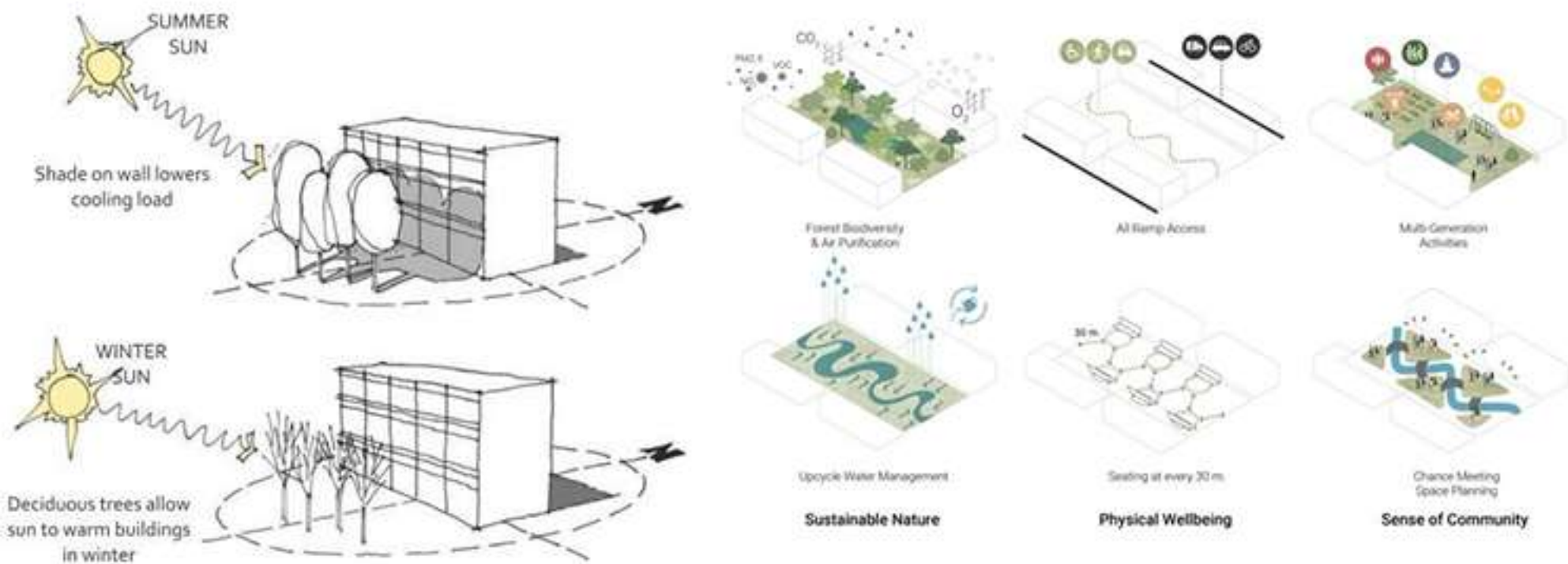


LANDSCAPE DESIGN

as a climate responsive and ecological tool

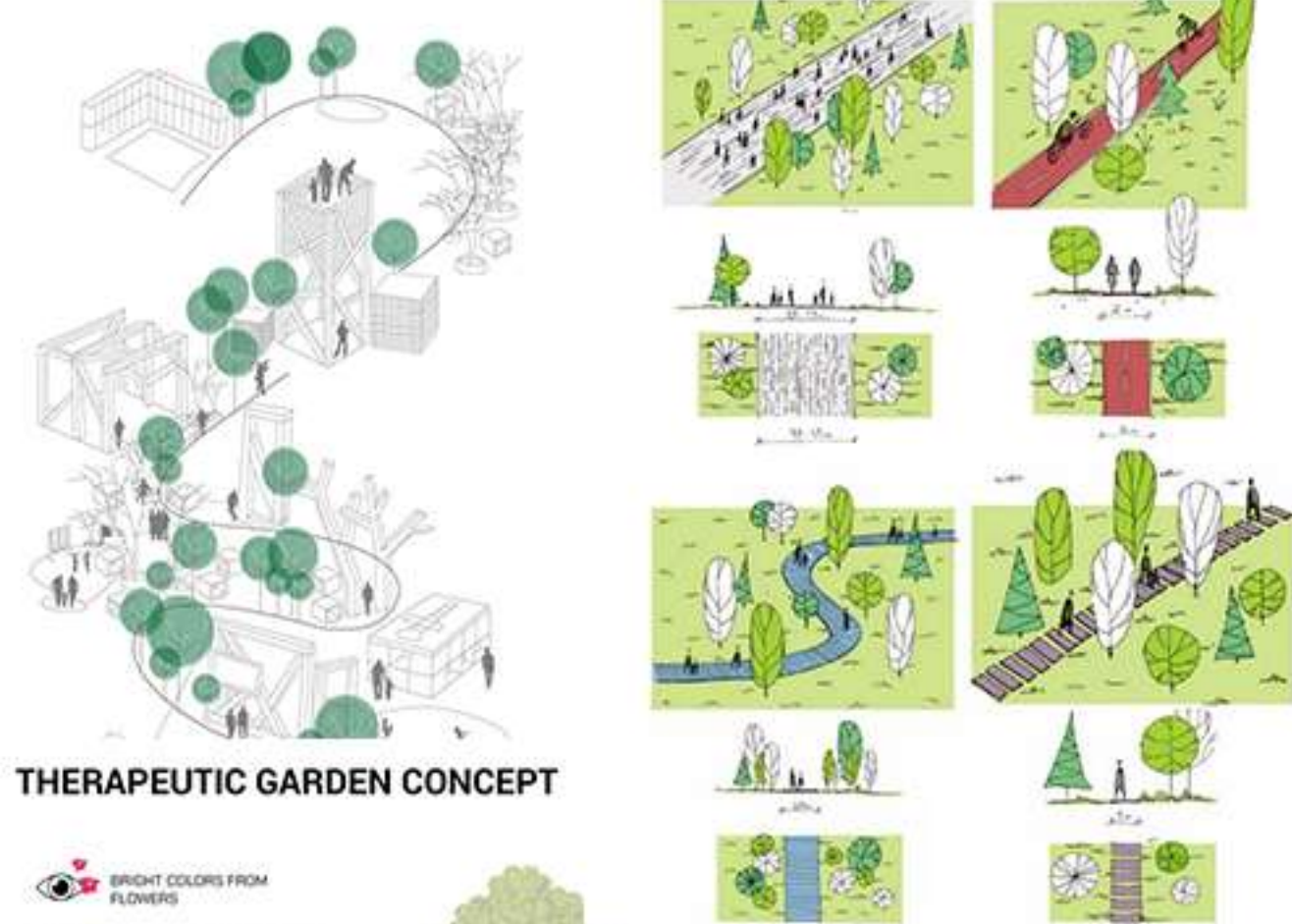


MICROCLIMATE MITIGATION

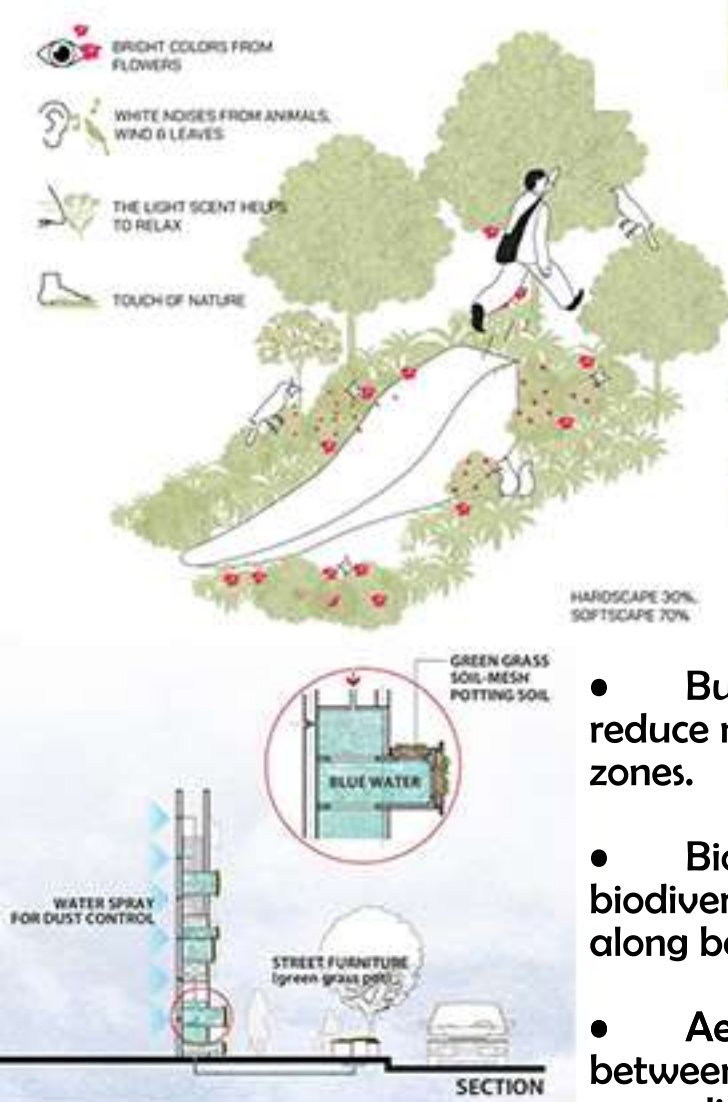


- **Shading & Cooling:** Use native trees and water features to lower ambient temperatures and mitigate urban heat islands.
- **Energy Savings:** Strategically placed vegetation can reduce building cooling loads by 10–15%.
- **Ventilation Enhancement:** Design corridors and open spaces to channel prevailing breezes for natural cooling.

RESILIENT EDGE DESIGN



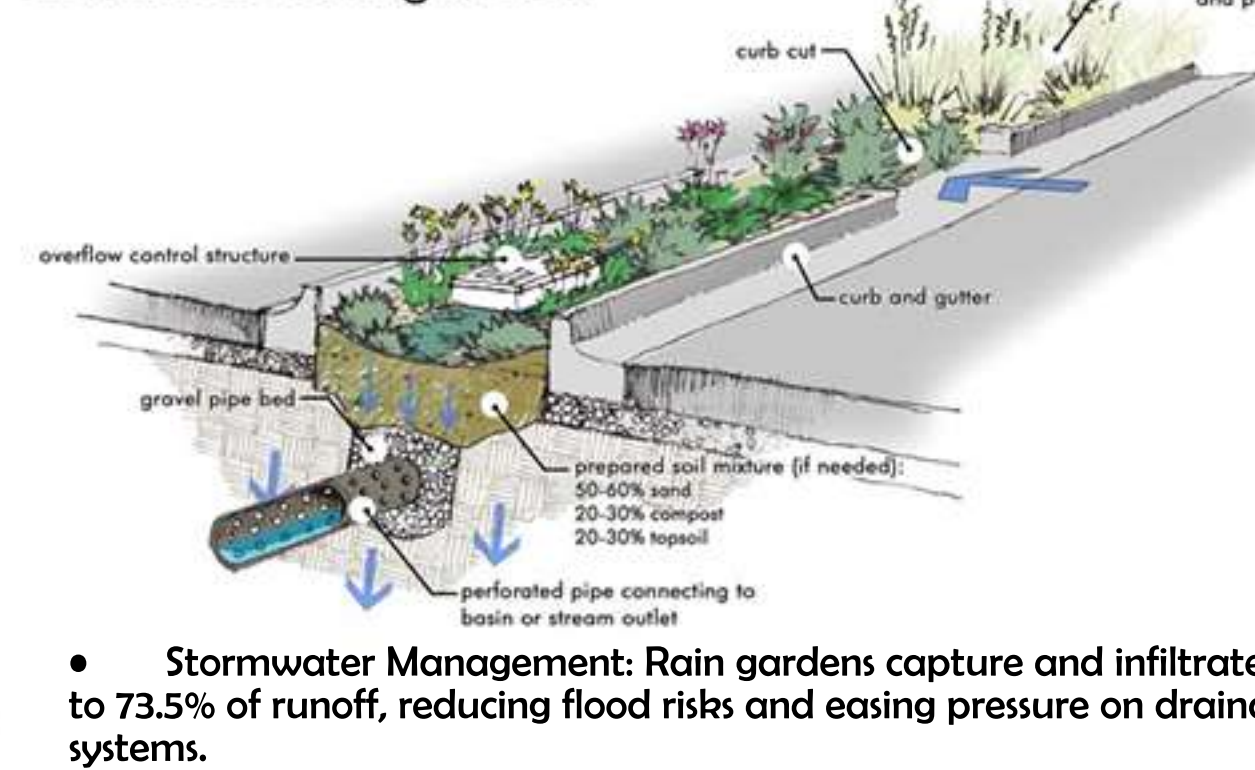
THERAPEUTIC GARDEN CONCEPT



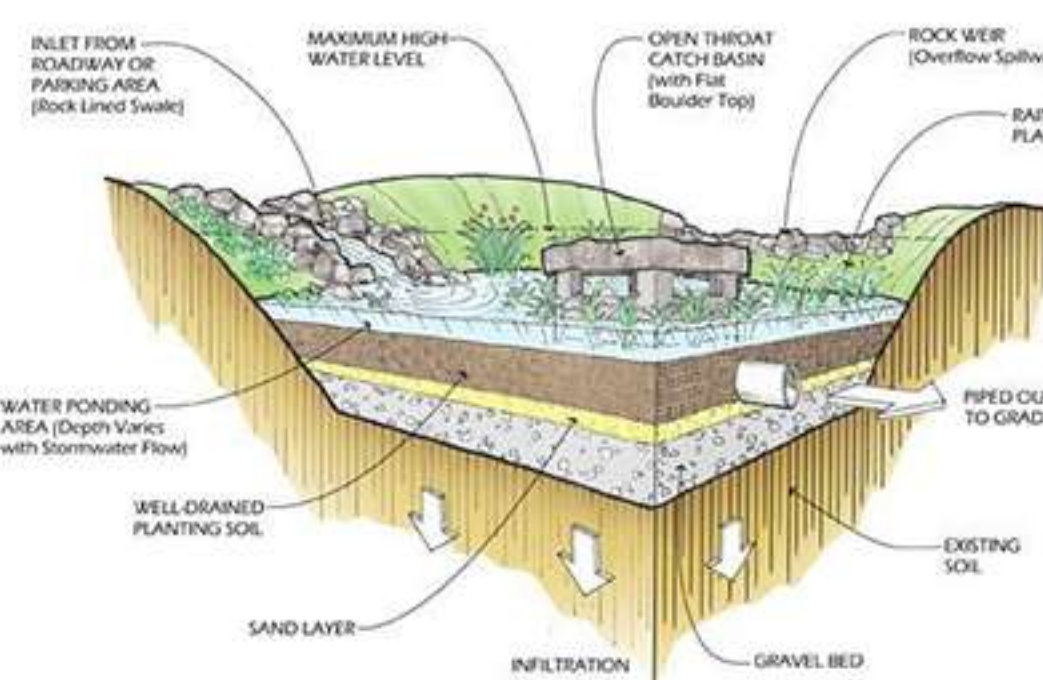
- **Buffer Zones:** Green buffers and living fences reduce noise, filter pollutants, and create transitional zones.
- **Biodiversity & Safety:** Enhance campus biodiversity while improving privacy and security along boundaries.
- **Aesthetic Transition:** Gradual transitions between built and natural areas create visually appealing landscapes.

RAIN GARDENS

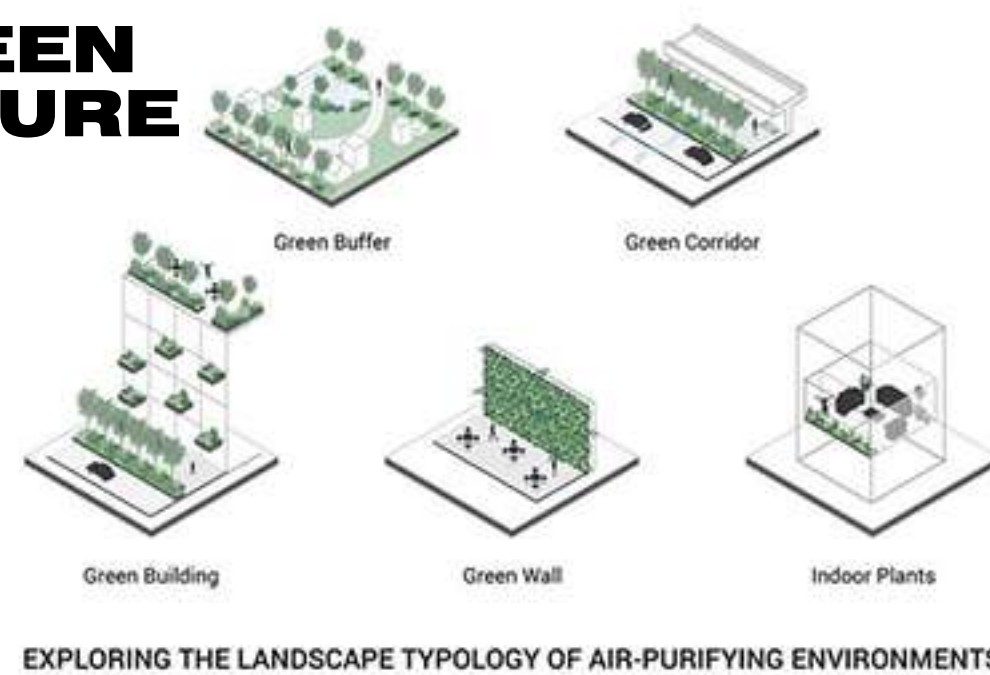
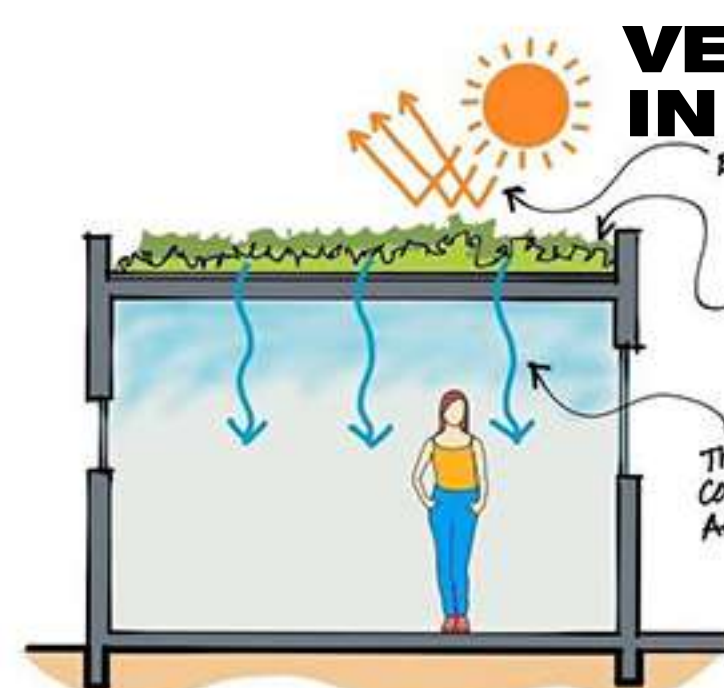
curbside rain garden



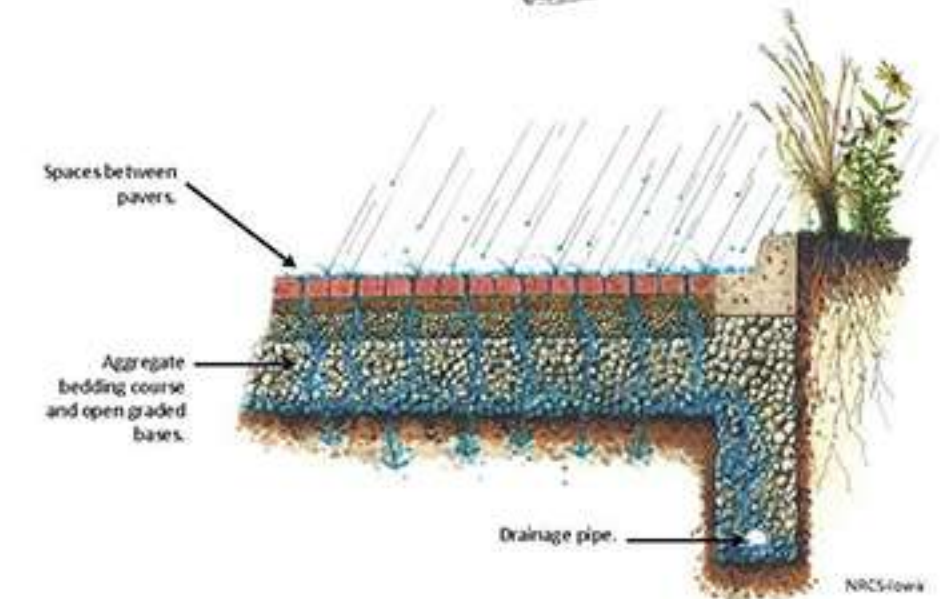
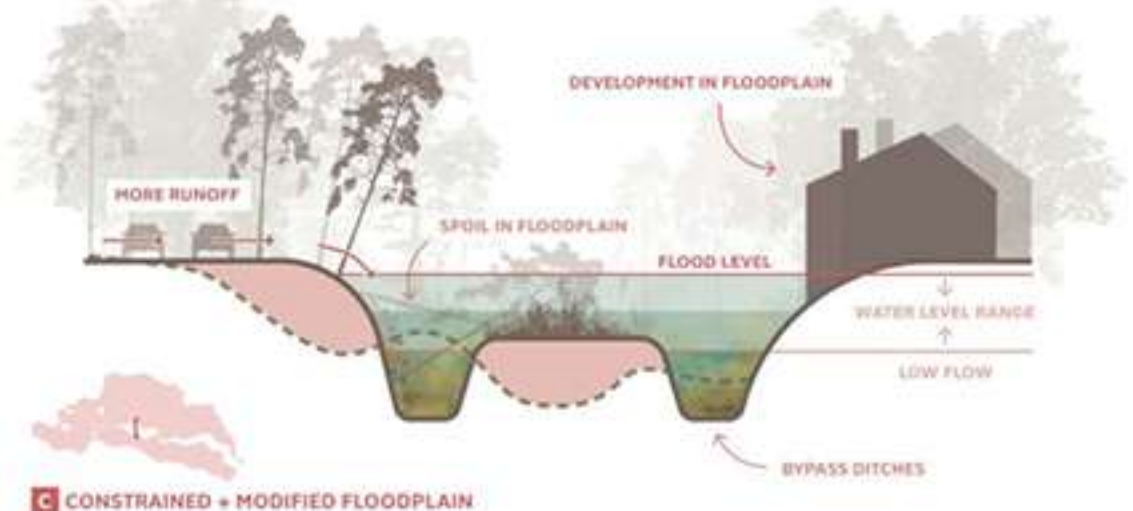
- **Stormwater Management:** Rain gardens capture and infiltrate up to 73.5% of runoff, reducing flood risks and easing pressure on drainage systems.
- **Pollutant Filtration:** They filter contaminants through soil and plant roots, significantly improving water quality before it reaches natural waterways.



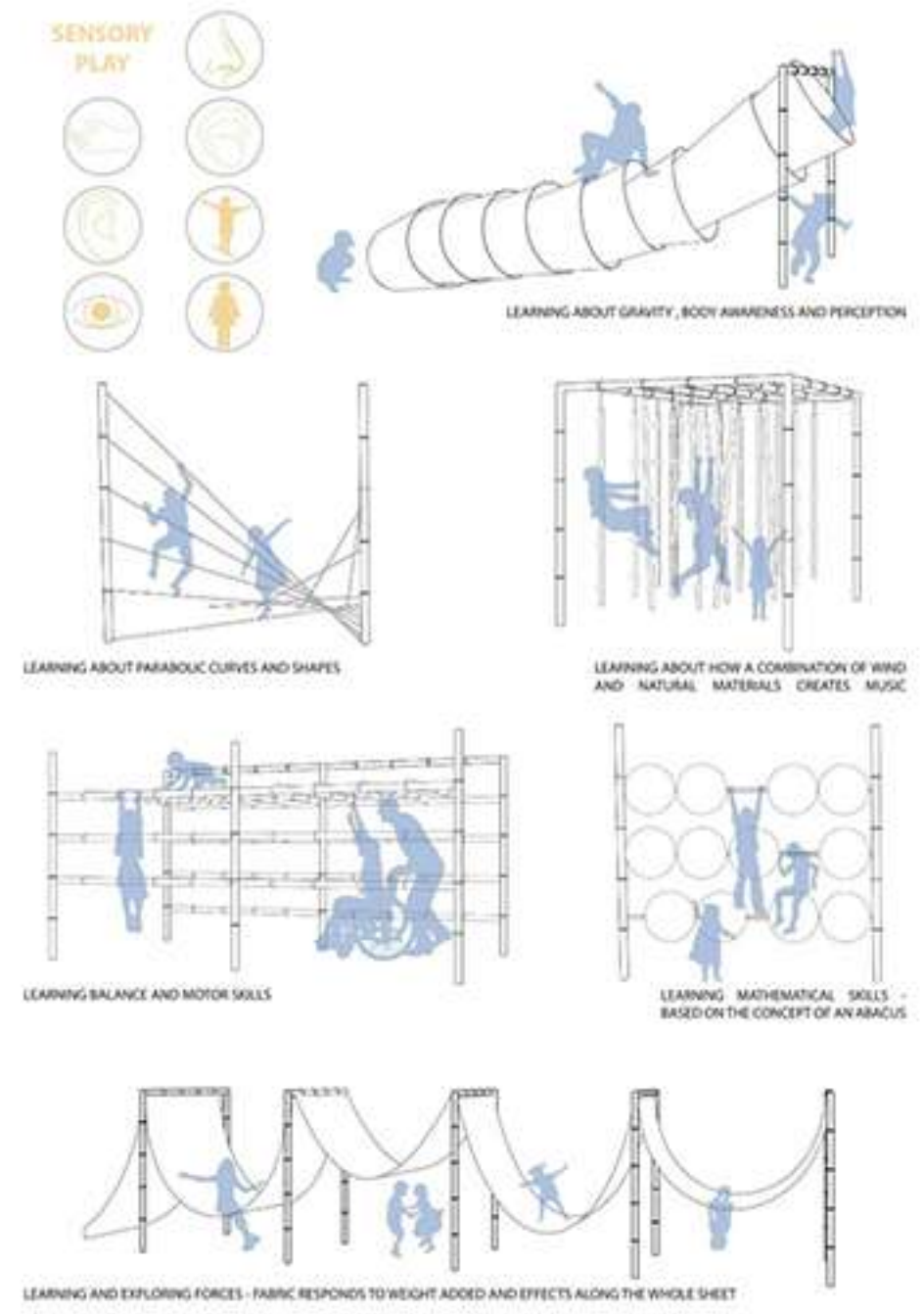
VERTICAL GREEN INFRASTRUCTURE



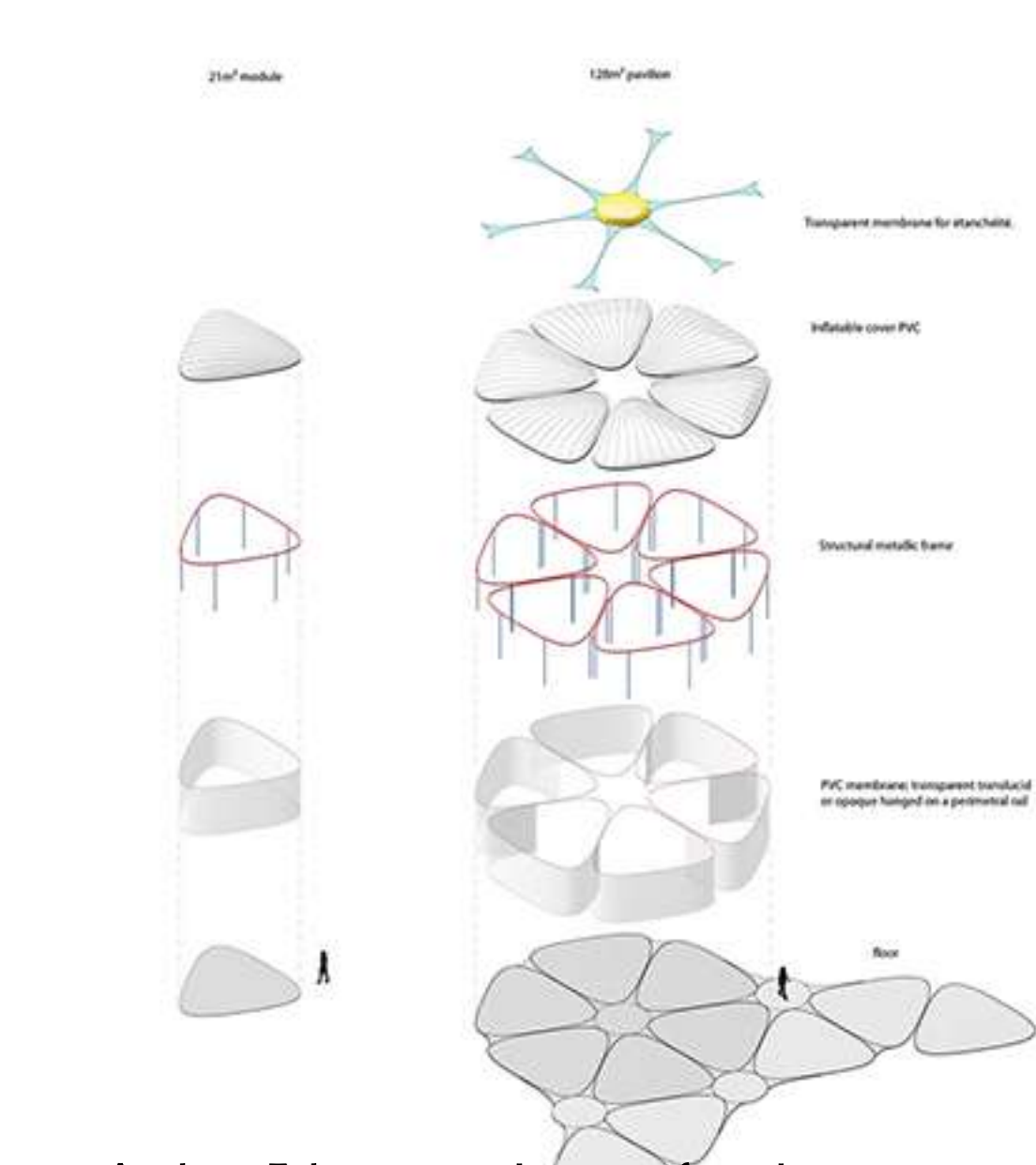
BIOSWALES & PERMEABLE PAVEMENTS



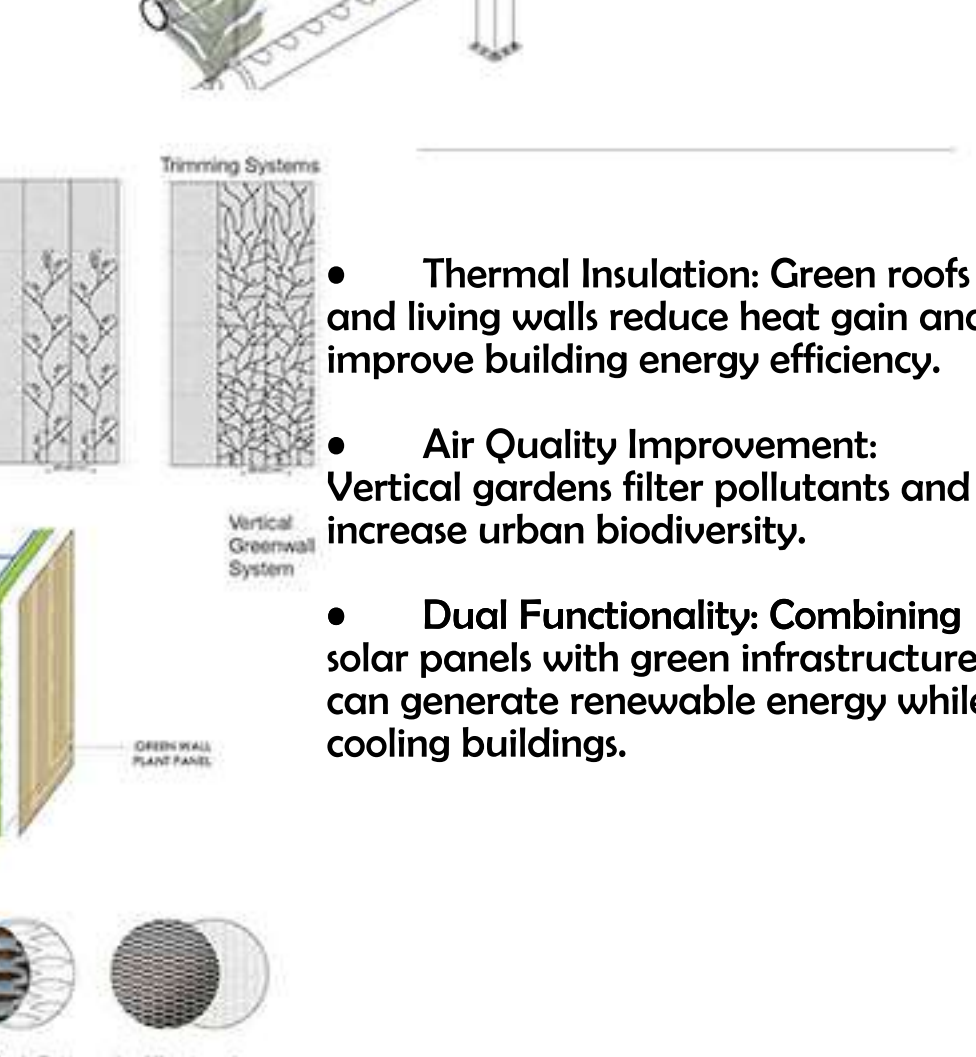
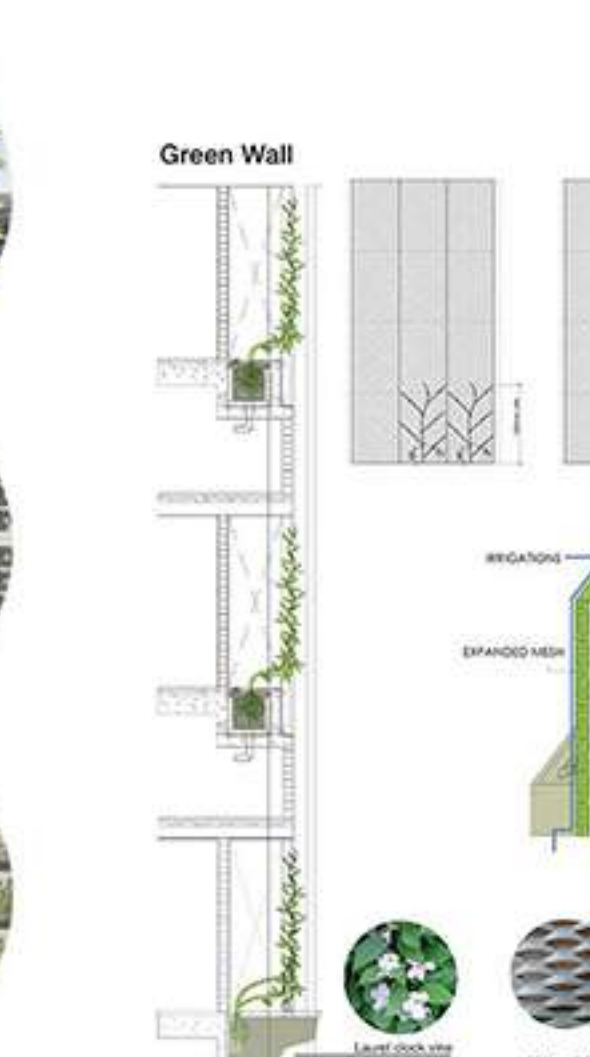
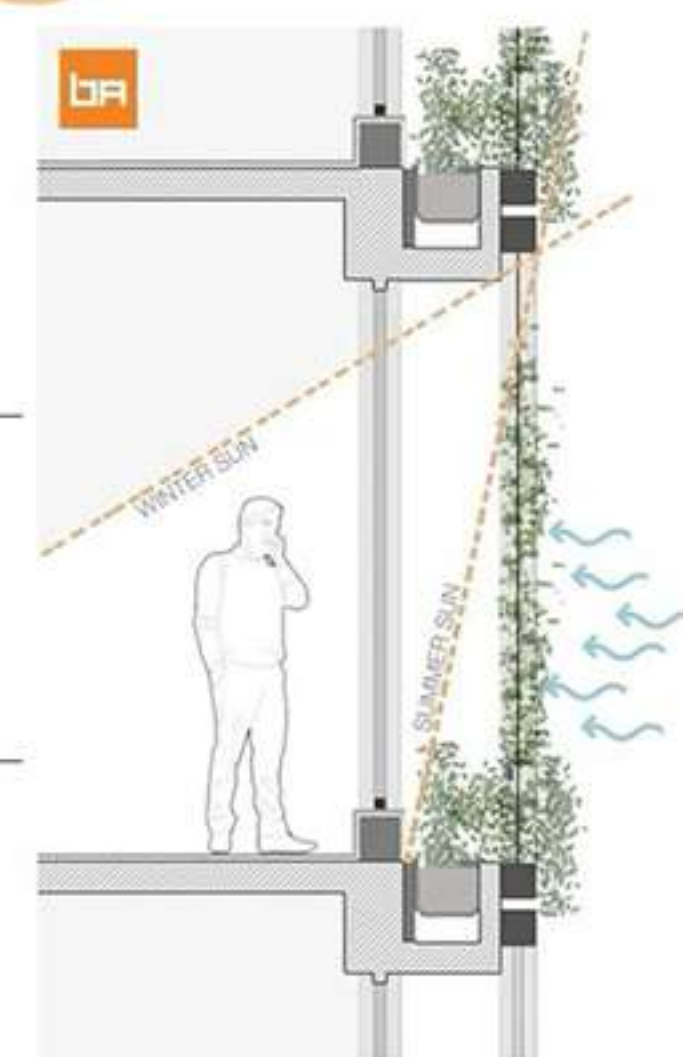
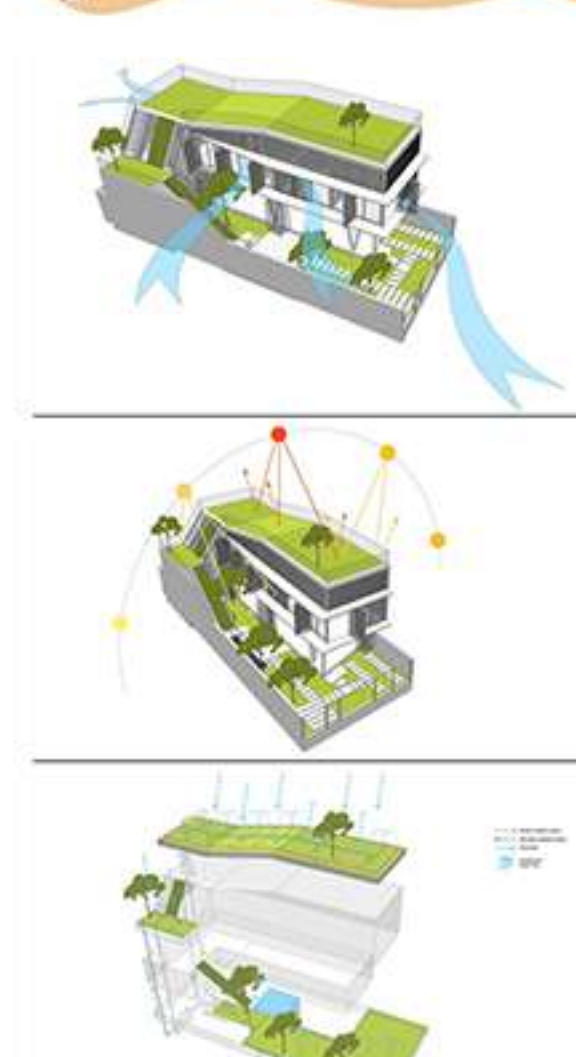
OUTDOOR LEARNING



NATURE INSPIRED PATTERNS



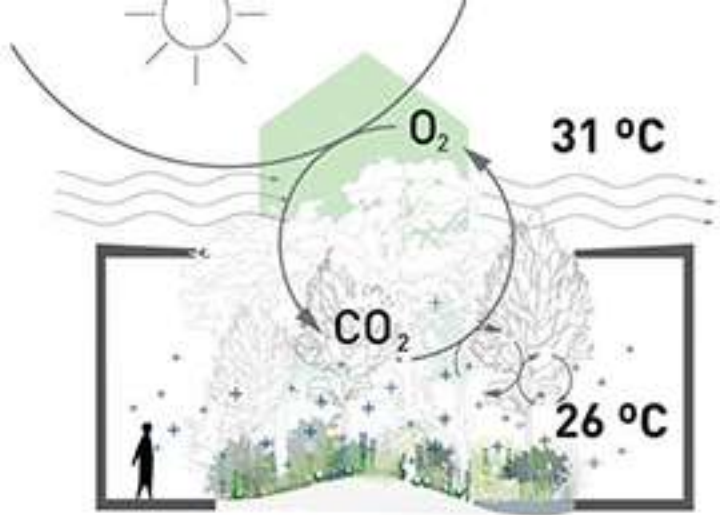
- **Aesthetic Enhancement:** Integrate fractal geometries and natural patterns to create visually engaging spaces.
- **Microclimate Benefits:** Optimized shading and airflow can lead to local cooling effects of 1–2°C.
- **User Engagement:** Unique, nature-inspired designs enhance occupant satisfaction by 10–15%.



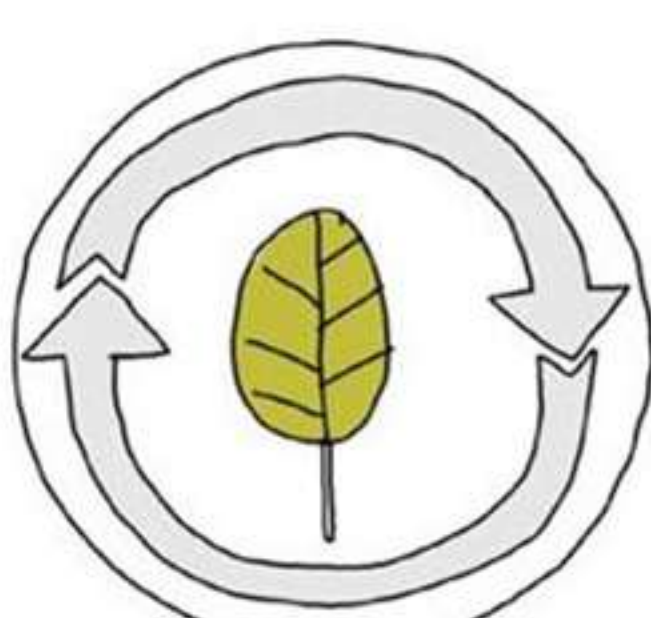
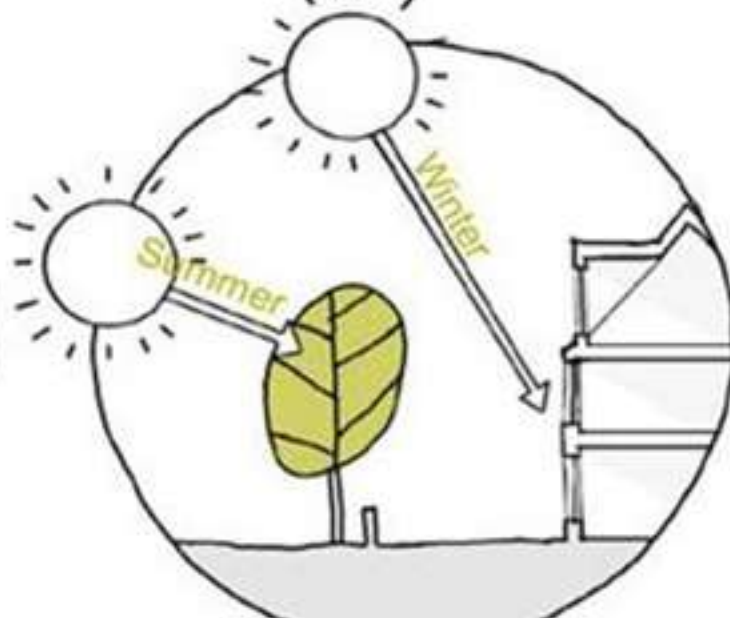
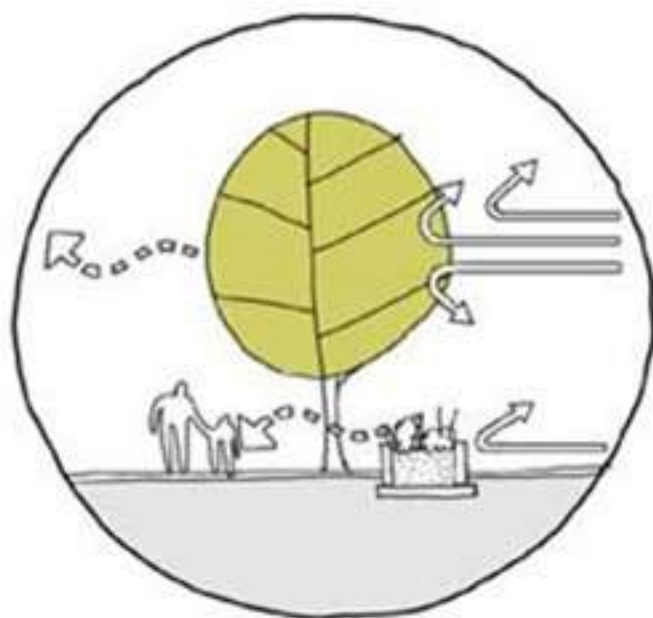
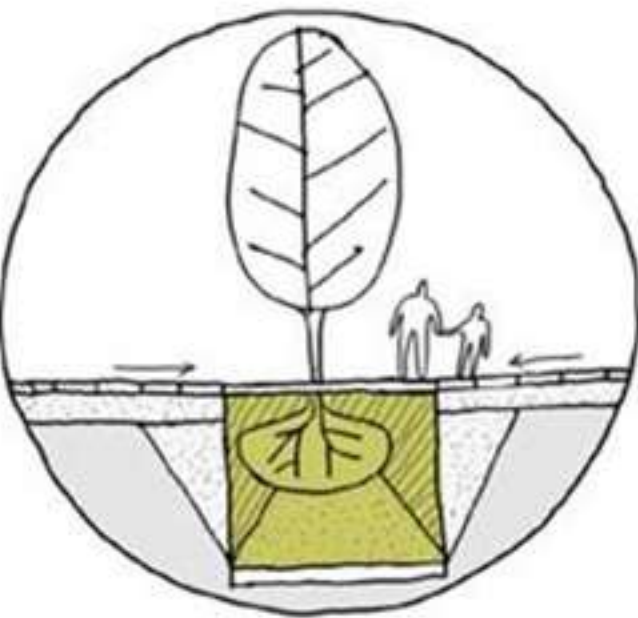
- **Thermal Insulation:** Green roofs and living walls reduce heat gain and improve building energy efficiency.
- **Air Quality Improvement:** Vertical gardens filter pollutants and increase urban biodiversity.
- **Dual Functionality:** Combining solar panels with green infrastructure can generate renewable energy while cooling buildings.

STUDY ON NATIVE TREES

Native trees are vital to sustainable campus design in Bangalore. By mitigating the urban heat island effect, enhancing air quality, and supporting local biodiversity, indigenous species such as Neem, Banyan, and Peepal serve as essential components in creating resilient, energy-efficient, and ecologically balanced environments. This study examines the role of native trees in optimizing campus microclimates and promoting sustainable water management while preserving regional natural heritage.



	Sl number	Common Name	Scientific Name	Height	Diameter (Canopy)	Lifespan	Characteristics & Uses
	1	Neem	Azadirachta indica	15–20 m	8–10 m	150–200 yrs	Medicinal, shade provider, drought-tolerant; excellent for rain gardens and roadside planting.
	2	Pride of India	Lagerstroemia speciosa	7–10 m	4–6 m	50–100 yrs	Ornamental flowers; ideal for gardens and plazas.
	3	Indian Banyan	Ficus benghalensis	20–25 m	25–30 m	200+ yrs	Large canopy; improves biodiversity; ideal for courtyards and open spaces.
	4	Peepal Tree	Ficus religiosa	20–30 m	15–20 m	200+ yrs	Sacred; improves air quality; suitable for meditation zones and courtyards.
	5	Jackfruit	Artocarpus heterophyllus	10–15 m	8–10 m	80–100 yrs	Fruit-bearing, evergreen; useful for edible landscapes and community gardens.
	6	Mango	Mangifera indica	10–15 m	10–12 m	100+ yrs	Fruit-bearing; provides ample shade; ideal for edible landscapes.
	7	Jamun	Syzygium cumini	10–15 m	6–8 m	70–100 yrs	Fruit-bearing; excellent for edible landscapes and boundary plantations.
	8	Kadamba	Neolamarckia cadamba	15–20 m	10–15 m	60–80 yrs	Fast-growing with fragrant flowers; suitable for shaded resting areas or near water bodies.
	9	Golden Shower	Cassia fistula	6–10 m	4–6 m	50–75 yrs	Ornamental flowers; attracts pollinators; ideal for pathways and bioswales.
	10	Arjuna Tree	Terminalia arjuna	15–20 m	8–10 m	100+ yrs	Medicinal; grows near water; ideal for bioswales and rain gardens.
	11	Indian Almond	Terminalia catappa	10–15 m	8–10 m	80–100 yrs	Deciduous with vibrant foliage; suitable for rain gardens and roadsides.
	12	Ashoka	Polyalthia longifolia	10–12 m	2–3 m	100+ yrs	Evergreen; noise-absorbing; great for boundaries and vertical green spaces.
	13	Rain Tree	Samanea saman	20–25 m	15–20 m	80–100 yrs	Large shade provider; suitable for recreational spaces and large courtyards.
	14	Flame of the Forest	Butea monosperma	10–12 m	8–10 m	60–80 yrs	Ornamental flowers; attracts pollinators; suitable for gardens and recreational zones.
	15	Indian Tulip	Thespesia populnea	10–15 m	6–8 m	60–70 yrs	Tolerates salty soils; ideal for rain gardens and urban streetscapes.



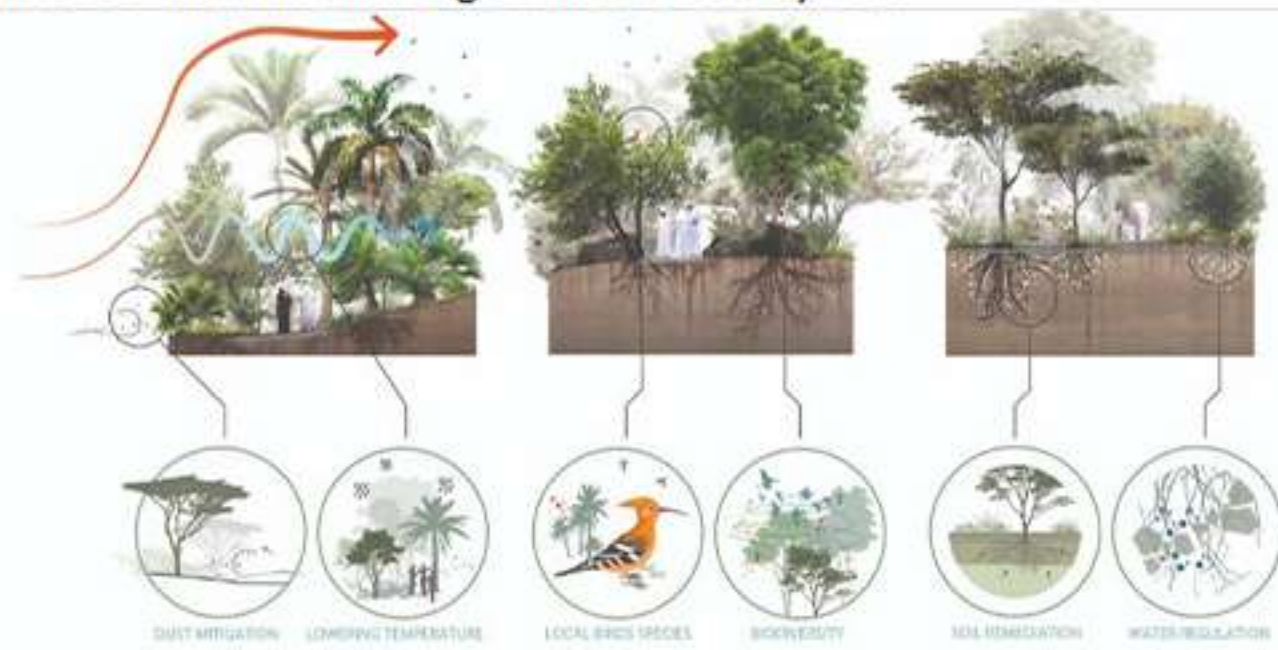
STUDY ON NATIVE TREES

	16	Indian Cork Tree	Millingtonia hortensis	15–20 m	6–8 m	60–70 yrs	Fragrant flowers; suitable for pathways and boundary plantations.
	17	Baobab	Adansonia digitata	15–20 m	10–12 m	500+ yrs	Drought-tolerant; ornamental; ideal for arid zones or as a focal point in plazas.
	18	Sandalwood	Santalum album	6–8 m	4–6 m	80–100 yrs	Highly valued for its wood; suitable for small gardens and urban forestry.
	19	Honge	Pongamia pinnata	15–20 m	8–10 m	100+ yrs	Nitrogen-fixing; ideal for rain gardens; improves soil quality.
	20	Mahogany	Swietenia mahagoni	10–15 m	6–8 m	80–100 yrs	Timber-producing; suitable for plantations along roads and pathways.
	21	Gulmohar	Delonix regia	10–15 m	8–10 m	50–60 yrs	Vibrant flowers; ideal for gardens, roadsides, and bioswales.
	22	Teak	Tectona grandis	15–30 m	10–15 m	100–150 yrs	Valuable timber; suitable for forestry zones or large landscapes.
	23	Wild Jasmine	Jasminum sambac	2–4 m	2–3 m	20–30 yrs	Fragrant flowering shrub; ideal for ornamental gardens and courtyards.
	24	Tamarind	Tamarindus indica	10–15 m	8–12 m	150–200 yrs	Fruit-bearing; provides dense shade; suitable for edible landscapes and community gardens.
	25	Wild Mango	Mangifera sylvatica	12–15 m	8–10 m	100+ yrs	Edible fruit; enhances biodiversity in campus settings.
	26	Indian Rosewood	Dalbergia latifolia	10–15 m	6–8 m	100+ yrs	Durable timber; ideal for roadsides and large parks.
	27	Creeping Fig	Ficus pumila	Vine	Spreading	20–30 yrs	Evergreen climber; suitable for green walls and boundary fencing.
	28	Indian Gooseberry	Phyllanthus emblica	8–10 m	6–8 m	70–100 yrs	Medicinal fruit; suitable for medicinal gardens or edible landscapes.
	29	Vetiver Grass	Vetiveria zizanioides	1-2m	Clumping	Perennial	Excellent for soil erosion control; ideal for bioswales, rain gardens, and wetland zones.
	30	Tulsi	Ocimum sanctum	0.5-1m	Shrub	Perennial	Medicinal herb; suitable for small medicinal gardens and courtyards.



SOURCES

1 Indian Institute of Science (IISc) Bangalore: https://www.iisc.ac.in/	4 Flora of Karnataka - Trees and Plants Database: http://www.florakarnataka.ces.iisc.ac.in/
2 ATREE - Ashoka Trust for Research in Ecology and the Environment: https://www.atree.org/	5 Lalbagh Botanical Garden Official Site: https://www.horticulture.karnataka.gov.in/
3 India Biodiversity Portal - Trees of Bangalore: https://indiabiodiversity.org/	



ANANT NATIONAL UNIVERSITY

AHMEDABAD

Anant National University in Ahmedabad, India, is a pioneering educational institution that blends progressive academic philosophy with innovative architectural design. The campus, spanning 125 acres, is a testament to sustainable and contextually responsive design principles. The master plan, developed by Sasaki Architects, emphasizes a central green core that preserves over 90% of existing mature trees and serves as a vibrant outdoor learning environment.

- Organizes the campus around a central core that focuses on academic and functional spaces, reinforcing a concentrated campus life.
- Integrates surrounding urban elements like city hubs and smart mobility networks to seamlessly connect the campus with the broader urban context.

RE-ENVISIONING THE FOREST CLASSROOM

"The peace of the forest has helped the intellectual evolution of man. The culture that has arisen from the forest has been influenced by diverse processes of renewal of life which are always at play in the forest, varying from species to species, from season to season, in sight and sound and smell. The unifying principle of life in diversity, of democratic pluralism, thus become the principle of Indian civilization."

- Rabindranath Tagore

Extending the forest into the campus and building fabric

FRAMEWORK FOR SOCIAL & CULTURAL ACTIVITIES

- **Holistic Programming:** Includes festivals, street performances, and cultural gatherings, appealing to diverse interests.
- **Central & Distributed Venues:** Activities occur in courtyards and plazas, promoting widespread engagement and social interaction.
- **Community Integration:** Merges local traditions (e.g., kite flying) with modern events, strengthening ties between campus life and regional heritage.

- Incorporates an optimized roof design with north light windows and solar panels to maximize daylight and reduce energy usage.
- Employs a central atrium that unites multiple levels, ensuring a seamless flow of natural light and improved air circulation.

INSTITUTION'S ETHOS

A CAMPUS EMBEDDED IN NATURE



THE FOREST AS THE GENESIS OF KNOWLEDGE

HOLISTIC LEARNING ENVIRONMENT



FOSTER A DIVERSE & INCLUSIVE STUDENT EXPERIENCE

CAMPUS WITHOUT WALLS



FACILITATE CREATIVE COLLISIONS

PROMOTE A CULTURE OF MAKING & TESTING



THE CAMPUS AS A LEARNING LAB

MAKER HUB



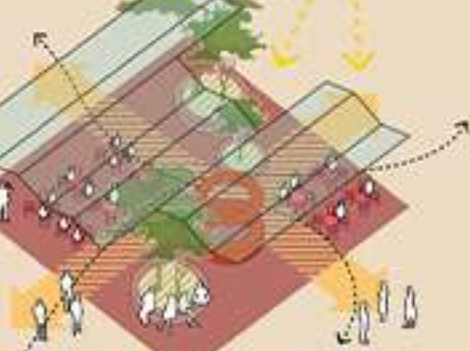
Facilitate making and testing by introducing a maker hub integrated with the learning environment

STUDIOS



Transform double loaded blank hallways into collaborative, flexible design studio spaces

COURTYARD



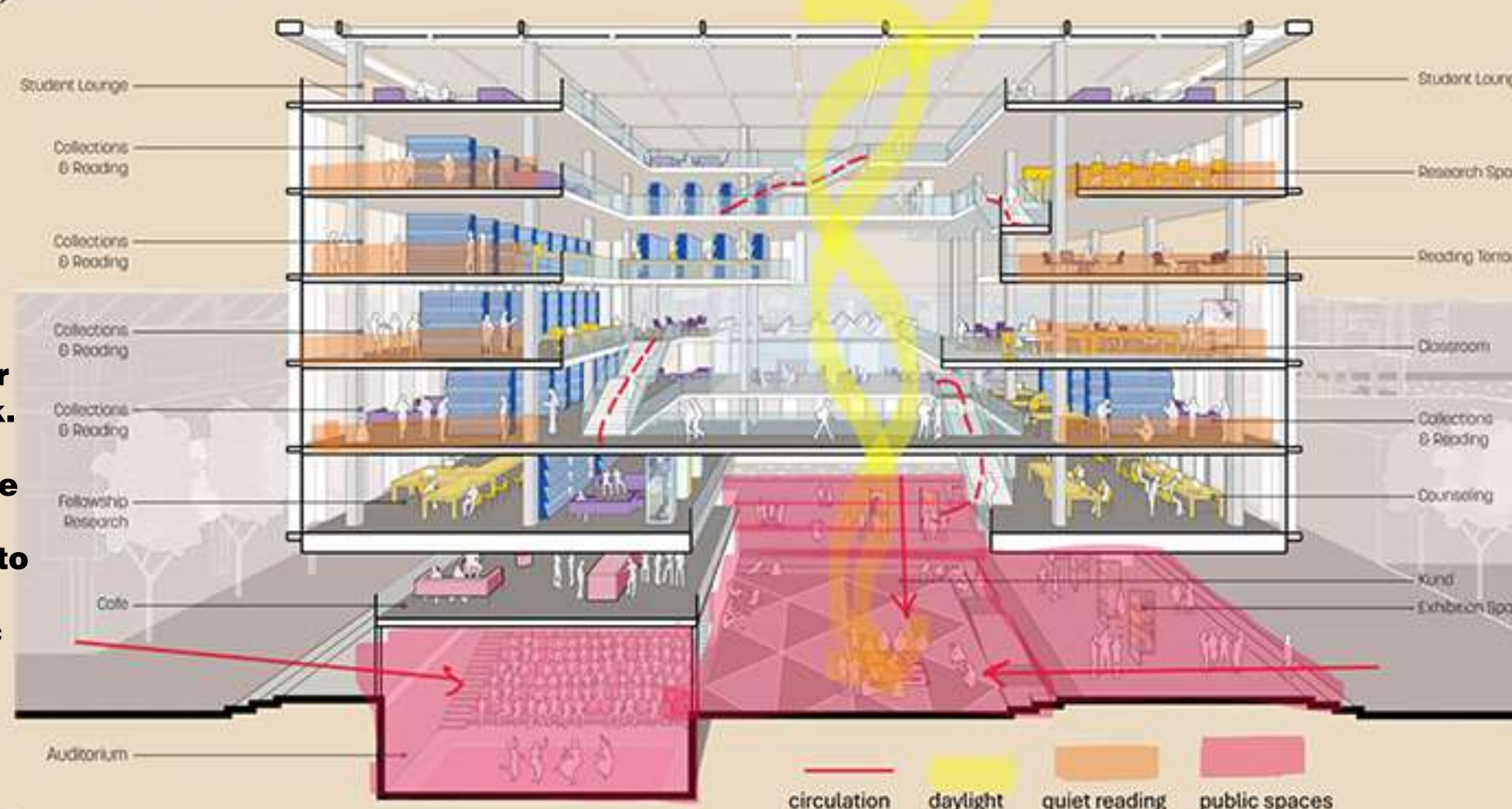
Create a social heart that is green, shaded & facilitates serendipitous encounters

GALLERY



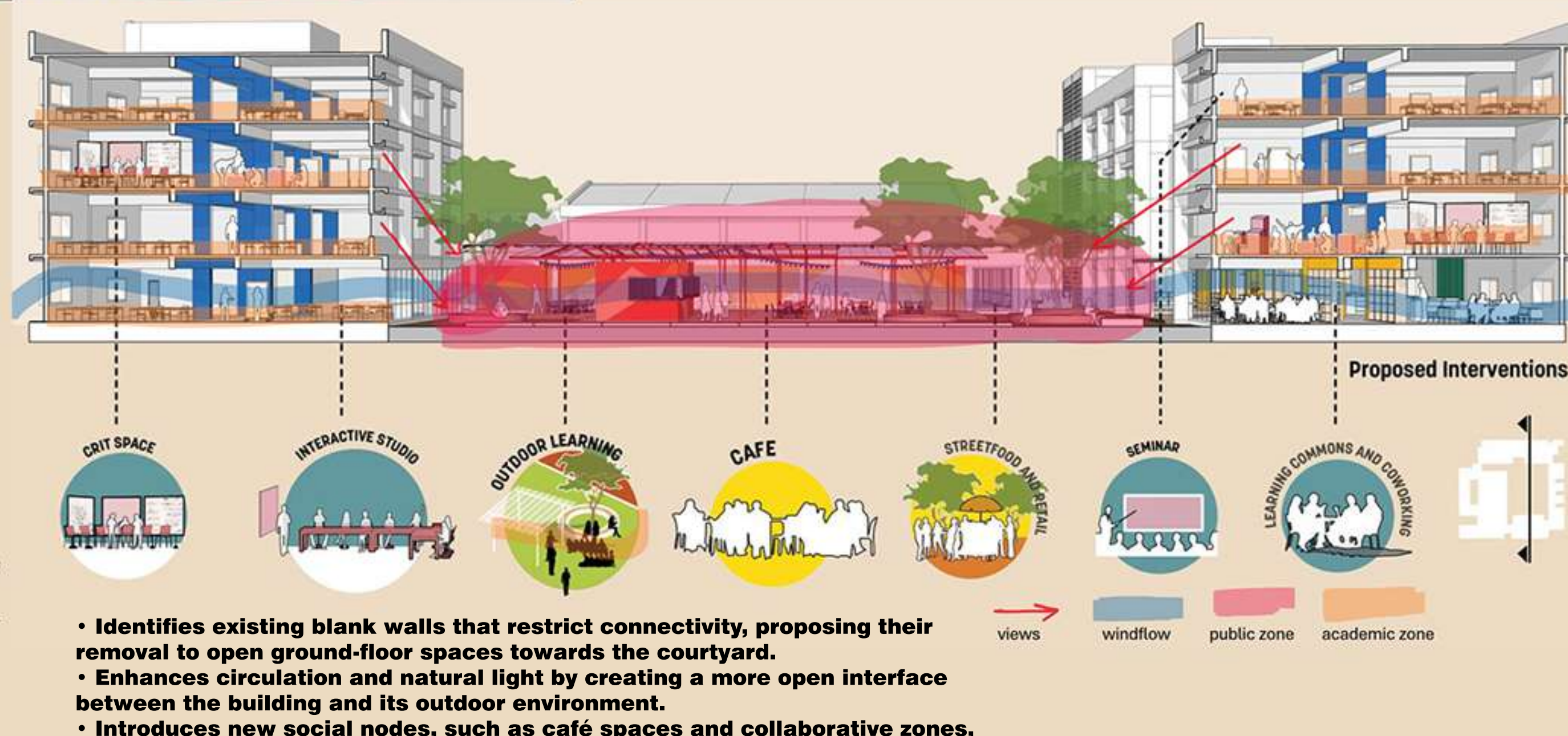
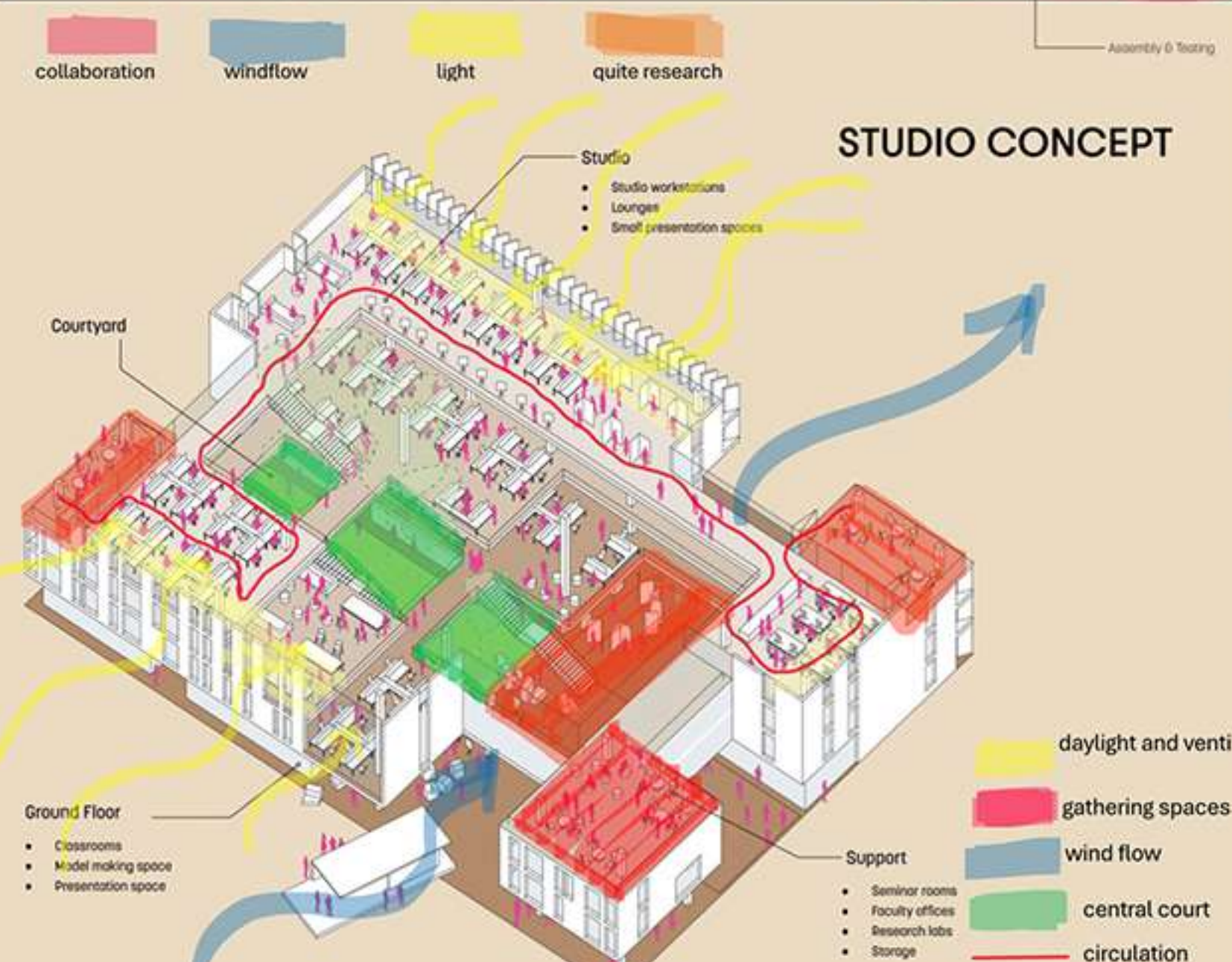
Make student & faculty work visible and accessible to the internal & external community

- Utilizes a multi-level layout with tiered reading and collaboration spaces to create distinct zones for focused and group work.
- Separates noisy basement functions (like auditoriums and cafés) from quiet upper floors to maintain an effective balance between public and private areas.



- Strategically integrates maker spaces and prototyping labs adjacent to academic zones, encouraging hands-on learning and iterative design.
- Features dedicated areas for demonstration and research that foster interdisciplinary collaboration.
- Incorporates an outdoor water plaza and canteen that serve as social hubs while enhancing the local microclimate.

STUDIO CONCEPT



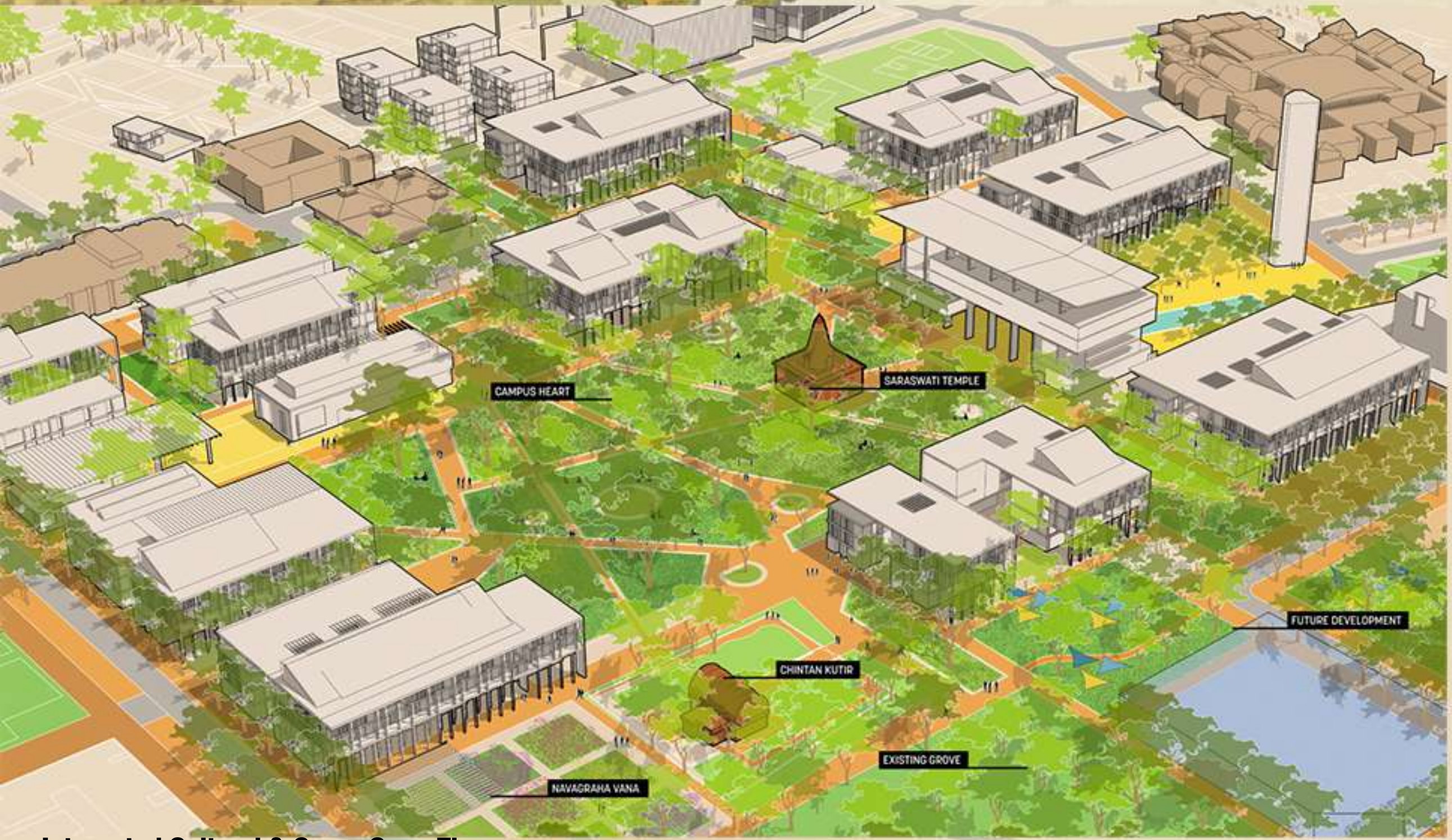
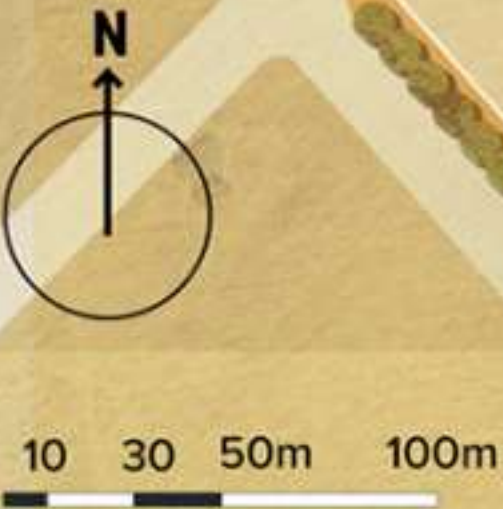
- Identifies existing blank walls that restrict connectivity, proposing their removal to open ground-floor spaces towards the courtyard.
- Enhances circulation and natural light by creating a more open interface between the building and its outdoor environment.
- Introduces new social nodes, such as café spaces and collaborative zones, to revitalize the courtyard as a dynamic community hub.

- Establishes a clear spatial hierarchy with distinct ground-floor public spaces, open studio levels, and support zones that enhance functional clarity and circulation.
- Features a central courtyard acting as a natural light well and social connector, promoting both cross-ventilation and community interaction.
- Adopts an open, modular layout that allows for flexible reconfiguration to meet

ANANT NATIONAL UNIVERSITY

- 01 Campus heart and Saraswati temple
- 02 Entry Plaza
- 03 Academic
- 04 Learning and Design Hub
- 05 Auditorium
- 06 Conference Center
- 07 Research Institute
- 08 Maker Space
- 09 Dining
- 10 Student Housing
- 11 Parking Garage
- 12 Faculty Housing
- 13 Sports Center
- 14 Cricket Field
- 15 Football Field above Parking Garage

- **Layered Functional Zoning:** Academic buildings, student housing, sports facilities, and research centers are strategically distributed to promote synergy and efficient use of space.
- **Green Core & Connectivity:** A central landscaped area anchors the campus, linking various zones through pedestrian-friendly pathways and fostering social interaction.
- **Integrated Amenities:** Conference centers, parking garages, and recreational hubs are placed for easy access, reducing congestion and enhancing the overall campus



- **Integrated Cultural & Green Core:** The temple and surrounding groves anchor a communal space merging spiritual identity with lush landscaping.
- **Context-Sensitive Building Placement:** Academic blocks and future expansions preserve ecological corridors and mature trees.

- **Proximity to Academics:** LIVING LEARNING STUDENT COMMUNITIES Residences lie near classrooms and shared amenities, supporting continuous learning and social engagement.

- **Holistic Campus Experience:** Sports courts, green spaces, and cultural landmarks create a balanced environment for study, recreation, and community bonding.

- **Contextual Integration:** Features like the reservoir and amphitheater reflect environmental awareness and provide cultural event spaces.



COLLABORATIVE STUDIO CLUSTERS

- **Central Green Focus:** Buildings encircle a shared landscape, encouraging interaction and visual connectivity among academic functions.
- **Programmatic Synergy:** Studios, maker spaces, and dining areas cluster together, fostering interdisciplinary learning and spontaneous collaboration.
- **Walkable Core:** Pathways between clusters create a pedestrian-friendly environment, enhancing social engagement and efficient circulation.



INTEGRATED FACULTY HOUSING

- **Proximity & Connectivity:** Faculty residences sit close to academic blocks, café, and sports facilities, fostering daily interaction and balanced living.
- **Community-Focused Layout:** Clustered housing and green pockets encourage informal gatherings and a supportive residential environment.
- **Efficient Infrastructure:** Surface parking and clear circulation reduce congestion, enhancing overall campus livability



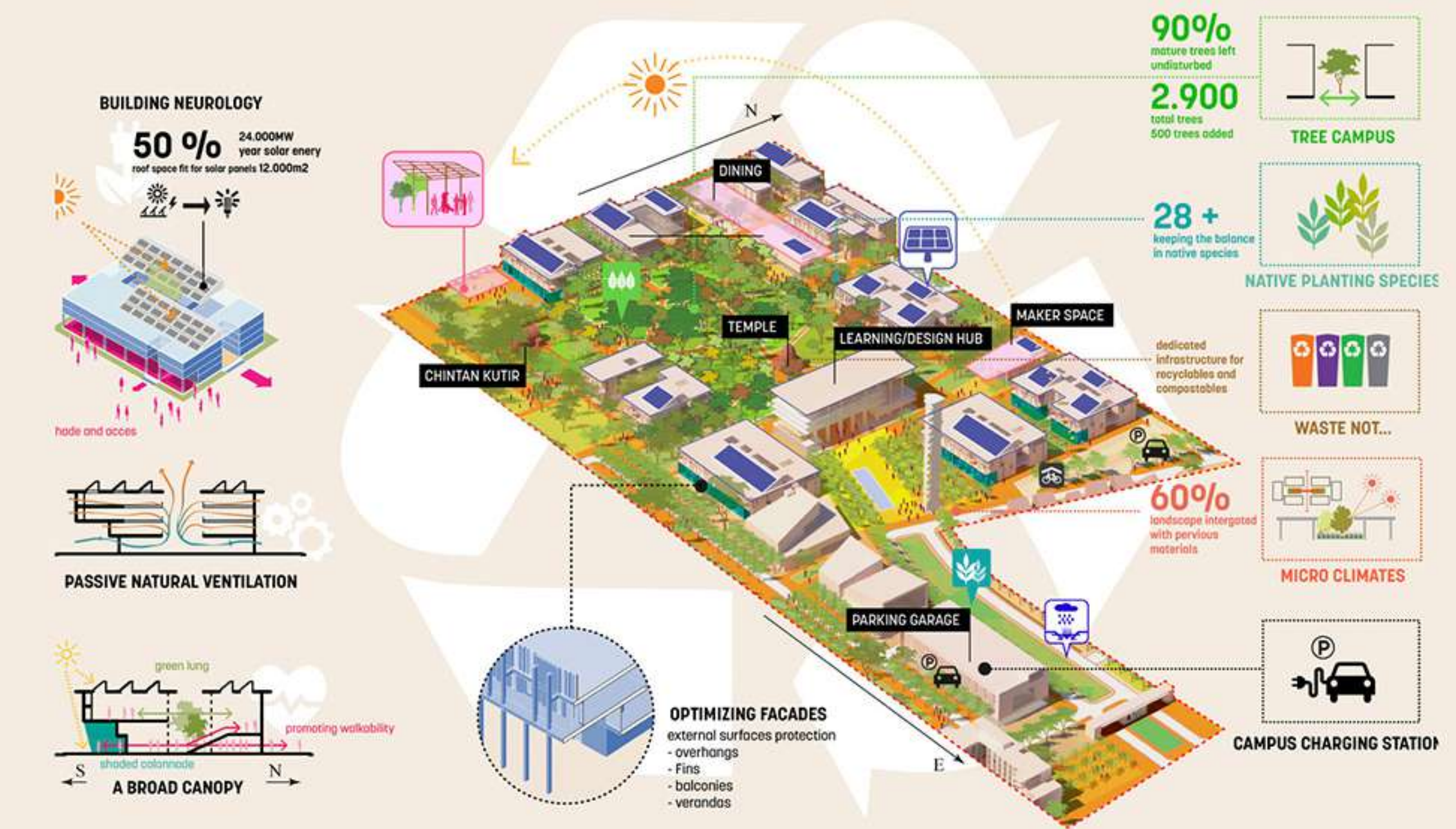
- 01 Campus heart and Saraswati temple
- 02 Entry Plaza
- 03 Sports Fields
- 04 Sports / Recreation Center
- 05 Student Housing
- 06 Academic
- 07 Faculty Housing

CAMPUS HEART ANANT NATIONAL UNIVERSITY



- **Open-Air Learning & Collaboration:** Outdoor classrooms and seating areas support informal study and social interaction.
- **Dynamic Community Hub:** Art installations and temporary shade structures activate the space, inviting cultural engagement.
- **Green Microclimate:** Mature trees provide cooling shade, creating a comfortable and vibrant focal point for campus life.

SUSTAINABILITY STRATEGIES



- **Reduced Energy Demand:** Incorporates measures (e.g., optimized facades, passive ventilation) to cut building energy usage by 50%.
- **Tree Campus & Native Species:** Preserves and adds extensive greenery, including 2,900+ trees and over 28 native plant species.
- **Microclimate Creation:** Employs broad canopies, shaded courtyards, and vegetative cover to moderate temperatures and enhance comfort.
- **Waste Minimization:** Emphasizes a “Waste Not” approach through composting, recycling, and efficient resource management.
- **EV Infrastructure:** Provides on-site charging stations to support electric mobility and reduce carbon emissions.

PLANTING STRATEGY



- **Cultural & Spiritual Integration:** Incorporates sacred groves (Panchavati, Tirthankar vana) and holy trees to reflect regional traditions.
- **Biodiversity & Ecological Health:** Preserves existing trees and introduces native species for habitat creation, medicinal use, and fruit production.
- **Zoned Planting:** Segments the campus into medicinal, ornamental, and fruit-bearing clusters to meet diverse functional and aesthetic needs.

PROPOSED LEARNING COMMONS



- **Diverse Study Zones:** Group study rooms, lounges, and research stations accommodate varied learning styles.
- **Indoor-Outdoor Flow:** Large openings and reading verandahs connect to a courtyard, promoting natural ventilation and an inviting study atmosphere.
- **Flexible & Collaborative:** High-top seating, adaptable furniture, and a gallery space support academic and social activities.

DEVELOPING A CONTEXTUAL MATERIAL PALETTE

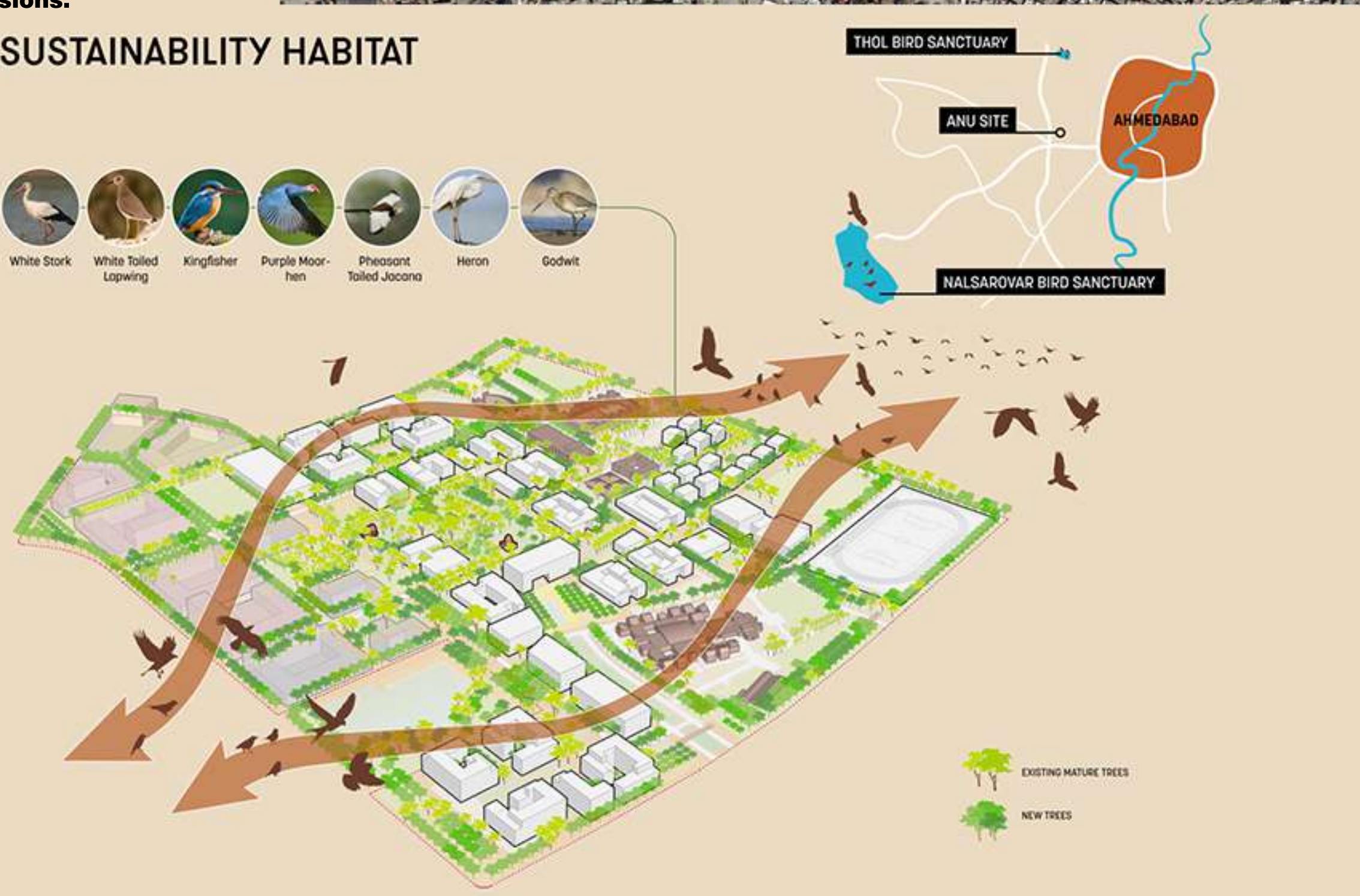


- **Draws on rich cultural inspirations** such as regional miniature paintings, stepwells, and vernacular architecture to ground the design in local tradition.
- **Employs a material palette** of brick, salvaged wood, and local stone to balance sustainability with regional character.
- **Merges contemporary design elements** with historical references, creating an aesthetic that is both modern and contextually resonant.

CONTEXTUAL & CLIMATICALLY RESPONSIVE DESIGN



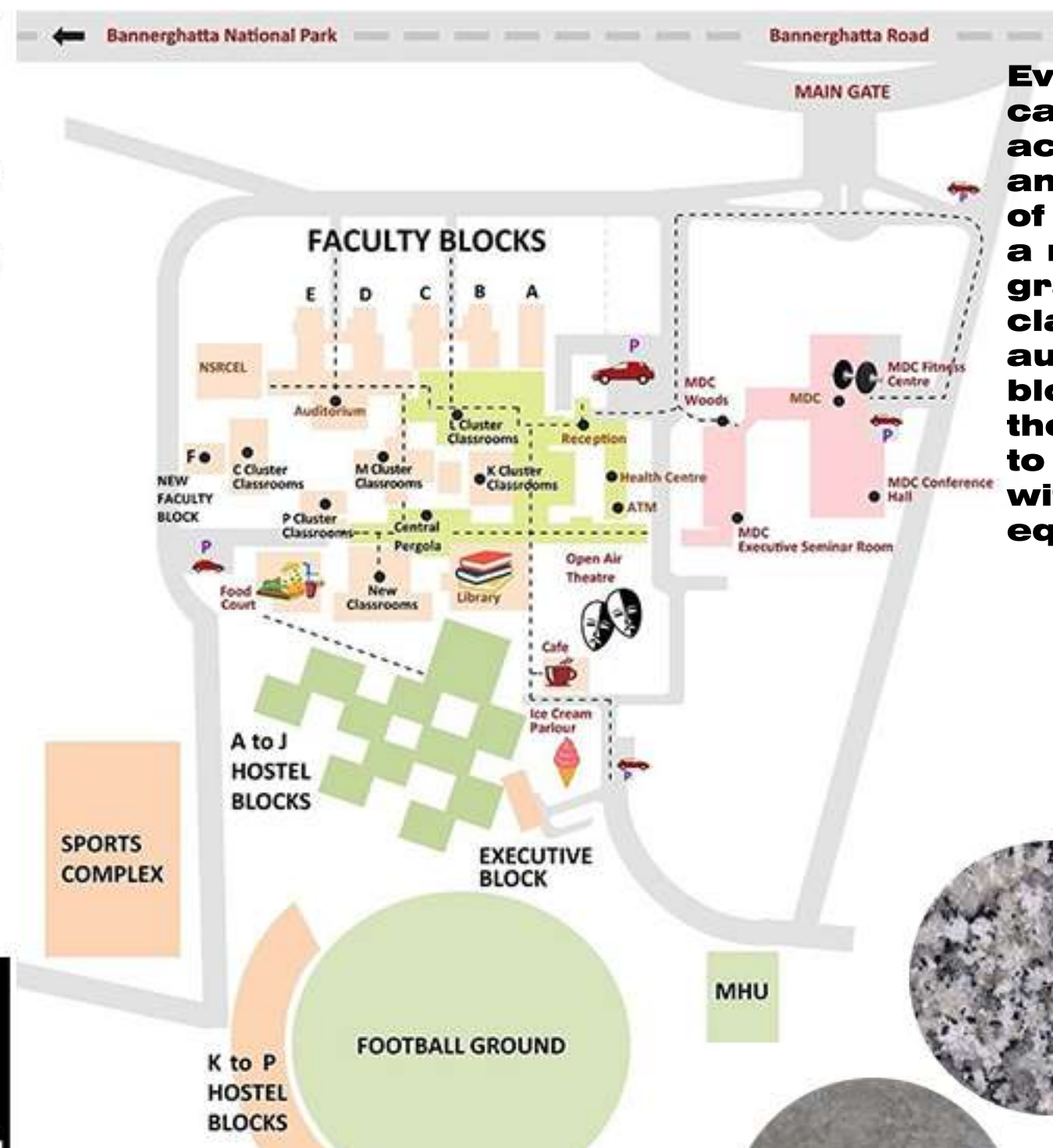
SUSTAINABILITY HABITAT



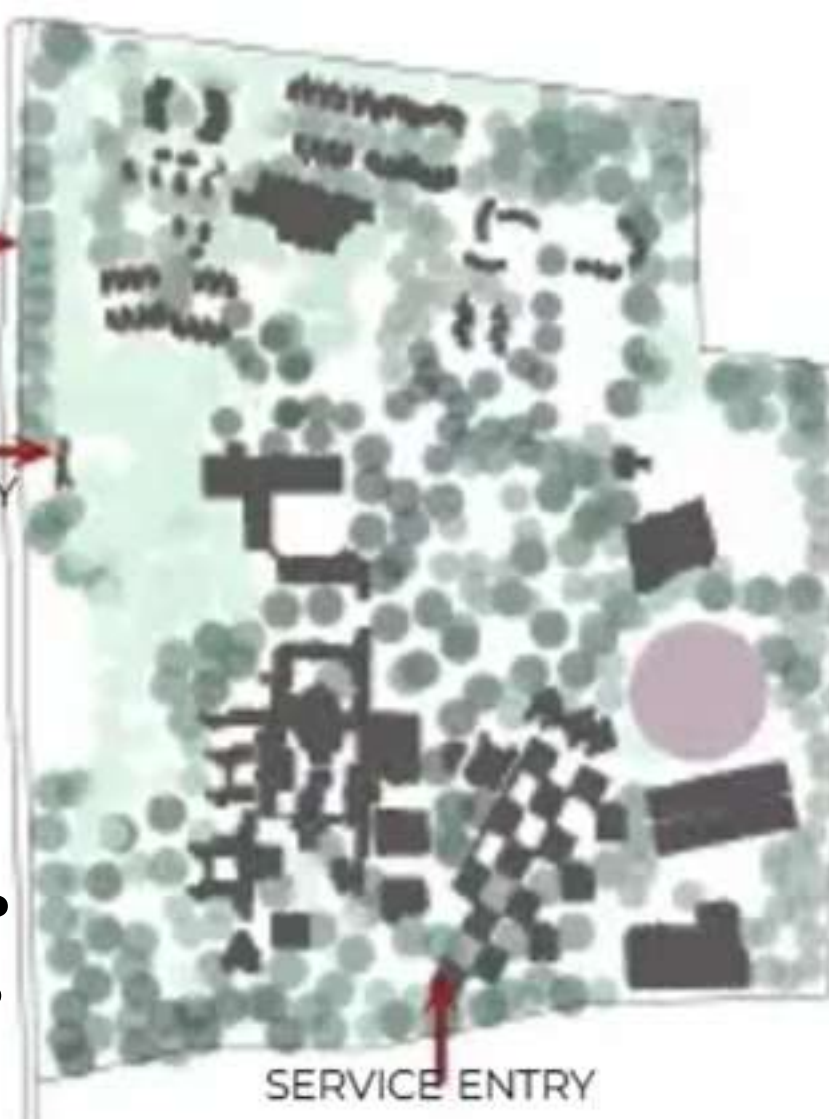
- **Habitat Connectivity:** Links to nearby bird sanctuaries (Thol, Nalsarovar), creating ecological corridors for migratory species.
- **Biodiverse Landscape:** Preserves existing trees and adds new plantings to support nesting, feeding, and roosting for various birds.
- **Educational Value:** Serves as a living laboratory, promoting environmental awareness and responsible stewardship.

IIM BANGALORE

The Indian Institute of Management Bangalore (IIMB) is an architectural masterpiece designed by the celebrated Indian architect Balkrishna Vitthaladas Doshi (B.V. Doshi), a pioneer in modern Indian architecture. The campus is acclaimed for its modernist style infused with traditional Indian design elements, reflecting Doshi's philosophy of contextual and human-centric architecture.



Every block within the campus premise is accessible to one another. The main block of the campus opens into a reception space that gradually transitions into classrooms and an auditorium. The hostel blocks are adjacent to the campus, contributing to smoother accessibility, with the canteen in an equally ideal location.



Vegetation Massing
Green corridors and courtyards integrate nature into the campus, offering shade, ventilation, and aesthetic appeal. Native plants ensure sustainability and blend with Bangalore's tropical climate.

Entry Points
1. **Main Entry:** Leads to academic and administrative zones; visually and functionally prominent.
2. **Service Entry:** Dedicated to maintenance and deliveries; avoids interference with daily activities.
3. **Housing Entry:** Access to residential areas; ensures privacy and seamless connection to essential facilities.

LEGENDS
PUBLIC
SEMI PUBLIC
PRIVATE

ACADEMIC BLOCK

HOUSING

GRANITE

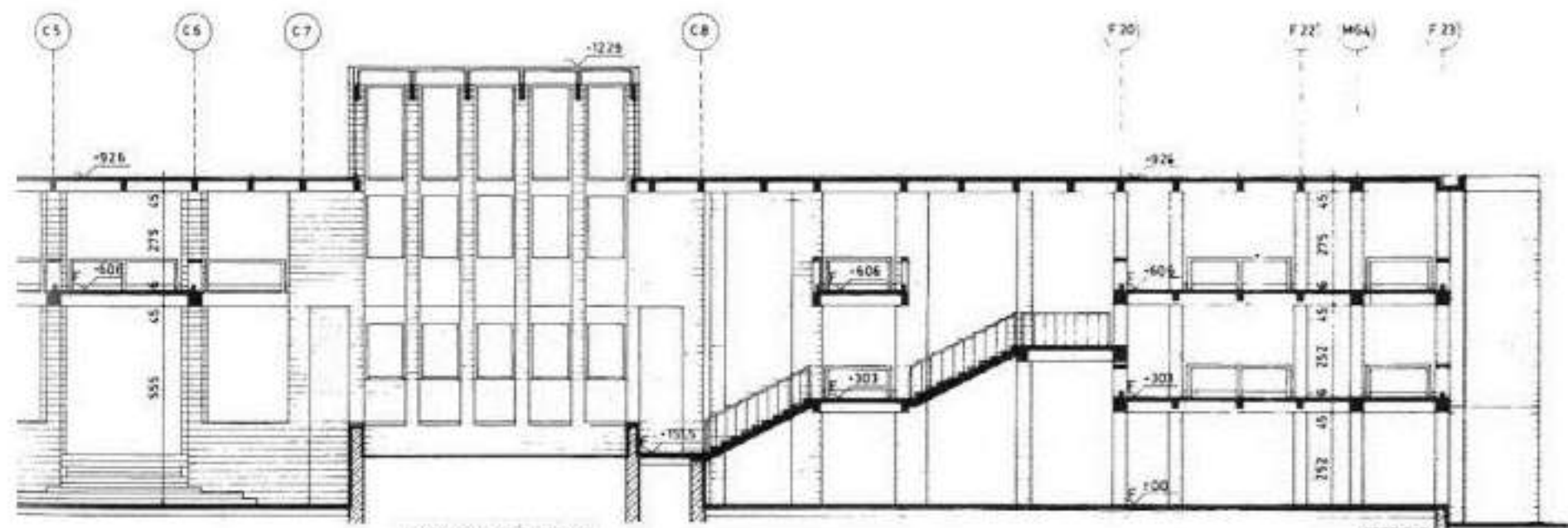
CONCRETE

KOTA STONE

The primary materials used in the campus are hand-chipped granite stone and concrete for the walls while a rough and polished Kota stone for the floor.

The walls are devoid of plastering to bring a rustic ambience to the design while reducing construction costs. The neutral tones stand as the perfect backdrop to the light entering the space and the lush vegetation.

- The campus zones include academic blocks, hostel blocks, sports areas, and housing facilities for staff and faculty.
 - Separate entries for services, housing, and the main campus ensure smooth circulation and functionality.
 - Facilities such as schools, dormitories, dining areas, community spaces, and parking are strategically placed to enhance convenience.
- INTEGRATION AND ACCESSIBILITY**
- The masterplan reflects thoughtful organization, balancing living, working, and recreational spaces.
 - Proximity of neighborhood facilities like schools and transit housing strengthens community connectivity.



The courtyards are large enough for each block to illuminate the entire campus compared to its scale. The provision of such openings also considers the enhancement of textures and focal points.



CONCEPT: INFLUENCE OF FATEHPUR SIKRI LAYOUT



As the architect states, the aim was "to create an atmosphere where you don't see divides and doors". Thus, the spaces transition smoothly as thresholds and passageways, distinguished through light and shade.

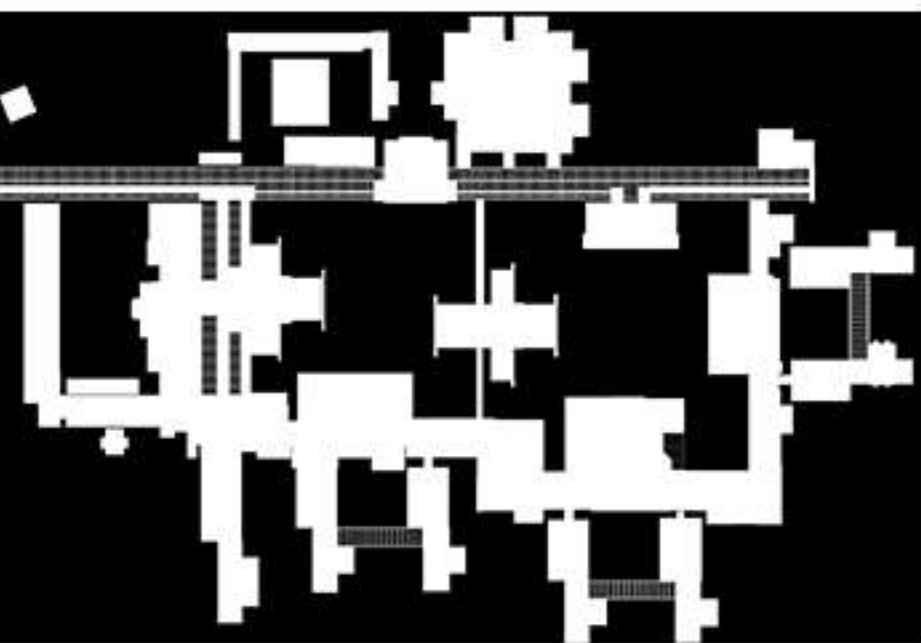
The architecture does not focus on a single point but aims at multi-focal points throughout the campus. Thus, not a single image but multiple experiences will imprint themselves in the mind of the visitor.

Moreover, the design takes inspiration from the ancient city of Fatehpur Sikri. The apparent similarity to the Mughal city lies in the courtyards and green corridors enriching the campus.



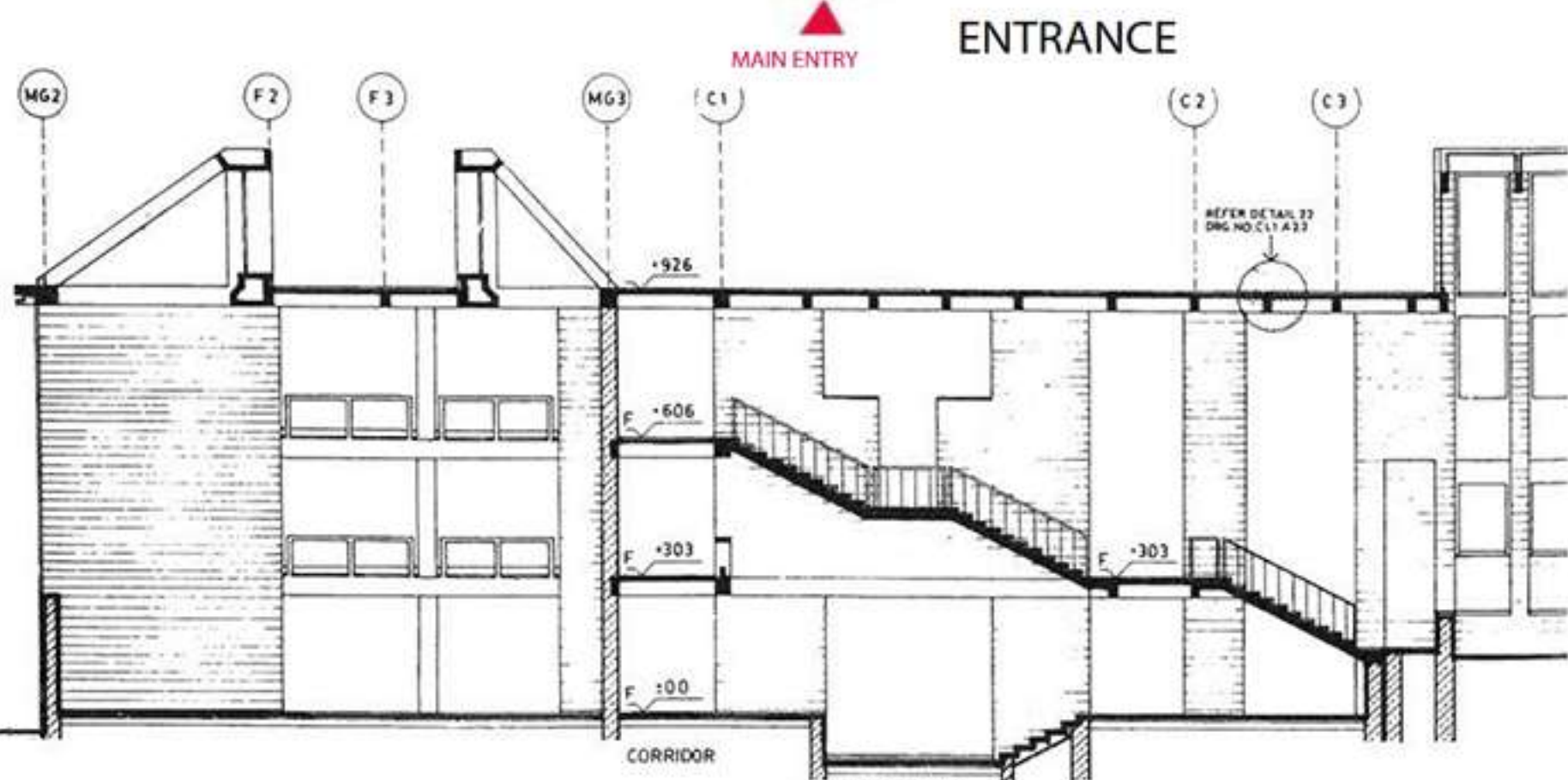
CLIMATIC RESPONSE TO SPATIAL ARRANGEMENT

The campus sits over 102 acres of undulated terrain with a gentle slope. The tropical rainforest greenbelt that landscapes the site passively enhances the climate. The blocks arranged of varying volumes facilitate restricting the harsh rays into the campus, while the courtyards provide



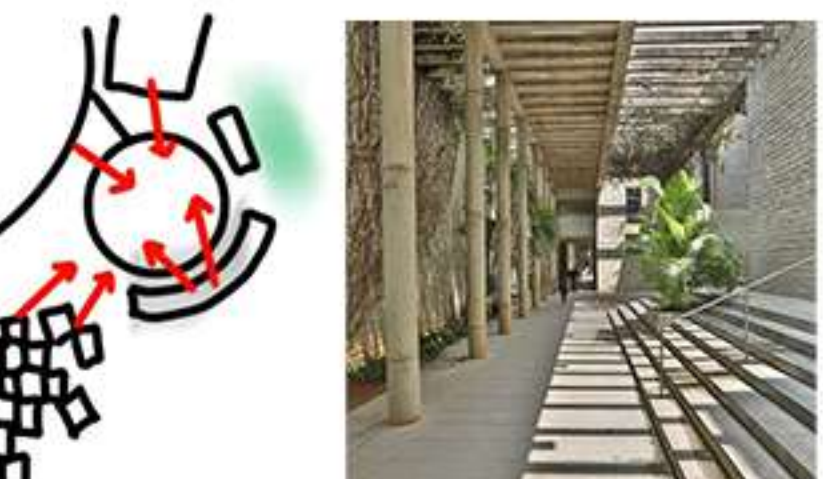
LEGENDS

ACADEMIC BLOCK
HOSTEL BLOCK
SPORTS AREA
STAFF HOUSING
STAFF HOUSING



SECTION 1-1
The corridors formed around courtyards facilitates the hierarchical arrangement of spaces on the campus. The varied volumes of space blend via threshold pathways. The visual continuity is uninterrupted as the view from any floor is visible from any point. The fluidity of barrier-free spaces is in harmony without difficulty in navigation.

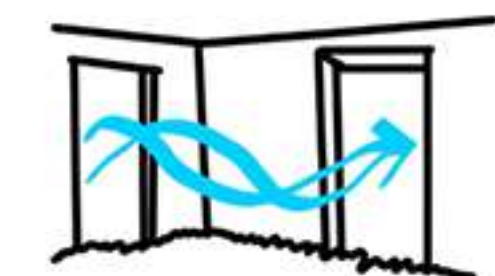
- The hostel blocks overlook the playground. This allows students to view events like cricket matches from their rooms. This causes noise disturbances and reduces privacy for the students.



MAIN ROAD

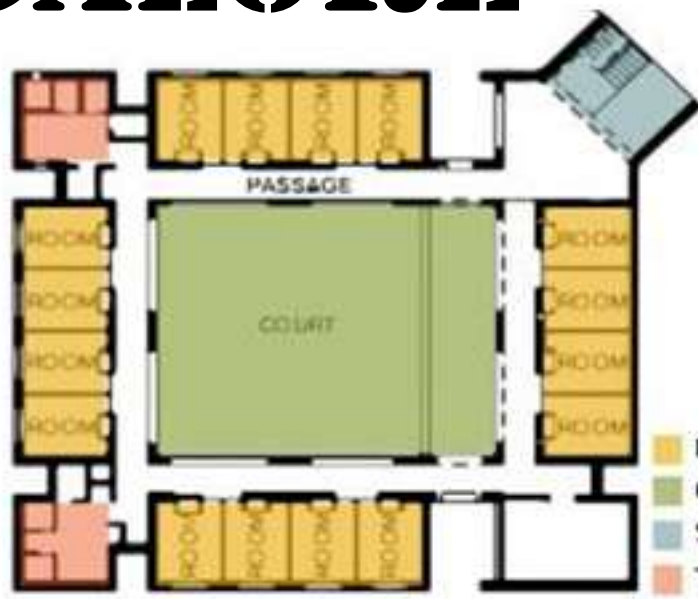
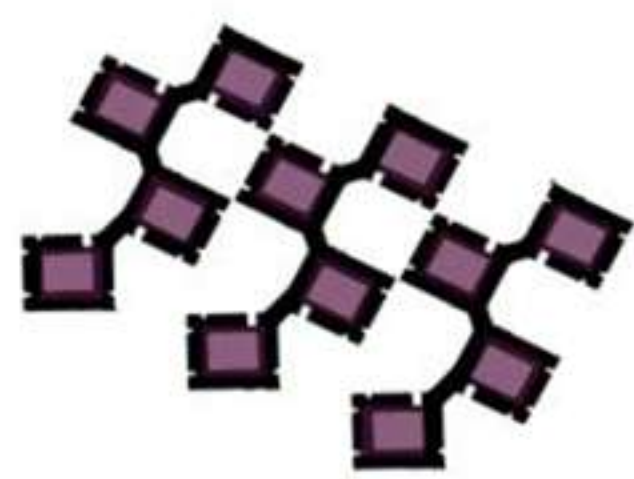
ENTRANCE GATEWAY

- **Structure:** The building is raised on columns, and the variation in volumes creates visual interest. The spillover spaces beneath the structure are used for parking and interactions.
- **Courtyard Design:** The courtyards serve as transit spaces that let in ample natural light.

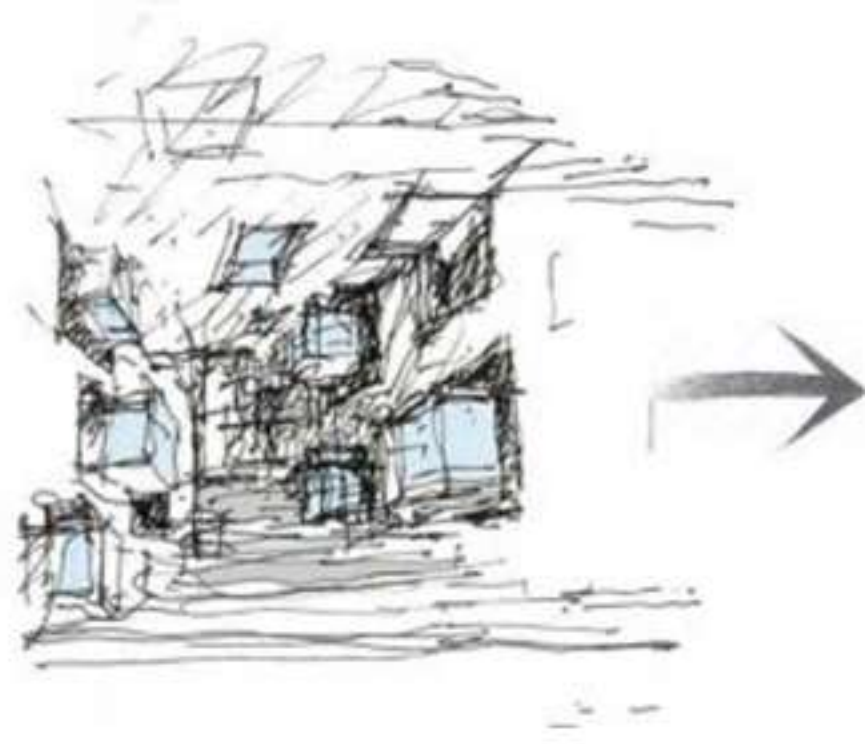


Openings or "punctures" in the walls allow for visual connectivity between the indoor and outdoor spaces.

IIM BANGALORE



Architectural Details:
- Ground coverage: 464 sq.m
- Floors: 3
- Built-up area per block: 1332 sq.m
- Total blocks: 12
- Total capacity: 576 individuals
- Area per student: 27.7 sq.m



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ARRANGEMENT OF BLOCKS

DORMITORIES
- Hostels are located a short walking distance from the classrooms.
- The design includes internal courtyards (specific to each block) and external courtyards (shared among multiple blocks). These courtyards act as interactive spaces, providing light and ventilation.
- Each floor accommodates 12 individuals, encouraging a community-like setting.

Rooftop solar panels:
Installed: 2017
Capacity: 290 kilowatts and reduces BESCOM bill by 15%.



Parabolic Solar Panels:
Installed- 2010;
Capacity: steam produce equivalent to 10-15kg LPG cylinders per day that helps reduce the consumption of LPG by 15%

Bio-gas plant:
Capacity-400 kg /day



Rain water harvesting:
Installed: 2010
Capacity- 75,000 litres
The water harvesting system has helped save 7 lakh liters per year in addition to recharging ground water.



Functions include discussion rooms, formal and informal reading areas, laptop bays, digital displays, and flexible spaces.

CONSERVATION EFFORTS

Capture and reuse of water using recharge wells. Water efficient sanitary fittings (low flow taps, bio urinals, water efficient toilets). Used treated water from Apollo hospitals for landscape, discontinued due to heavy presence of phosphates and nitrates. Future STP plan. On site biogas plant fuels kitchens.

Waste management plant:
established 2010, all types of waste generated at campus is segregated and recycled.



Water consumption:
50% domestic & sanitary.
20% landscaping.
30% academic blocks, admin blocks, shops.



Ground Recharge Wells:
20% of the total water requirement is met by rejuvenated bore wells and rain water harvesting measures at the campus. 30+ recharge wells distributed on campus grounds. surface runoff is tapped and sent off to the sumps and recharge wells.

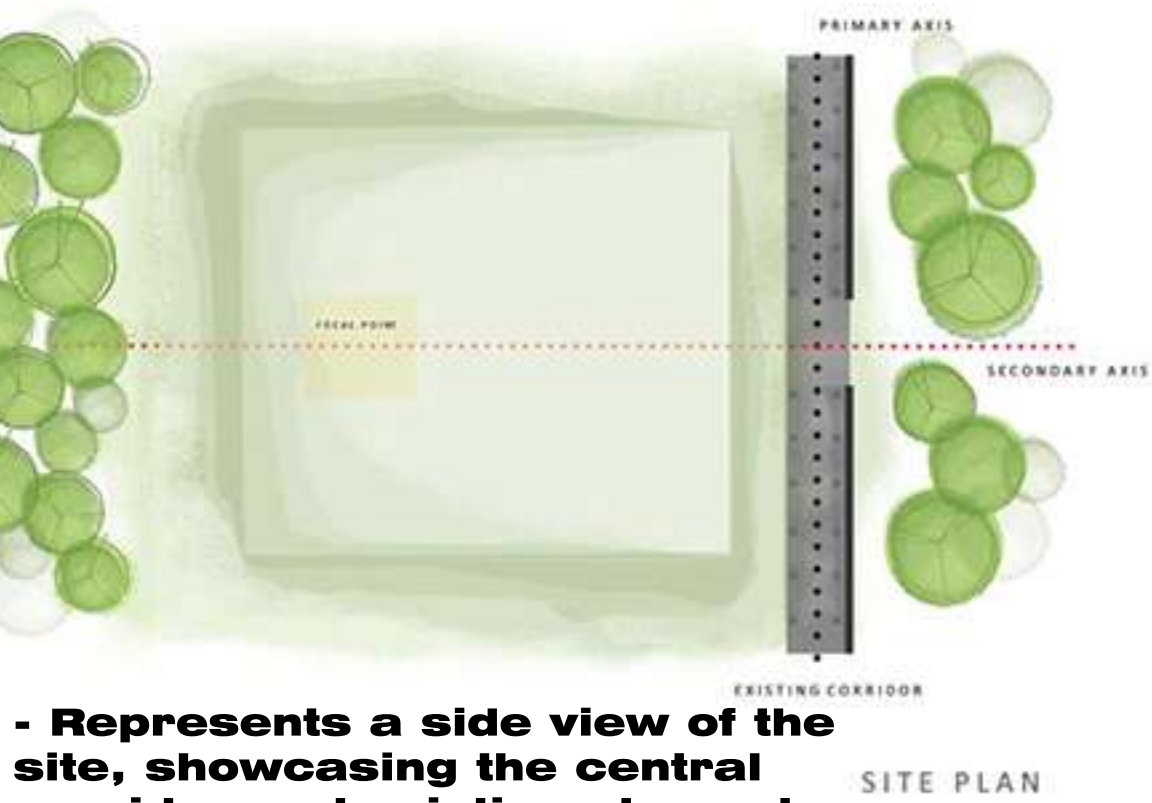
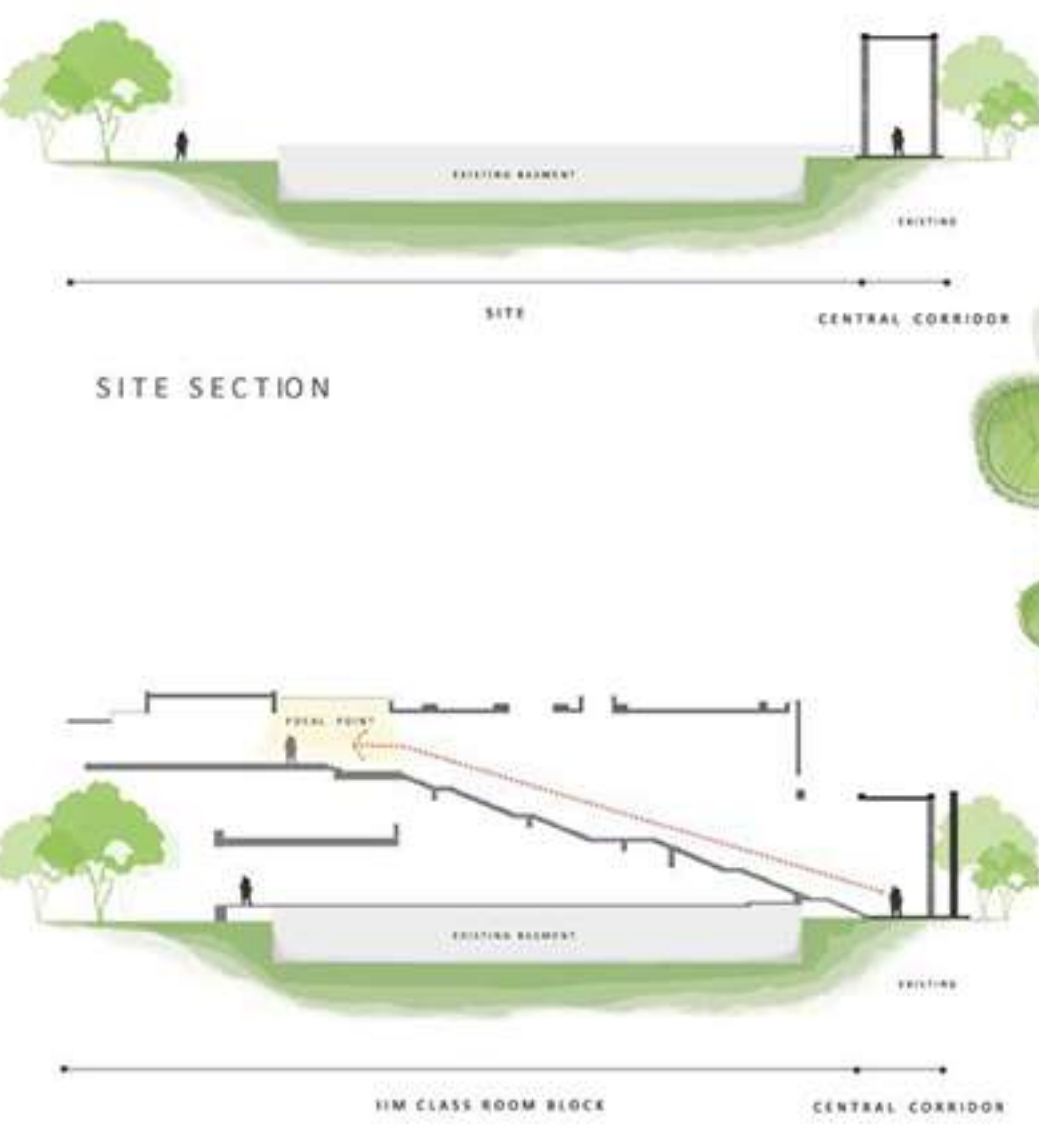
Bio-gas plant:
Capacity-400 kg /day
Reduces the energy -
Equivalent to 22kg LPG/day



Sewage Treatment Plants:
Capacity- 600KLD
Usage- For watering the gardens, lawns etc



These unique locations in the plan allow the functional spaces to interact and assimilate more freely with the overall scheme creating a set of fluid and easy connections between the spaces for movement and spaces for work. In the third dimension, the plan creates much complexity and layering. One can observe the emphasis on the diagonal while moving through the complex as these layers are revealed.

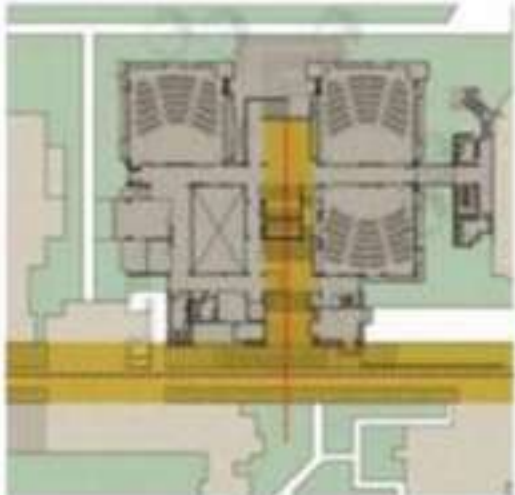


- Represents a side view of the site, showcasing the central corridor and existing elements like vegetation and human scale. This highlights the emphasis on circulation and spatial connectivity.

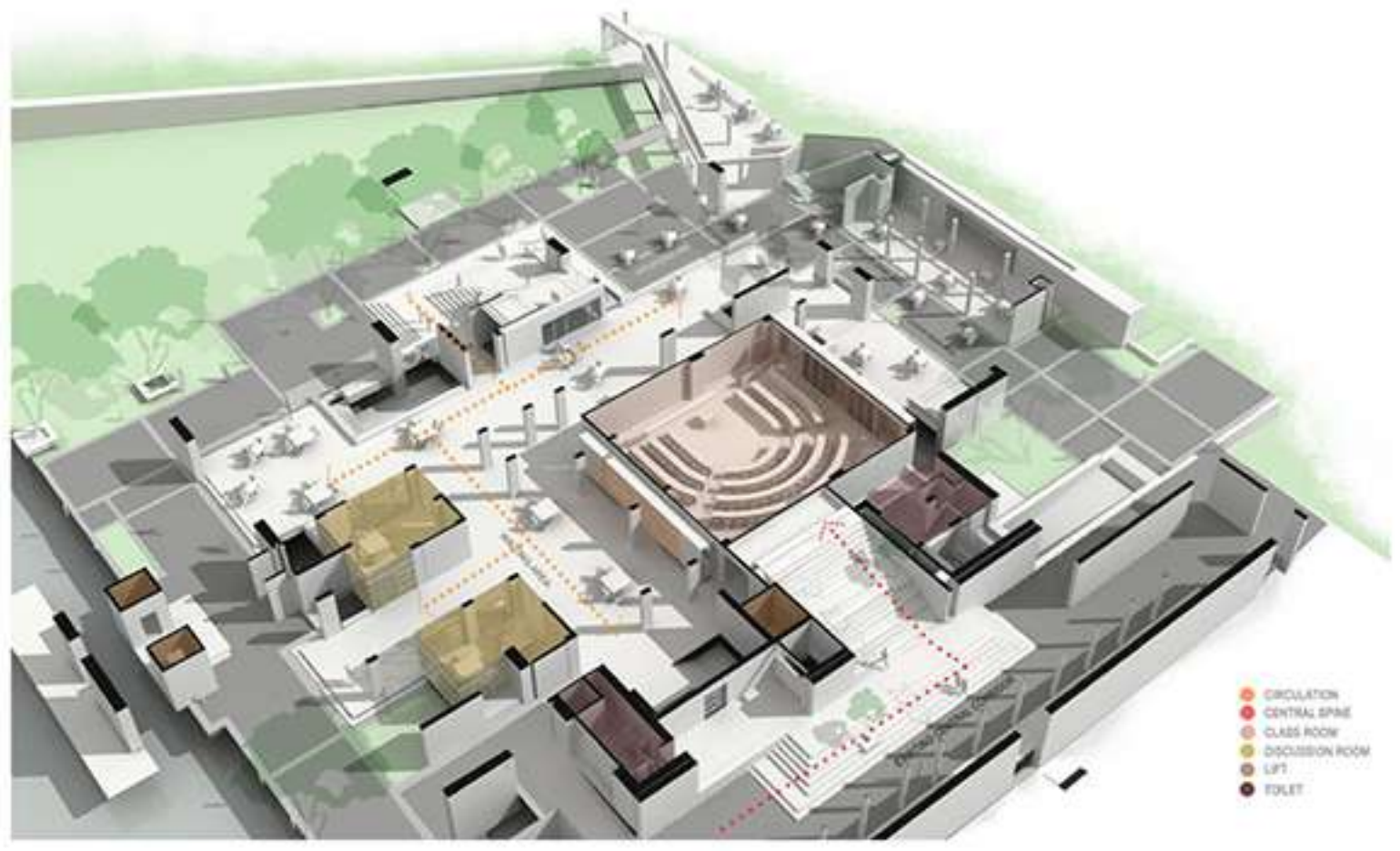
Creating a Complementary Axis Perpendicular to the Main Spine

Looking at the site contextually, there were two axes, primary one that of pergola which ran across entire width of the existing building and a secondary one, much smaller, connecting a courtyard, which was perpendicular to pergola spine.

On the other side, there was a thick growth of beautiful trees, where the hostels are located and lot of students would take that path to approach the building.



The classroom block is made disabled friendly by providing ramps and lifts to access all the levels. The classrooms are also disabled friendly by keeping the first row of seats at the same level of corridors.



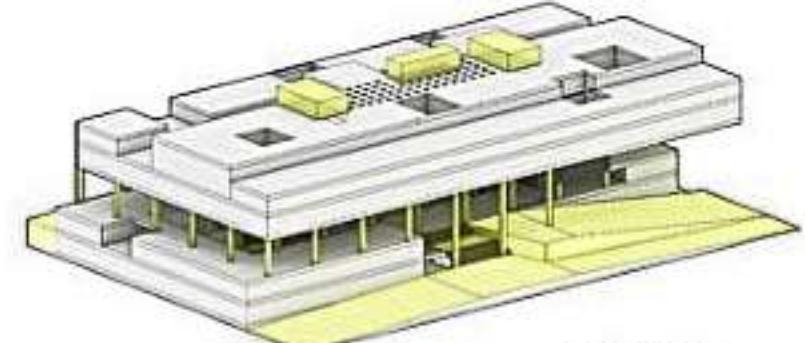
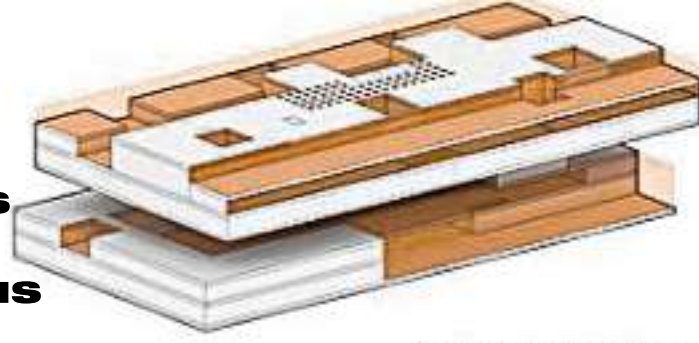
The program for the new classroom block was 8 classrooms, discussion rooms and its ancillaries. A wide flight of steps perpendicular to the central spine became the main axis of the classroom block with a courtyard as the focal point at the end of the axis. The classrooms flank the wide flight of steps. The ground floor is conceived as an extension of common areas of the campus and therefore is kept barrier free. The ground floor columns are clad with stone to bind it with the existing campus. The upper levels have exposed concrete surfaces. Importance is given to informal interaction areas which is centred around the belief that these break out spaces will spawn many a novel idea amongst the students.



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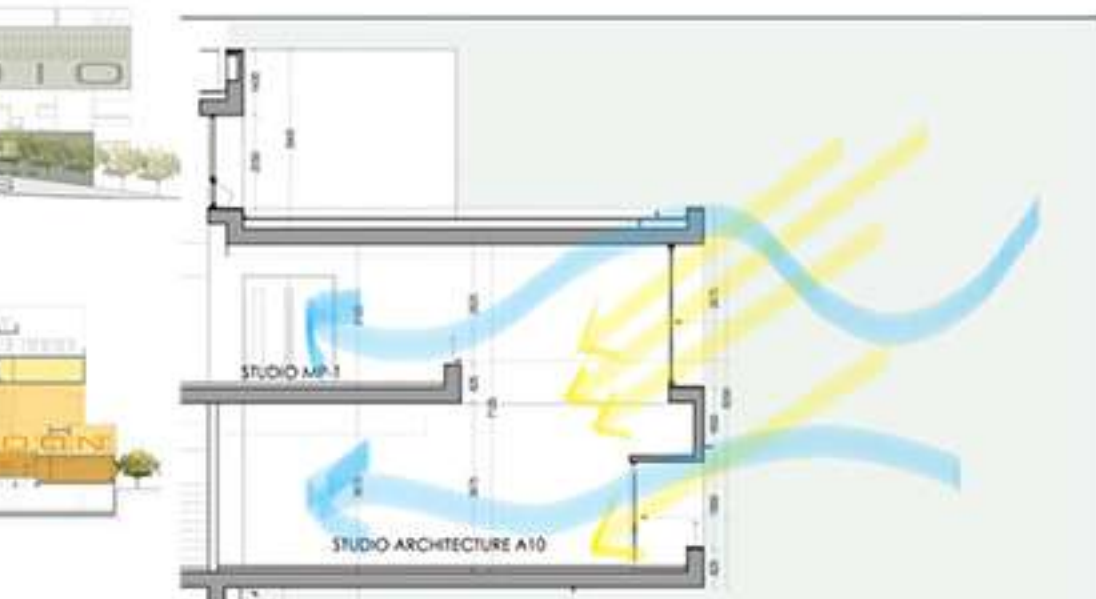
SPA VIJAYAWADA

The School of Planning and Architecture (SPA) in Vijayawada, established in 2008, is an autonomous institution recognized as an Institute of National Importance. The campus features a Brutalist architectural style, designed to suit the region's hot and humid climate emphasizing sustainable design with locally sourced materials.



Courtyard Creation: Orientation facilitates outdoor courtyards, promoting interaction and environmental comfort.

Solar Orientation: Building positioned to optimize natural lighting and minimize heat gain.
Contextual Placement: Site layout considers adjacent structures and natural surroundings for harmonious integration.

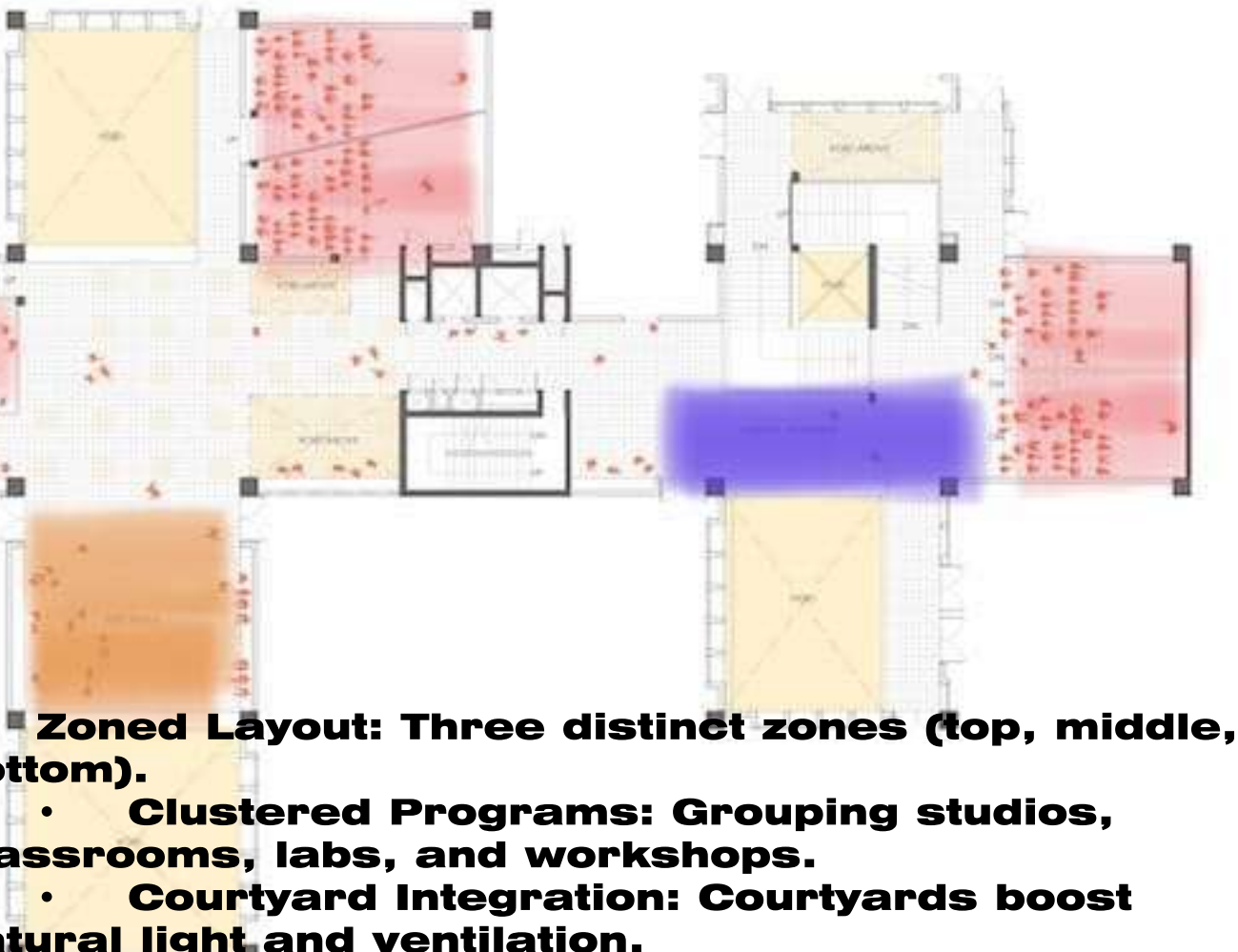
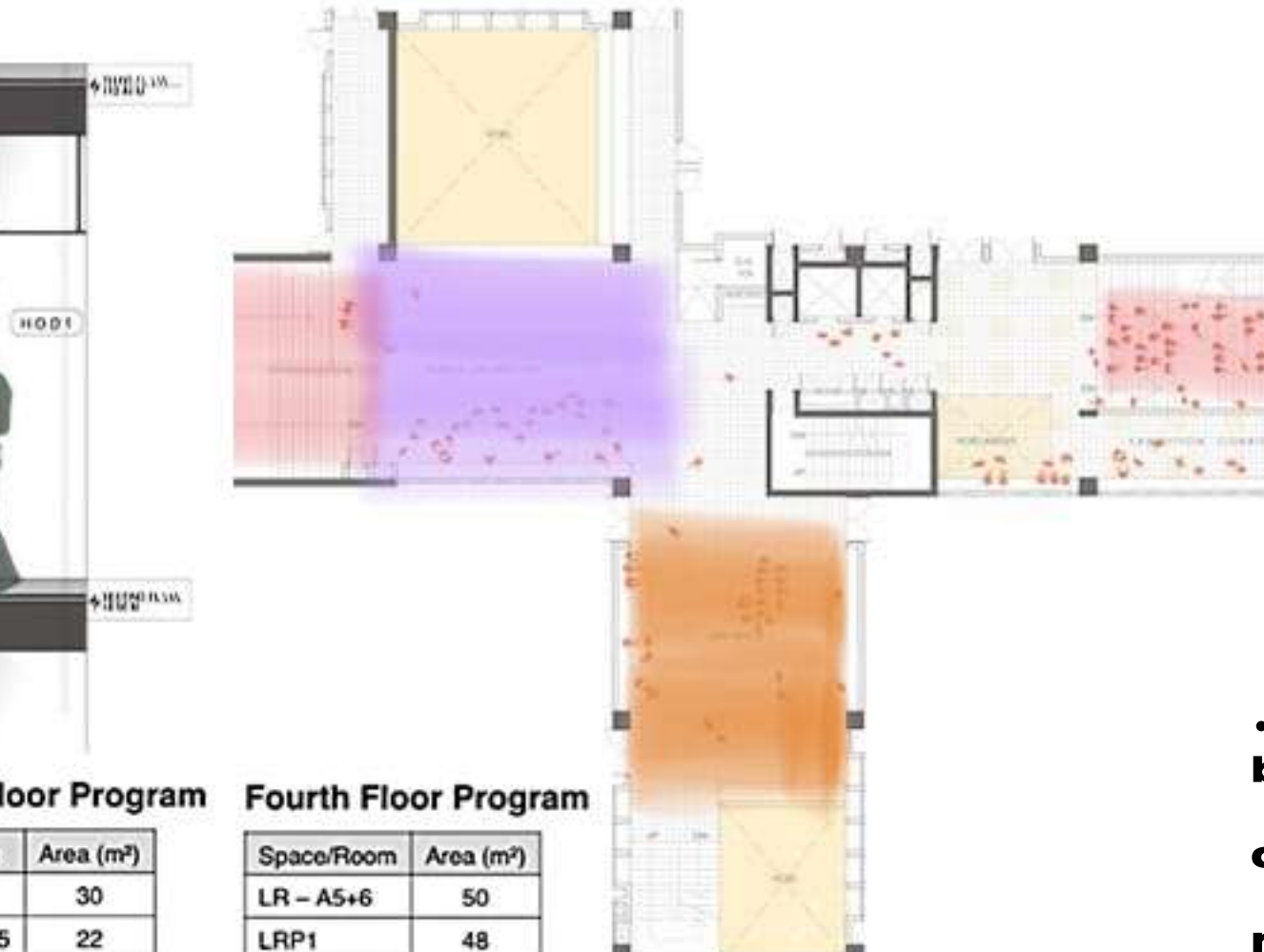
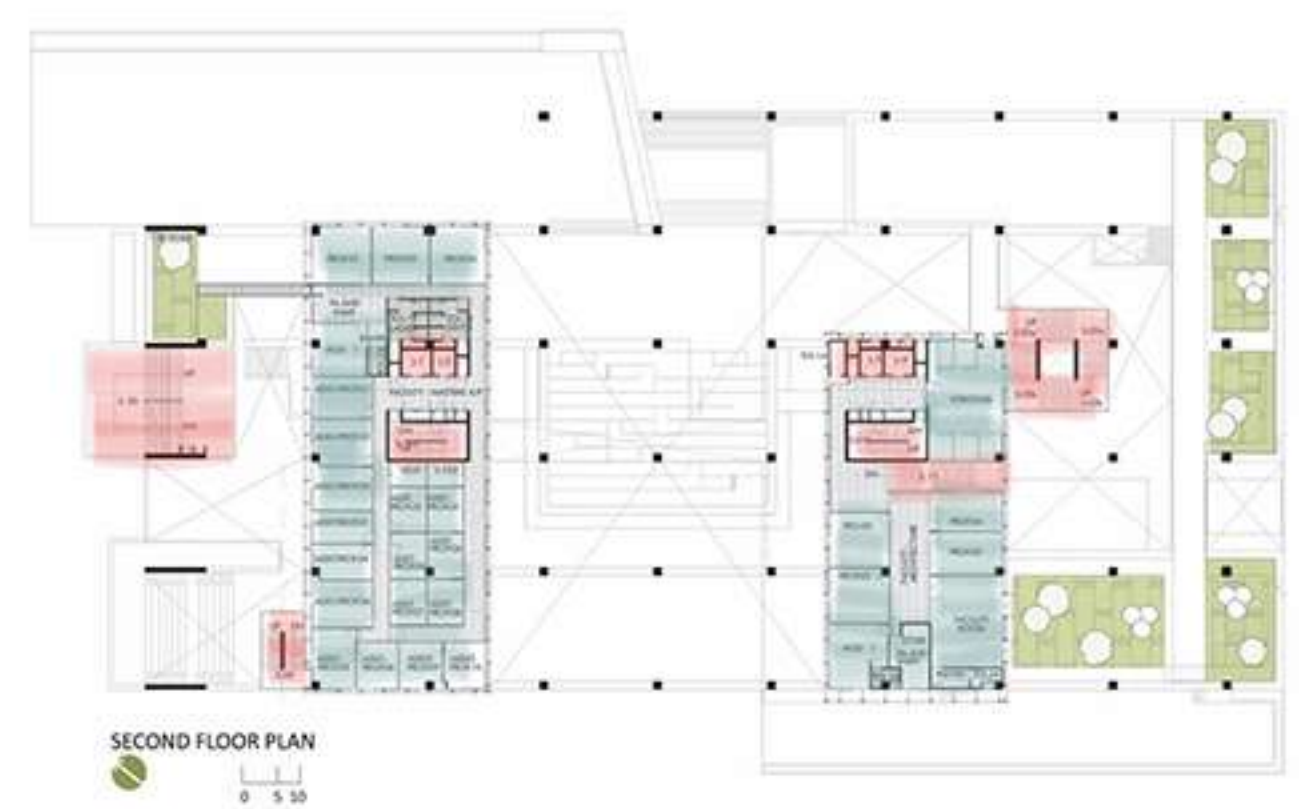
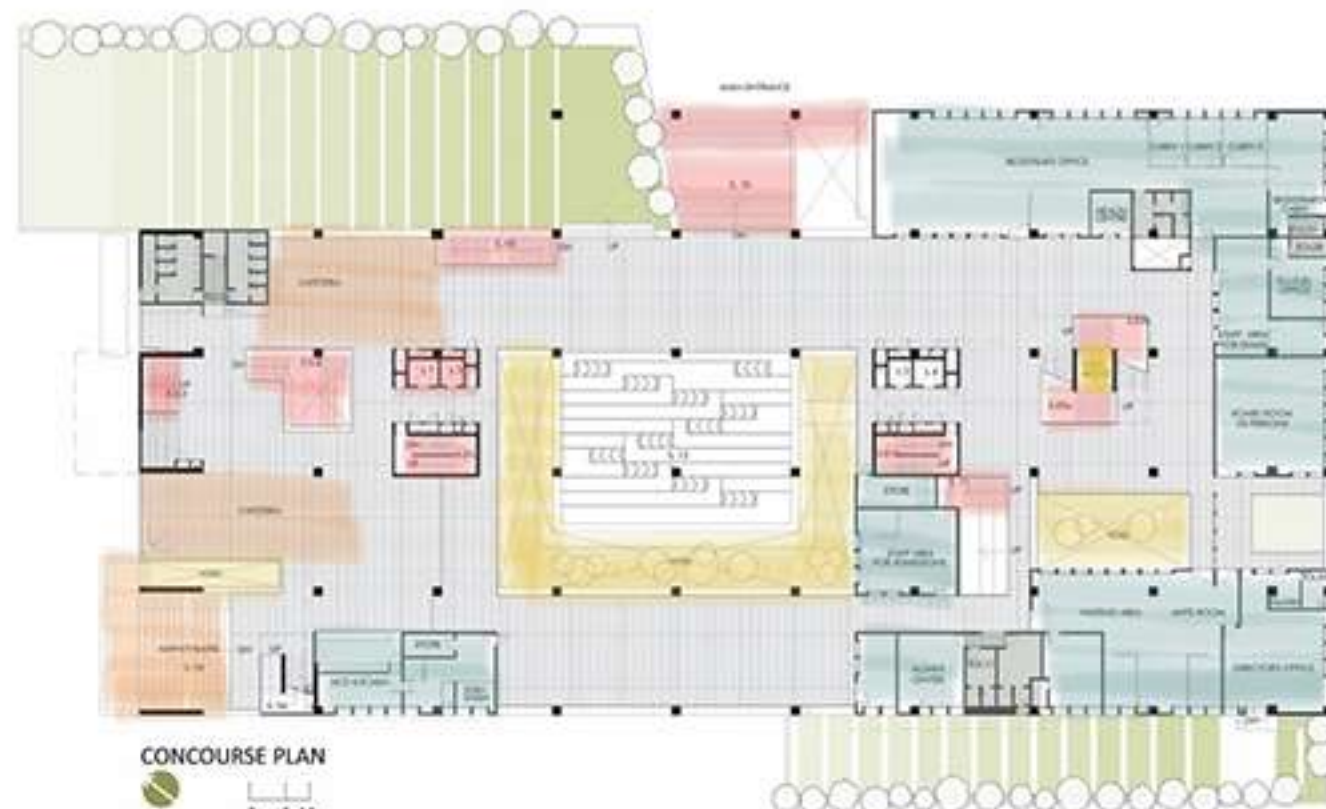


North Light Windows: 1.8m x 1.6m windows in studios for glare-free natural light.

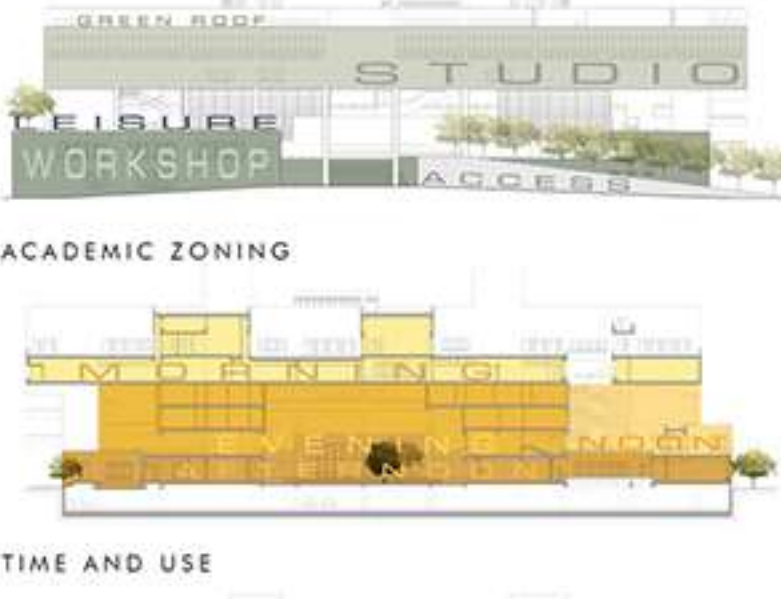
• **Window-to-Floor Ratio: 13.2%,** exceeding NBC India's minimum requirement.

• **Louvers:** Horizontal shading devices reduce heat and enhance ventilation.

• **Cross-Ventilation:** Shading elements facilitate airflow for better indoor comfort.



• **Zoned Layout:** Three distinct zones (top, middle, bottom).
• **Clustered Programs:** Grouping studios, classrooms, labs, and workshops.
• **Courtyard Integration:** Courtyards boost natural light and ventilation.
• **Central Circulation:** Central stairs and elevators connect all levels.
• **Flexible Spaces:** Open layouts support collaborative and individual use.

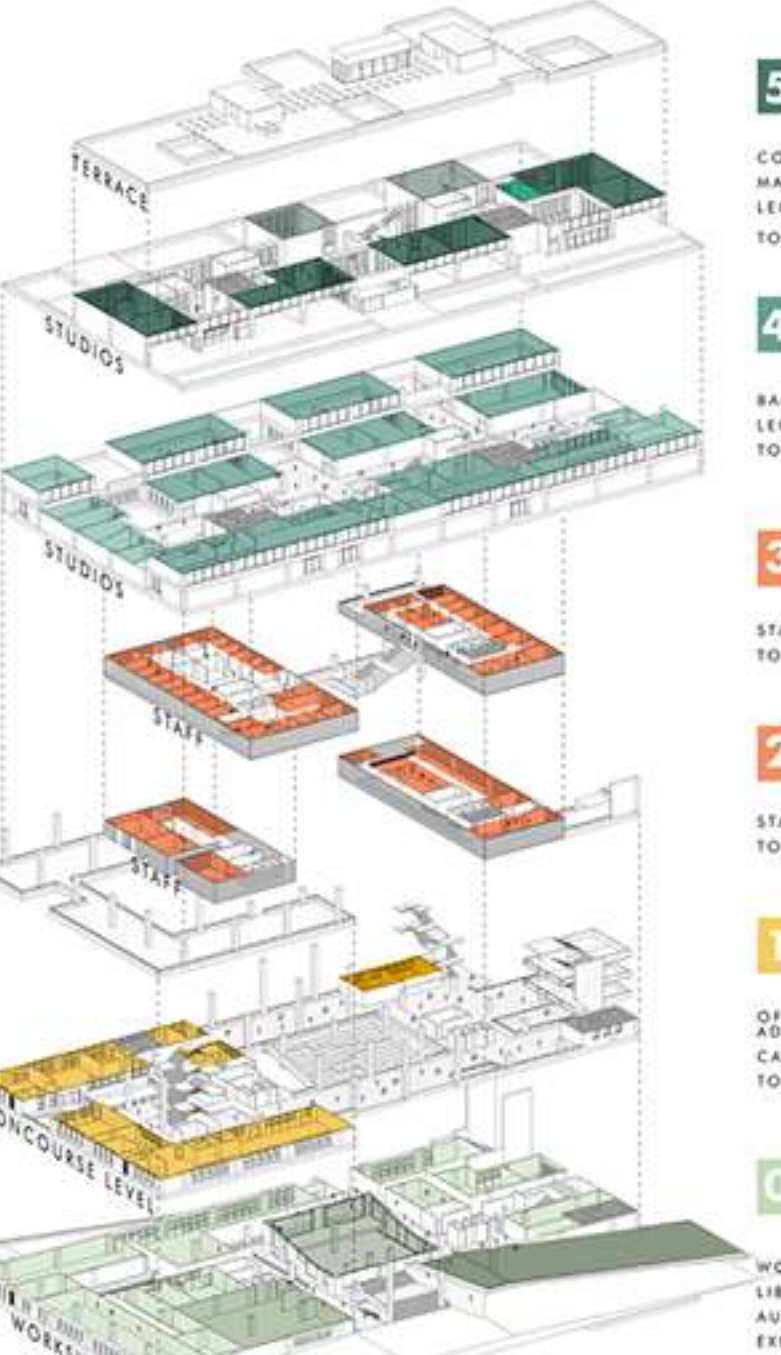


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5	CONFERENCE ROOMS MASTERS' STUDIOS LECTURE ROOMS TOILETS
4	BACHELORS/STUDIOS LECTURE ROOMS TOILETS
3	STAFF ROOMS TOILETS
2	STAFF ROOMS TOILETS
1	OFFICES AND ADMINISTRATION CAFETERIA/KITCHEN TOILETS
0	WORKSHOPS AND LABS LIBRARY AUDITORIUM EXHIBITION AREA TOILETS

Space/Room	Area (m²)
Exhibition Hall	444
Transportation Lab	26
Material Museum	199
Survey Lab	30
Model Making	54
Hobby Centre	21
Structure Lab	53
Computer Lab	81
Reprography Room	40
BC Lab	57
Workshop 1	64
Auditorium	655
Climate Lab	66
Workshop 2	133
AutoCAD & Digital	176
Workshop 3	77
Digital Architecture	106
Workshop 4	61
Art Studio	196
Library	429
Data Center	49
Terrain Model	37
Terrain Survey	33
Environment Workshop	68
Electrical Room	23
AHU Room	24
Digital Imaging	67

Space/Room	Area (m²)
Prof 02	30
Asso Prof -05	22
Asst Prof -07	12
Prof 03	27
Asso Prof -06	15
Asst Prof -08	14
Prof 04	24
Asst Prof -01	17
Asst Prof -09	17
HOD 1	22
Asst Prof -02	15
Asst Prof -10	15
Asso Prof -01	20
Asst Prof -03	13
VF 01	7
Asso Prof -02	23
Asst Prof -04	19
VF 02	7
Asso Prof -03	20
Asst Prof -05	14
Asso Prof -04	25
Asst Prof -06	14

Space/Room	Area (m²)
LR - A5+6	50
LRP1	48
LR - A7	38
LRP2	57
LR - A8	37
LRP3	35
S.03	50
LRA1	36
S.A1	202
LRP4	84
S.A3	94
S.P2	83
S.A4	94
S.P3	85
S.A5	93
S.P4	107
S.A6	100
LRA3	35
S.A7	118
S.A8	119
S.A9	96
S.A10	150

Second Floor Program (Building B)

Space/Room	Area (m²)
VF Rooms	69
HOD 1	26
Prof 02	26
Store PA & Staff	18
Prof 03	27
Faculty	50
Prof 04	22
Pantry	16
Prpf 05	25

Component	Area (m²)
Academic Block	30,000
Girl's Hostel	6,200
Guest House	4,300
Boy's Hostel	14,000

Facility	Capacity
Hostel Occupants	680
Guest House	25 (at a time)

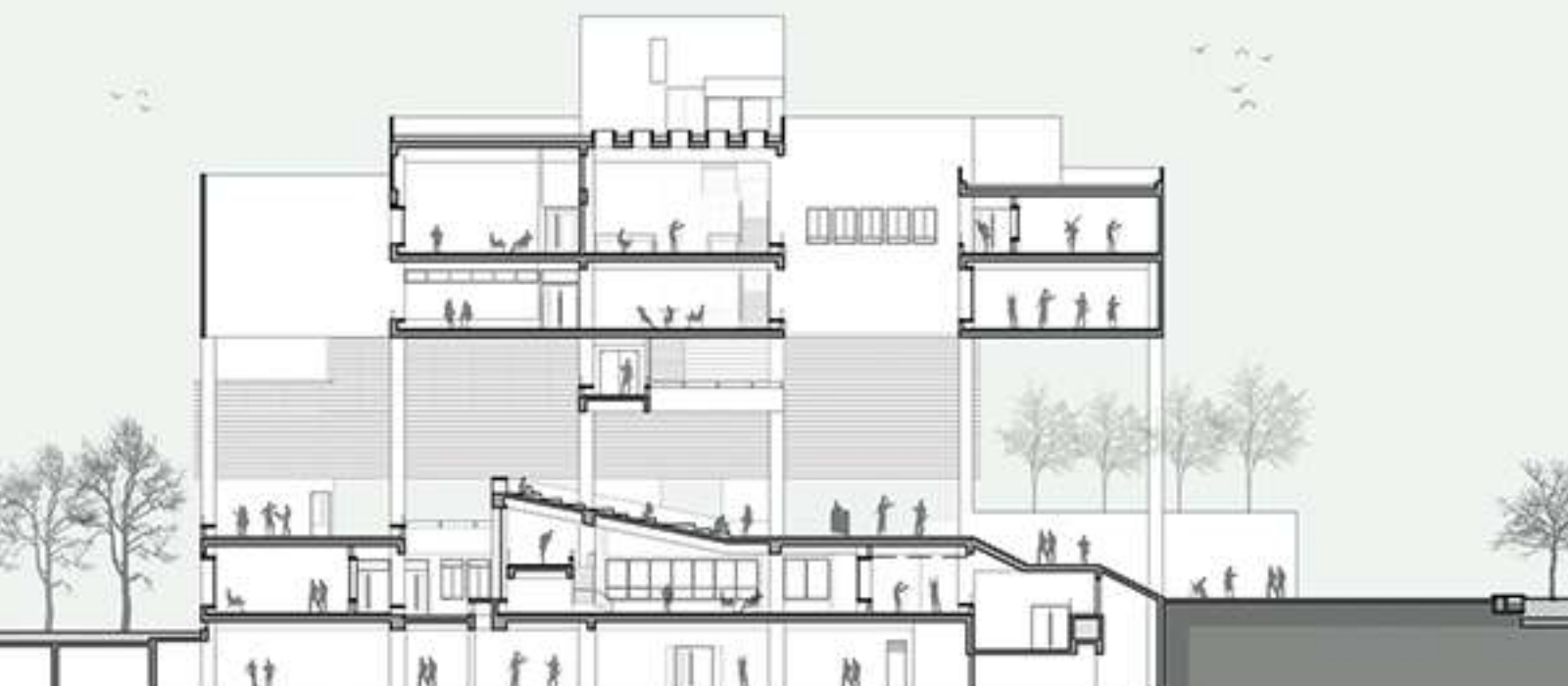
Site Information

Parameter	Details
Total Site Area	38,588 m² (9.66 acres)
Outdoor Sports Facility	2.66 acres
Setback (Front)	9 meters
Setback (Other sides)	7 meters
Zoning Restrictions	No restrictions due to surrounding institutional sites

GF Designed for interactive learning, with a layout that suggests a central area surrounded by peripheral spaces for engagement.
CF Focused on informal networking, featuring clusters and open areas that encourage exchange and collaboration.
TF Structured for focused learning, with a grid-like arrangement that promotes efficiency and concentration.

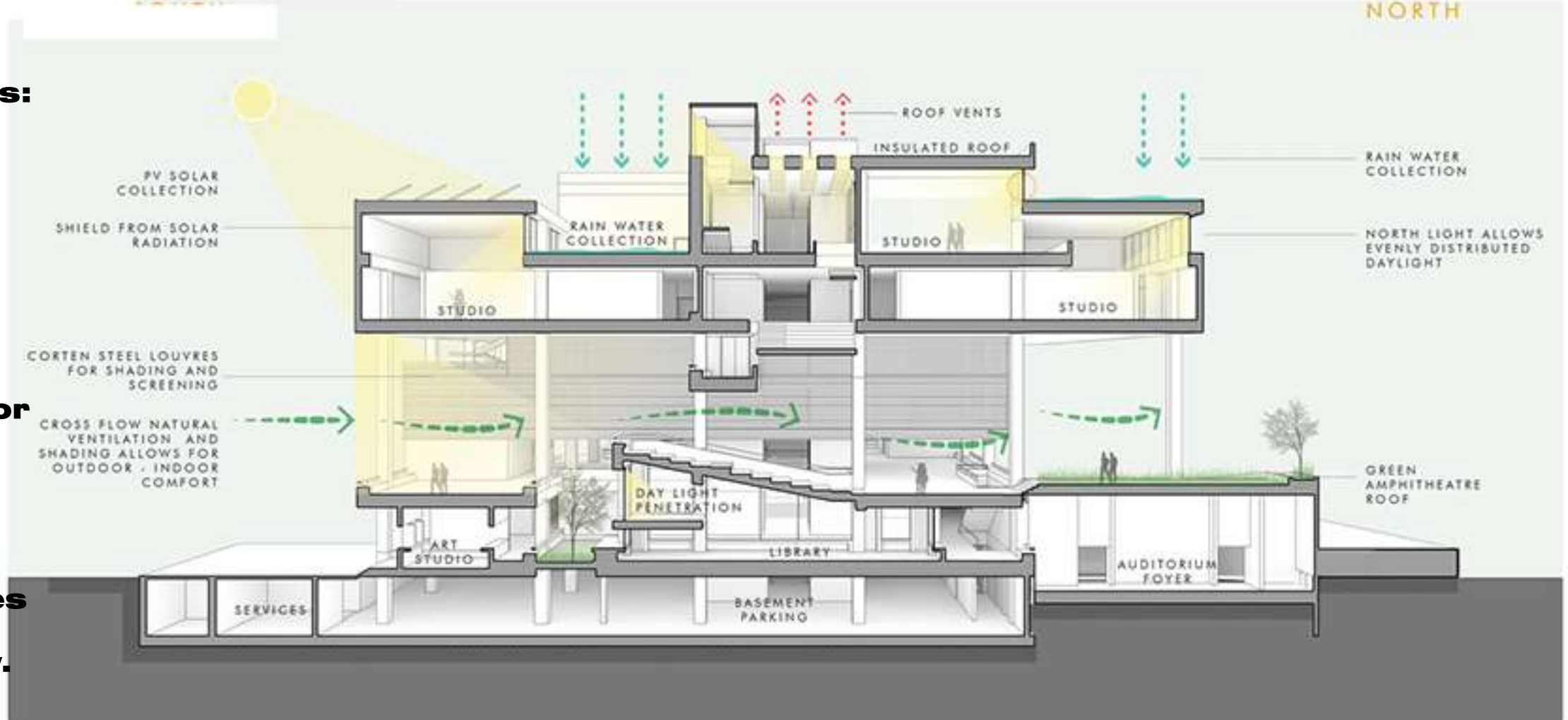


• **Solar Control:** The parasol zone shields lower levels from direct sun exposure, reducing heat gain.
• **Natural Ventilation:** Voids and elevated platforms in the sections promote cross-ventilation, channeling cooler breezes



• **Thermal Mass:** Use of local materials helps maintain stable interior temperatures by absorbing and slowly releasing heat.

• **Zonal Design:** Each floor is tailored to specific climate needs—morning programs get ample shade, while workspaces benefit from improved airflow.



CESE IIT KANPUR



Centre for Environmental Science and Engineering (CESE) is designed as an interdisciplinary research facility for environmental sciences and engineering.

- Houses a mix of wet labs (non-air-conditioned) and dry labs (air-conditioned), classrooms, and seminar spaces.
- First building in India to achieve a 5-star TERI-GRIHA rating for green buildings.

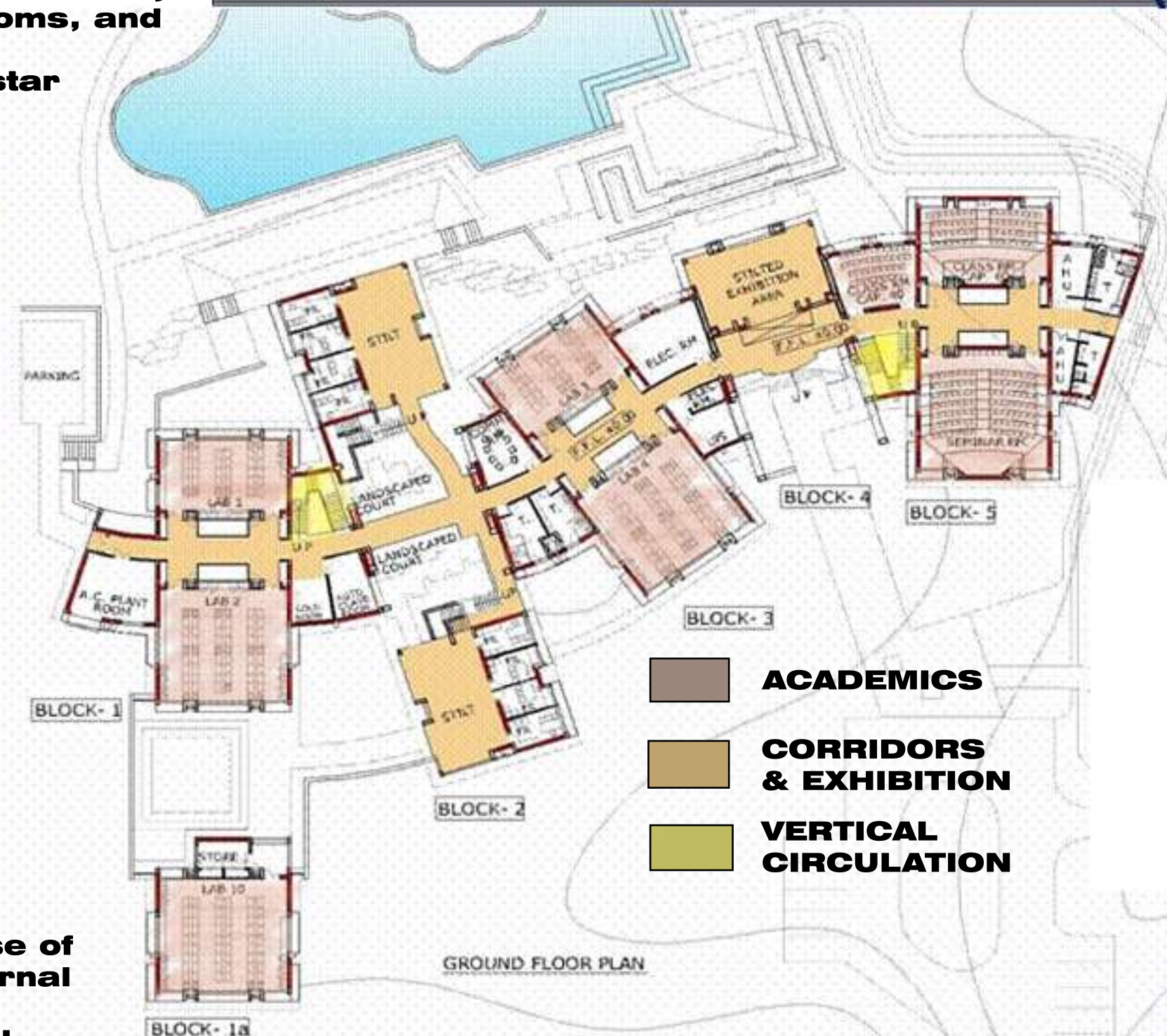
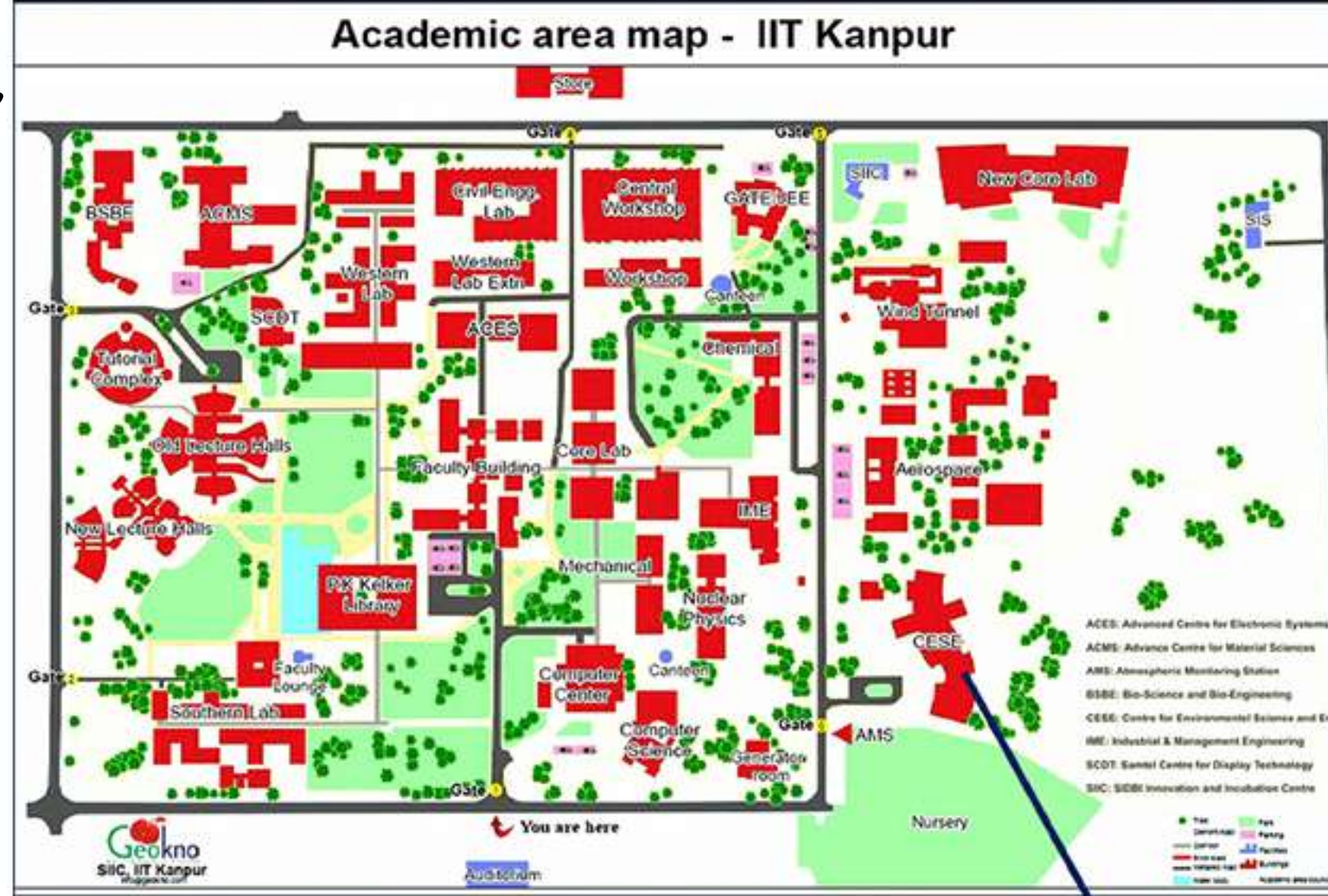
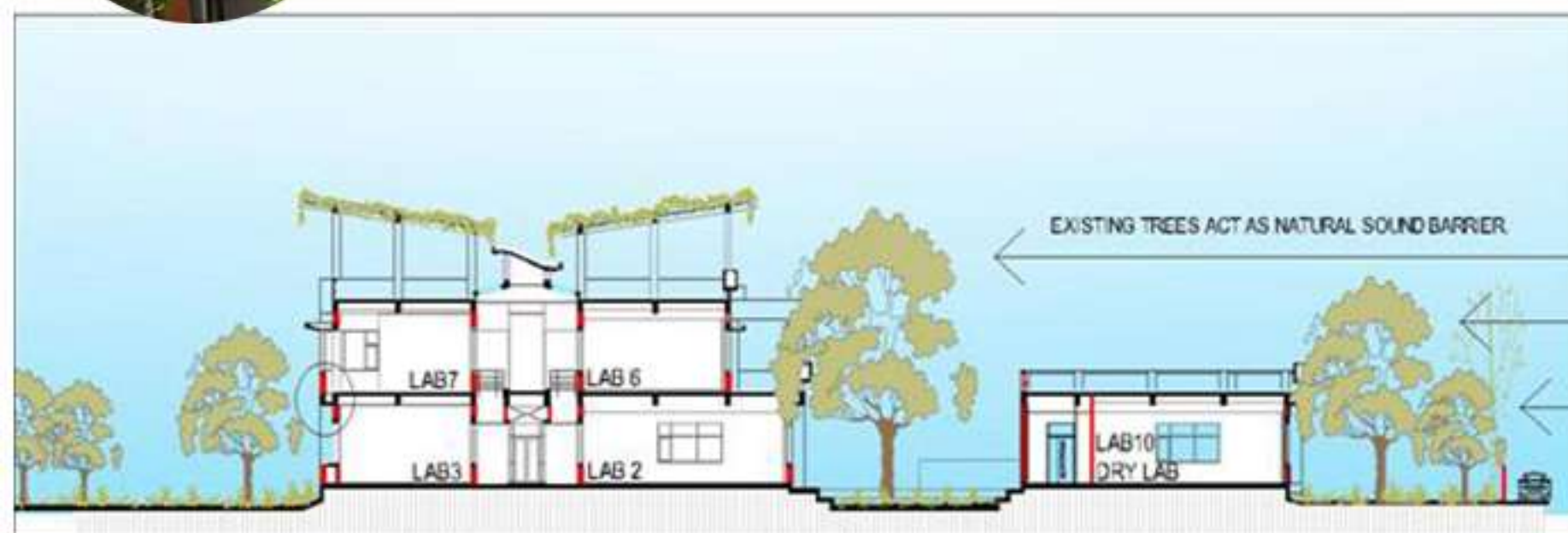


SITE AND CONTEXT

- Located within the expansive IIT Kanpur campus in Kanpur, India, where integration with the natural landscape is vital.
- Sustainable site planning preserves existing trees, topsoil, and natural microclimatic conditions.



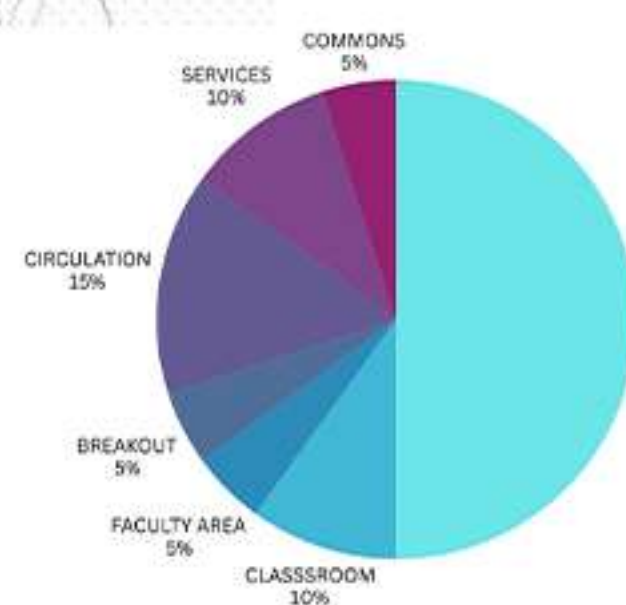
- Passive Shading:** Use of deep overhangs, external shading devices, and optimized window-wall ratios reduce direct solar radiation.



Plan of Building

- Natural Ventilation:** Incorporation of an earth-air tunnel system pre-cools incoming air to lower the cooling load.
- High-performance envelope:** Use of insulated cavity walls, reflective roof finishes, and low-e double glazing minimizes heat gain and loss.
- Daylighting:** Maximized natural light penetration reduces dependency on artificial lighting, supported by daylight sensors.

With an estimated 70% of the area devoted to academic functions, and laboratories and research spaces accounting for about 50%, the building clearly prioritizes high-performance research facilities, essential for an interdisciplinary environmental science center.



- Preserve, protect landscape during construction:
 - Proper timing of construction to minimize erosion.
 - Preserve existing trees/vegetation.
 - Preserve top soil.
 - Measures to collect/divert runoff from polluted areas so that it does not mix with storm water run off from undisturbed areas.
 - Run off control measures like contour trenching, mulching.
 - Spill prevention and control plans to stop source of spill, to dispose contaminated and hazardous wastes.
- Soil and water conservation (post construction)
 - Proper soil erosion and sedimentation control plan.
 - Proper laying back of top soil for vegetative growth.
 - Soil stabilization.
 - Storm water management and filtration.
- Compensatory depository forestation for removed mature trees
 - Replant the number of mature trees removed in higher ratio (1:3).
- Minimize site circulation and provide aggregate utility corridor.
 - Minimize road and pedestrian walkway length.

INITIALLY	LATER
Brick wall	Cavity brick wall with insulation.
RCC roof without insulation	Roof insulation with fiber glass.
Single clear glass for windows	Shading on roof. (Double glass for windows.)

Initial energy consumption: 240 kWh/m² yr

Energy consumption Later: 208 kWh/m² yr

13% ENERGY SAVINGS



ESC UNIVERSITY OF TORONTO SCARBOROUGH

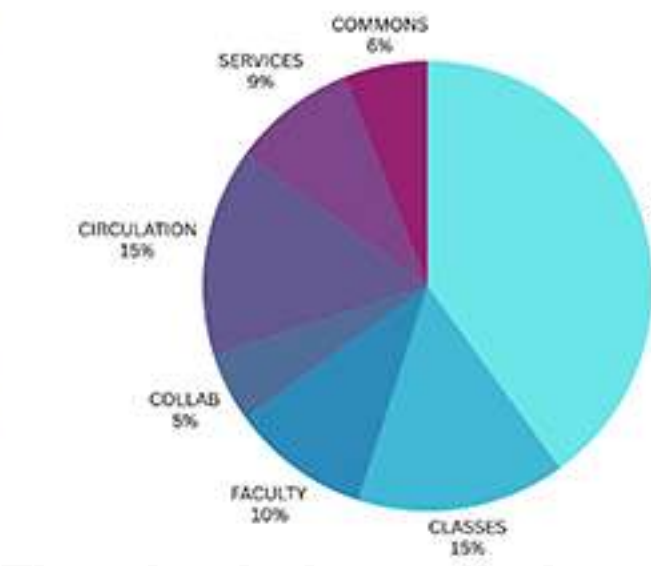


Environmental Science & Chemistry Building (ESCB) at the University of Toronto Scarborough is a 110,000 square foot, five storey academic facility built to support environmental science and chemistry research and teaching.

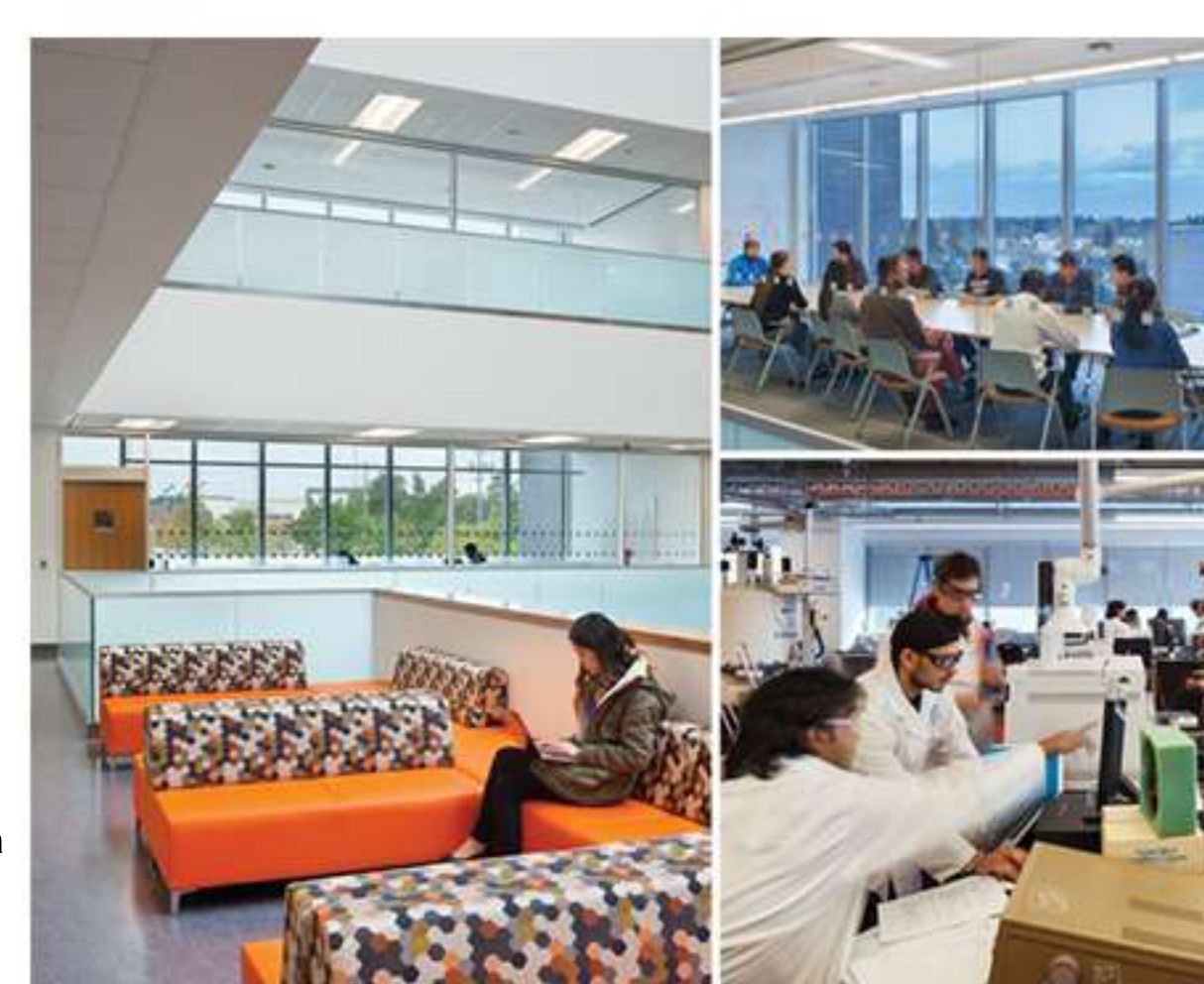
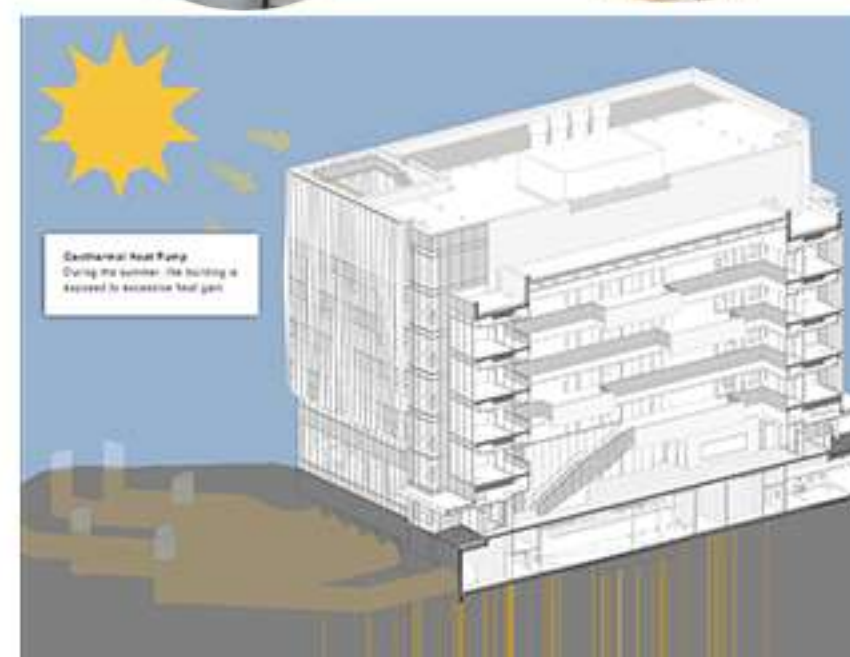
- Designed by Diamond Schmitt Architects and completed in 2015.
- Achieved LEED Gold certification through a comprehensive sustainable design approach.



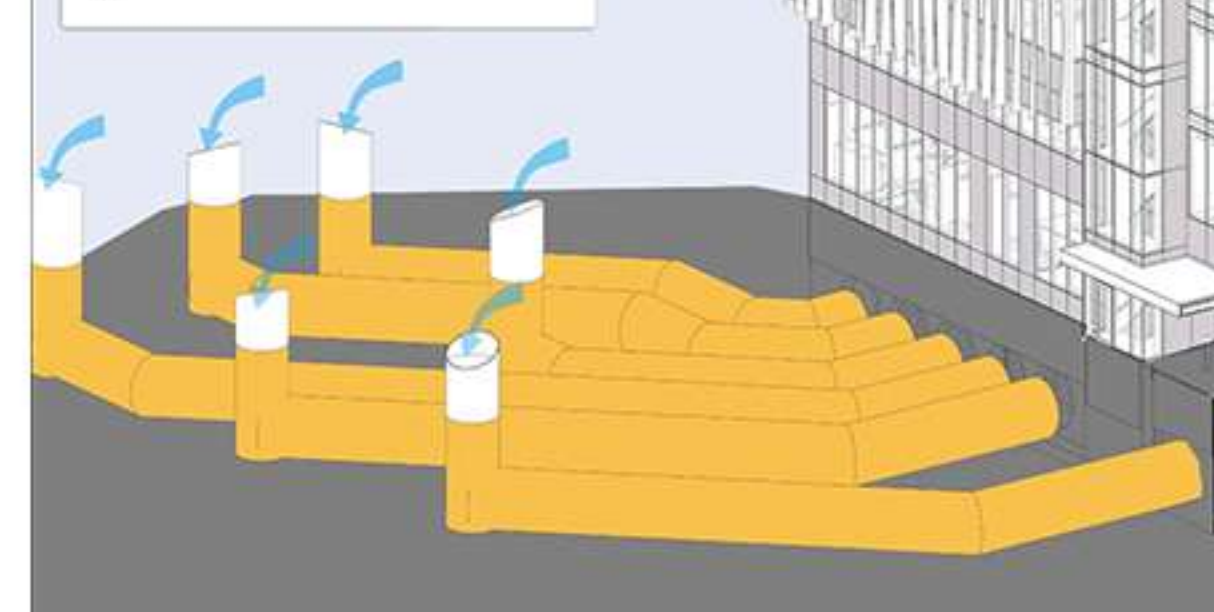
- Located within the University of Toronto Scarborough campus, positioned on the edge of a wooded ravine to enhance natural connections.



The chart shows that approximately 70% of the total area is dedicated to academic spaces, with a major focus on laboratories and research areas (roughly 40% overall). This highlights the building's role as a hub for innovative research and interdisciplinary teaching.

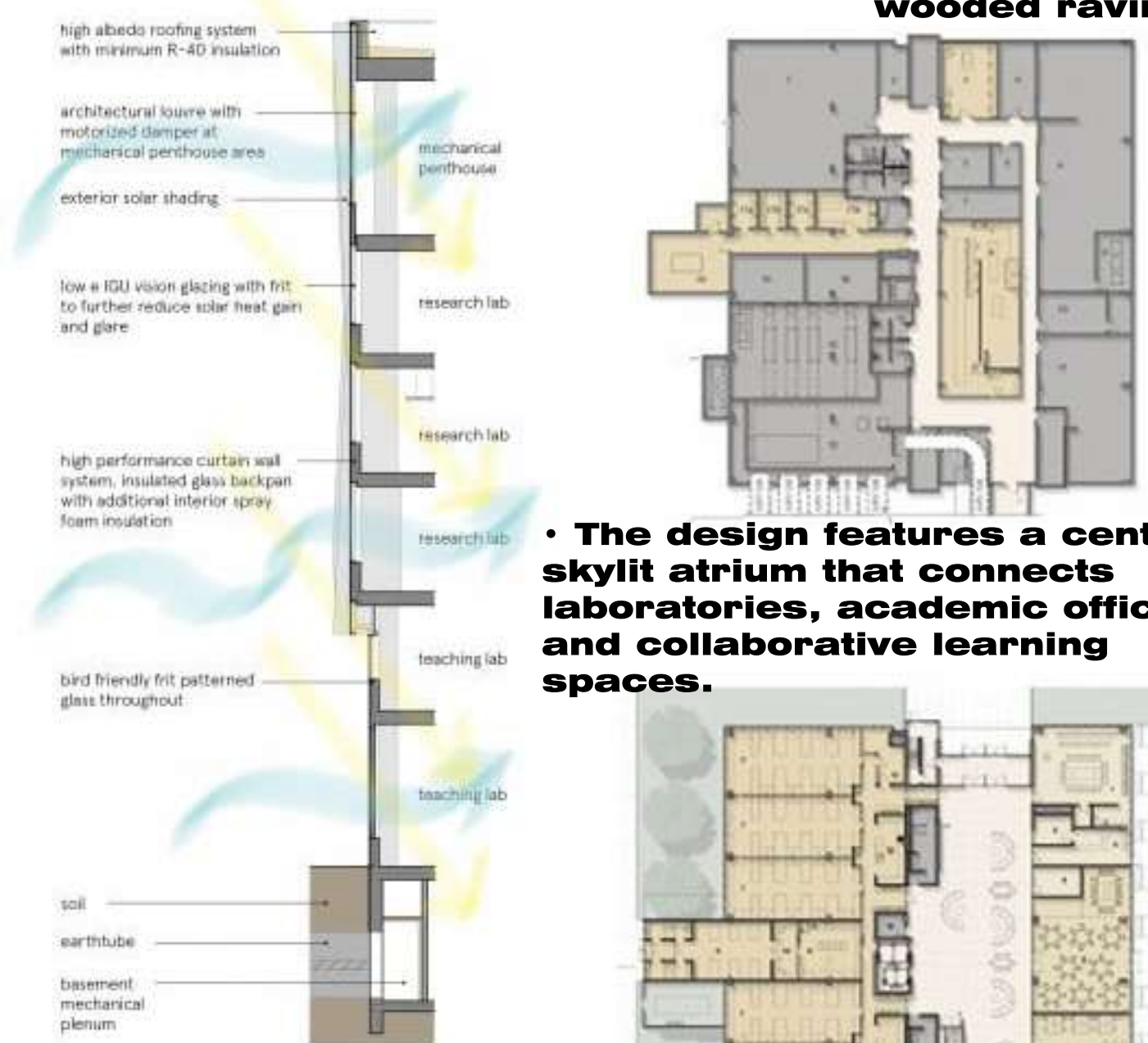


Earth Tubes
The earth tubes provide a means of passively heating or cooling ventilation air as it is brought into the building using the temperate temperature of the earth. This reduces the natural gas and electricity required for the conditioning of ventilation air.



An innovative Earth Tube system pre-treats incoming air—warming it in winter and cooling it in summer—thereby reducing ventilation load.

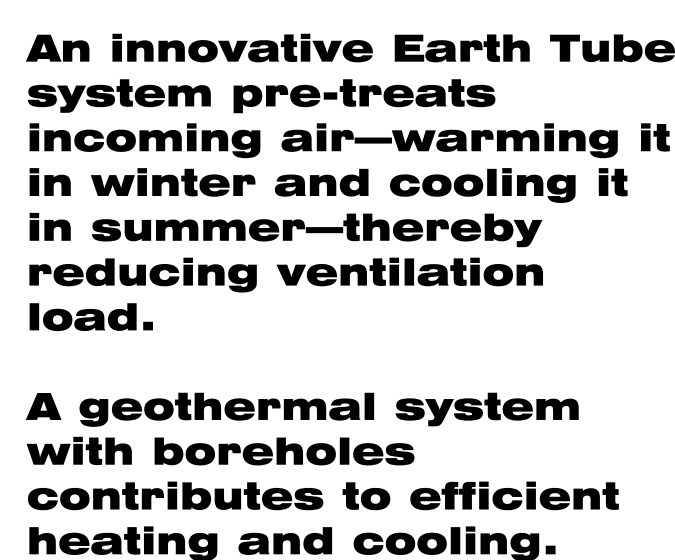
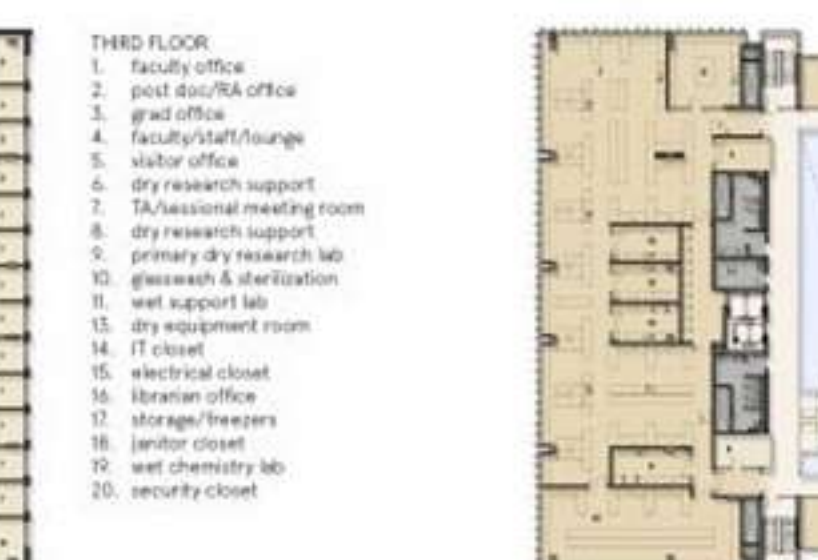
A geothermal system with boreholes contributes to efficient heating and cooling.



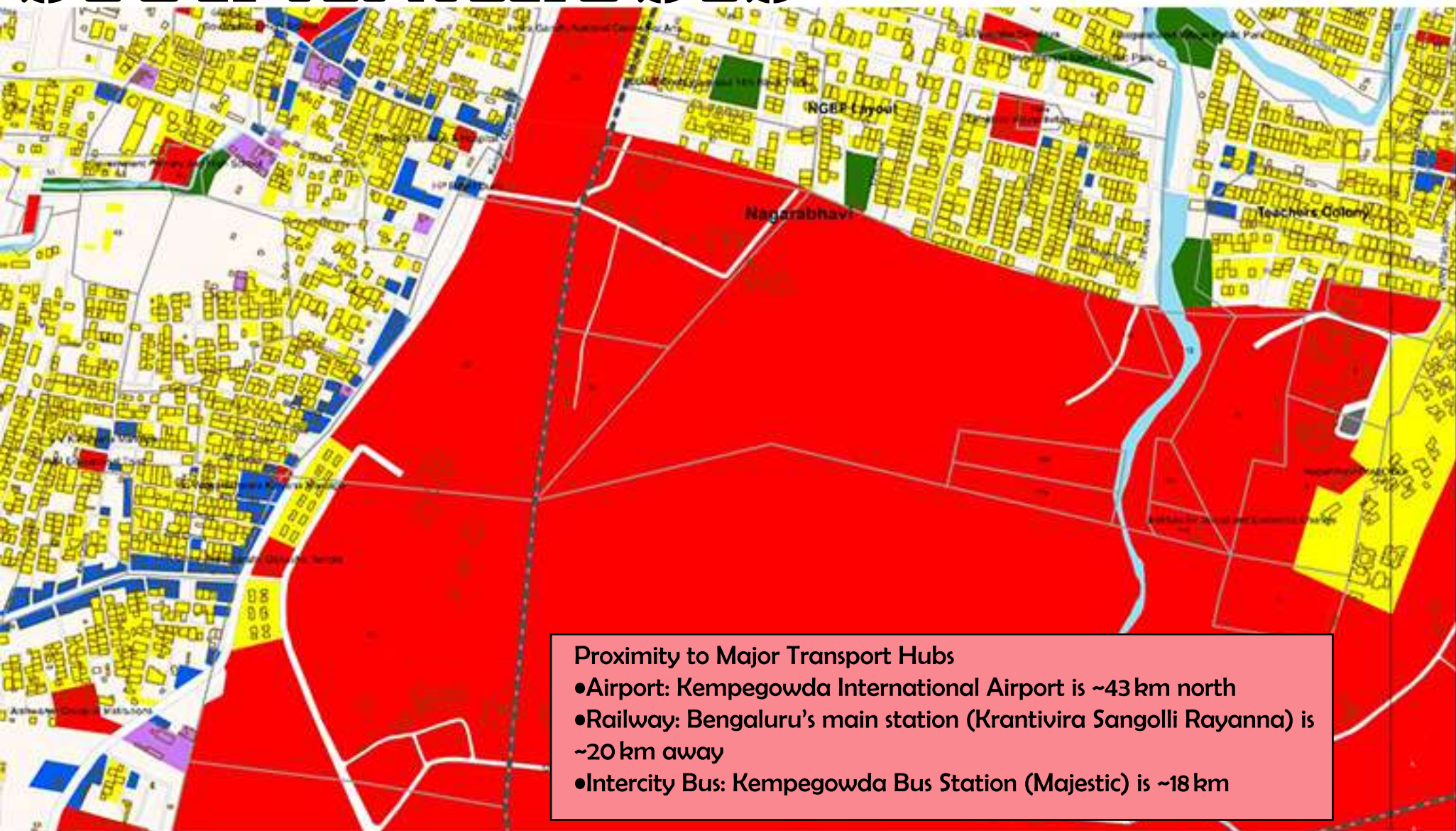
A dynamic façade with vertical sunshades creates a rhythmic play of light and shadow while controlling interior glare.



Abundant natural daylight, open views, and flexible lab configurations enhance visual comfort and support occupant well being.



SITE ANALYSIS



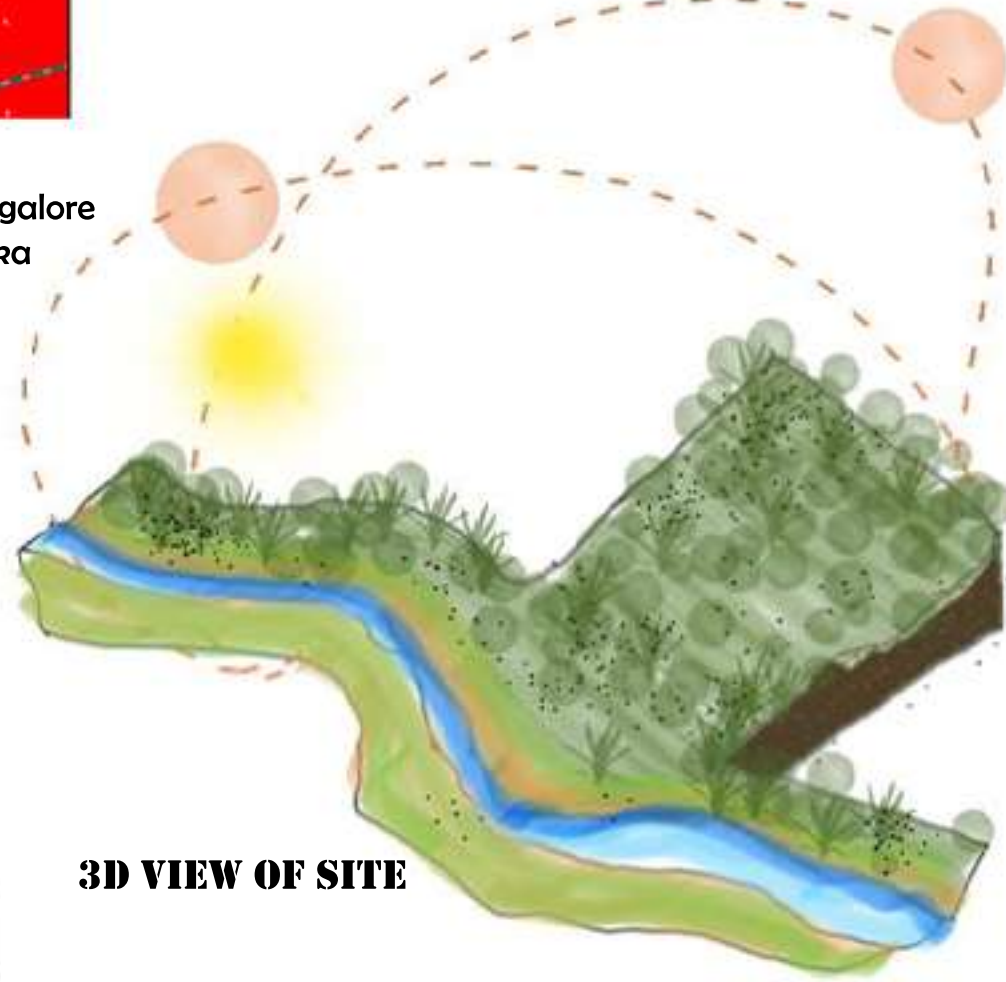
- Site Location**
- Postal Address: Bangalore University, Jnana Bharathi Campus, Mysore Road, Bengaluru 560056, Karnataka, India.
 - GPS Coordinates: 12° 56' 11.74" N, 77° 30' 6.86" E.
 - Campus Extent: The Jnana Bharathi (JB) Campus covers approximately 1,100 acres (445 ha) since its establishment in 1973.



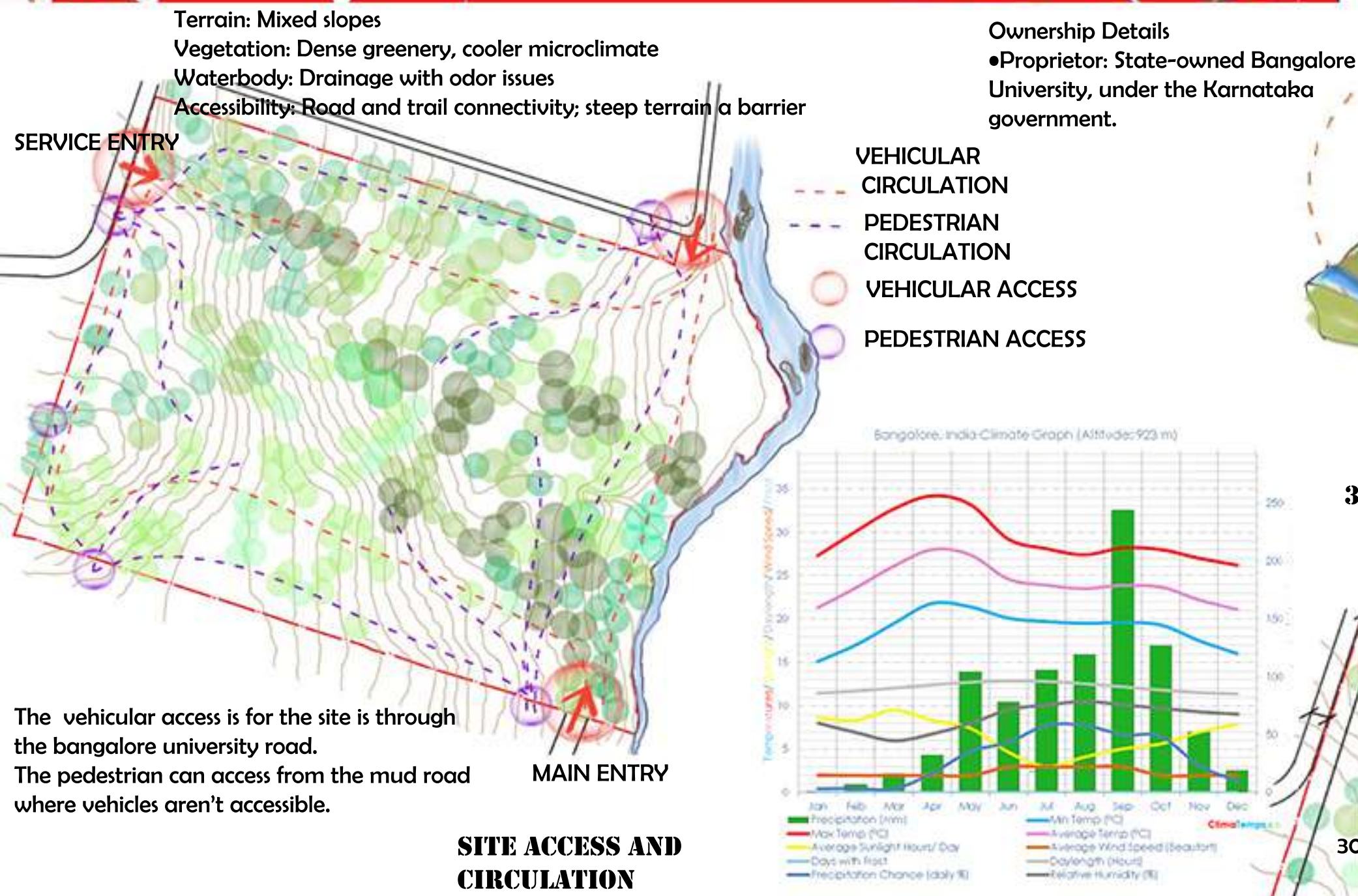
SURROUNDING LAND USE

- Institutional: Predominantly academic and research facilities across the JB Campus.
- Residential: Flanked by Rajajinagar and Pattarapalya housing clusters spilling into university peripheries.
- Commercial Corridors: Retail, eateries and service outlets line Mysore Road and Chord Road junctions.

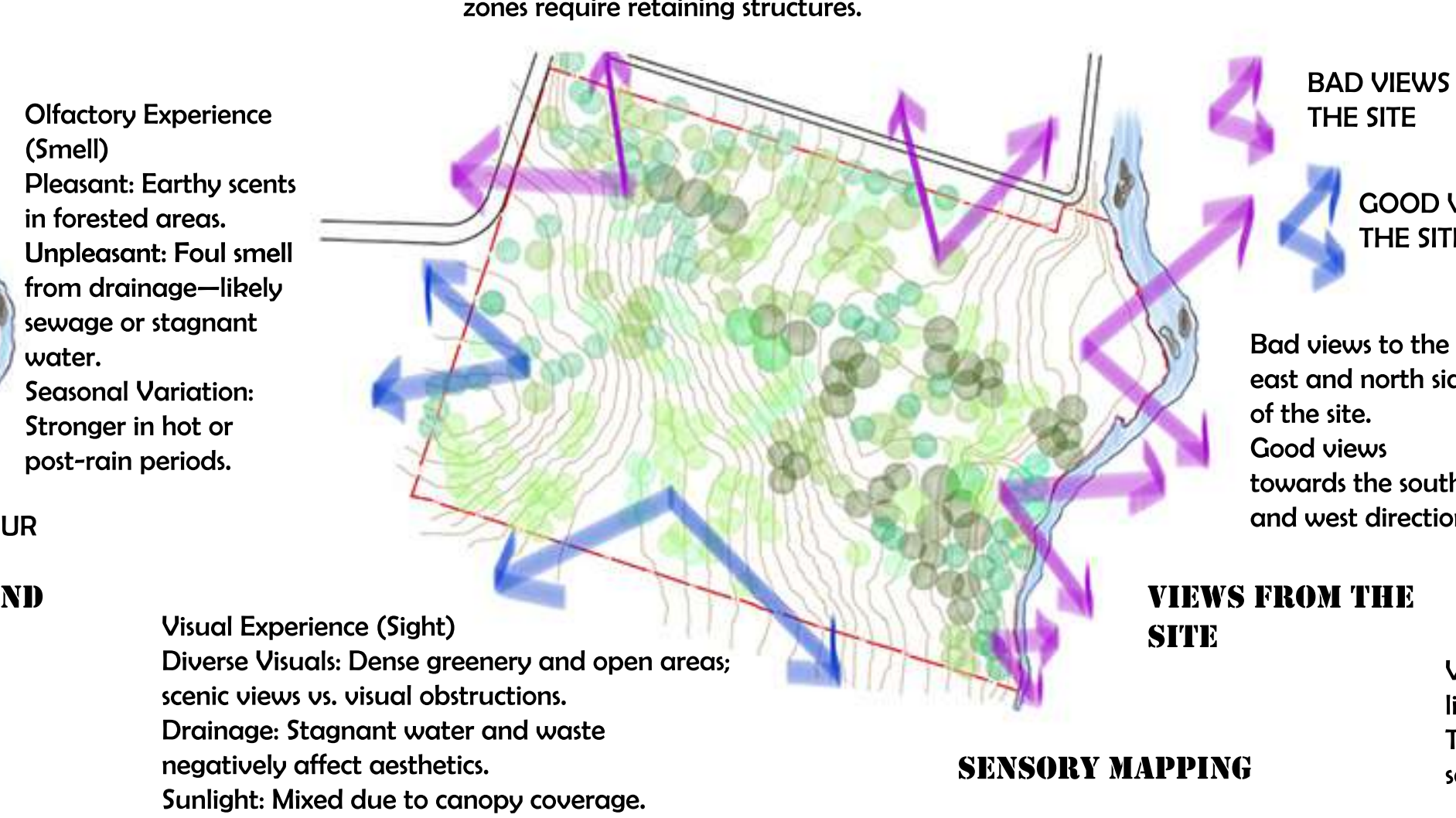
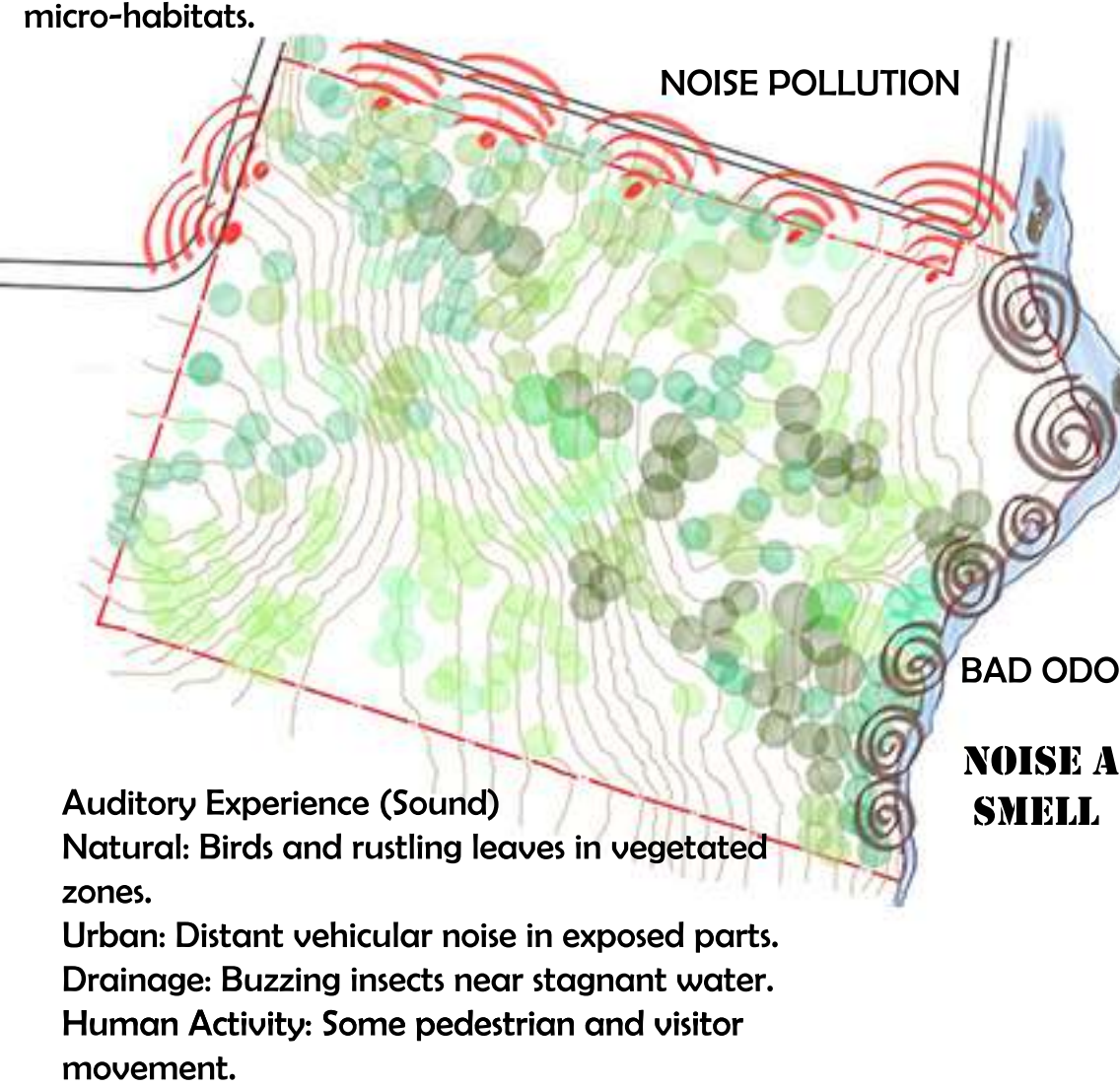
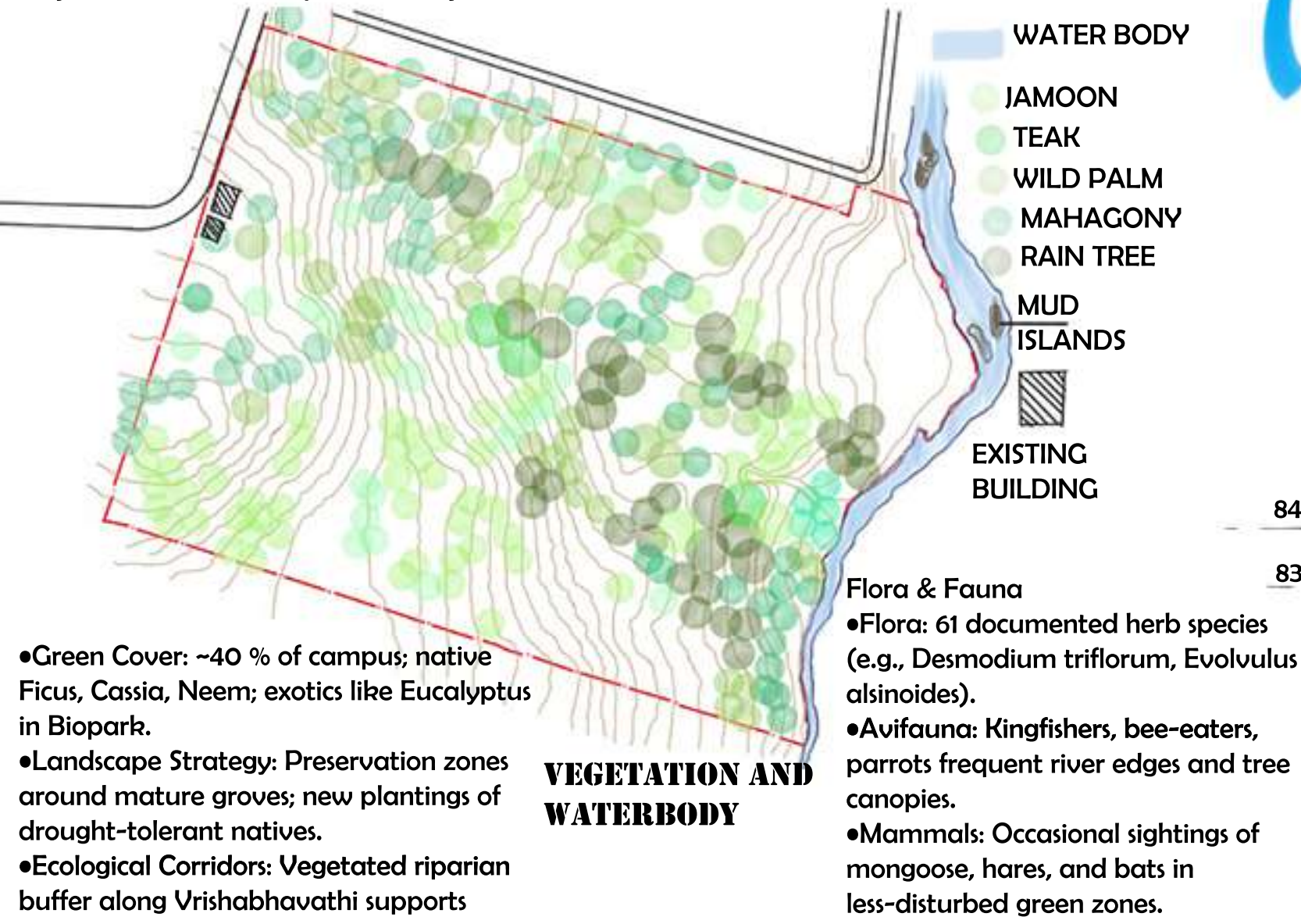
LANDUSE MAP



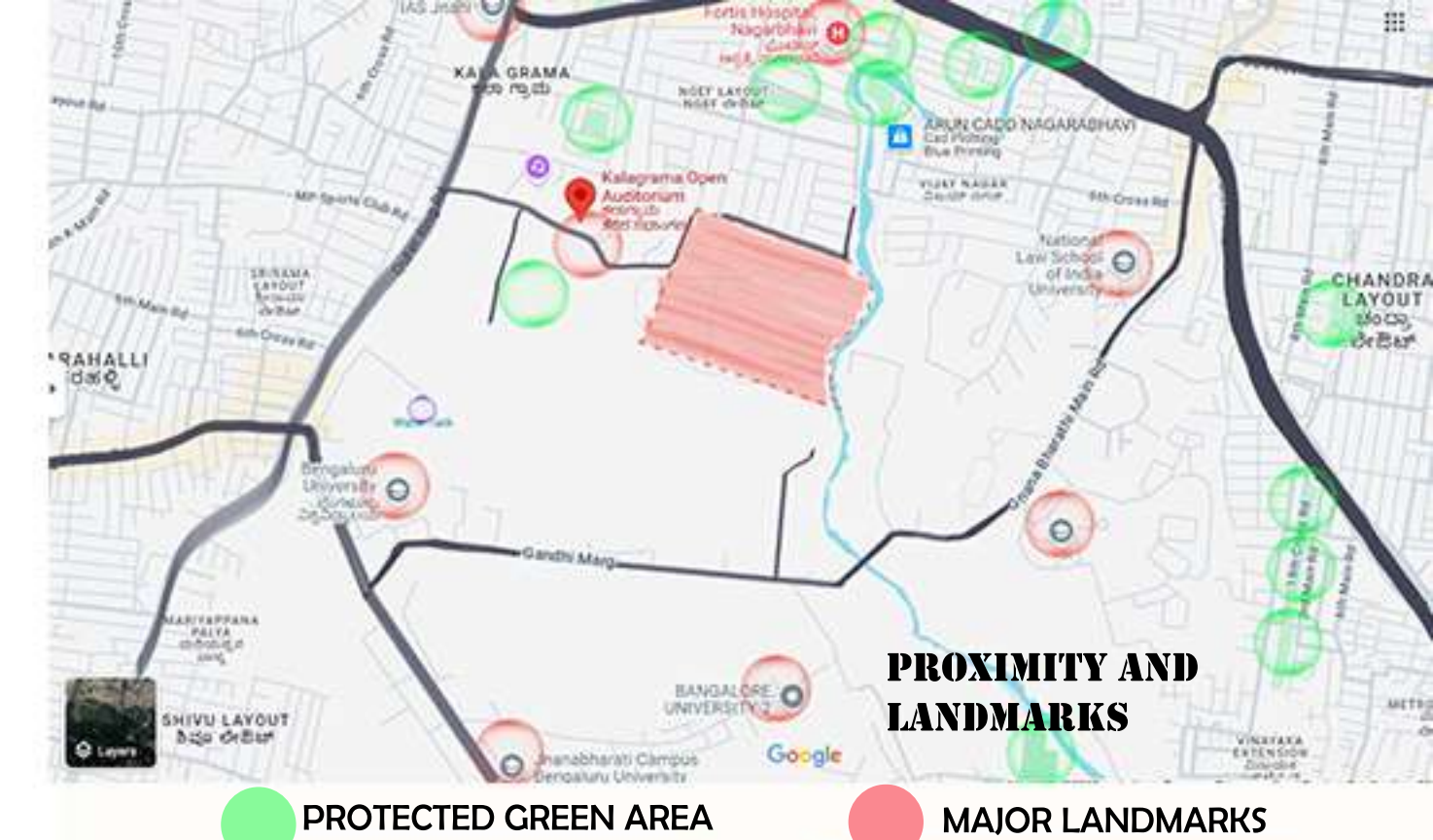
3D VIEW OF SITE



- Green Cover:** ~40 % of campus; native Ficus, Casia, Neem; exotics like Eucalyptus in Biopark.
- Landscape Strategy:** Preservation zones around mature groves; new plantings of drought-tolerant natives.
- Ecological Corridors:** Vegetated riparian buffer along Vrishabhavathi supports micro-habitats.



SENSORY MAPPING



Strengths

- Dense vegetation provides shade and improves microclimate.
- Unique topography allows for creative terraced design.
- Proximity to urban infrastructure enhances accessibility.

Weaknesses

- Drainage channel emits odor and poses health risks.
- Steep terrain increases erosion and limits accessibility.
- Informal pathways are unstable and unsafe.

Opportunities

- Eco-sensitive design with rainwater harvesting and bio-remediation.
- Outdoor learning spaces and recreational trails.
- Community engagement through restoration projects.

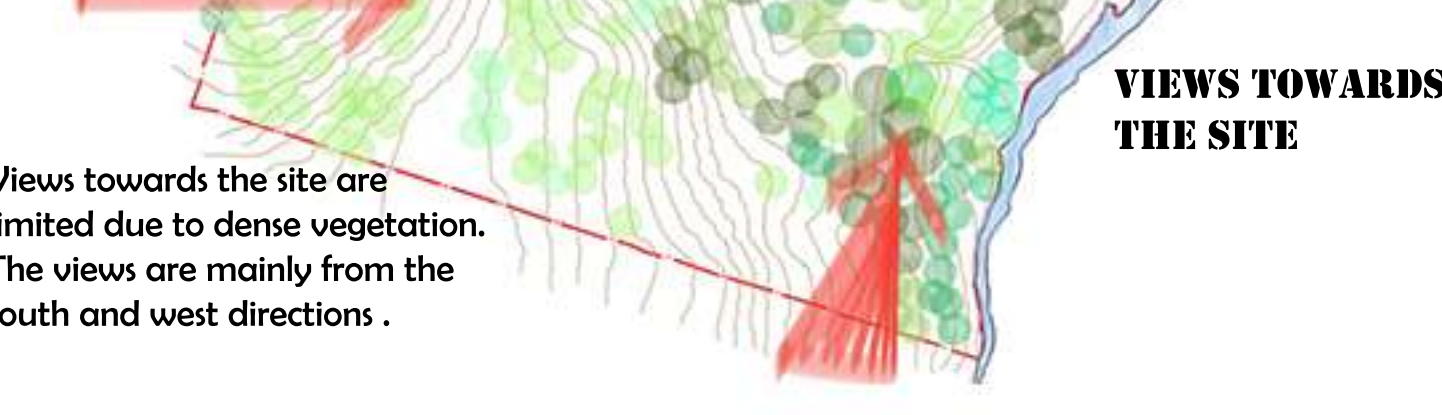
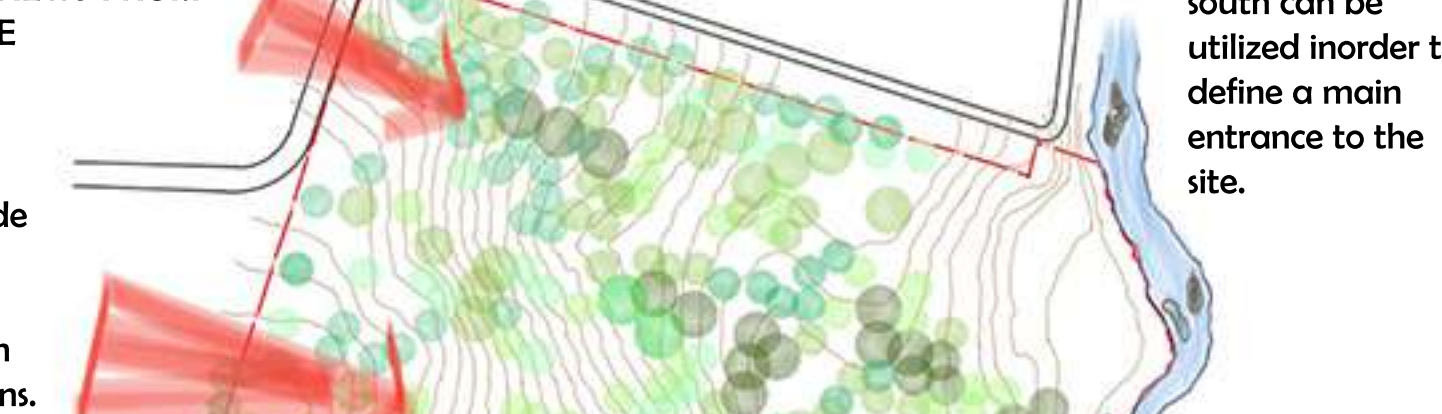
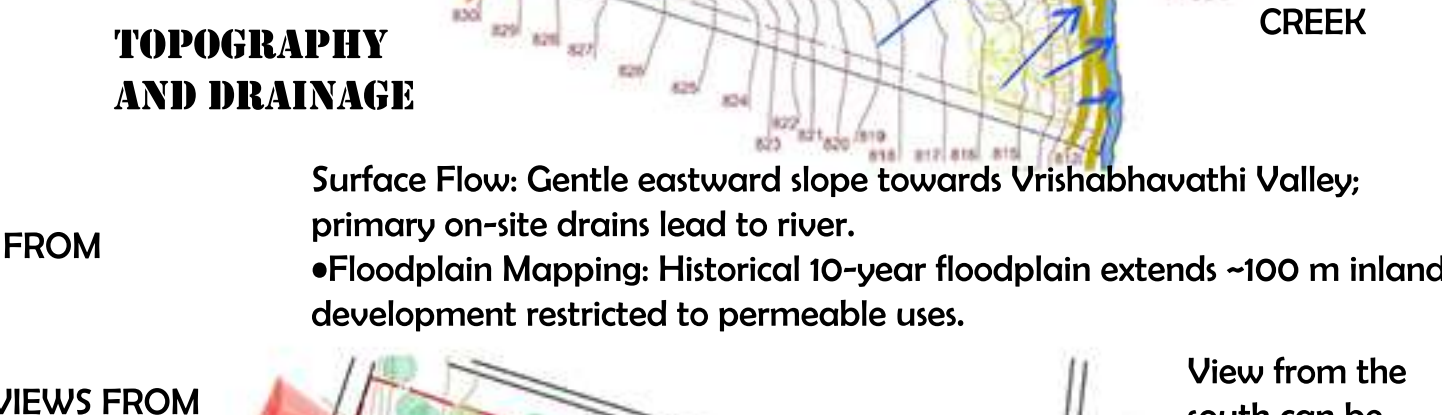
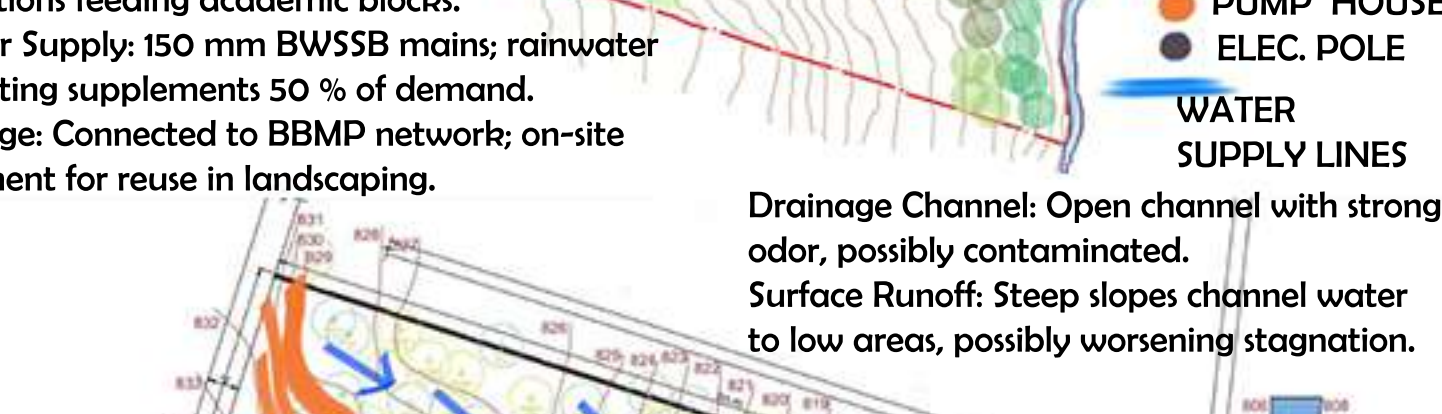
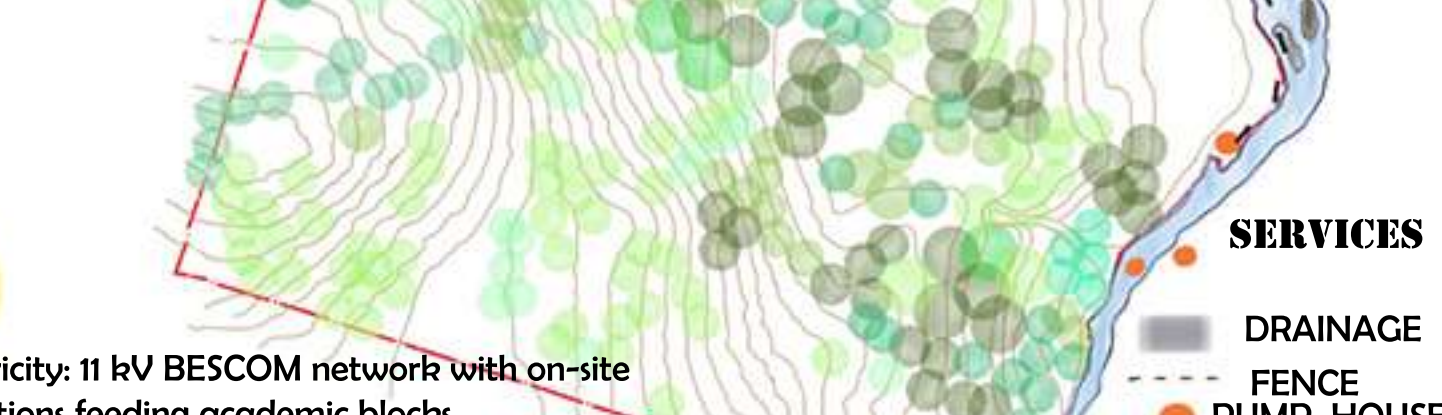
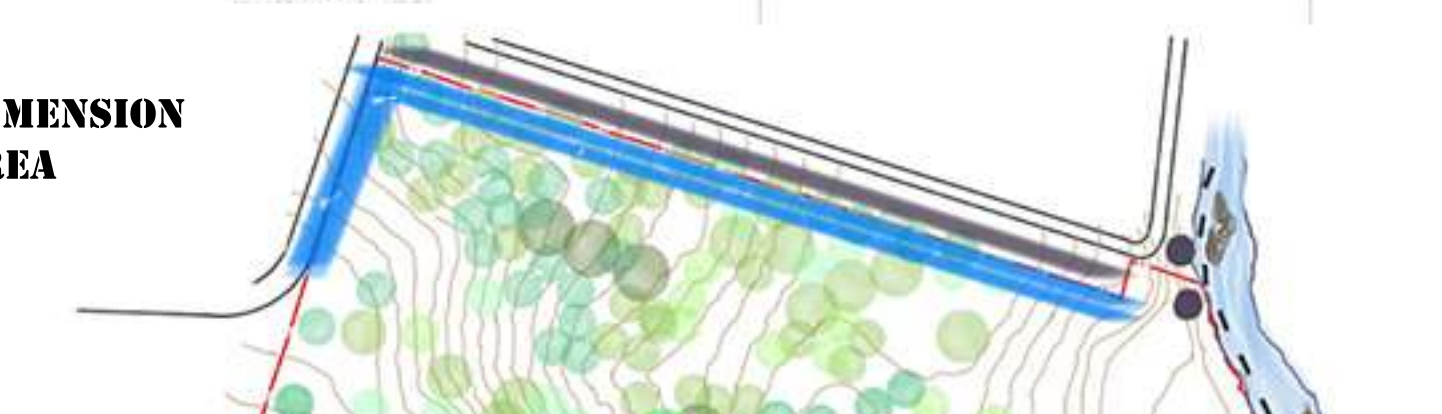
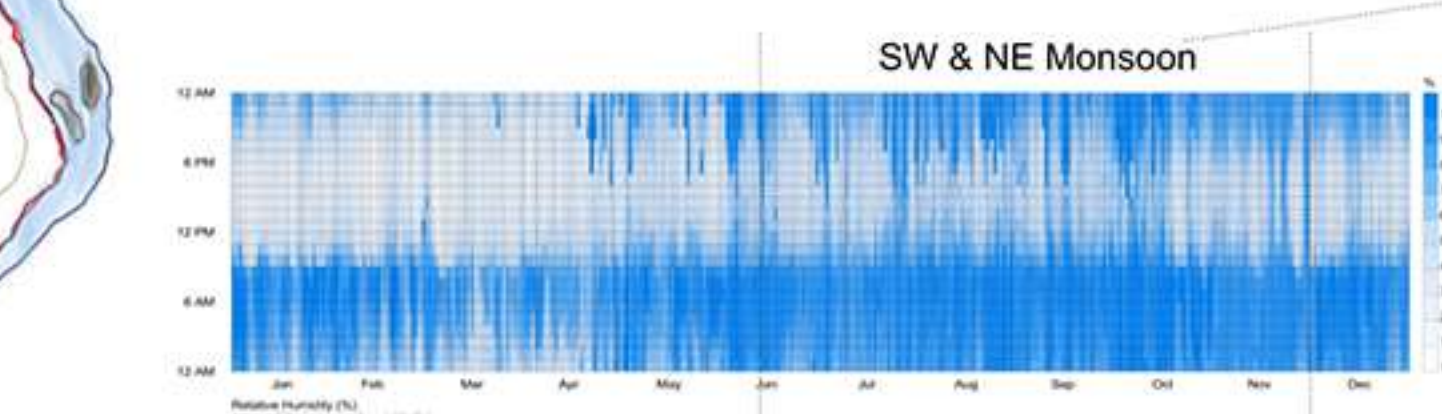
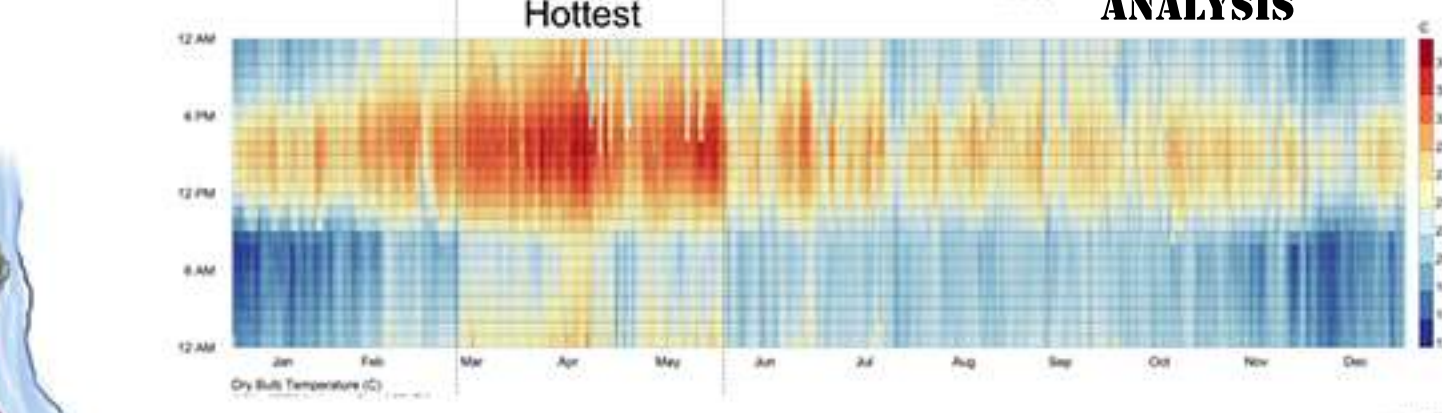
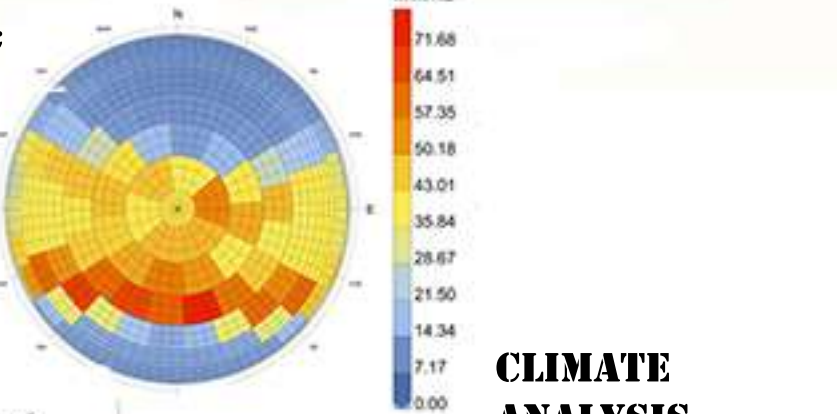
Threats

- Environmental degradation from urban expansion.
- Climate risks like erosion and drainage overflow.
- High maintenance for green spaces and infrastructure.

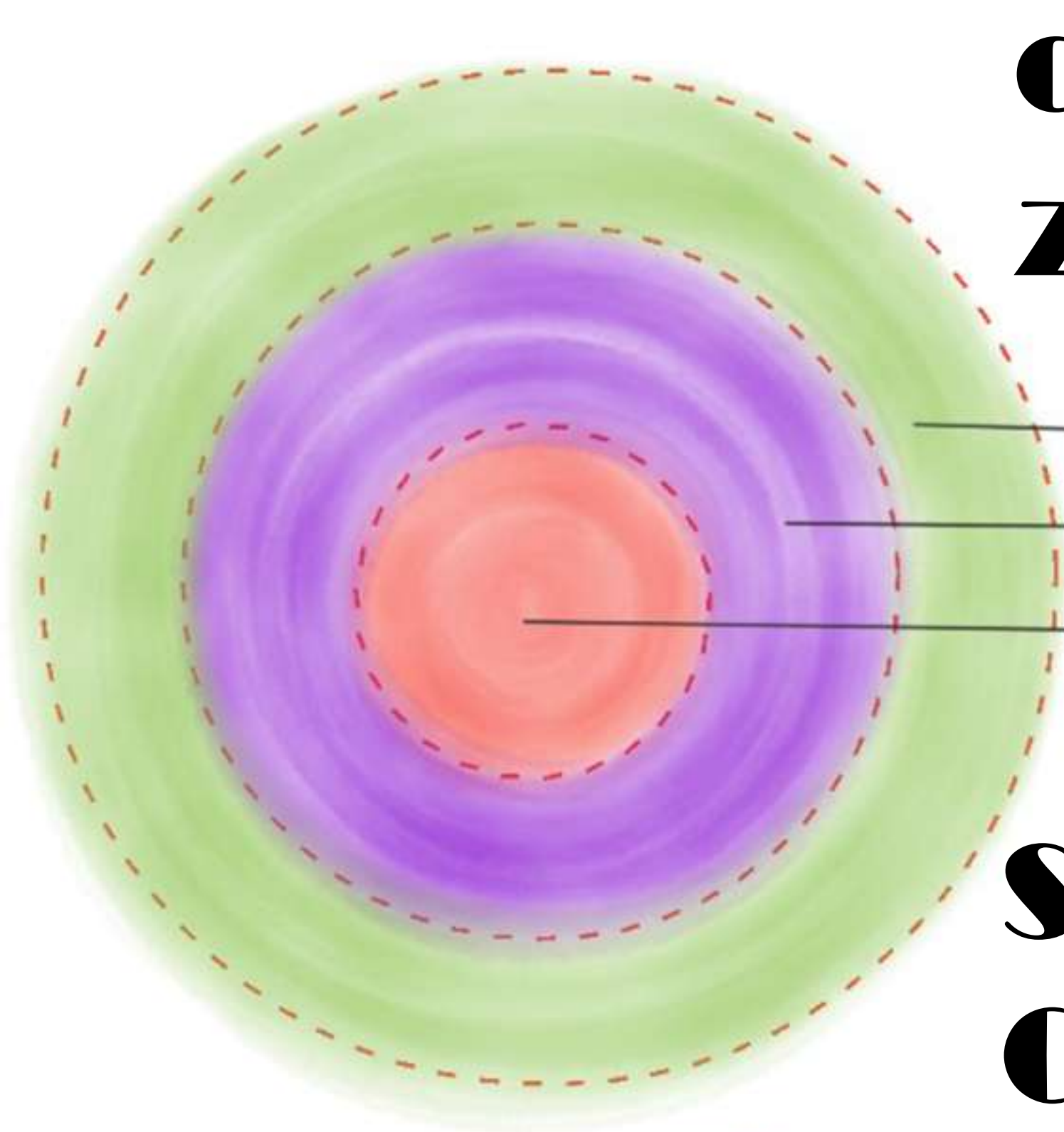
Climate Type: Tropical savanna (Aw); annual rainfall ~960 mm, mean temperature ~22.9 °C.

• Seasonality: Hot dry summers (Mar–May, > 35 °C), monsoon rains (Jun–Sep), mild winters (Dec–Feb).

• Air Quality: Urban AQI often 80–150; campus green cover key for microclimate regulation.

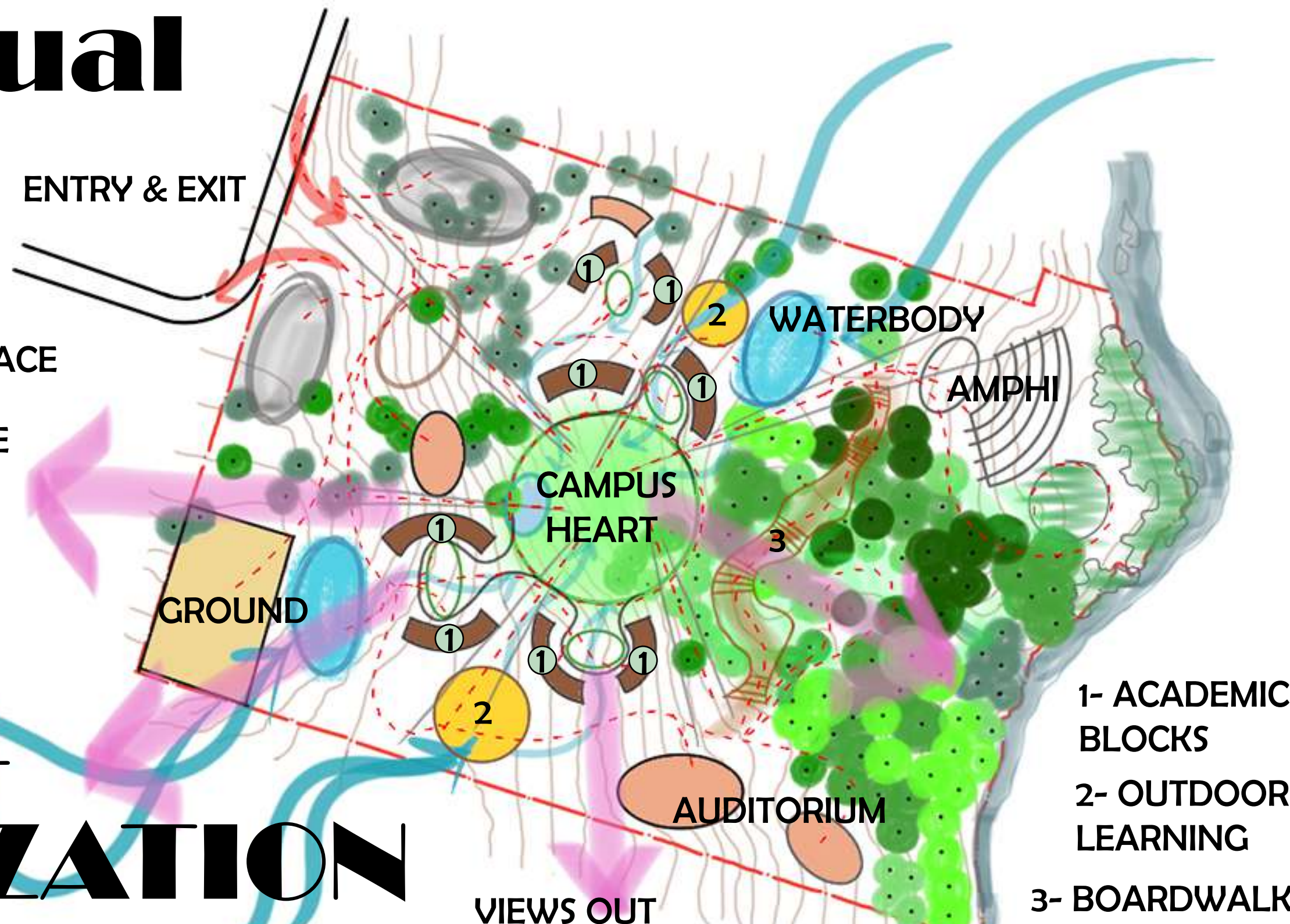


conceptual zoning

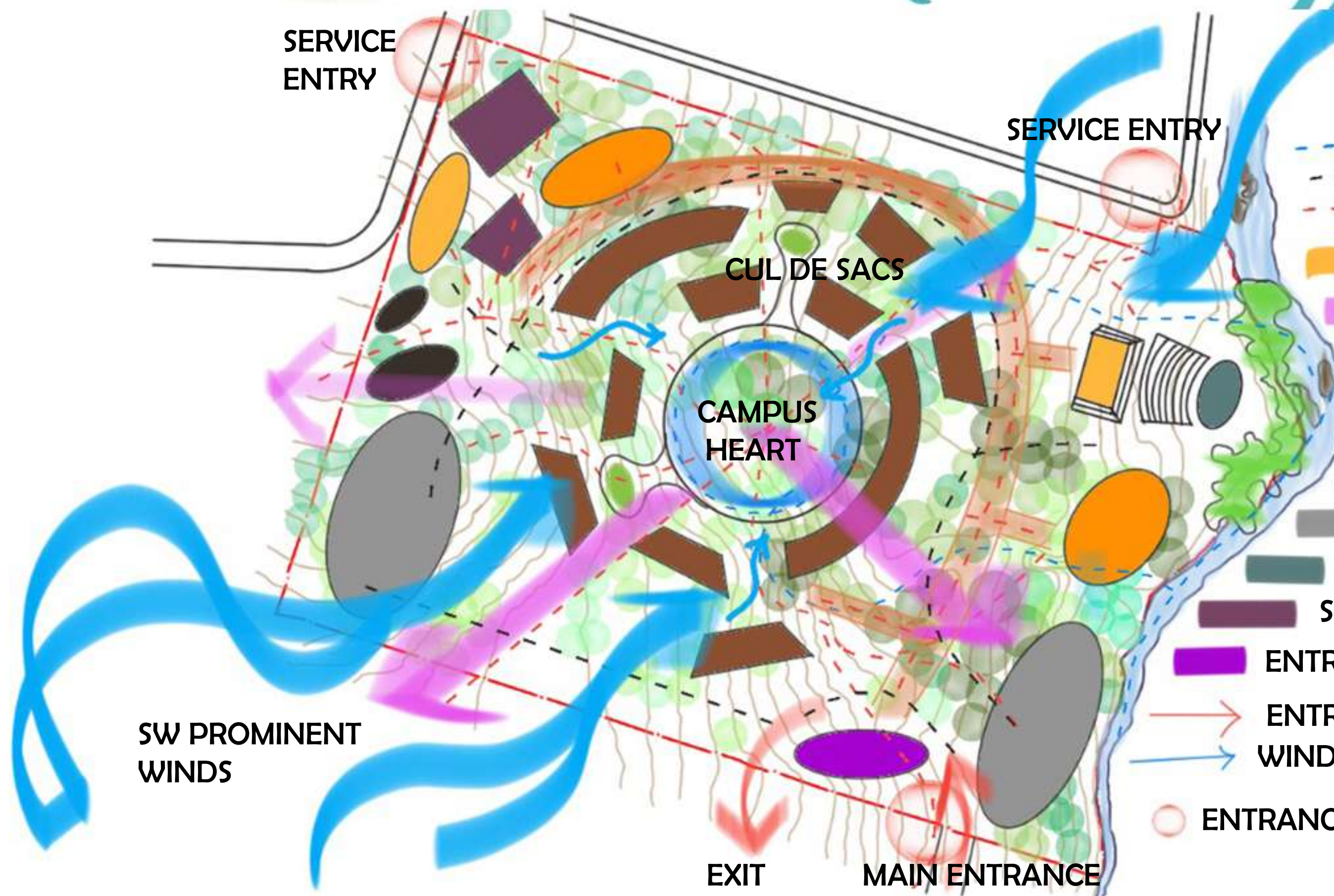


RECREATIONAL SPACE
ACADEMICS SPACE
CAMPUS HEART

SPATIAL ORGANIZATION



SERVICE ENTRY



SERVICE ENTRY

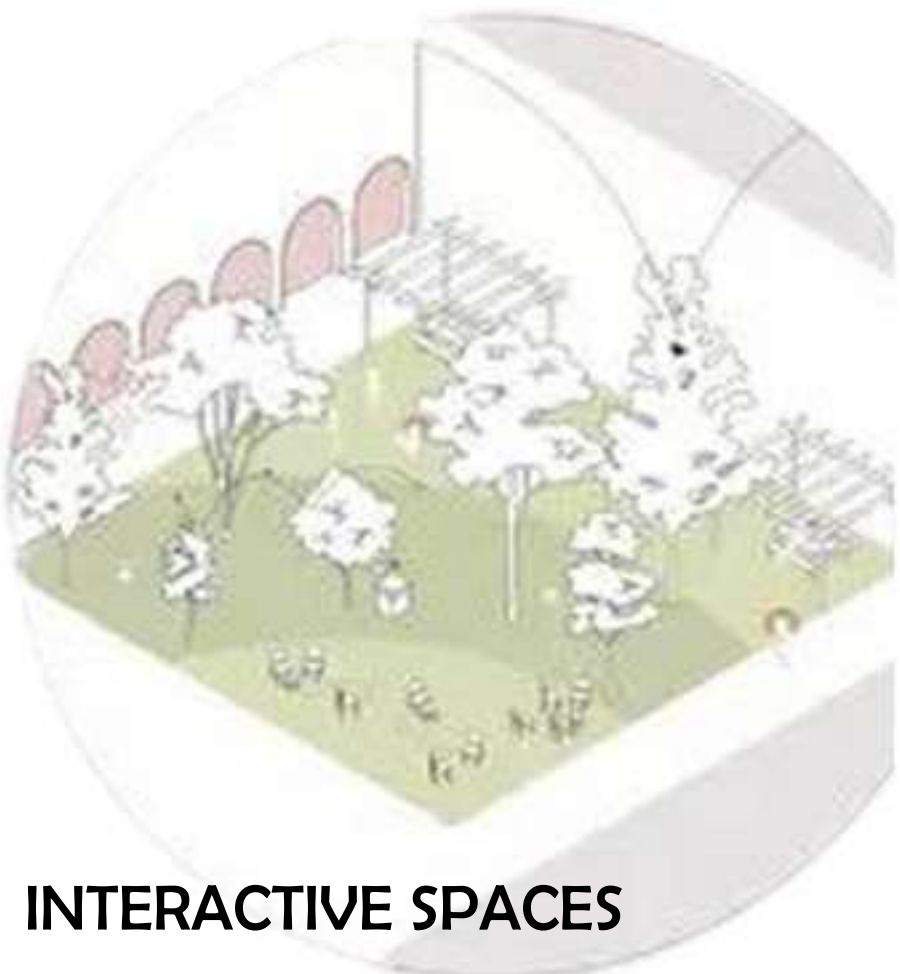
WATERBODY
VEHICULAR CIRCULATION
PEDESTRIAN CIRCULATION

GROUNDS
VIEWS OUT
CANTEEN
ACADEMIC BLOCKS
WASTE MANAGEMENT
PARKING
OPEN AMPHITHEATRE
STUDENT RESOURCE
ENTRANCE PLAZA
ENTRY/ EXITS
WINDFLOW
ENTRANCES

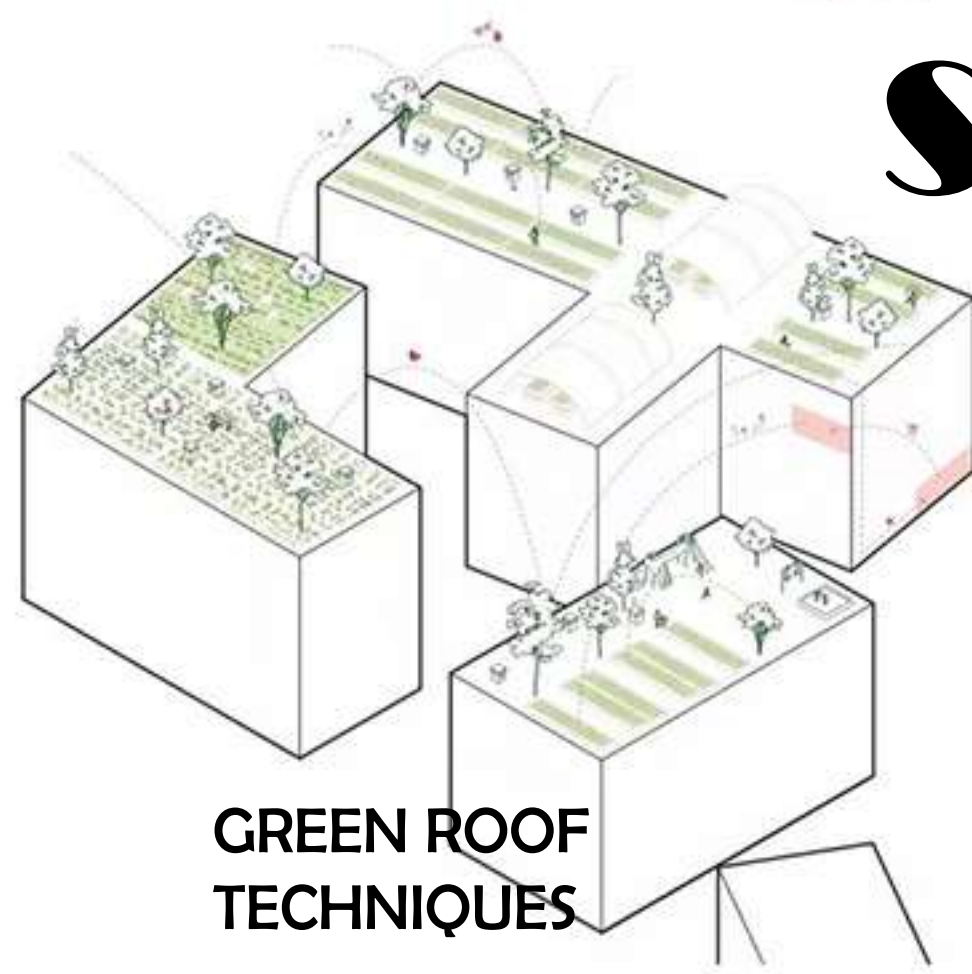
The cauliflower neighbourhood concept organizes spaces in organic, modular clusters that promote collaboration, social interaction, and a strong sense of community. Its non-linear, fractal layout supports flexible campus growth, creates walkable environments, and encourages informal learning and connection across disciplines.

cauliflower Neighbourhoods

SITE ZONING



INTERACTIVE SPACES



GREEN ROOF TECHNIQUES



SUSTAINABLE STRATEGIES

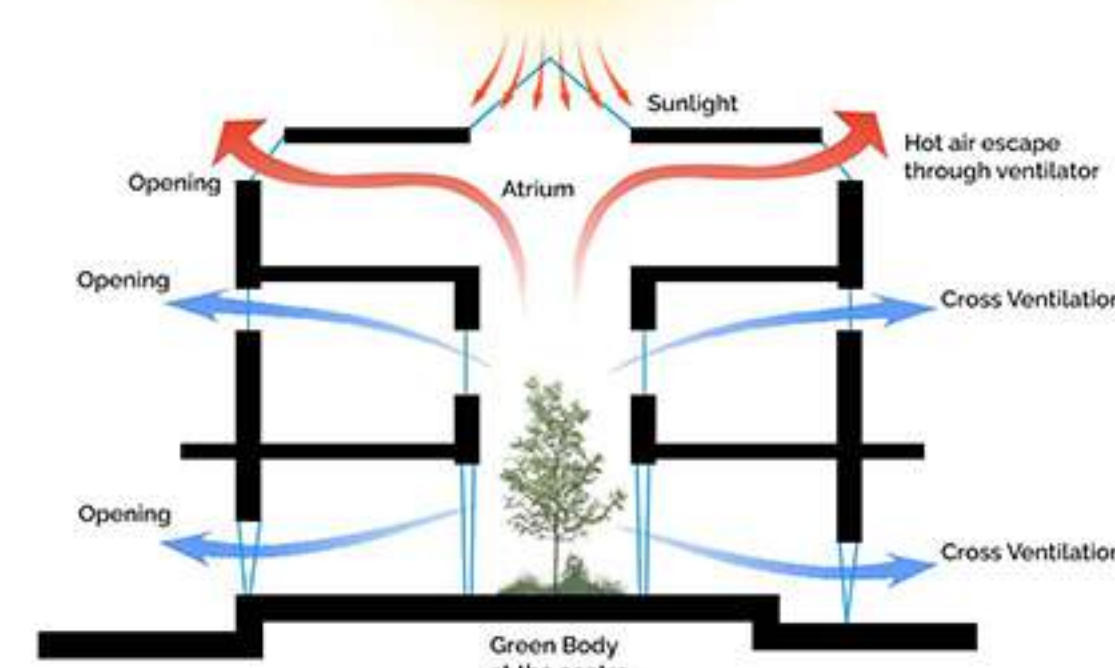
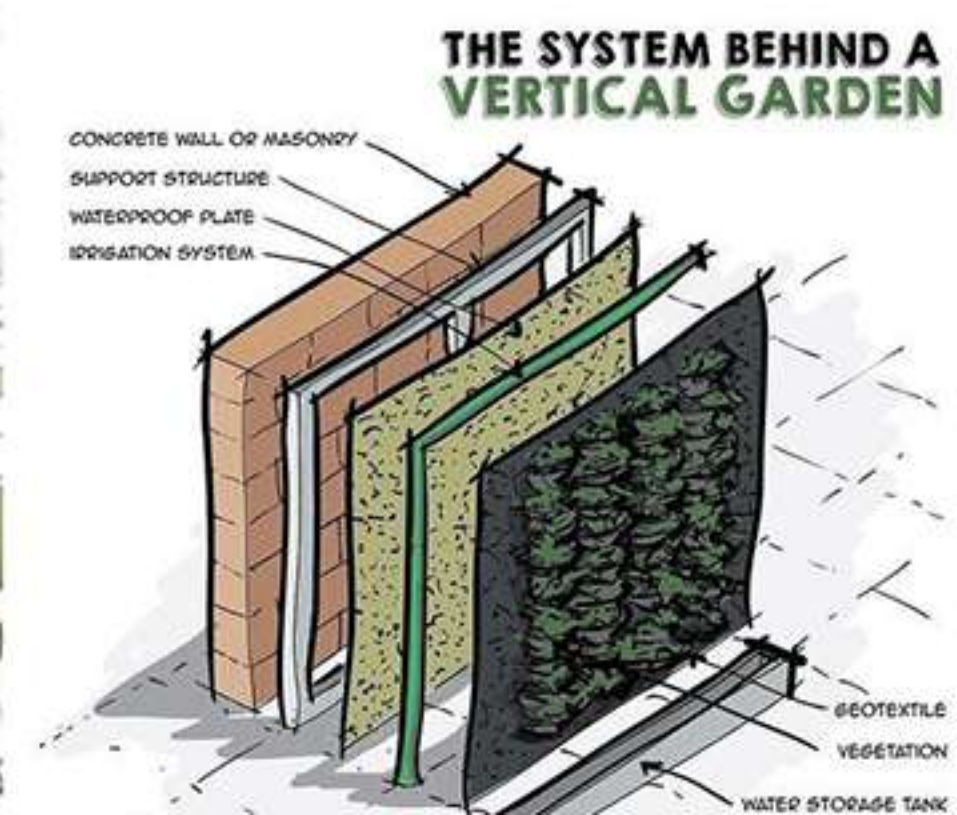
When integrated with Karnataka's cultural elements like ainmane-inspired courtyards, verandahs, and traditional materials, the campus gains a strong local identity. Combined with sustainable features like passive cooling, rainwater harvesting, and native landscaping, this design ensures low energy use, cultural relevance, and a vibrant, healthy campus experience.

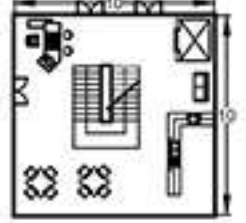
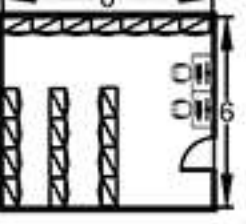
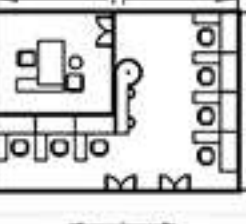
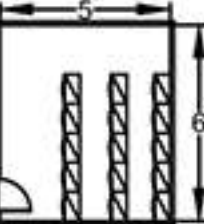
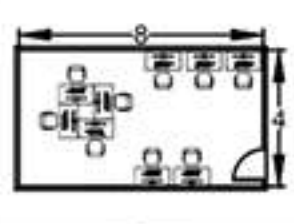
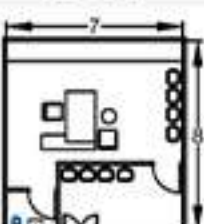
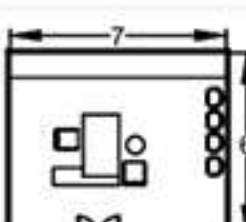
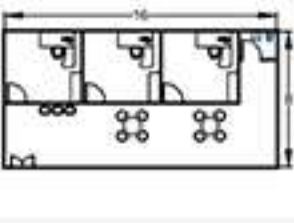
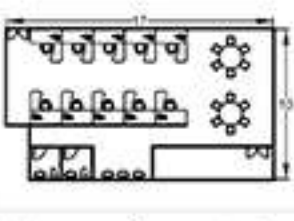
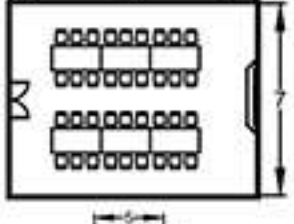
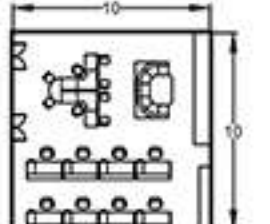
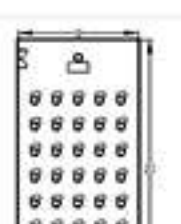
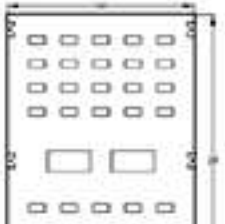
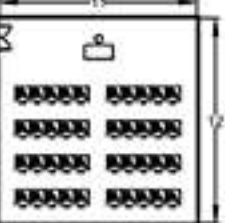
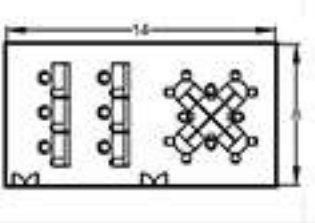
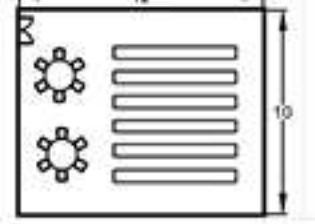


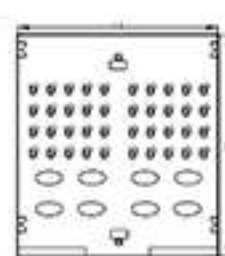
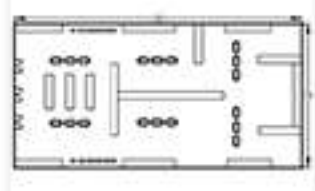
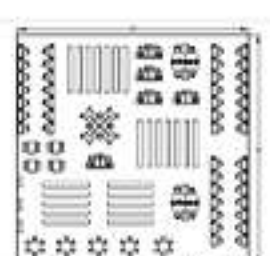
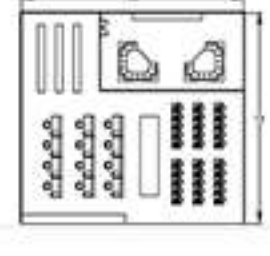
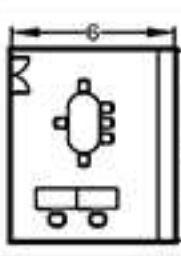
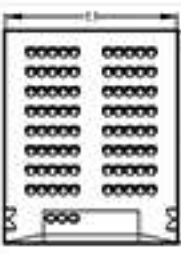
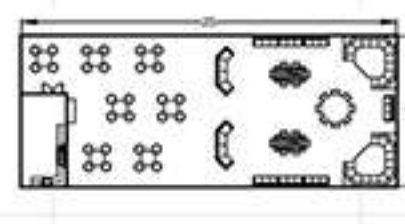
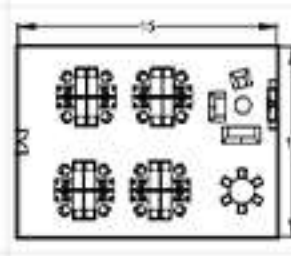
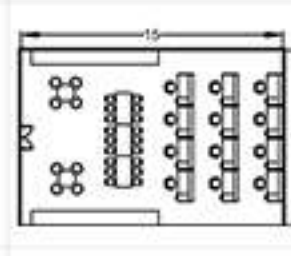
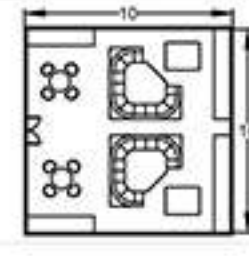
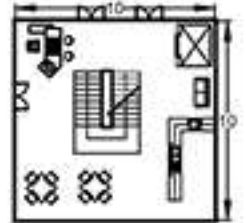
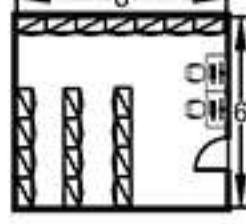
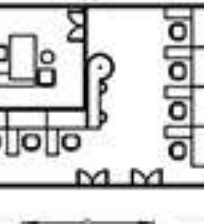
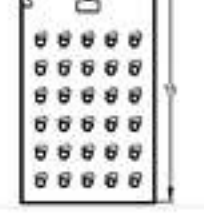
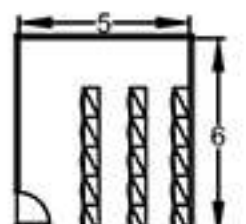
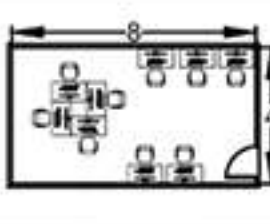
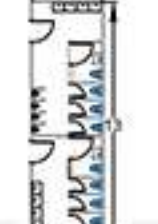
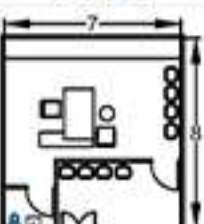
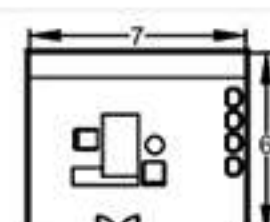
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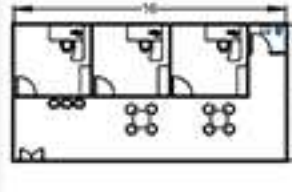
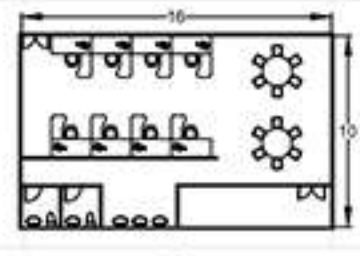
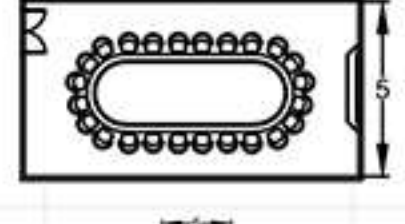
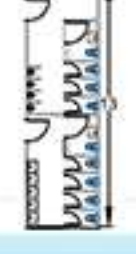
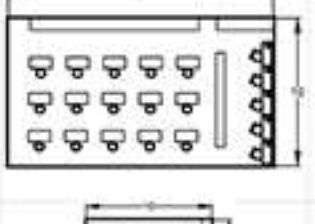
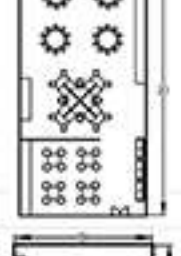
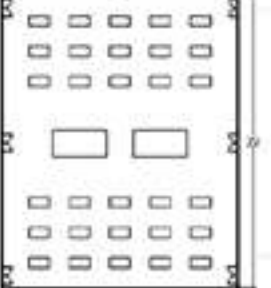
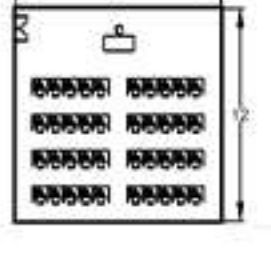
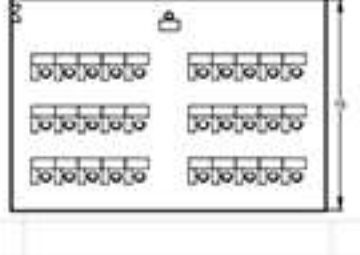
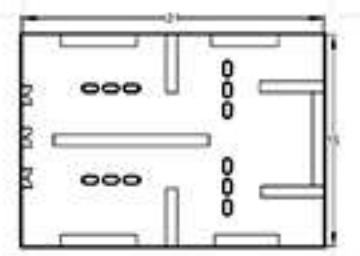
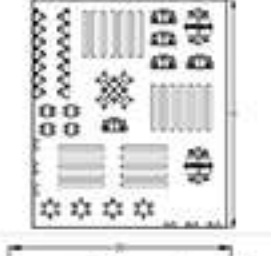
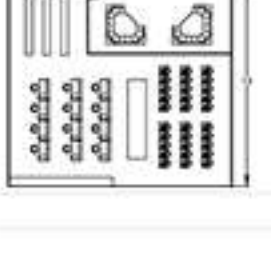
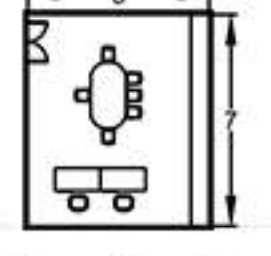
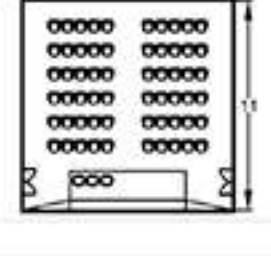
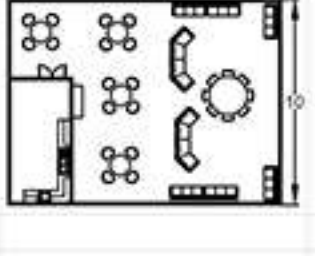
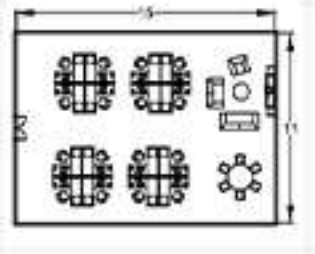
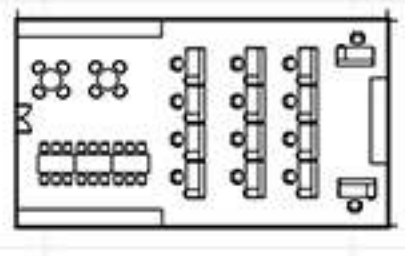
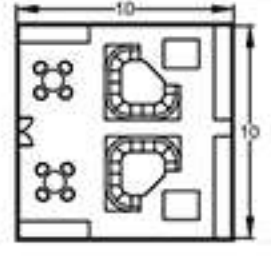
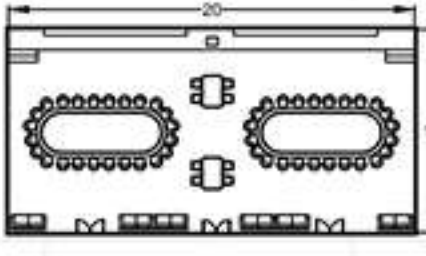


DESIGN STRATEGIES

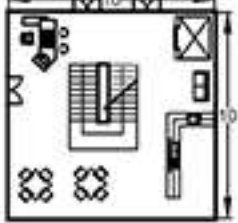
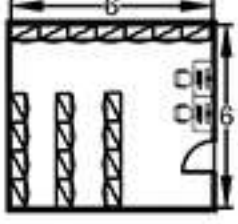
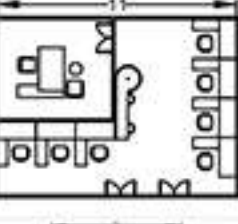
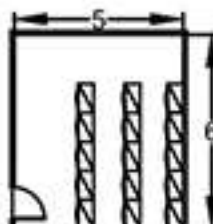
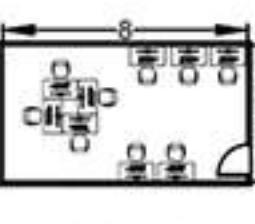
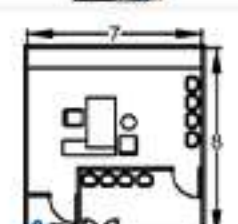
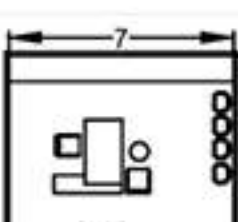
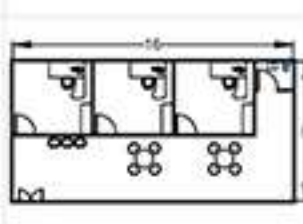
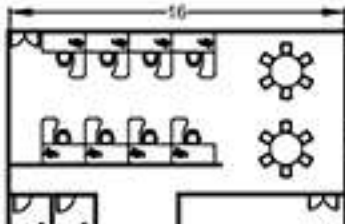
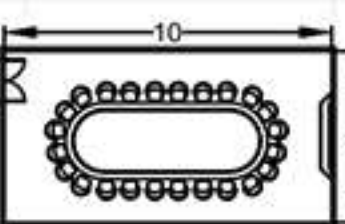
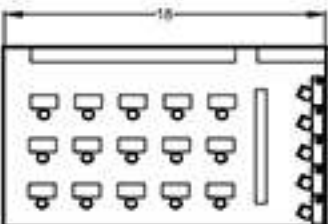
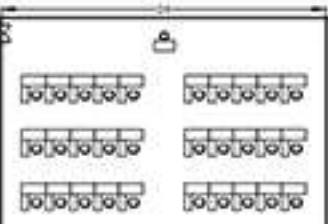
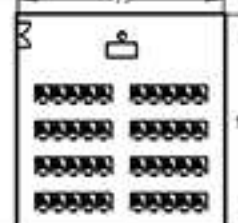
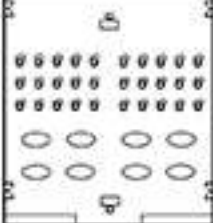
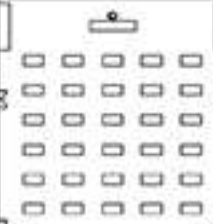
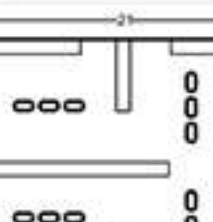


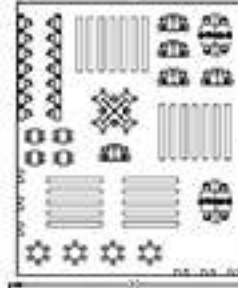
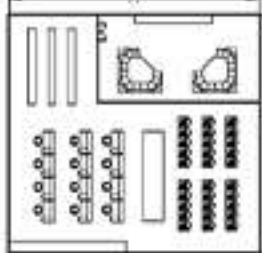
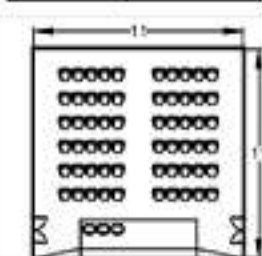
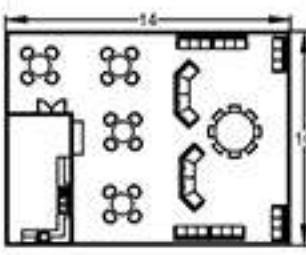
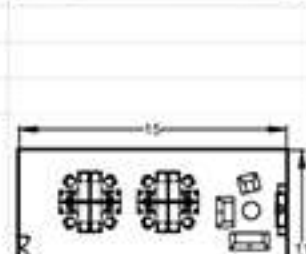
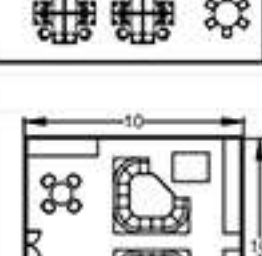
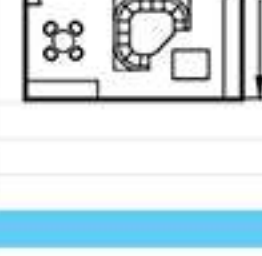
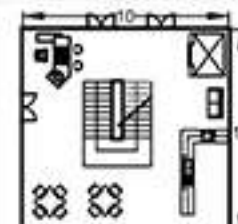
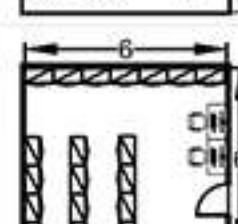
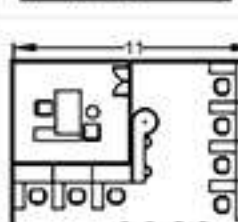
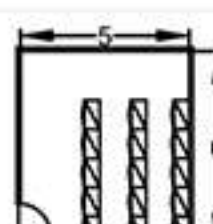
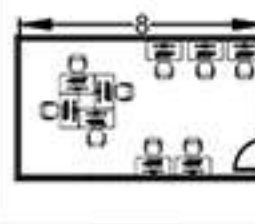
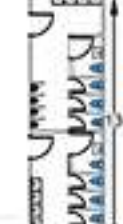
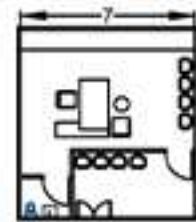
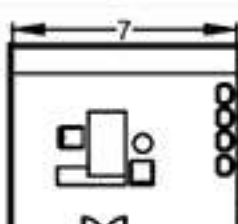
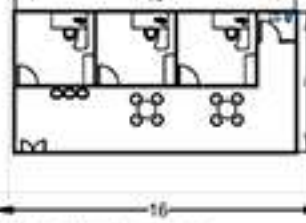
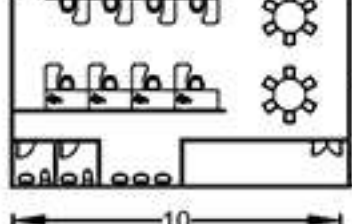
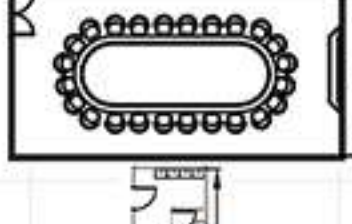
BARCH AREA PROGRAM				
STUDENT INTAKE : 80	DURATION : 5 YEARS	TOTAL: 400 STU.	FACULTY - 1:10	
SPACES REQUIRED	SPACE LAYOUT	UNIT AREA (sqm)	NO. OF UNITS	TOTAL AREA (sqm)
I. ADMINISTRATION				
1. ADMIN SPACE				
ENTRANCE LOBBY + RECEPTION		100	1	100
RECORD ROOM		36	1	36
ADMIN OFFICE		88	1	88
EXAM CELL		180	2	360
SECURITY ROOM		10	1	10
PANTRY		15	1	15
STORAGE ROOM		30	1	30
MAINTENANCE ROOM		32	1	32
CCTV ROOM		32	1	32
WASHROOM		65	1	65
2. PRINCIPAL'S OFFICE		15	1	15
LOBBY		36	1	36
PRINCIPAL'S CABIN		5	1	5
WASHROOM				0
3. HOD'S CABIN		42	1	42
4. STAFF ROOM				0
PROFESSORS ROOM		128	1	128
FACULTY ROOM		170	4	680
FACULTY MEETING ROOM		63	1	63
WASHROOM		65	2	130
II. ACADEMICS				
1. STUDIO				0
DESIGN STUDIO		375	10	3750
RENDERING STUDIO		100	5	500
2. LECTURE HALL		180	10	1800
3. WORKSHOPS				0
MODEL MAKING		500	1	500
MATERIAL AND CONSTRUCTION		500	1	500
ART AND SCULPTURE		500	1	500
4. LABS				0
CAD LAB		132	2	264
3D PRINTING LAB		112	2	224
MATERIAL TESTING LAB		180	1	180

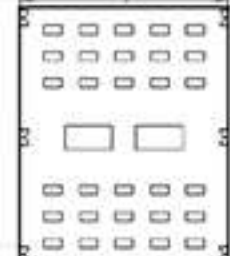
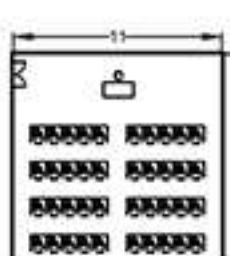
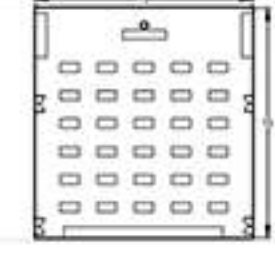
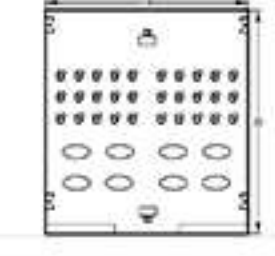
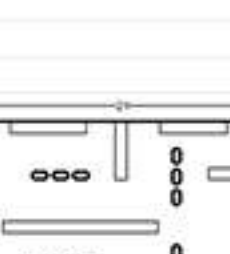
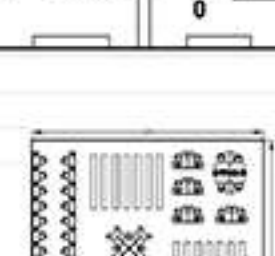
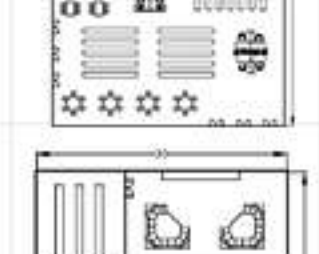
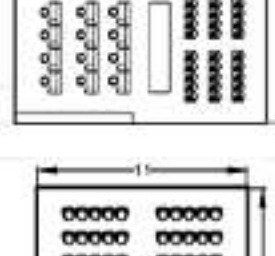
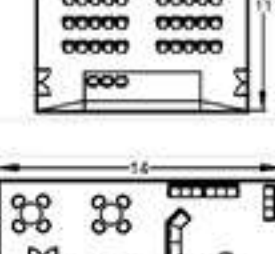
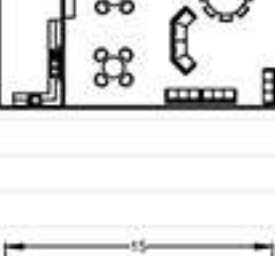
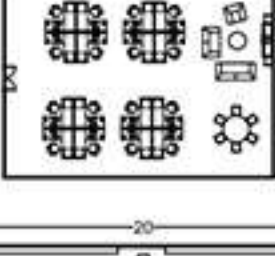
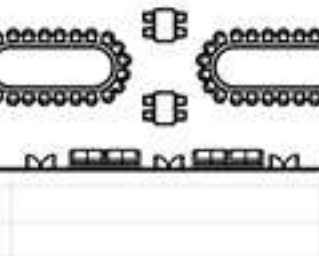
CLIMATOLOGY LAB		360	1	360
SURVEYING LAB		100	1	100
5. EXHIBITION SPACE				0
EXHIBITION AREA		450	1	450
STORAGE ROOM		30	1	30
6. LIBRARY				0
ARCHITECTURE LIBRARY		900	1	900
DIGITAL LIBRARY		380	1	380
MATERIAL SAMPLE LIBRARY		120	1	120
7. JURY HALL		42	2	84
8. SEMINAR HALL		143	1	143
9. STUDENT LOUNGE		250	1	250
10. ALUMINI CENTRE		50	1	50
11. INNOVATION HUB		165	1	165
12. PORTFOLIO DEVELOPMENT		150	1	150
13. DESIGN CRITIQUE LOUNGE		100	1	100
14. WASHROOM		65	6	390
TOTAL AREA FOR BARCH				
13757				
BPLAN AREA PROGRAM				
STUDENT INTAKE : 60	DURATION : 4 YEARS	TOTAL: 240 STU.	FACULTY - 1:10	
SPACES REQUIRED	SPACE LAYOUT	UNIT AREA	NO. OF UNITS	TOTAL AREA
II. ADMINISTRATION				
1. ADMIN OFFICE				
ENTRANCE LOBBY + RECEPTION		100	1	100
RECORD ROOM		36	1	36
ADMIN OFFICE		88	1	88
EXAM CELL		180	2	360
SECURITY ROOM		10	1	10
PANTRY		15	1	15
STORAGE ROOM		30	1	30
MAINTENANCE ROOM		32	1	32
CCTV ROOM		32	1	32
WASHROOM		65	1	65
2. PRINCIPAL'S OFFICE		15	1	15
LOBBY		36	1	36
PRINCIPAL'S CABIN		5	1	5
WASHROOM				0
3. HOD'S CABIN		42	1	42
4. STAFF ROOM				0

PROFESSORS ROOM		128	1	128
FACULTY ROOM		163	3	489
FACULTY MEETING ROOM		50	1	50
WASHROOM		65	2	130
II. ACADEMICS				
1. STUDIO				0
PLANNING STUDIO		300	8	2400
URBAN ANALYSIS STUDIO		180	4	720
PARTICIPATORY PLANNING		200	1	200
2. LECTURE HALL		135	8	1080
3. WORKSHOPS				0
MODEL MAKING		150	1	150
COLLABORATIVE WORKSHOP		396	1	396
CONSTRUCTION		150	1	150
4. LABS				0
GIS LAB		132	2	264
3D PRINTING LAB		112	1	112
HOUSING INFRASTRUCTURE LAB		432	1	432
MAPPING LAB		150	1	150
TRANSPORTATION LAB		150	1	150
5. EXHIBITION SPACE				0
EXHIBITION LAB		315	1	315
STORAGE ROOM		30	1	30
6. LIBRARY				0
PLANNING LIBRARY		750	1	750
DIGITAL LIBRARY		380	1	380
MATERIAL SAMPLE LIBRARY		120	1	120
7. JURY HALL		42	2	84
8. SEMINAR HALL		121	1	121
9. STUDENT LOUNGE		140	1	140
10. ALUMINI CENTRE		50	1	50
11. INNOVATION HUB		165	1	165
12. SPATIAL DESIGN SUPPORT		180	1	180
13. DESIGN CRITIQUE LOUNGE		100	1	100
14. PLANNING POLICY FORUM		200	1	200
15. WASHROOM		65	6	390
TOTAL AREA FOR BPLAN				
10892				

AREA PROGRAM

BTECH ENVIRONMENTAL ENGINEERING AREA PROGRAM				
STUDENT INTAKE : 60	DURATION : 4 YEARS	TOTAL: 240 STU.	FACULTY - 1:10	
SPACES REQUIRED	SPACE LAYOUT	UNIT AREA	NO. OF UNITS	TOTAL AREA
I. ADMINISTRATION				
1. ADMIN OFFICE				
ENTRANCE LOBBY + RECEPTION		100	1	100
RECORD ROOM		36	1	36
ADMIN OFFICE		88	1	88
EXAM CELL SECURITY ROOM PANTRY		135 10 15	2 1 1	270 10 15
STORAGE ROOM MAINTENANCE ROOM		30 32	1 1	30 32
CCTV ROOM		32	1	32
WASHROOM		65	1	65
2. PRINCIPAL'S OFFICE LOBBY PRINCIPAL'S CABIN WASHROOM		15 36 5	1 1 1	0 15 36 5
3. HOD'S CABIN		42	1	42
4. STAFF ROOM				0
PROFESSORS ROOM		128	1	128
FACULTY ROOM		163	3	489
FACULTY MEETING ROOM WASHROOM		50 65	1 2	50 130
II. ACADEMICS				
1. STUDIO				0
ENGINEERING DRAWING STUDIO		300	3	900
ENVIRONMENTAL ANALYTICS		180	3	540
2. LECTURE HALL		135	6	810
3. WORKSHOPS COLLABORATIVE WORKSHOP		300	1	300
4. LABS PROJECT & RESEARCH		384	1	384
AIR & POLLUTION		384	1	384
GIS LAB		132	2	264
HYDRAULICS LAB		360	1	360
MICROBIOLOGY & CHEMISTRY		342	1	342
5. EXHIBITION SPACE				0
EXHIBITION SPACE STORAGE ROOM		315 30	1 1	315 30

6. LIBRARY		750	1	750
PHYSICAL LIBRARY		380	1	380
DIGITAL LIBRARY		121	1	121
7. SEMINAR HALL		140	1	140
8. STUDENT LOUNGE		50	1	50
9. ALUMINI CENTRE		165	1	165
10. INNOVATION HUB		100	1	100
11. DEMONSTRATION CENTRE		65	5	325
12. WASHROOM				
TOTAL AREA FOR BTECH				
BSC ENVIRONMENTAL SCIENCE AREA PROGRAM				
STUDENT INTAKE : 60	DURATION : 3 YEARS	TOTAL: 180 STU.	FACULTY - 1:10	
SPACES REQUIRED	SPACE LAYOUT	UNIT AREA	NO. OF UNITS	TOTAL AREA
I. ADMINISTRATION				
1. ADMIN OFFICE				
ENTRANCE LOBBY + RECEPTION		100	1	100
RECORD ROOM		36	1	36
ADMIN OFFICE		88	1	88
EXAM CELL SECURITY ROOM PANTRY		135 10 15	2 1 1	270 10 15
STORAGE ROOM MAINTENANCE ROOM		30 32	1 1	30 32
CCTV ROOM		32	1	32
WASHROOM		65	1	65
2. PRINCIPAL'S OFFICE LOBBY PRINCIPAL'S CABIN WASHROOM		15 36 5	1 1 1	0 15 36 5
3. HOD'S CABIN		42	1	42
4. STAFF ROOM				0
PROFESSORS ROOM		128	1	128
FACULTY ROOM		163	3	489
FACULTY MEETING ROOM		50	1	50
WASHROOM		65	2	130

II. ACADEMICS				
1. LECTURE HALL		135	6	810
2. WORKSHOPS		396	1	396
WASTE MANAGEMENT		132	1	132
3. LABS		342	1	342
REMOTE SENSING		100	1	100
ENVIRONMENTAL LAB RESEARCH LAB		360 132	1 1	360 132
FIELD SAMPLING METEROLOGY & CLIMATE RENEWABLE ENERGY		342	1	342
4. EXHIBITION SPACE				0
EXHIBITION LAB STORAGE ROOM		315 30	1 1	315 30
5. LIBRARY		750	1	750
PHYSICAL LIBRARY		380	1	380
DIGITAL LIBRARY MATERIAL SAMPLE LIBRARY		120	1	120
6. SEMINAR HALL		121	1	121
7. STUDENT LOUNGE		140	1	140
8. ALUMINI CENTRE		50	1	50
9. INNOVATION HUB		165	1	165
10. VISUAL SIMULATION ROOM		200	1	200
11. WASHROOM		65	5	325
TOTAL AREA FOR BSC				

TOTAL SITE AREA = 30 ACRES
= 1,21,406 SQM

GROUND COVERAGE AREA = 40%
= 48,562 SQM

FSI = 2

TOTAL BUILT UP ALLOWED
= 2,42,812 SQM

SETBACKS:

FIRE TENDER ROAD = 6M
NBC PART 4

FRONT SETBACK = 7.5M
OTHER SIDES = 2.5M
FLOODLINE SETBACK = 25M

MAXIMUM NUMBER OF FLOORS ALLOWED
= G+3

TOTAL BUILT UP ACHIEVED
= 49,100 SQM

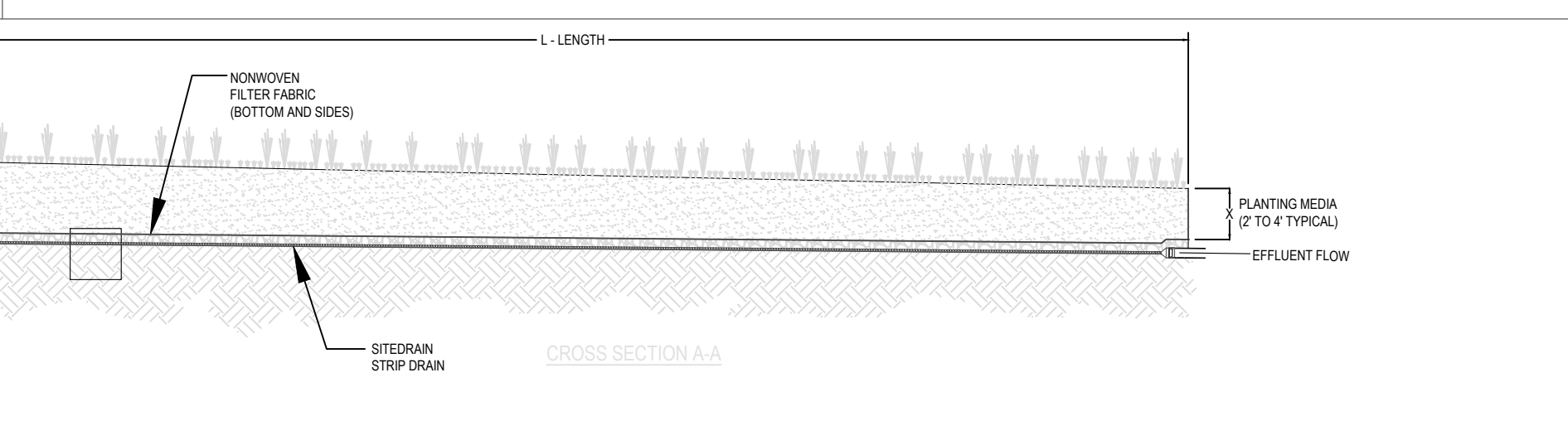
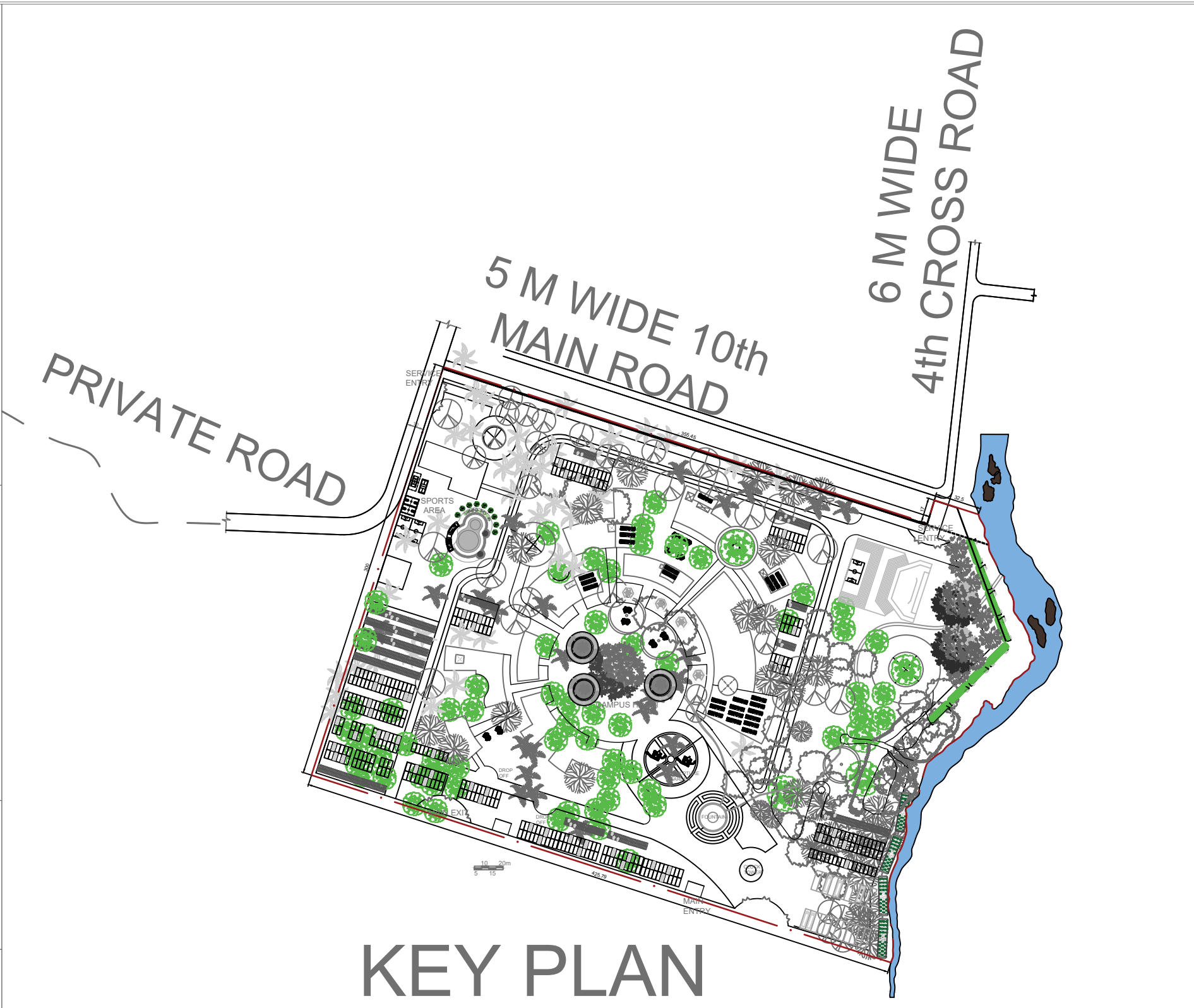
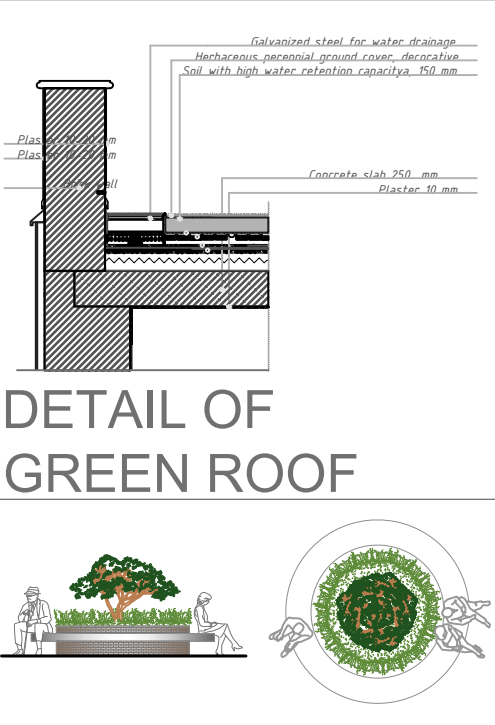
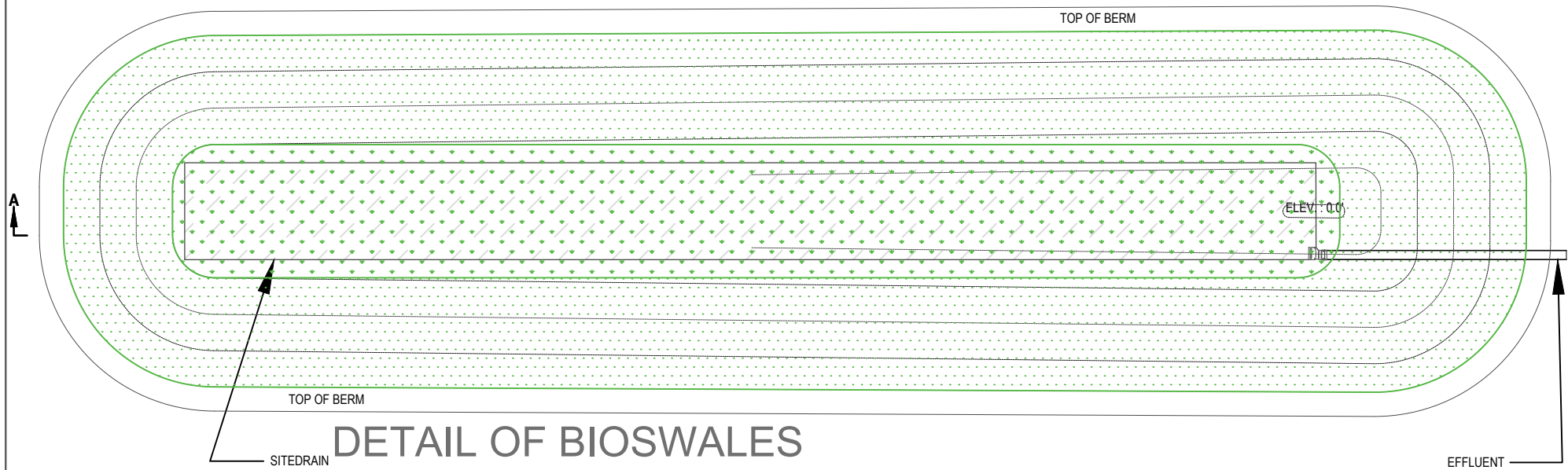
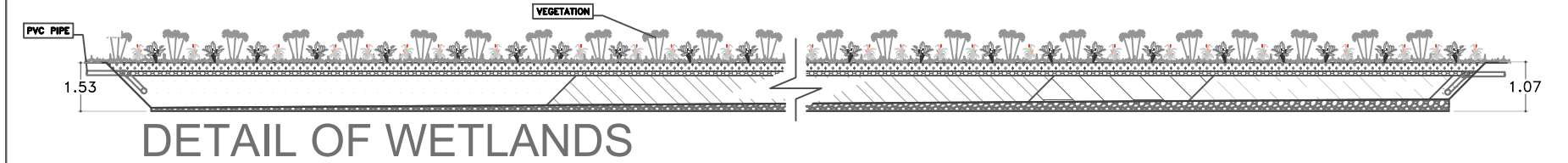
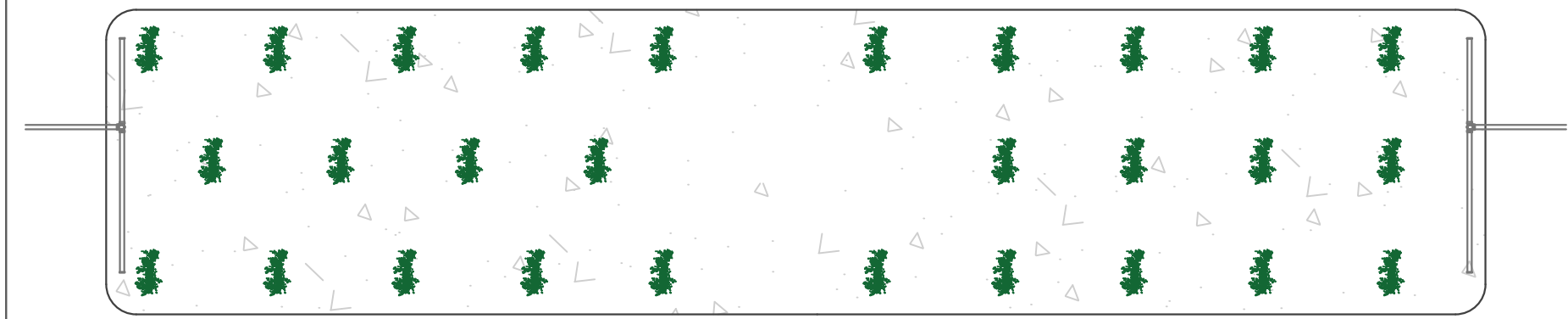
TOTAL GROUND COVERAGE ACHIEVED
= ALL BLOCKS+ AMENITIES
= 21, 500 SQM

AREA PROGRAM

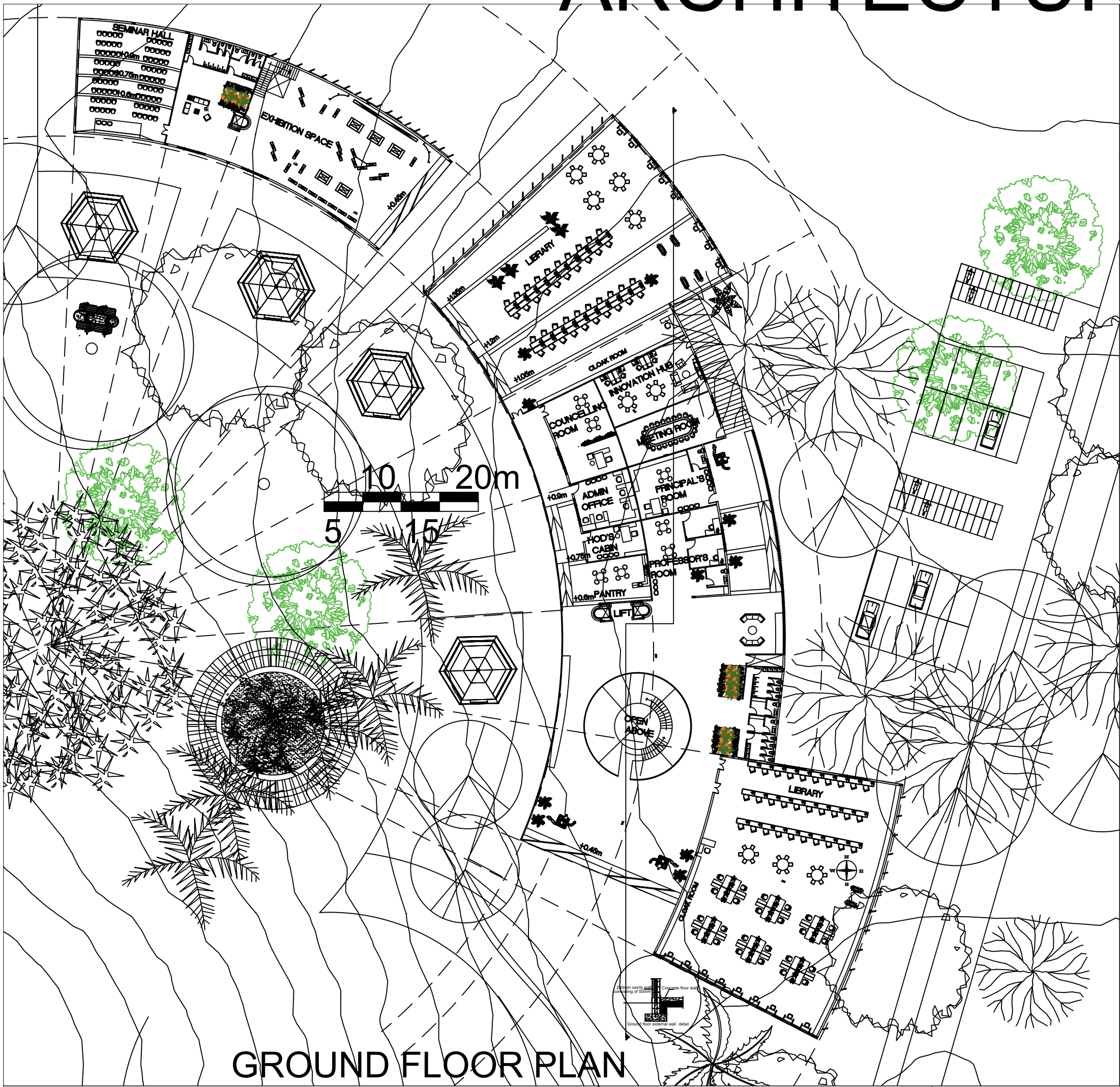


	ACADEMIC BLOCKS
	GREEN ROOF
	SOLAR PANELS
	CAR PARKING
	BIKE PARKING
	BUS PARKING
	RIVER STREAM
	LAKES
	ARTIFICIAL WETLANDS
	BIOSWALES
	OPEN AMPHITHEATRE
	SWIMMING POOL
	CANTEEN
	MAIN LIBRARY
	SPORTS FACILITY
	ADMIN BLOCK
	ENTRY EXIT GATES

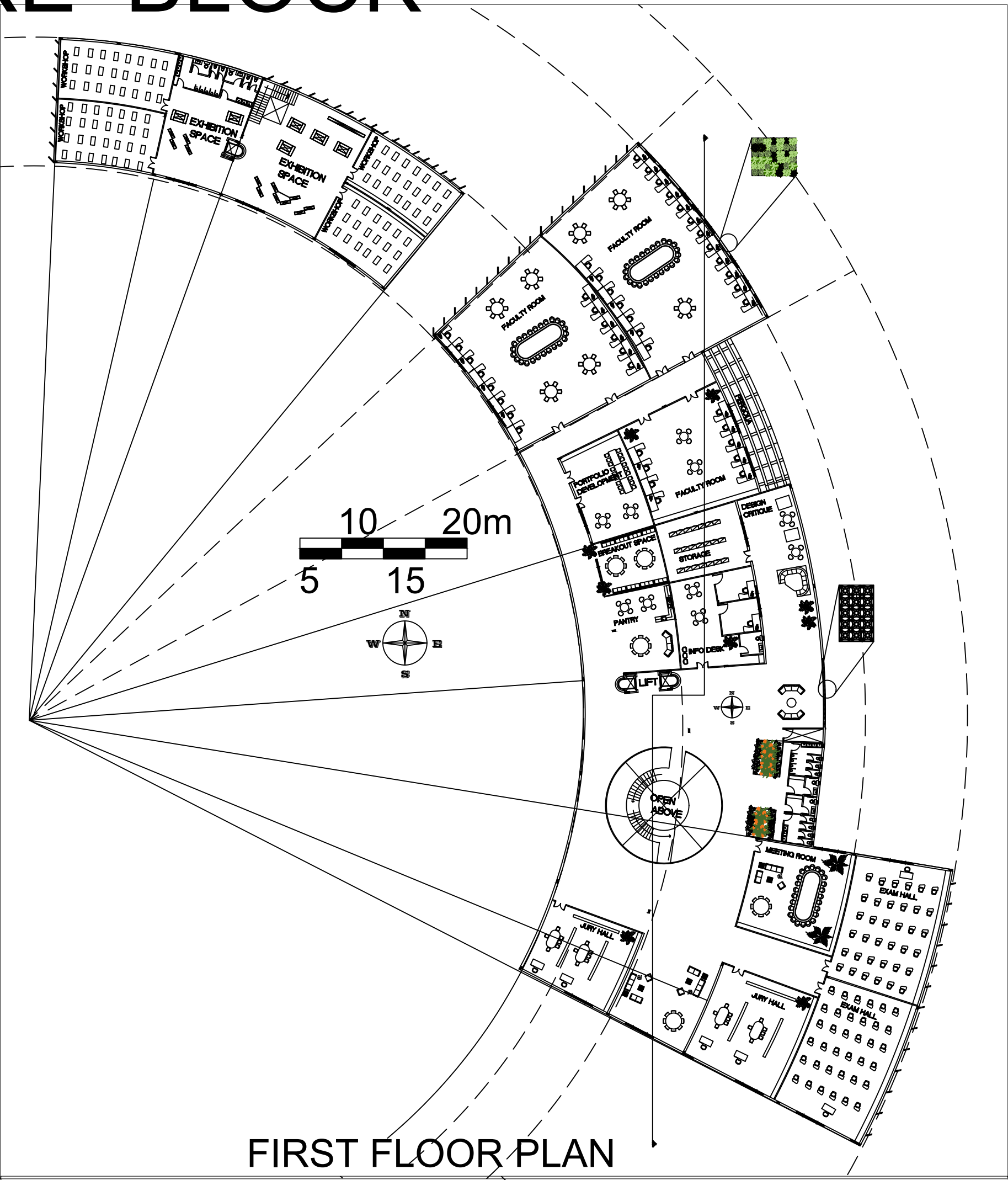
	RAINTREE 5- 15M		VETIVER GRASS 1- 2M		MAHOGANY 10- 15M		PEEPAL TREE 20- 25M
	COCONUT TREE 5- 10M		WILD MANGO 12- 15M		WILD PALM 5- 10M		BANYAN TREE 25- 30M
	JAMOON TREE 5- 10M		ASHOKA TREE 10- 12M		ASHOKA TREE 10- 12M		



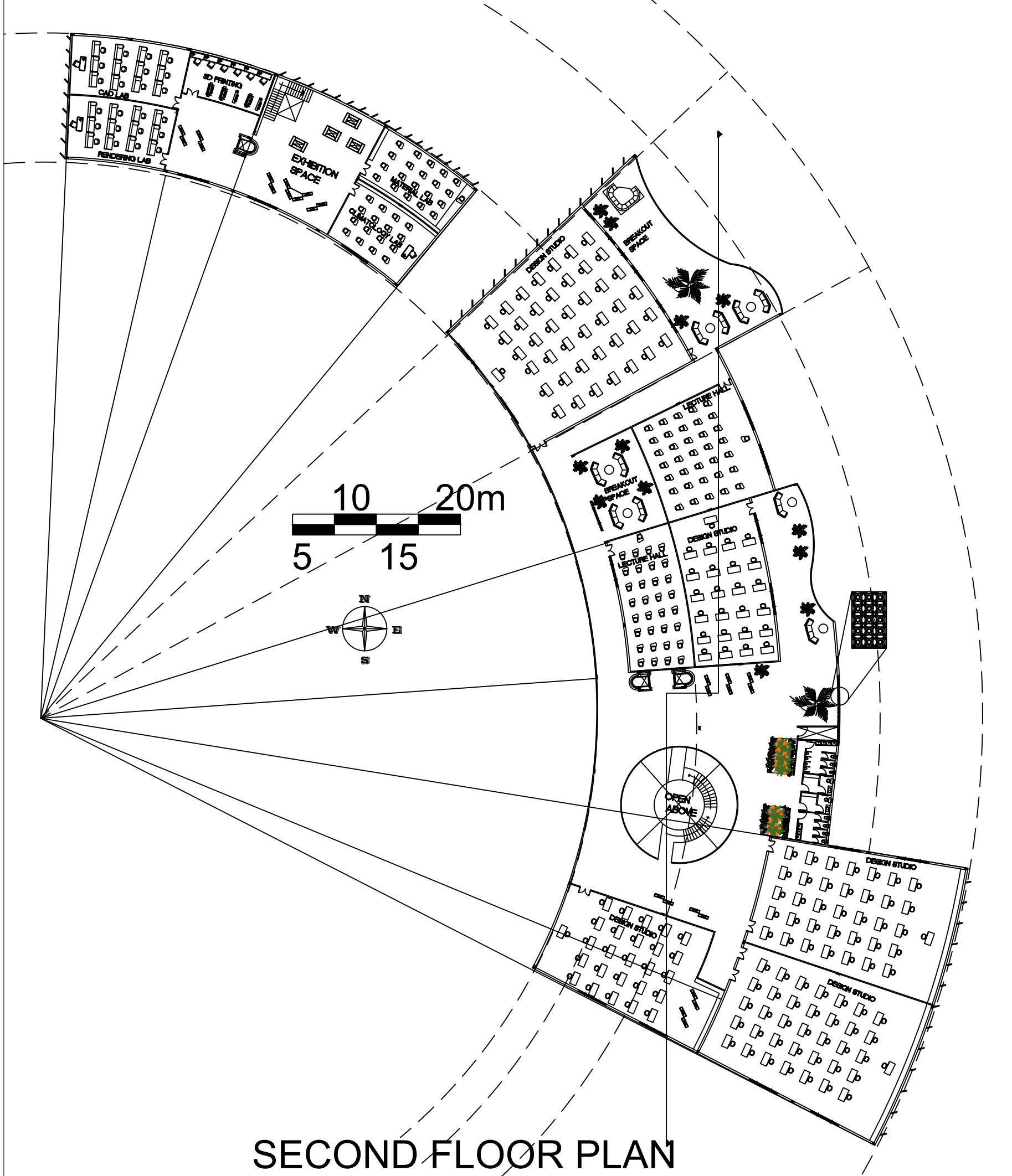
ARCHITECTURE BLOCK



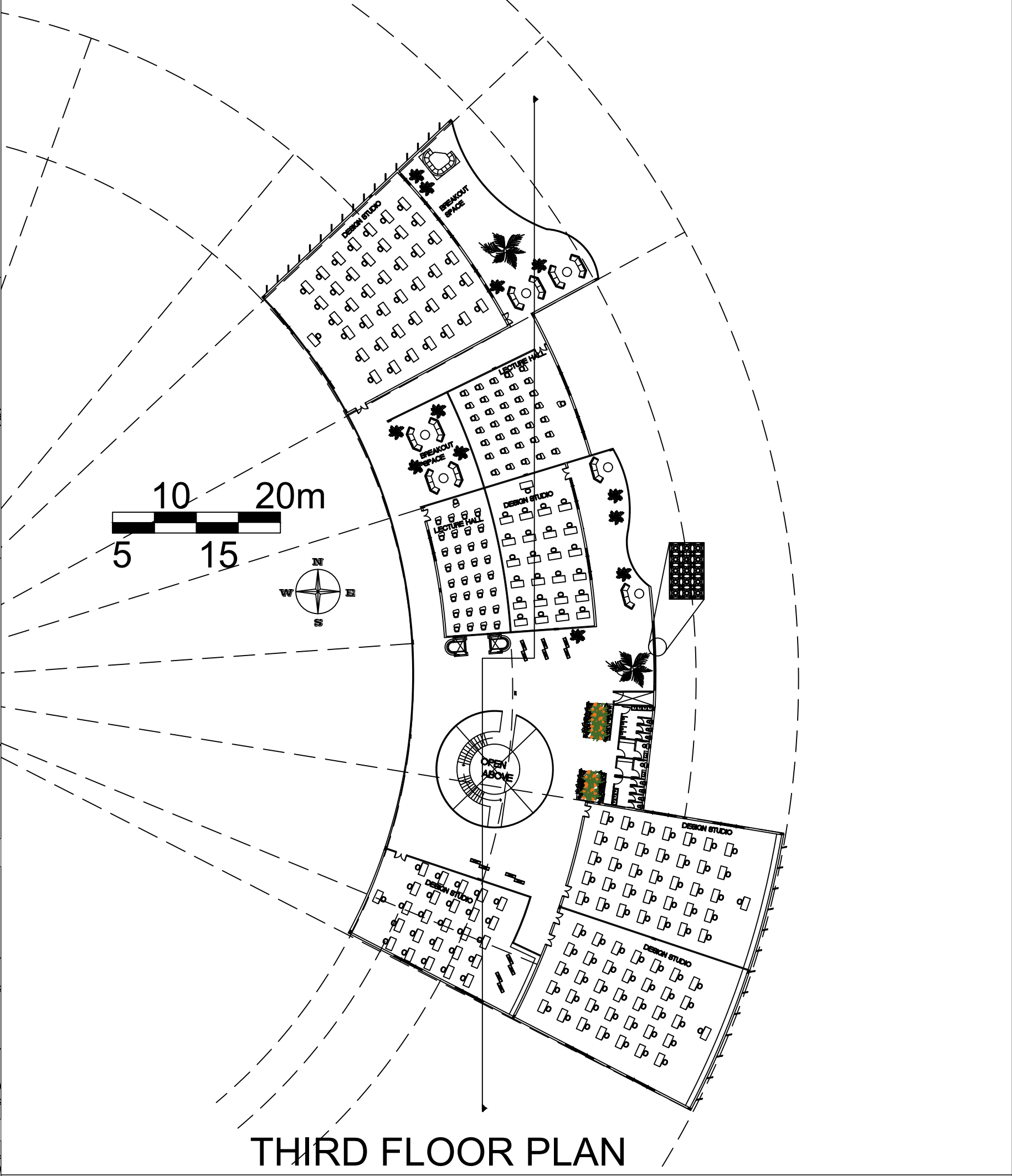
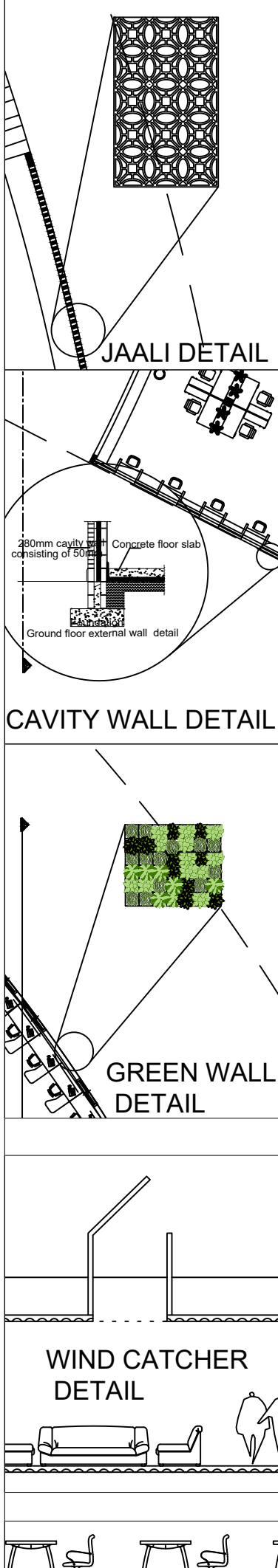
GROUND FLOOR PLAN



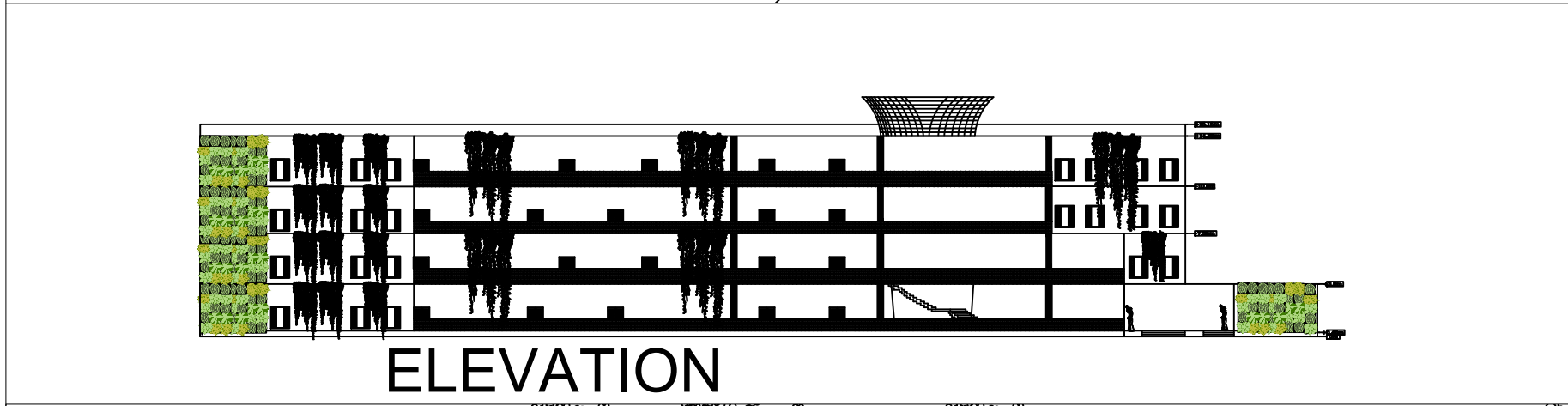
FIRST FLOOR PLAN



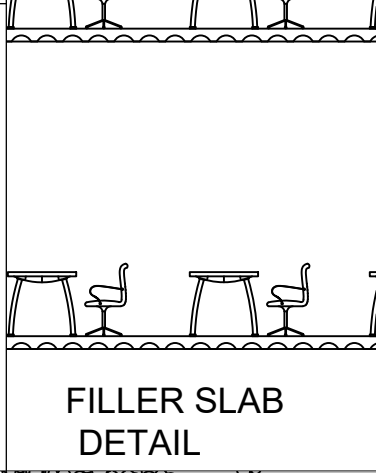
SECOND FLOOR PLAN



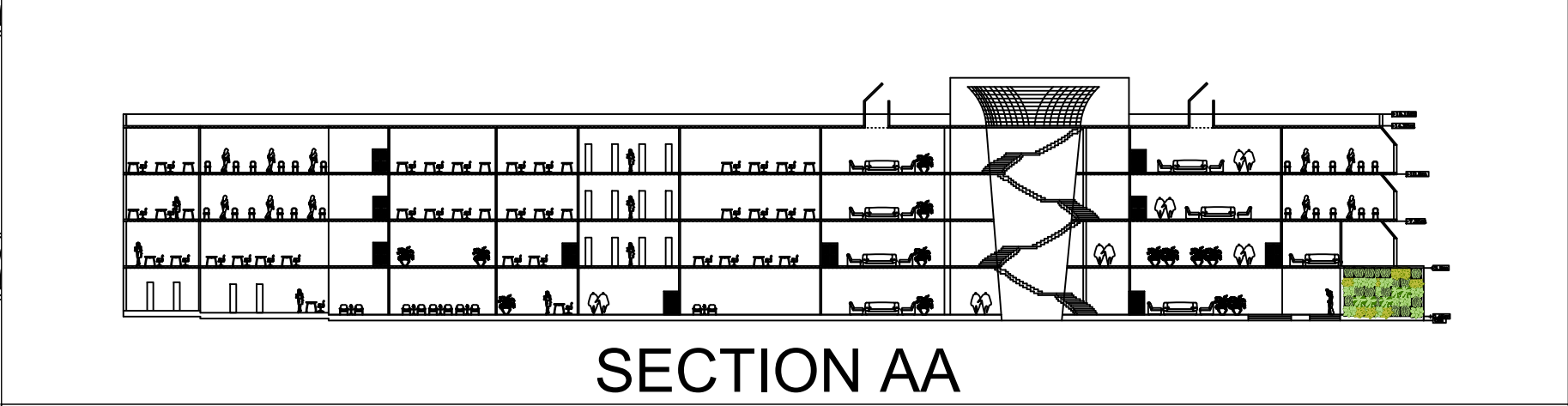
THIRD FLOOR PLAN



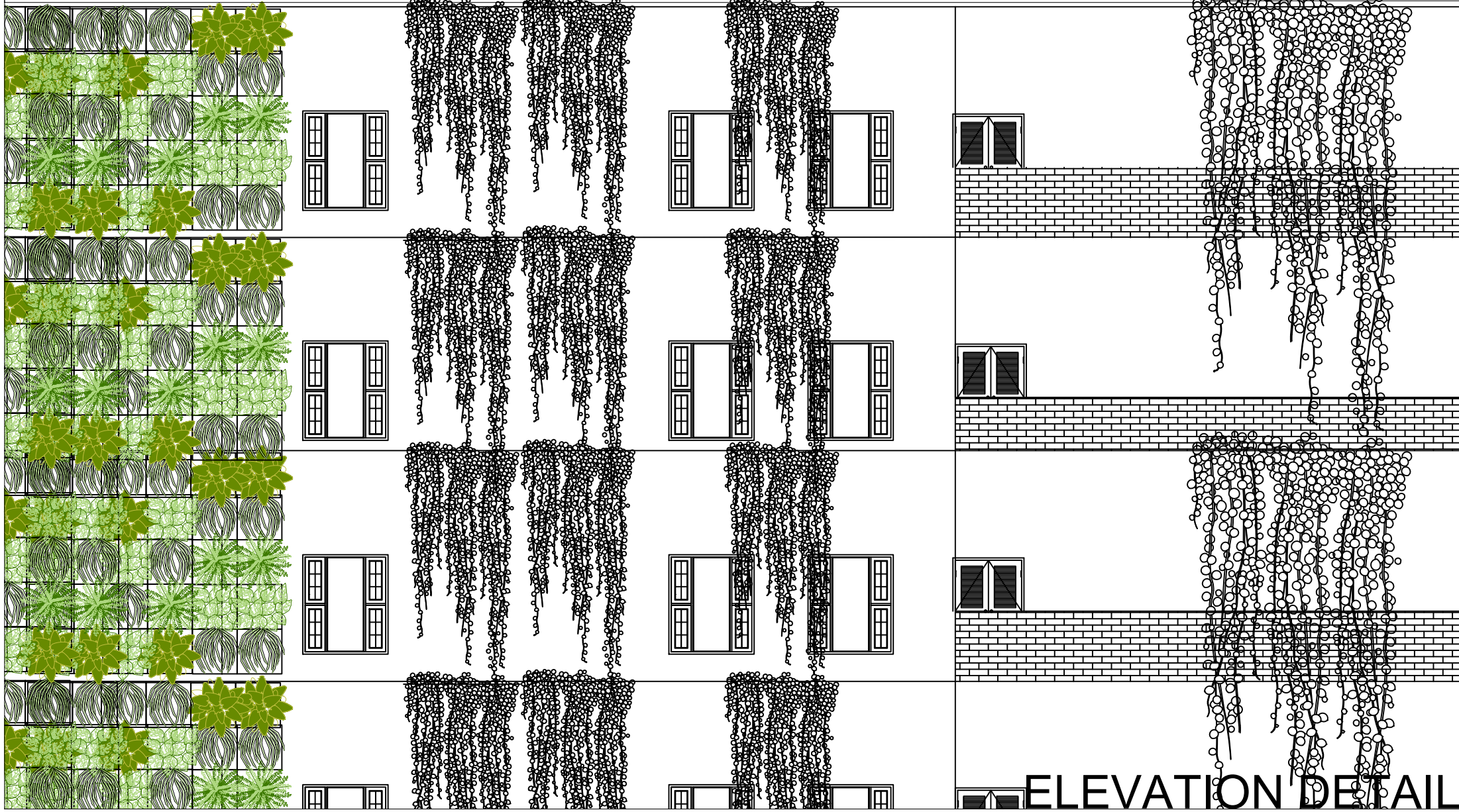
ELEVATION



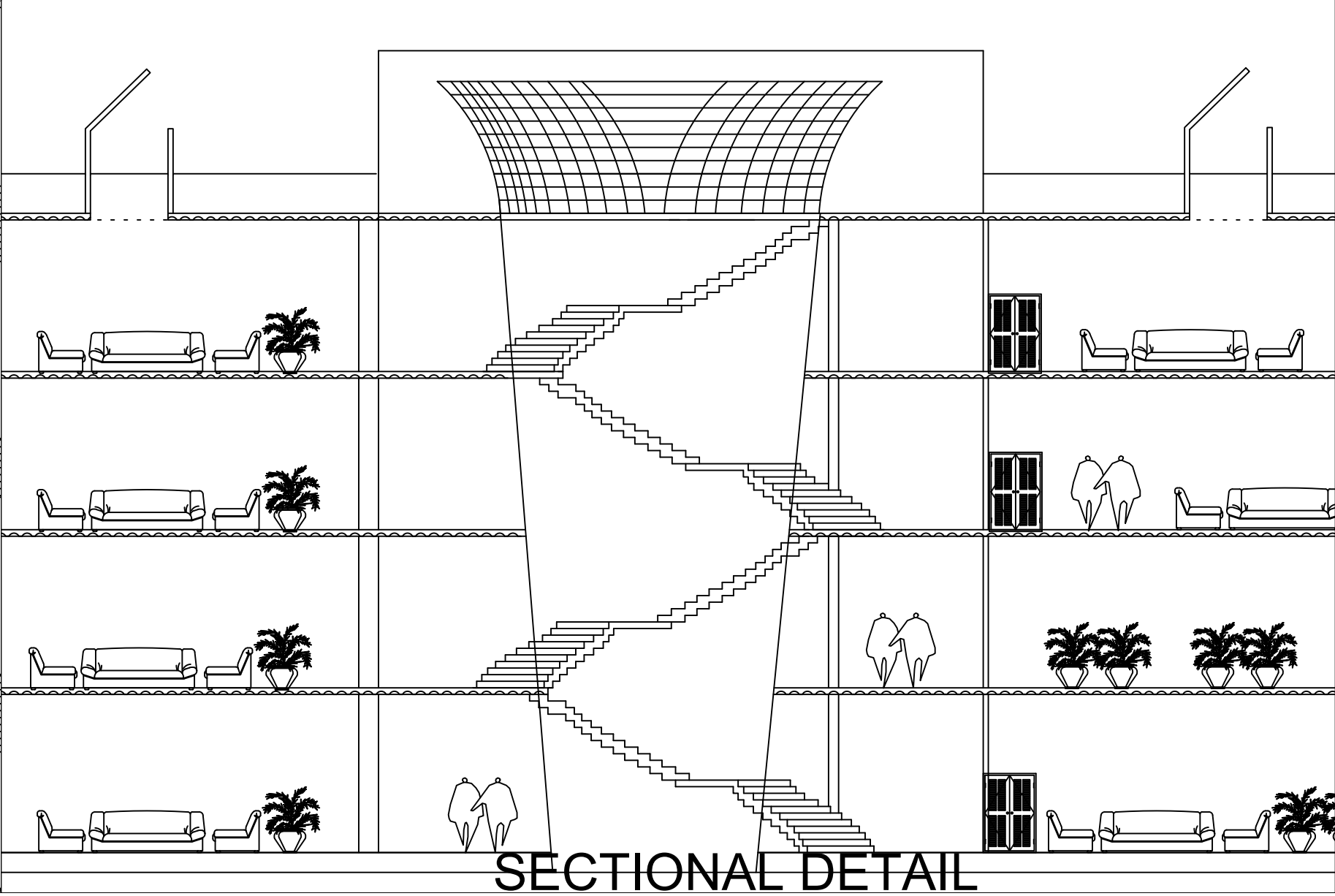
FILLER SLAB DETAIL



SECTION AA

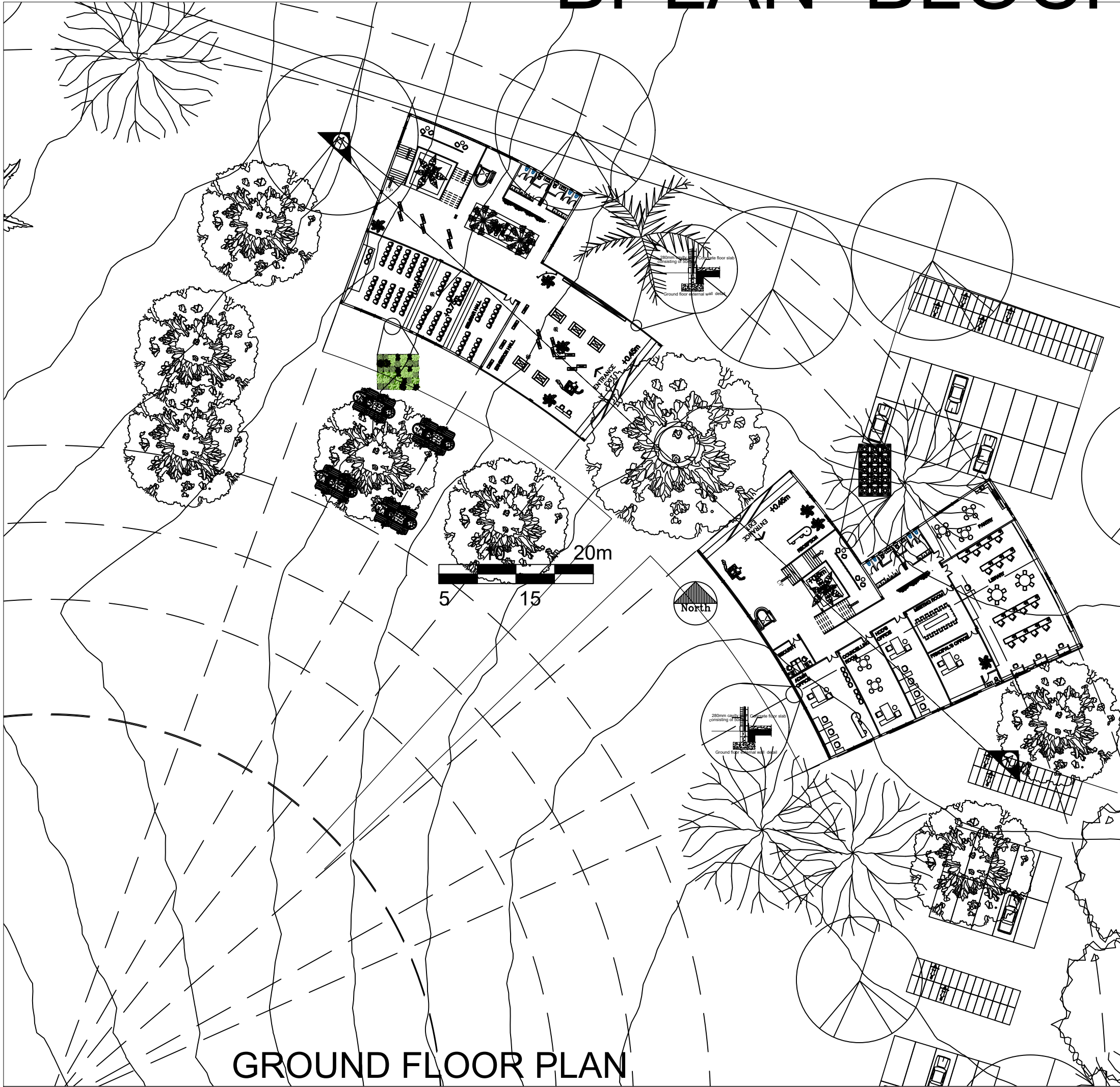


ELEVATION DETAIL

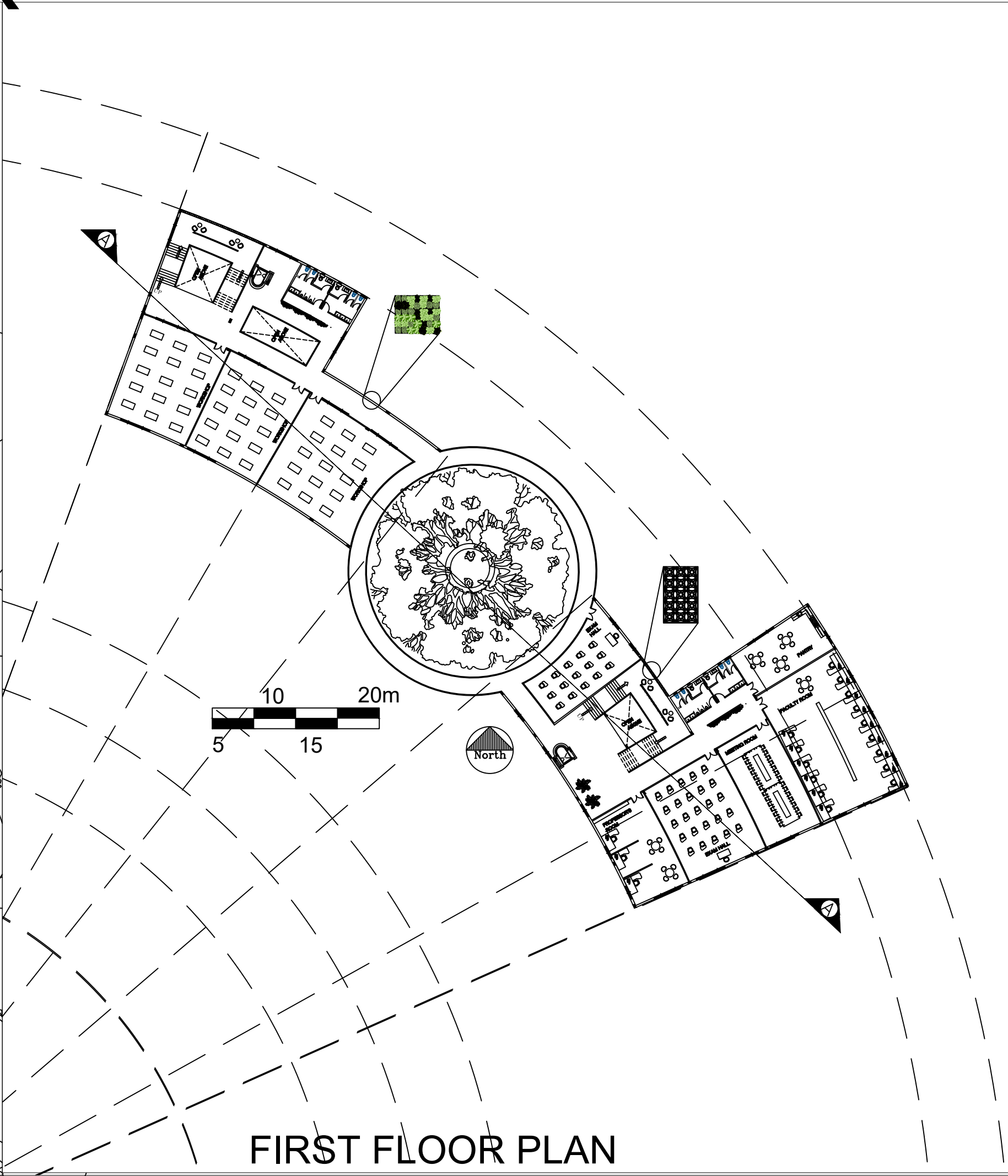


SECTIONAL DETAIL

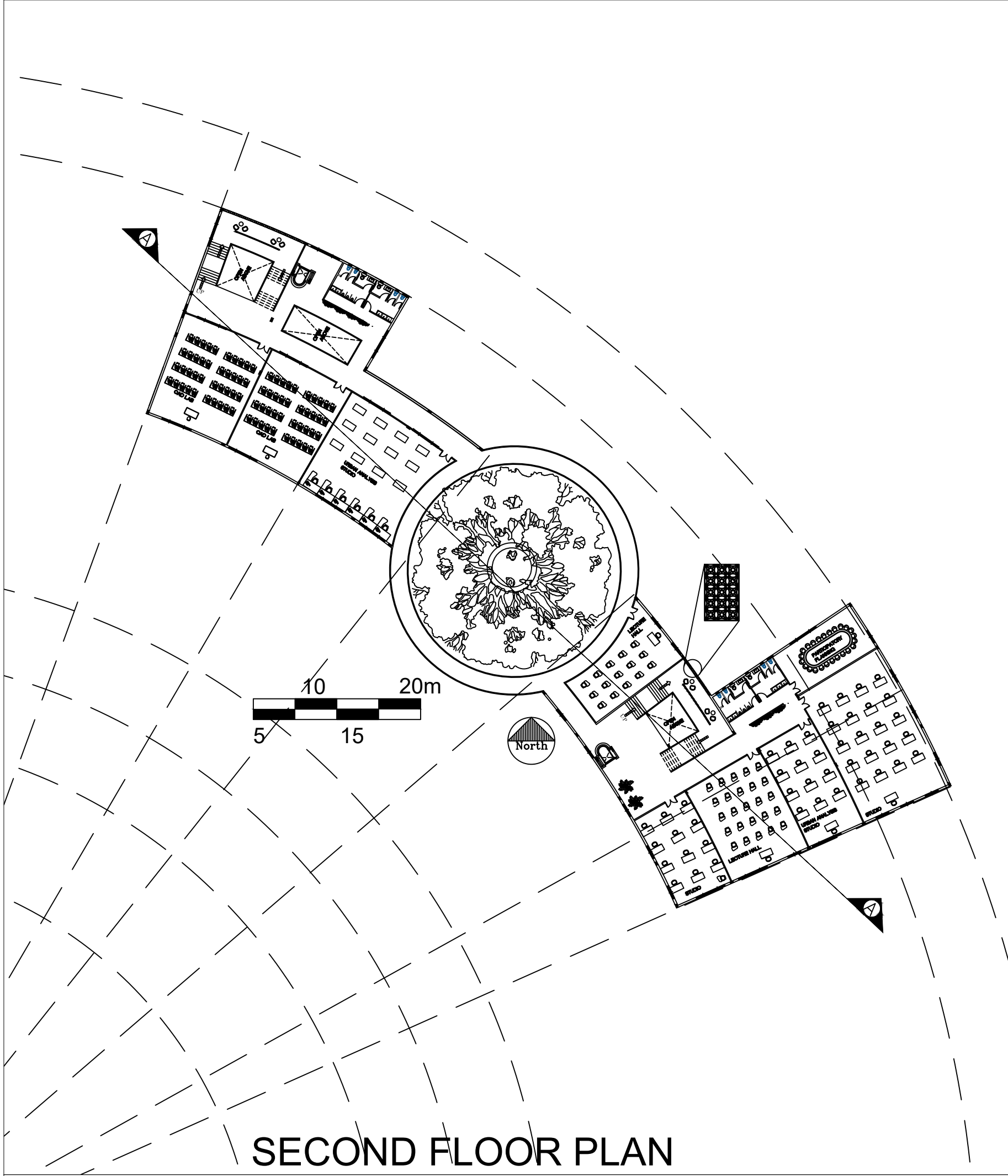
BPLAN BLOCK



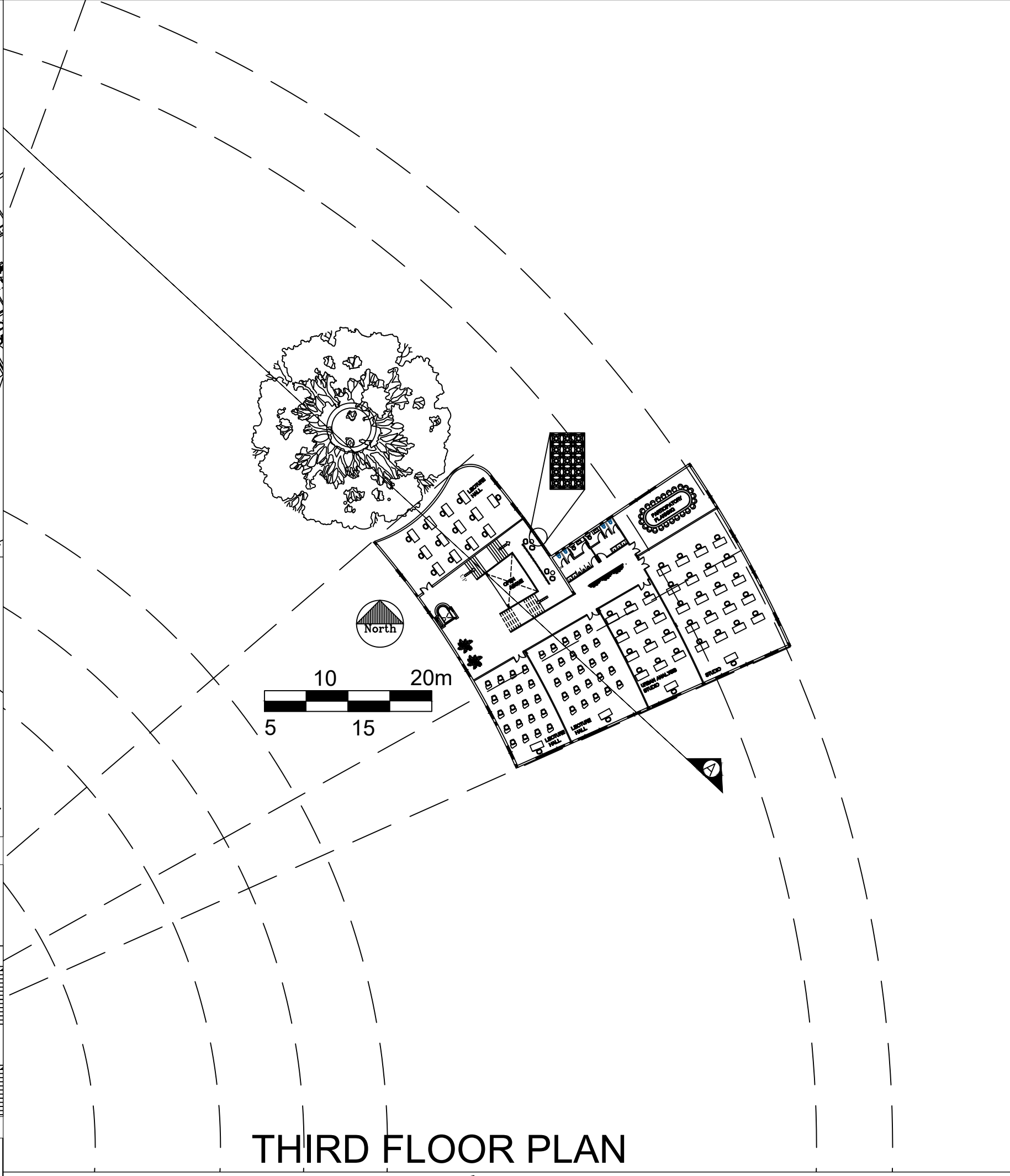
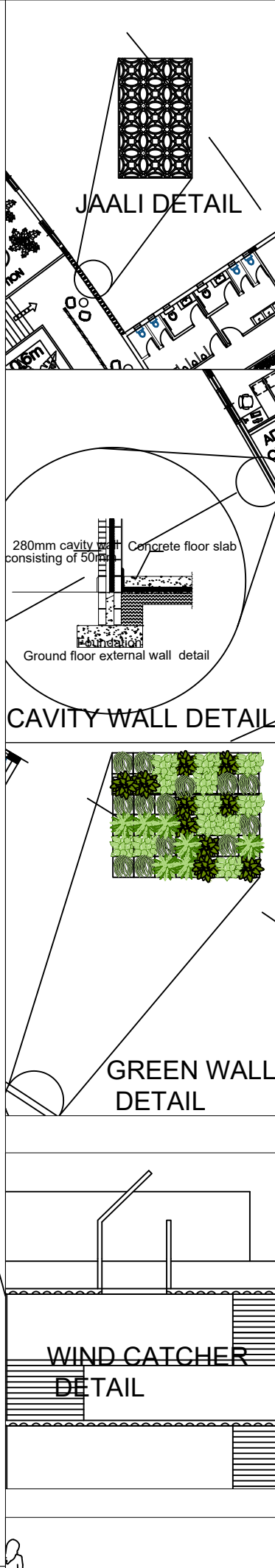
GROUND FLOOR PLAN



FIRST FLOOR PLAN



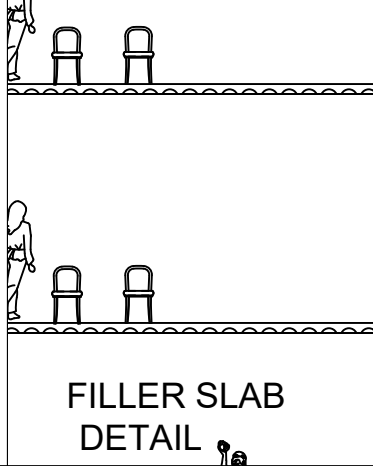
SECOND FLOOR PLAN



THIRD FLOOR PLAN



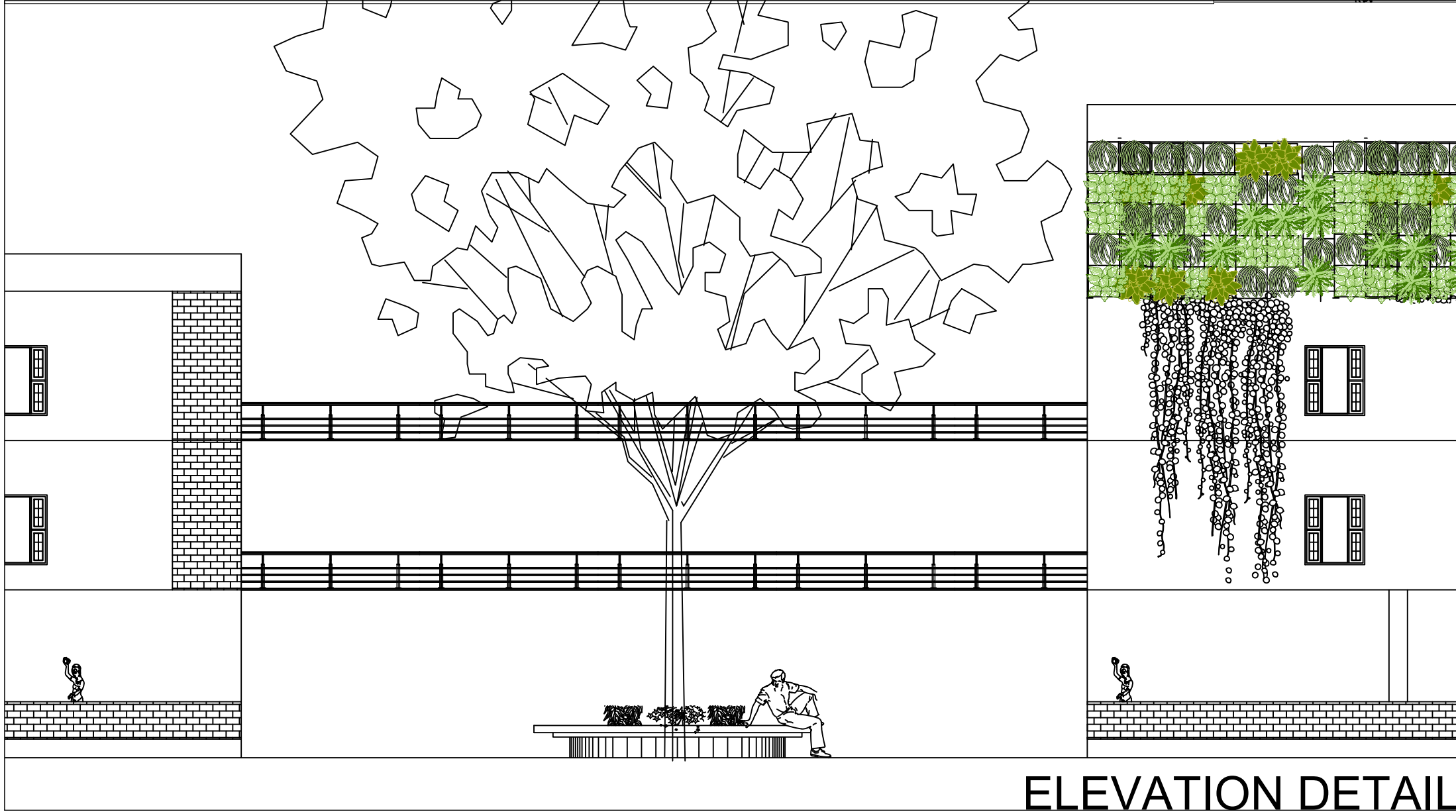
ELEVATION



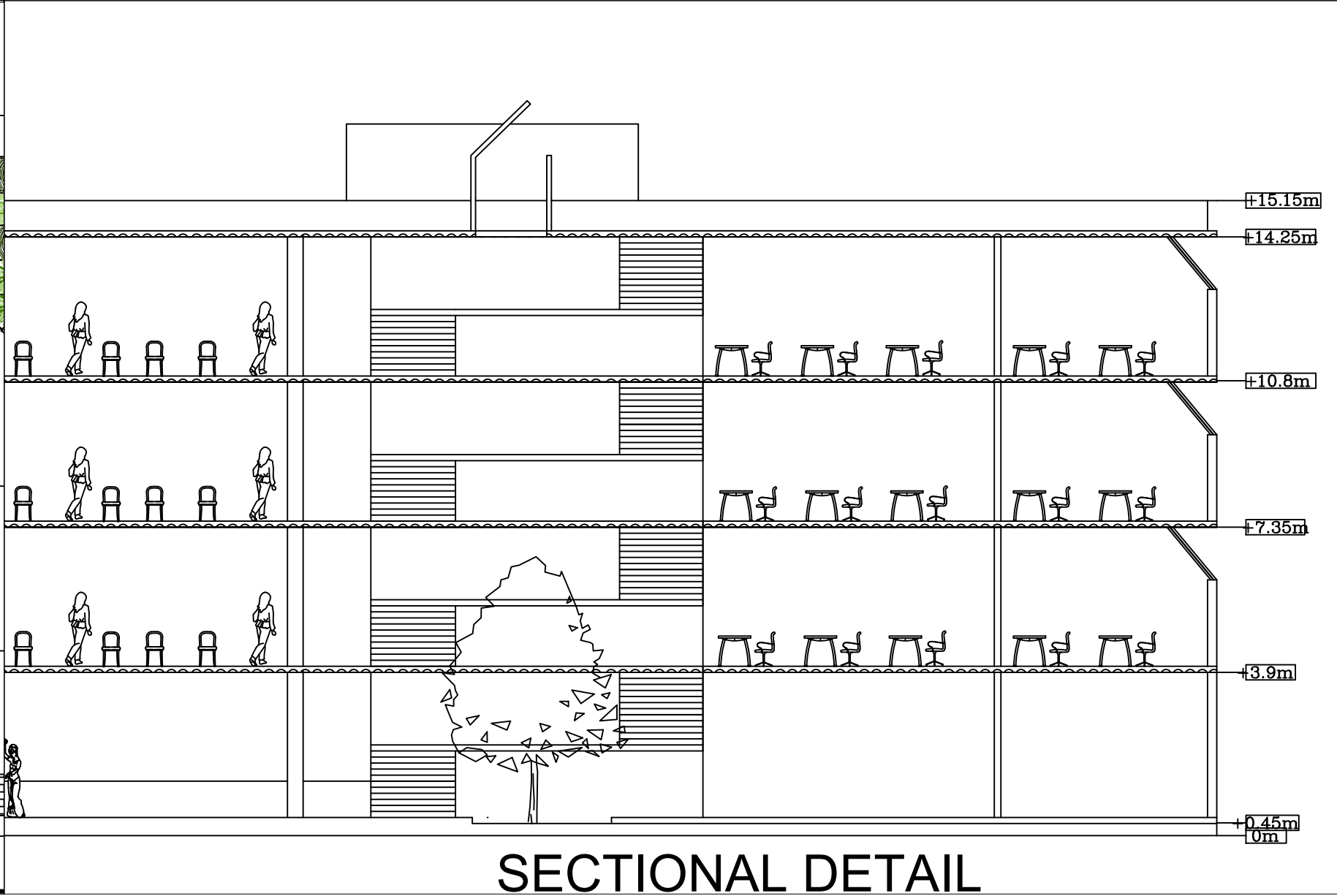
FILLER SLAB
DETAIL



SECTION AA

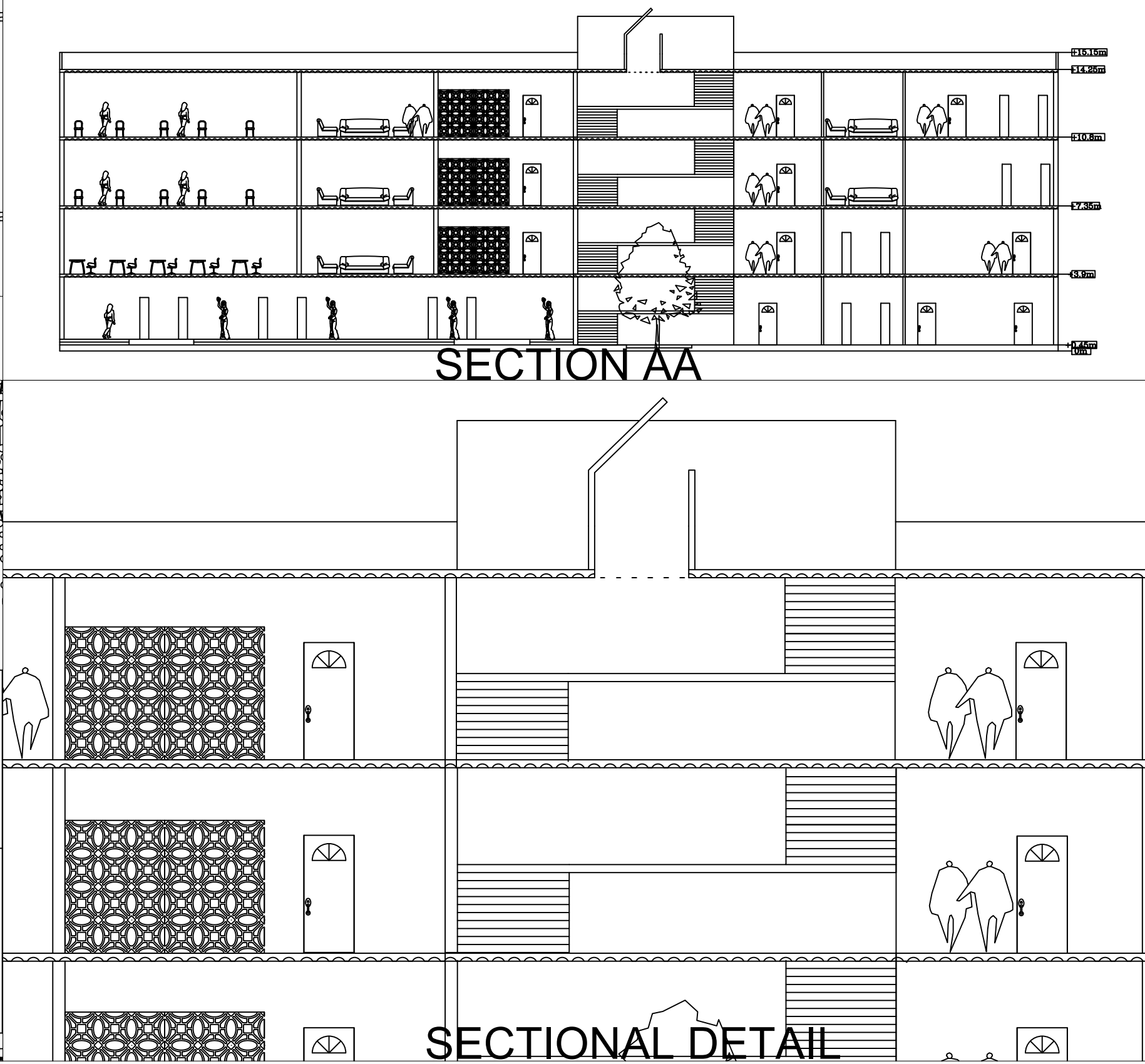
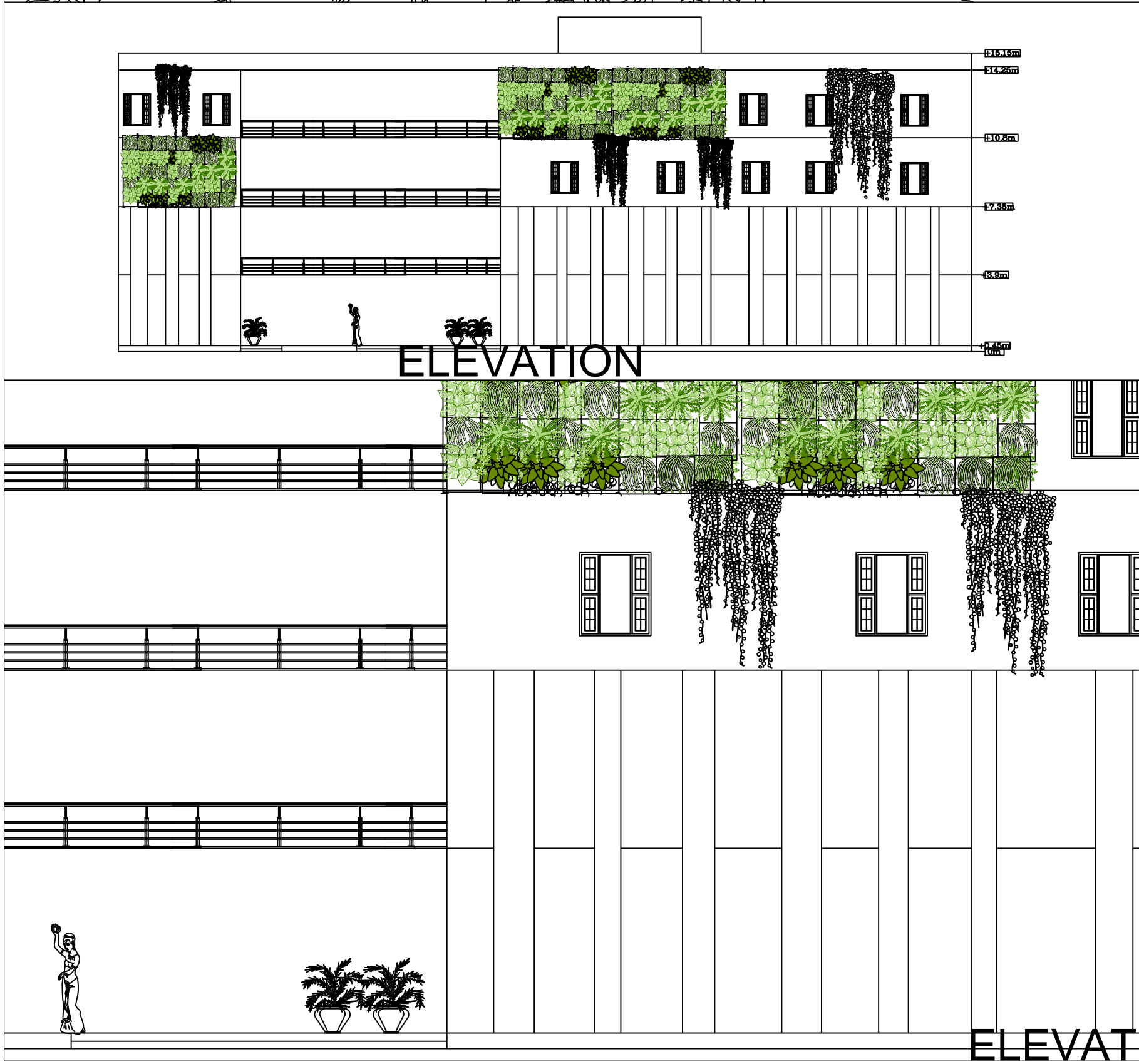
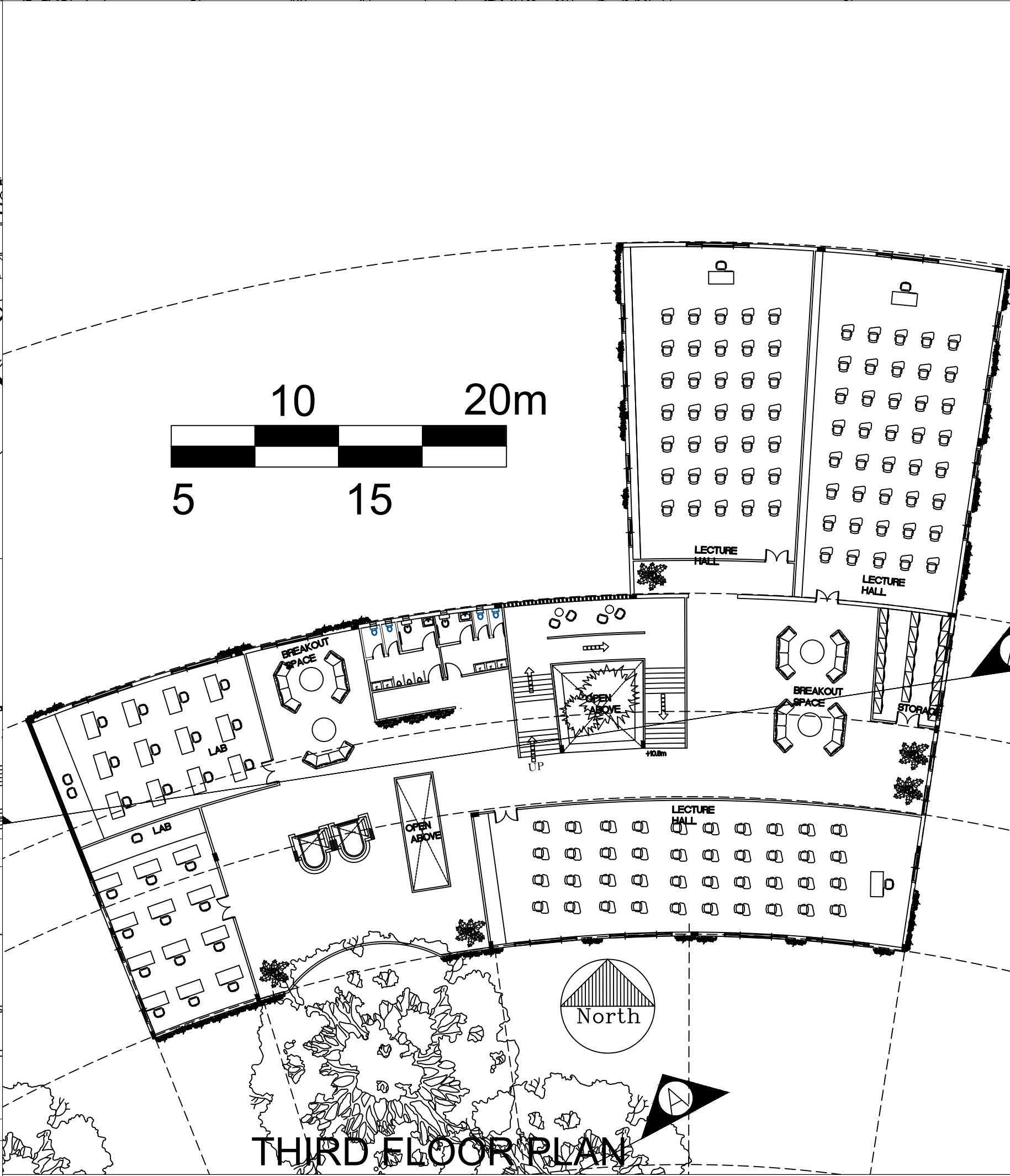
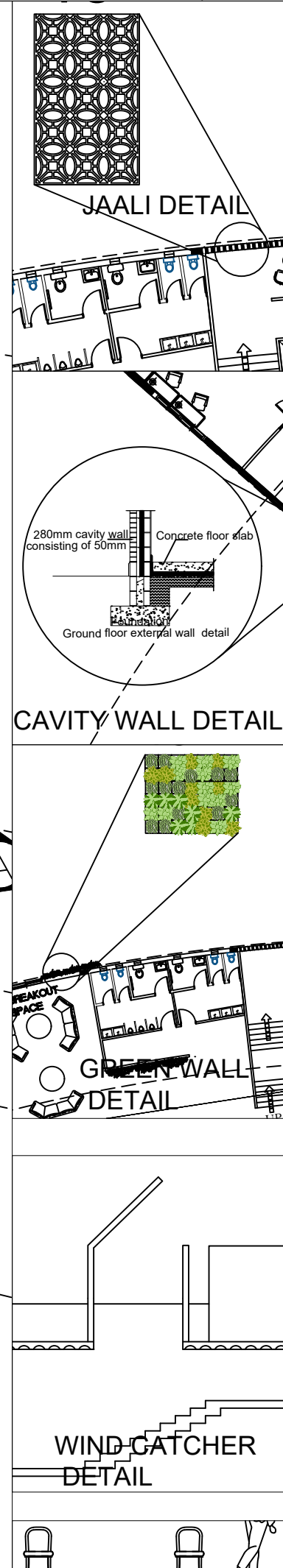
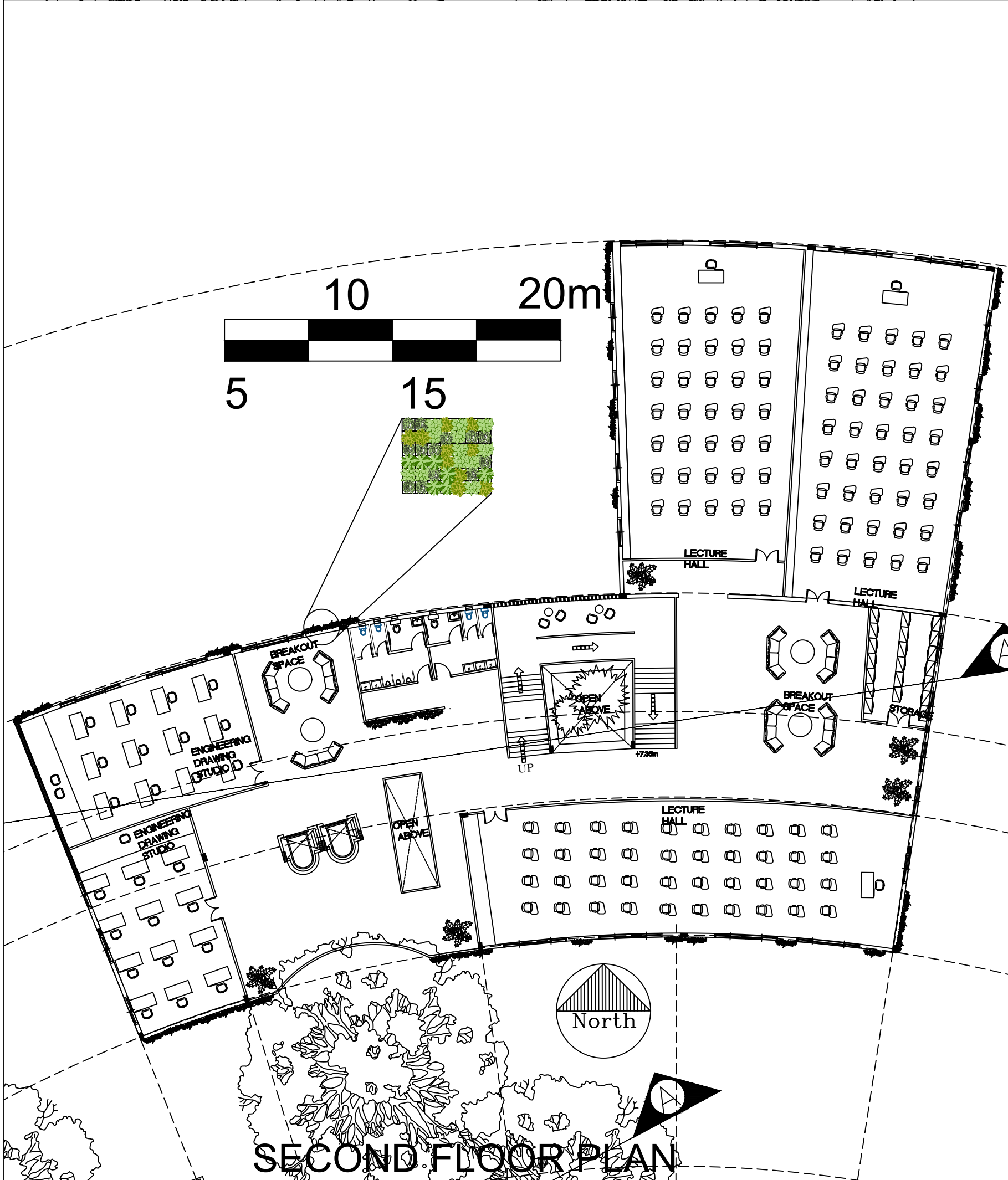
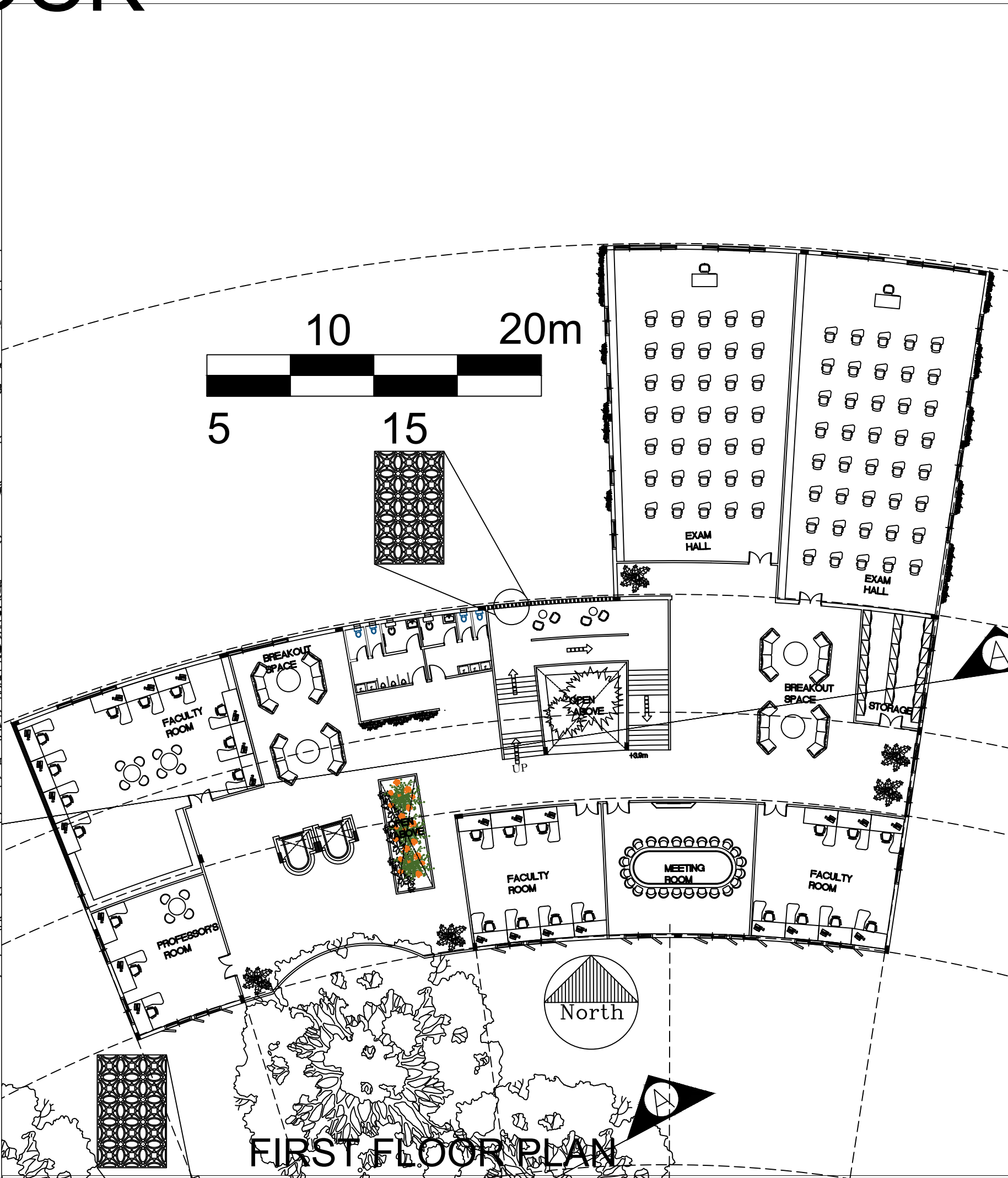
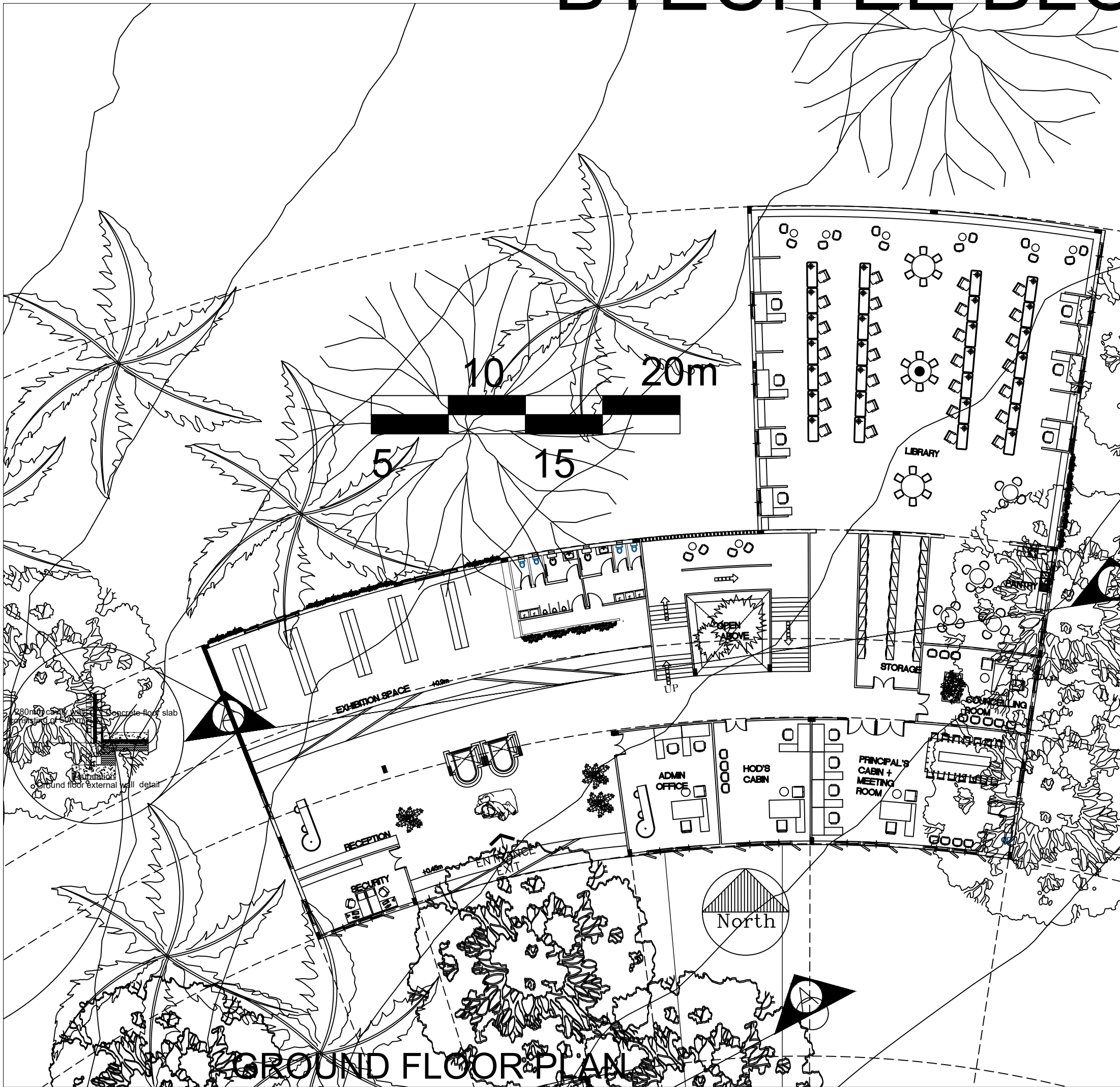


ELEVATION DETAIL

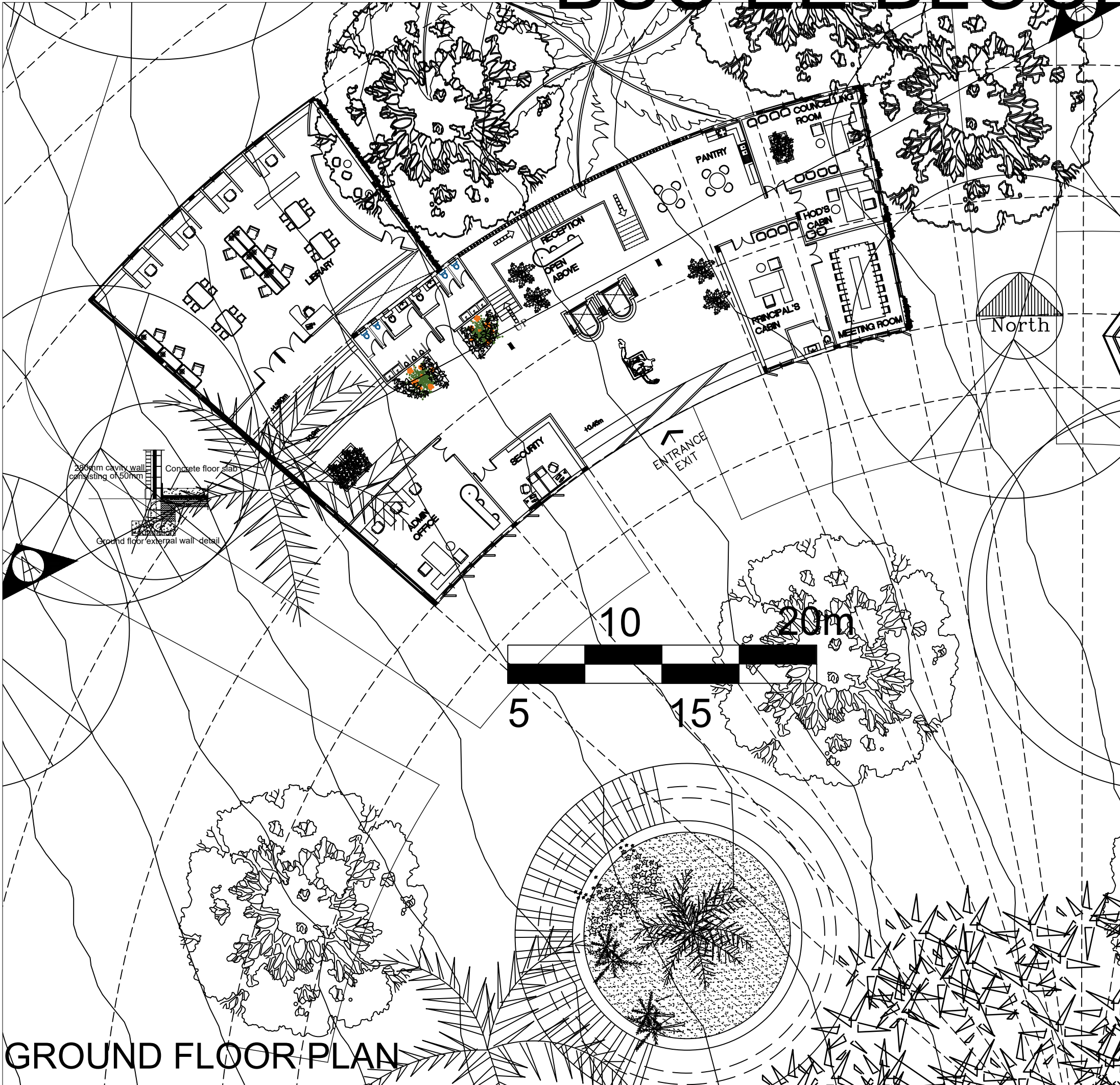


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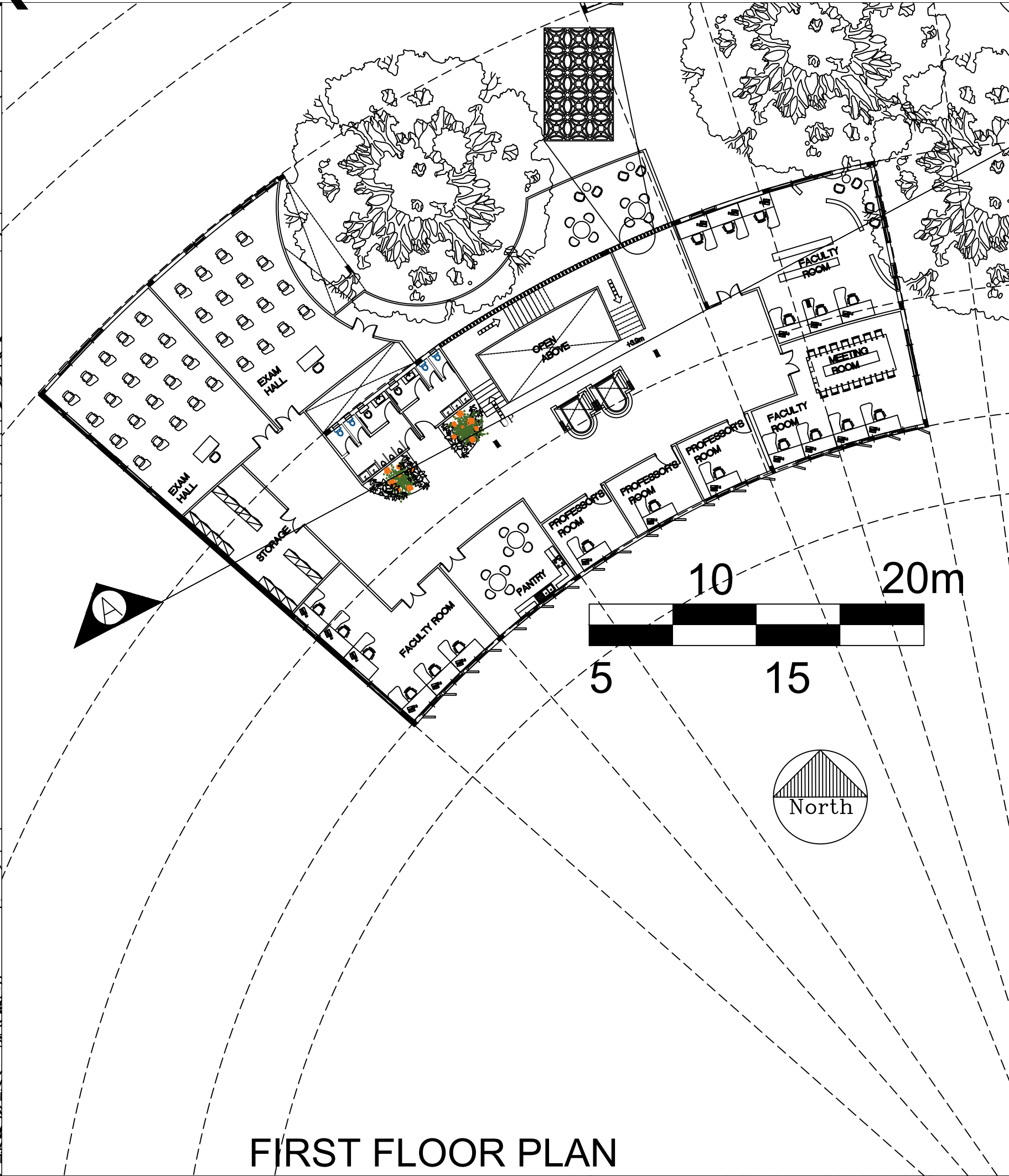
BTECH EE BLOCK



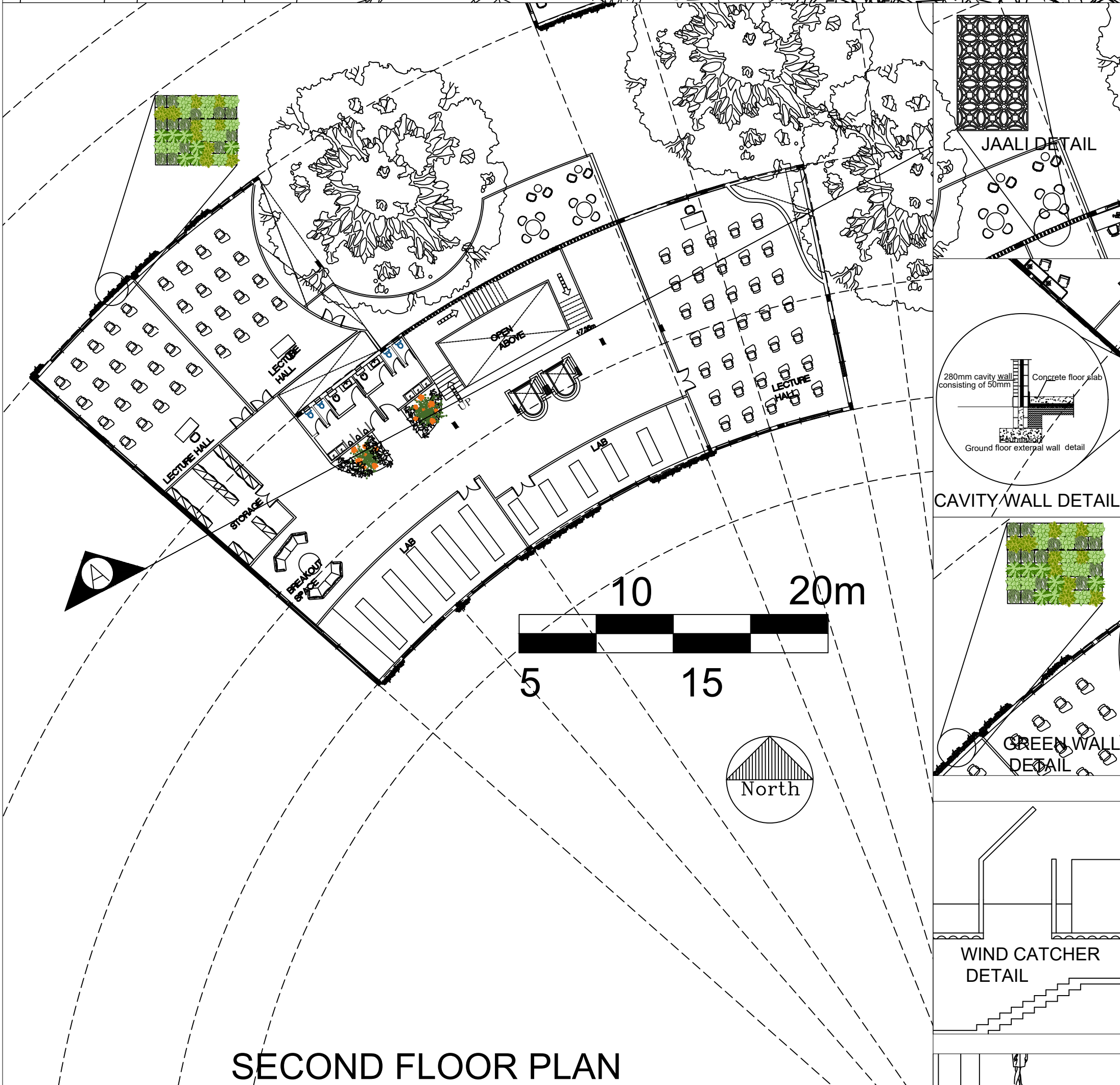
BSC EE BLOCK



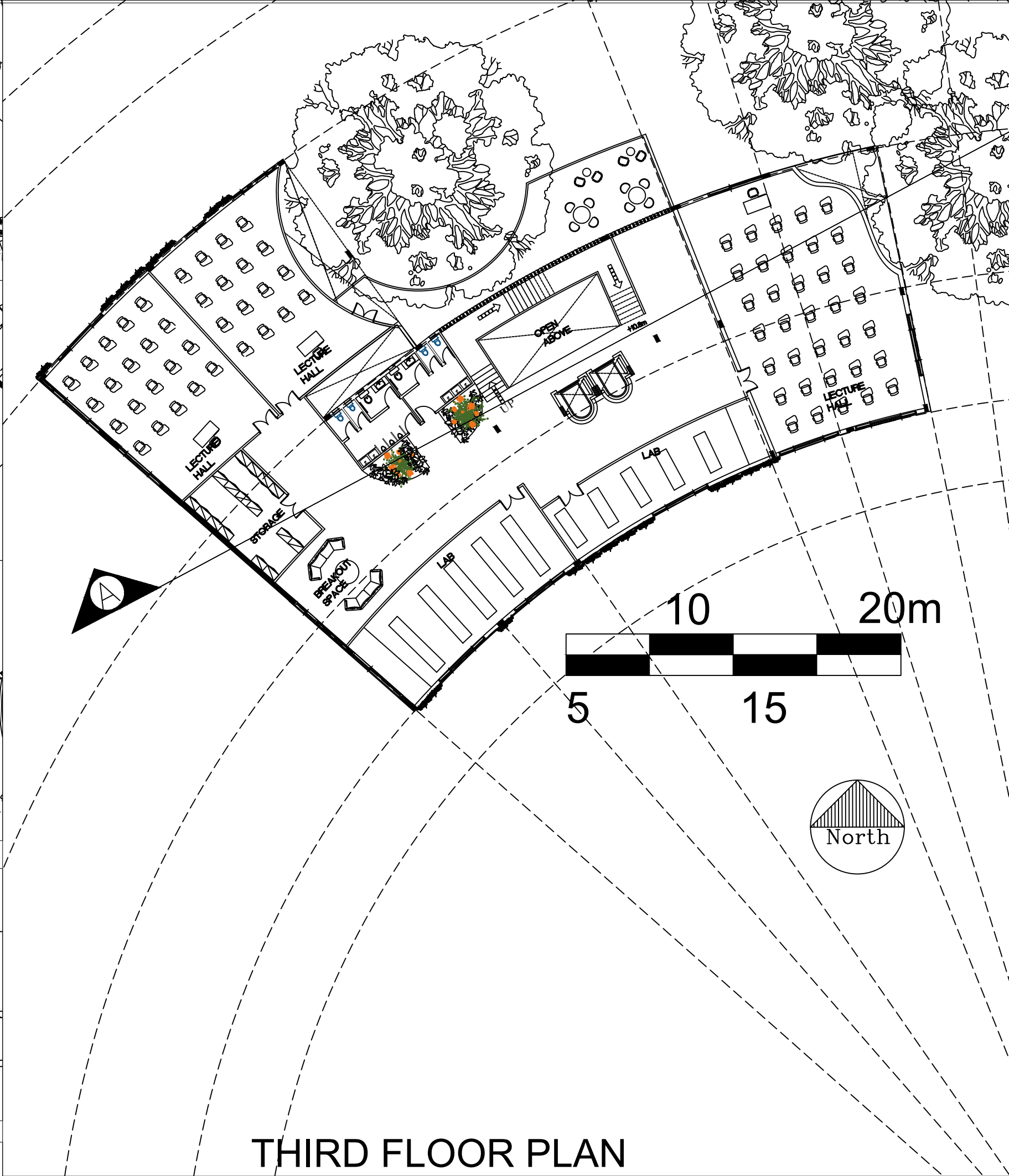
GROUND FLOOR PLAN



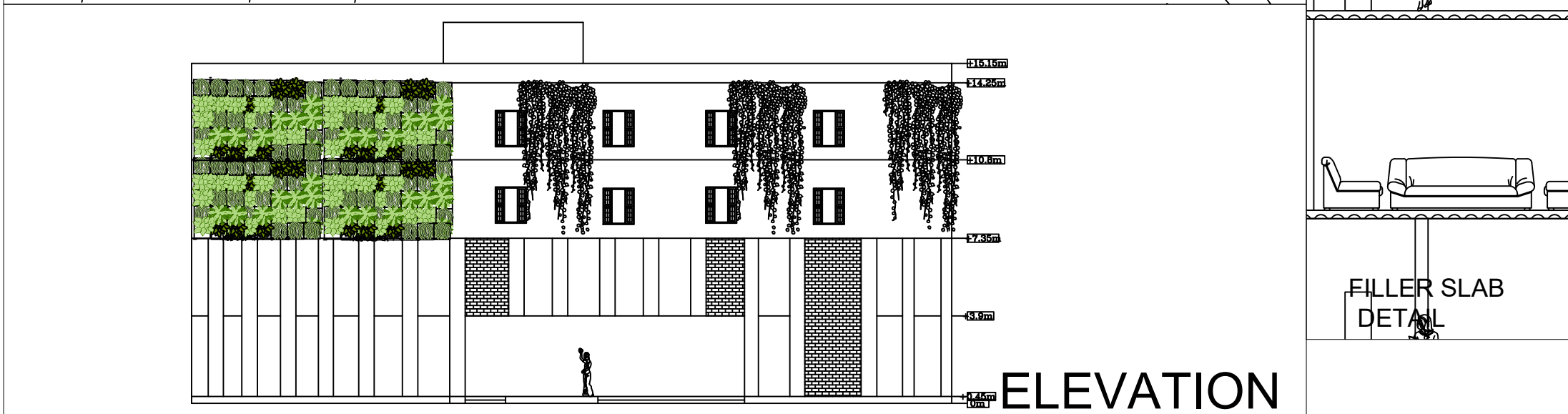
FIRST FLOOR PLAN



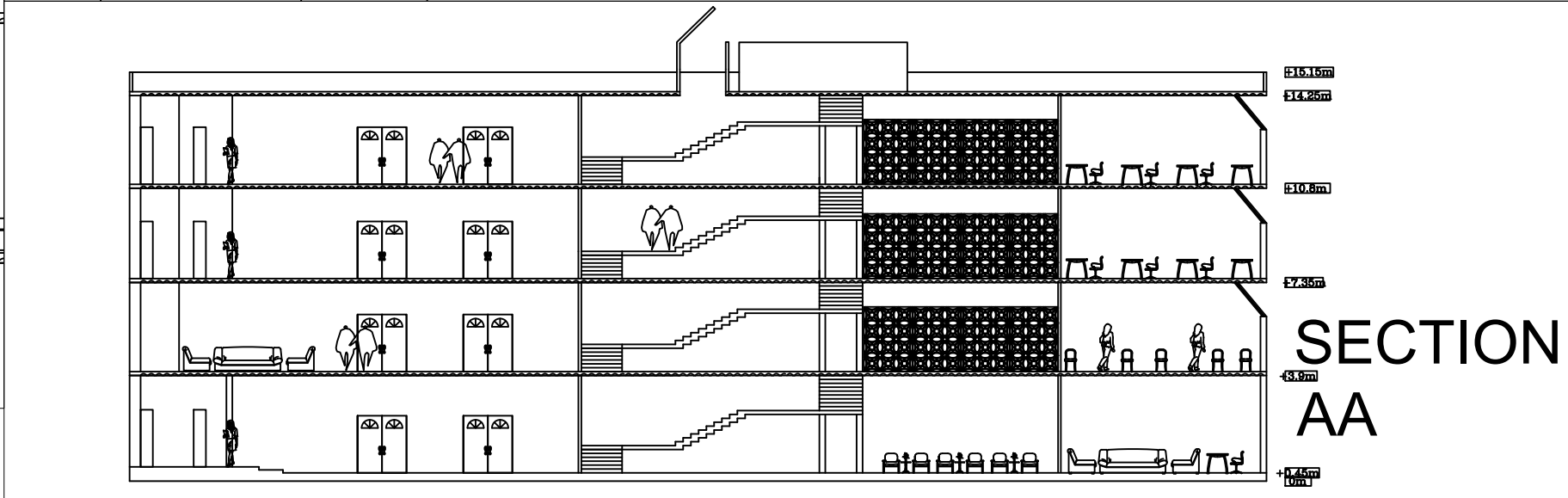
SECOND FLOOR PLAN



THIRD FLOOR PLAN



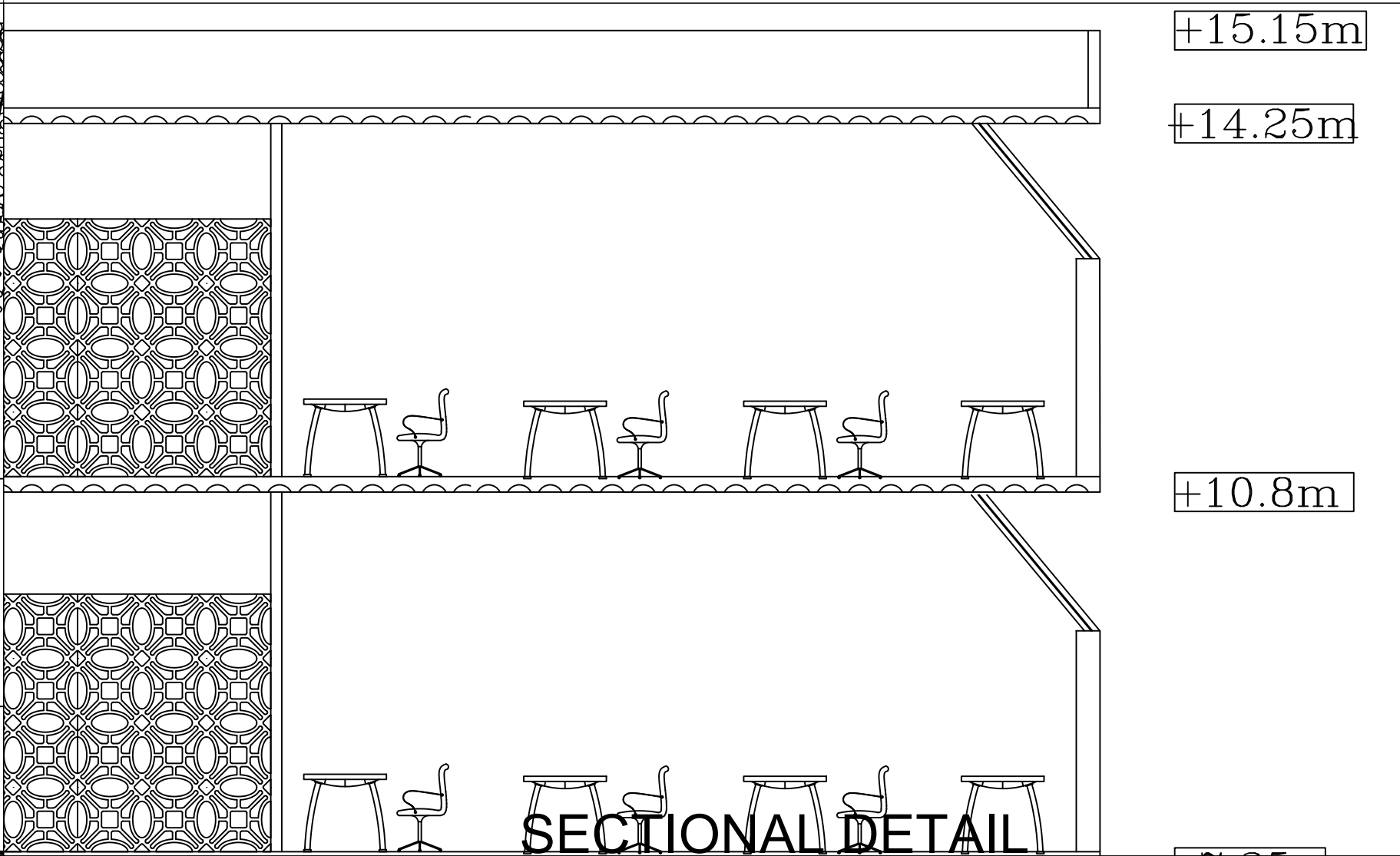
ELEVATION



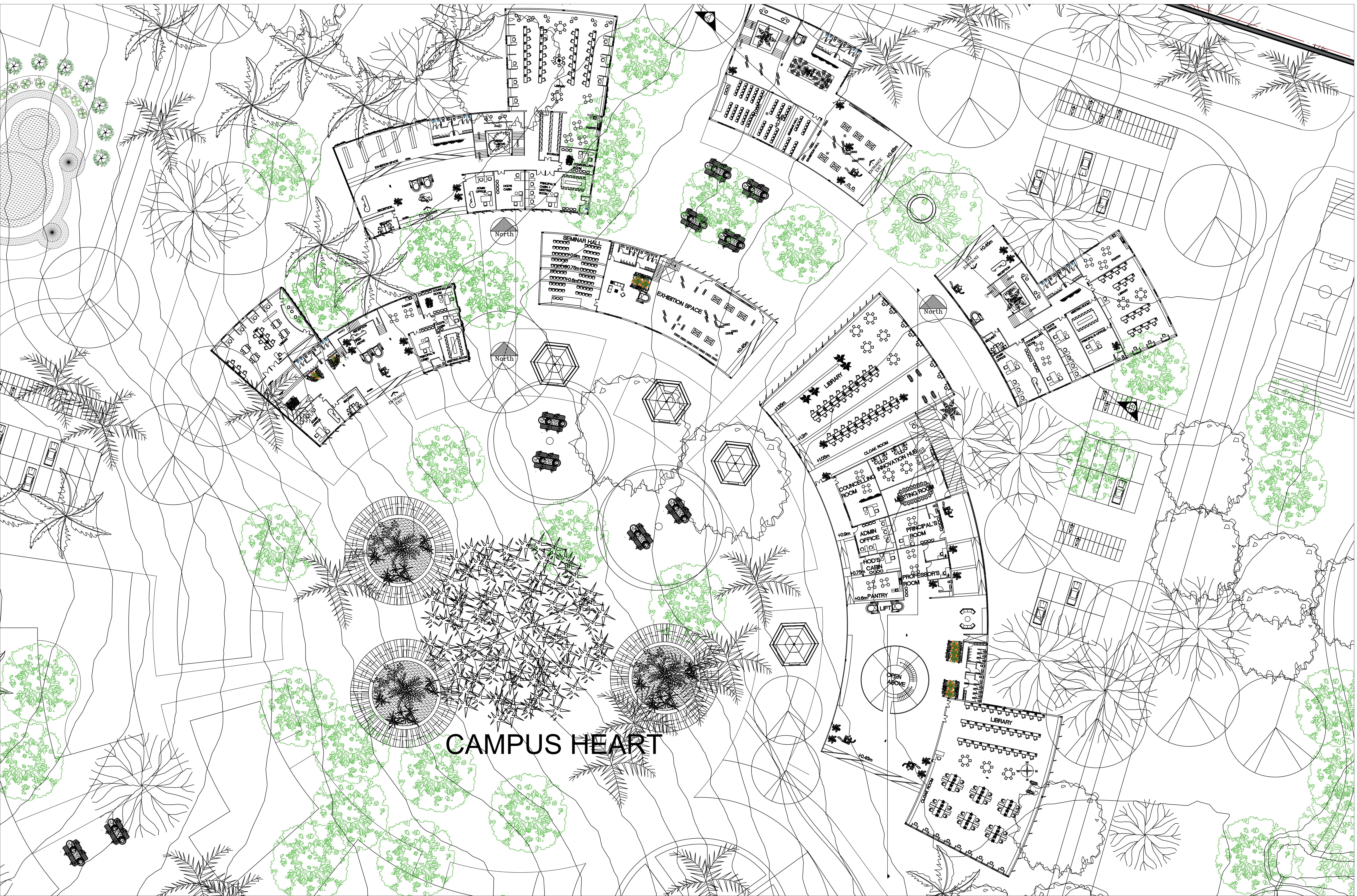
SECTION AA



ELEVATION DETAIL



SECTIONAL DETAIL



GROUND FLOOR PLAN WITH IMMEDIATE SURROUNDINGS