Architectural Studio

Semester 1~Semester 10

Bachelor of Architecture

**URBAN SPRAWLING MODEL IMAGES FROM SEMESTER 9

Composed works from Bachelor of Architecture

Ketki Sanjay Nalawade

This portfolio is my introduction to my undergraduate work. I am a dedicated student with persistent devotion to community. Through my projects, which include healthcare facilities and recreational spaces, I strive to design environments that leave a lasting impact—places that inspire people, foster connections, and stand the test of time."

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Mother and Child Hospital

Hosmart Healthcare Pvt ltd
Professional work

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Dental & Opthal Clinic

Hosmart Healthcare Pvt ltd
Professional work

Urban Mapping

Urban Mapping of Marine Drive, Mumbai
Academic Group work

Heera Moongi Hospital

Hosmart Healthcare Pvt ltd
Professional work

Thesis Project

Semester 10

5th Year Academic Work (2024-25)

PROJECT BRIEF

Aim

The project aims to redevelop and modernize the Mumbai Port Trust (MBPT) Hospital in Wadala into a state-of-the-art multispeciality healthcare facility with a capacity of 392 beds. This redevelopment will cater to the growing healthcare demands of Wadala, Eastern Mumbai, and Navi Mumbai, offering advanced medical services, specialized treatment facilities, and patient-centric design.

Objective

- o Integrate multiple medical specialties under one roof to offer comprehensive healthcare services.
- o Utilize advanced medical technologies and modern architectural design for enhanced patient care.
- o Alleviate pressure on existing healthcare facilities by providing additional capacity.
- o Focus on patient-centric planning to ensure a comfortable, efficient, and healing environment.
- o Improve healthcare accessibility and quality for residents of the Eastern coast of Mumbai and Navi Mumbai.

About the Site

- o **Site Location**- Mumbai Port Trust Hospital, Near Wadala Police Station, Nadkarni Park, East Wadala, BPT Colony, Wadala, Mumbai, Maharashtra 400037
- o **Site Area**- 40245 SQM (9.94 ACRE)
- o **Nearest Airport**- Chatrapati Shivaji Maharaj International Airport (12km) D.B. Patil International Airport(*Upcoming*)(32km)
- o **Nearest Railway Station**- Vadala Road station
- o **Nearest Bus Stop**- MbPt Hospital Bus Stop
- o **Nearest Monorail Station**- Wadala Bridge Stop

SITE MAPPING

Map of India

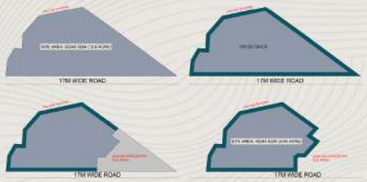
Map of Maharashtra

Map of Mumbai

Mumbai Port Trust Hospital, Wadala East

SITE VIEWS

SITE DEVELOPMENT



SWOT ANALYSIS

S

Prime location with good connectivity.
Diverse population with varied healthcare needs.
Existing infrastructure.

W

Waterlogging issues during monsoons.
Traffic congestion affecting access.
Limited space for expansion.

O

Growing demand for multi-specialty healthcare.
Integration of modern technology.
Potential for sustainable building practices.

T

Environmental regulations near sensitive areas.
Infrastructure & Connectivity: Dependence on external utilities, increased traffic impact.

MBPT HOSPITAL

Number of beds: 241 **ICU beds**: 6
Operational: 80 Beds **Operation Theatre**: 3nos
Year of Establishment : 1949 **Service**: Limited to MbPT employees

Building Infrastructure Condition: Aging structure with outdated layouts. Poor ventilation, limited daylight, and inefficient space usage.

Departmental Deficiencies: Lack of modern diagnostic facilities (no MRI, limited CT). Absence of specialized departments like NICU, Cath lab, etc. Inadequate Patient & Visitor Amenities

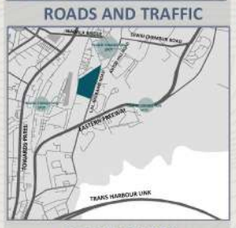
Compliance with Modern Standards: Does not meet NABH / modern hospital design codes. Lacks universal design for accessibility and safety.

Redevelopment Plan: Mumbai Port Trust is converting its 241-bed hospital into a 600-bed super speciality hospital to provide improved healthcare facilities to some 45,000 port employees and dependents and the general public in the catchment area on a PPP basis with an investment of about Rs 700 crore.

Status: On Hold due to Legal Issues.

SETTLEMENTS

ROADS AND TRAFFIC



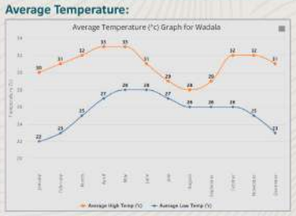
GREEN SPACES

NEIGHBOURHOOD

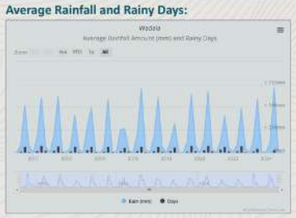
ACCESSIBILITY

CLIMATE STUDY

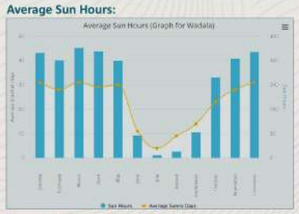
Average Temperature:



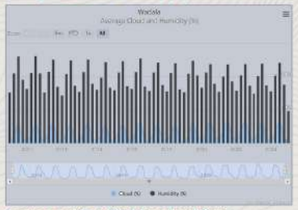
Average Rainfall and Rainy Days:



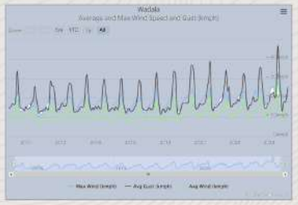
Average Sun Hours:



Average Cloud and Humidity (%):



Average and Max Wind Speed and Gust:



CONCEPT

CONCEPT DEVELOPMENT

WHEN WE DESIGN BUILDINGS FOR HEALING, WE BLEND IDEAS FROM HEALING THEORIES WITH ARCHITECTURAL ELEMENTS. THIS HELPS US CREATE SPACES THAT FEEL GOOD AND COMFORTING FOR PATIENTS. WE WANT THESE PLACES TO NOT ONLY SERVE THEIR PURPOSE BUT ALSO BE BEAUTIFUL AND UPLIFTING. ONE WAY WE DO THIS IS BY FOCUSING ON SENSORY ARCHITECTURE, WHICH MEANS CONSIDERING HOW THE SPACE APPEALS TO OUR SENSES LIKE SIGHT, SOUND, AND TOUCH. THIS HELPS PATIENTS FEEL MORE CONNECTED TO THE HEALING CENTER AND LESS LONELY OR CUT OFF FROM OTHERS. AIM IS TO MAKE THESE SPACES FEEL LIKE WELCOMING HAVENS WHERE PEOPLE CAN FIN SOLACE AND SUPPORT ON THEIR PATH TO RECOVERY

DESIGN OBJECTIVES -

- 5 LEVELS OF HEALING
- GROWTH
- CREATING VARIOUS LAYERS
- FOCUS ON ELEMENT THAT CREATE THERAPEUTIC ENVIRONMENT

5 Layers of Healing

GROWTH

Hospitals are not isolated buildings — they are transitional spaces in a person's life. This concept reflects the journey of "Home → Healing → Home", embracing:

Arrival with anxiety → Reception with calm
Uncertainty in diagnosis → Clarity through design
Treatment and recovery → Spaces for hope and dignity
Return to home → Empowered by care

The design grows with the patient, using spatial cues (light, scale, material) that reflect this emotional arc, supporting resilience and progress.

LAYERS

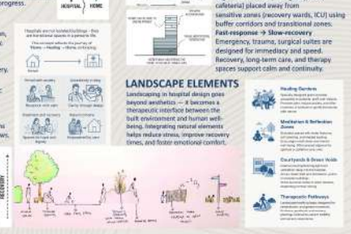
A well-designed hospital is layered in both plan and section, creating functional zoning that enhances clarity, efficiency, and comfort. These horizontal and vertical layers are not just physical—they reflect a philosophy of progression, mirroring the patient's journey from emergency to recovery.

Vertical Layers (Sectional Zoning)

Lower floors: Services, diagnostics, emergency, and public zones — high turnover areas.
Middle floors: Operation theaters, ICUs, staff-only areas — core clinical functions.
Upper floors: Patient wards, long-stay units, therapy rooms — quiet zones for healing with maximum daylight and views.

LANDSCAPE ELEMENTS

Landscaping in hospital design goes beyond aesthetics — it becomes a therapeutic interface between the built environment and human well-being. Integrating natural elements helps reduce stress, improve recovery times, and foster emotional comfort.



The Healing Canvas

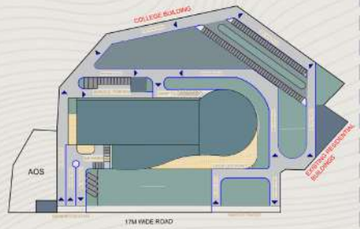
To create a calming and therapeutic environment for patients, "Healing Canvas" installations are integrated into the IPD (In-Patient Department) corridors and patient rooms. These are large-scale digital or printed art panels inspired by nature—like forests, skies, water, or floral themes—curated to reduce patient stress and promote recovery. Positioned in direct line of sight from beds and along walking corridors, the canvases stimulate positive visual engagement, aiding mental well-being. This design strategy aligns with principles of evidence-based design in healthcare, where art becomes an active contributor to the healing process.

The Healing Garden

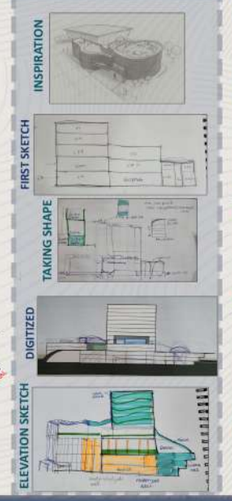
This semi-open healing garden provides a therapeutic outdoor space for all IPD patients. Designed with sand therapy, a meditation nook, aromatherapy plants, artistic walls, and seating along a curved path, it promotes relaxation, mental well-being, and faster recovery through sensory engagement with nature.

SITE ZONING

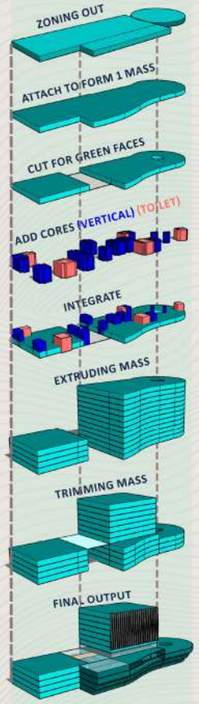
SUN PATH AND WIND DIRECTION



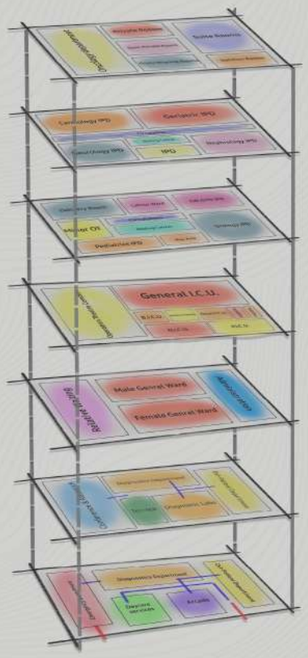
DESIGN SKETCHES



FORM DEVELOPMENT



ZONING



REDEVELOPMENT OF MbPT HOSPITAL WADALA WITH PROVISION OF MULTISPECIALITY SERVICES

VASANTDADA PATIL PRATHISTHAN'S
MANOHAR PHALKE COLLEGE OF ARCHITECTURE

KETKI SANJAY NALAWADE
B.ARCH SEMESTER- X DD2

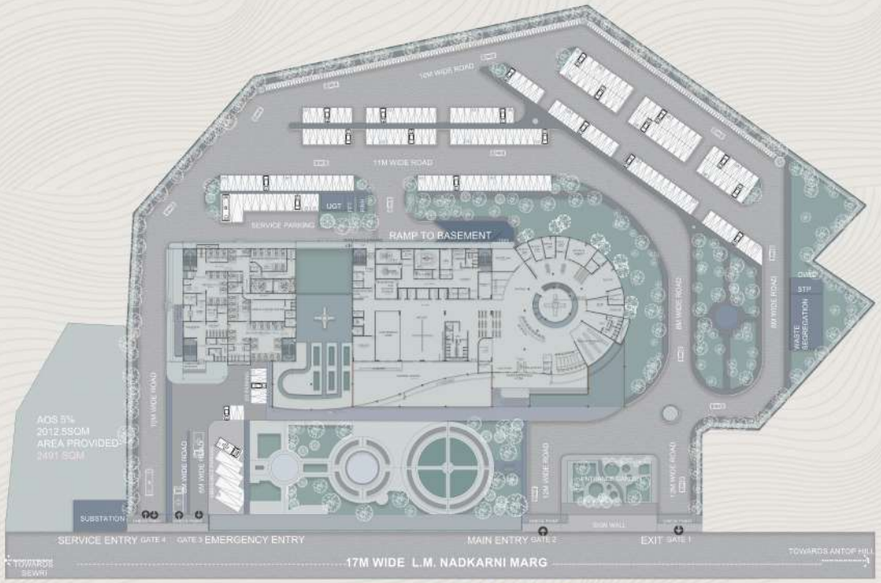
EXAM SEAT NO.
90382

STAMP:
SIGN:

Thesis Project

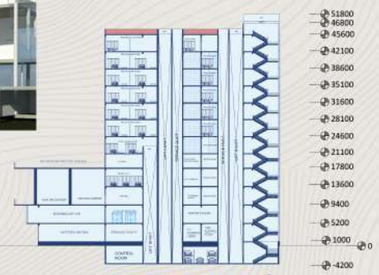
Semester 10

5th Year Academic Work (2024-25)



MASTER PLAN (1:500)

SITE PLAN (1:500)



SECTION B-B' (1:250)

WEST ELEVATION (1:250)

EAST ELEVATION(1:250)

SECTION A-A' (1:250)

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Semester 10

5th Year Academic Work (2024-25)

FLOOR PLANS (BASEMENT TO SEVENTH FLOOR)

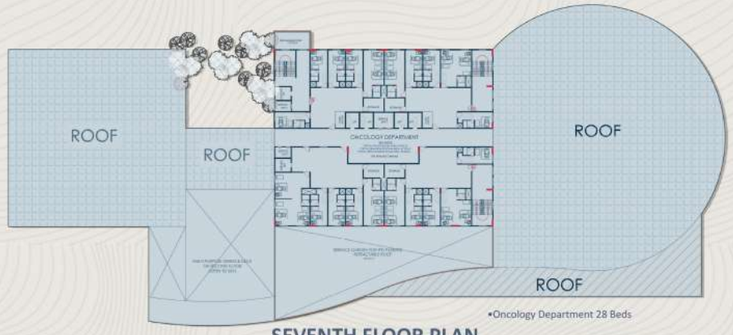
SCALE (1:250)

FIRST FLOOR PLAN
+5200MM

- Diagnostics & Labs
- OPD
- Seminar Hall

FOURTH FLOOR PLAN
+17800MM

- Doctor & Nurse Lounge (Indoor & Outdoor)
- Kitchen + Cafeteria

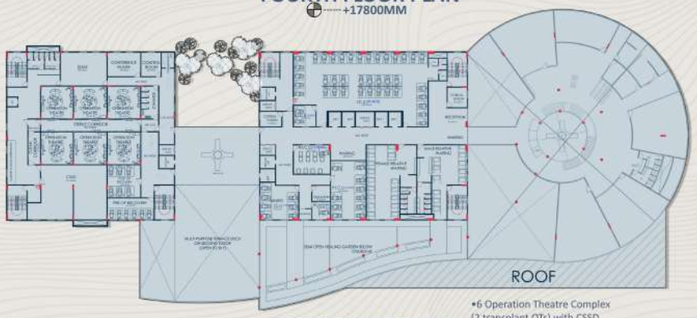


SEVENTH FLOOR PLAN
+28100MM

- Oncology Department 28 Beds

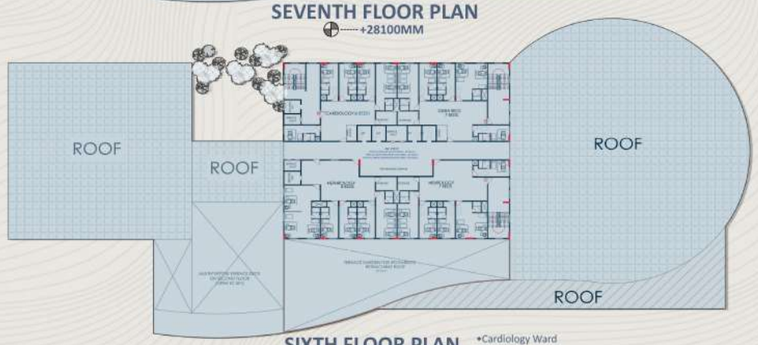
GROUND FLOOR PLAN
+1000MM

- Emergency Department
- OPD
- Diagnostics
- Arcade



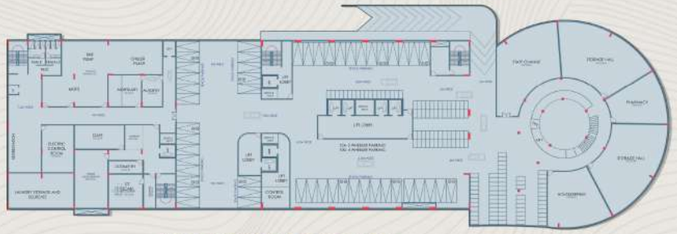
THIRD FLOOR PLAN
+13600MM

- 6 Operation Theatre Complex (2 transplant OTs) with CSSD
- ICU Complex
- Relative Resting Area



SIXTH FLOOR PLAN
+24600MM

- Cardiology Ward
- Neaurology Ward
- Nephrology Ward
- Geriatrics Ward

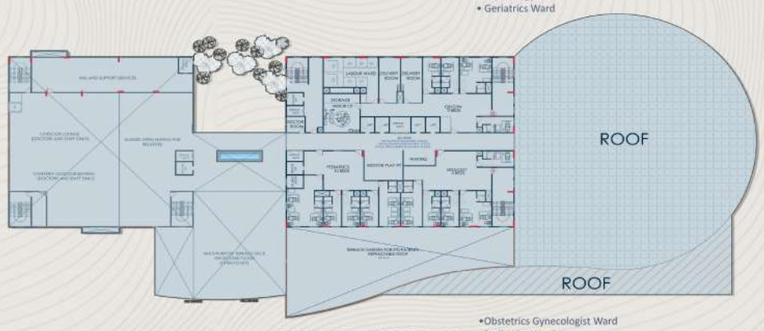


BASEMENT FLOOR PLAN
-5200MM

- 134 2 wheeler parking
- 100- 4 Wheeler Parking
- All Parkings are double-mechanical stack.
- Parking only for Doctors and Staff

SECOND FLOOR PLAN
+9400MM

- 123 Bedded General Ward
- Relative Resting Area
- Administration



FIFTH FLOOR PLAN
+21100MM

- Obstetrics Gynecologist Ward
- Pediatrics Ward
- Urology Department

REDEVELOPMENT OF MbPT HOSPITAL WADALA WITH PROVISION OF MULTISPECIALITY SERVICES

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03

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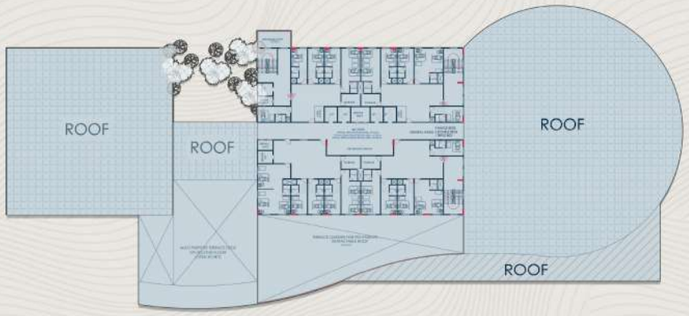
Thesis Project

Semester 10

5th Year Academic Work (2024-25)

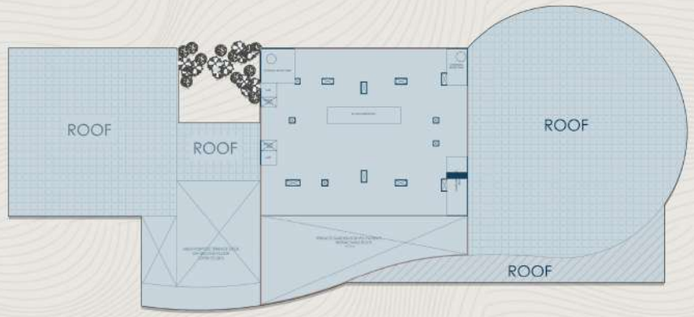
SCALE (1:250)

FLOOR PLANS (EIGHTH TO TERRACE FLOOR)



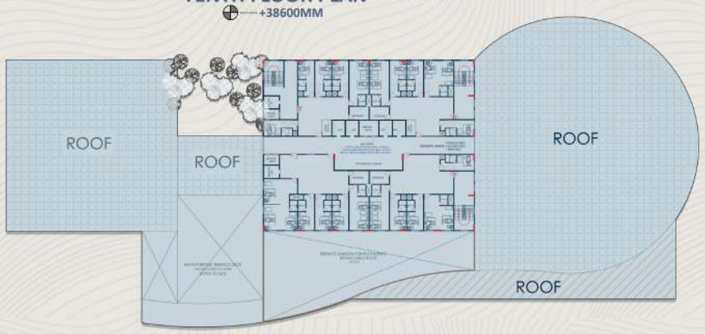
TENTH FLOOR PLAN • General Ward

+38600MM



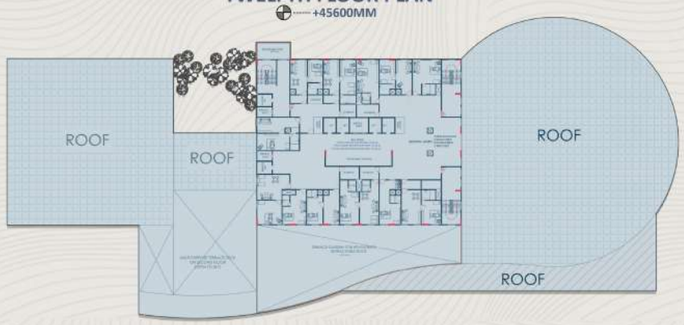
TWELFTH FLOOR PLAN

+45600MM



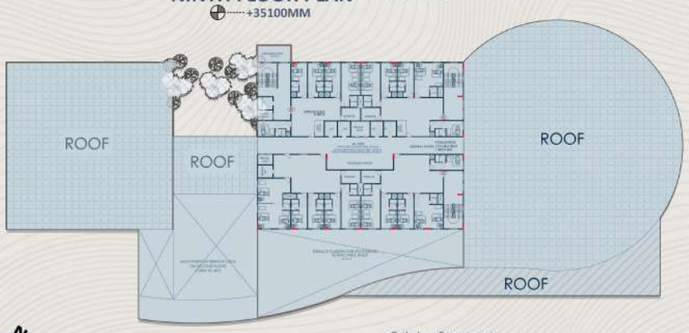
NINTH FLOOR PLAN • General Ward

+35100MM



ELEVENTH FLOOR PLAN • Private Suites

+42100MM



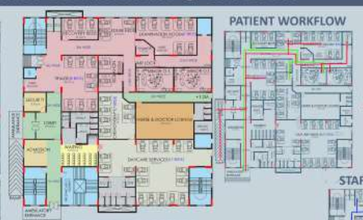
EIGHTH FLOOR PLAN

+31600MM

•Orthology Department
• General Ward

EMERGENCY DEPARTMENT @ Gr FLOOR

BLOWN UP PLAN (1:5)



PATIENT WORKFLOW

PATIENT OUT FLOW

PATIENT IN-FLOW

DEPARTMENT LEGENDS

LEGENDS

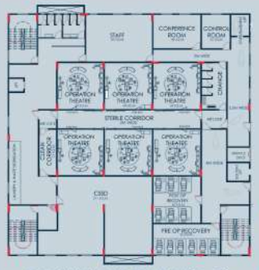
- CORRIDORS
- STAFF AREA (RESTRICTED)
- PATIENT TREATMENT AREA
- VERTICAL TRANSPORT
- VISITORS
- EMERGENCY DEPT

BED DISTRIBUTION

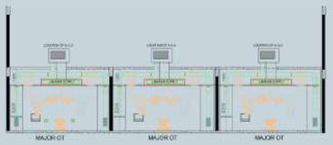
- •TRIAGE- 8BEDS
- •PROCEDURE - 3 BEDS
- •EXAMINATION - 7 BEDS
- •RECOVERY- 3 BEDS
- •ISOLATION - 2BEDS

STAFF WORKFLOW

OPERATION THEATRE @ 3rd FLOOR



BLOWN UP PLAN (1:5)



SECTION SHOWING AHU ABOVE OT FLOOR

DEPARTMENT LEGENDS

AXONOMETRIC VIEW OF OR

PATIENT WORKFLOW

LEGENDS

- CORRIDORS
- STAFF AREA (RESTRICTED)
- PATIENT TREATMENT AREA
- VERTICAL TRANSPORT
- PATIENT IN-FLOW
- PATIENT OUT-FLOW
- STAFF FLOW
- MATERIAL IN FLOW
- MATERIAL OUT FLOW

STAFF WORKFLOW

MATERIAL WORKFLOW

CSSD WORKING

INTENSIVE CARE WARD @ 3rd FLOOR

BLOWN UP PLAN (1:5)

DEPARTMENT LEGENDS

LEGENDS

- CORRIDORS
- STAFF AREA (RESTRICTED)
- PATIENT TREATMENT AREA
- VERTICAL TRANSPORT
- VISITORS
- PATIENT IN-FLOW
- PATIENT OUT-FLOW
- STAFF FLOW
- MATERIAL IN FLOW
- MATERIAL OUT FLOW

BED DISTRIBUTION

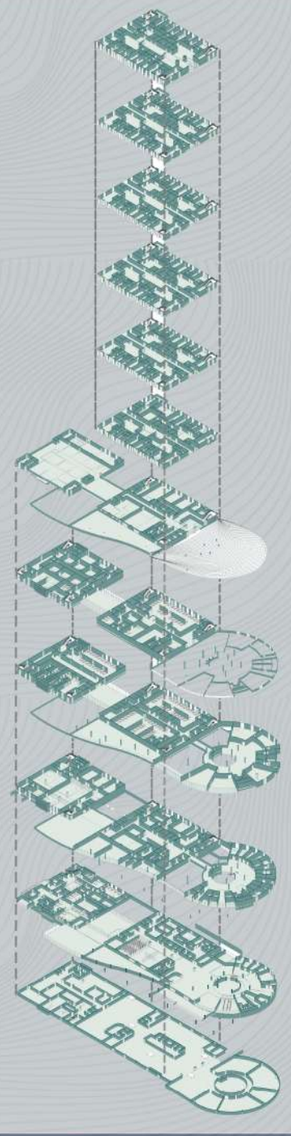
- •GENERAL I.C.U.- 39 BEDS
- •N.I.C.U. - 12 BEDS
- •P.I.C.U. - 10 BEDS
- •NEURO - 7 BEDS
- •ISOLATION - 28EDS
- •B.I.C.U - 2 BEDS

PATIENT WORKFLOW

STAFF WORKFLOW

MATERIAL WORKFLOW

EXPLODED VIEW



REDEVELOPMENT OF MbPT HOSPITAL WADALA WITH PROVISION OF MULTISPECIALITY SERVICES

VASANTDADA PATIL PRATHISTHAN'S
MANOHAR PHALKE COLLEGE OF ARCHITECTURE

KETKI SANJAY NALAWADE
B.ARCH SEMESTER- X DD2

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04

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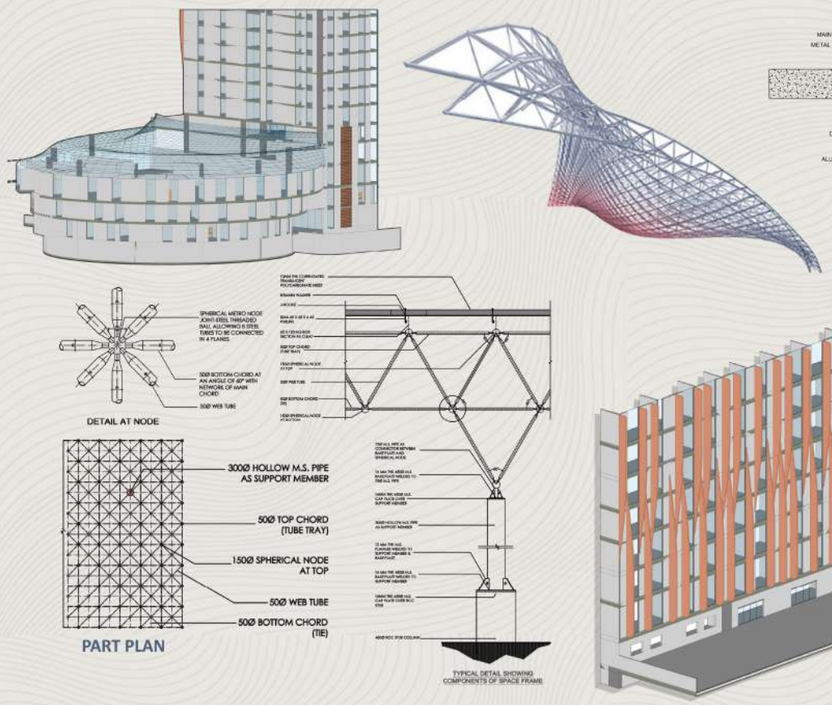
Thesis Project

Semester 10

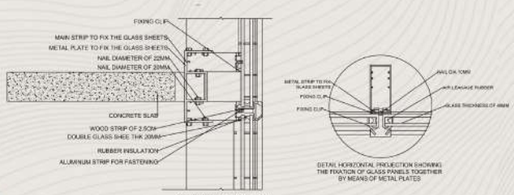
5th Year Academic Work (2024-25)

CONSTRUCTION

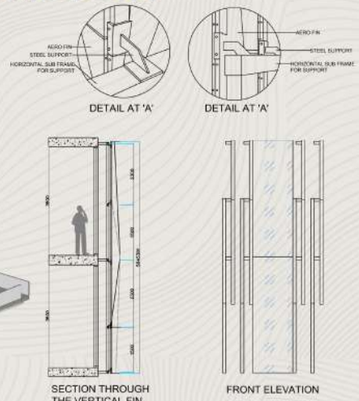
FREEFORM ROOF IN SPACE FRAME



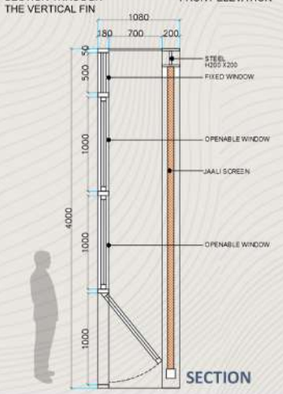
CURTAIN WALL DETAILS



VERTICAL FINS DETAIL



JAALI WALL DETAIL



ENVIRONMENTAL STUDIES & SERVICES

FOOTFALL

Admin Department	Count
Admin Staff	100
Visitors (patients, vendors, officials, staff interactions)	200
Total Footfall	300

OPD Block	OPD Rooms	Number of People per day
OPD Patients (Consultation + Diagnostic)	48	624
OPD Relatives (Avg. 1.2 per patient)		865
Diagnostic Only Patients (0% of OPD Patients)		0
Diagnostic Only Relatives (1 per patient)		98
Physical Therapy Patients		48
Physical Therapy Relatives		48
Doctors (24 OPD rooms x 3 per day)	24	72
Nurses (24 OPD rooms x 2 per day)	24	52
Ground Floor Staff		25
Admin Department Staff		300
Total OPD Block Footfall		**2427**

IPD, ER	Beds	Patients per Day	Nurse Ratio	Nurses per Day	Visitors per	Total Visitors	Total Footfall
General Ward	143	143	1:6	24	2	286	453
Private Rooms	66	66	1:2	33	3	198	297
Double Sharing	35	70	1:4	18	2	140	228
Triple Sharing	8	24	1:6	8	2	48	78
ICU	72	72	1:3	75	1	72	219
Emergency (ER)	19	19	1:3	7	2	38	64
Total	**343**	**393**	—	**161**	—	**783**	**1339**

Blocks	Total Footfall Per Day
OPD Block (including Patients, Relatives, Doctors, Nurses, Admin Staff)	2495
IPD Block (including Patients, Relatives, Nurses)	1339
Conference, Seminar & Meeting Rooms	381
Diagnostic Department (Patients, Relatives, Staff)	295
CSSD Staff across 3 shifts	300
Housekeeping & Maintenance	130
Mortuary (Deceased Patients, Relatives, Staff)	51
Hospital Management & Admin	120
Total Daily Footfall for Hospital	**4530**

DAILY FOOTFALL- 4530 persons

WATER CALCULATION

Category	Total Footfall per day	Water Consumption per Person per day (L)	Total Water Requirement (L)
Inpatients (IPD patients)	343	300	102900
Visitors (for Emergency)	19	300	5700
Visitors (for IPD)	72	30	2160
Visitors (for OPD)	111	30	3330
OPD Patients (Consultation + Diagnostic)	673	30	20190
OPD Patients Relatives (Avg. 1.2 per patient)	963	15	14445
Doctors (24 OPD rooms x 3 per day)	72	30	2160
Nurses (24 OPD rooms x 2 per day)	52	30	1560
Ground Floor Staff	25	30	750
Admin Department Staff	300	30	9000
Staff at Ground Floor	25	30	750
Staff at Upper Floors	161	30	4830
CSSD Ground Floor Staffs	18	150	2700
Staffs	18	150	2700
Hospital Maintenance	25	30	750
Housekeeping Services & Admin	250	30	7500
Canteen & Kitchen	1500	25	37500
Grand Total	**3877**	**677**	**208835**

Total Water Requirement day	208835	Litres	
Volume of Underground Tank	104418	Cubic Meter	
Length (L) = 1.5 x breadth (b), height (h) = 1.5			
L =	12.49	= 1.5 x L x B	
b =	8.32	= 18.72	
h =	7.49	= 18.72	
Volume of the Tank =	1.5 x L x B x H		
Length (L) = 1.5 x breadth (b), height (h) = 1.5			
L =	12.49	= 1.5 x L x B	
b =	8.32	= 18.72	
h =	7.49	= 18.72	
Volume of the Tank =	1.5 x L x B x H		
L =	8.7	30	
b =	5.8	30	
Fire Tank size (m)	**8.7**	**5.8**	**5.8**

FIRE TANK CALCULATION

No. of people	14100	
Water per person	5	
Liters of water needed	5x14100	70500
	70500	
	70.5	Cubic meter
Volume of the Tank =	1.5x70500	Cubic meter
Length (L) = 1.5 x breadth (b), height (h) = 1.5		
L =	12.49	= 1.5 x L x B
b =	8.32	= 18.72
h =	7.49	= 18.72
L =	8.7	30
b =	5.8	30
Fire Tank size (m)	**8.7**	**5.8**

WASTE CALCULATION

WASTE DESCRIPTION					
Food Waste (Kitchen)					
Kitchen Vegetable Waste					
Food Waste					
Food Waste					
Toiletries Waste					
Paper Waste					
Plastic Waste					
Medical Waste					
Waste No. of people/Bed					
Average waste per person (kg/day)	0.1				1kg
Medical Waste	0.5				
	0.5	500	0.5		
500	0.5	500	0.5		
500	0.5	500	0.5		
500

Social Sports Club Design

Semester 9 Architecture Design Studio

5th Year Academic Work (2024-25)

PRIMUS
SOCIAL SPORTS CLUB

DESIGN BRIEF

- Design a Social cum Sports Club at the Eastern Waterfront, P. Demmelo Road, Mumbai, on a 27,866 sq.m. site.
- The club should cater to all age groups and interest groups, focusing on sports, hospitality, and entertainment.
- Incorporate flexible and functional spaces for various activities, including sports facilities, recreation areas, and social spaces.
- Ensure universal design principles and environmental sustainability in the architectural approach.
- Consider the waterfront location and integrate the design with the surrounding urban context and transportation networks.
- Provide amenities such as sports courts, gym, swimming pool, restaurant, banquet hall, and accommodation suites.

LOCATION

MPT, Sewri, Mumbai, Maharashtra 400015

SITE

-Total area: 27,866sqm.
-The site has views of the Arabian Sea from two ends.
-Road Access from three Directions

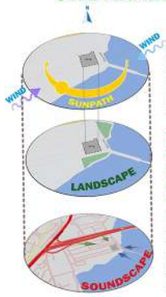
CLIMATE ANALYSIS

- SUMMER: MARCH TO MAY (93°F/34°C)
- WINTER: DECEMBER TO FEBRUARY (64°F/18°C)
- MONSOON: JUNE TO SEPTEMBER

MONTHLY CLIMATE DATA-

- HOTTEST MONTH: MAY (95°F/35°C)
- COLDEST MONTH: JANUARY (58°F/14°C)
- WETTEST MONTH: JULY (23.6 INCHES/599 MM)
- AVERAGE ANNUAL RAINFALL: 83.2

SITE ANALYSIS

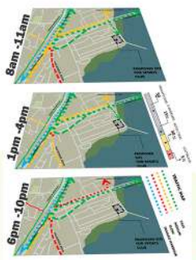


Optimize Ventilation and Passive Cooling: Orient buildings to capture prevailing southwest winds and design for cross-ventilation using operable windows, enhancing natural ventilation and indoor air quality.

Efficient Use of Natural Light: Orient spaces along the east-west axis with large windows to maximize daylight, reducing reliance on artificial lighting and improving energy efficiency.

Mitigate Solar Heat Gain: Install shading devices on southern facades, use reflective materials to reduce heat absorption, and plant deciduous trees for seasonal shading and thermal comfort.

TRAFFIC MAP



SOIL ANALYSIS

SOIL TYPE

THE PREDOMINANT SOIL COVER IN MUMBAI CITY IS SANDY WHEREAS IN THE SUBURBAN DISTRICT, THE SOIL COVER IS ALLUVIAL AND LOAMY.

TOPOGRAPHY

THE SITE TOPOGRAPHY INVOLVES MUDFLATS ON BOTH SIDE OF THE SITE SUCH AS WEST AND SOUTH SIDE OF THE SITE.

MUDFLATS LOCATION: IT IS LOCATED APPROX. 50-60M AWAY FROM THE

SWOT ANALYSIS

S
- GOOD CONNECTIVITY AND ACCESSIBILITY
- FLAMINGO POINT (150 m)
- MANGROOVE (50 – 60 m)

W
- AIR POLLUTION
- NOISE POLLUTION
- POOR INFRASTRUCTURE

O
- FUTURE/WATER FRONT DEVELOPMENT
- JOB OPPURTUNITY FOR LOCAL COMMUNITY

T
- DESERTED AREA

ACCESSIBILITY

- Sewdi Railway Station
- Cottongreen Railway Station
- Session Court Bus Stop
- Gaadi Adda Bus Stop
- Ambedkar Nagar Monorail Station
- Atal Setu MTHL Eastern Freeway

DESIGN INTRODUCTION

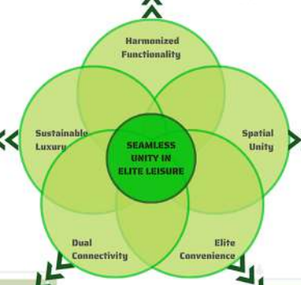
"Primus" is an exclusive luxury social sports club, seamlessly integrating three distinct buildings - Social, Admin, and Sports - to create a unique and indulgent experience. By consolidating exceptional amenities in close proximity, Primus eliminates lengthy walks, allowing members to effortlessly transition between fine dining, state-of-the-art fitness, and high-energy sports, all within the comfort and exclusivity of a private club. This thoughtful design fosters a vibrant community where members connect, unwind, and pursue passions in style and luxury.

DESIGN CONCEPT

"Seamless Unity in Elite Leisure" is all about creating a harmonious blend of social and recreational spaces where elite club members can enjoy their time together. The design encourages easy movement between indoor and outdoor areas, fostering a welcoming sense of community while maintaining an atmosphere of exclusivity.

The V-shaped design unites the social, sports, and administration areas, ensuring smooth transitions between spaces for the elite clientele. A central pathway with vertical gardens connects these areas, blending nature, leisure, and exclusivity.

The vertical gardens along the pathways not only enhance the club's aesthetic appeal but also promote sustainability.
This design reflects an elite, eco-conscious lifestyle, combining luxury with environmental responsibility. The greenery provides a refreshing, calming atmosphere while supporting the club's commitment to sustainability.

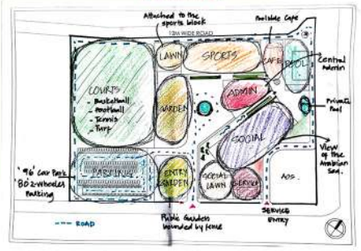


The design positions the buildings as a unified structure, avoiding the fragmentation typical of large facilities. This layout enhances functional efficiency and creates a seamless experience for users moving between activities.

Centralizing indoor activities caters to the elite members' lifestyle, reducing long-distance movement while providing a wide range of amenities nearby. Meanwhile, outdoor activities are distributed across the site, offering open-air recreation while preserving privacy and exclusivity.

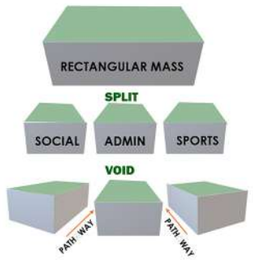
The social building faces the Arabian Sea, maximizing scenic views to enhance the leisure experience, while the sports building connects directly to the road, ensuring easy access for members and services. This placement balances relaxation and active participation.

ZONING

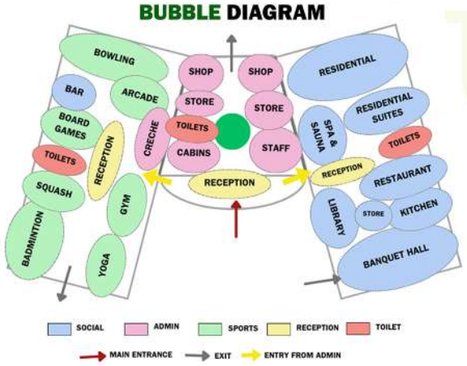


Zoning in this social sports club divides the space into three main buildings—social, sports, and admin—arranged in a V-shape for efficient flow and access. Public activities are centralized, while outdoor sports are spread across the site for a seamless connection between social and recreational areas.

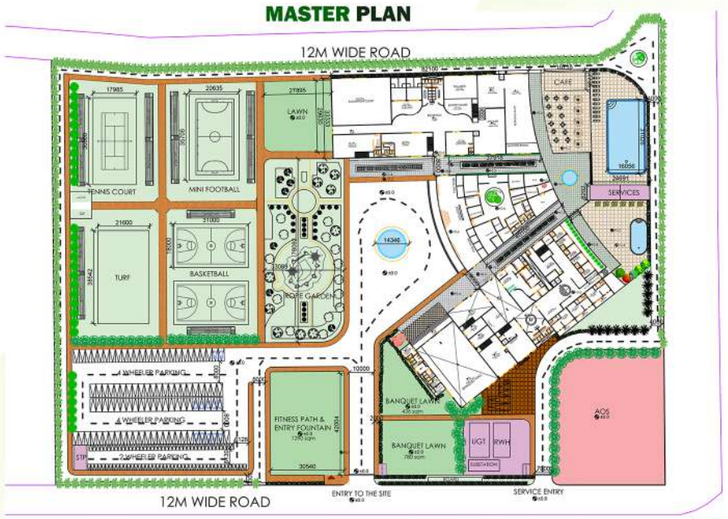
DESIGN DEVELOPMENT



BUBBLE DIAGRAM



MASTER PLAN



SECTION A-A'

EAST ELEVATION

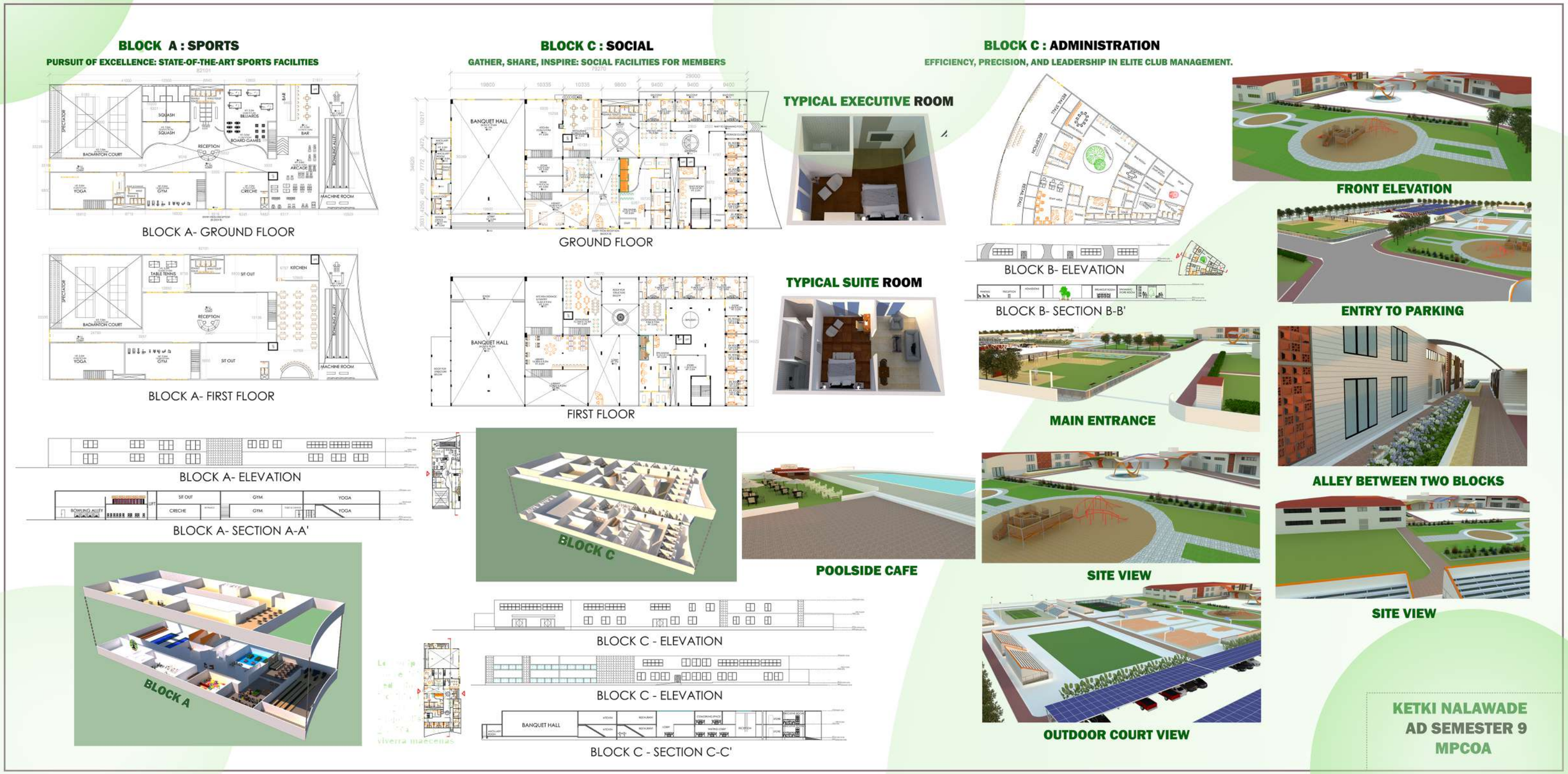
WEST ELEVATION

SECTION B-B'

ROOF PLAN

KETKI NALAWADE
AD SEMESTER 9
MPCOA

Continued...

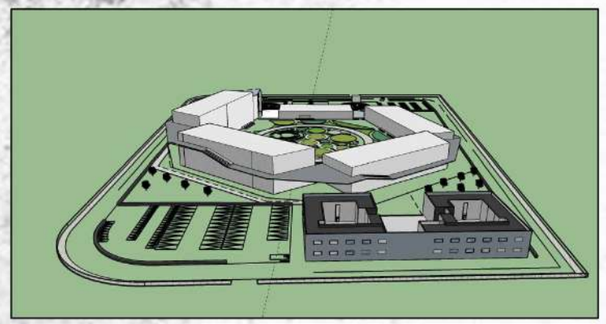


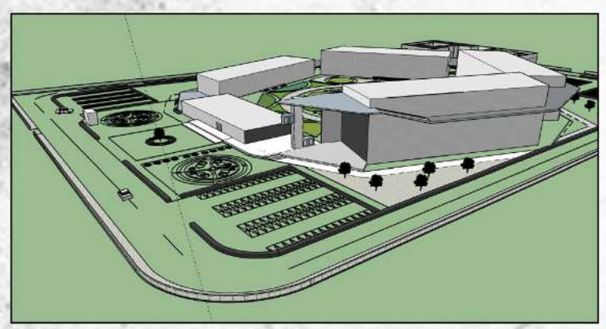
The brief for Semester 9 Architecture design studio was to create an Elite sports club with Social activities. The site was located along the shore of mumbai. The main challenges like zoning and integrating green features were tackled by using vertical gardens and thoughtful pathways, ensuring a welcoming, cohesive space. Primus is a social sports club designed to bring people together in a seamless and sustainable way

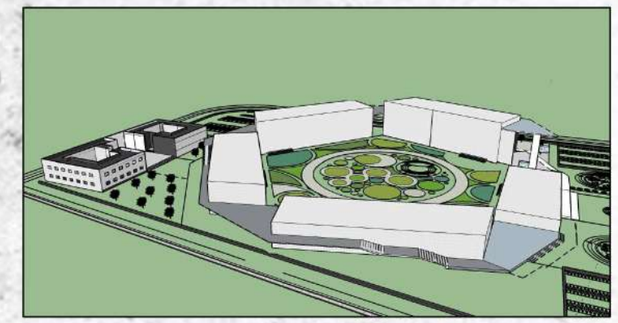
Studio Head: Ar. Ranjeeta Potpose (HOD)

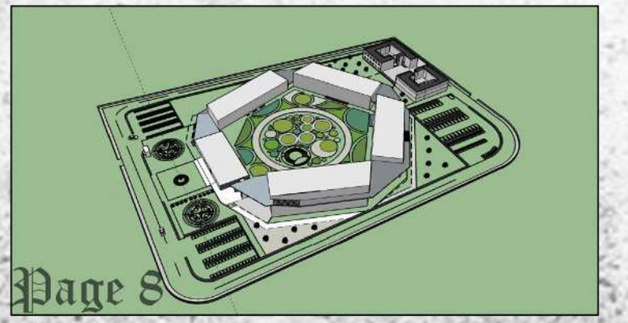
Educational Institute Design

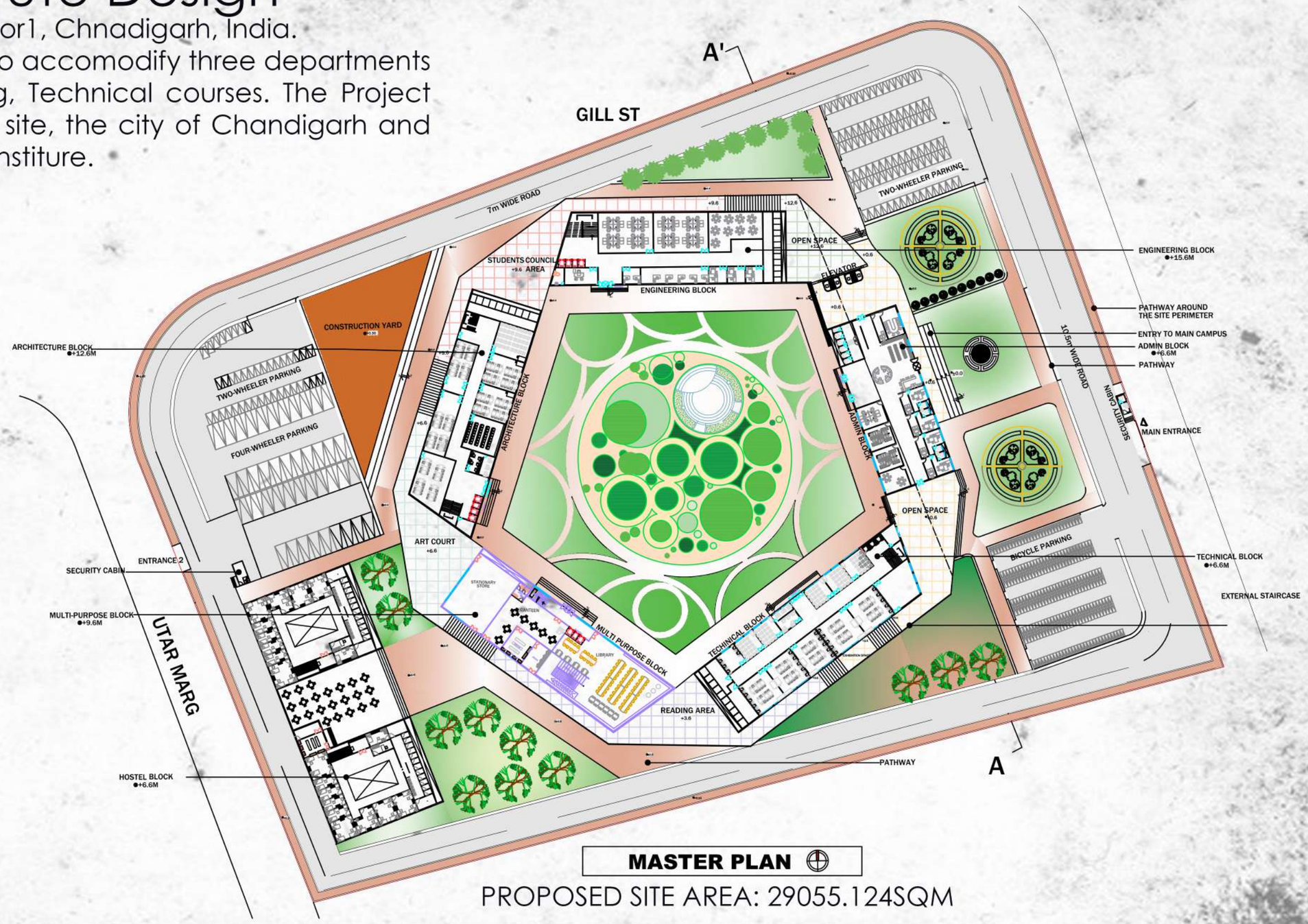
PROJECT BRIEF: Site location: Sector1, Chnadigarh, India.
This education institue demands to accomodify three departments namely Architecture, Enginnering, Technical courses. The Project demands to prove justice to the site, the city of Chandigarh and requiremnets of the Educational Institure.





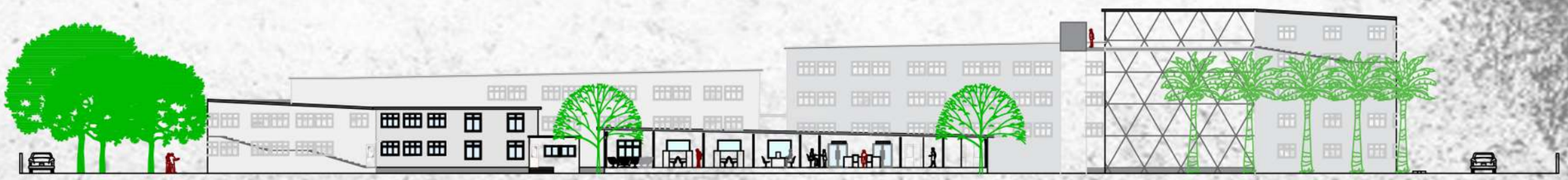






MASTER PLAN

PROPOSED SITE AREA: 29055.124SQM



SITE SECTION A - A'

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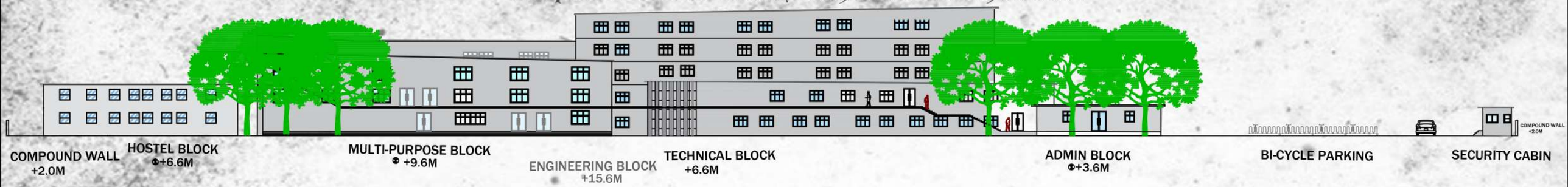
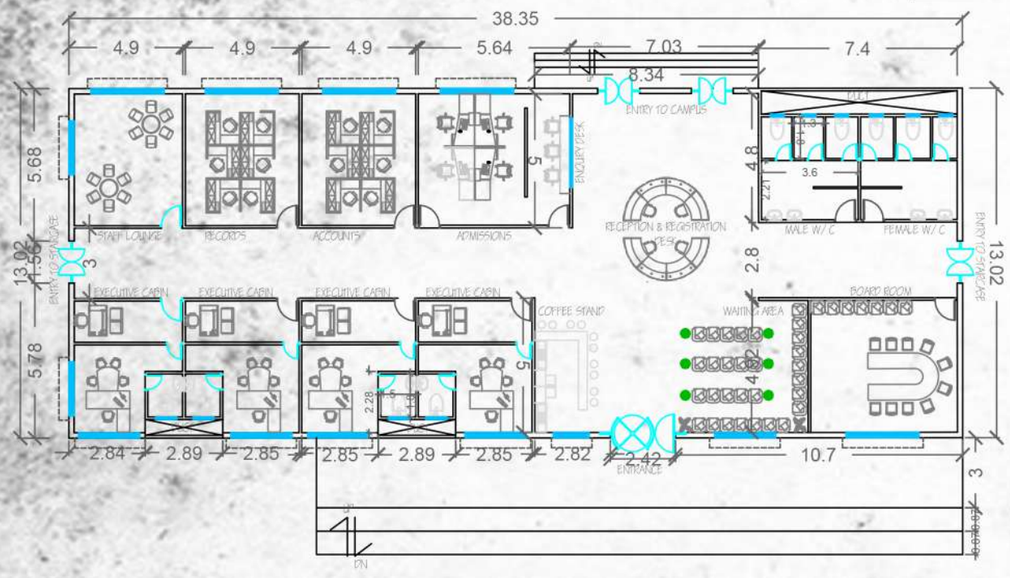
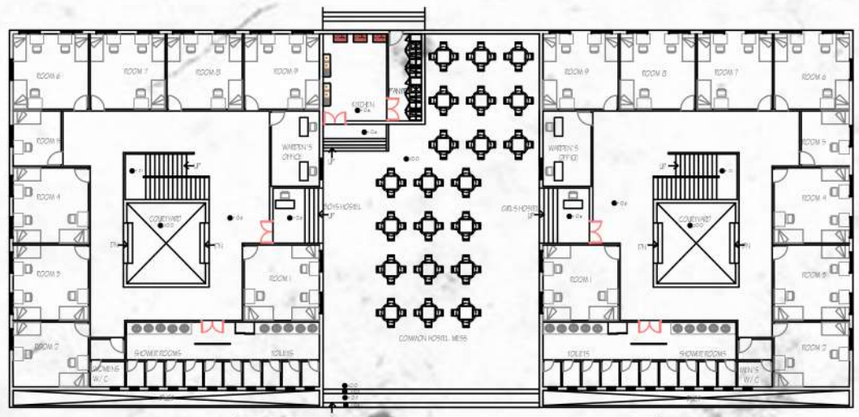


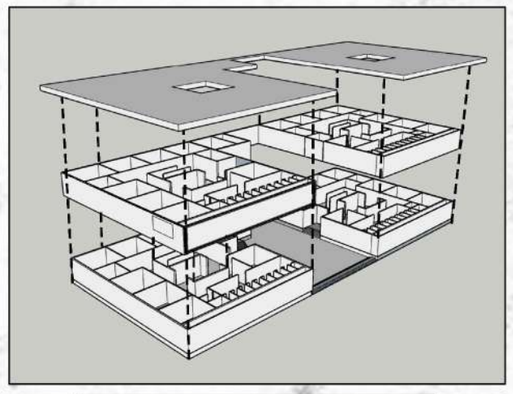
SOUTHSIDE SITE ELEVATION



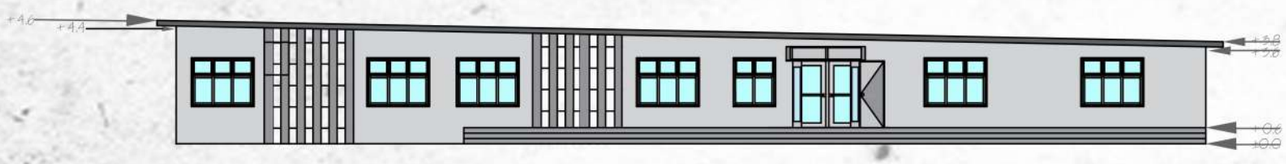
ADMIN BLOCK PLAN



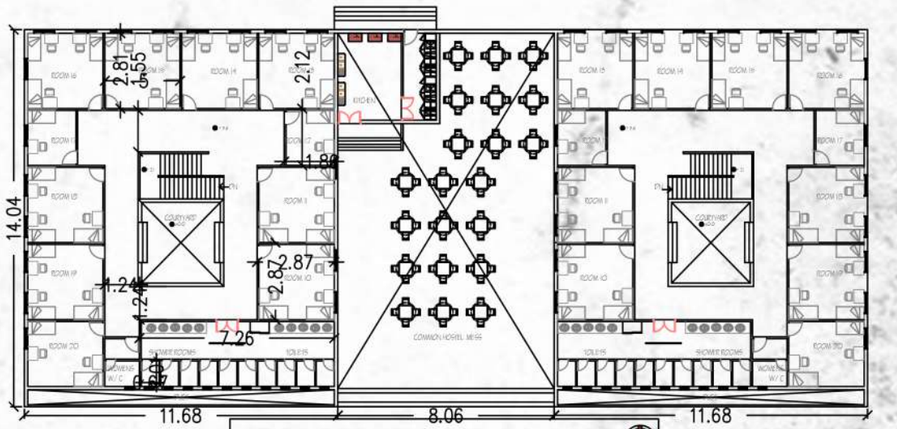
GROUND FLOOR PLAN



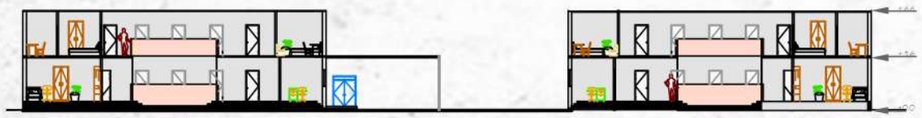
ISOMETRIC VIEW



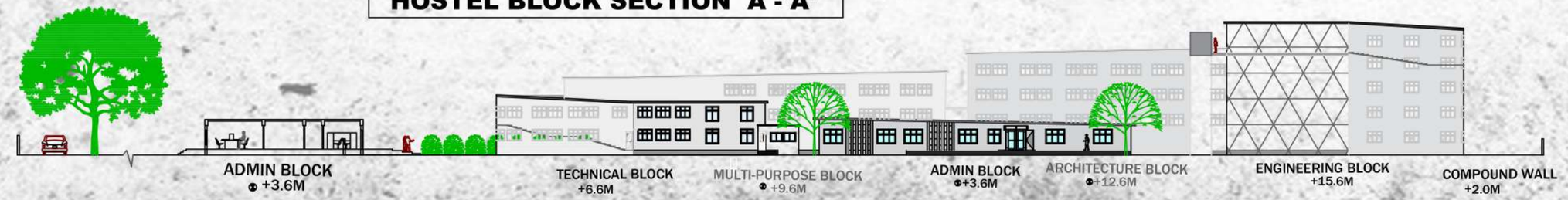
EAST ELEVATION FOR ADMIN BLOCK



FIRST FLOOR PLAN



HOSTEL BLOCK SECTION A - A'



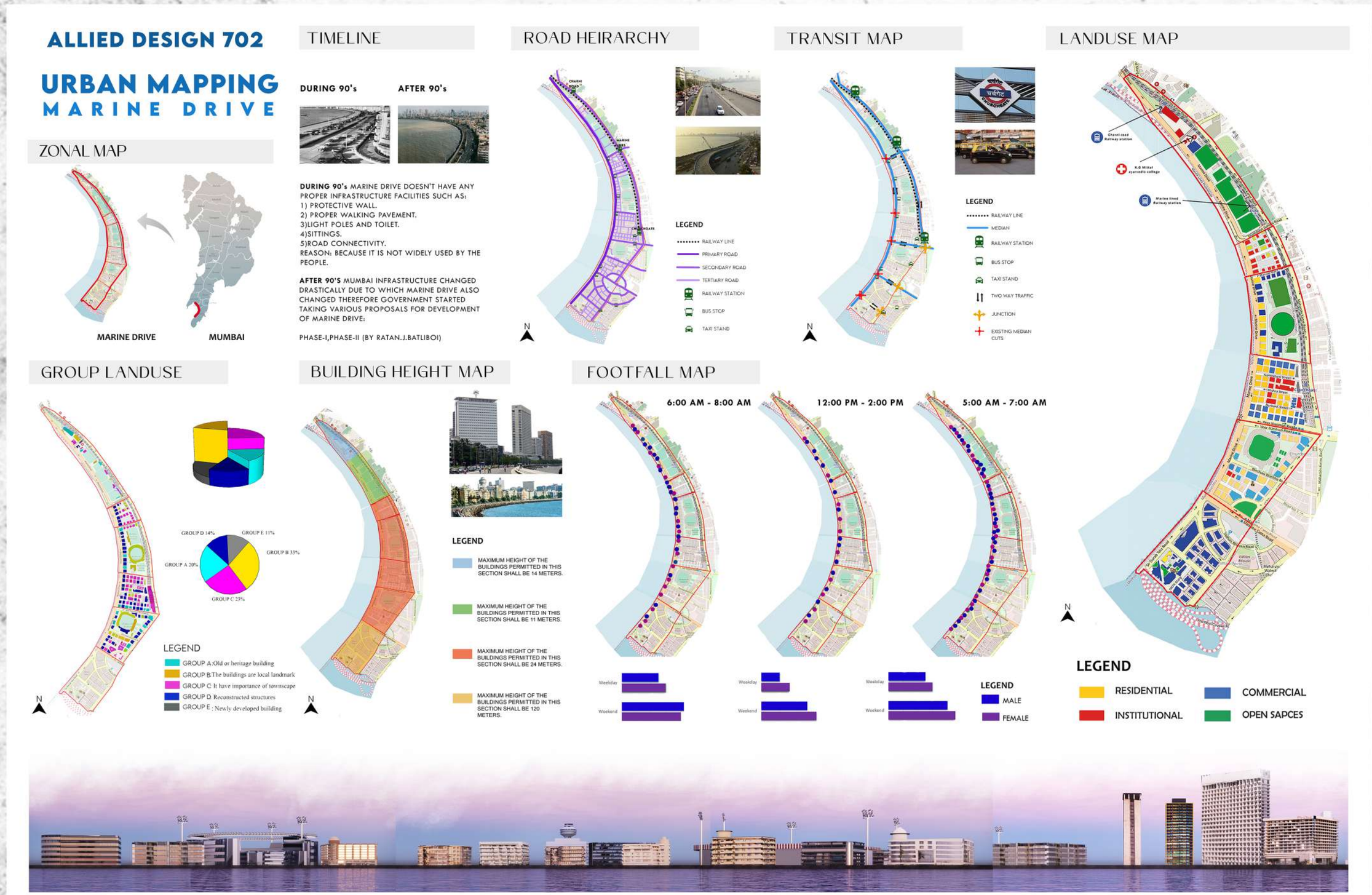
SITE ELEVATION

Studio Head: Ar. Yogesh Dhage

Urban Mapping of Marine Drive, Mumbai

Semester 7 Alied Design Studio

4th Year Academic Work (2023-24)



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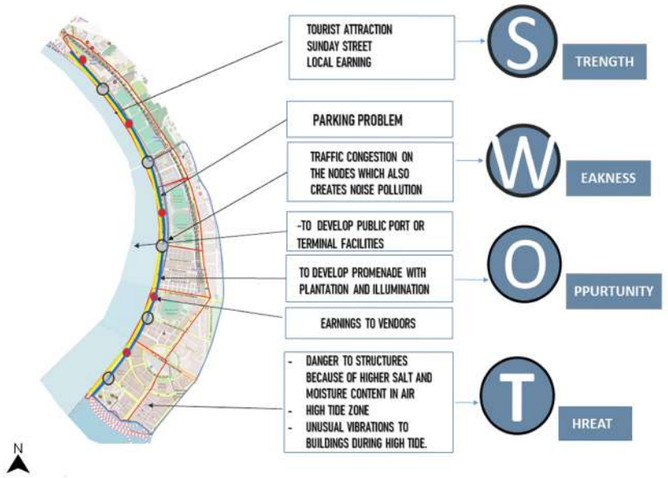
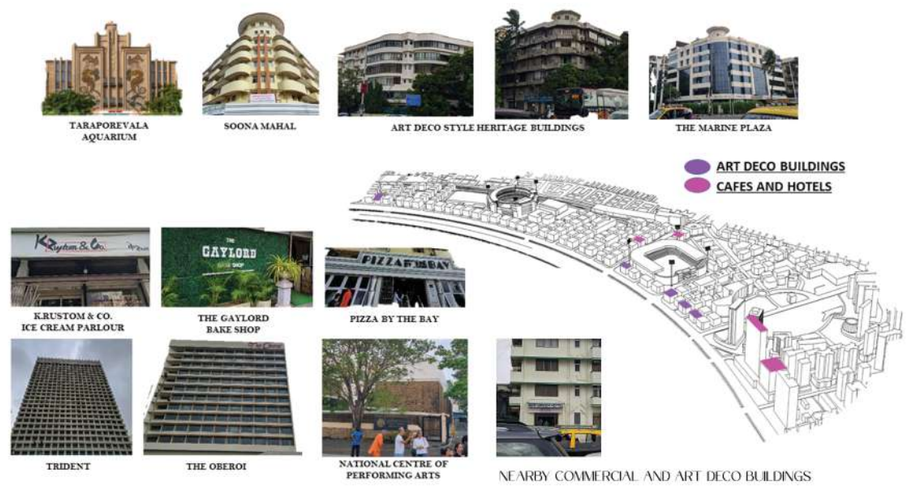
SWOT ANALYSIS



ARCHITECTURAL STYLES



STREET FURNITURE & ACTIVITIES

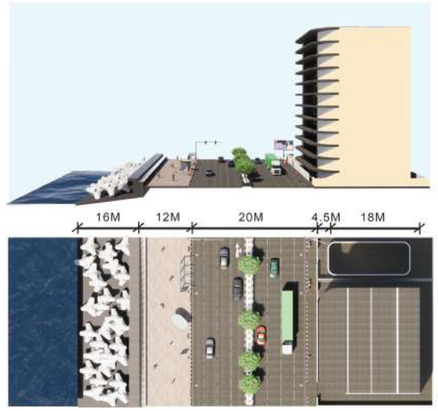
STREET SECTIONS

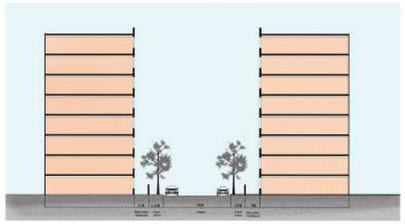
TETRAPOD STONES

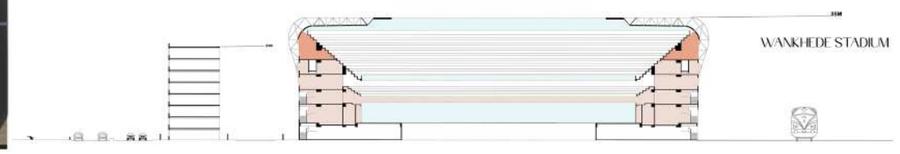
THE PURPOSE OF A TETRAPOD: A TETRAPOD IS A FORM OF WAVE-DISSIPATING CONCRETE BLOCK USED TO PREVENT EROSION CAUSED BY WEATHER AND LONGSHORE DRIFT, PRIMARILY TO ENFORCE COASTAL STRUCTURES SUCH AS SEAWALLS AND BREAKWATERS.

MATERIAL :TRADITIONAL CONCRETE BLOCKS

A SEA WALL FROM NARIMAN POINT TO CHOWPATTY, MUMBAI, WAS CONSTRUCTED IN 1920 AS A RETAINING WALL FOR THE RECLAMATION AS WELL AS TO PROTECT THE PROMONENADE AND A MAIN ROAD PROVIDED ON THE RECLAMATION.







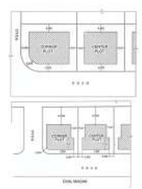
RULES AND REGULATIONS (DCPR 2034)

SR. NO	AREAS	ZONE	ROAD WIDTH	ZONAL (BASIC)	ADDITIONAL FSI	ADMISSIBLE TDR	PERMISSIBLE FSI
1	ISLAND CITY	RESIDENTIAL / COMMERTIAL	LESS THAN 9M	1.33	-	-	1.33
			9M T0 12 M	1.33	0.5	0.17	2.0
			12M TO 18M	1.33	0.62	0.45	2.4
			18M TO 27M	1.33	0.73	0.64	2.7
			27M AND ABOVE	1.33	0.84	0.83	3.0
		INDUSTRIAL	-	1.0	-	-	1.0

FRONT SET BACK :

Sr. no.	LOCATION OF PLOT	RESIDENTIAL ZONE (M)	COMMERTIAL ZONE (M)	INDUSTRIAL ZONE (M)
1.	ISLAND CITY			
	(AREA LOCATED IN)	3.0	4.5	-
	(AREA LOCATED AWAY)	4.5	4.5	4.5

	Front open space	Side open space	Rare open space
For buildings in sub-precinct 2	6M	6M	6M
Buildings in Maharshi Karve road	3.3M	3.3 TO 6.6 M	15 M



FUTURE PROPOSAL

EXECUTED WORKS

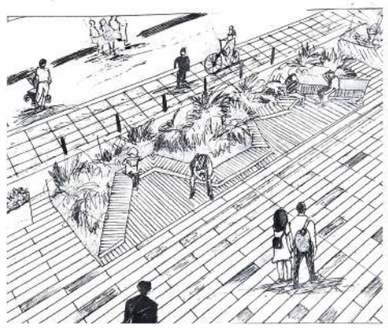
MEDIAN BETWEEN THE HIGHWAY OF MARINE DRIVE

- THE MEDIANS ARE USED TO DIVIDE THE ROAD TO PROTECT FROM THE MAJOR ACCIDENTS.
- HEIGHT: APPROXMATELY 0.5M.
- ELEMENTS USED: PLANTS AND BUSHES
- MADE UP-OF: CONCRETE
- LIGHT POLES AND SIGNAGES ARE LOCATED AT THE MEDIAN.

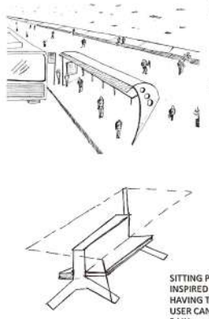
CARRIAGE-WAY PARKING AT MARINE DRIVE APPROX-3M WIDE

SITTINGS AT MARINE DRIVE

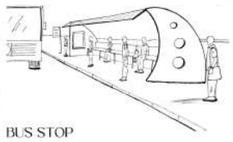
PROPOSED DESIGN



LANDSCAPING



FURNITURE



BUS STOP

EVER PUBLIC SPACE MUST BE DESIGNED BY KEEPING WOMEN IN MIND , THIS IS THE DESIGN PROPOSAL FOR BREAST FEEDING AND CHANGING AREA FOR CHILDREN.
HAVING TRANSPARENCY FROM INSIDE AND SITTINGS EITHER SIDE SO IT CAN BE FOR 2 PURPOSE.

SITTING PROVIDED FOR USERS WHICH IS INSPIRED BY THE TRIDENT .
HAVING TRANSPARENT ROOF ABOVE SO THAT USER CAN SIT AND ENJOY THE VIEW DURING RAIN.
PRIVIDED THERE IS A CHARGING BOARD FACILITY FOR EMERGENCY

SOURCES

- HTTPS://WWW.VEYGO.COM/LEARNER-DRIVER-INSURANCE/GUIDES/BOX-JUNCTIONS/
- HTTPS://MMRDA.MAHARASHTRA.GOV.IN/MARINE-DRIVE
- HTTPS://TIMESOFINDIA.INDIATIMES.COM/CITY/MUMBAI/ALL-YOU-NEED-TO-KNOW-ABOUT-THIS-RS-12700-CRORE-MUMBAI-ROAD-PROJECT/ARTICLESHOW/86473603.CMS
- HTTPS://RJBX.IN/PORTFOLIO/MARINE-DRIVE/
- HTTPS://MAPS-MUMBAI.COM/MARINE-DRIVE-MUMBAI-MAP
- HTTPS://WWW.ARTDECOMUMBAI.COM/RESEARCH/ART-DECO-IN-MUMBAI-THE-OVAL-MARINE-DRIVE/
- HTTPS://WWW.IES.EDU/ARCHITECTURE/2017/08/19/ON-MARIN-DRIVE/

GROUP NO 2 (22 TO 43)

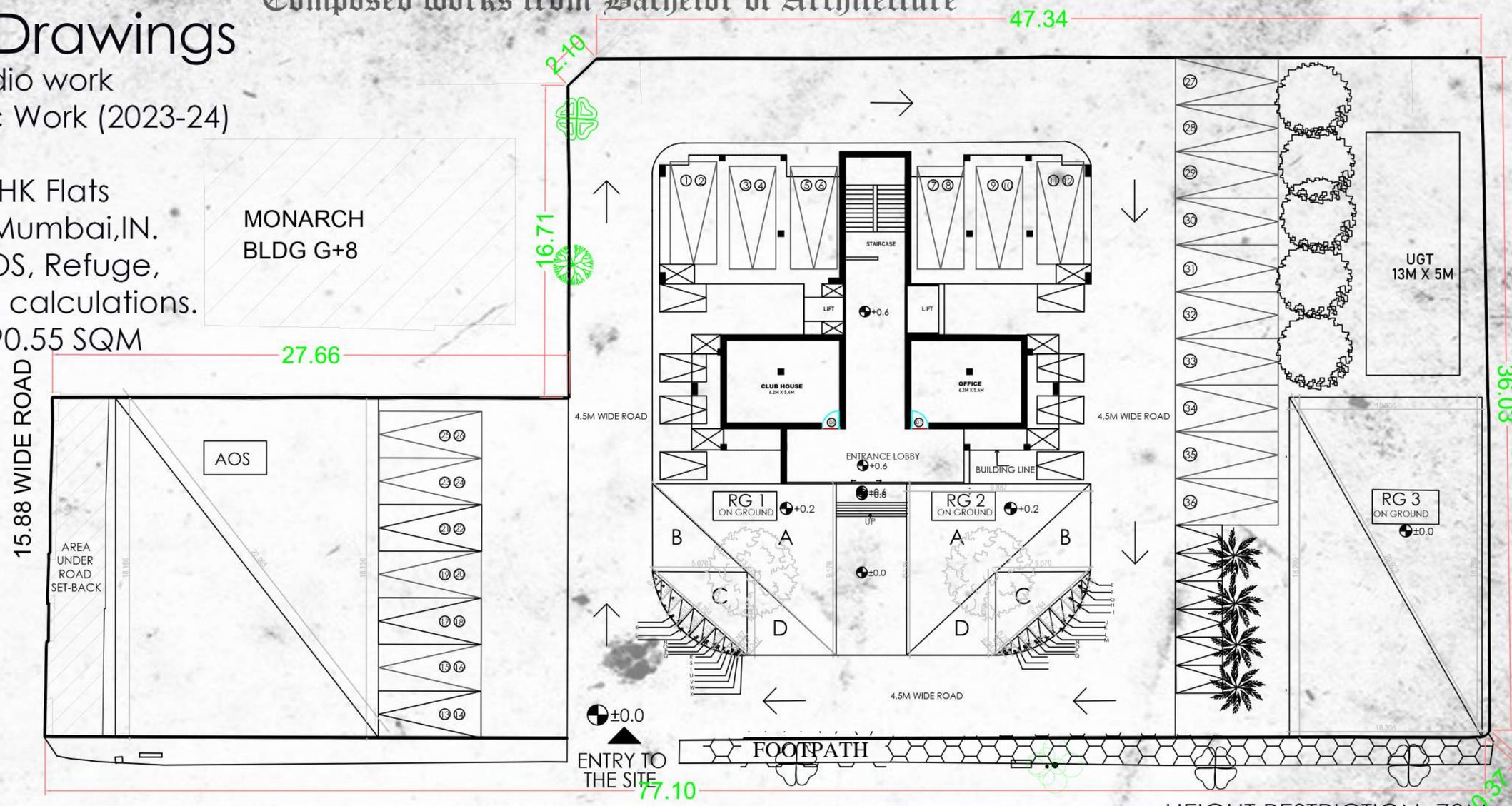
Alied Design Studio Semester 7, Urban Mapping of Marine Drive, Mumbai.
Group Project., Members- Ketki Nalawade,Mandar Sawant,Bhumika Saini, Rohan Katkar, Swati Sinha, Rishika Kakrecha.
Work contribution by Ketki - Site Visit and Case study, Creating a Landuse Map according to the areas, SWOT Analysis, understanding the future proposals, and proposed design sketching.

Studio Head: Ar. Anuradha Deshpande

Municipal Drawings

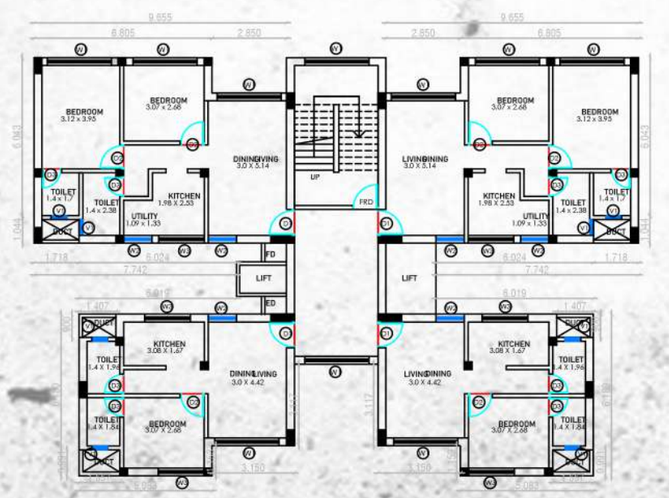
Semester 7 MD Studio work
4th Year Academic Work (2023-24)

Project Brief: 1 & 2BHK Flats
Site: Bandra West, Mumbai,IN.
Considering RG, AOS, Refuge,
BuiltUp and Parking calculations.
Proposed Area: 2290.55 SQM



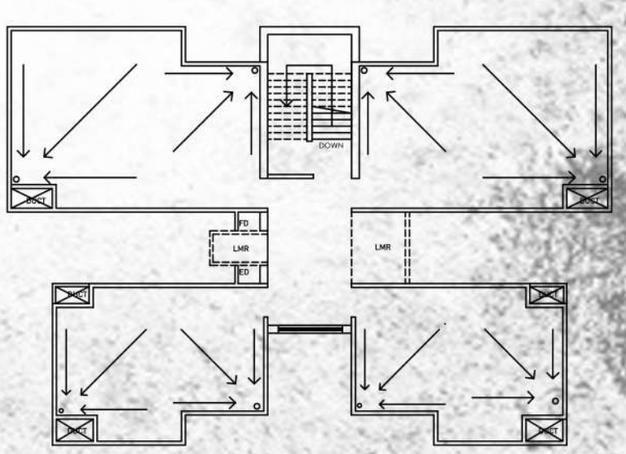
GROUND FLOOR PLAN WITH RG AND AOS

HEIGHT RESTRICTION: 70M
ADMISSIBLE BUA: 6184.49SQM



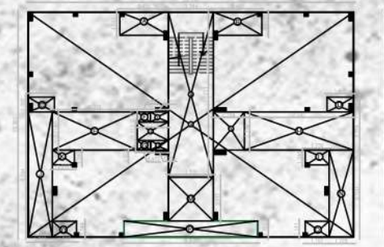
TYPICAL FLOOR PLAN
(1ST TO 6TH, 8TH TO 13TH,15TH TO 18TH)

REFUGE FLOOR PLAN
(7TH FLOOR, 14TH FLOOR)

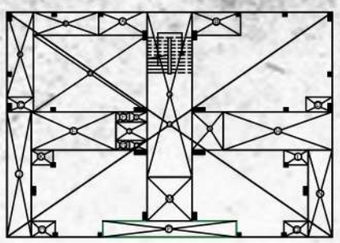


TERRACE FLOOR PLAN

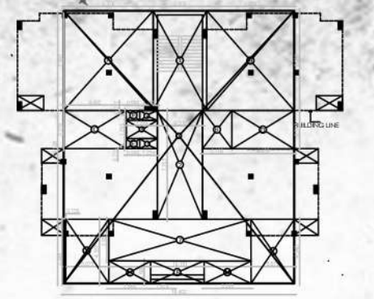
Continued..



TYPICAL FLOOR BUILT UP AREA



REFUGE FLOOR BUILT UP AREA



STILT FLOOR BUILT UP AREA

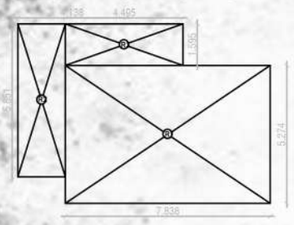
1 BHK UNIT PLAN

CARPET AREA STATEMENT

SR. NO.	ROOM	ROOM SIZE	TOTAL CARPET AREA
1	LIVING	3.0 X 4.42	13.26sqm
2	DINING		
3	KITCHEN	3.08 X 1.67	5.14 sqm
4	BEDROOM	3.07 X 2.68	8.22 sqm
5	TOILET 1	1.4 X 1.96	2.74 sqm
6	TOILET 2	1.4 X 1.8	2.52 sqm
7	LOBBY	3.22 X 0.92	2.96 sqm
		TOTAL	31.88 sqm

LIGHT AND VENTILLATION STATEMENT

SR. NO.	ROOM	ROOM SIZE	TOTAL CARPET AREA	WINDOW SIZE	SILL LEVEL	LV AREA
1	LIVING	3.0 X 4.42	13.26sqm	2.45 X 2.10	0.23	5.14 sqm
2	DINING			1.08 X 2.10	0.23	2.26 sqm
3	KITCHEN	3.08 X 1.67	5.14 sqm	1.75 X 1.50	0.90	2.62 sqm
4	BEDROOM	3.07 X 2.68	8.22 sqm	1.75 X 1.50	0.90	2.62 sqm
5	TOILET 1	1.4 X 1.96	2.74 sqm	0.60 X 0.90	1.50	0.54 sqm
6	TOILET 2	1.4 X 1.8	2.52 sqm	0.60 X 0.90	1.50	0.54 sqm
		TOTAL	31.88 sqm			13.72 sqm



REFUGE AREA CALCULATIONS

Sr.No.	Dimensions	Area
R1	8.08 X 5.44	43.95
R2	1.86 X 6.03	11.21
R3	4.63 X 1.64	7.59
	R0	62.75

REFUGE FLOOR BUILT UP AREA - 156.71 SQM

Sr.No.	Dimensions	Area
X	23.11 X 15.98	369.29
TOTAL= X - (X1+X2)		
	X1	45.18
	X2	104.65
X1 + X2 = 149.83 SQM		
TOTAL= 369.29-149.83		
=219.46 SQM		
RT= Y - R0 = 219.46 - 62.75		
RT = 156.71 SQM		

DEDUCTION FOR STAIRS,LOBBY,LIFT

Sr.No.	Dimensions	Area
1	1.25 X 0.71	0.88
2	2.21 X 1.31	2.89
3	1.25 X 0.71	0.88
4	3.20 X 11.17	35.74
5	2.21 X 2.71	4.79
	X1	45.18

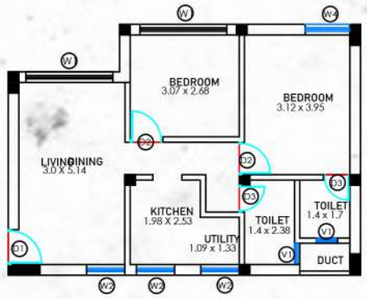
DEDUCTION FOR OPEN VOIDS

Sr.No.	Dimensions	Area
A	3.45 X 1.64	5.65
B	3.45 X 1.64	5.65
C	1.86 x 1.05	1.95
D	1.86 x 1.05	1.95
E	6.01 X 2.71	13.04
F	0.95 X 0.71	0.68
G	0.95 X 0.71	0.68
H	7.74 X 2.71	20.97
J	1.72 X 8.89	15.29
K	1.55 X 1.04	1.61
L	1.73 X 1.04	1.79
M	3.20 X 3.11	9.95
N	1.72 X 6.18	10.62
O	1.70 X 1.15	1.95
P	9.50 X 1.15	10.92
Q	1.70 X 1.15	1.95
	X2	104.65

TYPICAL FLOOR BUILT UP AREA - 219.46 SQM

Sr.No.	Dimensions	Area
X	23.11 X 15.98	369.29
TOTAL= X - (X1+X2)		
	X1	45.18
	X2	104.65
X1 + X2 = 149.83 SQM		
TOTAL= 369.29-149.83		
=219.46 SQM		

KEY PLAN



2 BHK UNIT PLAN

CARPET AREA STATEMENT

SR. NO.	ROOM	ROOM SIZE	TOTAL CARPET AREA
1	LIVING	3.0 X 5.14	15.42 sqm
2	DINING		
3	KITCHEN	1.98 X 2.53	5.0 sqm
4	BEDROOM	3.07 x 2.68	8.22 sqm
5	MASTER BEDROOM	3.12 x 3.95	12.32 sqm
6	TOILET 1	1.4 x 2.38	3.22 sqm
7	TOILET 2	1.4 x 1.7	2.38 sqm
8	UTILITY AREA	1.09 x 1.33	1.44 sqm
9	LOBBY 1	2.26 X 0.96	2.16 sqm
10	LOBBY 2	0.95 X 1.97	1.87 sqm
		TOTAL AREA	52.03 sqm

LIGHT AND VENTILLATION STATEMENT

SR. NO.	ROOM	ROOM SIZE	TOTAL CARPET AREA	WINDOW SIZE	SILL LEVEL	LV AREA
1	LIVING	3.0 X 5.14	15.42 sqm	2.45 X 2.10	0.23	5.14 sqm
2	DINING			1.08 X 2.10	0.23	2.26 sqm
3	KITCHEN	1.98 X 2.53	5.0 sqm	1.75 X 1.50	0.90	2.62 sqm
4	BEDROOM	3.07 x 2.68	8.22 sqm	2.45 X 2.10	0.23	5.14 sqm
5	MASTER BEDROOM	3.12 x 3.95	12.32 sqm	2.45 X 2.10	0.23	5.14 sqm
6	TOILET 1	1.4 x 2.38	3.22 sqm	0.60 X 0.90	1.50	0.54 sqm
7	TOILET 2	1.4 x 1.7	2.38 sqm	0.60 X 0.90	1.50	0.54 sqm
8	UTILITY AREA	1.09 x 1.33	1.44 sqm	1.08 X 2.10	0.90	2.62 sqm
			48.0 sqm			23.64 sqm

BUILT UP AREA CALCULATIONS

Floor	Area
0	69.34 SQM
1	219.46 SQM
2	219.46 SQM
3	219.46 SQM
4	219.46 SQM
5	219.46 SQM
6	219.46 SQM
7	156.71 SQM
8	219.46 SQM
9	219.46 SQM
10	219.46 SQM
11	219.46 SQM
12	219.46 SQM
13	219.46 SQM
14	156.71 SQM
15	219.46 SQM
16	219.46 SQM
17	219.46 SQM
18	219.46 SQM
19	219.46 SQM
20	219.46 SQM
TOTAL	4333.04 SQM

STILT FLOOR BUILT UP AREA - 69.34 SQM

PROPOSED BUILT UP AREA
4333.04 SQM

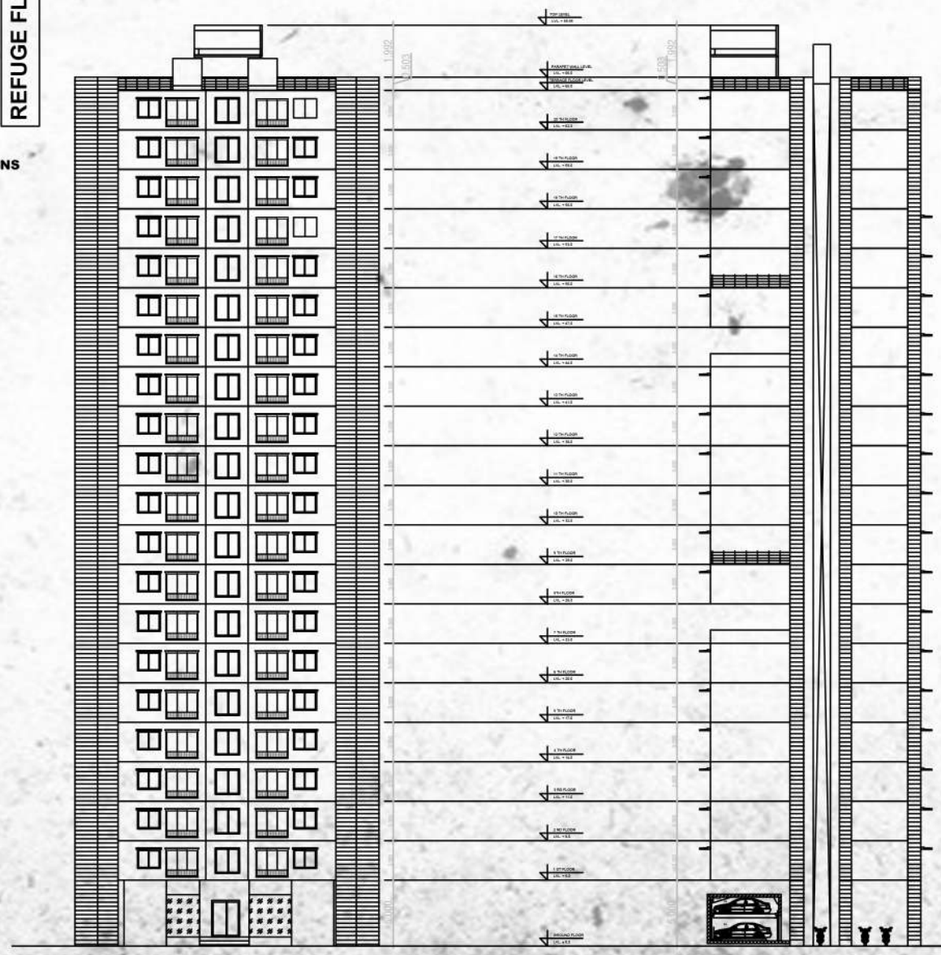
DEDUCTION FOR OPEN VOIDS

Sr.No.	Dimensions	Area
A	6.37 X 7.08	44.88
B	6.22 X 7.08	44.03
C	4.46 X 2.62	11.68
D	4.46 X 2.62	11.68
E	0.96 X 0.71	0.68
F	0.96 X 0.71	0.68
G	0.15 X 1.15	0.17
H	0.15 X 3.98	0.59
J	3.07 X 4.55	13.96
K	3.07 X 4.54	9.05
L	2.96 X 1.60	4.73
M	3.33 X 1.60	5.32
	X1	147.45

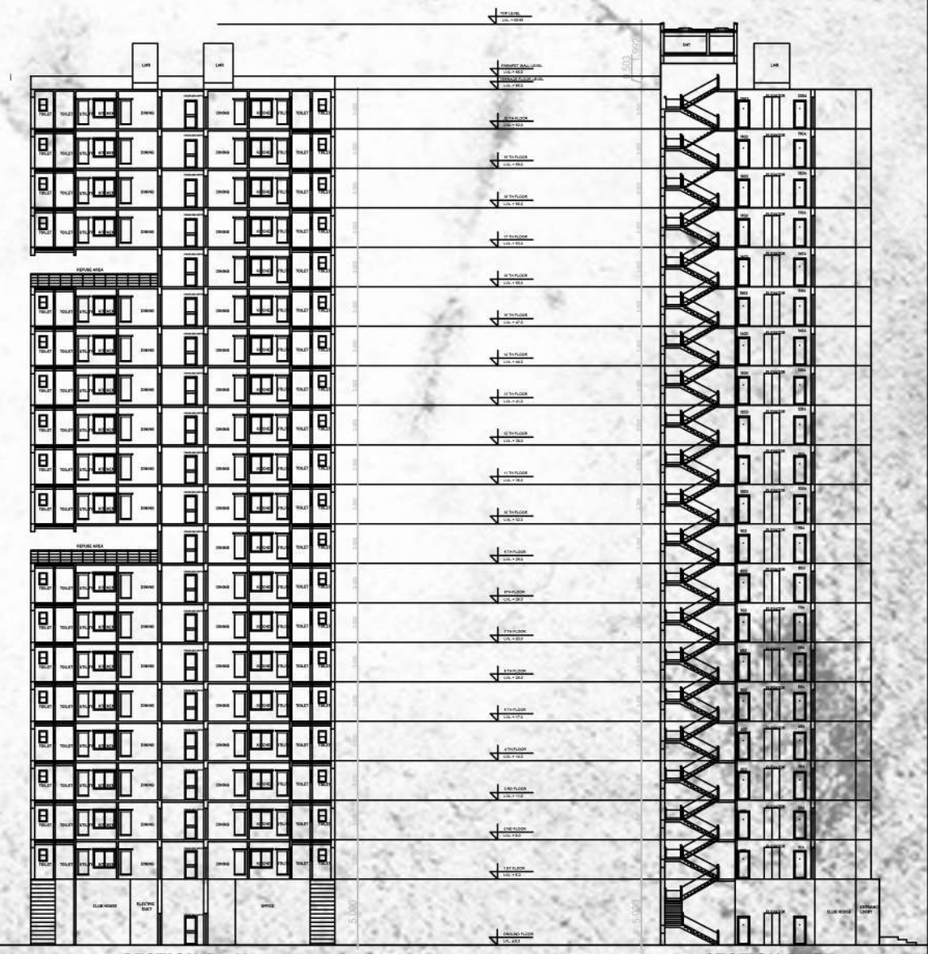
DEDUCTION FOR STAIRS,LOBBY,LIFT

Sr.No.	Dimensions	Area
1	3.80 X 7.08	26.90
2	3.20 X 7.75	24.80
3	1.25 X 0.71	0.88
4	1.25 X 0.71	0.88
5	2.21 X 1.29	2.85
6	2.10 X 2.74	5.75
7	10.10 X 2.95	29.79
8	3.80 X 1.60	6.08
	X2	97.93

Sr.No.	Dimensions	Area
X	16.40 X 19.19	314.716
TOTAL= X - (X1+X2)		
	X1	147.45
	X2	97.93
X1 + X2 = 245.37 SQM		
TOTAL= 69.34		
= 69.34SQM		



SOUTH ELEVATION



WEST ELEVATION

SECTION A - A'

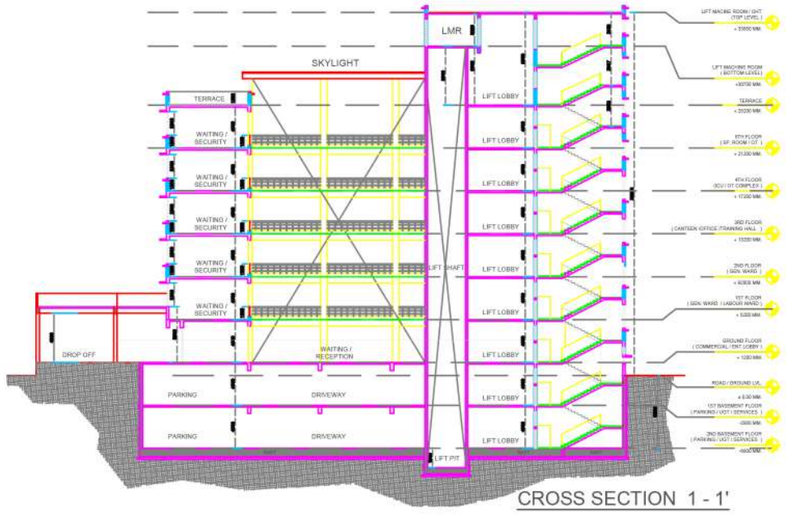
SECTION B - B'

Mother & Child Hospital

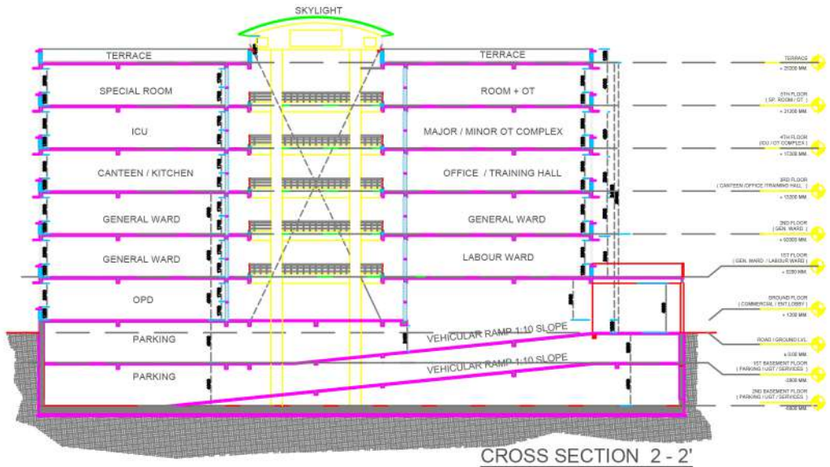
Hosmart Healthcare Pvt ltd

Position- Intern

Professional work- Semester 8 (2023-24)

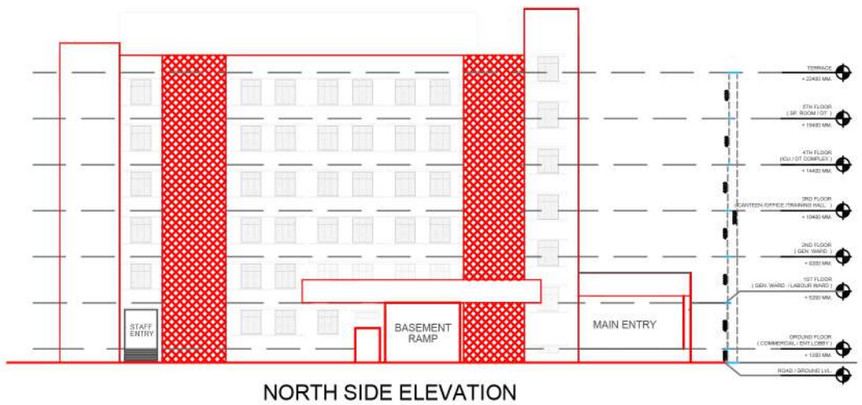


CROSS SECTION 1 - 1'

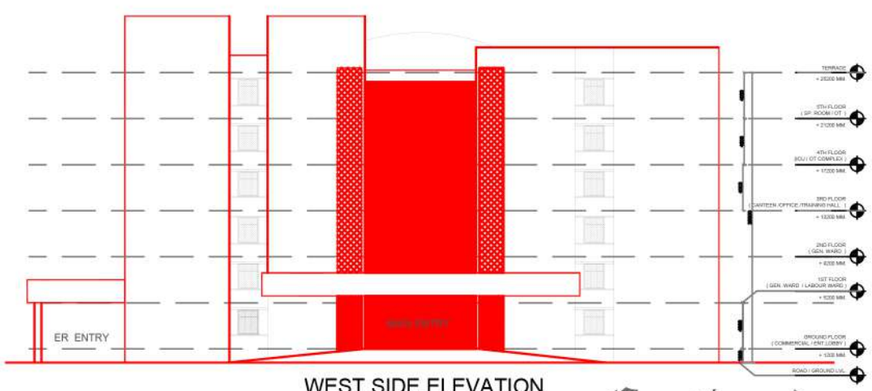


CROSS SECTION 2 - 2'

SOUTH SIDE ELEVATION



NORTH SIDE ELEVATION

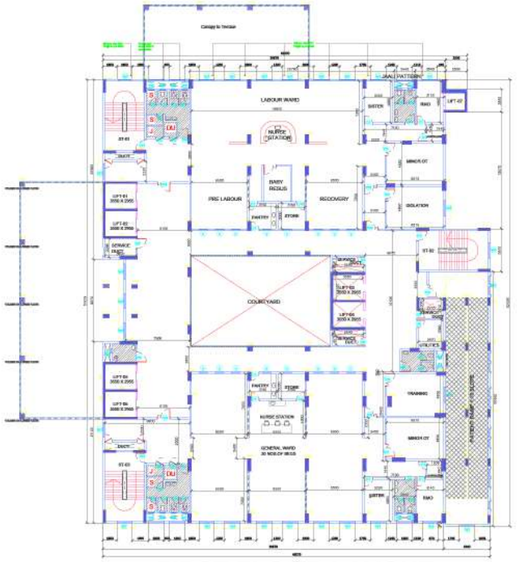


WEST SIDE ELEVATION

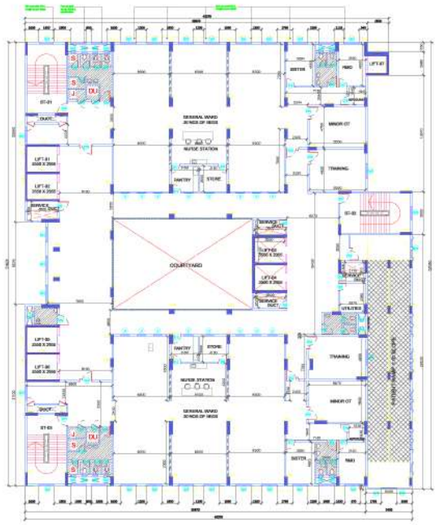
Continued...

FLOOR PLANS GROUND FLOOR - FIFTH FLOOR

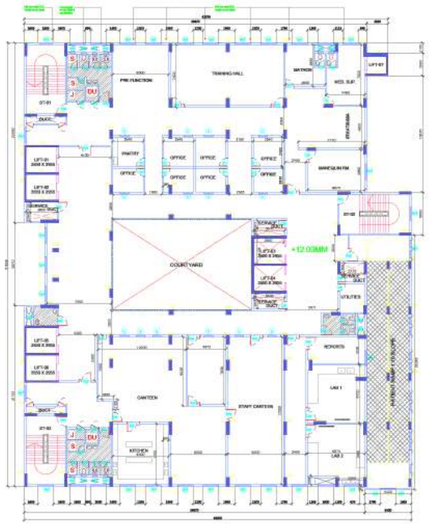
GROUND FLOOR LAYOUT
FLOOR LEVEL + 1200MM



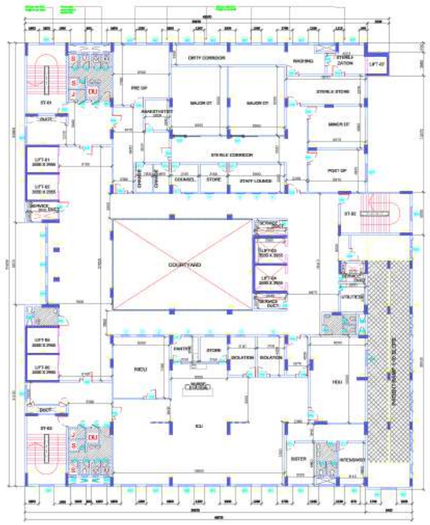
FIRST FLOOR LAYOUT
FLOOR LEVEL + 5200MM



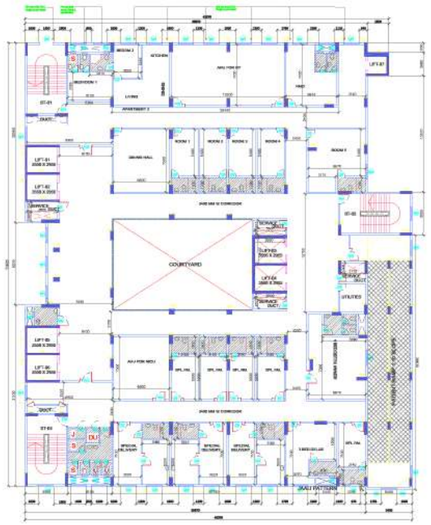
SECOND FLOOR LAYOUT
FLOOR LEVEL + 9200MM



THIRD FLOOR LAYOUT
FLOOR LEVEL + 13200MM

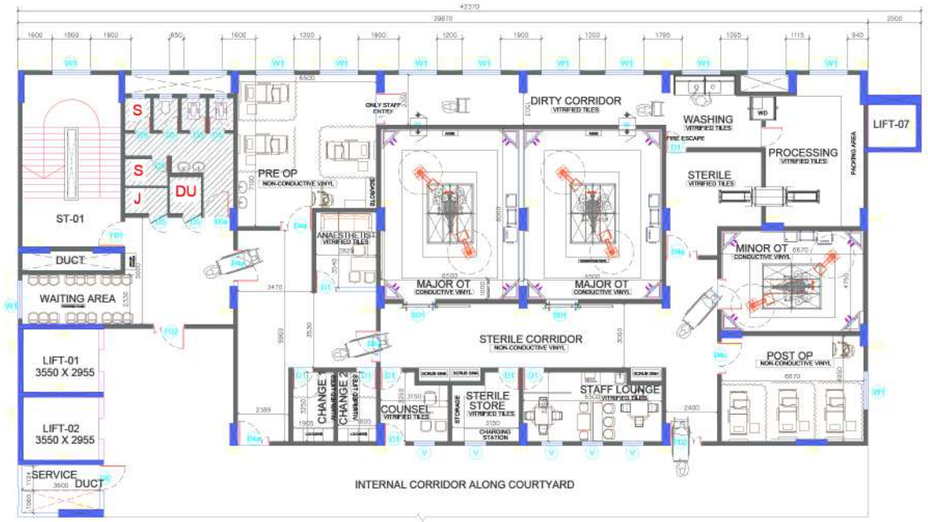


FOURTH FLOOR LAYOUT
FLOOR LEVEL + 17200MM

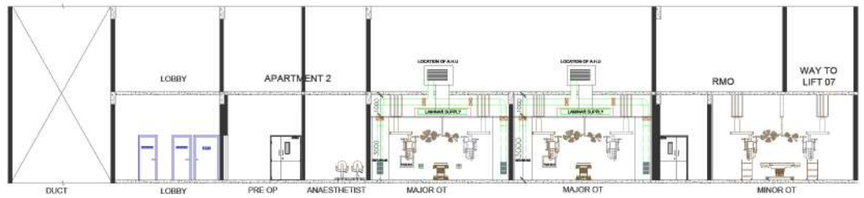


FIFTH FLOOR LAYOUT
FLOOR LEVEL + 25200MM

OPERATION THEATRE COMPLEX DETAIL PLAN & SECTION



OT COMPLEX LAYOUT



SECTION A-A'

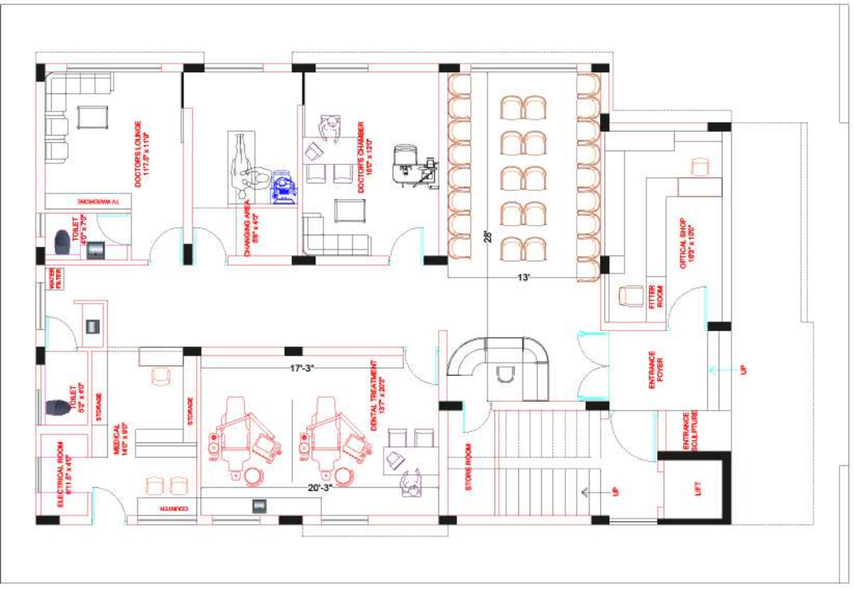
3D VIEW

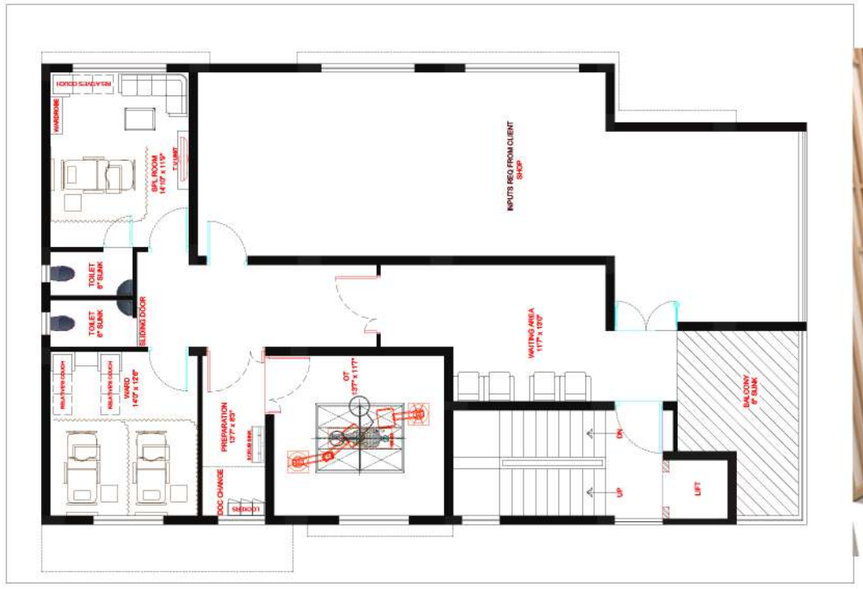
Typology- 189 Bedded Mother and Child Hospital
Features- 12 Bed Emergency, 13 OPDs, Diagnostics, Labs, 90 Bed General Ward, Dedicated Labour Ward, OT Complex, I.C.U., Special Rooms, Staff Accomodation, 2 floor Basement, Training Hal, Canteen.
Scope of Work- Planning, Detail Plans, Elevation and Sections, Landscape
Guided by- Ar. Yadneshwar Pathak

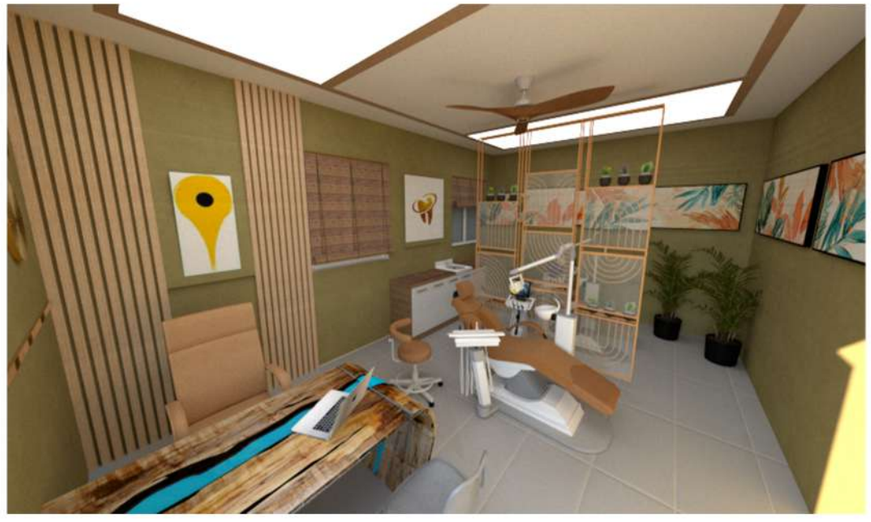
Opthal & Dental Clinic

Hosmart Healthcare Pvt ltd
Professional work- Semester 8 (2023-24)

Typology- Dental & Opthal OPD
Features- Dental OPD, Opthal OPD, Doctor Lounge, USG Room, Pharmacy, Waiting & Reception, Residential on last 2 floors.
Scope of Work- Planning and Designing, Material Selection, 3D Views using Softwares
Guided by- Ar. Yadneshwar Pathak



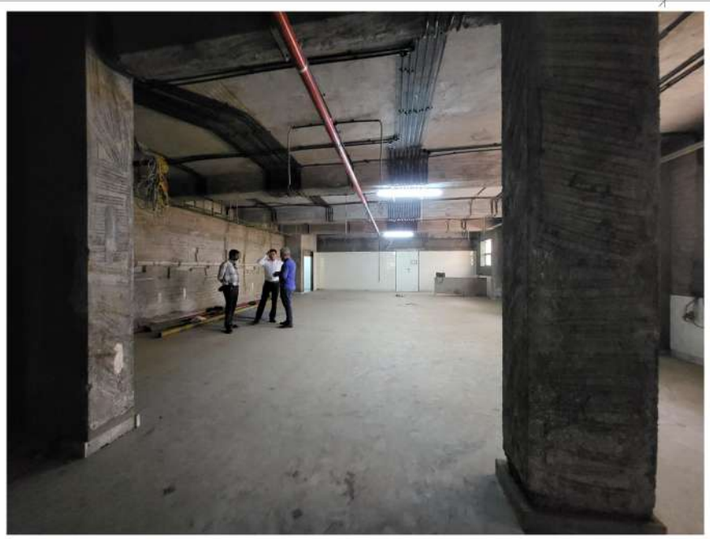


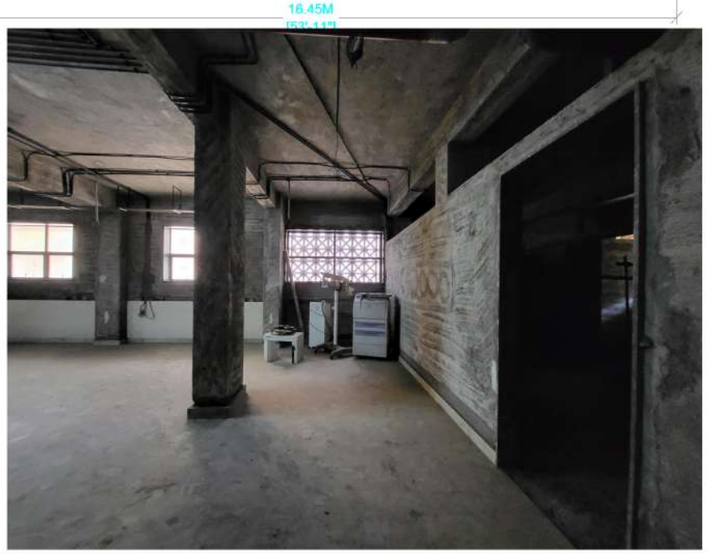


Heera Moongi Hospital

Hosmart Healthcare Pvt ltd
Position- Intern
Professional work- Semester 8 (2023-24)

Typology- Cath Lab & I.C.U.
Features- Cath Lab and paraphrenics, 13 Bed I.C.U., TMT, 2D Echo and Change Facility.
Scope of Work- Planning, Designing and On site Inspections
Guided by- Ar. Yadneshwar Pathak





Existing hospital in Mulund, Mumbai., Hira Moongi Navneet Hospital needed to introduce a Cardiology Department in the Hospital. Planning and Designing of the Cardio Department had many challenges including no prior planning for cardio in hospital.