

ECO-TERRARIUM: IMMERSIVE WILDLIFE PARK

Baadreni Road, Bharatpur, Chitwan

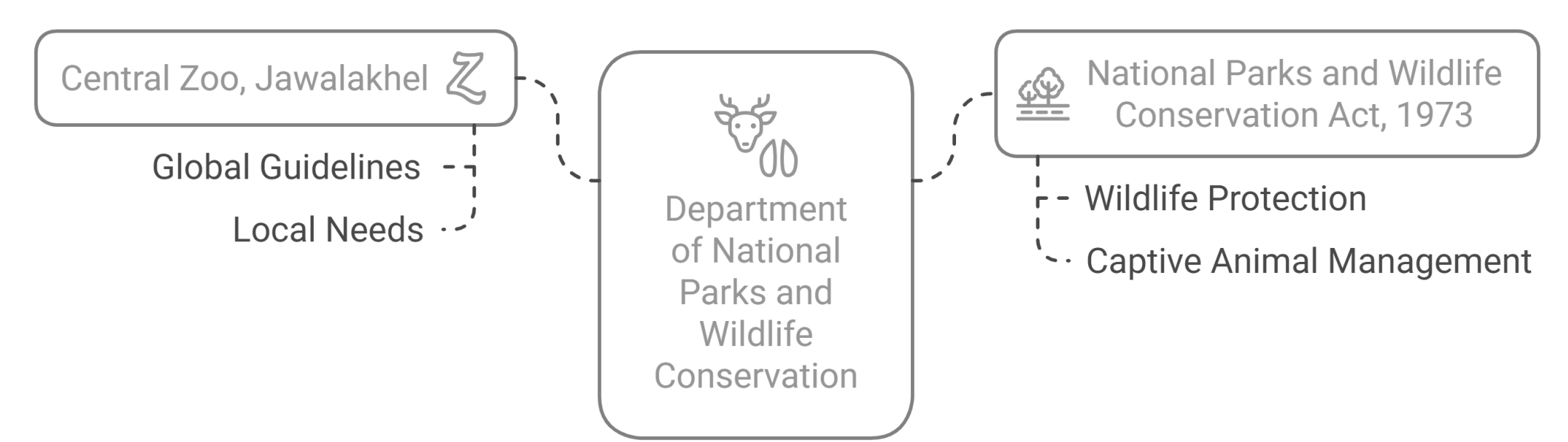
LITURATURE STUDY

An eco-terrarium integrated into a zoo concept is a sustainable, self-contained eco-system designed to replicate natural habitats while prioritizing conservation, education, and visitor engagement. These immersive exhibits combine cutting-edge technology, biodiversity, and ecological principles to create a model for ethical animal care, climate resilience, and public awareness.

POTENTIAL BENEFITS FOR NEPAL:

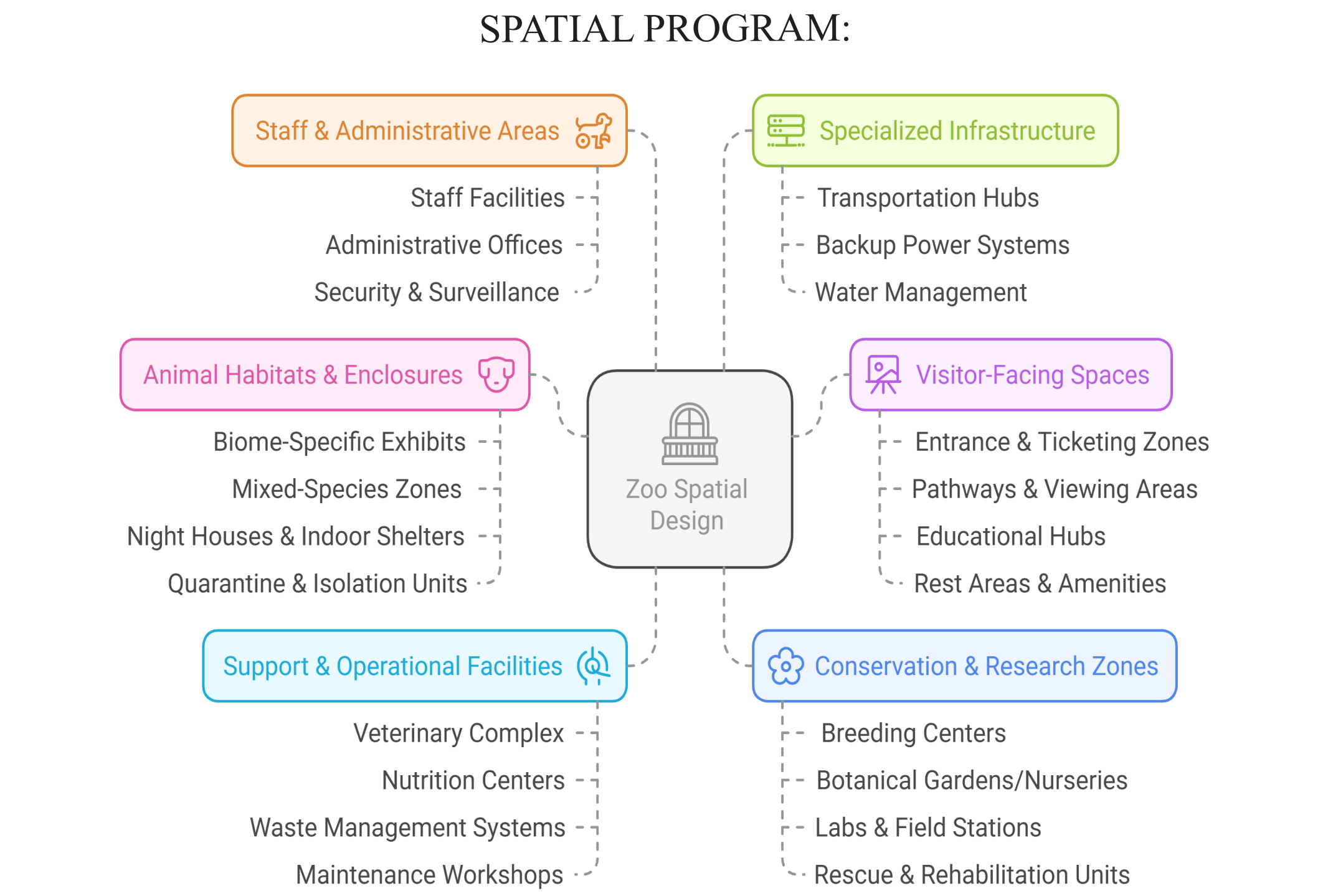
- **Conservation:** Protect endangered species (e.g. Bengal Tiger, Chinese Pangolin) through controlled breeding and habitat replication.
- **Education:** Offer immersive experiences to teach visitors about Nepal’s ecosystems, climate change, and biodiversity.
- **Tourism:** Attract eco-conscious travelers, aligning with Nepal’s growing eco-tourism sector.
- **Research:** Serve as hubs for studying species behavior, climate resilience, and ecosystem dynamics.

WILDLIFE CONSERVATION STRUCTURE IN NEPAL:

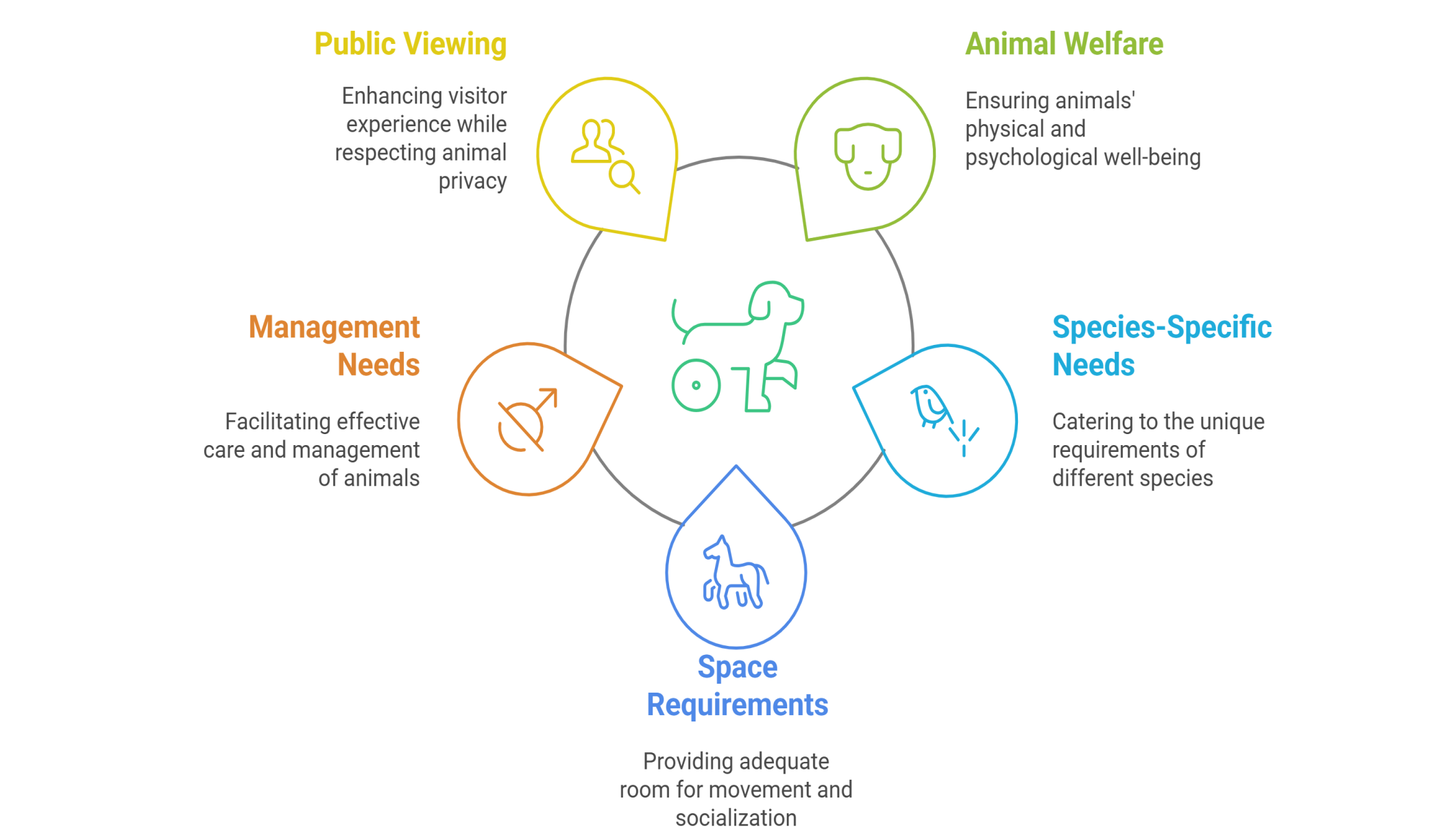


ANIMAL ENCLOSURE DESIGN:

Designing enclosures for zoo animals requires careful consideration of each species’ natural behaviors, social structures, and habitat needs. Below are guidelines on minimum enclosure dimensions for the species you listed, based on global best practices (e.g., WAZA, AZA) and adapted to the context of zoos in regions like Nepal. These guidelines focus on providing adequate space, environmental enrichment, and welfare for the animals.



ANIMAL ENCLOSUE DESIGN:



SITE SELECTION:

1. Climate and Environmental Suitability

- Natural Climate Alignment:
- Choose regions with stable temperatures and humidity levels close to the target biome (e.g., tropical, desert, temperate).
 - Example: A rainforest terrarium thrives in humid climates (e.g., Nepal’s Terai) to reduce energy costs for climate control.
- Microclimate Analysis:
- Avoid flood-prone, landslide-prone, or extreme weather zones.
 - Use GIS mapping to assess sun exposure, wind patterns, and soil stability.

2. Proximity to Natural Resources

- Water Availability:
- Access to freshwater sources (rivers, lakes, or groundwater) for closed-loop systems.
 - Rainwater harvesting potential (e.g., Nepal’s monsoon climate can supply 70–80% of water needs).
- Native Flora and Fauna:
- Sites near biodiverse regions simplify sourcing plants and animals while reducing transportation stress.
 - Example: Chitwan (Nepal) for Terai species or Pokhara for montane ecosystems.

3. Visitor Accessibility and Footfall

- Urban Proximity:
- Within 1–2 hours of major cities to maximize educational impact and tourism revenue.
 - Example: Kathmandu Valley for Nepal’s Central Zoo.
- Transport Links:
- Accessible via public transit, highways, and parking facilities (1 space per 5–10 visitors).
- Tourism Synergy:
- Proximity to existing attractions (e.g., national parks, heritage sites) boosts combined visitation.

4. Infrastructure and Energy Efficiency

- Renewable Energy Potential:
- Solar/wind-rich sites to power HVAC, lighting, and water systems.
 - Example: Solar panels in Nepal’s Terai (average 5.5 kWh/m²/day).
- Grid Reliability:
- Backup generators or battery storage for unstable power grids.
- Waste Management:
- Space for composting, recycling, and biofiltration systems.
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5. Ecological and Cultural Sensitivity

- Avoid Ecologically Fragile Areas:
- Steer clear of protected habitats, wetlands, or endangered species corridors.
- Brownfield Redevelopment:
- Repurpose degraded or underused land (e.g., abandoned industrial sites) for eco-terrariums.
- Cultural Relevance:
- Align with local conservation priorities (e.g., Himalayan species in Nepal).

6. Space and Layout Requirements

- Minimum Area:
- 0.5–2 hectares (1.2–5 acres) for a mid-sized terrarium, depending on biome complexity.
- Vertical vs. Horizontal Design:
- Vertical stacking (e.g., Singapore’s Cloud Forest) optimizes space in urban zoos.
 - Horizontal layouts suit rural areas with ample land (e.g., replicating savannahs).
- Zoning:
- Separate zones for public access, animal habitats, staff facilities, and utilities.

7. Regulatory and Community Considerations

- Legal Compliance:
- Secure permits for construction, water use, and species acquisition (CITES for endangered species).
 - Adhere to zoo accreditation standards (e.g., WAZA, national guidelines).
- Community Engagement:
- Involve local stakeholders in planning to ensure social acceptance and reduce conflicts.
 - Example: Partner with Nepal’s NTNC for conservation credibility.

8. Cost-Benefit Analysis

- Construction Costs:
- Prioritize modular, scalable designs to phase investments (e.g., start with amphibian terrariums).
- Revenue Streams:
- Factor in ticket sales, educational programs, and eco-tourism partnerships.
- Long-Term Savings:
- Renewable energy and closed-loop systems reduce operational costs over time.

9. Risk Mitigation Strategies

- Climate Resilience:
- Flood barriers, earthquake-resistant structures, and fire-resistant materials.
- Biosecurity:
- Quarantine zones and UV sterilization systems to prevent disease outbreaks.
- Insurance:
- Coverage for extreme weather, equipment failure, or animal-related incidents.

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LITURATURE STUDY

SPATIAL STANDARDS:

1. VISITOR VIEWING AREA

Sightlines and Viewing Heights

- Eye Level Ranges (for unobstructed viewing):
- Adults: 1.5–1.7 m (59–67 in)
- Children (5–12 years): 0.9–1.2 m (35–47 in)
- Wheelchair Users: 1.1–1.3 m (43–51 in)

Viewing Glass/Panel Design:

- Height: 0.6–1.8 m (24–71 in) to accommodate all users (lower sections for children, upper for adults).
- Tilted Glass: Angled at 10–15° to reduce glare and improve visibility.
- Depth of Viewing Zone: Minimum 0.6 m (24 in) for wheelchair turnaround.

Barrier Design

Safety Railings:

- Height: 1.1 m (43 in) to prevent climbing.
- Vertical Bar Spacing: <10 cm (4 in) to prevent child entrapment.
- Glass Thickness: 19–25 mm (0.75–1 in) for structural integrity and safety.

2. PATHWAYS AND CIRCULATION

Walkway Dimensions

Primary Pathways:

- Width: 2.4–3 m (8–10 ft) for bidirectional flow + strollers/wheelchairs.
- Secondary Pathways: 1.8 m (6 ft) for single-direction movement.

Slopes:

- Max slope: 1:20 (5%) for comfort; 1:12 (8.3%) for ramps (ADA compliant).

Turning Radius:

- Wheelchair: 1.5 m (60 in) diameter.

Tactile Guidance

Tactile Paths:

- Width: 0.6–0.9 m (24–35 in) with textured paving for visually impaired visitors.
- Contrasting Colors: To demarcate edges (e.g., light vs. dark stone).

3. INTERACTIVE EXHIBIT ZONES

Touchscreens and Controls

Height:

- Median: 1.2 m (47 in) for standing adults and seated children.
- Adjustable mounts for wheelchair users (0.7–1.2 m / 28–47 in).

Reach Zones:

- Forward reach (seated): 0.4–1.2 m (16–47 in).

Educational Displays

Signage:

- Mounting height: 1.2–1.6 m (47–63 in) for readability.
- Font size: Minimum 18 pt for text, with high-contrast backgrounds.

Interactive Tables:

- Height: 0.75–0.9 m (30–35 in) with knee clearance of 0.7 m (28 in).

4. SEATING AND REST AREAS

Benches and Perches

- Seat Height: 0.45–0.5 m (18–20 in) for easy sitting/standing.
- Depth: 0.4–0.45 m (16–18 in) with backrests angled at 95–105°.
- Spacing: 1–1.2 m (3–4 ft) between benches for social distancing.

Picnic Areas

- Table Height: 0.7–0.75 m (28–30 in) with knee clearance of 0.6–0.7 m (24–28 in).
- Seat-to-Table Distance: 0.3 m (12 in) vertically.

5. STAFF AND MAINTENANCE ZONES

Keeper Access Points

Doorways:

- Width: 0.9 m (35 in) for staff with equipment.
- Height: 2 m (79 in) to avoid head injuries.

Work Counters:

- Height: 0.9–1.1 m (35–43 in) for food prep or medical tasks.

Storage and Tools

Shelving:

- Frequently used items: 0.5–1.5 m (20–59 in) from floor.
- Heavy items: 0.7–1.2 m (28–47 in) to avoid bending/lifting.

6. ACCESSIBILITY COMPLIANCE

Universal Design Features

Ramps:

- Slope: 1:12 (8.3%) with landings every 9 m (30 ft).
- Handrails: 0.9–1 m (35–39 in) height, 3.8 cm (1.5 in) diameter.

Restrooms:

- Stall width: 1.5 m (60 in) for wheelchair access.
- Grab bars: 0.75–0.85 m (30–33 in) above floor.

Sensory Considerations

Quiet Zones:

- Seating spaced 2 m (6.5 ft) apart with sound-absorbing materials.

Lighting:

- 300–500 lux for exhibits, with dimmable options for light-sensitive visitors.

7. SAFETY AND EMERGENCY EGRESS

Clearances:

- Minimum 1.1 m (43 in) width for emergency exits.

Handrails:

- Diameter: 3.8–5 cm (1.5–2 in) for grip comfort.










Non-Slip Surfaces:

- Coefficient of friction (COF) >0.6 for wet/humid terrarium areas.

8. ANTHROPOMETRIC CHECKLIST FOR ECO-TERRARIUMS

Feature	Measurement	Standard
Viewing glass height	0.6–1.8 m (24–71 in)	ADA/ISO
Pathway width	1.8–3 m (6–10 ft)	ADA
Bench seat height	0.45–0.5 m (18–20 in)	DIN/ANSI
Interactive screen height	0.7–1.2 m (28–47 in)	Universal Design
Ramp slope	1:12 (8.3%)	ADA
Tactile path width	0.6–0.9 m (24–35 in)	ISO

MINIMUM ENCLOSURE DIMENSION:

<p>Big Cats (Bengal Tigers, Leopards, Snow Leopards)</p> <p>Single Animal: Minimum of 400 sq. meters (4,300 sq. ft) with a height of 4 meters (13 ft) for climbing structures.</p> <p>Group: Additional 100 sq. meters (1,075 sq. ft) per animal.</p> <p>Features: Elevated platforms, scratching posts, and hiding areas.</p> 	<p>Primates (Rhesus Macaques, Langurs)</p> <p>Single Animal: Minimum of 50 sq. meters (540 sq. ft) with a height of 3 meters (10 ft).</p> <p>Group: Additional 20 sq. meters (215 sq. ft) per animal.</p> <p>Features: Vertical climbing structures, foraging opportunities, and secluded resting areas.</p> 	<p>Hoofed Animals (Deer, Antelope, Wild Boar)</p> <p>Single Animal: Minimum of 200 sq. meters (2,150 sq. ft).</p> <p>Group: Additional 100 sq. meters (1,075 sq. ft) per animal.</p> <p>Features: Open spaces, shade structures, and browsing opportunities.</p> 	<p>Reptiles (Pythons, Cobras, Tortoises)</p> <p>Large Snakes (Pythons, Cobras): Minimum enclosure length of 2/3 the snake's length, with a width of 1/3 the length.</p> <p>Tortoises: Minimum of 10 sq. meters (108 sq. ft) per animal.</p> <p>Features: Basking areas, hiding spots, and appropriate substrates.</p> 	<p>Small Mammals (Himalayan Marmots, Otters)</p> <p>Meerkats: Minimum of 50 sq. meters (540 sq. ft) for a group.</p> <p>Otters: Minimum of 100 sq. meters (1,075 sq. ft) with a water depth of 1 meter (3 ft).</p> <p>Features: Burrowing areas, water features, and climbing structures.</p> 
<p></p> <p>Elephants</p> <p>Single Animal: Minimum of 1,000 sq. meters (10,760 sq. ft) for Asian elephants.</p> <p>Group: Additional 500 sq. meters (5,380 sq. ft) per animal.</p> <p>Features: Mud wallows, shade structures, and social grouping areas.</p>	<p></p> <p>Bears (Himalayan Black Bears, Sloth Bears)</p> <p>Single Animal: Minimum of 500 sq. meters (5,380 sq. ft) with a height of 4 meters (13 ft).</p> <p>Group: Additional 200 sq. meters (2,150 sq. ft) per animal.</p> <p>Features: Water pools, digging areas, and climbing structures.</p>	<p></p> <p>Birds (Peafowl, Pheasants, Vultures)</p> <p>Large Birds (Vultures, Eagles): Minimum of 50 sq. meters (540 sq. ft) with a height of 6 meters (20 ft).</p> <p>Small Birds (Peafowl, Pheasants): Minimum of 20 sq. meters (215 sq. ft) with a height of 3 meters (10 ft).</p> <p>Features: Perches, nesting areas, and flight space.</p>	<p></p> <p>Aquatic Animals (Fish, Turtles)</p> <p>Marmots: Minimum of 50 sq. meters (540 sq. ft) for a group.</p> <p>Otters: Minimum of 100 sq. meters (1,075 sq. ft) with a water depth of 1 meter (3 ft).</p> <p>Features: Burrowing areas, water features, and climbing structures.</p>	

According to WAZA, EAZA, AZA and Indian Central Zoo Standards

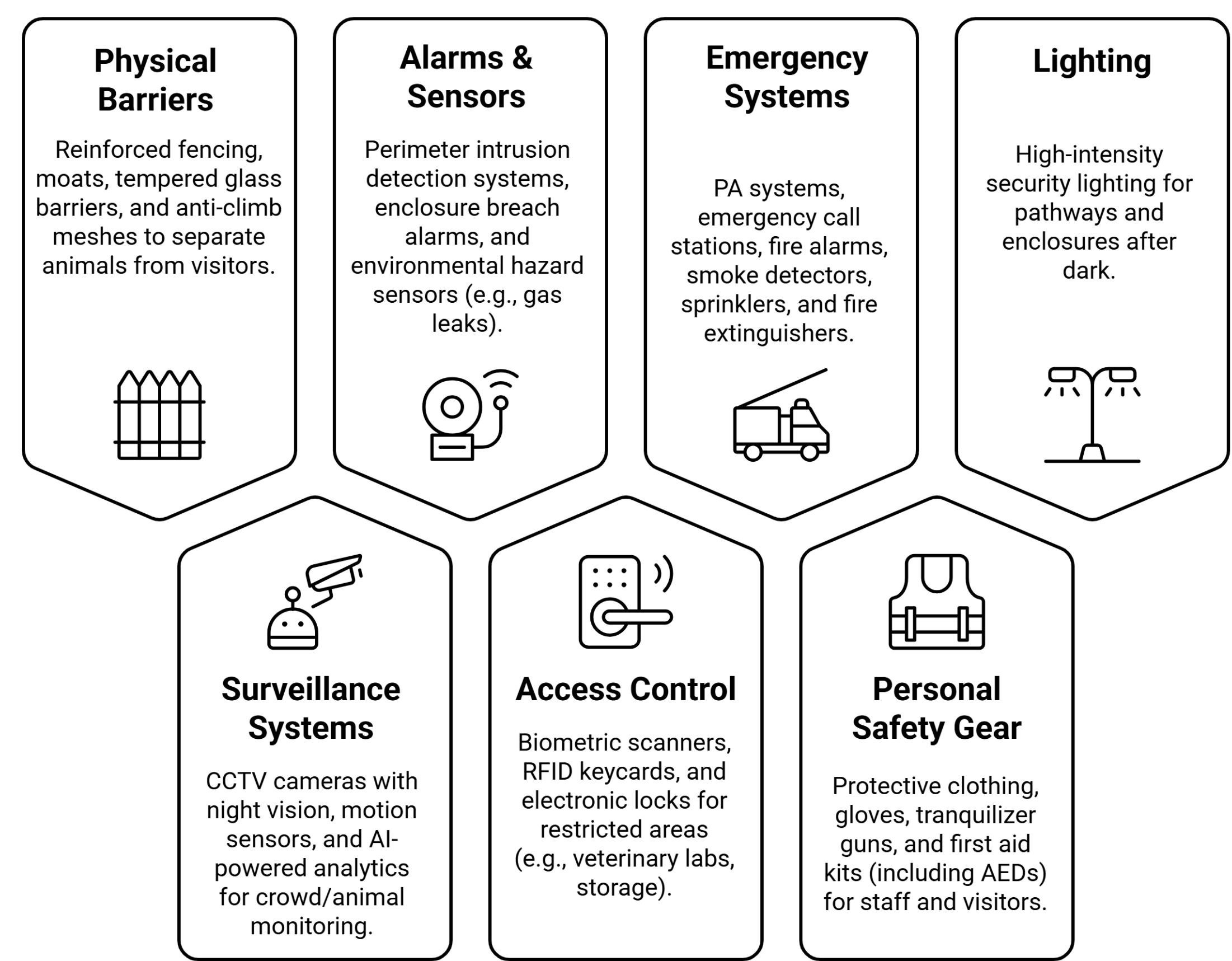
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LITURATURE STUDY

SAFETY & SECURITY EQUIPMENT



SERVICES:

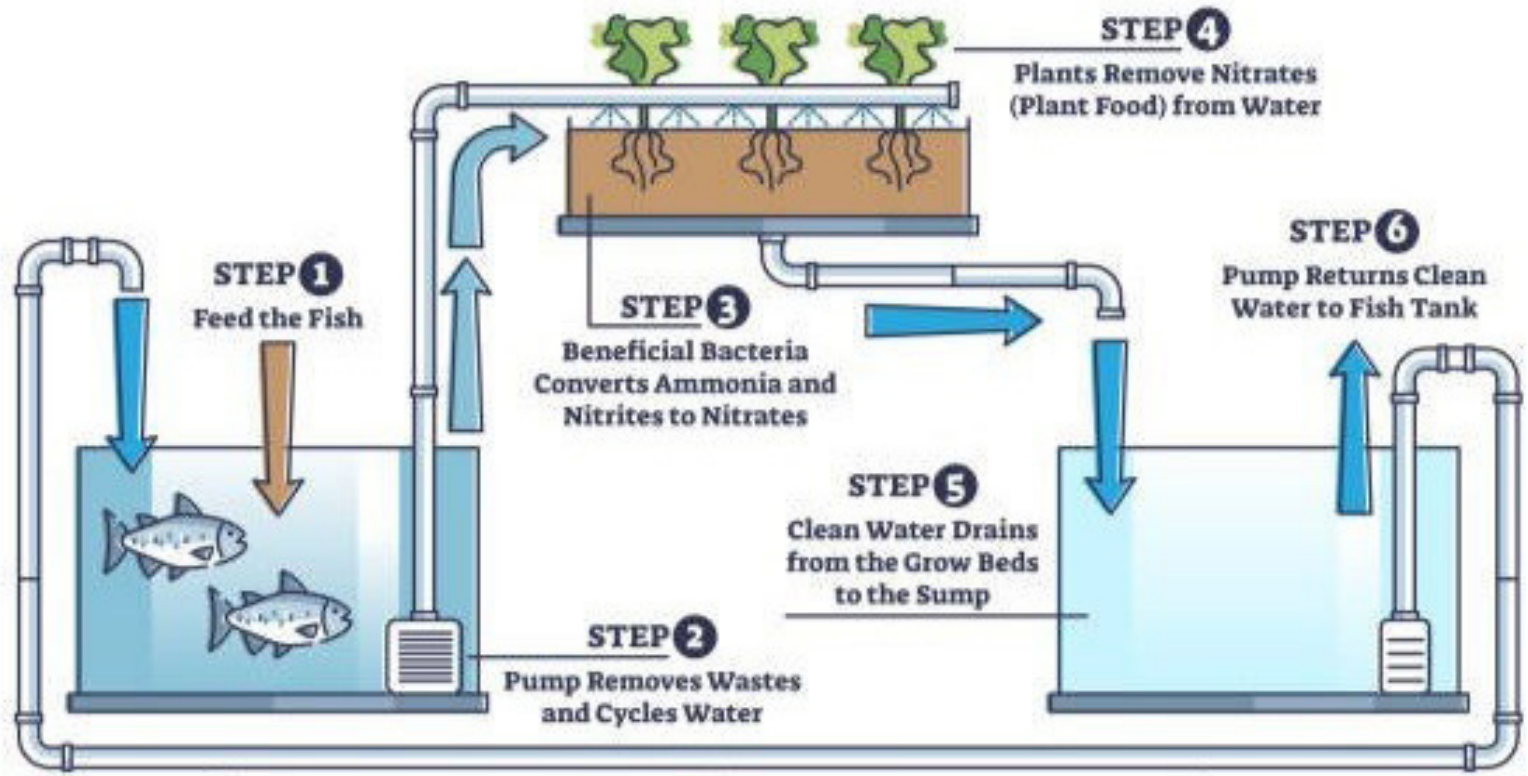
1. Water Management System

Essential for aquatic exhibits, animal habitats, and plant irrigation.

COMPONENTS & TECHNOLOGIES:

Closed-Loop Water Circulation:

- Aquarium & Aquatic Habitats:
 - Filtration: Mechanical (sand filters), biological (biofilters), UV sterilization, and protein skimmers.
 - Flow Rate: 4–6 tank volumes per hour (e.g., a 100,000L aquarium requires pumps rated for 400,000–600,000 L/h).
- Automated Monitoring: Sensors for pH (6.5–8.5), dissolved oxygen (5–7 mg/L), salinity (varies by species), and temperature (tropical: 24–28°C; cold-water: 10–18°C).



Rainwater Harvesting:

- Collect rainwater via bio-dome’s glass/ETFE roof.
 - Storage Tanks: Sized based on local rainfall (e.g., 1,000m² roof × 1,000mm annual rainfall = 1,000,000L/year).
- Greywater Recycling:
 - Treat sink/shower water via constructed wetlands or membrane bioreactors (MBR) for reuse in irrigation or flushing.
- Calculations:
 - Aquarium Water Needs: Volume: 500,000L for a mid-sized aquarium.
 - Top-Up Losses: 1–2% daily (5,000–10,000L/day) due to evaporation and filtration.
- Animal Drinking Water:
 - Daily Requirement: ~50L per large mammal (e.g., elephant: 100–150L/day).

2. Drainage System

Critical for flood prevention, waste removal, and groundwater recharge.

COMPONENTS:

Permeable Surfaces:

- Use porous pavers or gravel paths to reduce runoff.
- Bioswales & Retention Ponds:
 - Vegetated channels to slow and filter stormwater.

Underground Drainage:

- PVC/ABS pipes (150–300mm diameter) sloped at 1–2% gradient.

Calculations:

Stormwater Capacity:

- Peak Flow Rate:** $Q = C \times I \times A$
- C : Runoff coefficient (0.9 for impervious surfaces; 0.3 for permeable).
 - I : Rainfall intensity (e.g., 50mm/hr in tropical zones).
 - A : Catchment area (e.g., 10,000m²).
 - Example: $Q = 0.6 \times 0.05m/hr \times 10,000m^2 = 300m^3/hr$.

3. Sanitation System

Ensures hygiene for animals, staff, and visitors while recycling waste.

COMPONENTS:

Composting Toilets:

- Reduce water use and convert human waste into fertilizer.

Animal Waste Management:

- Biogas Digesters: Convert manure to methane for energy (1kg manure ≈ 0.03m³ biogas).
- Composting: Aerobic composting for non-toxic bedding/feces.

Sewage Treatment:

- Membrane Bioreactors (MBR) or Sequential Batch Reactors (SBR) for advanced wastewater treatment.

Calculations:

- Human Waste: 500 visitors/day × 1.5L/person = 750L/day sewage.
- Animal Waste: Elephants: 100kg manure/day; primates: 1–2kg/day

4. HVAC System

Maintains stable temperature, humidity, and air quality for diverse ecosystems.

Components:

- Geothermal Heating/Cooling:
 - Ground-source heat pumps for energy efficiency (COP 3–5).
- Radiant Floor Heating:
 - For reptile enclosures or tropical zones (30–35°C).

Humidity Control:

Desiccant dehumidifiers (for arid zones) and misting systems (for rainforests).

Air Quality:

- HEPA filters, CO₂ scrubbers, and live plant walls for natural air purification.

Calculations:

- Heat Load:**
 - $Q = U \times A \times \Delta T$
 - U : Thermal transmittance of bio-dome glazing (e.g., 1.0 W/m²K).
 - A : Surface area (e.g., 5,000m²).
 - ΔT : Temperature difference (e.g., 10°C for cooling).
 - Example: $Q = 1.0 \times 5,000 \times 10 = 50,000W$.
- Ventilation:**
 - 0.3–0.5 air changes per hour (ACH) for animal enclosures; 2–3 ACH for visitor areas.

5. Integration & Sustainability

Energy:

- Solar panels (e.g., 500kW system) + biogas generators.

Automation:

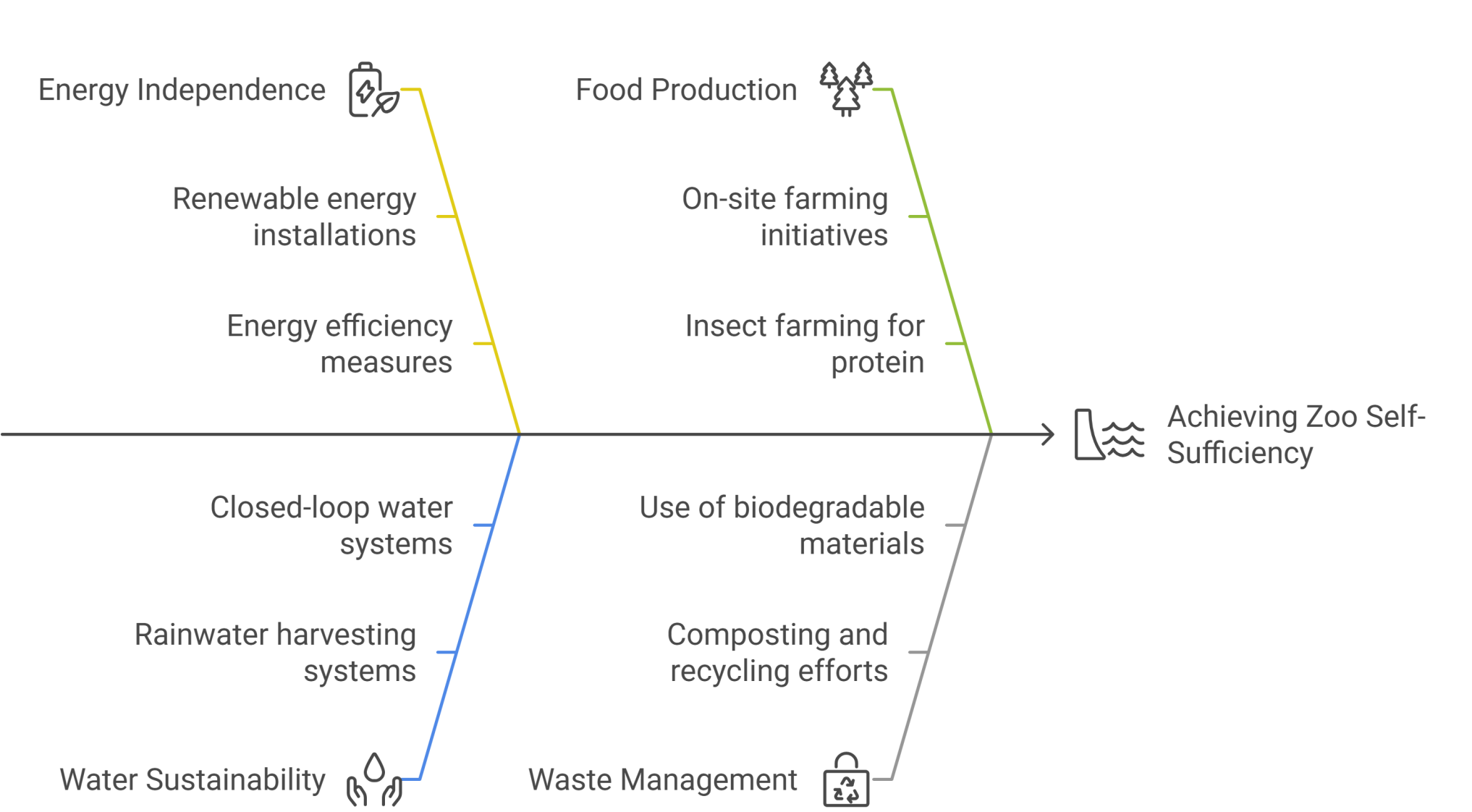
- SCADA systems to monitor and adjust water/HVAC parameters in real time.

Certifications:

- Target LEED Platinum or BREEAM Outstanding for sustainability.

Zone	Water Needs	Temperature	Humidity	Special Requirements
Tropical Rainforest	10,000L/day	25–30°C	80–90%	Misting systems, UV filtration
Desert	500L/day	30–40°C	10–20%	Radiant heating, dehumidifiers
Aquarium	500,000L	24–28°C	N/A	Protein skimmers, wave generators

CHALLENGES FOR SELF-SUFFICIENCY:

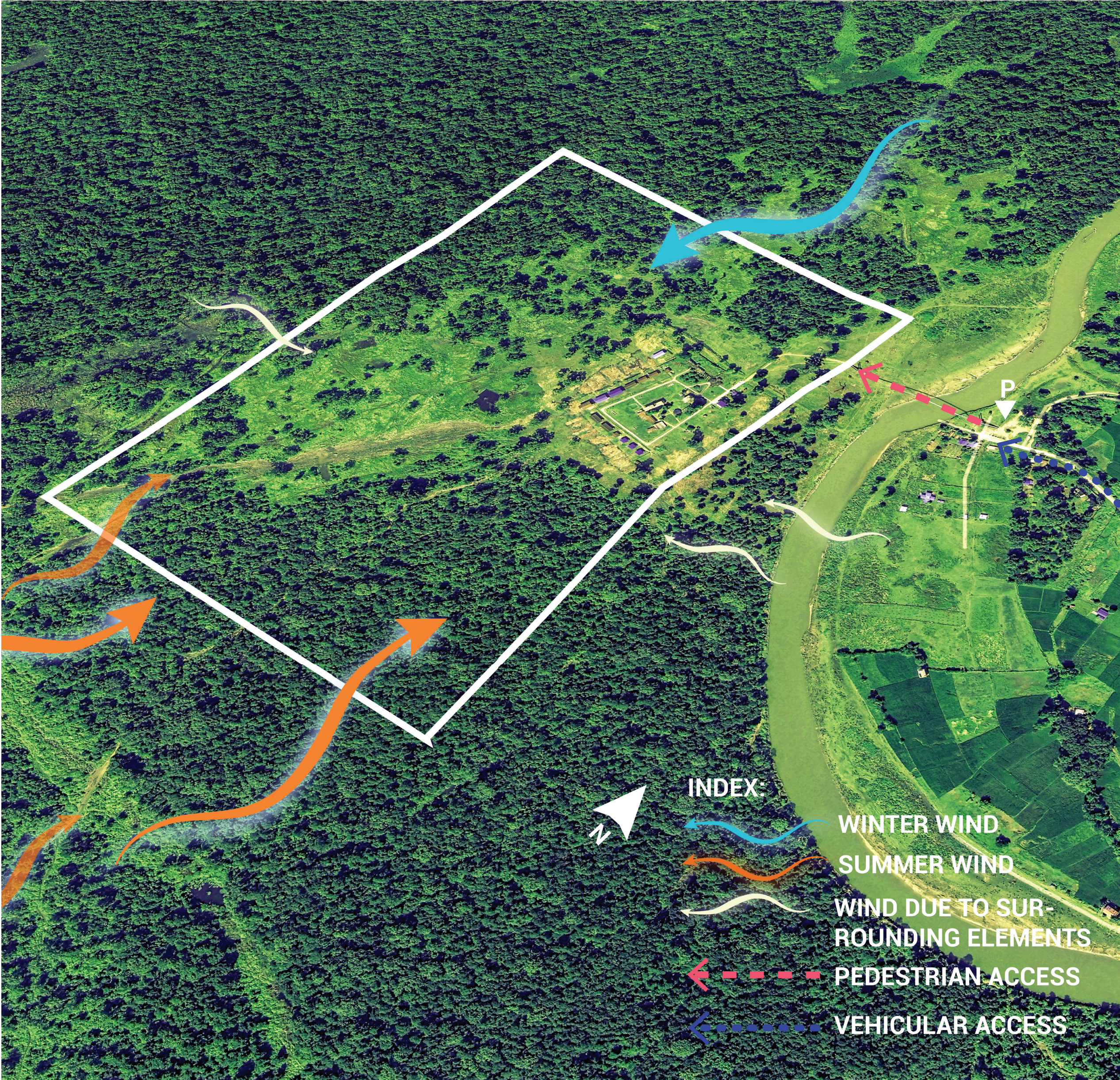


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SITE ANALYSIS



MAP SHOWING FACTORS THAT CAN AFFECT THE PROJECT DURING DESIGN PHASE

WIND ANALYSIS:

- WEST: FOR 2.0 MONTHS, FEBRUARY 20 TO APRIL 19, PEAK PERCENTAGE:35%
- SOUTH FOR 6.2 MONTHS, FROM APRIL 19 TO OCTOBER 24, PEAK PERCENTAGE: 61%
- NORTH FOR 3.9 MONTHS, FROM OCTOBER 24 TO FEBRUARY 20, PEAK PERCENTAGE: 37%



TWO-PHASE POWER SUPPLY IN THE PRESENT

CLIMATE & ENVIRONMENTAL CONDITIONS:

- 10–38°C, HOT SUMMERS, MILD WINTERS, AND HEAVY MONSOON RAINS
- ~1500 - 2,000MM ANNUAL RAINFALL; HIGH HUMIDITY (~80%)
- HIGH FLOOD RISK IN MONSOON; REQUIRES ELEVATED STRUCTURES AND PROPER DRAINAGE

TOPOGRAPHY & LAND FEATURES:

- MOSTLY FLAT TERRAIN WITH SLIGHT UNDULATIONS
- MINIMAL ROCK FORMATIONS; PRIMARILY RIVERBED DEPOSITS

BIODIVERSITY & EXISTING WILDLIFE:

- RICH BIODIVERSITY, INCLUDING RHINOS, DEER, SLOTH BEARS, AND ELEPHANTS
- HIGH RISK DUE TO ELEPHANTS AND RHINOS STRAYING INTO LOCAL VILLAGES

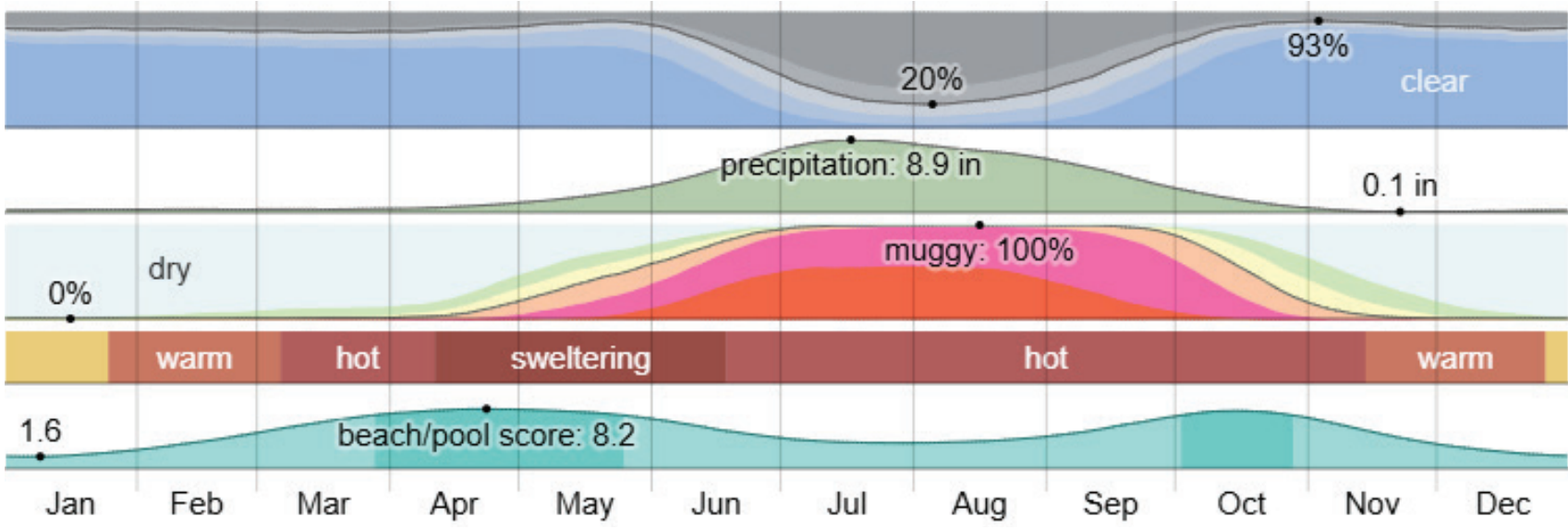
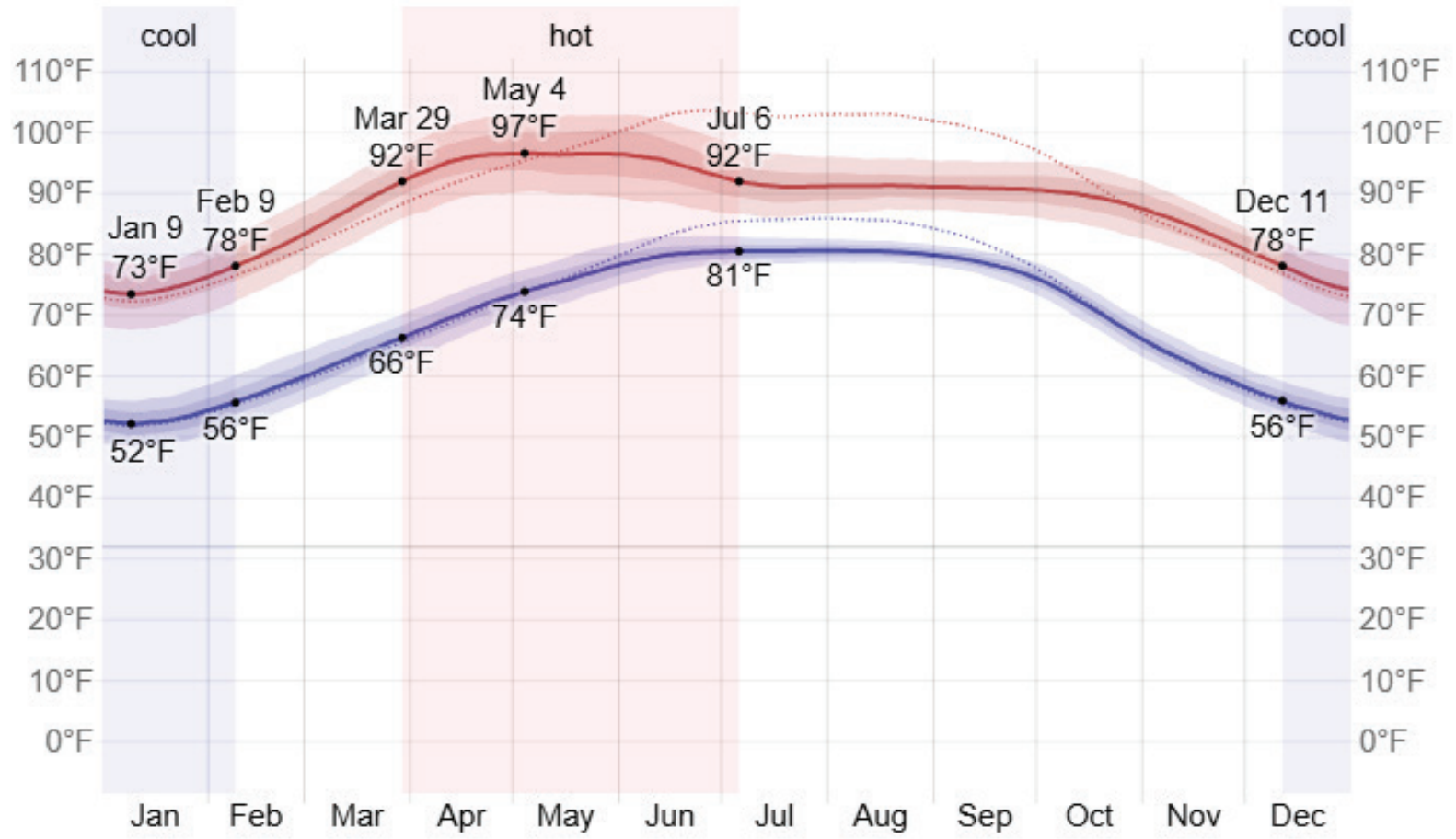
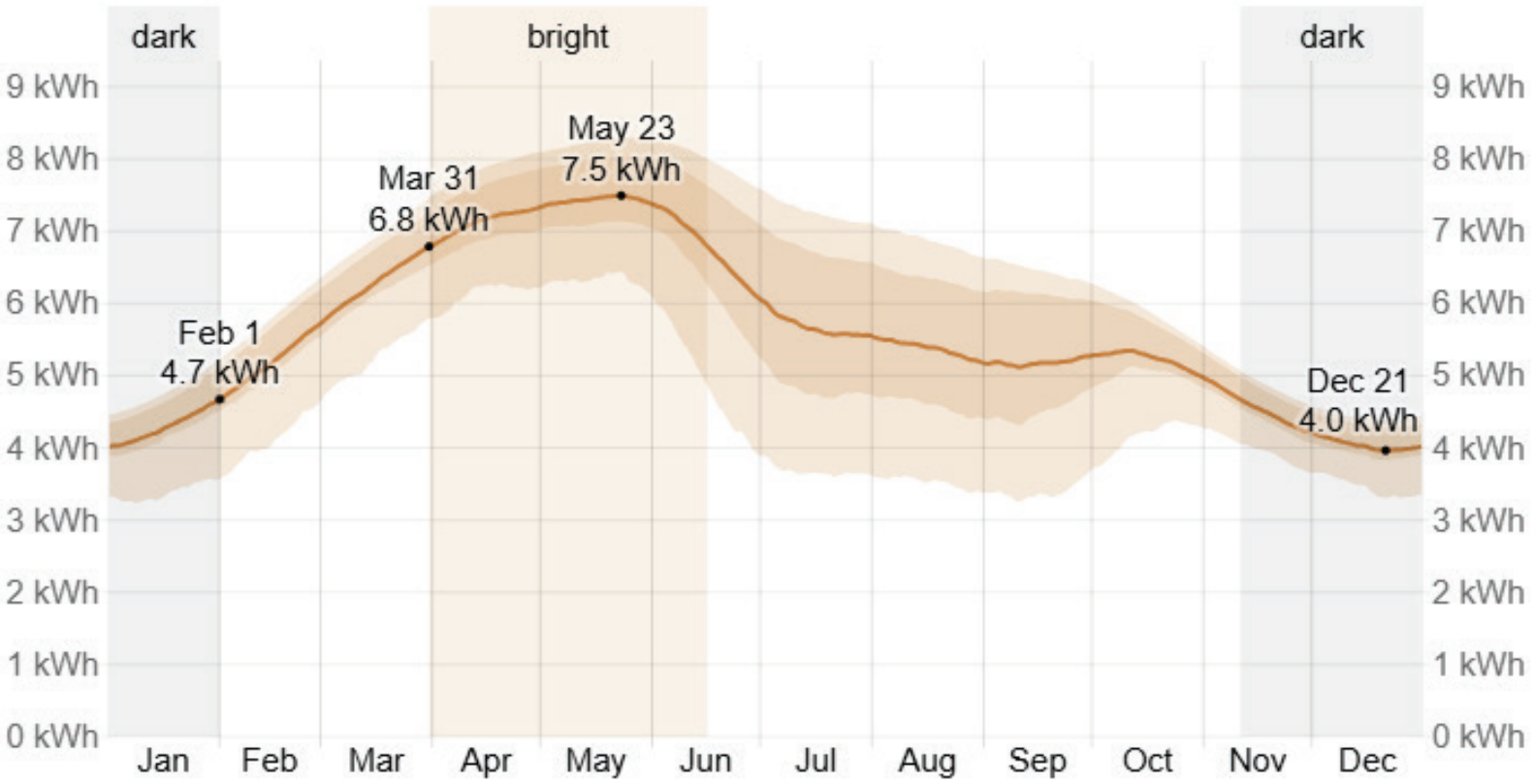


CHART SHOWING CLOUD COVERAGE, PRECIPITATION, HUMIDITY, AND BEST TIME OF YEAR TO VISIT



AVERAGE HIGH AND LOW TEMPERATURE



AVERAGE DAILY INCIDENT SHORTWAVE SOLAR ENERGY

ZONING & LAND USE REGULATIONS:

- BUFFER FOREST LAND UNDER DNPWC; PERMISSIONS REQUIRED FOR MODIFICATIONS
- SUBJECT TO NATIONAL PARK AND WILDLIFE CONSERVATION LAWS

HYDROLOGY & WATER RESOURCES:

- ~1500 - 2,000MM ANNUAL RAINFALL; HIGH HUMIDITY (~80%)
- GROUNDWATER AVAILABLE BUT LIMITED; SURFACE WATER PRIMARY SOURCE

NOISE & AIR QUALITY:

- LOW TO MODERATE; OCCASIONAL TOURISM-RELATED NOISE

SOCIO-CULTURAL & COMMUNITY ASPECTS:

- VERY SUPPORTIVE; PROJECT MUST ENGAGE LOCAL COMMUNITIES
- HIGH EMPLOYMENT POTENTIAL IN ECO-TOURISM, CONSERVATION, AND EDUCATION

S.W.O.T ANALYSIS OF SITE

STRENGTH

- Rich biodiversity with native flora & fauna
- Existing natural forest ecosystem supports immersive exhibits
 - Well-connected by road (near Bharatpur)
 - Popular tourist hub (Sauraha nearby)
- Located within a buffer zone, allowing controlled eco-tourism
- Support from conservation bodies (DNPWC, NTNC, WWF)
 - Potential for eco-tourism revenue & local employment
 - Can support research & education programs

WEAKNESS

- Seasonal flooding and high water table
- Risk of deforestation & habitat degradation if not planned sustainably
- Wildlife movement restrictions may be required
- Can be overcrowded during peak tourism seasons
- Requires government permissions & environmental clearances
- Legal restrictions on large-scale infrastructure within buffer zones
- Need for strong community involvement to prevent conflicts
- Possible resistance from local farmers if land-use changes

OPPORTUNITIES

- Climate-controlled eco-domes can enhance conservation efforts
- Wildlife corridors can be integrated with sustainable enclosures
 - Can attract eco-tourists & research scholars globally
- Opportunity for community-based conservation tourism
- Renewable energy solutions (solar, rainwater harvesting)
 - Use of low-impact, eco-friendly architecture

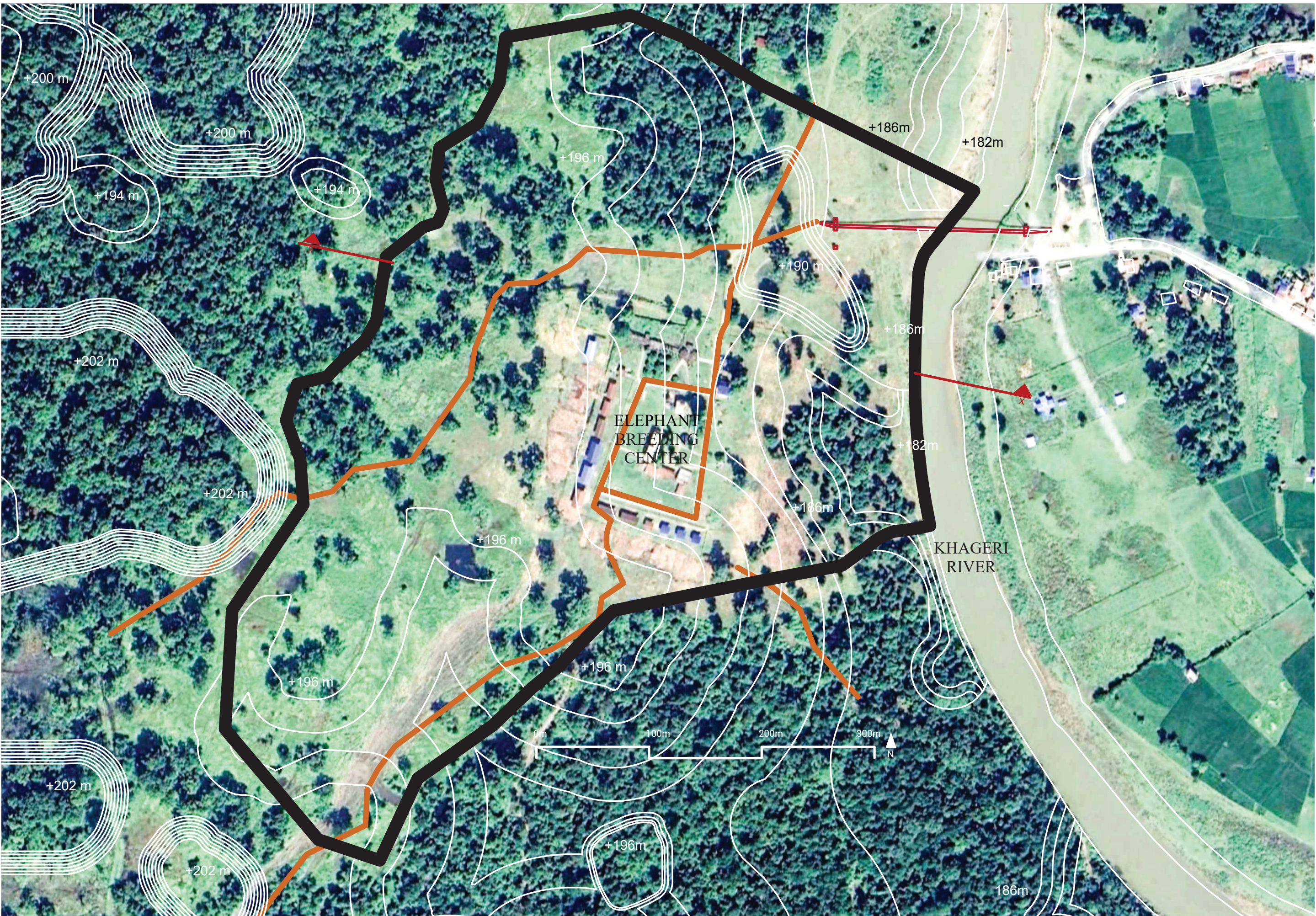
THREATS

- Climate change impact (floods, heat waves)
- Human-wildlife conflict risks
- Economic dependency on seasonal tourism
- Competition with existing wildlife tourism setups
- Initial construction cost & infrastructure development challenges
- Maintenance & long-term sustainability costs

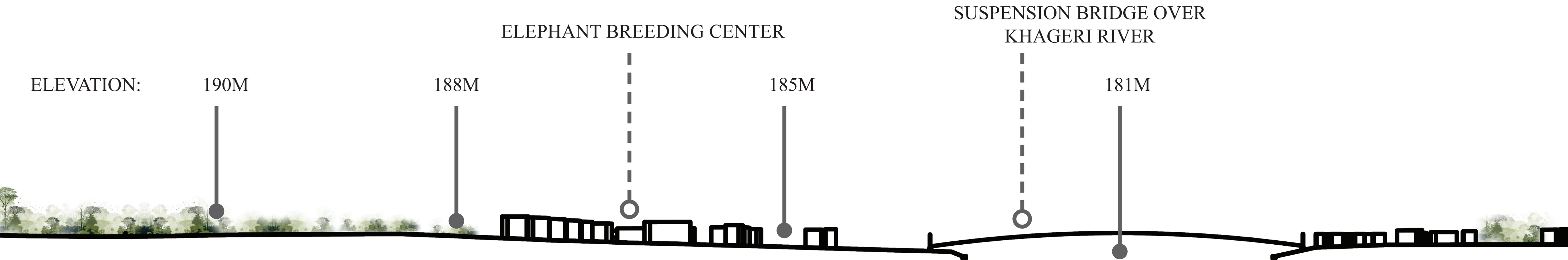
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SITE ANALYSIS



PRESENT SITE CONDITION



SECTION OF SITE AT THE PRESENT: X-X

WHY ELEPHANT BREEDING CENTER BUFFER ZONE FOREST IS THE BEST SITE OPTION FOR THE PROJECT?

- ECOLOGICAL SUITABILITY & NATURAL HABITAT
- STRATEGIC LOCATION & ACCESSIBILITY
- LARGE LAND AVAILABILITY
- CONSERVATION & RESEARCH POTENTIAL
- ENVIRONMENTAL & SUSTAINABLE BENEFITS
- SOCIO-ECONOMIC & COMMUNITY IMPACT

SOME FAUNAS FOUND ON THE SITE:



BENGAL TIGER



ONE HORNED RHI-NO



ASIAN ELEPHANT



SLOTH BEAR



SPOTTED DEER



PEACOCK



CHINESE PANGOLIN



GREAT HORNBILL

BUILDING BYE-LAWS

1. SETBACK ACCORDING TO THE BUILDING HEIGHT:

BUILDING HEIGHT	TYPE OF BUILDING	
	PUBLIC	PRIVATE
Up to 10m	1.5m	1.5m
10m – 17 m	3m	2m
17m – 24m	4m	3m
24m – 31m	5m	4m
31m – 38m	6m	5m
38m – 45m	7m	6m
45m – 52m	8m	7m

2. GROUND COVERAGE:

- FOR 80M LONG ROAD= 90% OF THE SITE AREA
- FOR 250M LONG ROAD= 70% OF THE SITE AREA
- FOR 250M+ LONG ROAD= 60% OF THE SITE AREA

3. FLOOR AREA RATIO:

BUILDING TYPE	COMMERCIAL	RESIDENTIAL	MIXED-USE	INSTITUTIONAL
	3.5	3	3	2.5

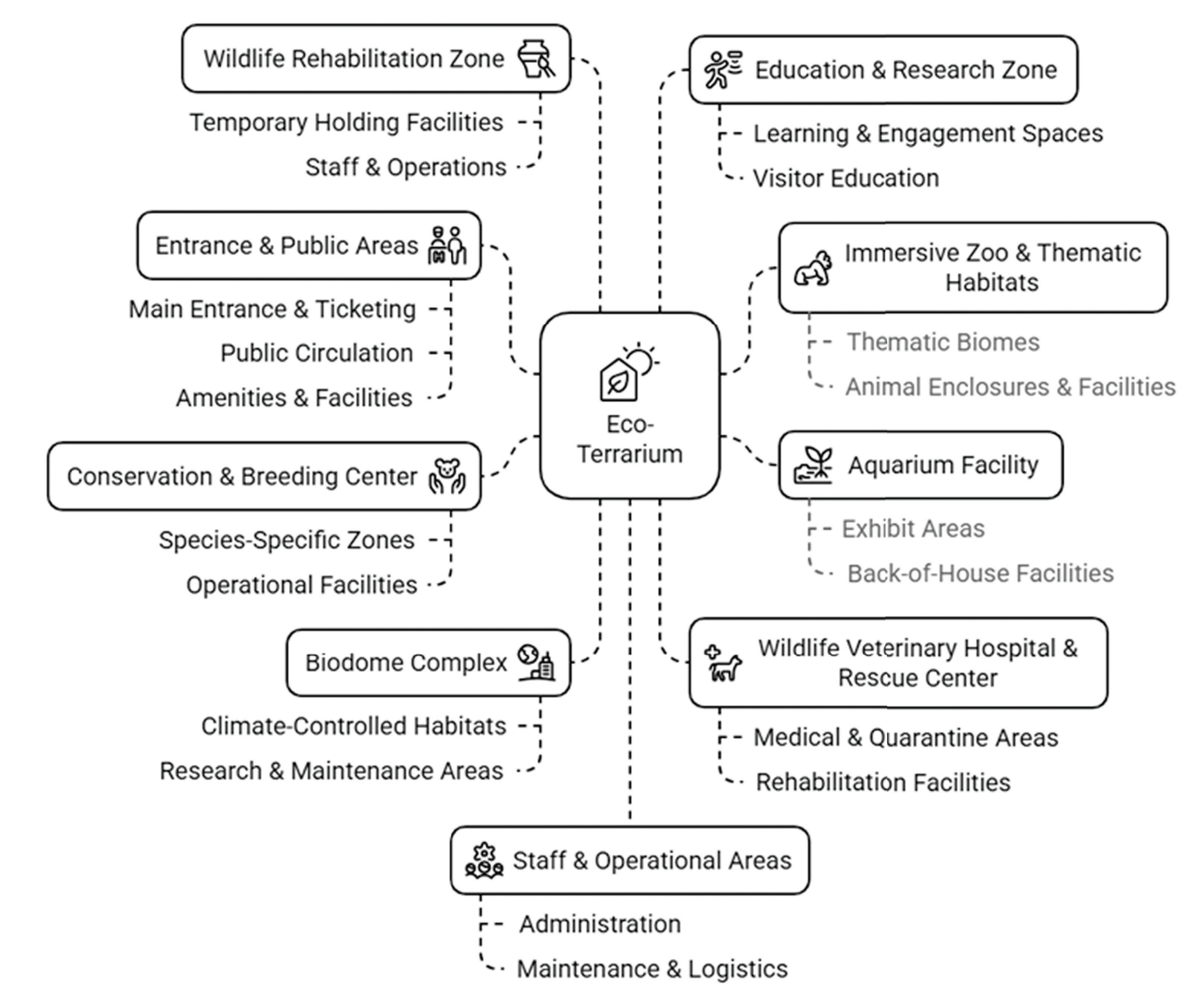
4. ACCORDING TO CHITWAN NATIONAL PARK:

- SHOULD BE SUSTAINABLE AND SHOULD NOT AFFECT THE HABITAT OF THE SITE
- SHOULDN'T HARM THE WILD ANIMALS AROUND THE SITE
- SHOULD HELP EASE THE ECOSYSTEM AND HABITAT AROUND THE SITE

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PROGRAM FORMULATION



Structure and functional areas of the Eco-Terrarium

MINIMUM SITE AREA:

According to Central Zoo Authority of India:

Zoo Category	Minimum Area	Notes
Large Zoo	≥ 50 hectares (123 acres)	For major cities; houses diverse species (e.g., elephants, big cats).
Medium Zoo	25–50 hectares (62–123 acres)	Common in state capitals; focuses on regional biodiversity.
Small Zoo	5–25 hectares (12–62 acres)	Urban or district-level zoos; limited to smaller species (e.g., primates).
Mini Zoo	<5 hectares (12 acres)	Discouraged by CZA; only allowed for specialized facilities (e.g., aviaries).

ANIMALS TO BE CONSIDERED FOR THE PROJECT CLASSIFIED IN DIFFERENT HABITATS:

Animal Species	No. of Animals	Paddock Area (sqm)	Feeding Cubicles (L×B×H in m)	Enclosure Type	Barrier Details	Total Area (sqm)
Bengal Tiger	2 (1:1)	1000 + 200	3.0 × 2.75 × 1.8	Moated/open dry-moated	Dry moat, mesh wall, hotwire	1200
Common Leopard	2 (1:1)	500 + 100	2.5 × 2.0 × 1.8	Moated/screened enclosure	Chain link + buffer fencing	600
Clouded Leopard	2 (1:1)	500 + 100	2.5 × 2.0 × 1.8	Screened semi-arboreal	Climb-proof vertical mesh	600
Sloth Bear	2 (1:1)	1000 + 100	2.5 × 2.5 × 1.8	Natural terrain open enclosure	Dry moat, electric wire	1100
Bengal Fox	2 (1:1)	500 + 100	2.5 × 2.0 × 1.5	Natural substrate	Chain link + dig-proof fencing	600
Dhole	4 (1:1)	400 + 100	2.5 × 2.0 × 1.8	Forested paddock	Tall fence + under-barrier	1000
Golden Jackal	4 (1:1)	400 + 100	2.5 × 2.0 × 1.5	Shrubland paddock	Mesh with overhang	1000
Langur	6 (1:1)	500 + 100×2	2.5 × 2.0 × 1.5	Arboreal island/enclosure	Climb-proof vertical mesh + moat	1500
Chevrotains	2 (2:2)	100 + 50	1.5 × 1.2 × 1.2	Thick foliage + shaded area	Small mesh, no top enclosure	712
Lemur	2 (1:1)	500	2.5 × 2.0 × 2.5	Screened/climb-proof	Chain link dome mesh	780

Rhesus Macaque	2 (1:1)	500 + 100×2	2.5 × 2.0 × 2.5	Open island	arboreal	Climb-proof mesh + dry moat	780
Macaws	3 (1:3)	80	Aviary: 3×3×6 m	Walk-in aviary		Wire mesh enclosure	400
Great Hornbill	2 (2:2)	80	Aviary: 3×3×6 m	Aviary		Mesh roof and sides	400
Mugger Crocodile	1:1	400 + 150	Basking + shaded den	Wetland + basking island		Deep moat with mesh buffer	550
Gharial	2 (1:1)	400 + 150	Shade den near water	Natural riverine enclosure		Water barrier with fencing	1000
Indian Roller, Parrots, Love Birds, Finches, Java Sparrow, Budgerigars, Cockatoos	20 total (mixed)	300	Aviary nesting (earthen pots)	Large walk-through aviary		Mesh top aviary	300
Crusted Serpent Eagle, White-tailed Eagle, Vultures	4 (1:1)	300	Raised perch areas	Tall aviary		Chain link with high perching	300
Pied Hornbill, Peafowl, Owl	4(1:1)	300	Mixed habitat aviary	Walk-through mixed aviary		Fencing + vertical mesh	300
Pygmy Hog	4 (1:1)	100	2.0 × 1.5 × 1.5	Thick undergrowth paddock		Small mesh wire, dig-proof	712
Jungle Cat	2 (4:2)	500 + 100	2.0 × 1.5 × 1.5	Grassland mimic enclosure		Fencing + canopy mesh	1500
Porcupine	4 (1:1)	100	2.0 × 1.5 × 1.5	Burrow-style dry enclosure		Mesh + moat	800
Chinese Pangolin	4 (4:4)	100	2.0 × 1.5 × 1.5	Enclosure with digging area		Subterranean protection	800
Gecko	4	40	Glass terrarium	Reptile house/glass terrarium		Sealed terrarium enclosure	80
Indian Python	4	80	Reptile terrarium	Glass enclosure with pool		Glass + metal mesh	160
Turtle Species (all types)	~8	80 + 40 each	Shaded pond with bank	Semi-aquatic zone		Aquatic fencing + sand bank	400
Cobra, Krait, Viper	4 each	40 each	Reptile house	Glass terrarium		Escape-proof enclosures	80
Asian Forest Tortoise	6 (1:1)	40	2.0 × 1.5 × 1.5	Dry forest ground paddock		Chain link + burrow-proof	240
Giant Aldabra Tortoise	4(1:1)	200	20 sqm shade shelter	Grassland paddock		Fenced paddock	200
Otters	5 (1:1)	400	Dry den + water pond	Semi-aquatic paddock		Aquatic + climb-proof fencing	1200
Hippopotamus	2 (1:1)	1000	5 × 3 × 2.5 + 200 sqm pool	Aquatic paddock		Water body + strong fencing	2240
Flamingo	15(1:1)	300	Wading pool + nesting area	Walk-through aviary		Mesh roof, shallow water	2800
Spotted Deer, Barking Deer, Four Horned Antelope, Chinkara	2(2:3) each	1500 + 100×6	2.5 × 2.0 × 1.5 per animal	Open paddock		Low fence with visual barriers	2100

ZONING

Biodome Complex:

SUBZONE	FUNCTION	MINIMUM AREA (M²)	REQUIREMENT
Tropical Biodome	Controlled rainforest environment for exotic species	20,000	<ul style="list-style-type: none">Climate-controlled environment (temperature ~25–30°C, high humidity).Integrated visitor pathways and plant nursery.
Total Biodome Complex		35,000 m² (5 Ha)	Bio-domes provide climate control and visitor paths

ECO-TERRARIUM: IMMERSIVE WILDLIFE PARK

Baadreni Road, Bharatpur, Chitwan

PROGRAM FORMULATION

Public & Visitor Zone

FACILITY / ROOM	FUNCTION	MINIMUM AREA (M²)	REQUIREMENTS
Entrance Plaza & Reception	Ticketing, visitor info, waiting area	300	<ul style="list-style-type: none">Includes ticketing counters, reception desk, waiting seating, and security checkpoint.Designed for smooth visitor flow and ADA-compliant access.
Information/Interpretation Center	Interactive displays, VR experiences, museum	500	<ul style="list-style-type: none">Interactive displays, digital kiosks, museum-like exhibits, and briefing rooms.Flexible layout for temporary exhibitions and workshops.
Public Toilets & Restrooms	Sanitary facilities for visitors	150	Include baby change facilities, accessible stalls, and a hygienic layout.
Cafeteria	Food service area	300	Should accommodate seating, serving counters, and circulation.
Retail/Souvenir Shop	Sales of memorabilia and essentials	200	
Botanical Gardens	Native flora, landscaped walkways, rest zones	20,000	Isclaped trails with seating, shade onal signage.
Total Public Zone		~21,450 m² (~2.15 Ha)	Some areas may be interlinked with open walkways

Aquarium Facility

FACILITY / ROOM	FUNCTION	MINIMUM AREA (M²)	REQUIREMENT
Aquarium Building	Indoor controlled aquatic environment (exotic & native fish)	1,000	ntrolled environments for native and d viewing panels.
Water/Tank Area	Display area for aquatic exhibits	500	<ul style="list-style-type: none">Open water space within the building complex.For water treatment, temporary holding, and maintenance operations.
Total Aquarium		~1,500 m²	Integrated into the overall aquatic theme

Conservation & Breeding Center

FACILITY / ROOM	FUNCTION	MINIMUM AREA (M²)	REQUIREMENT
Breeding Enclosures	For endangered species (e.g., red panda, gharial, vultures)	20,000	<ul style="list-style-type: none">Secure, specialized enclosures for endangered species with isolation zones for breeding.
Hatchery & Nursery	Incubation and early rearing of birds & reptiles	10,000	<ul style="list-style-type: none">Controlled environment for incubation and early rearing (temperature, humidity control).
Research Laboratories	Genetic, behavioral, and ecological studies	10,000	<ul style="list-style-type: none">Labs for genetics, animal behavior, and conservation studies, plus offices and meeting rooms.
Total Conservation Center		40,000 m² (4 Ha)	Integrated research and breeding facility

Veterinary, Rescue & Rehabilitation Complex

SUBZONE	FUNCTION	MINIMUM AREA (M²)	REQUIREMENT
Veterinary Hospital	Diagnosis, surgery, ICU, and treatment rooms	15,000	<ul style="list-style-type: none">Includes consultation rooms, diagnostic imaging (X-ray, ultrasound), operating theater, ICU, and recovery wards.
Quarantine & Isolation Units	Disease control and initial treatment zones	10,000	<ul style="list-style-type: none">Secure, bio-controlled units for treating infectious or injured animals.
Rehabilitation Enclosures	Recovery and reconditioning of rescued animals	15,000	<ul style="list-style-type: none">Naturalistic recovery spaces with minimal human interference.
Total Veterinary & Rescue		40,000 m² (4 Ha)	Fully integrated medical and rescue facilities

Education & Research Zone

FACILITY / ROOM	FUNCTION	MINIMUM AREA (M²)	REQUIREMENT
Field Research Stations	On-site ecological and behavioral research	15,000	<ul style="list-style-type: none">Dedicated labs and observation points integrated into outdoor areas.
Training Halls & Classrooms	Workshops, lectures, and practical sessions	10,000	<ul style="list-style-type: none">Multi-functional rooms for workshops, lectures, and training sessions.
Library & Archives	Conservation documentation and digital resources	5,000	<ul style="list-style-type: none">Storage for conservation literature and digital media.
Total Education & Research		30,000 m² (3 Ha)	Facilitates conservation education programs

Camping & Ecotourism Zone

FACILITY / ROOM	FUNCTION	MINIMUM AREA (M²)	NOTES
Researcher & Student Camps	Sustainable eco-camping for researchers and students	20,000	<ul style="list-style-type: none">Designated tent pads with utility hookups and minimal environmental impact.
Eco-Lodges	Nature-based accommodations (treehouses, lodges)	15,000	<ul style="list-style-type: none">Sustainable, low-impact structures with natural ventilation and renewable energy integration.
Guided Safari Trails & Recreational	Visitor pathways and observation decks	15,000	<ul style="list-style-type: none">Campfire areas, outdoor kitchens, shared bathrooms, and shower facilities.
Total Camping & Ecotourism		50,000 m² (5 Ha)	Encourages low-impact tourism and research stays

Sustainability & Infrastructure Zone

FACILITY / ROOM	FUNCTION	MINIMUM AREA (M²)	REQUIREMENT
Solar & Renewable Energy Installations	Energy generation, smart grid controls	10,000	<ul style="list-style-type: none">Solar panel arrays, wind turbine installations, electrical substations, and control rooms.
Water Management Facilities	Rainwater harvesting, filtration, recycling systems	10,000	<ul style="list-style-type: none">Rainwater harvesting tanks, water filtration systems, sewage treatment, and recycling centers.
Waste Management Facilities	Composting, recycling, sewage treatment systems	10,000	Total for this zone (1.0 Ha)
Total Sustainability Zone		30,000 m² (3 Ha)	Supports overall eco-friendly operations

Sustainability & Infrastructure Zone

Based on location, accessibility, and similar projects in Nepal (e.g., Chitwan National Park, Central Zoo Kathmandu), we estimate:	
<ul style="list-style-type: none">Peak Season (6 months): 3,000–5,000 visitors per dayOff-Season (6 months): 5,00–1,500 visitors per dayTotal Annual Visitors Estimate: 800,000 – 1.2 million visitors	

Calculating Base Ticket Price;

To break even, the minimum ticket price should be:

To break even, the minimum ticket price should be:

$$\text{Base Ticket Price} = \frac{\text{Total Annual Cost}}{\text{Estimated Annual Visitors}}$$

For example, if **Total Annual Cost** = NPR 200 million, and estimated visitors = 1 million,

$$\text{Base Ticket Price} = \frac{200,000,000}{1,000,000} = \text{NPR}200$$

Attraction	Ticket Price (NPR)
Central Zoo, Kathmandu	NPR 150 - 750
Chitwan National Park Entry	NPR 200 - 2,000
Elephant Breeding Center	NPR 100 - 500

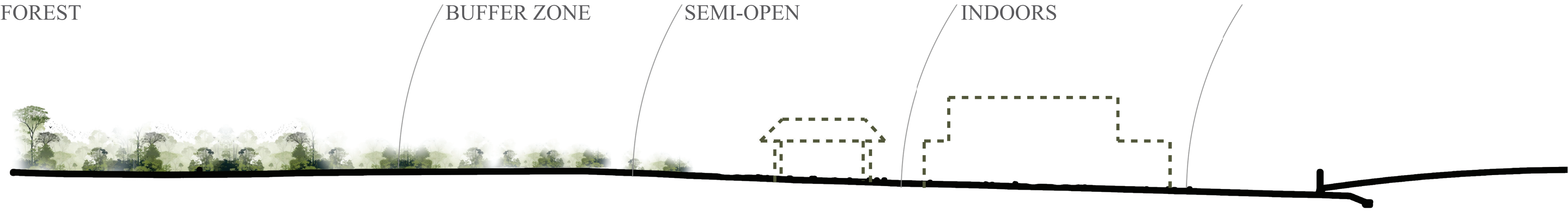
Category	Ticket Price (NPR)
Nepalese Citizens (Adults)	NPR 300 - 500
Nepalese Citizens (Students)	NPR 150 - 250
SAARC Nationals	NPR 800 - 1,500
Foreign Tourists	NPR 1,500 - 2,500
Children (Below 5 years)	Free

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	B. Arch Thesis	Roll no.: 760141		

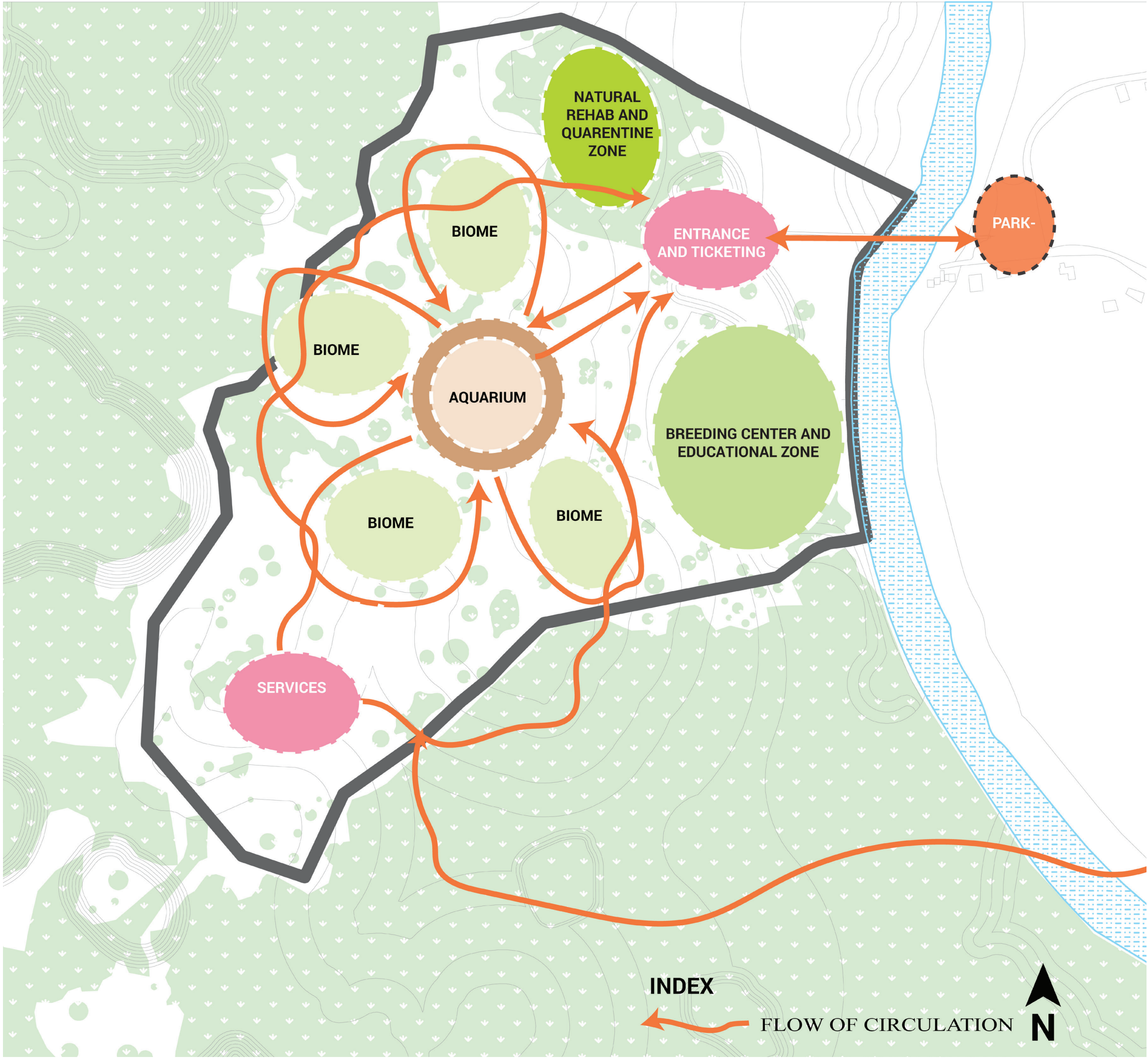
ECO-TERRARIUM: IMMERSIVE WILDLIFE PARK

Baadreni Road, Bharatpur, Chitwan

CONCEPT



CONCEPTUAL PLANNING



ZONING

LOCAL ARCHITECTURE



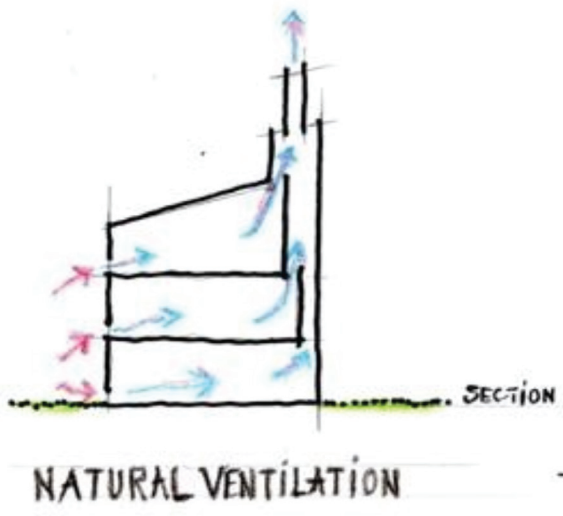
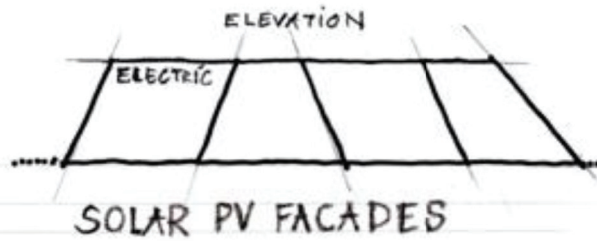
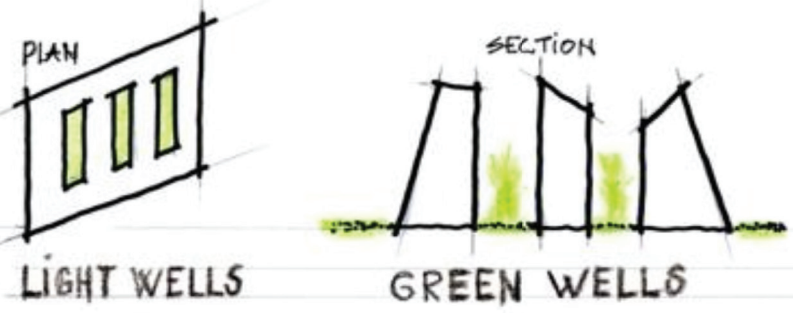
MACHAN



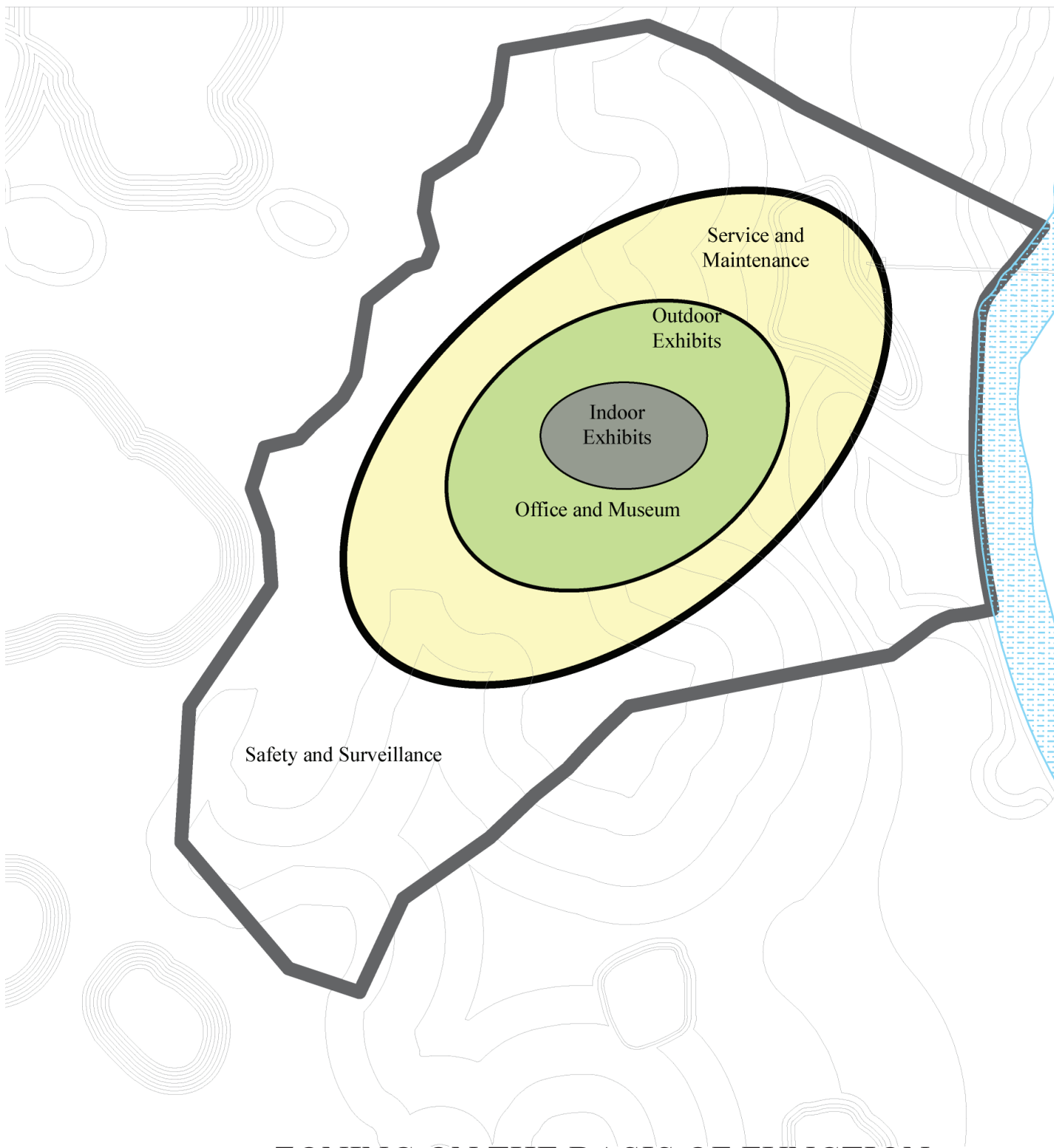
USE OF THATCHED ROOF AND WATTLE-DUB WALL OR MUD PLASTER



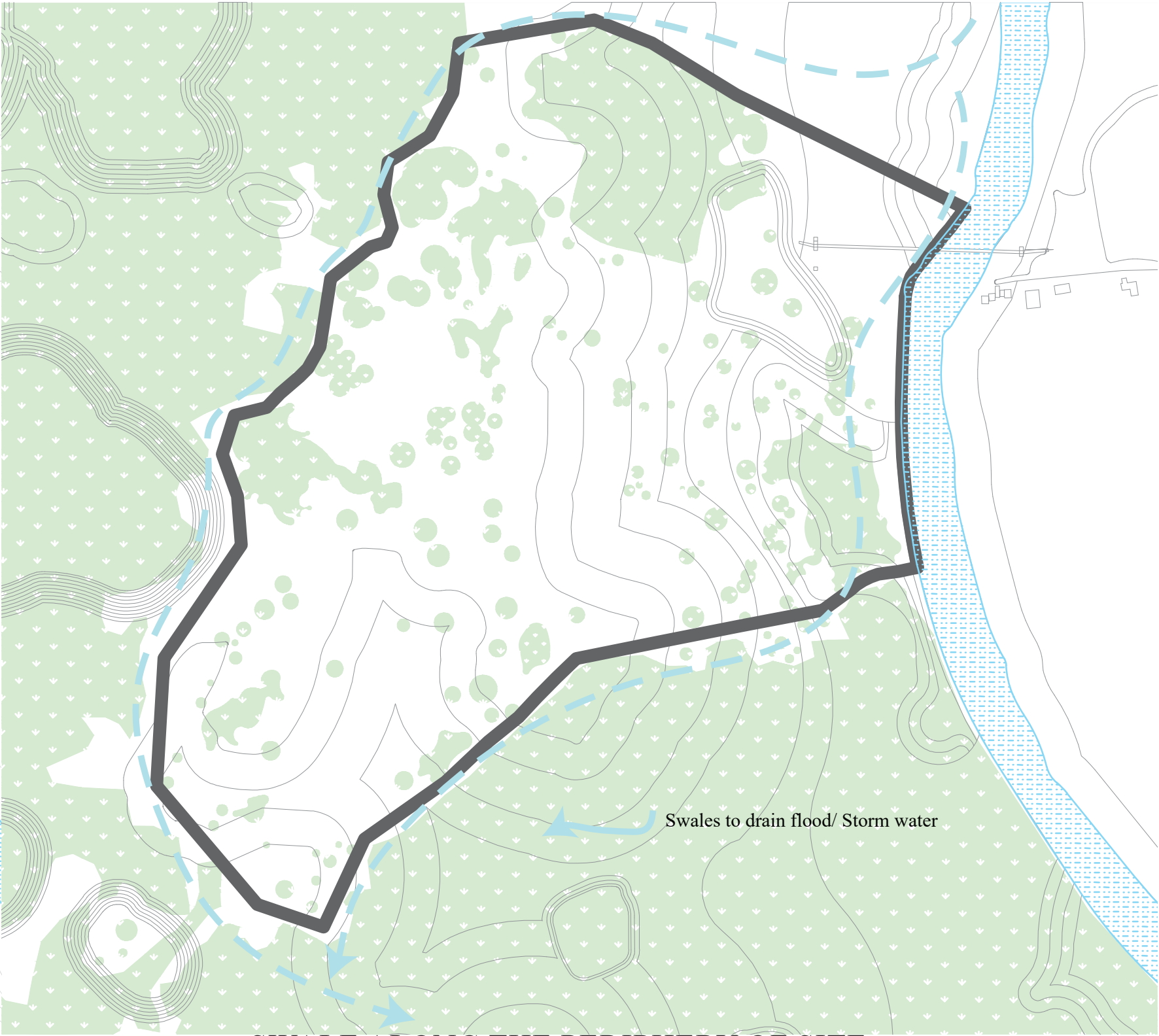
USE OF ELONGATED ROOF EVES TO CONTROL SUN RAYS AND INTERIOR TEMPERATURE



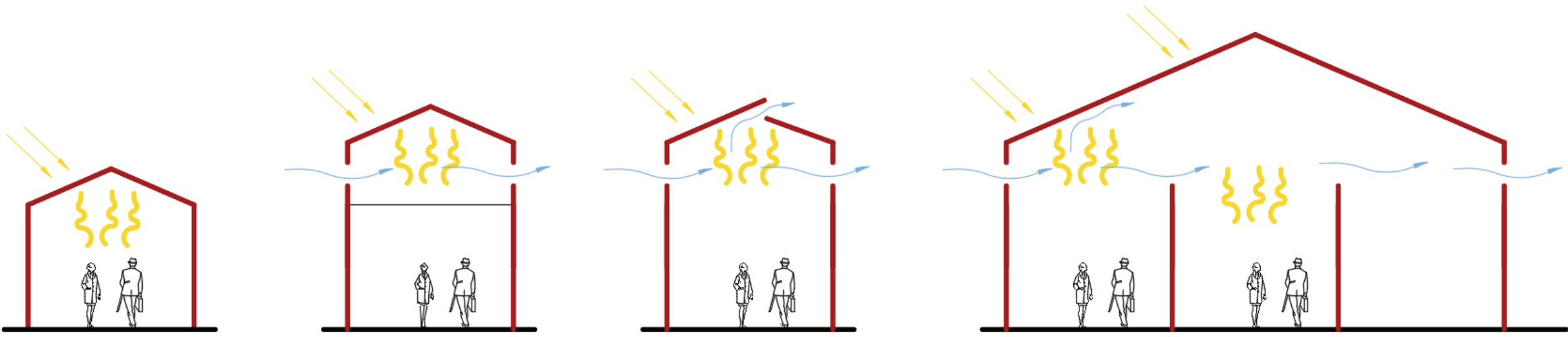
ADOPTING ENERGY EFFICIENT STRATEGIES



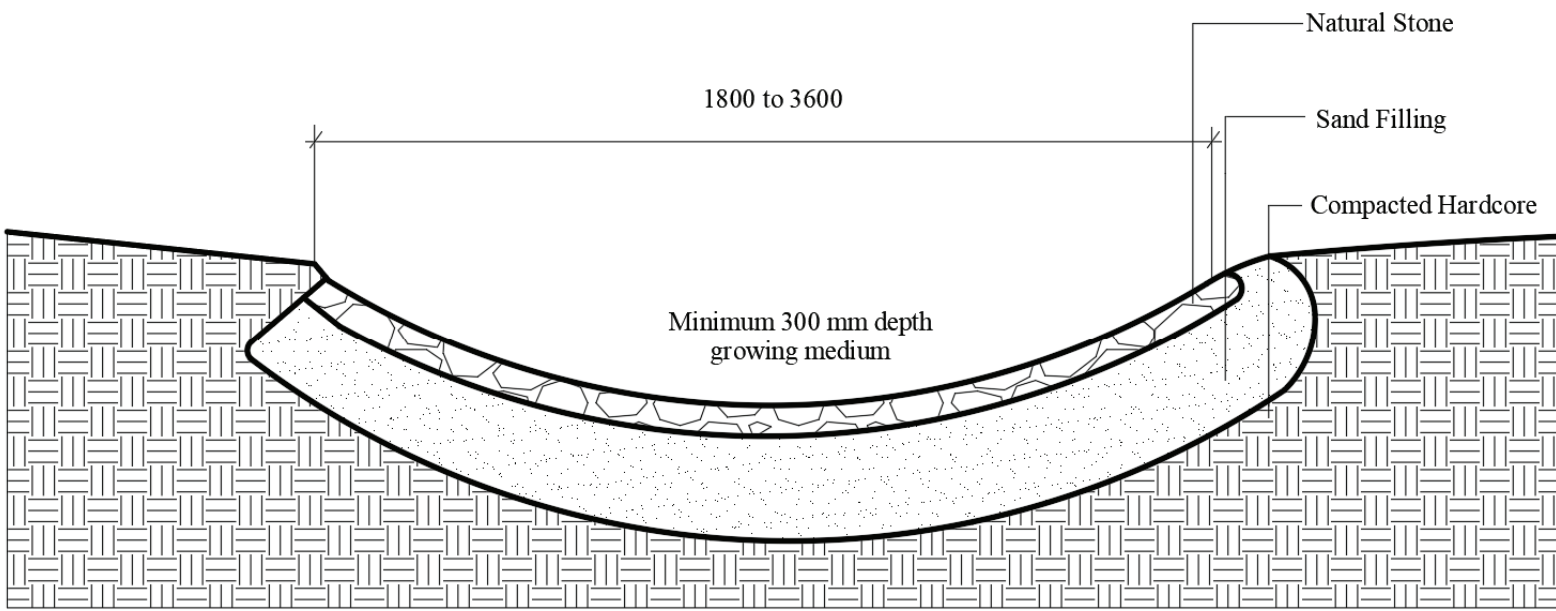
ZONING ON THE BASIS OF FUNCTION



SWALE ALONG THE PERIPHERY OF SITE



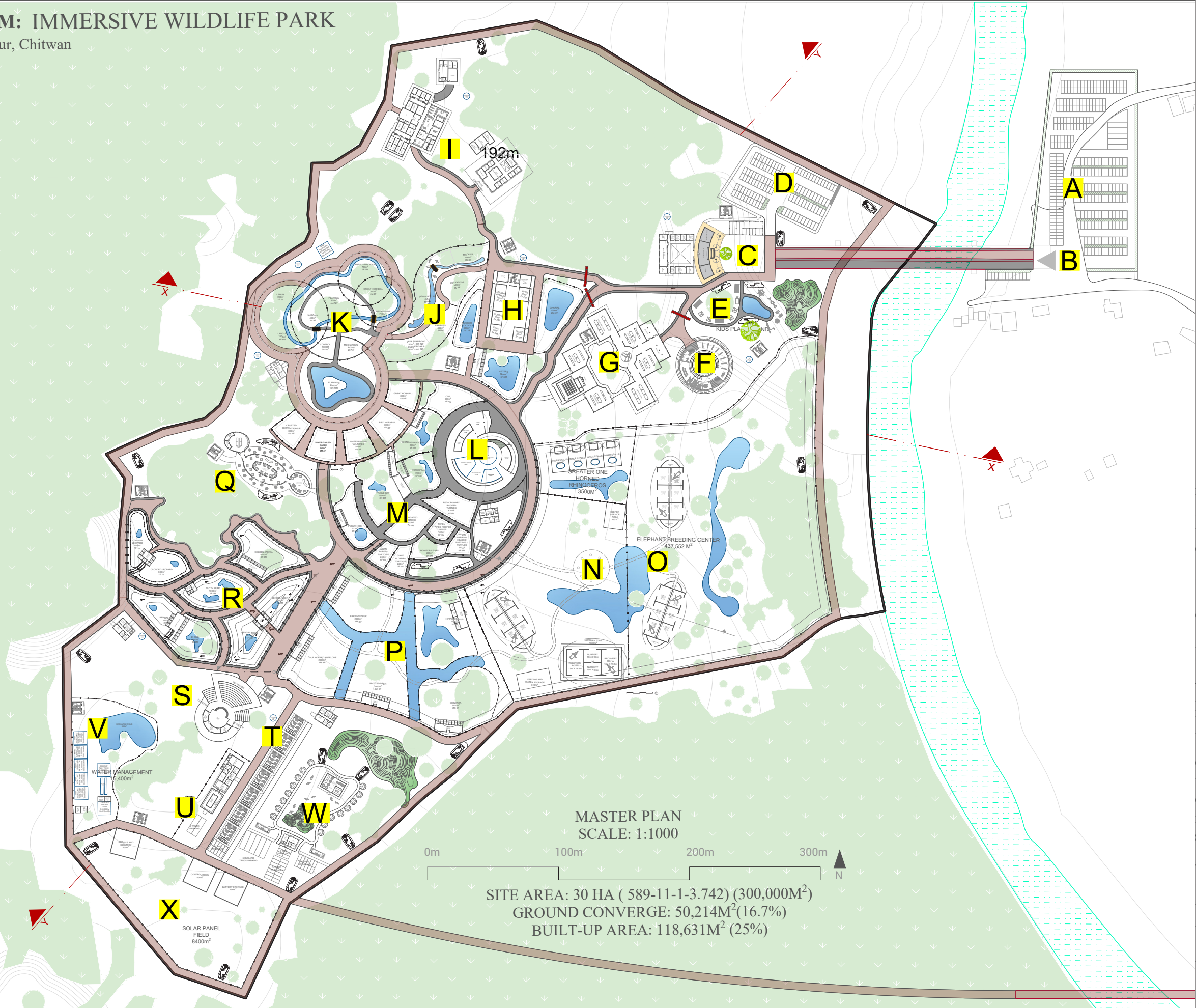
STRATEGIES USED BY LOCALS TO REDUCE HEAT AND INCREASE AIR FLOW PASSIVELY



DETAIL OF SWALE

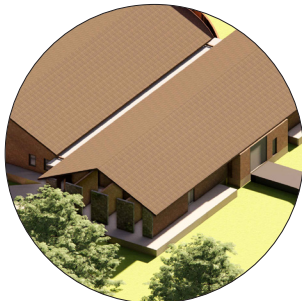
ECO-TERRARIUM: IMMERSIVE WILDLIFE PARK

Baadreni Road, Bharatpur, Chitwan



ECO-TERRARIUM: IMMERSIVE WILDLIFE PARK

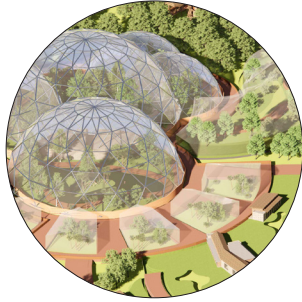
Baadreni Road, Bharatpur, Chitwan



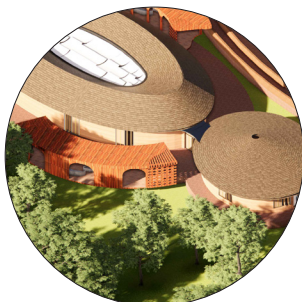
D. VETERINARY BLOCK



E. REPTILE HOUSE



F.TROPICAL FOREST TERRARIUM



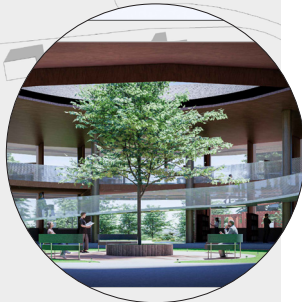
H. WILDLIFE THEME RESTAURANT



K. ANIMAL-SHOW SEMI-OPEN AMPHITHEATER



A. TICKETS + BUGGY PARKING



B. F.O.Z. OFFICE



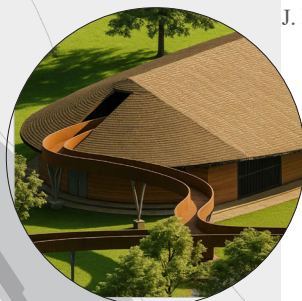
C. WILDLIFE CONSERVATION MUSEUM



G. AQUARIUM



J. ELEVATED VIEWPOINT + CAFE



I. ELEPHANT BREEDING CENTER

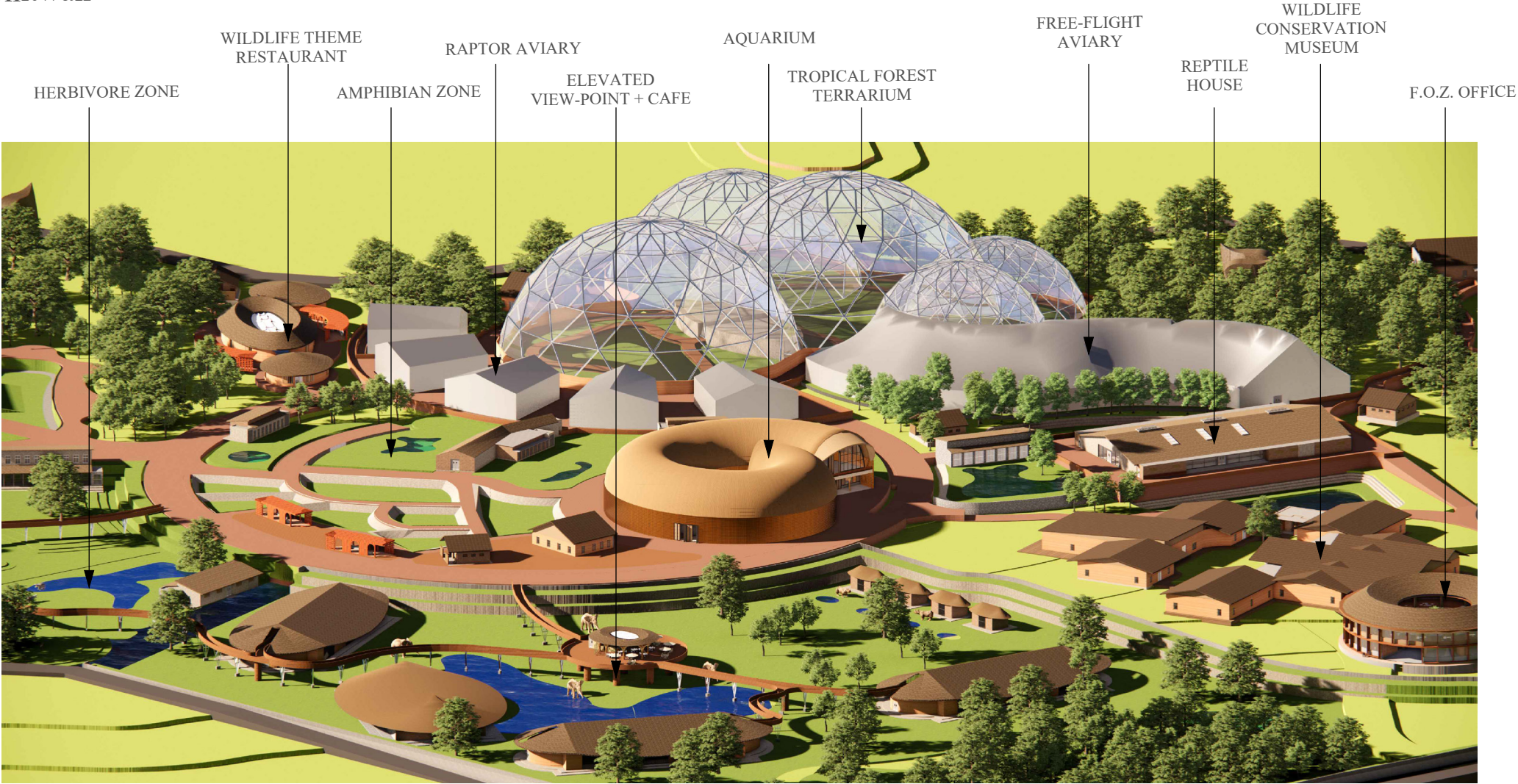


SITE PLAN
SCALE: 1:1000
SITE AREA: 30 HA (589-11-1-3.742) (300,000M²)
GROUND CONVERGE: 50,214M²(16.7%)
BUILT-UP AREA: 118,631M² (25%)

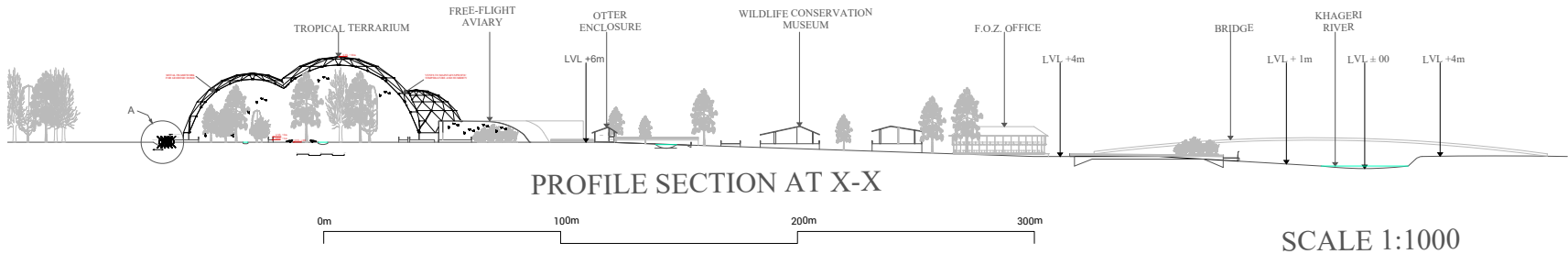
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	B.Arch. Thesis	Roll no.: 760141		

ECO-TERRARIUM: IMMERSIVE WILDLIFE PARK

Baadreni Road, Bharatpur, Chitwan

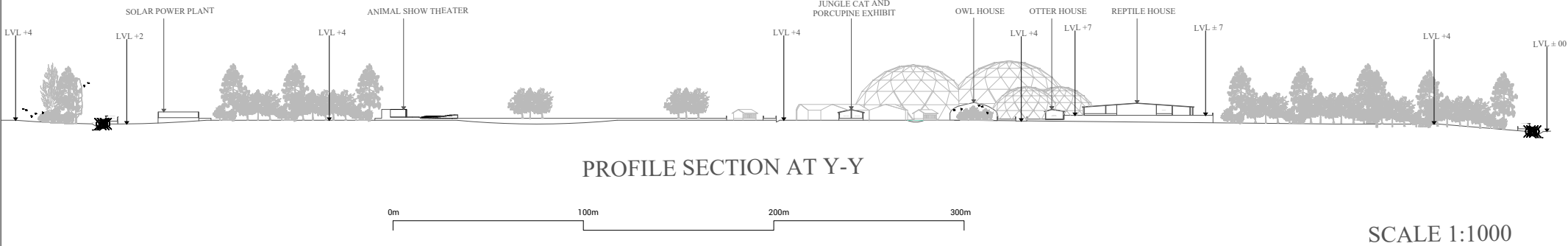


BIRD'S EYE VIEW OF THE PROJECT



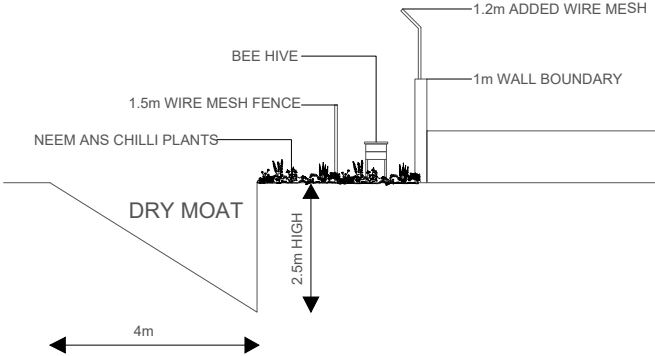
PROFILE SECTION AT X-X

SCALE 1:1000



PROFILE SECTION AT Y-Y

SCALE 1:1000



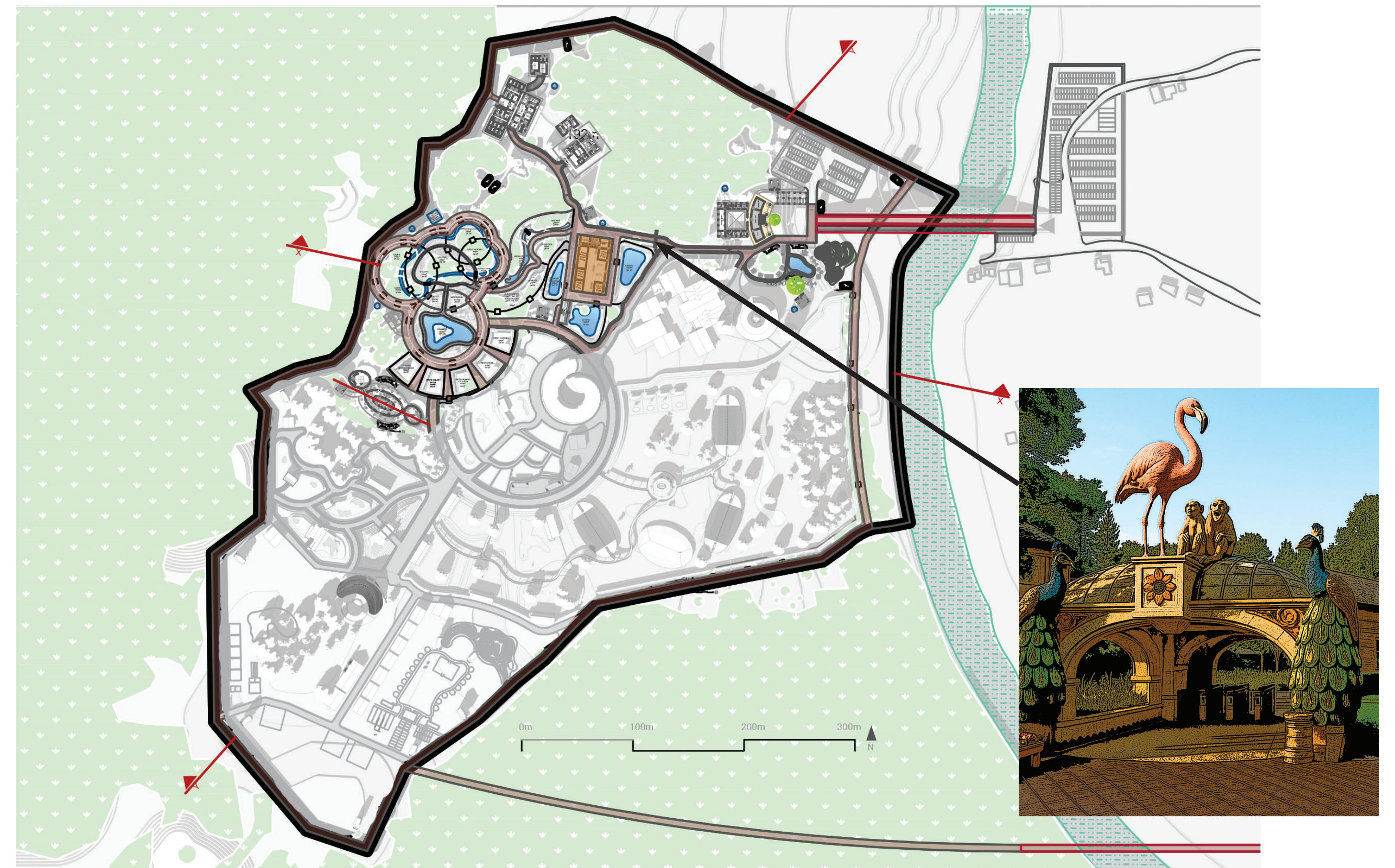
DETAIL AT A
SCALE 1:50

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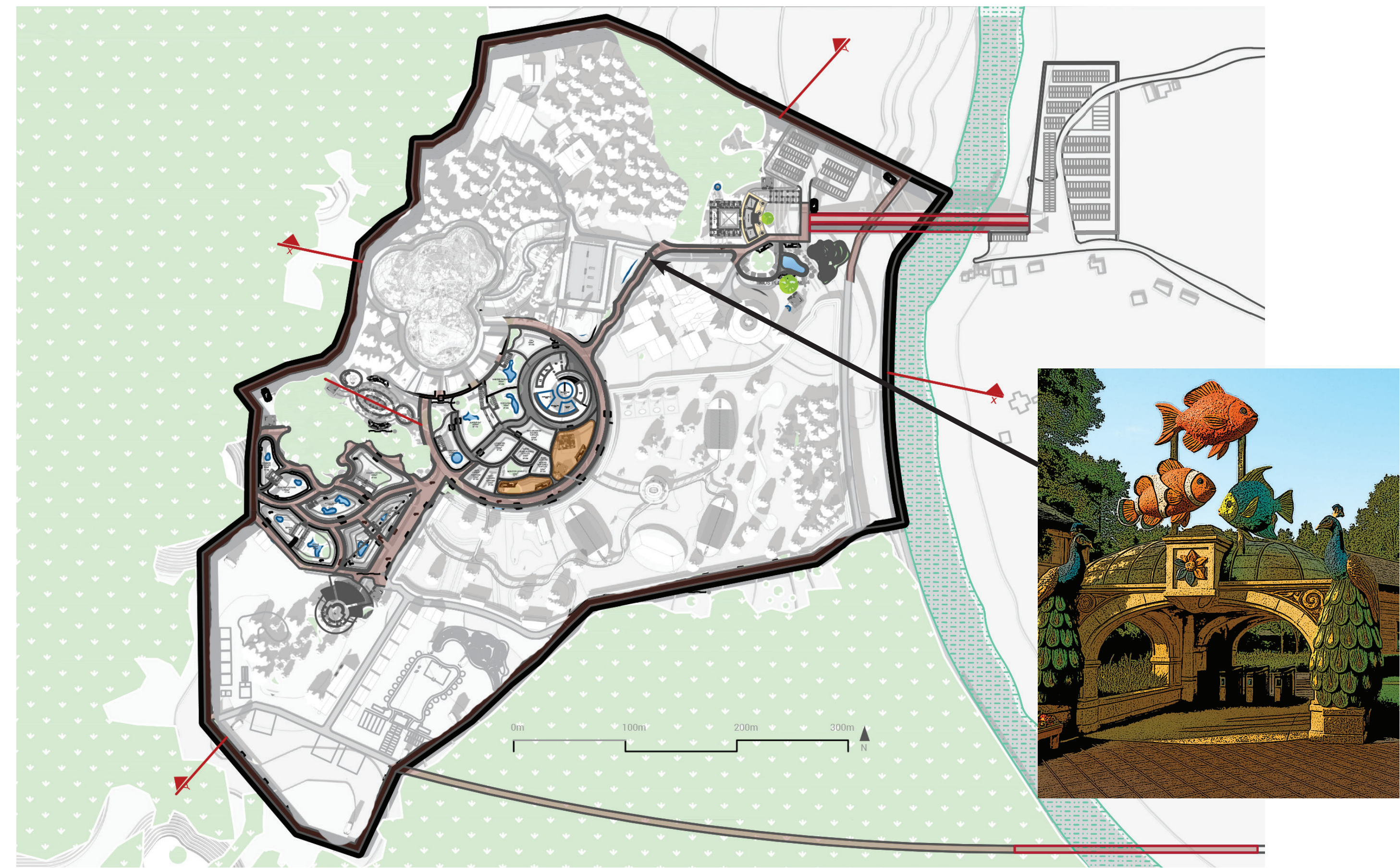
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MASTER PLANNING THROUGH PROGRAMS



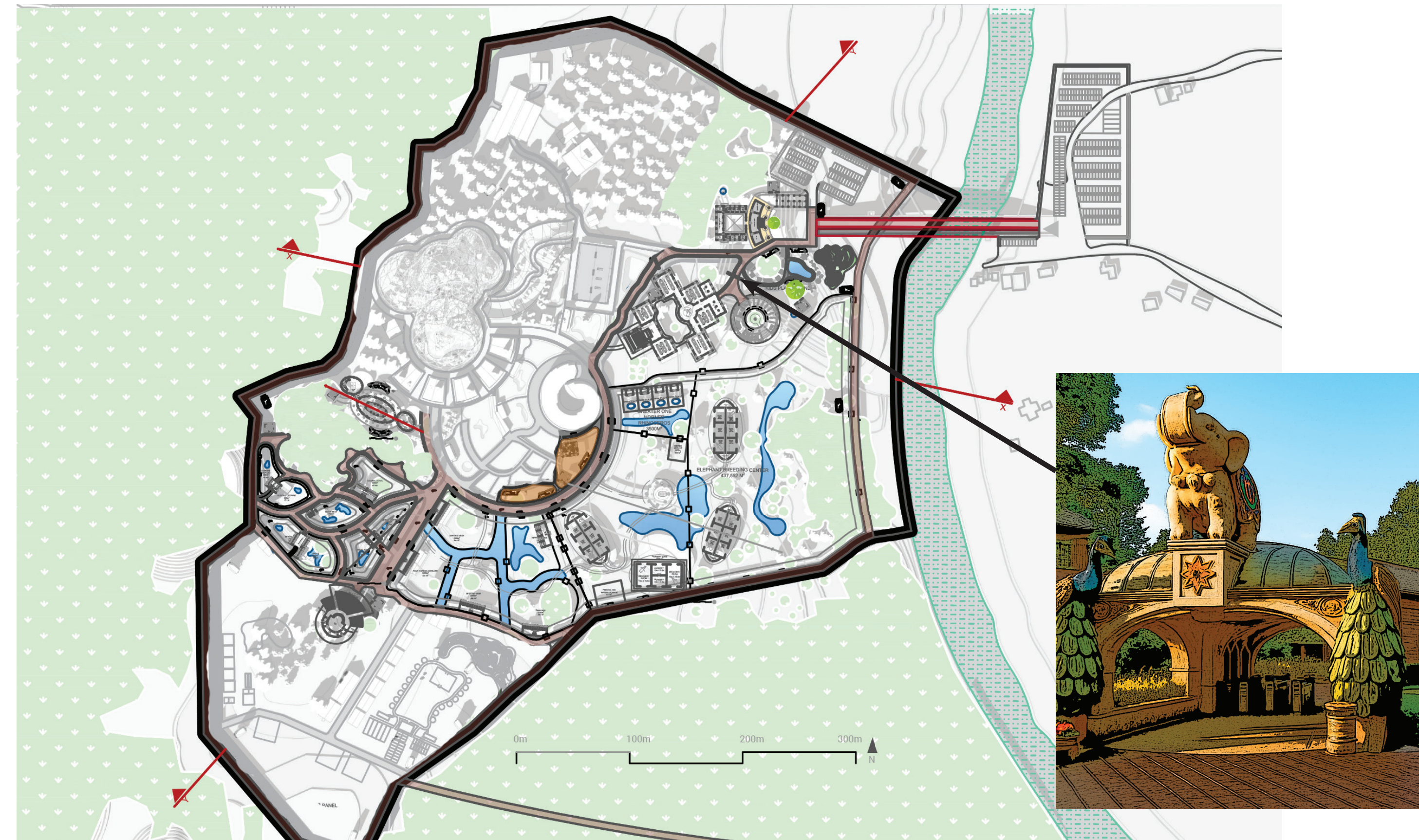
ROUTE 1

- Estimated time = 3 hours
- Includes Reptile house, Free-Flight Aviary, Tropical Terrarium and Raptors Aviary
- Includes 27 Exhibit: Gharial, Otter, Mugger Crocodile, Gecko, Krait, Cobra, Indian Python, Viper, Macaws, Cockatoos, Indian Roller, Myna, Parrots, Java Sparrow, Budgerigar, Chevrotains, Great Hornbill, Resus Macaque, Peafowl, Lemur, Langur, Flamingo, Pied Hornbill, White Rumped Vultures, White Tailed Eagle, and Crusted Serpent Eagle.



ROUTE 2

- Estimated time = 3 hours
- Includes Aquarium, Nocturnal animal Exhibits, and Carnivore Exhibit
- Includes 20 Exhibit: Shrimps, Tropical fishes, Fresh water fishes, Owl, Chinese Pangolin, Porcupine, Red Crowned Roofed Turtles, Indian Narrow Headed Softshell Turtles, Monitor Lizard, Elongated Tortoise, Giant Aldabra Tortoise, Asian Forest Tortoise, Jungle Cat, Pygmy Hog, Golden Jackal, Bengal Tiger, Sloth Bear, Bengal Fox, Clouded Leopard and Common Leopard



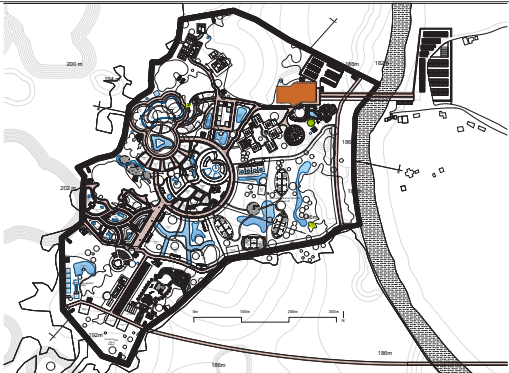
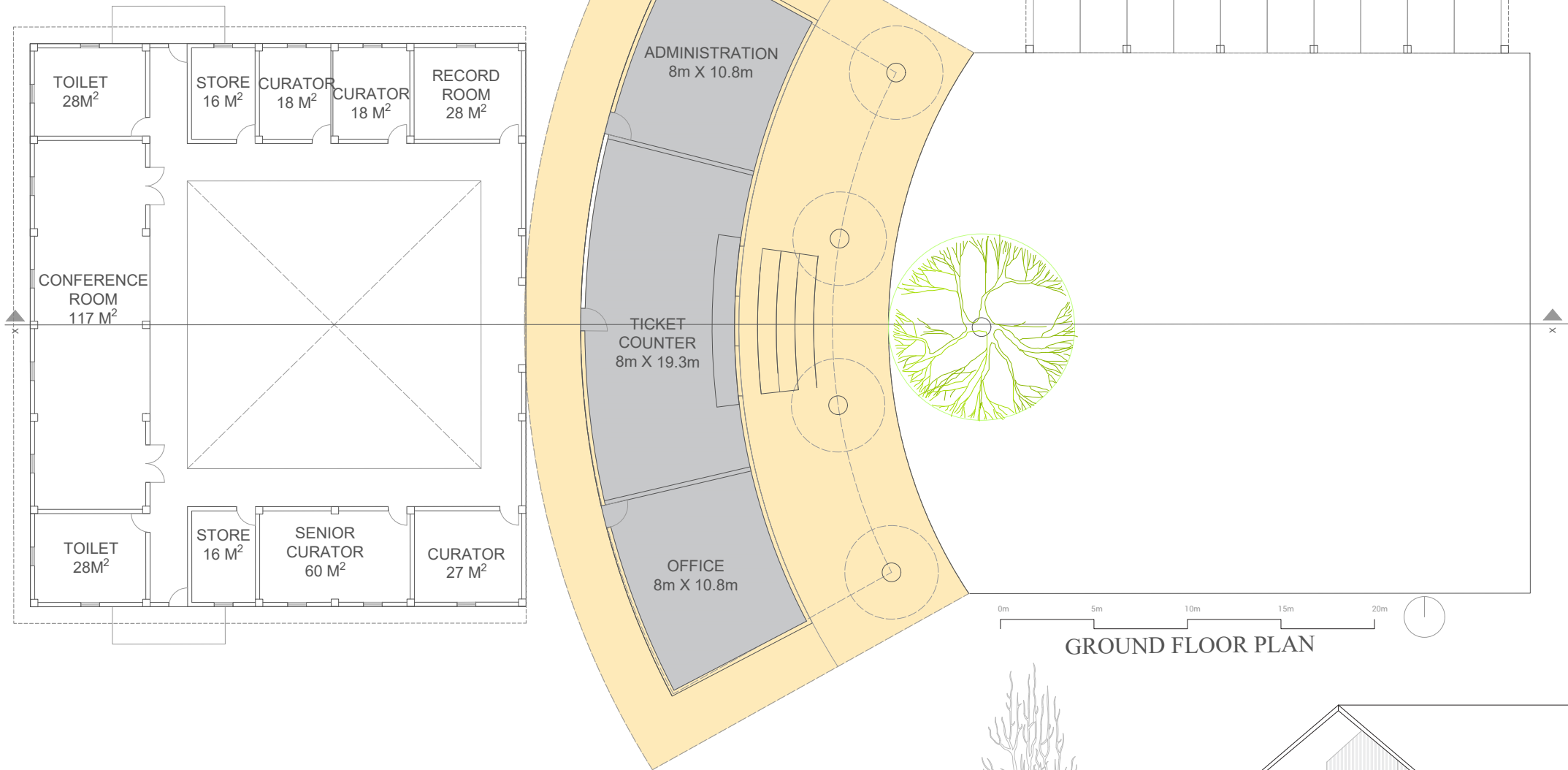
ROUTE 3

- Estimated time = 3 hours
- Includes F.O.Z. Office, Wildlife Conservation Museum, Great Rhinoceros Exhibit, Elephant Breeding Center, Herbivore Exhibit and Carnivore Exhibit
- Includes 12 Exhibit: Great One-Horned Rhinoceros, Elephants, Hippopotamus, Barking Deer, Four Horned Antelope, Spotted Deer, Chinkara, Bengal Tiger, Sloth Bear, Bengal Fox, Clouded Leopard and Common Leopard

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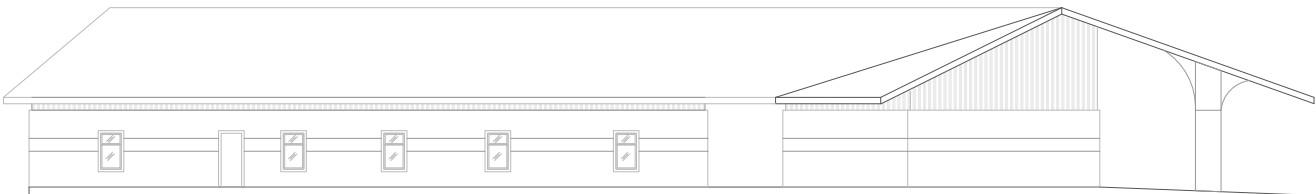
Baadreni Road, Bharatpur, Chitwan



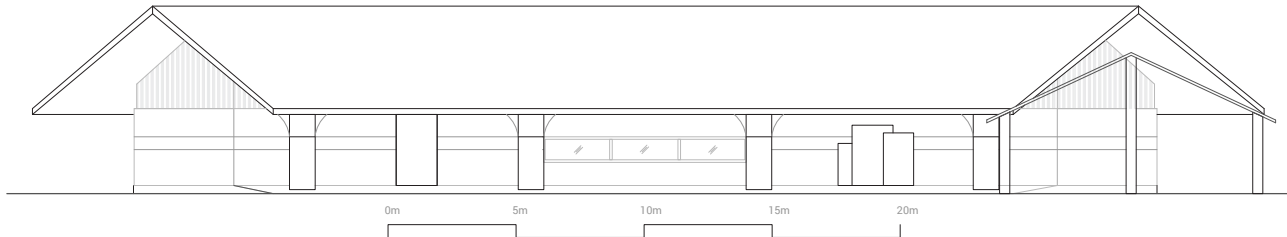
3D ILLUSTRATION



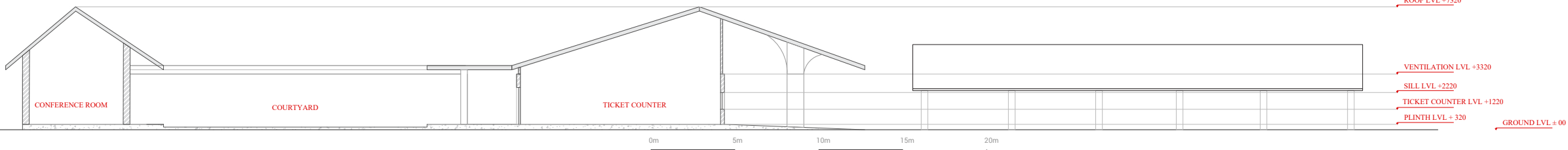
3D ILLUSTRATION SHOWING ENTRANCE PLAZA AS GATHERING SPACE



SIDE ELEVATION



FRONT ELEVATION



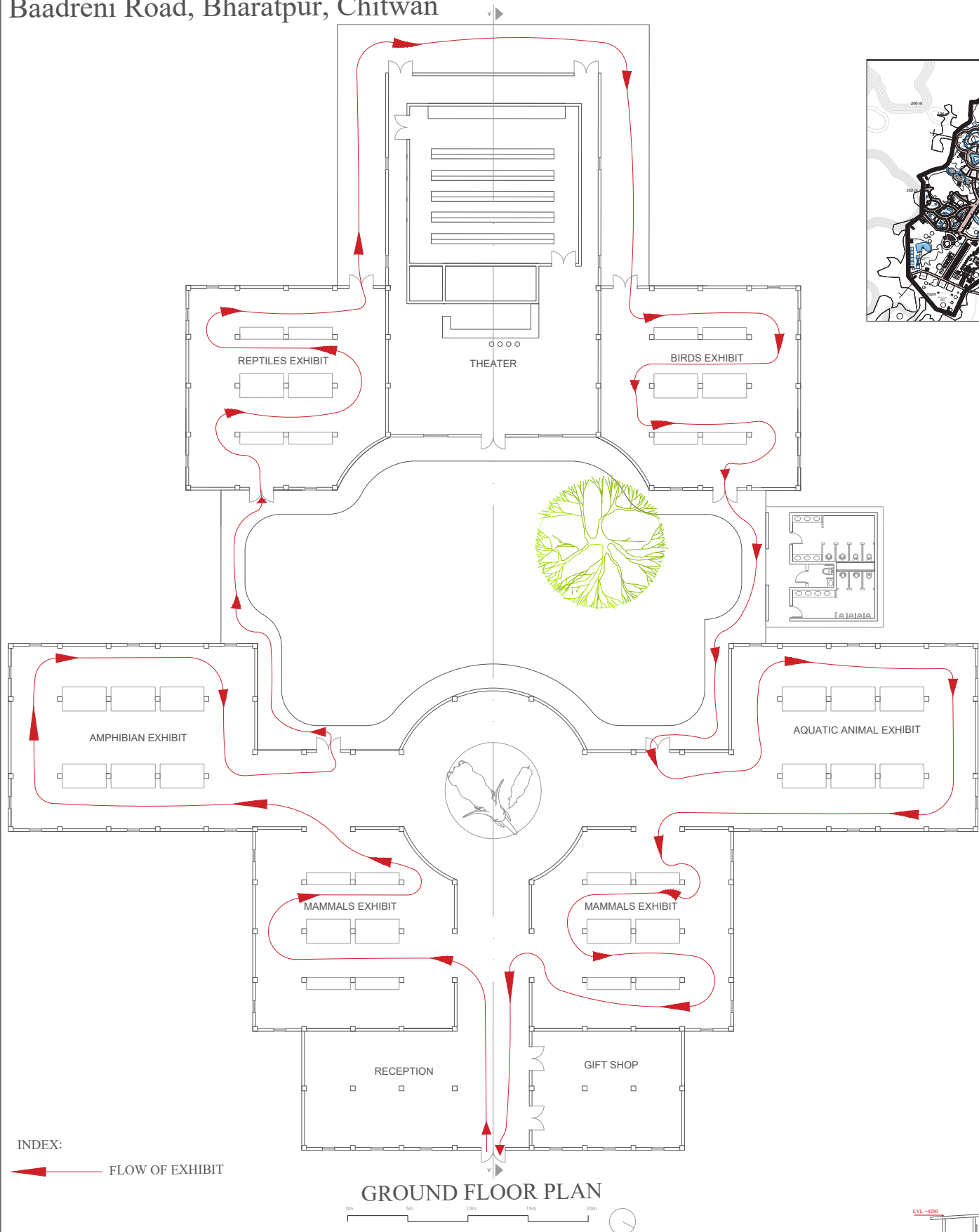
SECTION AT X-X

TICKET COUNTER +
ADMINISTRATION +
BUGGY PARKING
GROUND COVERAGE: 1930 sq.m.
SCALE: 1:100

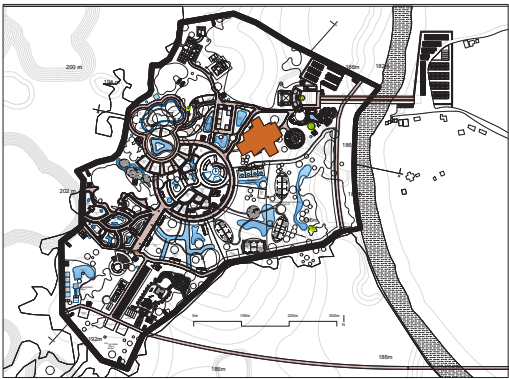
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	B.Arch. Thesis	Roll no.: 760141		

ECO-TERRARIUM: IMMERSIVE WILDLIFE PARK

Baadreni Road, Bharatpur, Chitwan



WILDLIFE CONSERVATION MUSEUM
GROUND COVERAGE: 3134 sq.m.
SCALE: 1:150



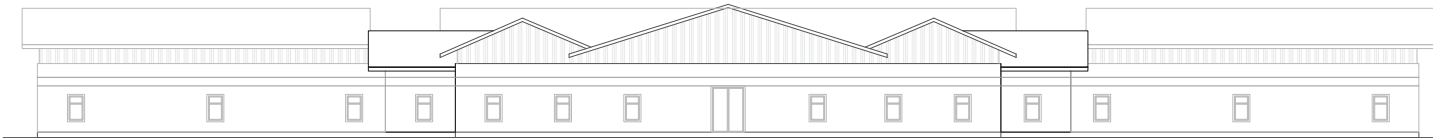
KEY PLAN



SIDE ELEVATION



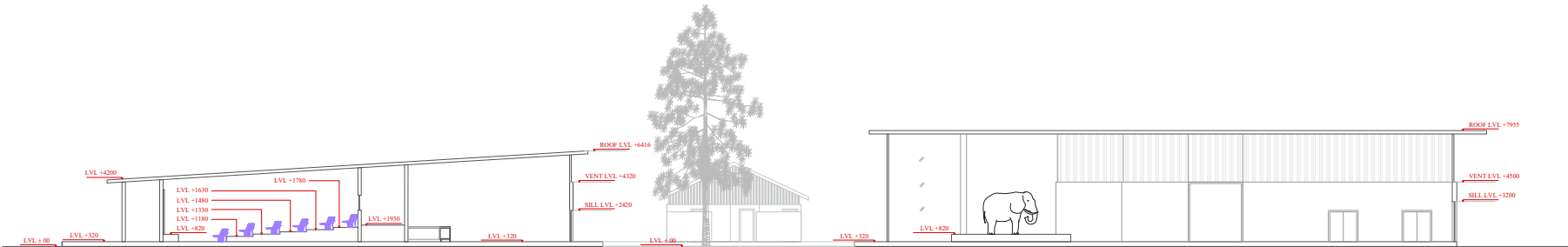
SIDE ELEVATION



FRONT ELEVATION



SIDE ELEVATION

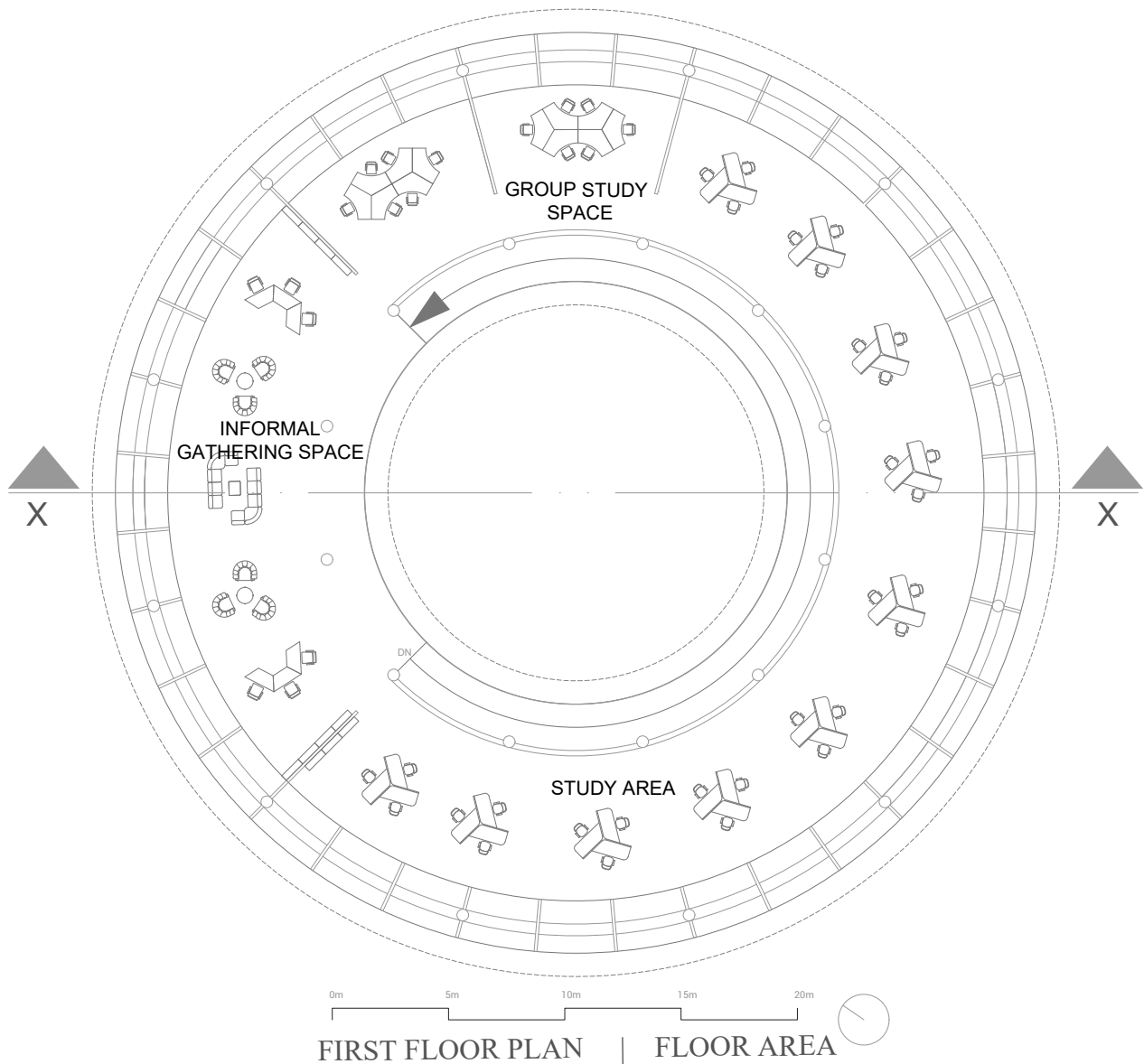
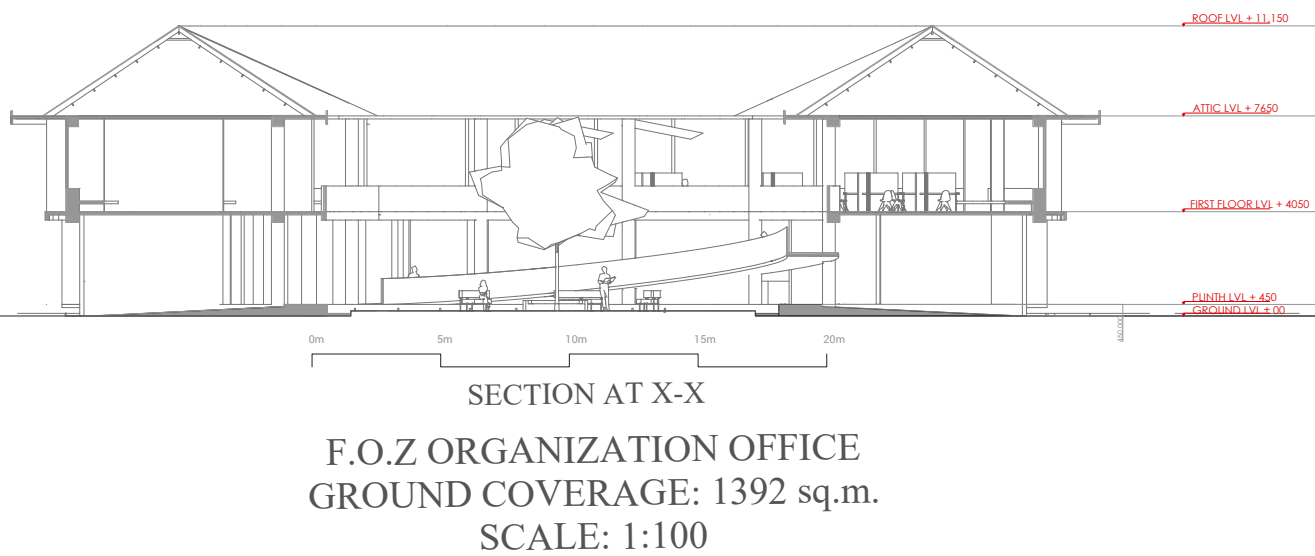
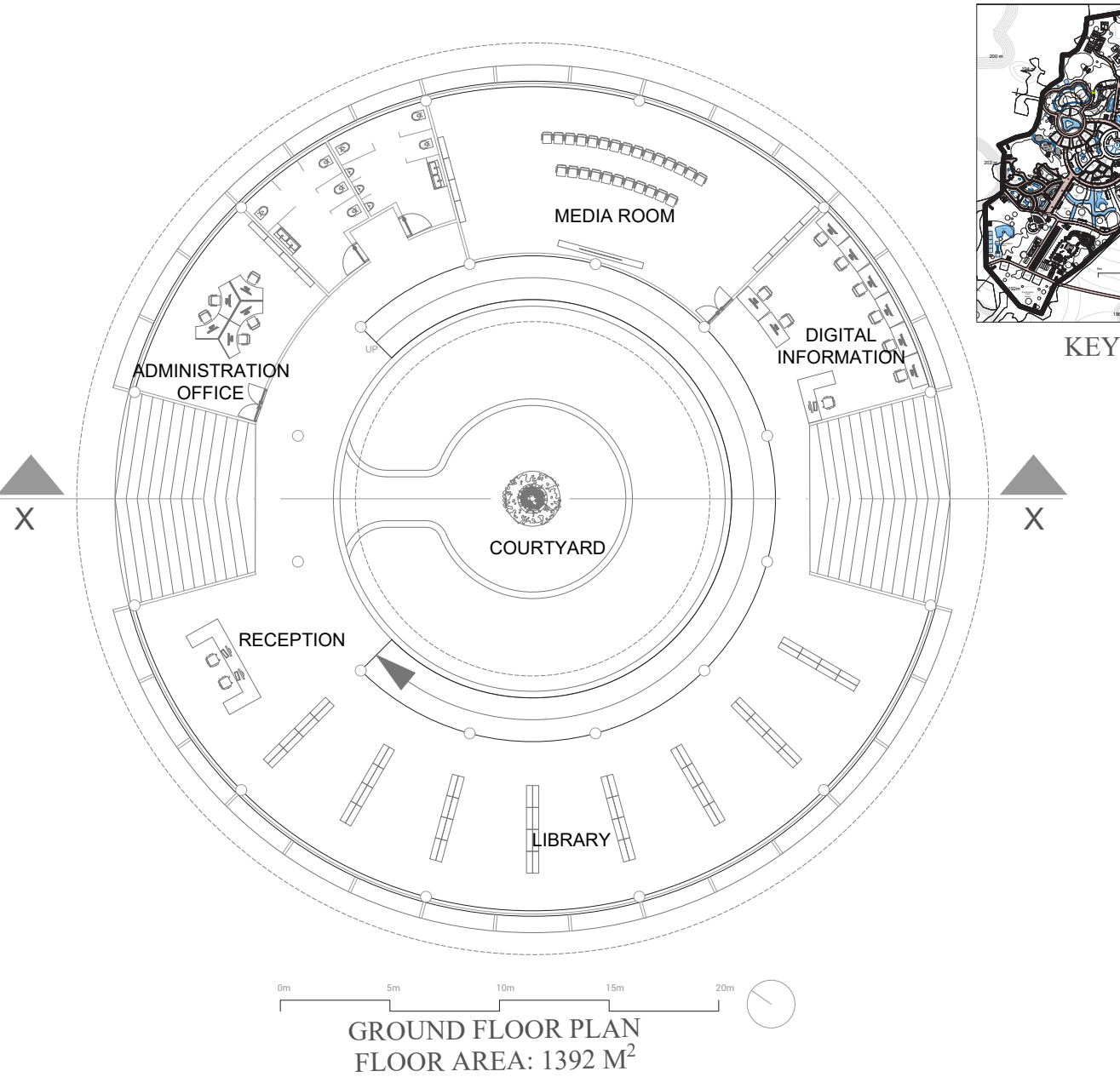


SECTION AT Y-Y

INDEX:
FLOW OF EXHIBIT

ECO-TERRARIUM: IMMERSIVE WILDLIFE PARK

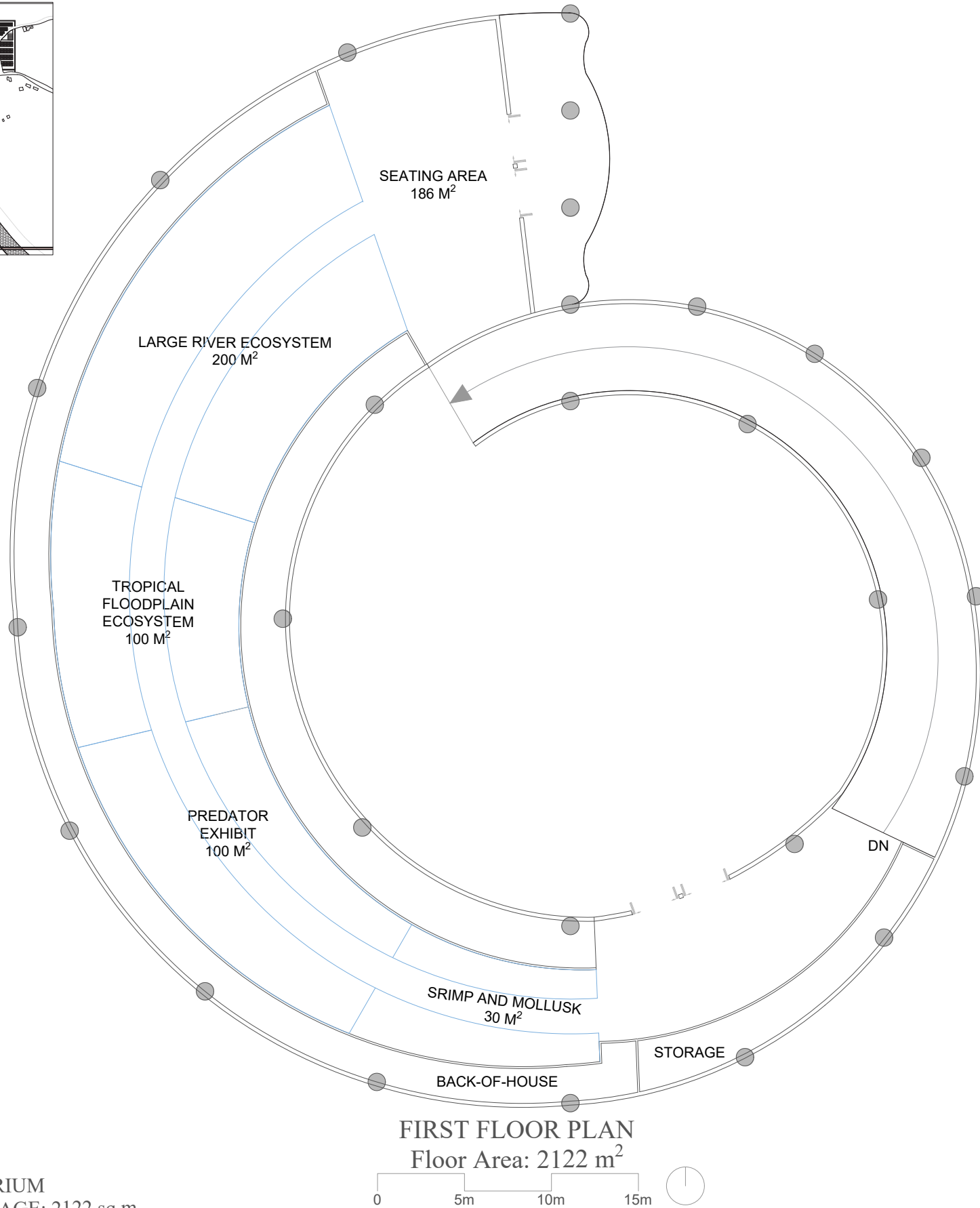
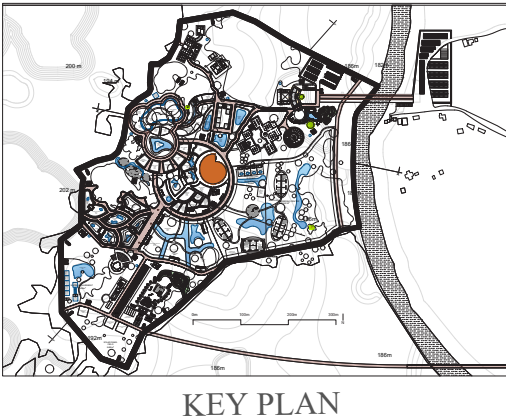
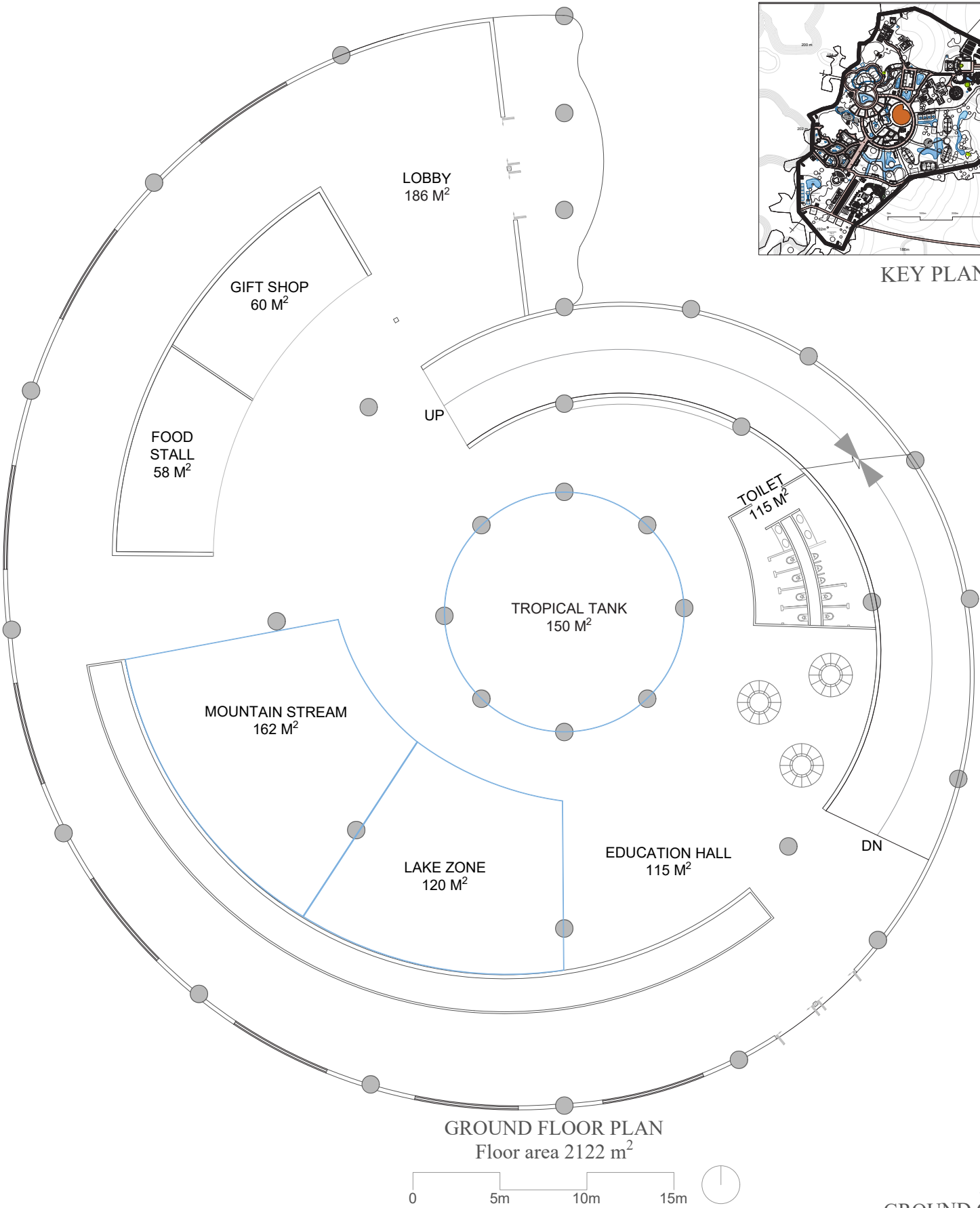
Baadreni Road, Bharatpur, Chitwan



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	B.Arch. Thesis	Roll no.: 760141		

ECO-TERRARIUM: IMMERSIVE WILDLIFE PARK

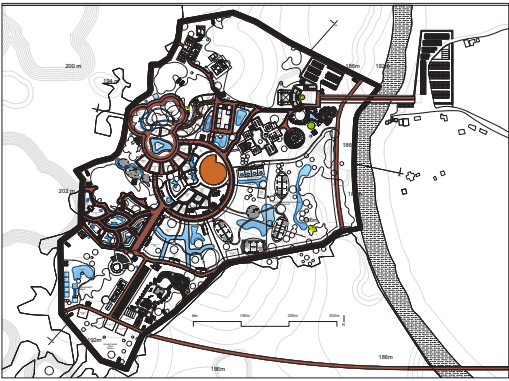
Baadreni Road, Bharatpur, Chitwan



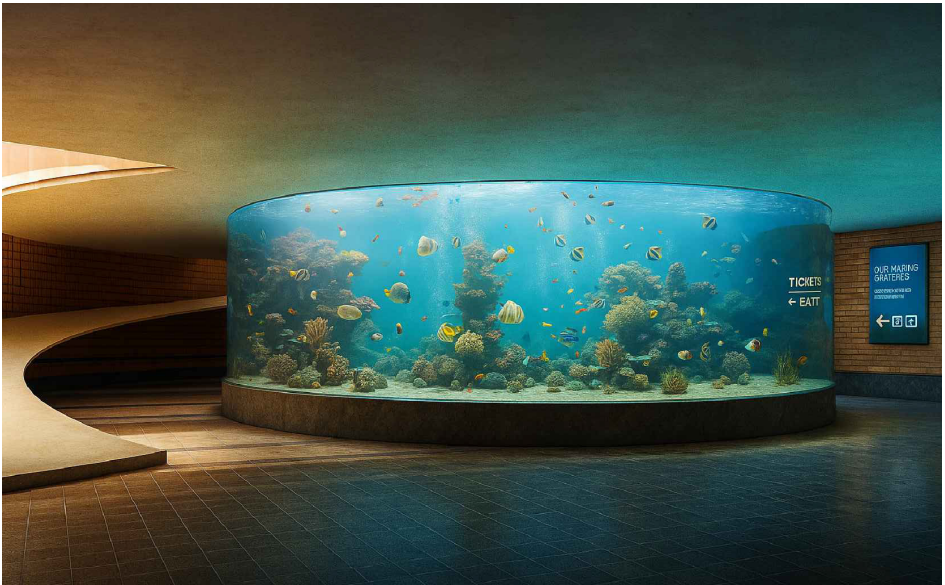
AQUARIUM
GROUND COVERAGE: 2122 sq.m.
SCALE: 1:100

ECO-TERRARIUM: IMMERSIVE WILDLIFE PARK

Baadreni Road, Bharatpur, Chitwan



KEY PLAN



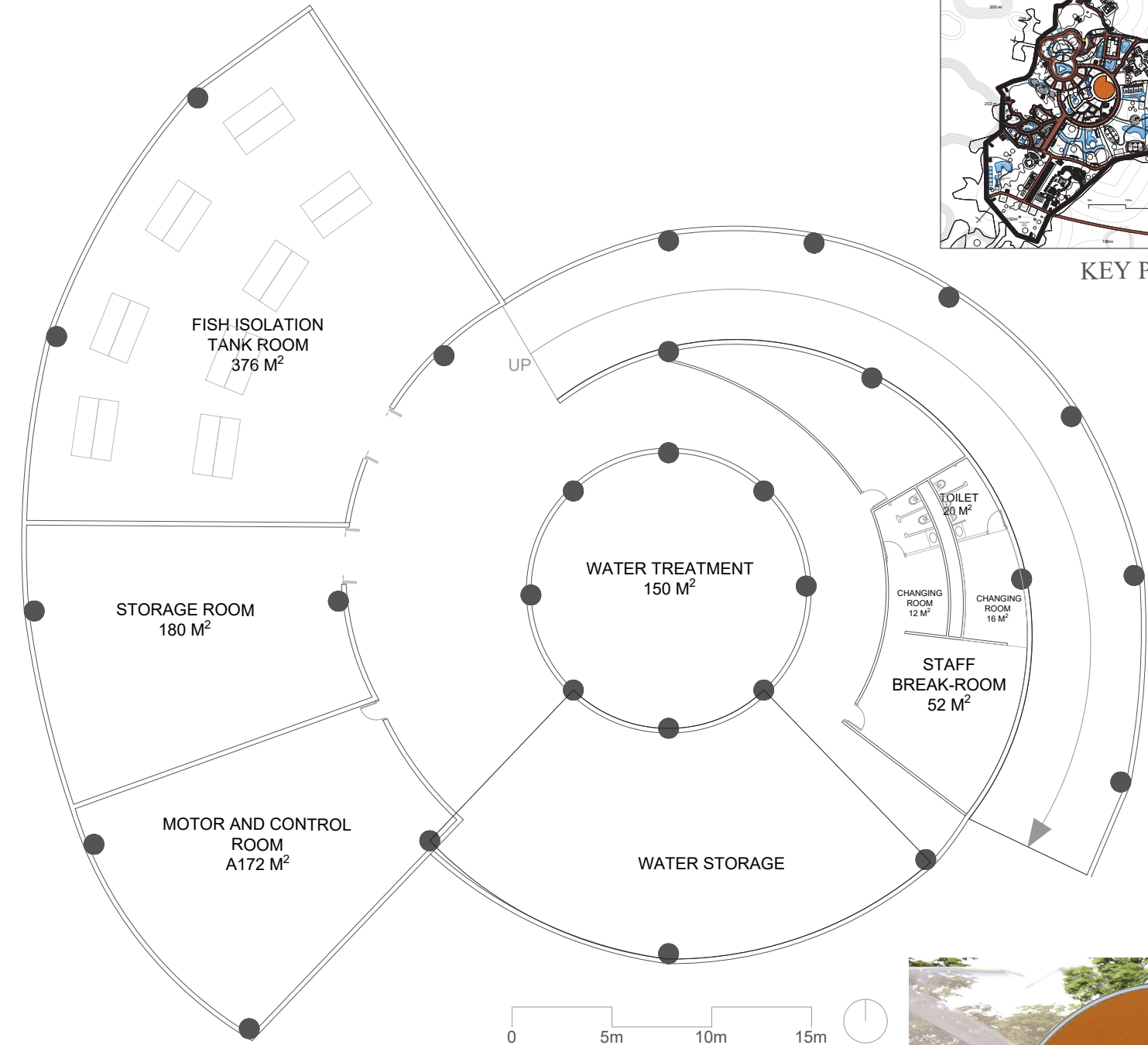
3D ILLUSTRATION OF TROPICAL AQUARIUM



3D ILLUSTRATION OF UNDERWATER TUNNEL AQUARIUM

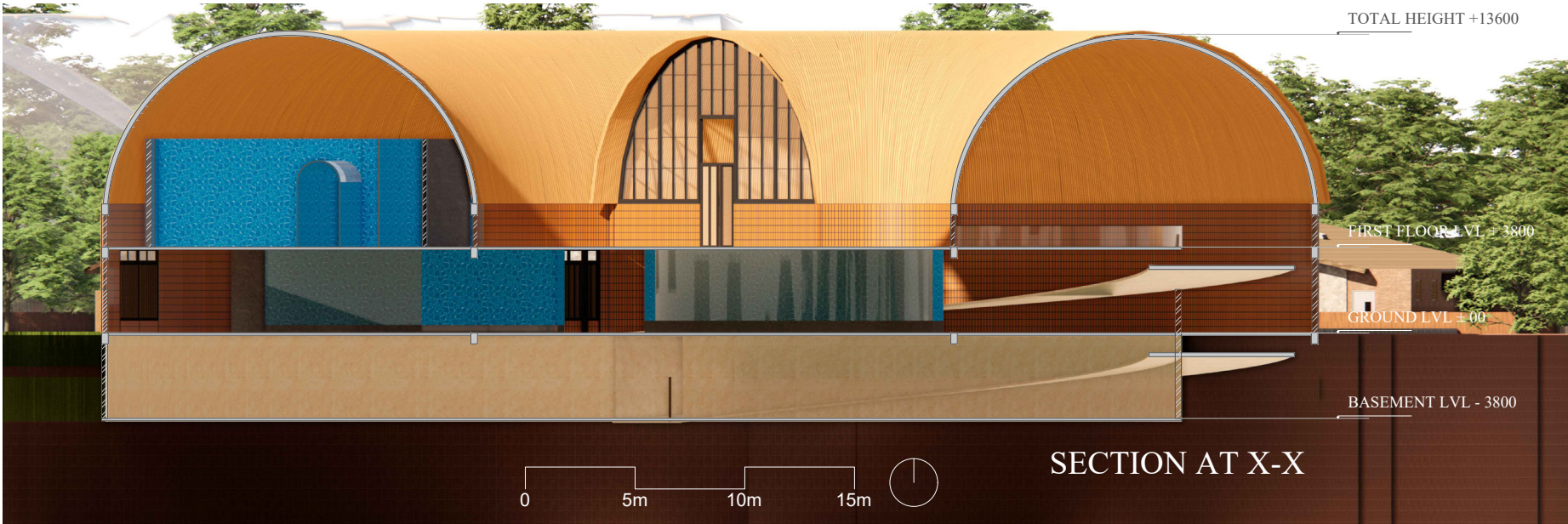


EXTERIOR ILLUSTRATION



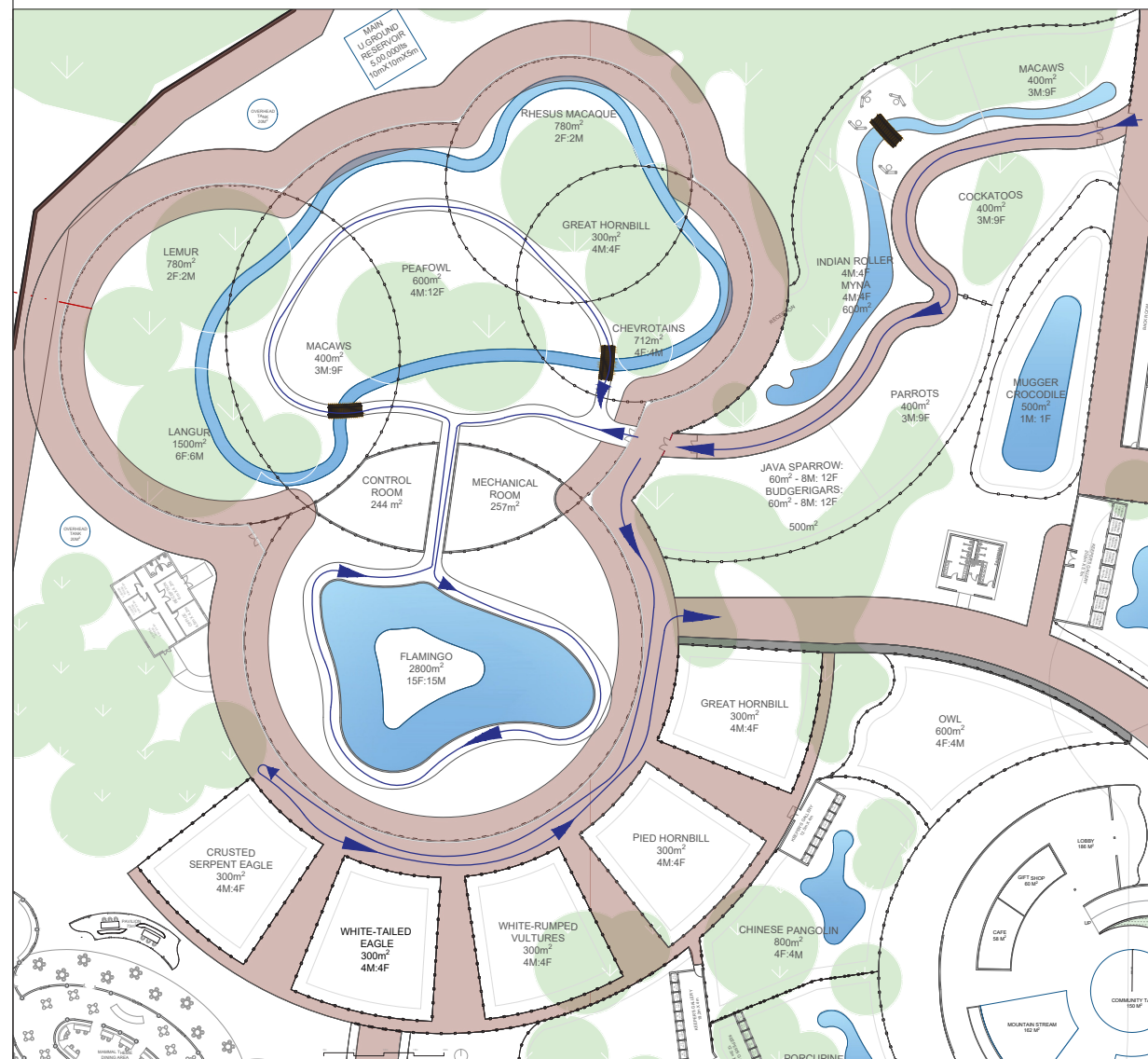
BASEMENT FLOOR PLAN
Floor area 1905 m²

AQUARIUM
GROUND COVERAGE: 2122 sq.m.
SCALE: 1:200



SECTION AT X-X

Baadreni Road, Bharatpur, Chitwan

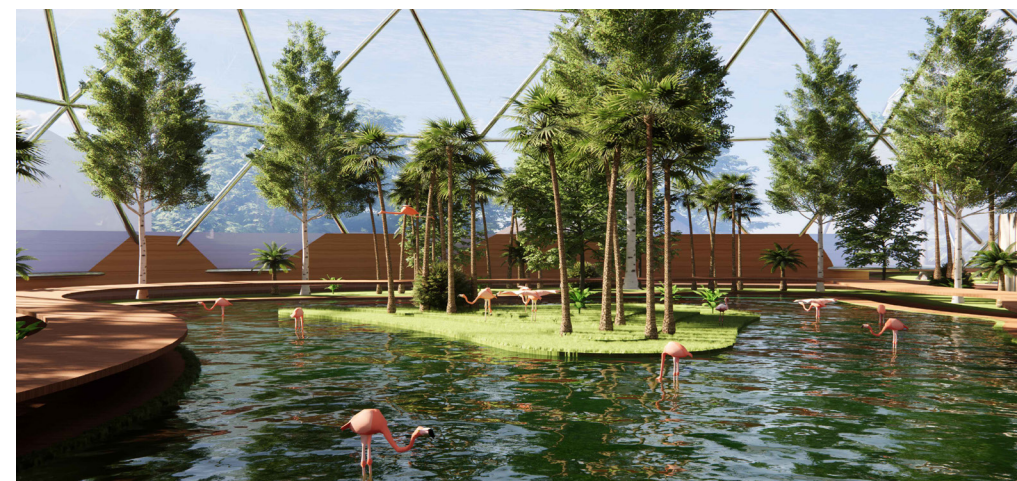


INDEX: FLOW OF EXHIBIT

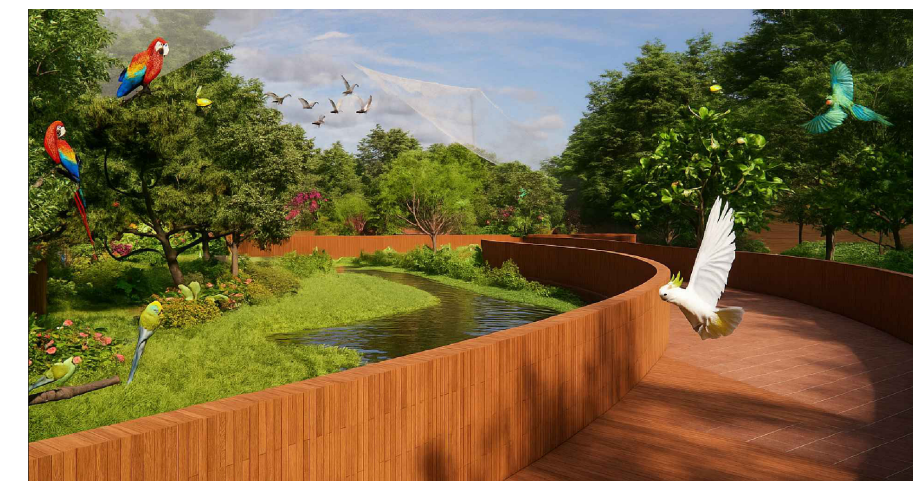
FLOOR PLAN OF TROPICAL TERRARIUM



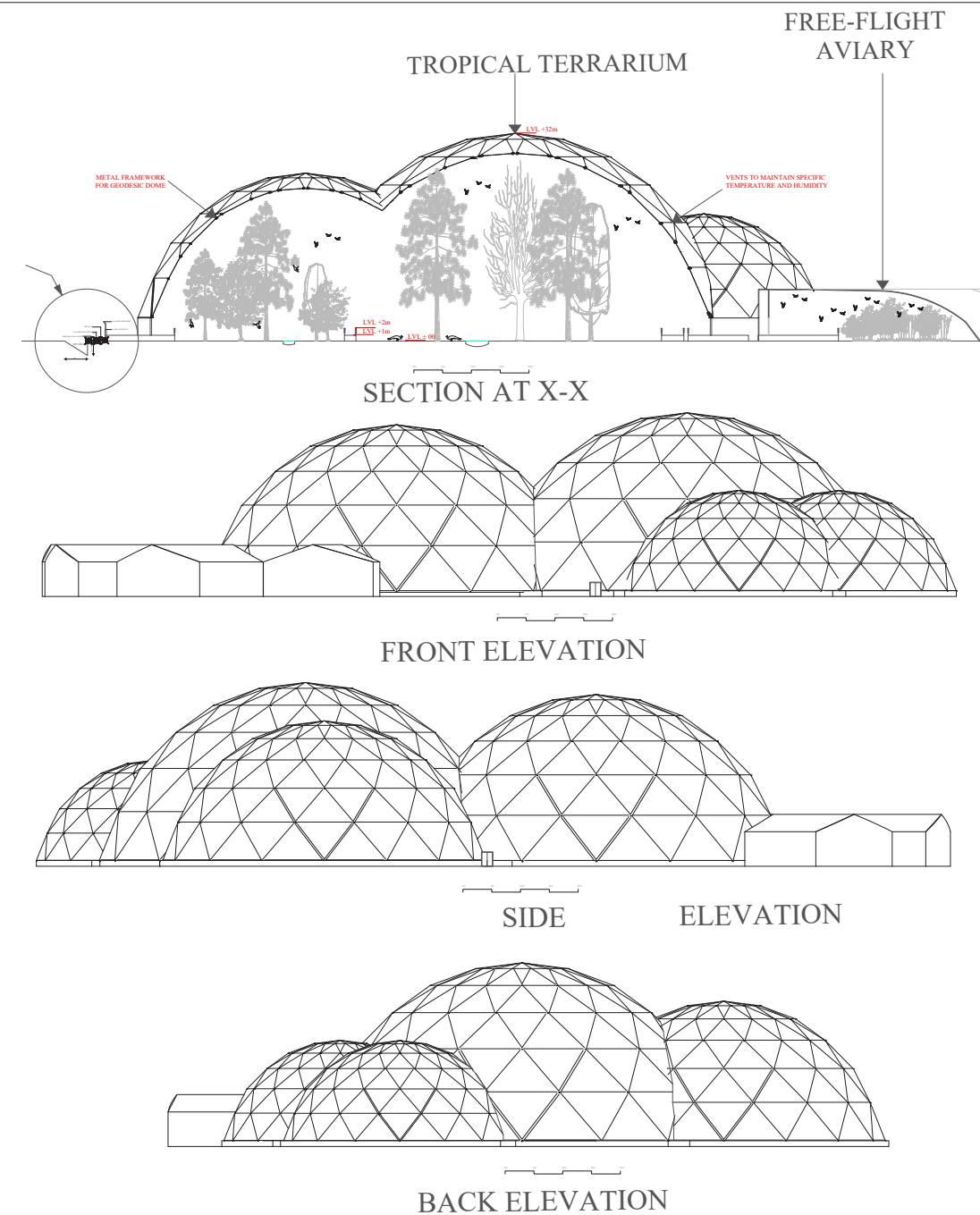
BIRD'S EYE VIEW



HABITAT OF FLAMINGO



FREE FLIGHT AVIARY



<p>Purbanchal University</p> <p>Khwopa Engineering College</p> <p>Department of Architecture</p> <p>Libali, Bhaktapur</p>	Final Presentation	Name: Shoumya Malla	Date: 2082/04/27	15
	B.Arch. Thesis	Roll no.: 760141		

ECO-TERRARIUM: IMMERSIVE WILDLIFE PARK

Baadreni Road, Bharatpur, Chitwan



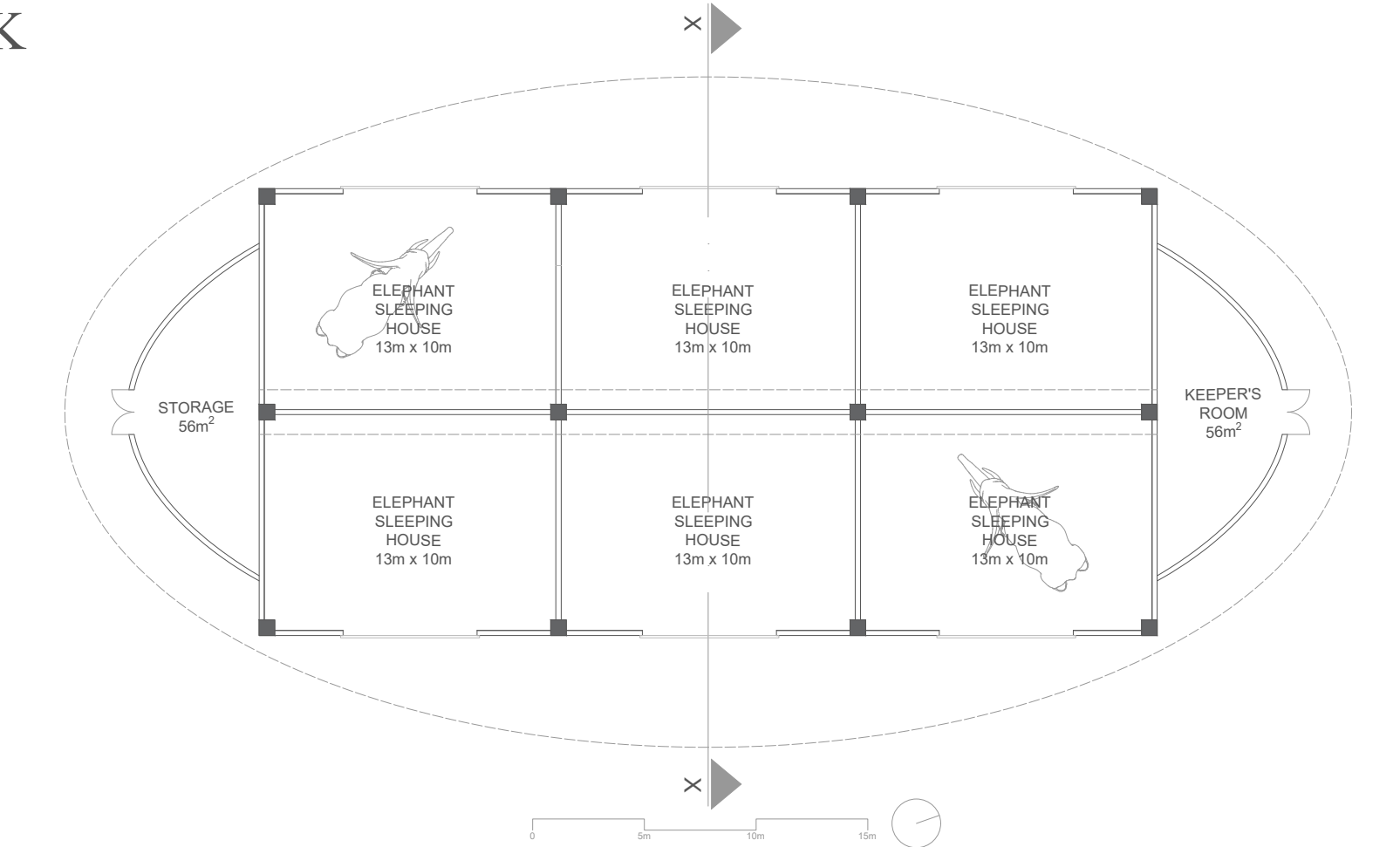
FLOOR PLAN OF ELEPHANT BREEDING CENTER



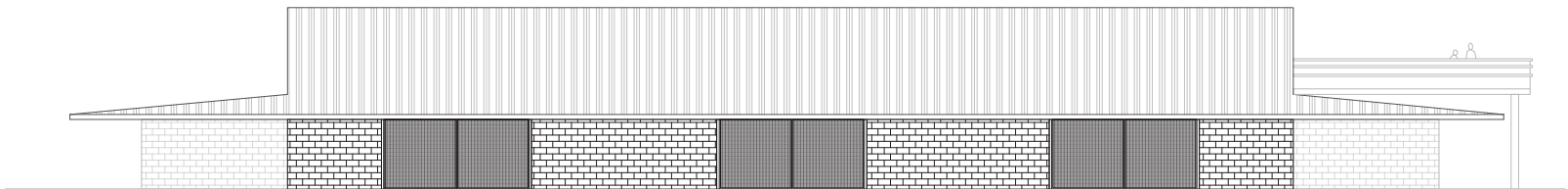
SECTION AT Y-Y



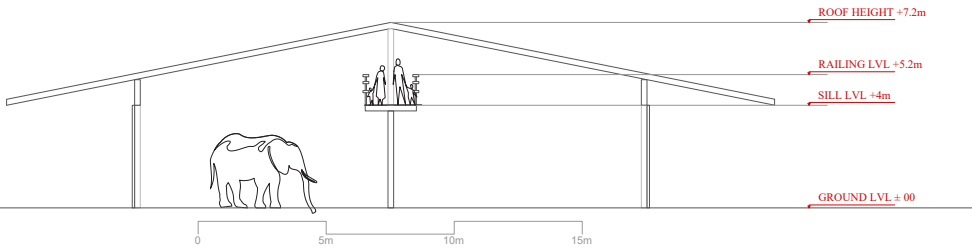
3D VIEW OF ELEPHANT EXHIBIT



GROUND FLOOR PLAN



FRONT ELEVATION



SECTION AT X-X

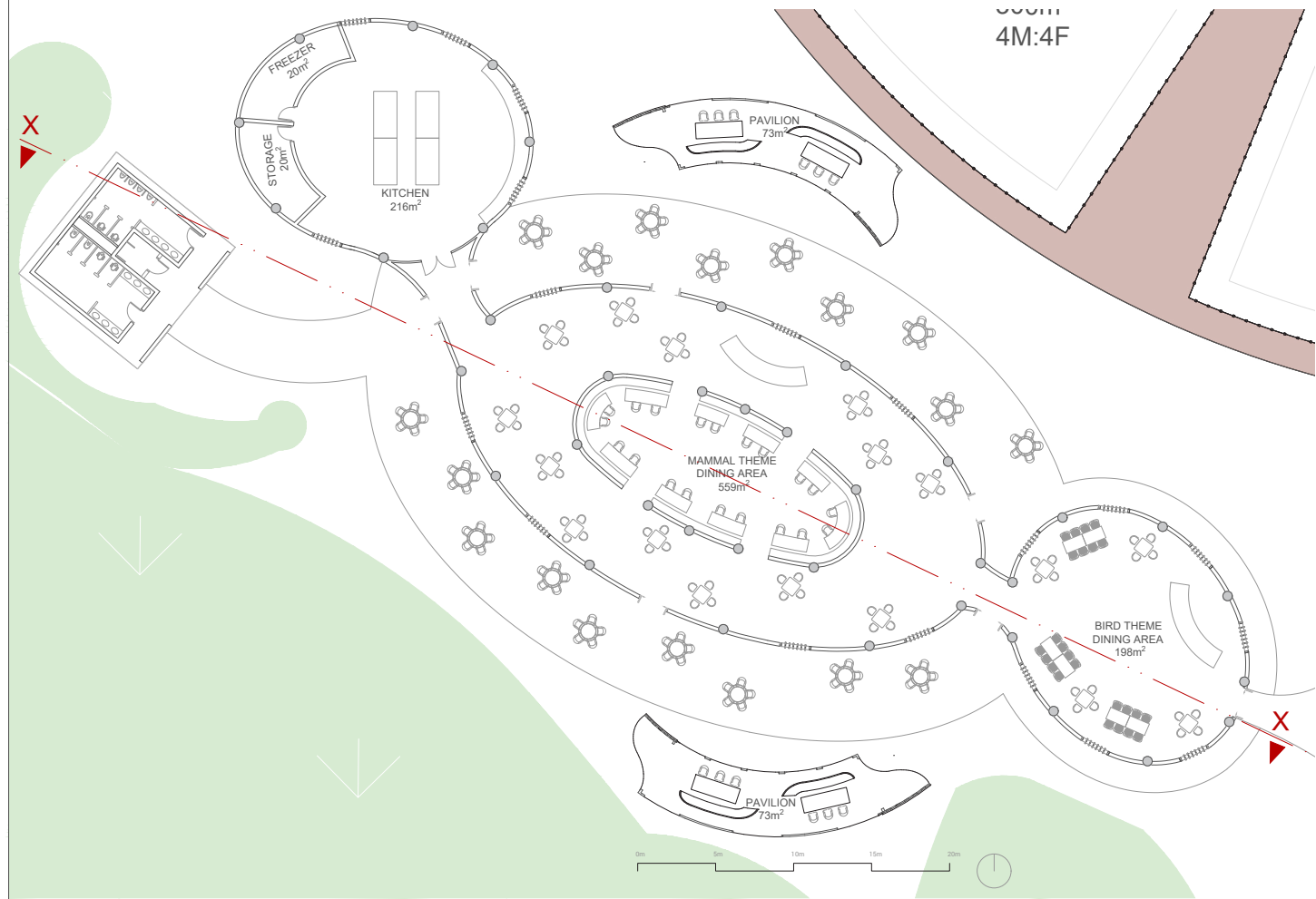


ELEPHANT BREEDING CENTER
SITE AREA: 437552 sq.m.
SCALE: 1:500

ELEPHANT HOUSE
GROUND COVERAGE: 1357sq.m.
SCALE: 1:200

ECO-TERRARIUM: IMMERSIVE WILDLIFE PARK

Baadreni Road, Bharatpur, Chitwan



GROUND FLOOR PLAN



KEY PLAN



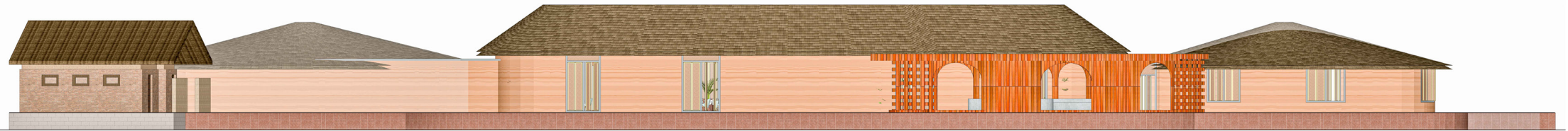
BIRD'S EYE VIEW OF THE BUILDING



BACK ELEVATION



FRONT ELEVATION



SIDE ELEVATION



SECTION AT X-X



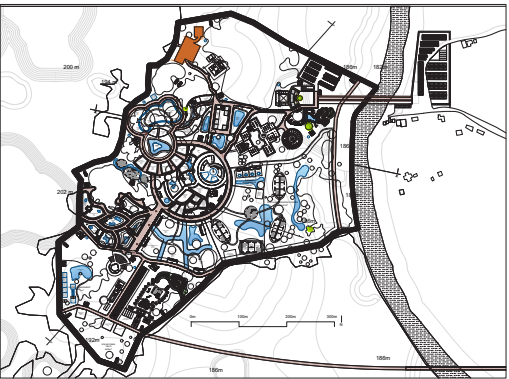
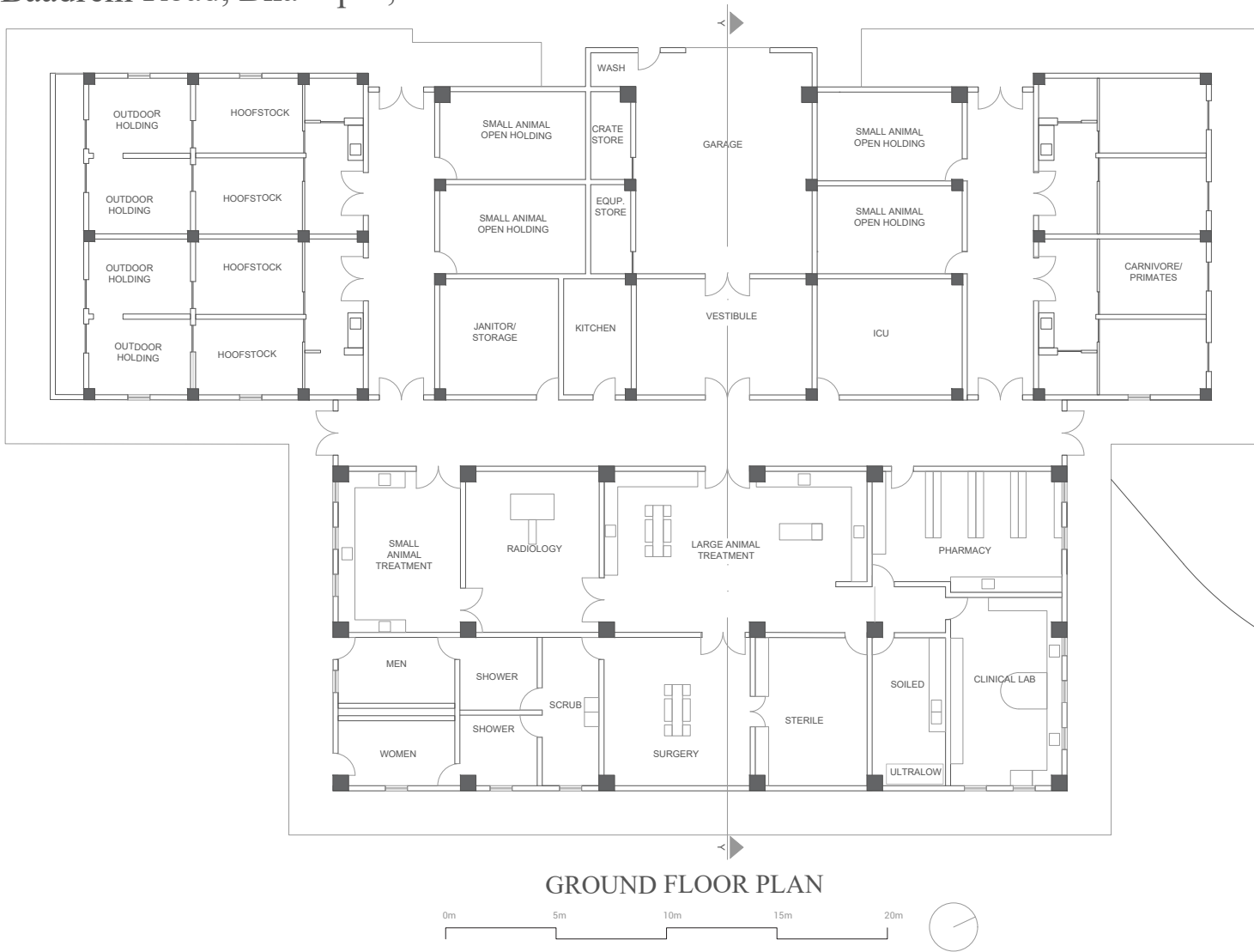
INTERIOR OF THE RESTAURANT

WILDLIFE THEME RESTAURANT
FLOOR AREA: 1264.19 sq.m.
SCALE: 1:100

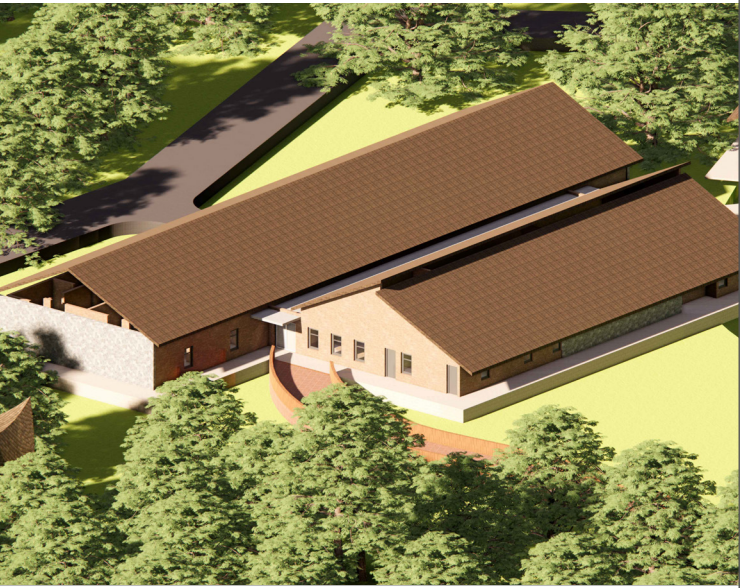
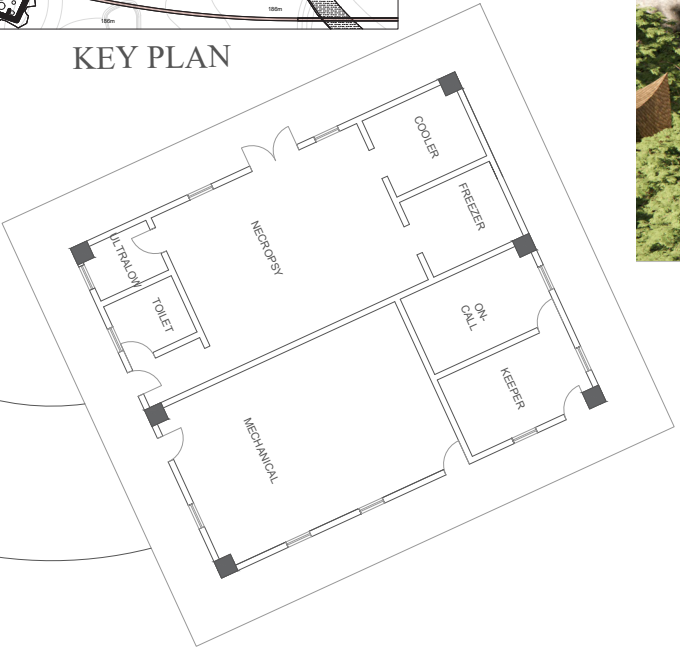
Purbanchal University Khwopa Engineering College Department of Architecture Libali, Bhaktapur	Final Presentation	Name: Shoumya Malla	Date: 2082/04/27	17
	B.Arch. Thesis	Roll no.: 760141		

ECO-TERRARIUM: IMMERSIVE WILDLIFE PARK

Baadreni Road, Bharatpur, Chitwan



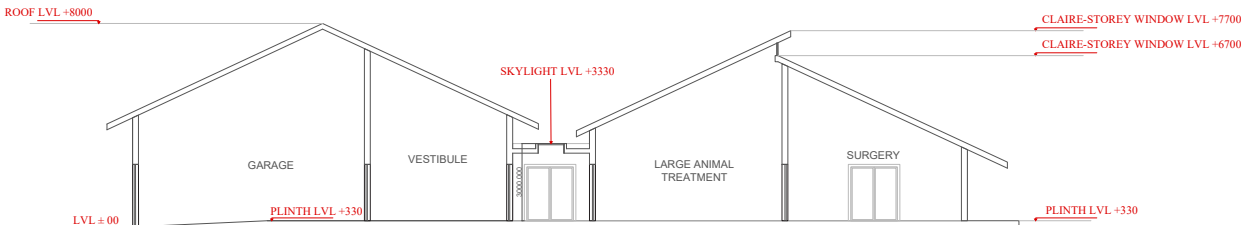
KEY PLAN



3D ILLUSTRATION SHOWING
ENTRANCE TO THE
VETERINARY HOSPITAL



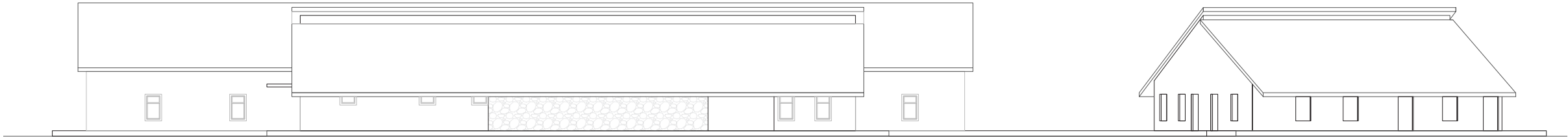
SIDE ELEVATION



SECTION AT Y-Y



3D ILLUSTRATION SHOWING
BACK ENTRANCE, CONNECTED TO
THE SERVICE ROAD

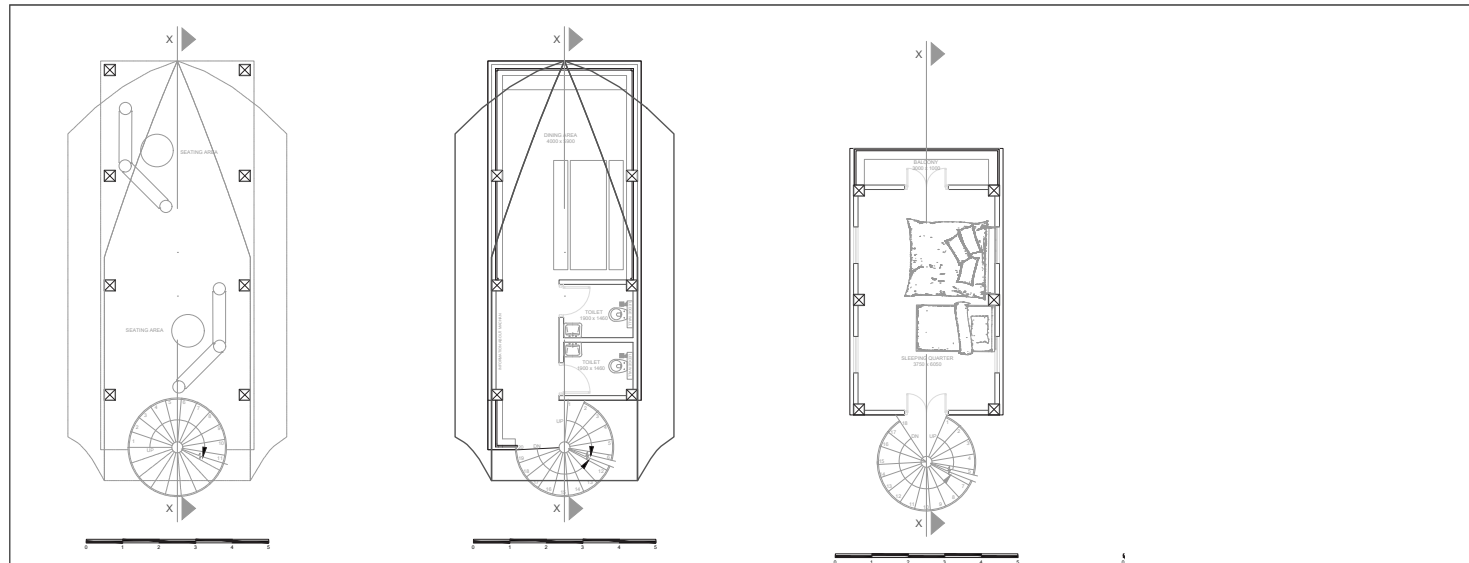


FRONT ELEVATION

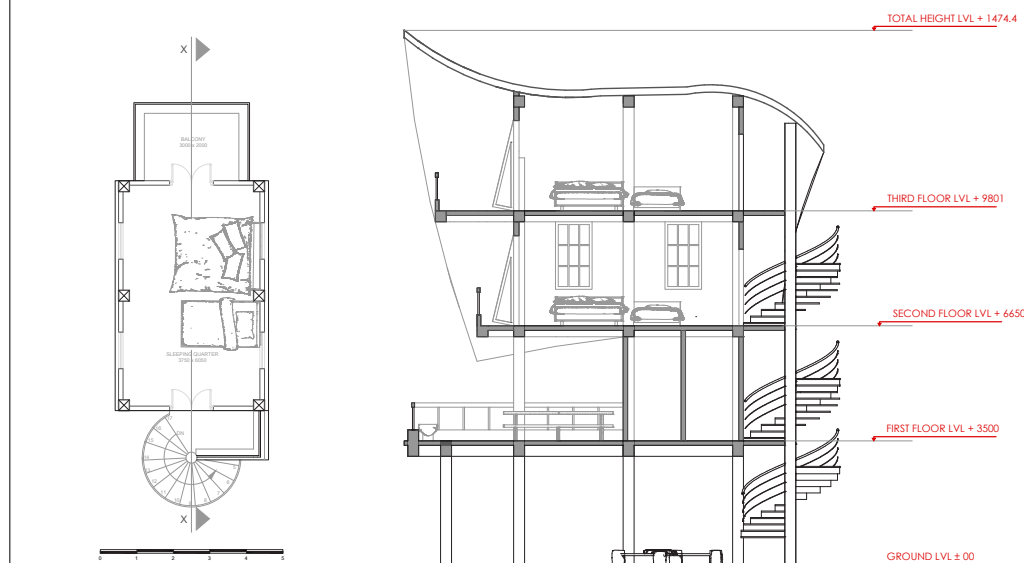


VETERINARY
GROUND COVERAGE: 2049 sq.m. SCALE: 1:100

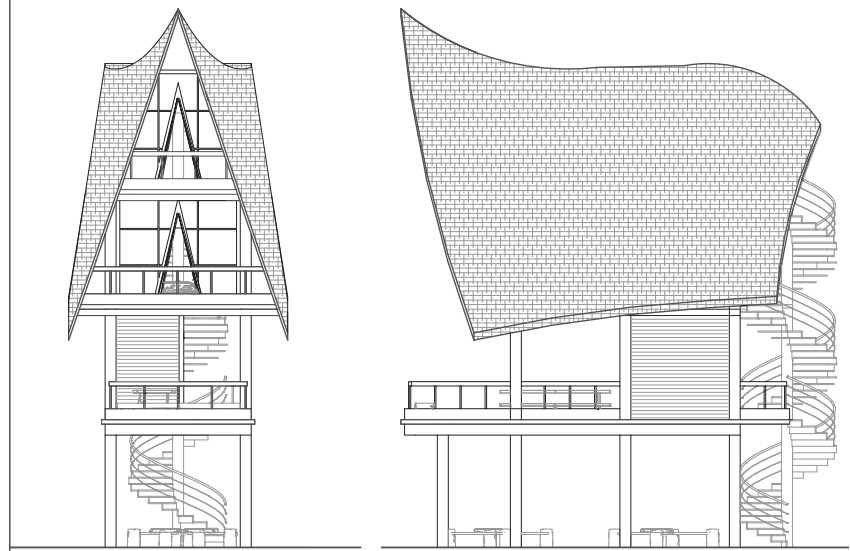
Purbanchal University Khwopa Engineering College Department of Architecture Libali, Bhaktapur	Final Presentation	Name: Shoumya Malla	Date: 2082/04/27	18
	B.Arch. Thesis	Roll no.: 760141		



GROUND FLOOR PLAN FIRST FLOOR PLAN SECOND FLOOR PLAN

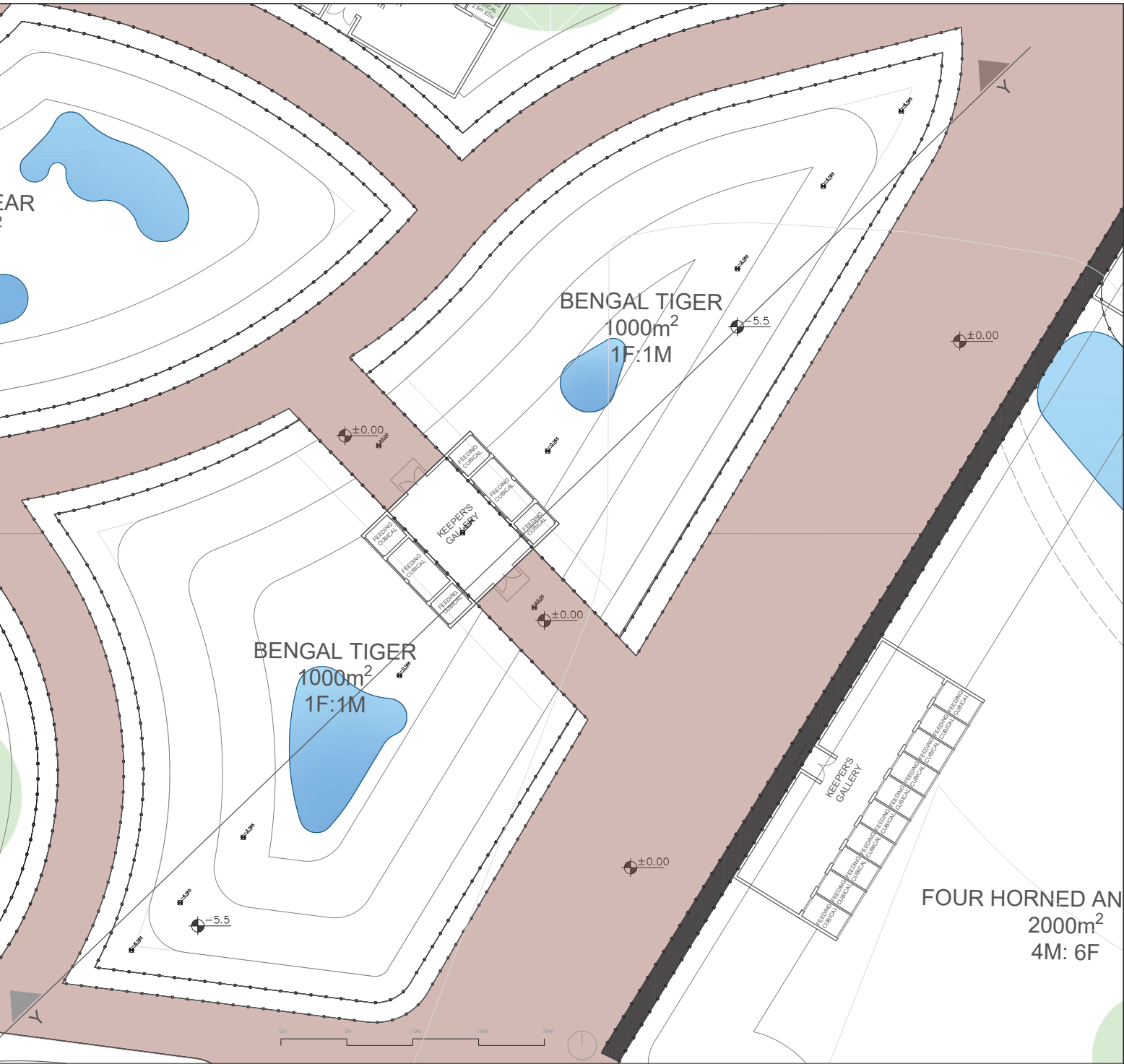


THIRD FLOOR PLAN SECTION AT X-X

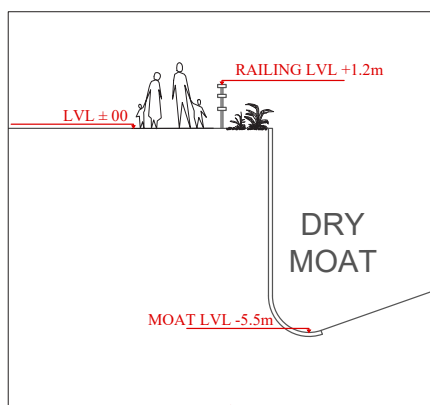


FRONT ELEVATION BACK ELEVATION

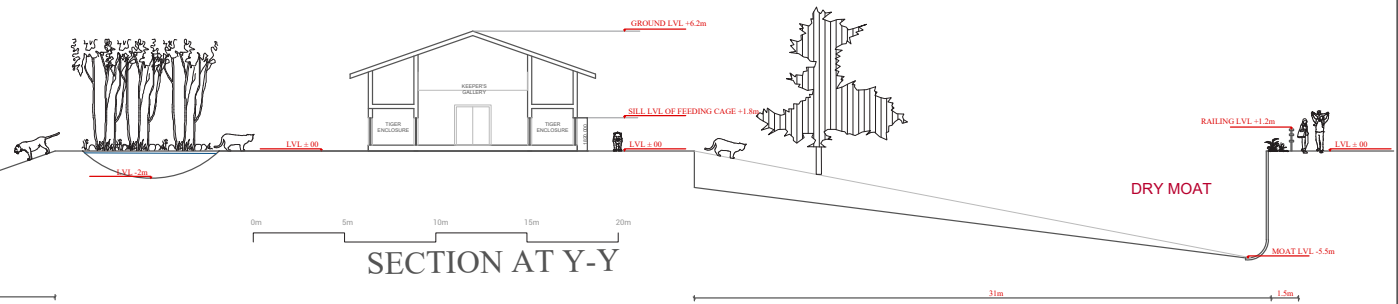
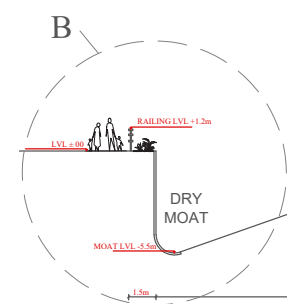
MACHAN DESIGN
GROUND COVERAGE: 50sq.m.
SCALE: 1:100



GROUND FLOOR PLAN



DETAIL AT B
SCALE:1:100



SECTION AT Y-Y

TIGER HOUSE
GROUND COVERAGE: 50sq.m.
SCALE: 1:200

ECO-TERRARIUM: IMMERSIVE WILDLIFE PARK

Baadreni Road, Bharatpur, Chitwan



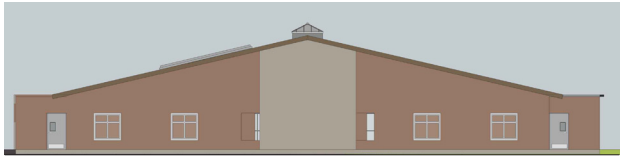
KEY PLAN



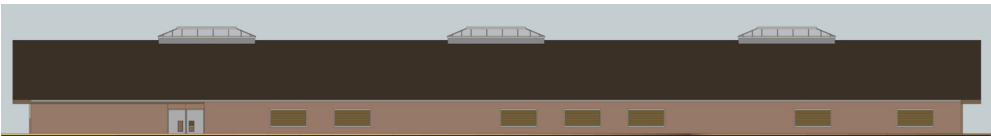
BIRD'S EYE VIEW OF REPTILE HOUSE



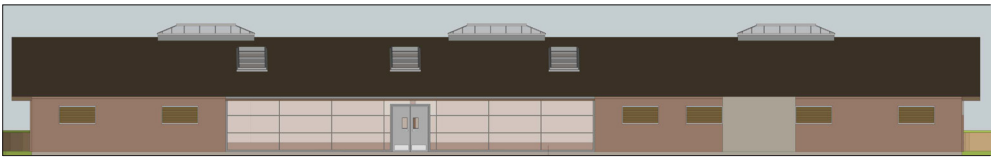
FRONT ELEVATION



BACK ELEVATION



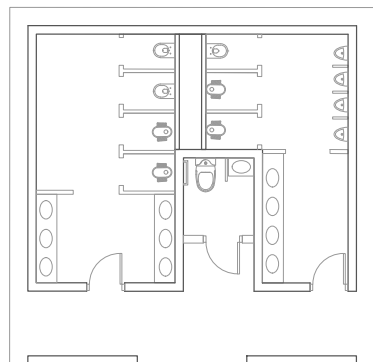
LEFT ELEVATION



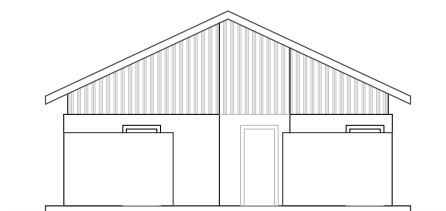
RIGHT ELEVATION

REPTILE HOUSE
GROUND COVERAGE: 1630 sq.m.
SCALE: 1:200

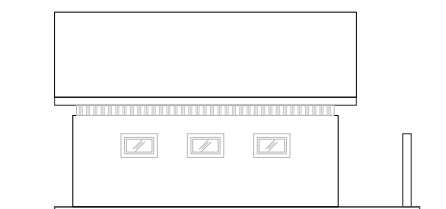
Purbanchal University Khwopa Engineering College Department of Architecture Libali, Bhaktapur	Final Presentation	Name: Shoumya Malla	Date: 2082/04/27	20
	B.Arch. Thesis	Roll no.: 760141		



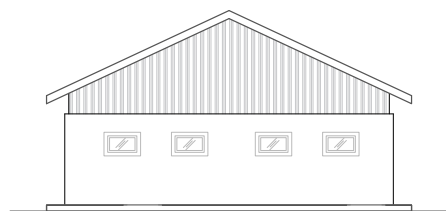
GROUND FLOOR PLAN



FRONT ELEVATION



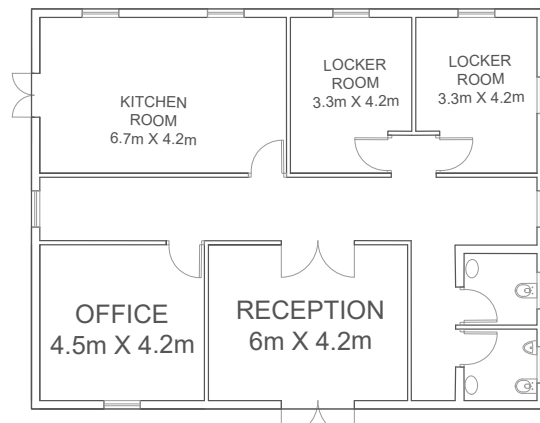
SIDE ELEVATION



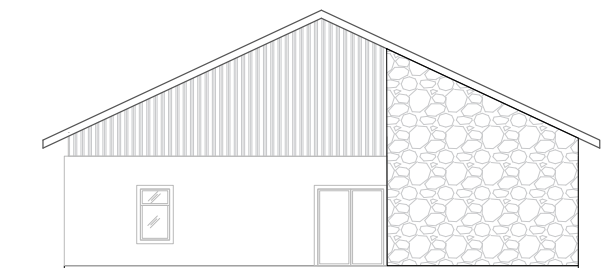
BACK ELEVATION



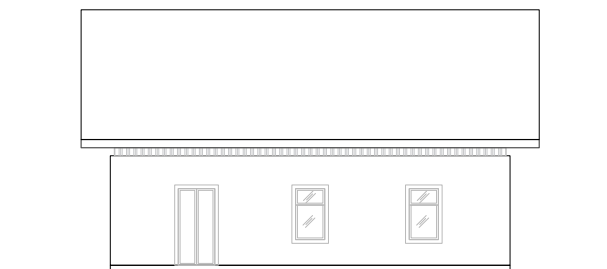
TOILET
GROUND COVERAGE: 97sq.m.
SCALE: 1:100



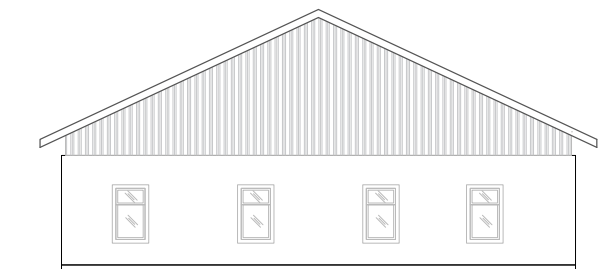
GROUND FLOOR PLAN



FRONT ELEVATION



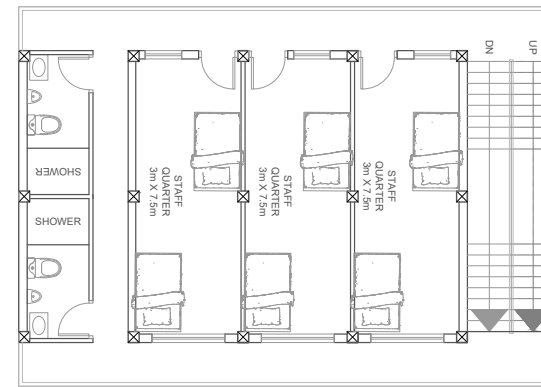
SIDE ELEVATION



BACK ELEVATION



NUTRITIONIST BUILDING
GROUND COVERAGE: 154sq.m.
SCALE: 1:100



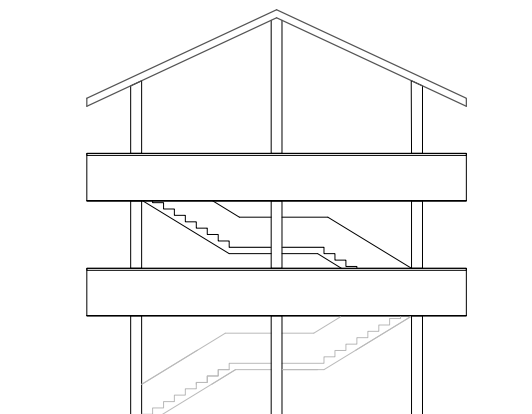
GROUND FLOOR PLAN



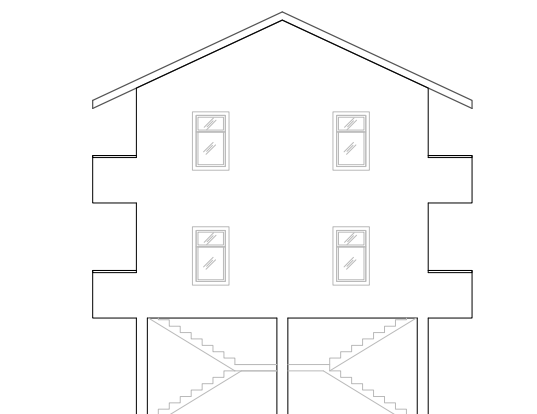
FRONT ELEVATION



BACK ELEVATION



RIGHT ELEVATION



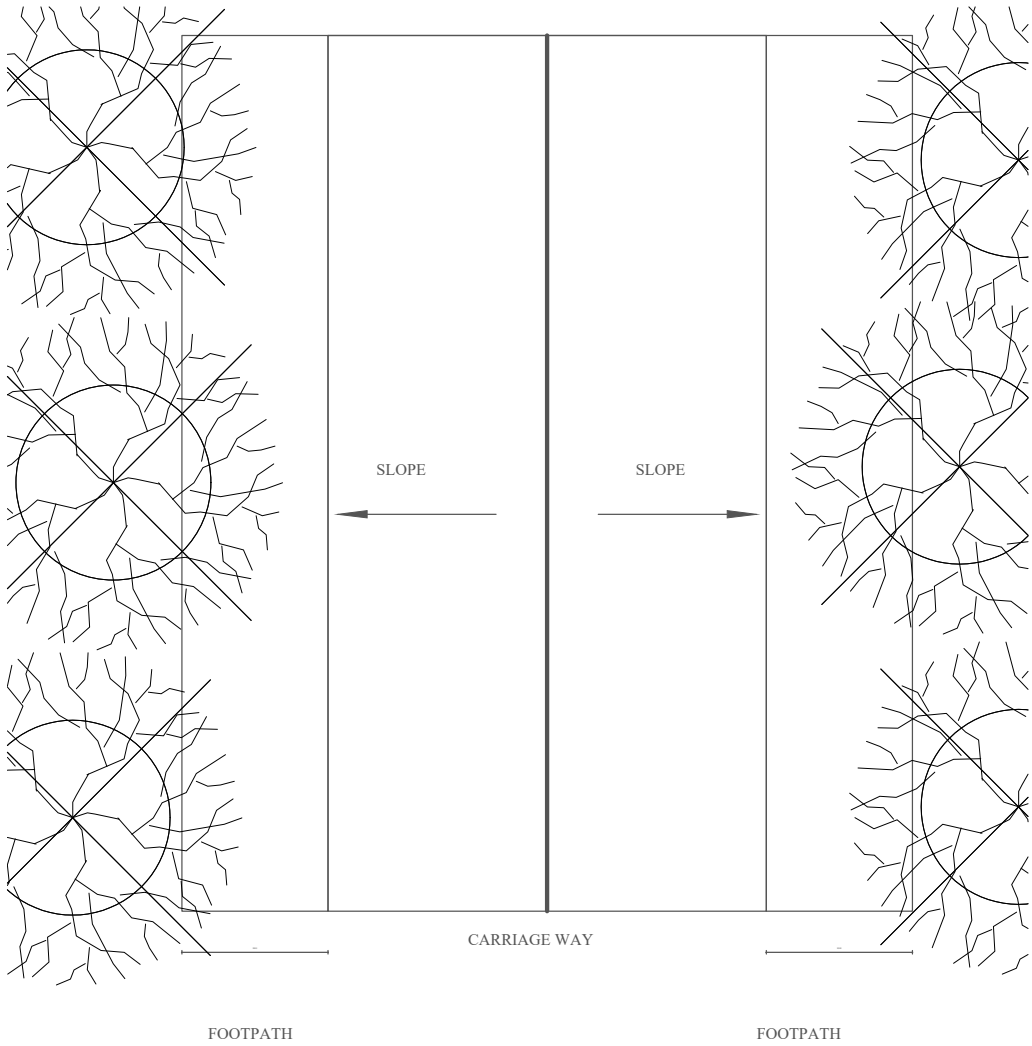
LEFT ELEVATION



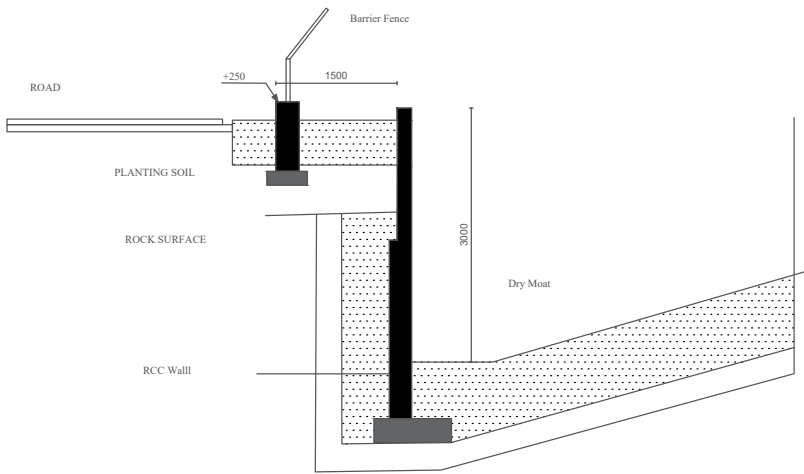
STAFF QUARTERS
GROUND COVERAGE: 152.8sq.m.
SCALE: 1:100

ECO-TERRARIUM: IMMERSIVE WILDLIFE PARK

Baadreni Road, Bharatpur, Chitwan

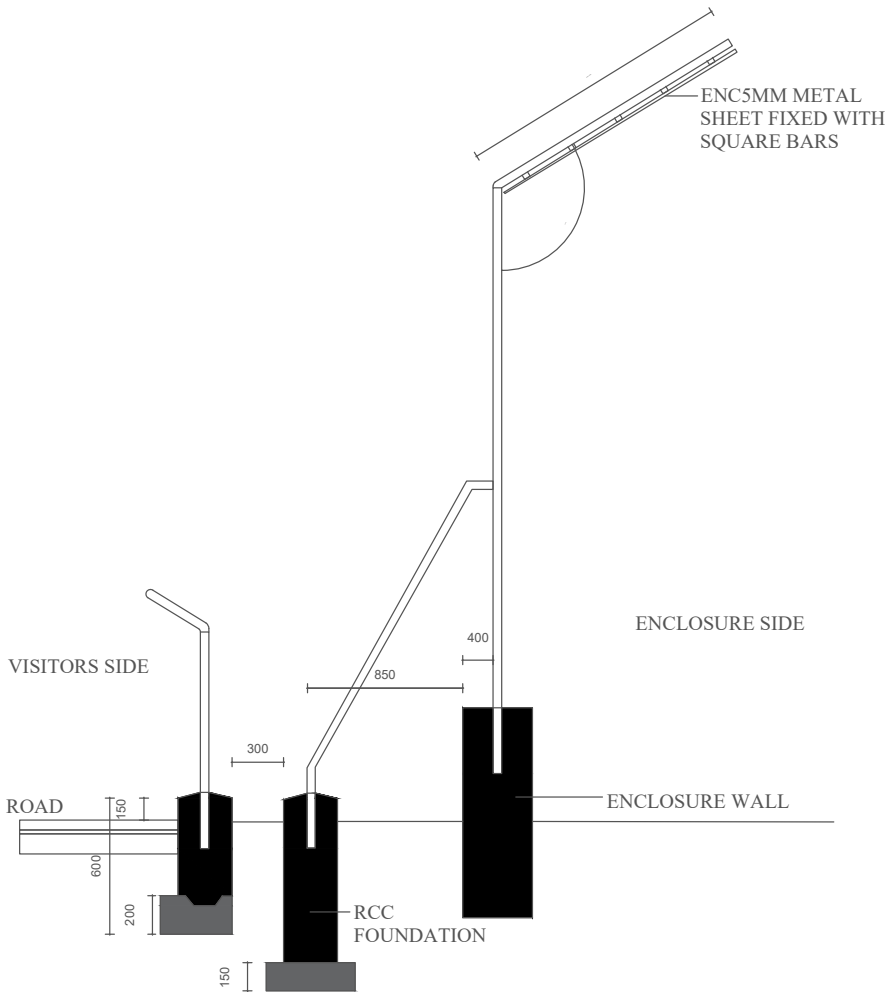


PLAN ROADS INSIDE THE ECO-TERRARIUM

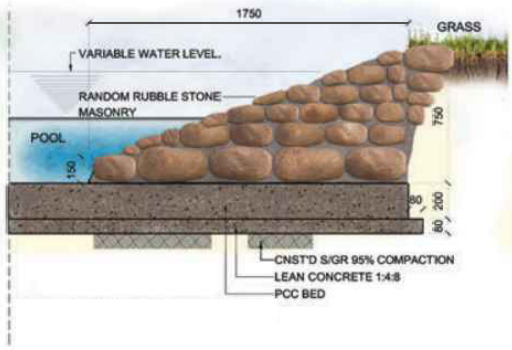
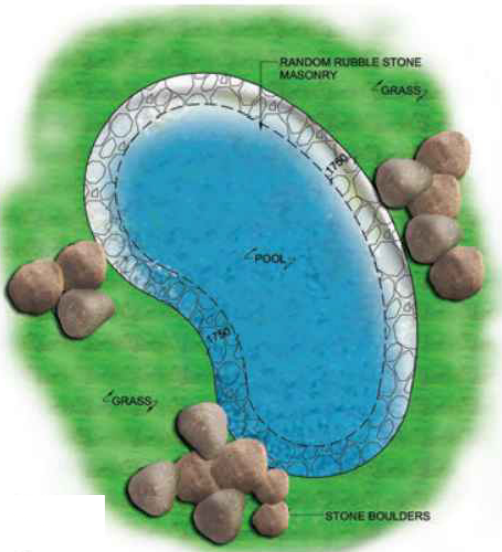


DRY MOAT DETAIL

SCALE: 1:50



AVIARY ENCLOSURE DETAIL

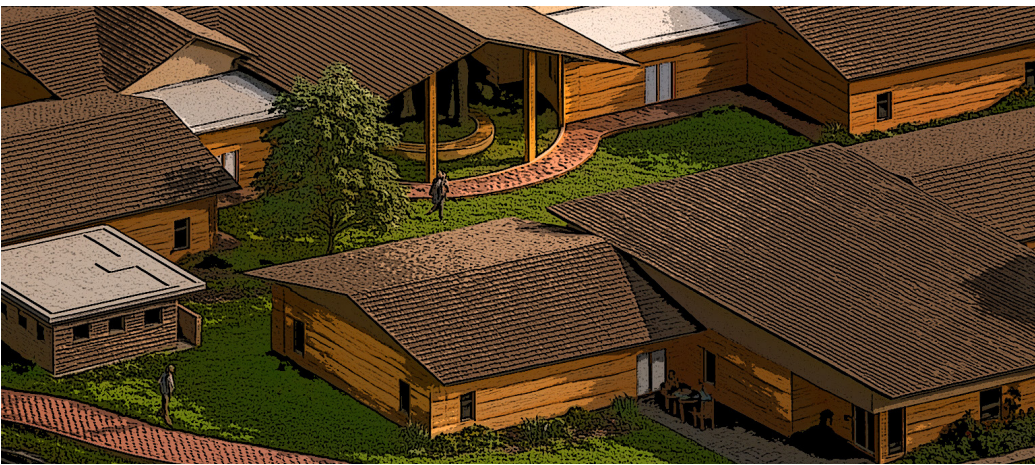


ARTIFICIAL POND DETAIL

SCALE: 1:20



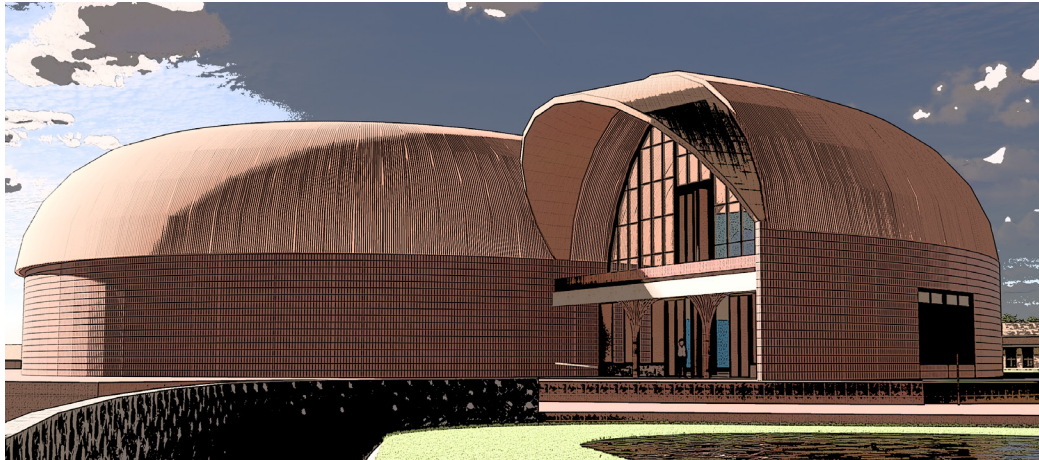
Entrance to the Eco-Terrarium



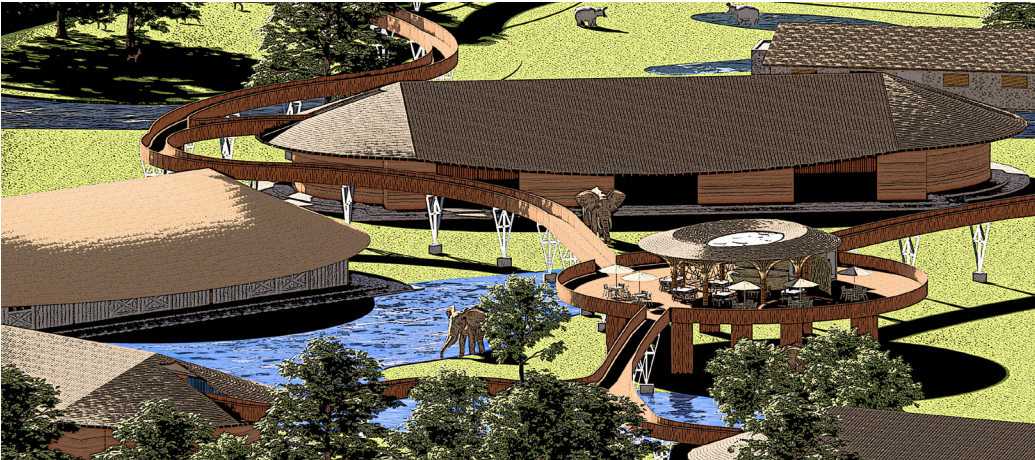
Wildlife Conservation Museum



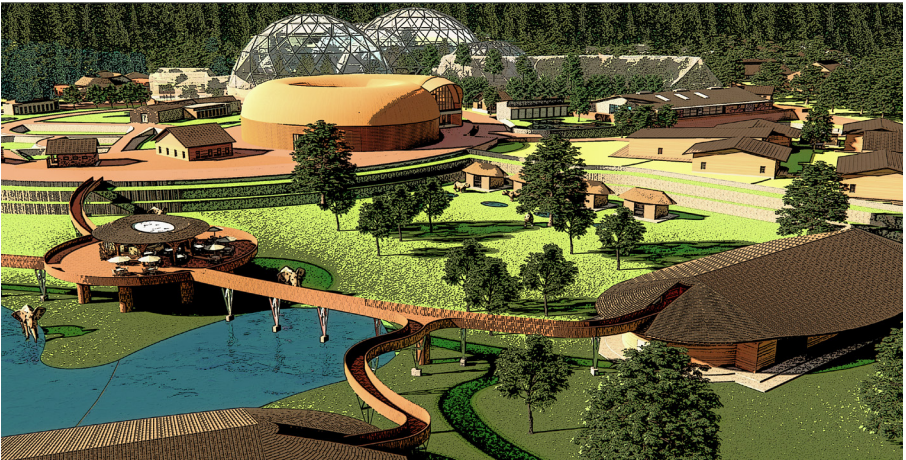
F.O.Z. Office



Aquarium



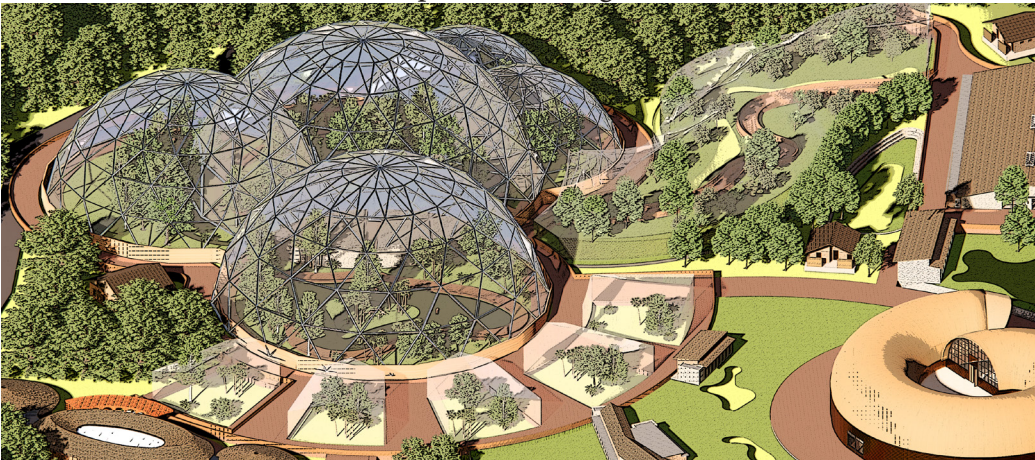
Elephant Breeding Center



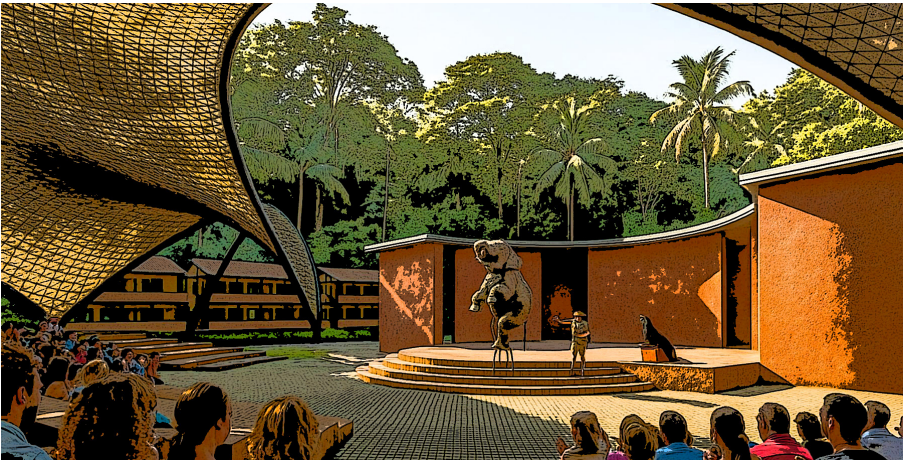
F.O.Z. Office



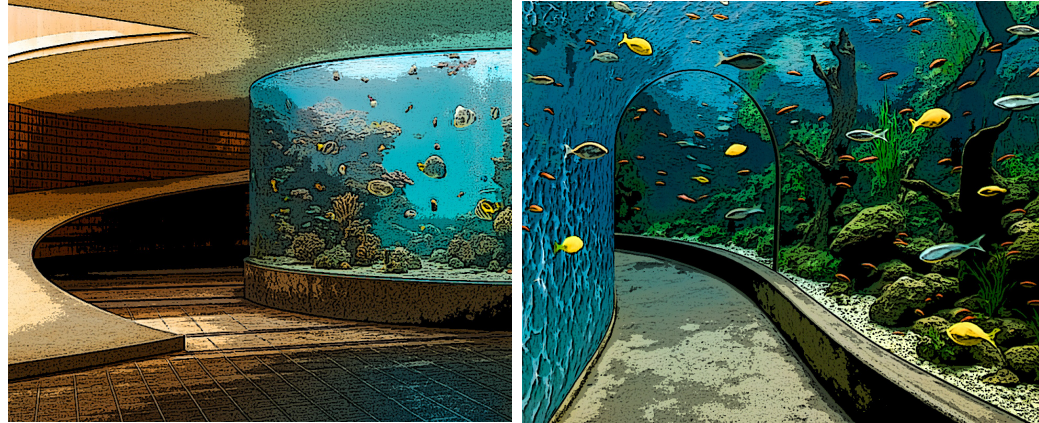
Veterinary Block



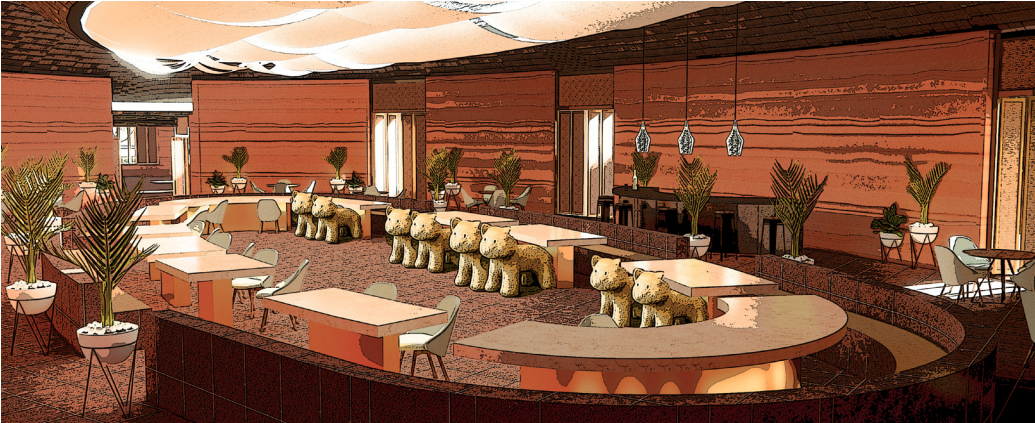
Tropical Eco-Terrarium Block



Semi-open Amphitheater showing animal mascot show



Interior of Aquarium

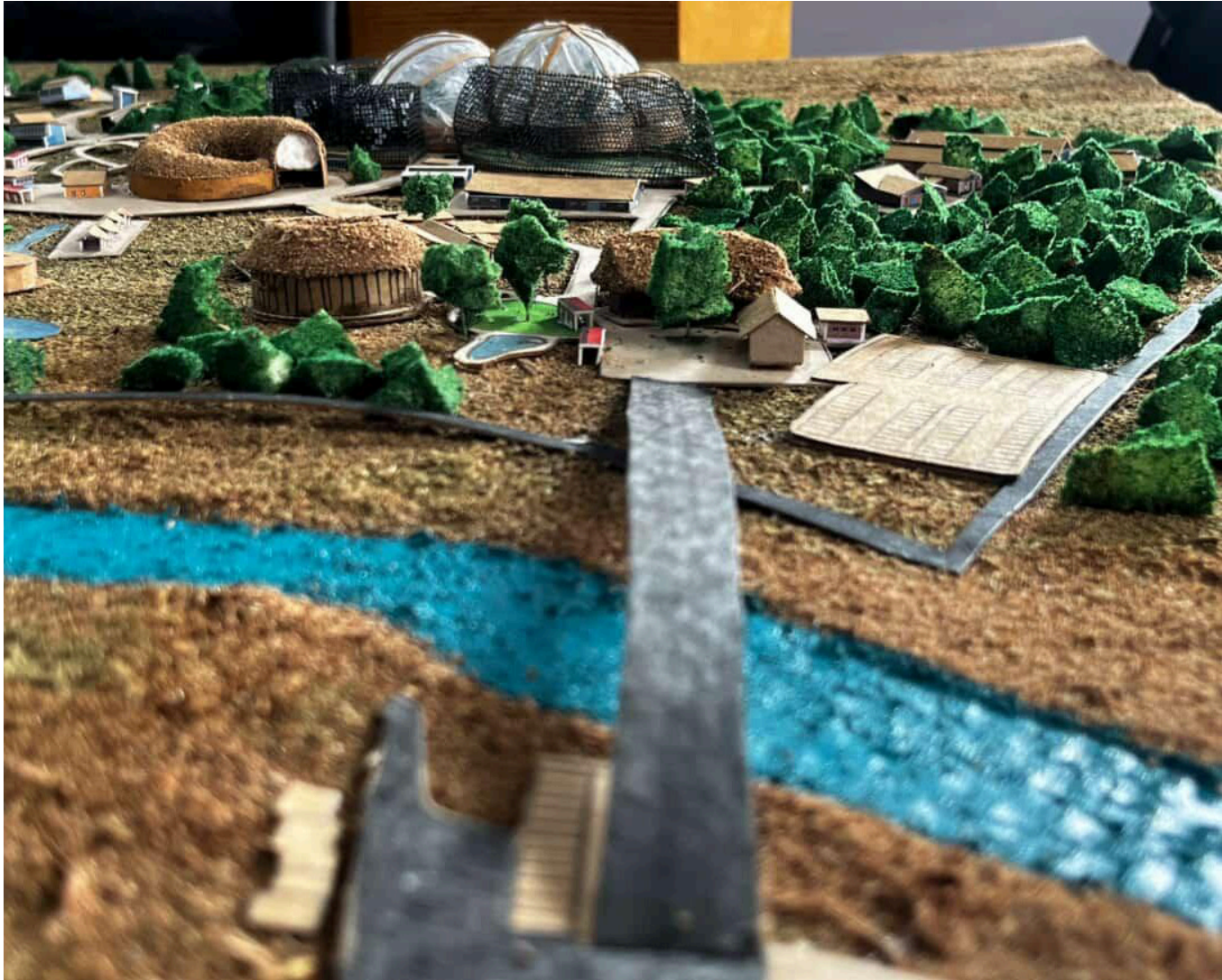


Interior of Wildlife theme Restaurant
3D VIEWS



Reptile House

<div>Purbanchal University</div> <div>Khwopa Engineering College</div> <div>Department of Architecture</div> <div>Libali, Bhaktapur</div>	Final Presentation	Name: Shoumya Malla	Date: 2082/04/27	23
	B.Arch. Thesis	Roll no.: 760141		



IMAGES OF MODEL

Purbanchal University Khwopa Engineering College Department of Architecture Libali, Bhaktapur	Final Presentation	Name: Shoumya Malla	Date: 2082/04/27	24
	B.Arch. Thesis	Roll no.: 760141		