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5 Star Resort

Vishakhapatnam, Andhra Pradesh, India

Dec, 2025

5 Star Resort

Vishakhapatnam, Andhra Pradesh, India

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MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

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5 Star Resort

Vishakhapatnam, Andhra Pradesh, India

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UNDER THE GUIDANCE OF

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DEPARTMENT OF ARCHITECTURE AND PLANNING
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CANDIDATE DECLARATION

The Thesis Project in the subject ARC 511, entitled "**5 Star Resort, Vizag, India"**, is being submitted in partial fulfilment of the requirement for the award of degree of Bachelor of Architecture by the undersigned for evaluation.
The matter embodied in this project is a record of my own work. If, in future, it is found that the above statement is false, then I have no objection in withdrawal of Bachelor of Architecture Degree awarded to me by the Institute.

Date: 1st – 2nd Dec, 2025

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RECOMMENDATION

Based on the above declaration of the student, the undersigned recommends that the work submitted by the candidate may be considered for the final end term examination of the subject ARC-511, Thesis Project.

Date: 1st – 2nd Dec, 2025

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Thesis Guide

CERTIFICATION OF EXAMINATION

The Bachelor of Architecture Thesis Viva-Voce examination of Mr Nachiket Deshpande Scholar No.211110019, was held on 1/12/2025 to 2/12/25.

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ABSTRACT

This thesis explores the idea of **transcendental Spaces**, where a five-star luxury resort can deliver a transcendental experience. The project is set in **Visakhapatnam**, a coastal city with a strong Navy legacy, the spiritual presence, and a deep connection to the sea and hills. These elements shape the resort's, interiors, material palette, and overall storytelling.

The project aims to create an environment where luxury is redefined not through excess but through meaningful engagement with landscape, light, and materiality. Spatial planning, architectural language, and landscape interventions are guided by principles of simplicity, self-reflection, ecological sensitivity, and intuitive connection with the natural world.

The resort integrates immersive wellness spaces, experiential pathways, vernacular inspirations, and sustainable systems to foster a sense of retreat, awareness, and inner balance. The resulting design aspires to offer guests an elevated experiential journey—one that transcends the conventional hospitality model by placing nature and human consciousness at the centre of luxury.

ACKNOWLEDGMENT

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CHAPTER I

DESIGN BRIEF

1.1 INTRODUCTION

A **resort** is a commercial establishment designed to provide lodging, dining, and a wide range of recreational and entertainment facilities all in one location. Resorts offer more than just a place to stay, they focus on creating a complete vacation experience, which typically includes:

- Multiple accommodation options (rooms, suites, villas)
- On-site restaurants and bars
- Leisure amenities such as swimming pools, spas, fitness centers
- Organized activities (water sports, golf, yoga, entertainment shows)
- Additional services like retail shops, excursion planning, and wellness offerings

Resorts are often located in popular travel destinations like beaches, mountains, or lakes and are designed so guests can enjoy most of their holiday activities without needing to leave the property. They are distinct from standard hotels because they provide a comprehensive package of services, recreation, and relaxation all in one place.

There are various types of resorts, including beach resorts, ski resorts, golf resorts, spa resorts, and family-oriented resorts, each catering to different vacation preferences.

1.2 WHAT IS A BEACH RESORT?

A beach resort is a full-service vacation lodging facility located along a coastline, offering guests direct access to a private or semi-private beach as its primary attraction. The main aim of a beach resort is to create a relaxing, tropical, or oceanfront paradise where guests can enjoy a variety of experiences without having to leave the property.

1.3 BRIEF ABOUT THE PROJECT

Visakhapatnam Metropolitan Regional Development Authority (VMRDA) proposes for Development of Convention Centre & 5 Star Hotel / Resort with Other Water Entertainment Facilities in Visakhapatnam on Public Private Partnership (PPP) Basis (the "Project"). The proposed site admeasuring 7.97 acres (approx.) is situated on a prime land along beach road at Visakhapatnam, Andhra Pradesh. The proposed development is envisaged on Design, Finance, Build, Operate and Transfer ("DFBOT") format of PPP.

Table 1 Project Details

S. No.	**Item**	**Description**
1	**Project Title**	Development of a Convention Centre with not less than 5 Star Category Hotel / Resort & other Waterfront Entertainment Facilities on PPP basis in Vizag.
2	**Authority**	Visakhapatnam Metropolitan Regional Development Authority (VMRDA), Visakhapatnam, Andhra Pradesh.
3	**Project Site**	10.97 Acres (including waterbody) of land along Beach Road, Visakhapatnam, Andhra Pradesh.
4	**Minimum Development Obligations (MDOs)**	**1. Convention Centre & 5 Star Category Hotel / Resort** to be developed within 36 months: **(i) A Convention Centre comprising:** a) Multi-purpose air-conditioned hall with a minimum 15 ft ceiling; seating for 2500 people in theatre style. b) Partitioned flexible hall with no fixed seating for multiple events. c) Capable of hosting National & International level Meetings, Events, and Exhibitions. **(ii) 5 Star Category Hotel / Resort comprising:** a) Minimum 200 guest rooms. b) 5 Star certification from HRACC, Ministry of Tourism, India, within 180 days of operations. **2. Other Waterfront Entertainment Facilities** to also be implemented within 36 months.
5	**Waterfront Entertainment Facilities**	To be implemented within 36 months in accordance with applicable CRZ norms: (i) Shack Restaurants / Cafés (temporary structures/canopies) (ii) Party Lawns with landscaping/hardscaping (e.g., Amphitheatre) for outdoor events (iii) Flea Market (iv) Exhibition Venue **Note:** MDOs are subject to applicable Development Control Regulations. Additional tourism facilities listed in the Andhra Pradesh Tourism Policy 2020–2025 may be developed if permissible under CRZ norms.
6	**Regulatory Clause**	If any MDO is not currently permissible under existing Development Control Regulations or CRZ norms, its implementation shall begin after such regulations are amended to permit them.
7	**Other Obligations / Conditions**	a) Adopt water conservation, recycling, rainwater harvesting, zero discharge of wastewater (if possible), and energy-efficient utilities. b) Ensure accessibility for differently-abled individuals per the Persons with Disabilities Act, 1995 and UNCRPD. c) The Concessionaire shall be responsible for obtaining all statutory approvals, licenses, and clearances.

1.4 SITE LOCATION & FEATURES

Name of the Project: 5 Star Category Hotel with Convention Centre & Waterfront Activities.

Location: Along beach road, Vishakhapatnam, Andhra Pradesh India**.**

Site Coordinates: 17°43'22.65"**N** 83°20'24.48"**E**.

Total Site Area = 43537.45 Sq. M (10.97 ac.)

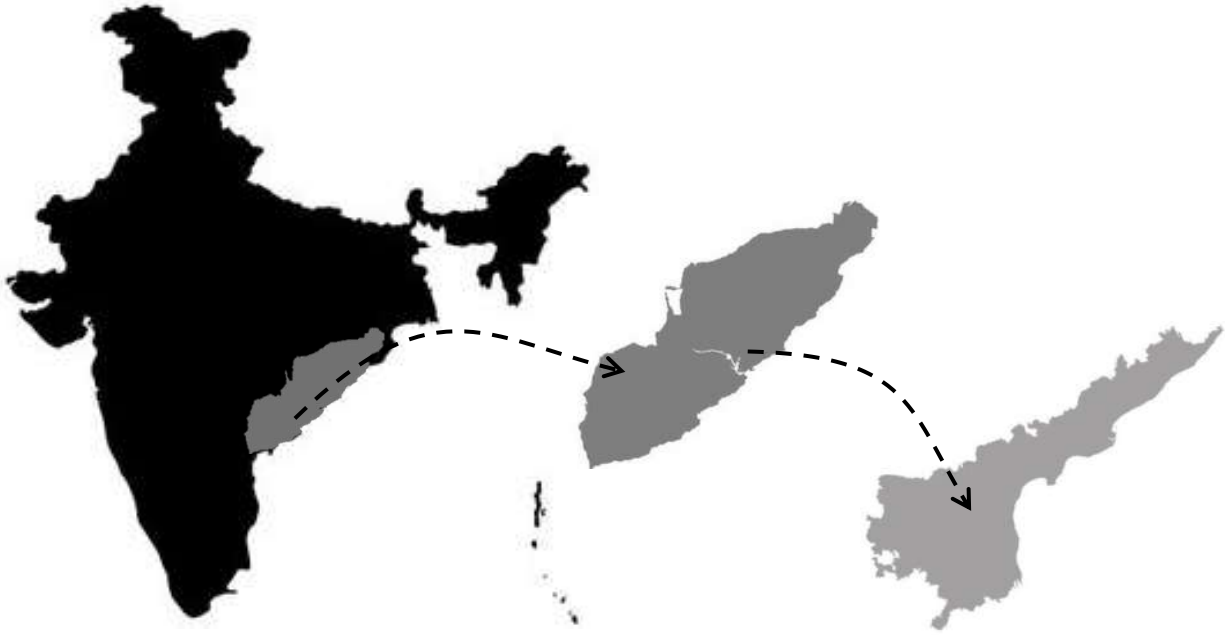


Figure 2 Site Location



Figure 1 Location Map

1.5 SITE PHOTOGRAPHS

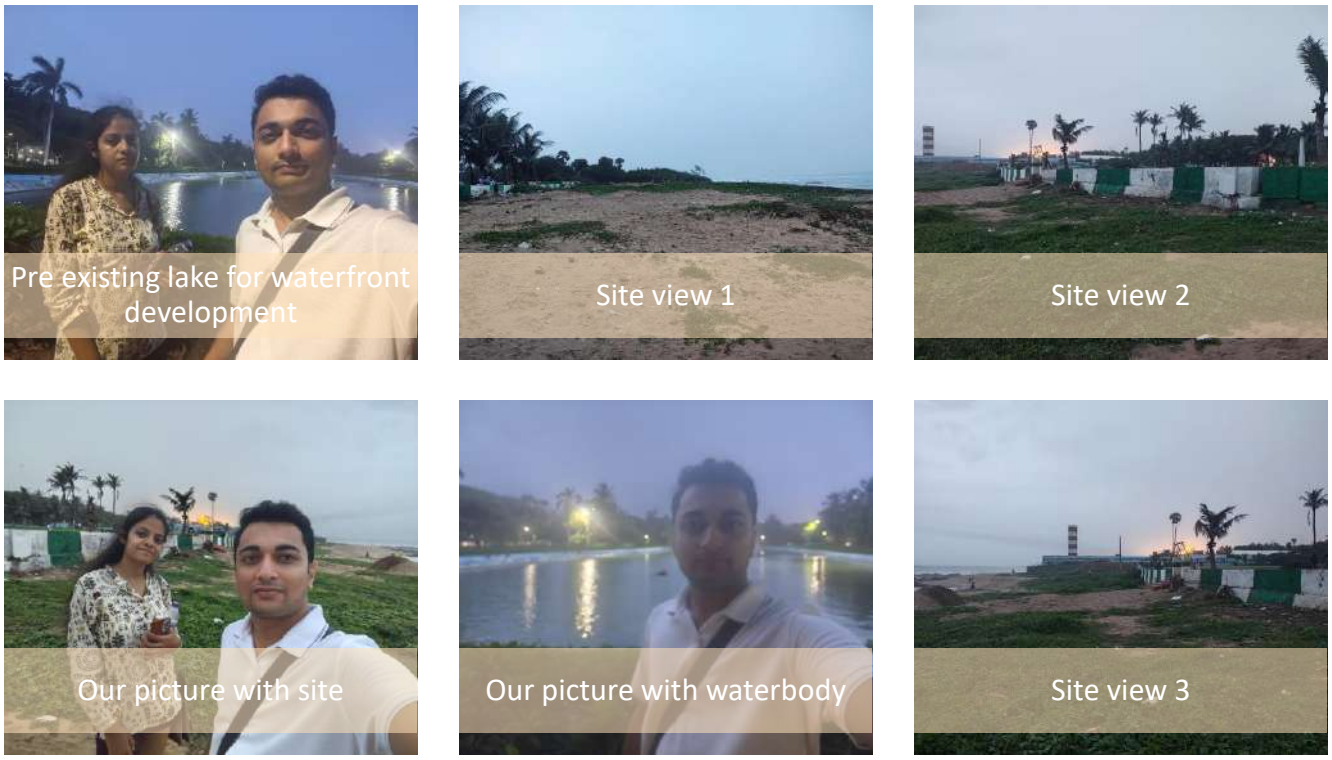


Figure 3 Site pictures

Table 2 Site details

S.no.	Description	Proposed
1.	Site area (sqm)	43625.112
2.	Site area (acre)	10.78
3.	Ground coverage	30%
4.	F.a.r.	2.5
5.	Max builtup area (sqm)	109,062.78
6.	Mos	10 m
7.	Building height	Upto 40 m
8.	Land use	Mixed use type 3
9.	CRZ	II
10.	Seismic zone	II

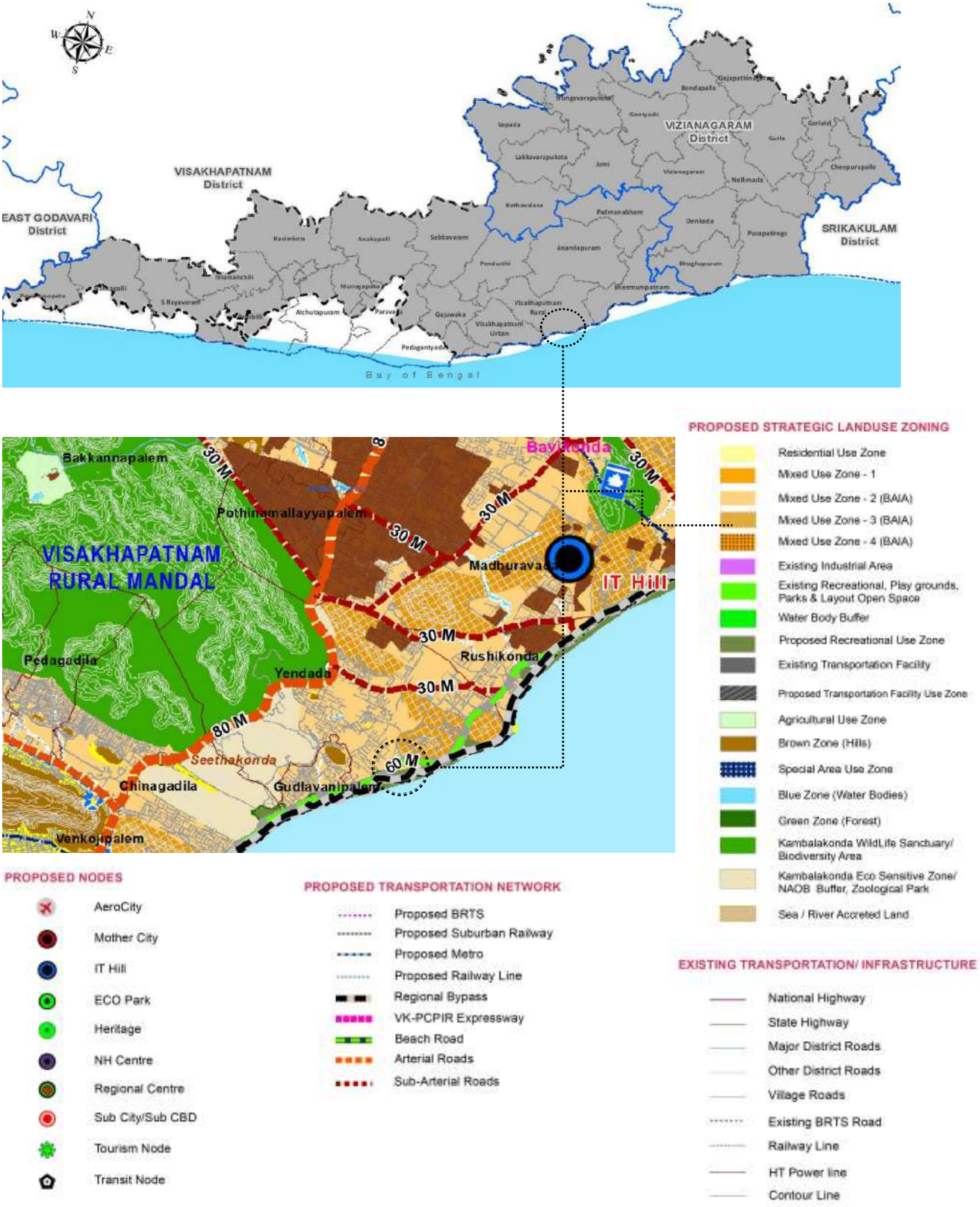


Figure 4 Land use map

1.6 LAND USE

This section examines the site's immediate surroundings and broader urban context to evaluate its integration, market viability, and community impact. It covers land use and zoning regulations, adjacent developments, local demographics, and Visakhapatnam's economic and tourism landscape, essential factors influencing the feasibility and strategic positioning of the proposed 5-star hotel and convention center.

Table 3 Existing Land Use and Zoning Classification of Site and Immediate Surroundings (Illustrative)

Category	**Description / Classification (Illustrative)**	**Relevance to Project**
Site Current Land Use	Vacant / Recreational	Basis for development potential and required change of use if applicable.
Site Zoning Classification	Tourism Zone / Mixed-Use (as per VUDA Master Plan)	Defines permissible uses, scale, and density of development.
Permitted FAR/FSI	2.5 (CRZ II)	Direct impact on building massing, floor area, and economic viability.
Permissible Building Height	Upto 40 meters (Illustrative, subject to CRZ & Airport Clearances)	Influences architectural design, views, and urban skyline integration.
Minimum Setbacks	10 M from all sides, for 24 m wide road	Shapes site layout, open spaces, and compliance with regulations.
Adjacent Land Use (North)	Residential (Low-Rise)	Potential for noise/privacy conflicts, need for buffer zones.
Adjacent Land Use (South)	Public Open Space / Beach Access	Opportunity for integration, pedestrian linkages, public amenities.
Adjacent Land Use (East)	Bay of Bengal (Waterfront)	Direct interface for waterfront activities, CRZ implications.
Adjacent Land Use (West)	Commercial / Arterial Road (NH16)	Access, traffic impact, commercial synergy.

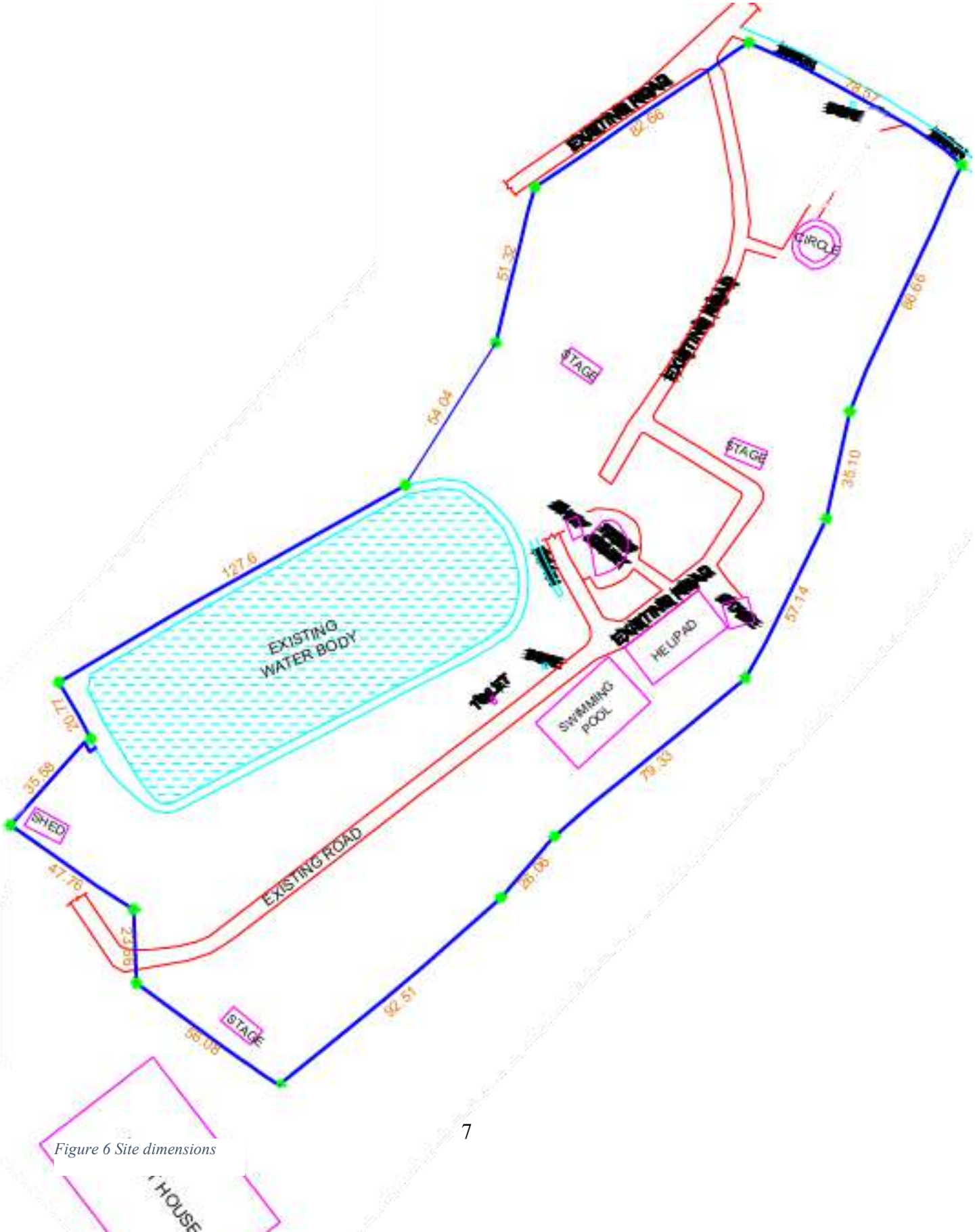


Figure 6 Site dimensions

CHAPTER 2

LITERATURE SURVEY

2.1 OVERVIEW

The Scope of the Project includes design, construction, management, operation, and maintenance of the following components for the Concession Period of 33 years, excluding construction period of 36 Months, as per the Minimum Development Obligations (MDOs) specified in the RFP for development of:

• Convention Centre & 5 Star Category Hotel / Resort

• Waterfront Entertainment Facilities

2.2 PRESCRIBED NORMS AND REGULATIONS FROM DEVELOPERS

Table 4 Applicable development control & regulation

S. No.	**Description of Parameter**	**Applicable Standards**	**Remarks**
1	Development Controls and regulations	Andhra Pradesh Building Rules – 2017 (G.O. Ms. No. 119, MA&UD, Dt. 28.03.2017) and amendments thereon, and National Building Code (NBC).	Any other applicable regulations/stipulations of any other statutory authorities applicable in the Local Body.
2	Andhra Pradesh Tourism Policy 2020-2025	Development / Activities shall be limited to those listed in the Policy.	Any other development / activity not listed in the Policy shall be prohibited.
3	VMRDA Master Plan 2041	G.O. Ms.No.136 dated 08.11.2021, MA&UD – VMRDA Perspective Plan 2051 & Master Plan 2041, and subsequent amendments, if any.	Development / Activities shall be limited to those listed in the Master plan. Any other applicable regulations/stipulations.
4	Coastal Regulation Zone (CRZ 2011)	Coastal Regulatory Zone Notification by the Ministry of Environment & Forest, GoI, 2011.	Any other applicable regulations/stipulations of any other statutory authorities.
5	Coastal Regulation Zone (CRZ 2019)	Coastal Regulatory Zone Notification by the Ministry of Environment & Forest,	Any other applicable regulations/stipulations of any

		GoI, 2019, as and when made applicable in the State of Andhra Pradesh, and subsequent amendments, if any.	other statutory authorities, as and when made applicable.
6	Hotel and Restaurant Association Classification Committee	Certification of Star Category from HRACC, Ministry of Tourism, India.	Any other applicable regulations/stipulations of any other statutory authorities.
7	Spatial planning and architectural design guidelines	Urban Development Plans Formulation & Implementation guidelines (UDPFI) and Time Saver Standards.	Any other applicable regulations/stipulations of any other statutory authorities.
8	Facilities for Persons with Different (Differently abled Persons)	Persons with Disabilities Act, 1995 with subsequent amendments and 'UN Convention for Rights of Persons with Disabilities (UNCRPD).	Any other applicable regulations/stipulations of any other statutory authorities.
9	All Pavements, Roads, and Signage	Indian Road Congress (IRC) & Ministry of Road Transport and Highways (MORTH) specifications.	Any other applicable regulations/stipulations of any other statutory authorities.
10	Building construction including structures, utilities, infrastructure facilities, etc.	National Building Code (NBC) regulations.	Any other applicable regulations/stipulations of any other statutory authorities.
11	Fire Protection and Detection Services.	National Fire Protection Authority (NFPA) regulations.	Any other applicable regulations/stipulations of any other statutory authorities.
12	Performance Standards	ISO 9001: 2008	Any other applicable regulations/stipulations of any other statutory authorities.

2.3 LOCAL BYELAWS

Policy on Waterfront Development

Andhra Pradesh's Coastal Potential & Policy Focus

Table 5 Coastal potential policy

Aspect	**Details**
Coastline Length	974 km
Tourism Focus	Beach and water-based tourism identified as priority sectors
Blue Flag Certification	Rushikonda Beach certified – represents global standards for safety, hygiene, and sustainability
Policy Objective	Promote premium tourism while ensuring ecological compliance and international-quality standards

Definition – Blue Flag Certification: An international eco-label awarded to beaches and marinas that meet high environmental and safety standards.

Development of Water Villas

Table 6 Water villas

Policy Provisions	**Details**
Responsible Body	Andhra Pradesh Tourism Authority (APTA)
Functions of APTA	Site identification, feasibility studies, investor facilitation
Regulatory Compliance	Strict adherence to CRZ norms and environmental laws
Private Investment Role	Encouraged through de-risked entry points via pre-vetted sites and support infrastructure

Definition – Water Villas: Luxury accommodations built over or adjacent to water bodies, offering exclusive waterfront experiences.

Development of Beach Shacks

Table 7 Beach shacks

Aspect	**Details**
Development Approach	Private operators selected through transparent bidding process
CRZ Compliance	Mandatory – all development must follow Coastal Regulation Zone guidelines
Operator Responsibility	Construction, operation, hygiene, safety, and adherence to all regulations
Shack Specifications	Within 500m of approved tourist beaches, max 1 storey, max 200 sq.m., min 10 seats for dining

Water Sports & River/Sea Cruises

Table 8 Water sports

Category	**Minimum Requirements**
Water Sports	Activities like kayaking, rafting, scuba, etc. must follow MoT/GoI safety guidelines
Water Ride Facilities	Must be tourist-focused, not for public transport; operator registration mandatory
River Cruises	Minimum 25 pax, onboard dining and entertainment required
Sea Cruises	Minimum 50 pax, with lodging, dining, and recreational services
Infrastructure Support	Government to invest in marinas, jetties, and boating facilities

Action Plan for Beach & Water-Based Tourism

Table 9 Action plan for water based tourism

Planned Action	**Purpose**
Water Sports Hubs	Identify and cluster beach zones with integrated offerings like villas and shacks
Blue Flag Expansion	More certified beaches to attract high-end and eco-conscious tourists

Strategic Benefit: If the resort project lies within these clusters, it gains from coordinated infrastructure and shared branding.

2.4 HRACC (HOTEL AND RESTAURANT APPROVAL CLASSIFICATION COMMITTEE)

Table 10 HRACC

Star Rating	Minimum Requirements
1 Star	- Shower or bathtub in all rooms- Daily room cleaning- Color TV with remote- Table and chair- Soap or body wash- Reception service- Fax service- Guest telephone- Extended breakfast- Beverage offer- Deposit facility
2 Star	- Reading light by bed- Bath essence or shower gel- Bath towels- Linen service- Sanitary products- Credit card acceptance- Breakfast buffet
3 Star	- Internet access in room- Reception open 14 hrs, phone 24 hrs- Luggage service- In-room telephone- Heated bathroom, hairdryer, tissues- Dressing mirror & luggage rack- Sewing kit, shoe polish, laundry & ironing- Extra pillow & blankets on request- Complaint management system

4 Star	- Reception open 18 hrs, phone 24 hrs- Lobby with seating & beverage service- Breakfast buffet or in-room breakfast menu- Minibar or 24-hr room beverage service- Couch & side table- Bathrobe & slippers on demand- Cosmetic products
5 Star	- Reception open 24 hrs- Multilingual staff- Concierge, page boy- Spacious reception with multiple seating areas & beverage service- Personalized greeting (flowers/gift/drink)- 24-hr room F&B & minibar- Internet & terminal- Room safe- Ironing & shoe polish service- Evening turndown service- Mystery guest audits

Design Considerations – Room Layout Types

Table 11 Room layout types

Layout Type	Key Features
Double Loaded Corridor	- Most economical- Needs 2 staircases- 16–24 rooms/floor (60 ft width)
Double Loaded T-shaped Corridor	- Needs 3 staircases- Economical use of space
Single Loaded Corridor	- Not economical- Desirable with ample space- 12–30 rooms/floor (32 ft width)
Square Block	- Central service core- Compact design- Ideal for small sites/tower layout
Y Plan	- Complex- Requires 3 staircases- Challenges in public area design
Tri Arc Plan	- Similar to Y plan- More space required- Curved rooms, large bathrooms
Circular Plan	- Risk of awkward inward-facing rooms- 16–24 rooms per floor
Circular with Central Core	- Compact like square block- Risk of poor room planning

Structural Regulations – As per Municipal Authorities

Table 12 structural regulations as per HRACC

Area	Requirements
Emergency Response	- Alarms must be reported immediately to fire brigade- Regular fire drills (every 3 months)- Participation by all occupants- Maintain records for 3 years
Signage Requirements	A. **Lift Landing Signs**: Clear, large font, visible, contrasting color, stair use in fireB. **Floor Number Signs**: Prominent display on each floorC. **Staircase/Elevator Signs**: Clearly indicate elevator/stair on each floorD.

	Re-entry Signs: Show if re-entry allowed on that floorE. **Building Floor Plan**: Shared with nearest fire station
Eco-Friendly Practices	- Safe solid & liquid waste disposal- Renewable energy (solar/wind) use earns extra classification points

Systematic Layout Planning (SLP)

Definition & Purpose

Table 13 SLP defination

Aspect	**Details**
Definition	Systematic Layout Planning (SLP) is a structured and rational method for developing efficient layouts by analyzing interrelationships among people, materials, equipment, and processes.
Purpose	To ensure the quickest material flow, minimal handling cost, and most logical spatial arrangement at the lowest overall cost.
Use Case	Applies to both mini-hotels (where space is critical) and large hotels (which may include banquet halls, terraces, etc.)

Key Elements of SLP

Table 14 Key elements of SLP

Element	**Explanation**
1. Relationships	Defines the closeness required between different areas/functions.
2. Space	Involves size, shape, and configuration needs of the layout.
3. Adjustments	Realistic optimization and final arrangement of layout elements.

Objectives of SLP

1 Minimize equipment investment

2 Minimize production time

3 Minimize material handling cost

4 Maximize space utilization

5 Maintain operational flexibility

6 Provide comfort to employees

Planning Phases in SLP

1 Determine area and location for departments

2 Establish general overall layout

3 Develop detailed layout plans

4 Install the selected layout

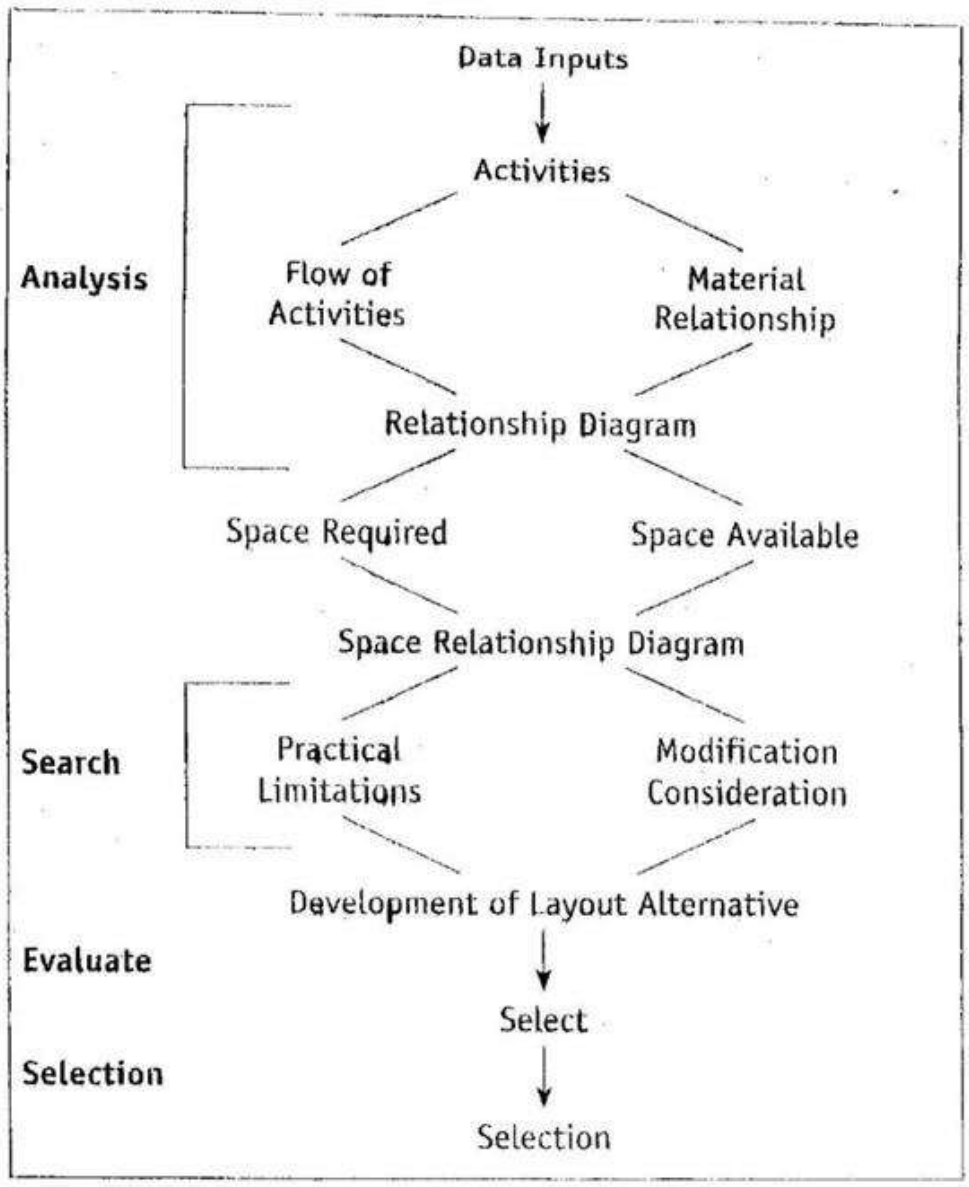


Figure 7 Step Systematic Layout Planning Process

Thumb rule for space allocation in hotels

Table 15 Thumb rule

Facility Type	**Component**	**100 Rooms**	**200 Rooms**	**500 Rooms**	**1000 Rooms**
1. Food Production	Main Kitchen	1100 sq.ft	2000 sq.ft	9000 sq.ft	18000 sq.ft
	Pantry	0	0	1200 sq.ft	1200 sq.ft
	Bakery	0	0	850 sq.ft	1000 sq.ft
	Room Service Kitchen	75 sq.ft	75 sq.ft	300 sq.ft	500 sq.ft
	Chef's Office	100 sq.ft	100 sq.ft	120 sq.ft	120 sq.ft
	Dry Food Storage	150 sq.ft	300 sq.ft	1000 sq.ft	1800 sq.ft
	Refrigerated Food Storage	100 sq.ft	200 sq.ft	500 sq.ft	1000 sq.ft
2. F&B Service	Coffee Shop	1200 sq.ft	2400 sq.ft	3500 sq.ft	4400 sq.ft
	Specialty Restaurant	0	0	2800 sq.ft	4000 sq.ft
	Bar	400 sq.ft	800 sq.ft	2000 sq.ft	2800 sq.ft
3. Housekeeping	Executive HK Office	100 sq.ft	100 sq.ft	125 sq.ft	150 sq.ft
	Secretary	0	0	100 sq.ft	100 sq.ft
	Linen Storage	300 sq.ft	500 sq.ft	1500 sq.ft	3000 sq.ft
	Uniform Storage	100 sq.ft	250 sq.ft	500 sq.ft	800 sq.ft
	Supplies Storage	100 sq.ft	100 sq.ft	100 sq.ft	200 sq.ft
	Lost and Found	0	100 sq.ft	150 sq.ft	200 sq.ft
	Laundry	0	1000 sq.ft	2500 sq.ft	4000 sq.ft
	Valet	0	100 sq.ft	150 sq.ft	200 sq.ft
	Laundry Supervisor	0	0	100 sq.ft	120 sq.ft
4. Front Office	Front Office Manager	0	120 sq.ft	120 sq.ft	120 sq.ft
	Bell Desk Storage	0	150 sq.ft	200 sq.ft	300 sq.ft
	Safety Deposit Lockers	0	30 sq.ft	60 sq.ft	60 sq.ft
	Front Desk	0	160 sq.ft	250 sq.ft	450 sq.ft
	Reservations	0	80 sq.ft	200 sq.ft	250 sq.ft
	Telephone Operator	0	80 sq.ft	200 sq.ft	250 sq.ft

Necessary and desirables spaces from ministry for tourism

General & Guest Room Facilities

1. Full time operation 7 days a week in season: N.
2. Establishment to have all necessary trading licenses / Permissions: N.

3. Establishment to have public liability insurance: D.
4. 24hr. lifts for buildings higher than ground plus two floors: N.
5. Bathrooms, Bedrooms, Public areas and kitchen fully serviced daily: N.
6. All floor surfaces clean and in good shape: N.
7. Minimum 10 lettable rooms, all with outside windows/ventilation: N.
8. Minimum size of bedroom (excluding bathroom): 200 sq. ft..
9. Air conditioning: 100% of rooms.
10. A clean change of bed and bath linen daily and between check-in: N.
11. Minimum bed width: 90 cm for single and 180 cm for double.
12. Mattress thickness: N, minimum 10 cm.
13. Minimum bedding: 2 sheets, pillow and case, blanket, mattress protector / bed cover.
14. Suite: N, minimum 1 suite with a bedroom and separate sitting area, having one bathroom and one powder room.
15. Hairdryers: N, must be available in the room on a complimentary basis.
16. Safe keeping/in room safe: N, to be provided in the room.
17. Mini bar / Fridge: N.
18. Drinking water: N, minimum two sealed bottles of branded packaged drinking water of minimum 500 ml per person per day on a complimentary basis.
19. Shelves / drawer space: N.
20. Wardrobe with minimum 4 clothes hangers per bedding: N.
21. Sufficient lighting (1 lamp per bed): N.
22. A 5 amp earthed power socket: N.
23. A bedside table and drawer: N.
24. TV Cable: N, except for eco and nature resorts where it's mandatory to have a TV with cable in a common area.
25. A writing surface with sufficient lighting: N.
26. Chairs: N, preferably one per bed.
27. Waste paper basket: N.
28. Opaque curtains or screening at all windows: N, specifically blackout curtains.
29. A mirror at least half length (3 ft.): N.
30. A stationary folder containing stationary: N.
31. A 'do not disturb' notice: N.
32. Night spread/bed cover: N.
33. Energy saving lighting: N.
34. Linen Room: N.

Bathroom, Public Area & Guest Services

1. Number of rooms with attached bathrooms: All.
2. Minimum size of bathroom: 45 sq. ft..
3. 1 bath towel and 1 hand towel to be provided per guest: N.
4. Bath Mat: N.
5. Guest toiletries: N.
6. Clothes hooks in each bath / shower room: N, two hooks.

7. Sanitary bin: N.
8. Each western WC toilet to have a seat with lid and toilet paper: N.
9. Water sprays or bidets or washlets or other modern water-based post-toilet paper hygiene facilities: N.
10. Floors and walls to have non-porous surfaces: N.
11. Hot and Cold running water available 24 hours: N.
12. Shower cabin: N.
13. Bath tubs: D.
14. Water saving taps and showers: N.
15. Energy saving lighting: N.
16. Lounge or seating area in the lobby: N.
17. Reception facility: N, manned a minimum of 16 hours.
18. Valet (parking) services to be available: N.
19. Availability of Room, F&B and other tariff: N.
20. Heating and cooling in public areas: N.
21. Public rest rooms for ladies and gents: N.
22. At least one room for differently abled guest: N.
23. Ramps with anti-slip floors at the entrance: N.
24. Public Restrooms for differently-abled guests: N.
25. Dry cleaning/laundry: N, for 5-Star Deluxe; D, for 5-Star (may be outsourced).
26. Tea / coffee making facility in the room: N.
27. Iron and Iron Board facility: N, in every lettable room.
28. Paid transportation on call: N.
29. Shoe cleaning shoe horn & slippers: N.
30. Ice (from drinking water) on demand: N.
31. Acceptance of common credit cards and facility/infrastructure for accepting/making payments by digital transactions: N.
32. Assistance with luggage on request: N.
33. A public telephone on premises: N.
34. Wake up call service on request: N.
35. Messages for guests to be recorded and delivered: N.
36. Doctor on call: N.
37. Stamps and mailing facilities: D.
38. Newspapers available: N.
39. Access to travel desk facilities: N.
40. Left luggage facilities: N.
41. Provision for emergency supplies toiletries / first aid kit: N.
42. Health Fitness and Barber's Shop: N.
43. Beauty Salon and Barber's Shop: D.
44. Florist: D.
45. Utility shop/kiosk: D.
46. Money changing facilities: D.

Food & Beverage & Kitchen

1. Food & Beverage Outlets: A 24-hour multi-cuisine restaurant cum coffee shop and one specialty restaurant are necessary for Grade A cities. For other cities, a 24-hour multi-cuisine restaurant is necessary, and a specialty restaurant is desirable.
2. Room Service: 24-hour room service is necessary.
3. Bar: N.
4. Crockery and glassware: N.
5. Cutlery: N, to be at least stainless steel.
6. Refrigerator with deep freezer: N.
7. Segregated storage of meat, fish and vegetables: N.
8. Tiled walls, non-slip floors: N.
9. Colour coded synthetic chopping boards: N.
10. Head covering for production staff: N.
11. Daily germicidal cleaning of floors: N.
12. Good quality cooking vessels / utensils: N.
13. All food grade equipment containers: N.
14. Drinking water (in kitchen): N, treated with UV+ filtration.
15. Ventilation system: N.
16. Garbage to be segregated wet and dry: N.
17. Wet garbage area to be air-conditioned: N.
18. Receiving areas and stores distinct from garbage area: N.
19. Six monthly medical check ups for production staff: N.
20. First aid training for all kitchen staff: N.
21. Pest control: N.

Staff & Safety

1. Staff uniforms for front of the house: N.
2. English speaking front office staff: N.
3. Percentage of Supervisory staff: 80%.
4. Percentage of skilled staff: 60%.
5. Staff Rest Rooms: N.
6. Staff locker Rooms: N.
7. Toilet facilities: N.
8. Separate Dining area & Facility: N.
9. Metal detectors (door frame or hand held): N.
10. CCTV at strategic location: N.
11. X-Ray Machine: N.
12. Under belly scanners to screen vehicles: N.
13. Verification (of staff and suppliers): N.
14. Staff trained in firefighting Drill: N.
15. Security arrangements for all hotels entrances: N.
16. Each bedroom door to be fitted with lock and key, viewport / peephole & internal securing device: N.
17. Smoke Detectors: N.
18. Fire and Emergency alarms should have visual & audible signals: N.

19. First aid kit with over-the-counter medicines at the front desk: N.
20. Fire Exit Signs on guest floors with emergency / backup power: N.
21. Eco-Friendly Practices
22. Sewage Treatment Plant: N.
23. Rain Water Harvesting: N.
24. Waste management: N.
25. Pollution control methods for air, water and light: N.
26. Introduction of non-CFC equipment for refrigeration and air conditioning and other Eco-friendly measures / initiatives: N.

2.5 CENTRAL BYE LAWS

2.5.1 Urban and regional development plans formulation AND IMPLEMENTATION guidelines (URDPFI)

Means of access

For plot development of uses other than residential, the following minimum width corresponding to the length of the means of access shall be followed:

Sr. No.	Width of Means of Access (m)	Length of Means of Access (m)	Other Controls
1.	12.0	200	➢ The width of the means of access shall not be less than the internal access ways in layouts and subdivision.
2.	15.0	400	
3.	18.0	600	
4.	24.0	above 600	

Source: NBC, 2005.

Figure 8Means of Access (NBC, 2005)

For high rise buildings and buildings other than residential, the following additional provisions shall be ensured:

I. The width of the abutting main street shall not be less than 12 m and one end of this street shall join another street not less than 12 m in width.
II. The approach to the building and open spaces on all sides up to 6 m width and the layout shall be done in consultation with Chief Fire Officer of the city.
III. The main entrance to the plot shall be of minimum 6 m width to allow easy access to fire engine.

Parking

2	Commercial Centres		
	Convenience Shopping Centre/Local Shopping Centre / Local Level Commercial areas	2 ECS / 100 sqm of floor area	For Population between 2- 10 lakh – 1 car parking space for every 4 guest room. For Population between 10-50 lakh – 1 car parking space for every 3 guest room. For Population more than 50 lakh – 1 car parking space for every 2 guest room[143].
	Service Market	2 ECS / 100 sqm of floor area	
	Community Centre / Non- hierarchical Commercial Centre	3 ECS / 100 sqm of floor area	
	District Centre/ Sub-Central Business District/Sub-City Level Commercial areas	3 ECS / 100 sqm of floor area	
	Commercial Plot: Retail & Commerce Metropolitan City Centre	3 ECS / 100 sqm of floor area	
	Hotel	3 ECS / 100 sqm of floor area	

Figure 9 ECS requirements

Minimum setbacks

Setbacks based on Plot Sizes :The following table may be referred for deciding the minimum setbacks for different size plots in various use zones. The size of plots should be

Sr. No.	Plot Size (in sqm)	Front (m)	Rear (m)		Side (m)	Side (m)
			Plains	Hill Towns	Plains	Hill Towns
1.	Upto 60	0	0	2	0	1.5
2.	Above 60 and upto 150	3	0	2	0	1.5
3.	Above 150 & upto 300	3	3	3	0	1.5
4.	Above 300 & upto 500	3	3	3	3	3
5.	Above 500 & upto 1000	6	3	3	3	3
6.	Above 1000 & upto 2000	9	3	3	3	3
7.	Above 2000 & upto 4000	9	6	6	6	6
8.	Above 4000 & upto 10000	9	6	6	6	6
9.	Above 10000	15	9	9	9	9

Source: UDPFI Guidelines 1996.

decided after taking into account the provisions of National Housing Policy and Urban Land (Ceiling and regulation) Act. The setbacks, if necessary

Figure 10 Minimum setbacks

Setbacks with respect to abutting road width

Front Setback

Sr. No.	Front Setback (m)	Width of street fronting the plot (m)	Remarks
1.	1.5	Upto 7.5	For buildings upto a maximum height of 7 m
2.	3.0	7.5 to 18	
3.	4.5	18 to 30	
4.	6.0	Above 30	

Figure 11 Front setback w.r.t. abutting road width

***Note**: For streets less than 7.5 m in width, the distance of the building (building line) shall be at least 5m from the centre line of the street.*

Rear and Side setback for building heights above 10m

Sr. No.	Height of Buildings (m)	Side and rear setbacks (m)	Other Controls
1.	10	3	➢ For buildings above 24 m in height, the minimum front setback shall be 6 m. ➢ Where rooms do not derive light and ventilation from the exterior open space, the width of such space shall be reduced by 1 m subject to a minimum of 3 m and maximum of 8m. ➢ Alternative setbacks for tower like structures ○ Upto height of 24 m with one setback: Minimum 6m ○ Between 24 m and 37.5 m with one setback: Minimum 9 m ○ Above 37.5 m with two setbacks: Minimum 12 m
2.	15	5	
3.	18	6	
4.	21	7	
5.	24	8	
6.	27	9	
7.	30	10	
8.	35	11	
9.	40	12	
10.	45	13	
11.	50	14	
12.	55 and above	16	

Figure 12Side & Rare setback w.r.t. abutting road width

The open areas provided in the buildings can be used for the following permissible activities:

Garden, rockery, water well and well structures, plant nursery, water pool, swimming pool (if un covered), platform around a tree, landscaping, tank, fountain, bench, *chabutra* with open to pandunen closed on sides by walls and the like.

Drainage culvert, conduit, catch pit, gully pit, chamber, gutter and the like.

Compound wall, gate, un-storied porch and portico, canopy, slide, swing, uncovered staircase, ramps are as covered by *chajja* and the like.

GroUND COVERAGE & FAR

Sr. No.	Hierarchy of Commercial Centre	Maximum Ground Coverage (%)		Maximum FAR		Maximum Height (m)		Other Controls
		Plains	Hills	Plains	Hills	Plains	Hills	
1.	Cluster Centre Convenience Shopping	40	40	60	60	15	6	
2.	Neighbourhood Centre	30	35	100	100	15	9	
3.	Community Centre	25	30	100	100	26	15	
4.	District Centre	25	25	125	125	37	15	Some of the buildings in Plains could be permitted upto 50 m height with the approval of the Government for achieving an urban form.
5.	Sub city centre	--	--	--	--	--	--	Controls to be as per requirement
6.	City Centre	25 (MPD, pg 59)	--	150 (MPD, pg 59)	--	--	--	Other controls to be as per requirement
7.	Hotel	40 (MPD, pg 59)	--	225	--	--	--	Other controls to be as per requirement
8.	Service Apartment	30	--	150	--	--	--	Other controls to be as per requirement
9.	Any other commercial centre	25%	--	100	--	--	--	Other controls to be as per requirement

Source: UDPFI Guidelines 1996, MPD.

Figure 13 Ground Coverage & FAR

WATER SUPPLY

The CPHEEO Manual recommends fire-fighting water demand as a function of population, i.e. water demand for fire-fighting purpose = $100\sqrt{P}$, where P stands for forecasted population may be adopted for communities larger than 50,000. It is desirable that one-third of fire-fighting requirements from part of the service storage. The balance requirement may be distributed in several static tanks at strategic points. These static tanks may be filled from nearby ponds, streams or canals by water tankers wherever feasible. The pressure required for fire-fighting would have to be boosted by fire engines.

S. No.	Institutions	Litres per head per day
1	Hospital (including laundry) a. no of beds exceeding 100 b. no. of beds not exceeding 100	a. 450 (per bed) b. 340 (per bed)
2	Hotels	180 (per bed)
3	Hostels	135
4	Nurses homes and medical quarters	135
5	Boarding schools/colleges	135
6	Restaurants	70 (per seat)
7	Airport and seaports	70
8	Junction stations and intermediate station where mail or express stoppage (both railway and bus stations) is provided	70
9	Terminal stations	45
10	Intermediate stations (excluding mail and express stops)	45 (could be reduced to 25 where bathing facilities are not provided)
11	Day Schools/colleges	45
12	Offices	45
13	Factories	45(could be reduced to 30 where no bathing rooms are required to be provided)
14	Cinema, concert halls and theatres	15

Source: CPHEEO Manual, 1999.

Figure 14 Water supply requirement in LCD

FIRE FIGHTING

The CPHEEO Manual recommends fire-fighting water demand as a function of population, ie. water demand for fire-fighting purpose = $100\sqrt{P}$, where P stands for forecasted population may be adopted for communities larger than 50,000. It is desirable that one-third of fire-fighting requirements from part of the service storage. The balance requirement may be distributed in several static tanks at strategic points. These static tanks may be filled from nearby ponds, streams or canals by water tankers wherever feasible. The pressure required for fire-fighting would have to be boosted by fire engines

SOLID WASTE MANAGEMENT

Municipal Solid Waste (MSW) is the trash or garbage that is discarded day to day ina human settlement. According to MSW Rules 2000 MSW includes commercial and

residential wastes generated in a municipal or notified areas in either solid or semisolid form excluding industrial hazardous wastes but including treated bio-medical wastes. Waste generation encompasses activities in which materials are identified as no longer being of value (being in the present form) and are either thrown away or gathered together for disposal. The following table indicates the waste generation per capita per day for estimation and forecast of waste generation for future for planning purposes:

S.No.	Land use type	Estimated waste generation
1	Residential refuse	0.3 to 0.6 kg/cap/day
2	Commercial refuse	0.1 to 0.2 kg/cap/day
3	Street sweepings	0.05 to 0.2 kg/cap/day
4	Institutional refuse	0.05 to 0.2 kg/cap/day

Source: Manual on Solid Waste Management, CPHEEO – 2000

Figure 15 Waste generation

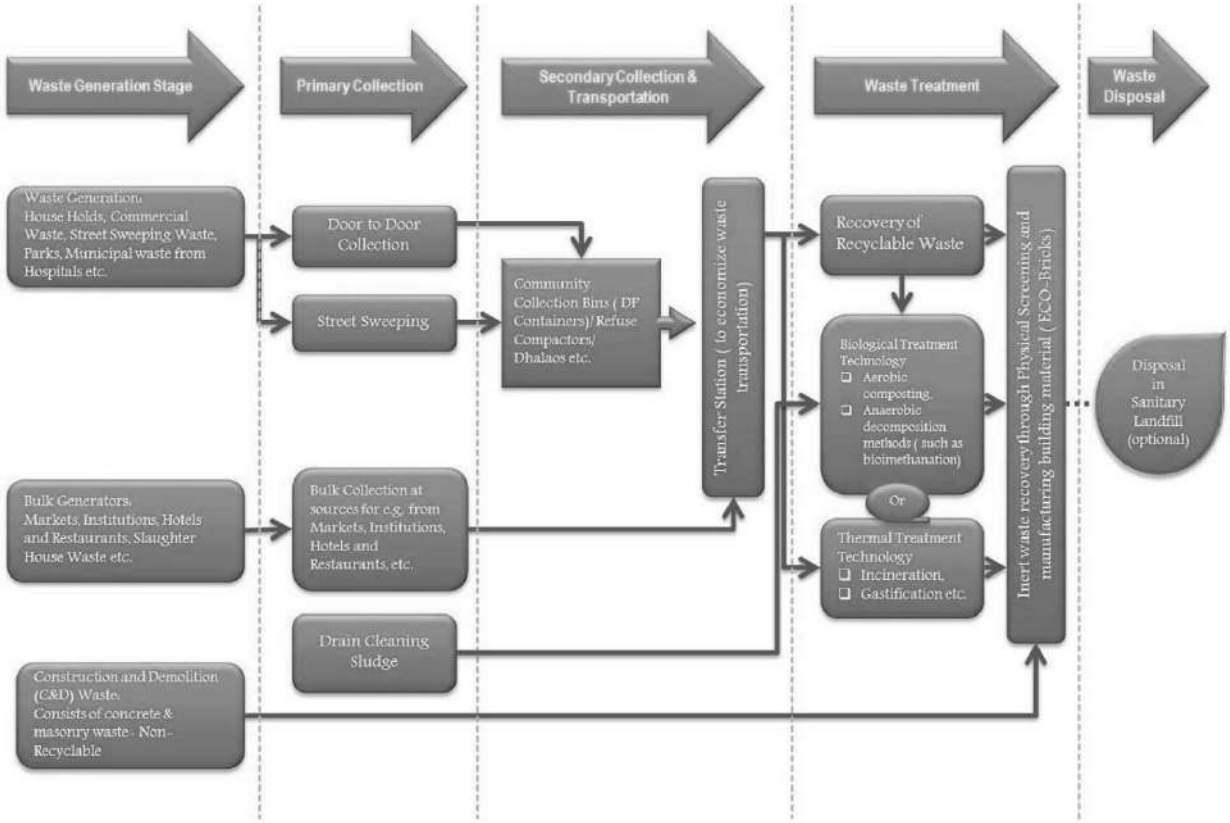


Figure 16 Flow diagram of waste disposal

2.6 NEUFERT ARCHITECTS' DATA FOR HOTELS AND RESTAURANTS

BUILDING

In addition to the recommendations in the code the building in which food service establishment is located shall also conform to the local building byelaws in force. The building should be of a permanent nature and maintained in a proper state of repair and cleanliness.

Table 16 Basic terminology of spaces from Neufert's

Area/Function	Description
Hotel lobby & reception	Central, prestigious hub linking various parts of the operation. Serves as the well-arranged main nerve center.
Catering area	Located near the hotel lobby. The extent of services offered depends on hotel category.
Administration	Staff area, separately accessed but sometimes connected to other hotel areas.
Guest room area	Contains differentiated rooms and individual access areas; arrangement considers category, orientation, and noise screening.
Service area	Includes kitchens, store, and associated rooms.

vertical zoning

Block:

The "Block" form consists of a simple, rectangular block structure. Hotel rooms are arranged

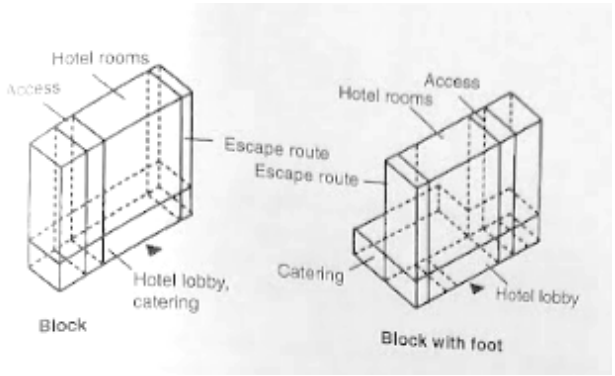


Figure 17 form 1&2

along access corridors, with escape routes, a hotel lobby, and catering facilities typically located at the base of the building.

Block with foot:

Similar to the block form, the “Block with foot” adds an extension or ‘foot,’ often used for the hotel lobby or catering area, providing more flexibility in the arrangement of service spaces.

Corner block:

The “Corner block” is an L-shaped structure, where hotel rooms are arranged along two wings. This layout offers distinctive access and escape routes, with the catering and lobby

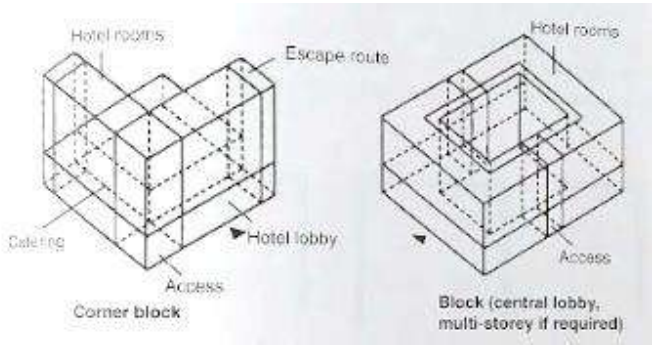


Figure 18 form 3&4

areas positioned conveniently at the intersection.

Block (central lobby, multi-storey if required):

This form features a central lobby, often extending vertically to multiple storeys if needed. Hotel rooms surround this central space and access and escape routes are directly connected to the core.

Solitary (central lobby):

The “Solitary (central lobby)” form typically features a round or standalone building, with a central lobby and hotel rooms arranged in a ring or radial fashion around it, ensuring direct access.

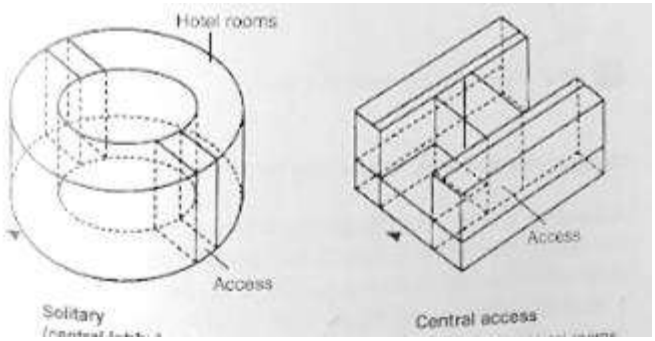


Figure 19 form 5&6

Central access:

In the “Central access” form, a central corridor or lobby gives access to hotel rooms on either side, with escape routes and service areas efficiently organized off the main axis.

Star:

The “Star” configuration has hotel rooms extending outwards in branch-like arms from a

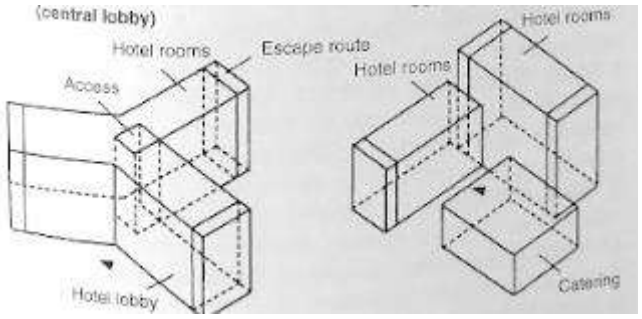


Figure 20 form 7&8

central hotel lobby, offering direct access and flexibility in room arrangement.

Ensemble:

The “Ensemble” form combines several blocks or wings into a larger, cohesive hotel complex, allowing for varied arrangements and larger capacities, suited to diverse site and operational needs.

Horizontal zoining

The scheme below the tables visually represents the typical horizontal zoning layout, showing how different hotel functions are organized:

1. Public and common areas (like Reception/Lobby) are placed centrally for easy access.
2. Guest rooms are set on both sides, making corridors efficient.
3. Catering (Restaurant/Bar/Kitchen) is close to the Lobby.
4. Event spaces (Ballroom, Seminar rooms) are also central or adjacent to public areas.
5. Service and staff rooms are located away from guest circulation but connected for efficient operations.
6. Deliveries, Stores, Laundry, and Services are grouped and separated from guest flow.
7. Recreation (Swimming pool, Sport area) is on the periphery or in areas with special access.
8. Vehicle access (parking/garage) is shown with direct/controlled access.

Purpose: Ensures that public, semi-public, and private zones are clearly separated, improving functionality, guest experience, and operational efficiency.

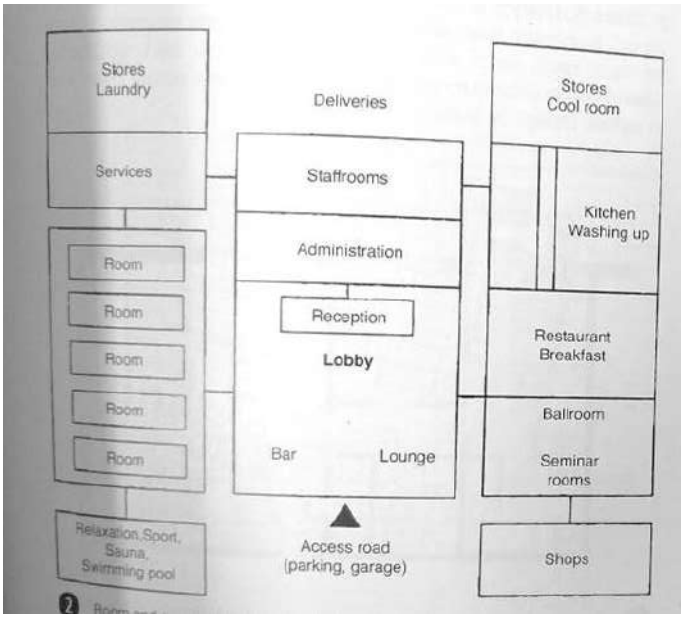
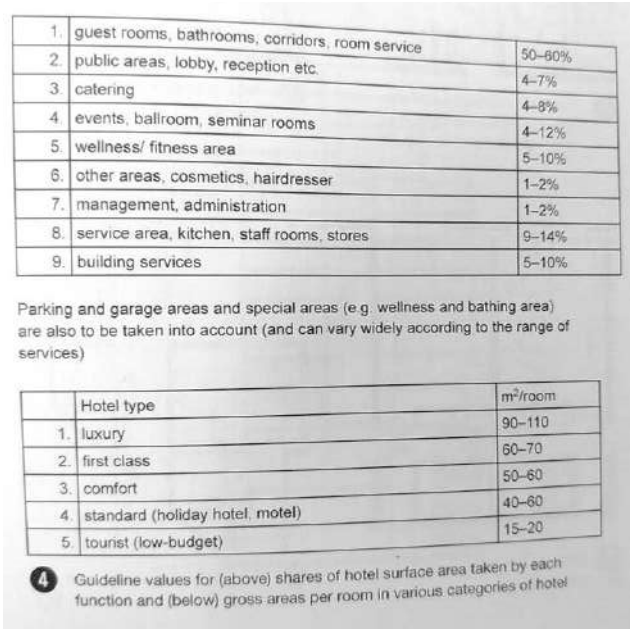


Figure 21 Horizontal zoning

FLOORS

The floors of all rooms in which food or drink is stored, prepared or served and of all washing placed shall be of such construction as to be impervious, easily cleansed, smooth and in good repair. All floors shall be kept clean and free from litter. Dustless method of floor cleaning shall be used, ail except emergency floor cleaning shall be done during the



1.	guest rooms, bathrooms, corridors, room service	50–60%
2.	public areas, lobby, reception etc.	4–7%
3.	catering	4–8%
4.	events, ballroom, seminar rooms	4–12%
5.	wellness/ fitness area	5–10%
6.	other areas, cosmetics, hairdresser	1–2%
7.	management, administration	1–2%
8.	service area, kitchen, staff rooms, stores	9–14%
9.	building services	5–10%

Parking and garage areas and special areas (e.g. wellness and bathing area) are also to be taken into account (and can vary widely according to the range of services)

	Hotel type	m²/room
1.	luxury	90–110
2.	first class	60–70
3.	comfort	50–60
4.	standard (holiday hotel, motel)	40–60
5.	tourist (low-budget)	15–20

4 Guideline values for (above) shares of hotel surface area taken by each function and (below) gross areas per room in various categories of hotel

Figure 22 Internal area statement

period when least amount of food and drink is exposed.

WALLS

The walls shall have a smooth, non-absorbent surface, free from cracks and crevices to facilitate their efficient cleaning.

The walls of all rooms in which food or drink is prepared or utensils are washed shall have a smooth washable surface up to a minimum height of 2-O m from the floor.

CEILING

Ceiling shall be clean, leak-proof and have a smooth non-absorbent surface free from cracks and crevices to facilitate their efficient cleaning. These should be such that they do not harbour vermin.

DOOR AND WINDOWS

In the absence of air-conditioning all openings to the outer air including doors, windows, sky lights shall be effectively screened with tight fitting screens free from holes with wire gauge conforming to IS: 1568-

1960*. The doors when not in use shall be kept in closed position. Self closing screened doors to the outer air shall open outwards. Other methods approved by the authority shall be employed to ensure the absence of flies

LIGHTING

TABLE 1 RECOMMENDED VALUES OF ILLUMINATION

The lighting of some of these locations will be determined primarily by aesthetic considerations and the recommended illumination values as given in IS : 3646 (Part II)-1966* may be taken as a guide only.

Sl No.	Areas	Illumination, Lux
(1)	(2)	(3)
i)	Entrance halls	150
ii)	Reception and accounts	300
iii)	Dining rooms (tables)	100
iv)	Lounges	150
v)	Bedrooms:	
	a) General	100
	b) Dressing tables, bed heads, etc	200
vi)	Writing rooms (tables)	300
vii)	Corridors	70
viii)	Stairs	100
ix)	Laundries	200
x)	Kitchens	†200
xi)	Goods and passenger lifts	70
xii)	Clockrooms and toilets	†200
xiii)	Dining rooms:	
	a) Tables	100
	b) Cash desks	300
xiv)	Self service-counters	300

*Code of practice for interior illumination: Part II Schedule for values of illumination and glare index.

†Supplementary local lighting should be provided over kitchen equipment and mirrors.

Figure 23 Recommended values of illumination – IS Codes

VENTILATION

In case of ran-air-conditioned buildings the minimum standards of mechanical ventilation shall be maintained as given

TABLE 2 VENTILATION REQUIREMENTS FOR NON-AIRCONDITIONED BUILDINGS

Sl No.	Area	Air Changes per Hour
(1)	(2)	(3)
i)	Living rooms	3
ii)	Dining and lounge	2-3
iii)	Big kitchen	12
iv)	Small kitchen	6
v)	Toilets	6

Figure 24 Ventilation Requirements - IS Codes

WATERSUPPLY

There shall be adequate supply of safe and potable water. Running water shall be easily accessible to all rooms in which food is prepared or utensils

TABLE 3 WATER SUPPLY REQUIREMENTS FOR HOTELS AND RESTAURANTS

Sl No.	Description	Non-Airconditioned (Litres per Day)	Air Conditioned (Litres per Day)
(1)	(2)	(3)	(4)
i)	Hotels (per bed)	180	275
ii)	Restaurants (per seat)	70	97

Note — In hotels where laundry is provided arrangement for an extra quantity of 120 litres per bed should be made.

are washed. Requirements for water supply for hotels and restaurants shall be as given

Figure 25 Water requirement in hotel

STORAGE OF WATER

For the storage of water, proper receptacles made of galvanized iron or other suitable material shall be used. Such receptacles shall he kept covered with tight fitting lids and shall have screw caps at the bottom for draining out residual water. The receptacles shall be placed on a stand or a platform rasily accessible for the purpose of maintenance and cleaning, The receptacles shall be examined and cleaned regularly.

DRAINAGE

Adequate arrangements shall be made for satisfactory drainage of all sewage and waste water. Harmful waste water, such as water containing kitchen waste, &all be saticfactorily disposed of. The drainage shall be so designed as to cause no stagnation at

the maximum discharge rate fur which the different units are designed. The requirements for firments for drainage and sanitation shall conform to the requirements given

TABLE 4 REQUIREMENTS OF DRAINAGE AND SANITATION FITMENTS IN HOTELS

(*Clause* 14.1.1)

Sl No.	Fitments	For Residential Public and Staff	For Public Rooms		For Non-Residential Staff	
			For Males	For Females	For Males	For Females
(1)	(2)	(3)	(4)	(5)	(6)	(7)
i)	Water-closets	1 per 8 persons omitting occupants of the room with attached water-closets; minimum of 2 if both sexes are lodged	1 per 100 persons up to 400 persons; and for over 400, add at the rate of 1 per 250 persons or part thereof	2 per 100 persons up to 200 persons; and for over 200, add at the rate of 1 per 100 persons or part thereof	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons
ii)	Ablution taps	1 in each water-closet	1 in each water-closet	1 in each water-closet	1 in each water-closet	1 in each water-closet
		1 water tap with draining arrangements shall be provided for every 50 persons or part thereof in the vicinity of water-closets and urinals				
iii)	Urinals	—	1 per 50 persons or part thereof	—	Nil up to 6 persons 1 for 7-20 persons 2 for 21-45 persons 3 for 46-70 persons 4 for 71-100 persons	—
iv)	Wash basins	1 per 10 persons omitting the wash basins installed in the room suite	1 per water-closet and urinal provided	1 per water-closet provided	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons
v)	Baths	1 per 10 persons omitting occupants of the room with bath *en suite*	—	—	—	—
vi)	Slop sinks	1 per 30 bedrooms, minimum 1 per floor	—	—	—	—
vii)	Kitchen sinks and dish washers	← 1 in each kitchen →				

NOTE 1 — Some of the water closets may be of European style if desired.

NOTE 2 — It may be assumed that two-thirds of the number are males and one-third females.

Figure 26 Drainage & Sanitation fitments in hotels- IS Codes

Figure 27 Drainage & Sanitation fitments in Restaurants- IS Codes

Sl No.	Fitments	For Male Public	For Female Public	For Male Staff	For Female Staff
(1)	(2)	(3)	(4)	(5)	(6)
i)	Water-closets	1 for 50 seats up to 200 seats; and for over 200 seats, add at the rate of 1 per 100 seats or part thereof	1 for 50 seats up to 200 seats; and for over 200 seats, add at the rate of 1 per 100 seats or part thereof	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons
ii)	Ablution taps	1 in each water-closet	1 in each water-closet	1 in each water-closet	1 in each water-closet
		1 water tap with draining arrangements shall be provided for every 50 persons or part thereof in the vicinity of water-closets and urinals.			
iii)	Urinals	1 per 50 seats	—	Nil up to 6 persons 1 for 7-20 persons 2 for 21-45 persons 3 for 46-70 persons 4 for 71-100 persons	—
iv)	Wash basins	← 1 for every water-closet provided →			
v)	Kitchen sinks and dish washers	← 1 in each kitchen →			
vi)	Slop or service sinks	← 1 in the restaurant →			

Note 1 — Some of the water closets may be of European style, if desired.

Note 2 — It may be assumed that two-thirds of the number are males and one-third females.

Septic tanks conforming to IS: 2470 (Part I)- 1963* or IS: 2470 (Part II)-l964 shall be provided if required by the authority. The gradient of the drains should be such that no water stagnates anywhere within the premises. Where no sewerage is provided for the final outfall, soak pits or access pools to the satisfaction of the Authority should be provided

KITCHEN

Kitchen shalt be sufficiently spacious and should be of a size in proportion to the average number of diners catered for at one meal, The floor spice in the kitchen shall be calculated at the rate of0.5 me Min per diner. In case of snack bars, soda fountains, etc, the service-cum dispensing area shall be treated as part of the kitchen.

The minimum size of the kitchen should not be less than 10 rnp and none of the sides less than 2.4 meter. Exhaust fans should have provisions of grease filters for collecting grease

STORAGE AND HANDLING EQUIPMENT

All containers and utensils shall be stored at a height of not less than. 430 mm above the floor in a clean, dry place protected from flies, splash, dust, overhead leakage, and other contamination

STORAGE OF FOOD STUFF

All perishable food shall be stored at the temperatures

as given in

Sl No.	Names of Articles	Storage Temperature °C
(1)	(2)	(3)
i)	Meat, meat products, poultry	0·00 to 1·50
ii)	Fresh fish and sea food	−2·00 ,, −0·50
iii)	Dairy products and eggs	0·50 ,, 2·50
iv)	Fresh fruit and vegetables	2·00 ,, 4·50
v)	Ice-creams	−14·50 ,, −12·00

Note 1 — Potatoes need no refrigeration, but should be stored away from light.

Note 2 — Fish and sea foods shall be stored in separate compartments so as not to affect other materials.

Figure 28 Storage temperatures for food

ACOUSTICS

Food service establishments (hotels, restaurants, etc) shall adopt suitable noise control measures to provide adequate sound insulation against various noise sources which would cause disturbance to human comfort and efficiency

FIRE SAFETY REQUIREMENTS

All buildings and particularly buildings having more than one storey shall be provided with liberally demiglace safe-fire-resistant exists or escapes.

The exits shall be so placed that they are always immediately accessible and each is

capable of taking all the persons on that floor as alternative escape routes may be

rendered unsuitable and/or unsafe due to fire.

Escape route shall be well-ventilated as persons using the escapes are likely to be overcome by smoke and/or fumes which may enter from floor.

Basements- It is essential that the fire resistance of the basement conforms to the highest order and all columns for separating the upper structure shall have grading not less than the standards laid down for Grade 3.

Grade No.	Time in Hours, Minimum Resistance Against Standard Fire	Fire Load and Class of Fire Which Structural Element may Withstand	
		Fire Load in kcal/cm²	Class of Fire
(1)	(2)	(3)	(4)
1	6	1 100 000 and over	Very high
2	4	550 000 to 1 100 000	High
3	2	275 000 to 550 000	Medium
4	1	less than 275 000	Low
5	½	—	Very low

Figure 29 Classification of structural components – IS Codes

2.7 CRZ 2019

The CRZ Notification under the Environment Act, 1986, regulates coastal activities to protect ecosystems, traditional livelihoods, and promote sustainable development. It is vital for Andhra Pradesh, with its 974 km coastline, balancing growth with environmental and climate resilience.

Table 17 CRZ 2019 category

CRZ Category	**Definition/Characteristics (2019 Notification)**	**No Development Zone (NDZ) / Setback**	**General Permissible Activities**	**General Prohibited Activities**	**Clearance Authority**
CRZ-I	Ecologically most sensitive areas and geomorphological features vital for coastal integrity.	N/A (highly restricted zone)	Limited eco-tourism (mangrove walks, nature trails); Exploration of natural gas; Salt extraction. Certain small infrastructure projects	Setting up new industries; Expansion of existing industries; Manufacture/handling of oil/hazardous substances; New fish processing units; Land reclamation (except	MoEF&CC / Central Government (based on CZMA recommendation), with specific exceptions for CZMA.

			(jetties, temporary structures, erosion control) by CZMA.	permissible activities with prior permission); Untreated waste/effluent discharge; Solid waste dumping.	
CRZ-IA	Mangroves (with 50m buffer if >1000 sq. mts), Corals/coral reefs, Sand dunes, Biologically active mudflats, Salt marshes, Turtle nesting grounds, Horseshoe crab habitats, Seagrass beds.	N/A	As above.	As above.	As above.
CRZ-IB	Intertidal zone (area between Low Tide Line and High Tide Line).	N/A	As above.	As above.	As above.
CRZ-II	Developed land areas up to or close to the shoreline, within existing municipal limits or other legally designated urban areas, substantially built-up (>50% built-up plots) with drainage and roads.	N/A (construction allowed on landward side of existing structures)	Construction for residential, schools, hospitals, public places on landward side of existing structures/roads. Current FSI/FAR norms permitted.	Unauthorized structures.	State CZMA

CRZ-III	Relatively undisturbed areas not falling under CRZ-I or CRZ-II; includes rural and urban areas not substantially built up.	Varies by sub-category	Agriculture-related activities; Limited public facilities. Beyond NDZ: beach resorts and tourism development (subject to guidelines). Allowances for traditional communities' dwelling units and fishing facilities (2011 provisions, subject to 2019 review).	No construction in NDZ except repairs/reconstruction of existing authorized structures (without exceeding FSI/plinth area).	State CZMA
CRZ-IIIA	Densely populated rural areas (population density > 2161 per sq km as per 2011 Census).	50 meters from HTL (No Development Zone)	As above.	As above.	As above.
CRZ-IIIB	Less populated rural areas (population density < 2161 per sq km as per 2011 Census).	200 meters from HTL (No Development Zone)	As above.	As above.	As above.

CRZ-IV	Water areas.	N/A	Fishing and allied activities; Regulation of pollution from oil/gas exploration, mining, boat houses, shipping.	Disposal of untreated sewage, effluents, ballast water, ship washes, fly ash, solid waste from all activities (including aquaculture).	MoEF&CC / Central Government (based on CZMA recommendation), with specific exceptions for CZMA.
CRZ-IVA	Water area and seabed from LTL to 12 nautical miles seaward.	N/A	As above.	As above.	As above.
CRZ-IVB	Water area and bed area of tidal-influenced water bodies from mouth of water body at sea up to influence of tide (salinity of 5 ppt during driest season).	N/A	As above.	As above.	As above.

CRZ-II (Developed Land Areas)

CRZ-II areas are characterized as developed land areas that are situated up to or in close proximity to the shoreline. These areas typically fall within existing municipal limits or other legally designated urban areas, are substantially built-up (defined as having a ratio of built-up plots to total plots exceeding 50%), and are already provided with essential urban infrastructure such as drainage and roads.[2]

Construction activities are generally permitted in CRZ-II, specifically on the landward side of existing authorized roads or fixed structures.[5] This includes construction for residential purposes, schools, hospitals, and various public facilities.[5] A significant change introduced by the CRZ Notification 2019 is the permission to apply the current Floor Space Index (FSI) or



Figure 30Grid 118 CRZP

Floor Area Ratio (FAR) norms prevailing in urban areas, thereby removing the stricter restrictions on construction size that dated back to the Development Control Rules of 1991.

Coastal Zone Management Plans (CZMPs)

Coastal Zone Management Plans (CZMPs) are essential for implementing CRZ rules. They map CRZ categories, fishing villages, and community infrastructure through consultative processes, serving as the official reference for coastal boundaries and regulatory classifications in any area. Our site lies in the Grid 118 of CRZ.

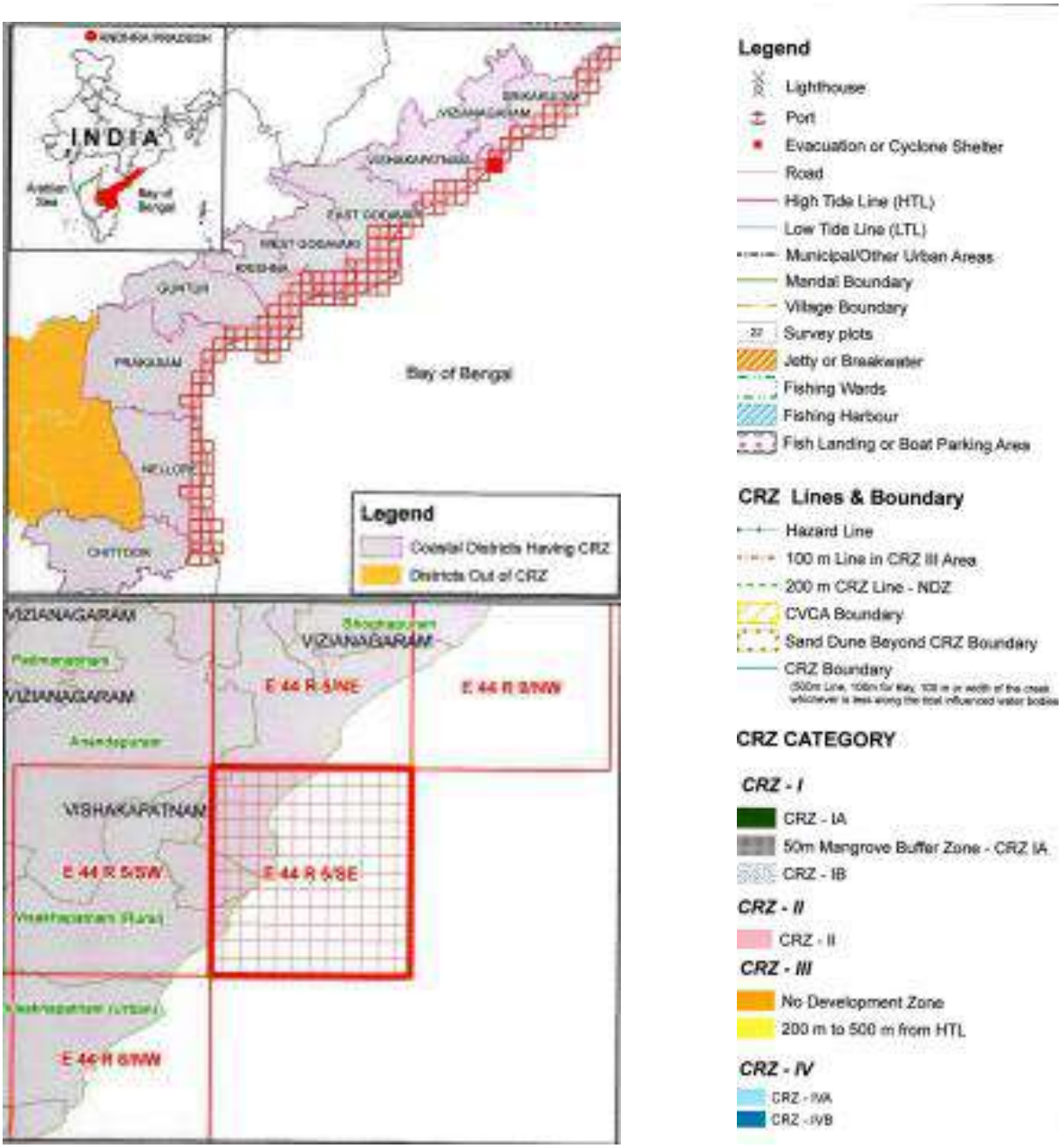


Figure 31 CZMPS

2.8 SUMMARY FROM TIME STANDARDS

Table 18 TSS1

Category	**Explanation**
Circulation Planning (Front vs Back of House)	A fundamental planning principle in hotel design is the clear separation of guest and service circulation. The front-of-house areas (like lobbies, restaurants, and guest rooms) must never intersect with the back-of-house functions (such as kitchens, storage, and staff circulation). However, both must remain efficiently interconnected to support smooth operations without disrupting the guest experience.
Guest Comfort & Environmental Quality	The physical environment significantly influences guest satisfaction. Factors such as appropriate lighting, color schemes, comfortable furnishings, pleasant air temperature, and overall ambiance are essential in shaping a relaxed and inviting atmosphere. Design must prioritize the sensory and emotional comfort of guests, aligning aesthetics with functionality.
Cost and Investment Considerations	Hotel economics revolve around land cost, construction cost, and interior furnishing expenses. These constitute the primary capital investment. Therefore, design decisions must be economically rational, ensuring efficient space utilization and long-term operational viability while staying within budgetary limits.
Back of the House – Importance & Planning Logic	Though hidden from public view, the back-of-the-house is the operational core of the hotel. Efficient planning of these areas ensures logistical control and optimizes service delivery. Functions like storage, food prep, waste management, and staff operations need to be discreet yet accessible, supporting the hotel's daily functions seamlessly.
Receiving and Loading Areas	The receiving dock is a key service node, usually covered to allow all-weather operations. It should be directly linked to the receiving department. Importantly, guests should never witness these service operations, reinforcing the spatial separation between hospitality and logistics.
Material Flow and Control Measures	Two levels of control are emphasized: (1) preventing theft and misplacement of incoming goods through immediate checking, and (2) ensuring that supplies reach their destination directly without unnecessary detours. This requires well-mapped circulation paths, tight security, and thoughtful architectural planning.
Service Circulation Patterns	A controlled, one-directional flow of supplies and staff within the back-of-house enhances security and efficiency. Well-planned

	corridors and nodes, designed with security in mind, help maintain order and reduce operational lag or confusion.
Garbage Management & Waste Flow	For large hotels, garbage destructors or compactors may be integrated into the plan. Where garbage is stored before disposal, rooms must be refrigerated and placed in view of the receiving area to ensure hygiene and oversight. Proper waste circulation also prevents contamination and odour issues.
Staff Entry, Control, and Social Zoning	A single, controlled point of entry and exit for staff enhances security. Staff circulation must be planned to reduce travel time and avoid overlap with guest areas. Additionally, social hierarchy among employees (e.g., waiters vs. dishwashers) is acknowledged through spatial zoning in locker rooms and lounges.
Locker Room Facilities and Work Access	Locker areas must be well-equipped with toilets and showers, supporting hygiene and morale. The plan should ensure minimal travel time from locker to workstation, which contributes to better productivity and staff satisfaction. Clear internal zoning and orientation help streamline daily staff routines.

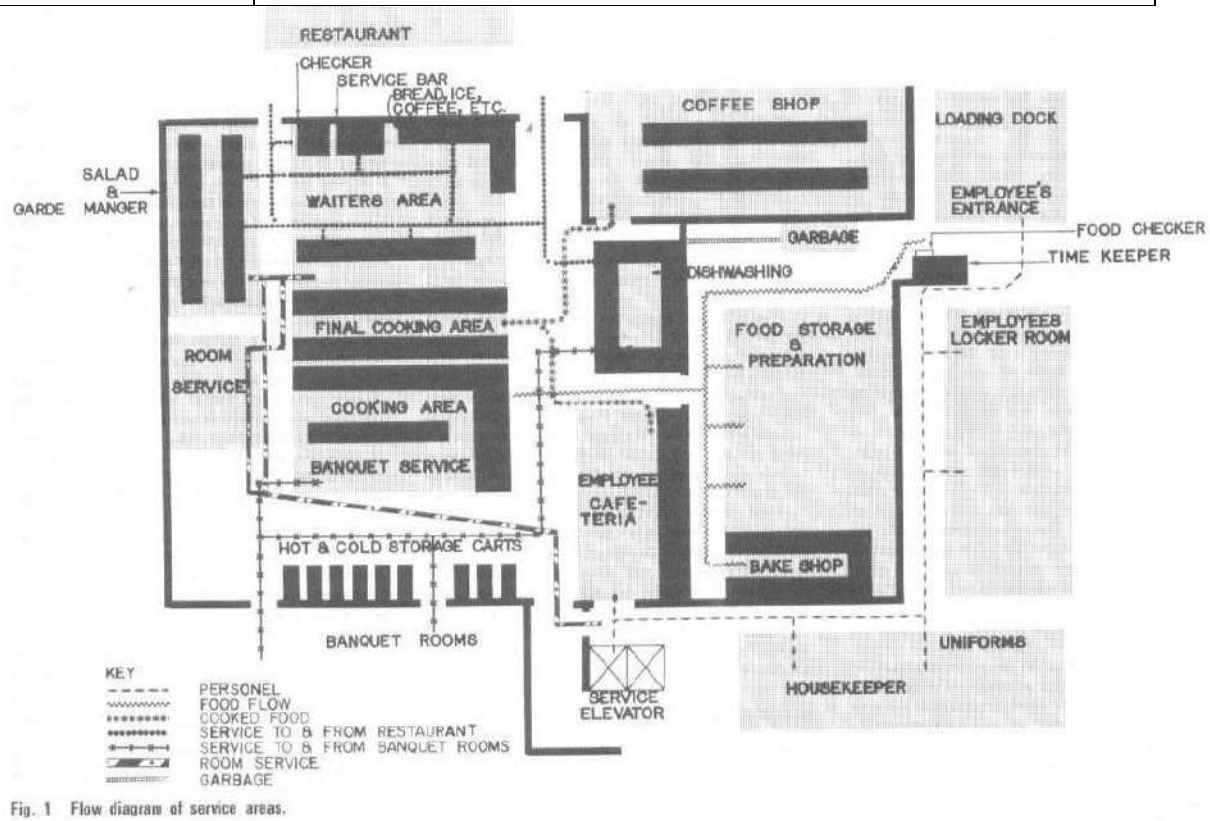


Figure 32Flow Diagram of Service Area (ITC Hotel Manual)

Table 19 TSS2

Department / Function	**Design and Planning Considerations**
Uniform & Linen Circulation	Uniforms are managed by the housekeeper and laundered in-house. Soiled linens move through a vertical linen chute from every typical floor's service room to a central laundry area. Proximity to service elevators ensures efficient vertical circulation. Trash chutes are planned alongside linen chutes to optimize utility space on each floor.
Laundry Facilities	Mid-to-large hotels require extensive space for washing, drying, ironing, and pressing of flatwork (sheets, towels), uniforms, and guest garments. Dry-cleaning and valet services are usually integrated and supervised by a laundry manager. Laundry design must support separation of clean and soiled linens, and accommodate large machines and workflow.
Housekeeping Department	Headed by a chief housekeeper, this department oversees all maids and porters. Housekeeping includes storage areas for supplies (linen, soap, tissue, menus, etc.). Typically, one porter is assigned to each maid, and each maid services a maximum of 15 rooms per day. There are also night maids for turndown service. Locker rooms and optimized circulation are essential.
Food & Beverage Services – Receiving to Kitchen	Food is delivered, weighed, and sorted into storage zones: dry, refrigerated, and frozen. Specific cold storage boxes are required for dairy, fish, meat, vegetables, etc., with proper insulation. Vegetable prep areas must have sinks, cutting boards, and workspace. Theft prevention through spatial placement is critical (e.g., bakery close to kitchen to reduce losses).
Kitchen (Hot and Cold Prep)	The food prep flow starts from vegetable cutting to rough cooking (soups, bulk items) and finishes at line cooking stations (ovens, broilers, fryers). A central chef's aisle runs between cooking and serving counters. Waiters collect food from heated serving tables in a self-service manner. Pot washing is planned near rough cooking to streamline cleanup.

Dining Room Interface	A dishwashing area is placed adjacent to the dining room for easy disposal, but isolated from cooking areas due to noise and hygiene concerns. A checker's desk tracks orders leaving the kitchen. A service bar with a bartender supports beverage service, while a glass-enclosed chef's office offers oversight and menu planning visibility.
Room-Service Area	Located near the garde manger (cold prep) and cooking zones, this area stores rolling tables pre-set for room service delivery. Adequate space must be provided for storage, food plating, and circulation. The location supports rapid dispatch following telephonic orders from guests.



Fig. 3 Main kitchen, Paradise Island, Nassau, B.W.I.

Figure 33 Flow diagram of Service Areas (ITC Hotel Manual)

Table 20 TSS3

Section	**Design & Functional Considerations**
Room Service Area	Should be adjacent to service elevators to minimize delivery time. Adequate space must be allocated for meal carts, access to kitchens, and interface with guest floors.
Cooking Area	Staffed by short-order chefs and garde manger team. Design requires separate sections for different meal types (e.g., breakfast), with quick access from prep to hot zones. Efficient food flow is crucial.
Banquet Facilities	Includes separate banquet kitchen and dishwashing area. Use of heated/cooled mobile cabinets for pre-set trays. Requires significant space planning to handle volume and timed service.
Kitchen Support Facilities	Toilets for kitchen staff should be placed within or adjacent to kitchens to avoid long detours. Dining room doors must be baffled

	for sound and visual privacy. Coffee shops and other dining spaces ideally back up to kitchen for efficient food transfer.
Waiter & Dish Pick-up Zones	Includes pickup counters, plate warmers, and pass-throughs to dishwashing. Designed for minimal interference with diners and efficient reuse cycle.
Employee Cafeteria	Should be near locker rooms and main kitchen, enabling efficient access and food service for staff. Supports morale and operational efficiency.
Beverage Service Areas	Bars and lounges need direct service routes for delivery of liquor, snacks, and supplies, ideally backed by the kitchen with pass-throughs. Seating arrangements depend on local codes.
Mechanical & Engineering Services	The mechanical room houses HVAC, pumps, and electrical gear. Requires adjacent engineer's office and repair shops (carpentry, upholstery, locksmith). Also includes storage rooms for spare parts.
Back-of-House Admin	Includes bookkeeping, reservations, and mail sorting rooms. Strategically placed to back up the front-of-house functions, such as registration and cashier counters, enabling efficient communication and operations.
Front of the House	Encompasses lobbies, dining areas, elevators, guest rooms, and corridors. Designed entirely from the guest's perspective—aesthetic, intuitive circulation, and convenience.
Guest Registration Desk	Located prominently at lobby entrance. Scaled by hotel size—large hotels need multiple clerks. Desk area includes reservation file system, advance registration counter, and access to administrative offices.
Mail & Keys Management	Key rack typically sits behind the front desk for easy access by clerks. Larger hotels may have dedicated key management staff and zones.
Cashier Operations	Typically next to registration, but may be relocated in large hotels to avoid crowding. Includes vault access, guest safe deposit system, and internal coordination with bookkeeping.
Administrative Offices	Varies by hotel scale. Includes manager and assistant manager offices, reception typists, and specialized areas for banquet, convention, or F&B managers. Placement allows oversight without disrupting guest flow.

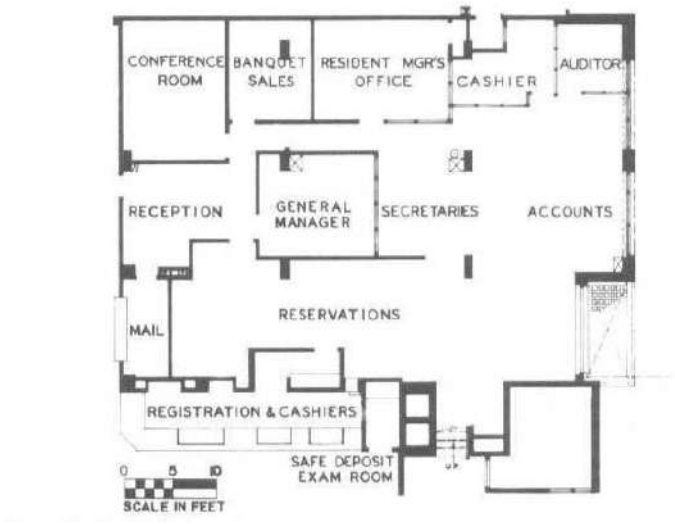


Figure 34 Admin Plan, Churchhill Hotel London

Table 21 TSS4

Space Type	**Design Considerations**	**Planning Norms / Notes**
Lobby	Essential in every hotel type; sets ambiance.	Size depends on number of rooms and hotel type; ambience through furniture, finish, color, lighting.
Elevators	Required for all hotels except 1–2 story motels.	- Should be visible from entrance or reception. - Centrally located on guest floors. - Separate service elevators. - Elevator banks must serve front/back of house efficiently. - Bell captain's station must overlook entry, desk, cashier, elevators. - Include luggage storage near lobby.
Guest Floor Corridors	Avoid guest doors opposite elevators.	- Use foyer with different decor/lighting. - Add seating and full-length mirror near elevator. - Provide ash/trash receptacles. - Ideal corridor length ≤ 100 ft. - Minimum corridor width = 6 ft (some manage with 5 ft). - Recessed doors (1–2 ft) add privacy. - Wall dado or contrasting color to resist damage.

Guestrooms	Room dimensions depend on furniture and luxury level.	- Typical beds: Single (3’6”), Double (4’6”), Queen (5’), King (6’), all ~6’6” length. - Allow 3’ aisle; minimum room width = 10’6”. - Opposite furniture (dresser): ~24” deep. - Seating: Two chairs + cocktail table (~5’ from wall). - Lighting: Ceiling + bedside reading lamps. - Other essentials: Luggage stand, writing chair, nightstand.
Suites	Serve affluent travelers or those entertaining clients/families.	- Studio rooms with dual sleep furniture (day sofas, night beds). - Suites = sitting room + 2–4 bedrooms. - Located at building corners for connectivity. - Rooms within suites should be independently rentable (via foyer/keying). - Each sitting area should have a full bathroom and water-connected bar. - Lower floors preferred for proximity to public/convention spaces.
2.3.16 Guest Bathrooms	Basic bathroom elements include a tub-shower combo, lavatory, and WC.	- Minimum: 5-ft tub, 1 lavatory; ideal: 2 lavatories (in or outside).- Bidet: Only in luxury hotels.- Wall-hung units: Preferred for easy cleaning, but cost-intensive.- Preferred: Telephone-type shower head with dual mounting (hand & high level).- Provide ledge for toiletries with integrated holders (toilet tissue, tumbler, toothbrush).- Electrical outlet mandatory for shavers, toothbrushes; razor blade slot recommended.- Towel bars should be reachable from all fixtures.- Add retractable clothesline (for wash-and-wear).- Provide dual-faced (magnifying & normal) wall mirror.
2.3.17 Guest Closets	Storage and accessibility based on hotel type and length of stay.	- Should accommodate luggage without reducing hanging/shoe/shelf space.- Prefer flat reach-in or walk-in with visible interiors (no blind corners).- Include hang rod (for men’s and women’s clothes), top shelf, and shoe rack.- Open hanging systems help reduce forgotten items.



Figure 35 Guest room details (ITC Hotel Manual)



Figure 36 Guest room details (ITC Hotel Manual)

Table 22 TSS5

Category	**Standard/Guideline**	**Key Notes**
General Space Requirements	Calculate area needs based on: service type, equipment, staff, supplies, and traffic.	Over/under-sized spaces affect cost and efficiency.
Dining Area (per seat)	Banquet: 10 sq ft/seatDeluxe: up to 20 sq ft/seat	Include aisle space, comfort, and table types (booth, square, diagonal).
Service Stations	Small: 1 per 20 seatsCentral: 1 per 50–60 seats	Sizes range from 24"x24"x36" to 10'x2.5'x6' (approx.).
Booth Dimensions	Width (including seats + table): 5.5 ft	Lunch counter: 16–30 in. wide, 20–24 in. per seat
Table Spacing & Aisles	Chairs: Min. 18" passageTables: 4–5 ft apartEmployee aisles: 2.5 ft+	Aisles for carts: size per cart width
Counter Service	1 counter line/250–300 patronsRecommended max: 50 ft	Typical width: 14 ft (patron lane + tray + counter + workers + back bar)
Turnover Rate	No. of seats × turnover/hour = total patrons/hour	Higher turnover = higher efficiency
Banquet Planning	Folding tables: 30" wide × 72" or 96" long	24" per place setting, plan for flexible seating
Dining Efficiency	Diagonal square tables improve flow	Folding partitions/screens help during off-peak times
Kitchen Area	Rule of thumb: ⅓ to ½ of dining area	Depends on meals/hour, food type, equipment, prep complexity, etc.
Kitchen Layout Guidelines	Min. aisle: 36" (1 worker), 42" (2 workers), 48–60" (mobile equipment/main lanes)	Eliminate partitions, use right-angle work centers
Work Tables	Width: 24–42" based on useHeight: ~34"	Shared use: 8–10 ft length
Storage Requirements	Food for 1,000 = 500 sq ft for 30 days	45 cases per 100 persons/monthStack height: ~72" (8–9 cases)
Store Room Aisles	Min. 36"Preferred: 42–48"	Wider for trucks; add shelf thickness when calculating spacing
Receiving Area	Dock: ~8 ft × 12 ft for regular ops	Larger areas needed for bulk deliveries

Type of facility	Estimated maximum meals per hour				
	200 or less	200–400	400–800	800–1,300	1,300–7,500
Cafeterias	7.5–5.0	5.0–4.0	4.0–3.5	3.5–3.0	3.0–1.6
Hospitals	18.0–4.5	12.0–4.5	11.0–4.5	10.0–4.0	8.0–4.0
Hotels	18.0–4.0	7.5–3.0	6.0–3.0	4.0–3.0	4.0–3.0
Industrial lunchrooms	7.5–5.0	4.0–3.2	3.5–2.0	3.0–2.0	2.5–1.7
Lunch counters	7.5–2.0	2.0–1.5			
Railroad dining car	1.6				
Restaurants (service)	7.0–4.0	5.0–3.6	5.0–3.6	5.0–3.0	5.0–3.0
School lunchrooms	4.0–3.3	3.3–2.2	3.0–2.0	2.5–1.6	2.0–1.6

Figure 37 Estimated meal per hours

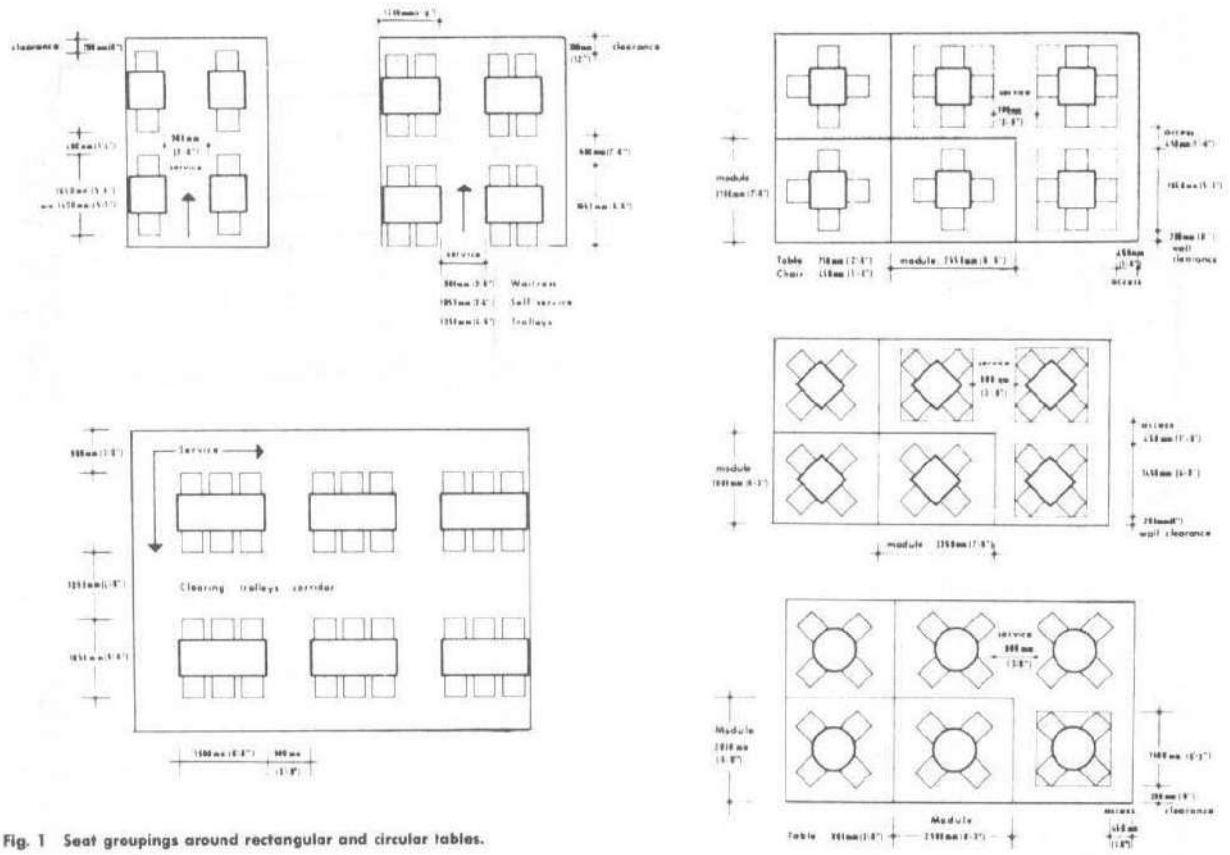


Fig. 1 Seat groupings around rectangular and circular tables.

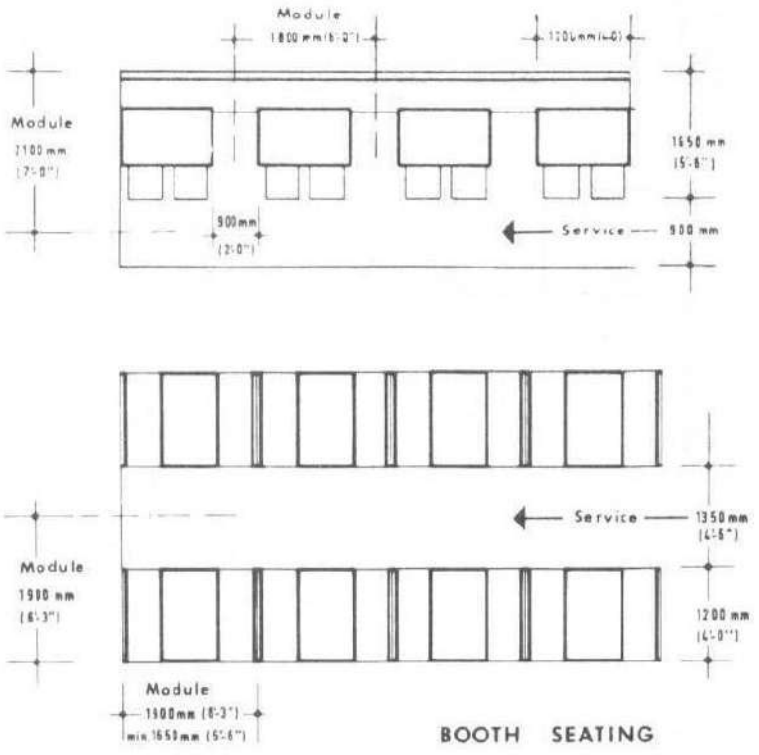
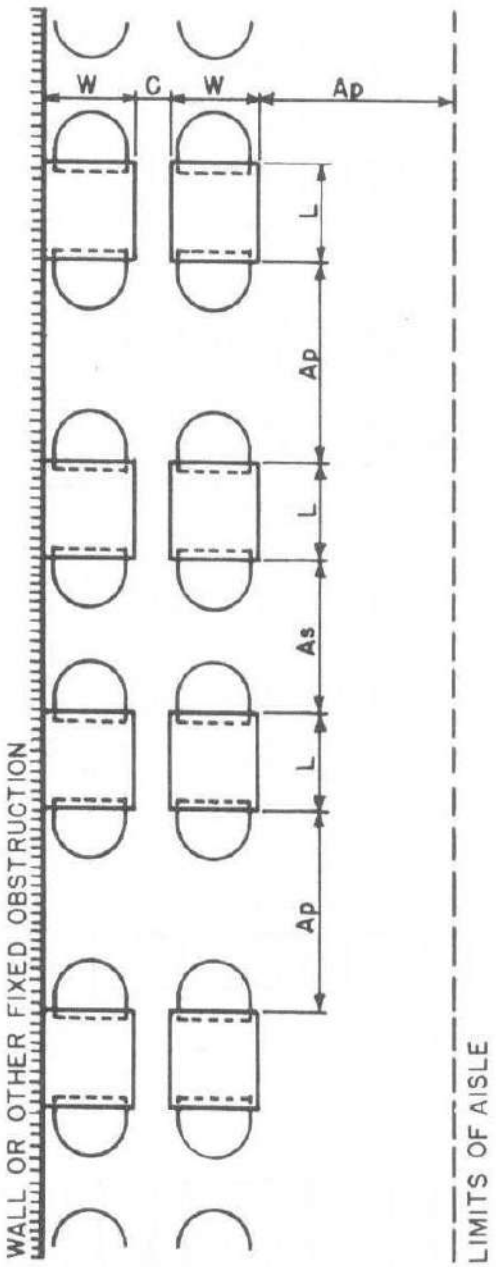
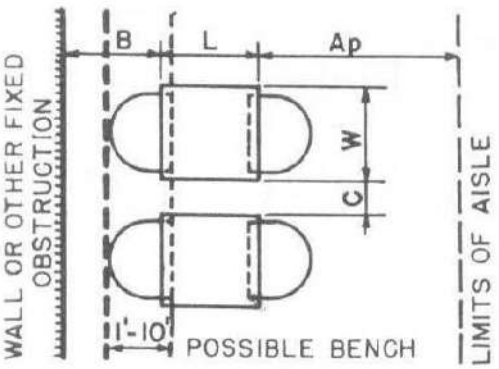


Fig. 2 Banquette seating arrangements and limiting dimensions including space for access and service.

Fred Lawson, *Restaurant Planning and Design*, The Architectural Press, Ltd., London, 1973.

Figure 38 Seating Arrangements (TSS)





	Abs. Min.	Des. Min.	Comfort-able
Ap Public circ'n	3–0 to 4–6	3–6 to 5–0	3–9 to 5–0
As Service aisle	3–6 to 4–6	4–0 to 5–0	4–0 to 5–6
B To wall	1–8 to 2–0	2–0 to 2–6	2–0 to 3–0
C Between units	0 to 8	6 to 1–0	1–0
Length	1–8 to 2–0	2–3 to 2–4	2–4 to 2–6
Width	1–8 to 2–0	2–2 to 2–3	2–4 to 2–6

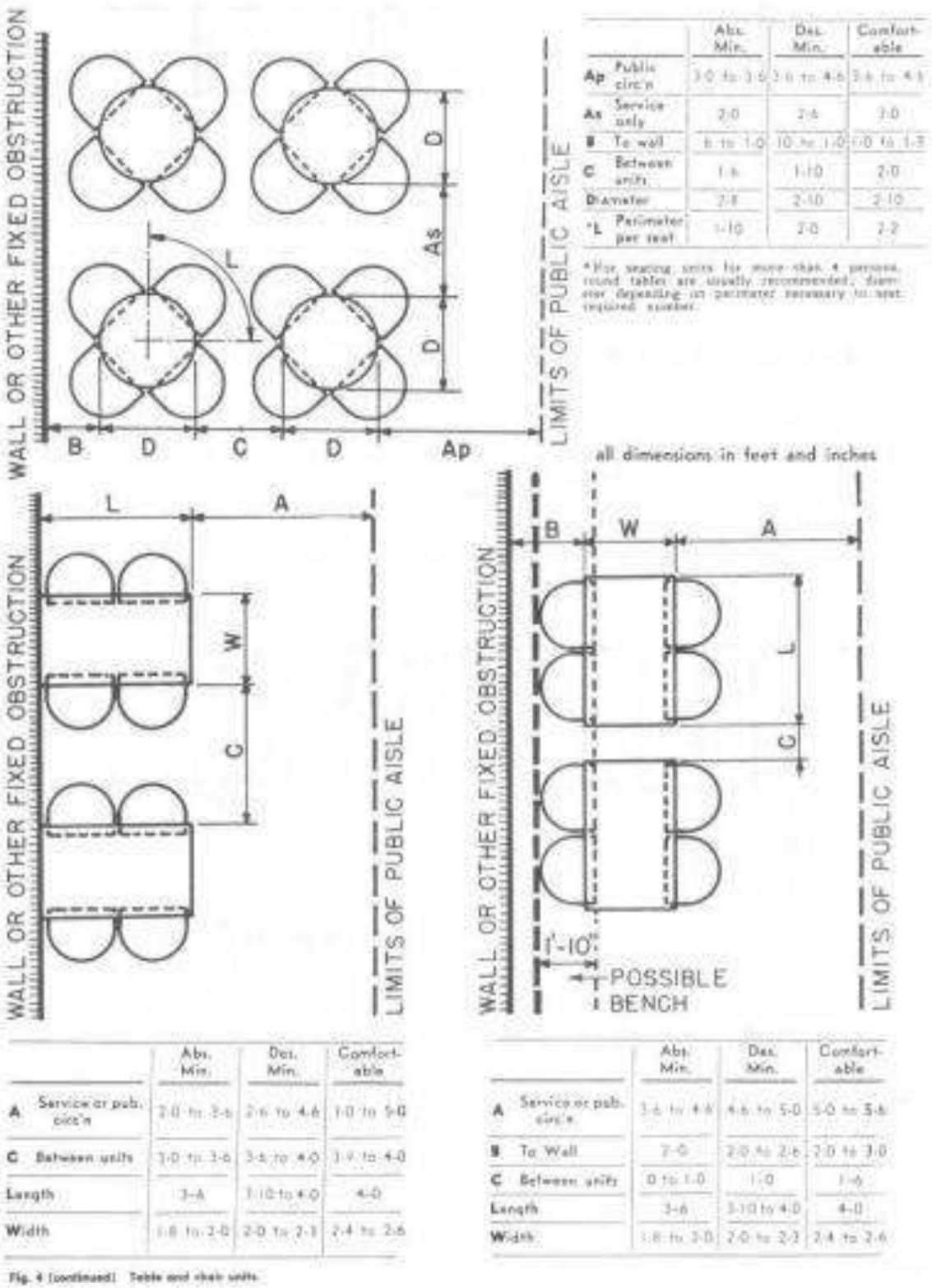
all dimensions in feet and inches

	Abs. Min.	Des. Min.	Comfort-able
Ap Public circ'n	*1–10 to 4–6	2–3 to 5–0	3–0 to 5–0
As Service aisle	3–0 to 3–6	3–6 to 4–0	3–9 to 4–0
C Between units	0 to 3	4 to 6	6
Length	1–8 to 2–0	2–3 to 2–4	2–4 to 2–6
Width	1–8 to 2–0	2–2 to 2–3	2–4 to 2–6

*Lower range only if chairs, etc., do not project into aisle

Fig. 4 Table and chair units.

Figure 39 Table & Chair Units (TSS)



		Abs. Min.	Des. Min.	Comfortable
Ap	Public circ'n	3-0 to 3-6	3-6 to 4-6	5-6 to 6-6
As	Service only	2-0	2-6	3-0
B	To wall	6 to 1-0	10 to 1-0	1-0 to 1-3
C	Between units	1-6	1-10	2-0
D	Diameter	2-8	2-10	2-10
*L	Perimeter per seat	1-10	2-0	2-2

*For seating units for more than 4 persons, round tables are usually recommended, diameter depending on perimeter necessary to seat required number.

		Abs. Min.	Des. Min.	Comfortable
A	Service or pub. circ'n	2-0 to 3-6	2-6 to 4-6	3-0 to 5-0
C	Between units	1-0 to 3-6	3-6 to 4-0	3-9 to 4-0
Length		3-6	3-10 to 4-0	4-0
Width		1-8 to 2-0	2-0 to 2-3	2-4 to 2-6

		Abs. Min.	Des. Min.	Comfortable
A	Service or pub. circ'n	3-6 to 4-6	4-6 to 5-0	5-0 to 5-6
B	To Wall	2-0	2-0 to 2-6	2-0 to 3-0
C	Between units	0 to 1-0	1-0	1-6
Length		3-6	3-10 to 4-0	4-0
Width		1-8 to 2-0	2-0 to 2-3	2-4 to 2-6

Fig. 4 (continued) Table and chair units.

Figure 40 Table & Units (TSS)

APPLICATION FORM:

1. Proposed name of the Hotel.
2. Name of the promoters with a note on the business antecedents in not more than 60 words.
3. Complete postal address of the promoter with Telephone, Fax and Email address.
4. Status of the owner/promoter:
   a) If Public/private limited company with copies of Memorandum and Articles of Association.
   b) If Partnership, a copy of Partnership Deed and Certificate of Registration.
   c) If proprietary concern, name and address of proprietor/certificate of Registration.
   d) Location of hotel site with postal address.
5. Details of the site .
   a) Area (in sq. meters).
   b) Title – owned / leased with copies of sale / lease deed.
   c) Copy of Land Use Permit to construct Hotel from local authorities.
   d) Distance (in Kms) from (a) Railway station (b) airport (c) main shopping center.

6. Details of the project:

   a) Copy of Feasibility Report
   b) Star category planned
   c) Number of rooms (with attached bathrooms) and size for each type of room (in sq.ft.) d) Size of bathrooms (in sq.ft.) Sewage Treatment Plant
   d) rain water harvesting (c) waste management (d) pollution control method for air, water and light
      a. Energy / water conservation (use of CFL lamps, solar energy, water saving devices / taps)
      b. Details of Fire Fighting Measures/ Hydrants etc.
      c. Date by which project is expected to be completed and become operational
      d. Any other additional facilities
      e. Security related features
      f. The architecture of the hotel building in hilly and ecologically fragile areas should incorporate creative architecture keeping in mind sustainability and energy efficiency and as far as possible in conformity with local art and architecture with use of local materials
   b) Details of public areas with size in sq. ft. – Lobby / lounge; restaurants; bar; shopping; banquet/conference halls; business center; health club; swimming pool; parking facilities (no. of vehicles) f) Facilities for the differently abled guests (room with attached bathroom earmarked for this purpose, designated parking, ramps for free

accessibility in public areas and to at least one restaurant, designated toilet (unisex) at the lobby level etc.). g) Eco-friendly Practices

c) (e) introduction of non-CFC equipment for refrigeration and air conditioning.

CHAPTER 3

SITE INVENTORY

3.1 INTRODUCTION

This "City of Destiny" offers a unique blend of industrial vitality, a growing MICE (Meetings, Incentives, Conferences, and Exhibitions) market, and stunning coastal beauty, presenting a clear opportunity for a high-end hospitality and event hub.



Figure 35 Proximity Map

Table 23 Connectivity and proximity

Amenity / Landmark	**Approximate Distance from Site**	**Connectivity / Access**
Ramakrishna (RK) Beach	4 km	Coastal promenade along Beach Road; well-serviced by APSRTC buses (e.g. route 10K, 28 variants)
Beach Road (Dr. NTR Beach Rd.)	Adjacent / immediate	Major scenic thoroughfare with pedestrian pathways, cycling track, cultural landmarks (Mandapam, parks)

Visakhapatnam Railway Junction	6 km	Eight-platform major rail hub; frequent long-distance and suburban trains
Dwaraka (RTC) Bus Station	4 km	Major state and interstate bus terminus; serviced by city buses and taxi access
Maddilapalem Bus Station	4 km	Municipal transit hub with frequent APSRTC routes and feeder connections to city centre
Visakhapatnam International Airport {Customs airport}, operated by Indian Navy on INS Dega Airbase	16 km	Major commercial hub; well-connected via APSRTC city buses and road network
Hanumanthavaka Junction	6 km	Interchange junction on NH16; BRTS connecting to Simhachalam and other city zones
Visakhapatnam Port Connectivity Road (New Six-Lane)	5 km	Underway NH-516C linking Sabbavaram bypass to Sheelanagar; improves connectivity to Visakhapatnam Port
Future Coastal Highway (Mulapeta–Bheemili)	15 km	200 km greenfield highway approved for improved coastal logistics and tourism movement
Nearest AAI operated airport	200 km	Rajamundry International Airport

3.1.1 Topography & Geology

The site is expected to be **relatively flat or gently sloping towards the Bay of Bengal**, typical for large-scale coastal developments. Predominant **sandy loams** near the coast.

3.1.2 Waterfront & Hydrology

The site's direct interface with the Bay of Bengal is a pivotal aspect, profoundly influencing the project's identity, guest experience, and the core "waterfront activity" vision.

Table 24 Hydrological data

Parameter	Description / value (illustrative)	Relevance to project
Tidal Range	Mean High Water (MHW): ~1.5m, Mean Low Water (MLW): ~0.5m	Influences design of marine structures (jetties, pontoons), flood protection, and accessibility for water activities.
Prevailing Currents	Generally weak, but can be stronger during monsoon; North-South direction	Impacts water quality dispersion, sediment transport, and safety for swimming/boating.
Typical Wave Heights	Average: 0.5-1.0m; Extreme (during cyclones): 3-5m+	Critical for structural design of coastal defenses, breakwaters, and resilience of waterfront amenities.
Water Depth Profiles	Gradual slope from shore, reaching ~5m depth at 100m offshore	Determines feasibility of various watercraft, swimming zones, and dredging requirements.
CRZ Classification	To be confirmed, but likely CRZ-II (Developed Area)	Dictates permissible construction setbacks, FAR, and types of activities allowed on the waterfront.
Water Quality (Key Indicators)	Dissolved Oxygen (DO): 4-6 mg/L; BOD: 5-10 mg/L; Coliform: High (indicative of sewage)	Direct impact on recreational use suitability, marine life, and project's environmental responsibility.

3.1.3 Climatic Conditions and Environmental Factors

Visakhapatnam's tropical climate, with high temperatures and humidity, necessitates advanced passive cooling. Heavy monsoons demand robust stormwater management. Crucially, cyclone susceptibility and storm surge risks mandate a "resilience-first" design, ensuring structural integrity and guest safety for this 5-star coastal development.

Table 25 Climatic conditions

Climatic Parameter	**Annual Average / Typical Range**	**Extreme Event Data / Seasonality**	**Relevance to Design**

Temperature	27.2°C (Annual Avg.)	Hottest Month (May): 30.0°C; Coolest Month (Jan): 23.9°C	HVAC sizing, material selection, passive cooling strategies.
Humidity	80% (Morning), 70% (Evening)	Consistently high year-round	Dehumidification, mold prevention, material durability.
Rainfall	1118.8 mm (Annual Avg.)	Southwest Monsoon (Jun-Oct), Northeast Monsoon (Oct-Dec)	Stormwater management, drainage, waterproofing.
Prevailing Winds	SW (Monsoon), NE (Winter)	Sea breeze moderates coastal areas	Natural ventilation, wind load analysis, outdoor comfort.
Cyclones	Common in Oct-Nov	Hudhud (2014), Titli (2018), Phethai (2018) caused significant damage	Structural resilience, storm surge protection, emergency planning.
Sea Level Rise	Ongoing concern for coastal cities	Future projections to be considered	Site elevation, flood protection, long-term resilience.

3.1.4 ASML {Average MEAN SEA LEVEL}

Table 26 Basic terminologies for AAI

Term	Explanation
Ground Elevation (AMSL)	Your site's surveyed elevation relative to sea level.
Permitted Top Elevation (AMSL)	AAI-assigned upper limit for your structure's total elevation, ensuring it doesn't breach aviation safety surfaces.
Allowed Structure Height (AGL)	Permitted Top Elevation minus Ground Elevation.

Max Structure Height (AGL)=Permitted Top Elevation (AMSL)−Site Elevation (AMSL

IFR – Instrument Flight Rules

Flights under IFR are primarily conducted with reference to aircraft instruments rather than visual cues. IFR operations are characteristic of major airports that handle significant air traffic, including international flights, and are supported by comprehensive air traffic control services. Such airports are equipped with extensive radar coverage, advanced navigational aids, and longer runways to accommodate diverse aircraft operations.

For the purpose of AAI clearance, if a proposed site is located beyond **56 km from an IFR airport**, and the proposed structure's height is **less than 150 m above ground level (AGL)**, a No Objection Certificate (NOC) is generally not required.

Distance of nearest AAI airport from site – 200 m, So permissible height – 150 m MSL.

Table 27 Aerodromes operated by aai and joint venture companies

Airport	Coordinates	Aerodrome Elevation in Mtrs.	Runway	Dimension In Mtrs	Type of operation (in NOCAS)
RAJAHMUNDARY	170634N 0814910E	46.33	05/23	3165x45	IFR

3.1.5 SEISMIC ANALYSIS

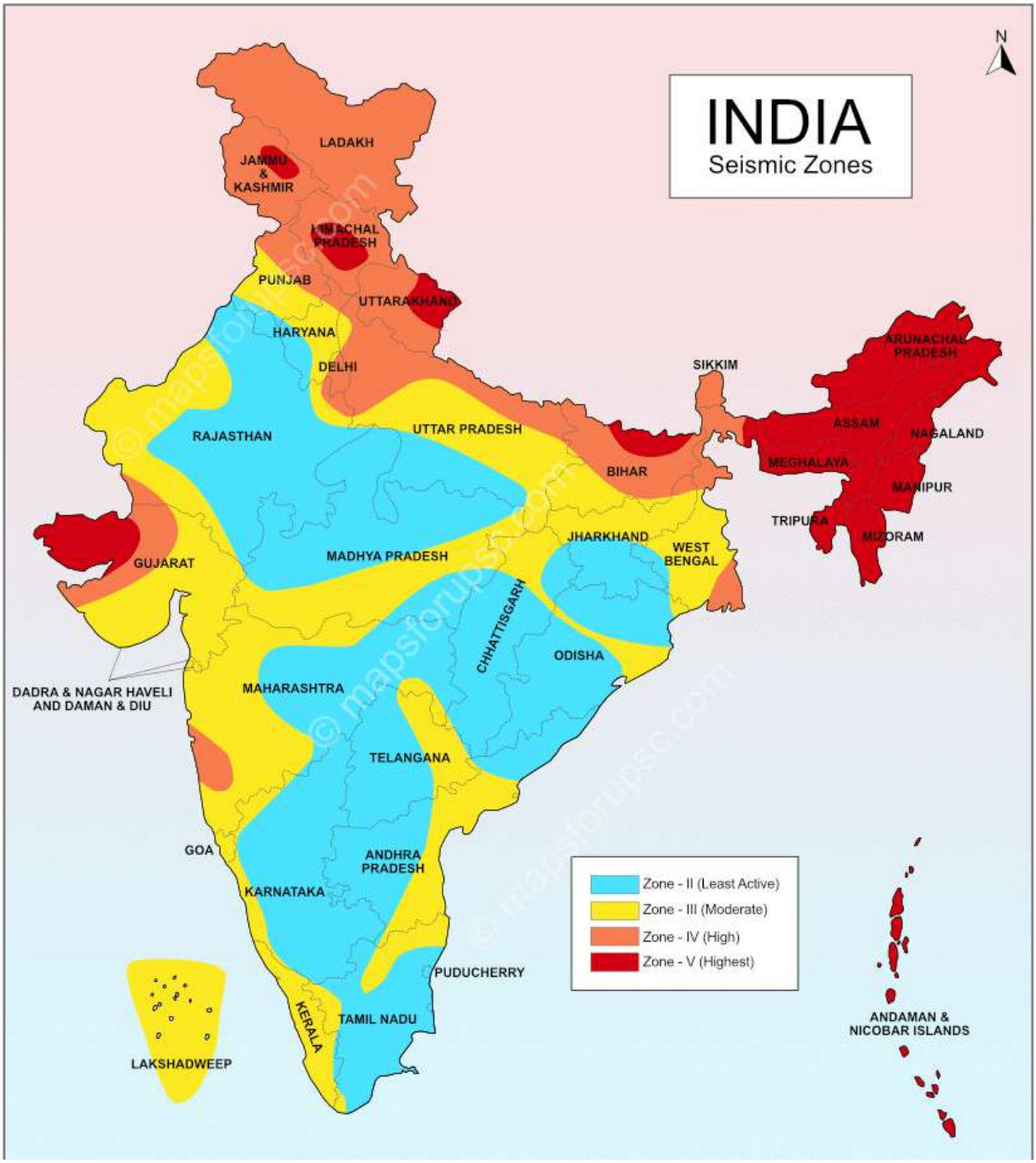


Figure 41 Seismic map

Table 28 Sesmic analysis

Parameter	**Details**
Seismic Zone	**Zone II** (Low to Moderate seismic risk) As per IS 1893:2016 Seismic Zoning Map of India.
Zone Factor (Z)	**0.10** (as per IS 1893)
Soil Type (assumed)	Likely **Type II (Medium soil)** based on typical coastal soil profile (marine clay + sand)
Importance Factor (I)	**1.5** (for important public buildings like hotels & convention centres)
Response Reduction Factor (R)	**5.0** (for Special RC moment-resisting frame – ductile design)
Design Seismic Coefficient (Ah)	Ah = (Z * I * Sa/g) / (R)Where Sa/g depends on time period and damping
Design Base Shear (Vb)	Vb = Ah × WWhere W is total seismic weight of structure

1.1.2 Subsurface Profile

The site is characterized by **soft to medium coastal soils** typical of the Visakhapatnam coastline. These soils often have a **high groundwater table**, which can affect stability and bearing capacity. As a result, **pile foundations** are likely required to ensure structural safety and performance under both static and dynamic (seismic) loads.

1.1.3 Liquefaction Susceptibility

Given the site's proximity to the shoreline and the presence of **loose, saturated sandy soils**, there is a **moderate risk of liquefaction** during seismic events. This necessitates a **detailed geotechnical investigation**, including Standard Penetration Tests (SPT) and Cone Penetration Tests (CPT), to accurately assess liquefaction potential and recommend appropriate mitigation strategies.

1.1.4 Slope & Tsunami Risk

Although Visakhapatnam has relatively stable coastal slopes, **site elevation mapping and tsunami risk modeling** are essential due to its location along the Bay of Bengal. The site should incorporate a **coastal buffer zone** as per CRZ norms and integrate **emergency design features**, such as elevated plinths, flood-resistant materials, and designated refuge zones to mitigate the impact of potential tsunami or storm surge events.

3.1.6 Infrastructure and Accessibility Assessment

Figure 42 Acessibility

Utility Service	**Key Data Points (Illustrative)**	**Relevance to Project**
Water Supply	Source: Gosthani & Godavari Rivers; Estimated Daily Available Municipal Supply: 1.5-2.0 ML/day; Pressure: Moderate (needs booster pumps); Quality: Generally good, but requires on-site treatment for potable use.	Ensures adequate supply for high demand; informs need for on-site storage, treatment, and potential reuse.
Electricity Supply	Provider: APTRANSCO; Connection: Available at site boundary; Capacity: 5-8 MVA; Grid Reliability: Occasional outages (2-3/month, avg. 2-4 hrs); Cost: Commercial tariffs apply.	Determines power infrastructure requirements, need for robust backup generation (e.g., diesel, solar), and energy efficiency strategies.
Sewerage	Connection: Municipal sewer line nearby; Capacity: "Improving", potentially limited for large development; Treatment: Basic municipal treatment; Discharge: Bay of Bengal (concerns about water quality).	Highlights need for advanced on-site Sewage Treatment Plant (STP) and treated water reuse to meet environmental standards and operational demands.
Telecommunications	Fiber Optic: Available; Mobile Network: Excellent 4G/5G coverage; ISPs: Multiple major providers; Bandwidth: High-speed connectivity feasible.	Critical for convention center operations, guest connectivity, and smart building systems.
Road Access	Proximity: Direct access to local roads, close to NH16; Width: 2-lane local road; Condition: Good; Traffic Volume: Moderate, but peak event traffic could be high.	Influences traffic impact assessment, access design (drop-off/pick-up), parking strategy, and potential for road upgrades.

Vegetation on site

S.No.	Name of the plant	Family	Local (Telugu) Name	Common Name
1	*Acacia auriculiformis* Benth.	Mimosaceae	Australia tumma	Australian Oke
2	*Adenanthera pavonina* L.	Mimosaceae	Bandi gurivinda	Peacock flower fence
3	*Aegle marmelos* (L.) Correa	Rutaceae	Maaredu	Bengal Quince
4	*Ailanthus excelsa* Roxb.	Simaroubaceae	Peddamanu	Indian Tree of Heaven
5	*Alangium salvifolium* (L. f.) Wangerin	Alangiaceae	Uduga	Sage-leaved alangium
6	*Albizia chinensis* (Osbeck) Merr.	Mimosaceae	Chinduga	Chinese albizia
7	*Albizia lebbeck* (L.) Willd.	Mimosaceae	Dirisena, Siresha puspam	East Indian Walnut
8	*Albizia saman* (Jacq.) Merr.	Mimosaceae	Nidraganneru	Rain Tree
9	*Alstonia scholaris* (L.) R.Br.	Apocynaceae	Edakula pala	Devil tree, white cheesewood
10	*Alstonia venenata* R.Br.	Apocynaceae	Chinna edakula pala	Poison Devil Tree
11	*Anacardium occidentale* L.	Anacardiaceae	Zeedimamidi	Cashe Nut
12	*Annona reticulata* L.	Annonaceae	Rama phalam	Bull's heart
13	*Annona squamosa* L.	Annonaceae	Seeta phalam	Custard apple
14	*Anogeissus acuminata* (Roxb. ex DC.) Guill. & Seneg.	Combretaceae	Pasi chettu	Button tree
15	*Anogeissus latifolia* (Roxb. ex DC.) Wall.	Combretaceae	Sirimanu	Axlewood
16	*Araucaria columnaris* (Forst.) Hk.	Araucariaceae	Christmas tree	Monkey puzzle tree
17	*Areca catechu* L.	Arecaceae	Pokachekka	Areca palm

3.1.7 Nearby Places of Interest and Amenities

This section identifies and analyzes attractions and amenities in the vicinity that can enhance the guest experience and attract MICE delegates, significantly contributing to the project's market appeal and competitive advantage.

3.1.8 Cultural and Historical Sites

The site's proximity to significant cultural and historical landmarks in Visakhapatnam, such as the ancient Simhachalam Temple, offers rich opportunities for cultural immersion and historical exploration for hotel guests and convention attendees. There is potential for developing curated tours or cultural experiences that leverage these local assets, thereby enhancing the overall destination appeal and providing unique offerings for delegates.

Recreational and Natural Attractions

Nearby beaches, including Rushikonda, Yarada, and Bheemili, offer significant potential for beach tourism, relaxation, and a variety of water sports. Kailasagiri, a prominent hilltop park, provides panoramic views of the city and coastline, serving as a unique recreational and scenic attraction. The Submarine Museum is another distinctive tourist attraction that adds to the city's unique offerings. Leveraging the site's direct waterfront access, there is potential for developing bespoke recreational activities, such as non-motorized water sports (e.g., kayaking, paddleboarding), curated boat tours of the coastline, designated fishing zones, and the development of a vibrant public promenade.

Commercial and Hospitality Establishments

Proximity to existing commercial centers, shopping districts, dining options, and entertainment venues within Visakhapatnam provides convenience for guests and delegates. An analysis of the competitive landscape, including existing 5-star hotels like Novotel, Radisson Blu, and Taj Gateway, is crucial. This information informs the need for differentiation and the development of unique selling propositions for the proposed project. Opportunities for collaboration with local businesses or for the project itself to become a new commercial hub should also be considered.

Educational and Healthcare Facilities

The site's proximity to major universities, research institutions, and reputable hospitals is relevant for attracting specialized conventions (e.g., medical, academic conferences) and for ensuring emergency medical services are readily available for guests and staff. Furthermore, the availability of a skilled workforce from local educational institutions presents a valuable resource for potential employment opportunities within the hotel and convention center.

CONSUMER ANALYSIS

Table 29 Main Customer Types Table

Customer type	***Typical stay (nights)***	***Room type & rate (inr/night)***	***Trip purpose & frequency***	***Key preferences***
Corporate Business Travelers	1–3	Deluxe Room: ₹12,000–₹18,000	Monthly or quarterly trips	Fast Wi-Fi, in-room work desk, meeting room access
Affluent Leisure Travelers	2–5	Deluxe Room: ₹12,000–₹18,000	2–3 leisure trips annually	Seaside views, pool/SPA access, curated local excursions
High-Net-Worth Individuals (HNWIs)	3–5	Suite: ₹28,000–₹45,000	2–4 trips annually	Privacy, personalized butler service, premium amenities
Special Occasion Celebrants	2–4	Suite: ₹28,000–₹45,000	As needed for events	Event planning, customized décor, private dining options

Table 30 Customer Behavioral Patterns

Customer Segment	Stay Duration	Seasonal Patterns	Group Characteristics	Decision Factors
High-Net-Worth Individuals	3–7 days average	Year-round, avoid peak seasons	Couples (60%), small exclusive groups	Service quality, privacy, uniqueness
Ultra-High-Net-Worth	5–10+ days for exclusive trips	Year-round, prefer exclusivity	Very small groups, maximum privacy	Ultimate exclusivity and personalization
Corporate Business Travelers	1–3 days typical	Peak during business seasons	Individual travelers primarily	Location, amenities, corporate rates
Leisure Travelers	4–10 days for leisure	Holiday seasons, summer, winter	Couples, families, friend groups	Value, location, amenities, reviews
Special Occasion Celebrants	2–5 days for events	Major holidays, personal milestones	Variable based on celebration type	Event capabilities, memorable experiences
Wellness Travelers	4–7 days wellness retreats	Year-round, prefer quiet seasons	Individual, couples, small groups	Wellness facilities, tranquil environment
Experiential Travelers	5–12 days cultural immersion	Cultural seasons, festivals	Couples, small cultural groups	Cultural authenticity, unique experiences

3.1.9 Demgraphics

Population and Age Distribution

Total city population: ~18 lakhs (2011 Census)

Age breakdown (approx.):

0–14 years: 23%

15–34 years: 34%

35–54 years: 25%

55+ years: 18%

Income and Occupation

Average household income: ₹4–6 lakhs per year

Key employment sectors:

Information Technology and ITES (15% of workforce)

Heavy industry and manufacturing (25%)

Shipping and port services (12%)

Tourism, hospitality and retail (20%)

Government and public administration (10%)

Agriculture and allied (rural periphery, 18%)

Education and Literacy

Overall literacy rate: 84%

Female literacy: 79%

Post-secondary degree holders (college and above): ~35% of adult population

3.2 CULTURE AND Major tribes

The major types of tribes in Visakhapatnam district, Andhra Pradesh, primarily belong to the Eastern Ghats tribal communities. These tribes are mostly concentrated in the agency areas such as Paderu and Araku regions. The key tribes include:

Bagata

The dominant tribal community both socially and politically

Traditionally engaged in agriculture and village leadership roles

Konda Dora (or Konda Kammara)

Largest tribe in sample studies (about 76%)

Primarily involved in cultivation and wage labor

Found mainly in agency areas

Gadaba

Known for terrace and wet cultivation

Settled in fertile valleys, considered relatively primitive

Khond

One of the more primitive tribes

Has sub-groups such as Jatapu Dora, Dongria, and Kutia

Traditionally dependent on forest-based livelihoods

Porja

Another forest-based tribal community with primitive lifestyle

Traditionally involved in forest and hill agriculture

Valmiki

Migrated during colonial times as Vetti community

Lowest in the tribal social hierarchy

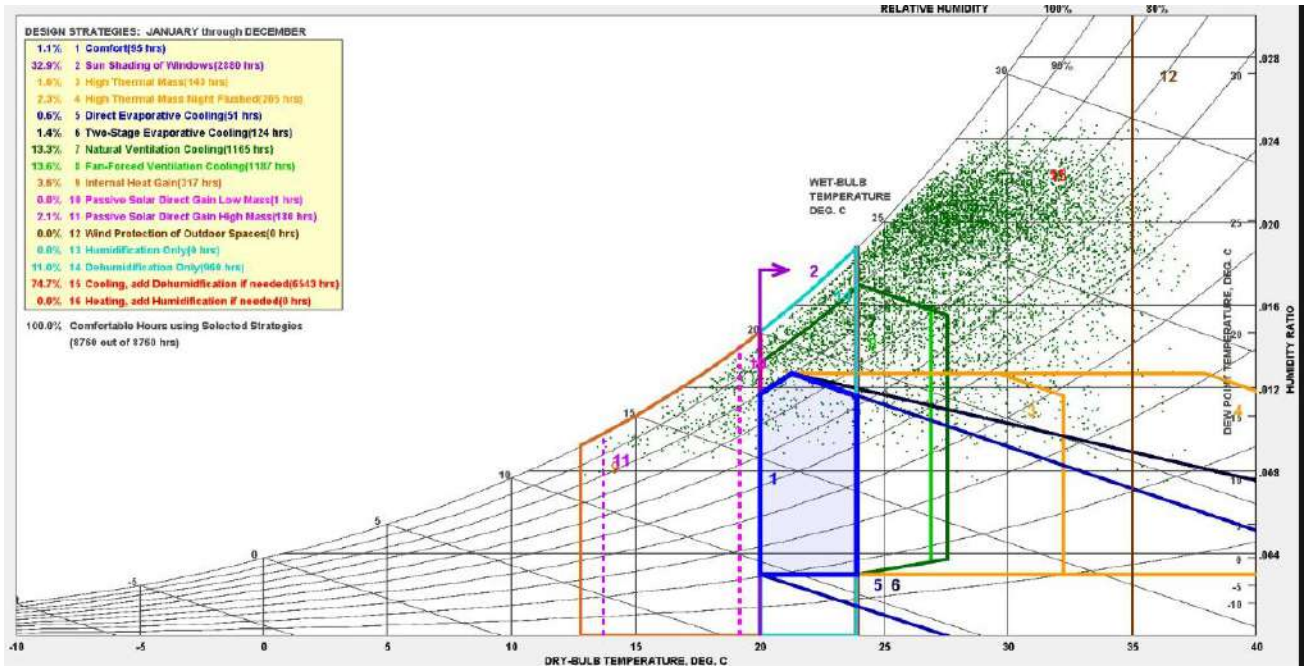
Inhabit plains and work largely in agriculture and wage labor

Other tribal groups present include Kotiya, Konda Kapu, Nooka Dora, Mannedora, Savaras, and Sugalis/Lambadis.

These tribes largely depend on agriculture (including terrace and wet cultivation), forest produce, and wage labor for their livelihood, and maintain distinct cultural and social traditions in the region.

3.3 GRAPHS OF CLIMATIC ANALYSIS

1.1.5 PSYCHROMATRIC CHART

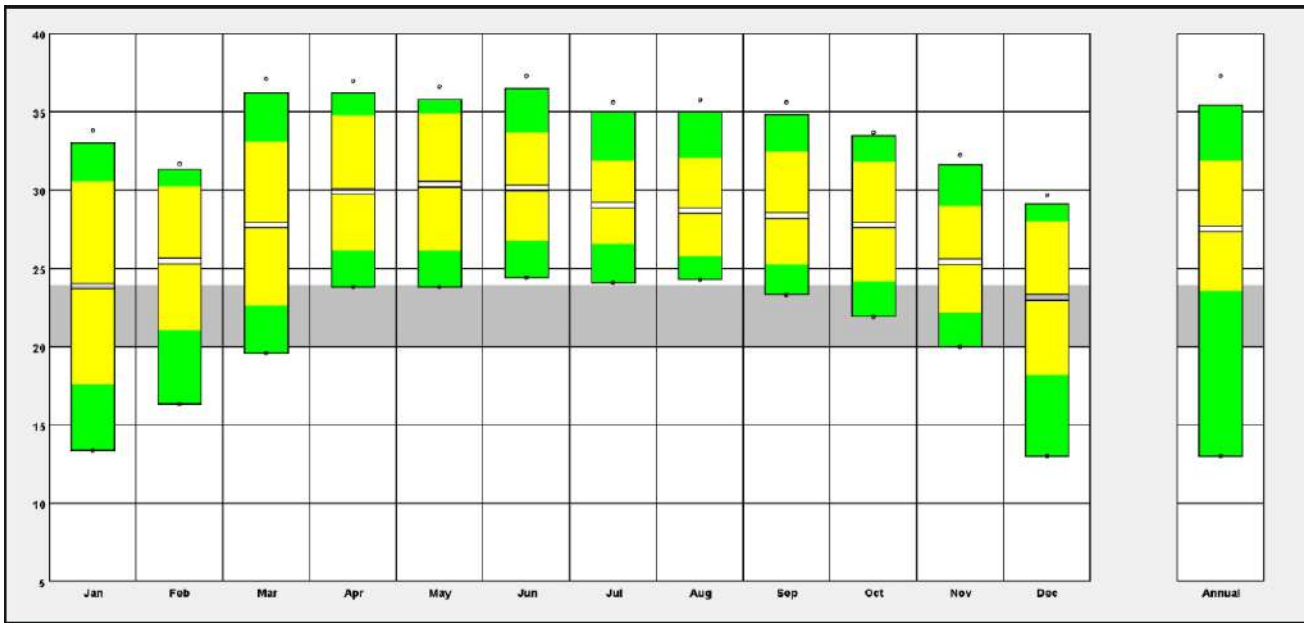


1.1.6 SITE SECTIONS

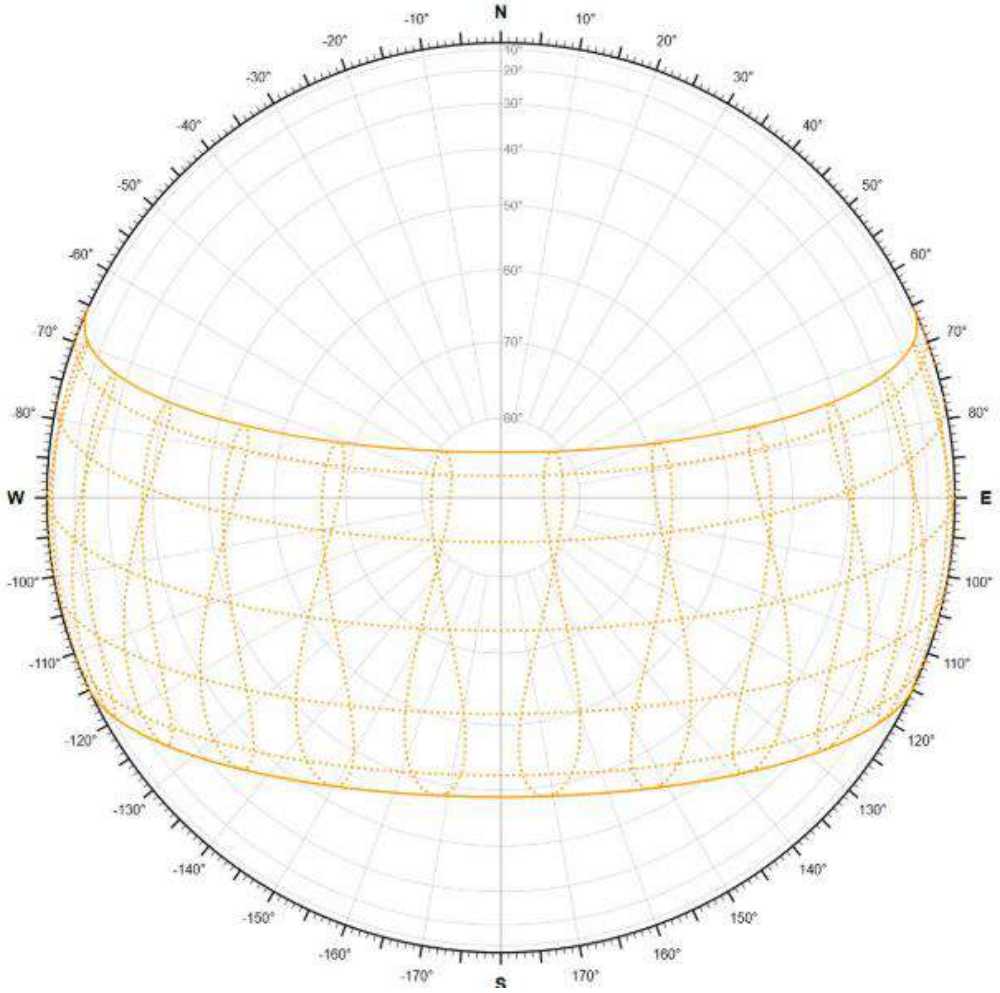




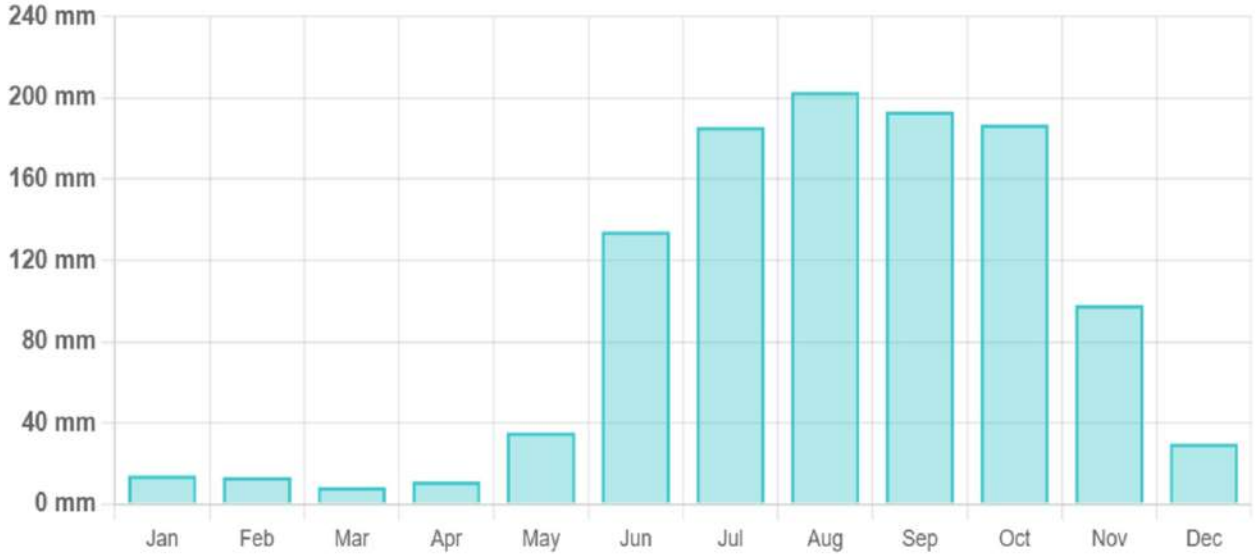
1.1.7 TEMPERATURE CHART



1.1.8 SUN PATH



1.1.9 ANNUAL RAINFALL



CHAPTER 4

CASE STUDIES

LIVE CASE STUDIES

4.1 TAJ RESORT, BANDHAVGARH, MADHYA PARDESH

Table 31 Taj Bandhavgarh Data

ITEM	DATA
NAME	MAHUA KOTHI, TAJ SAFARI RESORT
LOCATION	BANDHAVGARH, MADHYA PRADESH
DEVELOPER	INDIAN HOTEL COMPANY LIMITED (IHCL), SUSBIDARY OF TATA GROUP
AREA	40 ACRES PLOT 9 ACRES LEASE 5 ACRES BUILDABLE
YEAR OF OPENING	2006
KEY FACILITIES	**GUEST FACILITIES** 12 DOUBLE OCCUPANCY ROOMS MAX TRIPLE OCCUPANCY 1 DINING HALL WITH 24 OCCUPANCY 1 ROOF TOP DINNING WITH 12 OCCUPANCY 1 OPEN AIR DINNING WITH 12 OCCUPANCY 1 KITCHEN 1 GUEST LIBRARY 1 SPA AND MASSAGE ROOM GUEST PARKING SECURITY ROOM BEAN SHAPED SWIMMING POOL **BACKDOOR FACILITIES** 2 ELECTRICAL ROOMS 1 GENRATOR ROOM 1 UPS ROOM WITH 7 HRS BACKUP WATER TREATMENT AREA WITH EATER SOFTNER GM OFFICE ACCOUNTS ROOM LAUNDARY ROOM STAFF LOCKER WITH RESTING FACILTY COMPOSTING AREA 22 STAFF QUARTERS WITH 65 OCCUPANCY STAFF CAFTERIA WITH 20 OCCUPANCY STAFF TOILETS AND BATHROOMS 1 STAFF LIBRARY 1 STAFF MEETING HALL SAFARI CAR GARAGE WITH PARKING FOR 5 SAFARI CARS

	1 SURVEILLANCE ROOM
ACTIVITIES AND SPACES	BONNET BREAKFAST (SAFARI BREAKFAST) BANDHAVGARGH JUNGLE SAFARI

4.1.1 ABOUT THE PROJECT

MAHUA KOTHI, is a luxury Resort by Taj Group at the world famous Bandhavgarh National park. The National park is famous for it's White tigers, wildlife, serene landscapes and Mohua trees. Spread across 40 acres of private forest, it offers rustic yet comfortable hospitality, nature centric experiences like twice-daily safaris, tribal village visits, and birdwatching. The resort emphasizes sustainability, local culture, and personalized service, making it one of the best stays in the region for a luxury, serene and immersive wildlife experience.

4.1.2 SITE CHARACTERISTICS

Location and Land : The site is located at Tala gate of Bandhavgarh National Park.
Site Area : 40 Acres of private teak and mohua forest with 9 acres on lease and 5 acres buildable space
Connectivity :
Airport : Rewa 144 kms, Jabalpur 193 km
Railway Station : Umaria Railway Station 35 kms
Road: 3kms from Tala Gate of Bandhavgarh
Climate : Tropical Dry Climate

4.1.3 PHOTO GALLERY



Figure 43 MAHUA KOTHI 1



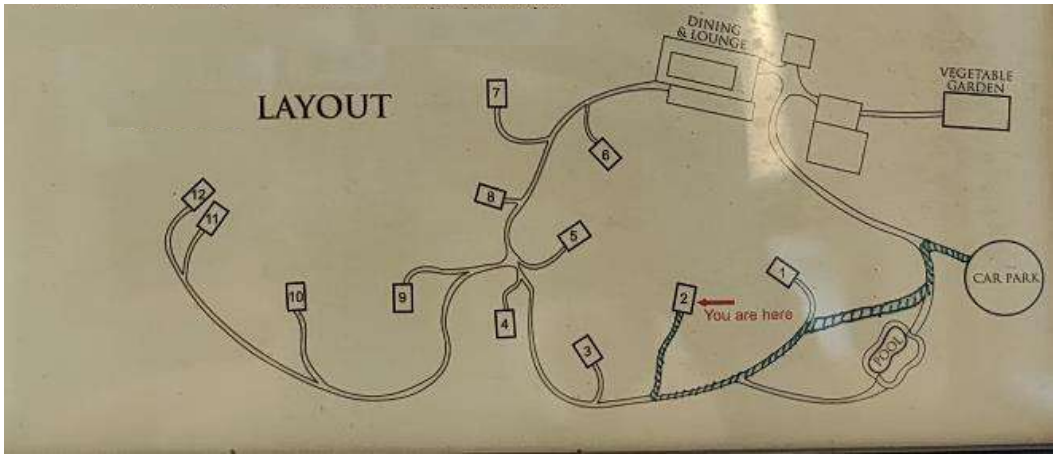


Figure 45MAHUA KOTHI 3

4.1.4 ARCHITECTURAL FEATURES

1. MAHUA KOTHI has 12 luxury rooms each being double occupancy rooms with max triple occupancy.
2. Each room is 500 sqft in area with 400 sqft room and 100 sqft toilet, bathroom and washbasin
3. Each room has a 150 sqft verandah
4. Each room has 6 tons Air conditioning.
5. Walls are made up of bricks and plastered using A mixture of cement, sand, local mud and cowdung.
6. Walls are 400mm thick with foundation being Pile foundation.
7. Roof Structure, Window frame, Doors, Furniture is made of 80% Teak Wood (Sagwan) 20% Saal Wood.
8. Flooring is done using Katni stone found locally.
9. Wooding Carvings are from Bastar.
10. Roof Requires maintenance in every 15 years.
11. Staff mess of 500 sqft with kitchen and storage spaces being separate.
12. Staff quarters have 22 rooms with each room being 200 sqft
13. GM room is 100 sqft
14. Account room is 500 sqft
15. Laundary room is 900 sqft

16. Staff locker room with resting bed are 860sqft
17. Katni stone is primary used for walking tracks and flooring in exterior spaces.
18. All the electrical wiring is done by underground trenches 3 ft in depth and 1.5 ft wide.

4.1.5 DESIGN PRINCIPLES

1. Vernacular Style : inspired by traditional Madhya Pradesh village layouts, using mud-plastered walls, earthy colours, and rustic materials that are reminiscent of local rural homes. Walls are finished in mud plaster, while floors use Katni stone and handmade tiles set in lime mortar. Roofs feature handmade pottery tiles, open rafters, and rough-hewn beams with textiles in earthy rust and burnt orange tones.
2. Sustainability : The resort maintains a small ecological footprint by using local materials and preserving tree cover, including Mahua and teak grove integration.
3. Natural and Passive Climate control: Structures are laid out to nestle within the 45-acre private forest, allowing visual and spatial continuity with bamboo thickets and grasslands.
   Verandas, shaded courtyards, ceiling fans, wooden shutters, thick walls and high ceilings support passive cooling, mitigating summer heat naturally.

4.1.6 ENGINEERING FEATURES

1. 11KV Transformer at Main gate installed Privately.
2. 2 Electrical rooms, 1 Genrator room, 1 UPS Room
3. 2 D.Gs Primary being 125 KV with consumption rate of 12L/hr and Secondary being 82.5kv with consumption rate of 8L/hr on full load
4. Composting Machine producing 50kg/day of manure used for landscape
5. UPS Capable of 7hrs of backup

4.1.7 ECONOMICS FEATURES

1. Accommodation cost ranges from 22000/- per day to 45000/- per day
2. 35 lakhs Maintenance Cost per year.
3. 1.5 lakhs operational cost per year.
4. Total of 55- 65 lakhs per year Cost to Company.

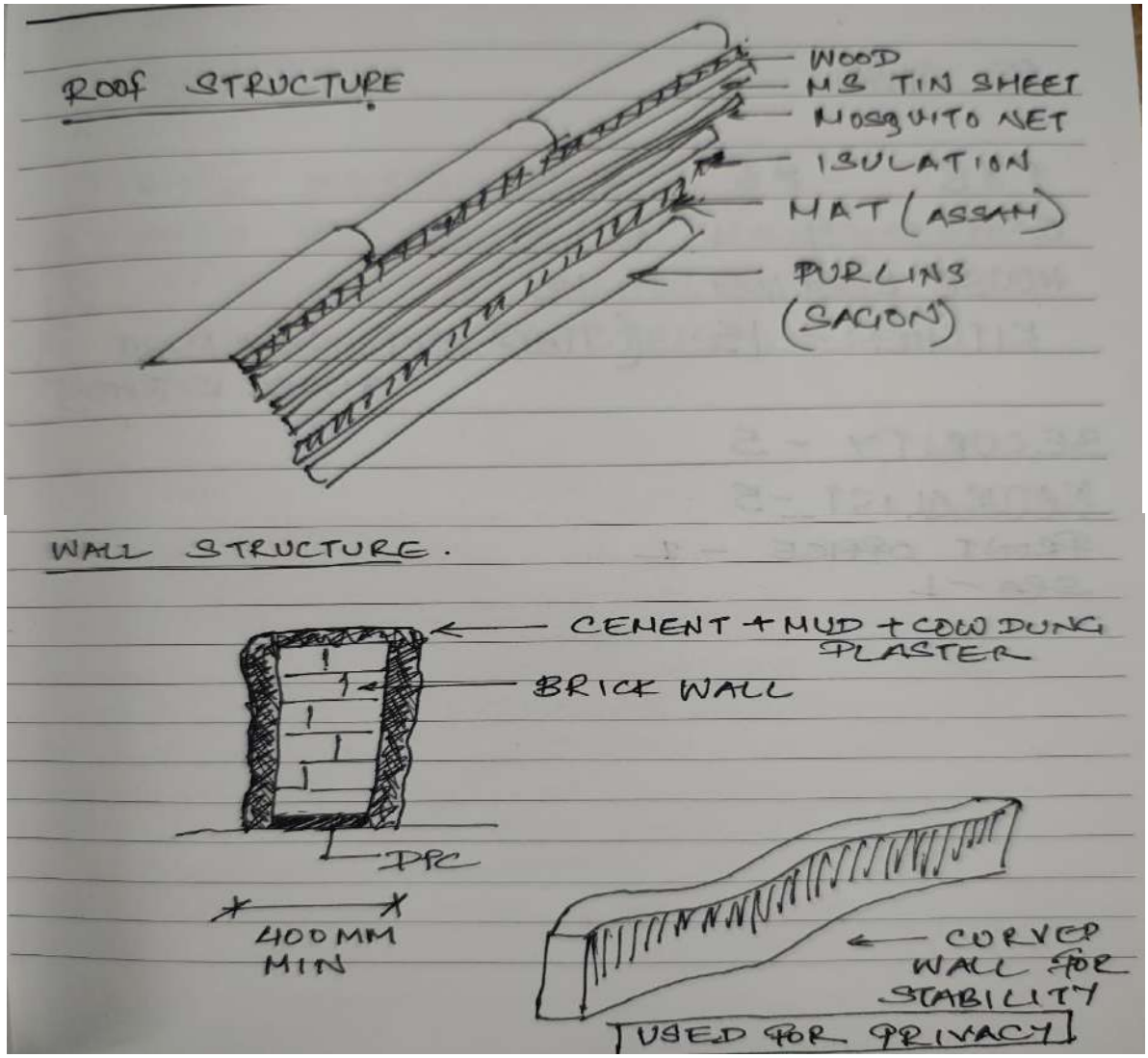


Figure 46 MAHUA KOTHI SKETCH



Figure 47MAHUA KOTHI COLLAGE

4.1.8 KEY TAKEWAYS:

1. Vernacular design : Architecture is directly influenced by local architecture of Madhya Pradesh. Materials used are also authentic to rural setting.
2. Low impact and eco sensitive planning.
3. Experiential architecture through vistas, local setting, open areas and rural aesthetic.
4. Design as a Conservational tool: Architecture plays a role in soft tourism, encouraging visitors to adopt respectful, slow travel habits.

4.1.9 POINTS OF CRITICISM

1. Accessibility challenge
2. Extreme seasonal Dependency
3. Extremely high cost of Running
4. Extremely high cost of maintenance
5. Limited Replicability
6. Despite the rustic look, it is a high-end luxury resort (~₹25,000–₹44,000/night**)**. Which does not seem to be justified.
7. Restaurants open only for guest with room booking is a missed opportunity of inviting more people and makes it very exclusive.

Table 32 Design inferences

Aspect	**Observation**	**Inference / Design Learning**
Location & Connectivity	Situated on Beach Road with direct sea view and urban accessibility	Strategic siting enhances tourism value; however, contributes to pressure on ecologically sensitive coastal zones
Site Orientation	East-facing with panoramic ocean views	Follows optimal orientation for passive ventilation and guest experience, but over-relies on view commodification
Zoning & Land Use	Located in commercial-tourism mixed zone in the city core	Suitable for high-intensity hospitality use, but lacks graded transitions between public promenade and private domain
Building Height & Massing	G+5 structure with a stepped profile toward the ocean	Height and form offer views and reduce bulk, but visually dominate the low-lying coastal skyline
Setbacks & Open Space	Generous front setback; rear service access	Provides privacy and sea-facing open space, yet limited public realm integration or civic engagement
Access & Circulation	Separate entries for guests, services, and banquet functions	Ensures operational clarity but disrupts pedestrian flow during high-traffic events

Public–Private Transition	Grand lobby transitions to ocean-facing terraces and restaurants	Blurs boundaries between indoors and outdoors for guests, but restricts visual and physical access for the local community
Landscape Integration	Decorative landscaping, mostly hardscape and exotic species	Offers visual appeal, but lacks native coastal vegetation or ecological design principles
Convention & Banquet Areas	Large event spaces with independent access and sea views	Supports MICE tourism, but high energy loads and glass surfaces increase environmental impact
Room Layout	Uniform, sea-oriented rooms with balconies; limited spatial diversity	Maximizes revenue-generating views, but lacks architectural variety and contextual sensitivity
F&B Outlets	International restaurant brands with ocean-facing seating	Provides economic benefit and guest variety; lacks reflection of local food heritage or culinary storytelling
Sustainability Features	Natural ventilation in lobby and select buffer landscaping	Some passive elements present; no evidence of comprehensive green building strategy such as energy efficiency, water management, or material sourcing
CRZ Compliance	Aligns with permissible CRZ norms during construction period	Legally compliant, yet raises ethical questions on coastal land development and environmental disruption
Parking & Services	Basement parking and rear service yard	Functional for operations, but drop-off zone prioritizes vehicles over pedestrian comfort and local interaction
User Experience	Seamless indoor-outdoor flow with luxury-focused spaces	Delivers high-end comfort, but the architectural identity is generic and disconnected from cultural context
Cultural Integration	Contemporary international design, devoid of local cultural reference	Absence of vernacular materials, traditional spatial systems, or regional art reflects a missed opportunity to ground the project in its geographic and cultural setting

Table 33Summary of case study

Strengths	**Limitations**
Optimal use of ocean-facing views and passive orientation	Over-dependence on the visual experience without deeper cultural or ecological grounding

Clear service and guest circulation enhancing functionality	Limited inclusivity and poor integration with public or community activities
Strategic location enhances visibility and tourist access	Exerts pressure on CRZ-sensitive land; lacks civic contribution to beach road users
Wide banquet and convention facilities contribute to urban event economy	High carbon and energy footprint; generic global aesthetics over contextual relevance
Provides luxury guest experience with high-end amenities	Minimal or no adoption of local crafts, traditions, materials, or spatial grammar

4.2 NOVOTEL 5 STAR HOTEL, VISHAKPATNAM, ANDHRA PRADESH

Table 34Novotel Data

ITEM	DATA
NAME	NOVOTEL VISHAKAPATNAM
LOCATION	VARUN BEACH VISHAKAPATNAM
DEVELOPER	ACCOR
AREA	2.8 ACRES
YEAR OF OPENING	2012
KEY FACILITIES	GUEST FACILITIES 225 ROOMS DIVIDED INTO VARIOUS CATERGORIES 160 SUPERIOR ROOMS 55 PREMIUM ROOMS 9 SUITES 1 PRESEDENTIAL SUITE 11 BANQUET HALLS 1 CONVENTION HALL 3 MULTI CUISINE RESTRAUNTS 1 BAR GIFT SHOP INFINITY SWIMMING POOL JOGGING TRACK 3 LEVEL UNDERGROUND PARKING WITH 1200 CAPACITY 2 BASEMENT FLOORS KIDS ACTIVITY AREA SPA, SAUNA, SALON, THERAPY ROOMS LOUNGE AND RECEPTION AREA

	GYMNASSIUM
ADDL.ACTIVITIES AND SPACES	KIDS ACTIVITY AREA XBOX AREA TOURIST CIRCUIT OFFICE BACKDOOR OPERATION SPACES INOX MOVIE THEATRE

4.2.1 ABOUT THE PROJECT

Located adjacent to Varun Inox Multiplex and close to the airport, Novotel Visakhapatnam Varun Beach has a panoramic view of Bay of Bengal. All 225 rooms overlook the ocean, offering a comfortable environment to business and leisure travellers with Wi-Fi access, three restaurants, an executive lounge, bar and spa. With over 3600 sqm of indoor & outdoor space, the hotel provides the largest banqueting facility in the region, and is able to cater for business and social events of up to 4000 people.

4.2.2 SITE CHARACTERISITICS

Location and Land : The site is located at Varun Beach,Vishakapatnam.
Site Area : 2.8 Acres of campus with Inox Movie Theatre.
Connectivity :
Airport : 12kms from Vizag Airport
Railway Station : 4.1 kms from Vizag Railway Station
Road: 350m from RK Beach
Climate : Tropical Warm-humid climate



Figure 49 NOVOTEL 1



Figure 48 NOVOTEL 2

4.2.3 ARCHITECTURAL FEATURES

1. Novotel Varun beach Vishakhapatnam Hotel has total of 225 rooms for guests.
2. Superior Room (Entry Level) 160 nos
3. Premium Rooms (Mid level) 55 nos
4. Suites (Upper level Rooms) 9 nos
5. Presidential suite (for VVIPs and Director) 1 nos Includes Personal meeting room a mini bar small kitchenette.
6. X shaped layout of building providing Ocean views from all rooms and public spaces
7. 14 floors Hotel
    a. Level T
        i. Avenue Banquet Hall 470pax
        ii. Pan Asian Roof top restaurant
        iii. Jogging Track
    b. Level 1 to 6
        i. Guest rooms
        ii. Presidential suite on 6^{th} floor
    c. Level C
        i. 24 hrs Gymnasium
        ii. Spa and Salon
        iii. Summit Banquet hall 50pax
        iv. Eureka Banquet/Meeting hall 50pax
        v. Nautica Banquet hall 120pax

vi. Varun chambers

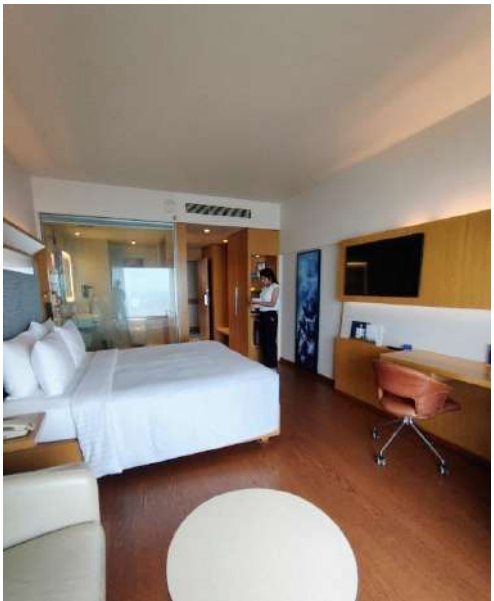
d. Level L
    i. Reception
    ii. Tourist Circuit Desk
    iii. The square, Harbour, Zaffran, Sugarr
    iv. Infinity Swimming Pool
    v. Outdoor Seating
e. Level M
    i. Administration
f. Level B
    i. Business Centre
    ii. Pearl 1 Meeting hall/banquet hall 50 pax
    iii. Pearl 2 Conference Hall 18pax
    iv. V Convention 1,2,3 1700pax
    v. Coral Exhibition/Banquet hall 1,2,3 220pax
g. 3 level Underground Parking
    i. Capacity of 440 cars per floors.

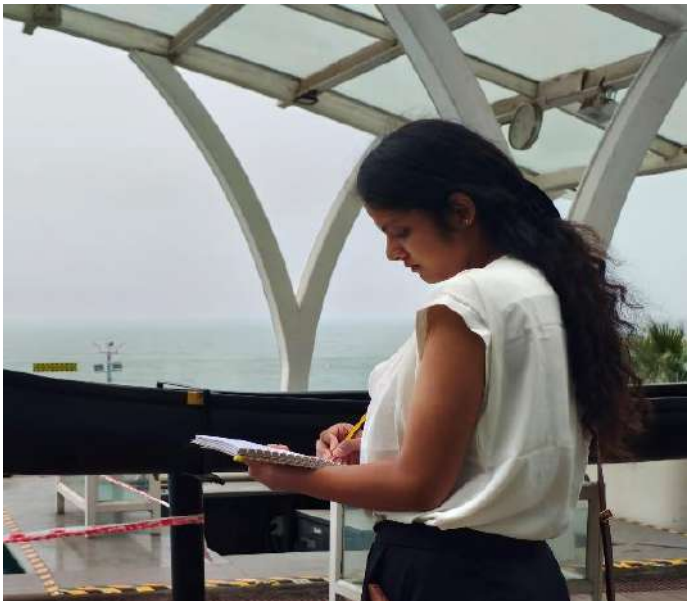
8. Glass façade of reception area for capturing maximum daylight as well as Sea view
9. 3 Guest Elevators
10. 2 Guest Staircase
11. 4 Fire exit staircase
12. 3 Service Elevators and 1 Service staircase

4.2.4 DESIGN PRINCIPLES

1. View Optimization : Panoramic Ocean Views, All 225 rooms overlook the Bay of Bengal, so spatial planning prioritizes visual access to the sea.
   Infinity swimming Pool for maximum visibility of sea.
2. Luxury + functionality : Separate zones for business (banquets, meeting lounges), leisure (spa, bar, pool), and hospitality (guest rooms)
3. Disaster Preparedness (Cyclone-Resilient): Storme drainage planning, Reinforced structure, Elevated plinths

4.2.5 PHOTO GALLERY



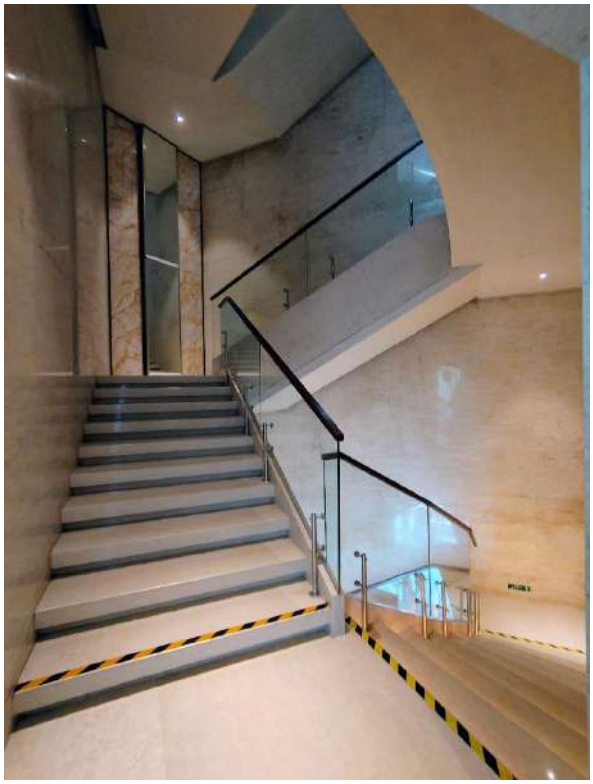


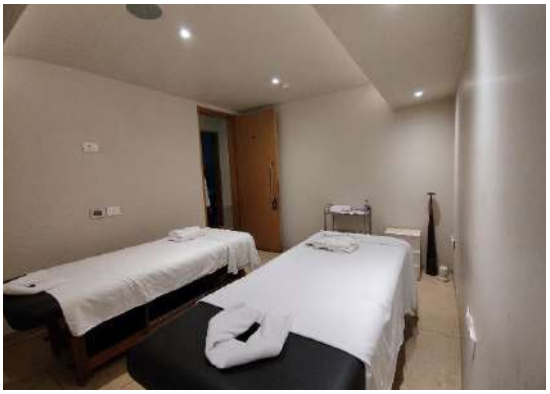
















4.2.6 KEY TAKEAWAYS

1. Costal Integration : Built right on Varun Beach, the hotel boasts 225 guest rooms, all facing the Bay of Bengal, delivering uninterrupted ocean views
2. Sustainability : Awarded the Green Key Certification in 2025, recognizing global compliance in eco-tourism initiatives, including energy efficiency, waste reduction, water conservation, and sustainable sourcing.
3. Modern Amenities and facilities: Features a landscaped terrace jogging track, infinity outdoor pool overlooking the sea, and large pillarless banquet halls (V-Convention) accommodating over 1,250 guests—significant for MICE events.

4.2.7 POINTS OF CRITICISM

1. The aesthetic is sleek and modern, but not particularly distinctive—it is functional rather than iconic or locally contextual.
2. There is no experiential connect with the surrounding.
3. Layout of building makes distance from lift to room significantly tiresome
4. No major softscapes makes the campus fell very artificial.

4.3 THE MARARI BEACH RESORT

4.3.1 ABOUT PROJECT

Blending the traditional Kerala style of architecture with contemporary designs, the Marari Beach resort, set on a 25-acre coconut palm grove, provides the quintessential Kerala experience with all facilities of the modern age. For its excellent performance in the field of hospitality Marari Beach Resort was honoured by Kerala Tourism with an Award of Excellence for the Best luxury Hotel in Kerala.

4.3.2 SITE CHARACTERISTICS

Location and Land : The site is located at Mararikulam, Kerala.
Site Area : 36 Acres of campus with 18 Acres currently in use.
Connectivity :
Airport : 70 kms from Cochin International Airport
Railway Station : 14 kms from Cherthala Railway Station
Climate : Tropical hot and humid



3. Constructed using local materials
    a. Walls using Local bricks
    b. Roof from coconut thatch
    c. Flooring using kadappa stone
    d. Interiors using timber and bamboo
4. Integrated Water management system like
    a. Rain water harvesting
    b. Well recharge
    c. Waste water recycling
5. No single use plastic campus
6. Natural setting swimming pool
7. Ayurveda Centre
8. Yoga Centre
9. Guest library
10. Gift and Souvenir shop
11. Butterfly garden
12. Backwater cruising
13. 3 Restaurants
    a. Club house : Portuguese styled
    b. Beach Shack : Rustic yet Luxury beach eatry
    c. Chakara : Indian and continental Restaurant
14. Rooms are categorised into
    a. Deluxe Garden villa with private pool
    b. Garden villa with pool
    c. Garden villa
15. Disable friendly
16. Mini Bar
17. Rustic Setting close to vernacular style of Kerala
18. Community Activity spaces

4.3.5 DESIGN PRINCIPLES

1. Vernacular Costal Aesthetics inspired from local fishermen dwellings.
2. Modern with Eco friendly attire: Roof structures are designed to conceal a concrete inner roof that enables air-conditioning while preserving the rustic exterior.
3. Fluid and organic layout : The layout and built forms are organic in shape allowing better spatial flow
4. Inside outside : Reception, restaurant, and communal lounging areas are semi-open, naturally ventilated, with high ceilings and thatched roofing supported by bamboo and wooden frame

4.3.6 PHOTO GALLERY

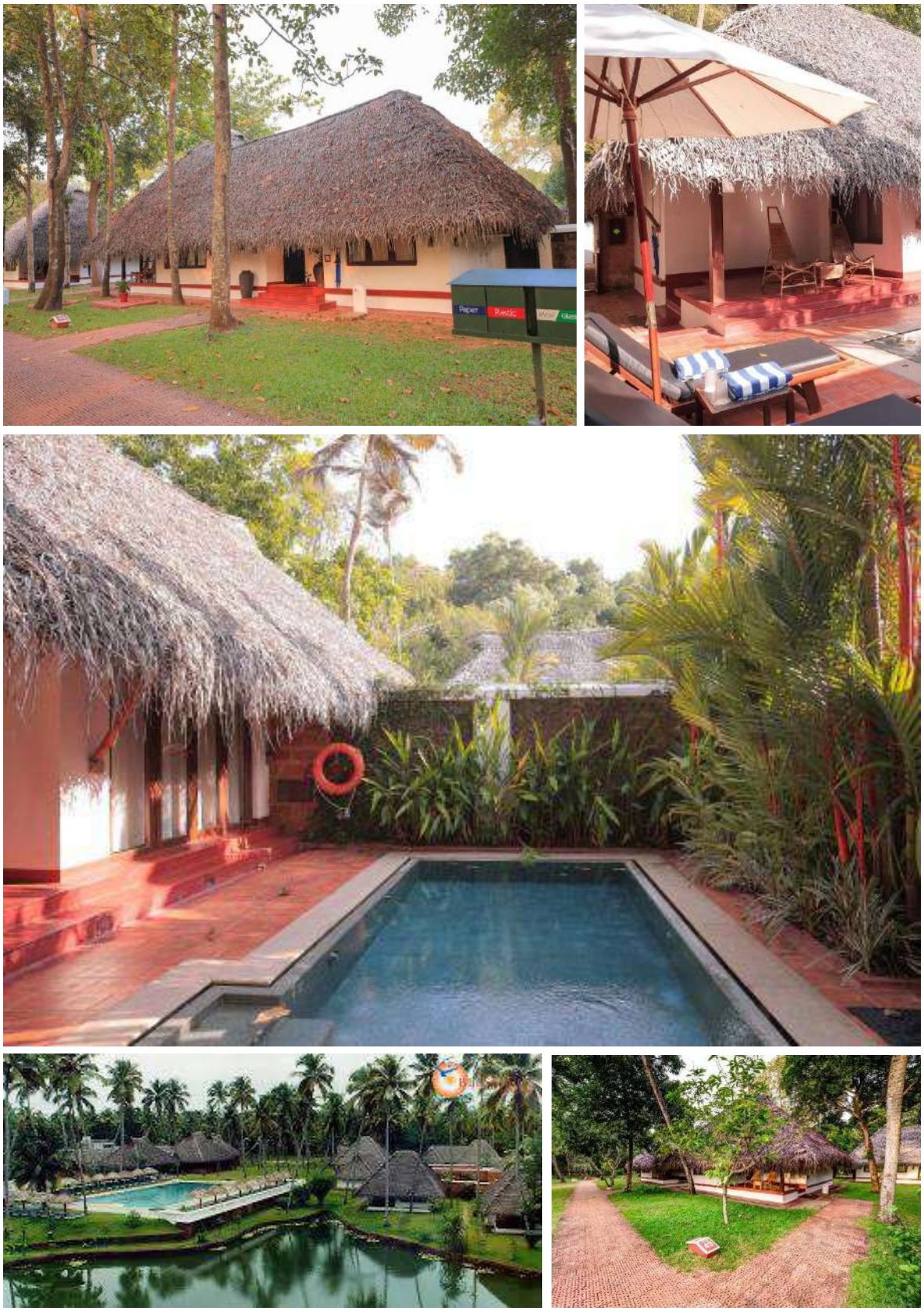


Figure 53MARARIKULAM COLLAGE

4.3.7 KEY TAKEAWAYS

1. Adaptation of traditional forms (Kerala fishermen's huts) to luxury hospitality proves that local typologies can inform modern design without losing identity.
2. Organic and non Intrusive design : Use of organic forms in layout and structure minimises visual disruption to natural landscapes
3. Indoor outdoor connectivity : the design dissolves boundaries between inside and outside, using semi-open spaces, outdoor showers, and garden sit-outs to encourage immersive guest–nature interaction.
4. Low impact and sustainable footprint.
5. Human scale design
6. Privacy without Isolation.

4.3.8 POINTS OF CRITICISMS

1. Cultural symbols are aestheticized but stripped of their lived social function—posing a question of authenticity vs. appropriation.
2. Imported Luxury elements present throughout the site undermine local materials.
3. Limited local engagement in Design and Development process
4. Open to sky showers and minimal barriers raise question of safety and useability.
5. Similar exterior design makes things repetitive and eliminates architectural mystery.

4.4 SIX SENSES CON DAO, VIETNAM

4.4.1 ABOUT PROJECT

Set in a protected national and marine park. The first top-rated luxury beach resort in Vietnam's archipelago islands, it is contemporary in design, yet draws on the essence of a traditional fishing village. Our hotel in Con Dao is just a 45-minute flight from Ho Chi Minh City but a world away from the everyday. Oh, and that golden sand and blue sapphire sea.

4.4.2 SITE CHARACTERISTICS

Location and Land : The site is located at Con Dao, Vietnam.

Site Area : 12 hectares

Connectivity

Airport : 45-minute flight from Ho Chi Minh City

Climate : Tropical hot and humid

4.4.3 ARCHITECTURAL FEATURES

1. Six Senses Con Dao resort has 50 private villas and suites.
2. Village masterplan inspired by traditional Vietnamese fishing hamlets.
3. A central marketplace hub with reception, restaurant, spa and elevated timber walkways
4. Linear arrangement of villas along beachfront
5. Separate staff quarters and service area
6. Four Restaurants
    a. By the Beach Restaurant

   b. Vietnamese by the market restaurant
   c. Splash Bar
   d. Elephant Bar
7. Destination dinning
   a. By the cellar- wine cellar
   b. By the kitchen (chef's table)
   c. Plant to plate garden dining
8. Guest accommodation categorised into
   a. Ocean view duplex pool villa 195sqm
   b. Beachfront duplex pool villa 195sqm
   c. Beachfront deluxe pool villa 150sqm
   d. Ocean view two-bedroom family pool villa 195sqm
   e. Beachfront two bedroom pool villa 522sqm
   f. Oceanview three bedroom pool villa 542sqm
   g. Beachfront three bedroom pool villa 542sqm
   h. Oceanview four bedroom pool villa 671sqm
   i. Beachfront four bedroom pool villa 671sqm
9. Boat Trips and charters
10. Bicycle ride
11. Hiking trekking
12. Water sports
13. Jungle Movie
14. Feed the fish golf
15. Turtle hatchling release
16. Children's Area
17. Organic farming
18. Banquet hall/meeting rooms
   a. Sense of Gathering hall 40pax
   b. In the villa meeting 15 pax
19. Sea turtle incubation and research programme
20. Fabricated modular construction
21. Butterfly and mono pitched roofs with bamboo shutters
22. Infinity pools, open to sky showers
23. Interior using reclaimed teak, stone flooring

4.4.4 DESIGN PRINCIPLES

1. Sustainability first: low impact prefab construction, rainwater harvesting, waste recycling, no single use plastics.
2. Contextual response: Villas inspired from fishing community
3. Experiential design
4. Conservation oriented tourism

4.4.5 PHOTO GALLERY



Figure 54 Vietnam Collage

4.4.7 POINTS OF CRITICISM

1. Eco vs Elite : Despite claims of being eco resort it caters to ultra luxury market. Raising questions about accessibility and ecological cost per guest.
2. Heritage as surface: Vernacular Aesthetics are mere visual tools.
3. Energy use : Resort requires significantly huge amount of energy for operations
4. Tourism footprint : Increased tourism, even controlled, places stress on the fragile island ecosystem—especially in peak seasons.
5. No Community Involvement

4.5 INFERENCES FROM CASE STUDIES AND DESK APPRAISAL

4.5.1 DESIGN PHILOSOPHY AND ARCHITECTURAL IDENTITY

1.1. Vernacular and contextual design
1.2. Organic and non intrusive Architecture
1.3. Experiential Architecture

4.5.2 SUSTAINABLITY AND ECO SENSITIVE APPROACH

1.4. Low Impact materials, efficient energy practices
1.5. Green certifications
1.6. Local Materials
1.7. Water recycling and on site treatment

4.5.3 SPATIAL PLANNING AND FUNCTIONAL ELEMENTS

1.8. Zoning and Thematic Planning
1.9. Modern amenities with local expressions
1.10. Layout such that it has legibility, Coherence, Complexity and mystery

4.5.4 ECO TOURISM

Architectural storytelling and eco-tourism potential is high but needs community integration and operational realism along with design innovation (like indoor-outdoor flow, low-impact forms) succeeds best when grounded in local engagement and practical usability.

CHAPTER 5

CONCLUSION

Aspect	Taj Mahua Kothi (Bandhavgarh)	Six Senses Con Dao (Vietnam)	Marari Beach Resort (Kerala)	Novotel Visakhapatnam	Design Inference for Vizag Coastal Resort
Overall Concept	Jungle lodge; intimate, rustic luxury; inspired by local village "kothi" structures	Minimalist, eco-luxury; strong connection to landscape and sea	Vernacular coastal village concept; eco-sensitive luxury	Urban, contemporary seafront hotel	Blend **eco-luxury** + **cultural storytelling**, rooted in coastal Andhra identity
Cultural Integration	Uses local Bundelkhand architecture, mud plaster, khus panels, handcrafted details	Subtle; focuses more on natural setting than cultural narrative	Strong Kerala vernacular: thatch roofs, local crafts	Minimal; depends heavily on sea view	Integrate **local crafts, coastal rituals, fishing culture**, and regional material traditions
Sustainability Approach	Naturally ventilated, low-rise, minimal footprint	Strong: timber construction, low embodied energy, passive design	Very strong: organic farming, zero-waste systems, natural materials	Limited green strategies	Combine **passive cooling, shaded courts, natural materials, stormwater reuse**, and renewable systems

Material Palette	Timber, mud plaster, natural stone, handmade elements	Locally sourced wood, recycled materials, muted palette	Thatch, clay tiles, coir, laterite – all regional	Glass façade, steel, modern finishes	Use **coastal stone, terracotta, bamboo/wood, lime plaster**, and corrosion-resistant materials
Spatial Planning	Scattered cottage clusters creating privacy + immersion	Villa clusters aligned to ocean breeze; uninterrupted visual axes	Individual cottages with courtyards; organic layout	Linear rooms facing sea; compact planning	Use **cluster planning with courtyards**, breeze-oriented villas, and hierarchy of private–semi-private–public spaces
Landscape Strategy	Forest integration, minimal disturbance	Preserves natural contours and dunes	Uses native coastal flora, coconut palms, water bodies	Shaped lawns and terraces	Create a **coastal ecological landscape**: dunes, mangroves, native planting, shaded pathways
Waterfront Integration	Not applicable (forest site)	Direct beach relationship; villas open toward ocean	Indirect but serene beach integration; eco-sensitive transition	Balconies providing sea-view rooms	Use **gentle multi-level transitions to shore**, beachfront decks, tidal pools, shaded promenades
Climate Response	Shaded verandahs, courtyards,	Cross-ventilation, sloped	Thatch roofing, open plans,	Glass façade with some shading	Incorporate **deep overhangs, verandahs, courtyards,**

	passive cooling	roofs, deep overhangs	shaded sit-outs		**wind corridors**, and controlled glazing
Luxury Definition	Rustic, intimate, experiential	Minimalist, nature-driven luxury	Slow living, wellness-oriented	Contemporary corporate	Combine **experiential luxury** + **local wellbeing traditions**, not generic high-end finishes
Public Interaction / Community	Limited—focused on guests	Minimal public access	Strong community tourism model	Guest-focused	Include **public waterfront plazas, local craft markets, cultural performance decks**
Scale & Privacy	Small-scale, immersive, private	Medium scale; privacy in villas	Low-rise, spread-out; excellent privacy zones	High-rise, compact	Prefer **low-rise spread-out typology** for coastal ambience and privacy
Architectural Expression	Vernacular revival	Timeless minimalism	Pure vernacular and nature-integrated	Modern urban	Create a **hybrid architectural identity**: modern coastal + vernacular warmth
Experience Layering	Forest trails, rustic luxury, wildlife immersion	Wellness, ocean, detox experiences	Ayurveda, village life, slow living	Sea-view rooms, dining	Provide **multi-sensory experiences**: coastal

					healing, craft-engagement, nature trails, night-lit waterfront
Environmental Sensitivity	High	Very high	Very high	Low–moderate	Aim for **near-eco-resort sustainability** even in a luxury category
Construction Approach	Low-impact, handcrafted	Prefabricated timber modules	Local labor and materials	Conventional construction	Explore **prefab for villas, sustainable materials**, and local craftsmanship

5.1 Comparitive inferences from the literature survey

Table 35 Inferences form literature survey

Norm Source	**Design Takeaways for Building Program & Spatial Planning**
Andhra Pradesh Tourism Policy 2020–25	Allocate significant built-up for **MICE facilities** (convention halls, exhibition areas); integrate **waterfront-oriented public spaces** like promenades, viewing decks, restaurants. Use **flexible, modular spaces** for events and conferences.
Developer/Brand Norms	Include zones for **luxury amenities** (spa, specialty restaurants, rooftop lounges), and **back-of-house areas** (kitchen, laundry, staff circulation) as per hotel chain requirements. Clearly segregate **guest and service circulation**.
Ministry of Tourism – HRACC (5-Star Classification)	Incorporate **minimum room sizes**, suite ratios, **multiple F&B outlets**, **banquet hall**, **swimming pool**, **spa**, and **business center**. Ensure **universal accessibility** and star-compliant safety/fire norms.
URDPFI Guidelines	Use **maximum permissible FAR** and **setbacks** effectively. Keep **utilities (STP, ETP, solid waste)** in basement or rear. Respect **zoning regulations** and provide clear access for service/maintenance.
Central Bye-Laws & IS Codes (Hotels)	Design **separate vertical and horizontal cores** for services and guests. Ensure **fire escape stairs**, water tank locations, **natural light and ventilation** in rooms and kitchens. Use **soundproofing** between banquet halls/guest areas.
CRZ Norms	Limit construction within CRZ-II with **minimum ecological impact**. Orient building blocks **parallel to coast**. Use **stilted podiums** or **elevated decks** for flood resilience. Avoid basement use in sensitive coastal zones.
Time Saver Standards	Derive **standard areas** for hotel spaces like guestrooms, lobbies, restaurants, service areas, and corridors. Maintain **ideal room-to-corridor ratios**, **lift core positioning**, and **F&B kitchen adjacency** to service areas.

5.2 BUILDING AREA PROGRAM

Table 36 Building area program

Category	Spaces	Capacity	Area	Nos	Proposed Area (sq.m.)
Arrival and front house	Reception lobby & waiting lounge		745	1	745
	Front desk		55	1	55
Total					800
Accommodation	Standard rooms	2 each	38	85	3230
	Deluxe rooms	2 each	70	50	3500
	family Suites	4 each	75	18	1350
	Executive suites	2 each	135	0	0
	Luxury suite	5 each	280	1	280
	Cottages	8	160	40	6400
	Villas	6	45	6	270
Total				200	15030
Food & Beverage	Specialty restaurant 1	205	575	1	575
	All-day dining restaurant with bar	256	605	1	605
	Specialty restaurant 2	130	385	1	385
	Coffee shop / patisserie	65	245	1	245
	Banquet hall with pre-function area	475	1900	1	1900
	Banquet hall with pre-function area	336	1160	2	2320
Total					6030
Back-of-House & Service	Main kitchen		265	1	265
	Specialty Kitchen		240	1	240
	Stock receiving, Dishwashing & garbage disposal		180	1	180
	Laundry & Linen area		45	1	45
	Staff toilets with changing rooms & lockers		60	2	120
	Staff cafeteria		85	1	85
	Engineering services (HVAC, electrical, DG set)		150	1	150
	STP & rainwater harvesting		150	1	150
	Loading dock & service yard				0
	Waste management & recycling		35	1	35

CHAPTER 6

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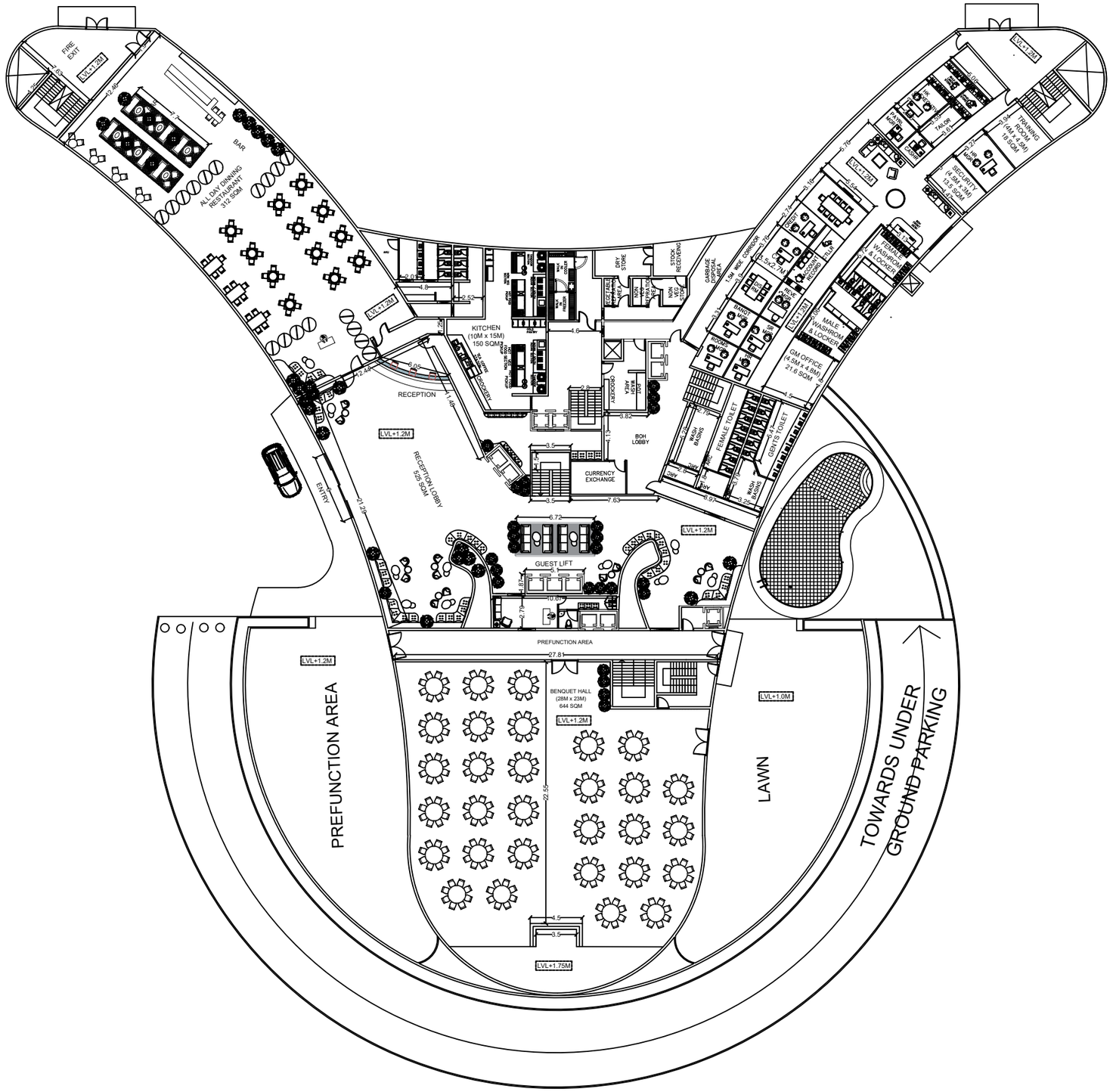
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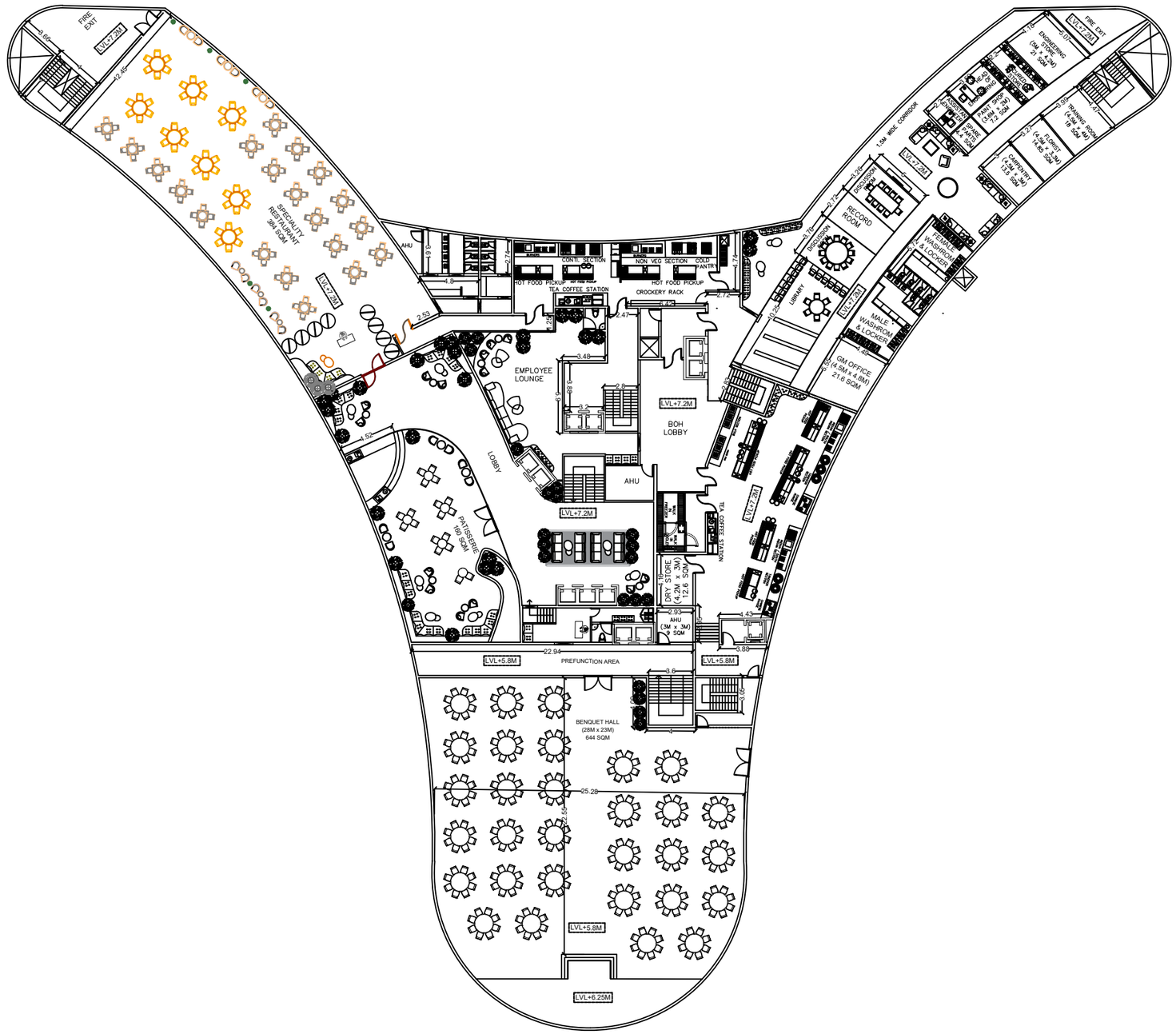
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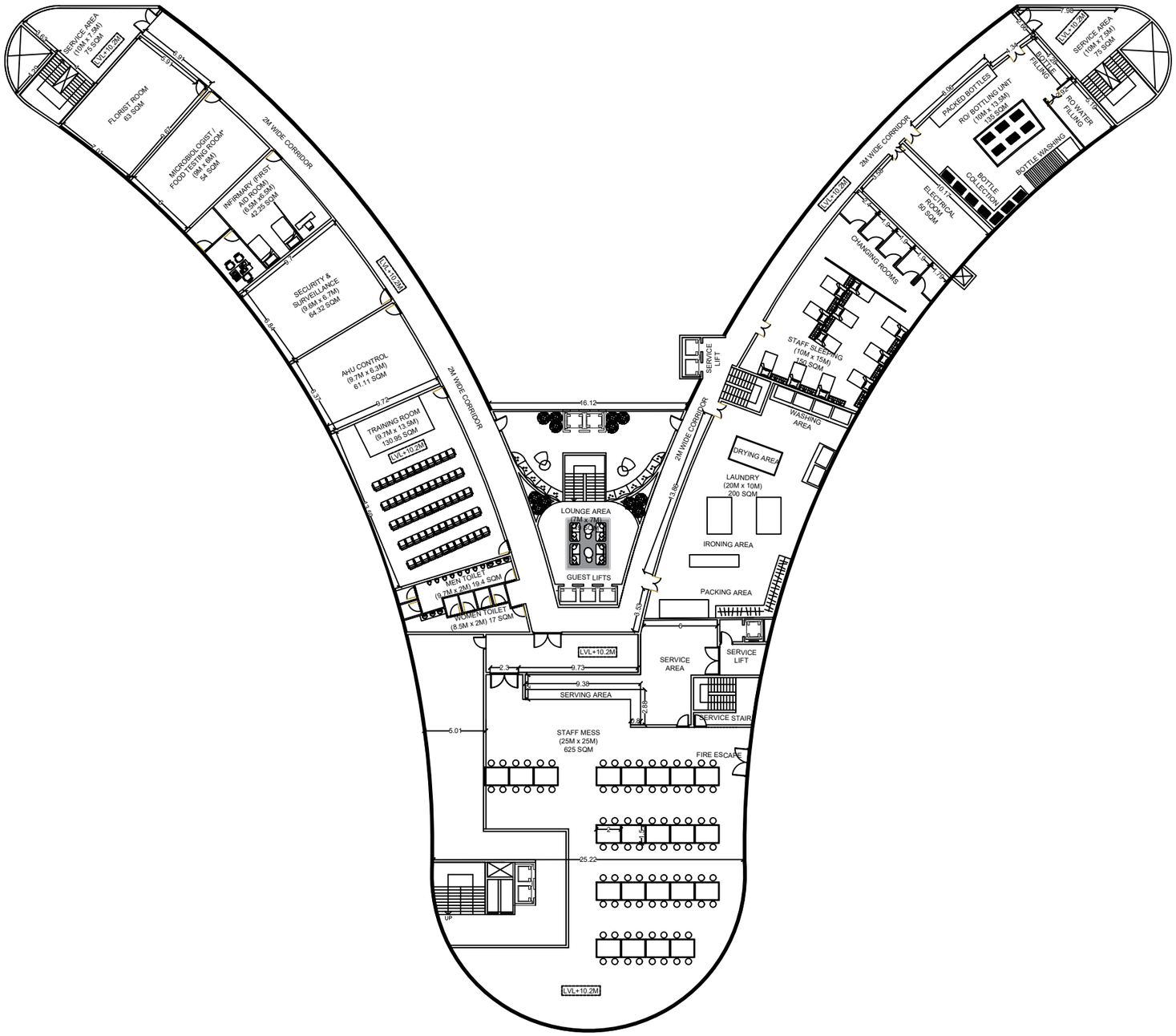
GROUND FLOOR

SCALE 1:400



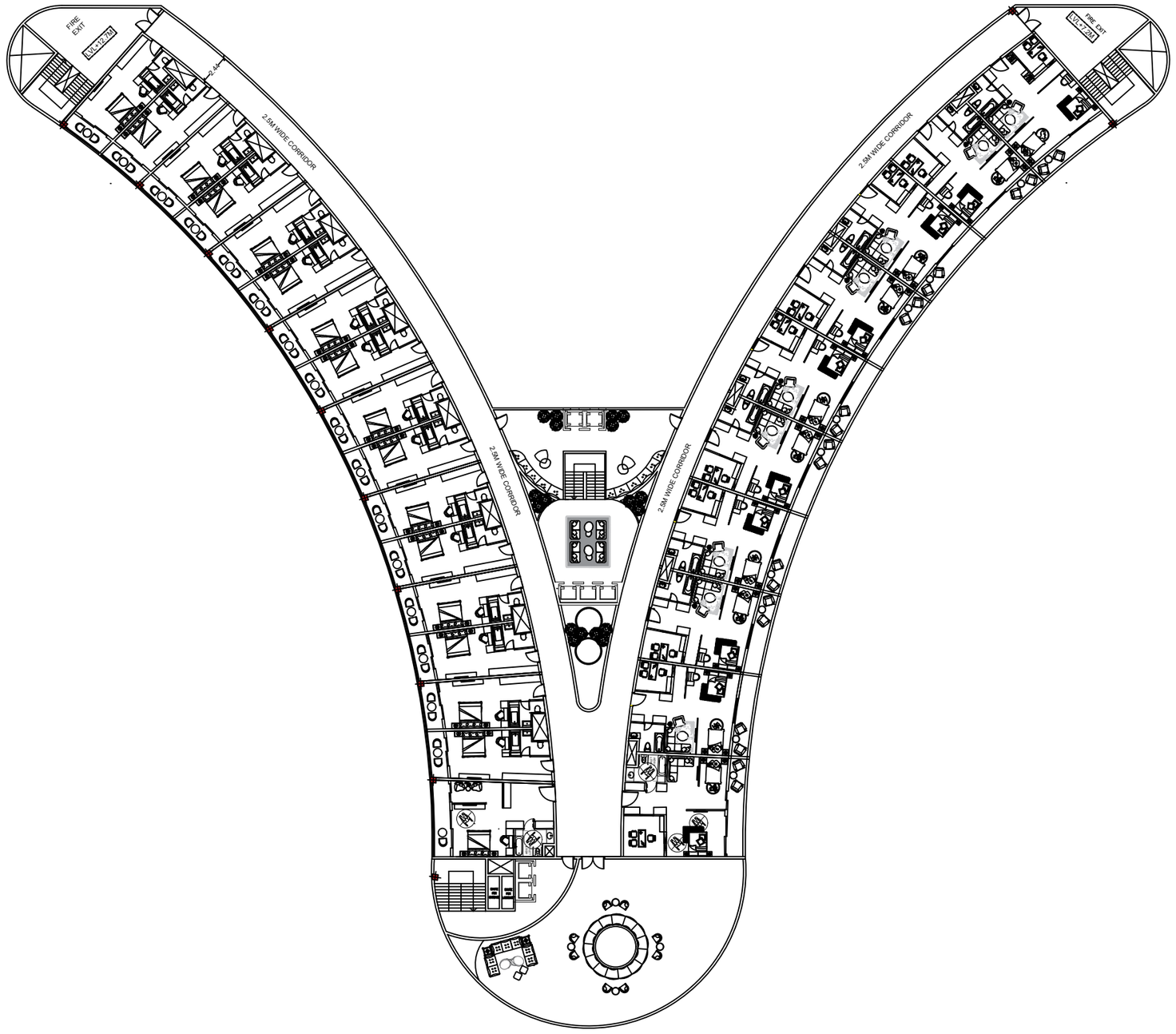
FIRST FLOOR

SCALE 1:400



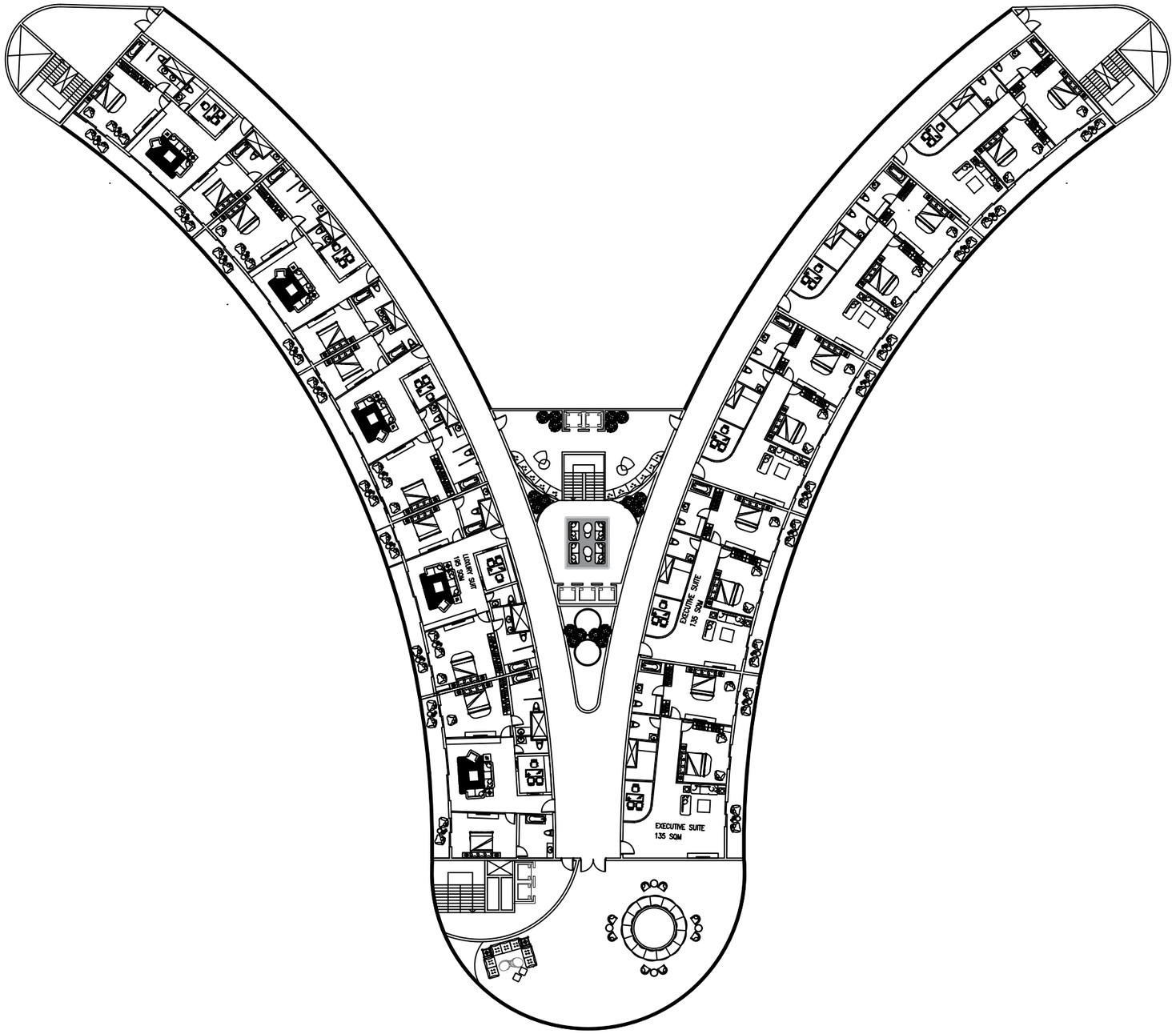
SERVICE FLOOR

SCALE 1:400



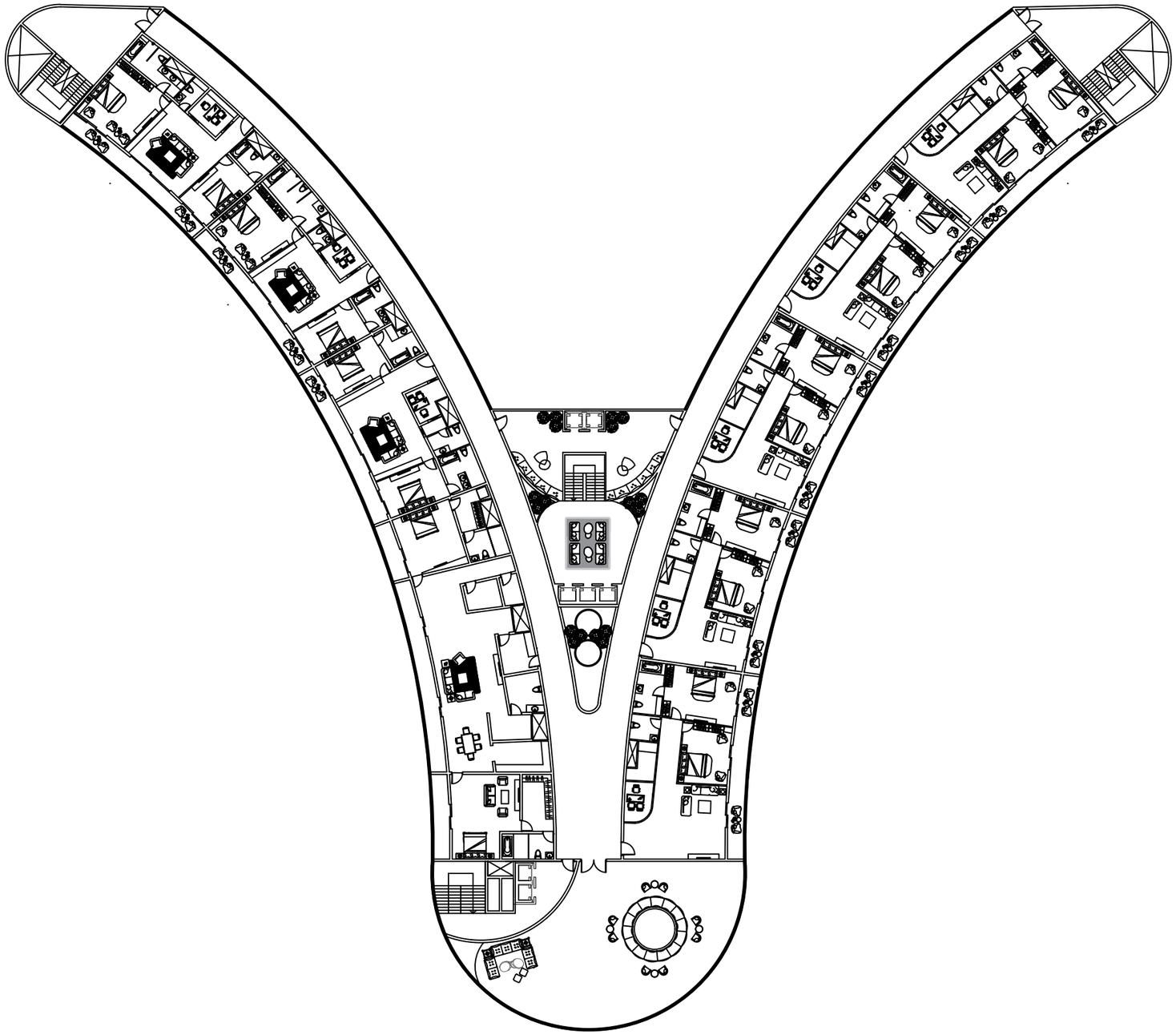
SECOND TO SIXTH FLOOR

SCALE 1:400



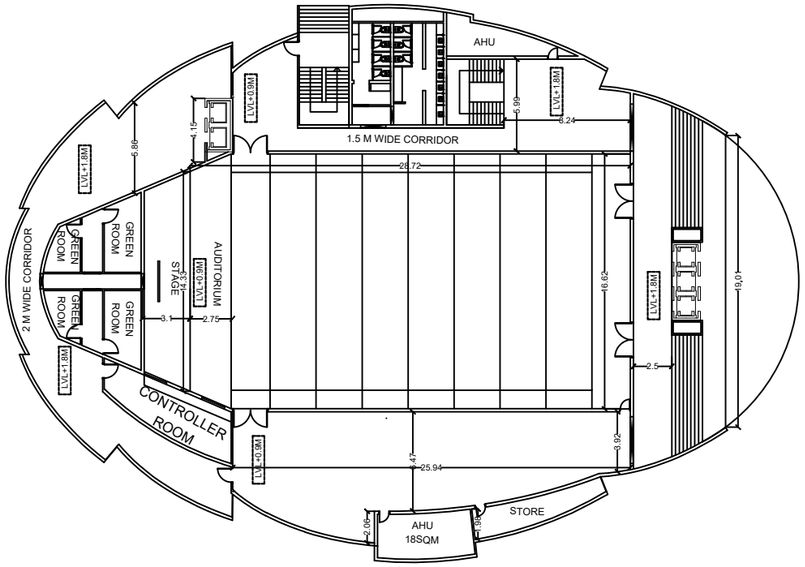
SEVENTH FLOOR

SCALE 1:400

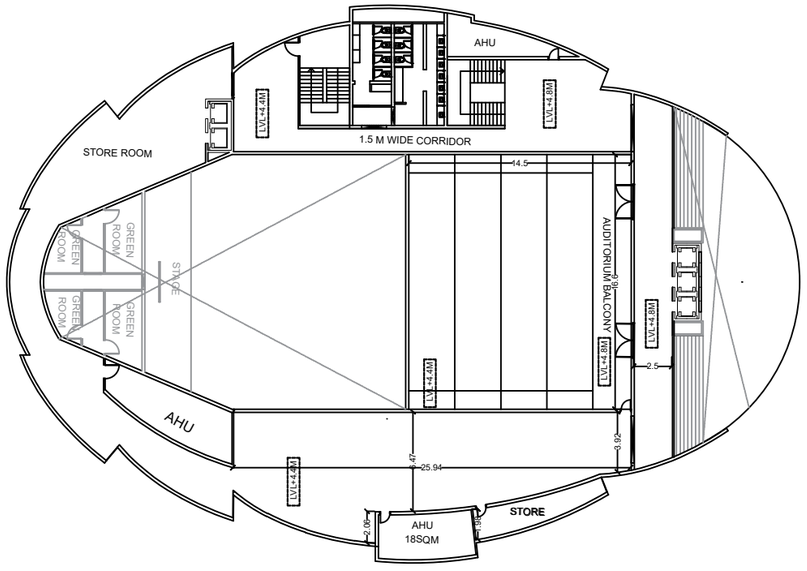


EIGHTH FLOOR

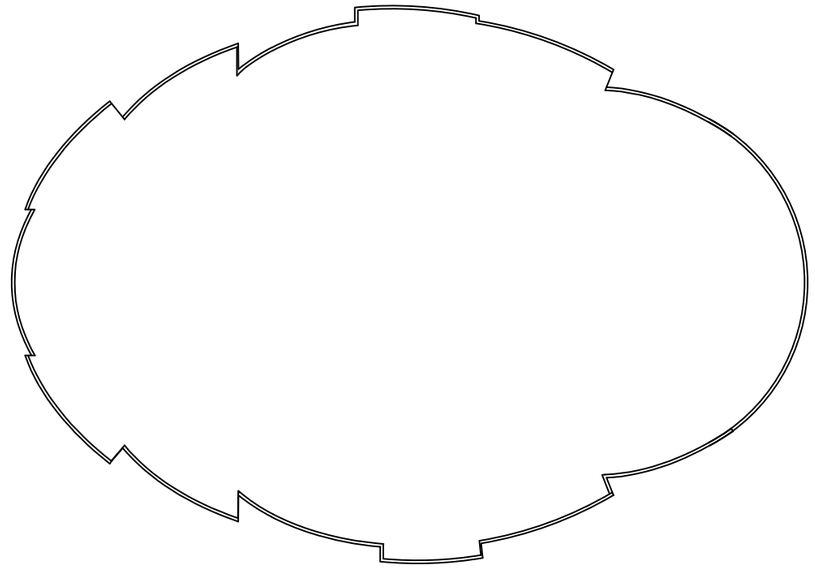
SCALE 1:400



GROUND FLOOR

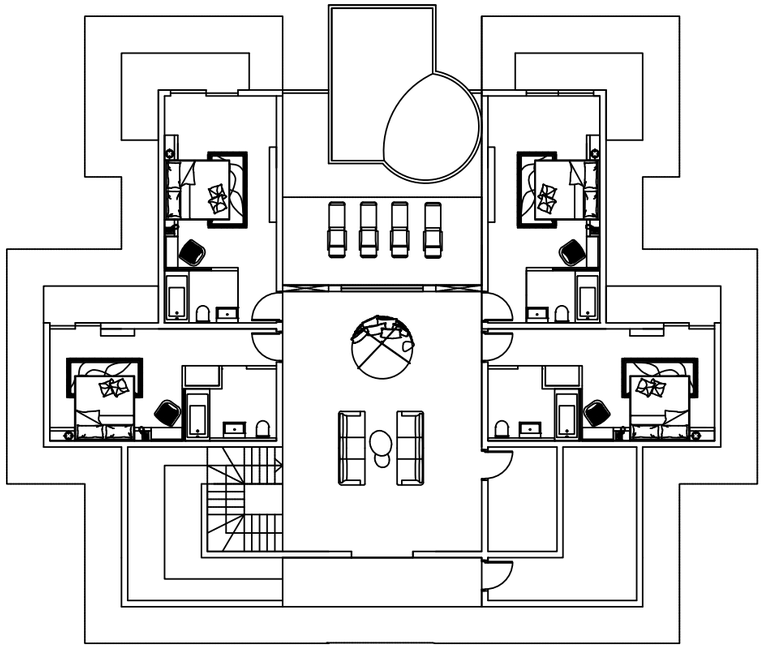


FIRST FLOOR



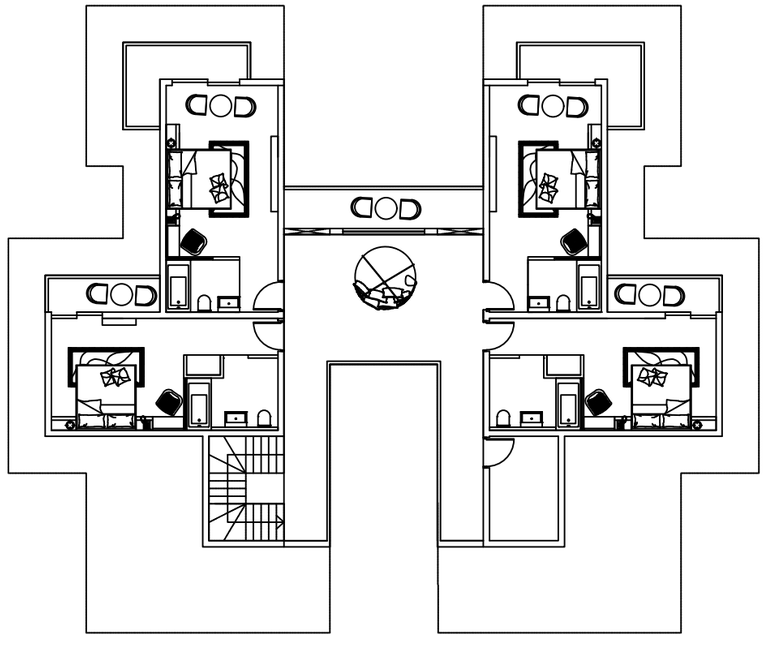
ROOF PLAN

CONVENTION CENTRE	SCALE 1:400

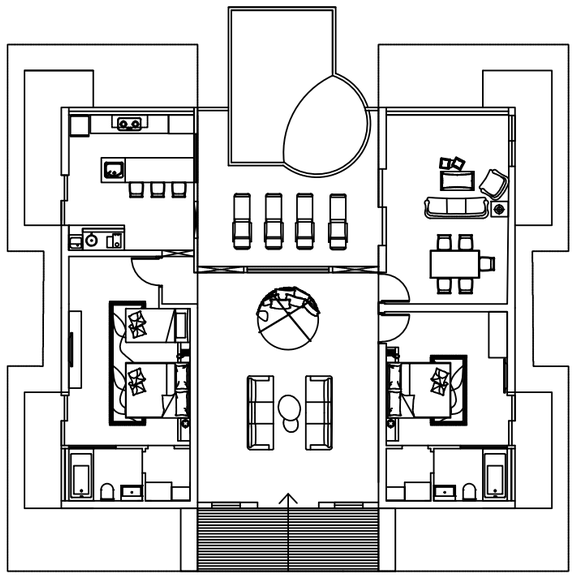


GROUND FLOOR

COTTAGE



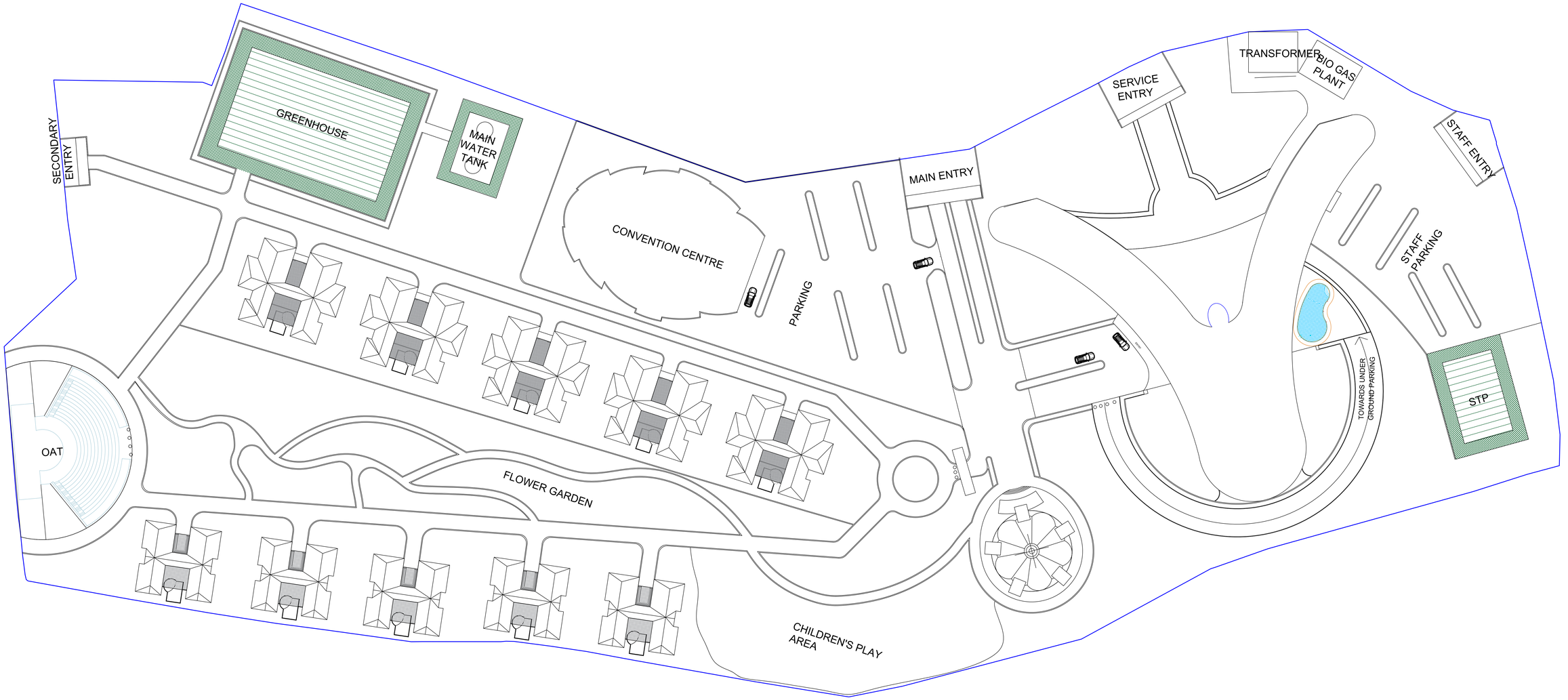
FIRST PLAN

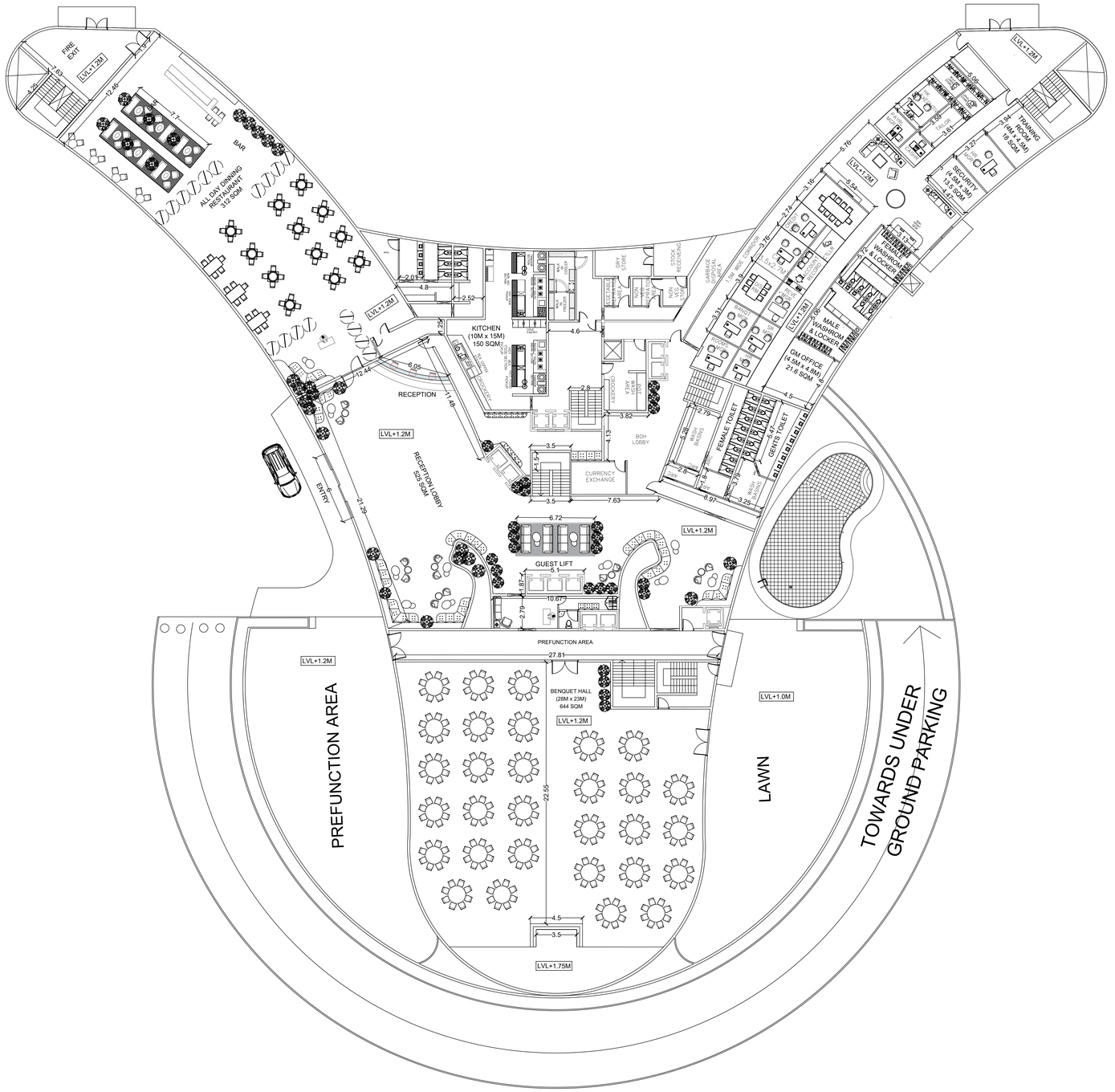


GROUND FLOOR

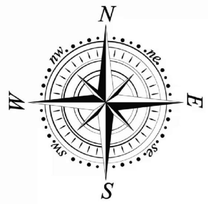
VILLA

COTTAGE AND VILLA	SCALE 1:200


SECONDARY ENTRY
GREENHOUSE
MAIN WATER TANK
CONVENTION CENTRE
PARKING
MAIN ENTRY
SERVICE ENTRY
TRANSFORMER
BIO GAS PLANT
STAFF ENTRY
STAFF PARKING
TOWARDS UNDER GROUND PARKING
STP
OAT
FLOWER GARDEN
CHILDREN'S PLAY AREA



GROUND FLOOR



5 STAR RESORT, VIZAG

FLOOR PLAN

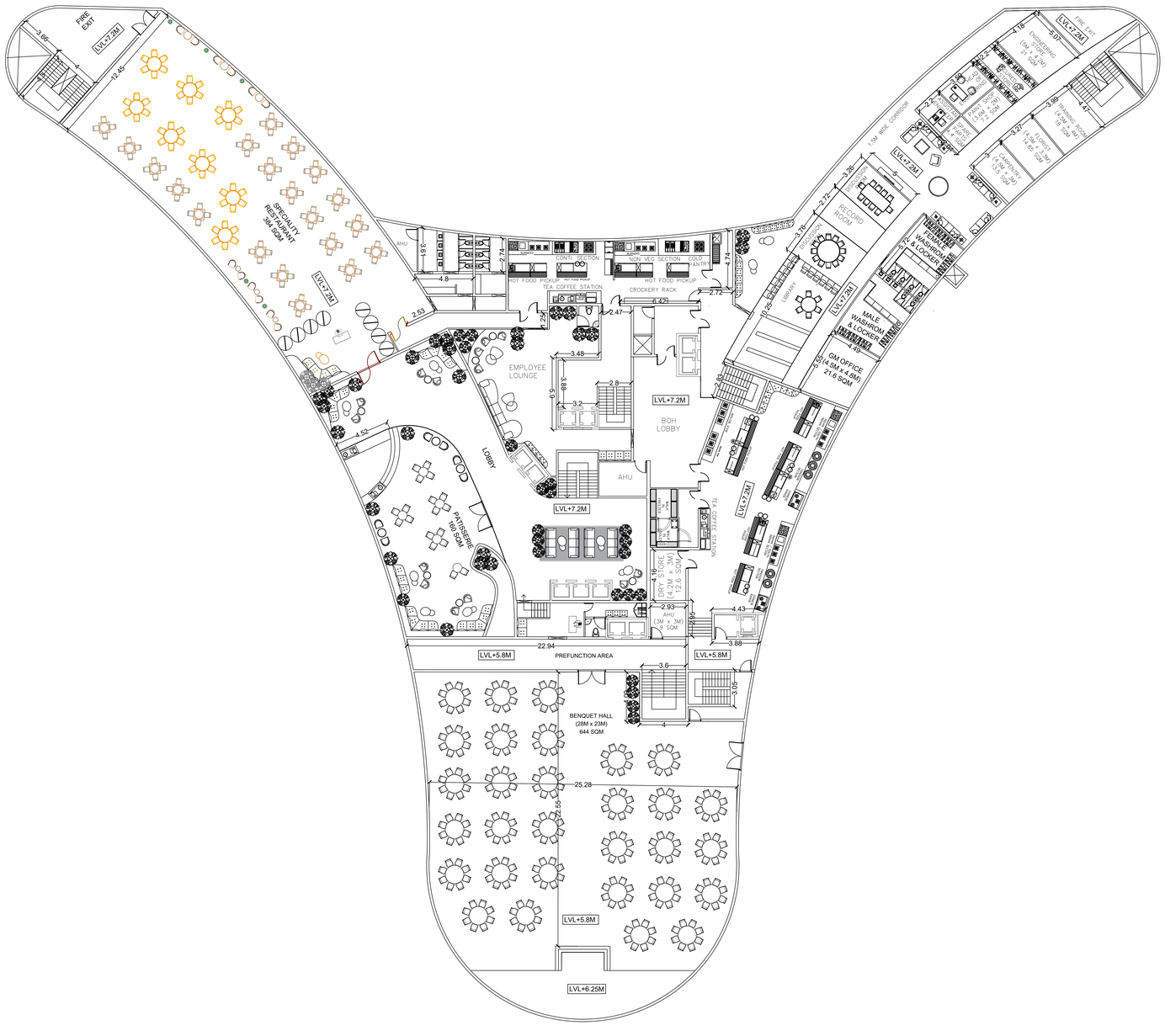
DRAWN BY
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DR. ALKA BHARAT

1

SCALE 1:150

SIGN



FIRST FLOOR

N

5 STAR RESORT, VIZAG

FLOOR PLAN

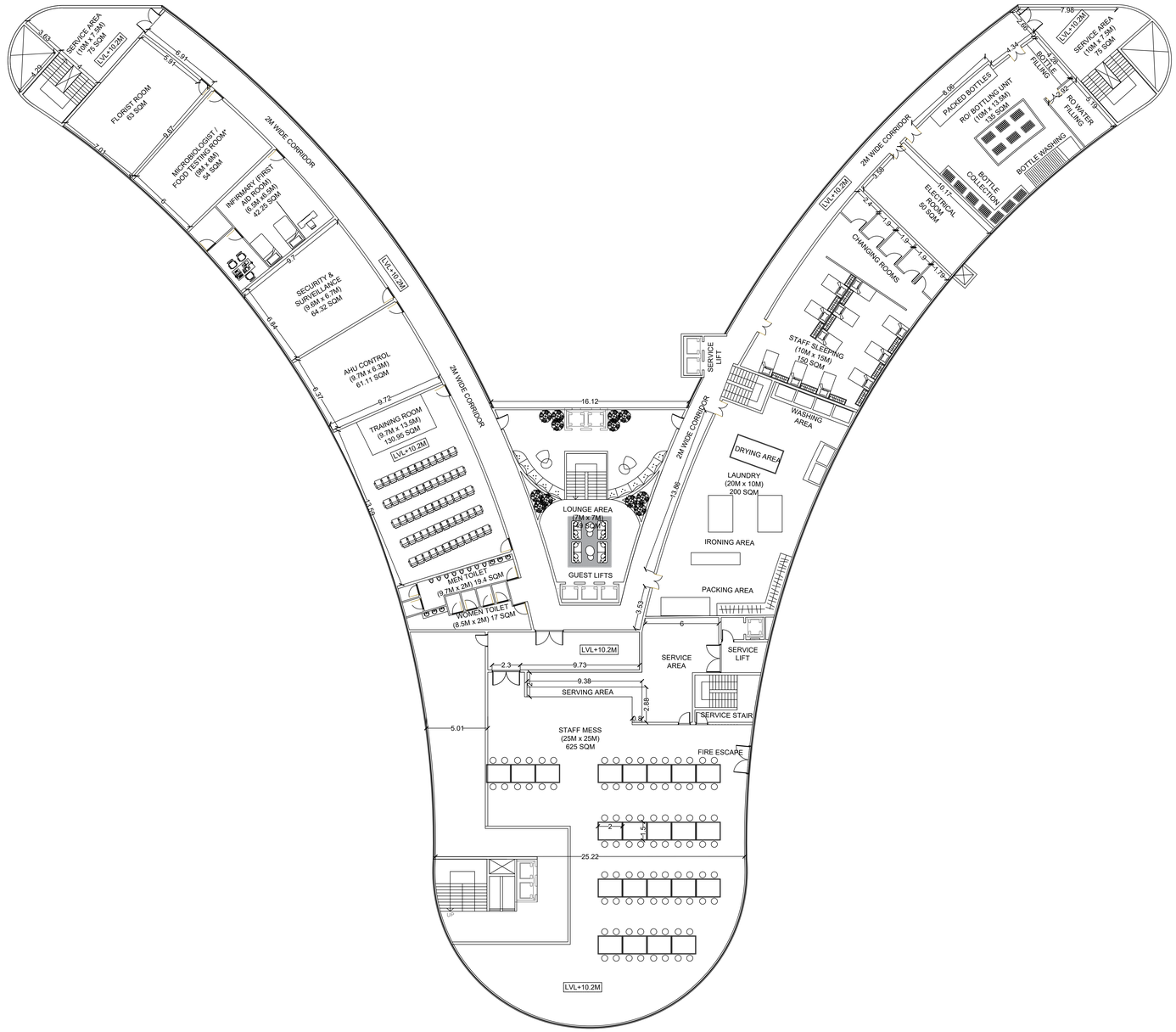
DRAWN BY
NACHIKET DESHPANDE

THESIS GUIDE
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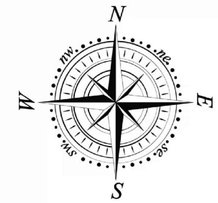
2

SCALE 1:150

SIGN



SERVICE FLOOR



5 STAR RESORT, VIZAG

FLOOR PLAN

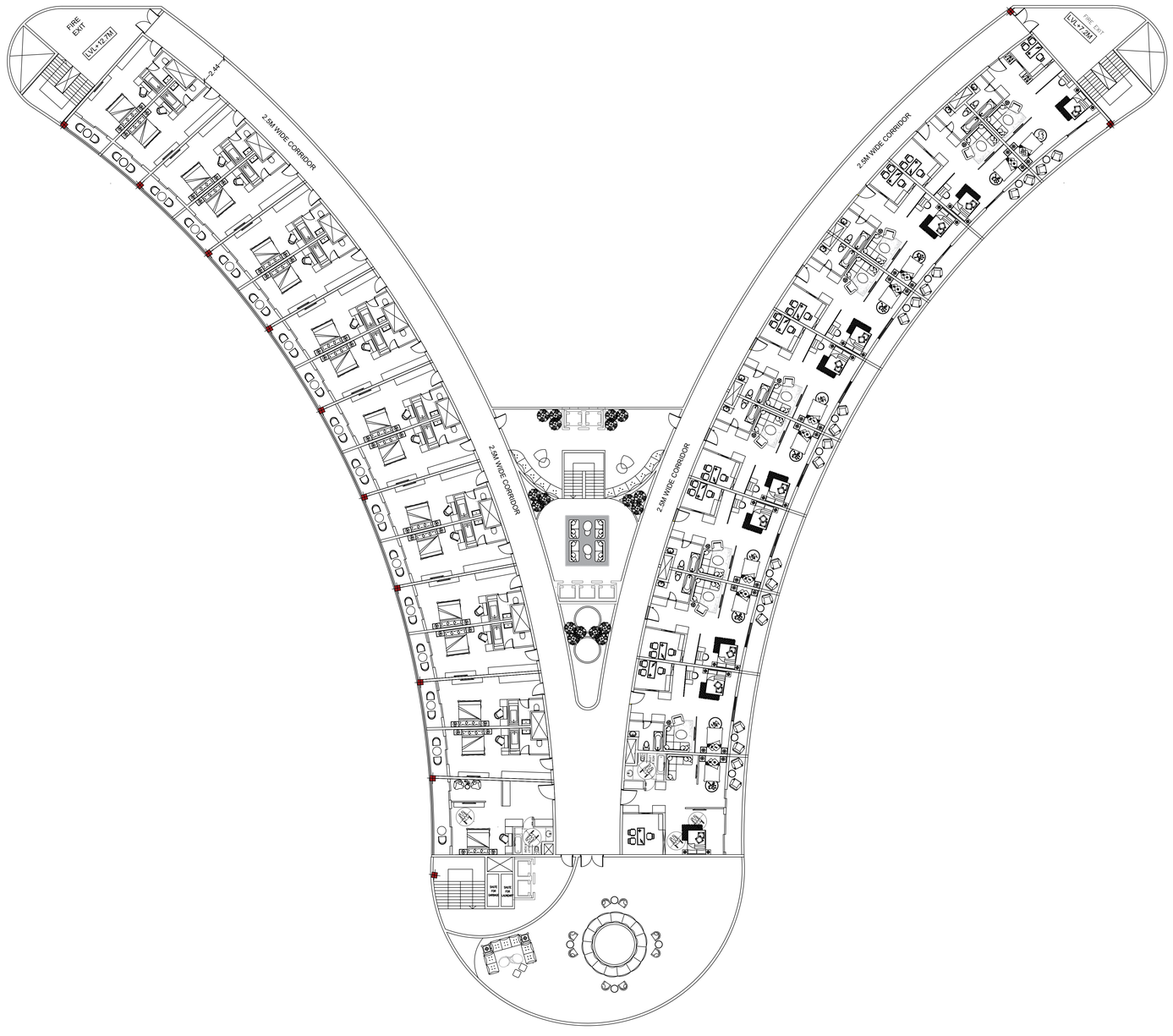
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3

SCALE 1:150

SIGN



SECOND TO SIXTH FLOOR

N

5 STAR RESORT, VIZAG

FLOOR PLAN

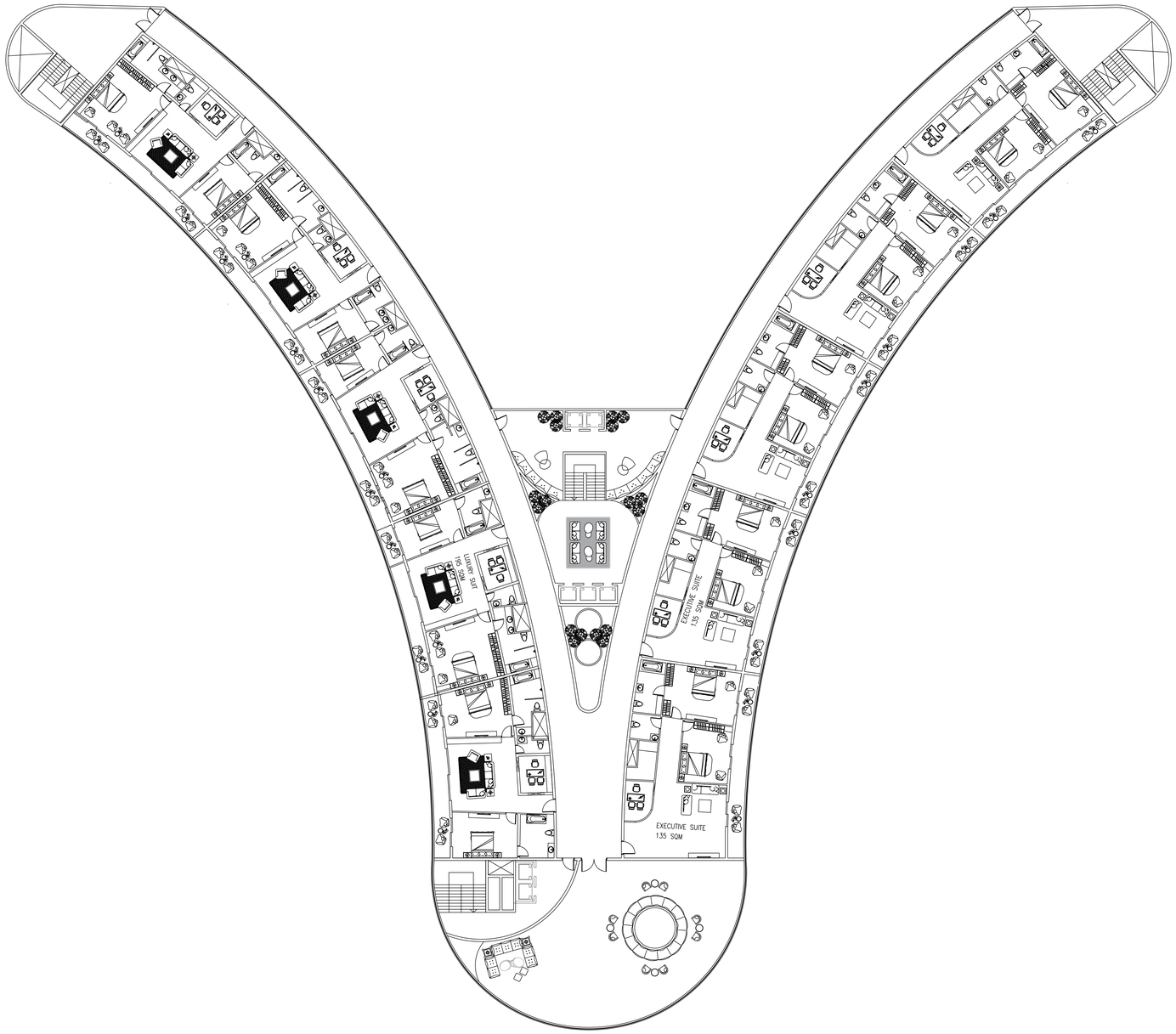
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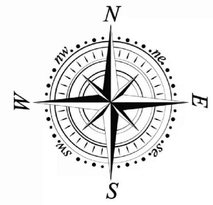
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SCALE 1:150

SIGN



SEVENTH FLOOR



5 STAR RESORT, VIZAG

FLOOR PLAN

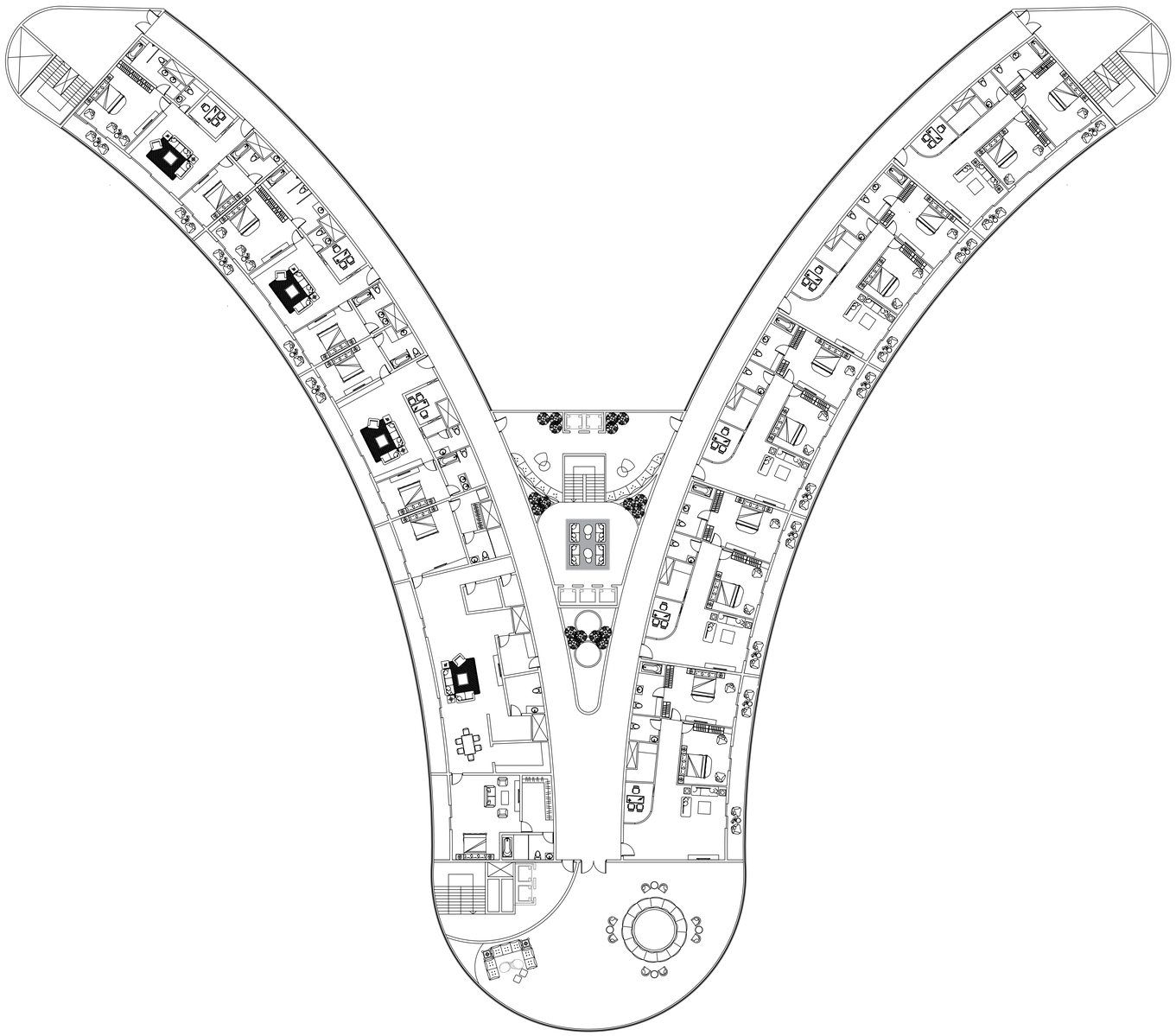
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5

SCALE 1:150

SIGN



EIGHTH FLOOR

N

NE

E

SE

S

SW

W

NW

5 STAR RESORT, VIZAG

FLOOR PLAN

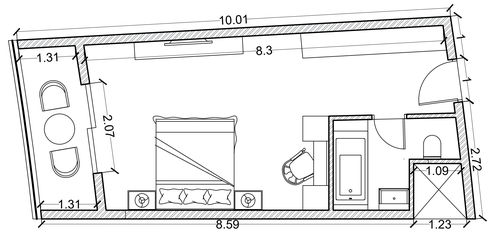
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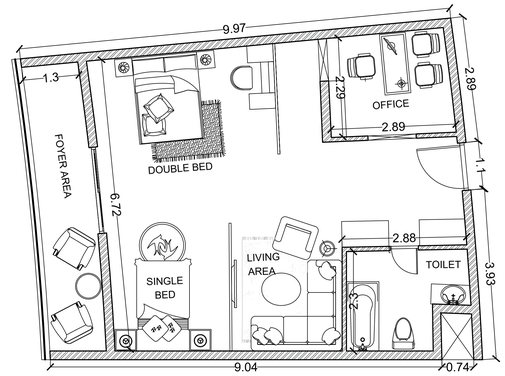
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SCALE 1:150

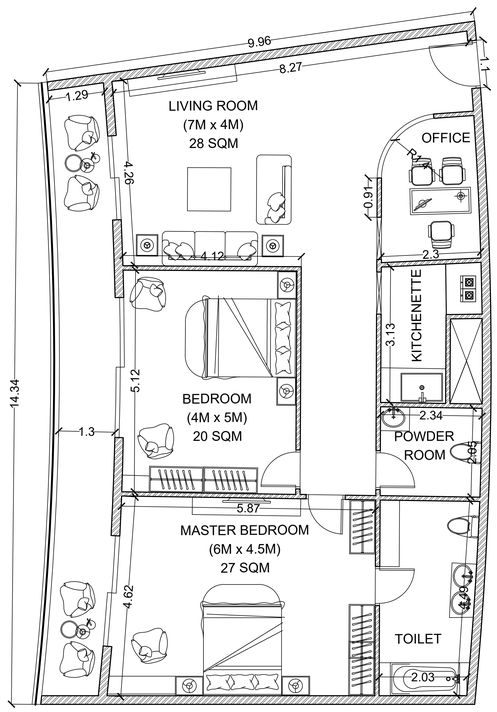
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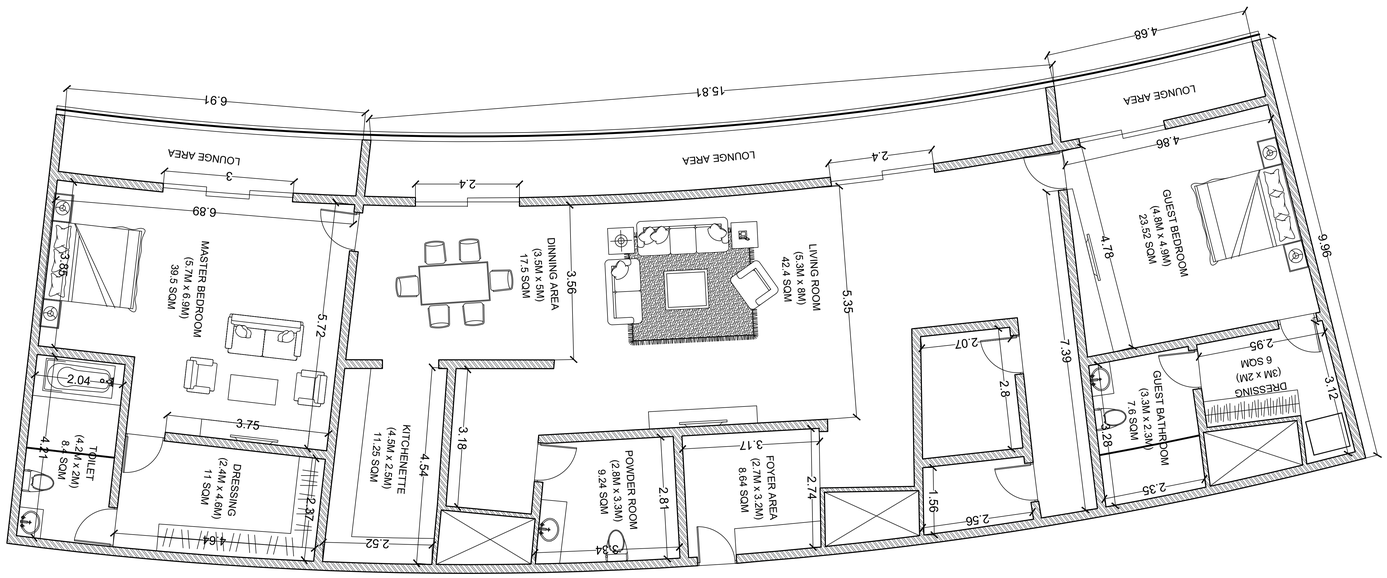
STANDARD ROOM
SIZE : 10M x 5M
NO. OF ROOMS : 85



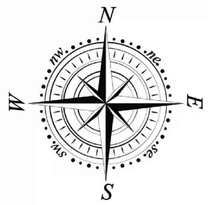
DELUXE ROOM
SIZE : 10M x 7M
NO. OF ROOMS : 50



FAMILY SUITE
SIZE : 10M x 15M
NO. OF ROOMS : 18



PRESIDENTIAL SUITE
SIZE : 10M x 27M
NO. OF ROOMS : 1



5 STAR RESORT, VIZAG

ROOM LAYOUTS

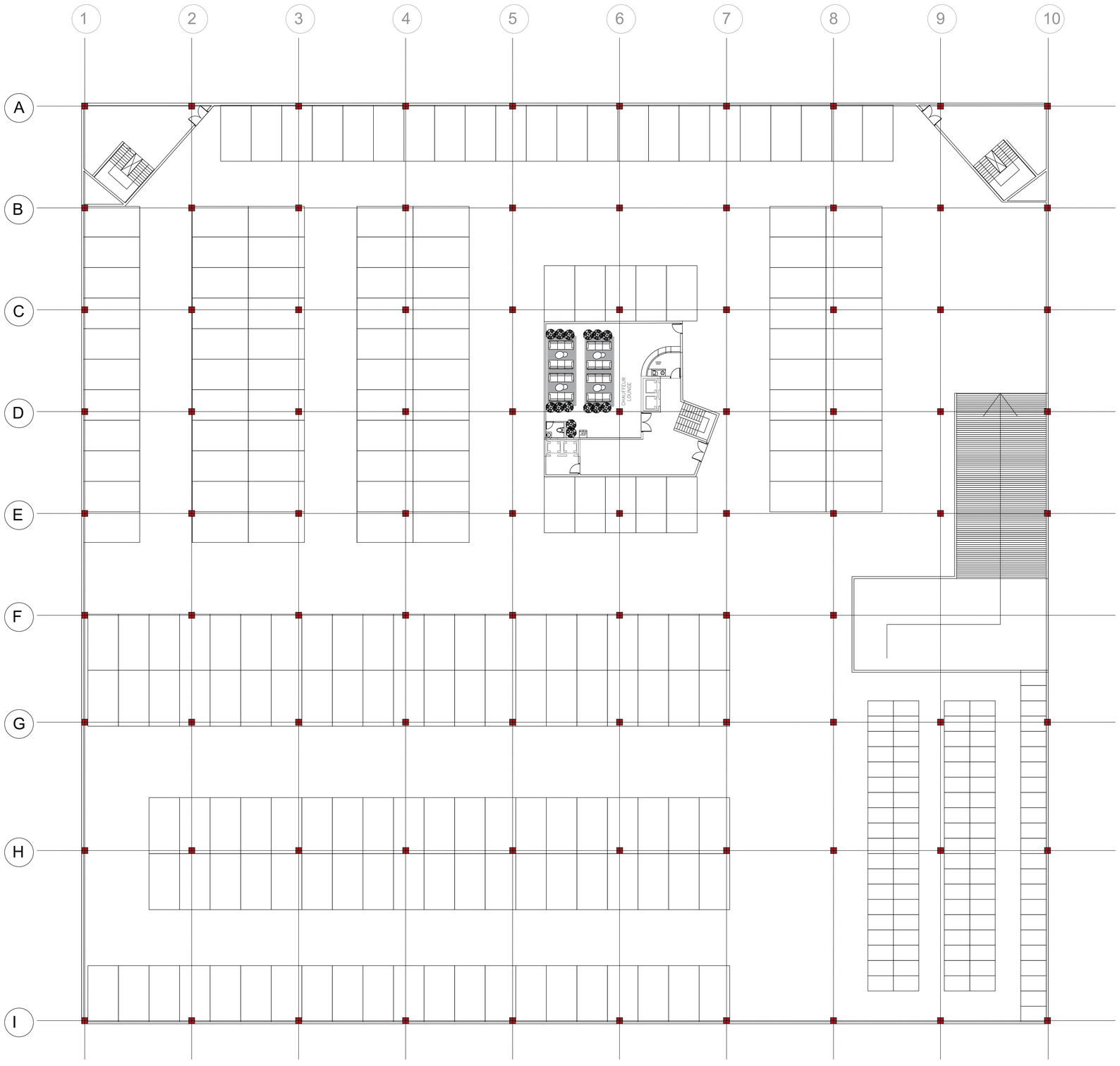
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SCALE 1:100

SIGN



N

5 STAR RESORT, VIZAG

PARKING LAYOUT

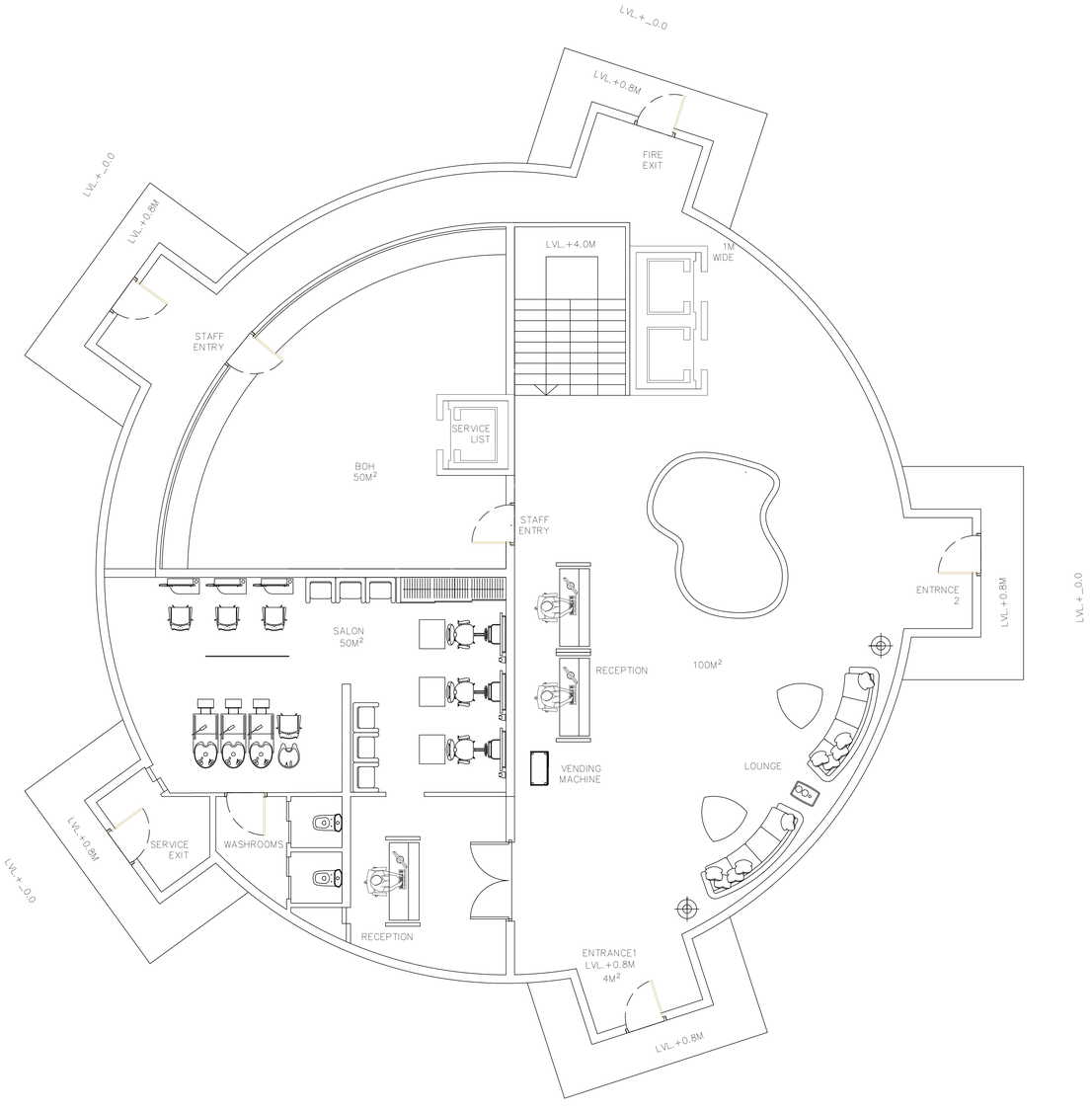
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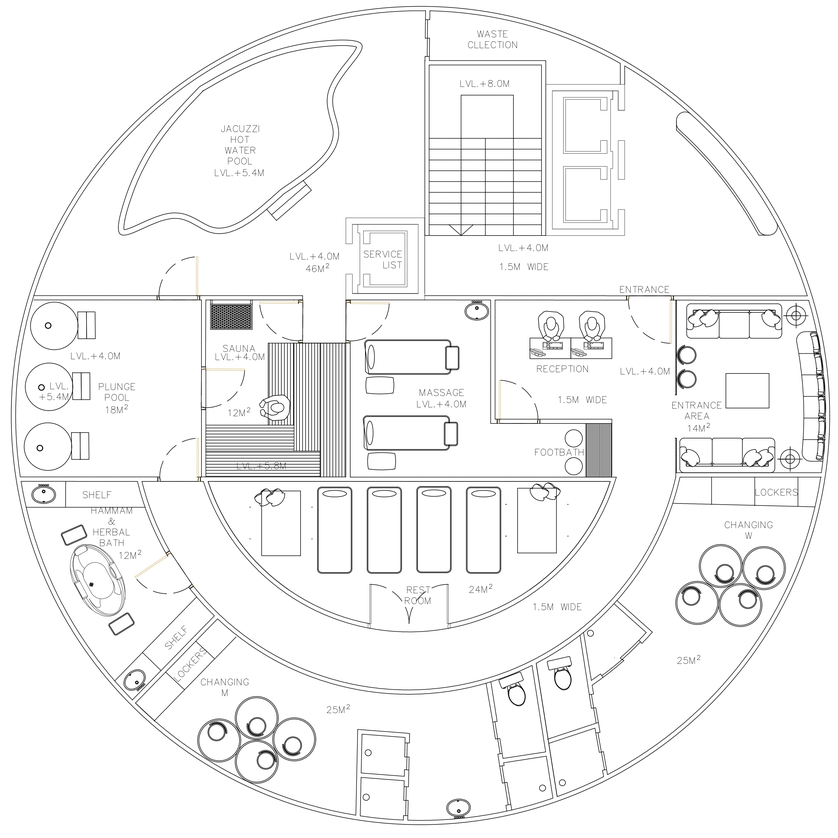
1B

SCALE 1:50

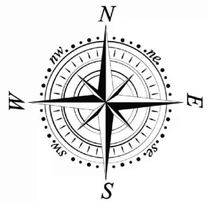
SIGN



GROUND FLOOR



FIRST FLOOR



5 STAR RESORT, VIZAG

RECREATION CENTRE

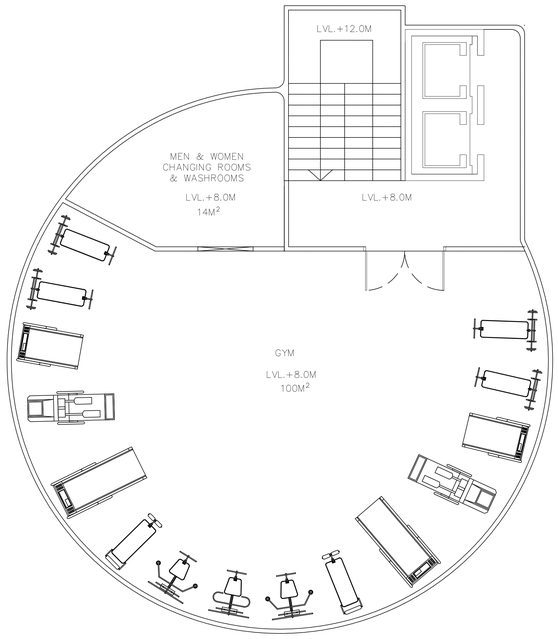
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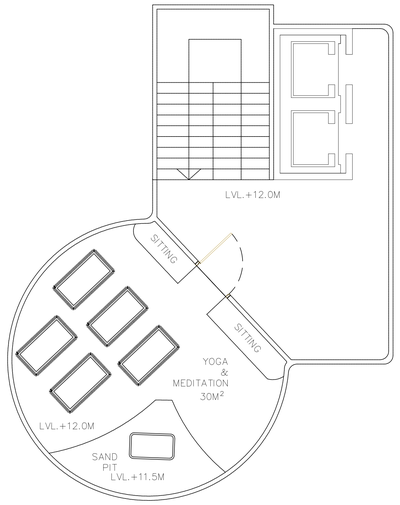
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SCALE 1:50

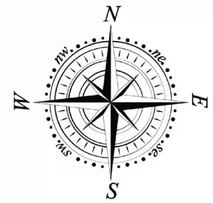
SIGN



SECOND FLOOR



THIRD FLOOR



5 STAR RESORT, VIZAG

RECREATION
CENTRE

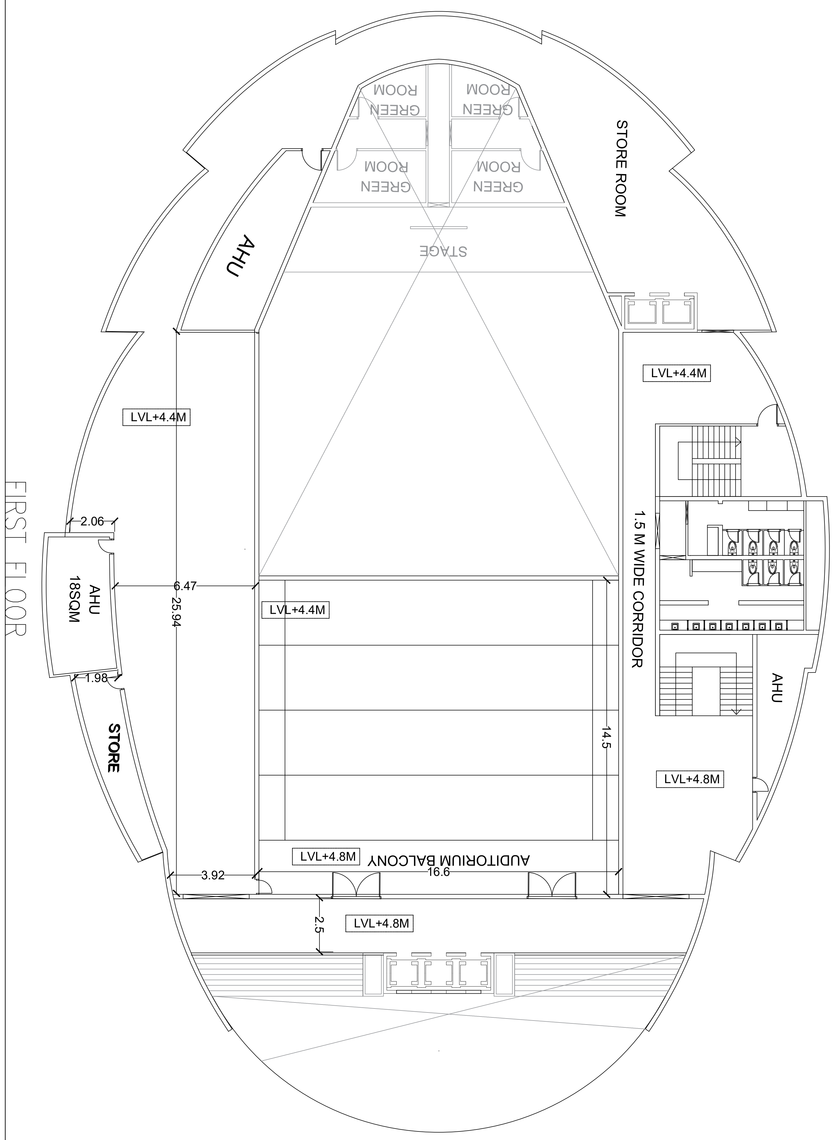
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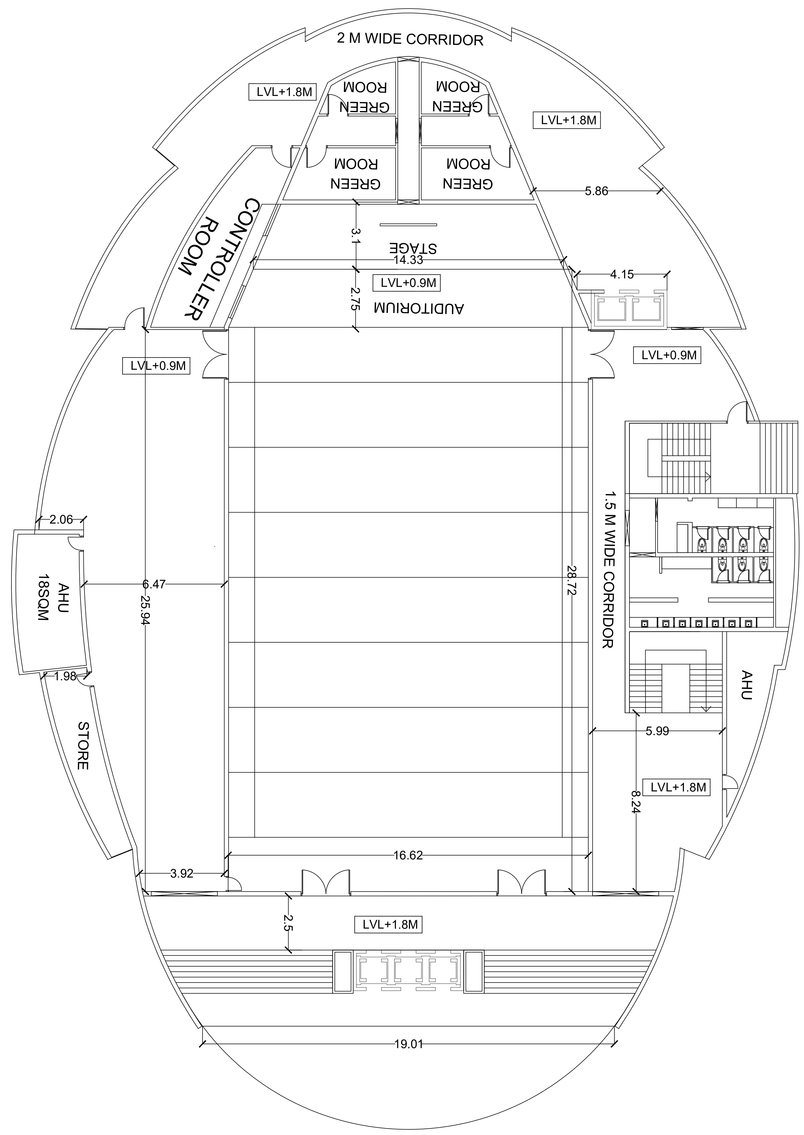
THESIS GUIDE
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SCALE 1:50

SIGN





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DR. ALKA BHARAT

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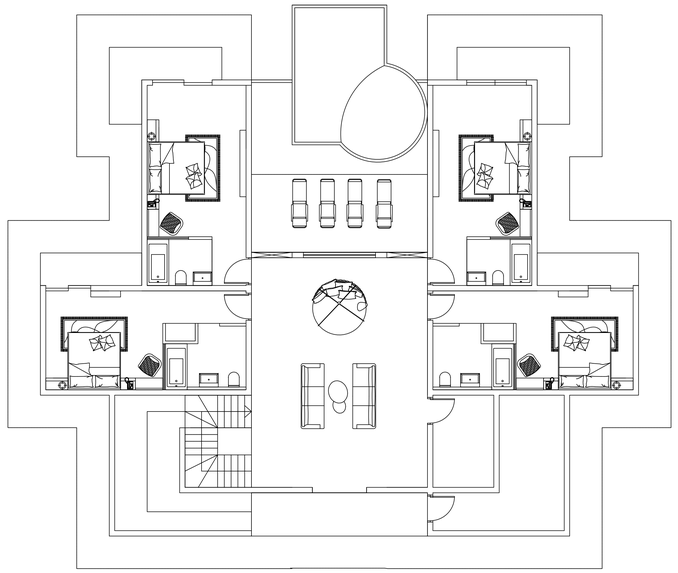
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SIGN

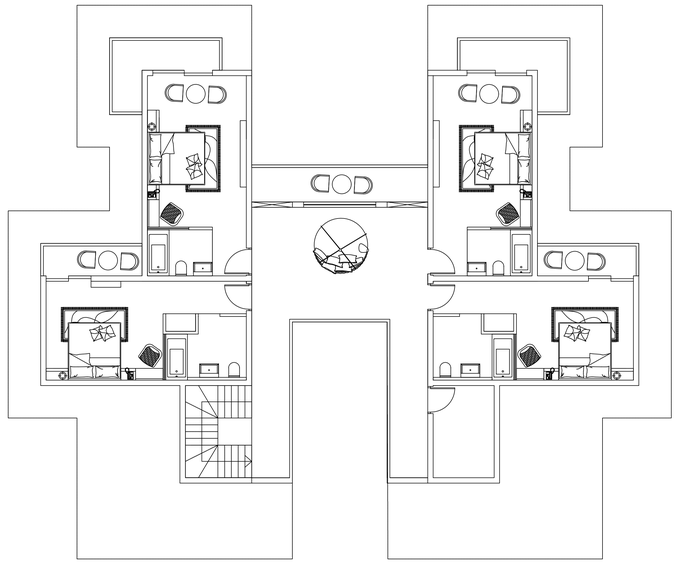
CONVENTION CENTRE

5 STAR RESORT, VIZAG

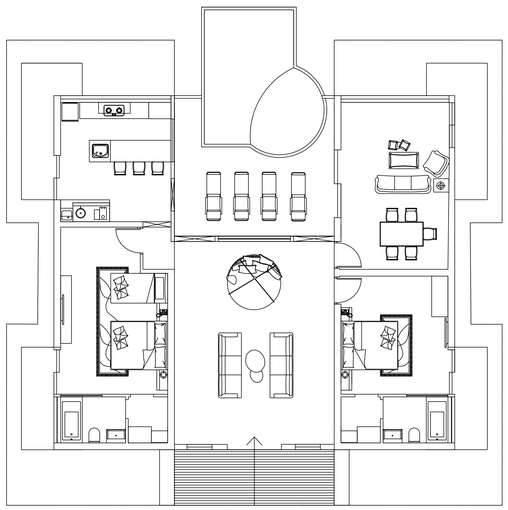




GROUND FLOOR



FIRST FLOOR



VILLA

5 STAR RESORT, VIZAG

RESORT
FLOOR PLAN

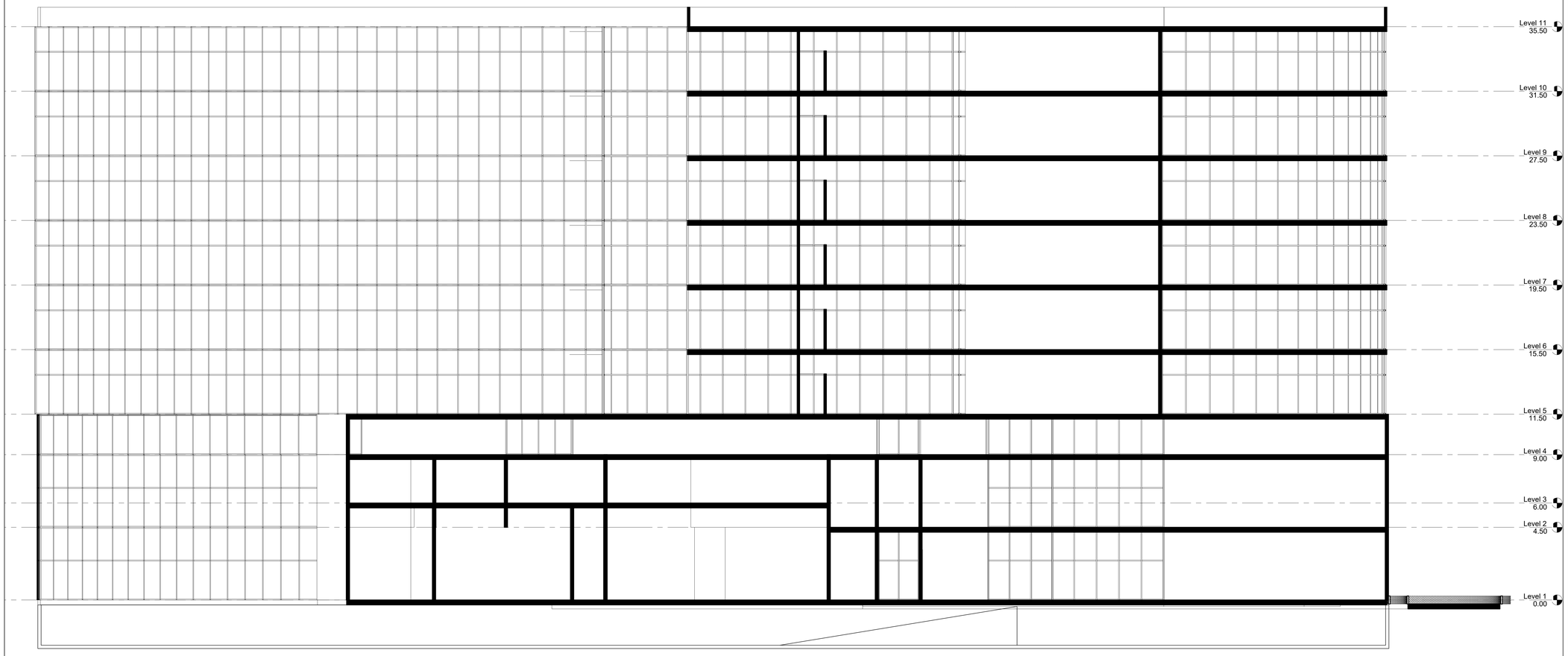
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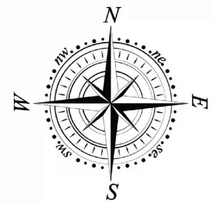
THESIS GUIDE
DR. ALKA BHARAT

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SCALE 1:80

SIGN





5 STAR RESORT, VIZAG

SECTION

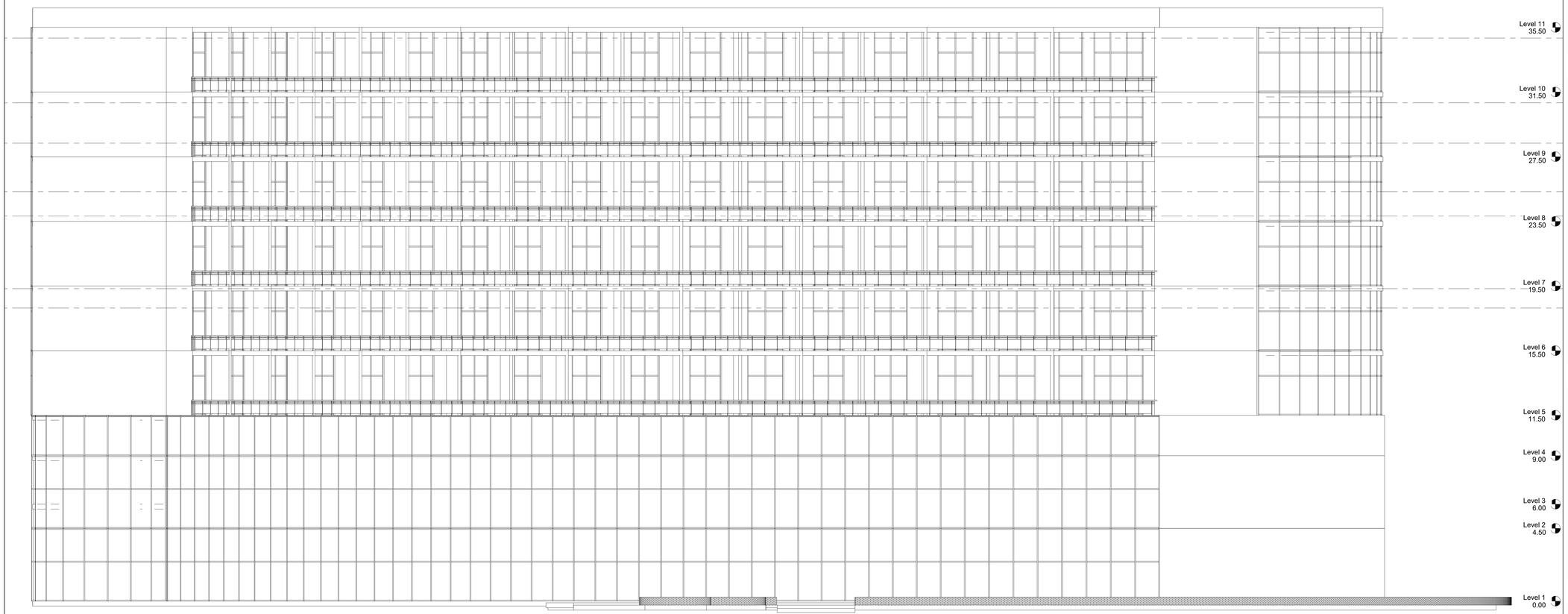
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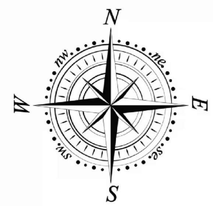
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DR. ALKA BHARAT

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SCALE 1:100

SIGN





5 STAR RESORT, VIZAG

SECTION

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THESIS GUIDE
DR. ALKA BHARAT

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SCALE 1:100

SIGN

5 STAR RESORT

VRMDA PARK, VISHAKAPATNAM

INTRODUCTION

SITE LOCATION

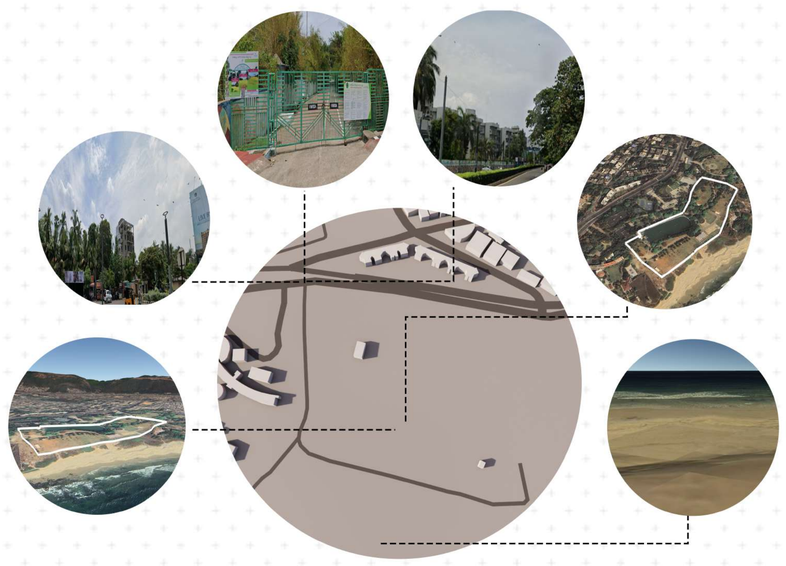
THE SITE IS LOCATED AT VRMDA PARK, VARUN BEACH, VISHAKAPATANAM. THE SITE AREA IS OF 10.78 ACRES.

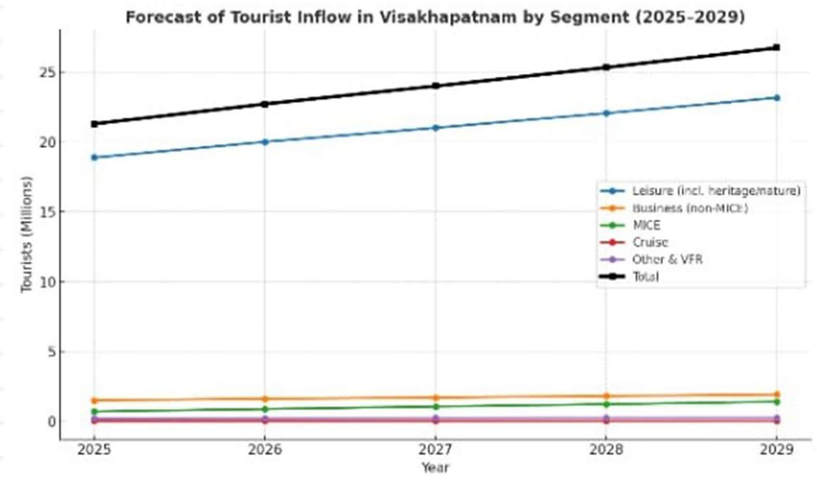
LAND USE : MIXED USE ZONE III
F.A.R : 2.5
= 109,012 SQM
PERMISSIBLE GROUND COVERAGE : 30% OF TOTAL SITE AREA
= 13,081.44 SQM
CRZ REGULATIONS : CRZ ZONE II
SEISMIC ZONE : ZONE II (LOW TO MODERATE RISK)

LEGAL REQUIREMENTS

SET BACKS : FRONT 9 M
BACK 6M

SITE VIEWS





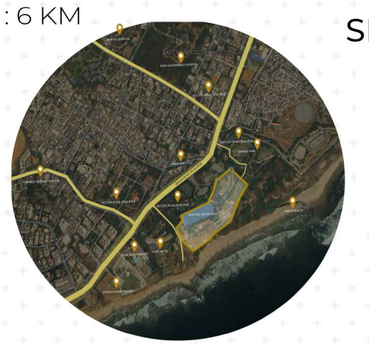
VISHAKAPATNAM IS EXPECTED TO HAVE INFLOW OF 25 MILLION TOURIST BY 2029. LEISURE, BUSINESS AND MICE WOULD MAKE UP FOR MORE THAN 90% OF TOTAL TOURIST INFLOW.

SITE ANALYSIS

LOCATION ANALYSIS

SITE CONNECTIVITY

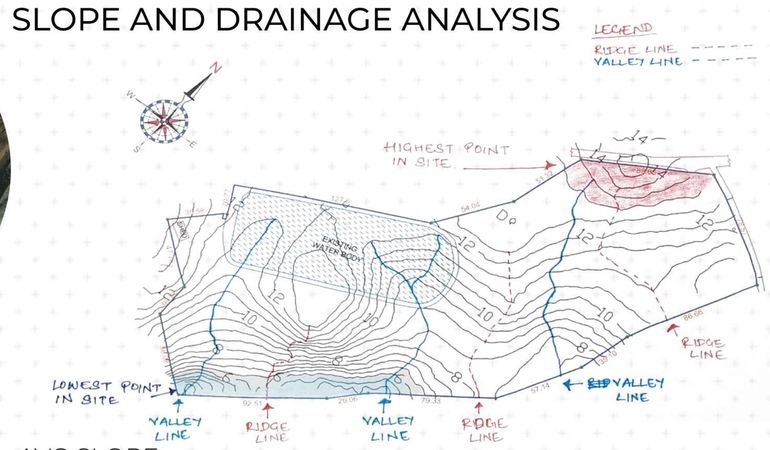
VISHAKAPATANAM RAILWAY STATION : 6 KM
VISHAKAPATNAM AIRPORT : 14.9 KM
HOSPITAL : 3.2 KM
RAMAKRISHNA BEACH : 1.2 KM
BUS STAND : 4 KM



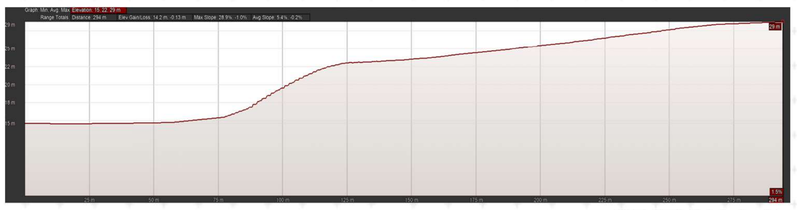
TOURIST SPOTS

THOTLAKOMDA TOURIST SITE : 15.1 KM
KAILASAGIRI : 6.7 KM
ARRAKU VALLEY : 118 KM
BORRA CAVES : 95 KM
LAMBASINGI : 118KM
INTERNATIONAL CRICKET STADIUM : 11.2 KM
SUBMARINE AND AIRCRAFT MUSEUM : 1.2 KM
SIMHACHALAM TEMPLE : 18.4 KM
ZOOLOGICAL PARK : 6.1 KM
RUSHIKONDA BEACH : 9.6 KM
KAMBALKONDA WILDLIFE SANCTUARY : 8.4 KM

SLOPE AND DRAINAGE ANALYSIS



AVG SLOPE:
LONG AXIS : 5.4%
SHORT AXIS : 2.4%

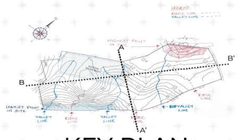


SECTION A-A'



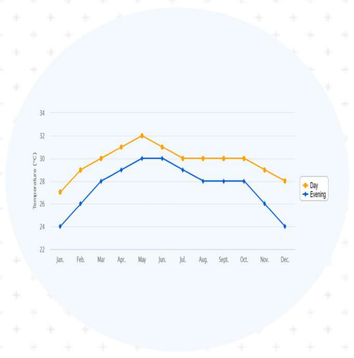
SITE SECTION

SECTION B-B'

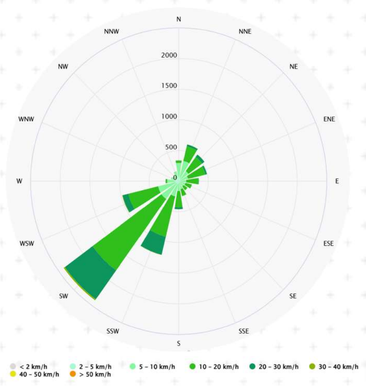


KEY PLAN

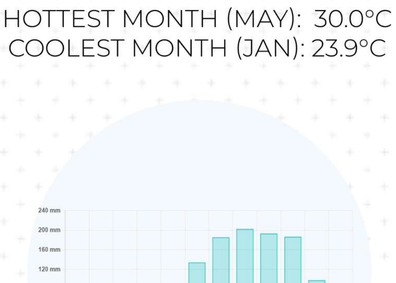
CLIMATIC ANALYSIS



TEMPRATURE
HOTTEST MONTH (MAY): 30.0°C
COOLEST MONTH (JAN): 23.9°C



WIND PATTERN
WIND DIRECTION IS PREDIMINANTLY SW AND S DIRECTION



PRECIPITATION
WETTEST MONTH (AUG): 203.1MM
DRIEST MONTH (MAR): 8.9MM



HUMIDITY
HIGHEST (SEPT): 78%
LOWEST (DEC): 67.2%
AVG: 72%

SUN PATH DIAGRAM

EXISTING VEGETATION

TOP STORY



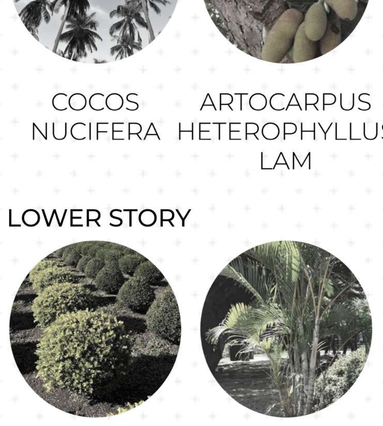
STERCULIA URENS ROXB
CASUARINA EQUISETIFOLIA
COCOS NUCIFERA
ARTOCARPUS HETEROPHYLLUS LAM

MIDDLE STORY



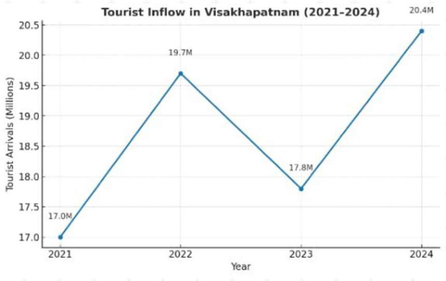
SARACA ASOCA
WRIGHTIA TINCTORIA

LOWER STORY



DURANTA ERECTA
DYPSIS LUTESCENS

DEMOGRAPHIC ANALYSIS



VISHAKAPATANAM HAS SEEN 14.61% INCREASE IN TOURIST INFLOW FROM 2023 AND 3.55% INCREASE FROM 2022.

MAJORITY OF TOURIST INFLOW WAS FOR ECO-TOURSIM AND M.I.C.E EVENTS

ARCHITECTURAL SWOT ANALYSIS

S

A. PRIME BEACHFRONT SITE AT VARUN BEACH PROVIDES NATURAL ORIENTATION, VIEWS, AND IDENTITY.
B. 200 KEYS ENABLE FLEXIBILITY BETWEEN LEISURE AND BUSINESS FUNCTIONS.
C. CONVENTION CENTRE WITH 2500 SEATS OFFERS POTENTIAL FOR INTEGRATION WITH LANDSCAPED TERRACES AND SEA-FACING EVENT SPACES.

W

A. CONVENTION-LED PLANNING MAY CREATE A CORPORATE IMAGE UNLESS BALANCED WITH RESORT AMBIENCE.
B. HIGH GROUND UTILIZATION CAN REDUCE OPEN/GREEN SPACE IF ZONING IS NOT CAREFULLY MANAGED.

O

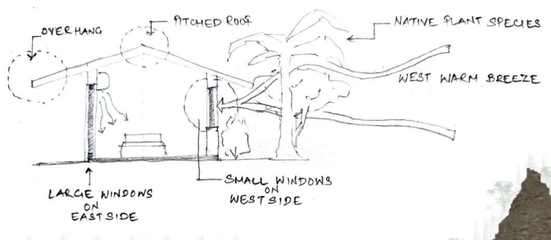
A. POTENTIAL TO ESTABLISH A LANDMARK COASTAL ARCHITECTURAL IDENTITY FOR THE CITY.
B. INTEGRATION OF SUSTAINABLE STRATEGIES: PASSIVE COOLING, SHADED COLONNADES, WATER HARVESTING, AND COASTAL PLANTING.
C. DEVELOPMENT OF LAYERED PUBLIC-PRIVATE ZONES.
D. INCLUSION OF AN ICONIC SKYLINE ELEMENT (TOWER, PAVILION, OR VERTICAL MARKER) TO REINFORCE COASTAL PRESENCE.

T

A. OVER-HARDSCAPING MAY REDUCE THE NATURAL BEACH CHARACTER.
B. EXCESSIVE USE OF GLASS RISKS HIGH HEAT GAIN AND LONG-TERM MAINTENANCE ISSUES IN A HUMID CLIMATE.
C. COMPETING RESORTS AND HOTELS IN THE VICINITY NECESSITATE STRONG EXPERIENTIAL DIFFERENTIATION IN ARCHITECTURE.

INFERENCES FROM SITE ANALYSIS

1. AIR CONDITIONING WOULD BE REQUIRED FOR DEHUMIDIFICATION AND COOLING.
2. WINDOW OVERHANGS AND EXTENDED PITCHED ROOF FOR SUNSHADING AND RAIN PROTECTION WOULD BE REQUIRED.
3. USE OF NATIVE PLANTS ON WEST SIDE WOULD HELP IN REDUCATION OF HEAT GAIN.
4. EAST SIDE WINDOWS CAN BE LARGER IN SIZE FOR MAXIMUM VIEW WITH GLAZED GLASS FOR PROTECTION FROM MORNING SUNLIGHT IN SUMMERS.
5. LIGHT WEIGHT CONSTRUCTIOIN WITH OPENABLE WALLS AND LARGE DOORS WOULD HELP IN HUMID CLIMATES.



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THESIS 2025

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5 STAR RESORT

VRMDA PARK, VISHAKAPATNAM

CASE STUDIES AND DESK APPRAISALS

COMPARATIVE ANALYSIS



PARAMETER	TAJ MAHUA KOTHI, BANDHAVGARH	NOVOTEL, VISHAKHAPATNAM	TAJ LAKEFRONT, BHOPAL	MARARI BEACH RESORT	SIX SENSES CON DAO, VIETNAM
LAYOUT & ORIENTATION	DISPERSED COTTAGES INTEGRATED WITH FOREST	ORIENTED TOWARDS SEA FOR VIEWS	STRONG AXIS TO LAKE, BANQUET FOCUS	VILLAS SCATTERED IN COCONUT GROVES	LINEAR COASTAL LAYOUT MAXIMIZING SEA VIEWS
THEME	RUSTIC AND VERNACULAR	MODERN CONTEMPORARY	MODERN CONTEMPORARY	VERNACULAR	MINIMALISTIC
MATERIAL	MUD, STONE, BAMBOO	GLASS AND REINFORCED CEMENT CONCRETE	MODERN FINISHES WITH TRADITIONAL MOTIFS	THATCHED ROOFS, LATERITE WALLS	BAMBOO & TIMBER (PRE FAB CONSTRUCTION)
PLANNING	LOW-RISE, FRONTYARD CENTRIC DESIGN	VERTICAL BLOCK, COMPACT	LARGE INTEGRATED BLOCK WITH BANQUET HALLS	LOW-DENSITY VILLA INSPIRED BY LOCAL FISHERMEN	LINEAR VILLA ARRANGEMENT ALONG COAST
CULTURAL INTEGRATION	STRONG VERNACULAR EXPRESSION	MINIMAL CULTURAL CUES	HYBRID OF MODERN + TRADITIONAL MOTIFS	STRONG COASTAL VERNACULAR	SUBTLE CULTURAL REFERENCE IN FORM AND MATERIAL
SUSTAINABILITY	ECO-SENSITIVE FOOTPRINT, MINIMAL INTRUSION	MODERATE	LIMITED ECO MEASURES	HIGH: NATURAL MATERIALS & LOW-IMPACT LAYOUT	VERY HIGH: PASSIVE COOLING, RENEWABLE RESOURCES
STRENGTHS	1. FRONTYARDS AID COMFORT 2. LOCAL MATERIALS BUILD AUTHENTICITY	1. SEA ORIENTATION ENHANCES GUEST EXPERIENCE 2. COMPACT FOOTPRINT SAVES LAND	1. LAKE FACING BANQUETS 2. HYBRID INTERIORS WIDEN APPEAL	1. VILLAS CREATE PRIVACY 2. LANDSCAPE IMMERSION	1. PASSIVE OPEN-AIR DESIGN 2. ECO-LUXURY BRANDING
LIMITATIONS	1. LOW DENSITY HENCE IT IS LAND INTENSIVE 2. MAINATAINENCE COST IS VERY HIGH.	1. VERTICALITY REDUCES LANDSCAPE ENGAGEMENT 2.WEAK LOCAL IDENTITY 3. VULNERABLE TO STORMS DUE TO HEIGHT	1. HEAVY MASSING DISTURBS NATURAL EDGE 2. BANQUET FOCUS OVERSHADOWS GUESTS	1. THATCHED ROOFS RESULT IN HIGH MAINTENANCE 2. PLANNING AND LAYOUT RESULTS IN LIMITED SCALABILITY	1. VULNERABLE TO STORMS 2. ECOLOGICAL RISK DUE TO SIZE OF VILLAS

INFERENCES FROM CASE STUDIES

1. IDENTITY COMES FROM SITE RESPONSIVE DESIGNS AND CULTURAL ASSIMILATION.
2. SUSTAINABILITY CAN BE ACHIEVED BY USING OF LOCAL MATERIALS, PASSIVE DESIGN STRATEGIES AND LOW DENSITY PLANNING.
3. OPEN SPACES AND GREEN SPACES PLAY A KEY ROLE IN DEFINING USER ENGAGEMENT AT RESORTS.
4. SPACES DESIGNED SUCH THAT GUESTS ENGAGE IN VARIOUS ACTIVITIES THROUGH OUT THEIR STAY ARE ESSENTIAL PART OF RESORTS.
5. HEAVY MASSING WOULD DISTRUB THE DELICATE COASTLINE.
6. GREATER HEIGHTS WOULD RESULT IN GREATER VULNERABILITIES TO STORMS.

LITERATURE REVIEW

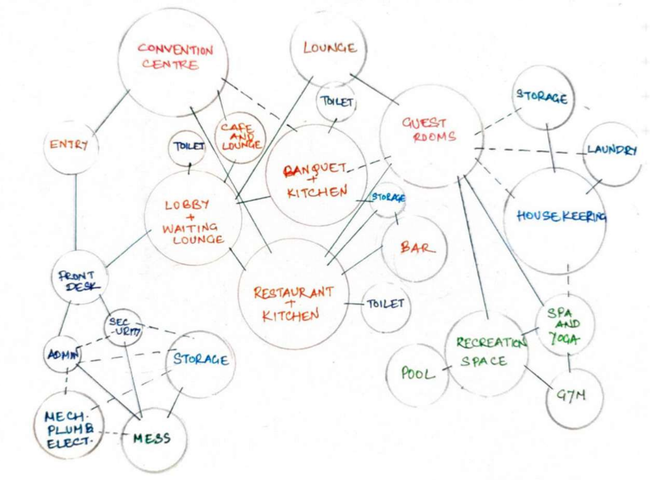
LITERATURE REFERED

1. MINISTRY OF TOURISM GUIDELINES FOR SPACE CATEGORIZATION
2. HOTEL & RESTAURANT APPROVAL & CLASSIFICATION COMMITTEE (HRACC) GUIDELINE FOR AREA REQUIREMENTS
3. NEUFERT ARCHITECT'S DATA FOR AREA REQUIREMENTS.
4. ANALYZING ARCHITECTURE BY SIMON UNWIN FOR CONCEPTUALIZATION.

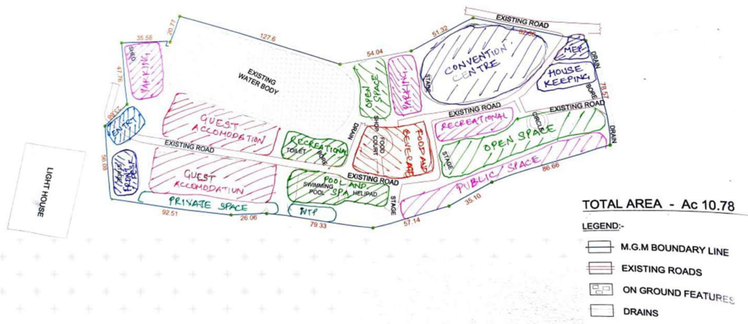
LITERATURE INFERENCE

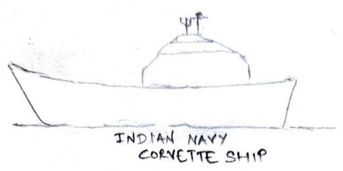
SR. NO	CATEGORIES	SPACES	AREA (SQM)	REMARKS	COMMENTS
1	HEALTH	FITNESS	-	N	
		BARBER SHOP	-	N	
		BEAUTY SHOP	-	D	
2	GUEST ROOM	ROOMS	18.5	N	100% AIR CONDITIONING
		BATHROOM	4.2	N	ATTACHED BATHROOM
3	F&B	MAIN KITCHEN	185	N	
		ROOM SERVICE KITCHEN	7	N	
		CHEF'S OFFICE	9.5	N	
		DRY FOOD STORAGE	28	N	
		COLD STORAGE	18.5	N	
		COFFEE SHOP	225	N	
		BAR	75	N	
		BUFFET	-	N	
4	HOUSEKEEPING	EHK OFFICE	9.5	N	
		LINEN STORAGE	46.5	N	
		UNIFORM STORAGE	25	N	
		SUPPLIES STORAGE	9.5	N	
		LOST AND FOUND	9.5	N	
		LAUNDRY	95	N	
		VALET	9.5	N	
5	FRONT OFFICE	FRONT OFFICE MANAGER	11.5	N	
		BELL DESK STORAGE	15	N	
		SAFTEY DEPOSIT LOCKER	2.5	N	
		FRONT DESK	15	N	
		RESERVATIONS	7.5	N	
		TELEPHONE OPERATOR	7.5	N	
		LOBBY WITH SEATS AND BEVERAGE	-	N	

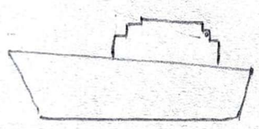
HORIZONTAL ZONING



SITE ZONING




INDIAN NAVY CORVETTE SHIP


2D REPRESENTATION

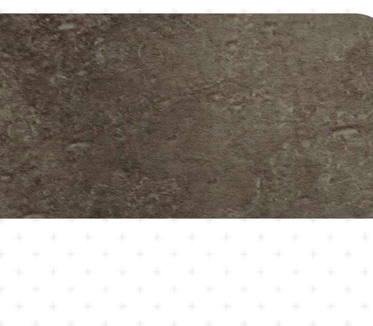
CONCEPT

LUXURY WITH MIND AND SOUL



4 BILLION YEARS
EVERGREEN TRANQUILL HILLS OF EASTERN GHATS FORM THE BACKDROP OF VIZAG FROM THE ETERNITY.

6TH CENTURY BCE
DHARMA WAS ESTABLISHED WITH VARIOUS CENTRES OF SANATAN DHARMAS. FROM HINDUISM TO BUDDHISM VARIOUS PHILOSOPHIES ENRICHED THIS PLACE.





1ST CENTURY BCE
FISHING, FARMING AND TRADING CAME UP AS PRIMARY ACTIVITIES OF THE VIBRANT TOWN .



POST 1947
VARIOUS INDUSTRIES WERE SET UP AND TOWN BECOME "THE CITY OF DESTINY"



POST 2000s
NEW AGE AND MODERN INFRASTRUCTURE FOLLOWED WITH NEW AGE INDUSTRY OF M.I.C.E AND TOURSIM

CONCEPT

THE DYNAMIC NATURE OF VISHAKAPATNAM, IT'S CHANGING LIFESTYLE AND TRANSITION FROM TOWNSCAPES TO CITYSCAPES HAS INSIPIRED CONCEPT OF **TRANSCEDENTALISM**

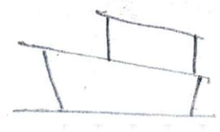
CONCEPT STATEMENT

LUXURY WITH MIND AND SOUL. MEANING LUXURY THAT LUXURY THAT ENGAGES MIND AND SOUL THROUGH DESIGN AND USER EXPERIENCE.

FORM EVOLUTION

FISHERMEN HUT


INDUSTRIAL HUT


LINE REPRESENTATION


MODERN HUT

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