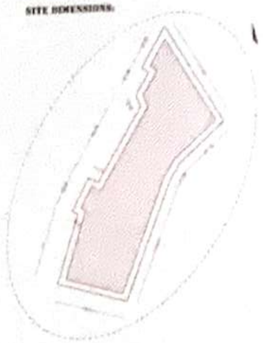
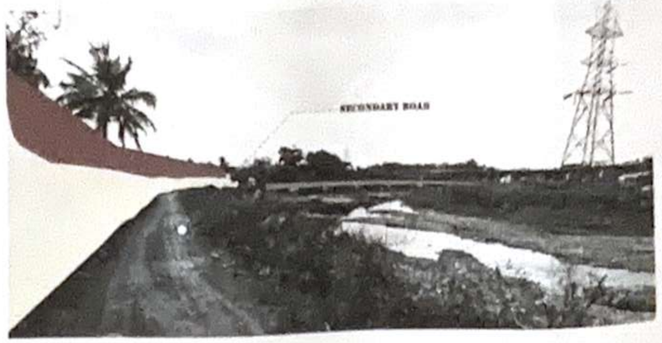
CLIMATE: TROPICAL WET & DRY / HUMID

HUMIDITY:	UV RATING:	AVG. RAINFALL
82%	7 of 11	895 MM

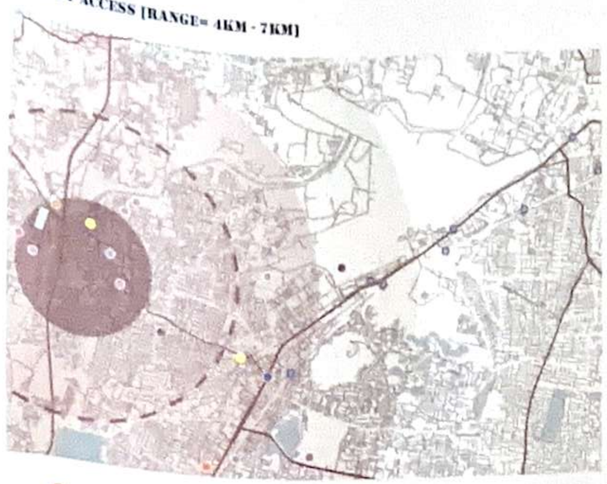
SITE LOCATION:
Pammal Main Road,
Chennai, Tamil Nadu

SITE DIMENSIONS:





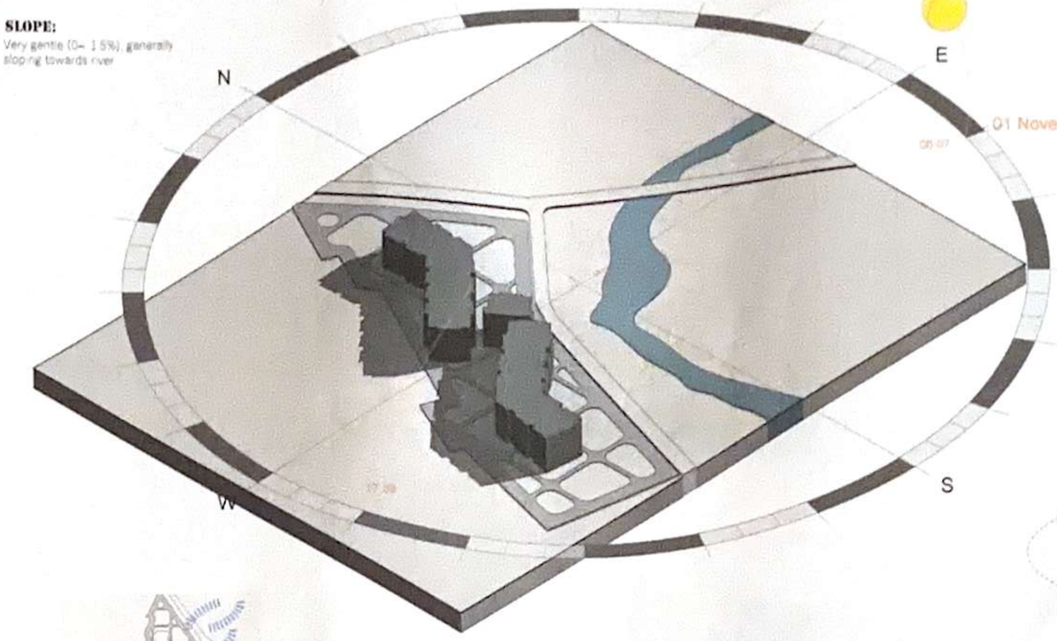
NEARBY ACCESS [RANGE= 4KM - 7KM]



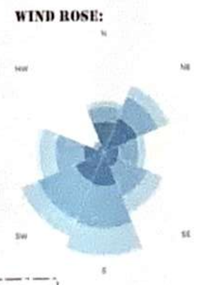
- POLICE STATION
- FIRE STATION
- LEISURE & ENTERTAINEMENT
- HOSPITAL
- BUS STATION
- RAILWAY STATION
- CHENNAI INTERNATIONAL AIRPORT
- EDUCATIONAL INSTITUITIONS

SITE AREA:
Total area: 20,190.24 m²
Total Perimeter: 736.54 m

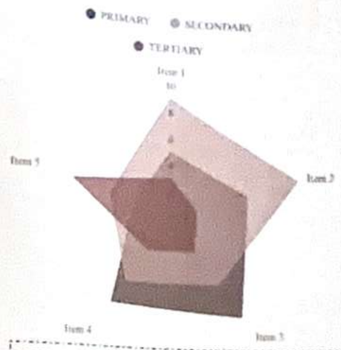
SLOPE:
Very gentle (0– 1.5%), generally sloping towards river



WIND ROSE:



VEGETATION:



PRIMARY PLANTS: Coconut, Ashoka Trees, Neem, Tamarind, Peepal
SECONDARY PLANTS: Albizia lebbeck, Gulmohar, Rain Tree, Pongamia, Barringtonia acutangula
TERTIARY PLANTS: Grasses, Reeds, Water Hyacinth, Reedmace, Blue Water Lily

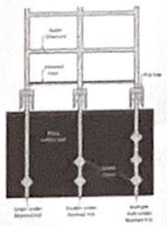
SOIL TYPE

Clayey soil

High plasticity & cohesion
Low permeability
Lower bearing capacity than granular soils — more settlement risk.

Under-reamed piles (screw-shaped enlargement near tip) — ideal for expansive clays.
Pros: Resists uplift from heave, reduces differential movement, good for low-to-medium loads.
Cons: Requires specialist contractor; deeper drilling.

FOUNDATION



DESIGN IMPLICATION:

Strong need for passive cooling, shade, and natural ventilation

High risk of water logging in clayey soil → need for efficient site drainage.

Roofs and balconies must have proper slope + rainwater harvesting

INFERENCE

The site's scenic riverfront, greenery, connectivity and scope for flood-resilient, community-focused design make it ideal for a small multi-generational complex.

S W O T

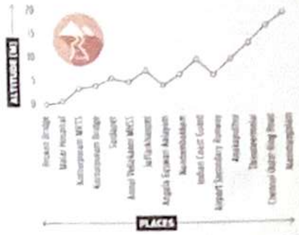
Scenic river views, potential for waterfront development.
Good connectivity (GST Road, airport, railway, IT hubs).

Model flood-resilient housing in Chennai.
Eco-sensitive urban housing, bioswales, wetlands, rainwater harvesting.

Flood risk, especially in monsoon.
Soil instability/marshy ground → costly foundations.

Climate change → heavier rains, higher flood risk.
Urban encroachment → wetland shrinkage, environmental degradation.

WATERSHED



SITE ANALYSIS

NAME: CHASANTIA SURESH
ROLL NO: 963423251012
YEAR : III SEM : V
SUB: URBAN ARCHITECTURE DESIGN STUDIO

SHEET NO: 1A

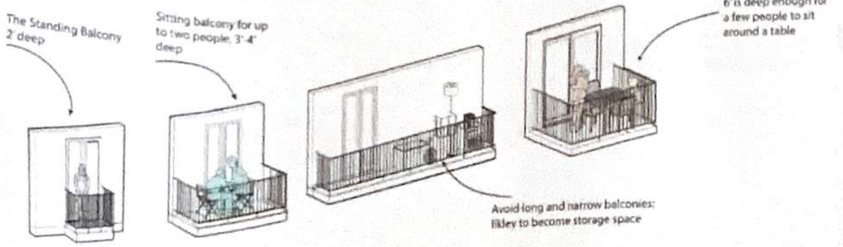
GRECO DYNAMICS

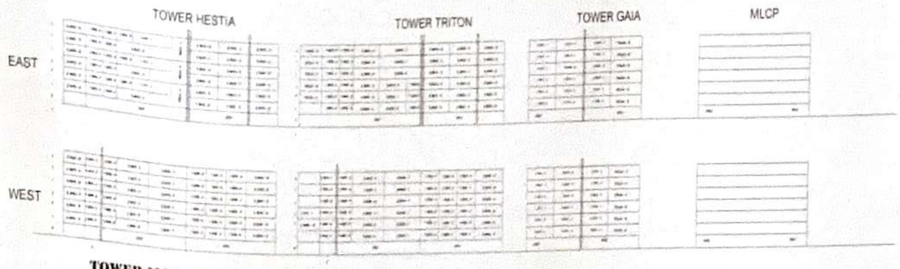
MODULAR CONSTRUCTION
PRE-CAST ELEMENTS

BARRIER FREE DESIGN
INCLUSIVITY

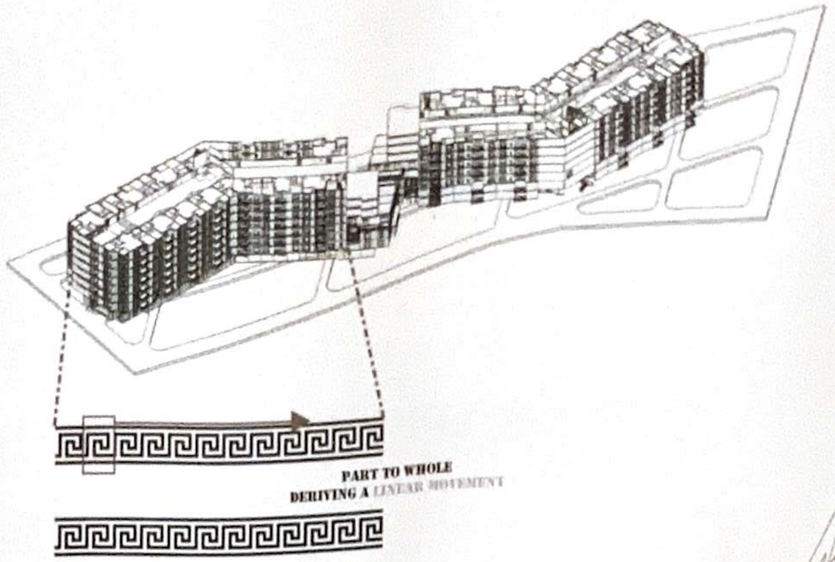
SOCIAL HOUSING STRATEGIES
COMMUNITY LIVING

BALCONY DESIGN CONSIDERATIONS





TOWER MATRIX SHOWING THE UNITS MIX



COMPUTATIONAL FORM DEVELOPMENT

MAGNETIC FIELD
GRECO WAVES

Magnetic fields are the EM component responsible for shaping the movement of charged particles.

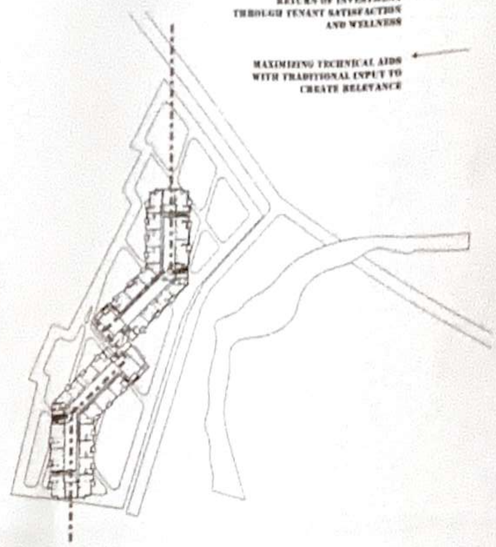
Greco waves describe a theoretical or astrophysical coupling where magnetic (and electric) fields interact dynamically with spacetime curvature, creating hybrid waves that carry both gravitational and electromagnetic properties.

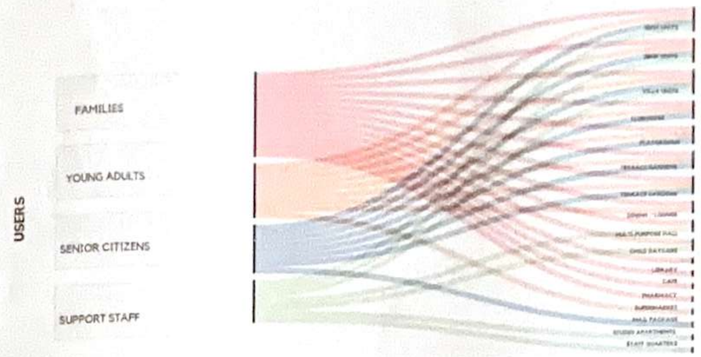
DESIGN STRATEGIES

DESIGN OF ERGONOMIC AND NEUROLOGICALLY STIMULATING SPACES FOR ALL USER GROUPS

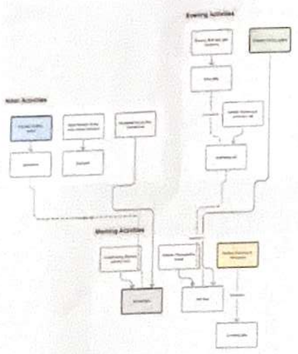
RETURN OF INVESTMENT THROUGH TENANT SATISFACTION AND WELLNESS

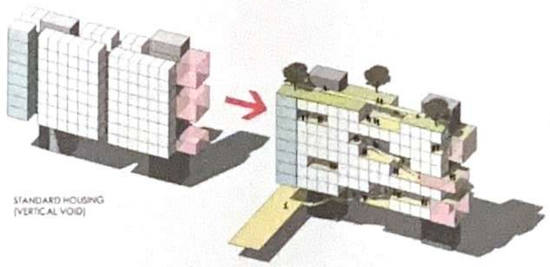
MAXIMIZING TECHNICAL AIDS WITH TRADITIONAL INPUT TO CREATE RELEVANCE



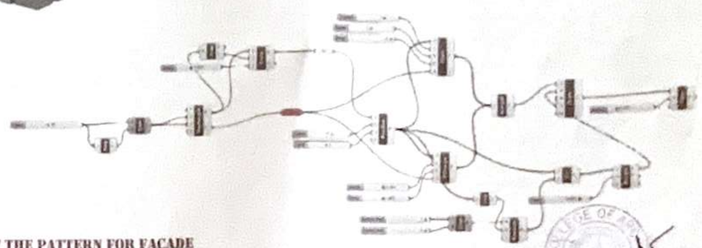


ACTIVITY MAPPING





A "horizontal void" in architecture is a large, empty space or opening that runs horizontally through a building, often designed to improve natural ventilation, create visual connections, and make a space feel larger. These voids can significantly increase airflow, allowing buildings to be more energy-efficient, and can also integrate outdoor elements into the indoor design.

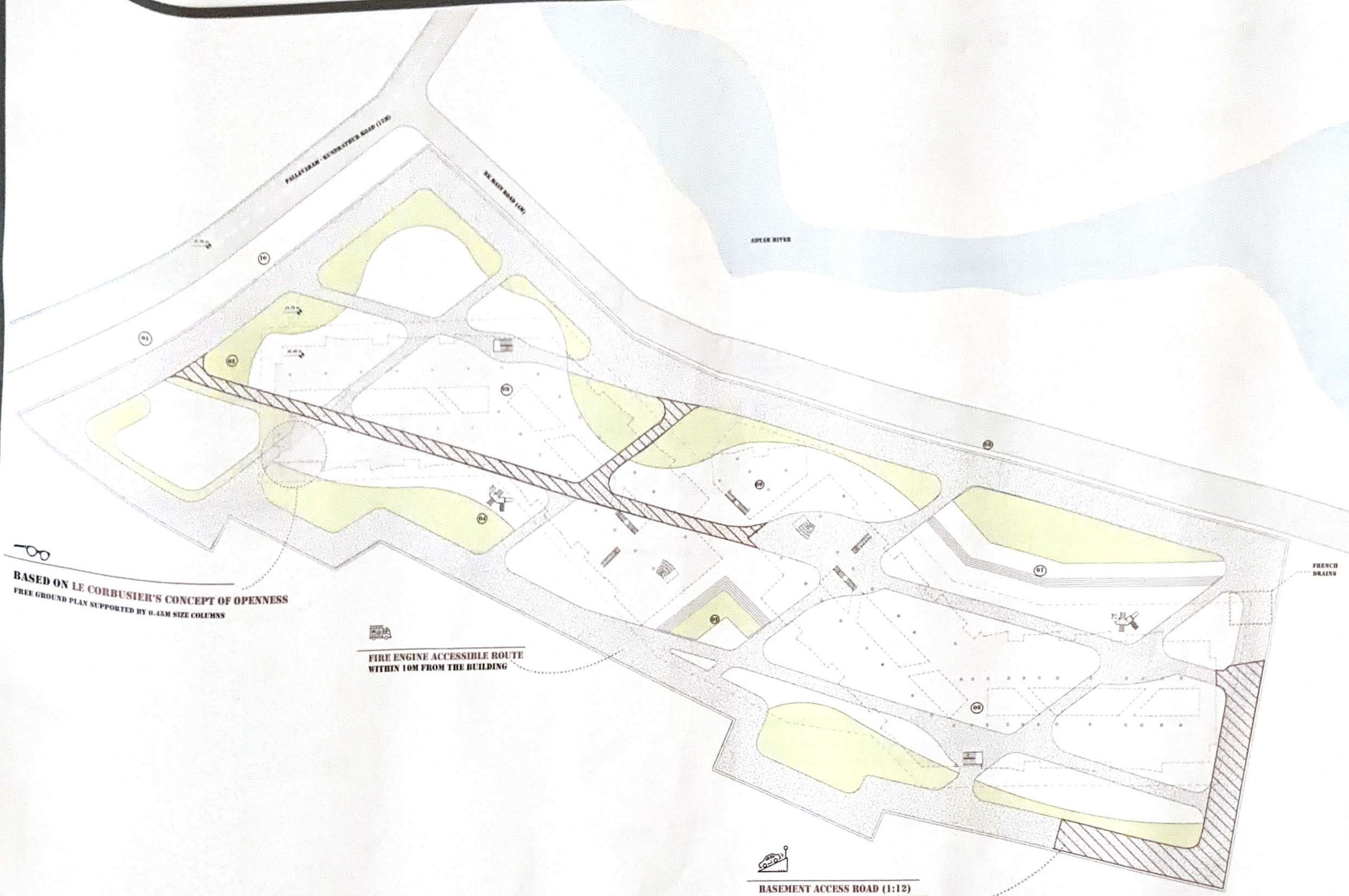


DERIVATION OF THE PATTERN FOR FACADE DEVELOPMENT AND SOLAR PANEL SYSTEMS

CONCEPT EVOLUTION

NAME: CRASANTIA SURESH
ROLL NO: 963423251012
YEAR : III SEM : V
SUB: URBAN ARCHITECTURE DESIGN STUDIO

SHEET NO: 02



BASED ON LE CORBUSIER'S CONCEPT OF OPENNESS
FREE GROUND PLAN SUPPORTED BY 0.45M SIZE COLUMNS

FIRE ENGINE ACCESSIBLE ROUTE
WITHIN 10M FROM THE BUILDING

BASEMENT ACCESS ROAD (1:12)
30M LENGTH OF ROADWAY TO HAVE THE SLOPE AS PER SITE CONTEXT

AREA:

TOTAL BUILT UP:
105000 SQ.M

PLOT COVERAGE:
57.4 %

AVAILABLE PERCOLATION AREA:
67 %

CIRCULATION SPACES:

TOTAL - 10.7 % (MAX. 10%)

PER FLOOR PLATE:
23.5%

WITHIN UNITS:
0%

LEGENDS:

1) ENTRANCE GATE
2) LANDSCAPE GARDENS
3) TOWER TRISTON
4) CHILDREN'S PARK
5) AMPHITHEATRE
6) TOWER HESTIA
7) TERRACED SEATING
8) SECONDARY GATE
9) TOWER GAIA
10) EXIT GATE

SITE PLAN

NAME: CRASANTIA SURESH
ROLL NO: 963423251012
YEAR : III SEM : V
SUB: URBAN ARCHITECTURE DESIGN STUDIO

SHEET NO:
5B

THE BEST HOMES?
THEY DON'T DEPEND ON CURRENT.
THEY DEPEND ON DESIGN.
THEY BREATHE.
THEY LIGHT UP NATURALLY.
THEY MAKE YOU FEEL GOOD -
WITH OR WITHOUT A SWITCHBOARD.

BARRIER FREE HOMES
WHEELCHAIR ACCESS

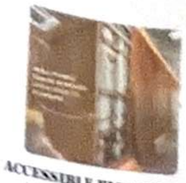
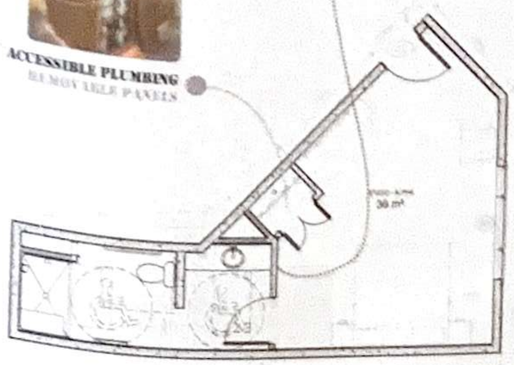


Image Source: Dezeen Magazine

ACCESSIBLE PLUMBING
REMOVABLE PANELS



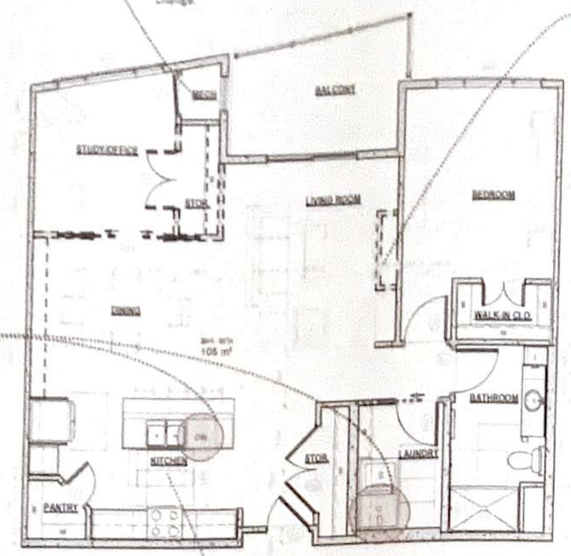
UNIT-ALPHA (STUDIO) FLOOR PLAN
SCALE 1:75

ARU SPACE
POSSIBILITY TO PROVIDE HVAC SERVICES

More and more homes in Chennai require multiple ACs and the adaptability to use an AHU is restricted due to the lack of space, low ceiling heights. Hence it must be provided in buildings of the future to be resilient to climate change.

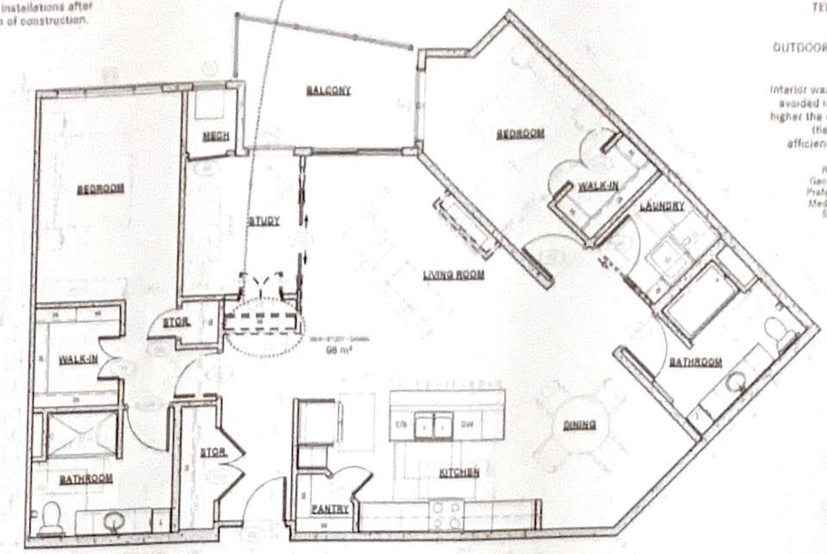
SPACE FOR MODERN AMENITIES

MANY HOUSES ARE ADOPTING THE USE OF DISHWASHERS AND DRYERS, BUT LACK THE PROPER SPACE FOR THE SAME.

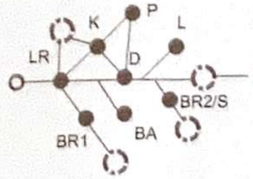


CONCEALED TV UNIT
REMOVING THE NEED TO INSTALL ADDITIONAL PANELING AND INTERIOR COMPONENTS

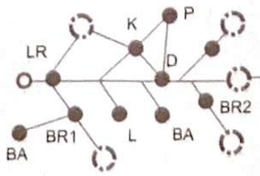
All cables are hidden behind panels so as to avoid the cost of additional installations after completion of construction.



UNIT-BETA (1 BHK)FLOOR PLAN
SCALE 1:75

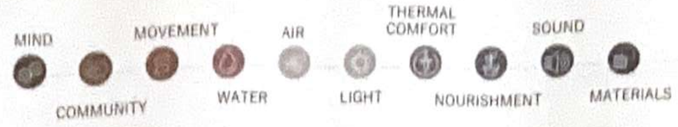


UNIT-GAMMA (2BHK + STUDY) FLOOR PLAN
SCALE 1:75



WELL CERTIFICATION FOCUSES ON PEOPLE'S HEALTH AND WELLBEING

It goes beyond energy or environmental performance (like LEED or GRIHA) and instead focuses on the people inside the building.



PERSONALIZATION OPTIONS
USER BASED MODIFICATIONS

Some users prefer to have additional storage, some don't - hence the storage option.

SPACE SYNTAX REPRESENTATION
LEGEND

ENTRANCE
TERMINAL SPACES
OUTDOOR CONNECTIVITY

Interior wastage of corridors are avoided in the floor plans. The higher the connectivity between the nodes, the more the efficiency of space planning.

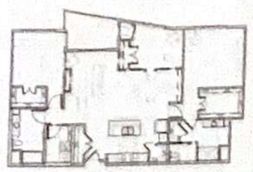
Research paper reference: Gan, Xiaolu & Assem, (2013). Preferences for Floor Plans of Medium-Sized Apartments: A Survey Analysis in Beijing, China. Housing Studies.

TWO-BHK ITERATIONS

SCALE 1:150

* VARIATIONS IN BATHROOM AREA AND ORIENTATION; BEDROOM SIZE VARIATIONS
* NO CHANGES IN BALCONIES TO MAINTAIN RIVER VIEW AND EXTERNAL FACADE

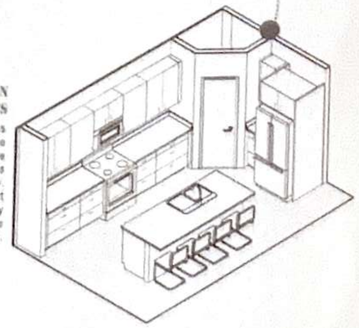
UNIT-DELTA
2 BHK + STUDY | 105 SQ. M.



UNIT-EPSILON
2 BHK + STUDY | 150 SQ. M.

KITCHEN ERGONOMICS

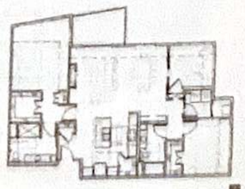
Indian kitchens demand more storage spaces, yet the provision of pantry is rare or often a luxury. This is a compact version of a pantry that ensures ideal use of the corner.



THREE-BHK ITERATIONS

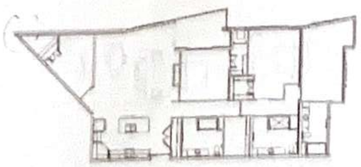
* THE STUDY IS COMBINED WITH THE AMENITIES AREA TO ADD A NURSERY ROOM FOR FAMILIES WITH CHILDREN.
* NO CHANGES IN BALCONIES TO MAINTAIN RIVER VIEW AND EXTERNAL FACADE

UNIT-ZETA
2 BHK + STUDY | 90 SQ. M.

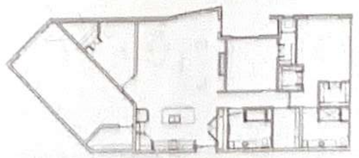


UNIT-ETA
2 BHK + STUDY | 138 SQ. M.

UNIT-BETA
2 BHK + STUDY | 160 SQ. M.



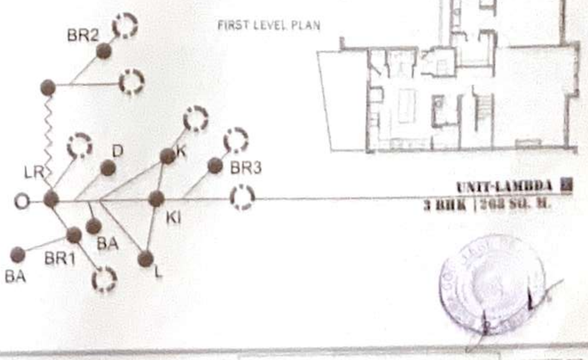
UNIT-SIGMA
3 BHK | 190 SQ. M.



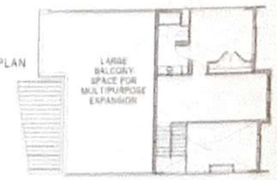
UNIT-IOTA
3 BHK | 220 SQ. M.

DUPLEX VILLA

* BASED ON THE IDEA OF SOCIAL HOUSING ARRANGEMENT INSPIRED BY THE MASSIVE SINGAPORE HOUSING SCHEME - THE 1BHKS ARE PLACED IN PROXIMITY WITH 2BHK AND 3BHK TO PROMOTE COLLECTIVE LIVING OF FAMILIES LIKE GRANDPARENTS, IN-LAWS AND SIBLINGS IN THE NEIGHBOURING APARTMENTS.



SECOND LEVEL PLAN



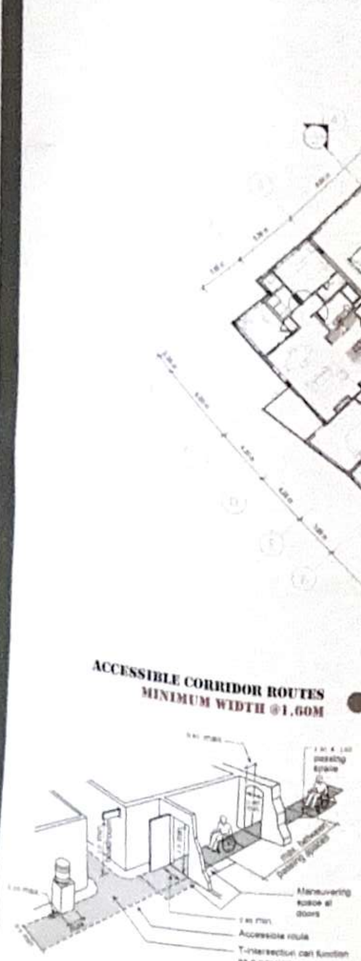
FIRST LEVEL PLAN

UNIT-LAMBDA
3 BHK | 268 SQ. M.

UNIT PLANS

NAME: URASANTIA SURESH
ROLL NO: 963423331012
YEAR : III SEM : V
SUB: URBAN ARCHITECTURE DESIGN STUDIO

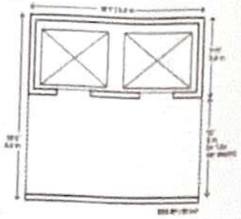
SHEET NO: 03



ACCESSIBLE CORRIDOR ROUTES
MINIMUM WIDTH @ 1.60M

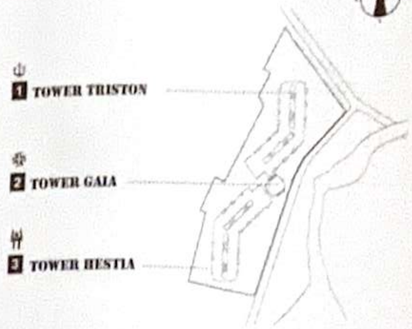
FIRE RATED TRASH CHUTE
EFFECTIVE WASTE MANAGEMENT

A trash chute is a vertical pipe or shaft used for disposing of waste from upper floors of a building to a central collection point in a lower level

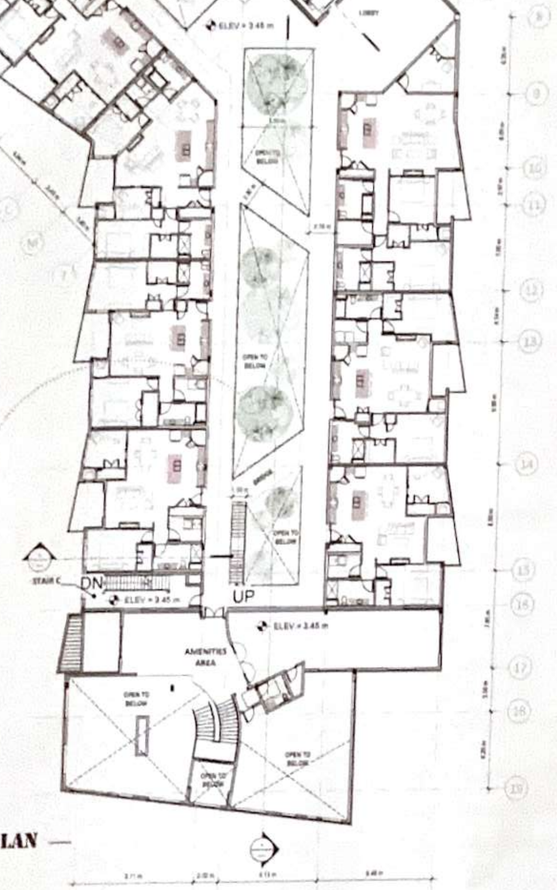


DOUBLE ELEVATOR SHAFT
EFFECTIVE VERTICAL CIRCULATION

Lift waiting time standards are often measured by average interval, which is the time between consecutive lift departures from a floor during peak periods.
Average Interval: The most common metric, it measures the time between lift departures from a main terminal floor. Waiting Time < 25 seconds.

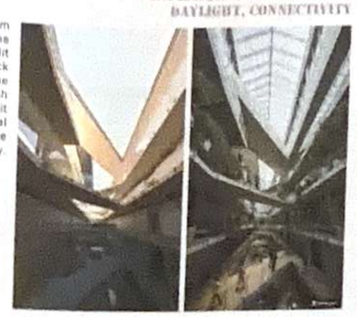


KEY PLAN
SCALE 1:3000



INTERACTIVE ATRIUM SPACE
DAYLIGHT, CONNECTIVITY

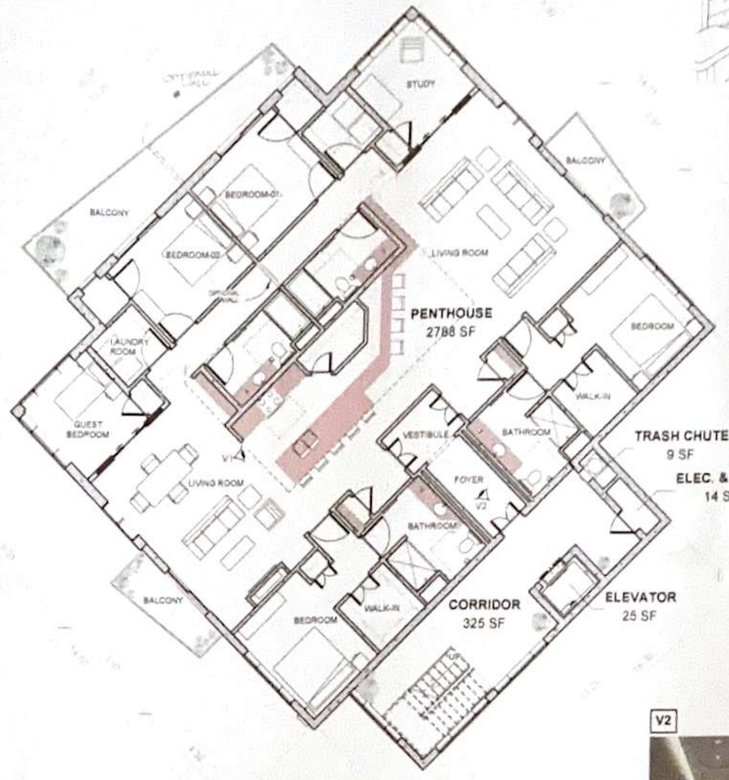
The open-to-sky atrium is designed to keep the corridor spaces well-lit and also create stack effect ventilation. The wide expansive approach to the corridors make it possible for social interaction and ensure safety of children's play.



Input Image: Revit 3D view

Output Image: ReRender AI

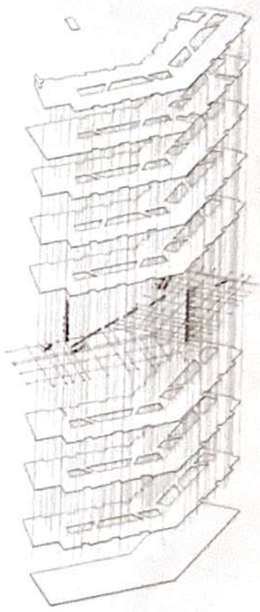
TOWER HESTIA, TRISTON - TYPICAL FLOOR PLAN
SCALE 1:200



TOWER GAIA - TYPICAL FLOOR PLAN
SCALE 1:100

V2

Grand entry foyer in the penthouse style ville variant, in direct connectivity to the elevator at this level.



VERTICAL ASSEMBLIES
SCALE N.T.S

APARTMENT FLOOR PLANS

NAME: CRASANTIA SURESH
ROLL NO: 963423251012
YEAR : III SEM : V
SUB: URBAN ARCHITECTURE DESIGN STUDIO

SHEET NO: 4A

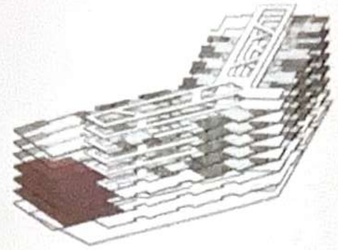
THE ONLY THING THAT RELAXES ME IS ARCHERY. THAT'S WHY I HAVE TO HAVE APARTMENTS WITH GARDENS.

Pavel Coglino

THE APARTMENT COMPLEX FUNCTIONS ONLY WHEN THE AMENITIES PROVIDED ARE OF FUNCTIONAL CAPACITY. THE MOTIVATION OF CUSTOMERS TO BUY THE APARTMENT IN THAT PARTICULAR SITE IS COMPLETELY DEPENDENT ON THE SURROUNDING FACILITIES. HENCE THE AMENITIES AREA IS IN CLOSE PROXIMITY TO THE THREE BLOCKS AND ALSO CONSISTING STATE-OF-THE-ART FEATURES

V3 OPULENT FINISHES WITH A SIMPLISTIC OUTPUT

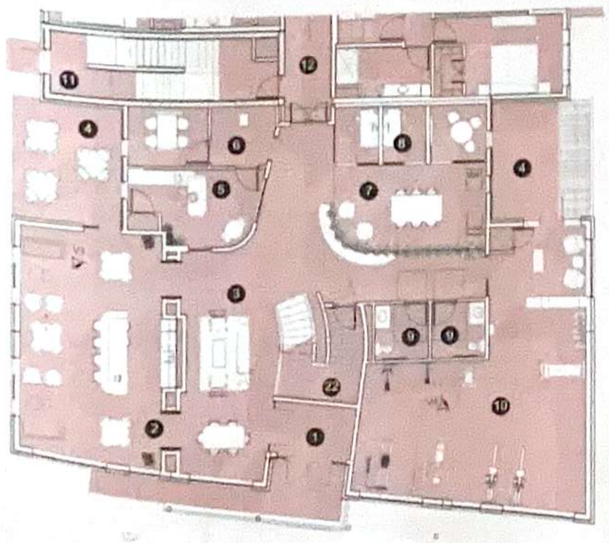
V4 FUNCTIONAL, WELL-LIT , RUBBER-FLOORING



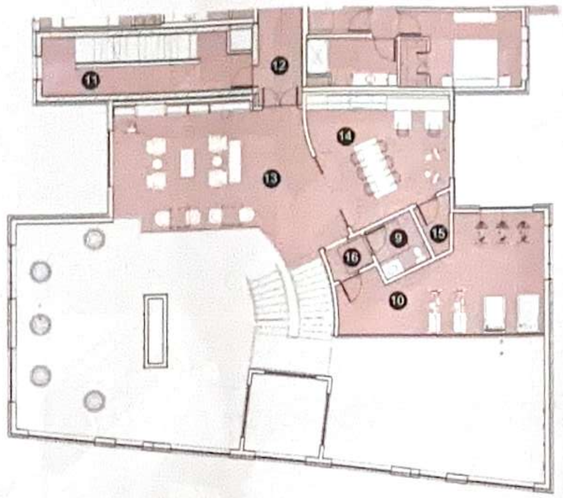
KEY VIEW SHOWING LOCATIONS OF AMENITIES AREAS

FLOOR AREA OF FIRST FLOOR - 491 SQ.M.
FLOOR AREA OF FIRST FLOOR - 320 SQ.M.
FLOOR AREA OF FIRST FLOOR - 415 SQ.M.

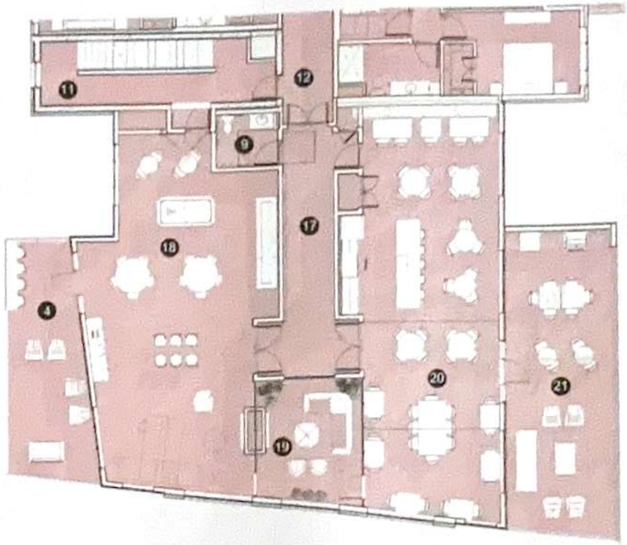
TOTAL BUILT SPACE FOR AMENITIES: 1226 SQ.M.



AMENITIES - FIRST FLOOR PLAN
SCALE 1:50



AMENITIES - SECOND FLOOR PLAN
SCALE 1:50



AMENITIES - THIRD FLOOR PLAN
SCALE 1:50

LEGEND

1. FOYER
2. CAFE
3. LOUNGE
4. BALCONY/ OUTDOOR PATIO
5. HOUSING OFFICE
6. CONFERENCE ROOM
7. ADMIN. OFFICE
8. MANAGER'S CABIN
9. ACCESSIBLE RESTROOMS
10. GYM / FITNESS STUDIO
11. STAIR-C
12. CORRIDOR
13. LIBRARY / READING AREA
14. ART ROOM / CREATIVITY STUDIO
15. STORAGE
16. FITNESS WAITING AREA
17. AMENITIES CIRCULATION
18. INDOOR GAMING AREA
19. SOLARIUM / GLAZED LOUNGE
20. DINING SPACE
21. OUTDOOR DINING SPACE
22. GRAND STAIRWAY IN DOUBLE HEIGHT OPENING

APARTMENT AMENITIES

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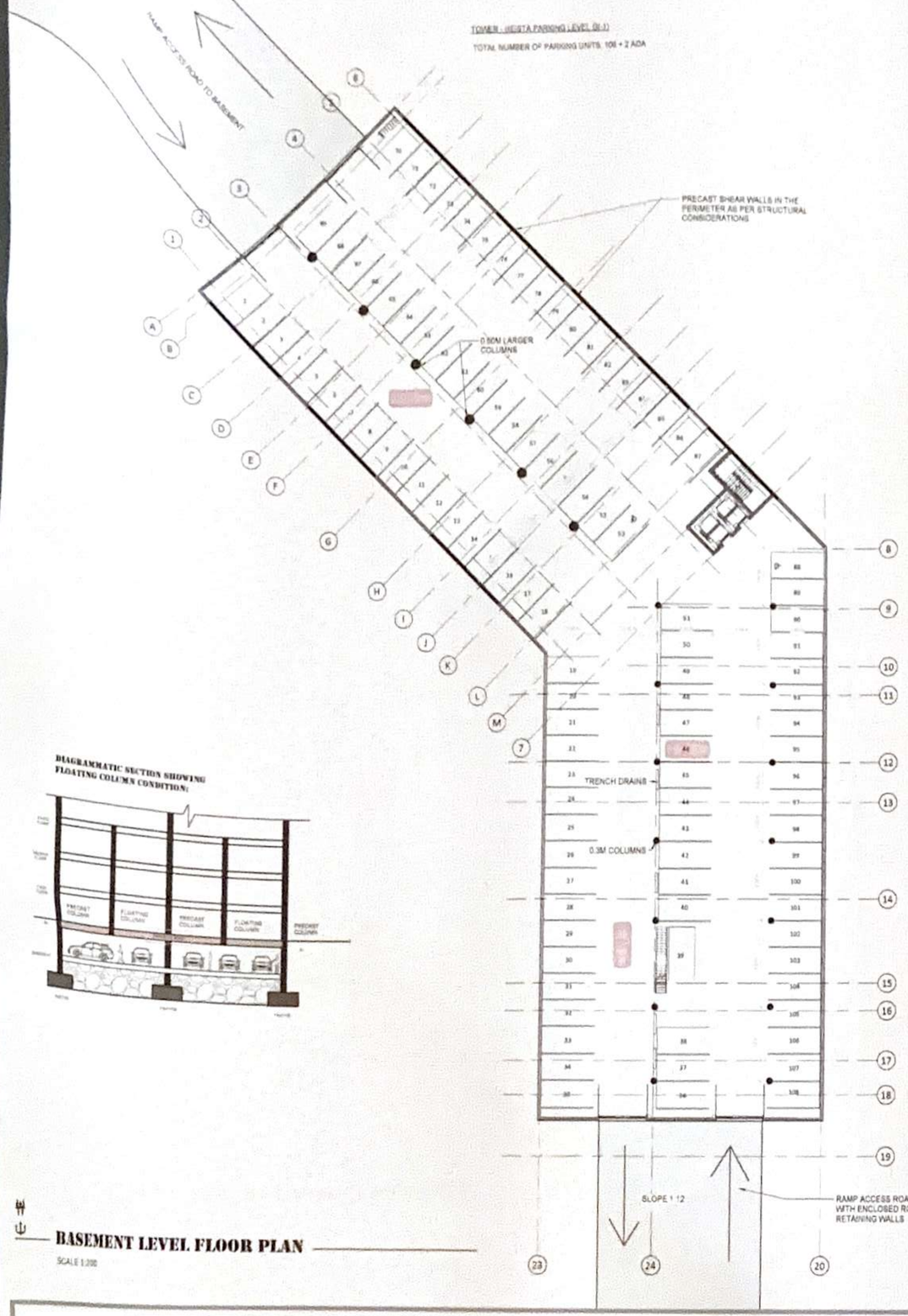


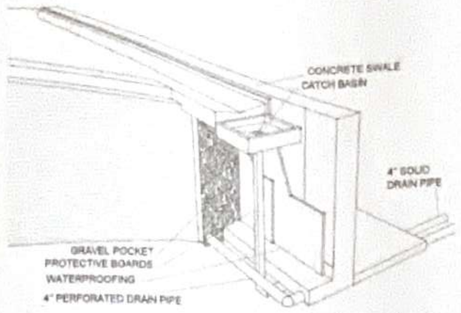
DIAGRAMMATIC SECTION SHOWING FLOATING COLUMN CONDITION:

BASEMENT LEVEL FLOOR PLAN

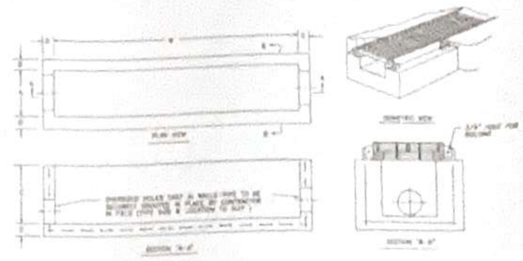
SCALE 1:200

SITE DETAILS

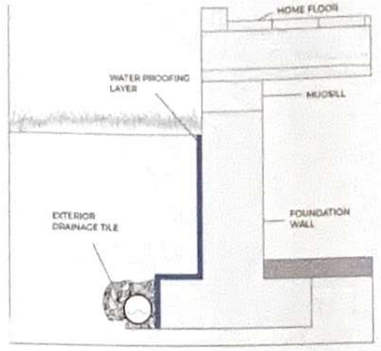
SCALE N.T.S.



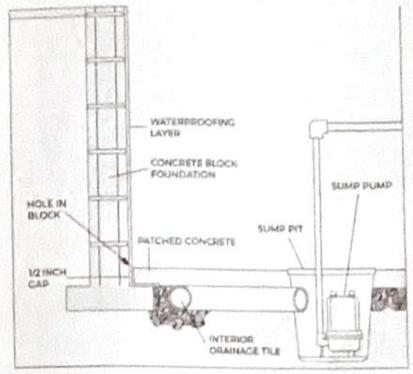
CURTAIN DRAIN
PROVIDED AT SITE PERIPHERY FOR STORM WATER DRAINAGE



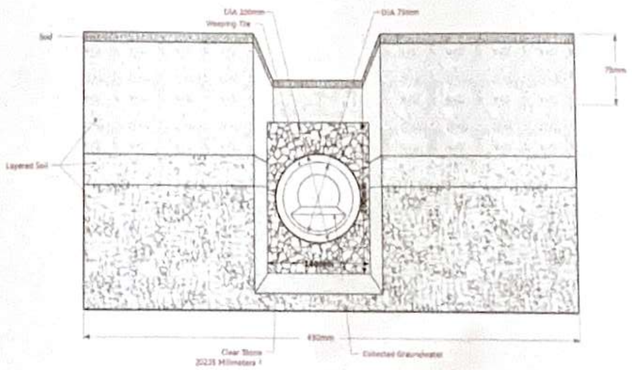
TRENCH DRAIN
PROVIDED IN THE BASEMENT TO AVOID WATER LOGGING



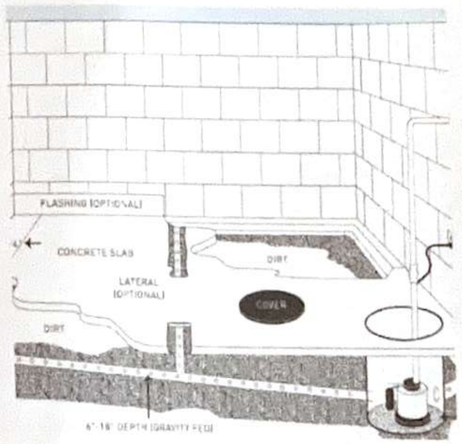
DRAIN TILE SYSTEMS - EXTERIOR
WATER DRAIN OFF AT LOW HEIGHT FOUNDATIONS



DRAIN TILE SYSTEMS - INTERIOR
WATER DRAIN OFF AT BASEMENT TO AVOID WATER LOGGING



FRENCH DRAIN
RUNS AROUND THE SITE TO ENSURE PREVENTION OF FLOOD DAMAGE



SUMP PUMP
MECHANICAL ACTIVATION REMOVES ANY WATER ENTRY

BASEMENT FLOOR PLAN AND SITE DETAILS

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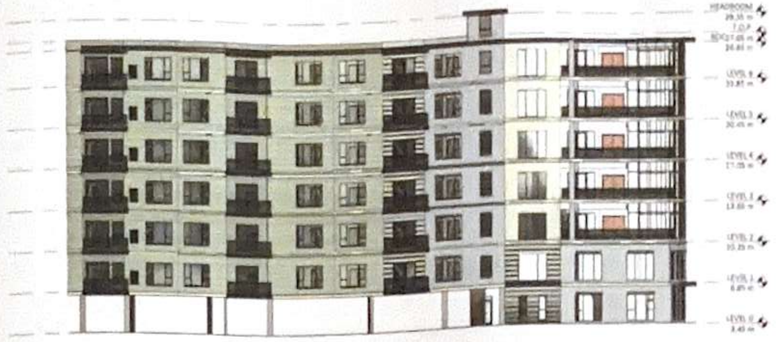
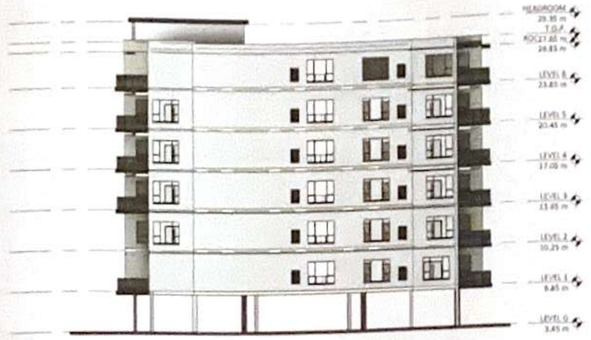
3 WEST(NORTHERN) ELEVATION
SCALE 1:200

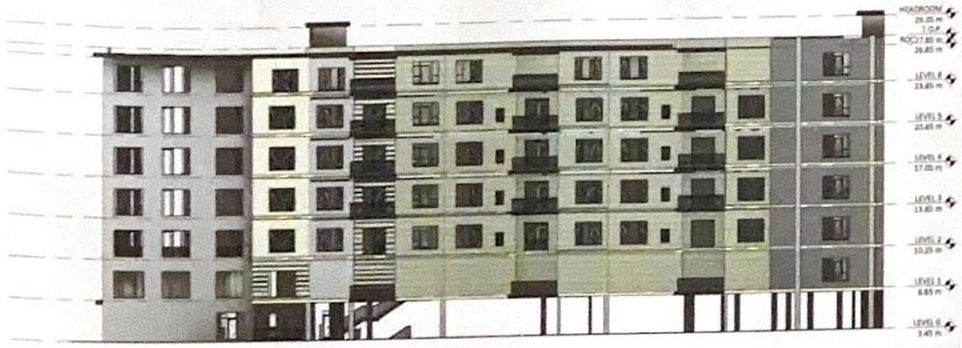


4 WEST(SOUTHERN) ELEVATION
SCALE 1:200

2 EAST(NORTHERN) ELEVATION
SCALE 1:200

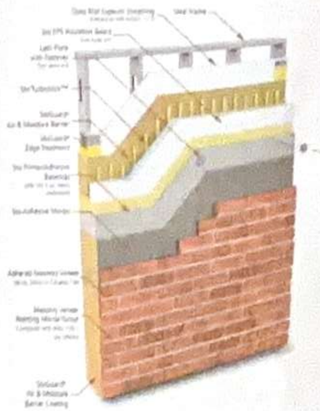


5 NORTH ELEVATIONS
SCALE 1:200



1 EAST(SOUTHERN) ELEVATION
SCALE 1:200

6 SOUTH ELEVATION
SCALE 1:200



ELEVATIONS

NAME: CRASANTIA SURESH
ROLL NO: 963423251012
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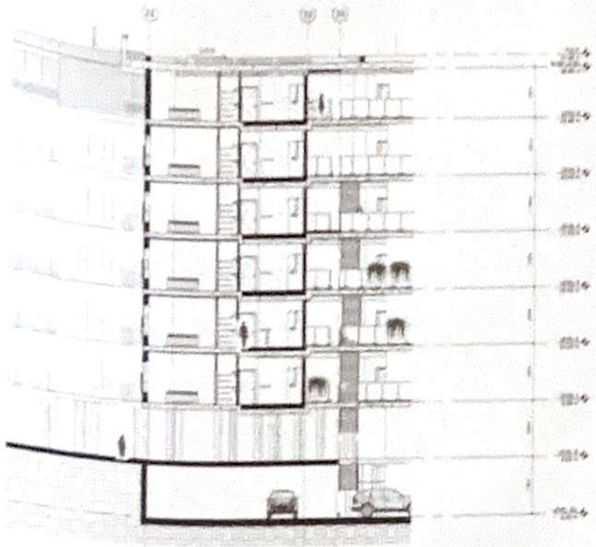
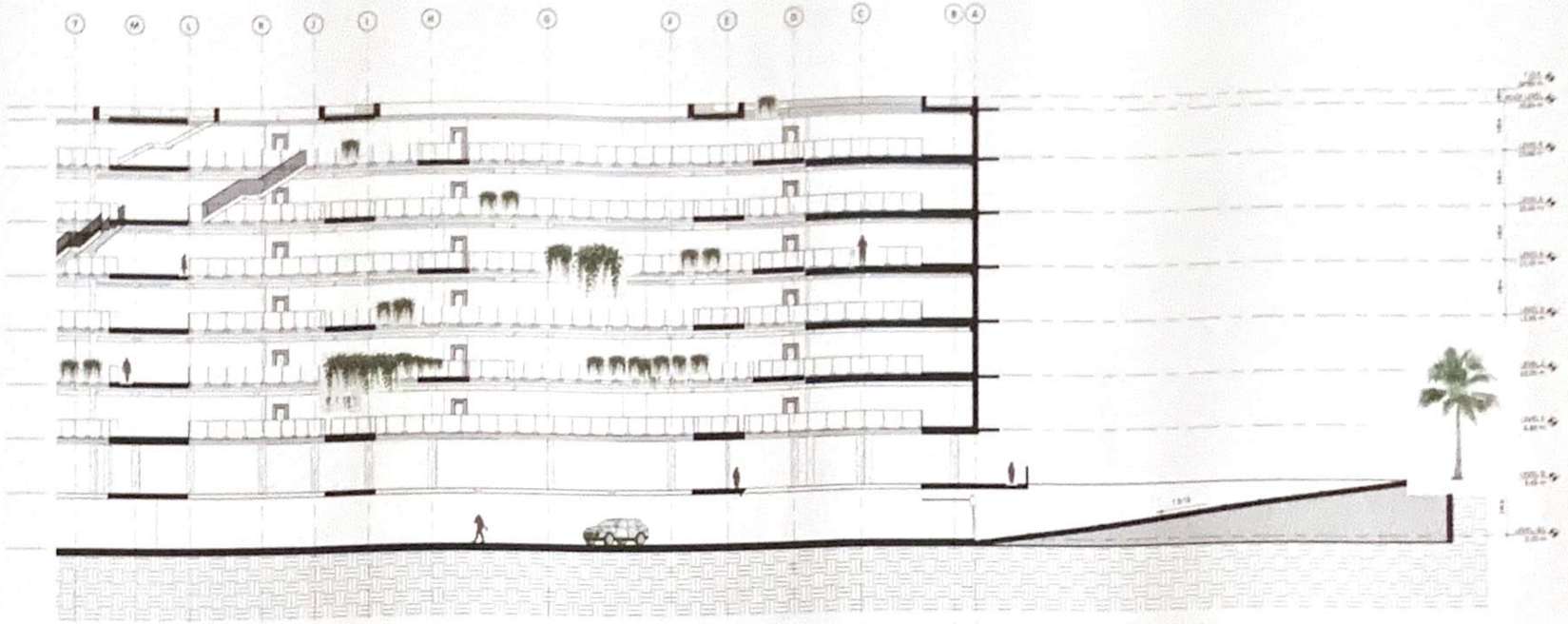
07



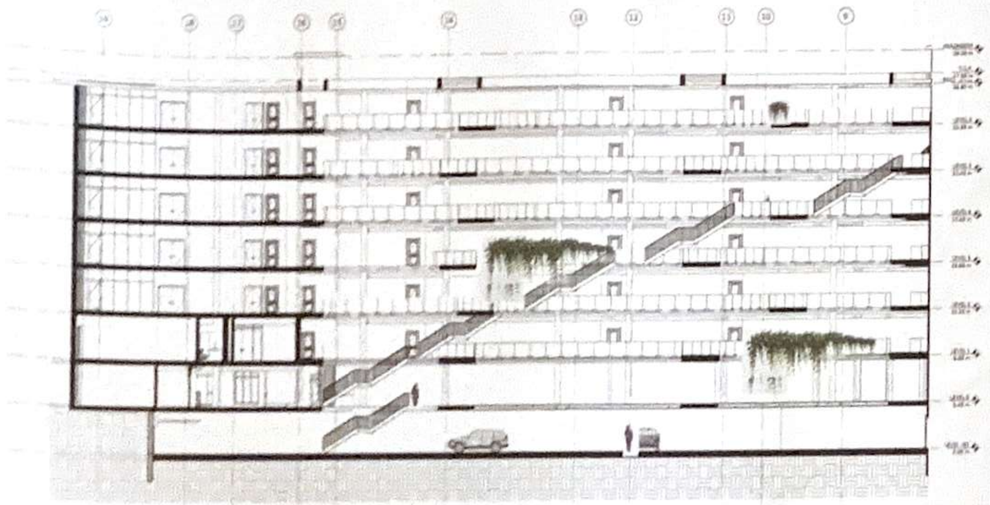
TYPICAL SECTION THROUGH TOILET AND STAIRS

SCALE 1:100



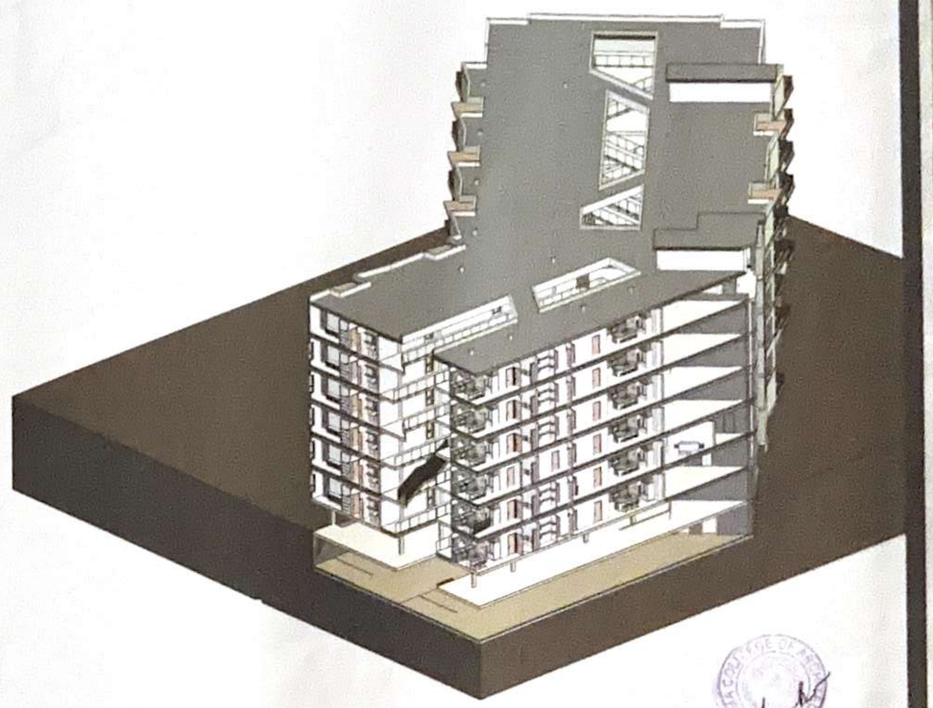
SECTION THROUGH SOUTHERN HALF

SCALE 1:100



SECTION THROUGH NORTHERN HALF

SCALE 1:100



SECTIONS

NAME: CRASANTIA SURESH
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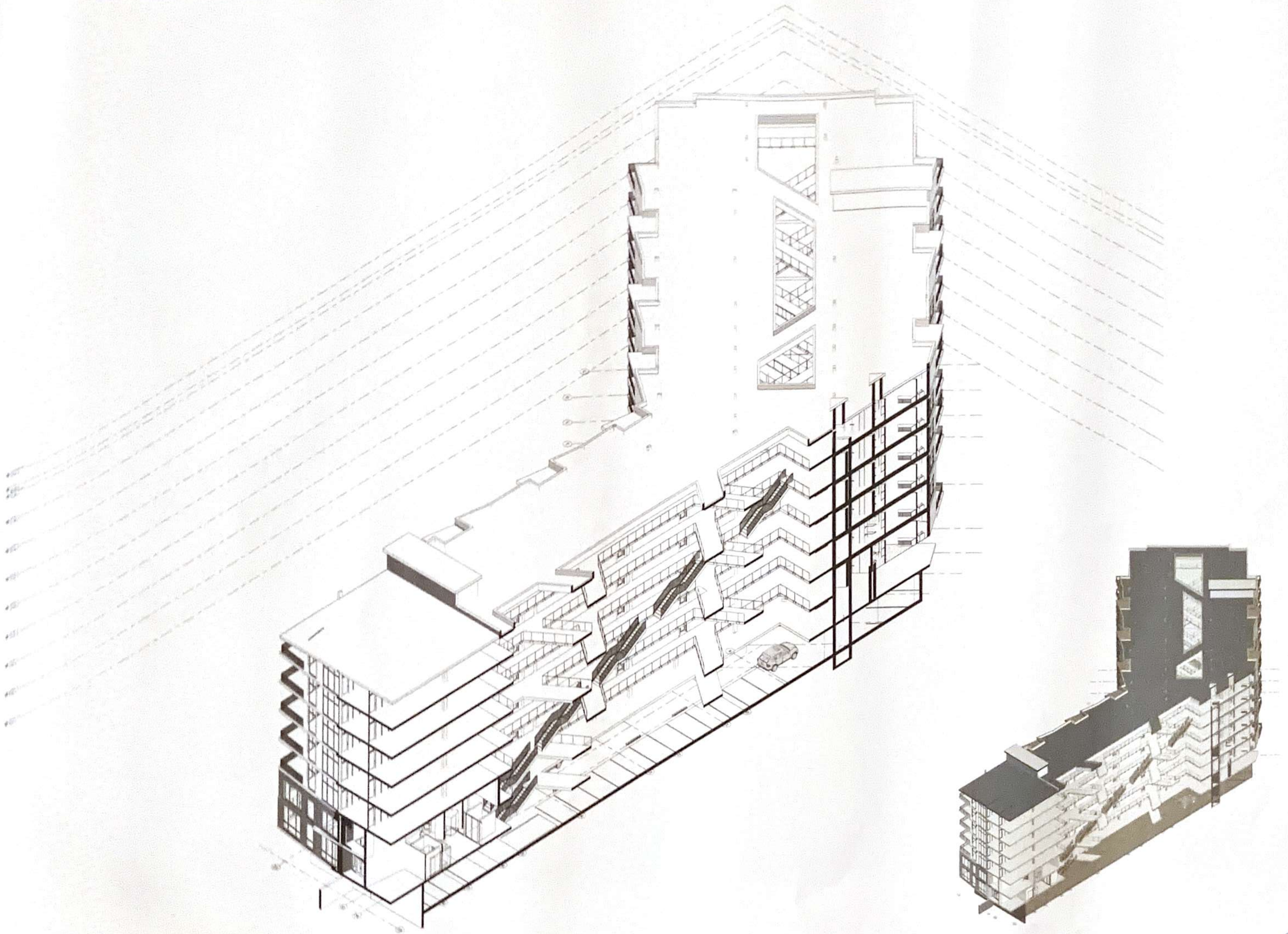
SHEET NO:

06



CROSS SECTIONAL ISOMETRIC VIEW

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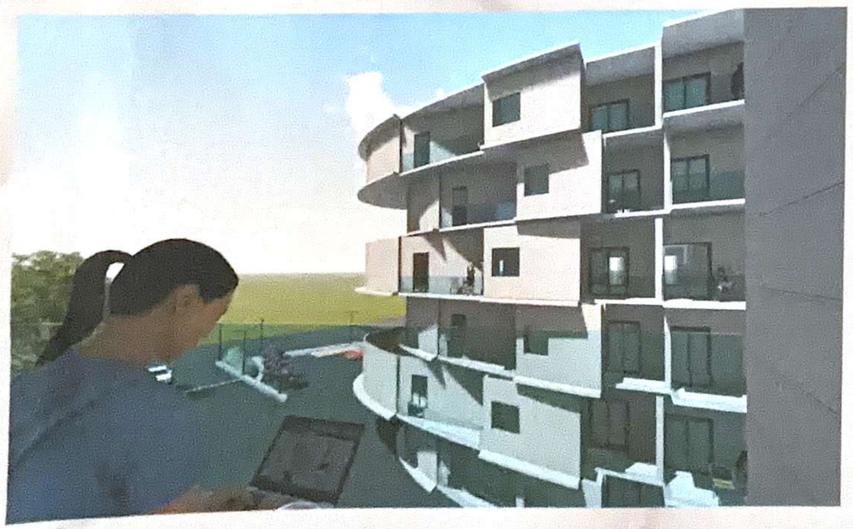
VIEW FROM THE ENTRANCE



VIEW FROM OSR

VIEWS

YEAR: 3RD, SEM: SUB: URBAN ARCHITECTURE DESIGN STUDIO REMARKS: DATE: