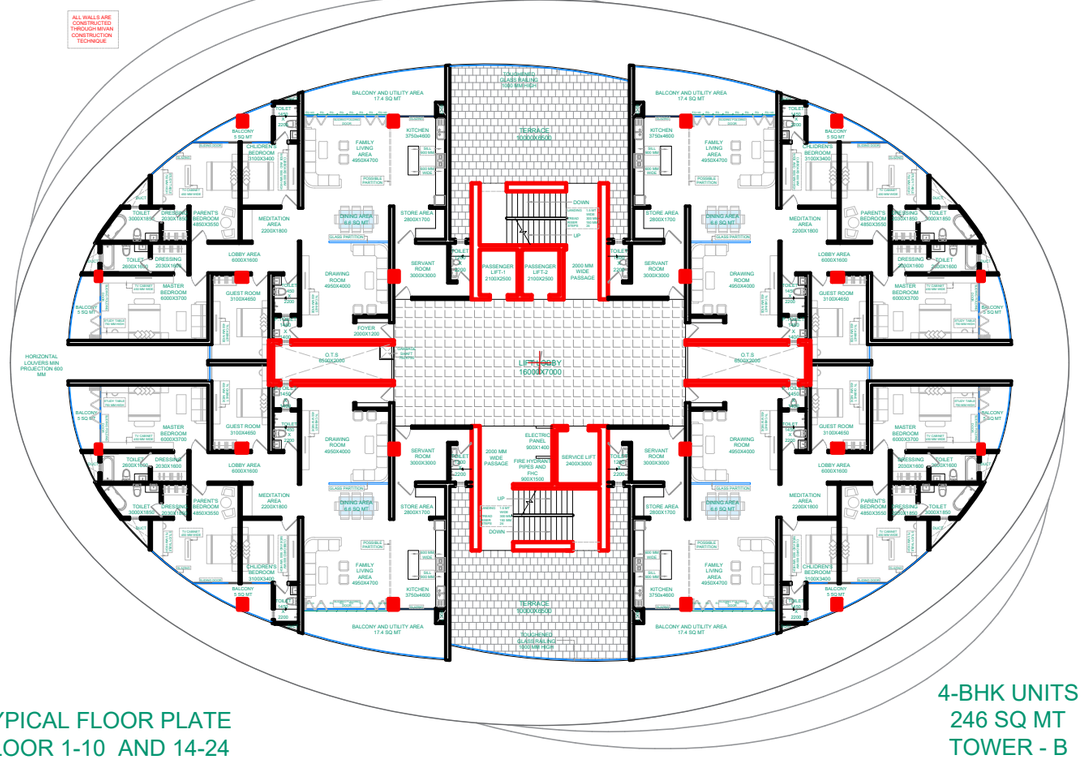
TYPICAL FLOOR PLATE
FLOOR 1-10 AND 14-24

2-BHK UNITS
80 & 100 SQ MT
TOWER -C



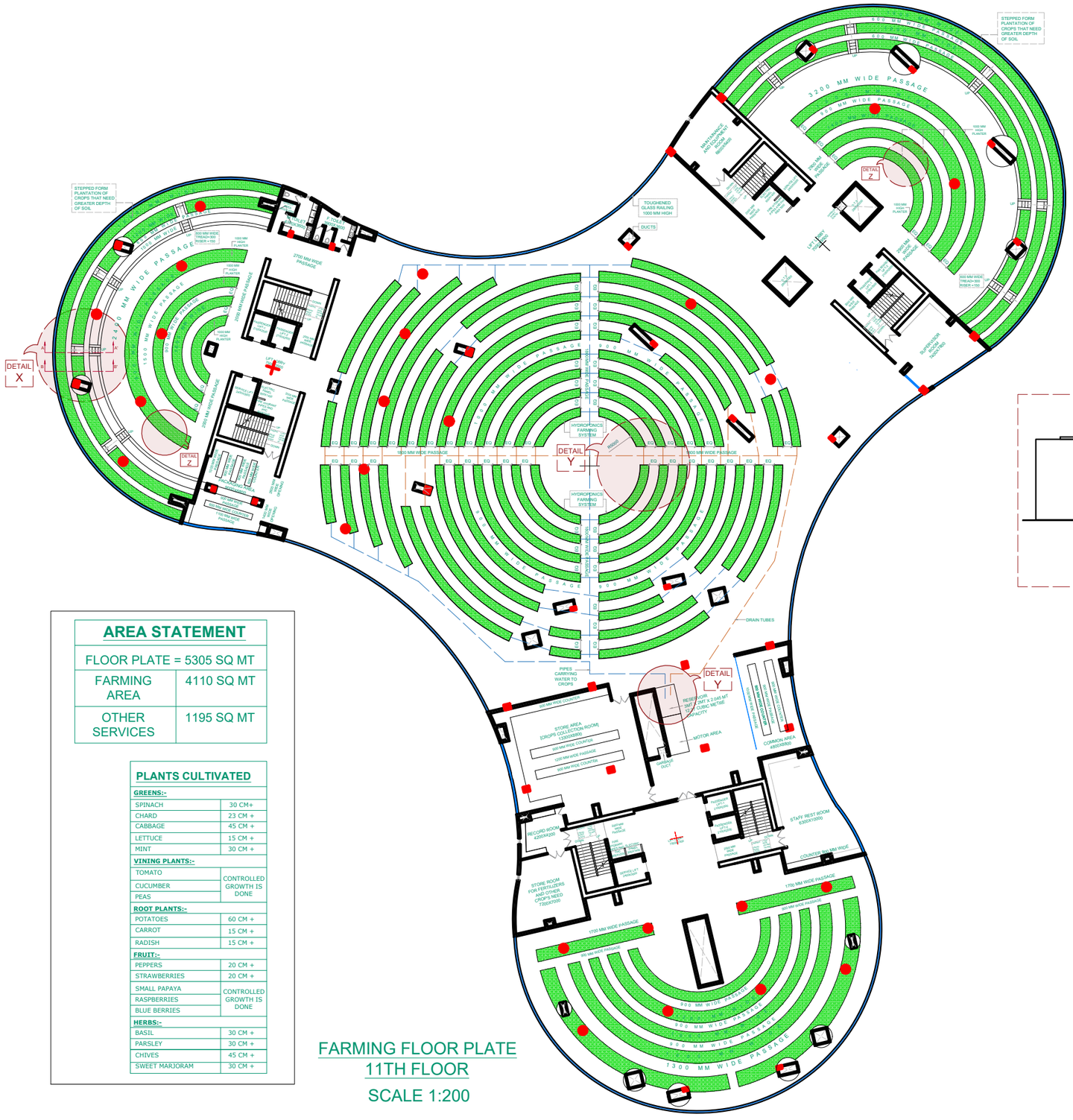
PENTHOUSE

SCALE 1:150



TYPICAL FLOOR PLATE
FLOOR 1-10 AND 14-24

4-BHK UNITS
246 SQ MT
TOWER - B



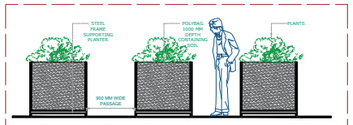
FARMING FLOOR PLATE
11TH FLOOR
SCALE 1:200

AREA STATEMENT

FLOOR PLATE = 5305 SQ MT	
FARMING AREA	4110 SQ MT
OTHER SERVICES	1195 SQ MT

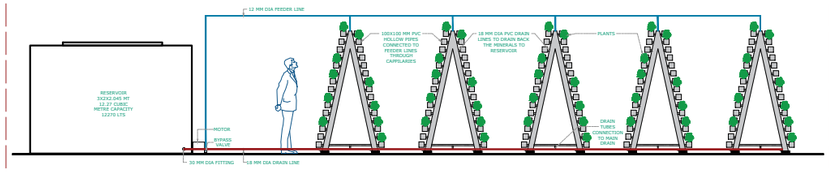
PLANTS CULTIVATED

GREENS:-	
SPINACH	30 CM+
CHARD	23 CM +
CABBAGE	45 CM +
LETTUCE	15 CM +
MINT	30 CM +
VINING PLANTS:-	
TOMATO	CONTROLLED GROWTH IS DONE
CUCUMBER	
PEAS	
ROOT PLANTS:-	
POTATOES	60 CM +
CARROT	15 CM +
RADISH	15 CM +
FRUIT:-	
PEPPERS	20 CM +
STRAWBERRIES	20 CM +
SMALL PAPAYA	CONTROLLED GROWTH IS DONE
RASPBERRIES	
BLUE BERRIES	
HERBS:-	
BASIL	30 CM +
PARSLEY	30 CM +
CHIVES	45 CM +
SWEET MARJORAM	30 CM +



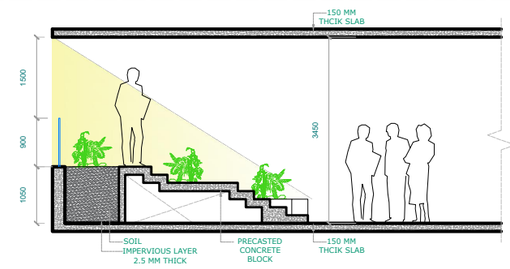
TYPICAL SECTION THROUGH 1000 MM HIGH PLANTER

DETAIL-Z

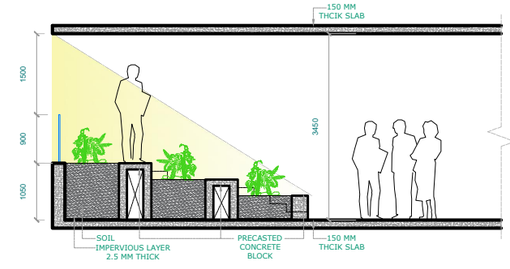


SCHEMATIC DIAGRAM SHOWING WORKING OF HYDIPONICS SYSTEM

DETAIL-Y



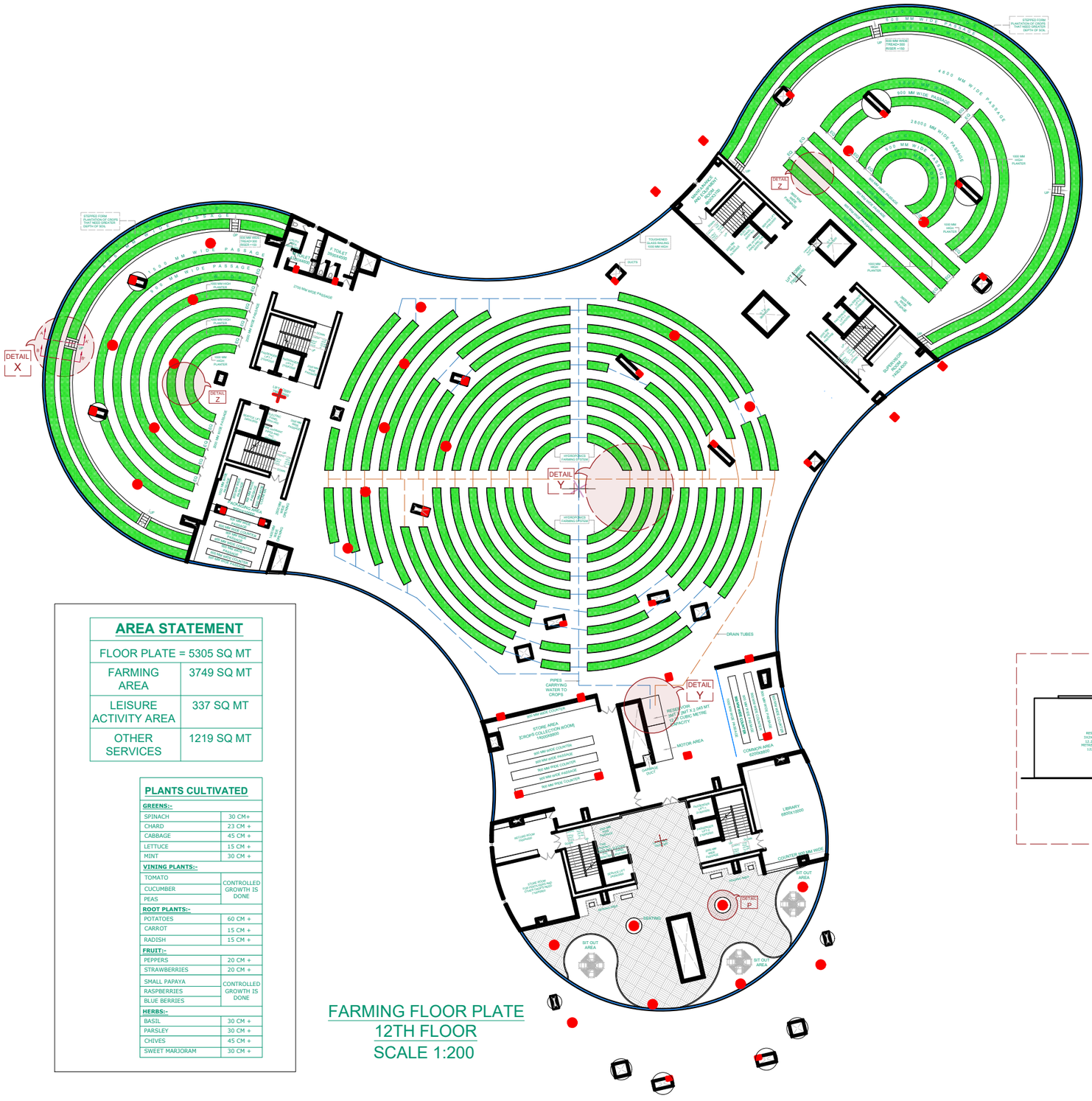
SECTION AA'



SECTION BB'

DETAIL-X

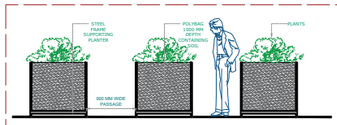
DETAILS @SCALE 1:50



FARMING FLOOR PLATE
12TH FLOOR
SCALE 1:200

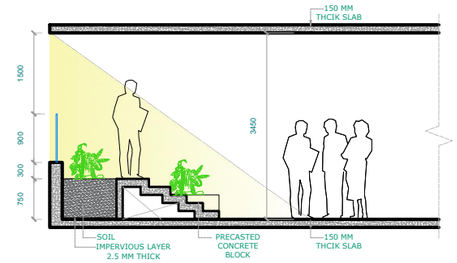
AREA STATEMENT	
FLOOR PLATE = 5305 SQ MT	
FARMING AREA	3749 SQ MT
LEISURE ACTIVITY AREA	337 SQ MT
OTHER SERVICES	1219 SQ MT

PLANTS CULTIVATED	
GREENS:-	
SPINACH	30 CM+
CHARD	23 CM +
CABBAGE	45 CM +
LETTUCE	15 CM +
MINT	30 CM +
VINING PLANTS:-	
TOMATO	CONTROLLED GROWTH IS DONE
CUCUMBER	
PEAS	
ROOT PLANTS:-	
POTATOES	60 CM +
CARROT	15 CM +
RADISH	15 CM +
FRUIT:-	
PEPPERS	20 CM +
STRAWBERRIES	20 CM +
SMALL PAPAYA	CONTROLLED GROWTH IS DONE
RASPBERRIES	
BLUE BERRIES	
HERBS:-	
BASIL	30 CM +
PARSLEY	30 CM +
CHIVES	45 CM +
SWEET MARJORAM	30 CM +

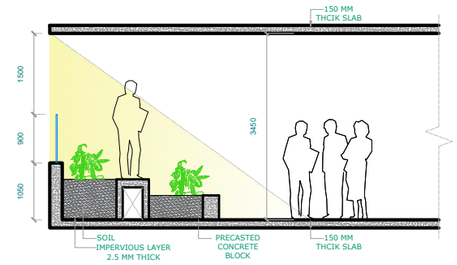


TYPICAL SECTION THROUGH 1000 MM HIGH PLANTER

DETAIL-Z

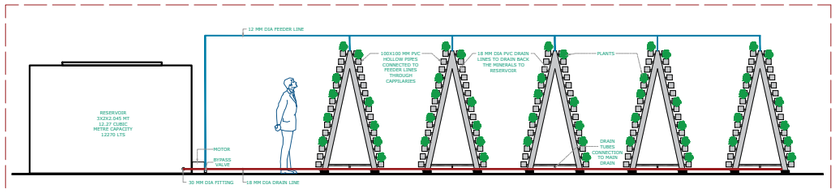


SECTION AA'



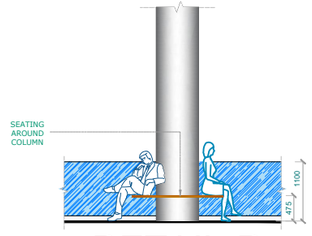
SECTION AA'

DETAIL-X



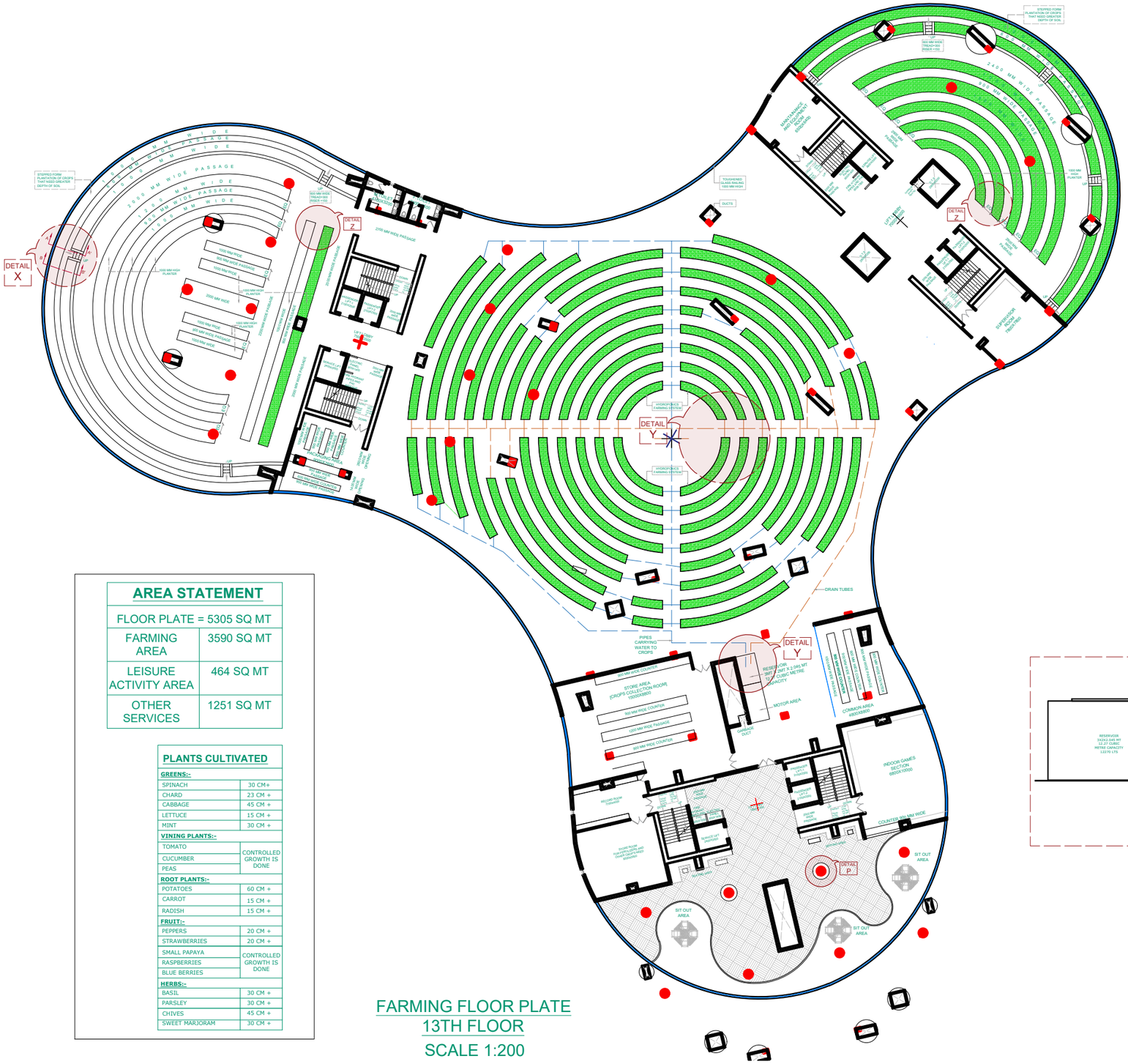
SCHEMATIC DIAGRAM SHOWING WORKING OF HYDIPONICS SYSTEM

DETAIL-Y



DETAIL-P

DETAILS @SCALE 1:50



AREA STATEMENT	
FLOOR PLATE = 5305 SQ MT	
FARMING AREA	3590 SQ MT
LEISURE ACTIVITY AREA	464 SQ MT
OTHER SERVICES	1251 SQ MT

PLANTS CULTIVATED	
GREENS:-	
SPINACH	30 CM+
CHARD	23 CM +
CABBAGE	45 CM +
LETTUCE	15 CM +
MINT	30 CM +
VINING PLANTS:-	
TOMATO	CONTROLLED GROWTH IS DONE
CUCUMBER	
PEAS	
ROOT PLANTS:-	
POTATOES	60 CM +
CARROT	15 CM +
RADISH	15 CM +
FRUIT:-	
PEPPERS	20 CM +
STRAWBERRIES	20 CM +
SMALL PAPAYA	CONTROLLED GROWTH IS DONE
RASPBERRIES	
BLUE BERRIES	
HERBS:-	
BASIL	30 CM +
PARSLEY	30 CM +
CHIVES	45 CM +
SWEET MARJORAM	30 CM +

FARMING FLOOR PLATE
13TH FLOOR
SCALE 1:200

TYPICAL SECTION THROUGH 1000 MM HIGH PLANTER

DETAIL-Z

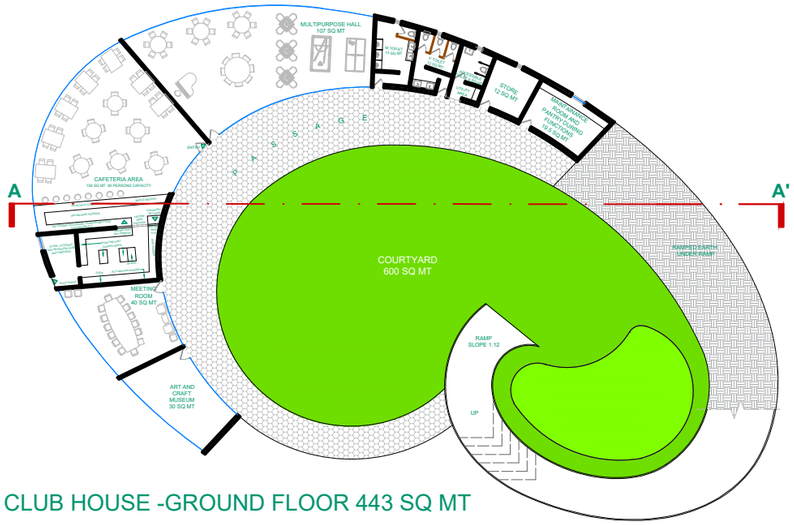
DETAIL-X

SCHEMATIC DIAGRAM SHOWING WORKING OF HYDIPONICS SYSTEM

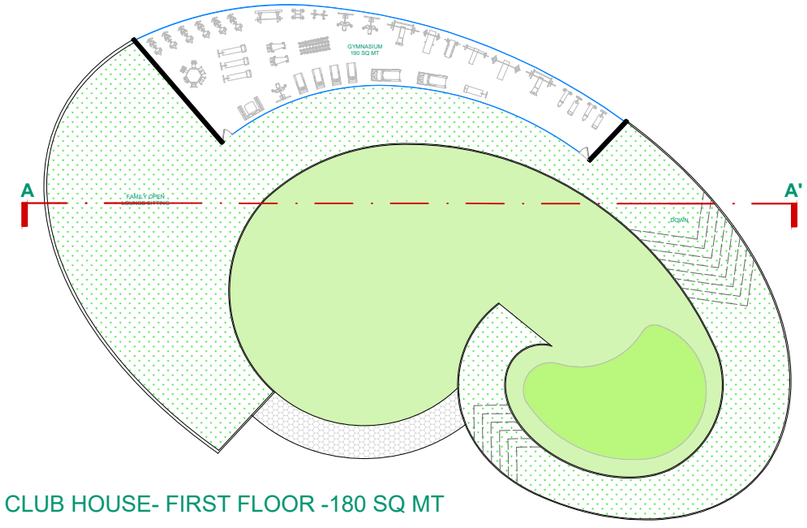
DETAIL-Y

DETAIL-P

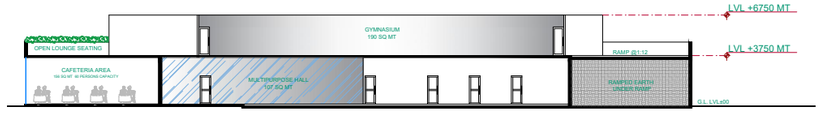
DETAILS @SCALE 1:50



CLUB HOUSE -GROUND FLOOR 443 SQ MT

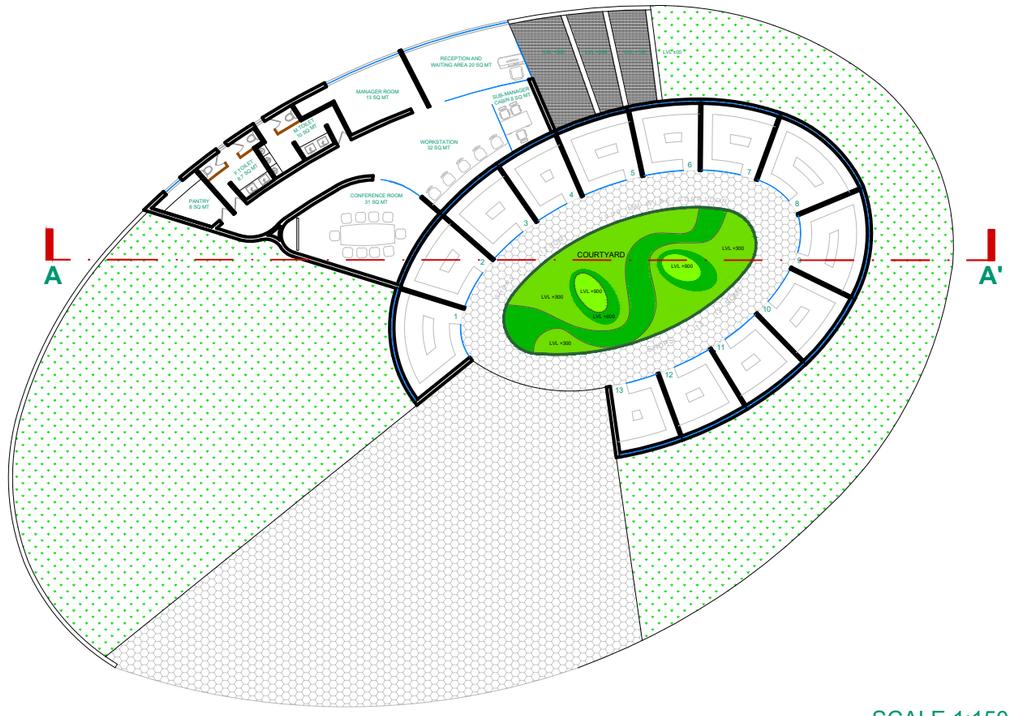


CLUB HOUSE- FIRST FLOOR -180 SQ MT



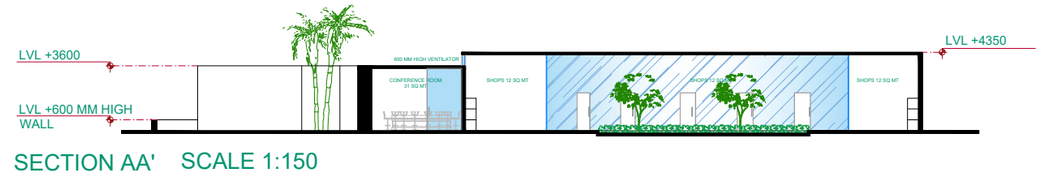
SECTION AA'

SCALE 1:150

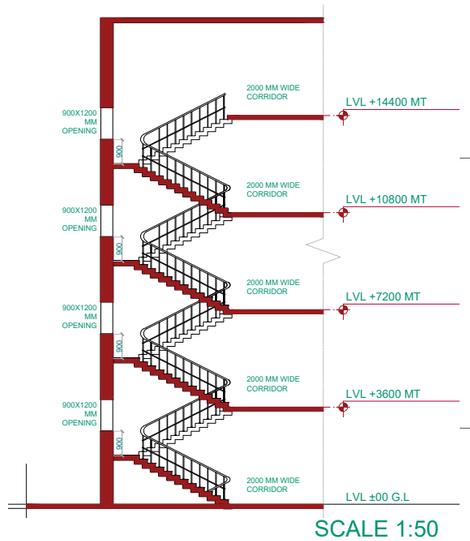


ADMIN BLOCK 336 SQ MT

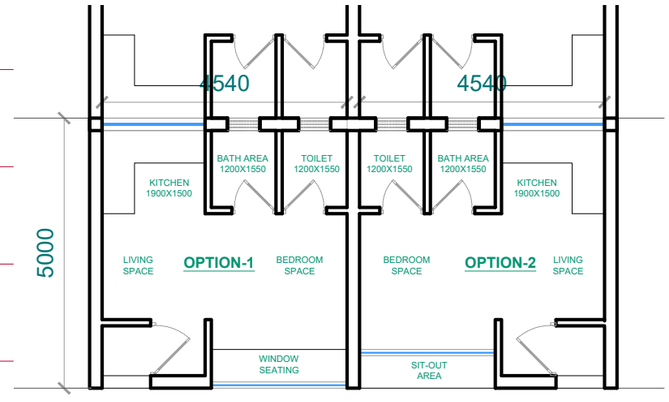
SCALE 1:150



SECTION AA' SCALE 1:150

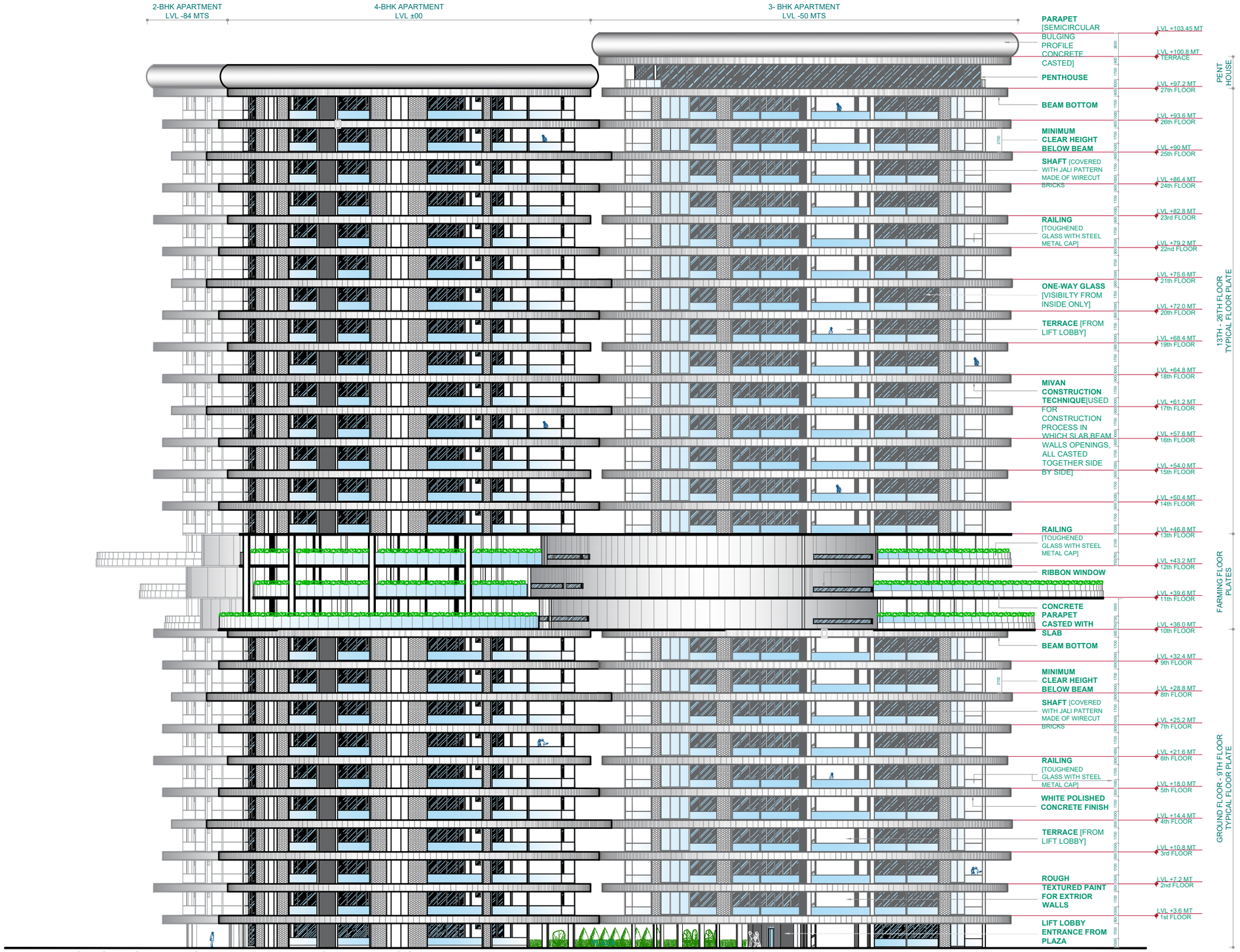


SCALE 1:50

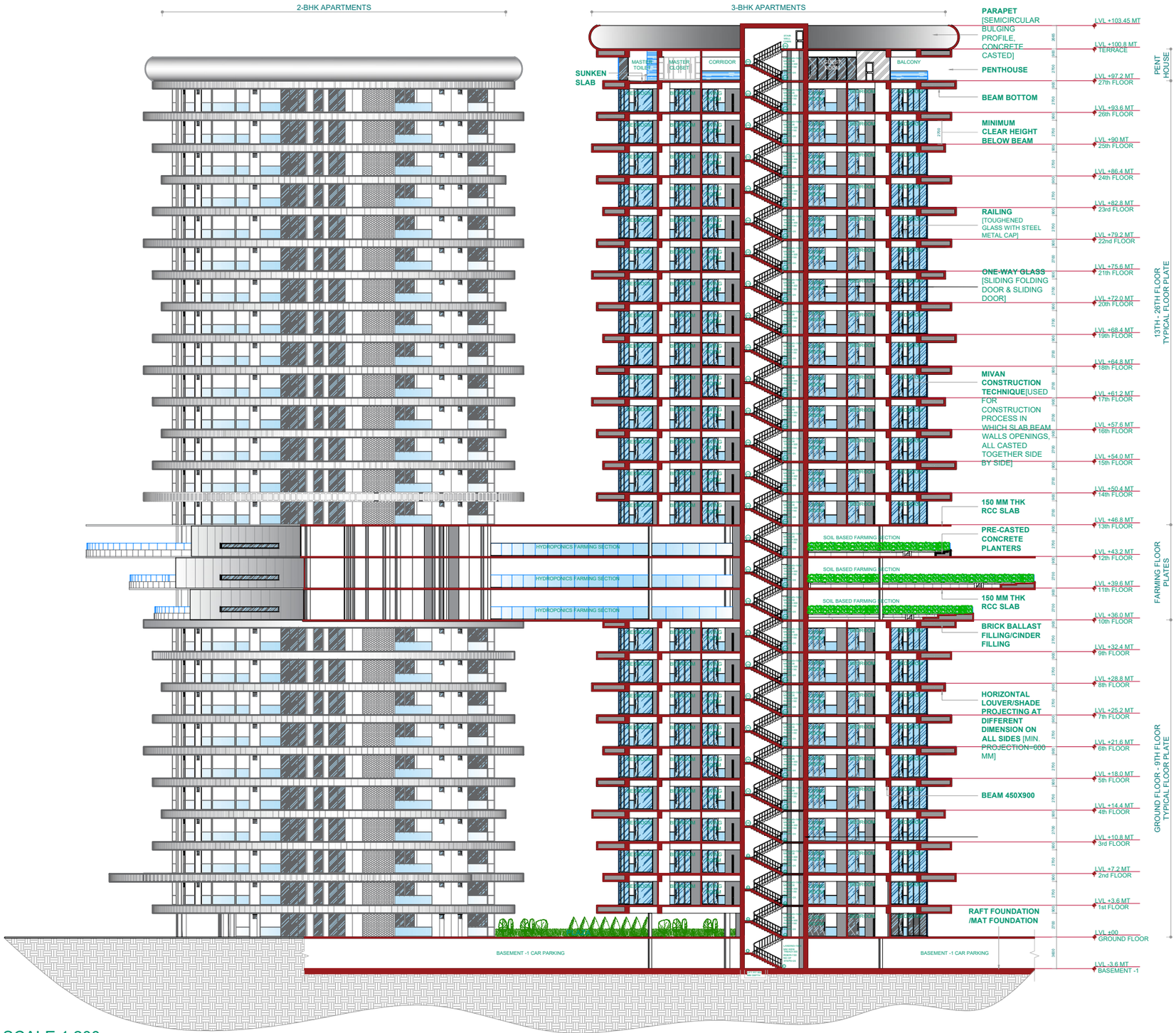


2000 MM WIDE PASSAGE

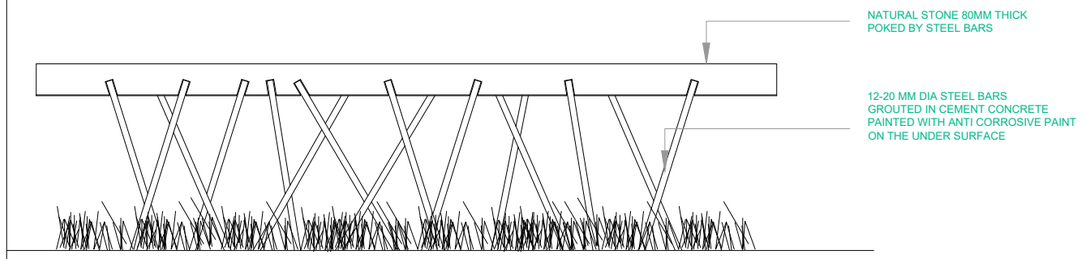
EWS UNITS 25 SQ MT SCALE 1:50



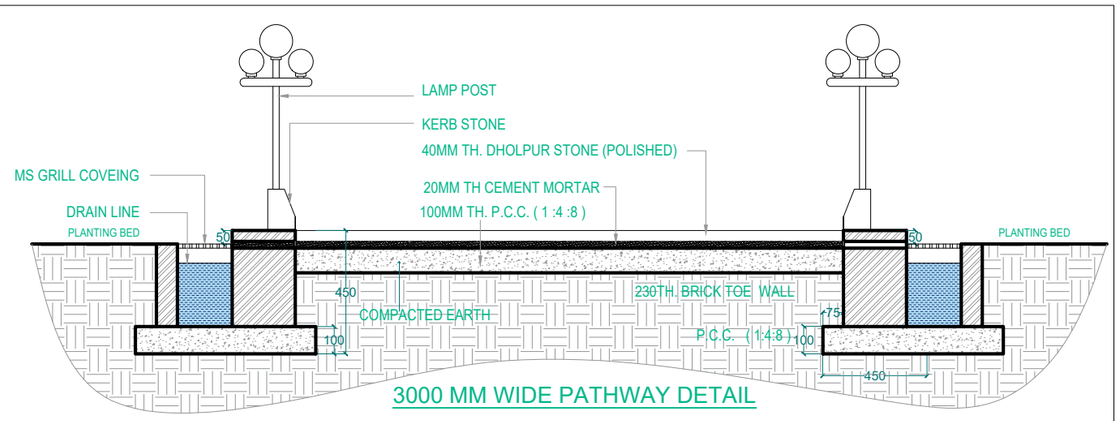
ELEVATION S-W SIDE FROM 45 MT WIDE ROAD SCALE 1:200



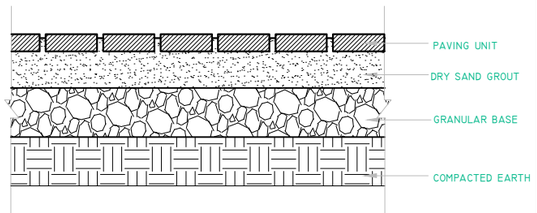
SECTION - BB' SCALE 1:200



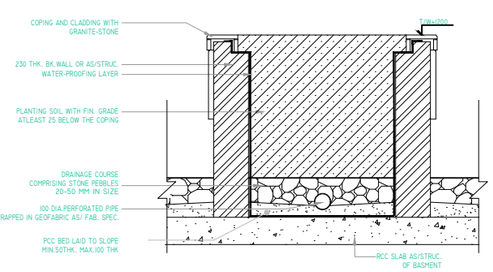
SEATING DETAIL



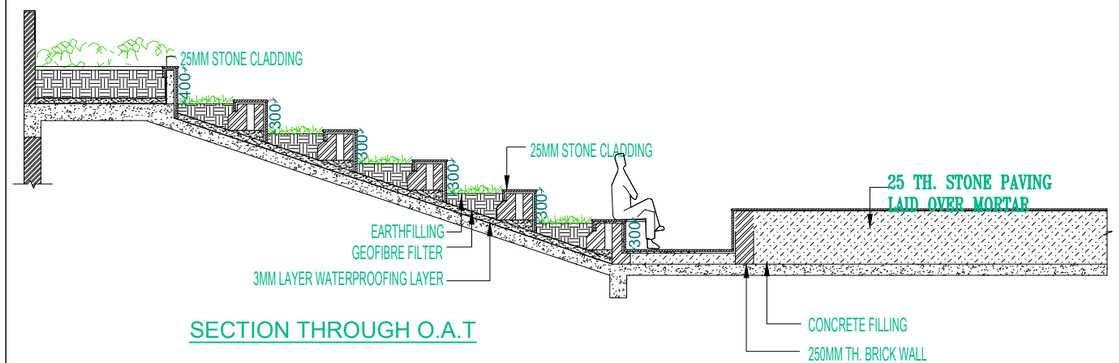
3000 MM WIDE PATHWAY DETAIL



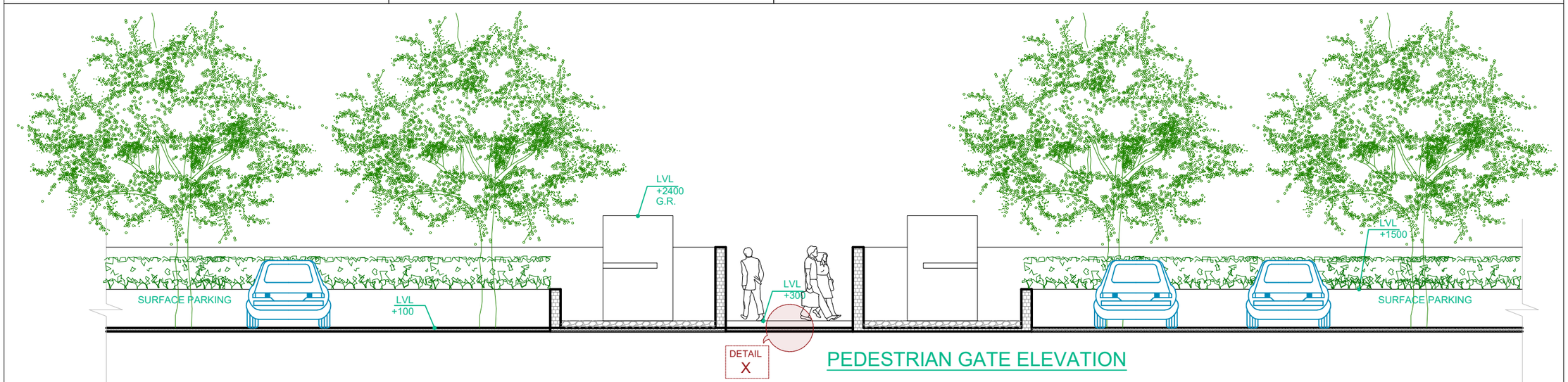
PAVING DETAIL



TYPICAL DETAIL OF PLANTER



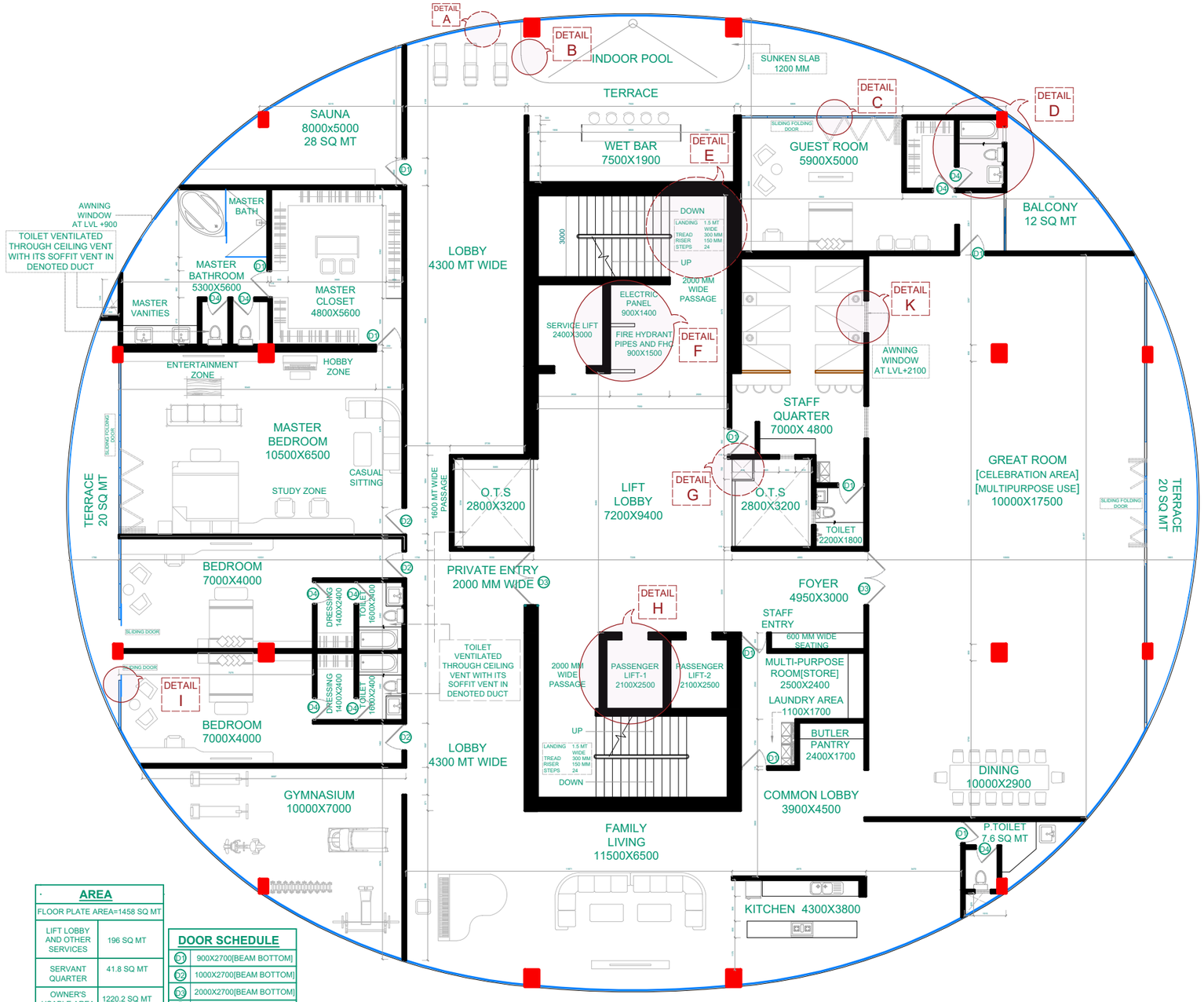
SECTION THROUGH O.A.T



PEDESTRIAN GATE ELEVATION

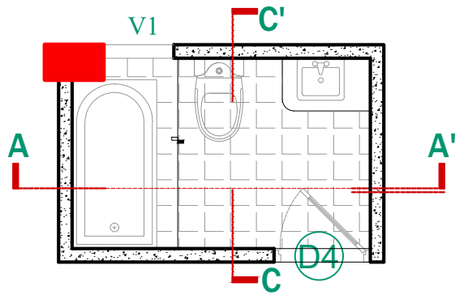
PLANTING LIST :-

CODE	BOTANICAL NAMES	SPECS IN HT.	CROWN WIDTH	
TREES:-				
BA	BAMBOO BUDDHA VALLEY	4.5M +	-	
B	BAUHINIA BLACKEANA	2.5M +	4.0M +	
CFi	CASSIA FISTULA	3.0M +	2.0M +	
CSp	CHORISSIA SPECIOSA	3.0M +	3.0M +	
PA	PLUMERIA ALBA	3.0M +	3.0M +	
WFi	WASHINGTONIA FILIFERA(Trunk in ht)	3.0M +	3.0M +	
FBen(T)	FICUS BENJAMINA TOPIERY(multi balls)	1.5M +	1.0M +	
RP	Roystonea regia(ROYAL PALM)	3M +	5.0M +	
At	Saraca Indica(ASHOKA TREE)	3M +	1.4M +	
LS	Lagerstroemia speciosa(PRIDE OF INDIA)	2M +	2.1M +	
SHRUBS:-				
ALM	ALAMANDA NERIIFOLIA	0.6M +	1.4M +	
APalm	ARECA PALM	1.2M +	4.0M +	
CAlt	CYPRESS ALTERNIFOLIUS	0.6M +	3.0M +	
FBen(T)	FICUS BENJAMINA TOPIERY(multi balls)	1.5M +	-	
FGrass	FOUNTAIN GRASS	0.45M +	-	
FP	FICUS PANDA	0.6M +	0.6M +	
FPm	FAN PALM	0.75M +	0.6M +	
FReg	FICUS REGINOLD	1.5M +	1.0M +	
GJ	GARDENIA JASMINOIDES	0.75M +	-	
HLf	HIBISCUS LAFRANCE	0.75M +	-	
HR	HIBISCUS ROSA SINENSIS(RED)	0.6M +	1.0M +	
HR_y	HIBISCUS ROSA SINENSIS(YELLOW)	0.6M +	1.0M +	
ALo	ALOCASIA	0.6M +	0.6M +	
HEDGES				
GDur	GOLDEN DURANTA	0.2m Ø Pots full	-	
BS	BOUGAINVILLEA SPECTABILIS		-	
DE	DURANTA ERECTA		-	
HP	HAMELIA PATENS (FIREBUSH):	2.5 MT +	2.0M +	
GROUND COVERS:-		0.2m Ø Pots full		
BGrass	BAMBOO GRASS	"		
FERN	FERN	"		
Lav	LAVENDER	"		
LILY	LILY	"		

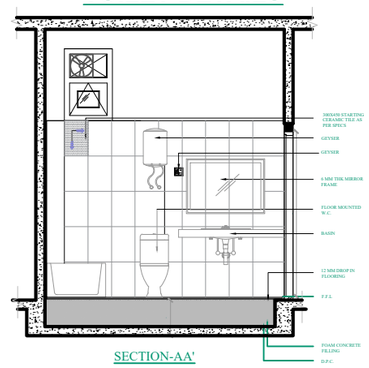


AREA	
FLOOR PLATE AREA=1458 SQ MT	
LIFT LOBBY AND OTHER SERVICES	196 SQ MT
SERVANT QUARTER	41.8 SQ MT
OWNER'S USABLE AREA	1220.2 SQ MT

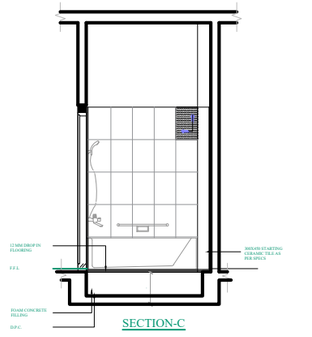
DOOR SCHEDULE	
D1	900X2700[BEAM BOTTOM]
D2	1000X2700[BEAM BOTTOM]
D3	2000X2700[BEAM BOTTOM]
D4	750X2700[BEAM BOTTOM]



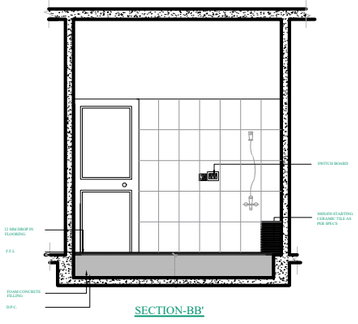
TOILET DETAILS



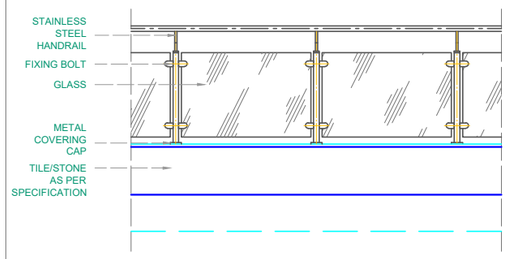
SECTION-AA'

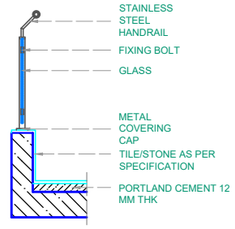


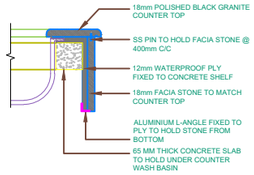
SECTION-C

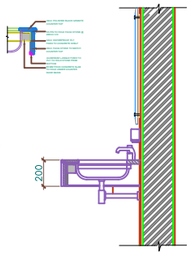


SECTION-BB'



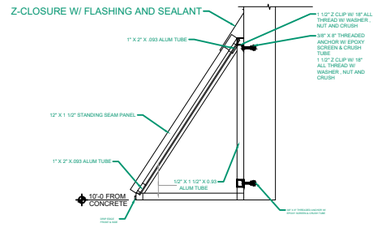


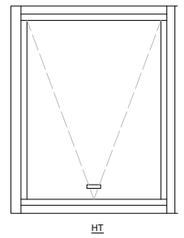




DETAIL A

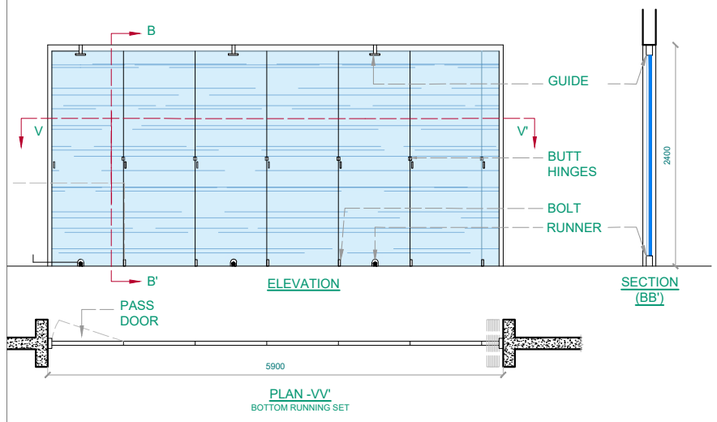
DETAIL D

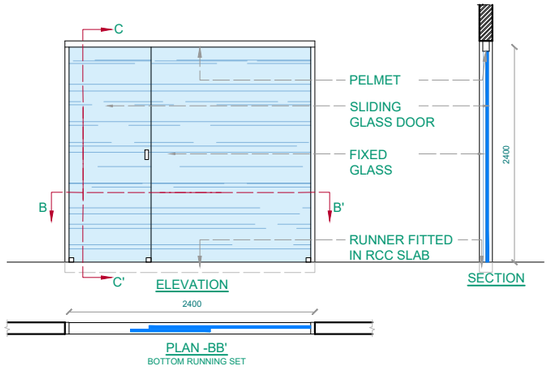




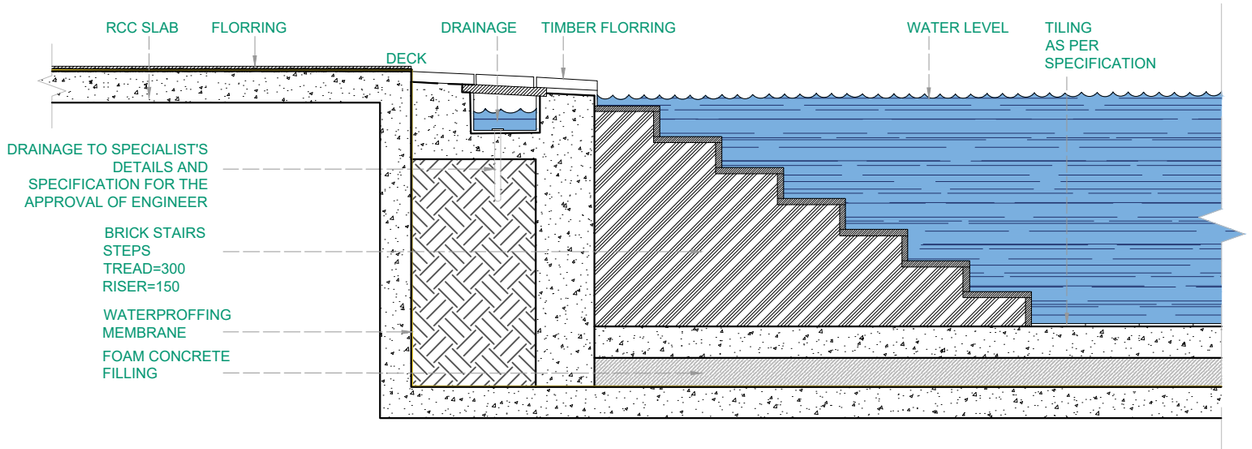
AWNING WINDOW

DETAIL K

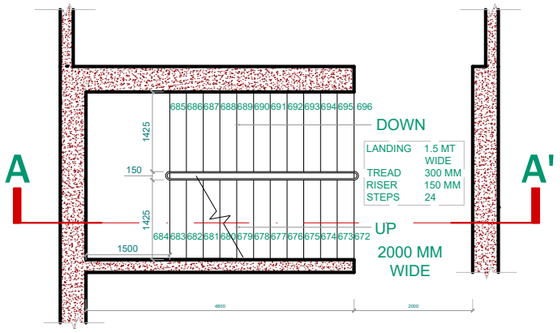




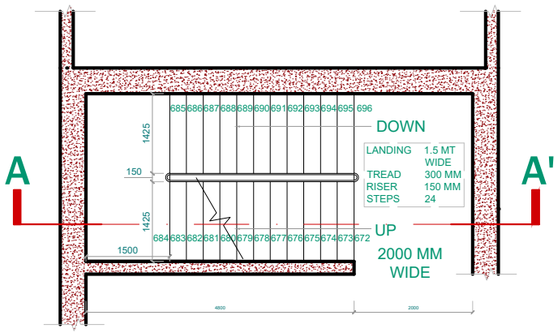
DETAIL C&J



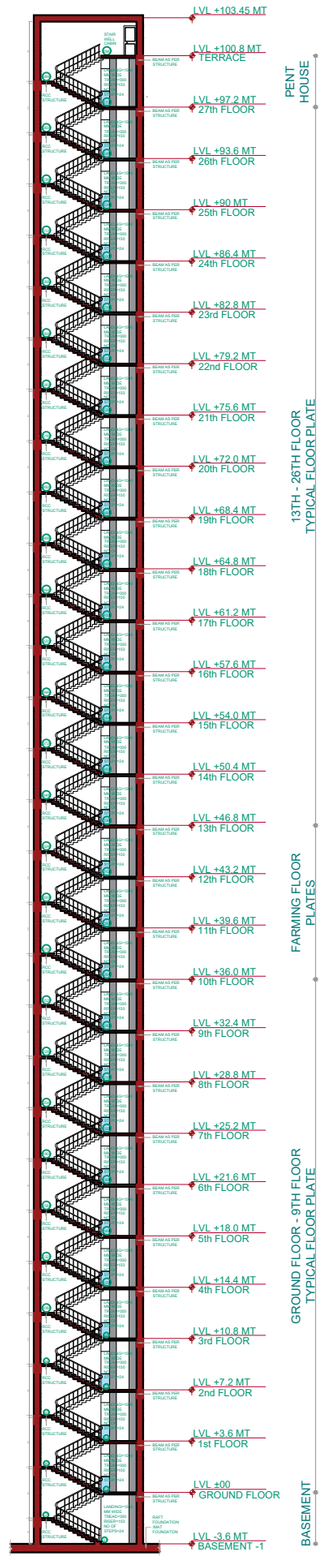
DETAIL B



BASEMENT FLOOR-26TH FLOOR STAIR WELL



PENTHOUSE LEVEL STAIR WELL



DETAIL