

**THESIS REPORT ON  
ADVANCE TRAUMA RECOVERY AND CARE CENTRE**

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

**BACHELOR OF ARCHITECTURE**

**BY**

**(UJJWAL SRIVASTAVA)**

**(1190101026)**

**THESIS GUIDE**

**(AR.VERSHA VERMA)**

**SESSION**

**2019-24**



**TO THE**

**SCHOOL OF ARCHITECTURE AND PLANNING**

**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“--Advance Trauma Recovery & Care Centre, VARANASI“ under the supervision, is the bonafide work of the students and can be accepted as partial fulfillment of the requirement for the degree of Bachelor’s degree in architecture, school of Architecture and Planning, BBDU, Lucknow.

Prof. Mohit Kr Agarwal  
(Dean Of Department)

Prof. Sangeeta Sharma  
(Head Of Department)

Recommendation

Accepted  
Not Accepted

External Examiner

External Examiner



## **ACKNOWLEDGEMENT:**

I heartly thanks to my family and colleague, to whom I learn many new things during the process, and I thank to my respected guide Ar. Versha Mam who guides me to this thesis journey and also thankful to all faculties. I soulfully thanks to my mother and father for giving me the confidence to work and taking time for me and understanding circumstances every day and night while I work.

I heartly thanks to one of my colleague Tamanna Kewlani for discussing with me and having the most knowledgeable conversation after jury for providing happy distraction to rest my mind outside of my research.

SPECIAL THANKS TO MY SENIORAS AR. UDBHAW GUPTA AND AR. SHALINI SINGH WHO SUPPORTED ME IN THIS JOURNEY.

THANKS TO DEVANSH JAIN FOR HIS CONTRIBUTION IN THIS PROJECT. AND THANKS TO HARSH AGARWAL FOR THIS AUSPICIOUS 5 YEAR JOURNEY OF LEARNING.

- UJJWAL SRIVASTAVA

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

## **Certificate of thesis submission for evaluation**

1. **Name :** Ujjwal Srivastava
2. **Roll No. :** 1190101026
3. **Thesis Title :** Advance Trauma Recovery And Care Center
4. **Degree for which the thesis is submitted:** Bachelor In Architecture
5. **Faculty of University to which the thesis is submitted:** Yes / No
6. **Thesis preparation guide was referred to for preparing the thesis.** Yes / No
7. **Specification regarding thesis format have been closely followed.** Yes / No
8. **The content 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 the sources used have been cited appropriately** Yes / No
11. **The thesis has not been submitted elsewhere for a degree.** Yes / No
12. **Submitted 3 hard bound copied plus one CD** Yes / No





SYNOPSIS-1  
ADVANCED TRAUMA  
RECOVERY  
AND CARE CENTER



## **INTRODUCTION**

An Advanced Trauma Recovery and Care Center is a specialized facility that provides advanced and comprehensive services for individuals who have experienced trauma, whether physical, emotional, or psychological. These centers are designed to offer a holistic approach to trauma recovery, integrating medical, psychological, and support services to address the diverse needs of survivors.

## **HISTORY AND BACKGROUND**

Advanced trauma life support (ATLS) is a training program for medical providers in the management of acute trauma cases, developed by the American College of Surgeons. Similar programs exist for immediate care providers such as paramedics. The program has been adopted worldwide in over 60 countries, sometimes under the name of Early Management of Severe Trauma, especially outside North America. Its goal is to teach a simplified and standardized approach to trauma patients. Originally designed for emergency situations where only one doctor and one nurse are present, ATLS is now widely accepted as the standard of care for initial assessment and treatment in trauma centers. The premise of the ATLS program is to treat the greatest threat to life first. It also advocates that the lack of a definitive diagnosis and a detailed history should not slow the application of indicated treatment for life-threatening injury, with the most time-critical interventions performed early

## **AIM AND OBJECTIVES**

- Evaluate Effectiveness: Assess the effectiveness of advanced trauma recovery and care centers in providing comprehensive care for individuals who have experienced trauma, including both physical and psychological aspects.
- Multidisciplinary Approach: Examine the integration and collaboration of various professionals, such as trauma surgeons, psychologists, counselors, and rehabilitation specialists, to understand how a multidisciplinary approach contributes to holistic recovery.

- Patient Outcomes and Satisfaction:

- Evaluate patient outcomes and satisfaction with the care received at advanced trauma recovery centers, considering both short-term recovery and long-term well-being.

- Holistic Healing Practices:

- Investigate the incorporation of holistic healing practices, such as mindfulness, art therapy, and complementary therapies, in trauma recovery programs and their impact on the overall healing process.

- Innovations in Trauma Care: Explore and document innovative medical and psychological interventions, technologies, and treatment modalities adopted by advanced trauma recovery centers to improve outcomes and patient experiences.

Rehabilitation and Functional Recovery:

- Assess the role of rehabilitation services in the recovery process, including physical therapy, occupational therapy, and other interventions aimed at enhancing functional abilities and quality of life.

- Community Outreach and Education Impact:

- Examine the impact of community outreach and education initiatives conducted by these centers on raising awareness about trauma, reducing stigma, and facilitating early intervention.

- Crisis Intervention Strategies:

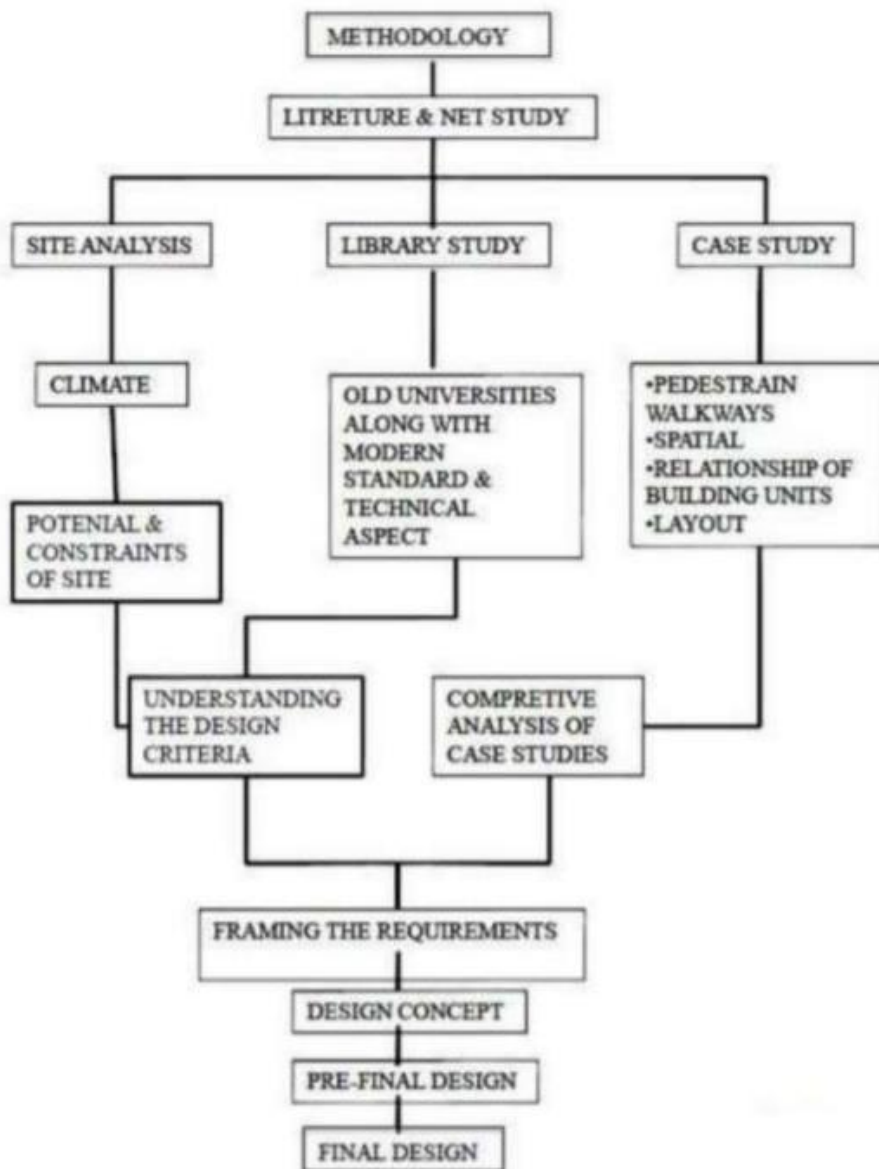
- Investigate the effectiveness of crisis intervention strategies employed by advanced trauma recovery and care centers in providing timely and supportive care to individuals in acute distress.



## LITERATURE

The goal of an Advanced Trauma Recovery and Care Center is to empower survivors on their journey to recovery, addressing not only the physical aspects of trauma but also the emotional and psychological impacts. These centers contribute to the advancement of trauma care by combining expertise from various disciplines and fostering a supportive environment for survivors.

## METHADODOLOGY

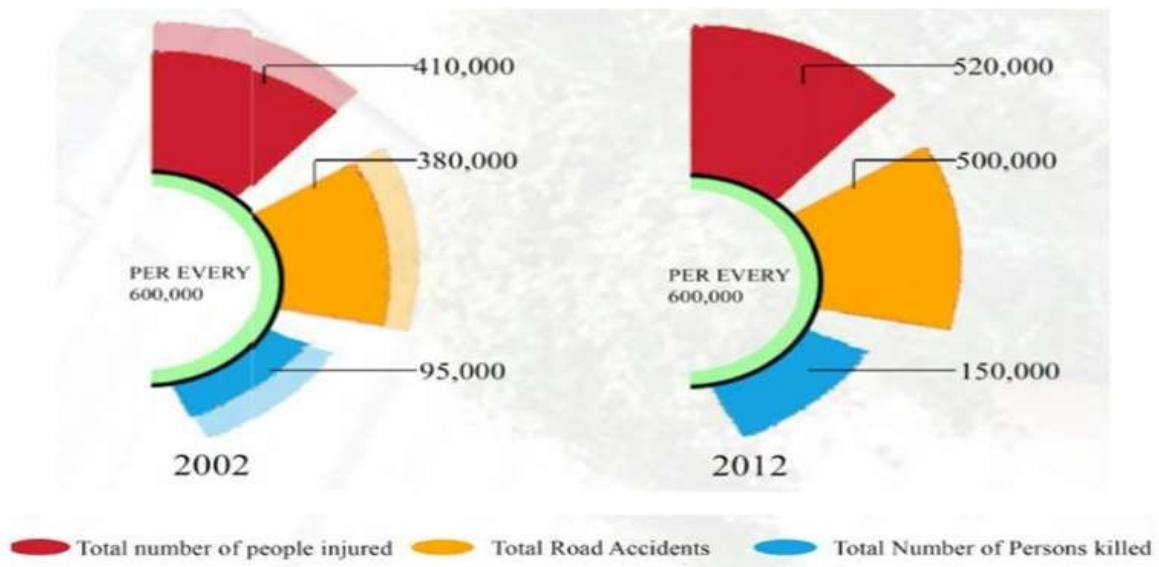


# CLIMATE AND SITE ANYLYSIS



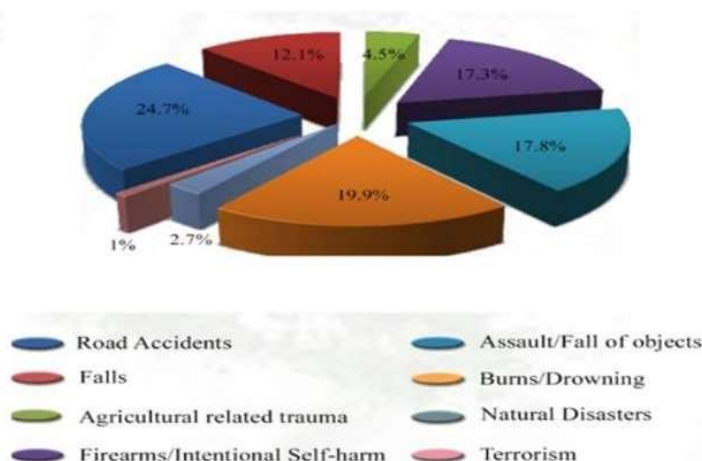
## INTRODUCTION

A TRAUMA CENTER IS A HOSPITAL EQUIPPED AND STAFFED TO PROVIDE COMPREHENSIVE EMERGENCY MEDICAL SERVICES TO PATIENTS SUFFERING TRAUMATIC INJURIES. THE TRAUMA LEVEL CERTIFICATION CAN DIRECTLY AFFECT THE PATIENT'S OUTCOME AND DETERMINE IF THE PATIENT NEEDS TO BE TRANSFERRED TO A HIGHER LEVEL TRAUMA CENTER.



## RATE OF DIFFERENT TRAUMA INJURIES

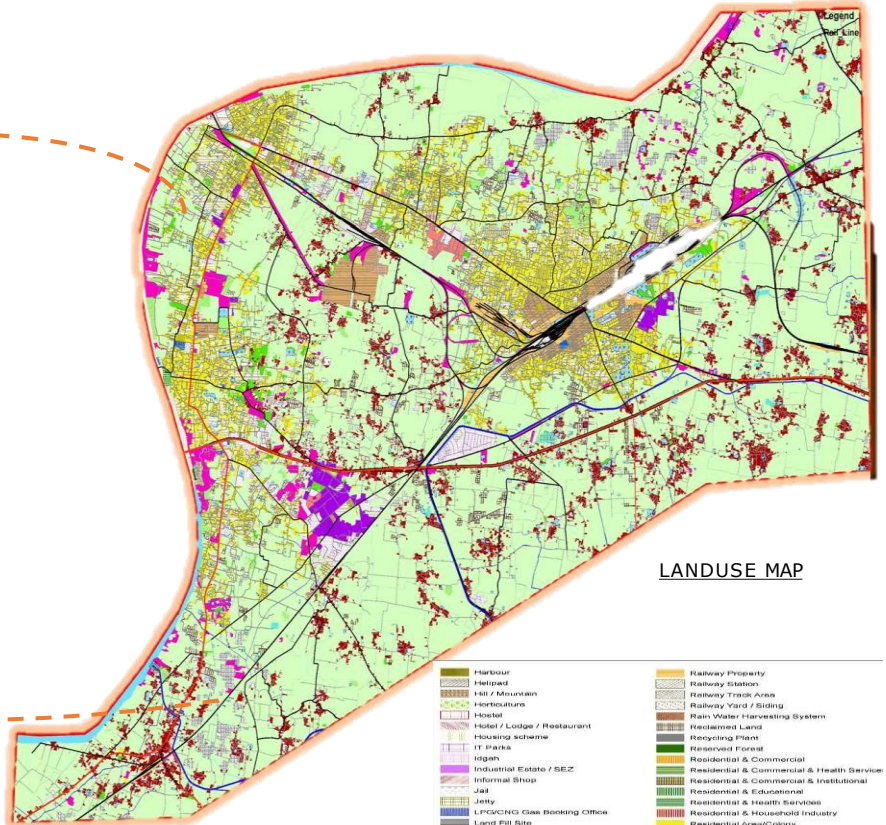
AS PER THE RECORDS OF THE SURVEYS TAKEN BY THE INDIAN JOURNAL OF CRITICAL CARE MEDICINE, THERE HAS BEEN A TREMENDOUS SCALE OF INCREASE IN THE TRAUMA RATES. THEIR REPORTS STATE THAT THE DEATH RATES ARE ALSO ALARMINGLY INCREASING EVERY YEAR FOR THE PAST TEN YEARS, DUE TO THE NASCENT STAGE OF DEVELOPMENT IN THE TRAUMA CARE INDUSTRY. THEIR CHARTS COMPARE THREE MAJOR ASPECTS;



## SITE LOCATION



INDIA POLITICAL MAP



LANDUSE MAP

Harbour	Railway Property
Hilltop	Railway Station
Hill / Mountain	Railway Track Area
Horticulture	Railway Yard / Siding
Hotel	Rain Water Harvesting System
Hotel / Lodge / Restaurant	Reclaimed Land
Housing scheme	Recycling Plant
IT Parks	Reserved Forest
Highway	Residential & Commercial
Industrial Estate / SEZ	Residential & Commercial & Health Service
Informal Shop	Residential & Commercial & Institutional
Jail	Residential & Educational
Jetty	Residential & Health Services
LPG/CNG Gas Booking Office	Residential & Household Industry
Land Fill Site	Residential Area/Colony
Layout / Plotted	Resort
Low lying area	Retail
Mangrove	Roadway
Manufacturing	SG_Office
Market (Daily & Weekly) / Mandi	SG_Quarter
Meadow	Salt affected
Metrological station	Salt pan
Mine	Sand Dunes
Mine	Satellite & Telecommunication Centre
Mine	School
Mine	Sold land
Mine	Service
Mine	Sewage Pumping Station
Mine	Sewage Treatment Plant
Mine	Shopping Centre / Mall
Mine	Slaughter House
Mine	Snow covered area
Mine	Social Welfare Centre
Mine	Social forestry
Mine	Sports Centre
Mine	Squatter / Kachibast
Mine	Stadium
Mine	Stock Exchange
Mine	Storage Godown
Mine	Swampy
Mine	Swimming Pool
Mine	Synagogue
Mine	Taxi Stand
Mine	Tea/Coffee Garden
Mine	Telephone exchange
Mine	Temple
Mine	Textile
Mine	Ticket Booking & Reservation Office
Mine	Tourist Facility Centre
Mine	Town Hall
Mine	Township
Mine	Training Institute
Mine	Transport Nagar
Mine	Tree Clad Area
Mine	Truck Terminus
Mine	University
Mine	Village / Abadi Area
Mine	Vocational Institute
Mine	Warehouse
Mine	Water Pumping Station
Mine	Water Treatment Plant
Mine	Waterlogged
Mine	Weir
Mine	Wholesale
Mine	Zoo
Mine	City_AOI

## NEED OF THE PROJECT

THE SITE IS LOCATED NEAR VARANASI - MIRZAPUR BORDER. . THE SURROUNDING HOSPITAL IN AND AROUND AROUND A COUPLE OF KMS ARE EITHER EITHER A CHILDREN HOSPITAL OR JUST CLINIC. THE JUSTIFICATION LIES IN THE FACT THAT THE AREA IS KNOWN FOR ITS INDUSTRIAL SECTOR. SO THERE ARE TOO MUCH HEAVY VEHICLES AROUND THE SITE.

## SITE SPECIFICATION

- SITE AREA- 74200 SQ.M (18.5 ACRE)
- SITE LOCATION - VARANASI-MIRZAPUR (UTTAR PRADESH)
- TOTAL NO OF FLOORS - 7

- LATITUDE-LONGITUDE - 25°17'20"N 83°02'08"E
- FLOOR-
- TOPOLOGY - FLAT
- F.A.R - 2.5
- GROUND COVERAGE - 35%

## LANDMARKS



SHREE KASHI  
VISHWANATH  
MANDIR (5KM)



RAMNAGAR  
(3KM)



ASSI GHAT  
(4.5KM)



BHU  
(6KM)

## SITE SURROUNDINGS



PETROL PUMP



BASE EYE CAMP



DAV PUBLIC SCHOOL

## NATURAL FACTOR

The proposed site has alluvial soil with some undifferentiated soil. The alluvial soil is formed due to the ganga river deposition over the long period of time. The soil particles have a mixture of both coarse and fine loamy soil. The soil has abundant amount of silt contained in it. The soil bearing capacity 25T/metre cube.

## DEMOGRAPHIC DATA

TOTAL POPULATION - 1435113

- TOTAL MEN - 761606
- TOTAL WOMEN - 674053
- Hindu - 70.11 % 840,280
- Muslims - 28.82 % 345,461
- Christian - 0.34 % 4,034
- Sikh - 0.22 % 2,610
- Buddhist - 0.04 % 461
- Jain - 0.12 % 1,417
- Other - 0.02 % 233

## SITE IMAGES



SITE



ROAD



ROAD

## ACCESSIBILITY

- VYAS NAGAR RAILWAY STATION - 4KM
- LAL BAHADUR SHASTRI AIRPORT - 25KM
- BUS STAND - 5KM

## VEGETATION



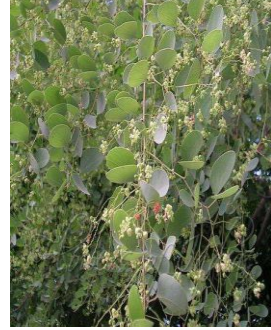
BANYAN TREE



NEEM TREE



BABUL TREE



ANJAN

SITE



SITE SECTION



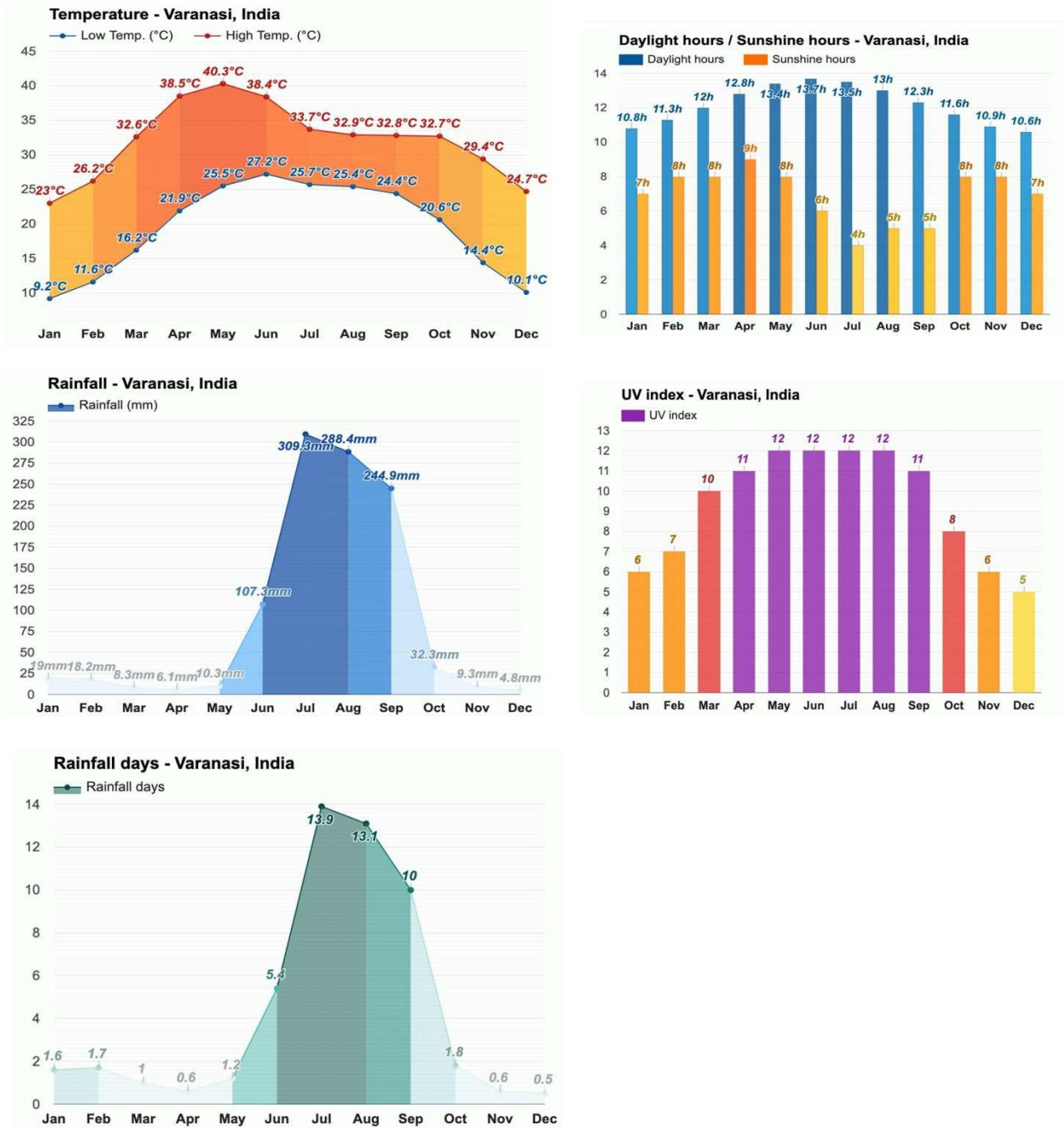
SERVICES ON THE SITE

- WATER SUPPLY – OVER HEAD WATER TANK – 3 KM
- ELECTRICITY – NEAREST POWERHOUSE (1.5 KM)
- SEWAGE – PASSED ON SITE
- ROAD – 20M WIDE ROAD

SUN PTH



CLIMATIC DATA



CLIMATIC ANYLYSIS

VARANASI EXPERIENCES A HUMID SUBTROPICAL CLIMATE ( WITH LARGE VARIATIONS BETWEEN SUMMER AND WINTER TEMPERATURES.

- AVERAGE WIND SPEED - 2.5 M/S
- AVERAGE AMBIENT TEMPRATURE - 25.6’ C
- AVERAGE HUMIDITY - 67.2%
- AVERAGE RAINFALL - 44 IN
- PREDOMINANTLY WIND BLOW - WNW



# LITERATURE STUDY



## INTRODUCTION

- GOVERNMENT MEDICAL COLLEGE AND HOSPITAL, CHANDIGARH A MEDICAL SCHOOL AND A TERTIARY CARE HOSPITAL IS LOCATED IN CHANDIGARH, INDIA.
- THE MEDICAL SCHOOL IS ADMINISTERED BY PANJAB UNIVERSITY. IT WAS ESTABLISHED IN 1991 AND HAS A 36 ACRES (15 HA) CAMPUS LOCATED IN SECTOR 32, CHANDIGARH.
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GOVERNMENT MEDICAL COLLEGE AND HOSPITAL, CHANDIGARH

## HISTORY

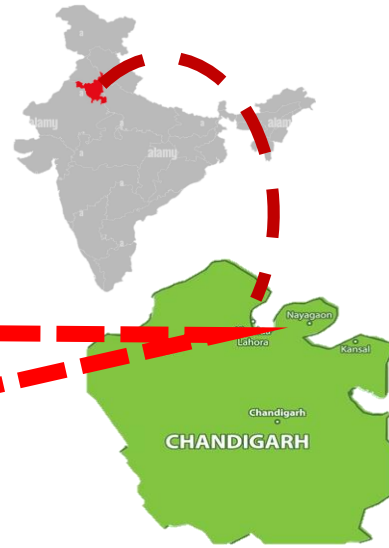
- GMCH was started in 1971 to fulfil the deficiency of medical colleges in Chandigarh and to render facilities for conducting research. With PGI already located in the vicinity with a 2000 bed strength was still not enough for this growing city, hence the Chandigarh administration granted 36 acres to this college and hospital.
- This 50 bedded hospital changed its intake to 100 beds in 2013. They started with a 800 bed strength.
- It has been planned to serve the southern sectors of the city and also to cater for patients from Panchkula and SAS Nagar. It has basically 250 staff in Clinical department in addition to 70 junior residents.

## LOCATION & ACCESSIBILITY

- LOCATION – SECTOR 48A , CHANDIGARH
- COORDINATES – 30°41'20"N 76°45'20"E
- AIRPORT – 18 KMS
- RAILWAY STATION – 6.6 KMS
- BUS STAND – 6.2 KMS



GOOGLE EARTH IMAGE OF SITE



INDIA MAP MARKING  
CHANDIGARH.

## LANDMARKS



INTERNATIONAL DOLLS  
MUSEUM  
(4.5 KMS)



AQUARIUM TUNNEL  
(3.6 KMS)



MUSICAL FOUNTAIN  
(5.4 KMS)

## ABOUT THE SITE

- TOTAL SITE AREA - 36 ACRE
- BED NO – 830
- F.A.R. - 1.50
- GROUND COVERAGE – 40%
- PARKING – 1.1 ECS
- BUILDING HEIGHT – 28M

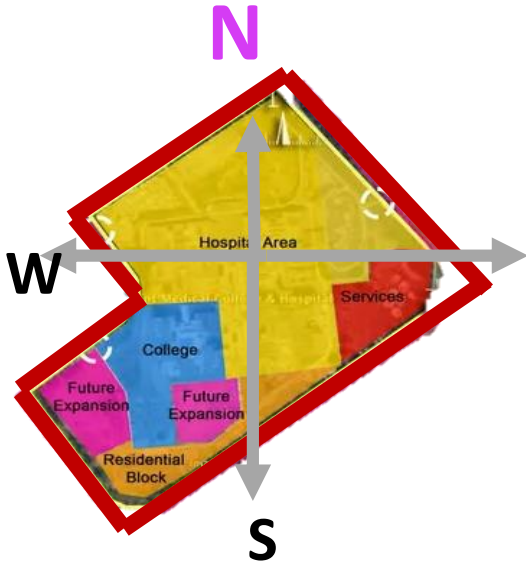
## SURROUNDING HOSPITAL

- PGI CHANDIGARH – 6.6KM
- MAX SUPER SPECIALITY HOSPITAL – 10.3 KM
- OXFORD HEART AND MULTISPECIALITY HOSPITAL – 3.7KMS

## SETBACK & FOOTFALL

- SET BACK OF 30M ONE SIDE & 10M ON REST OF THE SIDE.
- On the first map, we see the number of footfall with the darker the colour being the more congested look. On the second map, we see the types of people and their frequency with the range.
- Hence, it is important that we pay attention to the footfall while allotting roads, not only by giving extra space where needed while also not giving extra space where not required.

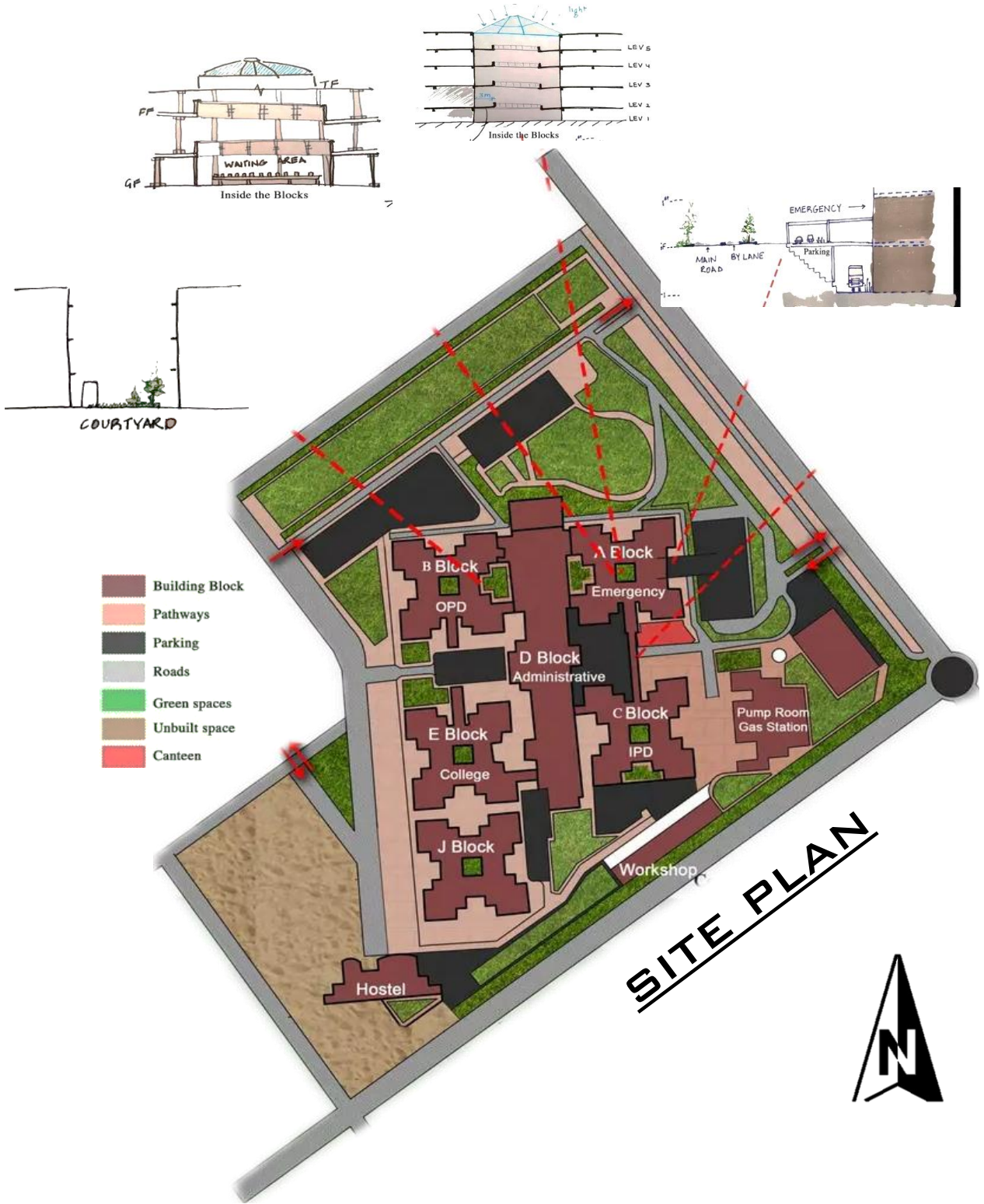
## SITE ZONING & DIMENSIONS



## CLIMATE

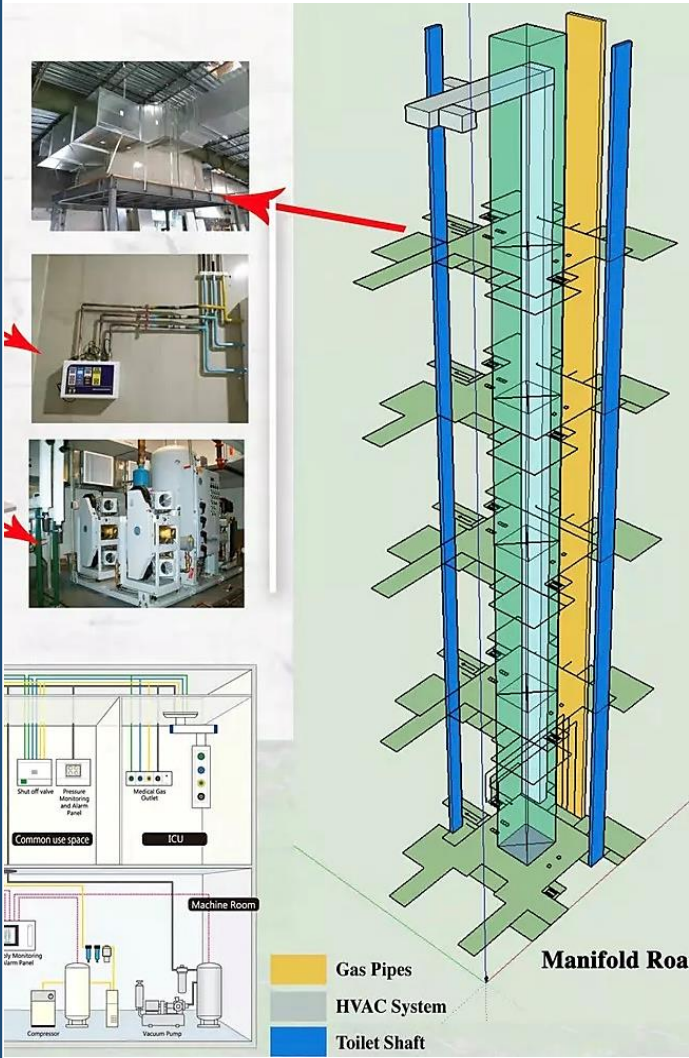
- Being a hot city, the planning of the building blocks is done in a such a way that lesser of the facade faces.
- The buildings have been built on a north south axis and east west axis.
- The blocks are compactly placed to provide shading to other buildings.
- The wind direction is from NE to SW with the speed being 3-13 km/hr.

## SITE PLAN



- COURTYARD PLANNING – EASY CIRCULATION , THE COURTYARD IS COVERD WITH TRANSLUCENT SHEET WHICH ALLOW FOR NATURAL LIGHT.

SERVICES



MEDICAL GAS SUPPLY



GAS SUPPLY CHART

SITE PHOTOGRPHS



Pharmacy in B block.



Emergency block



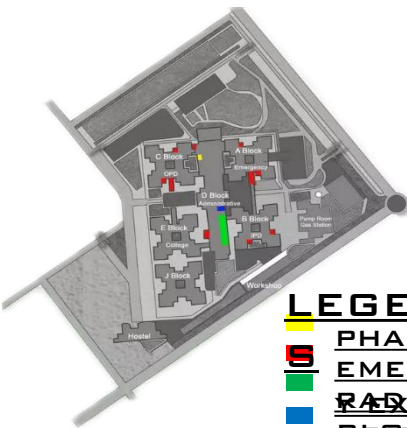
Blood collection centre in Block-B



Help desk



Provision of ATM and chemist in D block.



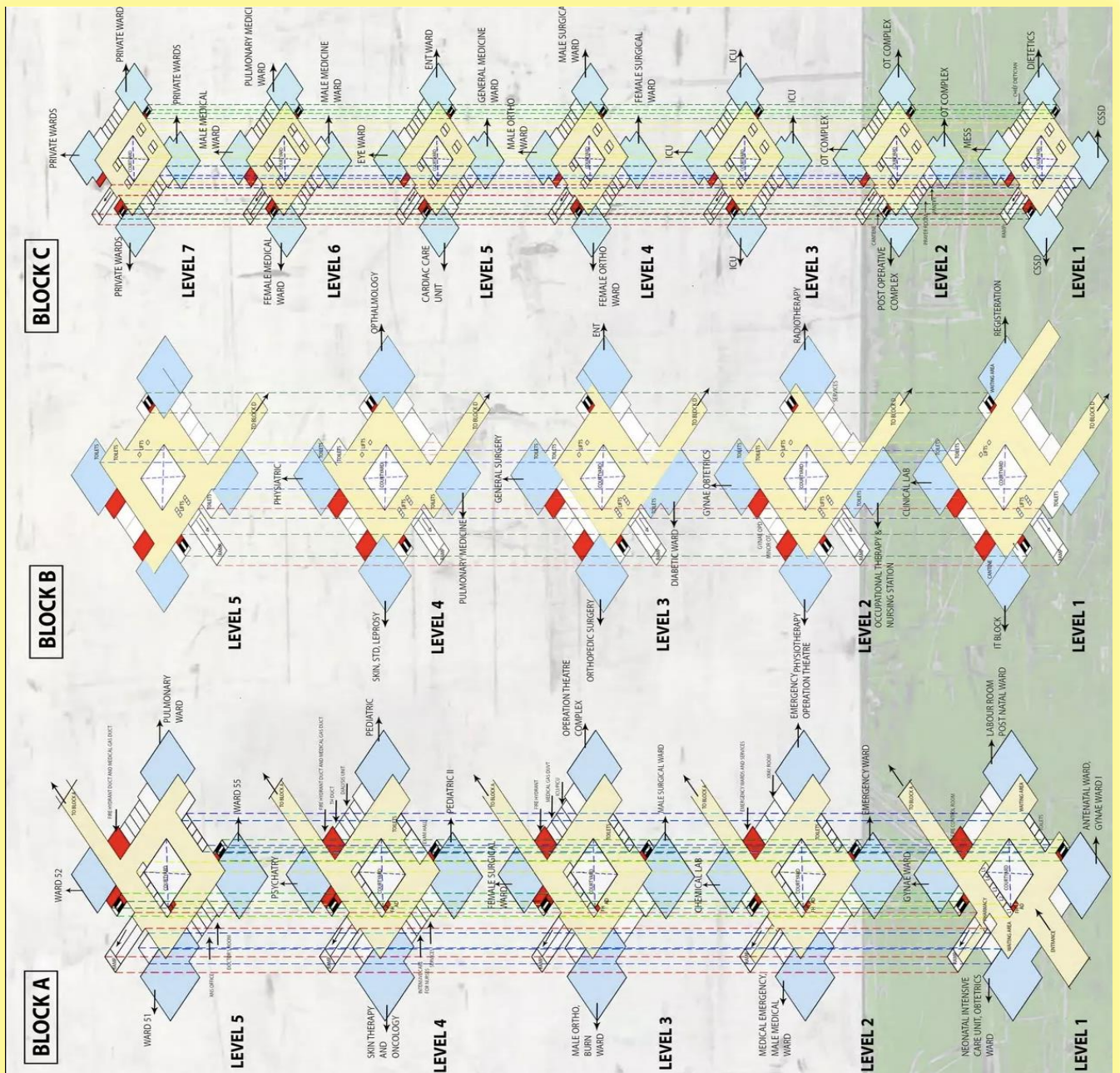
- LEGEND
- PHARMACY
  - EMERGENCY
  - RADIOGON
  - BANK

PLACEMENT OF SOME IMPORTANT FEATURE IN BUILDING

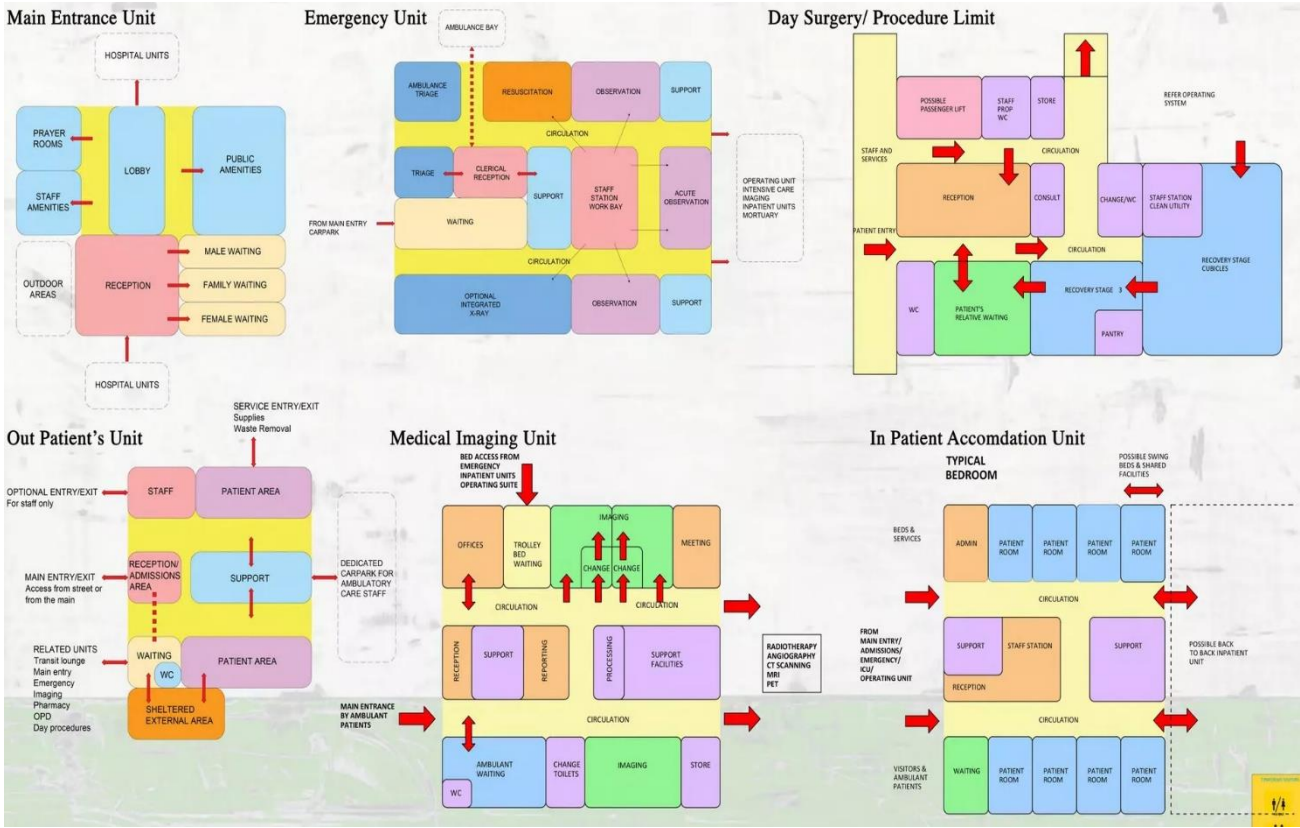
## FLOOR LAYOUTS

DEPARTMENT	NO. OF BEDS	DEPARTMENT	NO. OF BEDS
Anesthesia	14	Ophthalmology	30
Dental	6	Orthopaedics	80
Dermatology	30	Paediatrics	109
ENT	30	Psychiatry	30
General Medicine	145	Pulmonary Medicine	40
General Surgery	140	Radiotherapy	16
Obstetric & Gynaecology	90	Private Wards	50

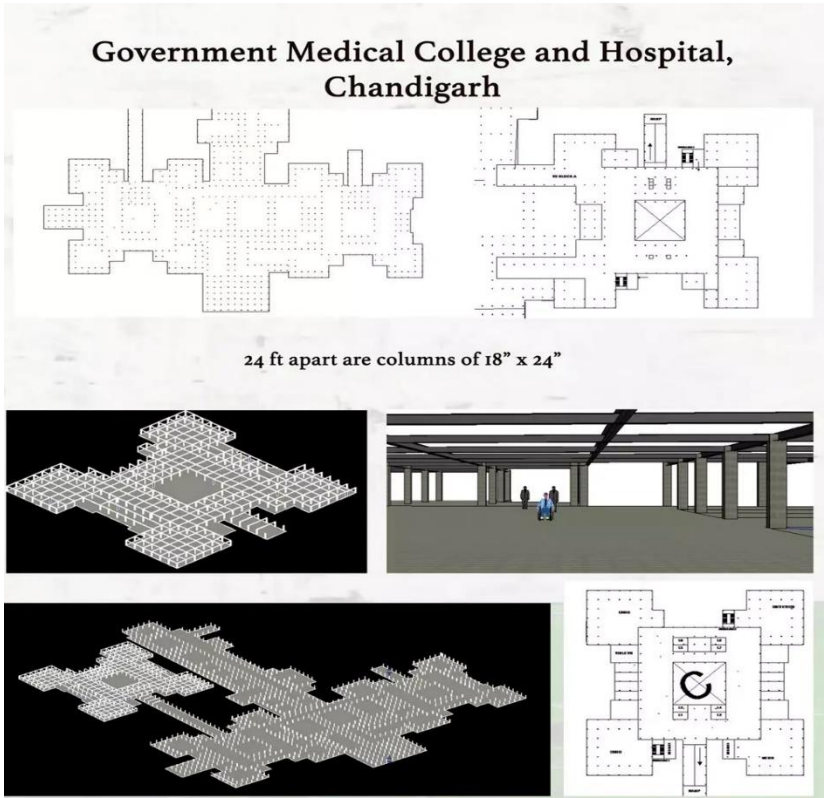
TOILET  
RAMP  
LIFTS  
STAIRCASE



UNIT WISE PLAN



GRID PLAN



## INTRODUCTION

- All India Institute of Medical Sciences Rishikesh (AIIMS Rishikesh) is a medical college, Hospital and medical research public university, based in Rishikesh, Uttarakhand, India.
- The Institute operates autonomously under the Ministry of Health and Family Welfare under the central government.
- Intakes 100 MBBS students, 50 nursing students every year. Inaugrated in 2012.
- the first batch of students was 50.
- The teaching hospital is a 1000 bedded multi-specialty facility.



AIIMS RISHIKESH

## HISTORY

- All India Institute of Medical sciences Rishikesh (AIIMS Rishikesh) is one of the apex health care institutes.
- It is established by the Ministry of Health and Family welfare, Government of India as an act of Parliament in the year 2012.
- the aim of correcting regional imbalances in quality tertiary level healthcare in the country and attaining self-sufficiency in graduate and post-graduate medical education and training in the country.

## LOCATION & ACCESSIBILITY

- LOCATION – Shivaji Nagar, Rishikesh, Uttarakhand ,249203.
- COORDINATES – 30°04'23"N 78°16'59"E
- helipad – 1.8 KMS
- RAILWAY STATION – 3 KMS
- BUS STAND – 1.2 KMS



INDIA MAP MARKING  
CHANDIGARCH.



## LANDMARKS



TRIVENI GHAT  
(2.9 KMS)



TANI WATERFALL  
(1.5 KMS)



RAJAJI NATIONAL  
PARK  
(4.5 KMS)

## ABOUT THE SITE

- EASTABLISHED – 2012
- NO OF BED – 500
- TOTAL AREA – 100 ACRE
- ARCHITECT – SURRINDER SAWHNEY
- CONSTRUCTION AGENCY – JMC PROJECT LTD.
- PROJECT COST – 1000 CRORE
- BUILTUP AREA – 12220.6 SQ.M (14.35 %)
- HARDSCAPE – 13198.75 SQ.M (15.50%)
- LANDSCAPE – 59690.64 SQ.M (70.15%)
- F.A.R – 2.1
- ECS - 2

## VEGETATION

- SAL
- TEAK
- MEDICINAL PLANT
- BROWN OAK
- WHITE OAK

## GEOGRAPHICAL FACTS

- ALTITUDE: 372 ABOVE SEA LEVEL
- LATITUDE: 30.1033 DEGREE N
- LONGITUDE: 78.2947 DEGREE E
- AVERAGE RAINFALL: 2136.7 MM

## NATURAL HAZARDS

- With hilly terrain and proximity to mighty Ganges and present circumstances, with ongoing construction and other urbanization activities in adjoining areas, raise the probability of our exposure to a spectrum of natural and manmade disasters in coming future.
- In order to find the solution, with the key objective of formulating the Institute policy for disaster management, a CME on disaster management has been contemplated during second half of September 2013 at AIMS

## DEPARTMENTS

- BURN AND PLASTIC SURGERY.
- COMMUNITY AND FAMILY PLANNING
- CARDIOTHERIC ACID
- VASCULAR SURGERY
- CARDIOOLOGY
- DENTISTRY
- DERMATOLOGY
- E.N.T
- GENRAL MEDICINE
- MEDICINE ENCOLOGY
- NUCLEAR MEDICINE
- ORTHOPEDICS
- OPHTHALMOLOGY
- OBESTRY & GYNECOLOGY
- PAC/PAIN CLINIC
- PEDIATRIC SURGERY
- PAEDRITICS
- PULMONARY MEDICINE

## **OBSERVATION & COCLUSION**

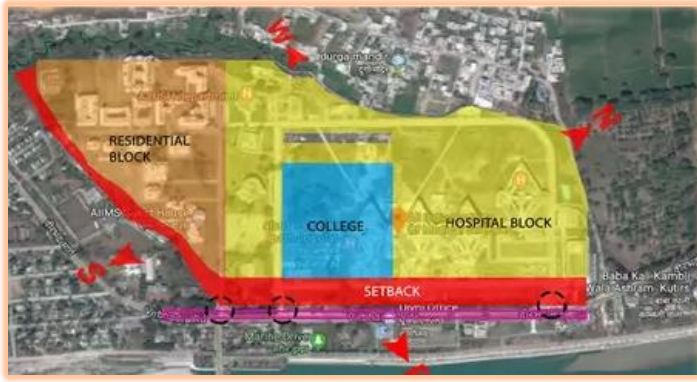
- The nuisances around and outside the site are less, mainly because the area around the AIIMS belongs to the elite residential region.
- Site selection- Visually appealing, moreover nowadays the old trend of the hospital being a place for sick, is not preferred, instead open, landscaped places are preferred.
- AIIMS is clearly visible from 20 metres, easy to spot and accessible.
- 3 entrances, but there is no entrance for the ambulance, probably beacause the main entrance is 10 metres wide, enough for 2 vehicles to pass by, even with the ambulance.
- On entering, all the blocks ,parking were clearly visible.
- The setbacks were acting as the buffer between the road and the hospital.
- Light traffic road, but during festivals or peak season, the traffic is heavy.

## **SOIL DETAIL**

- BROWN FOREST SOIL IS FOUND IN THIS REGION AND THE SOIL IS VERY RICH ORIGINALLY.
- IT IS CHARACTERICESED BY SANDY AND GRAVEL TYPE.
- THE SOIL IS VERY PORUS.



## SETBACKS



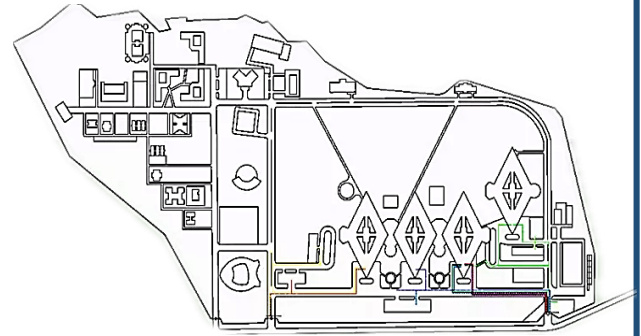
- 75 FEET IN THE FRONT.
- 20 FEET ON REST OF THE SIDE.

## SITE ZONING

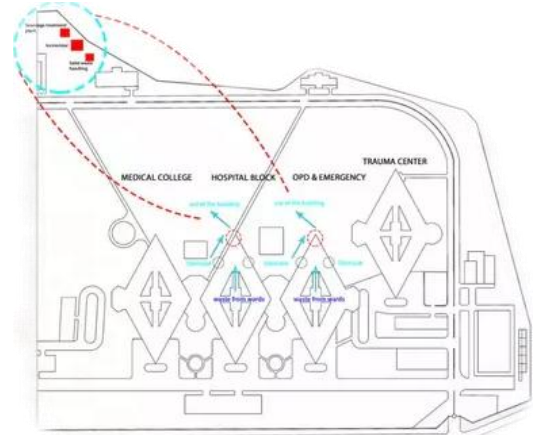


GOOGLE EARTH IMAGE SHOWING ZONING

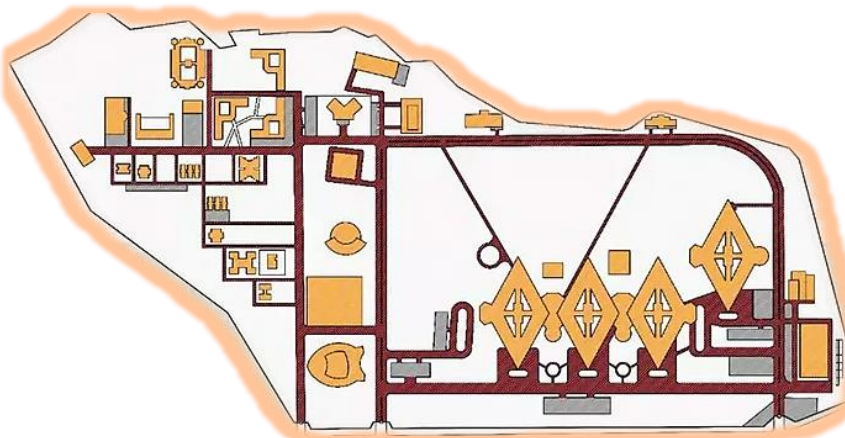
## CIRCULATION PLAN



## WASTE CIRCULATION

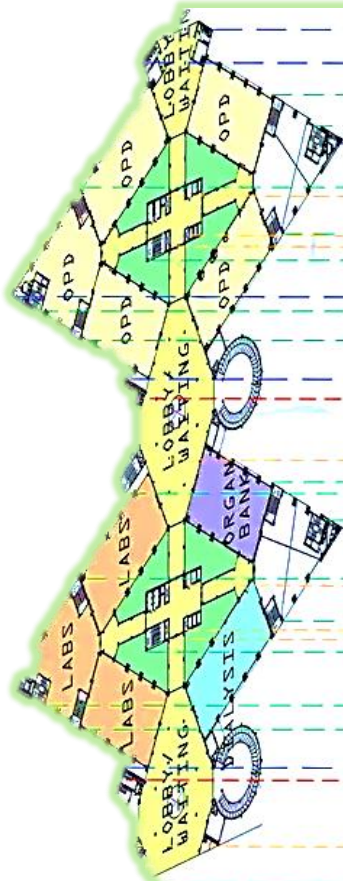


## BUILTUP AREA & ROAD NETWORK

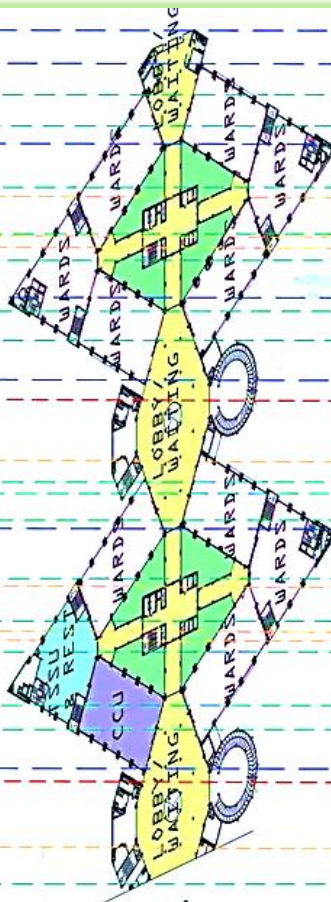


BUILTUP AREA 14.35%

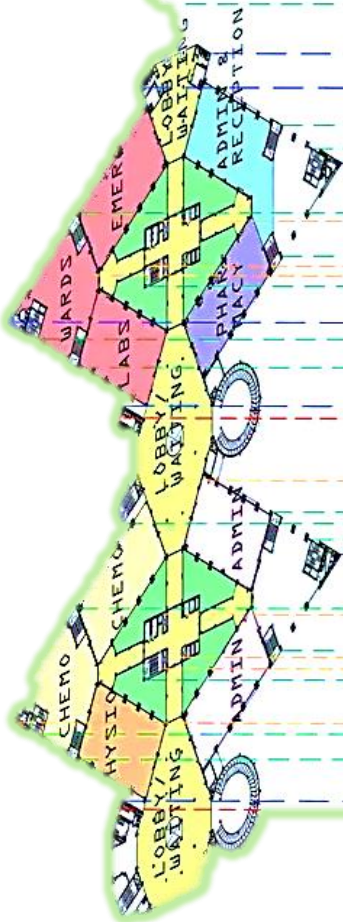
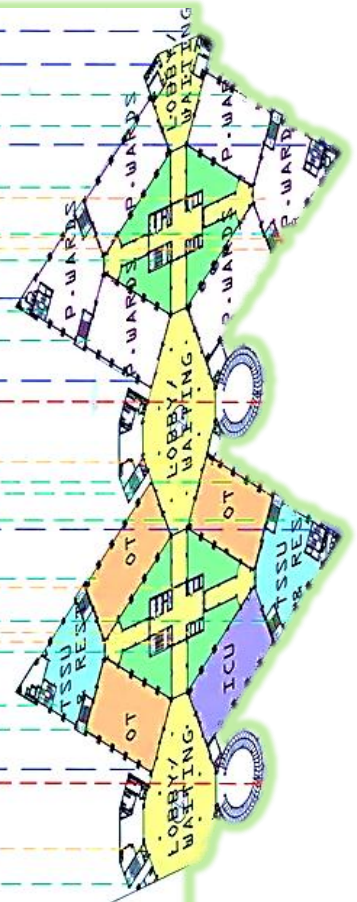
**FLOOR PLAN**



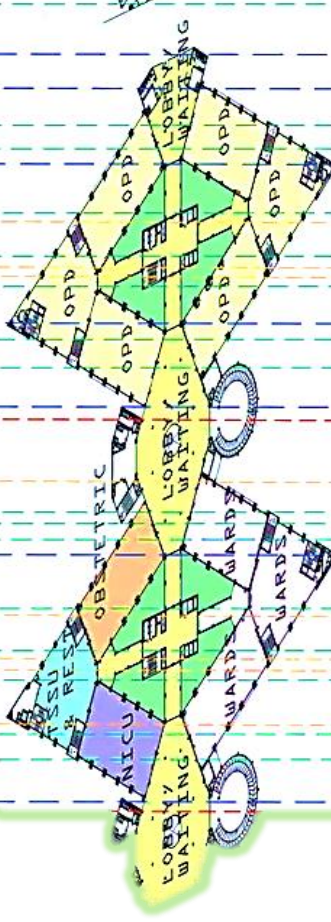
**FIRST FLOOR ZONING PLAN**



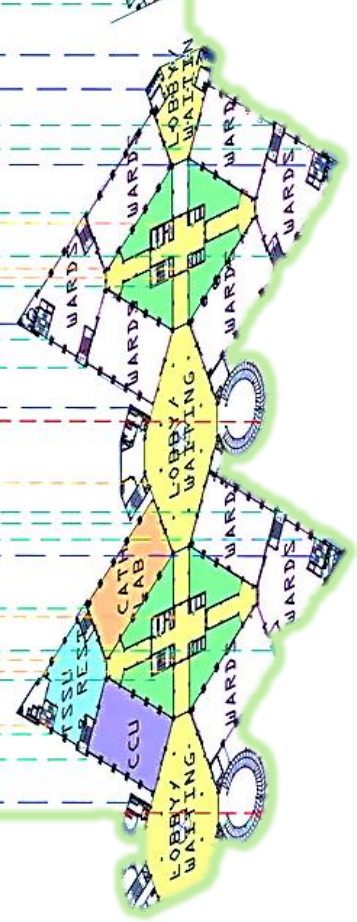
**THIRD FLOOR ZONING PLAN**



**GROUND FLOOR ZONING PLAN**



**SECOND FLOOR ZONING PLAN**



## CASE STUDY-1



## INTRODUCTION

- LOCATION – SECTOR 62 NOIDA OPP- SEC – 63 INDUSTRIAL AREA
- SITE AREA – 7 ACRE
- GROUND COVERAGE – 35%
- F.A.R – 1.5
- BUILDING HEIGHT – 24M
- NO OF BED – 177
- ARCHITECT – ACHAL KATARIA

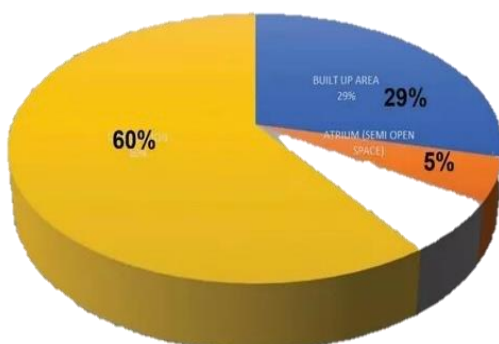


GOOGLE EARTH IMAGE

## CONNECTIVITY

- METRO STATION – SECTOR 62 NOIDA (260M)
- BUS STAND – FORTIS HOSPITAL
- AIRPORT – IGI TERMINAL 3 (31 KM)
- RAILWAY STATION – NIZAMUDDIN RAILWAY STATION – (17 KM)

## PROGRAM OF REQUIREMENT



CIRCULATION



ATRIUM (SEMI OPEN SPACE)

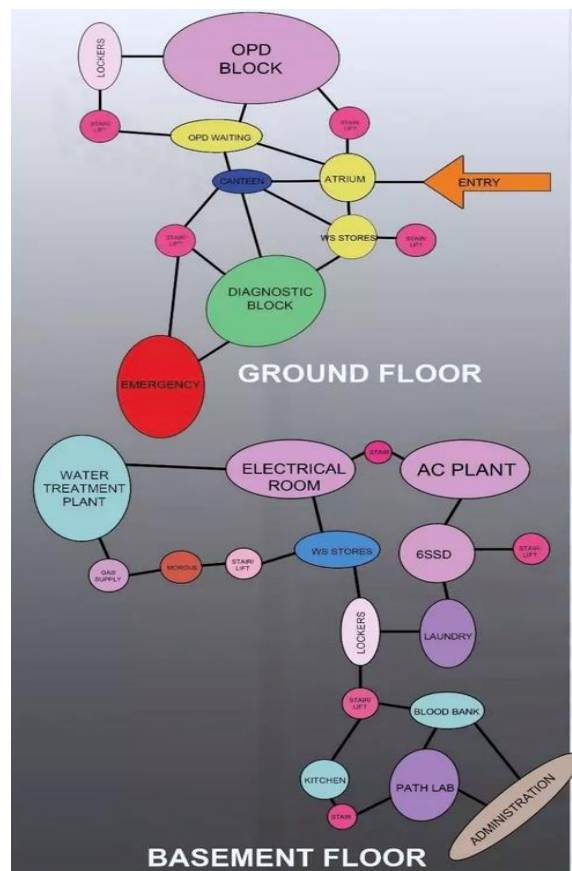


BUILTUP AREA

CONCEPT

THE HOSPITAL HAS BEEN DESIGNED KEEPNG IN MIND THE ARCHITECTURE OF THE SURROUNDING BUILDING & THUS IT MERGE WELL WITH THE SITTE AND SURROUNDINGS.

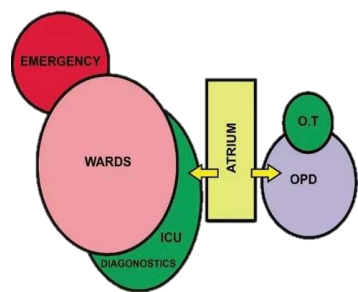
BUBBLE DIAGRAM



PHOTOGRAPHS



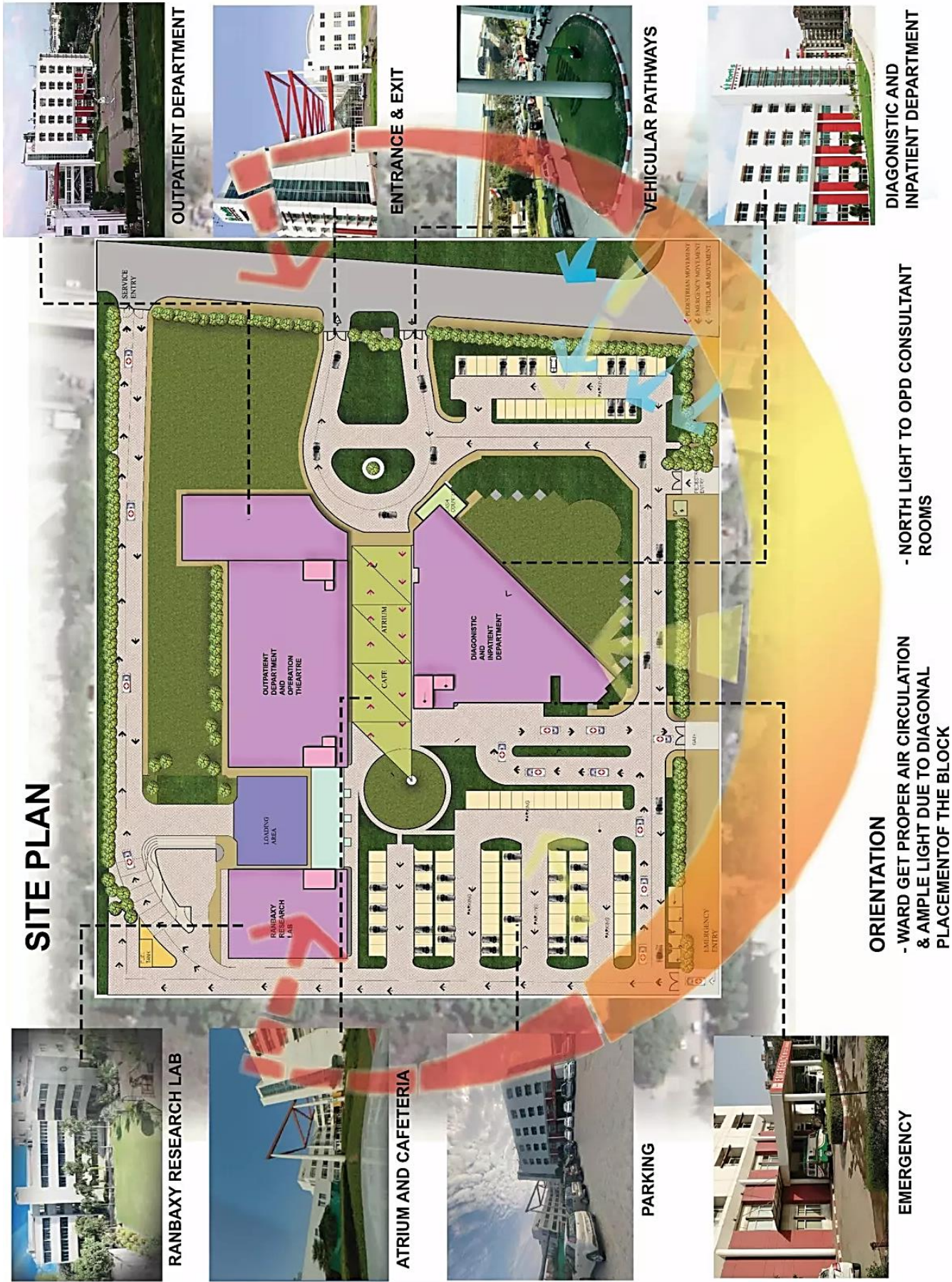
ZONING DIAGRAM



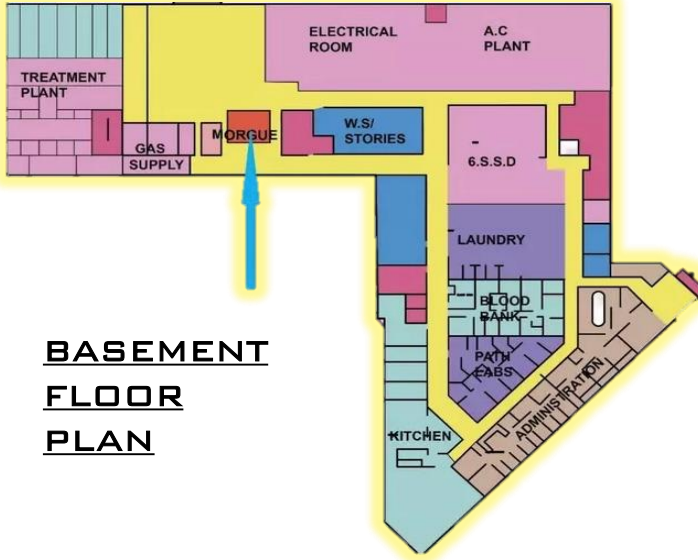
CLIMATE ANYLYSIS

•	ANNUAL HIGH TEMPERATUR E	33.78°C (92.8°F)
•	ANNUAL LOW TEMPERATUR E	23.44°C (74.19°F)
•	AVERAGE ANNUAL PRECIP.	65.71 MM (2.59 IN)
•	WARMEST MONTH	MAY (43.31°C / 109.96°F)

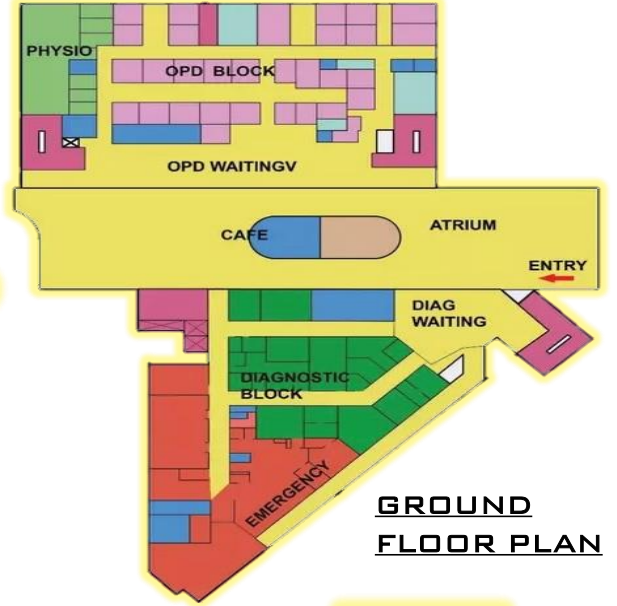
SITE PLAN



## FLOOR PLAN



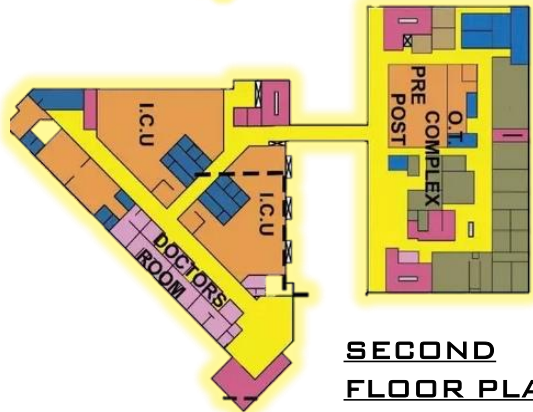
BASEMENT  
FLOOR  
PLAN



GROUND  
FLOOR  
PLAN



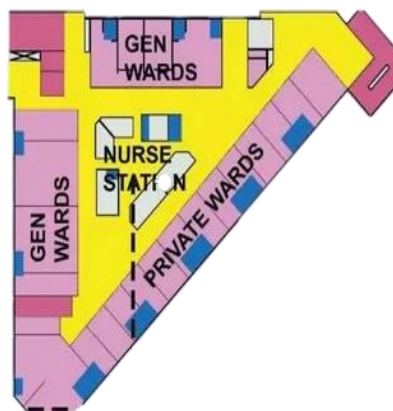
FIRST FLOOR  
PLAN



SECOND  
FLOOR  
PLAN



THIRD FLOOR  
PLAN



CONCEPT



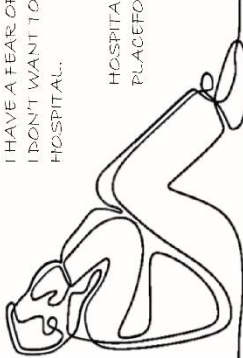
## WHAT IS TRAUMA CENTRE?

- TRAUMA IS A LOT OF COMPLEX PHENOMENA THAT DON'T JUST AFFECT MOMENTARILY BUT CAN CHANGE A PERSON'S LIFE FOREVER. WHICH MAKES THESE TRAUMA RECOVERY CENTERS ALL THE MORE IMPORTANT.
- THEY'RE SUPPOSED TO PROVIDE THE CARE AND REFUGE FOR THEM THAT CAN MAKE THEM FEEL BETTER AND START THEIR JOURNEY TO RECOVERY

## CONCEPT

I HAVE A FEAR OF HOSPITAL.  
I DON'T WANT TO GO  
HOSPITAL.

HOSPITAL IS NOT A GOOD  
PLACE FOR ME.



## NOSCOMPHOBIA

- IT IS THE EXTREME FEAR OF HOSPITALS.
- IT'S A CONDITION WHERE PEOPLE'S BLOOD PRESSURE RISES WHEN THEY VISIT A DOCTOR'S CLINIC.



## THERAPEUTIC GARDENS

- A THERAPEUTIC GARDEN OR HEALING GARDEN IS A DESIGNATED OUTDOOR GARDEN SPACE.
- IT IS DESIGNED TO IMPROVE OUR MENTAL HEALTH AND PHYSICAL HEALTH.
- THEY ARE USE TO BENEFIT NOT ONLY THE PERSON RECOVERING FROM AN ILLNESS BUT ALSO THEIR FAMILY , FRIENDS AND CAREGIVERS.
- IT IS OF DIFFERENT TYPES- HEALING GARDEN, ENABLING GARDEN, MEDITATIVE GARDEN, RESTORATIVE GARDEN.



CONCEPTUAL SKETCHES OF THERAPEUTIC GARDENS

## SYMPTOMS OF NOSCOMPHOBIA

- INCREASED HEART RATE.
- EXCESSIVE SWEATING.
- AVOIDANCE BEHAVIOR.
- A PANIC ATTACK AT THE THOUGHT OR SIGHT OF A HOSPITAL.
- OBSSESSIVE WORRYING.
- FEELING NAUSEATED.
- UNCONTROLLABLE ANXIETY.



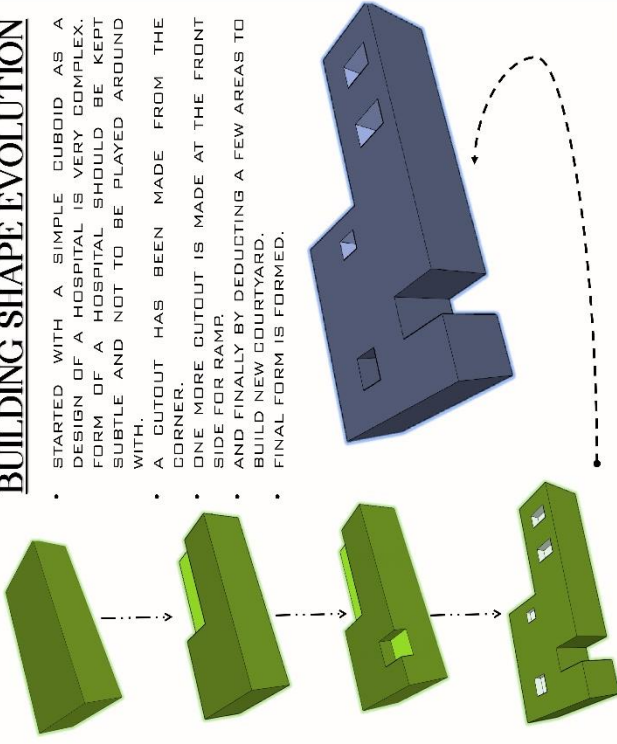
AROUND 35% OF WORLD POPULATION SUFFERS FROM HOSPITAL ANXIETY.

## BEST PLANTS FOR THERAPEUTIC GARDEN

- THYME
- ROSEMARY
- FLOWERING BULBS
- SWEET PEAS
- LAVENDER
- CHILDHOOD PLANTS

## BUILDING SHAIPE EVOLUTION

- STARTED WITH A SIMPLE CUBOID AS A DESIGN OF A HOSPITAL IS VERY COMPLEX. FORM OF A HOSPITAL SHOULD BE KEPT SUBTLE AND NOT TO BE PLAYED AROUND WITH.
- A CUTOUT HAS BEEN MADE FROM THE CORNER.
- ONE MORE CUTOUT IS MADE AT THE FRONT SIDE FOR RAMP.
- AND FINALLY BY DEDUCTING A FEW AREAS TO BUILD NEW COURTYARD.
- FINAL FORM IS FORMED.

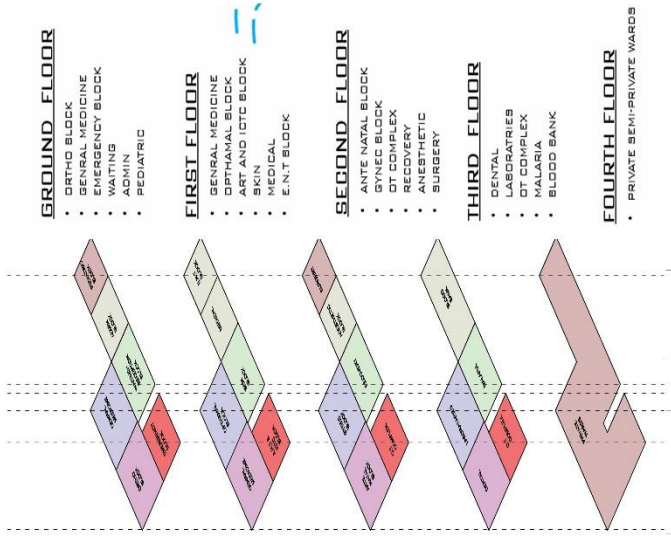


## TREATING NOSCOMPHOBIA

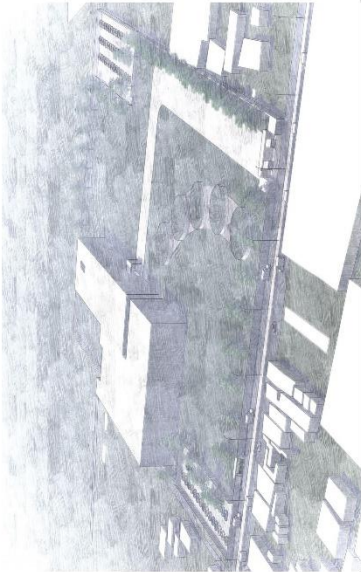
- PROVIDING NATURAL SPACE.
- EASY STRAIGHT CORRIDORS.
- NATURAL LIGHT.
- THERAUPTIC GARDEN.
- MATERIAL EFFICIENCY.



SPACE ZONING

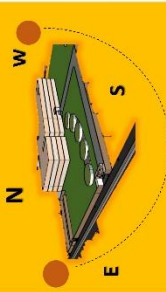


CONCEPTUAL SITE PLAN

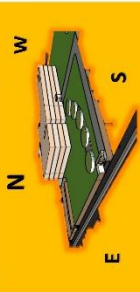


ADVANCE TRAUMA RECOVERY & CARE CENTRE

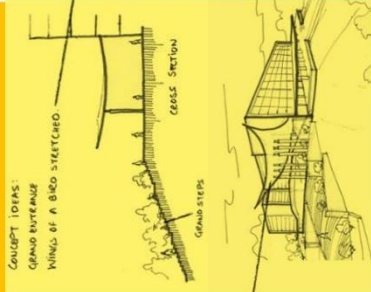
SUN PATH



WIND PATH



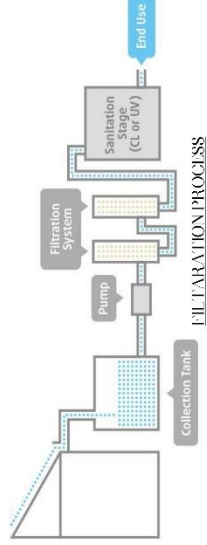
PORCH IDEA



IMPLEMENTING RAINWATER

- HOSPITALS CAN USE THIS TECHNIQUE TO AUGMENT GROUNDWATER BY DIVERTING RAINFALL TO SUB-SURFACE RESERVOIRS.
- THE COLLECTED WATER CAN BE USED FOR NON-POTABLE USES OR FOR POTABLE SUPPLY WITH APPROPRIATE TREATMENT.
- IN RURAL AREAS, HOSPITALS CAN ADOPT A TWIN STRATEGY OF SIMPLE ARTIFICIAL RECHARGE TECHNIQUES LIKE PERCOLATION TANKS, CHECK DAMS, RECHARGE SHAFTS, DUG WELL RECHARGE AND SUB-SURFACE DYKES.

SITE PLAN



UJJWAL SRIVASTAVA  
BARCHI 5YR  
GUIDE - AR. VERSHA VERMA

## STANDARDS

### CIRCULATION AREAS, CORRIDORS AND RAMPS

- CORRIDORS SHOULD BE AT LEAST 3 METRES WIDE.
- CORRIDORS SHOULD FOLLOW FIRE SAFETY NORMS AND BE WIDE ENOUGH TO ACCOMMODATE TWO PASSING TROLLEYS EASILY ALONG WITH SOME ADDITIONAL SPACE FOR EQUIPMENT.
- RAMPS SHALL HAVE A SLOPE OF 1:5 TO 1:8 AND SHOULD BE CHECKED FOR MANOEUVRABILITY OF BEDS AND TROLLEYS AT TURNING POINTS.

### WATER SUPPLY

Table 1: Minimum requirements for water supply

S. No.	Requirements	Hot water supply (with hot water points)	Water	Male	Female	Admission/consultation building
1	Water closet	One for every 10 persons	One for every 20 persons	One for every 20 persons	One for every 20 persons	One for every 10 persons
2	Wash basins	Two for up to 24 persons, add one for every additional 24 persons	One for every 100 persons	One for every 100 persons	One for every 100 persons	One for every 25 persons
3	Baths with shower	One bath with shower for every 100 persons	One for every 100 persons	One for every 100 persons	One for every 100 persons	One for every 100 persons
4	Bed pan washing sinks	One for every 10 beds in a ward	One for every 10 beds in a ward	One for every 10 beds in a ward	One for every 10 beds in a ward	One for every 10 beds in a ward
5	Cleaner sink	One per floor (minimum)	One per floor (minimum)	One per floor (minimum)	One per floor (minimum)	One per floor (minimum)
6	Kitchen sinks	One per ward (one per ward)	One per ward (one per ward)	One per ward (one per ward)	One per ward (one per ward)	One per ward (one per ward)
7	Urinals	One per 20 persons	One per 20 persons	One per 20 persons	One per 20 persons	One per 20 persons

### WASTE MANAGEMENT

- ALL SUCH WASTE THAT CAN ADVERSELY HARM THE ENVIRONMENT OR HEALTH OF A PERSON IS CONSIDERED INFECTIOUS AND TREATED AS BIOMEDICAL WASTE.
- EVERY HEALTH CARE FACILITY SHOULD ENSURE COLLECTION, TRANSPORTATION, TREATMENT AND DISPOSAL OF BIOMEDICAL WASTE AS PER THE LATEST LAWS/RULES.
- EACH HEALTHCARE FACILITY SHOULD ENSURE THAT THERE IS A DESIGNATED CENTRAL WASTE COLLECTION ROOM SITUATED WITHIN ITS PREMISES FOR STORAGE OF BIOMEDICAL WASTE, TILL THE WASTE IS PICKED AND TRANSPORTED FOR TREATMENT AND DISPOSAL AT THE COMMON BIOMEDICAL WASTE TREATMENT FACILITY.
- THE GENERAL WASTE CONSISTS OF ALL THE WASTE OTHER THAN BIO MEDICAL WASTE AND WHICH HAS NOT BEEN IN CONTACT WITH ANY HAZARDOUS OR INFECTIOUS, CHEMICAL OR BIOLOGICAL SECRETIONS AND DOES NOT INCLUDE ANY WASTE SHARPS.

### OPD

- IN OPD CLINICS, IT IS EXPECTED THAT EVERY PATIENT BEFORE GOING TO THE CONSULTATION ROOM WILL FIRST GO TO THE WAITING STATION TOGETHER WITH HIS CHECKED.
- AFTER CONSULTATION, NURSES WILL ALSO EXPLAIN TREATMENT AND PRESCRIPTION TO PATIENTS.

### WAYFINDING/ SIGNAGES

- ADEQUATE AND CLEAR SIGNAGE SHOULD BE DISPLAYED ON THE MAIN AND CONNECTING ROADS TO THE FACILITY.
- THEY SHOULD BE IN A FONT THAT IS EASILY VISIBL FROM A DISTANCE.
- A BOARD CLEARLY INDICATING THE NAME OF THE FACILITY SHOULD BE PLACED AT THE FRONT OF THE FACILITY AND.
- EACH DEPARTMENT AND ROOM SHOULD BE CLEARLY MARKED INCLUDING LANGUAGE AND LOCAL LANGUAGE.

### PARKING

- CLEAR ACCESS FOR VEHICLES AND AMBULANCES SHOULD BE MAINTAINED ESPECIALLY NEAR THE EMERGENCY DEPARTMENT INSIDE THE PREMISES.
- THERE SHOULD BE AN OPEN SPACE AVAILABLE IN LINE WITH THE AVERAGE EXPECTED LOAD OF VEHICLES FOR PARKING.

### GARDENS & LANDSCAPING

- GARDENS, LANDSCAPING AND OPEN SPACES GIVE A POSITIVE HEALING ENVIRONMENT THAT REDUCES STRESS.
- ANXIETY AND MENTAL FATIGUE SO WHETHER POSSIBLE, IDENTITY AND PROMOTE GREENERY AND OPEN SPACES.
- HERBAL GARDENS SHOULD BE PROMOTED ON THE CAMPUSES.

### DISABLED AND ELDERLY FRIENDLY ACCESS

- IT IS ADVISED THAT TAGHAT SIGNS BE USED WITH GOOD CONTRAST BETWEEN LETTERS AND BACKGROUND WHICH SHOULD ALSO CONTRAST WITH THE BACKGROUND TO PROVIDE PROVISION IF ANY LIGHT IS MOUNTED.
- IT IS RECOMMENDED TO INSTAL ONE TWO ROWS OF TAGHAT LIGHTING BLOCKS ALONG THE ENTIRE LENGTH OF THE PROPOSED ACCESSIBLE ROUTE.
- CARSHALL BE TAKEN TO ENSURE THAT THERE ARE NO OBSTACLES SUCH AS TREES, POLES OR UNLAWY SHRUBS ALONG THE ROUTE TRAVELLED BY THE CLINIC PATIENTS.

### OT COMPLEX

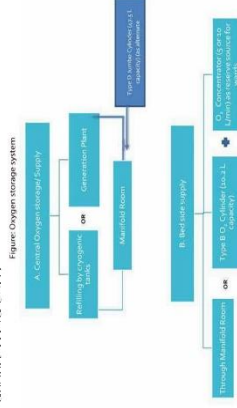
- THE LOCATION OF OPERATION THEATRE COMPLEX SHOULD BE IN A QUIET ENVIRONMENT, FREE FROM NOISE AND OTHER DISTURBANCES, CONTAMINATION AND POSSIBLE CROSS INFECTION.
- ZONING SHOULD BE MAINTAINED TO KEEP THE THEATRES FREE FROM MICROORGANISMS.
- THERE SHOULD BE FOUR WELL DEFINED ZONES OF VARYING DEGREES OF CLEANLINESS/ASEPSIS, NAMELY, PROTECTIVE ZONE, CLEAN ZONE, ASEPTIC OR STERILE ZONE, AND DISPOSAL OR DIRTY ZONE.
- ALSO NEEDS CONSTANT SPECIALIZED SERVICES SUCH AS PIPED SUCTION AND MEDICAL GAS SUPPLY, ELECTRIC SUPPLY, HEATING, AIR CONDITIONING.

### BLOOD BANK

- THE BLOOD BANK SHOULD BE IN CLOSE PROXIMITY TO THE LABORATORY AND AT AN ACCESSIBLE DISTANCE FROM THE OT COMPLEX, ICU AND EMERGENCY DEPARTMENT.
- BLOOD BANK SHOULD BE FUNCTIONAL ROUND THE CLOCK (24X7).
- THE BLOOD BANK SHOULD HAVE PROPER SIGNAGE AND RESTRICTED AREA DEMARCATION FOR THE SAFETY OF STAFF, DONORS, PATIENTS, AND OTHERS.

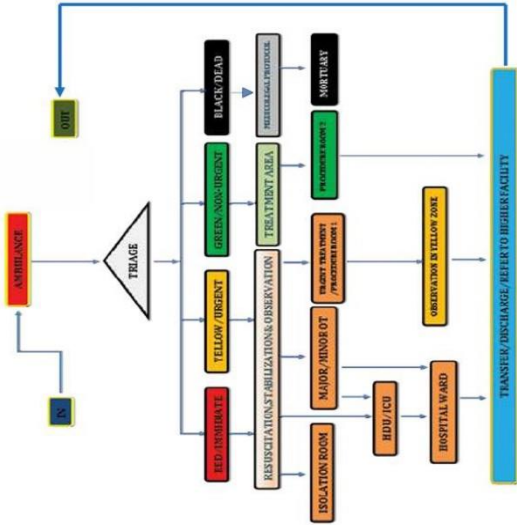
### MEDICAL GAS PIPELINE SYSTEM

- MEDICAL GAS PIPELINE SYSTEM (MGPS) IS DESIGNED TO PROVIDE A SAFE AND EFFECTIVE METHOD OF DELIVERING MEDICAL & ANALGETIC GASES, VACUUM & COMPRESSED AIR FROM THE SOURCE OF SUPPLY TO THE APPROPRIATE TERMINAL UNIT BY MEANS OF A PIPELINE DISTRIBUTION SYSTEM.
- THE MEDICAL GAS PIPELINE SYSTEM SUPPLIES MEDICAL GASES LIKE OXYGEN AND NITROUS OXIDE AND MIXTURES OF GASES TO DIFFERENT AIRWAYS OF THE SUB DISTRICT DISTRICT HOSPITAL.
- THE SUPPLY OF OXYGEN TO THE HOSPITAL CAN BE BASICALLY THROUGH A STORAGE SYSTEM OR FROM A GENERATING UNIT.



### EMERGENCY WARD

- THE EMERGENCY WING SHOULD BE PLANNED TO KEEP IN MIND EASY ACCESSIBILITY AND QUICK RESPONSE. Y EMERGENCY SERVICE PROVISION THROUGH ADEQUATELY TRAINED HUMAN RESOURCES FOR HEALTH SHOULD BE AVAILABLE ROUND THE CLOCK.
- IT SHOULD PREFERABLY HAVE A DISTINCT ENTRY INDEPENDENT OF OPD MAIN ENTRY SO THAT MINIMUM TIME IS LOST IN ATTENDING TO CASES THAT NEED RESUSCITATION AND ALSO TO OTHERS REQUIRING EMERGENCY MANAGEMENT.
- THERE SHOULD BE EASY APPROACH AND ACCESS FOR AMBULANCES WITH ADEQUATE SPACE FOR THE FREE PASSAGE OF VEHICLES AND A COVERED AREA FOR WAITING PATIENTS.
- STRETCHERS, WHEELCHAIRS, AND TROLLEYS SHOULD BE AVAILABLE AT THE ENTRANCE OF THE EMERGENCY AT A DESIGNATED AREA. A LAY OUT SHOULD BE SUCH THAT IT FOLLOWS THE FUNCTIONAL FLOW FOR CLINICAL MANAGEMENT OF THE PATIENT.
- SIGNAGE OF EMERGENCY SHOULD BE DISPLAYED AT THE ENTRY OF THE HOSPITAL WITH ADDITIONAL SIGNAGE AT KEY POINTS.
- THE EMERGENCY SHOULD HAVE A DEDICATED TRIAGE, AND FOUR CLINICAL MANAGEMENT ZONES (RED, YELLOW, GREEN, BLACK).
- THE TRIAGE AREA SHOULD HAVE DEDICATED SPACE WITH WALL MOUNTED MULTIPARA MONITORS AND MEDICAL GAS OUTLETS.



ADVANCE TRAUMA  
RECOVERY AND CARE  
CENTRE , VARANASI



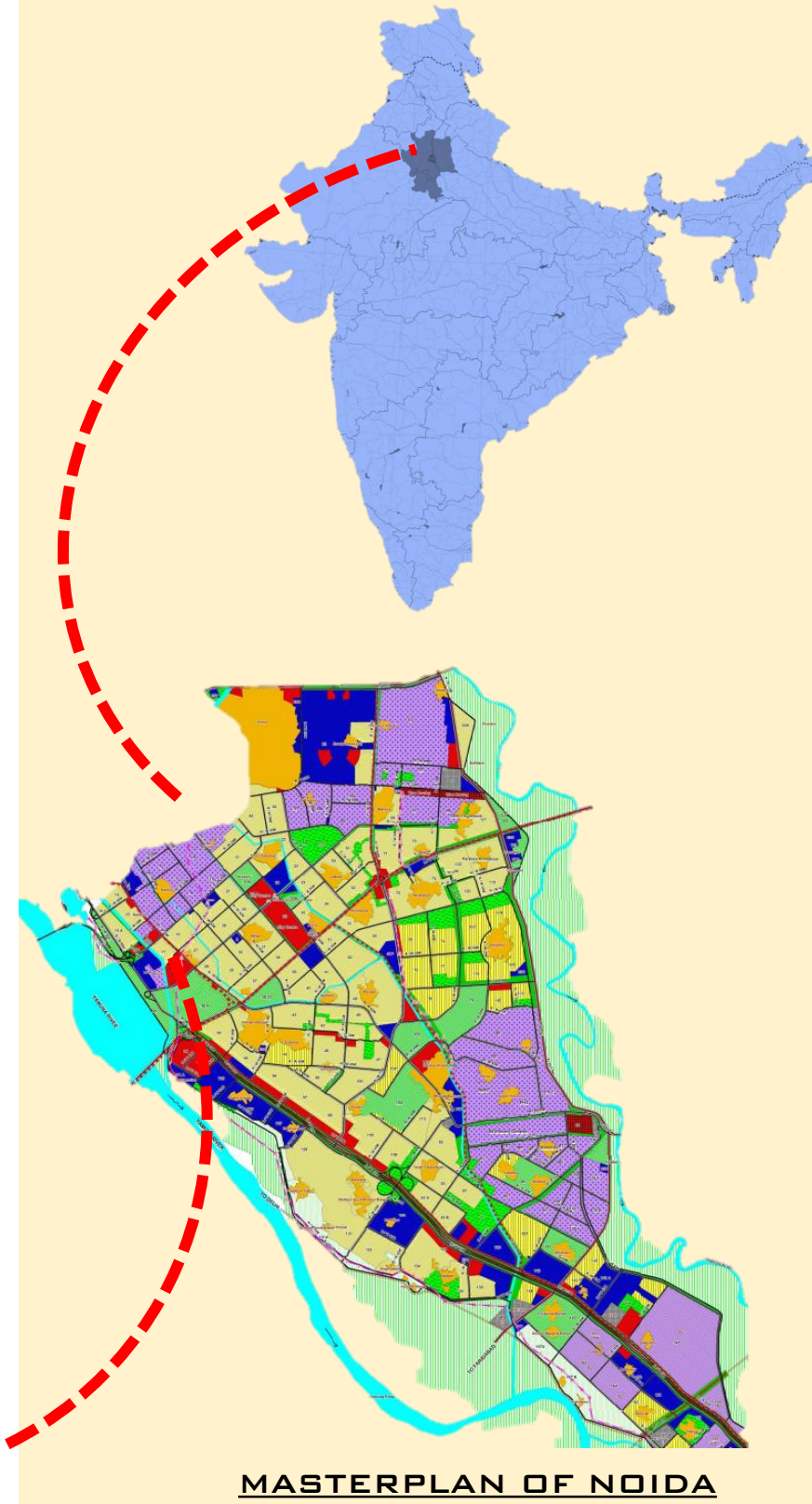
## INTRODUCTION

- LOCATION - SECTOR 62 NOIDA OPP- SEC - 63 INDUSTRIAL AREA
- SITE AREA - 7 ACRE
- GROUND COVERAGE - 35%
- F.A.R - 1.5
- BUILDING HEIGHT - 24M
- NO OF BED - 177
- ARCHITECT - ACHAL KATARIA



GOOGLE EARTH IMAGE

## LOCATION

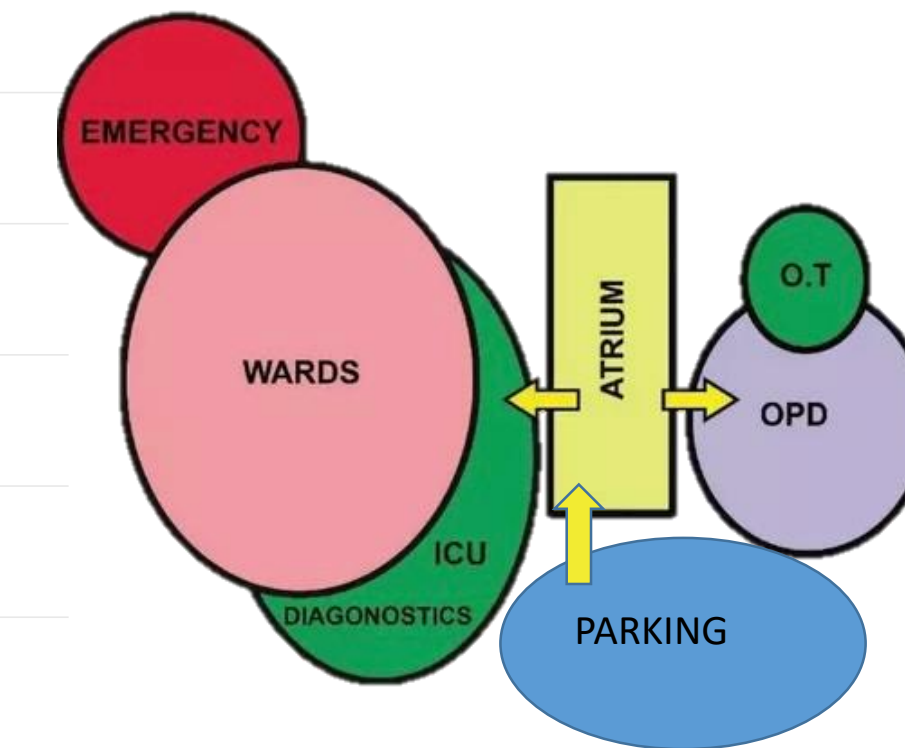


MASTERPLAN OF NOIDA

## CLIMATE ANALYSIS

ANNUAL HIGH TEMPERATURE	33.78°C (92.8°F)
ANNUAL LOW TEMPERATURE	23.44°C (74.19°F)
AVERAGE ANNUAL PRECIP.	65.71 MM (2.59 IN)
WARMEST MONTH	MAY (43.31°C / 109.96°F)
COLDEST MONTH	JANUARY (11.08°C / 51.94°F)
WETTEST MONTH	JULY (246.7MM / 9.71 IN)
DRIEST MONTH	NOVEMBER (3.19MM / 0.13 IN)
NUMBER OF DAYS WITH RAINFALL (≥ 1.0 MM)	72.99 DAYS (20.0%)
DAYS WITH NO RAIN	292.01 DAYS (80.0%)
HUMIDITY	40.68%

## ZONING DIAGRAM



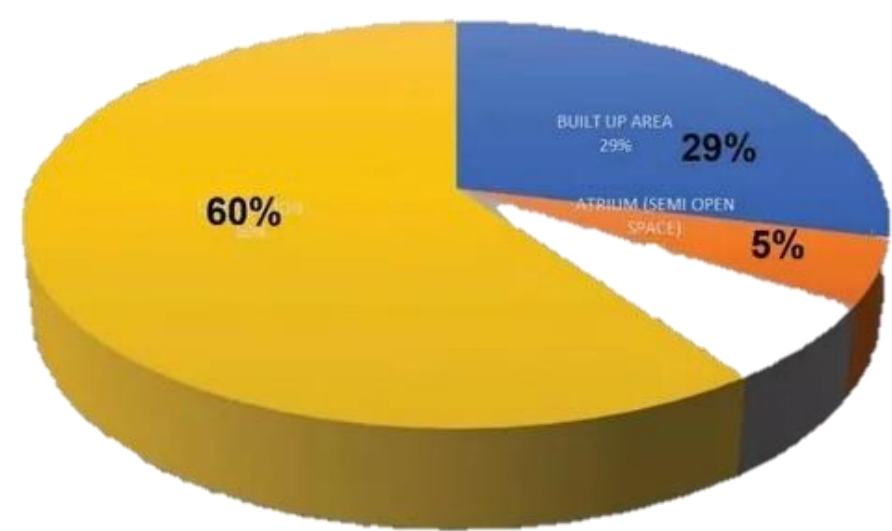
ZONING BUBBLE DIAGRAM

- ALL FLOOR WALL JUNCTIONS & CORNERS ARE ROUNDED WITH EPOXY RAISINS.
- PROPER ZONING OF PUBLIC LIFT LOBBY HELPS PUBLIC & HOSPITAL FUNCTIONS.
- LONG CORRIDOR CONNECTING EMERGENCY WAITING & DIAGNOSTIC WAITING SEPARATES PUBLIC TRAFFIC FROM HOSPITAL TRAFFIC.
- EMERGENCY WELL CONNECTED WITH DIAGNOSTIC AREA.
- GRID USED = 7.2 M X 7.2 M

## CONNECTIVITY

- METRO STATION - SECTOR 62 NOIDA (260M)
- BUS STAND - FORTIS HOSPITAL
- AIRPORT - IGI TERMINAL 3 (31 KM)
- RAILWAY STATION - NIZAMUDDIN RAILWAY STATION - (17 KM)

## PROGRAM OF REQUIREMENT



SPACES DIVIDE ACC. TO PERCENTAGE

- CIRCULATION**
- ATRIUM (SEMI OPEN SPACE)**
- BUILTUP AREA**

## CONCEPT

THE HOSPITAL HAS BEEN DESIGNED KEEPING IN MIND THE ARCHITECTURE OF THE SURROUNDING BUILDING & THUS IT MERGE WELL WITH THE SITE AND SURROUNDINGS.

## PHOTOGRAPHS



## SITE PLAN & CIRCULATION



RANBAXY RESEARCH LAB



ATRIUM AND CAFETERIA

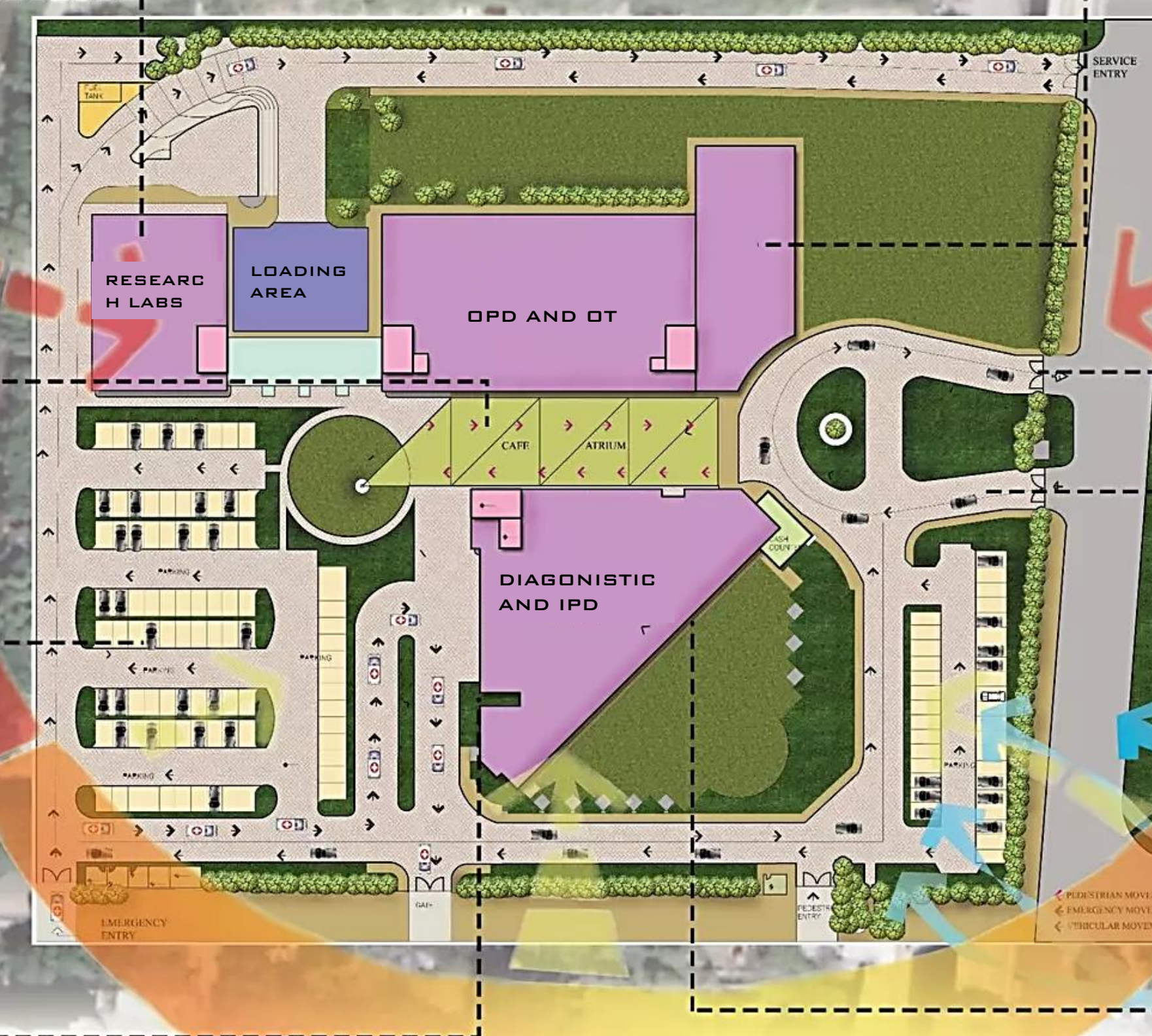


PARKING



EMERGENCY

## SITE PLAN



## ORIENTATION

- WARD GET PROPER AIR CIRCULATION & AMPLE LIGHT DUE TO DIAGONAL PLACEMENT OF THE BLOCK

- NORTH LIGHT TO OPD CONSULTANT ROOMS



OUTPATIENT DEPARTMENT



ENTRANCE & EXIT



VEHICULAR PATHWAYS



DIAGNOSTIC AND INPATIENT DEPARTMENT



EMERGENCY MOVEMENT



PEDESTRIAN MOVEMENT



VEHICULAR MOVEMENT



SERVICE CLASH POINT

UJJWAL SRIVASTAVA

BARCH 5YR

GUIDE - AR.VERSHA VERMA

CASE STUDY-1

MERITS & DEMERITS

- THE IPD BLOCK IN A DIAGONAL PLACEMENT RELIES THE HEAVY MASS OF BUILDING AND SETUP INTO CONES OF VISION.
- OPE BEING A DAY CARE BLOCK SEPRATED FROM THE IPD BLOCK.
- TOO MANY ENTRIES THAT CREATES CLASH POINT FOR TRAFFIC MOVEMENT.
- NO SPECIFIED RECOVERY ROOMS.PAITENTS ARE DIRECTLY SHIFTED TO THE WARDS AFTER OPERATION.
- NO UNLOADING AREA FOR KITCHEN AND THUS EMERGENCY TRAFFIC IS AFFECTED.

MATERIALS

S.NO	AREAS	FLOORING	WALL FINISHES	CEILING
1.	ENTRANCE LOBBY	NON GLAZED NON SUPPERY CERAMIC TILES	PLASTIC EMULSION PAINT UPTO 3'6" & CREAM COLOURED PAINT ABOVE.	GYPSUM BOARD FALSE CEILING
2.	OPD WAITING	MARBLE CHIP WHITE MOSAIC	PLASTIC EMULSION PAINT UPTO 3'6" & CREAM COLOURED PAINT ABOVE.	CREAM COLOURED CEILING FALSE CEILING
3.	REST OF FLOORS	WHITE MARBLE CHIPS IN WHITE CEMENT MOSAIC FLOORING	PLASTIC EMULSION PAINT UPTO 5' & CREAM COLOURED PAINT ABOVE.	GYPSUM BOARD FALSE CEILING
4.	CORRIDORS	CEMENT CONCRETE	WHITE PAINTED WALLS	
5.	BASEMENT FLOORS	KOTA STONE	WHITE PAINTED WALLS	GYPSUM BOARD FALSE CEILING
6.	O.T.	GLAZED CERAMIC TILES		GYPSUM BOARD FALSE CEILING

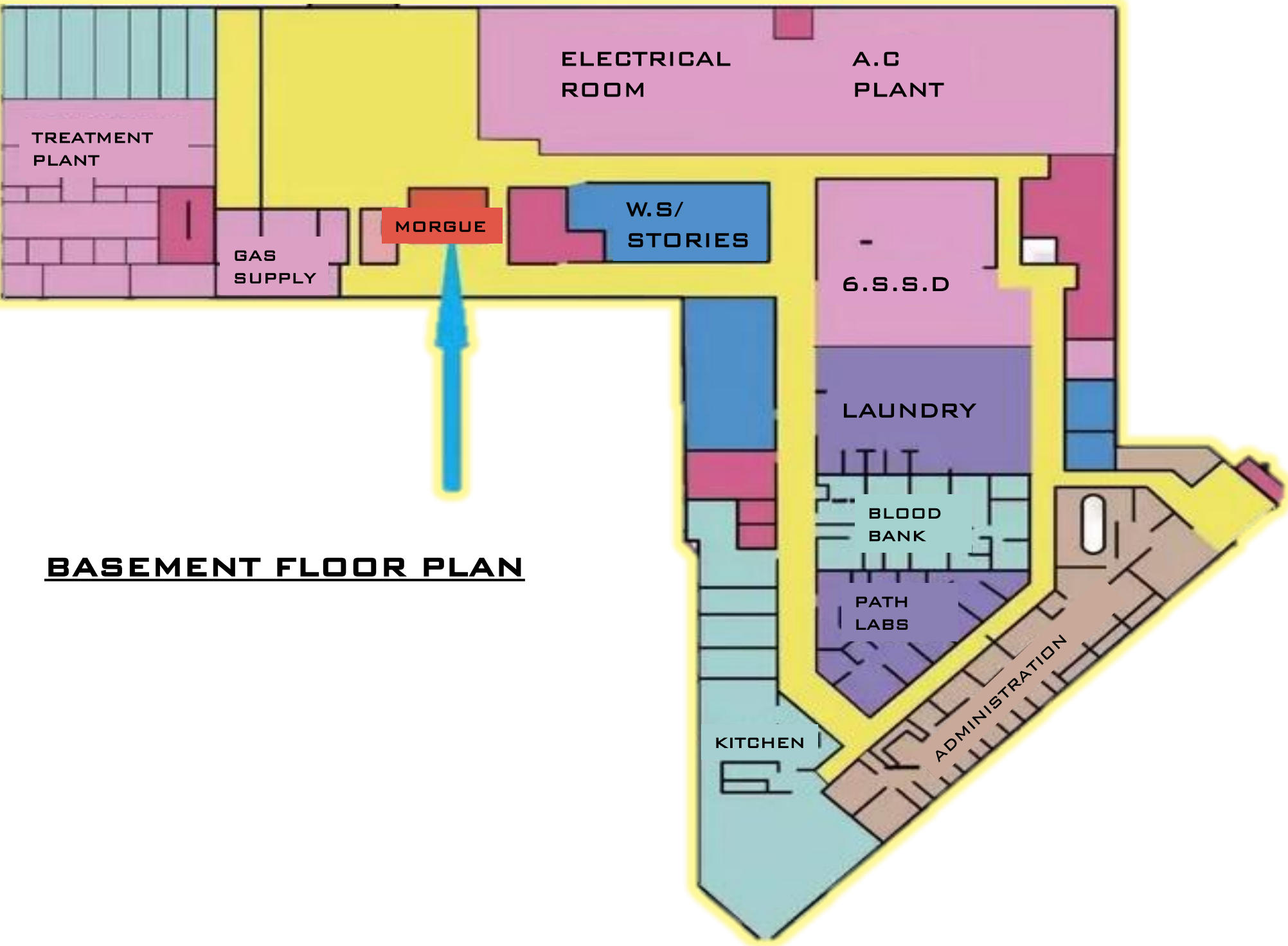
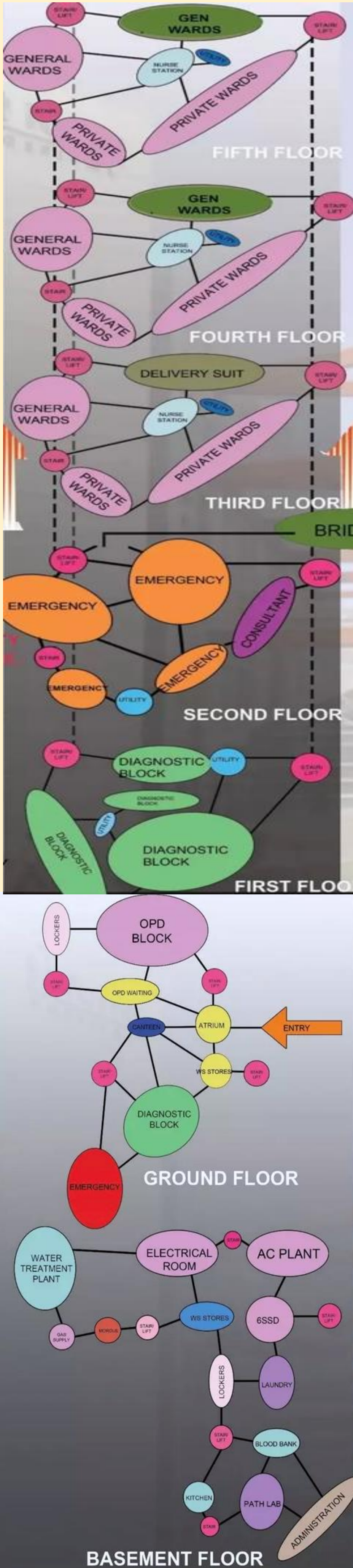
STRUCTURAL

- RED BANDS HAVE BEEN PROVIDED ON THE EXTERIOR IN MINIMUM QUANTITY IN CONTRAST TO THE WHITE EXTERIOR FINISH THIS CONCEPT IS CALLED MINIMALISM (GENERALLY USED WITH RED & WHITE COLOURCOMBINATION) - TO AVOID MONOTONY OF COLOUR & FOR EASY VISIBILITY FROM ANY AIRPLANE.
- BUILDING FINISHES ARE KEPT LIGHT IN COLOURTO DECREASE THE VISUAL DENSITY OF HEAVY MASS.
- TO AVOID EXCESSIVE HEAT PENETRATION INTO THE ATRIUM TRANSPARENT & TRANSLUSCENT POLYCARBONATE SHEETS HAVE BEEN USED.

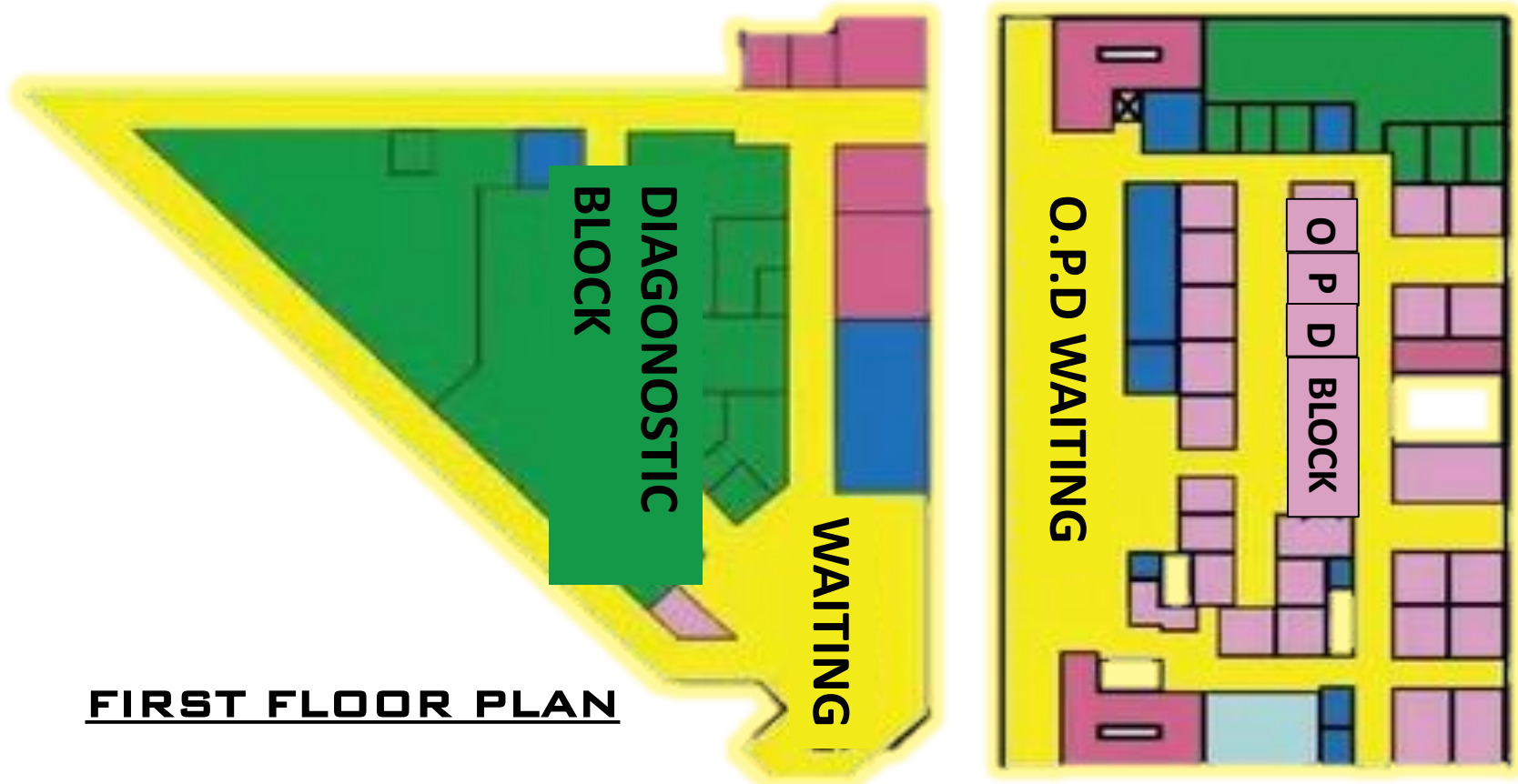
SECTION

WARDS		
WARDS		
DELIVERY SUITES, PRIVATE & GENERAL WARDS, NURSE STATION		
I.C.U.s & DOCTORS' ROOMS	BRIDGE	OPERATION THEATRES
DIAGNOSTIC		OPD CONSULTATION ROOMS
DIAGNOSTIC, EMERGENCY	ATRIUM, CAFE	OPD, PHYSIOTHERAPY
WATER TREATMENT,GAS SUPPLY,STORES & LOCKERS,ELEC RM,AC RM,CSSD,LAUNDRY,KITCHEN,ADMIN,PATH LAB,BLOOD BANK		

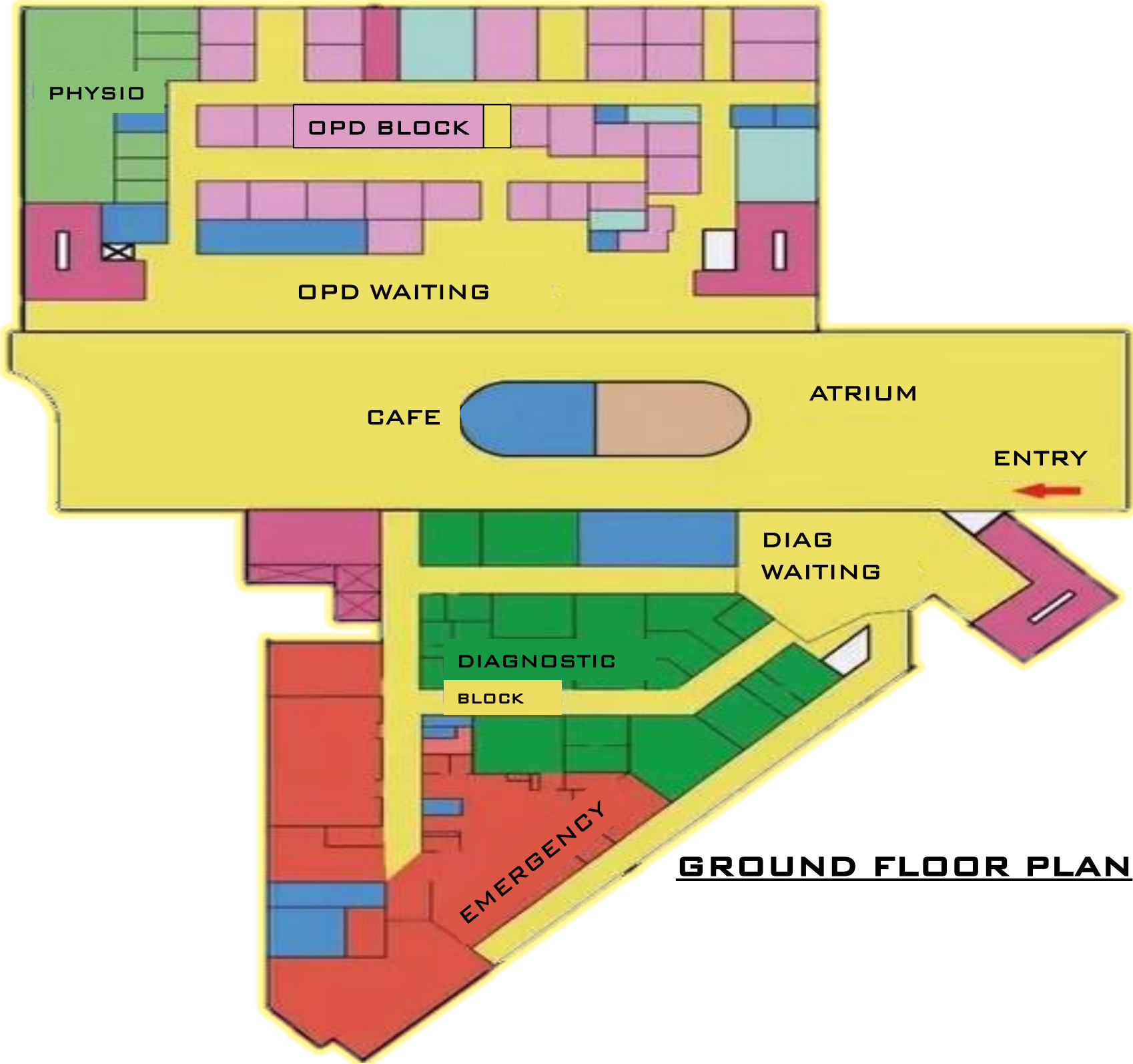
BUBBLE DIAGRAM



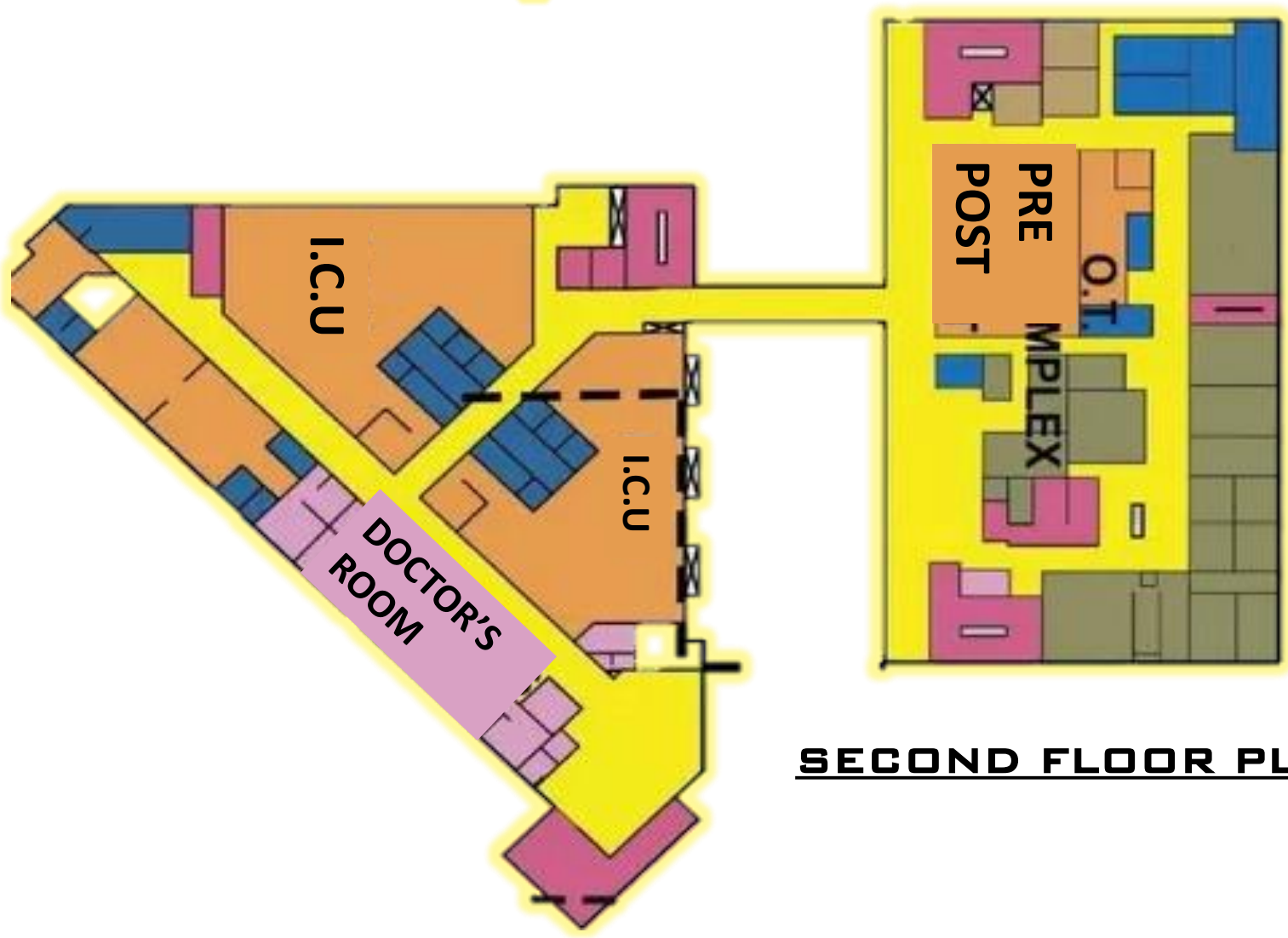
BASEMENT FLOOR PLAN



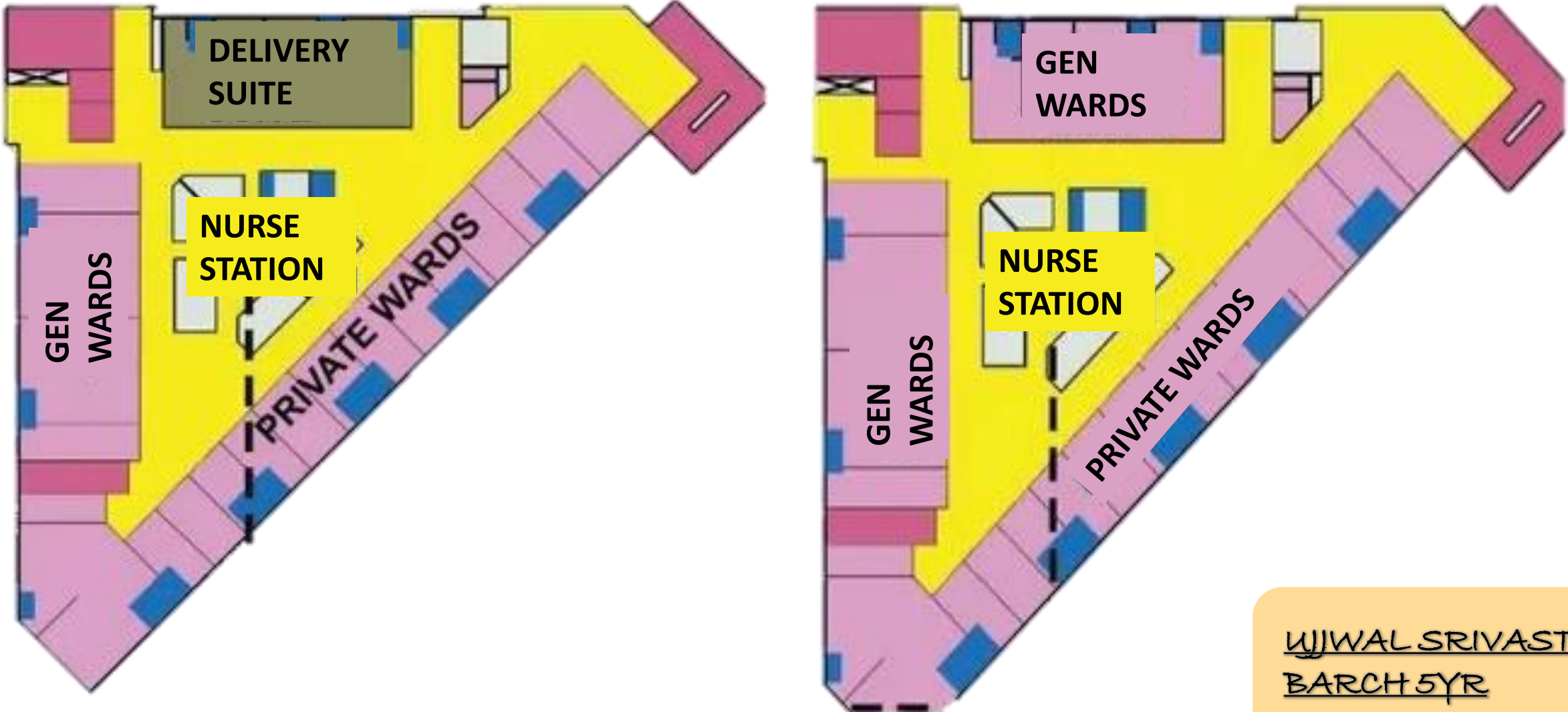
FIRST FLOOR PLAN



GROUND FLOOR PLAN



SECOND FLOOR PLAN



THIRD FLOOR PLAN

FOURTH & FIFTH FLOOR PLAN

LEGENDS

- CIRCULATION
- SERVICES
- UTILITY
- CONSULTANT
- EMERGENCY
- O.T.
- DIAGNOSIS



UJWAL SRIVASTAVA  
BARCH 5YR  
GUIDE - AR.VERSHA VERMA

CASE STUDY - 2

## INTRODUCTION

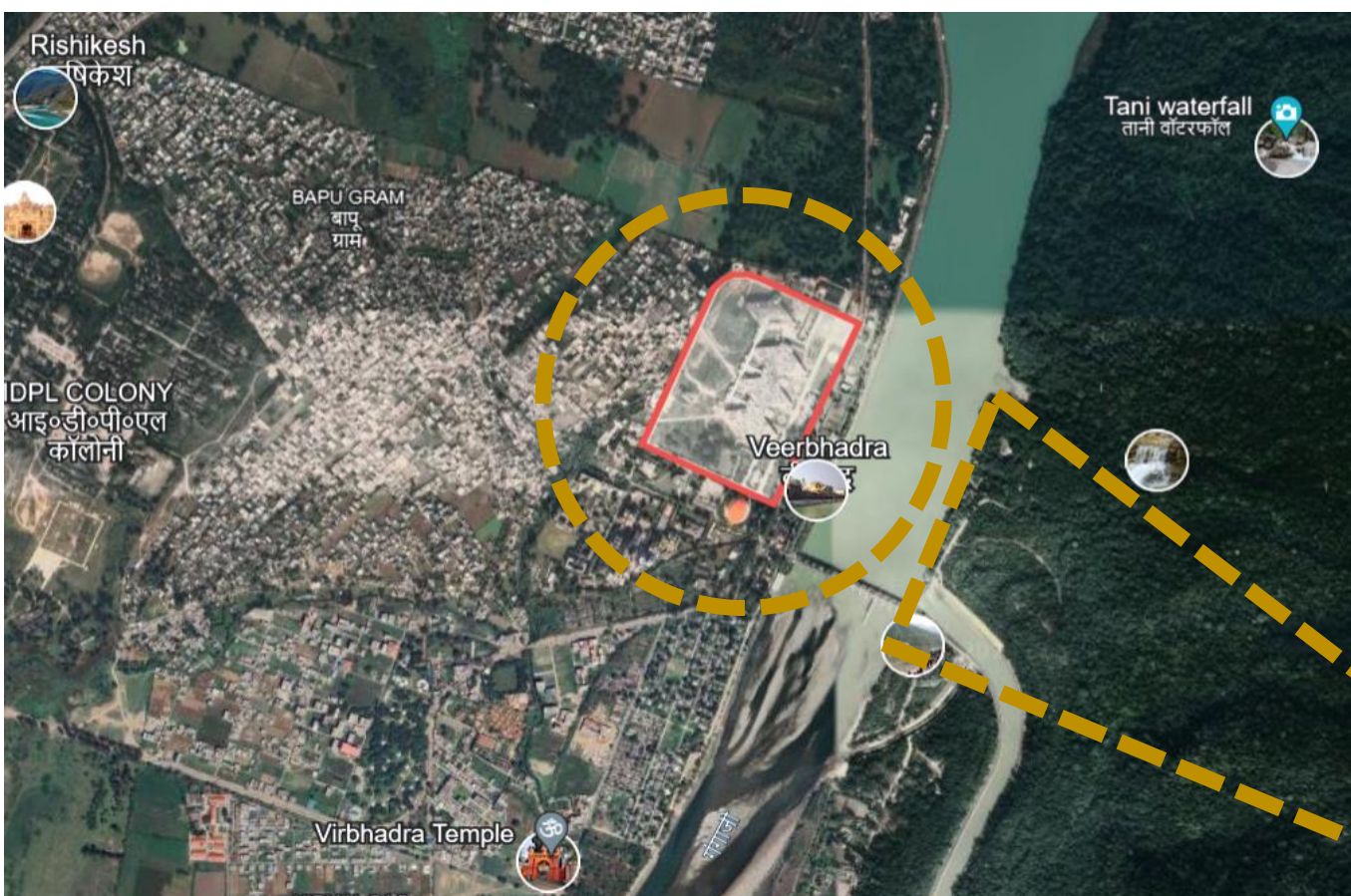
- ALL INDIA INSTITUTE OF MEDICAL SCIENCES RISHIKESH (AIIMS RISHIKESH) IS A MEDICAL COLLEGE, HOSPITAL AND MEDICAL RESEARCH PUBLIC UNIVERSITY, BASED IN RISHIKESH, UTTARAKHAND, INDIA.
- THE INSTITUTE OPERATES AUTONOMOUSLY UNDER THE MINISTRY OF HEALTH AND FAMILY WELFARE UNDER THE CENTRAL GOVERNMENT.
- INTAKES 100 MBBS STUDENTS, 50 NURSING STUDENTS EVERY YEAR. INAUGURATED IN 2012.
- THE FIRST BATCH OF STUDENTS WAS 50.
- THE TEACHING HOSPITAL IS A 1000 BEDDED MULTI-SPECIALTY FACILITY.

## HISTORY

- ALL INDIA INSTITUTE OF MEDICAL SCIENCES RISHIKESH (AIIMS RISHIKESH) IS ONE OF THE APEX HEALTH CARE INSTITUTES.
- IT IS ESTABLISHED BY THE MINISTRY OF HEALTH AND FAMILY WELFARE, GOVERNMENT OF INDIA AS AN ACT OF PARLIAMENT IN THE YEAR 2012.
- THE AIM OF CORRECTING REGIONAL IMBALANCES IN QUALITY TERTIARY LEVEL HEALTHCARE IN THE COUNTRY AND ATTAINING SELF-SUFFICIENCY IN GRADUATE AND POST-GRADUATE MEDICAL EDUCATION AND TRAINING IN THE COUNTRY.

## LOCATION & ACCESSIBILITY

- LOCATION - SHIVAJI NAGAR, RISHIKESH, UTTARAKHAND ,249203.
- COORDINATES - 30°04'23"N 78°16'59"E
- HELIPAD - 1.8 KMS
- RAILWAY STATION - 3 KMS
- BUS STAND - 1.2 KMS



GOOGLE EARTH IMAGE OF SITE



## PHOTOGRAPHS



AIIMS RISHIKESH



AIIMS RISHIKESH



INDIA MAP MARKING CHANDIGARH.

## LANDMARK



TRIVENI GHAT  
(2.9 KMS)



TANI WATERFALL  
(1.5 KMS)



RAJAJI NATIONAL PARK  
(4.5 KMS)

## ABOUT THE SITE

- EASTABLISHED - 2012
- NO OF BED - 500
- TOTAL AREA - 100 ACRE
- ARCHITECT - SURINDER SAWHNEY
- CONSTRUCTION AGENCY - JMC PROJECT LTD.
- PROJECT COST - 1000 CRORE
- BUILTUP AREA - 12220.6 SQ.M (14.35 %)
- HARDSCAPE - 13198.75 SQ.M (15.50%)
- LANDSCAPE - 59690.64 SQ.M (70.15%)
- F.A.R - 2.1
- ECS - 2

## VEGETATION

- SAL
- TEAK
- MEDICINAL PLANT
- BROWN OAK
- WHITE OAK

## NATURAL HAZARDS

- WITH HILLY TERRAIN AND PROXIMITY TO MIGHTY GANGES AND PRESENT CIRCUMSTANCES, WITH ONGOING CONSTRUCTION AND OTHER URBANIZATION ACTIVITIES IN ADJOINING AREAS, RAISE THE PROBABILITY OF OUR EXPOSURE TO A SPECTRUM OF NATURAL AND MANMADE DISASTERS IN COMING FUTURE.
- IN ORDER TO FIND THE SOLUTION, WITH THE KEY OBJECTIVE OF FORMULATING THE INSTITUTE POLICY FOR DISASTER MANAGEMENT, A CME ON DISASTER MANAGEMENT HAS BEEN CONTEMPLATED DURING SECOND HALF OF SEPTEMBER 2013 AT AIMS

## GEOGRAPHICAL FACTS

- ALTITUDE: 372 ABOVE SEA LEVEL
- LATITUDE: 30.1033 DEGREE N
- LONGITUDE: 78.2947 DEGREE E
- AVERAGE RAINFALL: 2136.7 MM

## INFERENCES

- THE FORM OF THE BUILDING ENHANCES THE CAPTURING OF COLD WINDS COMING FROM THE RIVERSIDE WHICH CAN BE PROBLEMATICAT TIMES ESPECIALLY DURING WINTERS.
- THE BUILDING HAVE BEEN BUILT ON A NE-NW AXIS.
- ALTHOUGH THE BUILDING FORM CAPTURE NATURE LIGHT EFFICIENTLY.

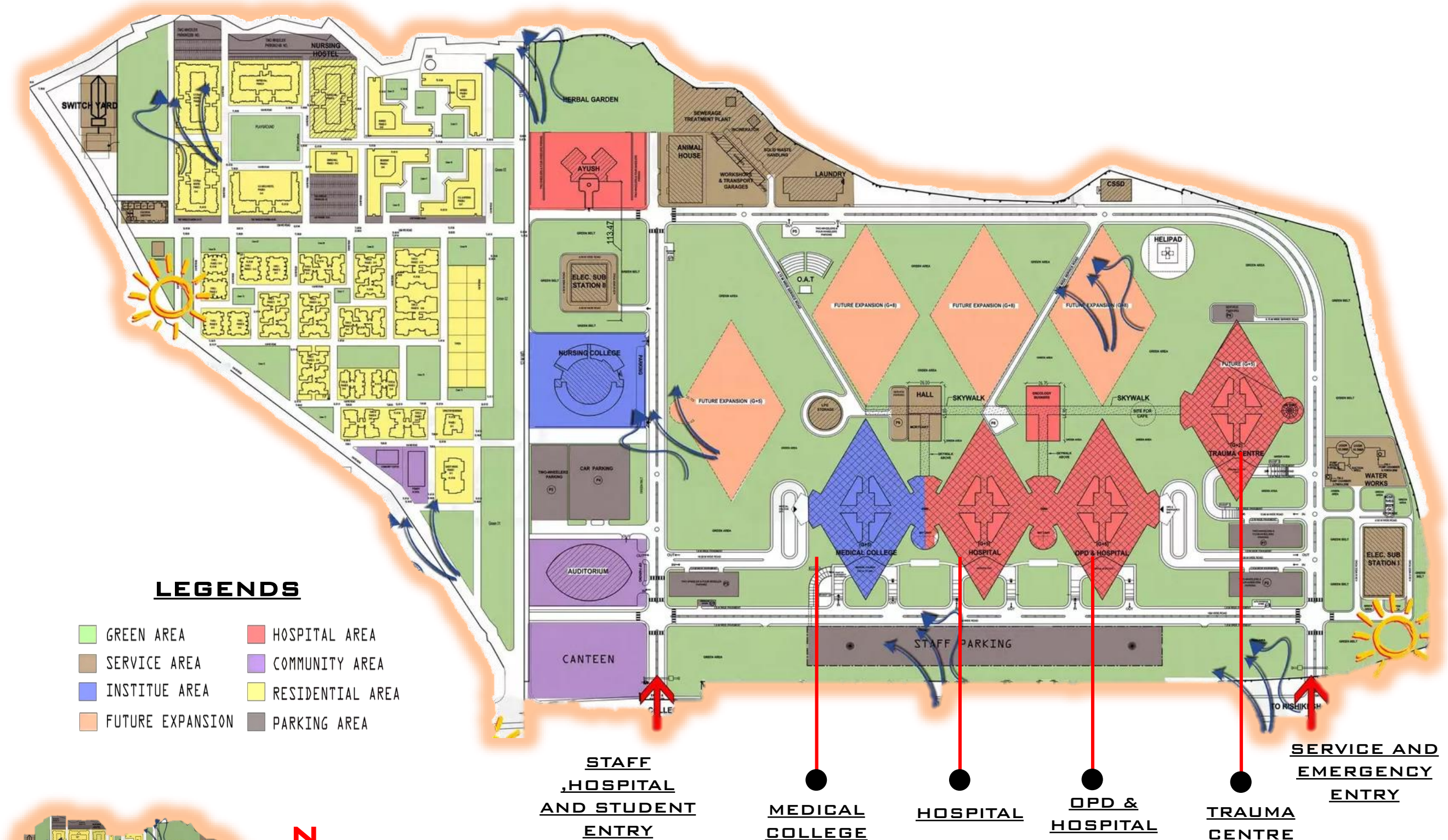
# ALL INDIA OF MEDICAL SCIENCE , RISHIKESH

## DEPARTMENTS

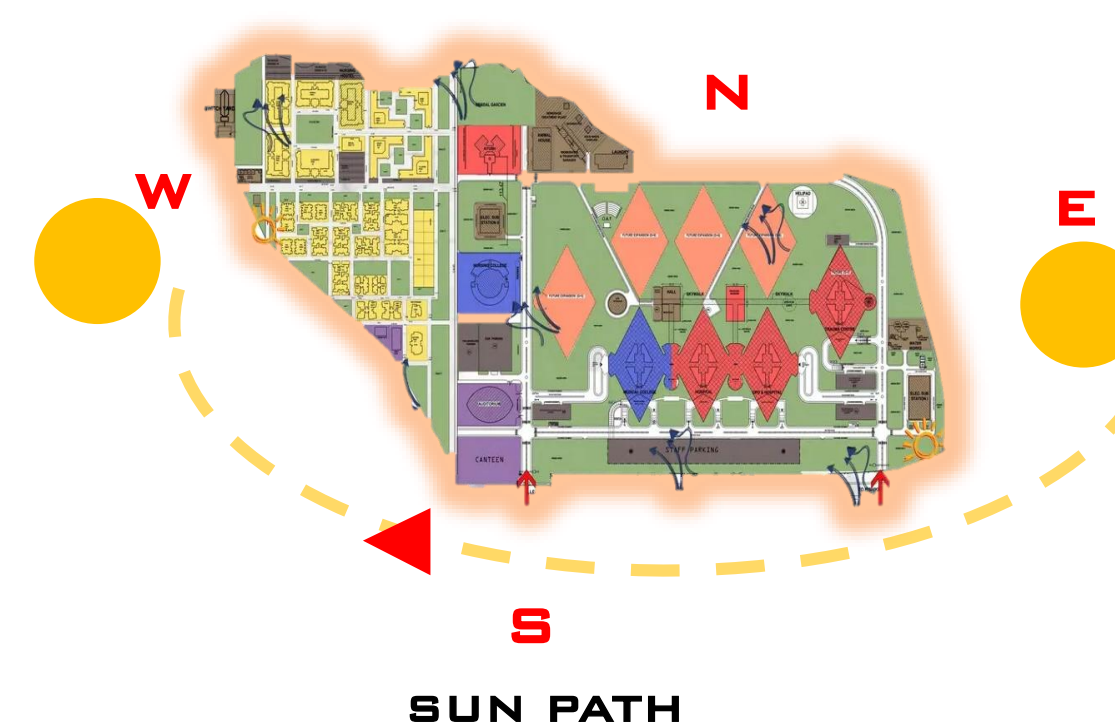
- BURN AND PLASTIC SURGERY.
- COMMUNITY AND FAMILY PLANNING
- CARDIOTHERIC ACID
- VASCULAR SURGERY
- CARDIOLOGY
- DENTISTRY
- DERMATOLOGY
- E.N.T
- GENRAL MEDICINE
- MEDICINE ENCOLOGY
- NUCLEAR MEDICINE
- ORTHOPEDICS
- OPHTHALMOLOGY
- OBESTRY & GYNECOLOGY
- PAC/PAIN CLINIC
- PEDIATRIC SURGERY
- PAEDRITICS
- PULMONARY MEDICINE
- PHYSICAL MEDICINE
- REHABILITATION
- RADIO THERAPY
- PSYCHITARY
- UROLOGY
- AYUSH (AYURVEDA)

## OBSERVATION & COCLUSION

- THE NUISANCES AROUND AND OUTSIDE THE SITE ARE LESS, MAINLY BECAUSE THE AREA AROUND THE ALIMIS BELONGS TO THE ELITE RESIDENTIAL REGION.
- SITE SELECTION- VISUALLY APPEALING, MOREOVER NOWADAYS THE OLD TREND OF THE HOSPITAL BEING A PLACE FOR SICK, IS NOT PREFERRED, INSTEAD OPEN, LANDSCAPED PLACES ARE PREFERRED.
- AIIMS IS CLEARLY VISIBLE FROM 20 METRES, EASY TO SPOT AND ACCESSIBLE.
- 3 ENTRANCES, BUT THERE IS NO ENTRANCE FOR THE AMBULANCE, PROBABLY BEACUSE THE MAIN ENTRANCE IS 10 METRES WIDE, ENOUGH FOR 2 VEHICLES TO PASS BY, EVEN WITH THE AMBULANCE.
- ON ENTERING, ALL THE BLOCKS ,PARKING WERE CLEARLY VISIBLE.
- THE SETBACKS WERE ACTING AS THE BUFFER BETWEEN THE ROAD AND THE HOSPITAL.
- LIGHT TRAFFIC ROAD, BUT DURING FESTIVALS OR PEAK SEASON, THE TRAFFIC IS HEAVY.



SITE PLAN & ZONING

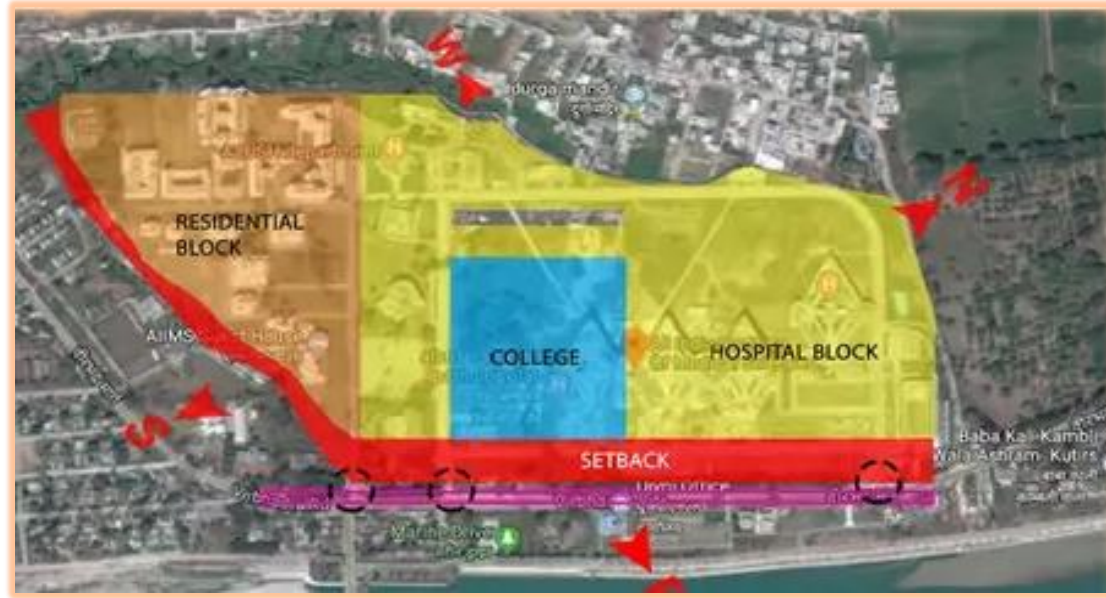


SUN PATH

UJJWAL SRIVASTAVA  
BARCH 5YR  
GUIDE - AR.VERSHA VERMA

LITERATURE STUDY - 2

## SETBACKS



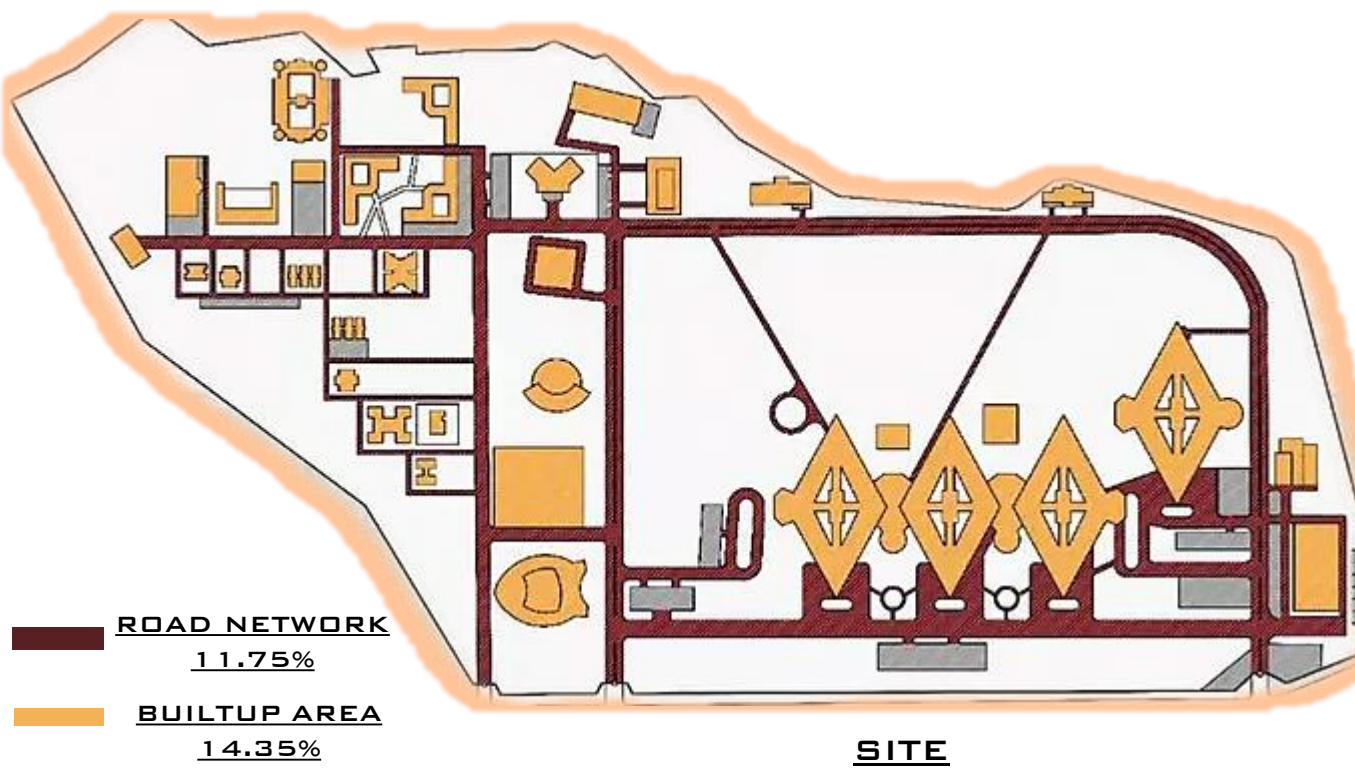
- 75 FEET IN THE FRONT.
- 20 FEET ON REST OF THE SIDE.

## SITE ZONING

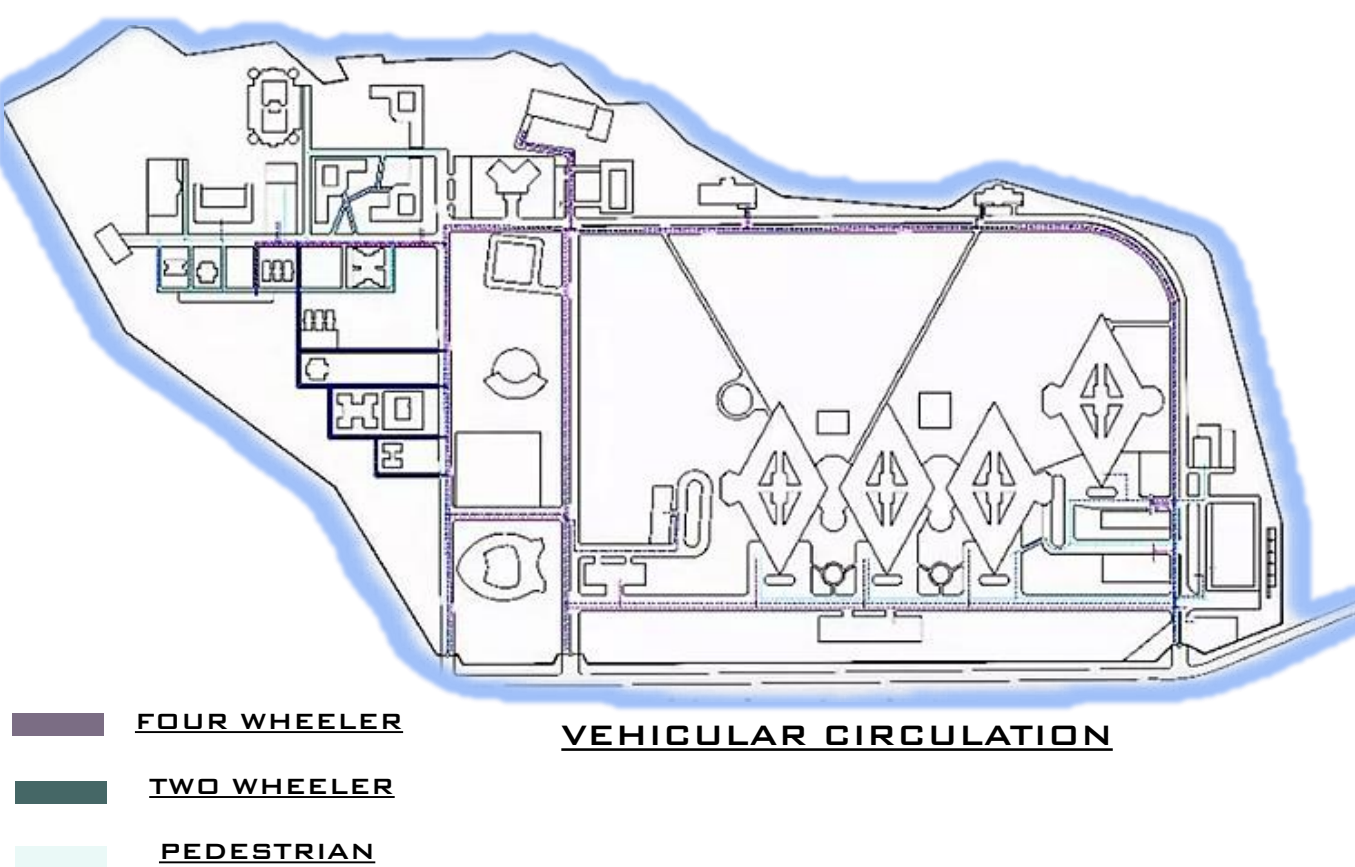


GOOGLE EARTH IMAGE  
SHOWING ZONING

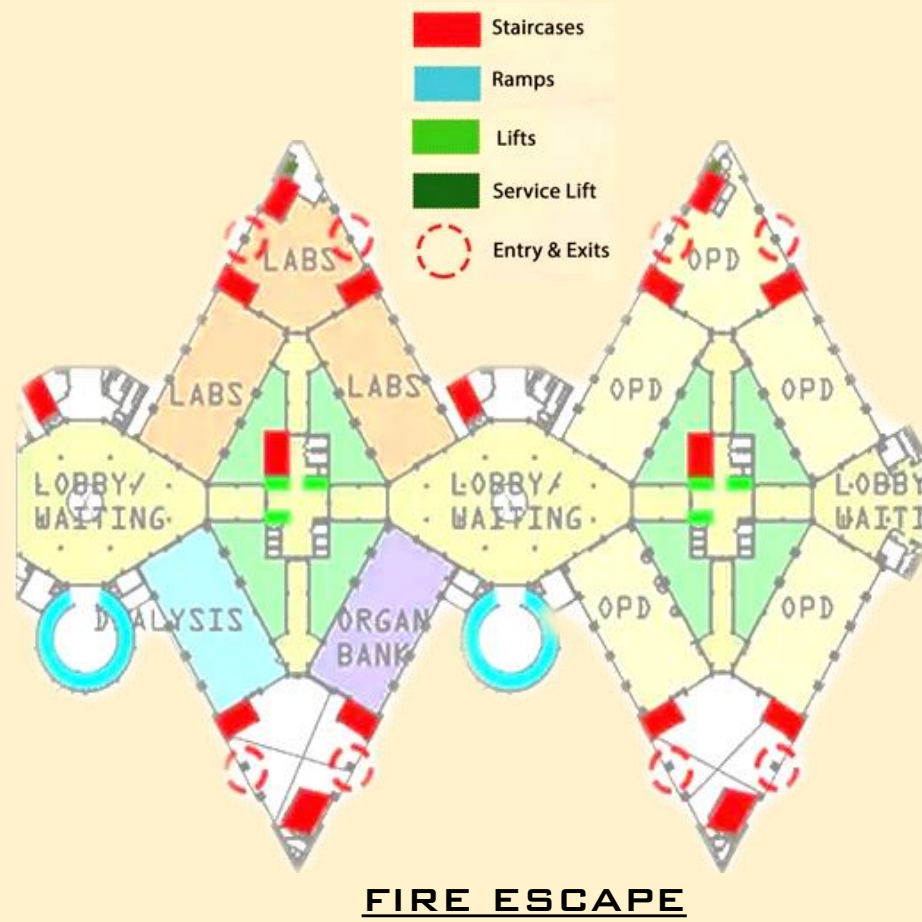
## BUILTUP AREA & ROAD NETWORK



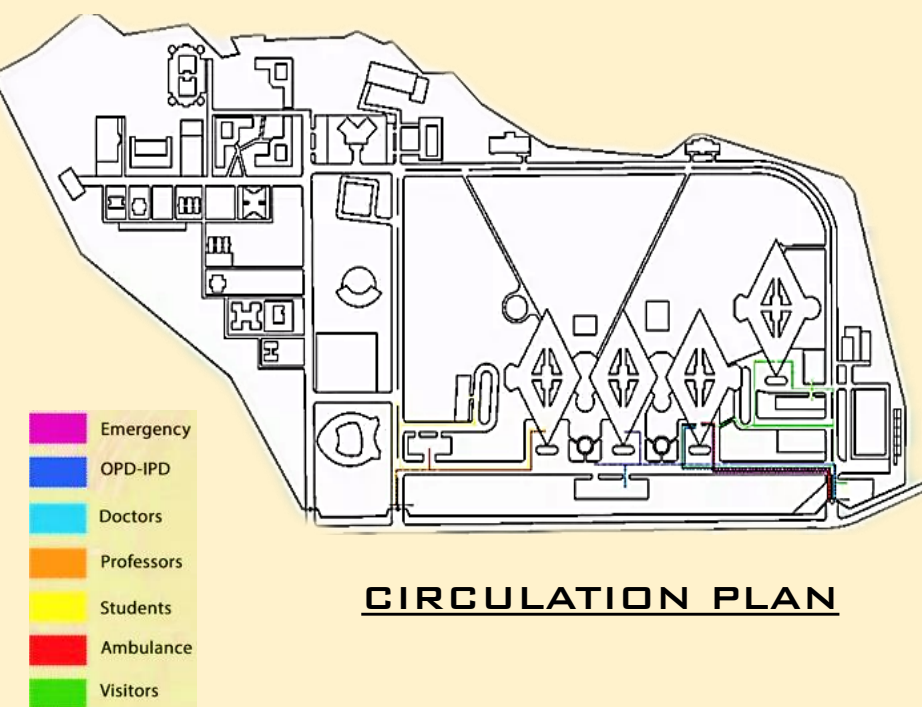
## VEHICULAR MOVEMENT



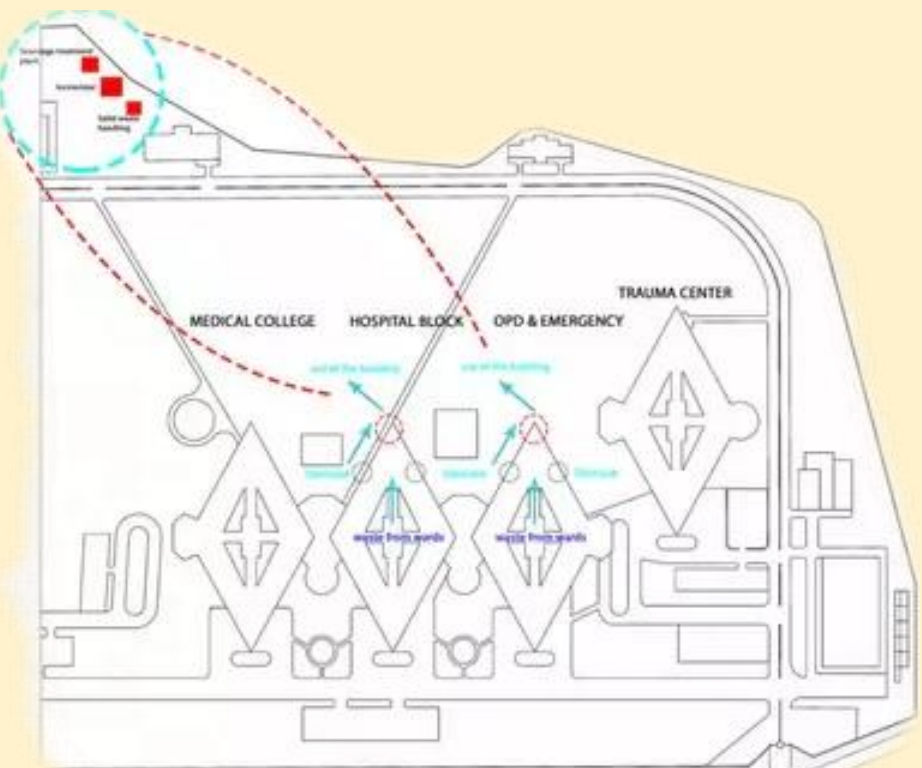
## FIRE ESCAPE



## CIRCULATION PLAN



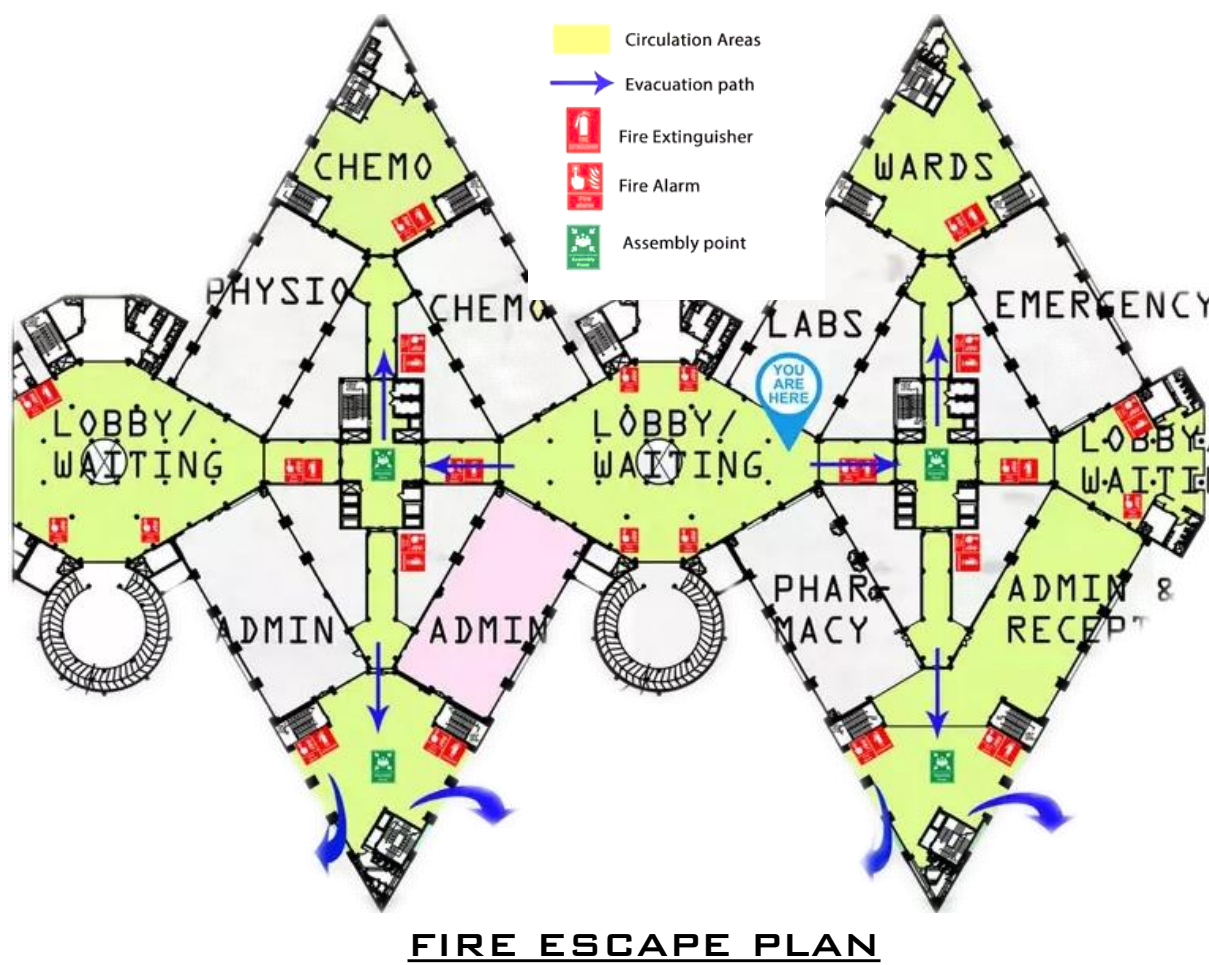
## WASTE CIRCULATION



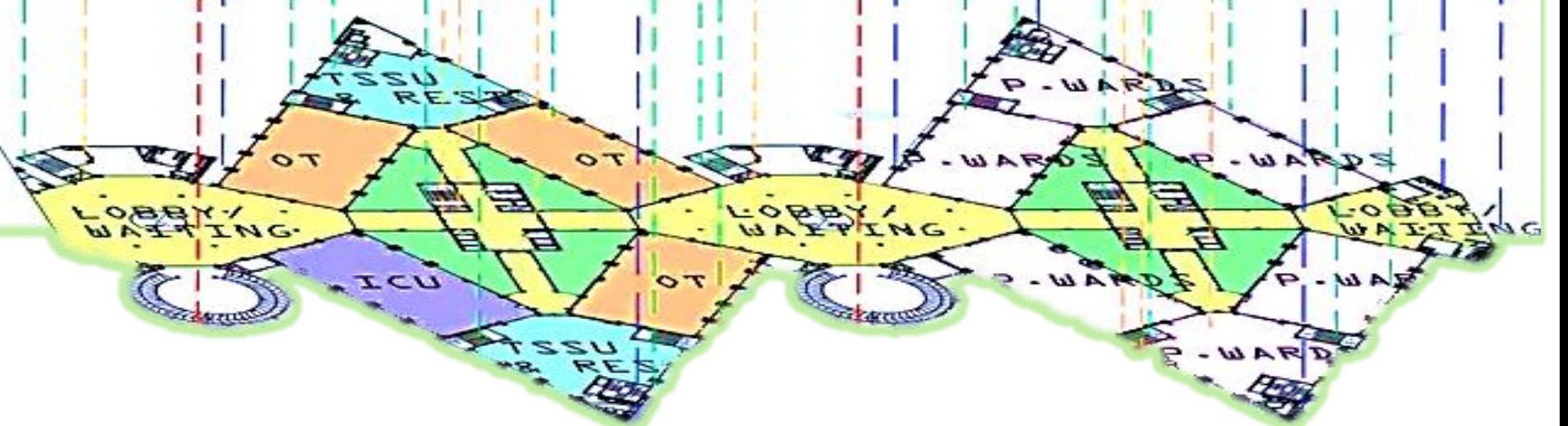
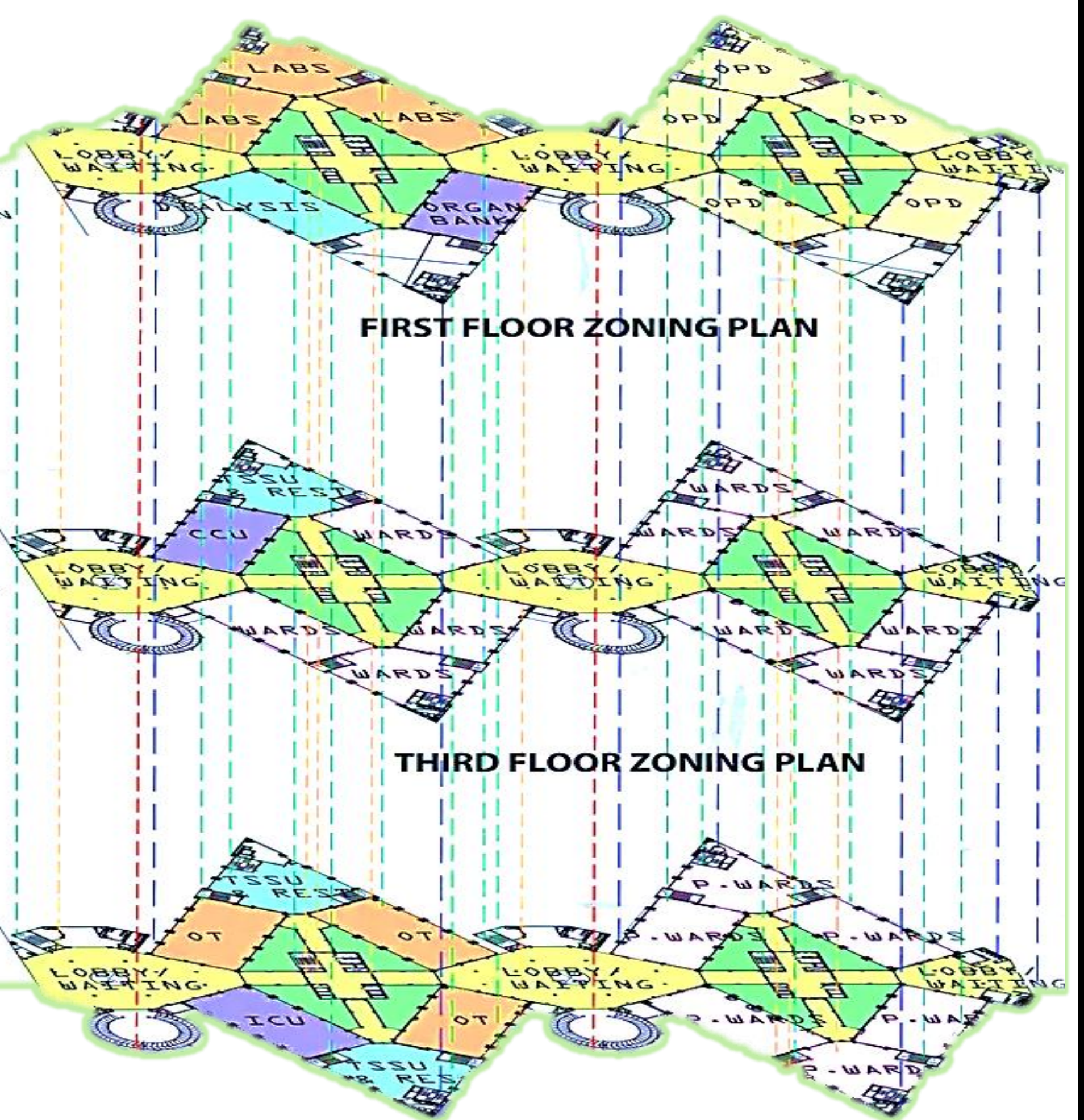
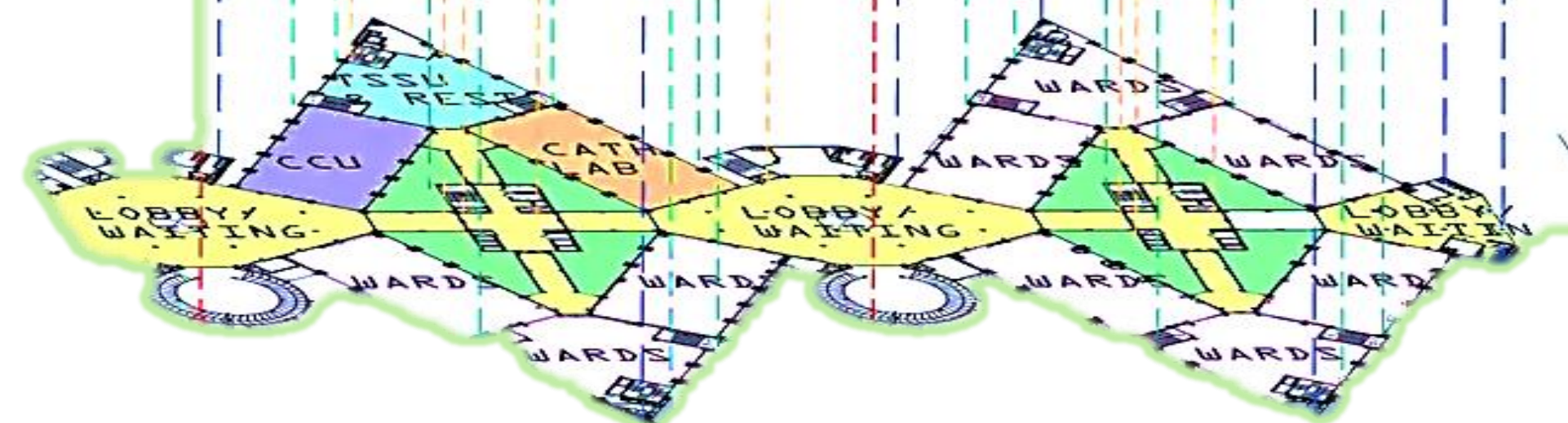
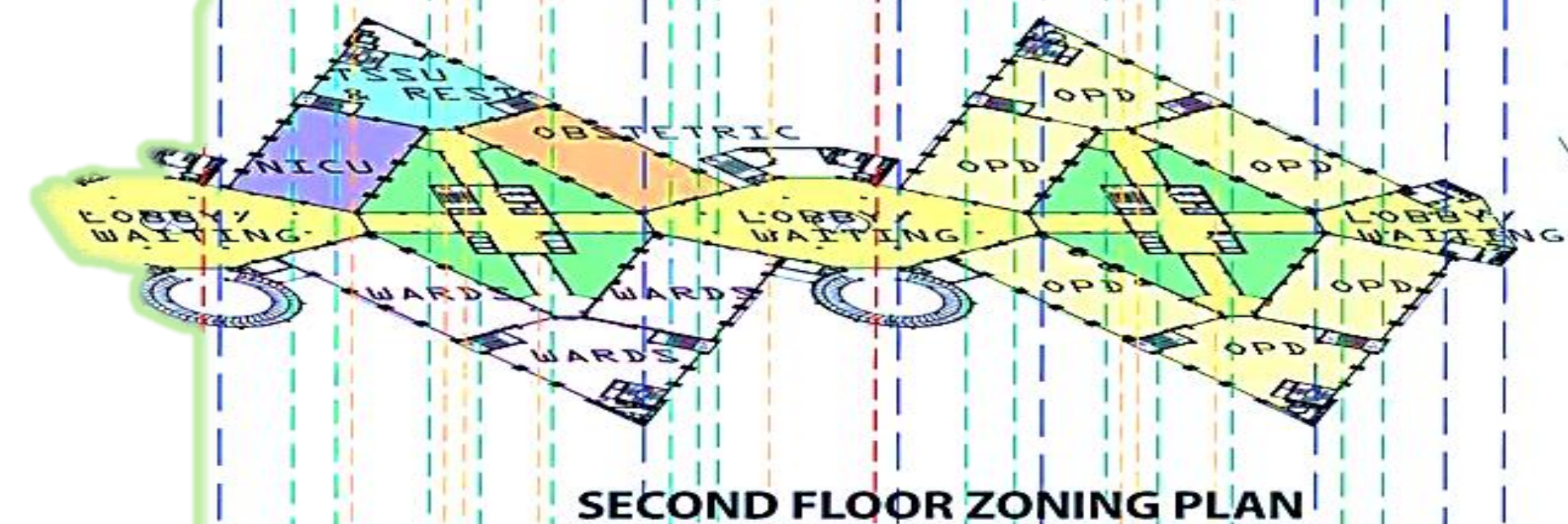
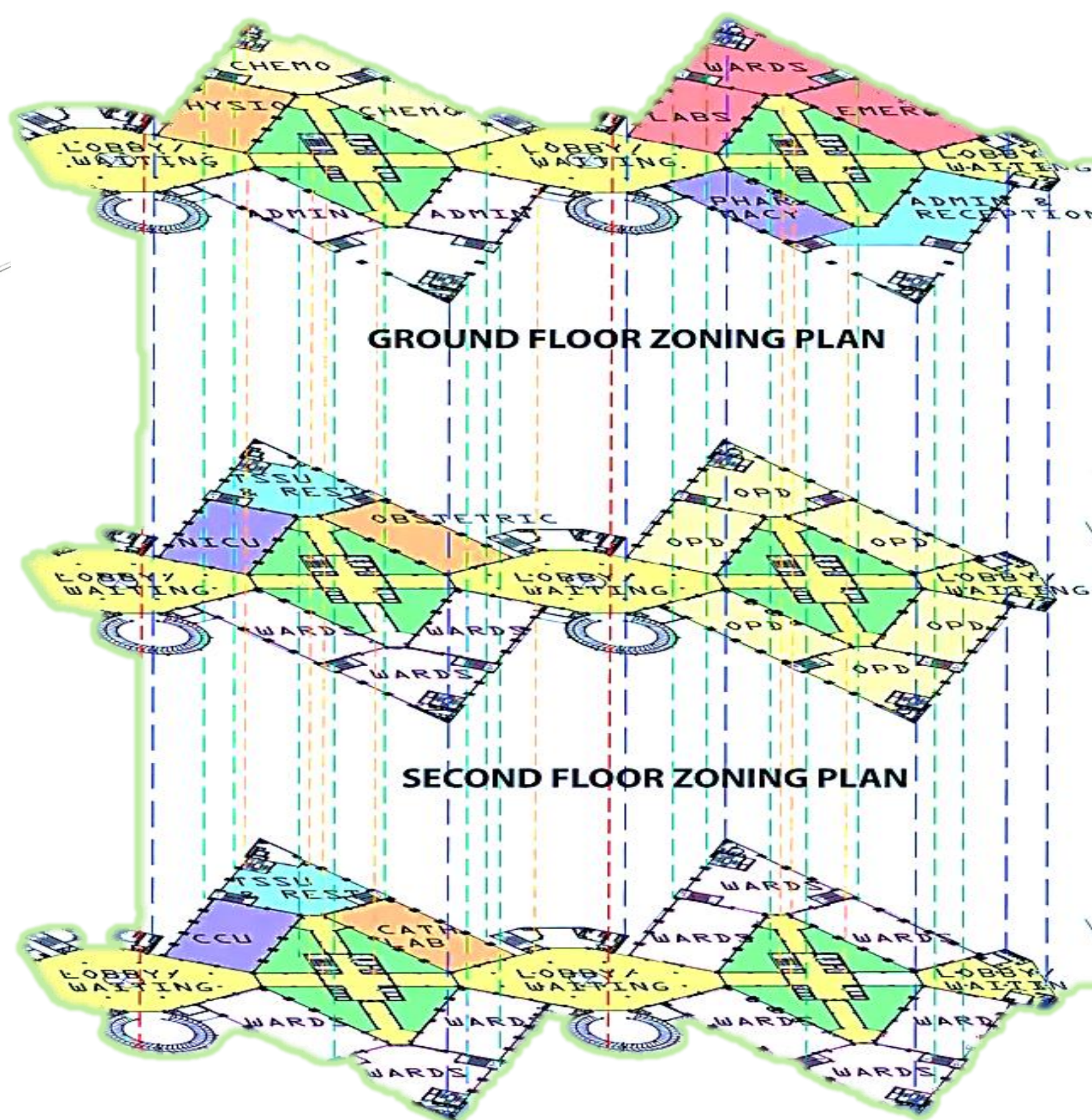
## HELIPAD



## FIRE ESCAPE PLAN



## FLOOR LAYOUT



## ALL INDIA OF MEDICAL SCIENCE , RISHIKESH

## FLOOR LAYOUT

- DIRTY UTILITY ARE PROPERLY PLANNED AND IN PLACED AT FRONT AND BACK OF THE BLOCK.
- O.T. COMPLEX IS AT THE TOP FLOOR, SO, PROPER TERRACE TREATMENT WAS REQUIRED AND FULFILLED.
- PROPER ENTRY AND CIRCULATION IN EMERGENCY BLOCK IS PROVIDED.
- ADEQUATE LIFTS, RAMP AND STAIRCASES ARE PROVIDED TO FACILITATE VERTICAL CIRCULATION.
- APPROPRIATELY WIDE CORRIDORS(2825MM).
- NO BASEMENT IS PROVIDED BECAUSE OF THE SOIL CONDITION AND ITS LOCATION, THAT IS NEAR GANGA RIVER.
- CUT OUTS FOR NATURAL LIGHT AND VENTILATION ARE PROVIDED.# FIRE STAIRCASE ARE NO PROPER.
- CSSD IS AT THE EXTREME END OF THE SITE MAKING IT DIFFICULT TO CONNECT WITH THE HOSPITAL. ITS POSITION IS DESIRED IN CLOSE VICINITY WITH OPERATION THEATRE.
- STERILE STORAGE IS PROVIDED WITH EACH O.T. COMPLEX.
- ALL INTERNAL WALLS ARE OF 115MM WITH LEDGE WALLS WHERE REQUIRED.# CONNECTION OF MORTUARY WITH HOSPITAL BLOCK IS DONE PROPERLY

- LIFT
- STAIRCASE
- RAMP
- TOILET



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BARCH 5YR  
GUIDE - AR.VERSHA VERMA

LITERATURE STUDY -2

## INTRODUCTION

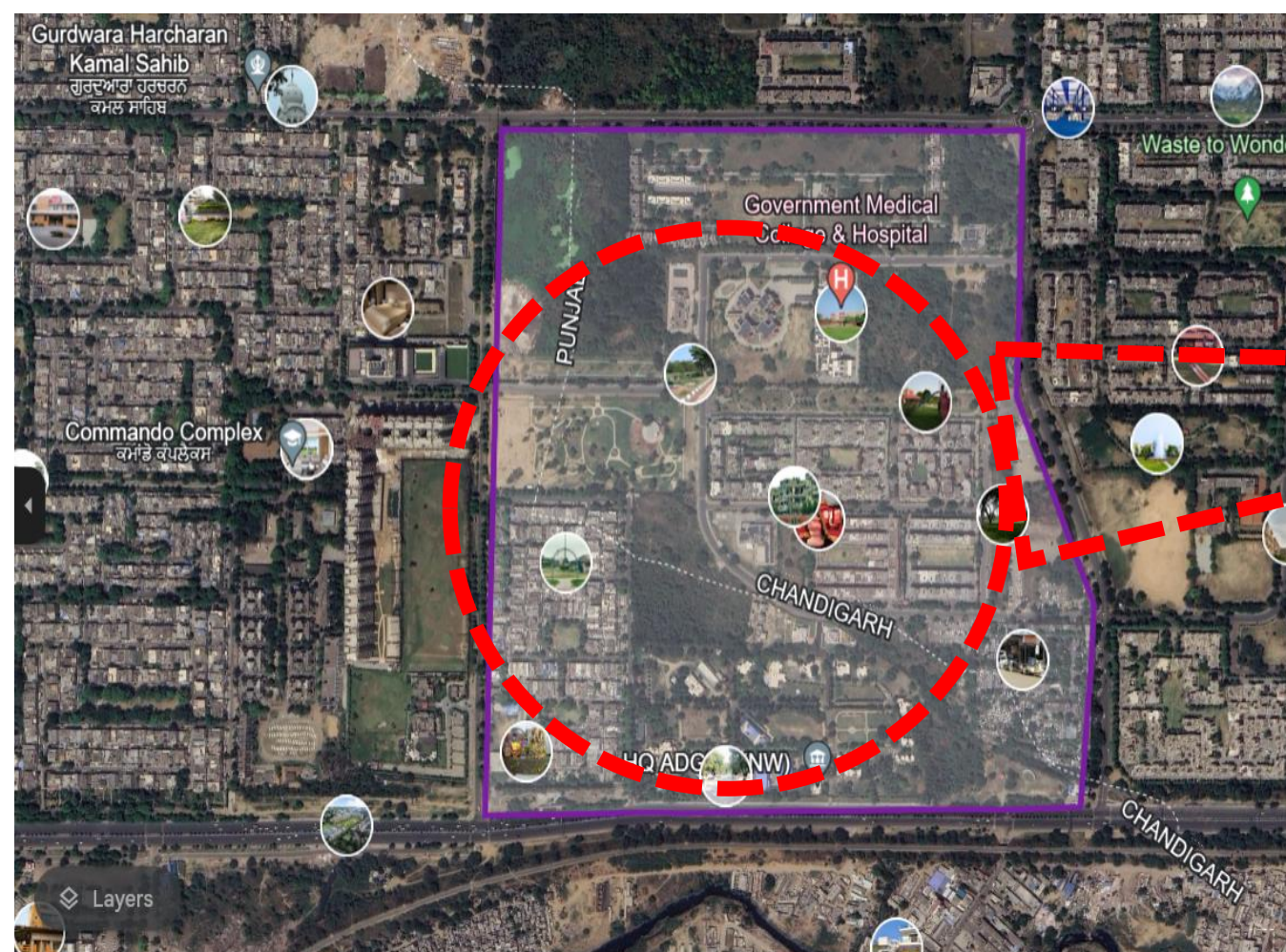
- GOVERNMENT MEDICAL COLLEGE AND HOSPITAL, CHANDIGARH A MEDICAL SCHOOL AND A TERTIARY CARE HOSPITAL IS LOCATED IN CHANDIGARH, INDIA.
- THE MEDICAL SCHOOL IS ADMINISTERED BY PANJAB UNIVERSITY. IT WAS ESTABLISHED IN 1991 AND HAS A 36 ACRES (15 HA) CAMPUS LOCATED IN SECTOR 32, CHANDIGARH.
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## HISTORY

- GMCH WAS STARTED IN 1971 TO FULFIL THE DEFICIENCY OF MEDICAL COLLEGES IN CHANDIGARH AND TO RENDER FACILITIES FOR CONDUCTING RESEARCH. WITH PGI ALREADY LOCATED IN THE VICINITY WITH A 2000 BED STRENGTH WAS STILL NOT ENOUGH FOR THIS GROWING CITY, HENCE THE CHANDIGARH ADMINISTRATION GRANTED 36 ACRES TO THIS COLLEGE AND HOSPITAL.
- THIS 50 BEDDED HOSPITAL CHANGED IT'S INTAKE TO 100 BEDS IN 2013.THEY STARTED WITH A 800 BED STRENGTH.
- IT HAS BEEN PLANNED TO SERVE THE SOUTHERN SECTORS OF THE CITY AND ALSO TO CATER FOR PATIENTS FROM PANCHKULA AND SAS NAGAR.IT HAS BASICALLY 250 STAFF IN CLINICAL DEPARTMENT IN ADDITION TO 70 JUNIOR RESIDENTS.

## LOCATION & ACCESSIBILITY

- LOCATION - SECTOR 48A , CHANDIGARH
- COORDINATES - 30°41'20"N 76°45'20"E
- AIRPORT - 18 KMS
- RAILWAY STATION - 6.6 KMS
- BUS STAND - 6.2 KMS



GOOGLE EARTH IMAGE OF SITE



GOVERNMENT MEDICAL COLLEGE AND HOSPITAL, CHANDIGARH



GOVERNMENT MEDICAL COLLEGE AND HOSPITAL, CHANDIGARH



INDIA MAP MARKING CHANDIGARH.

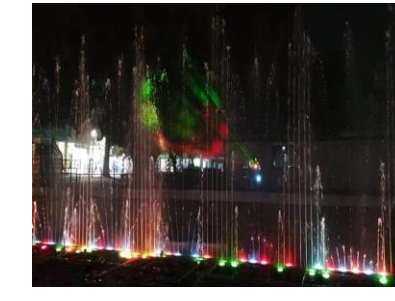
## LANDMARK



INTERNATIONAL DOLLS MUSEUM (4.5 KMS)



AQUARIUM TUNNEL (3.6 KMS)



MUSICAL FOUNTAIN (5.4 KMS)

## ABOUT THE SITE

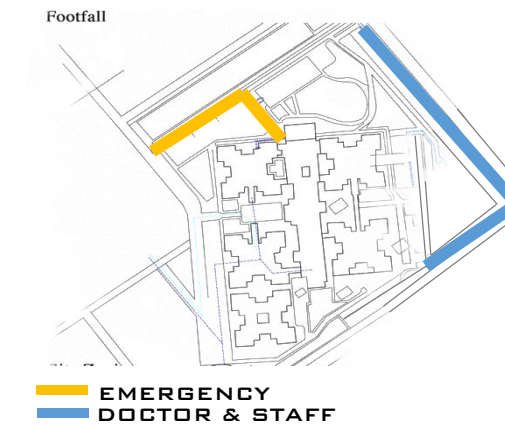
- TOTAL SITE AREA - 36 ACRE
- BED NO - 830
- F.A.R. - 1.50
- GROUND COVERAGE - 40%
- PARKING - 1.1 ECS
- BUILDING HEIGHT - 28M

## SURROUNDING HOSPITAL

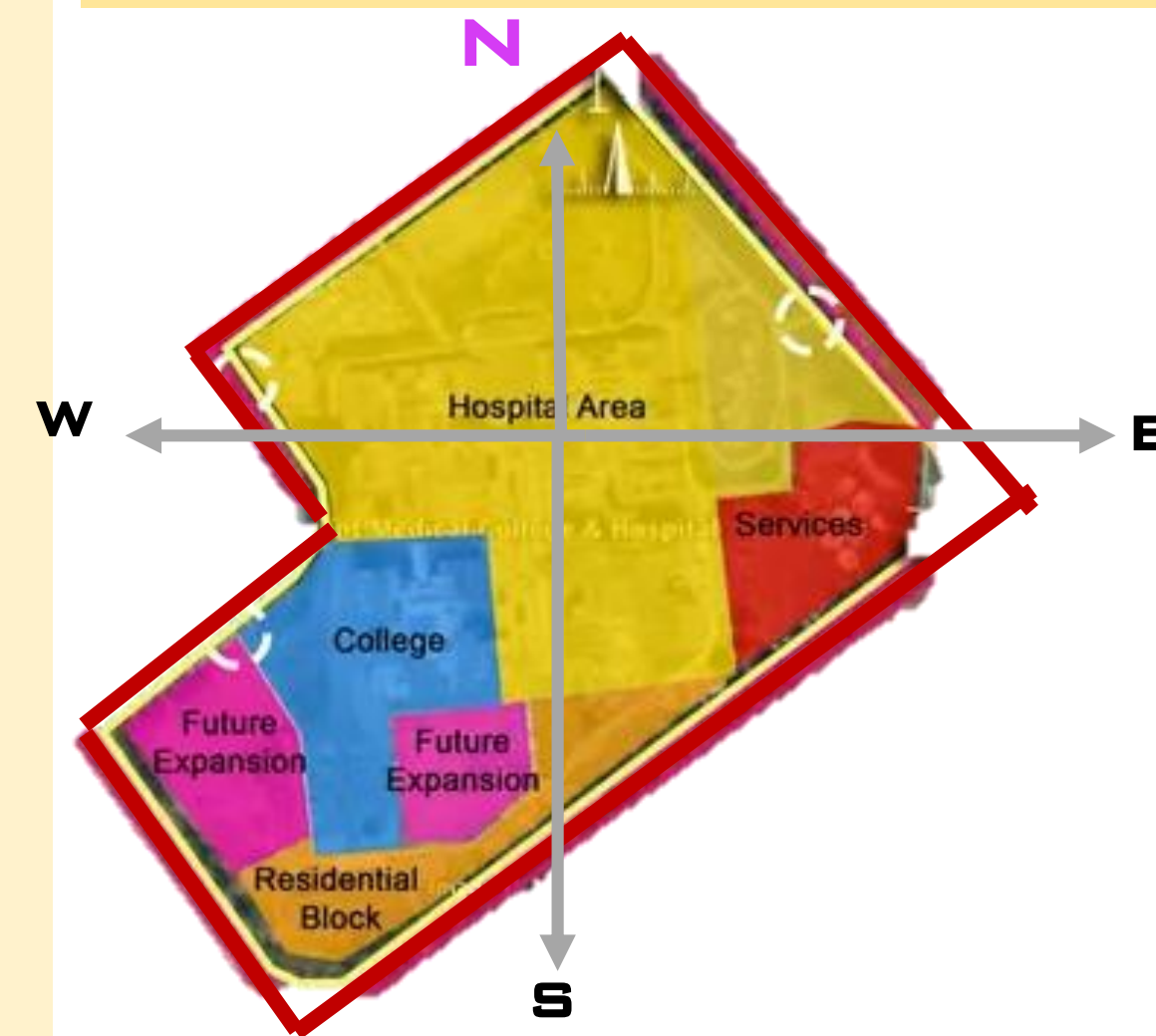
- PGI CHANDIGARH - 6.6KM
- MAX SUPER SPECIALITY HOSPITAL - 10.3 KM
- OXFORD HEART AND MULTISPECIALITY HOSPITAL - 3.7KMS

## SETBACK & FOOTFALL

- SET BACK OF 30M ONE SIDE & 10M ON REST OF THE SIDE.
- ON THE FIRST MAP, WE THE NUMBER OF FOOTFALL WITH THE DARKER THE COLOUR BEING THE MORE CONGESTED LOOK. ON THE SECOND MAP, WE SEE THE TYPES OF PEOPLE AND THEIR FREQUENCY WITH THE RANGE.
- HENCE, IT IS IMPORTANT THAT WE PAY ATTENTION TO THE FOOTFALL WHILE ALLOTING ROADS, NOT ONLY BY GIVING EXTRA SPACE WHERE NEEDED WHILE ALSO NOT GIVIGN EXTRA SPACE WHERE NOT REQUIRED.

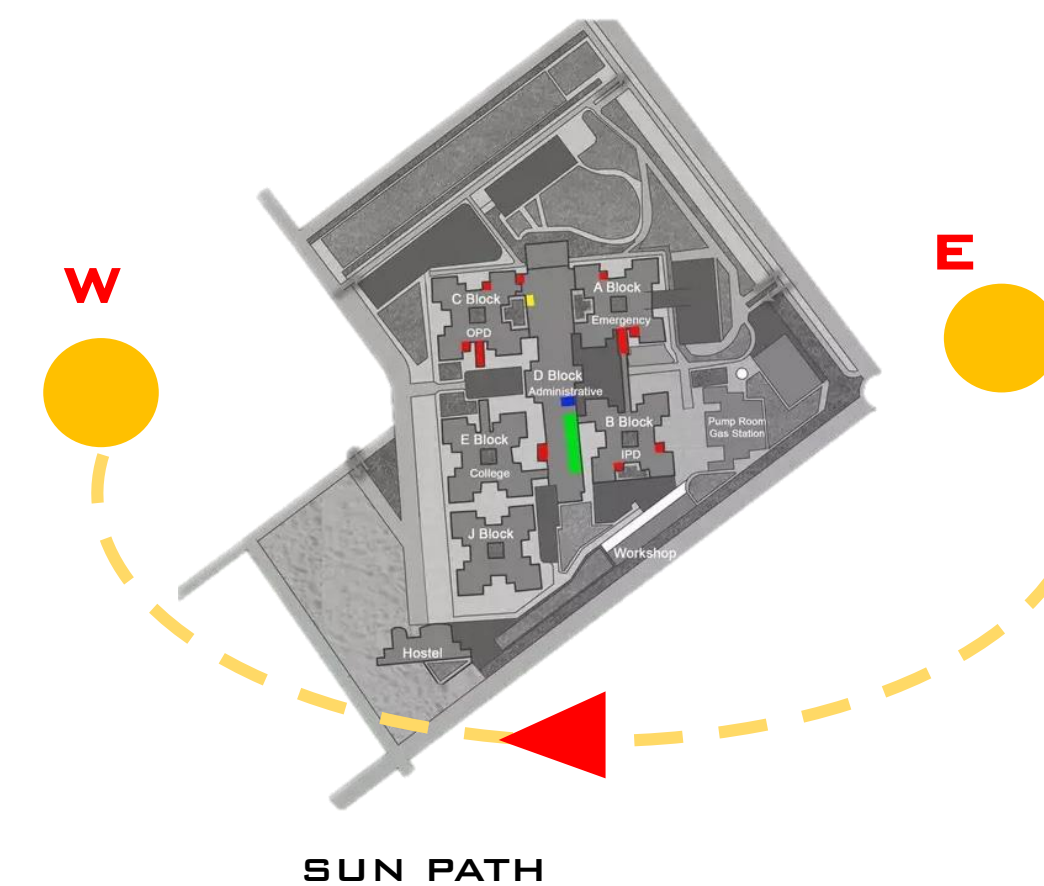


## SITE ZONING & DIMENSIONS

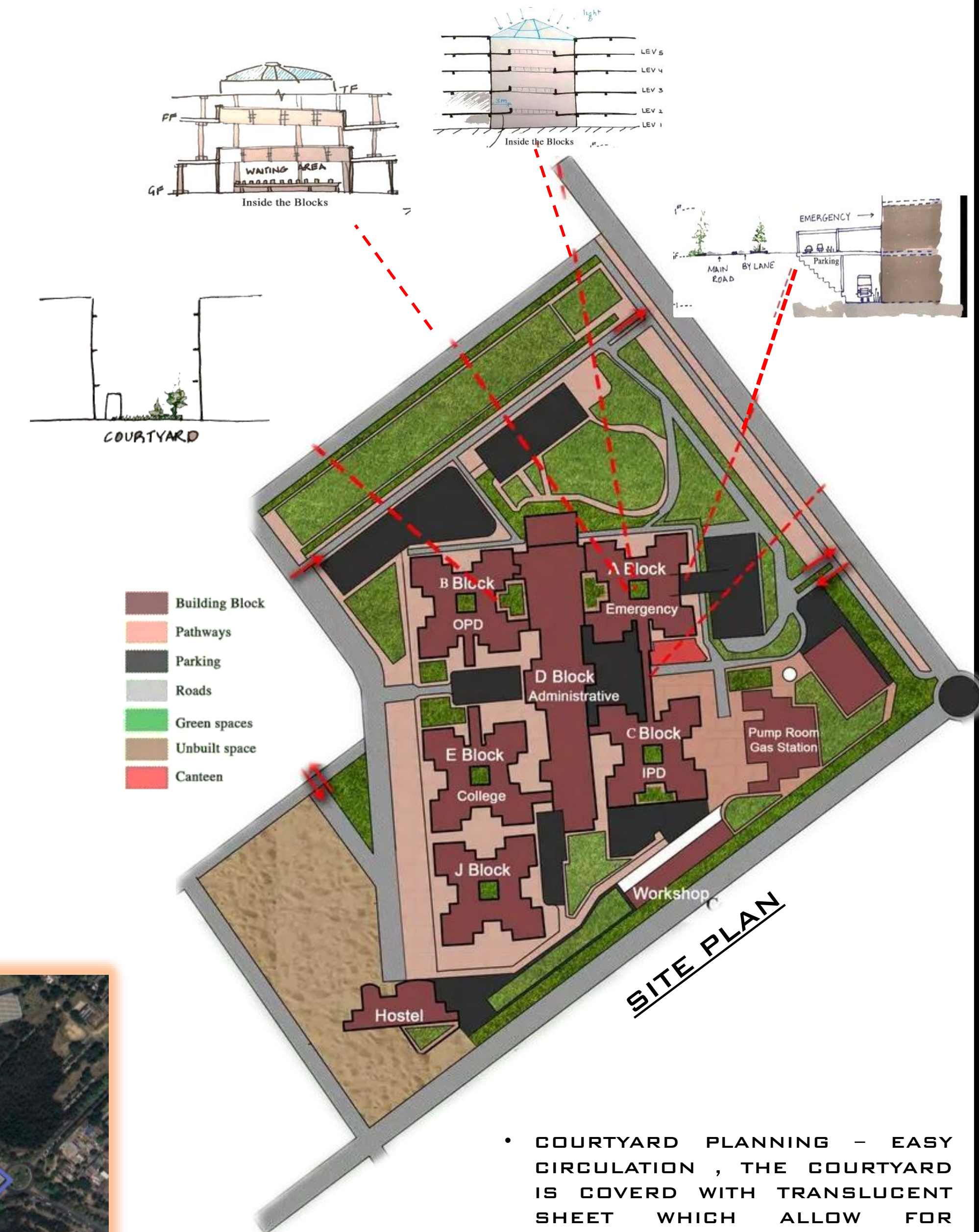


## CLIMATE

- BEING A HOT CITY, THE PLANNING OF THE BUILDING BLOCKS IS DONE IN A SUCH A WAY THAT LESSER OF THE FACADE FACES.
- THE BUILDINGS HAVE BEEN BUILT ON A NORTH SOUTH AXIS AND EAST WEST AXIS.
- THE BLOCKS ARE COMPACTLY PLACED TO PROVIDE SHADING TO OTHER BUILDINGS.
- THE WIND DIRECTION IS FROM NE TO SW WITH THE SPEED BEING 3-13 KM/HR.



## GOVERNMENT MEDICAL COLLEGE & HOSPITAL , CHANDIGARH



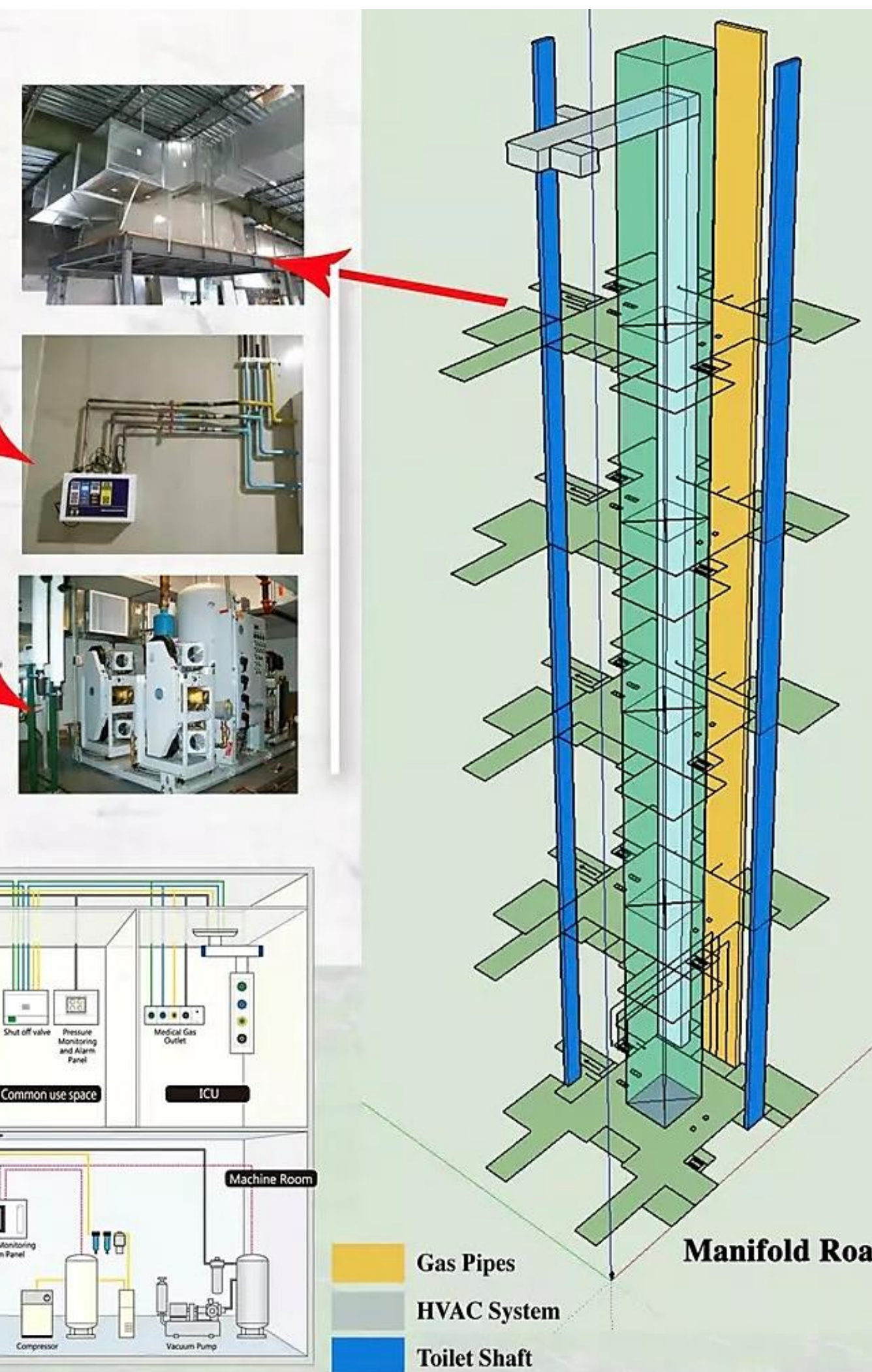
- COURTYARD PLANNING - EASY CIRCULATION , THE COURTYARD IS COVERD WITH TRANSLUCENT SHEET WHICH ALLOW FOR NATURAL LIGHT.
- COMING TO THE CLIMATE DATA SOON, WE SEE THAT ALL THE OTHER HOSPITAL BLOCKS HAVE BEEN PLACED AROUND THE ADMIN BLOCK WHICH IS THE BRAIN OF THE SYSTEM, HENCE MAKING OPERATIONS EASY AND QUICK.
- FUTURE EXPANSION HAS BEEN LEFT IN A WELL PLANNED AREA AS A SUPER SPECIALITY HOSPITAL IS COMING SOON IN THE J BLOCK.
- THE ENTRANCES ARE NOT FROM THE TWO MAIN ROADS BUT NEIGHBOURHOOD ROADS.HENCE DISTRIBUTING THE TRAFFIC. THERE IS A BYLANE PRESENT ON DAKSHIN MARGWHICH CREATES EASY ACCESS TO THE EMERGENCY BLOCK.
- THE SERVICES HAVE BEEN PLANNED IN THE BASEMENTS ALONG WITH GAS ROOMS, PRESENT ON A DIFFERENT BLOCK TO AVOID A DISASTER WITH GAS LEAKS.
- MORE OF A BUFFER SPACE HAS BEEN CREATED NEAR THE CHOWK.

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LITERATURE STUDY - 1

## SERVICES



## MEDICAL GAS SUPPLY



## GAS SUPPLY CHART

## LEGENDS

- PHARMACY
- EMERGENCY EXIT
- RADIOGONOSIS
- BLOOD BANK

PLACEMENT OF SOME  
IMPORTANT FEATURE IN  
BUILDING

## PHOTOGRAPHS



Pharmacy in B block.



Emergency block



Blood collection centre in Block-B



Help desk



Provision of ATM and chemist in D block.



Provision of 5 types of lifts:  
-Doctor -Trolleys -Patient  
-Equipment -Staff



Toilets

## FLOOR PLANS

### DEPARTMENTS

DEPARTMENT	NO. OF BEDS	DEPARTMENT	NO. OF BEDS
Anesthesia	14	Ophthalmology	30
Dental	6	Orthopaedics	80
Dermatology	30	Paediatrics	109
ENT	30	Psychiatry	30
General Medicine	145	Pulmonary Medicine	40
General Surgery	140	Radiotherapy	16
Obstetric & Gynaecology	90	Private Wards	50

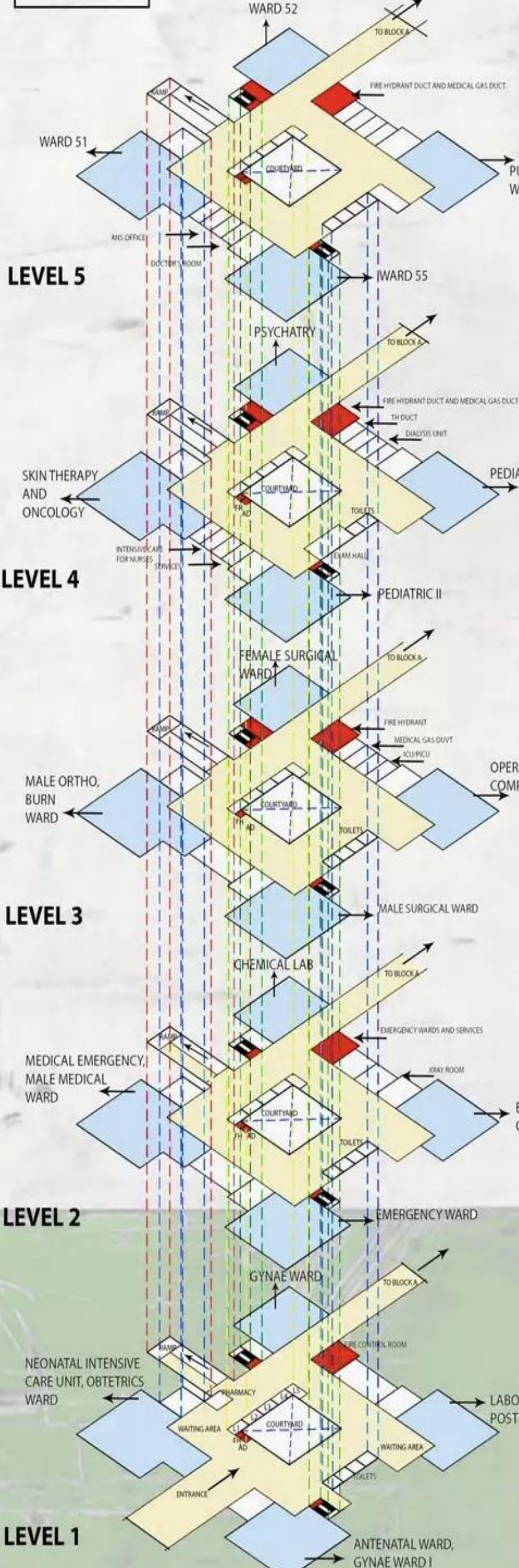
**COURTYARD PLANNING:**  
EASY CIRCULATION, THE COURTYARD IS COVERED WITH TRANSLUCENT SHEET WHICH ALLOWS FOR NATURAL LIGHT.

**CONNECTING CORRIDORS:**  
THE BUILDING BLOCKS ARE INTERNALLY CONNECTED FOR FLEXIBLE MOVEMENT.

THE WARDS ARE PLACED ON THE FOUR CORNERS OF THE BUILDING SO THAT EACH ONE OF THEM IS ABLE TO ACCESS NATURAL LIGHT AND AIR ALONG WITH EFFICIENT CROWD DISTRIBUTION

- TOILET
- RAMP
- LIFTS
- STAIRCASE

## BLOCK A



A TRAUMA CENTER IS A HOSPITAL EQUIPPED AND STAFFED TO PROVIDE COMPREHENSIVE EMERGENCY MEDICAL SERVICES TO PATIENTS SUFFERING TRAUMATIC INJURIES. THE TRAUMA LEVEL CERTIFICATION CAN DIRECTLY AFFECT THE PATIENT'S OUTCOME AND DETERMINE IF THE PATIENT NEEDS TO BE TRANSFERRED TO A HIGHER LEVEL TRAUMA CENTER.



Response	Percentage
Strongly agree	24.7%
Agree	19.9%
Disagree	17.8%
Strongly disagree	17.3%
Don't know	12.1%
Other	4.5%
Refuse to answer	2.7%
Invalid	1%

- |  |   |
|--|---|
|  Road Accidents                 |  Assault/Fall of objects |
|  Falls                          |  Burns/Drowning          |
|  Agricultural related trauma    |  Natural Disasters       |
|  Firearms/Intentional Self-harm |  Terrorism               |

## A map of India with its state boundaries outlined in orange. The state of Karnataka is highlighted in a solid red color. A dashed orange line extends from the northeastern corner of Karnataka towards the right edge of the image.

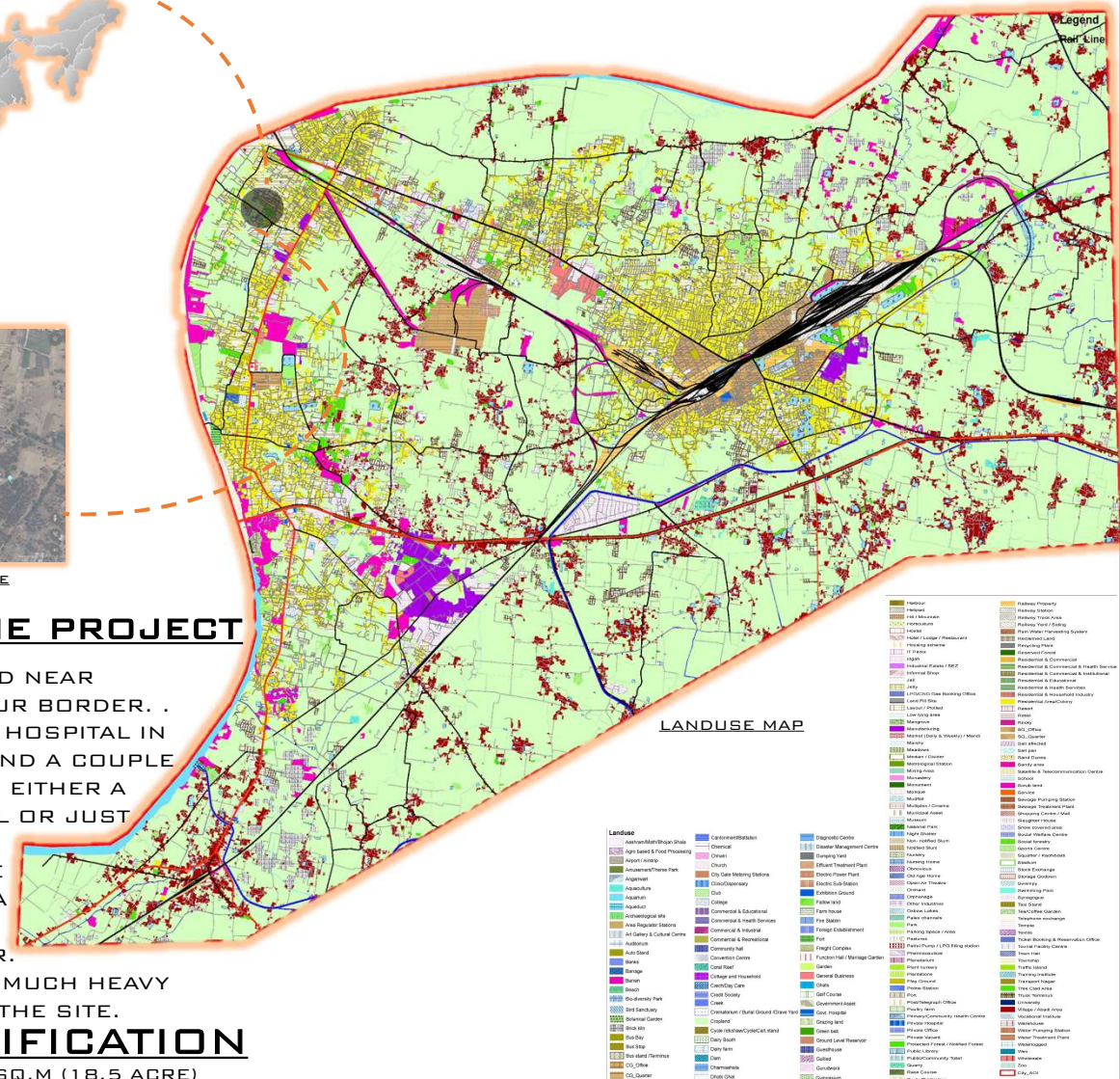
GOOGLE EARTH IMAGE

THE SITE IS LOCATED NEAR  
VARANASI - MIRZAPUR BORDER.  
THE SURROUNDING HOSPITAL IN  
AND AROUND AROUND A COUPLE  
OF KMS ARE EITHER EITHER A  
CHILDREN HOSPITAL OR JUST  
CLINIC. THE JUSTIFI-  
-CATION LIES IN THE  
FACT THAT THE AREA  
IS KNOWN FOR ITS  
INDUSTRIAL SECTOR.

SO THERE ARE TOO MUCH HEAVY  
VEHICLES AROUND THE SITE.

- SITE AREA- 74200 SQ.M (18.5 ACRE)
- SITE LOCATION - VARANASI-MIRZAPUR (UTTAR PRADESH)
- LATITUDE-LONGITUDE - 25°17'20"N 83°02'08"E
- FLOOR-
- TOPOLOGY - FLAT
- F.A.R - 2.5
- GROUND COVERAGE - 35%
- TOTAL NO OF FLOORS - 7

# SITE ANALYSIS



## LANDUSE MAP

## LEGENDS

TOPIC

## ADVANCE TRAUMA

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## RECOVERY & CARE CENTER

## LANDMRKS



**SHREE KASHI  
VISHWANATH  
MANDIR**  
(5KM)



**RAMNAGAR**  
(3KM)



**ASSI GHAT**  
(4.5KM)



**BHU**  
(6KM)

## SITE SURROUNDINGS



**PETROL PUMP**



**BASE EYE CAMP**



**DAV PUBLIC SCHOOL**

## NATURAL FACTOR

THE PROPOSED SITE HAS ALLUVIAL SOIL WITH SOME UNDIFFERENTIATED SOIL. THE ALLUVIAL SOIL IS FORMED DUE TO THE GANGA RIVER DEPOSITION OVER THE LONG PERIOD OF TIME. THE SOIL PARTICLES HAVE A MIXTURE OF BOTH COARSE AND FINE LOAMY SOIL. THE SOIL HAS ABUNDANT AMOUNT OF SILT CONTAINED IN IT. THE SOIL BEARING CAPACITY 25T/METRE CUBE.

## DEMOGRAPHIC DATA

- TOTAL POPULATION - 1435113
- TOTAL MEN - 761606
- TOTAL WOMEN - 674053
- HINDU - 70.11 % 840,280
- MUSLIMS - 28.82 % 345,461
- CHRISTIAN - 0.34 % 4,034
- SIKH - 0.22 % 2,610
- BUDDHIST - 0.04 % 461
- JAIN - 0.12 % 1,417
- OTHER - 0.02 % 233

## SITE IMAGES



**SITE**



**ROAD**

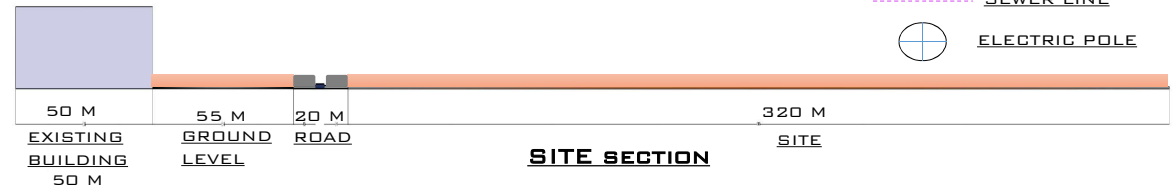


**ROAD**

## SITE ANALYSIS



**SITE PLAN**



## ACCESSIBILITY

- VYAS NAGAR RAILWAY STATION - 4KM
- LAL BAHADUR SHASTRI AIRPORT - 25KM
- BUS STAND - 5KM

## VEGETATION



**BANYAN TREE**



**NEEM TREE**



**BABUL TREE**



**ANJAN**



**HARDWICKIA**

## TOPIC

**UJJWAL SRIVASTAVA**

**BARCH 5YR**

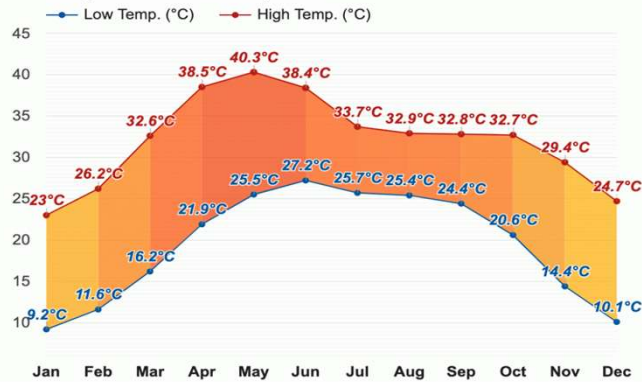
**GUIDE - AR. VERSHA VERMA**

**ADVANCE TRAUMA**

**RECOVERY & CARE CENTER**

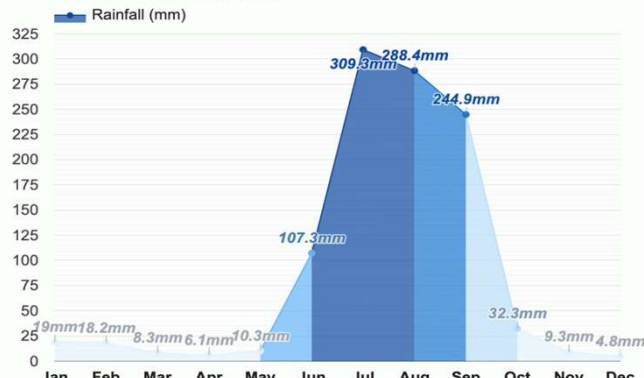
# CLIMATIC DATA

## Temperature - Varanasi, India



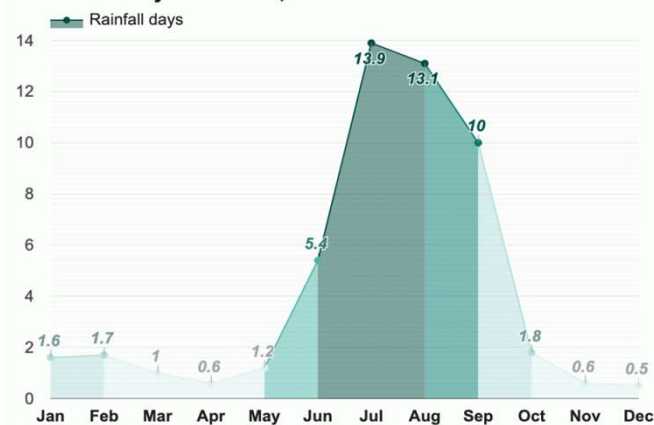
### AVERAGE TEMPERATURE

## Rainfall - Varanasi, India



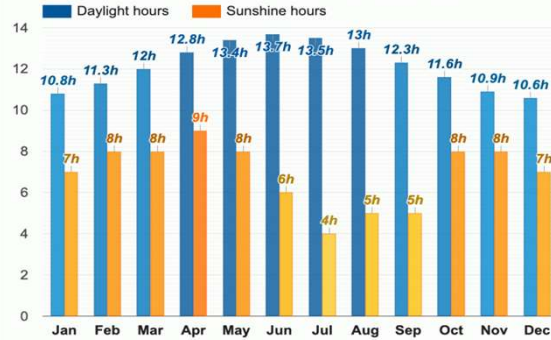
### AVERAGE RAINFALL

## Rainfall days - Varanasi, India



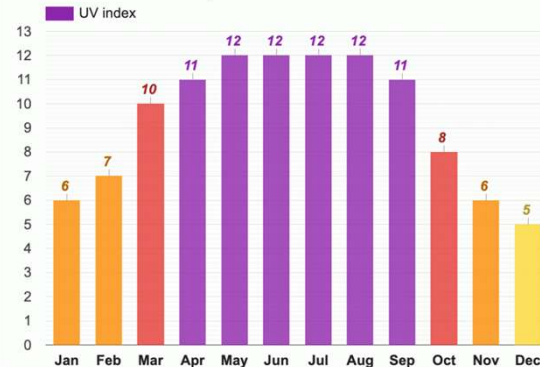
### AVERAGE RAINFALL DAYS

## Daylight hours / Sunshine hours - Varanasi, India



### DAYLIGHT HOURS

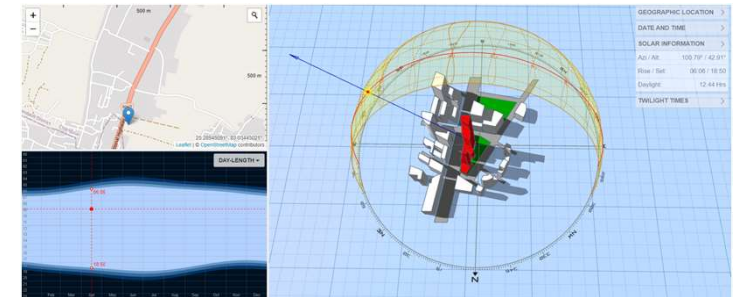
## UV index - Varanasi, India



### UV INDEX

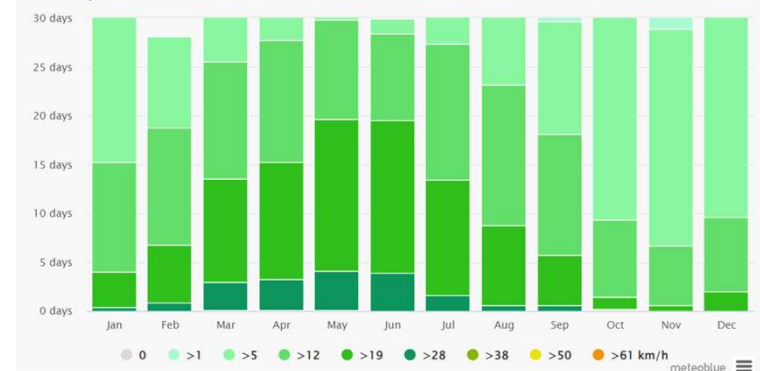
# SITE ANALYSIS

## SUN PATH



### BLOCK DIAGRAM OF SUN PATH

## Wind speed



# CLIMATIC ANALYSIS

VARANASI EXPERIENCES A HUMID SUBTROPICAL CLIMATE ( WITH LARGE VARIATIONS BETWEEN SUMMER AND WINTER TEMPERATURES.

- AVERAGE WIND SPEED - 2.5 M/S
- AVERAGE AMBIENT TEMPERATURE - 25.6° C
- AVERAGE HUMIDITY - 67.2%
- AVERAGE RAINFALL - 44 IN
- PREDOMINANTLY WIND BLOW - WNW

# SERVICES ON THE SITE

- WATER SUPPLY - OVER HEAD WATER TANK - 3 KM
- ELECTRICITY - NEAREST POWERHOUSE (1.5 KM)
- SEWAGE - PASSED ON SITE
- ROAD - 20M WIDE ROAD

UJJWAL SRIVASTAVA

BARCH 5YR

GUIDE - AR. VERSHA VERMA

TOPIC

ADVANCE TRAUMA

RECOVERY & CARE CENTER

## WHAT IS TRAUMA CENTRE?

- TRAUMA IS A LOT OF COMPLEX PHENOMENA THAT DON'T JUST AFFECT MOMENTARILY BUT CAN CHANGE A PERSON'S LIFE FOREVER. WHICH MAKES THESE TRAUMA RECOVERY CENTERS ALL THE MORE IMPORTANT.
- THEY'RE SUPPOSED TO PROVIDE THE CARE AND REFUGE FOR THEM THAT CAN MAKE THEM FEEL BETTER AND START THEIR JOURNEY TO RECOVERY

## CONCEPT

I HAVE A FEAR OF HOSPITAL.  
I DON'T WANT TO GO  
HOSPITAL.

HOSPITAL IS NOT A GOOD  
PLACE FOR ME.



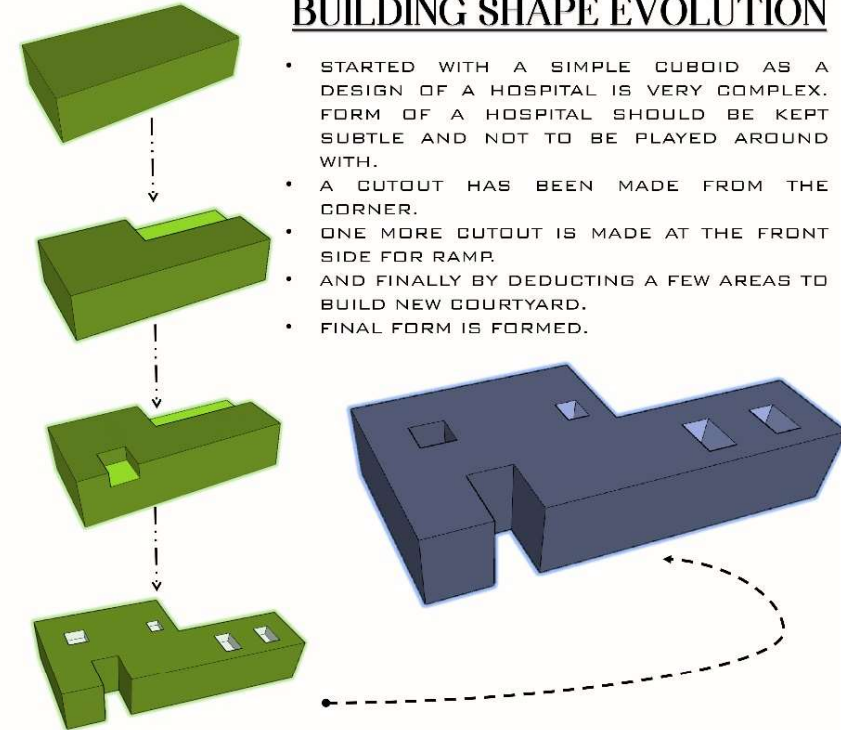
## THERAPEUTIC GARDENS

- A THERAPEUTIC GARDEN OR HEALING GARDEN IS A DESIGNATED OUTDOOR GARDEN SPACE.
- IT IS DESIGNED TO IMPROVE OUR MENTAL HEALTH AND PHYSICAL HEALTH.
- THEY ARE USED TO BENEFIT NOT ONLY THE PERSON RECOVERING FROM AN ILLNESS BUT ALSO THEIR FAMILY, FRIENDS AND CAREGIVERS.
- IT IS OF DIFFERENT TYPES- HEALING GARDEN, ENABLING GARDEN, MEDITATIVE GARDEN, RESTORATIVE GARDEN.



CONCEPTUAL SKETCHES OF THERAPEUTIC GARDENS

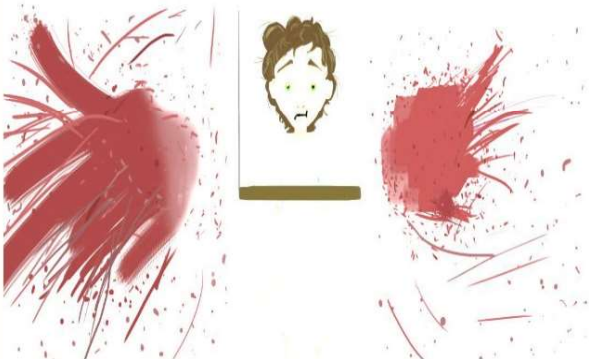
## BUILDING SHAPE EVOLUTION



- STARTED WITH A SIMPLE CUBOID AS A DESIGN OF A HOSPITAL IS VERY COMPLEX. FORM OF A HOSPITAL SHOULD BE KEPT SUBTLE AND NOT TO BE PLAYED AROUND WITH.
- A CUTOUT HAS BEEN MADE FROM THE CORNER.
- ONE MORE CUTOUT IS MADE AT THE FRONT SIDE FOR RAMP.
- AND FINALLY BY DEDUCTING A FEW AREAS TO BUILD NEW COURTYARD.
- FINAL FORM IS FORMED.

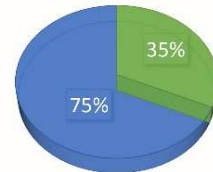
## NOSCOMPHOBIA

- IT IS THE EXTREME FEAR OF HOSPITALS.
- IT'S A CONDITION WHERE PEOPLE'S BLOOD PRESSURE RISES WHEN THEY VISIT A DOCTOR'S CLINIC.



## SYMPTOMS OF NOSCOMPHOBIA

- INCREASED HEART RATE.
- EXCESSIVE SWEATING.
- AVOIDANCE BEHAVIOR.
- A PANIC ATTACK AT THE THOUGHT OR SIGHT OF A HOSPITAL.
- OBSESSIVE WORRYING.
- FEELING NAUSEATED.
- UNCONTROLLABLE ANXIETY.



AROUND 35% OF WORLD POPULATION SUFFERS FROM HOSPITAL ANXIETY.

## BEST PLANTS FOR THERAPEUTIC GARDEN

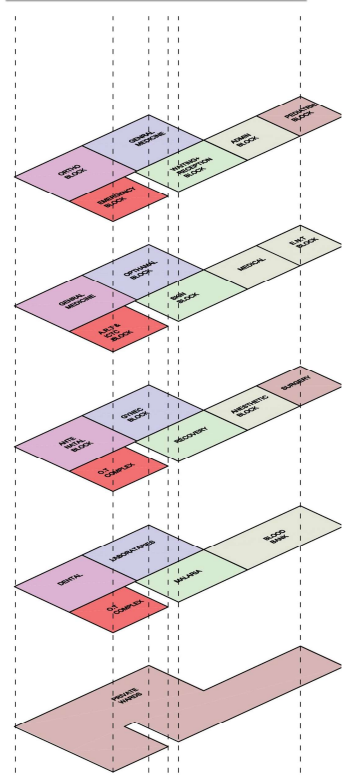
- THYME
- ROSEMARY
- FLOWERING BULBS
- SWEET PEAS
- LAVENDER
- CHILDHOOD PLANTS

## TREATING NOSCOMPHOBIA

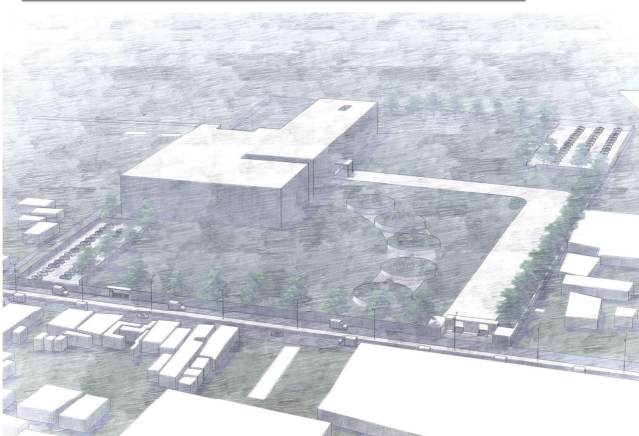
- PROVIDING NATURAL SPACE.
- EASY STRAIGHT CORRIDORS.
- NATURAL LIGHT.
- THERAPEUTIC GARDEN.
- MATERIAL EFFICIENCY.



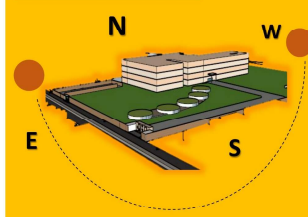
## SPACE ZONING



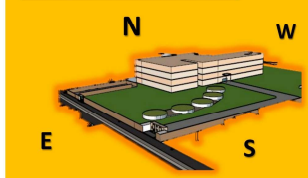
## CONCEPTUAL SITE PLAN



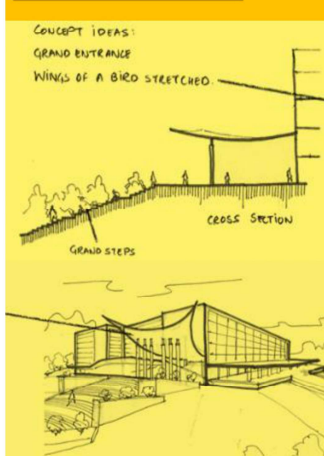
## SUN PATH



## WIND PATH



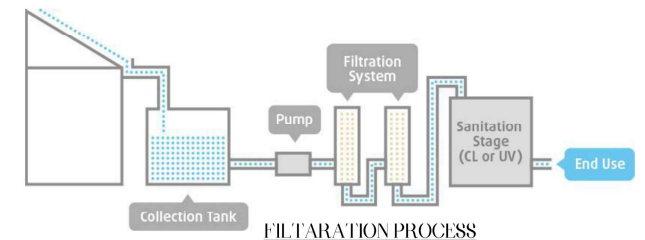
## PORCH IDEA



## IMPLENTING RAINWATER

- HOSPITALS CAN USE THIS TECHNIQUE TO AUGMENT GROUNDWATER BY DIVERTING RAINFALL TO SUB-SURFACE RESERVOIRS.
- THE COLLECTED WATER CAN BE USED FOR NON-POTABLE USES OR FOR POTABLE SUPPLY WITH APPROPRIATE TREATMENT.
- IN RURAL AREAS, HOSPITALS CAN ADOPT A TWIN STRATEGY OF SIMPLE ARTIFICIAL RECHARGE TECHNIQUES LIKE PERCOLATION TANKS, CHECK DAMS, RECHARGE SHAFTS, DUG WELL RECHARGE AND SUB-SURFACE DYKES.

## SITE PLAN



STANDARDS

CIRCULATION AREAS, CORRIDORS AND RAMPS

- CORRIDORS SHOULD BE AT LEAST 3 METRES WIDE.
- CORRIDORS SHOULD FOLLOW FIRE SAFETY NORMS AND BE WIDE ENOUGH TO ACCOMMODATE TWO PASSING TROLLEYS EASILY ALONG WITH SOME ADDITIONAL SPACE FOR EQUIPMENT.
- RAMPS SHALL HAVE A SLOPE OF 1:5 TO 1:8 AND SHOULD BE CHECKED FOR MANEUVERABILITY OF BEDS AND TROLLEYS AT TURNING POINTS.

WATER SUPPLY

Table: Fitment requirements for water supply

S. No.	Fitments	Hospital for indoor patients' wards (male & female)	Hospital with outdoor patient		Administrative building	
			Male	Female	Male	Female
1	Water closet	One for every 6 beds	One for every 100 persons	Two per 100 persons	One for every 15 persons	One for every 25 persons
2	Wash basins	Two for up to 24 persons, add one for every additional 24 beds	One for every 100 persons	One for every 100 persons	One for every 25 persons	One for every 25 persons
3	Baths with shower	One bath with shower for every 6 beds	-	-	One on each floor	One on each floor

S. No.	Fitments	Hospital for indoor patients' wards (male & female)	Hospital with outdoor patient		Administrative building	
			Male	Female	Male	Female
4	Bed pan washing sinks	One for each six beds in a ward	-	-	-	-
5	Cleaners sink	One for each ward	One per floor (minimum)	One per floor (minimum)	One per floor (minimum)	One per floor (minimum)
6	Kitchen sinks and dish washers	one per ward	-	-	-	-
7	Urinals	One per 20 persons	one per 50 persons	-	One/20 persons, add one per additional 20 persons. From 101 to 200 persons add @ 3% and over 200 persons add 2.5%.	

WASTE MANAGEMENT

- ALL SUCH WASTE THAT CAN ADVERSELY HARM THE ENVIRONMENT OR HEALTH OF A PERSON IS CONSIDERED INFECTIOUS AND TERMED AS BIOMEDICAL WASTE.
- EVERY HEALTH CARE FACILITY SHOULD ENSURE COLLECTION, TRANSPORTATION, TREATMENT AND DISPOSAL OF BIOMEDICAL WASTE AS PER THE LATEST BMW RULES.
- EACH HEALTHCARE FACILITY SHOULD ENSURE THAT THERE IS A DESIGNATED CENTRAL WASTE COLLECTION ROOM SITUATED WITHIN ITS PREMISES FOR STORAGE OF BIOMEDICAL WASTE, TILL THE WASTE IS PICKED AND TRANSPORTED FOR TREATMENT AND DISPOSAL AT THE COMMON BIOMEDICAL WASTE TREATMENT FACILITY.
- THE GENERAL WASTE CONSISTS OF ALL THE WASTE OTHER THAN BIO-MEDICAL WASTE, AND WHICH HAS NOT BEEN IN CONTACT WITH ANY HAZARDOUS OR INFECTIOUS, CHEMICAL OR BIOLOGICAL SECRETIONS AND DOES NOT INCLUDE ANY WASTE SHARPS.

OPD

- IN OPD CLINICS, IT IS EXPECTED THAT EVERY PATIENT BEFORE GOING TO THE CONSULTATION ROOM WILL FIRST GO TO THE NURSING STATION TO GET THEIR VITALS CHECKED.
- AFTER CONSULTATION, NURSES WILL ALSO EXPLAIN TREATMENT AND PRESCRIPTION TO PATIENTS.

WAYFINDING/ SIGNAGES

- ADEQUATE AND CLEAR SIGNAGE SHOULD BE DISPLAYED ON THE MAIN AND CONNECTING ROADS TO THE FACILITY.
- THEY SHOULD BE IN A FONT THAT IS EASILY VISIBLE FROM A DISTANCE.
- A BOARD CLEARLY INDICATING THE NAME OF THE FACILITY, SHOULD BE PLACED AT THE FRONT OF THE FACILITY AND.
- EACH DEPARTMENT AND ROOM SHOULD BE CLEARLY MARKED (INCLUDING ENGLISH, HINDI AND LOCAL LANGUAGE).

PARKING

- CLEAR ACCESS FOR VEHICLES AND AMBULANCES SHOULD BE MAINTAINED, ESPECIALLY NEAR THE EMERGENCY DEPARTMENT, INSIDE THE PREMISES.
- THERE SHOULD BE AN OPEN SPACE AVAILABLE IN LINE WITH THE AVERAGE EXPECTED LOAD OF VEHICLES FOR PARKING.

GARDENS & LANDSCAPING

- GARDENS, LANDSCAPING AND OPEN SPACES GIVE A POSITIVE, HEALING ENVIRONMENT THAT REDUCES STRESS.
- ANXIETY AND MENTAL FATIGUE, SO, WHEREVER POSSIBLE, IDENTIFY AND PROMOTE GREENERY AND OPEN SPACES.
- HERBAL GARDENS SHOULD BE PROMOTED ON THE CAMPUS.

DISABLED AND ELDERLY FRIENDLY ACCESS

- IT IS ADVISED THAT TACTILE SIGNS BE USED WITH GOOD CONTRAST BETWEEN LETTERS AND BACKGROUND, WHICH SHOULD ALSO CONTRAST WELL WITH THE BACKGROUND UPON SERVICE PROVISION AT WHICH IT IS MOUNTED.
- IT IS RECOMMENDED TO INSTALL ONE/TWO ROWS OF TACTILE GUIDING BLOCKS ALONG THE ENTIRE LENGTH OF THE PROPOSED ACCESSIBLE ROUTE.
- CARE SHALL BE TAKEN TO ENSURE THAT THERE ARE NO OBSTACLES, SUCH AS TREES, POLES OR UNEVEN SURFACES, ALONG THE ROUTE TRAVERSED BY THE GUIDING BLOCKS.

OT COMPLEX

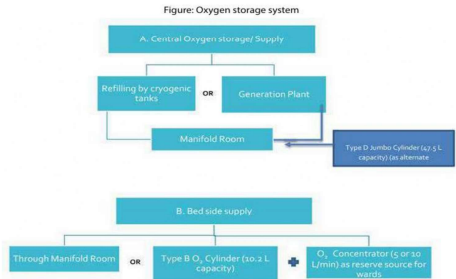
- THE LOCATION OF OPERATION THEATRE COMPLEX SHOULD BE IN A QUIET ENVIRONMENT, FREE FROM NOISE AND OTHER DISTURBANCES, CONTAMINATION, AND POSSIBLE CROSS INFECTION.
- ZONING SHOULD BE MAINTAINED TO KEEP THE THEATRES FREE FROM MICROORGANISMS.
- THERE SHOULD BE FOUR WELL-DEFINED ZONES OF VARYING DEGREES OF CLEANLINESS/ASEPSIS NAMELY, PROTECTIVE ZONE, CLEAN ZONE, ASEPTIC OR STERILE ZONE, AND DISPOSAL OR DIRTY ZONE.
- ALSO NEEDS CONSTANT SPECIALIZED SERVICES SUCH AS PIPED SUCTION AND MEDICAL GAS SUPPLY, ELECTRIC SUPPLY, HEATING, AIR-CONDITIONING.

BLOOD BANK

- THE BLOOD BANK SHOULD BE IN CLOSE PROXIMITY TO THE LABORATORY AND AT AN ACCESSIBLE DISTANCE FROM THE OT COMPLEX, ICU, AND EMERGENCY DEPARTMENT.
- BLOOD BANK SHOULD BE FUNCTIONAL ROUND THE CLOCK (24X7).
- THE BLOOD BANK SHOULD HAVE PROPER SIGNAGE AND RESTRICTED AREA DEMARCATION FOR THE SAFETY OF STAFF, DONORS, PATIENTS, AND OTHERS.

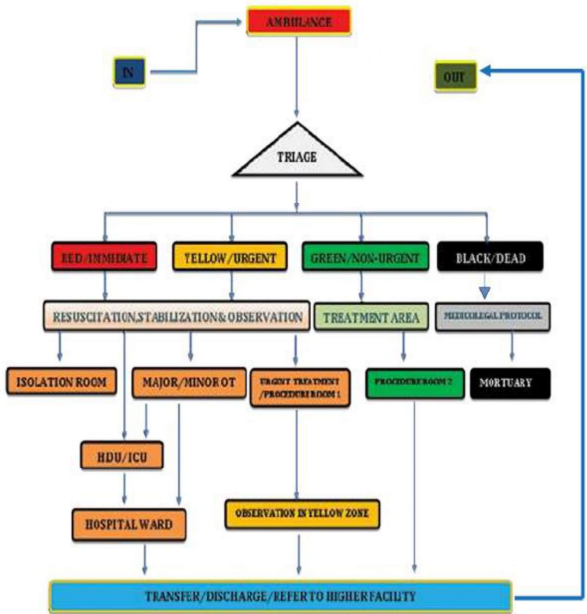
MEDICAL GAS PIPELINE SYSTEM

- MEDICAL GAS PIPELINE SYSTEM (MGPS) IS DESIGNED TO PROVIDE A SAFE AND EFFECTIVE METHOD OF DELIVERING MEDICAL & ANAESTHETIC GASES, VACUUM & COMPRESSED AIR FROM THE SOURCE OF SUPPLY TO THE APPROPRIATE TERMINAL UNIT BY MEANS OF A PIPELINE DISTRIBUTION SYSTEM.
- THE MEDICAL GAS PIPELINE SYSTEM SUPPLIES MEDICAL GASES LIKE OXYGEN AND NITROUS OXIDE AND MIXTURES OF GASES TO DIFFERENT AREAS OF THE SUB DISTRICT/DISTRICT HOSPITAL.
- THE SUPPLY OF OXYGEN TO THE HOSPITAL CAN BE BASICALLY THROUGH A STORAGE SYSTEM OR FROM A GENERATING UNIT.



EMERGENCY WARD

- THE EMERGENCY WING SHOULD BE PLANNED TO KEEP IN MIND EASY ACCESSIBILITY AND QUICK RESPONSE. Y EMERGENCY SERVICE PROVISION THROUGH ADEQUATELY TRAINED HUMAN RESOURCES FOR HEALTH SHOULD BE AVAILABLE ROUND THE CLOCK.
- IT SHOULD PREFERABLY HAVE A DISTINCT ENTRY INDEPENDENT OF OPD MAIN ENTRY SO THAT MINIMUM TIME IS LOST IN ATTENDING TO CASES THAT NEED RESUSCITATION AND ALSO TO OTHERS REQUIRING EMERGENCY MANAGEMENT.
- THERE SHOULD BE EASY APPROACH AND ACCESS FOR AMBULANCES WITH ADEQUATE SPACE FOR THE FREE PASSAGE OF VEHICLES AND A COVERED AREA FOR ALIGHTING PATIENTS.
- STRETCHERS, WHEELCHAIRS, AND TROLLEYS SHOULD BE AVAILABLE AT THE ENTRANCE OF THE EMERGENCY AT A DESIGNATED AREA. Y LAY OUT SHOULD BE SUCH THAT IT FOLLOWS THE FUNCTIONAL FLOW FOR CLINICAL MANAGEMENT OF THE PATIENT.
- SIGNAGE OF EMERGENCY SHOULD BE DISPLAYED AT THE ENTRY OF THE HOSPITAL WITH ADDITIONAL SIGNAGE AT KEY POINTS.
- THE EMERGENCY SHOULD HAVE A DEDICATED TRIAGE AND FOUR CLINICAL MANAGEMENT ZONES (RED, YELLOW, GREEN, BLACK).
- THE TRIAGE AREA SHOULD HAVE DEDICATED SPACE WITH WALL-MOUNTED MULTIPARA MONITORS AND MEDICAL GAS OUTLETS.



# SITE PLAN

TOWARDS  
RAMNAGAR

TOWARDS  
RAMNAGAR



PARKING



FRONT FACADE



BACK FACADE

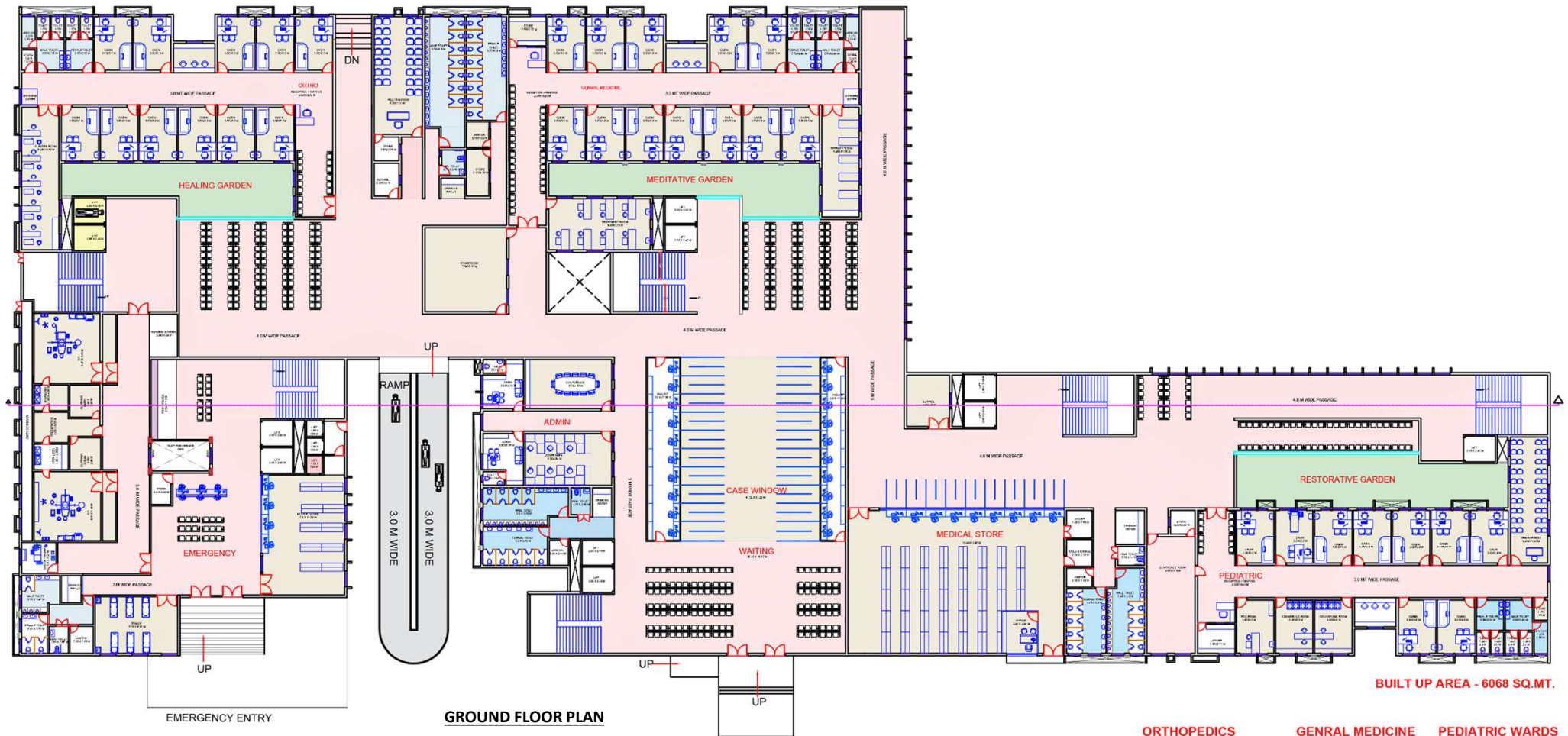


LANDSCAPING

TITLE - ADVANCE TRAUMA RECOVERY AND CARE CENTRE

SUBMITTED BY - UJJWAL SRIVASTAVA  
THESIS GUIDE - AR.VERSHA VERMA

## FLOOR PLANS



### ORTHOPEDICS

- FOOT AND ANKLE
- HAND AND UPPER EXTREMITIES
- HIP AND KNEE
- ORTHOPEDIC ONCOLOGIST
- SHOULDER AND ELBOW
- SPINE
- ARTHROPLASTY

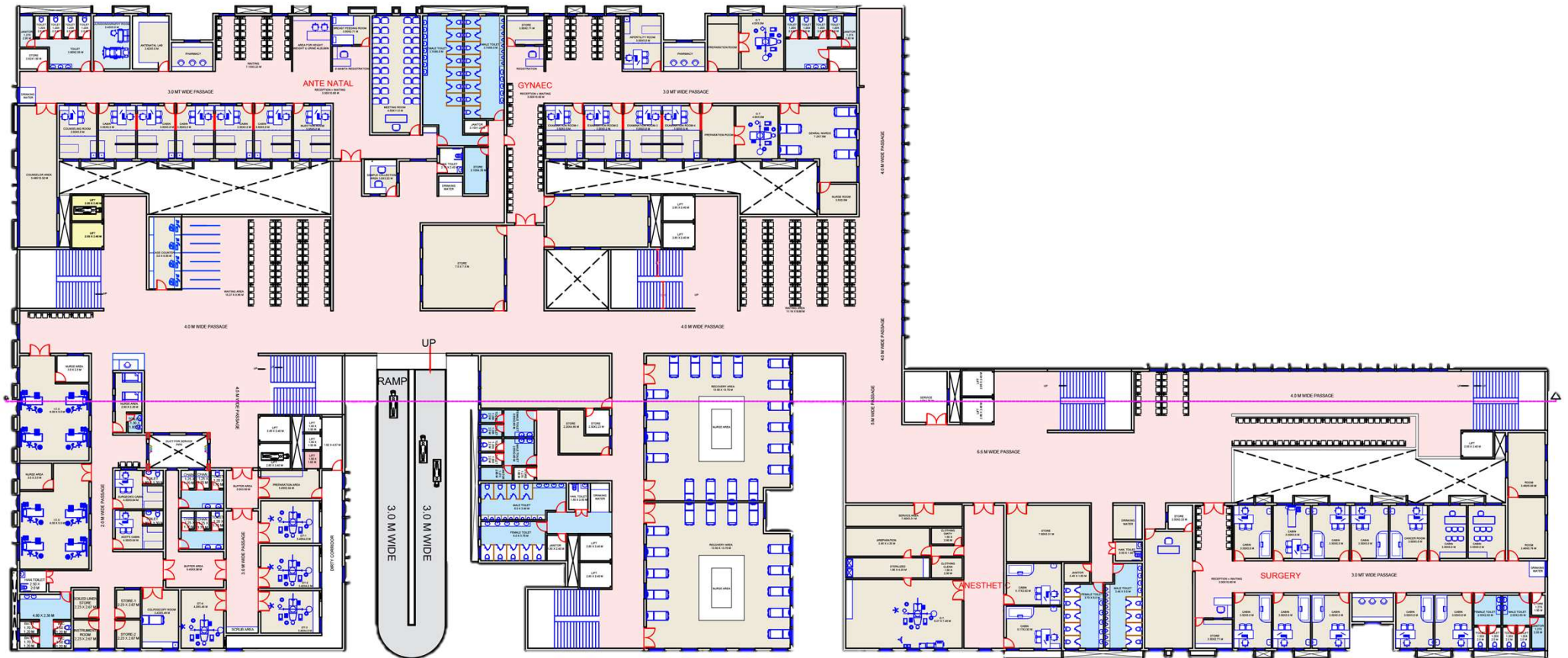
### GENERAL MEDICINE

- GASTROENTEROLOGY
- ENDOCRINOLOGY
- DIABETES
- RESPIRATORY
- RHEUMATOLOGY
- RADIOLOGY

### PEDIATRIC WARDS

- EMERGENCY SERVICES
- INTENSIVE CARE SERVICES
- ROUTINE CARE
- VACCINATION
- PHYSICAL THERAPY
- DRUG REHAB
- COUNSELLOR

## FLOOR PLANS



**FIRST FLOOR PLAN**

## FLOOR PLANS



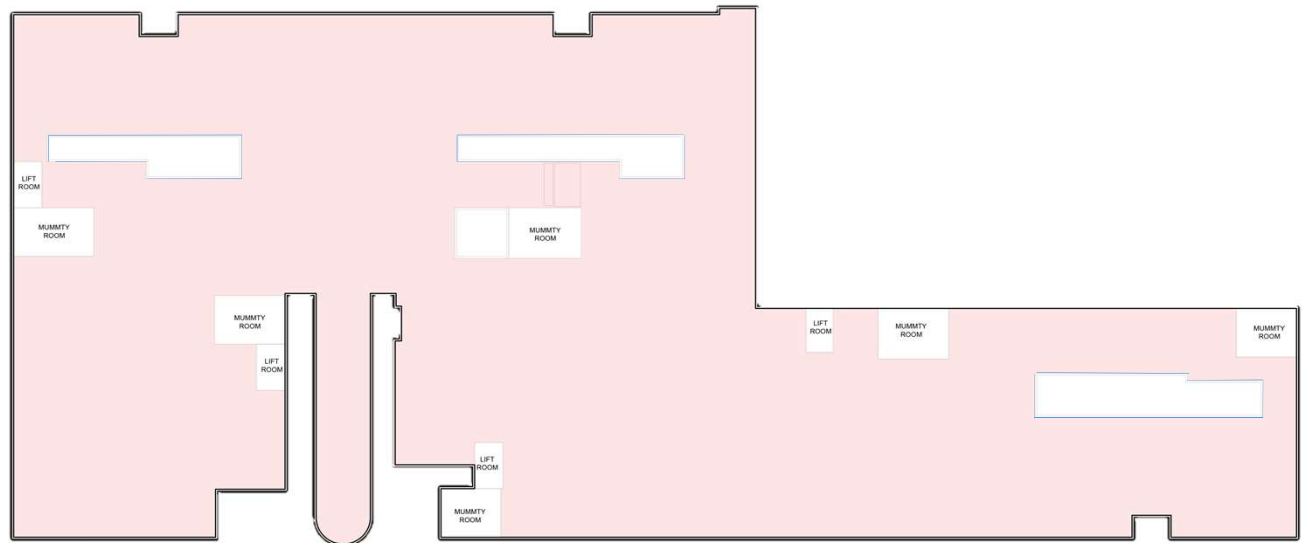
## FLOOR PLANS



## FLOOR PLANS

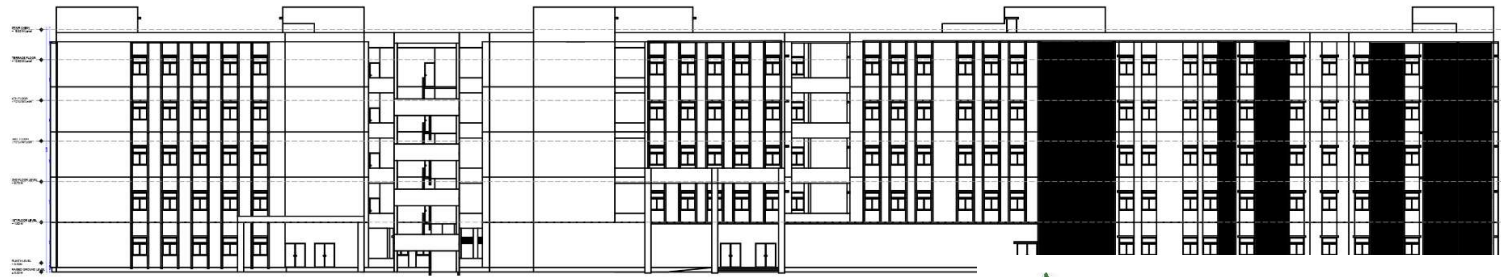


**FOURTH FLOOR PLAN**



**TERRACE FLOOR  
PLAN**

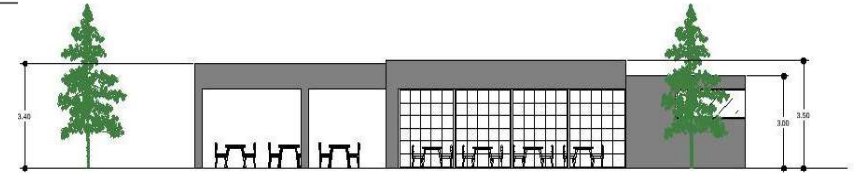
# ELEVATIONS



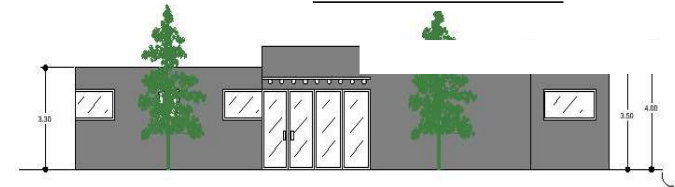
ELEVATION AT - A



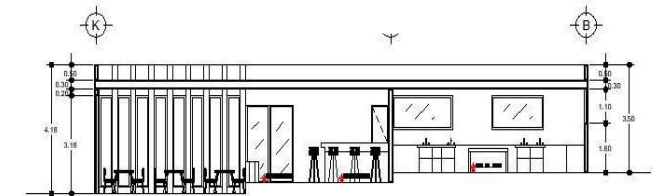
ELEVATION AT - B



CANTEEN ELEVATION AT - B



CANTEEN ELEVATION AT - B



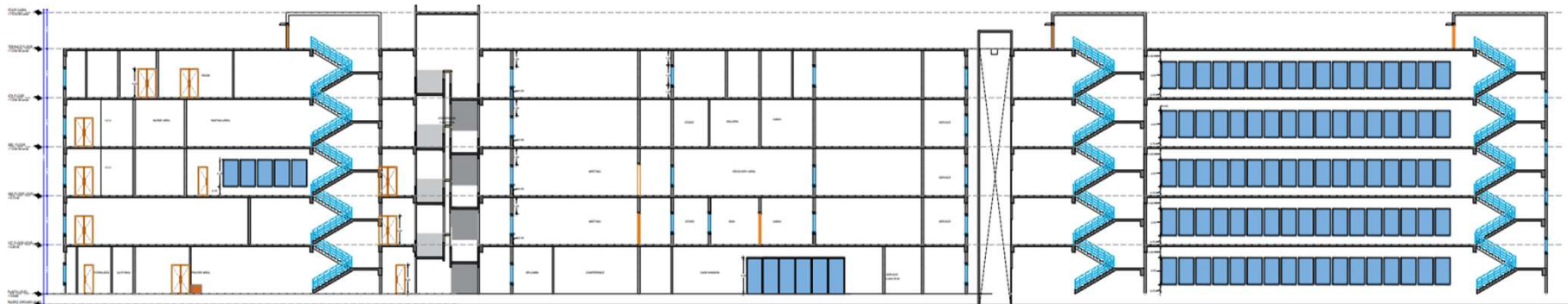
TITLE - ADVANCE TRAUMA RECOVERY AND CARE CENTRE

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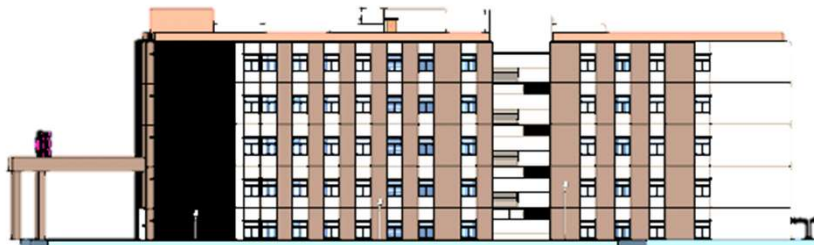
## ELEVATIONS



ELEVATION AT - C



SECTION AT XX'



ELEVATION AT - D



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FRONT FACADE



BACK GARDEN



SOFTWARE USED – SKETCHUP + LUMION +  
PHOTOSHOP

## LANDSCAPING DETAIL



### PLANT NAME – JAISMINE

- **BIOLOGICAL NAME** - ASMINUM OFFICINALE
- **HEIGHT** – 6 METRE
- **MEDICAL PROPERTY** - LIVER DISEASE (HEPATITIS), PAIN DUE TO LIVER SCARRING (CIRRHOSIS)



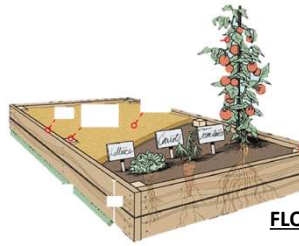
### PLANT NAME – NEEM

- **BIOLOGICAL NAME** - AZADIRACHTA INDICA
- **HEIGHT** – 30 METRE
- **MEDICAL PROPERTY** – SKIN , DENTAL, DIGESTIVE , INFECTION.

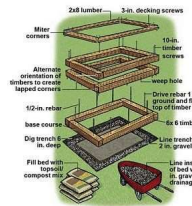


### TREE NAME – SITA ASHOKA

- **BIOLOGICAL NAME** - SARACA ASOCA
- **HEIGHT** – 30CM TO 60CM
- **MEDICAL PROPERTY** - ANTI-INFLAMMATORY, ANALGESIC, AND ANTIOXIDANT PROPERTIES



**FLOWER BED**



**DETAIL OF FLOWER BED**



**PATHWAY**



### PLANT NAME – DESI ROSE

- **HEIGHT** – 2' FEET
- **MEDICAL PROPERTY** – SKINCARE , STRESS RELIF., DIGESTIVE SYSTEM



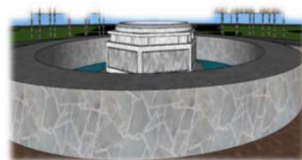
### PLANT NAME - HIBISCUS

- **BIOLOGICAL NAME** - MALLOW FAMILY
- **HEIGHT** – 25 CM
- **MEDICAL PROPERTY** - REDUCE SERUM TRIGLYCERIDES, TOTAL CHOLESTEROL, AND LIPIDS.



### TREE NAME - GULMOHAR

- **BIOLOGICAL NAME** - DELONIX REGIA
- **HEIGHT** – 15 M – 25M
- **MEDICAL PROPERTY** - ANTI-DIABETIC, ANTI-BACTERIAL, ANTI-DIARRHEAL, AND ANTI-INFLAMMATORY PROPERTIES



**FOUNTAIN**



**PERGOLA**

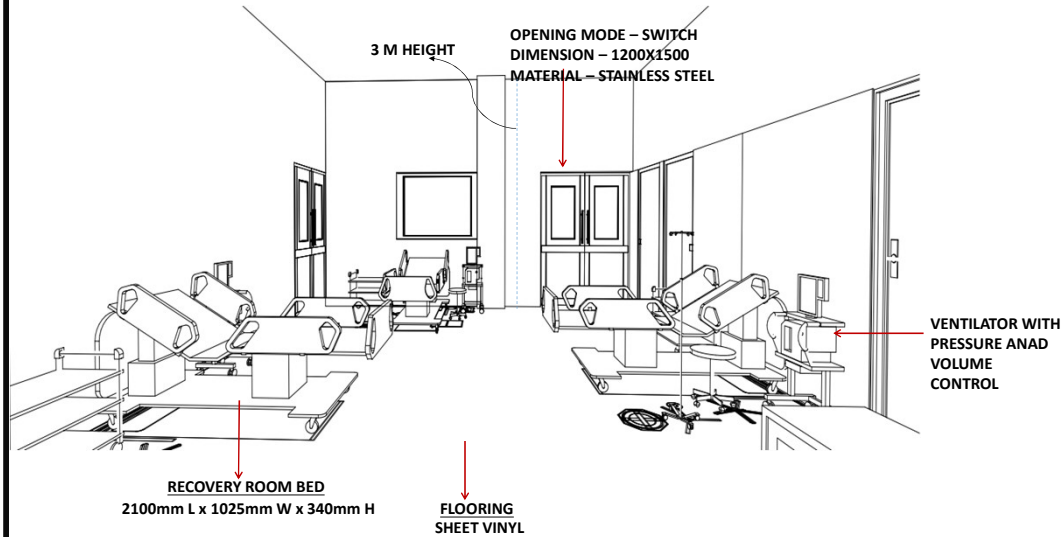


**Pyramid Car Parking Shade**  
Shade Size For 1 car (6M) x 3M (M) x 9.5M

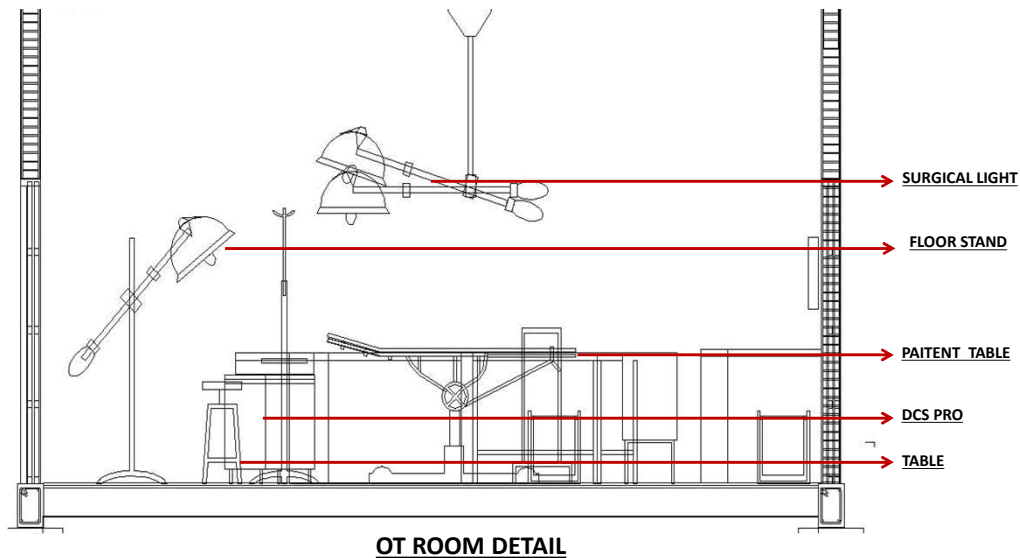


**GRID PATTERN  
PATHWAY FOR  
GARDEN**

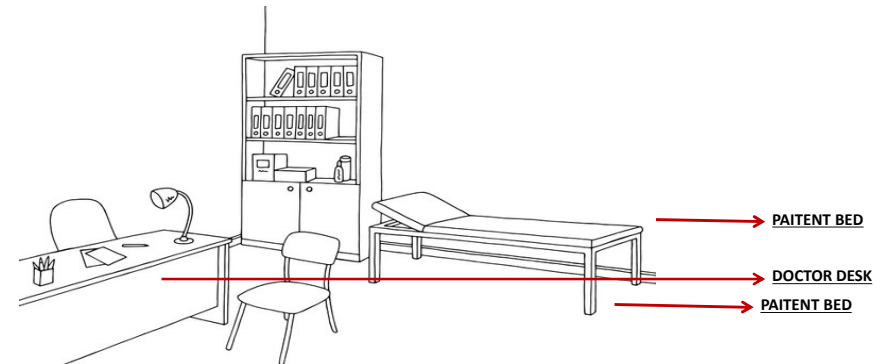
## INTERIOR DETAIL



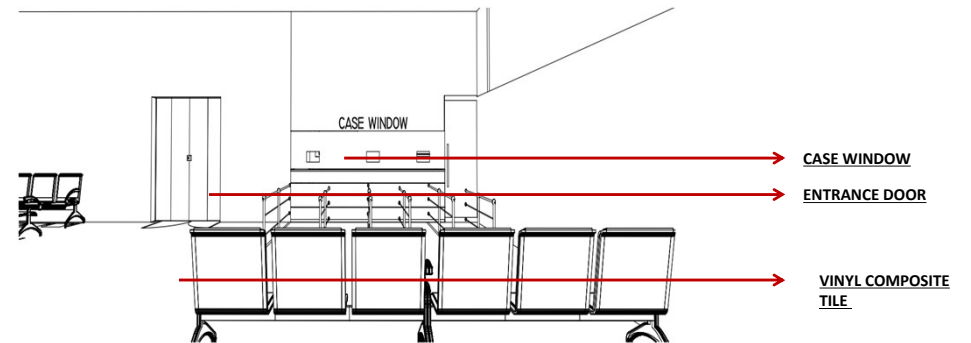
**RECOVERY ROOM  
DETAIL**



**OT ROOM DETAIL**



**DR. CABIIN DETAIL**



**DR. CABIIN DETAIL**



**MEDICAL STORE  
DETAIL**

## AREA ANALYSIS

### PROVISION OF ADMINISTRATIVE UNIT

S. NO	FACILITY	ROOM NO :	AREA (SQ. M.)
1	Medical Supdt (M.S.)room with toilet	1	35
2	Dy/ Asstt. Medical Supdt. room with toilet	1	21
3	Admin Officer	1	21
4	Waiting room	1	21
5	Library cum Conference room	1	56
6	Nursing Officer's room with toilet	1	31.5
7	Accounts Officer	1	14
8	Cashier	1	14
9	Purchase Officer	1	14
10	Clerical Staff	1	5.25/ per staff
11	Reception cum Enquiries	1	28
12	Welfare/ Labour Officer	1	14
13	Stationery/Record	1	42
14	Security Officer	1	14
15	Lavatory for staff(Separate for male and female)	3	21

### PROVISION OF BLOOD BANK

S. N O.	FACILITY	ROOM NO:	AREA (SQ M)
1	Reception and waiting		1 30
2	Bleeding area		2 42
3	Donor's rest room with kitchenette		2 42
4	Laboratory & blood storage area		1 21
5	Office		1 10.5
6	Stores		1 21
7	Bottle washing area		1 10.5
8	Lavatory		1 10.5
9	Doctor's room with toilet		1 17.5

### PROVISION HOSPITAL STORE

S. NO	FACILITY	ROOM NO :	AREA (SQ M)
1	Receipt of stores (weighing, inspection )	1	28
2	Medical store	1	70
3	General store	1	56
4	Linen store	1	42
5	Furniture store	1	70
6	Surgical store	1	21
7	Equipment store	2	42
8	Areas for storage of mechanical transport spares	1	28
9	Area for storage of articles awaiting condemnation	1	17.5
10	Store office room with toilet	2	21
11	Office	1	10.5
12	Stationery store	1	10.5

### PROVISION OF DIETARY UNIT

S. N O.	FACILITY	ROOM NO:	AREA (SQM.)
1	Reception area	1	28
2	Cooking area	1	84
3	Therapeutic,diet preparation and cooking area	1	21
4	Dietetion with toilet	1	14
5	Trolley loading	1	10.5
6	Walk in cold storage	1	10.5
7	Dry ration storage	1	14
8	Washing areas	1	55
9	Garbage collection area	1	14

S.N O.	DEPARTMENT	TOTAL AREA (SQM.)
1	ADMIN BLOCK	394
2	HOSPITAL STORAGE	495.5
3	TRANSPORT SERVICES	225
4	DIETICIAN UNIT	287.3
5	LAUNDRY UNIT	595

### PROVISION OF TRANSPORT SERVICES

S. NO	FACILITY	ROOM NO :	AREA (SQM)
1	Ambulance	6	42
2	Mortuary van	2	21
3	Tempo	4	42
4	Staff car	10	120

### PROVISION OF PATHOLOGY DEPT

S. NO	FACILITY	ROOM NO	AREA (SQ M)
1	Reception and specimen collection/ distribution	1	42
2	Patients waiting area with toilet	1	42
3	Pathologist laboratory with toilet	5	51
4	Office and record	1	14
5	Technician's room with toilet	1	14
6	Stores	3	42
7	Biochemistry	1	35
8	Microbiology with incubator	1	35
9	Media room	1	14
10	Clinical pathology and heamotology	1	28
11	Histology and cytology	1	14
12	Washing and sterilizing area	1	14
13	Janitors closet	1	3.5
14	Specimen disposal and sluice room	1	7.0

### FLOOR AREA OF HOSPITAL

700 – 900 sq ft per bed  
One bed requires 75-100 sq ft  
Total floor area required is 10 times this

### CORRIDORS

Main corridor should allow for passage of two beds with persons on sides  
It requires ~2.5 metre width  
Less than 100 bedded hospitals can have one bed passage  
It requires ~2.0 metre width  
Segregation of clean and dirty corridors

### O.P.D

For every bed three patients are seen in OPD  
60% of area should be for waiting & corridors  
Seats for 1/3 of daily attendance @ 8 sq ft/pt.  
Consultation room – 150 sq ft  
Attached examination room – 80 sq ft

### WINDOWS IN WARDS

Window area 20% of floor area if only on one wall  
Window area 15% of floor area if on opposite walls at same sill level

### BED DISTRIBUTION

Medical 30%-40%  
Surgical 25%-30% (includes Orthopedics ~5%)  
Obs & Gynae 15%-18%  
Peadiatrics 10%-12%  
ENT & Eye etc 10%-15%

### AC-OT

Temp – 20-23  
RH – 50%- 60%  
Pressure – Positive, Negative in Sluice Room  
Air changes – 10 fresh / 25 total  
Air Filtration – HEPA (0.3 µ) in OR 20µ else Pressure maintained in OR 24X7

### AC –MICU/SICU

Temp – 21-24  
RH – 30%-60%  
Pressure – Positive  
Air change – 5 fresh / 15 total  
Air Filtration – 5 µ

### AC –RADIOLOGY

Temp – 24  
RH – 30%-60%  
Pressure – Positive, Negative in Dark Room  
Air Changes – 6 total, 10 total in Dark Room  
Heat Load Calculation is important

### FLOOR AREA ALLOCATION

OPD – 12%-18%  
Wards – 37%-45%  
Diagnostic & Therapeutic – 18%-22%  
Administration – 8%-12%  
Service Departments – 15%-20%

### LIFTS

Depends upon number of beds above ground floor  
Up to 60 – one  
Up to 200 – two  
Up to 350 – three  
Size – >2280X1600X2300 mm with door size >1300X2100 mm

### WARDS

24 to 32 bedded  
75 sq ft area for each bed  
Center to center distance between beds 8 ft  
Edge to edge distance between beds 4 ft  
Service corridor between bed rows 8 ft  
Wash basin one between 10 beds  
Sluice room 120 sq ft  
Broom closet 40 sq ft

### CABINS

At least 6 cabins per 100 beds  
Australian standard is 25% of beds in single, double & quadruple units

### ICU

Bed strength – 2% to 5% of total beds  
Not less than 5 or more than 15 in a unit  
Each bed 150 – 200 sq ft  
Not more than 40%-50% floor area for beds  
Hence ICU size 500 sq ft per bed  
Power – 2X15 amp & 3X5 amp at least  
MGPS  
Monitor cabling

### AC-ENDOSCOPY ROOM

Temp – 20-23  
RH – 30%-60%  
Pressure – Negative  
Air Changes – 2 fresh / 12 total  
Air filtration – 20 µ  
All air vented ou

### AC –WARDS

Temp – 21-24  
RH – 30%-60%  
Pressure – Positive  
Air Changes – 3 fresh / 15 total  
Air Filtration – 20 µ

### REFERENCES

- IS10905 (Indian Hospital Standards)
- HTM 2025 (Ventilation in Health Care Facility)
- Hospital Planning and Administration
- R Llewellyn-Davies & HMC Macaulay
- Principles of Hospital Administration and Planning, BM Sakharkar

### PROVISION OF LAUNDRY UNIT

S.NO.	FACILITY	ROOM NO:	AREA (SQ. M.)
1	Dirty clothes receiving and sorting area ( with weighing facility )	2	42
2	Sluice and autoclaving machine area	2	56
3	Washing area	2	56
4	Hydro extractor area	2	56
5	Drying tumbler area	2	56
6	Calendaring machine Area	1	17.5
7	Tailor desk	2	21
8	Steam pressing	2	28
9	Manual press area	2	28
10	Clean clothes storage area	2	42
11	Issue area	1	17.5
12	Trolley bay	1	10.5
13	Store	2	21
14	Laundry supervisor office with toilet	1	14
15	Laundry staff room with toilet	1	21

### PROVISION OF O.T DEPARTMENT

S. NO.	FACILITY	ROOM NO:	AREA (SQ M)
ZONE A			
1	OT reception bay	1	14
2	Relatives waiting room (including 2 toilets of 6sqm. each )	1	24
3	Officer-in-charge of OT with toilet	1	15
4	Doctor's room change	1	17.5
5	Nurses room change	2	42
6	Technician change room	1	17.5
7	Class IV staff change room	1	14
8	Sterile storage area	2	14
9	Instrument and linen room	1	10.5
10	Trolley bay	1	10.5
11	Gas cylinder storage	1	10.5
12	Switch room	1	10.5
ZONE B			
1	Fracture-cum Casualty theatre	1	28
2	Instrument sterilization	1	10.5
3	Scrub up	2	24
4	Dirty wash up	2	21
5	Plaster Preparation	1	10.5
6	Splint store	1	35
7	Pre-operative room with toilet	6	84
8	Recovery room	6	63
9	Nurses duty room	1	10.5
10	Theatre pack preparation room	1	17.5
11	Frozen section	1	21
12	X-ray with dark room	1	17.5
13	Pantry	1	14
ZONE C			
1	Operation theatres ( Major )	6	126
2	Operation theatres ( Minor )	4	70
3	Instrument sterilization	3	10.5
4	Scrub up	3	10.5
5	Anaesthetist room	1	14
6	Anaesthetic storage	1	10.5
7	Anesthesia room	2	21
8	Doctor's work room	1	21
9	Nurses work room	1	10.5
ZONE D			
1	Dirty utility	3	10.5
2	Janitor's closet	2	14

### PROVISION OF EMERGENCY BLOCK

S. NO	FACILITY	ROOM NO:	AREA (SQM)
1	Drive-in Ambulance unit(Reception,waiting,Trolley bay, PA System,police control, Special Woker room	1	150
2	Doctor's Duty with Toilet	5	72
3	Doctor's Lounge with Toilet	1	21
4	Medico legal Specimen And Record room	1	10.5
5	Brought in Dead Room	1	14
6	Retiring Room for Ambulance -drivers and support staff	1	17.5
7	ECG Room	1	14
8	Treatment Room	5	35
9	Operation Theatre Unit:-		
9.1	Operation Theatre	2	48
9.2	Instrument Sterilization	1	7
9.3	Scrub Up	1	21
9.4	Dirty Utility	1	7
9.5	Anesthesia Room	1	10.5
10	Resuscitation Room	4	120
11	X-Ray Room with Dark Room	1	28
12	Clinical Laboratory	1	17.5
14	Blood Storage Area	1	10.5
15	Drug Dispensing Facility	1	10.5
16	Stores	1	14
17	Sluice Room & Janitor Closet	1	14
18	Nurses Station with Toilet	1	17.5
19	Observation room	3	42
20	Emergency Ward ( A ) 6 Bedded@1 ( B ) 4 Bedded@2 ( C ) 2 Bedded@2	3	335
S.N O.	DEPARTMENT	TOTAL AREA (SQM.)	
1	MORTUARY	222	
2	PATHOLOGY LAB	480	
3	O.T	1055	
4	EMERGENCY	1330	

### PROVISION OF MORTUARY

S. NO	FACILITY	ROOM NO:	ARE A (SQM)
1	Walk in cooler	1	21 (8 Bodie
2	Post mortem area	1	17.5
3	Autopsy stores	1	14
4	Body wash and prayer room	1	14
5	Relative waiting area with toilet and drinking water facilities	1	35
6	Doctor's office wit toilet	1	17.5
7	Staff room with toilet	1	17.5
8	Office	1	10.5
9	Stores	1	10.5
10	Janitors closet	1	3.5
11	Trolley bay	1	10.5