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5 Star Hotel

Visakhapatnam, Andhra Pradesh, India

Dec, 2025

5 Star Hotel

Visakhapatnam, Andhra Pradesh, India

BACHELOR OF ARCHITECTURE

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DEPARTMENT OF ARCHITECTURE AND PLANNING

MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

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5 Star Hotel

Visakhapatnam, Andhra Pradesh, India

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DEPARTMENT OF ARCHITECTURE AND PLANNING

MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

CANDIDATE DECLARATION

The Thesis Project in the subject ARC 511, entitled "**5 Star Hotel, Visakhapatnam, Andhra Pradesh. 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 the Bachelor of Architecture Degree awarded to me by the Institute.

Date: 1st – 2nd Dec 2025

Tahira Safey
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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

Prof. Preeti Onkar Singh
Thesis Guide

CERTIFICATION OF EXAMINATION

The Bachelor of Architecture Thesis Viva-Voce examination of Ms. Tahira Safey Scholar No.211110051, was held on 1/12/2025 to 2/12/25.

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ABSTRACT

This thesis presents the architectural design and development of a 5-star hotel integrated with a world-class convention center and waterfront entertainment facilities along RK Beach Road, Visakhapatnam, Andhra Pradesh. The project aims to strengthen the city's tourism corridor by creating a landmark coastal destination that supports business, leisure, and public recreation. The design responds to the challenges of CRZ-II regulations, high tourist inflow, and the need for functional clarity between public, semi-public, and private zones. Extensive literature studies—including Ministry of Tourism guidelines, ITC Hotel Manual, Time Saver Standards, and national building codes—inform the functional programming, spatial standards, and operational strategy. Site analyses covering climate, topography, accessibility, and cultural context guide the formulation of a climate-responsive and context-sensitive design. The proposal integrates a 200-key luxury hotel, a 2500+ capacity convention facility, multiple F&B outlets, public plazas, retail zones, an amphitheater, and extensive landscape areas, ensuring smooth circulation and user comfort. The design envisions a sustainable, iconic, and inclusive urban hospitality complex that enhances the identity of Visakhapatnam's coastline and contributes to regional economic growth.

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CHAPTER I

INTRODUCTION

1.1 OVERVIEW

1.1.1 PURPOSE OF THESIS

This thesis focuses on designing a **5-star hotel with a convention centre and waterfront entertainment facilities** on the coast of **Visakhapatnam, Andhra Pradesh**. The project addresses the need for world-class hospitality infrastructure to boost tourism and economic activity in the region. The purpose is to demonstrate architectural innovation, contextual sensitivity, and sustainable practices in a hospitality setting.

1.1.2 PROBLEM DESIGN OF THESIS

The design challenge lies in accommodating high-end hotel and recreational functions on a CRZ-regulated site while maintaining functional clarity, iconic visual identity, and guest comfort.

Setting New Standards

The proposal seeks to set a benchmark by combining MICE (Meetings, Incentives, Conferences, and Exhibitions) functions, luxury stay, and public recreational experiences within a single coastal development.

Extra Details Used

The thesis incorporates advanced planning and operational elements such as:

- Smart circulation and zoning
- Detailed space programming (lobby, banquets, convention halls, back-of-house zones)
- Energy-efficient and climate-responsive strategies
- Guest-centric technology integration

Use of Non-Indian Details

The design draws on:

- ITC Hotels Manual
- Time Saver Standards for Hotels and Restaurants
- International 5-star hotel prototypes
  This ensures a global design outlook while being rooted in Indian coastal context.

1.2 PROJECT VISION

The design aims to develop a vibrant, inclusive, and sustainable hospitality complex that enhances the city's identity, supports tourism growth, and offers public recreational spaces along the beach.

1.3 OBJECTIVES

- To integrate a 200-key **5-star hotel** with **a 2500+ seating convention hall**
- To create public-friendly entertainment zones: **amphitheatres, lawns, food courts, kiosks, and party spaces**
- To ensure architectural sensitivity to coastal regulations (CRZ norms)
- To offer **universal accessibility** and **smart circulation**
- To use eco-conscious and climate-responsive design principles
- To activate the beach frontage while maintaining **iconic visibility**

1.4 SCOPE OF WORK

The thesis focuses on the architectural planning and conceptual design of the following:

- Luxury hotel guest rooms and suites
- Lobby, lounges, reception areas
- Convention and banquet halls
- All-day dining, multi-cuisine restaurants and cafés
- Amphitheatre and stage zones
- Outdoor party lawns and event plazas
- Retail spaces, kiosks, food shacks
- Service and back-of-house facilities
- Parking infrastructure
- Public circulation and landscape integration

1.5 PROJECT DETAILS

Site Area: 10.7 acres

Built-up Area: ~29,000–35,000 sqm (7.97 acre)

Minimum Requirements:

- 5-star Hotel with ≥ 200 rooms
- Convention Centre with seating capacity of 2500+
- Public open spaces and recreational zones
- Restaurants, food kiosks, beach-facing cafés
- Amphitheatre, stage, and event areas
- Flea markets, retail stalls
- Parking and service circulation
- Restrooms, security, maintenance, and utility infrastructure

Attached below are project information as per the "CONVENTION CENTRE & 5 STAR HOTEL /RESORT WITH WATER FRONT ENTERTAINMENT, AT VISAKHAPATNAM ON PPP BASIS RFP: Volume 1"

Table 1 Project details from VMRDA

S. No	Key Information	Details
	Project Details	
1	**Project Title**	Development of a Convention Centre with not less than 5 Star Category Hotel / Resort & other Waterfront Entertainment Facilities on prime land along Beach Road at Visakhapatnam, Andhra Pradesh, India on Public Private Partnership (PPP) Basis
2	**Authority**	Visakhapatnam Metropolitan Regional Development Authority (VMRDA), Visakhapatnam, Andhra Pradesh.
3	**Project Site**	7.97 Acres (approx.) of land along Beach Road at Visakhapatnam, Andhra Pradesh
4	**Minimum Development Obligations (MDOs)**	**1. Convention Centre & 5 Star Category Hotel / Resort** Within Thirty Six (36) months* of the Agreement date, following shall be implemented: **(i) <u>A Convention Centre comprising:</u>** a) Multi-purpose Convention Hall, air-conditioned Main Hall (with the ceiling of minimum 15 feet high; area to accommodate minimum 2500 persons in theatre-style seating) b) This multi-purpose hall shall have no fixed seating and shall be with partitions for flexibility in conducting multiple events simultaneously c) The multi-purpose hall must be capable of hosting and catering to Meetings, Events, Exhibitions of National & International level.
		(ii) <u>5 Star category Hotel / Resort comprising:</u> a) Not less than 200 guest rooms b) Obtain not less than 5 Star category certification from the Hotel and Restaurant Association Classification Committee (HRACC), Ministry of Tourism, India, within 180 days of commencement of operations **2. <u>Other Water Front Entertainment Facilities:</u>** Within Thirty Six (36) months* of the Agreement date, following shall be implemented:

S. No	Key Information	Details
		(i) Water Front Entertainment Facilities (in the form and manner as permissible under the applicable CRZ Norms) such as: a) Shack Restaurant(s), Café(s) (with temporary structures / canopies, etc.) b) Party Lawns with landscaping / hardscaping (including Amphitheatre, etc) for outdoor events c) Flea Market d) Exhibition Venue The above specified MDOs are subject to the Applicable Development Control Regulations as applicable from time to time. Further, in addition to the MDOs, the Concessionaire shall be permitted to develop any other additional tourism facilities as listed in the Andhra Pradesh Tourism Policy 2020-2025 (in the form and manner as permissible under the applicable CRZ Notification) *In case any of the MDOs that are currently not permissible as per the currently applicable Development Control Regulations / applicable CRZ Notification, the timeline for the implementation of the same shall commence from the date of such amendment / notification permitting the same.
5	**Other Obligations / Conditions**	a. Adopt water conservation, water recycling & reuse, rainwater harvesting, if possible, zero discharge of wastewater; and also incorporate Energy efficient designs & utilities. b. The Project shall be user friendly and provide eased access to differently able persons to all the project facilities in accordance with "Persons with Disabilities Act, 1995" with subsequent amendments and 'UN Convention for Rights of Persons with Disabilities (UNCRPD)'. c. Obtaining all the applicable statutory approvals, licenses and clearances shall be the responsibility of the

1.6 SITE OVERVIEW

Location: Along RK Beach Road, Visakhapatnam





Figure 1 Location of site

Surroundings: Close proximity to Kursura Submarine Museum, Kailasagiri Hill, and RK Beach

Connectivity:

- NH-16 and arterial city roads
- Visakhapatnam Railway Station (~7 km)
- Visakhapatnam Airport (~15 km)

Topography: Flat coastal land with sea-facing frontage

Master Plan Designation: Tourism zone under VMRDA Master Plan 2041

The Project Site falls under Visakhapatnam Urban Mandal i.e., Part of Visakhapatnam Metropolitan Regional Development Authority (VMRDA). VMRDA Master plan 2041 is approved under by the Government Vide G.O. Ms No:136 Ma Dt. 08-11-2021. Holiday Resorts are permissible under the allowed activities of Proposed Recreation land use Zone. The type of Permissible Developments on the Site shall be limited to VMRDA Master Plan.

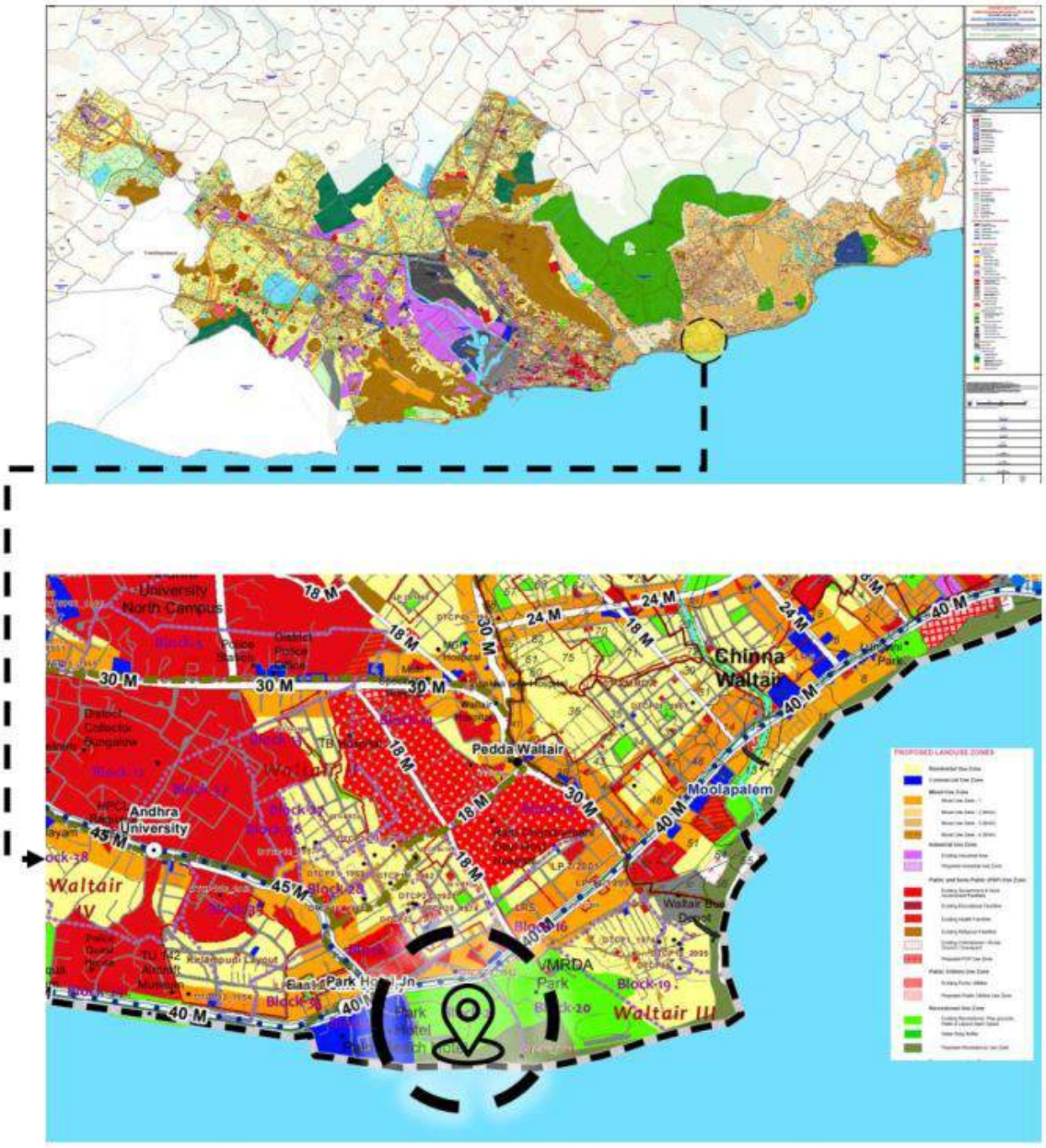

Figure 2 Site location on master plan



Figure 3 Site plan with dimensions

1.7 PROPOSING AGENCY

- **Developer**: VMRDA (Visakhapatnam Metropolitan Region Development Authority)
- **Development Mode**: PPP Model under **Design-Build-Finance-Operate-Transfer (DBFOT)**
- The project supports state tourism policies and is part of the **Visakhapatnam Tourism Corridor**.

1.8 DESIGN OPPORTUNITIES AND CHALLENGES

Opportunities

- Prime sea-facing location with tourism potential
- Iconic landmark possibility for the city
- Activation of public space in a high-footfall area
- Boost to local economy and employment
- Synergy between tourism and business infrastructure

Challenges

- CRZ II zone compliance and environmental clearances
- High water table and salt-laden air (material selection)
- Managing crowd movement between public and private areas
- Balancing luxury with inclusivity and accessibility

1.9 DETAILED LIST OF SPACES

Table 2 Area Statement

S.No	Description	Area/Unit	Unit	Total Area SQM
1	GUEST ROOMS			
1.A	Guest Room Types			
	Executives	42	208	8736
	Junior Suite	85	91	7735
	Senior Suite	133	8	1040
	Additional Area			845
	TOTAL	297	307	17511
1.B	Guest Floor Circulation			
	Corridoor Circulation	383	13	4719
	Lift Lobby	150	13	1853
	Service Lift Lobby	36	13	447
	terrace	150	8	1200
2	PUBLIC FACILITIES			
2.A	Lobby			
	Porte Cochere			
	Lobby (Excluding Lobby Lounge & Lift Lobby)			
	Bell Captain's Desk			
	X-Ray Scanning Machine			130
	Front Desk			
	Concierge Desk			
	House Phones			103
	Lobby Lounge			
	Library			
	News Stand			350
	Deputy Managers Office			12
	Smoking Room			420
	Luggage Cart Store			
	Luggage Store			361
	Guest Lift Lobby			208
	Guest Toilets Male			99
	Circulation			440
2.B	Food & Beverage Outlets			
	All Day Dining			690
	Pan Asian Restaurant			356
	Pan Asian Open Restaurant			430
	Pakistani Restaurant			693
	Bar			222
	Open Bar			503
	24 Hr. Coffee Shop			284
	TOTAL			3193
2.C	Banquets			
	Banquet Lobby			
	Ground Floor			370
	First Floor			165
	Ball Room			
	1 Divisible into : 1/3,2/3,1			840
	2 Divisible into : 1/3,2/3,1			840
	Pre Function Hall			
	Ground Floor			360
	Second Floor			360
	Banquets Manager			20
	Banquets Office			40
	Terrace Garden			1921
	Terrace Lawn			1733
	Toilet Terrace Lawn			120
	Store Terrace Lawn			120
	Bridal Room+Toilet			67
	Groom's Room+Toilet			65
	Public Toilets- Male, Female, Disabled, Janitor,s Room			120
	TOTAL			4892
2.D	Activity Centre (Adult/Kids)			625
2.E	Business Centre			
	Reception Lounge			112
	Computer Work-Station			66
	Meeting Room-1			392
	Meeting Room-2			196
	Meeting Room-3			82
	Meeting Room-4			76
	Conference Room-1			116
	Conference Room-2			126
	Conference Room-3			141
	Pantry			18
	Store			49
	Public Toilets- Male,Female,Disabled,Janitor's Room			96
	TOTAL			1109
2.F	Retail			
	Signature Shop			66
	Mixed Use Shop			79
	Jewellery Shop			66
	TOTAL			215
2.G	RECREATION			
2.GA	Swimming Pool			
	SwimmingPool			334
	SwimmingPool Kids			332
	Changing Room Male			399

	Laundry Manager			17
	Compressor			45
	TOTAL			737

3.R	Housekeeping Office and Stores			
	Executive Housekeepers Office			56
	Deputy House Keeper			11
	Chief House Keeper			15
	Tailor			17
	Staff Briefing Area			55
	Uniform Store			101
	Linen In Circulation			56
	Store, Packing & Valet			55
	Guest Amenities & Emergency Cleaning Equipment Storage			27
	Unit & Pownd Store			24
	Mini Bar Store			25
	Carpet & Fabric Store			40
	Sample Room			40
	Florist Counter			35
	Night Keepers Closet			11
	Garden Equipment Closet			11
	Housekeeping Closet			12
	Janitors Closet			13
	Linen Closet			22
	Miscellaneous Closet			38
	TOTAL			902

3.S	Engineering Offices			
	Reception/ Secretary/ Waiting			125
	Engineering Asst. and Monitoring Room			105
	Shift Engineer-1			37
	Shift Engineer-2			35
	Deputy Chief Engineer			27
	Chief Engineer			24
	Store Room			108
	Training Room			145

3.T	Repairs & Maintenance			
	HVAC/ Refrigeration Workshop			138
	Chemical Storage			65
	Paint Workshop			45
	Plumbing Workshop			48
	Electrical Workshop			45
	Construction Materials Store			90

3.U	Miscellaneous			
	Driver's Lounge (Parking)			175

	Male Driver's Toilet			13
	Female Driver's Toilet			10
	Valet Driver's Lounge			80

3.V	Mechanical Areas			
	Meter Room			28
	HT Panel Room			126
	HT Breaker Room & Indoor Transformers			153
	LT Panel Room			161
	DG Room			161
	STP			930
	Fire Control & Pump Room			95
	Boiler Room			140
	Pump Room			130
	Chiller Plant & Chiller Pumps			326
	Municipal Raw Water Tank		198	cu. M
	Treated Water Tank	2	265	cu. M
	Soft Water Tank	1	600	cu. M
	Rain Water Harvesting Tank	2	900	cu. M
	Fire Water Tank	1	442	cu. M

3 Parking

As Per NBC 2005

	Description	Units / Area	Remarks	Standard / Number	Total
	Guest Rooms	307	2 Guest Room	3	153.5
	Seats in Restaurant	514	6 Seats Per 1	3	102.8
	Seats in Coffee Shop + Bar	228	6 Seats Per 1	6	38.7
	Business Centre (sq. m)	1004	25 Sq. m per	25	40.2
	Seats in Banquets & Lawn (sq. m)	3962	25 Sq. m per	25	118.9
	TOTAL				453.7

(All Car Parking Space Required)

	Room Service			30
	Veg. Preperation Area			120
	Veg. Refrigirator			25
	Butchery			64
	Butchery Refrigirator			25
	Food Store			79
	Garbage Area			39
	Food Lab			25
	Central Pot Store			56
	TOTAL			662

3.J	Receiving/ Material Management			
	Truck Dock		2	4 M Wide
	Veg./Meat Wash			25
	Purchase Office			33
	Drivers Toilet			8
	Time Office			10
	Security Manager			20
	TOTAL			96

3.K	Garbage			
	Truck Dock			4 M Wide
	Garbage Sorting/ Dry Garbage			20
	Coal Room			13
	Fuel Room			13
	Wet Garbage			13
	Decomposer			10
	Chemical Store			21
	TOTAL			90

3.L	Main Stores			
	F&B Store			62
	Refrigirated Food Store			30
	Beverage Store			47
	Refrigirated Beverage Store			32
	Crockery, Cutlery, Glass Store			52
	General Bulk Store			110
	General Furniture Store			64
	Unused Textile Store			37
	Miscellanous			35
	Liquor Store			20
	Store Manager			20
	TOTAL			338

3.M	Banquet Store			
	Banquet Store 1			192
	Banquet Store 2			215

	Terrace Lawn Store			141
	Banquet Control Room	27	2	54
	UPS Room	11	2	22
	A/V Equipment Room	8	2	16
	TOTAL			640

3.N	Personnel/HR Offices			
	Reception/ Waiting			66
	HR Manager			20
	Asst. HR Manager			18
	HR Executives			68
	Interview Room			20
	Training Manager			21
	Traing Room 1			66
	Traing Room 2			119
	Computer Language Room			88
	E-Learning			68
	Pantry			20
	Store			33
	TOTAL			607

3.O	Employee Facilities			
	Male Staff Lockers			358
	Male Staff Restroom			57
	Male Staff Toilets			127
	Executive Male Lockers			133
	Executive Male Staff Restrooms			47
	Executive Male Staff Toilets			65
	Female Staff Lockers			142
	Female Staff Toilets			83
	Female Staff Restrooms			26
	Female Staff Changing Room			17
	Executive Female Staff Lockers			76
	Executive Female Staff Restrooms			37
	Executive Female Staff Toilets			60
	Executive Female Staff Changing Room			10
	Staff Kitchen			305
	Staff Recreation Area			117
	Staff Dining			506
	Pot Wash			60
	Stone			59
	Toilets			101
	TOTAL			2386

3.Q	Laundry			
	In-House Production			388
	Valet Production			244
	Solid Collection Room			68

	Changing Room Female			213
	Pool Pantry & Kitchen			126
	Pool Deck			256
	Steam Room			168
	Sauna Bath Room			158
	Toilets Male, Female			101
	TOTAL			1022

2.GB	Saloon & Spa			
	Massage Room 4	15	4	60
	Couple Massage Room			42
	Couple Treatment Room			39
	Treatment Room			70
	Reception Awaiting			63
	Saloon			211
	Spa Store & Pantry			48
	Saloon Store & Pantry			30
	TOTAL			565

2.GC	Fitness Centre			
	Gymnasium			648
	Store			84
	TOTAL			696

3	Back Of The House (BOH)

	Administration			

3.A	Front Office			
	Front Office Manager			36
	Assistant Front Office Manager			23
	Workstations			48
	Reservation Office			20
	Television Supervisor			14
	Secretary Front Office Manager			20
	TOTAL			161

3.B	Executive Offices			
	Waiting			66
	General Manager			36
	Discussion Room			15
	Store & Copying			7
	Pantry			7
	TOTAL			213

3.C	IT Offices			
	IT Manager			13
	IT Executives			36
	Battery/UPS Room			12

	TOTAL			66

3.D	Sales & Catering Offices			
	Director Sales & Marketing			28
	Sales Executive			27
	Banquet Manager			15
	Catering & Sales Manager			15
	Revenue Manager			19
	Food & Beverage Manager			15
	Discussion Room			32
	Storage & Copying			10
	Pantry			10
	TOTAL			168

3.E				
	Room Service			36
	Room Service Kitchen			48
	All Day Dining Kitchen			96
	All Day Dining Kitchen Live			78

3.F	Commissary			
	Commissary Kitchen			208
	Commissary Dishwash			36
	F&B Control Office			14
	Silver Washing/Packing Room			48
	TOTAL			307

3.G	Specialty Kitchen			
	Kitchen-Pan Asian Dining			139
	Kitchen-Regional Delivery			168
	Pantry Bar			126
	Kitchen Coffee Shop			67
	Bakery & Confectionary			126
	Pastery			72
	Refrigerated Store			61
	Oven Room			68
	TOTAL			808

3.H	Banquet Kitchens			
	Banquet Kitchen 1			339
	Banquet Kitchen 2			114

3.I	Kitchen Services			
	Masala Grinding Area			84
	Additional Banquet Wash			27
	Central Pot Wash			53
	Cold Food & Grade Manager			13
	Chef's Office			22

CHAPTER II

LITERATURE STUDY

The word hotel is derived from the French hotel (coming from hotel meaning host), which referred to a French version of a townhouse or any other building seeing frequent visitors, rather than a place offering accommodation. In contemporary French usage, hotel now has the same meaning as the English term, and hotel particular is used for the old meaning.

2.1 MINISTRY OF TOURISM GUIDELINES

With the aim of providing contemporary standards of facilities and services available in the hotels, the Ministry of Tourism has formulated a voluntary scheme for classification of operational hotels which will be applicable to the following categories:

I. Star Category Hotels: - 5 Star Deluxe, 5 Star, 4 Star, 3 Star, 2 Star & 1 Star
II. Heritage Category Hotels: - Heritage Grand, Heritage Classic & Heritage Basic

2.1.1 FOR APPROVAL

Application Form should have the following details:

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.

5. Location of hotel site with postal address.
6. 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.

7. 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.)
    e) 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
   (a) Sewage Treatment Plant
   (b) rain water harvesting
   (c) waste management
   (d) pollution control method for air, water and light
   (e) introduction of non-CFC equipment for refrigeration and air conditioning.

h) Energy / water conservation (use of CFL lamps, solar energy, water saving devices / taps)

i) Details of Fire Fighting Measures/ Hydrants etc.

j) Date by which project is expected to be completed and become operational

k) Any other additional facilities

l) Security related features

m) 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.

2.1.2 CLASSIFICATION / RECLASSIFICATION OF OPERATIONAL HOTELS

1. The application should indicate whether a few rooms or all rooms are to be let out on a Time Share basis. Hotels which propose to let out part of or all its rooms on time-share basis will not be eligible for Classification under this scheme.

2. The application fees payable for classification/reclassification are as follows. The Demand Draft may be payable to "Pay & Accounts Officer, Department of Tourism, New Delhi"

3. Star Category Classification/Reclassification fees in Rs.

- 5- Star 20,000
- 5- Star Deluxe 25,000

AREA OF HOTELS

Table 3: Space classification (Nueferts Data)

S. No.	Public Areas	Private Areas (Staff)	Private Areas (Guests)	Semi-Private Areas
1	Lobby and Reception Area	Administrative Offices	Standard Guest Room	Banquet Hall
2	Restaurant and Dining Facilities	Accounting Office	Double Occupancy Guest Room	Formal Dining Hall
3	Retail Outlets and Shops	Technical/Mechanical Rooms	Deluxe Guest Room	Multipurpose Hall
4	Lounge and Bar	Staff Bedrooms	Suite Guest Room	Banquet Area
5	Cloakroom and Storage Area	Laundry and Storage Facilities	Steam Room and Spa Services	
6	Parking Facilities	Kitchen and Food Storage Area	Guest Lounge and Bar	
7	Recreational Outdoor Areas (e.g., Parks)	Lockers and Staff Washrooms	Recreational Facilities (Swimming Pool, Gym)	
8	Banquet Hall	Waste Disposal Area	Guest Reading Room	
9		Control Room		
10		Pantry		

Checklist of Facilities for Classification/Re-classification of Hotels:

Table 4: Checklist for facilities for Classification/ Reclassification of hotels (Ministry of Tourism)

CHECKLIST FOR FACILITIES & SERVICES	1*	2*	3*	4*	5*/ 5* D	Yes / No	COMMENTS
General							
Full time operation 7 days a week in season	N	N	N	N	N		
Establishment to have all necessary trading licenses	N	N	N	N	N		Documents as detailed in General Terms and Conditions.
Establishment to have public liability insurance	D	D	D	D	D		
24 hr. lifts for buildings higher than ground plus two floors	N	N	N	N	N		Mandatory for all hotels. Local laws may require a relaxation of this condition. Easy access for the differently abled guests.
Bedrooms, Bathroom, Public areas and kitchen fully serviced daily	N	N	N	N	N		
All floor surfaces clean and in good repair	N	N	N	N	N		Floor may be of any type.
Guest Room							
Minimum 10 lettable rooms, all rooms with outside windows / ventilation.	N	N	N	N	N		
Minimum size of bedroom excluding bathroom in sq. ft	120	120	140	140	200		Single occupancy rooms may be 20 sq ft less. Rooms should not be less than the specified size.
Air-conditioning	25%	25%	50%	100%	100 %		Air-conditioning/ heating depends on climatic conditions & architecture. Room temp. should be between 20 & 28 Degrees C. For 4, 5 and 5 Star Deluxe (the percentage is of the total no. of rooms).
A clean change of bed and bath linen daily & between check– in 's	N	N	N	N	N		Definitely required between each Check – In. On alternate days for 1 & 2 Star hotels.
Suites				N	N		2% of room block with a minimum of 1.
Bathroom							
Number of rooms with attached bathrooms	All	All	All	All	All		It will be mandatory w.e.f. 01.09.2010 for all 1 and 2 Star category hotels to have attached bathrooms. All bathrooms to have sanitary bin with lid.

Minimum size of bathroom in square feet	30	30	36	36	45		25% of bathroom in 1 & 2 Star hotels to have western style WC. No higher ceiling/cap on the maximum size.
1 bath towel and 1 hand towel to be provided per guest	N	N	N	N	N		
Bath mat	D	D	N	N	N		
Guest toiletries to be provided-minimum 1 new soap per guest	N	N	N	N	N		Quality products depending on the star category.
A clothes – hook in each bath/shower room	N	N	N	N	N		
A sanitary bin	N	N	N	N	N		These must be covered.
Each western WC toilet to have a seat with lid and toilet paper	N	N	N	N	N		
Floors and walls to have non – porous surfaces	N	N	N	N	N		
Hot and cold running water available 24 hours	N	N	N	N	N		It will be mandatory w.e.f. 01.09. 2010 for all 1 and 2 Star category hotels to provide hot & cold running water.
Shower cabin	N	N	N	N	N		Where shower cabin is not available, a shower with shower curtain will suffice.
Bath tubs				D	D		In 4 Star and above hotels, some rooms should offer this option to guests.
Water saving taps / shower	N	N	N	N	N		
Energy saving lighting	N	N	N	N	N		
Hairdryers	D	D	D	N	N		Where not provided in bathroom, must be available on request.
Safe keeping / in room safe				N	N		1, 2 & 3 Star hotels to have facilities for safe keeping in the reception.
Minibar / Fridge				N	N		Contents must conform to local laws.
Drinking water	N	N	N	N	N		All category hotels to provide one sealed bottle of branded bottled water of minimum 500 ml. per person per day. Ultra violet treated water will not be acceptable.
Guest Linen							Good quality linen to be provided.

Linen room	N	N	N	N	N		Well ventilated
Paid transportation on call	D	D	N	N	N		Guest should be able to travel from hotel.
Shoe cleaning service	D	D	D	N	N		Free facility to be provided for in house guests.
Ice (from drinking water) on demand	D	D	N	N	N		Complimentary on request.
Acceptance of common credit cards	D	D	N	N	N		
Assistance with luggage on request	N	N	N	N	N		
A public telephone on premises. Unit charges made known	D	D	N	N	N		There should be at least one telephone no higher than 24" from floor level in 5 and 5 Star Deluxe (to also cater to differently abled guests).
Wake – up call service on request	N	N	N	N	N		
Messages for guests to be recorded and delivered	N	N	N	N	N		A prominently displayed message board will suffice for 1 & 2 Star categories.
Name Address and telephone numbers of doctors with front desk	N	N	N	N	N		Doctor on call in 3, 4, 5 & 5 Star Deluxe.
Stamps and mailing facilities	D	D	N	N	N		
Newspapers available	D	D	D	N	N		This may be placed in the lounge for 1, 2 & 3 Star hotels.
Access to travel desk facilities	N	N	N	N	N		This need not be on the premise for 1, 2 & 3 Star categories.
Left luggage facilities	D	D	N	N	N		This must be in a well secured room / 24 hour manned area.
Provision for emergency supplies toiletries / first aid kit	D	D	N	N	N		May be chargeable.
Health / Fitness facilities	D	D	D	D	N		Indian system of treatments should preferably be offered.
Beauty saloon and barber's shop			D	D	D		
Florist				D	D		

Crockery & Glassware	N	N	N	N	N		Plastic ware accepted in pool area.
Cutlery to be at least stainless steel	N	N	N	N	N		All categories should use good quality metal cutlery. Aluminum cutlery prohibited.
Bar			N	N	N		
Kitchens							
Refrigerator with deep freeze	N	N	N	N	N		Capacity based on size of F & B service.
Segregated storage of meat , fish and vegetables	N	N	N	N	N		Meat, fish and vegetables in separate freezers.
Colour coded synthetic chopping boards	N	N	N	N	N		Wooden chopping boards prohibited.
Tiled walls non –slip floors	N	N	N	N	N		
Head covering for production staff	N	N	N	N	N		
Daily germicidal cleaning of floors	N	N	N	N	N		
Good quality cooking vessels / utensils	N	N	N	N	N		Use of aluminum vessels prohibited except for bakery.
All food grade equipment containers	N	N	N	N	N		
Ventilation system	N	N	N	N	N		
Garbage to be segregated – wet and dry	N	N	N	N	N		To encourage recycling.
Wet garbage area to be air-conditioned			N	N	N		
Receiving areas and stores to be clean and distinct from garbage area	N	N	N	N	N		
Six monthly medical checks for production staff	N	N	N	N	N		
First – aid training for all kitchen staff	N	N	N	N	N		
Pest control	N	N	N	N	N		
Staff							
Staff uniforms for front of the house	N	N	N	N	N		Uniforms to be clean and in good condition.

Shelves / drawer space	N	N	N	N	N		Necessary for hotels of 1, 2 & 3 Star category to have a wardrobe.
Room and facilities for the differently abled guests							
At least one room for the differently abled guest	N	N	N	N	N		Minimum door width should be one metre to allow wheelchair access with suitable low height furniture, low peep hole, cupboard to have sliding doors with low clothe hangers etc. Room to have audible and visible (blinking light) alarm system. All hotels should be fully compliant by 01.09.2010.
Ramps with anti-slip floors at the entrance. Minimum door width should be one metre to allow wheelchair access.	N	N	N	N	N		To be provided in all public areas. Free accessibility in all public areas and at least one restaurant in 5 Star and 5 Star Deluxe. All hotels should be fully compliant by 01.09.2010.
Bathroom	N	N	N	N	N		Minimum door width should be one metre. Bathroom to be wheelchair accessible with sliding door, suitable fixtures like low wash basin, low height toilet, grab bars etc. No bath tub required. All hotels should be fully compliant by 01.09.2010.
Public restrooms	N	N	N	N	N		Unisex. To be wheelchair accessible with low height urinal (24" maximum) with grab bars. Minimum door width should be one metre. To be introduced by 01.09.2010 in 1, 2 & 3 Star hotels also.
Public Areas							
Lounge or seating area in the lobby	N	N	N	N	N		Doorman on duty. Lobby shall have furniture and fittings which shall include chairs/arm chairs, sofa, tables and fresh floral display.
Reception facility	N	N	N	N	N		Manned minimum 16 hours a day. Call service 24 hrs. Local directions to hotel including city / street maps to be available.
Availability of room, F& B and other tariff	N	N	N	N	N		
Heating and cooling to be provided in public areas				N	N		Temperatures to be between 20-28 degrees Celsius.

							provided on a permanent basis, it will be mandatory for all Star hotels to provide multi-socket adapter plugs on request.
A telephone for incoming & outgoing calls in the room	D	N	N	N	N		4 star and above should have direct dialing and STD / ISD facilities. 1,2 and 3 Star category hotels may go through a telephone exchange.
PC available for guest use with internet access	D	D	N	N	N		This can be a paid service. Upto 3 Star, PC can be in the executive offices, Internet subject to local access being available.
E-mail service	D	D	N	N	N		Subject to local internet access being available.
Fax, photocopy and printing Services.	N	N	N	N	N		
In room Internet / wi-fi connection	D	D	D	N	N		Subject to local internet access being available. Wi-Fi wherever possible.
Business Centre	D	D	D	N	N		This should be a dedicated area. (This provision may be relaxed for resort destinations, tourist and pilgrimage centers).
Swimming Pool	D	D	D	D	N		This can be relaxed for hill destinations. Mandatory to have trained Life Guard, Board containing Do's and Don'ts, No Diving sign, pool depth etc. should be displayed at a strategic location in the pool area. All 4 Star, 5 Star and 5 Star Deluxe hotels shall provide a luminous LED wall clock with numerals of three inches or more on display near their swimming pools
Parking Facilities	D	D	N	N	N		Should be adequate in relation to the number of rooms & banquet / convention hall capacity. Exclusively earmarked accessible parking nearest to the entrance for differently abled guest.
Conference Facilities.	D	D	D	D	N		
ECO FRIENDLY PRACTICES							
Sewage Treatment Plant	N	N	N	N	N		A Sewage Treatment Plant will not be a mandatory condition for hotels which have obtained completion certificate for construction before 01.04.2012.

English speaking front office staff	D	D	N	N	N		This may be relaxed outside the metros / sub-metros for 1 and 2 Star category hotels.
Percentage of Supervisory staff	20%	20%	40%	40%	80%		Hotels of 4 Star category and above should have formally qualified Heads of Departments. The supervisory or the skilled staff may have training or skill certification as follows: Degree / diploma from Central or state IHM's / FCI's or from NCHMCT affiliated IHM's or from other reputed Hospitality schools.
Percentage of Skilled staff	20%	20%	30%	30%	60%		The supervisory or the skilled staff may have training or skill certification as follows: i. Degree / diploma from Central or state IHM's / FCI's or from NCHMCT affiliated IHM's or from other reputed Hospitality schools. ii. Skill training certificate issued under the guidelines and scheme of the Ministry of Tourism.
Staff welfare / facilities							
Staff rest room	D	D	N	N	N		Separate for male and female employees with bunk beds, well lighted and ventilated.
Staff locker room	D	D	N	N	N		
Toilet facilities	N	N	N	N	N		Full length mirror, hand dryer with liquid soap dispenser.
Dining area	D	D	N	N	N		
Guest Services							
Provision of wheelchair for the differently abled guest	N	N	N	N	N		Wheel chair to be available on a complimentary basis in hotels of all categories
Valet (parking) services to be available	D	D	N	N	N		
Dry- cleaning /laundry	D	D	D	D	N		In house for 5 star Deluxe hotels. For 5 Star category and below, maybe outsourced.
Iron and iron board				N	N		Iron and iron board to made available on request in 1 to 4 Star category hotels on complimentary basis. For 5 and 5 Star Deluxe categories, to be available in the room.

Shop / kiosk	D	D	D	N	N		5 and 5 Star Deluxe category hotels to have one utility and one souvenir shop. 4 Star to have minimum one utility shop.
Money changing facilities	D	D	D	D	D		Money changing facility to be made available.
Bookshop	D	D	D	D	N		
Safety & Security							
Metal detectors (door frame or hand held)			N	N	N		
CCTV at strategic locations	N	N	N	N	N		
X-Ray Machine					N		For 5 Star Deluxe category, it would be 'Necessary' to have an X-Ray Machine at the guest entrance for screening of baggage. Manual checks may be conducted for staff and suppliers at designated entry points.
Under belly scanners to screen vehicles				N	N		
Verification	N	N	N	N	N		All hotels should conduct a verification of their staff and suppliers by the Police / private security agencies.
Staff trained in fire fighting drill	N	N	N	N	N		All hotels to conduct periodic fire drills and maintain 'Manuals' for Disaster Management, First Aid and Fire Safety. Quarterly drill or as per law.
Security arrangements for all hotel entrances	N	N	N	N	N		
Each bedroom door fitted with lock and key, viewport / peephole & internal securing device			N	N	N		A safety chain / wishbone latch is acceptable in place of viewport / peephole.
Smoke detectors	N	N	N	N`	N		These can be battery operated.
Fire and emergency procedure notices displayed in room behind door	N	N	N	N	N		
Fire and emergency alarms should have visual & audible signals	N	N	N	N	N		
First aid kit with over the counter medicines with front desk	N	N	N	N	N		

5 Star category							Grade A cities: One Multi cuisine Restaurant cum 24 hr. coffee shop / all day diner, one Specialty Restaurant and 24 hr. room service. Grade B cities: One Multi cuisine Restaurant cum coffee shop open from 7 a.m. to 11 p.m., one Speciality restaurant and 24 hr. room service.
5 Star deluxe category							Grade A cities: One Multi cuisine Restaurant cum 24 hr. coffee shop/ all day diner, one Speciality restaurant and 24 hr. room service. Grade B cities: One Multi cuisine Restaurant cum coffee shop open from 7 a.m. to 11 p.m., one Speciality restaurant and 24 hr. room service.
Grade- A: Delhi * Mumbai, Kolkata, Chennai, Bangalore, Pune, Hyderabad/ Secunderabad. Grade– B: Cities in the rest of the country excluding Grade 'A' cities.			Note: The Ministry of Tourism may review and revise the cities falling under the Grade 'A' & Grade 'B' from time to time. • Delhi would include the hotels falling in Gurgaon, Faridabad, Ghaziabad, NOIDA and Greater NOIDA.				

Rain Water Harvesting	N	N	N	N	N		
Waste management	N	N	N	N	N		
Pollution control methods for air, water and light	N	N	N	N	N		
Introduction of non CFC equipment for refrigeration and air conditioning and other Eco-friendly measures / initiatives.	N	N	N	N	N		

Checklist of Services and Facilities (Annexure III)

D Desirable

N Necessary

There is no relaxation in the **'Necessary'** criteria of the Checklist of Services and Facilities (Annexure II), except as specified in the comments column of said checklist.

Note1.

All hotels should clearly indicate on their websites the facilities and amenities provided to guests "free of cost" like complimentary breakfast (indicating broad classification like Indian breakfast, Continental breakfast or American breakfast), iron and iron board facility, shoe cleaning facility, shoe horn and slippers, other "free" facilities like dental kit, shaving kit etc.

If any facility is provided only 'on request' but is included in the room rent, this should be mentioned on the hotel's website under the head **'Facilities and Amenities Provided on complimentary basis'** and also be mentioned to the guest when the hotel staff introduce the room to him / her on arrival. In case the 'complimentary breakfast' is not a buffet, the guest must be shown a list stating in English the name of all complimentary items.

(All hotels shall submit a compliance of Note 1 in the form of a screen shot of their website showing the "Facilities & Amentias provided on complimentary basis")

Note 2.

It will be mandatory for all the hotels classified under all category to display their classification status prominently on their websites under a separate icon on the opening page, which on the click will display the order of classification issued by the Ministry of Tourism, Government of India, and at the reception.

Note 3.

All the hotels shall be required to submit an affidavit with respect to clearances along with their applications for approval of Hotel at the Project Stage and for Classification / Re-classification of Operational Hotels, as given in **Annexure V and VI respectively**.

Note 4:

a. If any hotel is found to obtain classification on a false pretext or on the basis of misrepresentation of facts, or is found to display wrong classification status, or found to promote / market the hotel on the basis of wrongful claims pertaining to hotel classification, then the unit / hotel will stand declassified with immediate effect and it shall be debarred from applying for classification under any category for a minimum period of two years from the date of debarment by the competent authority i.e. the Chairman, HRACC.

b. If a hotel which has applied for classification under any category to the Ministry of Tourism is found to display false classification status, or found promote / market the hotel on the basis of wrongful claims pertaining to hotel classification, then the application for classification of the unit / hotel will stand summarily rejected and it shall be debarred from applying for classification under any category for a minimum period of two years from the date of debarment by the competent authority i.e. the Chairman, HRACC.

c. In case of debarment, a hotel, which is found to otherwise fulfil to the satisfaction of the inspection committee, all criteria pertaining to the classification parameters of the star / heritage category under which it was found to wrongfully promote itself, will have the one-time opportunity for revocation of the debarment by paying a penalty prescribed below. Such observation of the committee, if any, will

2.1.3 EXTERNAL ACCESS OF CONTROL

1. Limiting Access Points

The number of access points needs to be reduced to a minimum of two or three and entry of persons regulated and monitored through CCTV cameras placed at such points.

2. Perimeter Security System

A three-tier security system should be put in place-

(a) At the perimeter, on the outside of the hotel itself, cars must be stopped, boots checked and mirrors put under the car chassis to detect explosives.

(b) Vehicles driving up to the hotel door should be discouraged. Vehicles should not be allowed to go right up to the door. Guests must alight at some distance away and walk-up.

(c) There should be closed circuit TVs installed in all public areas of the hotel, especially at the alighting point and entrance door for scanning people coming into the hotel.

3. Road Barriers

Premium hotels could consider installing devices like hydraulically operated road barriers or retractable bollards that can stop vehicles coming at high speed. Short humps can be raised from ground level to slow down/stop vehicles.

4. Shrubs and Vines

Heavy shrubs and vines should preferably be kept away from the hotel building and trimmed close to the ground to reduce their potential to conceal criminals or bombs.

5. Patrolling

Increasing the number of Security Guards and stepping up patrolling can be an effective deterrent to criminals.

2.1.4 MATERIAL ACCESS CONTROL

1. Guest Baggage Check

(a) Baggage should be taken to a drop point, away from the lobby and passed through baggage scanners which can detect the shape and density of the objects with a high degree of clarity

(b) Handheld bags must be checked at the entry point.

2.1.5 PEOPLE ACCESS CONTROL

1. Walk-In Guests

Hotels should not entertain Walk-in guests' (without reference or pre-bookings)

2. Guest Profiling

Hotels should put in place a computer linked guest profiling system to zero in on persons of suspicious antecedents whose names figure in the Ministry of Home Affairs' Watch List. The information would include details such as full name of the guest, date of birth; nationality, sex; passport number, country issuing the passport; country of residence; visa number, date and place of issue.

3. Employee Verification

Internal security must be ensured through background checks and antecedent verification of employees and service providers. Temporary staff should be hired from reputed contractors who maintain up-to-date database.

4. Visitor Management System

A visitor management system is essential. All visitors must be given a 'Visitor Pass'.

2.1.6 INTERNAL ACCESS CONTROL

1. Within the hotel there should be restriction on access to different parts of the hotel.

2. Access of staff to various departments in the hotel can also be regulated through proximity cards with magnetic inter locks.

3. Entrances to areas such as Boiler Rooms, Mal Rooms, Computer Rooms, Switch Boards and Control Rooms should remain locked when not in use.

4. It is also necessary to establish a procedure for the accountability of their keys.

5. LIFT USAGE

(a) The practice of people entering the lobby and taking the lift to any floor must be stopped.

(b) Lifts should be programmed so that Guests staying in hotels are able to go only to the guest floor they are on by swiping their room card in the lift and it should only let them get out on the guest floor they are on.

2.1.7 OTHER SECURITY MEASURES

1. Room Key Scanners

The US Department of Energy, through its Oak Ridge National Labs, has developed Mass Spectrometry Scanners which can analyze up to 1000 guest room access cards per hour. These can detect even a billionth of a gram of explosives such as Nitroglycerine or TNT. Even if a tinge of explosive has been touched by the guest it would alert the staff immediately and information flashed to security agencies.

2. Snifex

Snifex is a small handheld device with an ariel. The ariel starts V pointing to the direction where explosive is kept from a distance of a few meters.

3. Trash Management

An explosive device can easily be hidden in the trash. Trash cans need to be managed by trustworthy personnel.

2.1.8 CRISIS MANAGEMENT PLAN

I. Hotels must have a plan of action ready in case of an emergency Staff should be trained by mock drills in evacuations to help people in terror situations.

II. Hotels need to build strong in-house systems to prevent or deal with a crisis; train and motivate staff to respond to an emergency and evacuate guests if there is shooting or a bomb goes off. There should be a designated nodal executive in-charge of the crisis management team.

III. During crisis, calls start pouring from all over the world for news of the welfare and safety of guests and from the media persons who file reports on TV channels and in newspapers. There should be a nodal point and a designated person for information dissemination and to respond to all enquiries during a crisis.

2.2. ITC HOTEL MANUAL

2.2.1. PARKING AND APPROACH TO BUILDING

There must be minimally one designated accessible parking space in every 25 parking spaces provided.

a) Location:

- The accessible parking bay should be located closest to the entrance, with an accessible route, that is level or gently sloping and minimally 1200mm wide, leading to the building entrance.
- The route to the entrance from the parking must not require the user to cross any vehicular monument.
- The parking and the route connecting it to the entrance should preferably be covered.
- In case of underground parking, accessible parking bays should be located closest to the elevator leading to the lobby levels.

b) Parking Space

- Accessible parking bay should be 4800mm wide, out of which at least 1200mm, on both the sides, is used as transfer bays. Where there are two accessible parking bays adjoining each other, then the 1200mm transfer bay, on one side, may be shared by the two parking bays in between them.
- Length of the accessible parking bay should preferably be 6000mm, including a 1200mm wide transfer zone at the rear to allow loading of the wheelchair. The transfer zones, both on the sides and the rear should have yellow or white cross-hatch road markings.

c) Signage

- There should be the international symbol of accessibility painted on the 2400mm wide area where the car is to be parked. The symbol should be large enough to be easily visible by person looking for the accessible parking. Recommended size being 1000mm x 1000mm but not larger than 1500mm x 1500mm. The sign painted on the floor should contrast with the floor color (preferred colors, white and blue)
- There should also be a signboard with the international symbol of accessibility at the height of 1200mm from the floor right at the end of the parking.
- The Symbol of Access should be displayed at approaches and entrances to car parks, to indicate the provision of an accessible parking lot, for people with disabilities within the vicinity.
- Directional signs should be displayed at points where there is a change of direction to direct people with disabilities to the accessible parking lot.
- Approach to the Building
- The approach to the building entrance should be clearly defined.

- The surfaces should be firm and even, with a finish which is slip resistant in all weather conditions.
- The width of paths should be appropriate to meet the needs of all users.
- A recommended clear width of 1800mm will allow two wheelchair users to pass each other on path, however where obstacles are unavoidable and 1800mm width cannot be provided, a clear width of at least 1200mm should be provided throughout the path.
- Any kerbs in the route should have appropriate drop kerbs to allow access to a wheelchair.

2.2.2. MAIN ENTRANCE

a) Entrance should be easy to locate and adequately signposted

b) Consider installing automatic or semi-automatic doors

c) Avoid thresholds; if unavoidable, they should be no higher than 6mm

d) There should be a landing of at least 1800mm x 1800mm immediately next to the door.

2.2.3. LOBBY, RECEPTION AND HOUSE PHONES

a) Lobby

- The lobby should be levelled and split levels should be avoided.
- It should have adequate circulation space for a guest on a wheelchair, parents with a double pram or a person with heavy luggage.
- Any center piece that may be used in the lobby should be such that can be easily detected by a person with vision impairments. This can be achieved by making it contrast in color with the flooring and detectable by a white cane and by having its lower edge less than 300mm above the ground.

b) Reception

- Location of the reception should be such that it is easily identifiable from the entrance. The approach to the reception should be obstacle free.
- The reception should be designed, so as to accommodate both standing and sitting guests. This can be achieved by providing a seated section that is minimally 1500mm wide x 760mm high x 700mm deep with a 750mm high knee recess. The standing section should range from 950mm to 1100mm in height.
- A minimum clear floor area of 1200mm depth and 1800 mm width is required in front of any reception desk or counter (with a provision of 500mm deep knee recess) to enable sufficient maneuvering space for wheelchair users. If there is no knee recess provided, then the minimum maneuvering space required is 1400mm deep and 2200mm wide.

2.3. TIMESAVERS AND ARDS (BUILDING TYPES) HOTEL

- It must be borne in mind that, as far as planned circulation is concerned, there must never be aminglingofthefront-of-the-houseserviceswiththoseofthebackofthehouse.
- The two functions must be kept separate and yet so interrelated that both functions smoothly and efficiently.
- The physical environment becomes an important part of the guest's creature comfort. These factors include color and decor, lighting, proper air temperature, comfortable furnishings and, above all, pleasant and relaxed atmosphere.
- This involves the economics of a new hotel, which will center upon the cost of construction and furnishing. These costs represent, together with the cost of the land, the amount of money that is to be invested.

2.3.1 BACK OF THE HOUSE

- Though rarely seen by a guest, the back of the house is the most crucial part of the plan. It must be laid out with two paramount objectives: control and efficiency. Foodstuffs, housekeeping supplies, and a great many other items must be received out of sight of the hotel guests. Such receiving is usually done at a loading dock, which should be covered so that deliveries can be made regardless of the weather.
- This is usually the function of a receiving department that should be located directly on or adjacent to the loading dock. Tight control must be exercised in two directions. In one direction, it is not uncommon for material to be delivered and, within a short time of its having been left on the dock unchecked, for the management to find that this material has disappeared or that some parts of the shipment have gone astray. The second part of the control is to make sure that, once these shipments have arrived, they go directly to their destination without a chance- of becoming lost on the way.
- A good back-of the- house plan will be worked out in such a way that the flow of supplies is tightly controlled by the security that the architect works into his plan
- Tight, well-planned back of the house will have circulation patterns that will provide the utmost in control.
- In the larger hotels, garbage destructors or compressors may be used, in which case tight surveillance is necessary only in the garbage receiving area. Where garbage is shipped out, it is wise to have the garbage rooms so placed (and, incidentally, refrigerated) that the receiving office has this space in full view.
- A tight control at the point of entry and egress of all employees is highly desirable and can easily be accomplished if it is the same point as that at which food and other hotel supplies are brought in. Once again, the architect's careful planning will make it possible for employees to reach their various dressing and locker areas with a minimum of travel time lost. It must be borne in mind that there is class distinction in hotels and, as an example, that dishwashers and porters are not placed in the same locker rooms as head waiters and reception clerks.
- Locker rooms should be provided with ample toilet facilities and showers. Once the personnel have changed into their uniforms, the plan of the back of the house will make it possible for the people to get to their work stations with little time lost.

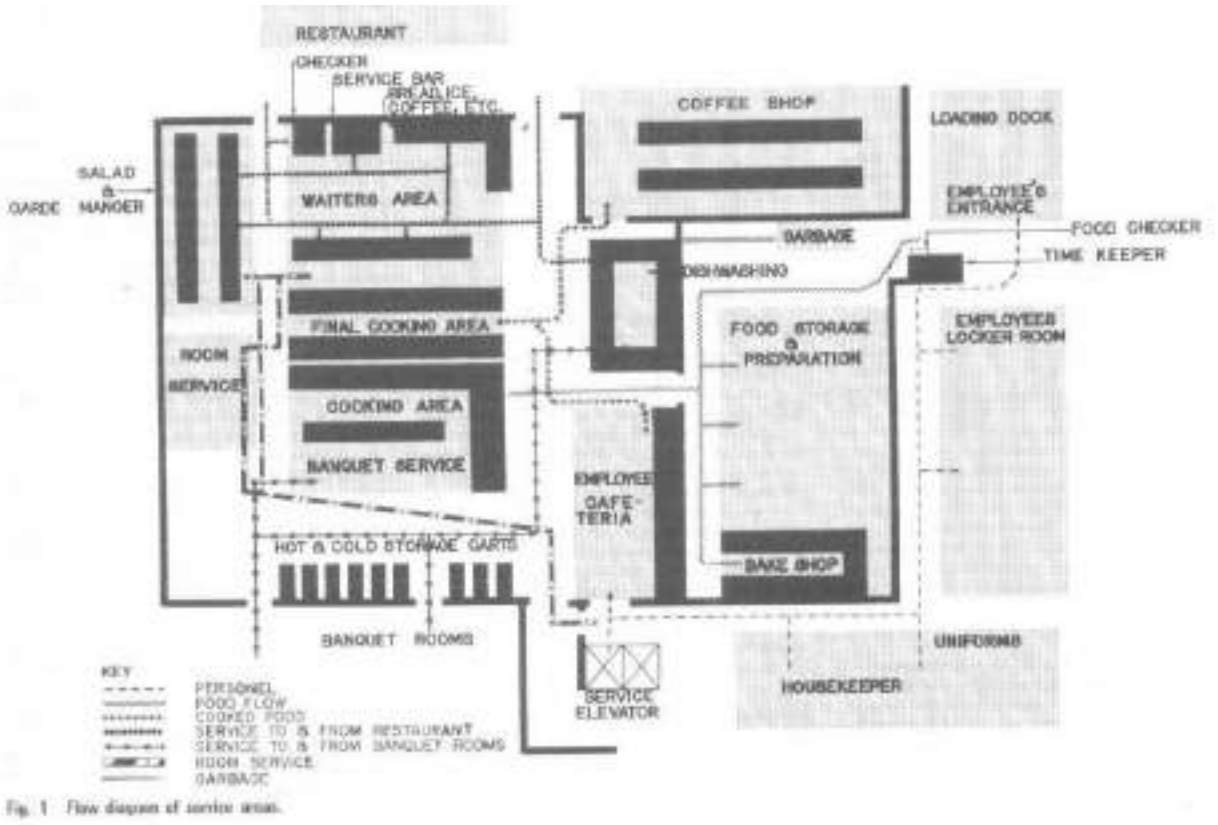

Figure 4 Flow Diagram of Service Area (ITC Hotel Manual)

Uniform issue is related to the housekeeper, the housekeeper to the laundry room, and the laundry room to the soiled linen room. The soiled linen room connects by vertical linen chute to the service room on every typical floor, and every typical floor is connected by a service elevator that opens to the lower-floor service area convenient to the scrutinizing gaze of the steward and the timekeeper. For convenience, a trash chute, going from every typical floor service area, should be located next to the linen chute

2.3.2 LAUNDARY FACILITIES

- A laundry is a usual adjunct of most good-sized hotels.
- A hotel laundry that does its own uniforms and flatwork (sheets, pillowcases, linens, etc.) requires a good-sized space for washers, dryers, drum ironers, and various pressing machines-each suitable for its own type of flatwork, uniforms and guests' laundry, and men's and women's wearing apparel.
- Larger hotels will maintain their own cleaning department for dry cleaning and pressing of woolens and similar garments. Such a cleaning and valet service is usually a part of or close to the laundry area, and it is definitely under the supervision of the laundry manager.

2.3.3 HOUSE KEEPING DEPARTMENT

- The housekeeping department, having several functions, is the province of the chief housekeeper, who will usually have assistant floor housekeepers. Under the housekeeper's strict control and supervision will be all the maids and porters

- The porters will deliver to the service areas on the guest-room floors all linen and soap as well as facial tissue, toilet paper, matches, room service menus, and ashtrays.
- The housekeeper's area is also a storage area, for here are kept all the supplies that become a part of housekeeping.
- It might be useful for the architect to know how many rooms a maid can make up during her daily tour of duty.
- It rarely goes beyond 15. One porter is usually assigned to each maid. In addition to the regular daytime maid, there will be, in most hotels, a night maid who will make up beds for guests ready to go to sleep.

2.3.4 FOOD AND BEVERAGE SERVICES

- The flow of the raw food from the time it is delivered to the steward until it is finally cooked and ready to be picked up by the waiters or the waitresses.
- After the comestibles have been weighed in, checked, and signed for, they are sent to either dry storage or liquor storage (a room with a big lock on it) or to one of the various cold holding rooms or boxes. Canned food and other bottled or packaged food which does not need refrigeration will be sent to dry-storage rooms. In this storage space will also be kept the various condiments that the chef will need in the preparation of his food. Vegetables will be sent to an area where they will be stored ready for preparation. A refrigerator box of the proper temperature will be needed, as well as work space, sinks, and cutting boards where vegetables will be prepared for the chefs as needed. Vegetable preparation area is needed.
- Dairy products will go to their own cold-storage boxes. Fish, fowl, and meat will go to a separate area where boxes must be arranged with proper temperatures for their storage.
- Freezer, refrigerator, and cold storage boxes require heavy insulation. Slab sinkage in these areas should be provided for.
- The bakery shop should be a separate entity, having its own refrigerator boxes as well as all the pertinent equipment that a baker will use in his art---and an art it is, indeed.
- Here again, one should be reminded that the bakery should be close to the actual food service area so that not too many of these goodies find their way into the locker rooms or out of the hotel entirely.

- KITCHEN- The food from the prep area is brought to the various points where it is to be used. One of the first areas to which a good part of the prepared food will go is the rough cooking area. Here we find the big soup kettles, the vegetable steamers, the ovens, and the hot tops where most of the bulk foods will be prepared.
- Pot washing area close to the rough or preliminary food cooking area. Rough cooking is usually backed up to the finished cooking area.
- Between the chefs' ovens, broilers, and fry- errs, which are aligned in a straight line, there will be an aisle for the chefs. On the other side of this aisle will be the serving tables from which the waiters will pick up the finished food. At the bottom of these tables will be plate. warmers which the waiter picks up and sets on the table so the chef can place the order of the specific dish that is required.
- This entire area is for self-service by the waiters, who will pick up the items they need on their way to the guest waiting for the delivery of his food.

- DINING ROOM- The dishwasher is usually placed close to the Dining room area so that the dishes can be disposed of as soon as the waiter or busboy enters the kitchen. The dishwashing area is, of necessity, not only noisy but also a rather untidy operation, SO it must be kept fairly isolated from the actual cooking and serving area.
- Then, before entering tire. dining room, Ire will usually go by a checker's desk where he presents a check indicating the items that he is taking out of the kitchen to the diner.
- One other space will usually occur in our ideal kitchen--a service bar with a bartender who will prepare tire drinks that the waiter has ordered.
- There will be a chef's office, which is set where the chef can observe all the activities in tire kitchen. His office is usually enclosed with glass to give him aural privacy but complete visual control. Here the chef will prepare and plan menus.
- Room-service area- Here there must be sufficient space for a fairly large number of room service rolling tables, which are set and ready to carry the dishes that have been ordered by the guest via telephone.
- The room-service area is always close to tire cooking and garde manger area.



Figure 5 Flow diagram of Service Areas (ITC Hotel Manual)

- The room service area should, of necessity, be as close to the service elevators as possible.
- COOKING AREA- The cooking area, consisting mainly of griddles, will be manned by short-order chefs who are ready to prepare various hot breakfast dishes, and the garde manger section will be manned by a crew who are expert in the preparation of breakfast menus.

- BANQUET HALLS- In the banquet area there will be mobile cabinets that take trays. These are electrified cabinets arranged to keep dishes either hot or cold. Those banquet cabinets can be stocked before a banquet for certain types of manes.
- A large banquet area in a hotel will require a separate banquet kitchen with its own cooking facilities as well as its own dishwashing area.
- One last observation: it is an excellent idea to have toilets and washrooms for kitchen help, so that it isn't necessary for them to return to their locker rooms, which may be at some distance. It is always advisable to keep the kitchen help within the kitchen during their stint of duty. Doors to dining rooms, and there may be several dining rooms serviced by the one kitchen, should be strategically placed and baffled so that the diners do not have a view of what goes on in the kitchen, and, what is more important, do not hear what is going on.

- The ideal plan would be to place the coffee shop backed up to the kitchen, so that certain finished dishes and prepared foods can be delivered to the coffee shop work area directly from the main kitchen under complete control and it passes from prep areas to kitchen to coffee shop.
- At the counter we will usually find a pickup area where the waiters can pick up the food prepared for them without disturbing the diners who are sitting at counters. Dirty dishes will be sent back to the dishwashing area through a pass-through, or they will be carried to the dishwashing area in the main kitchen.
- Employees' cafeteria- This space is usually planned to be close to the help's locker rooms and yet contiguous to the main kitchen.
- Beverage service area- This may be a bar room or a cocktail lounge. In any case, there will be a bar with stools (if local codes permit) and an area for cocktail tables and chairs. A cocktail lounge must be serviced just as the kitchen is serviced. To the bar must be brought not only liquor and bottled goods but also the usual crunchies.
- Ideally, the delivery should be made directly to the back bar through pass-throughs from the kitchen, so that we find once again another unit backed up to the ideal kitchen.

2.3.5 MECHANICAL SERVICES

- Another area that should be considered in designing the back-of-the-house spaces will be the boiler or mechanical room. In this area will be found the various pieces of equipment for heating and cooling as well as all the tanks and pumps to keep all the mechanical systems in operation.
- In this area will also be found all central switch gear that controls electric current for every purpose in the hotel complex. This domain belongs to the house engineer and, naturally, there should be provision for an engineer's office, with a mechanical repair shop close by.
- These would include a carpentry shop, an upholstery shop, and definitely an area for a locksmith. Somewhere in the area, where they are easily accessible, will be storage rooms in which will be kept a multitude of spare parts to service the hotel. be occupied by personnel that very often come in contact with the guests, and the strategic location of these back-of-the-house facilities will be controlled entirely by what happens in the front of the house.
- Included in these areas you will find accounting and bookkeeping offices (which back up the front cashiers); reservations offices (which back up to the front registration desk); and offices for management, which will include a reception area, a manager's office, and an assistant manager's office.
- There is also a mail sorting room.

2.3.6. FRONT OF THE HOUSE

- The guest or the paying customer sees only the front of the house, and this must be all that he desires.
- The front of the house comprises every area that the guest will see; lobbies, dining spaces, rest rooms, passenger elevators, corridors, hotel rooms, etc. These spaces must be handled and planned with one thought in mind: the convenience and continued approbation of the guests.
- The registration desk and the elevators should and must be immediately apparent. The registration area consists of a front desk, behind which is a registration clerk, behind whom is the key and mail rack, and behind that the various administration spaces.

2.3.7 GUEST REGISTRATION

- A hotel registration desk must be located so that it is immediately visible as one enters the hotel lobby. The size of the desk will be determined by the size of the hotel.
- 2,000 rooms might have anywhere from four to six registration clerks, while a hotel of 100 to 200 rooms will have one or at roost two spaces at which guests may register.
- The simplest arrangement will call for a suitable file containing advance reservation cards requesting space, so that the clerk can quickly check what room has been reserved for what particular guest.
- Advance registration counter

2.3.8 MAIL AND KEYS

- There are two other services that the front or registration desk must perform. The first and obvious one is to serve as the place where the room keys are kept.
- If the registration clerk handles the key, then obviously the key rack is directly behind the desk, easily accessible to the registration clerk. If the hotel is large enough to require separate area and separate personnel for handling of keys, this function will usually be alongside the actual registration desk



Figure 6 Admin Plan, Churchhill Hotel London

2.3.9 CASHIOR

- The average hotel usually has the cashier's counter located adjacent to the registration desk.
- The larger hotels may place cashiers in the so-called "front desk" area but somewhat remote from the actual registration desk. There are times in large hotels, especially those catering to conventions, where one convention is checking out while another is checking in. This will make for traffic congestion and some confusion. Such a situation can be avoided by planning the registration and cashier facilities so that lines forming in front of the registration desk do not conflict with lines forming at the cashier's counter.
- Larger hotels will have a complete bookkeeping department. This will require more than just the actual cashiers, who remain at their stations, while the bookkeeping department handles all entries and bookkeeping for the guests. It is obvious that this bookkeeping department should be close to if not backed up to tire front desk cashiers, so that any questions of charges can be quickly checked and adjusted by the cashier, who will contact the bookkeeping department for clarification or corrections in the guests' bills.
- Therefore, a small closed room is normally provided. The guest enters this room and gives the valuables to the cashier through a pass-through window. This pass-through window should have a view of the vault or the safe so that the guest can watch his valuables being deposited properly.

- In large hotels, where there are a number of restaurants and other facilities which entail cash payment, special arrangements should be made for the handling of this cash and, in some instances, safety deposit boxes or vaults are provided so that the money can be stored when it is brought to the cashier space at off hours.

2.3.10 ADMINISTRATIVE AREA

- The administration of a hotel operation depends entirely upon its size.
- A larger, medium-sized hotel will have a manager and an assistant manager and, as a rule, there will be e reception office where one or two typist receptionists will be acting as a buffer between the public and the manager.
- Aside from the manager and the assistant manager, there may be an office for a food and beverage manager and a banquet manager. A larger hotel, with sizable convention facilities, will also have an office for the convention manager and his assistants.

2.3.11 RESTAURANTFACILITIES

- Under normal situations there will be a cocktail lounge or beverage bar even in the smallest dining facility. The larger hotel will have a pleasant coffee shop for quick service and for simpler meals, whereas a restaurant, with its appropriate decor for more leisurely dining, will offer a more varied menu with probably higher cost per meal than in the coffee shop. The cocktail lounge will usually be found close to the dining room so that hotel guests can pause for a cocktail before lunch or dinner, or while waiting, before going to the dining room", to meet friends or other guests. Where convention facilities are offered within a hotel, it is wise to have a bar placed close to the convention facilities.
- Large convention and banquet facilities usually provide a fixed or portable bar arrangement in the pre-assembly or foyer areas to take care of pauses between meetings and seminars and to fill those pauses with a facility that will provide a "pause that refresh." There is no special requirement for the design of hotel restaurants, bars, cocktail lounges, and coffee shops which are in any way different from the standard requirements for any such facility.
- Wherever a rooftop restaurant is created, the architect must bear in mind that there will be increased traffic in the elevators taking diners from both in and outside the hotel to this specialized rooftop facility. And don't forget that, because of public assembly requirements, the stairs must be sized larger. Supper clubs or nightclubs will also be found in the larger hotels with this type of dining and entertainment area along with orchestra dressing rooms.

2.3.12. LOBBIES

- Every hotel, regardless of its size, must have a public lobby. The size of the lobby is largely determined by the number of guest rooms as well as by the type of hotel that is on the architect's drawing boards.
- Furnishings, color, finishing materials, lighting, and decor must create the proper ambience regardless of whether the hotel is large or small, in a city or a resort, moderately priced or expensive.

2.3.13 ELEVATORS

- Except for one- and two-story motels, every hotel and motel will use elevators to take guests from the point at which they have checked in up to the floor where the guest's room is located. Elevators should be located so that they are immediately visible, either from the entrance of the hotel or from the check-in or registration area. Another consideration in the planning of elevators is that of their location on the guest-room floors. It is advisable to place them centrally so that the distance walked by a guest in any direction is reduced to a minimum.
- The number, size, and speed of the required elevators is best determined by the elevator companies themselves.
- Service elevators are separate and apart.
- Each bank of elevators should be strategically located to best service the front of the house (guests) or the back of the house.
- The bell captain's station should be located so there is a commanding view of the hotel entrance, the registration desk, the cashier, and the elevators.
- Somewhere in the lobby there should be a rather large storage spare for luggage which may be left by guests after checking out but prior to departing.

2.3.14 GUEST FLOOR CORRIDORS

- It is wise to remember that no guest-room doors should be placed opposite the elevators. Guests coming or going late at night, coming out or getting into the elevators, may talk loudly or may be too noisy, in which case they would be disturbing guests whose doors open off this area. The foyer should be further demarked from the guest-room corridor by its decor and lighting.
- One of these appurtenances would be a small bench or some type of seat for guests who may want to wait in the foyer for the elevator or who may be waiting to meet someone else on the floor. It is also a thoughtful gesture to have a full-length mirror in this area; men as well as women guests appreciate the chance to have a look at themselves before descending to the main lobby floor.
- There should obviously be a good-sized ash receiver for cigarettes, cigars, and other trash nuisances that the guest may want to get rid of before getting into the elevator.
- Good practice indicates that a corridor should, if at all possible, not be over 100 ft in length.
- There is very little choice in the width of a corridor. Normally, 6 ft is considered an adequate width, although some hotels have made do with only 5 ft.
- Another expedient, which may be used either in a narrow corridor (under 6 ft) or a standard-width corridor, would be the device of recessing the bedroom or guest-room doors. Setting doors back from the corridor wall 1 ft or even as much as 2 ft gives an apparent width to the corridor and, what is more important, it gives each room entrance its own sense of privacy and individuality.
- A flush panel door is the least expensive but also the least desirable type of door for a guest room. If only a flush door is used, strong color might be helpful,
- The lower portion of the wall, therefore, might well be designed as a dado made of a bruise- and shock-resistant material or merely marked off with a contrasting color or wall covering.

2.3.15 GUESTROOMS

- The length and width are determined by the amount of furniture that is to go into the room and by the degree of luxury that the hotel operator wishes to achieve.

- The most common room in the hotel field today is the twin-bedded room. Then we have the possibility of a single occupancy room, and, lastly, studio rooms or suites.
- The next consideration is the size of the beds themselves. There are single beds which are 3 ft 6 in. wide, a full-sized bed which is 4 ft 6 in., a queen-sized bed which is 5 ft wide, end a king-sized bed which is 6 ft wide. Presently, all beds are still being made in a 6-ft 6-in. length dimension.
- If at all possible, there should be a3-ft aisle and, if no furniture is placed opposite the bed (a very unlikely arrangement), then the width of the room would be a minimum of 10 ft 6 in.
- Where furniture will be placed on the wall opposite the bed, such furniture will most likely consist of a dresser or cupboard with drawers. Such a piece of furniture requires a minimum of 18 in. in width and most likely an optimum width of 24 in.
- The most common arrangement found in most hotels consists of two comfortable armchairs with a cocktail table between them. A comfortable chair will require a depth of least 30 in. and another 30 in. of leg space in front of it, which means that we need at least 5 ft from the wall before we encounter the first piece of furniture, which will probably be a bed.
- In talking of lighting, we must bear in mind that we want not only a lamp or a ceiling fixture over the sitting area but also adequate reading lights for the beds. The most often used arrangement is a twin-headed lamp sitting on the night table between the two beds.
- Another piece of fixed furniture that is desirable is a luggage stand.
- This could be a straight-backed chair or a stool placed in front of the writing-makeup table.
- Between a pair of twin beds, the ubiquitous nightstand with its small storage space below is standard.
- SUITES: Another popular arrangement in hotels is that of the so-called "studio room." Dual sleep pieces have been developed which are comfortable sofas during the day and perfectly comfortable beds at night.
- furnished as a studio room. Thus, the hotel can provide a two-room suite (obviously, connecting doors must be provided between these two accommodations).
- Every hotel should have arrangements for suites of a permanent nature as opposed to a combination of a studio room with a typical guest room. Suites will be furnished like fine sitting rooms. They are used not only by the affluent traveler because he can afford it but also by travelers who do a good deal of entertaining, especially business travelers who entertain clients and customers on their arrival in any given city.
- These suites are also often used by two couples or by a large family, in which case the sitting room of the suite may be used for sleeping at night. In this case, dual sleep pieces will be required, but they will usually be the type that is referred to as a "davenport," or the type of sofa which opens out to become a comfortable double bed (never as comfortable as a true bed). These suites should have a good-sized dining table with a sufficient number of chairs, provision for an adequate desk (since some business may be carried on in that room), a sufficient number of comfortable lounge chairs, and an accessory table.
- It is a good practice to arrange the sitting room of a suite so that it connects with at least two bedrooms and, if at all possible, three and sometimes even four bedrooms.
- Suites will usually be found in the corner of a building, which makes it possible for the planner to join up several bedrooms.
- There are times when suites are not used, and the hotel should be able to rent each of the rooms in the suite separately.

- A foyer which connects the bedrooms and the sitting area makes this separate keying of rooms possible.
- A complete bathroom should be planned for each of the sitting rooms of a suite to make it possible to rent the rooms out singly.
- Since this room will be used for entertaining (either business or private), a bar with water connection becomes a pleasant adjunct.
- Obviously, these rooms will be placed on the lowest floors so they can be close to the public spaces for the convenience of those who are going to use them for meetings or seminars in connection with a larger convention or meeting taking place in the hotel.

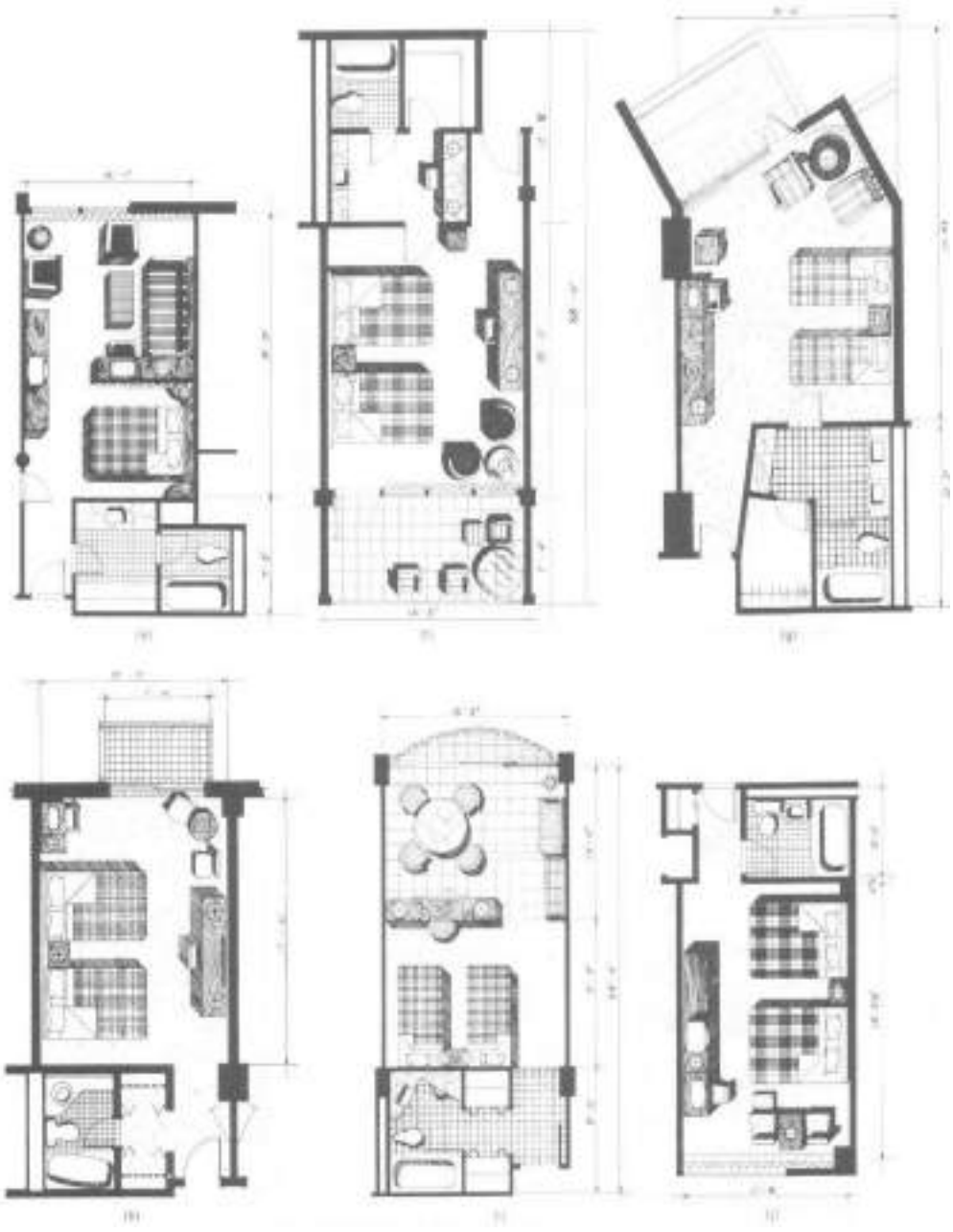

Figure 7 Guest room details (ITC Hotel Manual)



Fig. 5 (cont.) (k) Chicopee Motor Inn, Chicopee, Massachusetts. (l) and (m) Thomas Circle Motor Hotel, Washington, D.C. (n) Riverview Motor Hotel, New York.

Figure 8 Guest room details (ITC Hotel Manual)



Fig. 9 (cont.) (k) Chicopee Motor Inn, Chicopee, Massachusetts. (l) and (m) Thomas Circle Motor Hotel, Washington, D.C. (n) Riverview Motor Hotel, New York.

Figure 9 Guest room details (ITC Hotel Manual)

2.3.16 GUEST BATH ROOMS

- The minimum bathroom will have a combination tub-shower, a lavatory, and a water closet.
- An innovation devised by the writer's firm was the introduction of two lavatories in the bathroom facilities. These two lavatories may be right in the bathroom itself, they may be pulled out into a dressing area, or one lavatory may be placed in the bathroom and another outside the bathroom.
- Bidet is being introduced. Obviously, this additional feature is found only in the most luxurious hotels.
- A wall-hung unit makes cleaning of hotel bathrooms easier for the maid, but again, its economics will determine whether this fairly expensive type of installation is warranted. The tub in a guest room is normally a 5-ft tub.
- The normal shower head becomes standard in all hotels, although there is a growing tendency to using the so-called "telephone shower head."
- The normal wall shower head, and by using two movable shower-head supports, one at the normal hand level and one at the higher level where a fixed shower head normally would occur, the guest has the option of allowing the hand type shower head to remain in a standard position or to remove it and use it as he pleases.
- It is preferable to have a ledge on which toiletries may be placed, where they are conveniently reached, and where, obviously, they will not be left when the guest checks out.
- If a ledge is used, the toilet tissue holder can be placed within the recess of the ledge, es can be the tumbler holders and the toothbrush holders. Obviously, an electrical convenience outlet must be placed in this area for electric shavers, electric toothbrushes, and other electrical gadgets that today's traveler takes with him. A slot receptacle for used razor blades should not be forgotten. Towel bars must be strategically placed so that the guest can reach for a towel regardless of whether he is stepping out of the tub or whether he is washing or shaving et the lavatory.
- Another nicety which might be provided is some form of clothesline. With today's wash-and-wear apparel, many guests, especially women, like to do their washing at night and hang their garments in the bathroom.
- A number of hotels are installing a wall-hung mirror which is an enlarging mirror on one side and a normal mirror on the other, a very nice touch for both men and women guests.

2.3.17 GUEST CLOSETS

- The size of a closet will be determined by the type of hotel.
- Having the open hanging arrangements obviates this possibility. The longer the guest-room stay that is anticipated, then the larger the closet.
- It should be possible to store the luggage out of sight in the closet without diminishing the available hanging space, the shoe-rack space, or shelf space for hats and other apparel and paraphernalia. Whether the closet is a flat reach-in type or a walk-in type, the door should be such that, when the closet is opened, there are no hidden recesses where clothing may be forgotten because it cannot be readily seen by the departing guest.
- A good closet will have a hang rod with sufficient space to comfortably hold men's and women's clothes, a shelf for packages, hats, etc., and a shoe ledge or rack for placing shoes.

2.3.18 GUEST FLOOR SERVICESPACES

- Every guest-room floor will have a service area.
- Primarily, it is a place where linen is stored and where the maids' carts are kept. We must bear in mind that each maid will handle anywhere from 12 to 15 rooms and that each maid will need a cart. The number of rooms on the floor will, therefore, determine the number of maids and, in turn, the number of carts.
- A closed storage area should be provided for the storage of linens. In addition to the maids', porters', and linen supplies, sufficient space should be left for the storage of room-service carts.
- They may have to remain on the floor for some time waiting for the service elevator or elevators. Obviously, the service elevators will open out to this service area, so that all this activity takes place out of the sight and hearing of the hotel guests.

2.3.19 BANQUETING FACILITIES

- Larger hotels will have a more diversified arrangement for meetings, luncheons, dinners, and banquets. The largest hotels are usually designed with a full banqueting and convention facility.
- The normal meeting room requirements are rather simple. The rooms will vary in size to accommodate anywhere from 10 to as many as 100 people. In most instances, wherever it is feasible, the meeting rooms will be arranged in a straight line, so that the walls separating one room from the other can be made movable.
- Thus, if two meeting rooms which normally might seat 25 people are thrown open to one, we would have a meeting room to take 50 people; and if another wall is opened, we would be able to seat 75 people, and so on.
- In larger rooms, which normally qualify for conventions or large banquets, it is also possible to subdivide the space by the use of movable walls to create smaller rooms when a large room is not required. A large space which might seat 1,000 people when all folding wells have been moved back can be cut up into anywhere from four to six spaces, allowing for meeting rooms that can accommodate 150 to 250 people.
- Of course, in the really large convention halls, it will not be unusual to seat 3,000 or more people in one large convention banquet hell. Realizing that food must be brought to all these rooms, their juxtaposition to serving kitchens is highly important in arranging the plan.
- For the most part, food should be brought directly from banquet kitchens to the banquet spaces. In subdividing these spaces, the subdivision must be so planned that each space is contiguous to the kitchen and has its own doors to enable waiters to come and go between the banquet spaces and the banquet kitchen.
- Sound isolation is of the greatest importance, and this applies not only to the decibel rating of the panels themselves but also the arrangement of the joints between the sections or panels of the movable wall.
- In fairly large meeting, banquet, and convention facilities, space must be provided which is normally called "preconvention assembly space.'
- Since most of the people who are standing are those who will eventually be seated, the proportions of the preconvention foyer space will be determined by the number of people who will be eventually seated. As a rule of thumb, a person standing in fairly close quarters will take up approximately 5 sq ft. A person seated at a table will take up anywhere from 10 to 15 sq ft. A person seated for a

seminar or a meeting will require 8 or 9 sq ft. It thus becomes apparent that the ideal preconvention, pre-banquet, or assembly space should be at least one-third of the area of tire actual dining and meeting spaces.

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2.4. TIME SAVER STANDARDS (BUILDING TYPES)-RESTAURANTS

2.4.1 SPACE REQUIREMENTS

- Adequacy of space will influence building and operating costs and efficiency. When space is too small, labor time end effort is likely to increase end the volume and quality of output decrease. When itis too large, building and maintenance costs are excessive.
- Calculate area requirements in terms of: (1) volume and type of service, (2) amount and size of equipment to be used, (3) number of workers required, (4) space for needed supplies, and (5) suitable traffic area. The dining area location and space allowance.

2.4.2 DINING ROOMS

- Space for dining areas is usually based on the number of square feet per person seated times. Space requirements:
- The patron's size and the type and quality of service should be considered.
- A banquet seating allowance might be as little as 10sqft per seat and that for a deluxe restaurant as much as 20 sqft.

Table 5 Area Specifications (TSS)

Type of Operation	Square Feet per Seat
Commercial Cafeteria	16-18 sq. ft.
College and Industrial Cafeteria	12-15 sq. ft.
School Cafeteria (Lunchroom)	9-12 sq. ft.
College Residence (Table Service)	12-15 sq. ft.
Counter Service	18-20 sq. ft.
Hotel, Club, or Restaurant (Table Service)	15-18 sq. ft.
Table Service (Minimum Eating)	11-14 sq. ft.
Banquet (Minimum)	10-11 sq. ft.

- Table 6 square feet pwe seat used for various types of food operations
- All of the areas in a dining room used for purposes other than seating are a part of square footage allowed for seating.
- Service stations may be estimated in the proportion of one small one for every 20 seats or a large central one for every 50 to 60 places. The advisability of having a central serving station will be influenced by the distance of the dining area from the serving area.
- Small substations for silver, dishes, napery, beverages ice, butter, and condiments may measure20 to 24 in. square and 36 to 38 in. high. The size of central stations varies from that for a small enclosed room to that of a screened section measuring approximately 8 to 10 ft long by 27 to 30 in.

wide by 6 to 7 ft. high. Table size will influence patron comfort and efficient utilization of spaces. Smell tables, such as24 or 30in. square, are economical for seating but are uncomfortable for large people.

- The width of booths including seats and table is commonly 5h ft. A lunch counter will have a minimum width of 16 in. and a maximum width of 24 to 30 in. The linear feet are calculated on the basis of 20 to 24 in. per seat. The maximum area best served by one waitress is generally 16 U-shaped counters make maximum use of space and reduce travel. Space in depth of 8'/r to 11 ft will be required for every linear foot of counter. This will provide 3 to 4 ft of public aisle, 2j&ft for aisle space for employees. A width of 41h ft is desirable where employees must pass.
- A minimum passage area is 18 in. between chairs and, including chair area, tables should be spaced 4 to 5 ft apart. Aisles on which bus carts or other mobile equipment is to be moved should be sized according to the width of such equipment.
- Diagonal arrangement of square tables utilizes space better then square arrangement and yields a more trouble-free traffic lane.

Number of Persons Allowance:

- The number of persons to be seated at one time is the second point of information needed for calculation of the dining room size. The total number of seats required at one time, multiplied by the space required for each seat, will give the total number of square feet needed in the dining area.
- The number of times a seat is occupied during a given period is commonly referred to as "turnover."
- The turnover per hour, times the number of seats available, gives the total number of patrons who can be served in an hour. If peak loads, or number to be served at one time, are known, the number of seats required can be estimated.
- The table sizes used in the dining room will affect occupancy. It is often desirable to provide for groups varying from two to eight, with a predominance in most dining rooms of those for two people.
- Chairs with a "tablet arm" that will fold at ray have been used for fast turnover in crowded areas.
- One cafeteria line can serve four to eight patrons per minute depending on (1) the speed of the servers, (2) the elaborateness of food selection, (3) convenience of the layout, and (4) the type of patrons.
- Banquet seating requires planning because maximum seating potential means maximum profits. Folding tables 30 in. wide are popular. These are obtained in varying lengths, but 72 and 96 in. are commonly used. The spacing for the legs should be such as to allow for comfortable seating when the tables are joined end to end and place settings are laid on 24-in.centers.

- Separate rooms, folding doors, screens, or other attractive devices can be used to reduce size of an area during slack periods. Sections left open should be those easiest to serve. Balconies, backrooms, or other less desirable space can often be used for overflow numbers that occasionally require service.

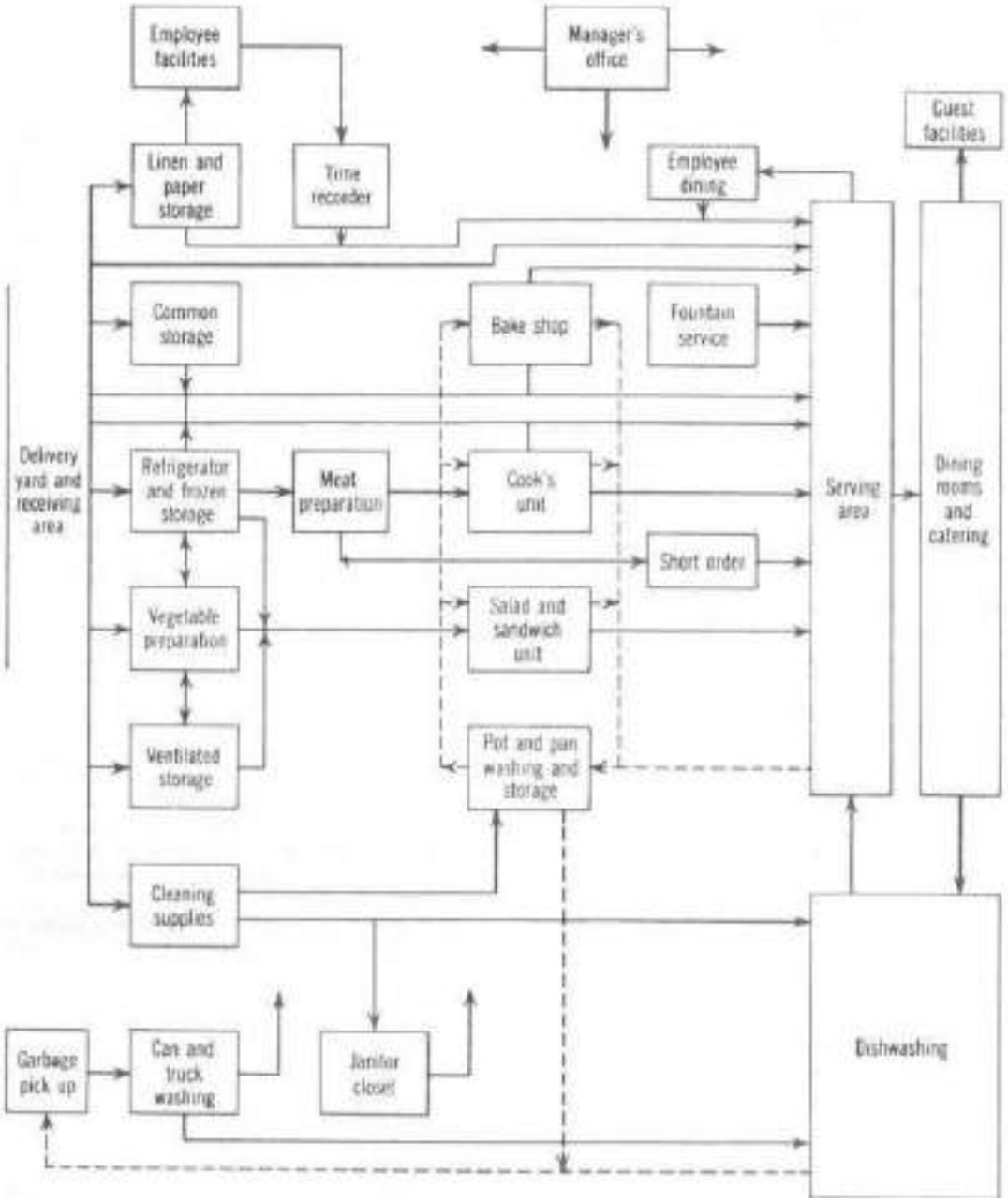


Figure 10 Flow Diagram Showing Functional Relationships (TSS)

Production areas:

- A frequently used rule for allotting a space for the kitchen is that it should be one-third to one-half the area of the dining room.
- An analysis of specific needs is required. Many factors in fluence space requirements, such as:

1. Type of preparation and service
2. Amount of the total production done in the unit
3. Volume in terms of the number of meals serve
4. Variety of foods offered in the menu
5. Elaborateness of preparation and service
6. Amount of individual service given, as in a hospital ltrey service
7. Seating and service plan, whether on one floor or many

Table 7 Vatiations in Space needs in Relation to numbers Served

Meal load	Square feet per meal	Variation in square feet
100–200	5.00	500–1,000
200–400	4.00	800–1,600
400–800	3.50	1,400–2,800
800–1,300	3.00	2,400–3,900
1,300–2,000	2.50	3,250–5,000
2,000–3,000	2.00	4,000–6,000
3,000–5,000	1.85	5,500–9,250

- The equipment provided will affect the space needs. Garbage and refuse, for example, may require a sizable area for storage awaiting pickup. Disposal units for food garbage, incinerator for burnable refuse, and a crusher for tin cans will greatly reduce the amount to be held. Frequency of garbage collection will minimize the space needs.
- The shape of the kitchen, location of ventilation and elevator shafts, support columns and partitions should be considered in relation to an efficient layout for work. The location of entrances and exits for a good flow of traffic, window placement, suitable space, and relationship of sections need consideration. Eliminate partitions whenever possible; this will reduce space needs and also permit easier supervision of production areas.
- The square footage given is to be multiplied by the maximum number of meals estimated per hour of service.
- The width of the table may be 24 to 30 in. unless dishes or food containers are to rest at the back of the table. Tables 36 in. wide are preferable when the back of the area is used for such storage. Where two workers work opposite each other, a table 42in. wide may be used. A work area of 4 to 6 in ft will be within convenient reach of the average person. Tables 8 to 10 ft. long are used if two people are working side by side. A height of 34 in., commonly used as a working height, be evaluated in terms of specific work done and equipment used.

- The minimum width for a lane between equipment where one person works alone is 36 and 42 in. where more than one is employed and where workers must pass each other in the progress of work. Where mobile equipment is used, 48 to 54 in. are recommended. At least 60 in. are needed for main traffic lanes where workers regularly pass each other with mobile equipment.
- Work centers at right angles to traffic lanes are efficient.
- A satisfactory layout may claim less than 30 percent of total space for equipment while work areas, traffic lanes, and space around equipment for easy operatioaning.

Table 8 Square Feet Of Kitchen Space Per Meal For Food Facilities Of Different Type And Size

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	3.0-1.8
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

Serving areas:

- In cafeterias the counter length should be regulated by the variety and volume.
- An estimate that may be used for allotting width is 14 ft. This allows for 4 ft as patron lane space,1ft treyelide,2ft counter width, 4'/r ft for workers, and 2'/r ft for back bar.
- Some commercial cafeteria counters may be 70 to 80 ft long, but counters over 50 ft long are frequently considered inefficient. Twenty feet is usually thought of as a minimum but, under special conditions and where a limited menuis served,6 to8 ft may be sufficient.
- Some planners use, as a rough guide, one counter or line for every 250 to 300 patrons served, but arrival rate, speed of service, and turnover are more reliable factors to consider in establishing the number of lines required.

Receiving and storage areas:

- Although the average operation may find a dock 8 ft deep and 12 ft long sufficient for receiving items, this would not be sufficient for a large one. The space requirement in square feet for food storage for 30 days has been calculated by some as approximately one half the total served or, if 1,000 are served,500 sq ft may be used as atentative figure for total food storage needs.
- COMMON STORAGE- The volume of canned food needed to serve 100 persona three meals daily for one month is estimated at approximately 45 cases of 6/10's or equivalent. The maximum stack height will be 8 or 9 cases or approximately72 in.
- Store room aisles may be as narrow as 36 in., but 42 or 48 approximal. are preferred. Wider aisles maybe required if trucks are used.
- Allow 1'/ to 2 in. as free space for ease of positioning. Add thickness of shelving to inter space when stating measurements between centers.

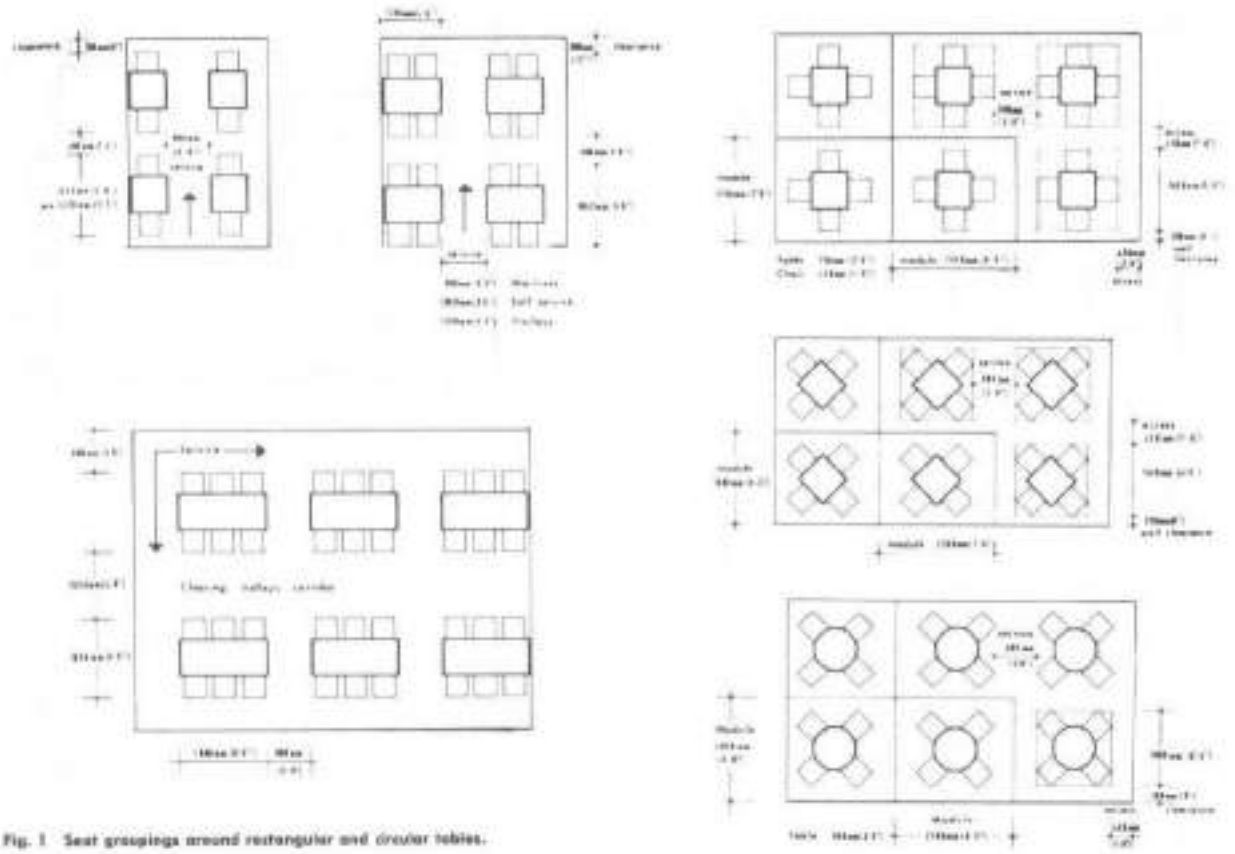


Fig. 1 Seat groupings around rectangular and circular tables.

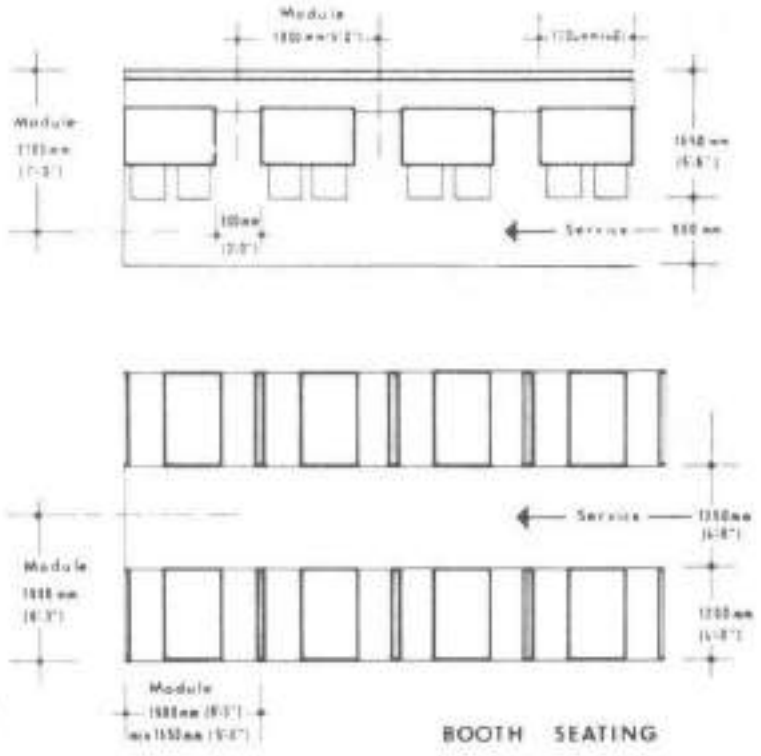
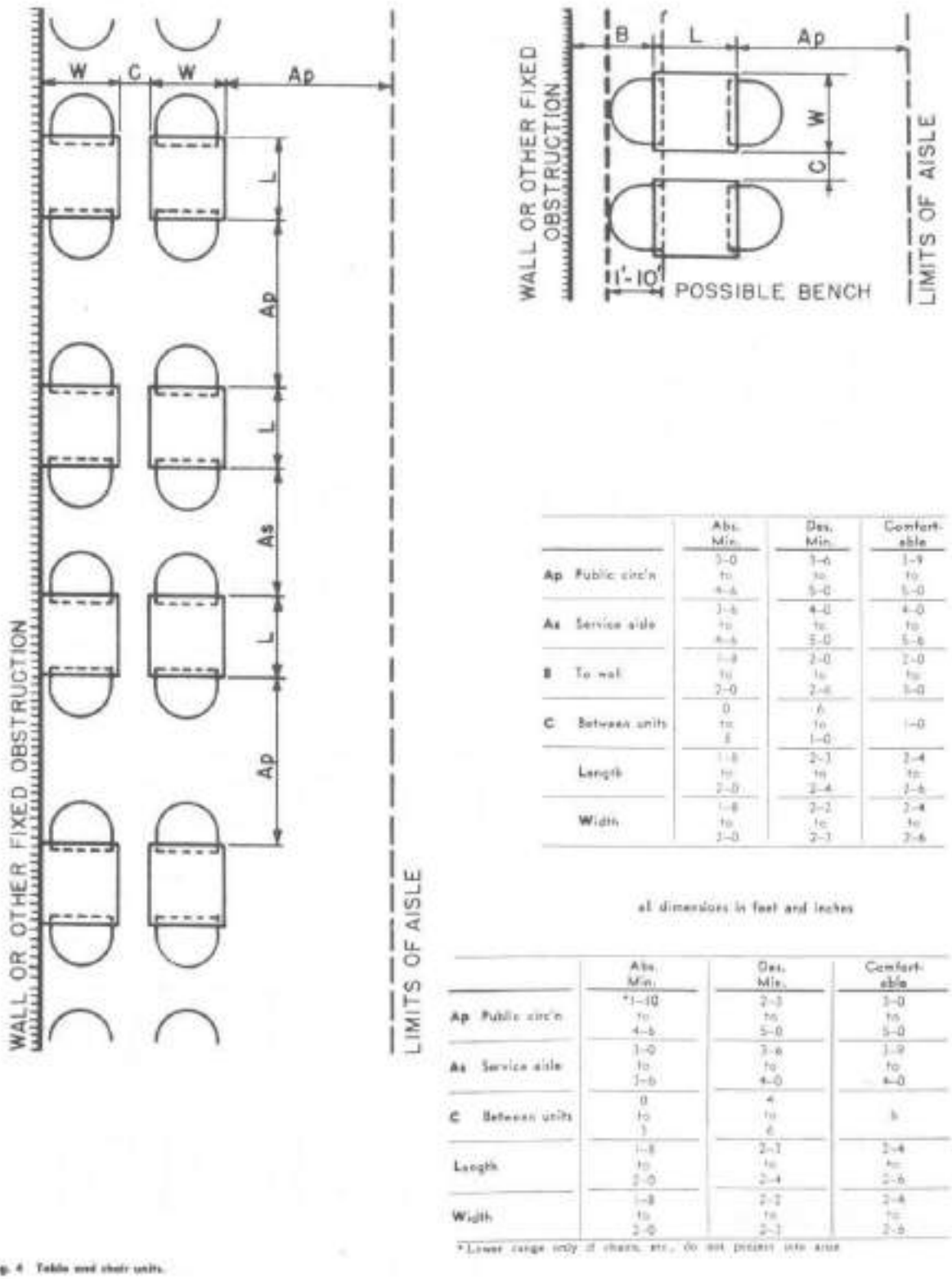


Fig. 2 Banquette seating arrangements and limiting dimensions including space for access and service.

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

Figure 11 Seating Arrangements (TSS)



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

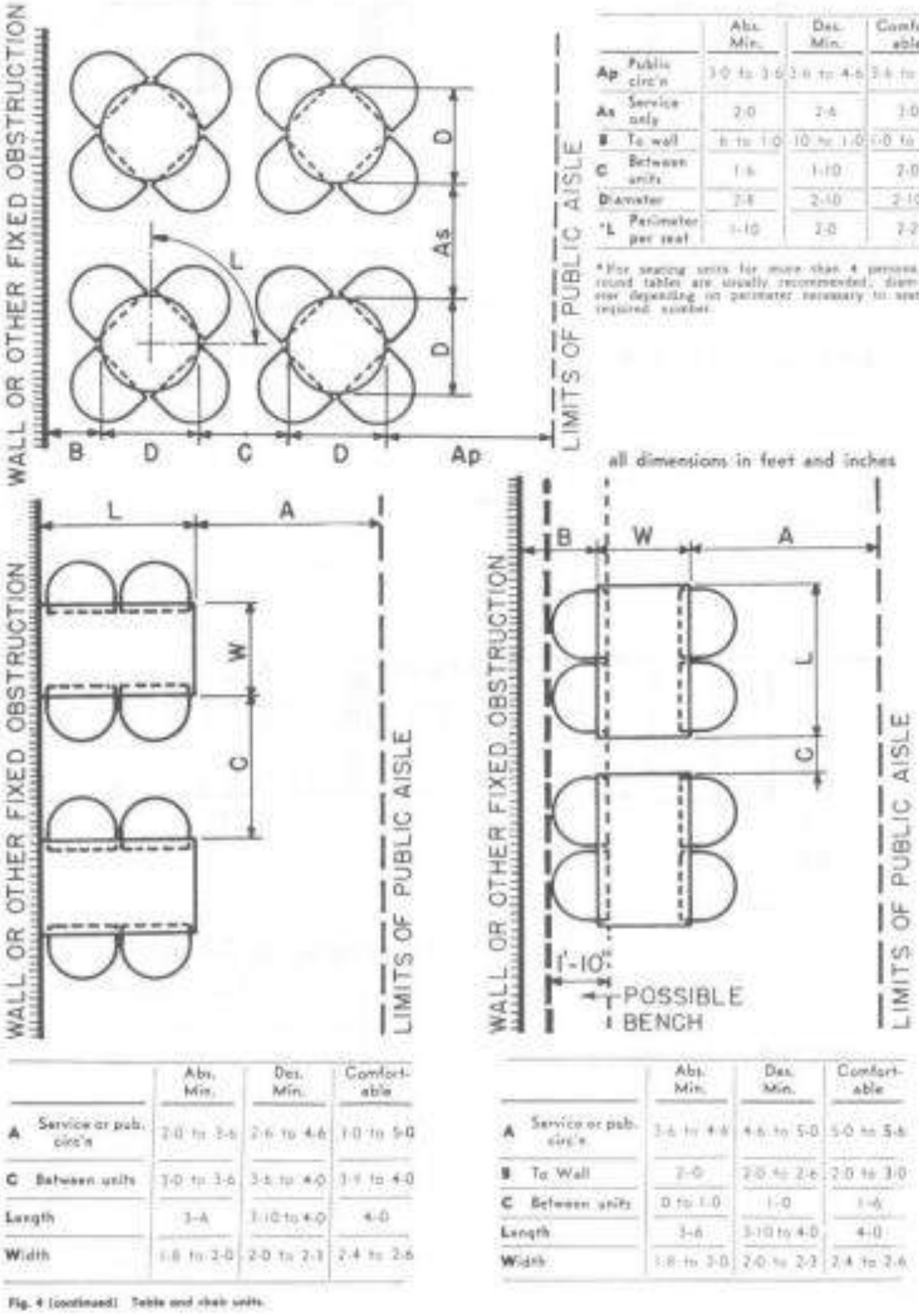
all dimensions in feet and inches

		Abs. Min.	Des. Min.	Comfortable
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 12 Table & Chair Units (TSS)



		Abs. Min.	Des. Min.	Comfortable
Ap	Public circ'n	3-0 to 3-6	3-6 to 4-6	3-6 to 4-6
As	Service only	2-0	2-6	3-0
B	To wall	0 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

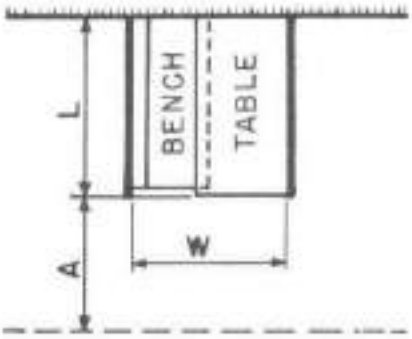
*For seating units for more than 4 persons, round tables are usually recommended, diameter depending on perimeter necessary to seat required number.

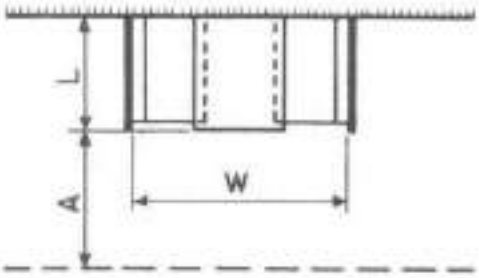
		Abs. Min.	Des. Min.	Comfortable
A	Service or pub. circ'n	2-0 to 3-6	2-6 to 4-6	3-0 to 5-0
C	Between units	3-0 to 3-6	3-6 to 4-0	3-9 to 4-0
Length		3-6	3-10 to 4-0	4-0
Width		1-8 to 2-0	2-0 to 2-3	2-4 to 2-6

		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 15 Table & Units (TSS)





2 PERSONS SIDE BY SIDE

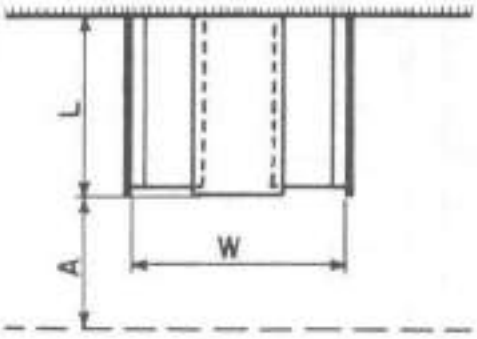
	Abs. Min.	Des. Min.	Comfortable
Service A and pub. circ'n	2-6	3-0	3-6
Length	3-6	3-9	4-0
Width	3-0	3-3	3-6

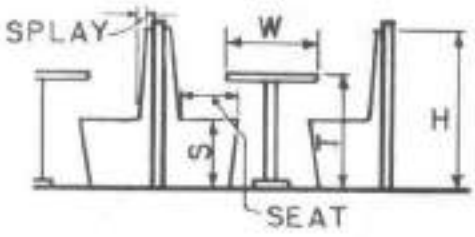
Note: This type not ordinarily recommended.

2 PERSONS FACE TO FACE

	Abs. Min.	Des. Min.	Comfortable
Service A and pub. circ'n	2-6 to 3-0	3-0 to 4-0	3-6 to 5-0
Length	2-0	2-2 to 2-6	2-6
Width	4-10 to 5-6	5-2 to 5-6	5-8 to 5-10

dimensions in feet and inches





4 PERSONS

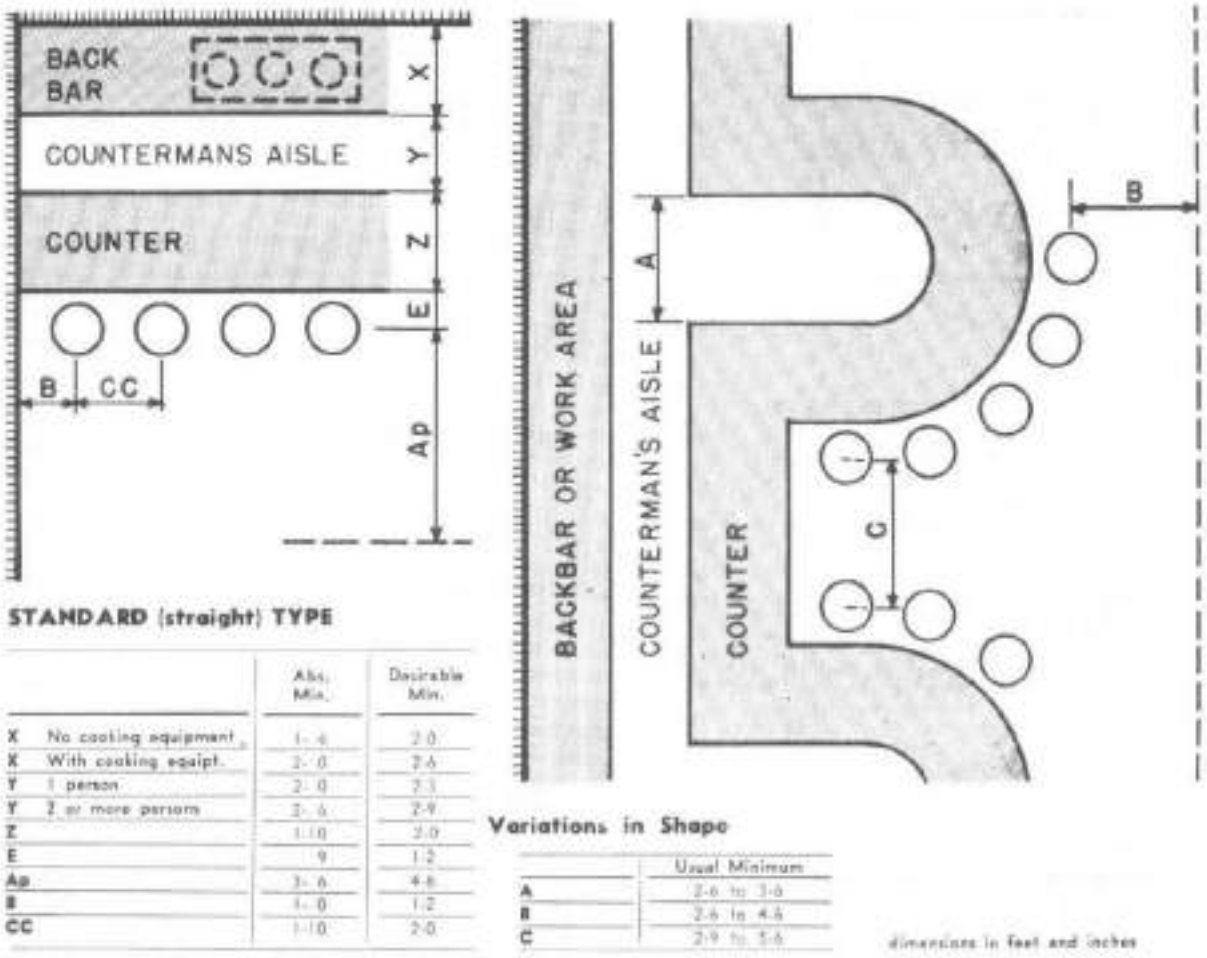
	Abs. Min.	Des. Min.	Comfortable
Service A and pub. circ'n	2-6 to 3-0	3-0 to 4-0	3-6 to 5-0
Length	3-6	3-9 to 4-0	4-0 to 4-2
Width	4-10 to 5-6	5-2 to 5-6	5-8 to 5-10

BOOTH FURNITURE HEIGHTS

	Abs. Min.	Des. Min.	Comfortable
H	3-0 to 3-6	3-6	4-0
S	1-5 to 1-6	1-5 to 1-6	1-6
T	2-5	2-5 to 2-6	2-6
W	1-8 to 2-0	2-0 to 2-2	2-4 to 2-6
Seat	1-4 to 1-5	1-5 to 1-6	1-6 to 1-8
Splay	0 to 0-3	0-2 to 0-3	0-3½ to 0-4

Fig. 3 Booths.

Figure 16 Booths (TSS)



STANDARD (straight) TYPE

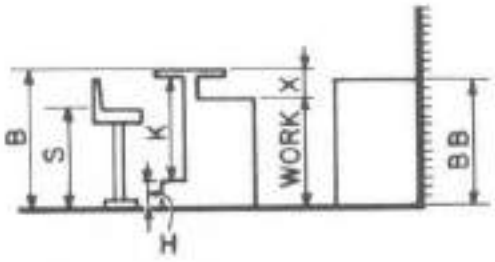
		Abs. Min.	Desirable Min.
X	No cooking equipment	1-6	2-0
X	With cooking equipt.	2-0	2-6
Y	1 person	2-0	2-3
Y	2 or more persons	2-6	2-9
Z		1-10	2-0
E		9	1-2
Ap		3-6	4-6
B		1-0	1-2
CC		1-10	2-0

Variations in Shape

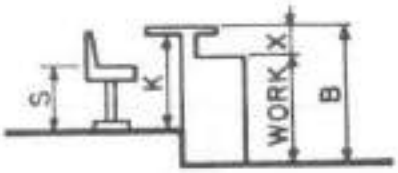
	Usual Minimum
A	2-6 to 3-0
B	2-6 to 4-6
C	2-9 to 5-6

dimensions in feet and inches

HEIGHTS



LEVEL FLOOR



DROPPED FLOOR

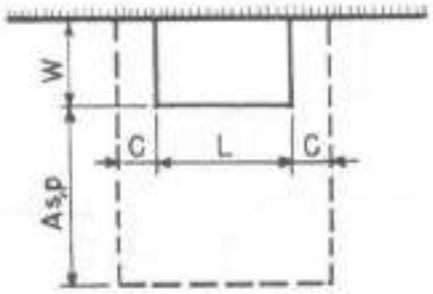
	Range of Dimensions		Range of Dimensions
B	2-6 to 3-6	X	1-2 to 1-3
BB	3-0 to 3-6	Work	2-4 to 2-7
H	7 to 10	S	1-6 to 2-6
K	2-4 to 2-8		

	Range of Dimensions
B	3-0 to 3-6
K	2-4 to 2-10
S	1-6 to 2-1
X	1-2 to 1-3
Work	2-4 to 2-8

Fig. 6 Food bars.

Figure 18 Food Bars (TSS)

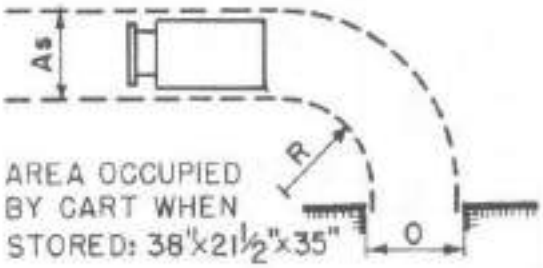
Serving Units



SERVING TABLE (& sideboard)

		Abs. Min.	Des. Min.	Comfortable
As	Service only	2-6	3-0	3-6
Ap	Public circ'n	2-0	2-6	3-0
C	Clearance to adjacent units	2-0	2-3	2-6
Length	}	30" x 20" x 42" is average		
Width				

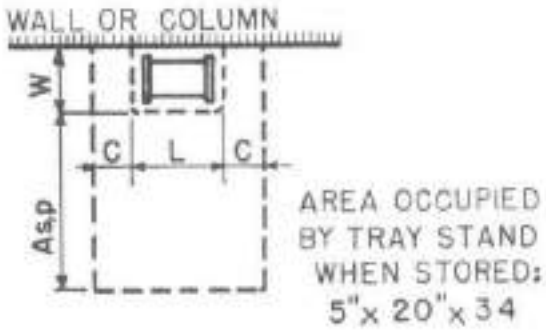
Display tables (hors d'oeuvres, etc.) usually 5'-0" x 2'-0"; [illegible] 3'-0" round.



SERVING CART

		Abs. Min.	Des. Min.
As	Service only	2-0	2-6
R	Turn radius	3-0	3-6
O	Door opening width	2-0	2-6

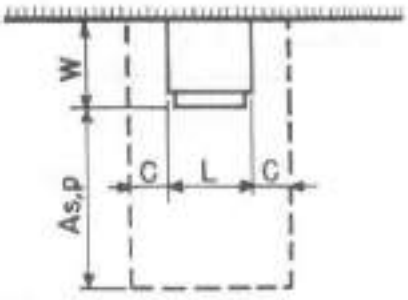
Approx. area when stored: 38" x 21½" x 35"



TRAY STAND

		Abs. Min.	Des. Min.	Comfortable
As	Service only	2-6	3-0	3-6
Ap	Public circ'n	2-0	2-6	3-0
C	Clearance to adjacent units	2-0	2-3	2-6
Length (tray)	}	Depends on type of restaurant		
Width (tray)				

Approx. area of stand, stored: 5" x 20" x 34"



WATER COOLER

		Abs. Min.	Des. Min.	Comfortable
As	Service only	2-6	3-0	3-6
Ap	Public circ'n	2-0	2-6	3-0
C	Clearance to adjacent units	Can overlap on top or front		
Length	}	Depends on capacity and if glass storage included		
Width				

Fig. 7 Serving units.

Figure 19 Serving Units (TSS)

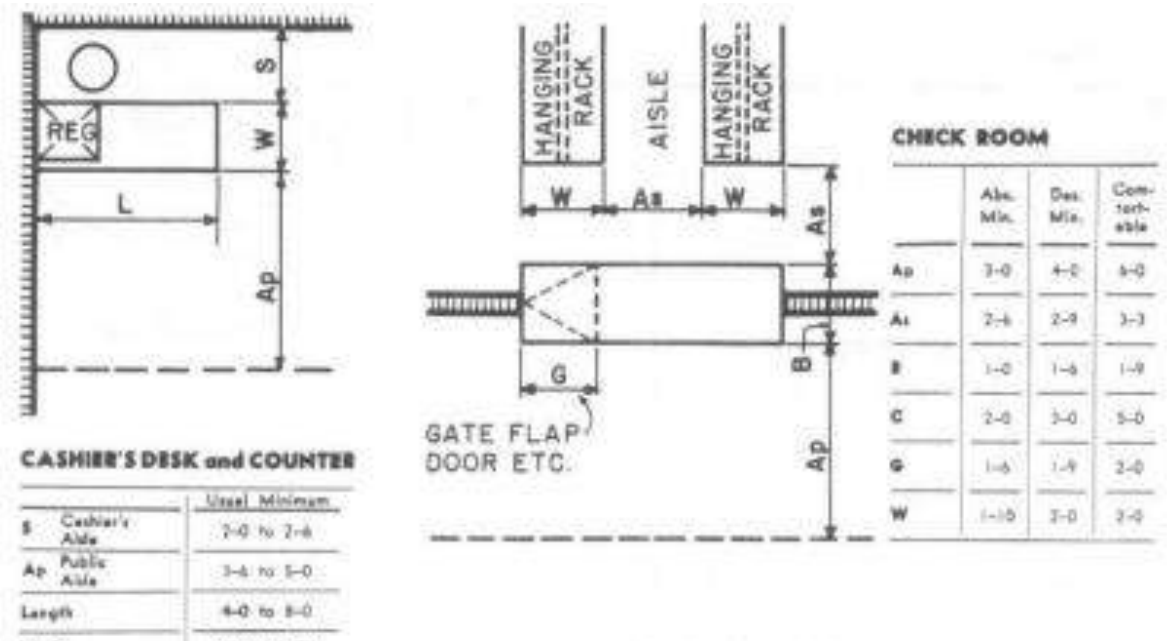


Figure 20 Nondining Spaces (TSS)

2.4.3 REFRIGERATED AND LOW TEMPERATURE STORAGE

- Allocation in preliminary planning may be as follows: 20 to 35 percent for meat (portion ready meats require '/ to '/, less space than carcass or wholesale cuts); 30 to 35 percent for fruits and vegetables; 20 to 25 percent for dairy products, including those in serving areas; 10 to 25 percent for frozen foods; and 5 to 10 percent for carry-over foods, salads, sandwich material, and bakery products. A requirement of 15 to 20 cu ft of refrigeration per 100 complete meals has also been used by some planners.
- Approximately 0.25 to 0.50 cu ft of refrigerated walk-in space was provided per meal served, and frozen walk-in space.
- A walk-in becomes feasible for an operation serving 300 to 400 meals per day, and refrigerated pass-throughs can be added when from 400 to500 meals are served per day
- Aisles of 30 in. are usually too narrow; 42 in. are desirable. If mobile equipment is moved in and out, aisles may have to be wider. Walk-ins that are 8 to 9 ft wide and about 10 ft long are minimum size. This allows for two storage are as30 in wide with a 3 to4 ft aisle.
- Doors should be a minimum of 42 in. wide to admit large crates and containers or be sized to suit mobile equipment.

2.4.4 SANITATION AREAS

- Dishwashing areas: The dimensions may be only 30 to 36 in. for a single tank machine, 60 to 72in.for sinks, or7 toover30 ft for a conveyor-type machine.

- Pot and pan section: When allowing space for the pot and pan section, 40 sqft is generally regarded as a minimum for the smallest unit. The free work aisle between the sinks and other equipment should be 4ftwide.The space allowance above the minimum will vary widely depending upon the type equipment used and the volume of pots and pans handled.

2.4.5 EMPLOYEE FACILITIES

- Facilities for employees may include locker and lounge area, toilets, showers, time-recording equipment, hand basins near work areas, and dining rooms. An employee entrance should be so located that the employees may go directly to the dressing rooms without passing through the dining room or production area.
- Locker and lounge area: Whether individual lockers or common cupboard, sufficient space should be allowed for personal clothing to hang without crowding or wrinkling.
- The depth from front to back should be a minimum of 20in.
- Suitable size for an employee lounge depends largely on scheduling of workers and the policies of individual establishments.
- A cotor day bed, 36in. by 6ft, should be provided in the women's room.
- Toilets and showers: They should be separated from food areas by a hallway or double entrance. Supply one wash bowl for every 8 to 10 workers, one toilet stool for every 12 to 15 women, and one urinal and one toilet stool for every15men.Toilet compartments measure approximately3by 41/ ,to 5 ft.
- Time recording management: Provide space for a recorder near and within view of the office. Wall hung card racks of sufficient capacity are recommended for the number of workers, both full and part time, who are likely to be employed during an accounting period. Estimated space for a clock recorder is approximately 18in.wideby12y.in.deepand18in.high, and a rack of 50 cards approximately1 1/2, by 2 1/2 by 34 ½ in.

2.4.6 GUEST FACILITIES

- The size of the area should be based on probable need for waiting, type of service, and number of persons likely to congregate at one time. If there is a lounge or hallway adjacent to the dining room, this may provide some waiting space.

2.4.7 CASHIER & COAT CHECKING

- Preferred location for the cashier's desk or counter, is on the right-hand side of the door when leaving, in order to avoid cross-traffic and resulting congestion.

Coat-checking

- Use of coat trees in dining areas is formed "necessary but never desirable. "These occupy approximately 20 by 20 in., are 72 in. high, and can accommodate 8 garments per costumer. Overshoe racks are considered undesirable; umbrella racks, desirable in check room.

2.5 TIME SAVER STANDARDS (BUILDING TYPES)-KITCHENS



Figure 23 Traffic movement through aisle side

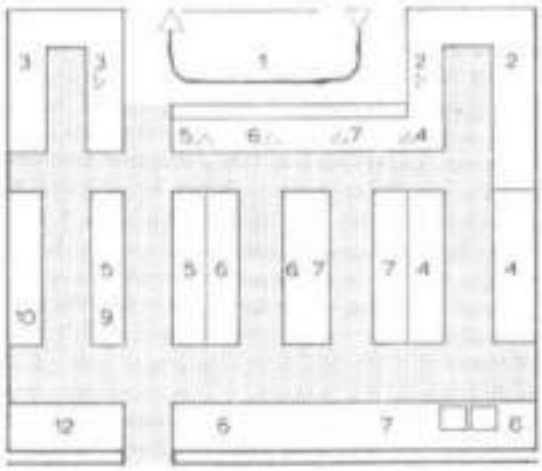


Fig. 1 Hotel or restaurant kitchen or French restaurant of high standard. Capacity for main meals: Hotel—100–200 persons / menu, 100 persons / à la carte. Restaurant—200–300 persons / mealtime from 11:30 to 1:30. Waiters' passageway: tangential. Kitchen: Linear arrangement with large installations in the rear. See Legend for explanation of numbers.

Figure 24 Kitchen for 100-200 Persons

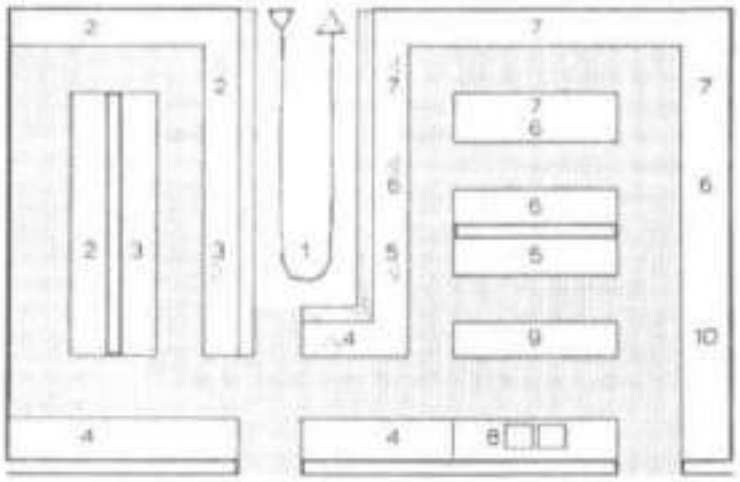


Fig. 2 Hotel or restaurant kitchen. Capacity: With this layout, a 200-seat restaurant will be able to handle three full sittings. This layout can also take care of a hotel with 100 guests and can also accommodate a restaurant open to the general public, an outdoor restaurant, and a private dining area for parties and conferences (altogether, 400 guests). Waiters' passageway: in the center. Kitchen: Linear arrangement with large installations in the rear. See Legend for explanation of numbers.

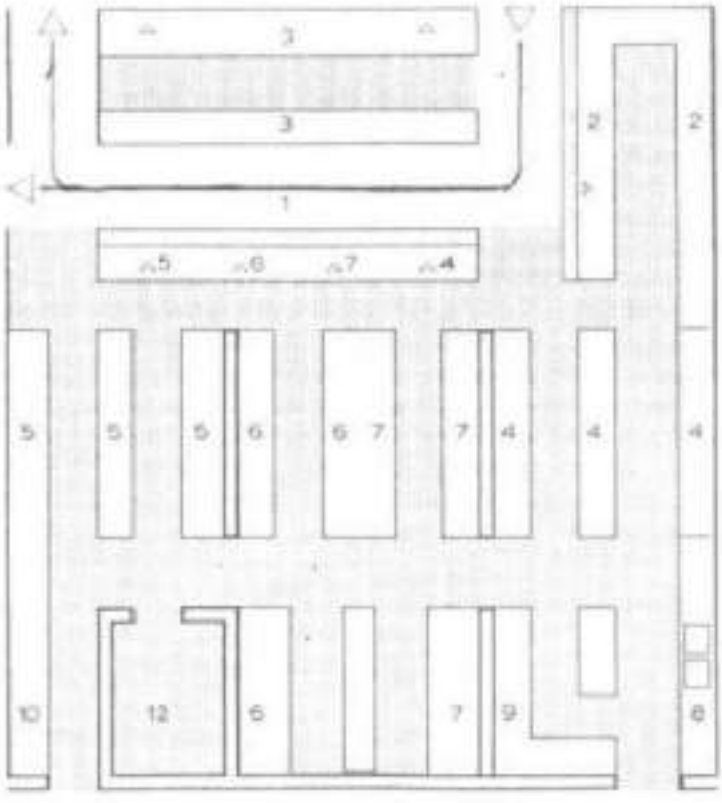


Fig. 3 Large restaurant kitchen for restaurants with many private party and conference facilities or with commissary and catering capacity for other businesses. Suitable also for large hotel with large restaurant for the general public. Capacity: 800–1,000 persons (e.g., 200 seats and fourfold reoccupancy). Waiters' passageway: tangential, with food buffet situated in front. The waiter has access to beverages and other items from the waiters' passageway in the kitchen and from the dining room side as well. The buffet looks over the dining rooms. Kitchen: Linear arrangement with fitted berths for large apparatus. See Legend for explanation of numbers.

Figure 25 Kitchen for 400 Persons (Up), and 800 persons (Down)

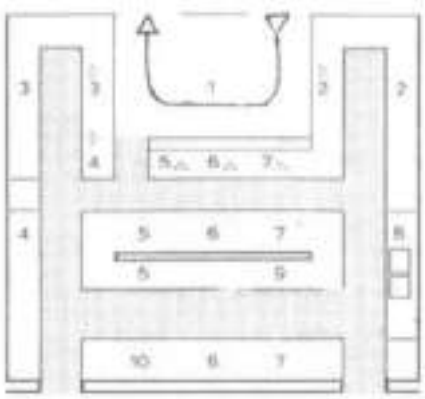


Figure 26 Kitchen for Excursion Restaurants

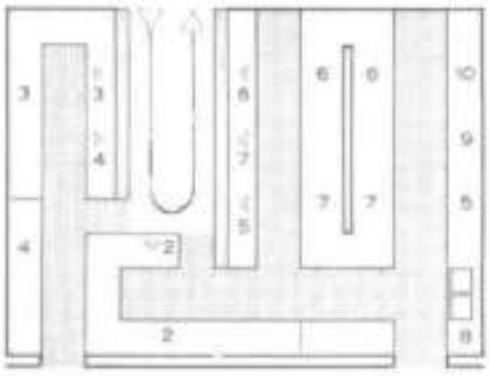


Figure 27 Kitchen for 600 persons, fourfold occupancy of 150 personsz

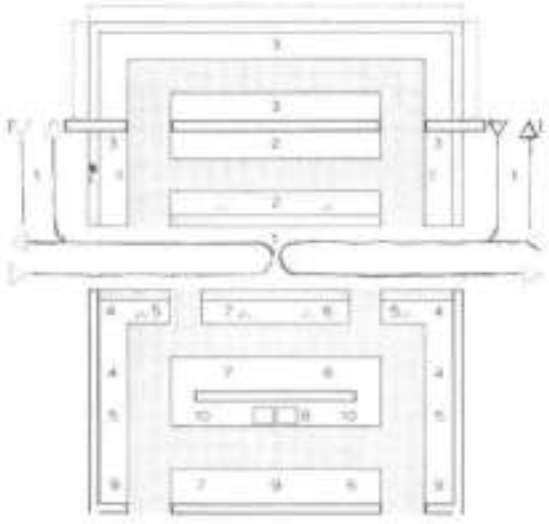


Figure 29 Kitchen for 1000 Persons

Legend for Restaurant and Hotel Kitchen Layouts (Figs. 1 to 6)

(Layouts: Scale 1:300)

1. Waiters' passageway—meal and beverage counter—dish return
2. Dishwashing area (dishes, glasses, silver)
3. Beverages—preparation and serving
4. Pastry (cookies, cakes, ice cream, dessert)—preparation and serving
5. Cold kitchen (cold appetizers, salad, fish)—preparation and serving
6. Warm kitchen—saucier/rôtisseur area (sauces, roasts, grill, fish)—preparation including large apparatus area and serving
7. Warm kitchen—entremétier area (soups, vegetables, entrées)—preparation including large apparatus area and serving
8. Pot and pan washing—casserolier area
9. Vegetable preparation
10. Meat preparation
11. Vegetable cold storage
12. Meat cold storage
13. Economat (dry storage)
14. Beverage cold storage
15. Linen, dish, cleaning supplies storage
16. Staple goods storage
17. Goods acceptance and control
18. Empty goods and garbage collecting rooms

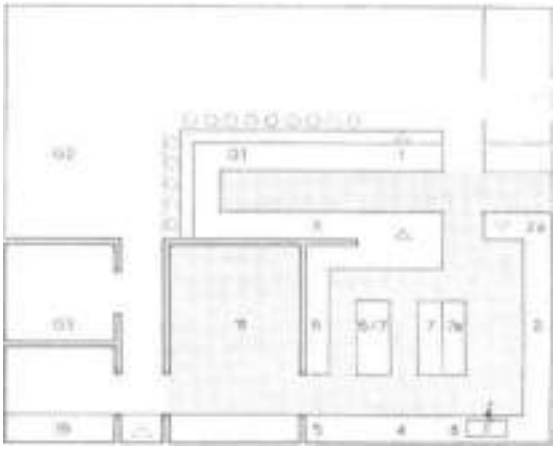


Figure 28 Snack Bar

Legend:

1. Meal and beverage serving counter
2. Dishwasher
2a. Dish return
3. Beverage buffet with mixer, toaster, ice-cream container, etc.
4. Oven and small pastry station
5. Garde-manger
6. Saucier / rôtisseur
6/7. Range
7. Entremétier
7a. Cooking vat and high-performance steam cooker
6/7b. Warming cupboard and warm serving counter with warming lamps
8. Pot and pan washing
11. Storage, empty goods, office; instead of cold storage rooms—cold storage and freezer cupboards
19. Employees' toilets
G1. Bar counter—also for meals
G2. Dining room with table seating
G3. Guests' toilets / make-up room / telephone booths

2.6. TIME SAVER STANDARDS (INTERIOR DESIGN)

2.6.1 ROOM ARRANGEMENTS

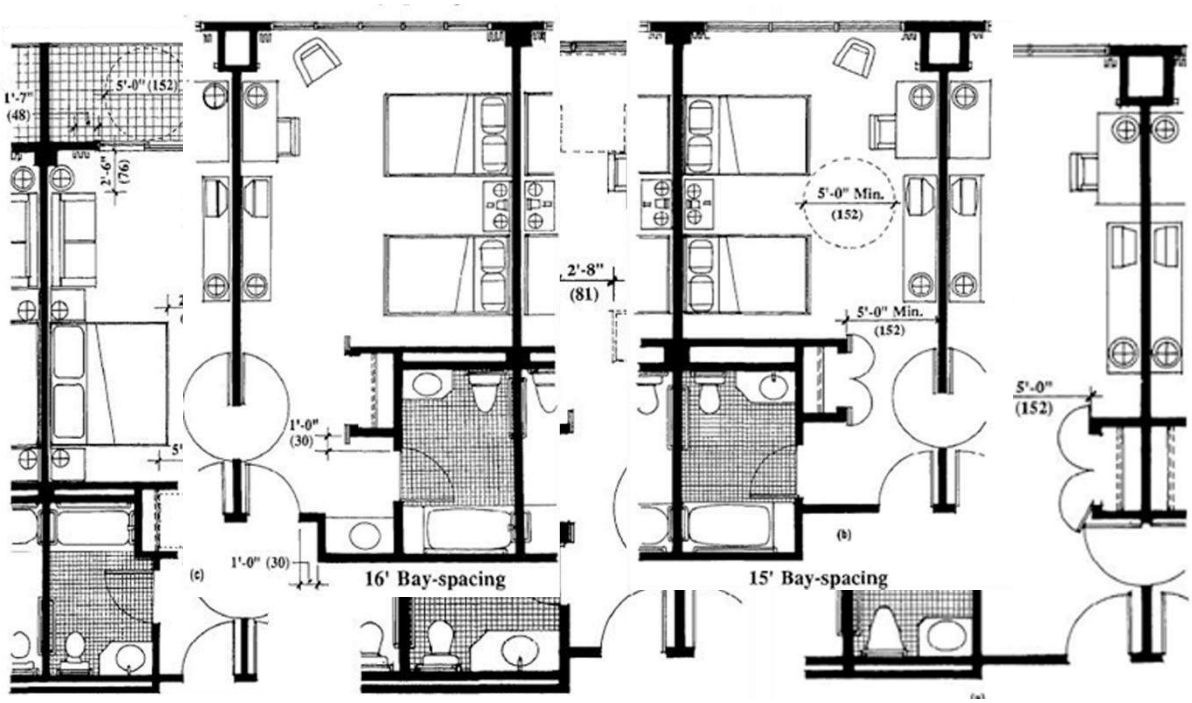


Figure 35 Room arrangements with 12, 13 & 14 ft bay spacing

Figure 36 Room Arrangements with 16 & 15 ft Bay Spacing

2.6.2 SNACK BAR

- Corner pub, cafe, restaurant: capacity 55-60 seats (2-4 place turnover at lunch time, 2 in evenings). Between lunch and evening meals: serving coffee, cakes and snacks. Kitchen: supplied predominantly with pre-prepared items. Storeroom need not be particularly large if deliveries are daily.

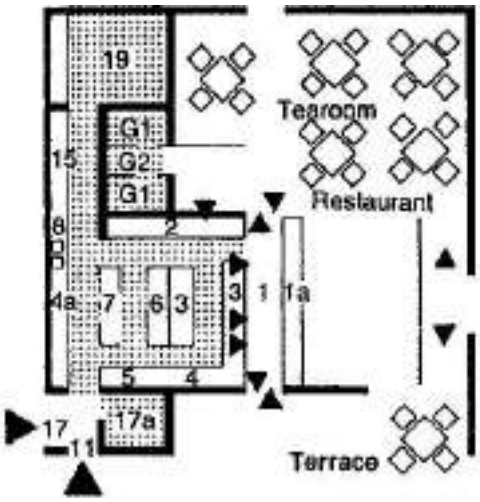


1	meals and drinks servery
2	dishwasher
2a	crockery returns
3	drinks bar with mixer, toaster, food containers etc.
4	oven for small pastry items
5	food storage
6	rotisserie
6/7	cooker rings
7a	water boiler and steam machine
8	pot and pan washer
11	stores/office; catering size refrigerators and freezers instead of cold store
19	staff toilets
G1	bar counter
G3	customer toilets

Figure 40 Snack Bar Arrangements

2.6.3 CAFE, RESTAURANT & KITCHEN

- With tea room. Urban business in heavy traffic location.



1	waiters' walkway
1a	service counter and cash tills
2	dishwasher
3	drinks bar with mixer, toaster, ice cream freezer etc.
4	pastry preparation
4a	pastry oven
5	sandwich preparation
6	reheating equipment (e.g. soup)
7	cooker rings
8	pot and pan washer
11	empties
15	linen store
17	deliveries and (a) store
19	staff toilets and cloakroom
G1	toilets
G2	telephone cubicle

Figure 39 Cafe-restaurant Arrangement

Cafe:

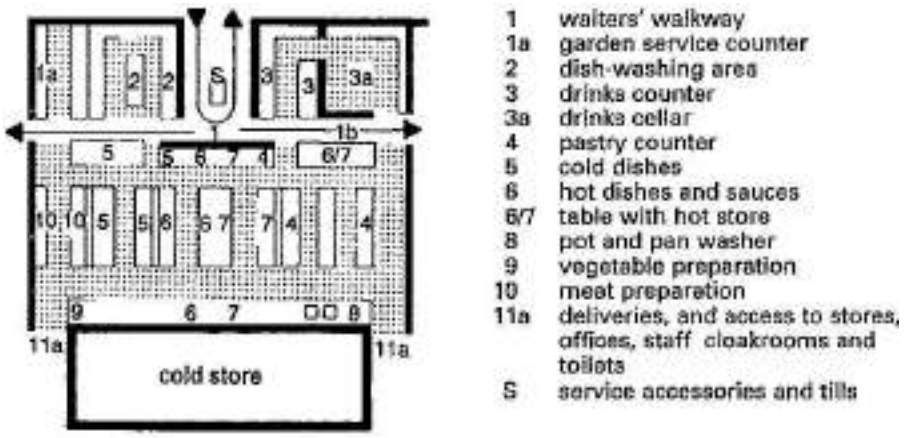
- Alcohol-free drinks, except bottled premium beer, liqueurs etc., patisserie and light food- cold and hot.

Tearoom:

- Alcohol-free drinks, patisserie, sandwiches. Capacity approx.150 seats, continuous operation 6.30-24.00. Kitchen: predominantly pre-prepared items, little storage.

Large hotel restaurant kitchen-

- Also, for large catering establishments with side rooms, external deliveries or production for outside companies. Capacity 800-1000 people. Waiters' walkway: in the center with special service in the garden or also bowling alley and direct access to the side rooms. Kitchen: cell system fronted by the backs of the large appliances.



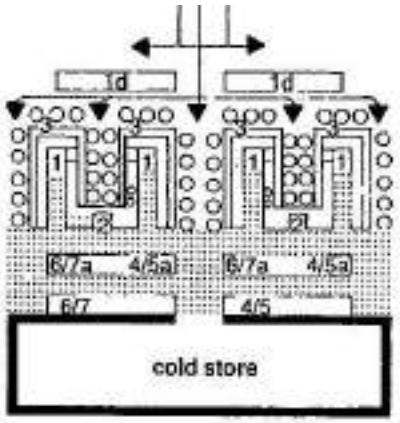
1 waiters' walkway
1a garden service counter
2 dish-washing area
3 drinks counter
3a drinks cellar
4 pastry counter
5 cold dishes
6 hot dishes and sauces
6/7 table with hot store
8 pot and pan washer
9 vegetable preparation
10 meat preparation
11a deliveries, and access to stores, offices, staff cloakrooms and toilets
S service accessories and tills

Figure 41 Large Hotel Restaurant Kitchen

Restaurant with buffet and vending machines:

- For fast midday meals in canteens, department stores and motorway services. Capacity 500 people/h. Kitchen: only warming of preprepared food stuffs, except for salad sand soups.

Self-service restaurant:



1 serving aisles in U-shaped counters
1d vending machines
2 link between two counters with covered dishwashers, operated from both sides, each with two rinsing basins
4/5 cold meal preparation
4/5a cold servery (salads, ices, desserts)
6/7 griddle, soup heater, water boiler etc.
6/7a hot servery (bain-marie, hotplates)

Figure 42 Restaurant with buffet and vending machine

- Suitable for department stores or attached to offices. Kitchen: no in house production. Outside delivery and preparation using deep frozen process.

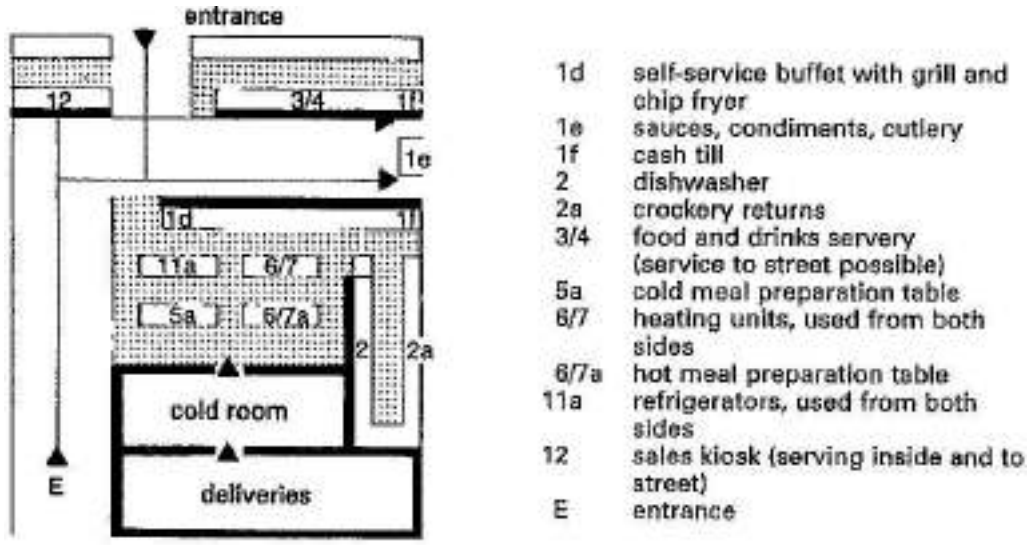


Figure 43 Self Service restaurant

Function and organization of the restaurant kitchen-

- The capacity of the kitchen is primarily dependent on the number of customer seats, customer expectations (type, extent and quality of the meals offered), the proportion of products freshly prepared from raw (in contrast to ready-prepared food) and the rate of customer turnover all day or at meal times (consumer frequency).
- In fast food restaurants the rule of thumb for seat changes is about1-3times per hour, in conventional restaurants about 2. In specialty and evening-based restaurants, the guests stay on average for1.3-2 hours.

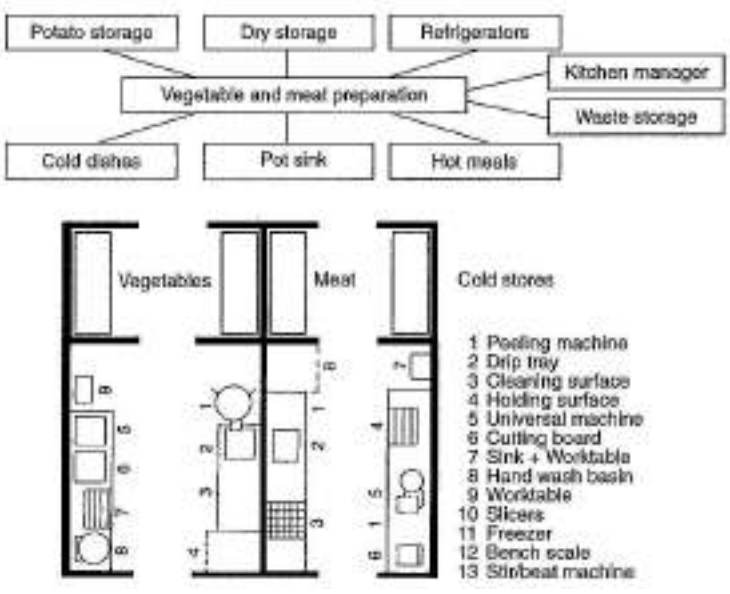


Figure 44 Separate preparation for Meat & vegetables

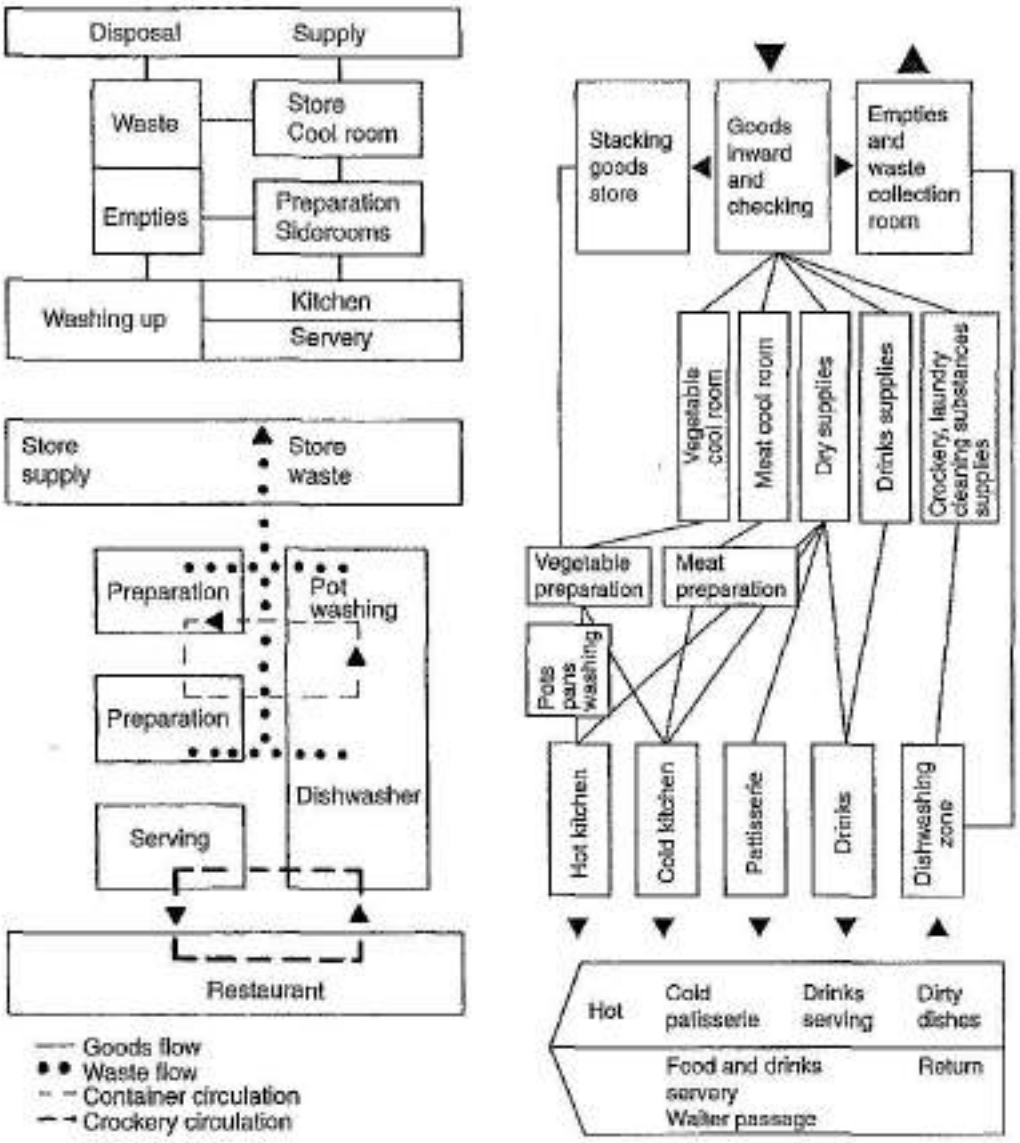


Figure 45 Restaurant Kitchen; Functions & Restaurant kitchen; Organisation

Percentage of total kitchen space requirement-

- Differentiated according to small, medium and large kitchens, floor area values for individual functions are be based on.
- Aisle widths in storage, preparation and production areas differ according to whether they are purely traffic routes or also overlap the service area. Working aisle widths should be 0.90-1.20 m, side traffic routes with (temporary) overlapping use 1.50-1.80 m and main traffic routes (transport and two-way through traffic) 2.10-3.30 m wide. For kitchen areas in small to medium restaurants, aisle widths of 1.00-1.50 m should be sufficient.

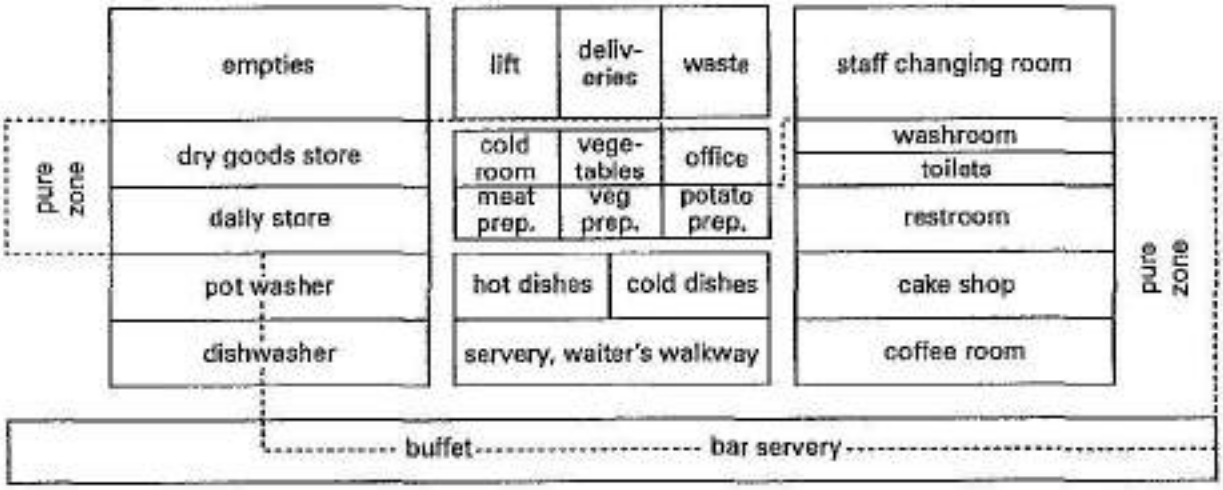
- Bistros, snack bars, small cafes - or specialty restaurants with 40-60 seats- are classified as small operations. Small to medium units (70-1 00 places) require on the other hand carefully zoned and fully equipped kitchen facilities. Large businesses (service areas, fast food restaurants, large hotel kitchens) achieve considerably higher place numbers, often with an integrated eating bar or selfservice areas.

Table 9 Kitchen Areas: space required (sqm/seat)

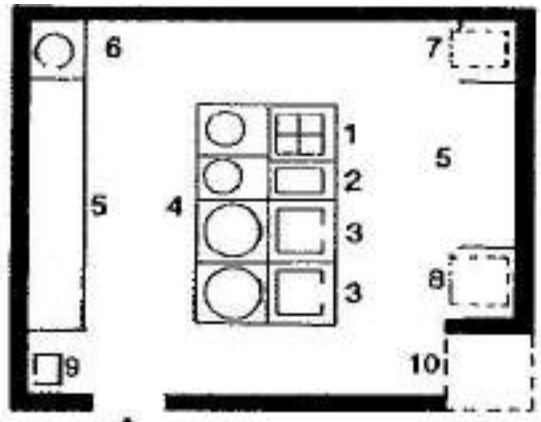
Seats	80	120	200
goods inward	0.05–0.075	0.05–0.067	0.05–0.06
empties	0.05–0.075	0.05–0.067	0.05–0.06
waste/rubbish	0.05–0.075	0.03–0.050	0.03–0.04
delivery/disposal	0.15–0.225	0.13–0.183	0.13–0.16
cold room meat	0.05–0.075	0.05–0.067	0.04–0.05
cold room fruit and vegetables	0.05–0.075	0.05–0.067	0.04–0.05
cold room dairy products	fridge	0.03–0.05	0.03–0.05
cold room cold service	fridge	fridge	0.02–0.03
cool room drinks	fridge	fridge	0.05–0.07
freezer room	0.05–0.075	0.05–0.067	0.06–0.08
cooled goods delivery	0.15–0.225	0.183–0.25	0.24–0.32
store dry goods	0.15–0.175	0.117–0.13	0.09–0.1
store drinks	0.075–0.1	0.1–0.117	0.08–0.1
store non-food	0.075–0.1	0.067–0.083	0.07–0.08
cooled goods storage	0.3–0.375	0.283–0.33	0.24–0.28
vegetable preparation	0.075–0.1	0.067–0.083	0.04–0.05
meat preparation	0.075–0.1	0.05–0.067	0.04–0.05
fish/poultry preparation	0	0.03–0.05	0.03–0.04
hot kitchen	0.325–0.35	0.217–0.23	0.16–0.18
cold kitchen	0	0.05–0.067	0.04–0.05
patisserie	0	0	0.04–0.05
pot washing	0.05–0.075	0.05–0.067	0.03–0.04
office kitchen manager	0	0	0.03–0.04
kitchen facilities	0.525–0.625	0.47–0.567	0.41–0.5
dishwasher	0.1–0.125	0.1–0.117	0.09–0.1
service/waiter office	0.075–0.1	0.083–0.1	0.07–0.08
dishwasher/office	0.175–0.225	0.183–0.217	0.16–0.18
= Total	1.3–1.675	1.25–1.55	1.18–1.44

Table 10 Basis for dimensions and space requirements

Area	Proportion (%)
goods delivery including inspection and waste storage	10
storage in freezer, cold and dry rooms	20
daily store	
vegetable and salad preparation area	2
cold dishes, desserts	8
patisseries/cakes	8
meat preparation	2
cooking area	8
washing area	10
traffic area	17
staff rooms and office	15
Total	100

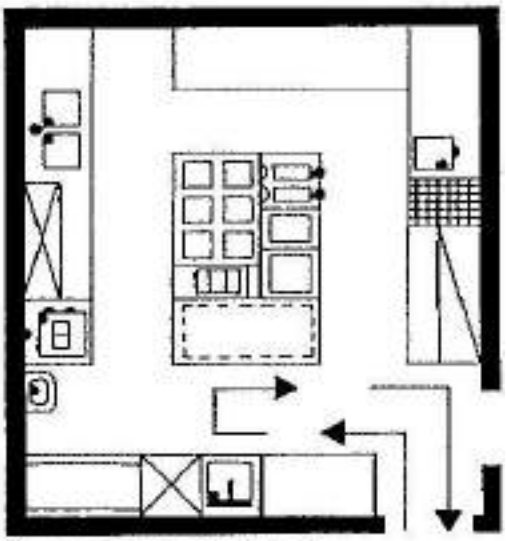


5 Kitchen areas: classification and relationships of functional areas in clean and unclean zones (if earth-covered vegetables are prepared, this must take place in a separate part of the unclean area!)



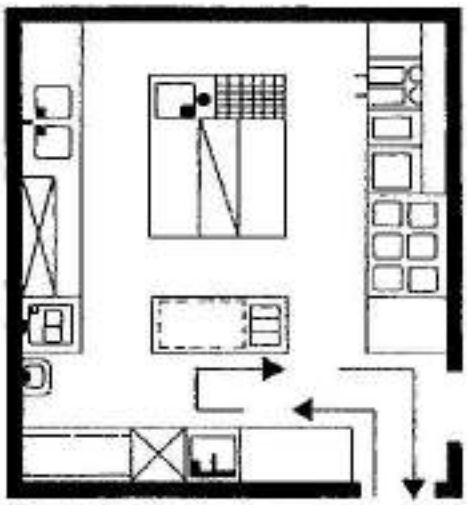
1 cooker
2 deep fat fryer
3 griddle
4 water boiler
5 work surface
6 cooker
7 double-deck oven
8 convectomat
9 hand basin
10 storage area

1 Basic organisation of the hot kitchen → **2** –**3**



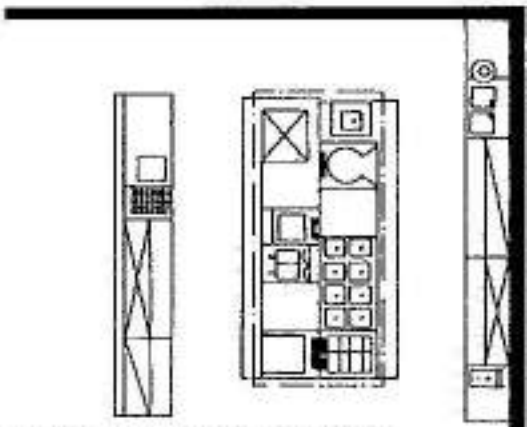
1. production in block

2 Kitchen for restaurant with 60–100 places



2. production in line

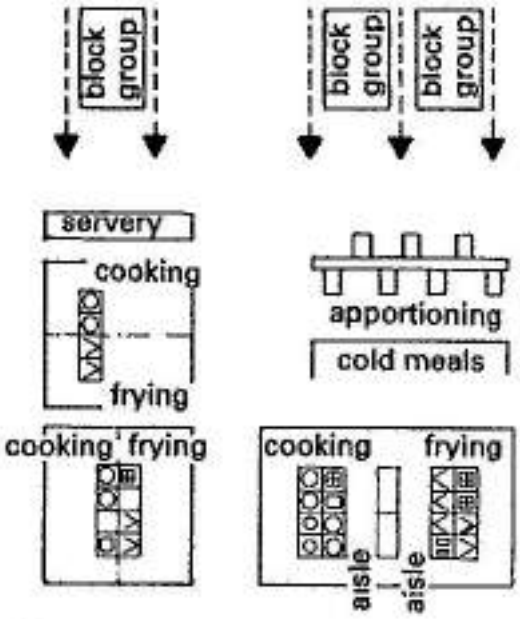
3 Kitchen for restaurant with 60–100 places



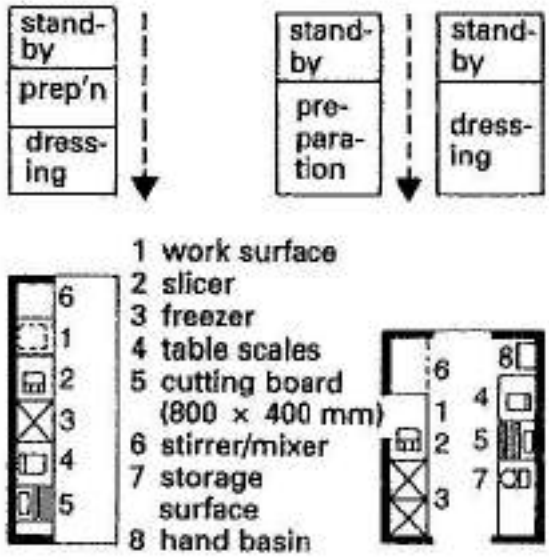
cooking: cooker, boiler (80 l), work surface, eight-ring hob, two ovens, bain-marie, hot cupboard
frying: griddle, work surface, twin deep fat fryer, frying pan, hot-air oven with table

4 Restaurant kitchen for 150–200 meals

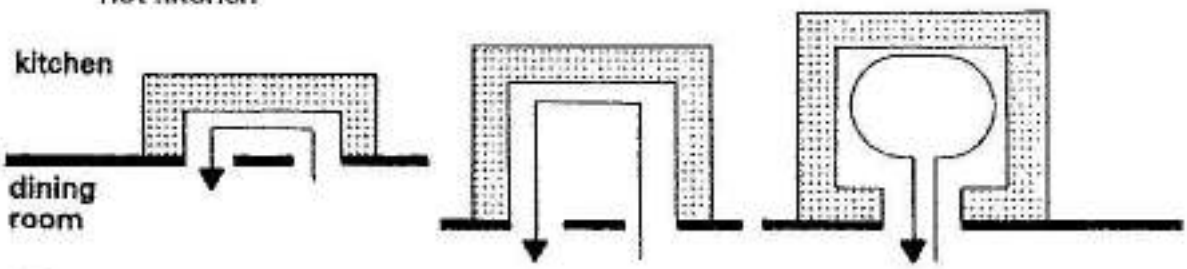
Figure 47 Funtionality of Kitchen Areas



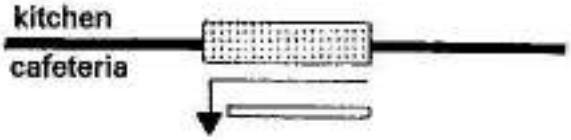
5 Functions and organisation of hot kitchen



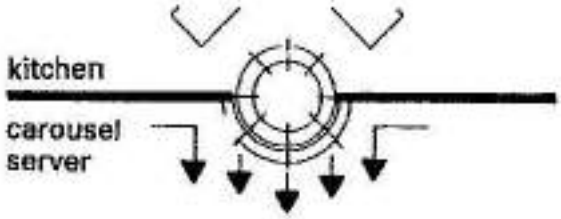
6 Organisation of cold kitchen



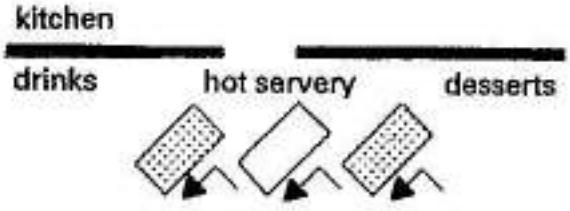
7 Servery, waiter walkway



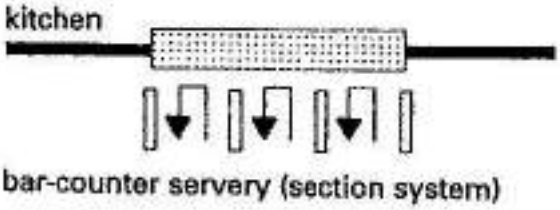
8 Self-service restaurant



9 Self-service restaurant



10 Free-flow restaurant



11 Self-service restaurant

2.6.4 BASIC SCHEMES OF HOTEL

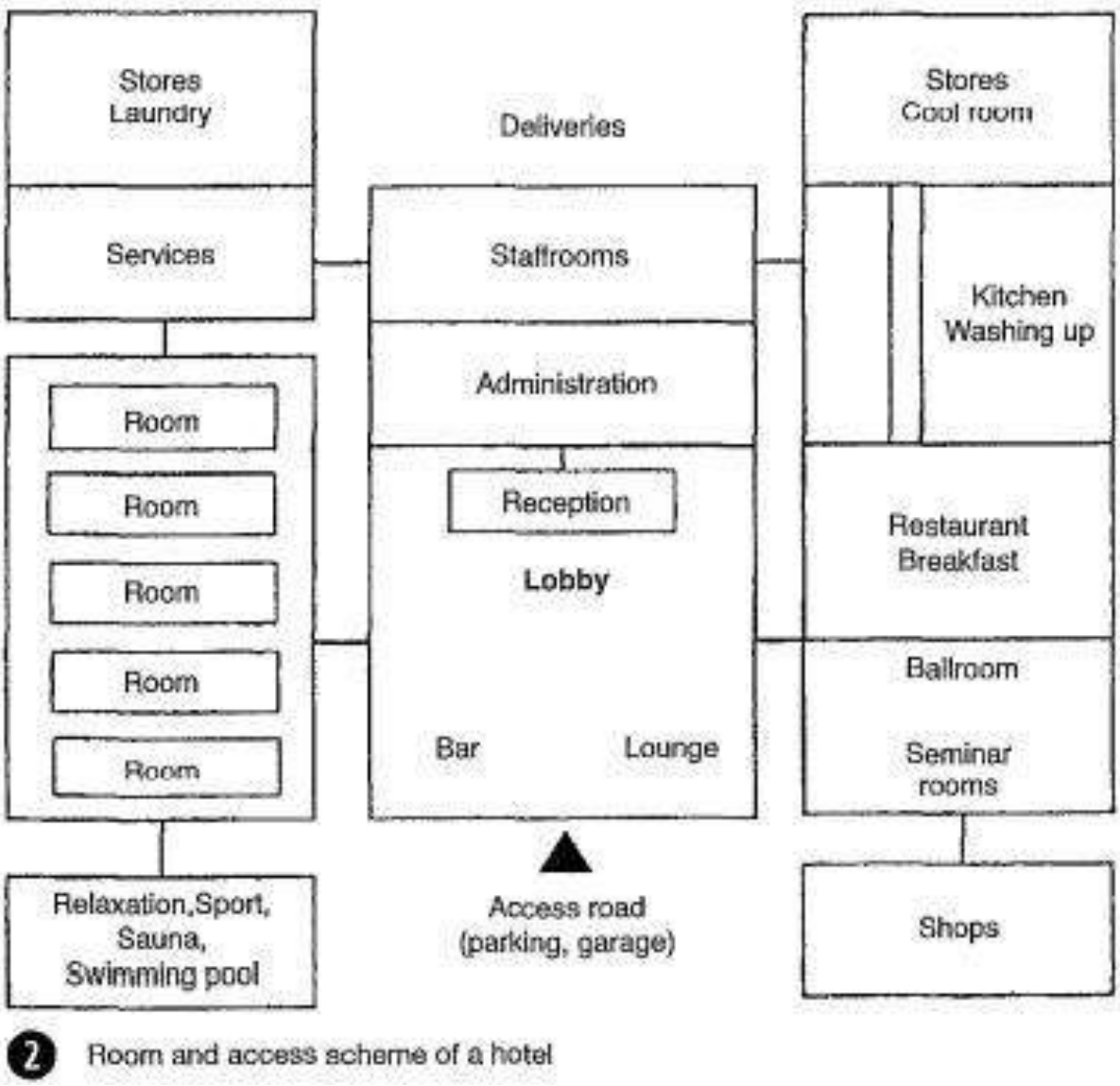


Figure 49 Route relationship between spaces

The percentages of hotels' surface areas required for the various functions are shown below

Table 11 Percentage of hotel area required

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	m^2/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

5 Stars (Luxury): as before, but single room 18m2 , double room 26m2, (minimum size, see above), 2% of the hotel rooms as suites (at least two), each with an armchair/sofa per bed, additional washbasin in double rooms and suites, additional colour television in suites, reception lobby.

To be able to eat in comfort, one person requires a table area around 60 cm wide and 30-40 cm deep This provides sufficient distance between adjacent diners. Although an additional 20 cm space in the centre for dishes and large bowls is sometimes desirable, an overall width of 80-85 cm is suitable for a dining table. If the food is served on plates, then 70 cm is sufficient, and for fast food 60 cm table depth.

Distance between table and wall greater than equal to 75 cm because the chair alone requires a space of 50 cm. If the space between table and wall is also used for access, the distance should be greater than 100cm. Round tables need a little more space, a difference of up to50cm.

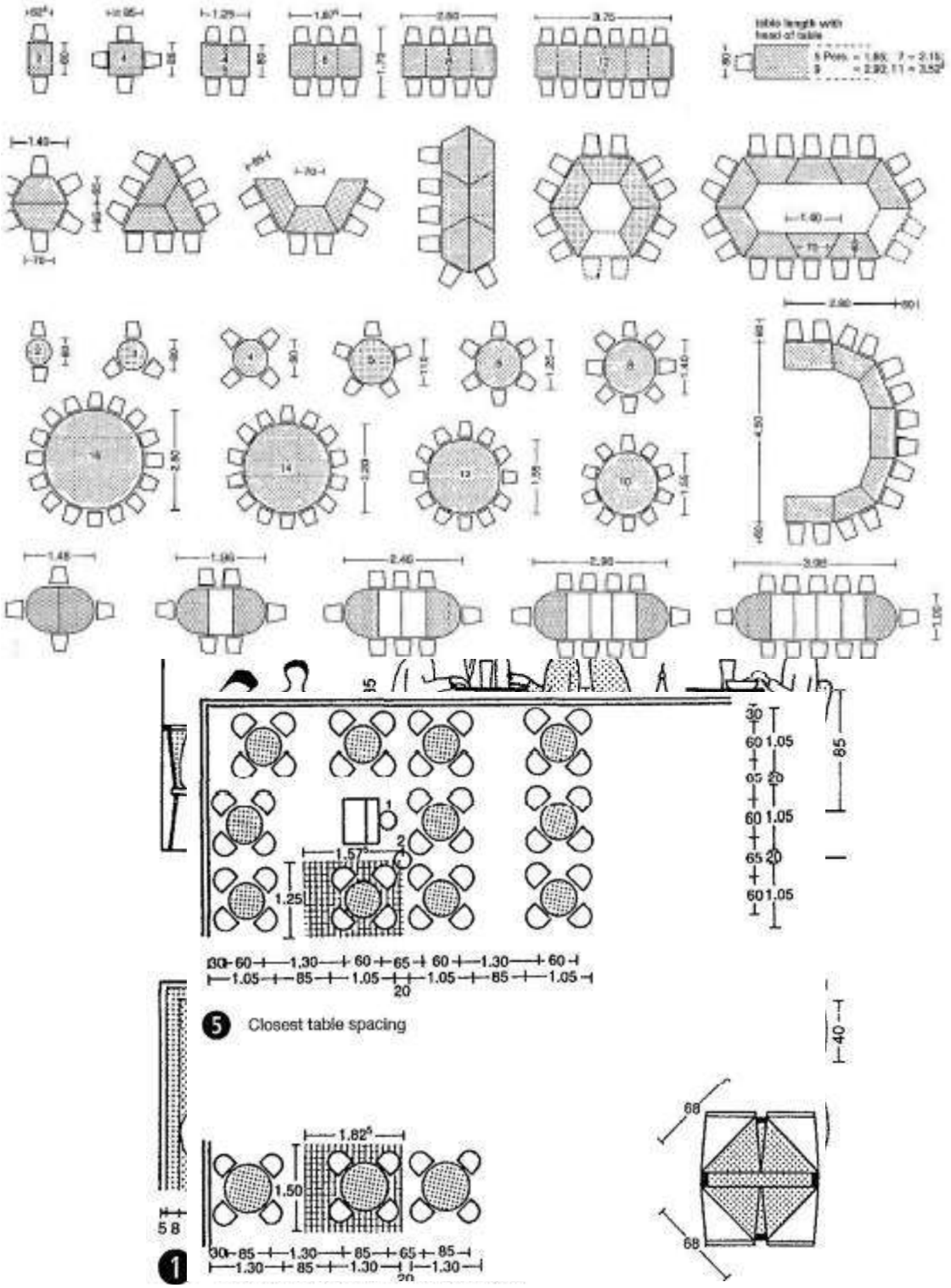


Figure 50 Space required for waiter and diner

Figure 51 Arrangements of dining tables

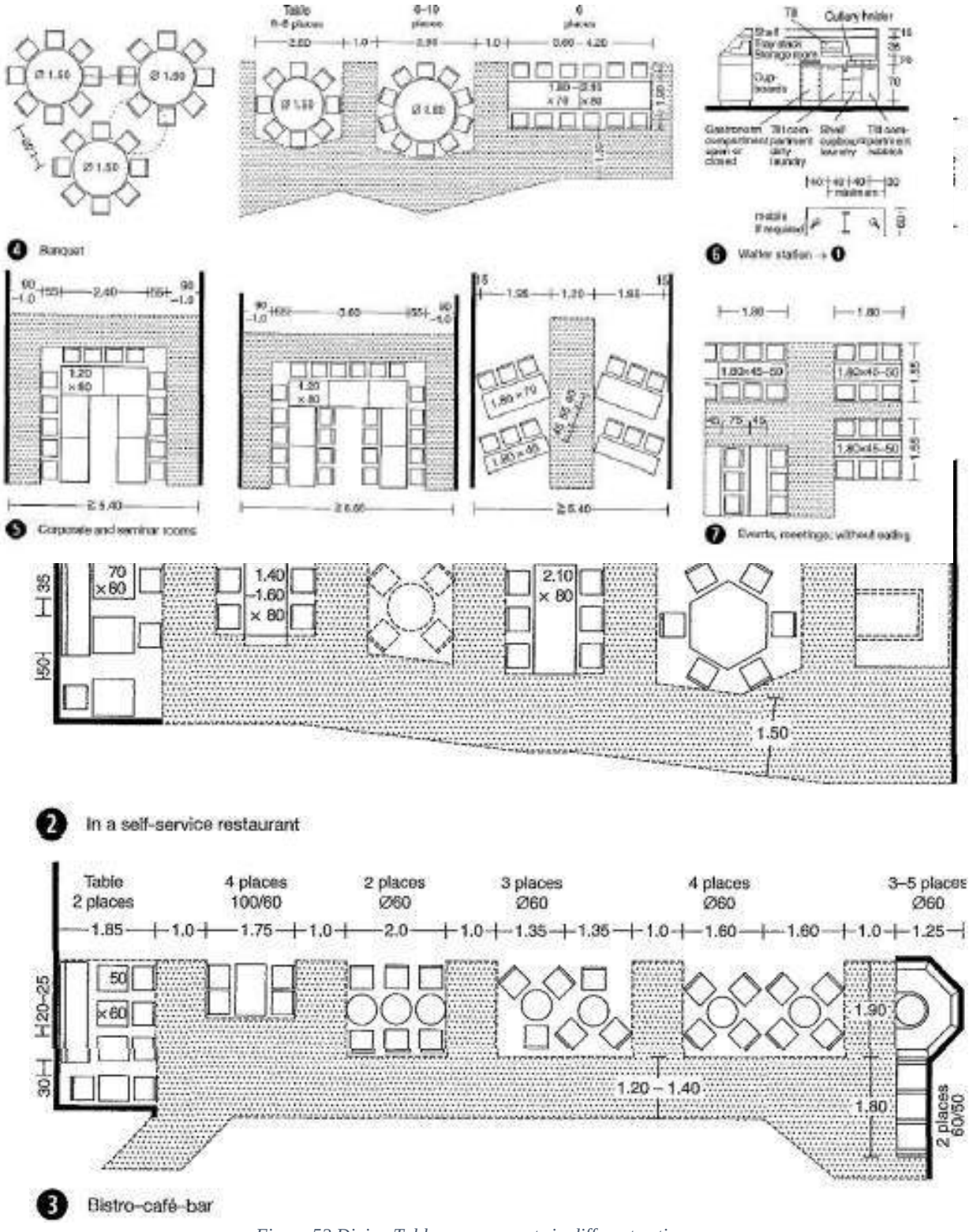


Figure 52 Dining Table arrangements in different eating spaces

Tables and chairs are kept as small as possible and tightly grouped.

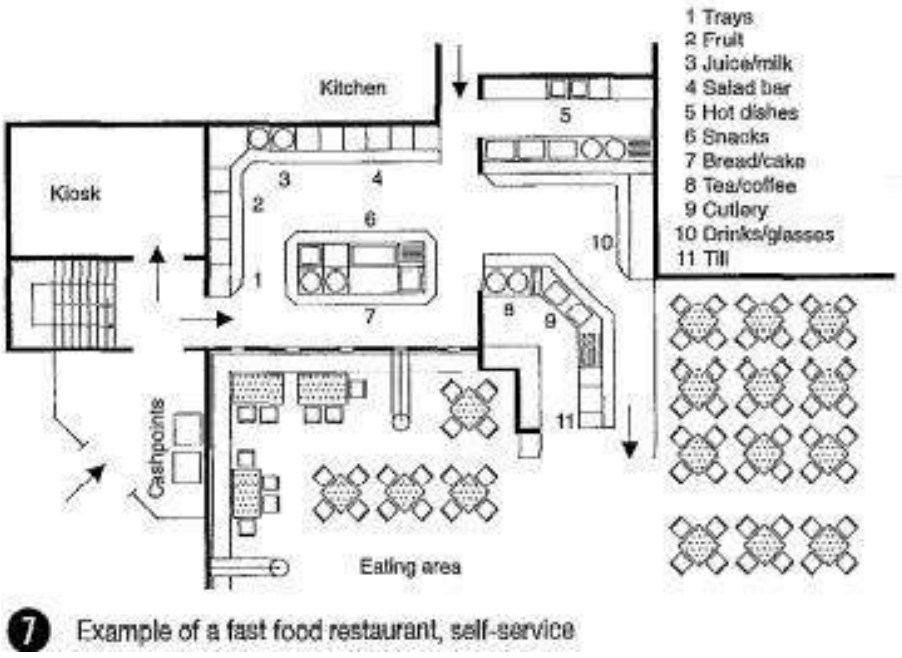


Figure 53 Dining table arrangements in different eating spaces with an example of self-service restaurant

2.7. URBAN AND REGIONAL DEVELOPMENT PLANS FORMULATION AND IMPLEMENTATION GUIDELINES (URDPFI)

2.7.1 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:

Table 12 Means of Access (NBC, 2005)

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.

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.

2.7.2 PARKING

Table 13 ECS requirement

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				
8.	Above 4000 & upto 10000	9	6	6	6	6
9.	Above 10000	15	9	9	9	9

Source: UDPFI Guidelines 1996.

2.7.3 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 decided after taking into account the provisions of National Housing Policy and Urban Land (Ceiling and regulation) Act. The setbacks, if necessary, may be changed depending upon the local situations and specified in the Development Plans and Building byelaws.

Table 14 Minimum setbacks

2.7.4 SETBACKS WITH RESPECT TO ABUTTING ROAD WIDTH

Front Setback

Table 15 Front setback w.r.t. abutting road width

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	

***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

Table 16 Side & Rare setback w.r.t. abutting road width

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.	33	11	
9.	36	12	
10.	45	13	
11.	50	14	
12.	55 and above	16	

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.

2.7.5 GORUND COVERAGE & FAR

Table 17 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	9	
2.	Neighbourhood Centre	30	35	100	100	15	9	
3.	Community Centre	25	30	100	100	26	15	
4.	District Centre	35	35	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.

2.7.6 WATER SUPPLY

The CPHEEO Manual recommends fire-fighting water demand as a function of population, i.e. water demand for fire-fighting purpose = 100√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.

Table 18 Water supply requirement in LCD

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.

2.7.7 FIRE FIGHTING

The CPHEEO Manual recommends fire-fighting water demand as a function of population, ie. water demand for fire-fighting purpose = 100√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

2.7.8 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:

Table 19 Waste generation

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

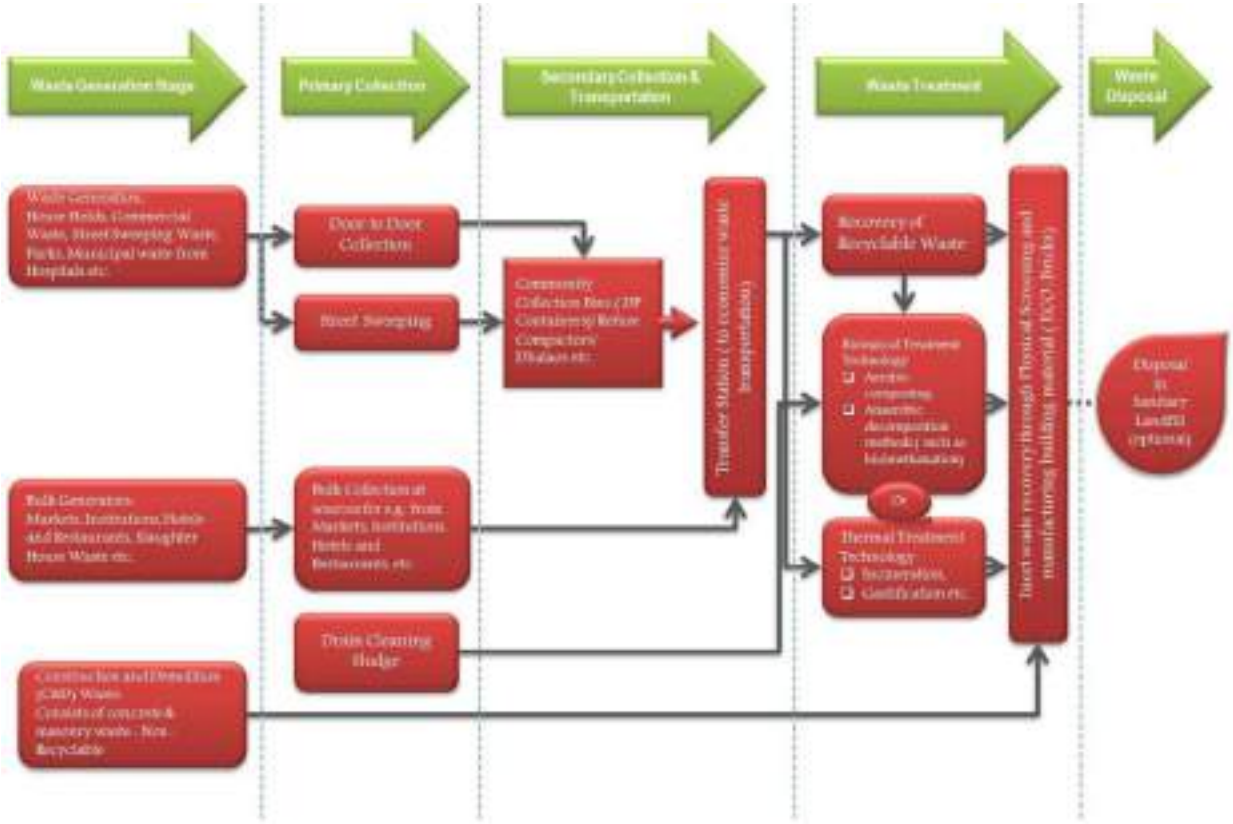


Figure 54 Flow diagram of waste disposal

2.8 INDIAN STANDARD CODE FOR HOTELS AND RESTAURANTS

2.8.1 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.

2.8.2 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 period when least amount of food and drink is exposed.

2.8.3 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.

2.8.4 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.

2.8.5 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

2.8.6 LIGHTING

Table 20 Recommended values of illumination – IS Codes

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.

2.8.7 VENTILATION

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

Table 21 Ventilation Requirements - IS Codes

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

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

Table 22 Water requirement in hotel

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.

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.

2.8.9 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 23 Drainage & Sanitation fitments in hotels- IS Codes

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 those parts 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.

Table 24 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

2.8.10 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

2.8.11 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

Table 25 Storage temperatures for food

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.

2.8.12 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

2.8.13 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.

Table 26 Classification of structural components – IS Codes

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

2.9 ANDHRA PRADESH BUILDING BYELAWS - 2017

2.9.1 FLOOR AREA RATIO (FAR) & HEIGHT RESTRICTIONS

FAR depends on road width:

- **9–12 m** road width: FAR = **2.25**
- **12–18 m**: FAR = **2.50**
- **>18 m**: FAR = **3.00**

Height restriction is linked to setbacks and road width. No fixed height cap unless near an airport or restricted zone.

Buildings >15 m must comply with fire safety and open space around = **1/3rd of height**.

2.9.2 SETBACKS & BUILT-UP AREA

For **plots ≥1000 sqm**:

Table 27 Setbacks

Height of Building	Front	Rear	Side-1	Side-2

≤15 m	4.5 m	3 m	3 m	3 m
>15–18 m	6 m	4.5 m	4.5 m	4.5 m
>18 m	7.5 m	6 m	6 m	6 m

Ground coverage: 50–60% allowed.

Built-up Area: Regulated by FAR × plot size.

2.9.3 BASEMENT AND PARKING

Up to **2 basements** permitted — restricted to parking, MEP, storage (non-habitable).

Parking norms:

- 1 car per 3 guest rooms
- 1 car per 100 sqm banquet area
- 1 two-wheeler per 5 rooms
- Dedicated loading/unloading bay

Ramps: minimum 3.6 m width; slope max 1:8.

2.9.4 FIRE SAFETY

- Fire tender access: **6 m road** width
- Fire lifts and refuge floors (every 24 m)
- Wet risers, hose reels, hydrants, sprinklers
- Smoke detection, fire escapes, emergency lighting
- Fire-resistant materials (Class I) for ceilings, partitions
- Fire drill plan, emergency exit signage
- Annual renewal of fire safety clearance for hotels ≥15 m or above 150 beds

2.9.5 WATER SUPPLY

NBC Part IX Section 1: Specifies per capita water use: hotels may assume ~180 L/day per occupant, plus additional for banquet/restaurant use

- Plumbing systems: flush + potable water supply, hot water, backflow prevention, maintenance access
- Adequate underground + overhead storage based on fixture units and peak demand

- Dual plumbing or reclaimed water reuse encouraged
  AP Rules (Page 14–15): Rainwater harvesting mandatory; recharge pits/trenches for paved areas and rooftops

2.9.6 BANQUET AND RESTAURANT

Banquet halls should:

- Have **minimum ceiling height: 3.6 m**
- **Fire exit doors** at both ends
- Provide **acoustic insulation**
- Attached **pantry and service corridor**

Must plan **dedicated parking**

Ventilation, HVAC, and crowd control layout mandatory

Kitchen: **mechanical ventilation (exhaust hood, grease traps)**, non-combustible finishes, fire-rated walls, slip-resistant flooring

Wastewater: grease interceptors before STP; FSSAI compliance for kitchen hygiene

2.9.7 HVAC REQUIREMENTS

Source: NBC Guidelines (AP Rules indirect reference)

- Centralized air conditioning recommended for:
  - Guest rooms
  - Banquets
  - Restaurant
- **Outdoor Units (OUDs)** should be on terrace or ventilated shafts
- Provide:
  - **Fresh air supply**
  - **Smoke extraction** in corridors/kitchens
  - Duct insulation and acoustic control
- No equipment to discharge hot air into open corridors or adjacent properties

2.9.8 LIGHTING & ELECTRICAL

Source: NBC referenced

- Minimum 300 lux in working/restaurant spaces
- Use of **LED lighting mandatory** in common/public areas
- Solar panels encouraged for:

- Corridor lighting
- Water heating

- Emergency lights required at:
  - Exits
  - Fire staircases
  - Corridors

2.9.9 BACK-OF-HOUSE (BOH) & SERVICES

Dedicated circulation for staff/service areas

Facilities include staff lockers/showers, laundry room, housekeeping store, service lifts, waste management

Service corridor width: ≥1.5 m

Waste segregation rooms per SWM rules; direct access for collection and handling

Table 28 AP building byelaws

Parameter	**Regulation**
Zoning	CRZ-II (urban, developed area) – permits hotels on landward side of existing road with CRZ clearance
FAR (Floor Area Ratio)	Based on abutting road width: • 9–12 m road: 2.25 • 12–18 m: 2.50 • >18 m: 3.00
Height Restriction	No specific CRZ height limit in CRZ-II, but: • Must follow **VMRDA/AP Building Rules** • Fire clearance mandatory if **>18 m** • Airports/Airstrip nearby may impose further limits
Setbacks *(for plots ≥1000 sqm)*	For height **≤15 m**: Front – 4.5 m; Sides/Rear – 3 m For **15–18 m**: Front – 6 m; Sides/Rear – 4.5 m For **>18 m**: Front – 7.5 m; Sides/Rear – 6 m For **>21 m**: Open space = **1/3rd of building height**
Ground Coverage	Max 50–60% depending on setbacks and height

Basement	Allowed only for: • Parking• Services/utilities (DG, STP, HVAC) • **No habitable rooms** allowed • Maximum 2 basements permitted
Parking Requirements	• 1 car/3 rooms • 1 car/100 sqm of banquet area • 1 two-wheeler/5 rooms • Service vehicle parking as per site plan
Fire Safety (mandatory if >18 m height)	• 6 m wide fire tender path • Fire lift • Wet riser, hose reel, hydrants • Minimum 2 staircases • Refuge area at every 24 m
Rainwater Harvesting	Mandatory for all plots >300 sqm
STP (Sewage Treatment Plant)	Required for hotels (all sizes)
Green/Open Space	Minimum 10% of site area as soft landscaping
Access Road Width	Minimum 12 m road width recommended for hotel use; more if building is high-rise

2.10 COASTAL REGION ZONE-NORMS II

II. CRZ-II,-

(i) buildings shall be permitted only on the landward side of the existing road, or on the landward side of existing authorized structures;

(ii) [**buildings permitted on the landward side of the existing and proposed roads or existing authorised structures shall be subject to the existing local town and country planning regulations as modified from time to time, except the Floor Space Index or Floor Area Ratio, which shall be as per 1991 level :**
Provided that no permission for construction of buildings shall be given on landward side of any new roads which are constructed on the seaward side of an existing road :Provided further that the construction in CRZ-II area of Goa, Kerala and Mumbai shall be governed by the provisions of Clause V of paragraph 8."][47]

(iii) reconstruction of authorized building to be permitted subject with the existing Floor Space Index or Floor Area Ratio Norms and without change in present use;

(iv) facilities for receipt and storage of petroleum products and liquefied natural gas as specified in Annexure-II appended to this notification and facilities for regasification of Liquefied Natural Gas subject to the conditions as mentioned in sub-paragraph (ii) of paragraph 3;

(v) desalination plants and associated facilities;

(vi) storage of non-hazardous cargo, such as edible oil, fertilizers and food grain in notified ports;

(vii) facilities for generating power by non-conventional power sources and associated facilities;

Table 29 CRZ Norms-II

Regulation	**CRZ-II Norm**
HTL Buffer Zone	Must obtain HTL demarcation from **authorized agency** (like NCSCM or MoEFCC certified consultants).
FSI/FAR	As per **local building by-laws** (GVMC/VMRDA norms). CRZ does **not restrict FAR** in CRZ-II.
Height Restriction	As per **local development control rules (DCR)**.
Basement	Allowed only for **parking and services**, not habitable use.
Sewage Treatment	Mandatory **STP (Sewage Treatment Plant)** within the premises. No direct discharge into sea.
Solid Waste Management	Must follow **SWM Rules 2016**, and provide an in-house waste segregation system.
Rainwater Harvesting	Compulsory for buildings >1000 sqm.

CHAPTER III

SITE ANALYSIS

3.1 ABOUT THE CITY- VISHAKAPATNAM

3.1.1 INTRODUCTION

Visakhapatnam, also known as Vizag, is the largest city and financial capital of Andhra Pradesh. Nestled between the Eastern Ghats and the Bay of Bengal, the city is widely recognized for its natural harbours, scenic beaches, and strategic maritime infrastructure. As a thriving urban center and key node in India's east coast economic corridor, Visakhapatnam plays a pivotal role in trade, tourism, defense, and information technology.

The city is not only the headquarters of the Eastern Naval Command but also a rapidly developing smart city under the **Smart Cities Mission**. Its combination of industrial, port-based economy and ecological richness makes it a dynamic destination for both business and leisure.



Figure 55 Group photograph at site

3.1.2 TOURISM SIGNIFICANCE

Visakhapatnam has emerged as one of the most popular tourist destinations on India's east coast. It is known for its diverse attractions ranging from serene beaches and hilltops to cultural sites and modern recreational parks.

Key Tourist Attractions:

- **RK Beach (Ramakrishna Beach)** – the city's most visited beachfront promenade.
- **Kailasagiri Hill Park** – a hilltop attraction with panoramic sea views, ropeway access, and religious sculptures.
- **Submarine Museum (INS Kurusura)** – India's first museum inside a decommissioned submarine.
- **Yarada Beach** – a pristine, lesser-crowded beach surrounded by hills.
- **Simhachalam Temple** – an ancient Hindu temple with Chola and Kalinga architectural elements.
- **Borra Caves and Araku Valley** – popular day-trip destinations known for tribal culture, coffee plantations, and natural limestone caves.

Annual Tourist Footfall: Over 2 million domestic and international tourists visit Visakhapatnam annually, with a major share visiting during winter (October–February).






3.1.3 TRANSPORT AND CONNECTIVITY

Roadways -

Visakhapatnam is well-connected via national highways and arterial roads:

- **NH-16 (formerly NH-5)** – Part of the Golden Quadrilateral, this major highway runs along the east coast connecting Chennai, Visakhapatnam, Bhubaneswar, and Kolkata.
- **NH-516** – Connects Visakhapatnam to beachside towns and Bhimli.





Figure 56 Tourist attraction in Vishakhapatnam

- **BRTS Corridors** – Dedicated Bus Rapid Transit System corridors connect major city nodes including RTC Complex, Maddilapalem, Simhachalam, and NAD Junction.

Railways -

- **Visakhapatnam Railway Station (VSKP)** is a major station on the Howrah–Chennai main line and classified as an A1-grade station by Indian Railways.
- Daily direct trains connect to metros including Hyderabad, Chennai, Kolkata, New Delhi, Bengaluru, and Mumbai.
- Other nearby stations: Duvvada, Simhachalam, Marripalem.



Figure 57 Connectivity map of Vishakhapatnam

Airways–

- **Visakhapatnam International Airport (VTZ)** is located ~12 km from the city center.
- Domestic connectivity: Flights to Delhi, Mumbai, Bengaluru, Chennai, Hyderabad, Kolkata, Tirupati.
- International connectivity: Limited but expanding—currently offers flights to Dubai, Singapore, and Kuala Lumpur.
- New terminal expansion (Phase II) is underway to support higher international footfall and MICE tourism.

Ports –

- **Visakhapatnam Port**: One of India's busiest ports, critical for both cargo and cruise tourism.
- **Cruise Terminal Development**: Under the Sagarmala scheme, the city is expected to host cruise liners with portside hospitality zones, aligning with the tourism project vision.

3.2 PROXIMITY

The project site is located within **VMRDA Park** on **Beach Road**, one of the most accessible and high-footfall areas of Visakhapatnam. Its central location ensures excellent connectivity to key transport hubs, landmarks, and tourist attractions.

Distances from Key Locations –

- **Visakhapatnam Railway Station (VSKP)** – 6.3 km
- **Visakhapatnam International Airport (VTZ)** – 15.1 km

- **NH-16 (Chennai–Kolkata Highway)** – 3.5 km
- **RK Beach** – walking distance (~300 m)
- **Kailasagiri Hill Park** – 7.5 km
- **Submarine Museum (INS Kurusura)** – 650 m
- **Visakhapatnam Port Cruise Terminal** – 6.8 km
- **City Bus Stand (RTC Complex)** – 5.6 km
- **Proposed Metro Corridor (Beach Road stretch)** – passes adjacent to the site (as per VMRDA Smart Plan)

The site's close proximity to tourist zones, public infrastructure, and arterial roads supports its viability for hospitality and convention-based development, ensuring ease of access for both domestic and international visitors.



Figure 58 Proximity Map

3.3 SITE ACCESSIBILITY & TRAFFIC

3.3.1 ACCESSIBLITY & TRAFFIC



Figure 59 Accesibility Map

3.3.2 SAFETY AND STRUCTURES ON SITE

Located within a secure public park along Beach Road.

Existing features:

- Swimming pool
- Helipad
- Stage platforms
- Water body
- Temporary canteen shed
- Internal access road
- Site has maintained lawns and coconut palm trees.

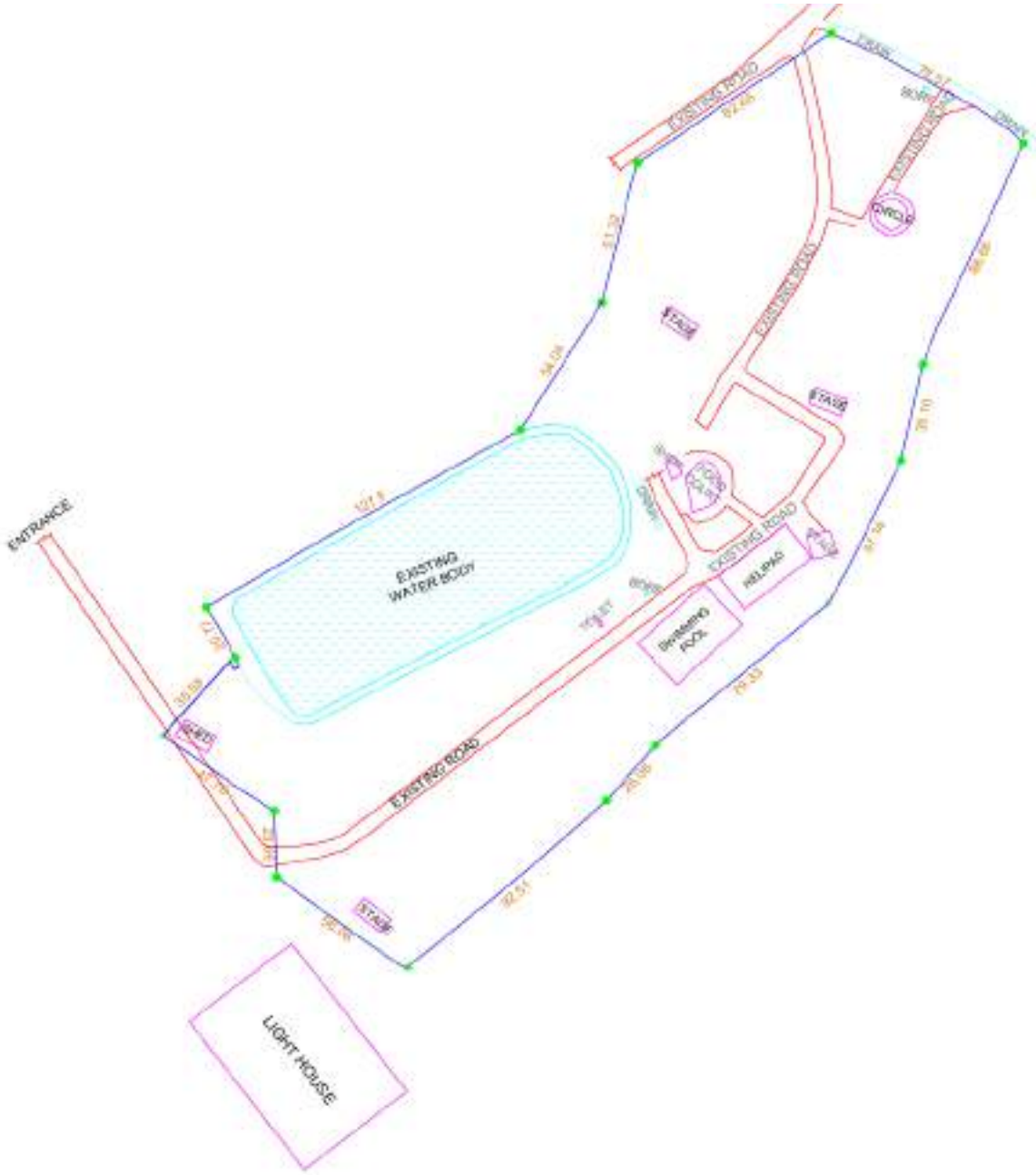

ENTRANCE
EXISTING WATER BODY
EXISTING ROAD
EXISTING ROAD
EXISTING ROAD
HELIPAD
SWIMMING POOL
LIGHT HOUSE
STAIR
STAIR
STAIR
GATE
DRAIN
DRAIN
DRAIN
CIRCLE
CIRCLE
CIRCLE



Figure 61 Site photographs

3.4 CLIMATE ANALYSIS

3.4.1 CLIMATE OF VISHAKAPATNAM

Visakhapatnam has a tropical wet and dry climate, with hot summers, moderate winters, and significant monsoon activity. Due to its coastal location, the city experiences high humidity and is moderately prone to cyclonic storms from the Bay of Bengal.

The average annual temperature is around 27.5°C, with summer highs peaking above 38°C and winter lows rarely falling below 18°C. The average wind speed ranges from 2.5 to 4.5 m/s, predominantly blowing from the south-east, especially between March and June.

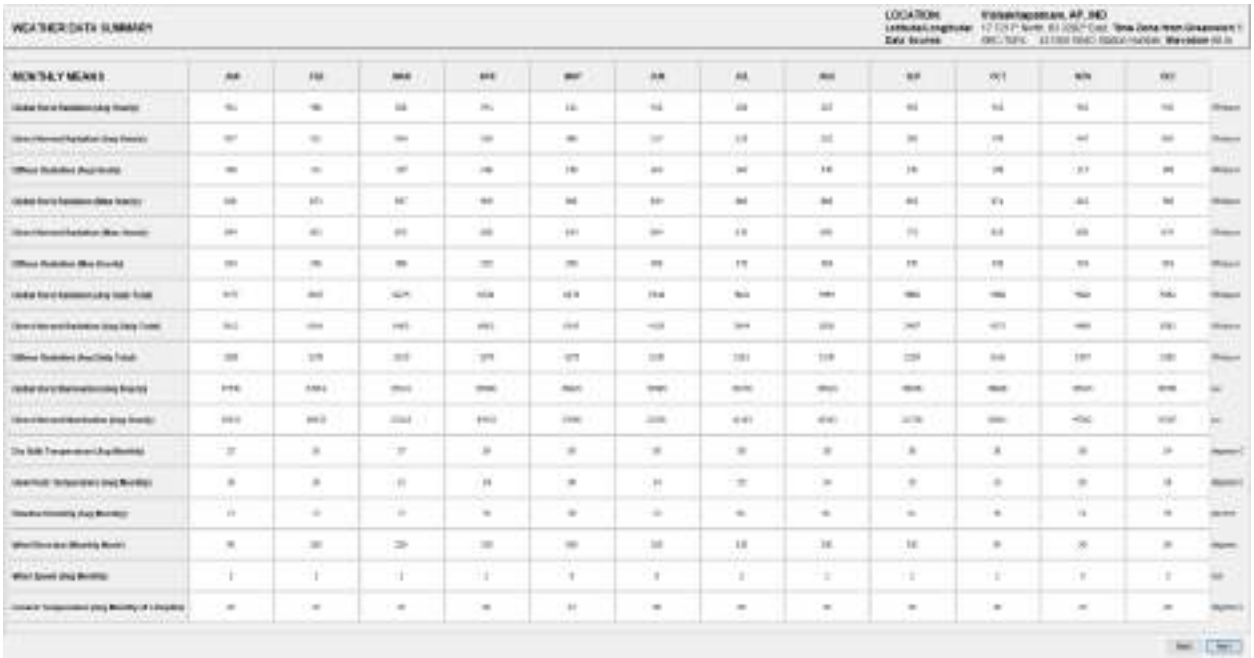
The city receives ~1,100 mm of rainfall annually, primarily during the southwest monsoon (June to September), and occasionally from the northeast monsoon (October–November).

Windrose data shows that **southerly and south-easterly winds dominate**, especially during summer and monsoon, making the coastal site favorable for natural ventilation and cooling.

Table 30 Climatic data

Parameter	Min	Max	Avg
Wind Speed (m/s)	1.8	7.9	3.5
Temperature (°C)	18.2	38.7	27.5
Dew Point (°C)	15.0	26.5	22.4
Relative Humidity (%)	60	90	78
Pressure (hPa)	1002	1013	1008

Table 31 Weather Data Summary



3.4.2 TEMPRATURE AND HUMIDITY

- **Annual Average Temperature: ~27.5 °C**
- **Summer Months:** March to June
  - Peak Temperature: Up to 32–33 °C in May
- **Winter Months**: December to February
  - Lowest Temperature: ~17–18 °C in January
- **Relative Humidity:**
  - Range: 65% to 85%
  - Highest during monsoon and early mornings

Humidity is consistently high due to the coastal setting, influencing material selection and ventilation design strategies.

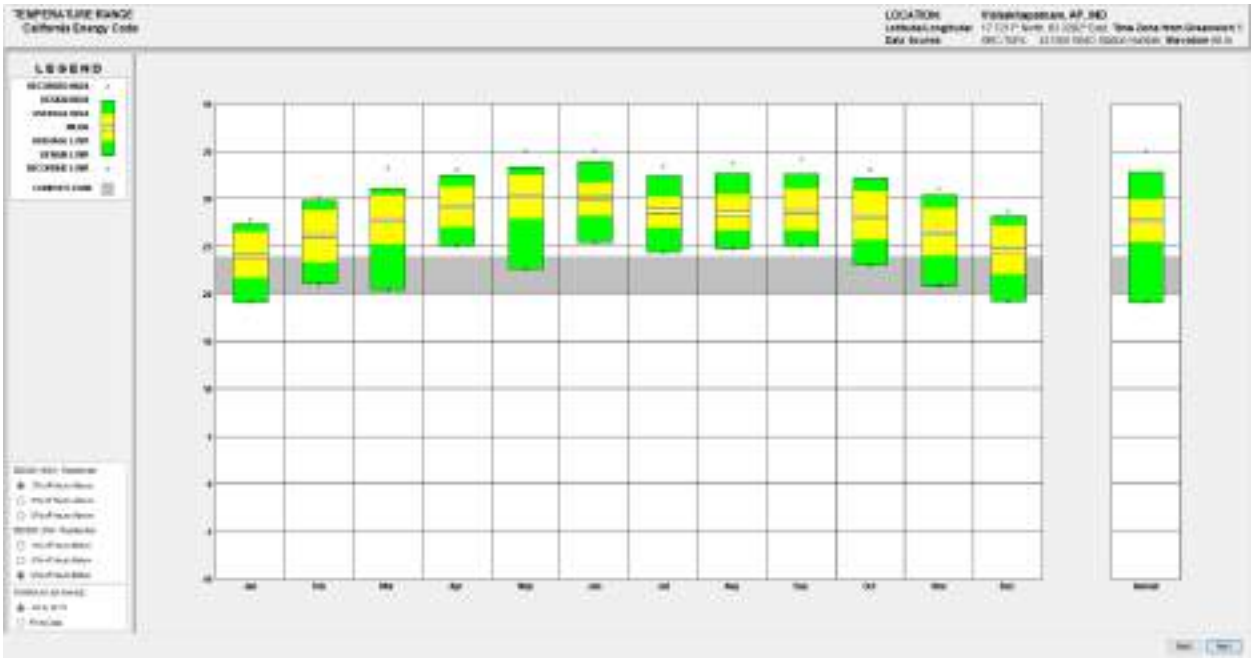


Figure 62 Temperature change graph

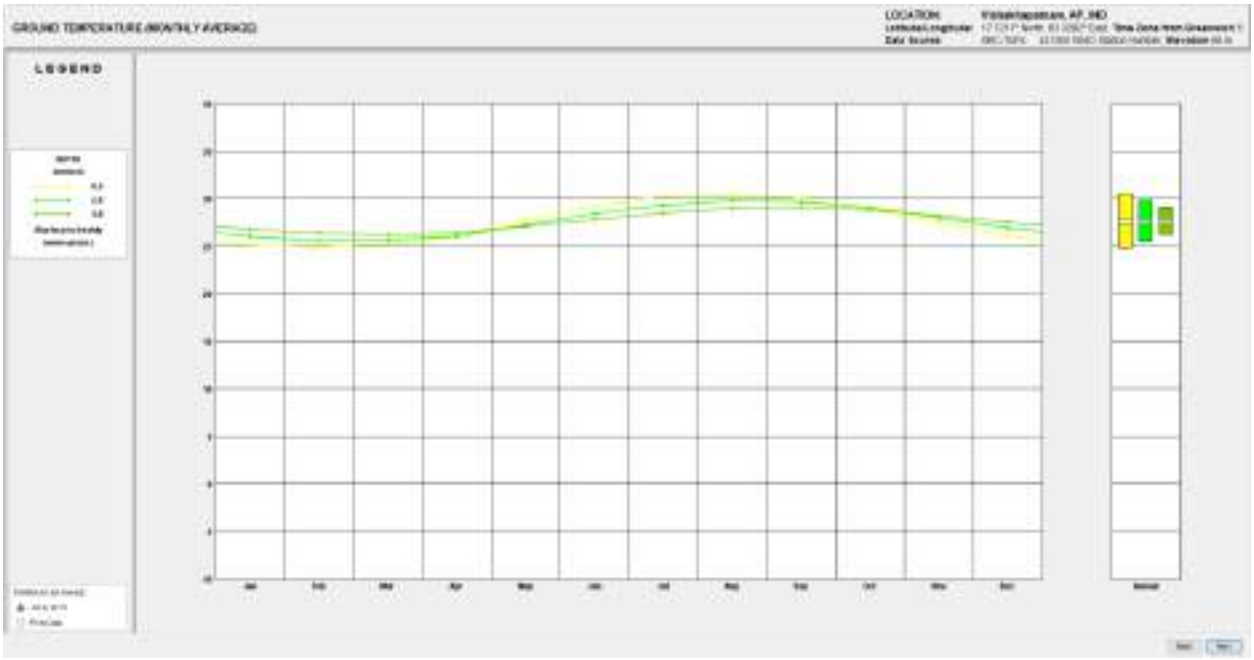


Figure 63 Ground temperature graph

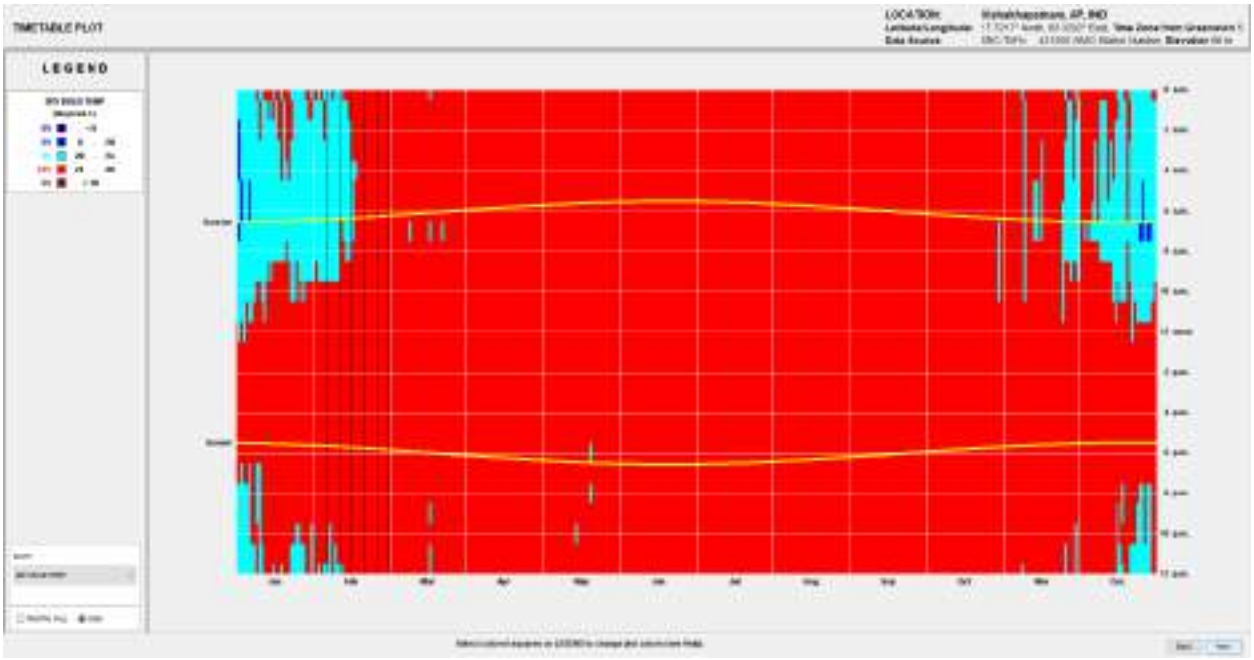


Figure 64 Time table plot

3.4.3 RAINFALL AND PRECIPITATION

Annual Rainfall: ~1,000 mm to 1,200 mm

Monsoon Season:

- **Southwest Monsoon**: June–September
- **Northeast Monsoon**: October–November (less intense)

Rainy Days per Year: ~60 to 70 days

Short, intense rain spells are common, especially during cyclonic activity.

3.4.4 WIND CONDITIONS

- **Prevailing Wind Direction**: South-East and East (from sea)
- **Average Wind Speed**: 3.5 to 5.0 m/s
- **High Wind Period**: March to June (pre-monsoon coastal breeze)
- **Windrose Analysis**:
  Strong coastal breezes from the sea side provide an excellent opportunity for **cross-ventilation**

During monsoon, gusty winds intensify, requiring wind-resistant design

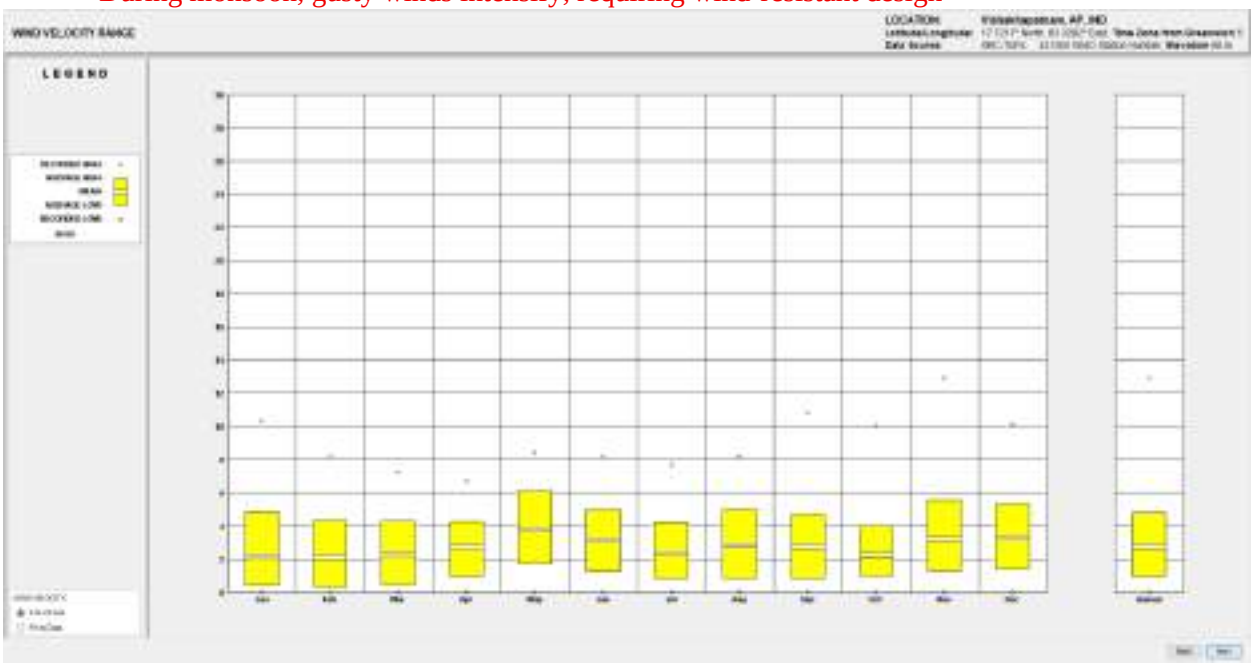


Figure 65 Wind velocity range

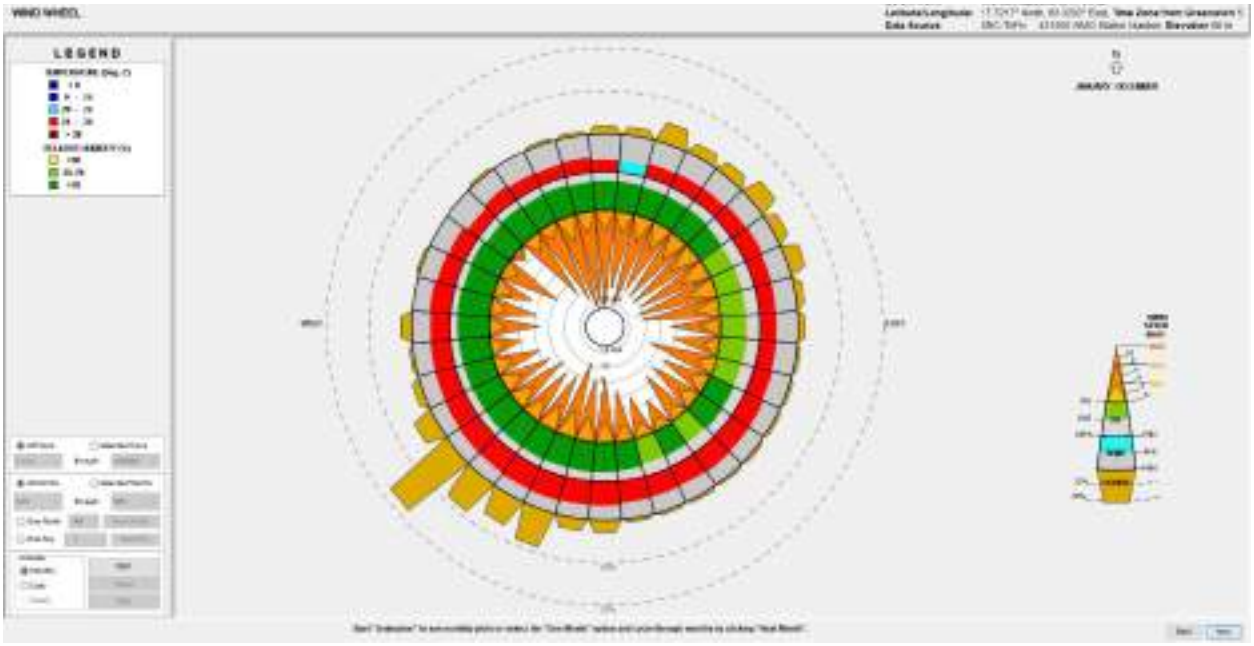


Figure 66 Wind wheel

3.4.5 SOLAR EXPOSURE & SUN PATH

- The sun rises in the **east** and sets in the **west**, with high solar angles in summer.
- The **south and southeast facades** receive maximum sunlight throughout the year.
- **Sunlight Hours per Day**:
  Summer: ~10–11 hours
  Winter: ~8–9 hours

Design Implication: Overhangs, pergolas, and shaded verandahs are essential to reduce heat gain while allowing diffused light indoors.

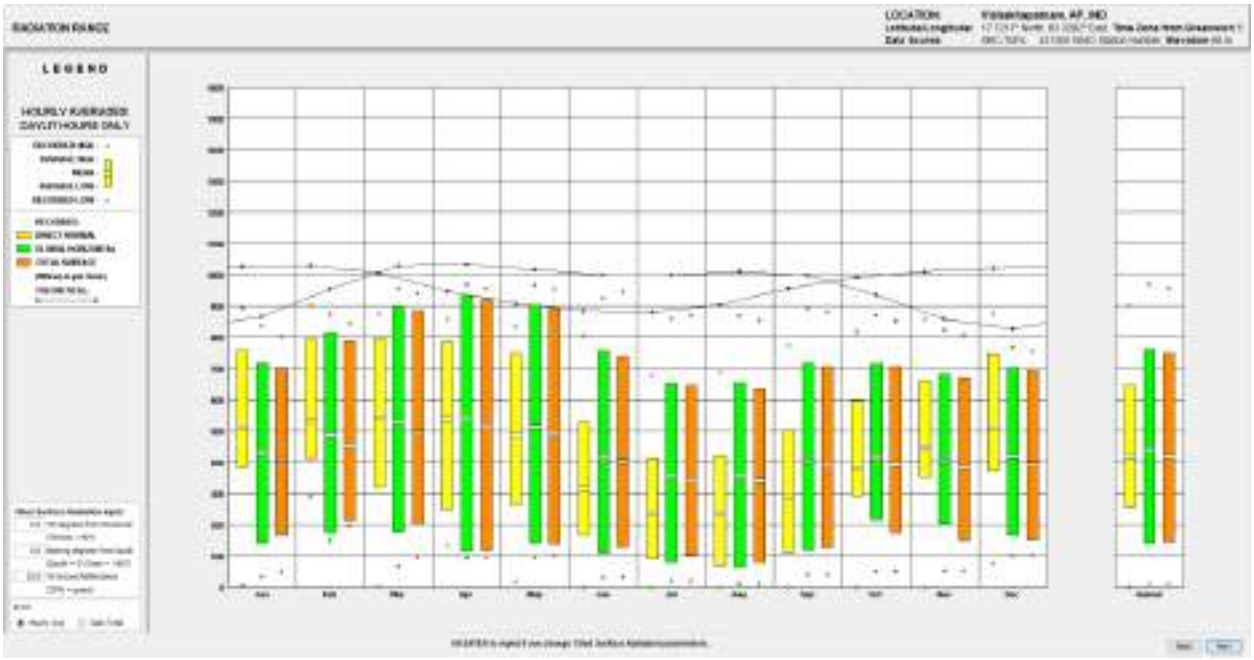


Figure 67 Radiation range

3.4.6 SUMMER SUN & WINTER SUN

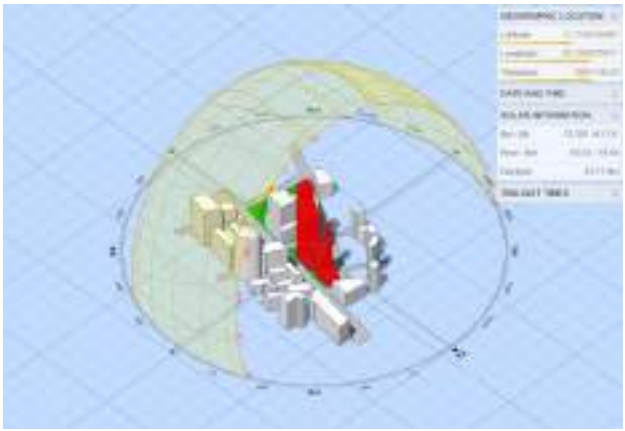


Figure 69 Summer solistic

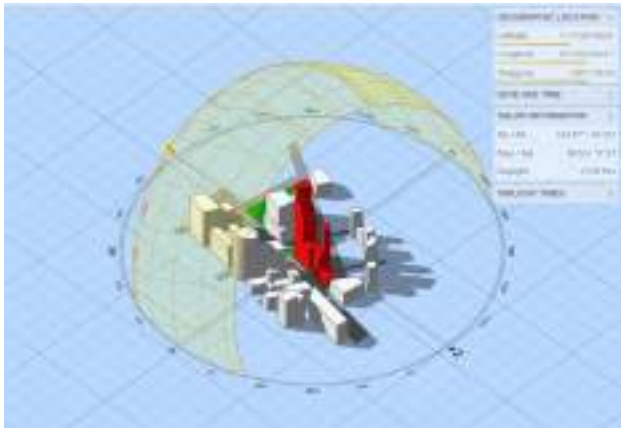


Figure 68 winter solistic

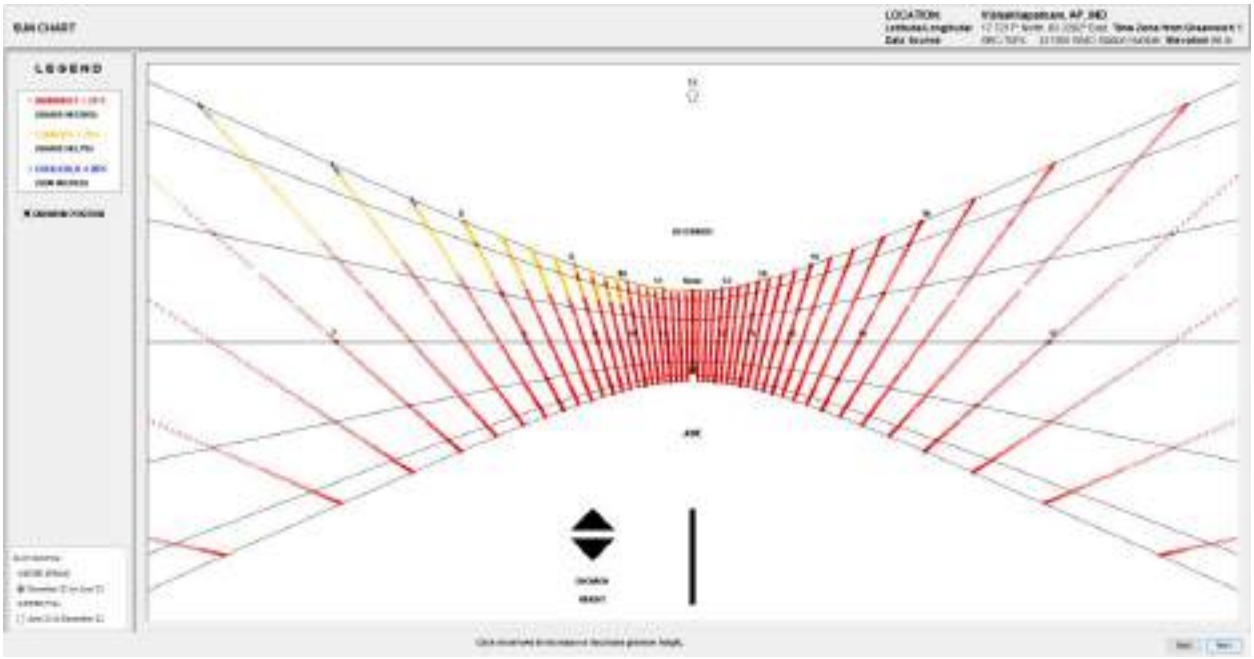


Figure 70 Sun chart

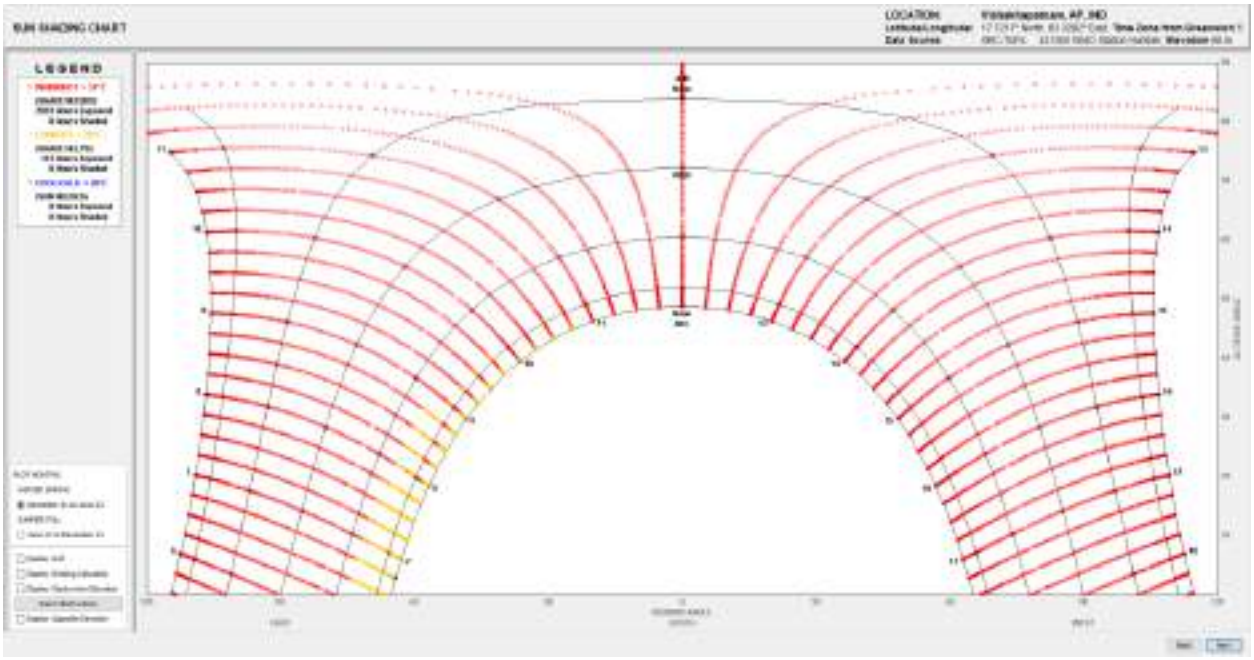


Figure 71 Sun Shading chart

3.4.7 CLOUD COVER AND VISIBILITY

- **Clear/Sunny Days**: ~180–200 days/year
- **Cloudy or Overcast Days**: Mostly during June–October
- **Visibility**: Generally good year-round except during stormy or heavily humid monsoon days.

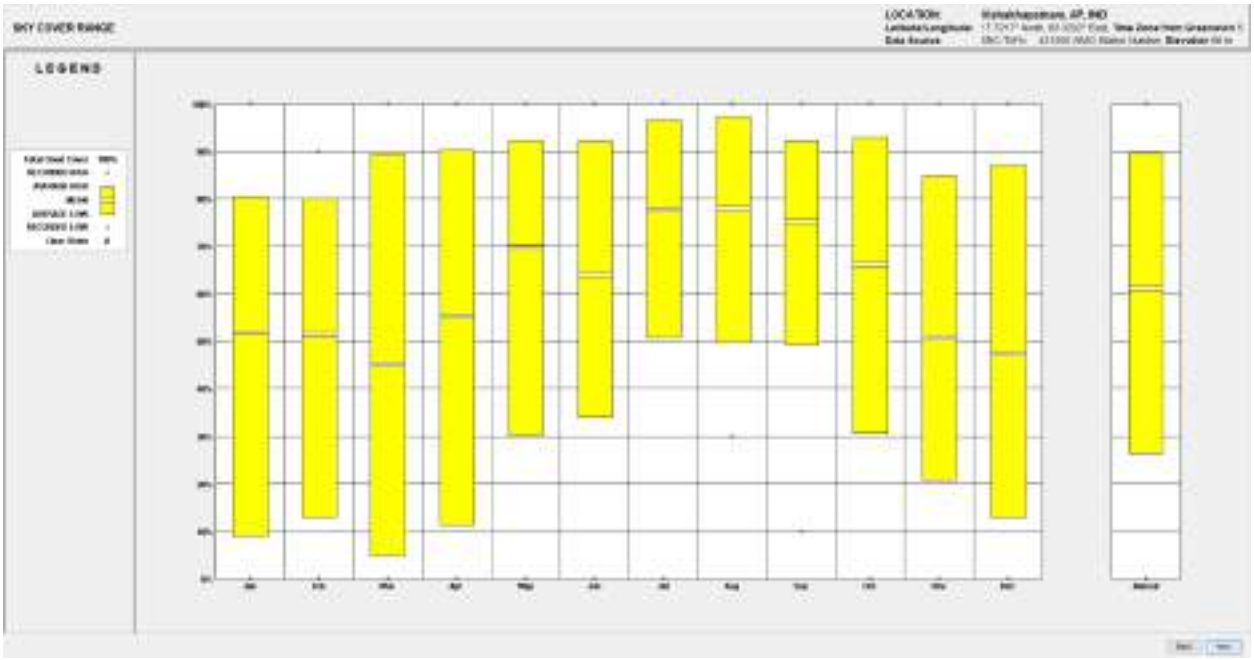


Figure 72 Sky cover Range

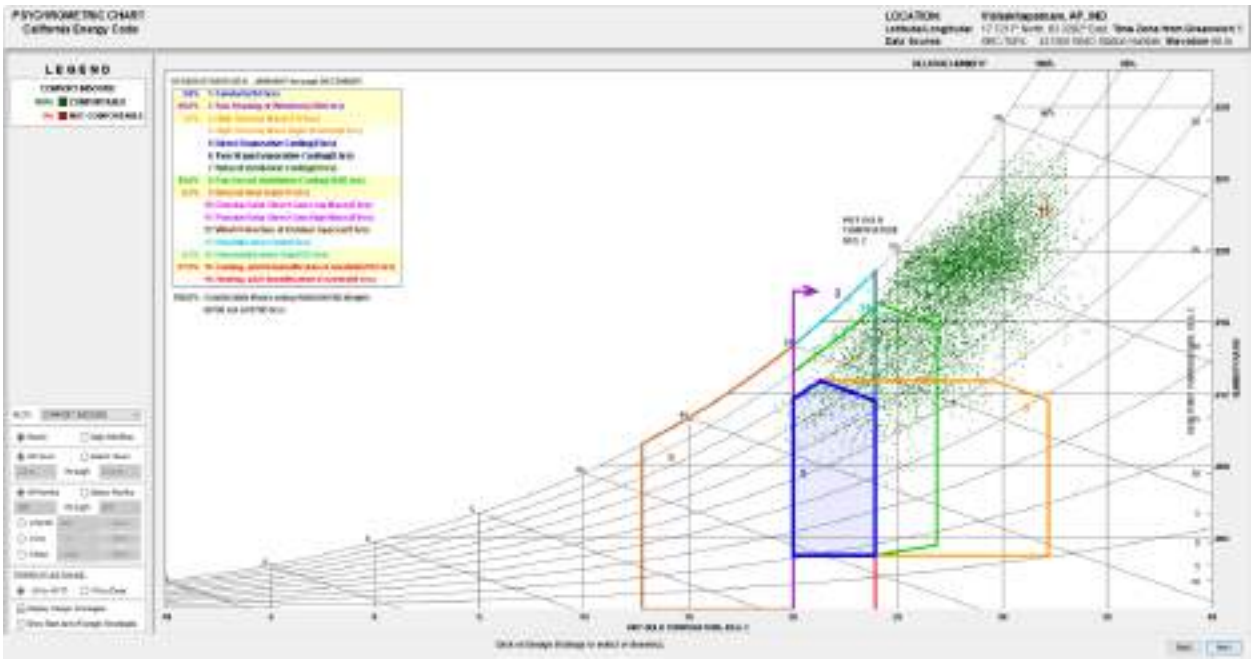


Figure 73 Psychromatric chart

3.4.8 CLIMATE-RELATED CALAMITIES

Cyclone Hudhud (2014)

- **Type**: Severe Cyclonic Storm
- **Impact**: Direct landfall near Visakhapatnam; wind speed ~195 km/h
- **Site Damage**:
    - Tree uprooting and defoliation
    - Temporary structures and fencing damaged
    - Coastal erosion and power cuts reported

Other Events

- **Cyclone Gulab (2021)** – Moderate rainfall, no direct landfall in Vizag
- **Cyclone Asani (2022)** – Rainfall and moderate wind; no major damage
- Despite coastal proximity, **flooding is minimal** due to site elevation and sandy subsoil, aiding percolation and runoff.

Recent Weather Patterns

- 2025 monsoon showed significant **rainfall deficits** (20–40%), leading to heat stress and reduced precipitation. Thunderstorms and squalls (40–60 km/h) were forecasted intermittently through July

3.4.9 CLIMATE RESPONSIVE DESIGN CONSIDERATIONS

1. Wind & Ventilation-Oriented Design

- **Plan building massing** to run along **north-south axis**, allowing sea breezes from the **east and southeast** to flow across courtyards and open areas.
- Incorporate **ventilation shafts**, **staircase towers**, or **thermal chimneys** in blocks to extract hot air.
- Use **operable windows with adjustable louvers or mesh panels** to regulate airflow.
- Design open-to-sky courtyards with low vegetation to promote **air circulation and thermal relief**.

2. Shading, Orientation, and Thermal Comfort

- Use **projected horizontal sunshades** for south and **vertical fins or jalis** for east façades to reduce solar heat gain.
- Optimize **roof design with insulation and reflective coatings** (e.g., white/terracotta tiles) to limit internal heat.
- Incorporate **shaded walkways or colonnades** connecting blocks to ensure user comfort during high-sun periods.

3. Structural and Cyclone Resilience

- Design as per **IS 875 Part 3 (Wind Loads)** and **IS 15498** for cyclone-prone areas.
- Avoid wide-span tensile roofs or unsupported lightweight covers unless wind-tested.
- Secure glass facades using **laminated or double-glazed systems with wind anchors**.
- Use **low-pitched roof angles** to reduce uplift pressures.

4. Monsoon-Ready Stormwater Systems

- Maintain **min. 1.5–2% slope** in all open areas and landscape zones to avoid pooling.
- Use **porous pavements, open-joint pavers, and infiltration wells** to increase percolation.
- Create **rain gardens or bioswales** at natural low points for passive collection and recharge.
- Elevate resort suites/facilities on **plinths or stilts** in flood-prone zones.

5. Landscape for Microclimate & Salt Tolerance

- Choose **salt-tolerant coastal plants**: coconut palm, pandanus, casuarina, agave, bougainvillea, neem, etc.
- Use **dense tree plantations** along the **west and south-west** sides as heat/wind buffers.
- Include **water features** (ponds, fountains) in semi-open zones for evaporative cooling.
- Use **green roofs** on secondary buildings to reduce heat absorption and enhance biodiversity.

6. Passive Cooling & Material Palette

- Use **high thermal mass materials** (e.g., stabilized mud block, stone, rammed earth) in public spaces.
- Employ **earth air tunnels or plenum floors** in enclosed convention areas for natural cooling support.
- Prefer **natural plasters** (lime/mud) and **wood/terracotta shading devices** for eco-thermal performance.
- Limit concrete/asphalt in open areas—replace with **terracotta tiles, stone, or shaded lawn**.

7. Sustainability Enhancements

- Install **solar PV panels** on rooftops and parking canopies for clean energy generation.
- Use **solar water heaters** in hotel suites and spa areas.
- Implement **low-flow plumbing** and **dual-flush toilets** to reduce water consumption.
- Incorporate **composting and bio-digestion units** for organic waste near resort kitchens.

8. Spatial Planning & User Comfort

- Design convention halls with **high ceilings, clerestory openings, and stack ventilation**.
- Use **movable partitions or folding doors** to transition between air-conditioned and open areas.
- Cluster private resort suites around **shaded courtyards**, rather than long linear corridors.
- Plan **buffer zones with semi-open sit-outs** before entering cooled spaces to ease thermal transition.

Table 32 Design Guidelines as per Climatic Data

DESIGN GUIDELINES (for the Full Year)
California Energy Code
User Modified Design Strategies, User Modified Criteria

Assuming only the Design Strategies that were selected on the Psychrometric Chart, 100.0% of the hours will be Comfortable. This list of Residential Design guidelines applies specifically to this particular climate, starting with the most important first. Clic

59	In this climate air conditioning will always be needed, but can be greatly reduced if building design minimizes overheating
37	Window overhangs (designed for this latitude) or operable sunshades (awnings that extend in summer) can reduce or eliminate air conditioning
68	Traditional passive homes in hot humid climates used light weight construction with openable walls and shaded outdoor porches, raised above ground
65	Traditional passive homes in warm humid climates used high ceilings and tall operable (French) windows protected by deep overhangs and verandahs
38	Raise the indoor comfort thermostat setpoint to reduce air conditioning energy consumption (especially if occupants wear seasonally appropriate clothing)
32	Minimize or eliminate west facing glazing to reduce summer and fall afternoon heat gain
30	High performance glazing on all orientations should prove cost effective (Low-E, insulated frames) in hot clear summers or dark overcast winters
57	Orient most of the glass to the north, shaded by vertical fins, in very hot climates, because there are essentially no passive solar needs
17	Use plant materials (bushes, trees, ivy-covered walls) especially on the west to minimize heat gain (if summer rains support native plant growth)
26	A radiant barrier (shiny foil) will help reduce radiated heat gain through the roof in hot climates
35	Good natural ventilation can reduce or eliminate air conditioning in warm weather, if windows are well shaded and oriented to prevailing breezes
46	High Efficiency air conditioner or heat pump (at least Energy Star) should prove cost effective in this climate
42	On hot days ceiling fans or indoor air motion can make it seem cooler by 5 degrees F (2.8C) or more, thus less air conditioning is needed
56	Screened porches and patios can provide passive comfort cooling by ventilation in warm weather and can prevent insect problems
18	Keep the building small (right-sized) because excessive floor area wastes heating and cooling energy
33	Long narrow building floorplan can help maximize cross ventilation in temperate and hot humid climates
43	Use light colored building materials and cool roofs (with high emissivity) to minimize conducted heat gain
25	In wet climates well ventilated attics with pitched roofs work well to shed rain and can be extended to protect entries, porches, verandas, outdoor work areas
27	If soil is moist, raise the building high above ground to minimize dampness and maximize natural ventilation underneath the building
40	High mass interior surfaces (tile, slate, stone, brick or adobe) feel naturally cool on hot days and can reduce day-to-night temperature swings

3.5 TOPOGRAPHY

3.5.1 SITE CONTOUR

VMRDA (NTR/VUDA) Park, located on the beachfront along RK Beach, covers approximately 55 acres and is known for its lush lawns, recreational facilities, and scenic views of the Bay of Bengal. Its contour and topographical characteristics are crucial to both its usability and natural drainage.

General Terrain

The park is primarily flat to gently undulating, lying adjacent to the coastline with a gradual slope downward toward the Bay of Bengal.

Average elevation at the park entrance (Beach Road side) is about 11m above sea level, while the beachfront drops to about 4m. This yields a typical elevation difference of just 7m across a horizontal distance of 60–120m, resulting in a very gentle slope of roughly 7% from road to shore.

Contour Characteristics

Contours are widely spaced, reflecting minimal variation in elevation within the park itself. There are no abrupt dips, hills, or steep gradients.

The highest points are along the entrance (Beach Road), with gradual, almost imperceptible descent toward the back of the park and the seafront.

Landscaping elements (lawns, gardens) and amenities (paved walkways, cycling tracks) are positioned on these gentle grades, with no zones of sharp contour shifts.

Functional Implications

Accessibility: The gentle and almost level topography allows for easy movement for all age groups, including the elderly and children; wheelchair and stroller access is facilitated.

Drainage: Natural slope toward the sea supports good rainfall runoff and reduces risk of waterlogging, but the gentle gradient ensures there is no risk of slope instability or erosion under typical conditions.

Land Use: The park’s nearly level contours support large, contiguous lawns, a musical fountain plaza, play areas, and event spaces, all without requiring significant grading or terracing.

Contrast With Surrounding Areas

Unlike Visakhapatnam’s more hilly sites (e.g., Kailasagiri), VMRDA Park is developed on low-gradient, coastal land. Nearby city regions may show greater elevation variability, but the park itself is designed to remain accessible and hazard-free.

Mapping and Survey Data

The park sits within a large urban block with contour lines showing only modest elevation drops from the northwestern entrance (Beach Road) toward the sea. There is no significant contour compression (indicator of steepness), and most of the park remains at elevations between 4–11m.

City master plans and regional development surveys confirm this area as “coastal plain with gentle slope,” categorized for open, public recreational use to take advantage of its benign relief and scenic value.

3.5.2 SITE SECTION/SLOPE

Park Location and Terrain

VMRD Park is a coastal urban park covering about 55 acres, of which 37 acres consist of lawns and landscaping, adjacent to RK Beach and the Bay of Bengal.

Unlike the steeper Kailasagiri Hill (360ft high), VMRD Park is on largely flat to gently undulating terrain due to its immediate proximity to the sea, providing easy access and walkable expanses for visitors.

Slope Characteristics

The area is developed on beachfront land, which naturally has a low gradient. This ensures high usability, accessibility for children and the elderly, and minimal risk of erosion compared to hillside parks.

While references to “steep slope” exist in discussions of site selection for other VMRDA development projects (such as stadiums and hillside parks), such steep and varied elevation changes are not present in VMRD Park itself. The park benefits from a “gradually sloping” profile descending gently toward the sea.

The park features no significant hills, abrupt cliffs, or embankments. The minor slopes occurring within the park are carefully managed with landscaping, drainage systems, and paved walkways to facilitate comfort and safety for large crowds.

Flooding and Erosion

The coastal location does expose the park to salt spray, sand drift, cyclone-induced winds, and potential short-term waterlogging during monsoon storms or cyclones, but the gentle terrain lessens the risk of significant structural damage from slope failure.

Proper landscaping, with extensive lawns, flower beds, and shade trees, helps stabilize the surface soil, reduce runoff, and enhance drainage.

Park Design and Accessibility

The park’s nearly level topography allows for open lawns, children’s play areas, jogging and cycling tracks, outdoor gymnasiums, amphitheater seating, and musical fountain installations to be placed without significant modification of the natural grade.

Elevation at the road/park entrance: The average elevation of VMRDA Park is about 11m above sea level. This corresponds closely with the elevation of Beach Road, which runs directly in front of the park and parallel to the coast.

Elevation at the shoreline: The elevation at the shoreline near RK Beach, which is immediately across from VMRDA Park, is approximately 4m above sea level.

Horizontal distance: The distance from Beach Road (adjacent to the park entrance) to the water’s edge ranges from 60m to 120m depending on tidal conditions, beach width, and landscaping features.

Slope gradient: Across this distance (roughly 100m), the elevation drops by about 7m, yielding an average slope of 7%. This is considered a very gentle, walkable slope, and much of the transition from the road to the sea is via lawns or paved paths.

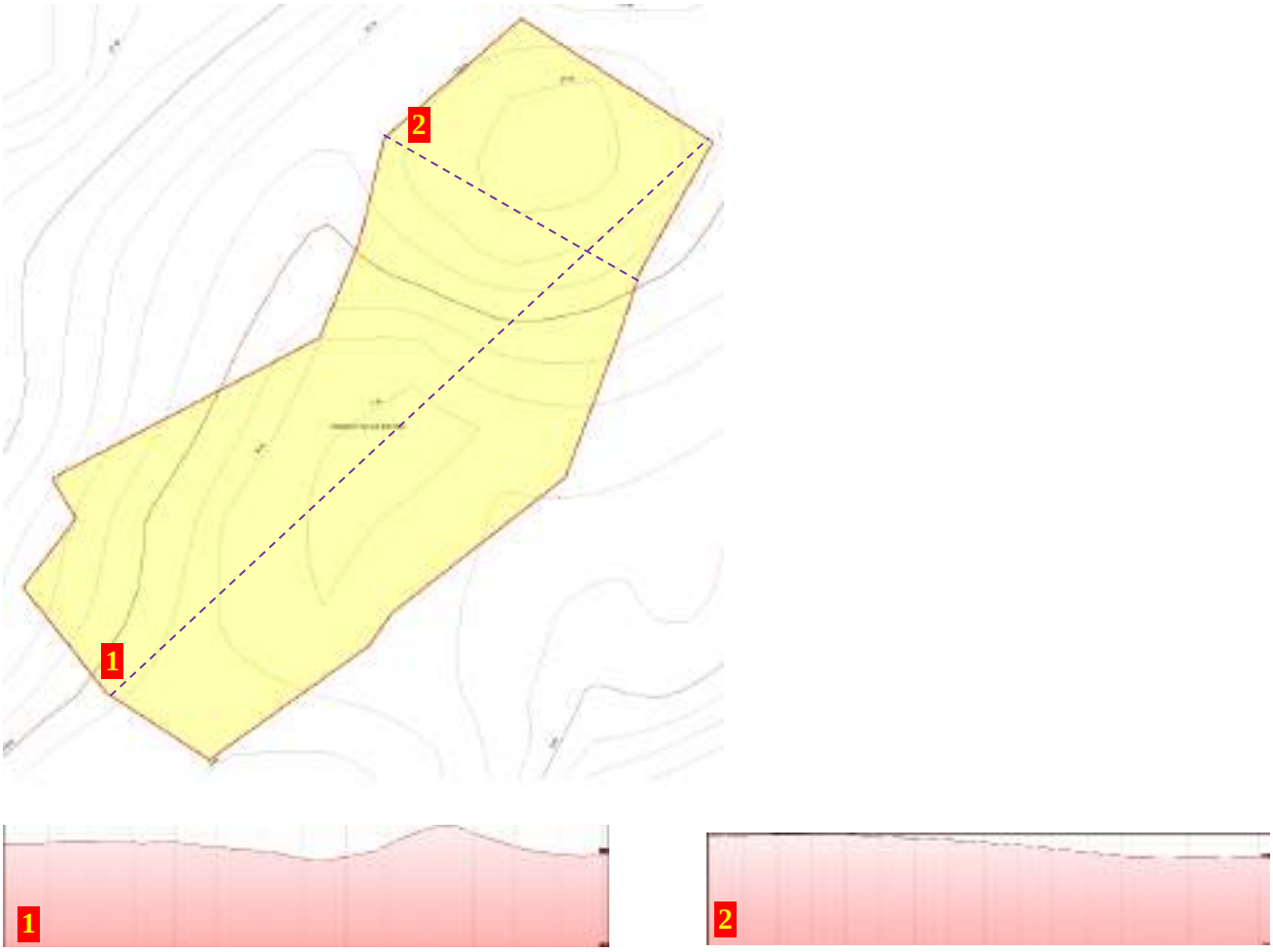


Figure 74 Contours & Site section

3.5.3 SOIL TYPE

VMRDA Park is situated along the coastal belt of Visakhapatnam, overlooking the Bay of Bengal. The soil characteristics in this area are influenced by its **marine proximity, coastal climate**, and **underlying geology**.

- **Coastal Alluvial Soil**:
  The park area features **alluvial sandy loam soil** with good drainage capacity. This type of soil, though slightly saline due to the sea breeze, is suitable for a variety of ornamental and coastal plant species.
- **Red Sandy Soil**:
  Parts of the elevated zones within the park have **red sandy soil**, originating from weathered granite. This soil is well-aerated and supports deep-rooted trees and shrubs.
- **Soil pH and Texture**:
  The pH is generally **neutral to slightly alkaline (6.8 – 7.5)**, with a **sandy to sandy-loam texture**, promoting root aeration and ease of landscaping.

3.5.4 VEGETATION

VMRDA Park is a **landscaped urban green space** with a combination of native, ornamental, and coastal vegetation, chosen for aesthetic appeal, environmental resilience, and soil adaptability.

- **Coastal Vegetation**:
  - **Casuarina equisetifolia (Casuarina)** – widely planted as a windbreaker along the shore.
  - **Ipomoea pes-caprae** – a creeping dune plant used to stabilize sandy patches.
  - **Coconut Palms (Cocos nucifera)** – dominant along the beach side, providing a tropical coastal character.
- **Ornamental and Landscaping Plants**:
  - **Bougainvillea**, **Hibiscus**, and **Ixora** – popular for vibrant colors and low maintenance.
  - **Ficus species**, **Ashoka trees**, and **Bauhinia** – used along pathways and lawns.
  - **Seasonal flowering beds** with Marigolds, Petunias, and Zinnias are common in garden pockets.
- **Tree Canopy and Shading Plants**:
  - **Neem (Azadirachta indica)**, **Rain Trees (Samanea saman)**, and **Gulmohar (Delonix regia)** provide shade and enhance the microclimate.
  - **Plumeria (Frangipani)** trees are frequently planted for their fragrant flowers.
- **Lawn and Ground Cover**:
  - **Buffalo grass (Stenotaphrum secundatum)** and **Doob grass (Cynodon dactylon)** are commonly used for lawns due to their salt tolerance and lush appearance.

3.6 UTILITIES & INFRASTRUCTURE

3.9.1 WATER AND WASTEWATER

- **Water Supply:** Municipal water from **GVMC** will be supplemented by **rainwater harvesting** systems for sustainability.
- **Sewage:** Connections to existing **sewer lines** will be established. The hotel will have an **on-site sewage treatment plant (STP)** for wastewater management.

3.9.2 ENERGY SUPPLY

- **Electricity:** Supplied by **APEPDCL** with backup generators for uninterrupted power supply.
- **Renewable Energy:** Use of **solar panels** and **wind turbines** for sustainable power generation.

3.9.3 STORMWATER MANAGEMENT

- A **drainage system** designed to handle seasonal rainfall, incorporating **rain gardens** and **permeable surfaces** for natural water absorption.

3.7 SENSORY




1
Google


2
Google


3


4





Figure 75 Views From site

3.8 HUMAN & CULTURAL

Attitude Towards New Development
Visakhapatnam, also known as Vizag, has witnessed rapid urbanization in recent decades. There is broad support among residents for infrastructural growth, particularly in transportation, tourism, and IT sectors. However, there is also increasing awareness and concern about environmental conservation, especially due to the city's proximity to the coast and hilly terrain. Public involvement in development projects is gradually rising, especially concerning green infrastructure and coastal protection.

Population Density
As per recent estimates, the population of Visakhapatnam Urban Agglomeration reached approximately **2.3 million in 2023**, with the municipal corporation area housing over **2 million people**. The population density stands at **~18,000 persons per square kilometer**, especially concentrated around Gajuwaka, Dwaraka Nagar, and MVP Colony.

Family Size
The average household size in Visakhapatnam is about **4 to 5 persons**, similar to other Tier-2 Indian cities.

Demographics And Ethnicity
Gender Ratio:
According to Census 2011, Visakhapatnam had a sex ratio of **979 females per 1,000 males**, which is above the national average of 943.

Age Distribution:
Children in the 0–6 years age group numbered around **230,000**, with a child sex ratio of **962 girls per 1,000 boys**. The population under 18 years accounts for over 30%, indicating a young demographic.

Literacy Rate:
The overall literacy rate of Visakhapatnam district is **67.7%** (Census 2011), but in the urban corporation limits, the rate is significantly higher at **~82%**, with male literacy at **89%** and female literacy at **75%**, exceeding the national urban average.

Religious Composition:
Based on the 2011 Census, the religious demographics of Visakhapatnam are as follows:

- **Hindus:** 91.12%
- **Muslims:** 6.32%
- **Christians:** 2.12%
- **Jains, Sikhs, and others:** 0.44%

Linguistic Diversity:
Visakhapatnam is a linguistically diverse city, though **Telugu** remains the primary language spoken. **Urdu** and **Hindi** are commonly spoken in some urban localities, while communities also speak **Odia, Bengali, Tamil, Kannada**, and **Malayalam** due to industrial migration and regional diversity.

Ethnic Composition:
The population of Visakhapatnam is largely composed of ethnic **Telugus**. The city is also home to people from across India, drawn by employment opportunities in the Navy, industries, and ports. Communities include **Marwaris, Bengalis, Malayalees**, and **Odias**, contributing to a culturally rich urban fabric. Tribal communities are also present in the outskirts and northern hills of the district.

3.9 VERNACULAR MATERIALS OF VISHAKAPATNAM

1. **Stone:**
   Laterite & Granite: Laterite, locally sourced and easy to work with, has been traditionally used in rural and coastal architecture of Visakhapatnam. Granite, abundant in the Eastern Ghats, is used for foundations, plinths, and columns.
   Khondalite Stone: A region-specific stone used historically in parts of North Andhra temples and hill settlements.
2. **Lime:**
   Lime Plaster & Lime Mortar: Widely used in coastal buildings for their breathability and salt resistance. Lime plaster helped regulate indoor temperatures and was often mixed with natural additives for durability and finish.
3. **Timber:**
   Used for beams, door frames, window shutters, and roofs. Locally available hardwoods like teak and jackfruit wood were preferred for their strength and resistance to decay.
4. **Mud and Adobe:**
   Mud Blocks & Rammed Earth: Extensively used in rural homes and tribal areas (e.g., Araku Valley) for walls and floors due to excellent thermal insulation. Adobe bricks were sun-dried and often mixed with straw or rice husk.
5. **Bamboo:**
   Used for structural frames, wall partitions, and scaffolding in tribal dwellings and temporary shelters, especially in the hilly terrains near Visakhapatnam.
6. **Terracotta and Clay:**
   Clay roof tiles and decorative terracotta panels were common in coastal and rural homes. Earthen pots and jali patterns were also used in architecture for cooling and ornamentation.

7. **Thatch and Grass:**
   Used for roofing in tribal hamlets and coastal fishing villages. Palm leaves, paddy straw, and wild grass provided cost-effective, breathable, and biodegradable roofing.
8. **Chunam:**
   Traditional fine lime plaster, often used in religious and Indo-Islamic buildings of the region for smooth wall finishes and detailed carvings.
9. **Metal:**
   Iron was used sparingly for gates, hinges, and grills. Bronze and brass had limited decorative use in temple and religious settings.
10. **Shell Lime and Sea Sand:**
    Locally sourced from the coast, shell lime was used in older buildings, while sea sand, though now restricted, was earlier common in mortar mixes.

3.10 DECADEWISE ARCHITECTURAL FEATURES OF VISHAKHAPATNAM

Table 33 Decade wise Architecture feature

Decade	Key Architectural Features	Common Materials	Architectural Influences
Pre-1900	Vernacular homes (chuttillu), small shrines, traditional temples	Mud, bamboo, stone, thatch	Indigenous, Dravidian
1900–1940	British bungalows, Gothic churches, civic buildings (e.g., Collector's Office)	Lime plaster, timber, tiles, brick	Colonial, Indo-Saracenic, Gothic
1940–1970	PSU colonies, functional housing blocks, Andhra University expansion	Brick, cement mortar, RCC	Modernist Functionalism
1970–1990	Apartment blocks, brutalist government buildings, modern temples	RCC, exposed concrete, brick	Brutalism, Institutional Modernism
1990–2010	Gated communities, malls, IT parks, luxury villas	Glass, steel, concrete, local stone	Global Contemporary, Revivalist
2010–2020	Smart infrastructure, IGBC buildings, transport nodes	Solar panels, steel, concrete, glass	Sustainable, Smart City Movement
2020–Present	Mixed-use towers, cyclone-resilient buildings, promenades	Composite panels, smart glass, steel	Resilient Urbanism, Parametric Design

3.11 INFERENCES

Site Parameter	Observation	Architectural Design Inference
Location	Coastal site near sea bay, VMRDA limits	Exploit **sea views** through room orientation; apply **CRZ regulations** in layout and massing.
Shape and Area	Rectangular site with sufficient frontage	Enable **linear massing** or **courtyard planning**; maximize frontage for public zones (lobby).
Topography	Generally flat	Ideal for **cost-efficient foundation** and **multi-level basements** (services, banquet halls).
Climate	Tropical wet-dry; high humidity; coastal winds from south-east	Use **cross-ventilation**, **deep overhangs**, **shading devices**, and **corrosion-resistant materials**.
Wind Direction	Predominant from south-east (sea breeze)	Align rooms, balconies, and lobby to **capture natural ventilation** from sea direction.
Sun Path	East to west	Minimize **west-facing glazing**; orient **pool and landscape** to benefit from morning sun.
Views	East/South-East offers sea view; North/West faces urban edges	Design all premium rooms and public zones facing **east/south-east**; place service core westward.
Access & Road Connectivity	One main approach road from west	Main entrance, drop-off and porch to be designed along **west side**, with buffer from traffic.
Vegetation & Natural Features	Sparse coastal shrubs, dry soil	Introduce **landscape buffer zones** using **salt-tolerant native species** for sustainability.
Surrounding Context	Nearby buildings: Radisson Blu, Dutch Apartment, Palm Stay, The Park Hotel	Design a **landmark form** to stand out yet **complement scale** of adjacent hotels.

CHAPTER IV

CASE STUDY and DESK APPRAISAL

4.1. CASE STUDY: NOVOTAL, VIZAG



Figure 76 Novotel night view

4.1.1 DESIGN CONCEPT

The architecture capitalizes its beachfront location through a composition of sea-facing wings, terraces, and floating volumes. Its massing reflects a stepped-form approach to preserve sightlines and reduce bulk



Figure 77 Group photograph at Novotel vizag

from Beach Road. Interiors follow Novotel's Metro design concept: clean lines, warm neutral tones, local materials (wood, stone), and open-plan multi-purpose zones for flexible guest use.

4.1.2 SITE PLAN

The hotel is situated on a site that gently slopes towards the Bay of Bengal, providing most rooms with unobstructed sea views. The building is terraced to follow the natural contours of the land, minimizing excavation and preserving the site's topography. Landscaped terraces and green spaces are integrated into the design, enhancing the aesthetic appeal and promoting sustainability.



Figure 78 site plan of novotel

4.1.3 FACILITIES

Lounge, Bars & Restaurants

- Lobby Lounge: A central atrium-based lounge seamlessly connects reception, café (Sugarr patisserie), and waiting areas. High ceilings and warm-toned interiors with local art establish a welcoming social hub.
- The Square: All-day dining multi-cuisine restaurant with sea-view seating.

- Harbour Vue: Rooftop bar and lounge offering live music and panoramic sea vistas.
  Zaffran / Red Bowl: Specialty Indian and Chinese restaurants with thematic interiors that showcase local coastal cuisine.

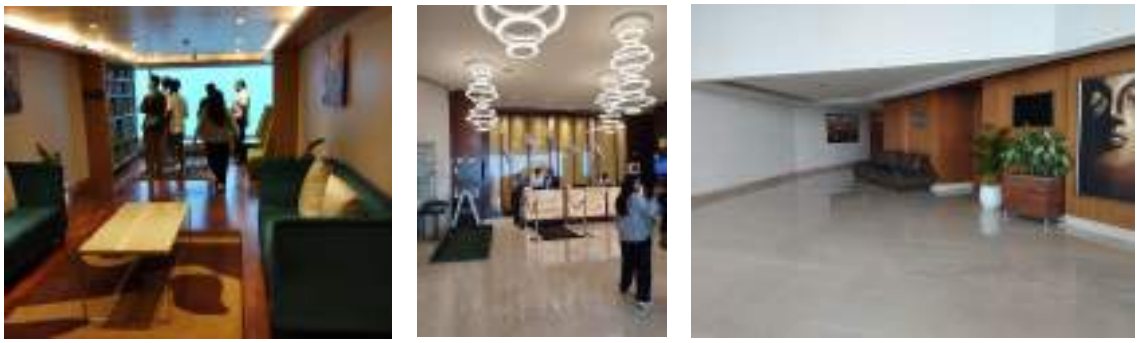


Figure 79 lobbies

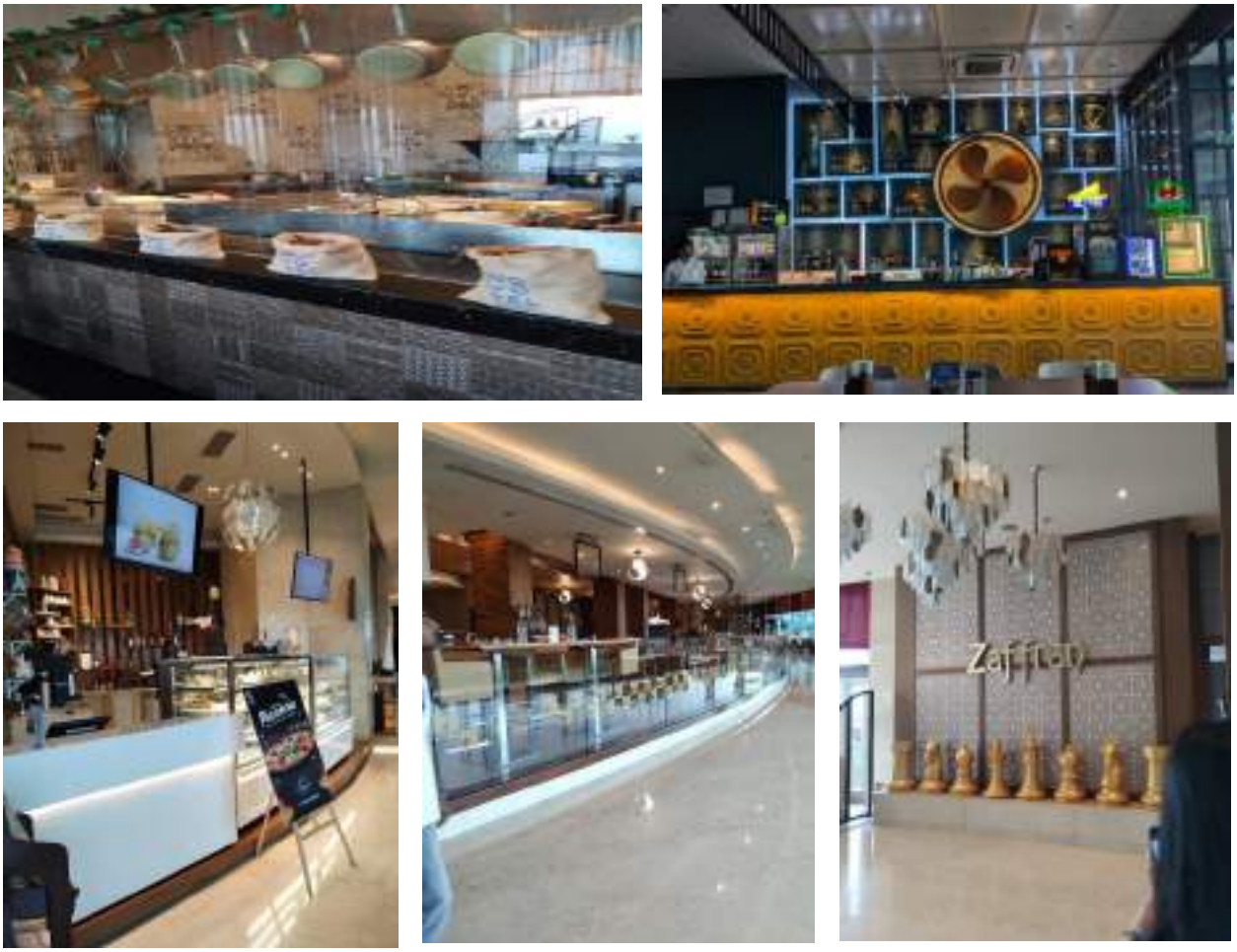


Figure 80 Restaurant and bar

4.1.5 Banquet & Conference Facilities

1. The VConvention Center, totaling approximately 11,000 m² (≈11200 sq ft), is the largest in the region with up to 2,000guest capacity and floating partitions for flexibility.
2. Additional halls include Avenue (~3,600 sq ft, capacity 600 banquet / 470 theatre), Coral, Summit, Pearl, and Nautica for smaller events—each designed with high ceilings (~1517 ft) and builtin AV systems and premium deco.



Figure 81 Banquets and conference room

4.1.6 ELEVATORS

The hotel provides 6–7 guest elevators, including dedicated express lifts to rooftop bar and function floors. Service cores are located along the building's spine, functioning as thermal buffers and ensuring privacy of guest corridors while allowing zoned vertical circulation.



Figure 82 Guest lift

4.1.7 SPA & RECREATION

While exact spa dimensions are not publicly documented, based on standard programming:

- Spa & salon: Estimated 500–800 sq ft, including treatment rooms, reception, steam/sauna. Fitness ***center*** (Gym): ~200–250 sq m (2,150–2,700 sq ft).
- Infinity pool & Jacuzzi: pool deck ~9,800 sq ft

- (shared with pool lawn), ample for loungers and bar.
- Recreation spaces also include rooftop jogging tracks, children's play zone, and poolside bar.



Figure 83 infinity pool and gym

4.1.8 ROOM TYPOLOGY & FACILITIES

- Room categories (225 total):
- Superior Rooms (Queen/Twin/King): ~29 m² (312 sq ft), sea/city views, seating/work corner, 43″ UHD TV, minibar, tea/coffee maker.
- Premier / Executive Rooms (larger): ~35–40 m² with better views and added amenities.
- Executive Suites (~50–60 m²): lounge area, premium bath, ocean-facing orientation.
- Presidential Suite: ~1035 sq ft (~96 m²), panoramic double-aspect views of the Bay.
- Guest convenience includes high-speed WiFi, electronic in-room safe, housekeeping services, and accessible rooms.



Figure 84 views of room

4.1.9 SERVICES & UTILITIES

- Water Supply: Municipal supply with borewell backup. Rainwater harvesting and low-flow fixtures deployed throughout.
- HVAC / Electrical: Central chilled water system, but with in-room thermostatic control; LED lighting across public & back-of-house areas.
- Housekeeping / Maintenance: In-house engineering, linen rotation, 24hour room service.
- Waste Management: Segregation (paper, plastic), recycling, and sustainability aligned with the Accor “Planet 21” initiative.



Figure 85 services in basement

4.1.10 SPATIAL PLANNING

- Public spaces (lobby, lounge, restaurants, spa, banquet halls) occupy podium and lower levels.
- Guestroom wings rise above these podium volumes, oriented to the sea for optimal view and daylight.
- BOH (back-of-house)—kitchens, laundry, staff rooms—are located behind banquet zone and concealed behind service cores for efficient logistics.
- Terraces & Pool Areas: on lower roof terraces and podiums for seamless indoor–outdoor transitions and event flexibility.

4.1.11 FLOOR PLANS



Figure 86 floor plan – Hotel Entrace level

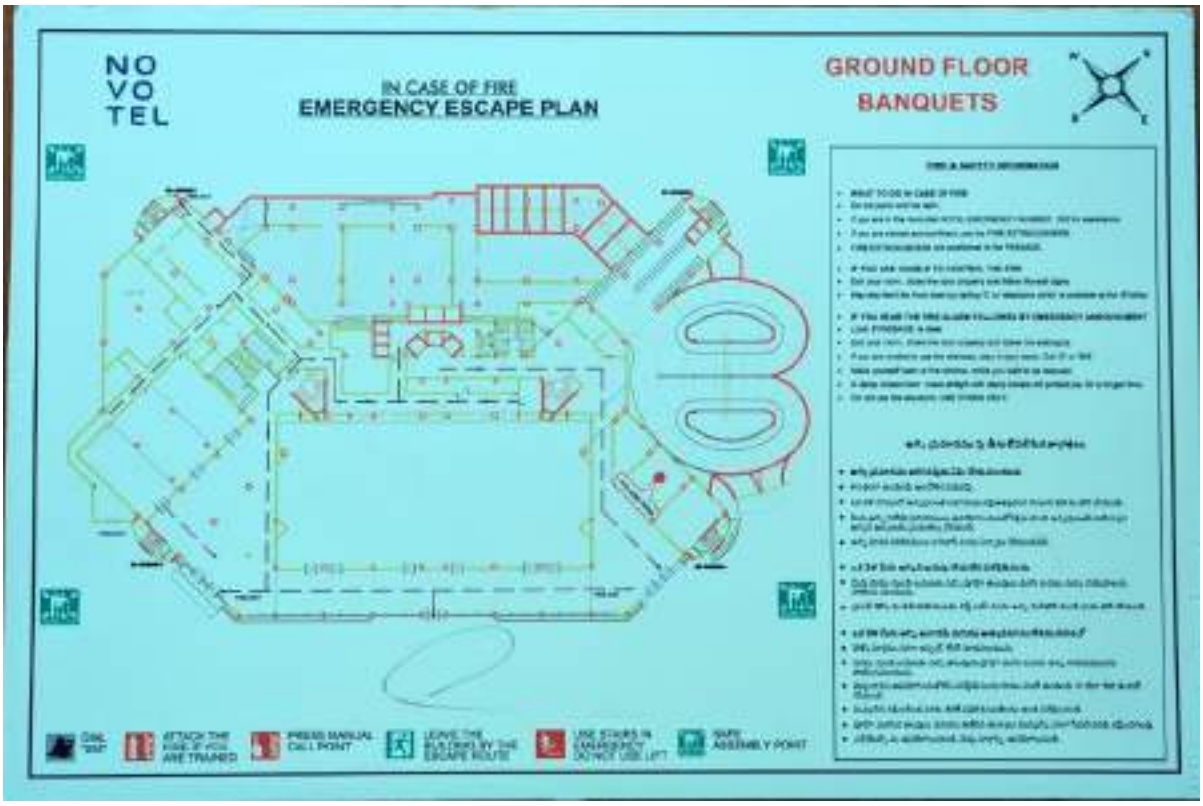


Figure 87 floor plans- ground floor banquets level



Figure 88floor plans - mezzanine floor

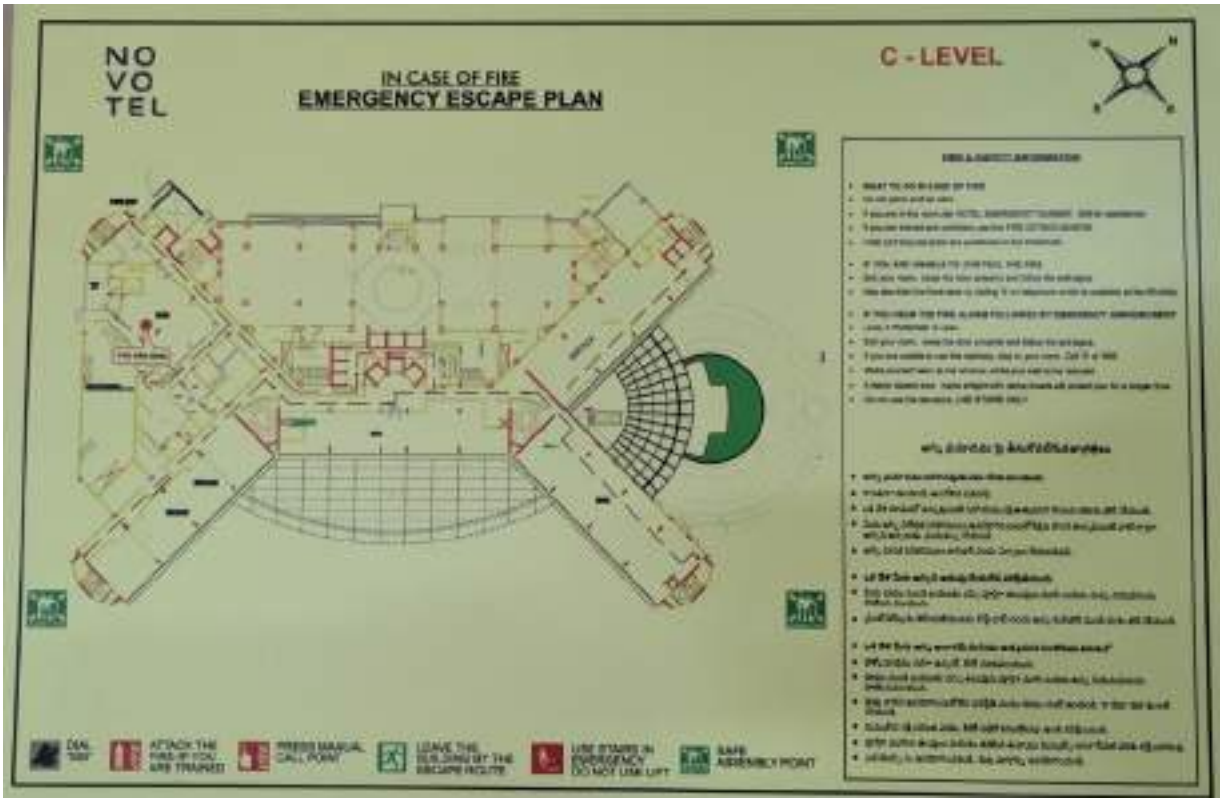


Figure 89 floor plans- C-level



Figure 90 floor plan - rooms level

4.1.12 KEY OBSERVATIONS

- The hotel showcases well-scaled and dimensioned event spaces—Coral and VConvention capable of hosting intimate to large-scale conferences and weddings.
- Terraced massing enhances views, daylight, and guest experience while mitigating building height.
- Balanced zoning ensures guest privacy and operational efficacy—public and guest areas are effectively separated.
- The interior materiality and layout reflect Novotel's signature design strategy—modern, functional, and placereferencing.
- Sustainable practices woven into design and operation uphold the hotel's eco-conscious ethos.





Table 34 comparative areas of banquets

Venue	Area (sq ft)	Dimensions (ft)	Height (ft)	Capacity (Banquet / Theatre)
V-Convention (1+2+3)	11,340	70 × 162 × 17	17	~520 / ~1,700
V-Convention III	3,430	70 × 49 × 17	17	Banquet 250 / Theatre 350
Avenue	3,584	—	17	Banquet 216 / Theatre 470
Coral (1+2+3)	~3,626	49 × 74 × 10	10	Banquet ~200 / Theatre ~350
Coral Part-I	1,127	49 × 23 × 10	10	~100
Coral Part-II	1,372	49 × 28 × 10	10	~120
Summit	~598	—	15	Banquet 24 / Theatre 50
Pearl I & II	~598 each	—	15	Banquet ~36 / Theatre 50
Nautica	—	—	—	Banquet 48 / Theatre 120

4.2. LIVE CASE STUDY: TAJ HOTEL, BHOPAL

4.2.1 INTRODUCTION

The Taj Lakefront, Bhopal epitomises true luxury. Overlooking the upper lake and just25 minutes from the international airport, this iconic landmark symbolises the soul of Bhopal and its vision for tomorrow. The magnificent structure by the lakefront redefines fine living with its modern interiors, ornate and luxurious finishes. The design is intuitive to the region and inspired by the bell metal craft of Tikamgarh, the lakes and Zari work ofBhopal, the paisley prints of Bagh, the Durries of Sironj, and the Terracotta art of the state's tribal areas.

Ready to be the new landmark of the city, it opens its doors to the world with 152 guest rooms, multi-cuisine and award-winning restaurants, recreation facilities, Jiva spa, modern meeting spaces, well-equipped conference rooms, and the city's largest banqueting facilities

Details:



Figure 91 Taj Lakefront at night

PROJECT	**TAJ LAKEFRONT**
LOCATION	**BHOPAL**
CLIMATE	**Humid Subtropical**
TOPOGRAPHY	**PLAIN LAND**
ARCHITECT	**JOI DESIGN**
COMPLITION YEAR	**2021**
NO. OF ROOMS	**152**
SITE AREA	**4.77 ACRE**
FAR	**2**

4.2.2 LOCATION

It is close to the Van Vihar National Park, Sanchi Stupa, National Museum of Mankind, Taj-ul-Masajid, and many such wonders of the city. Located near Bhadbhada Road Chauraha, Link Rd Number 3, Bhopal, Madhya Pradesh Overlooking the upper lake.

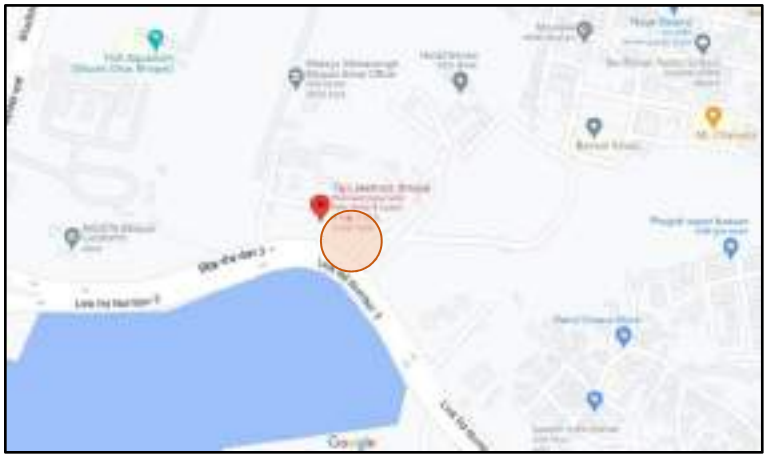


Figure 92 Location on google maps

4.2.3 SITE BOUNDARY



Figure 93 Site boundary

Site Boundary
Circulation within the Site

Site Characteristics:

- The site has kind of trapezium shape having curved edge in front.
- As we look into the site planning of taj the front part is designed with pleasing landscapeby which guests can connect with its lush greenery.
- Back part of the site is used for the services.
- The building shape is evolved by the curved front edge of the site.
- Circulation of the site is designed in that way so that no congestion will occur.

4.2.4 FACILITIES

These are the following facilities and amenities that Hotel Taj is providing to their guests.

Outdoors
- Outdoor furniture
- Sun terrace
- Terrace
- Garden

Activities
- Evening entertainment
- Games room

Food & Drink
- Bar
- Restaurant

Internet

WiFi is available in all areas and is free of charge.

Parking

Free private parking is possible on site (reservation is not needed)

- Electric vehicle charging station

Reception services
- Invoice provided
- Concierge service
- Currency exchange
- Express check-in/check-out
- 24-hour front desk

Cleaning services
- Daily housekeeping
- Trouser press Additional charge
- Ironing service Additional charge
- Dry cleaning Additional charge
- Laundry Additional charge

Business facilities
- Business centre
- Meeting/banquet facilities

Safety & security
- Fire extinguishers
- CCTV outside property
- CCTV in common areas
- Smoke alarms
- Security alarm
- Key card access
- 24-hour security

General
- Air conditioning
- Lift
- Family rooms
- Non-smoking rooms
- Room service

Outdoor swimming pool

Free! All pools are free of charge

- Open all year
- Opening times
- All ages welcome
- Pool/beach towels
- Pool bar
- Infinity pool
- Pool is on rooftop

Wellness
- Fitness
- Full body massage
- Hand massage
- Head massage
- Couples massage
- Foot massage
- Neck massage
- Back massage
- Spa/wellness packages
- Spa lounge/relaxation area
- Spa facilities
- Pool/beach towels
- Massage
- Spa and wellness centre Additional charge
- Fitness centre

4.2.5 APPROACH ROAD

- 18 m wide arterial road named Link RD number 3 is connecting the Taj hotel to the various locations of the city.
- 12 m wide service lane is given in the right side of the site.

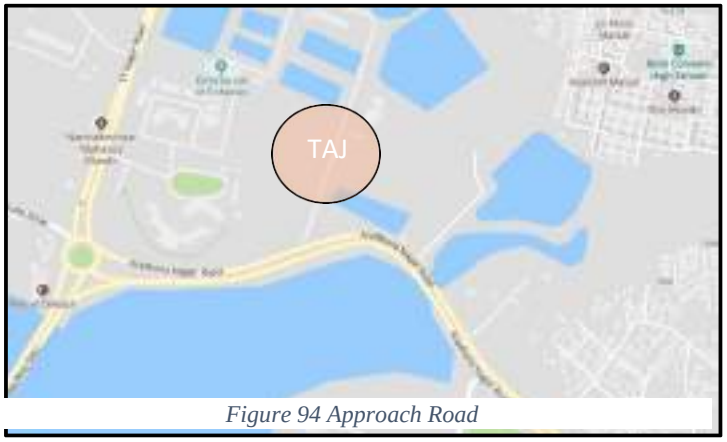


Figure 94 Approach Road

4.2.6 VERTICAL ZONING

Here is the conceptual section of the taj hotel to explain the vertical zoning.



Figure 95 Vertical Zoning

4.2.7 AREA STATEMENT

Name		No. of Units	Area (sq.m.)	Total Area	%
	Total No. of Keys	152			
	No. of Floors	10			
A.	**Guest Room Mix**				
	Executive Suite	141	66	9306	80
	Twin Bedroom	5	33	165	10
	King bedroom	5	33	165	10
	Presidential Suite	1	152	152	
	Total Area (Sum)			**9788**	
B.	**Guest Floor Services**				
I	**Corridor Area**				
	Type Floor Corridor	1	180	**180**	30
II	**Housekeeping Static or Typical Floors**				
	Housekeeping Static or Typical Floors	1	185	**185**	32
III	**Lifts**				
	Guest Elevators	2	55	**110**	19
	Service Lift Lobby	2	55	**110**	19
IV	**Fire Protection**				
	Fire Escape Stairs	2	30	**60**	10
	Total Area (Sum)			**585**	
C.	**Public Areas**				
I	**Entrance Lobby**				
	Port Cochere	1	40	**40**	15
	Entrance Lobby Waiting Areas Front Desk	1	100	**100**	38
	Front Desk	1	40	**40**	14
	Luggage Store	1	15	**15**	6
	Bell Man	1	4	**4**	8
II	**Business Centre**				
	Store	1	36	**36**	13
			5	**5**	2
III	**Public Utilities**				
	Public Toilet	1	30	**30**	10

Figure 96 Area Statement Taj - 1

	Total Area (Sum)			**270**	
D.	**F&B Outlets**				
	Bar (Special) - 30 Covers	1	100	**100**	25
	Multi-Cuisine Restaurant - 120 Covers	1	300	**300**	75
	Total Area (Sum)			**400**	

E.	**Banquets**				
	Banquet Hall	2	225	**450**	62
	Pre-Function Area	2	80	**160**	22
	Conference Room	1	50	**50**	6
	Banquet Toilets	1	60	**60**	10
	Total Area (Sum)			**720**	

F.	**Recreation Facilities**				
	Swimming Pool	1	100	**100**	32
	Pool Change Room	1	50	**50**	16
	Gym	1	100	**100**	32
	Massage Room	1	6	**6**	10
	Saloon	1	50	**50**	10
	Total Area (Sum)			**306**	

G.	**Retail Archade**				
	Retail Shops	1	25	**25**	
	Total Area (Sum)			**25**	
BOH					

A.	**Material Management**				
	Truck Dock	2	20	**40**	34
	Holding Area	1	38	**38**	34
	Veg Wash	1	2.5	**2.5**	2
	Purchase & Reciving Off	1	20	**20**	15
	Purchase Office Manager	1	18	**18**	15
	Total Area (Sum)			**118.5**	

B.	**Main Store**				
	General Store	1	120	**120**	75
	Linen	1	10	**10**	6

Figure 97 Area Statement Taj - 2

	Unassign Store	1	10	**10**	6
	Liquor	1	10	**10**	6
	Crockery	1	6	**6**	3
	Mis	1	2	**2**	2
	Fuel	1	2	**2**	2
	Total Area (Sum)			**160**	

C.	**Garbage**				
	Loading	1	20	**20**	30
	Trash Garbage(Dry)	1	8	**8**	12
	Trash Garbage Refrigerator (wet)	1	15	**15**	24
	Garbage Truck	1	12	**12**	18
	Coal Room	1	5	**5**	8
	Circulation Space	1	5	**5**	8
	Total Area (Sum)			**65**	

D.	**Front Office : Admi/Acc/IT**				
	GM	1	151	**151**	44
	Sec to GM	1	9	**9**	2
	FO Mgr Couples as duty manager)	1	5	**5**	1
	Revenue Manager	1	8	**8**	2
	Reservation Office	1	8	**8**	2
	Work Station	1	25	**25**	8
	Discussion Room (Commom Meeting)	1	4	**4**	1
	Chief Accountant- Refer Staff Reqmnt	1	15	**15**	5
	Credit Manager	1	8	**8**	2
	Cashier	1	5	**5**	1
	Controller	1	8	**8**	2
	Payroll Manager	1	5	**5**	1
	Account Record Room	1	10	**10**	2
	Meeting room	1	10	**10**	2
	Computer Room	1	17	**17**	8
	UPS	1	35	**35**	12
	Recorde	1	10	**10**	2
	Storage and Copy8ing	1	9	**9**	2
	Total Area (Sum)			**347**	

E.	**Sales**				
	Rooms Mgr	1	8	**8**	18

Figure 98 Area Statement Taj - 3

	Banquet Mgr	1	8	**8**	18
	Workstation	2	5	**10**	22
	Discussion Room	1	10	**10**	22
	Storage and Copying	1	8	**8**	20
	Total Area (Sum)			**44**	

F.	**F&B**				
	Multi Cuisine Main Kitchen	1	85	**85**	**20**
	Room Services Main Kitchen	1	20	**20**	5
	Pastery	1	32	**32**	7
	Bakery	1	20	**20**	4
	Commissary prep Kitchen	1	40	**40**	9
	Common Dishwash	1	20	**20**	5
	Central Potwash	1	12	**12**	2
	Pot Store	1	8	**8**	3
	Banquet BOH & Store	1	130	**130**	30
	Cold Kitchen	1	18	**18**	4
	Café Kitchen	1	12	**12**	2
	Show Kitchen\Back Pantry Area for bar	1	8	**8**	2
	Bar Counter	1	15	**15**	3
	Chief Counter	1	5	**5**	2
	Chief Office	1	8	**8**	2
	Total Area (Sum)			**433**	

G.	**House Keeping**				
	Issue / Trailer / Dirties Collection	1	5	**5**	4
	House Keeper Executive	1	10	**10**	10
	House Keeping Assistant	1	8	**8**	8
	Hsk Office + House Keeper (as per Ap.)	1	16	**16**	15
	Dead Store	1	30	**30**	28
	F&B Circulatipon	1	5	**5**	5
	Guest Supply Store	1	10	**10**	10
	Bulk Lenin Store	1	5	**5**	5
	Tailor	1	10	**10**	10
	Upholestry Store	1	5	**5**	5
	Lost & Found	1	5	**5**	5
	Total Area (Sum)			**104**	

H.	**Human Resources**				

Figure 99 Area Statement Taj - 4

	HR Mgr	1	8	**8**	14
	Sec	1	4	**4**	7
	Traing Room	1	20	**20**	35
	Training Mgr	1	4	**4**	7
	Discussion	1	20	**20**	35
	Total Area (Sum)			**56**	

K	**Security & Time Office**				
	Staff Entry & Time Keeper/cctv	1	10	**10**	
	Security Mgr	1	8	**8**	
	Total Area (Sum)			**18**	

L	**Repair and Maintenance**				
	Head of Engg	1	8	**8**	
	Asst Engg	1	8	**8**	
	Secured Store	1	10	**10**	
	Paint Shope	1	10	**10**	
	Engg Store	1	10	**10**	
	Carpentry	1	10	**10**	
	Spare Parts	1	5	**5**	
	Total Area (Sum)			**61**	

J.	**Staff Facility**				
	Male Toilets & Lockers	1	100	**100**	
	Male Executive Toilets and Lockers	0	0	**0**	
	Female Toilets and Lockers	1	70	**70**	
	Kitchen	1	25	**25**	
	Staff Cafeteria	1	90	**90**	
	Staff Recreation Area	1	15	**15**	
	Total Area (Sum)			**300**	

I.	**Miscellenouis**				
	Divers Rest Room	1	15	**15**	
	Drivers Toilet	1	22	**22**	
	Microbiologist	1	8	**8**	
	Total Area (Sum)			**45**	

Figure 100 Area Statement Taj - 5

M.	Other BOH (exer mech)				
I	Mechanical Areas				
	LV Room	1	56	56	
	Indoor Transformers	2	22	44	
	LT Panel	1	74	74	
	DG Generator Room	1	97	97	
	Chiller Plant Room	1	125	125	
	Rainwater Tank	105 Cubic Meter			
	Municipal Tank	123 Cubic Meter			
	Raw Water Tank	123 Cubic Meter			
	Fire Tank	105 Cubic Meter			
	Treated Water Tank	123 Cubic Meter			
	Salt Storage	1	12	12	
	Pump Room (Fire)	1	20	20	
	Pump Room (Raw + Soft + WTP)	1	60	60	
	Boiler Room with Pump and Heat	1	58	58	
	STP with Pump and Equipment's	1	80	80	
	Work Shop	1	22	22	
	Engineering Office	1	8	8	
	Engineering Store	1	10	10	
	Control Room	1	15	15	
	Underground Oil Storage Tank	1	190	190	
	Swimming Pool Filtration Plant	1	12	12	
	Total Area (Sum)			487	
II	Mechanical; Areas on Terrace				
	Cooling Towers	1	135	135	
	Overhead Tank	1	12	12	
	Ventilation/Exhaust Fans	14	12	168	
	Flushing Tanks/ Cooling Tower Tanks	3	9	27	
	Staircase Pressurisation Fans	3	11	33	
	Lift Pressurisation Fans	2	2.2	4.4	
	Sorubber for Kitchen Exhaust	1	5	5	
	Total Area (Sum)		186.4	384.4	

N.	Parking				
	Basement 2			1700	
	Basement 1			1420	
	Total Wall Thiockness and Circulation			3120	

Figure 101 Area Statement Taj - 6

4.2.8 FLOOR PLANS

Basement 3:
WTP, Fire Pumps, and Domestic, raw and fire tanks

Basement 2 Plan:

Basement 2 is comprised with service amenities like STP, ETP, WTP, fire tank, domestic water tank, etc., and parking spaces
Car Parking Space = 350

Sump Pumps (DG) to collect ground water and send it back to lake to save the foundation

Water treated in STP is sent to chiller and gardening purpose.



Figure 102 Basement 2 Plan

Raw Water tank Capicity: 90 KL & 125 KL

Domestic Water tank Capicity:118 KL & 123 KL

Fire Water tank Capicity: 1. 200 KL, 2. 200 KL

WTP Process: Raw Water → Sand Filter → Activated Carbon → Hyper Filtration → Kitchen/ Boilers/



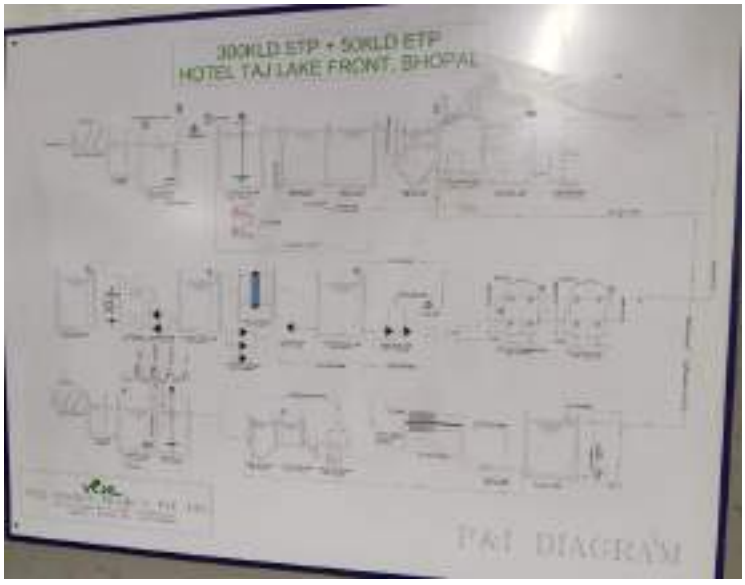


Figure 103 Basement 2

Basement 1 Plan:

- Basement 1 mainly consist of different types of Offices spaces like Housekeeping office , Finance Office, Sales office, Engg office and Canteen, Storage, Laundry spaces etc.
- It also has parking spaces and services outlet.
- All the staff of taj lakefront uses basement 1 as an entrance and parking space respectively.
- Car Parking Space: 250 ECS
- Grey Fans for fresh air, Red Fans for smoke extraction through fire shaft



Figure 104 Basement 1 Plan



Figure 105 Services in Basement 1

Ground Floor Plan:

- The entrance lobby of the hotel has grand luxury feel as it has triple heightedspaces with very attractive false ceiling consist of cove lighting.
- There is a separate entrance has been provided including Banquet Hall, Meetingroom, conference rooms.
- A Banquet Hall can be divided as 3 halls by automatic temporary panels. Washroom for Banquet guests is accessible from Pre-Function Area which act asa buffer space for guest.
- 2 Banquet Halls, Sheesh Mahal: Small banquet hall and Raj Mahal: Big Banquet Hall.
- 33kv Incoming line for transformer
- 2 DG, 1250 kVA and 1010 kVA, it take 8 seconds for backup and DG room is sound proof with the layering of glass fibre, reduces the sound from 95 dB to 65 dB and upto 45 dB in guest floors.

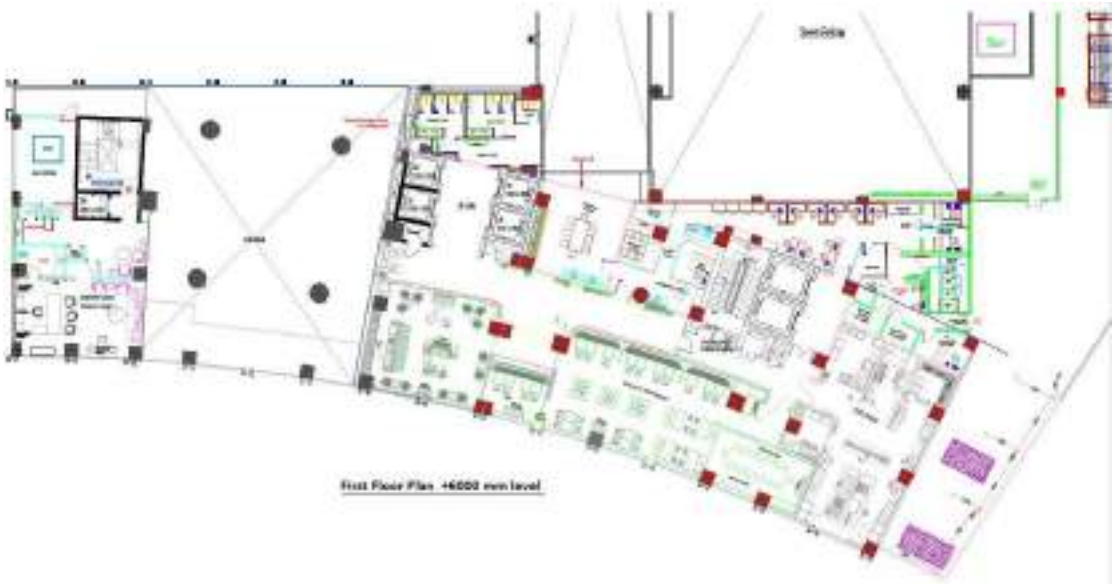




Figure 106 Ground floor plan and pictures (reception, banquet, duct opening, UPS)

First Floor Plan:

- This floor has a Chinese Restaurant with a wonderful Chinese theme based interiors Ming restaurant + Bar.
- Private Dining Restaurants are also provided in this floor.
- Chiller are located on the back terrace of first floor
- 3 Chillers 350 tons each



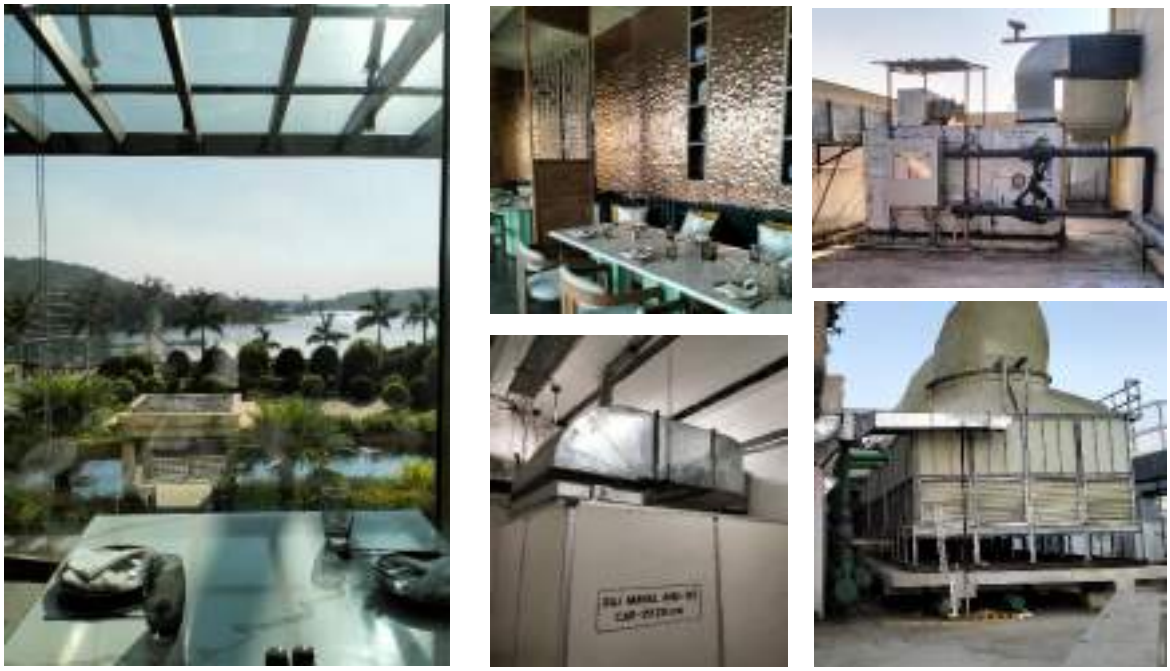


Figure 107 First floor plan and pictures (restaurant & chiller)

Second Floor Plan:

- Restaurant Seating's are provided in this floor. Kitchen including cooking, store, washing space has been provided. Live kitchen is also there.
- Amenities like Gym, Spa & sauna, Saloon etc. are provided with top classfacilitie



Figure 108 Second Floor plan

Service Floor 2.5:

Typical Floor Plan (3rd to 7th) Floor :

- 24 guest rooms including Executive Suites, Twin Bedrooms are there in this floor.

- Housekeeping Room are also there in this room for room services.
- Specialty of these typical floor is that interior of lobby and corridors are fullydifferent which gives different types of feeling at each different floor. FCU in Rooms 1.5 T, Suites 2 T



Figure 109 Typical FLoor plan 3rd to 7th



Figure 110 Guest room

8th Floor Plan:

- 15 guest rooms including Executive Suites, King Bedrooms and 1 presidentialsuite are there in this floor.



Figure 111 8th floor plan

- **9th Floor Plan:**
- 20 guest rooms including Executive Suites, Twin Bedrooms are there in this floor.



Figure 112 9th floor plan

9.5th Floor: Pool filtration, plumbing shafts end her & exhaust ducts of bathrooms end here

10th Floor Plan: Open terrace lounge, club area with the view of swimming pool is provided in the top floor of this Hotel.





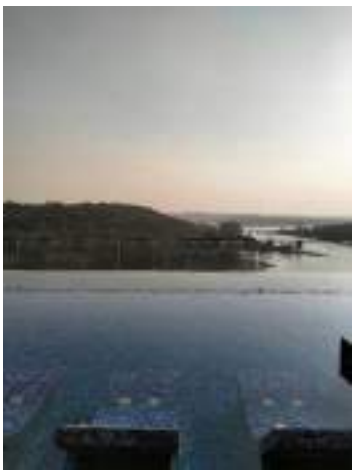




Figure 113 10th floor plan and pictures (rooftop rest. bar & swimming pool)

4.2.9 GUEST ROOM TYPOLOGY

Total there are 152 rooms which are majorly classified into 4 categories:

- Executive Suite
- Twin Room
- King Room
- Presidential Suite

Executive Suite

Tranquility and luxury unite in the Executive Suites at the Taj Lakefront, Bhopal. Extravagant and spacious, these suites, with the option of interconnecting rooms, are ideal for vacationing with family and friends. The breakfast table, the plush seating, a dressing area and state-of-the- art bathrooms are the perfect setting that your memories deserve. Indulge in the breath-taking views of the lake and Taj's signature service for a truly luxurious retreat.





Size: 66 sq.m

Signature Feature: Spacious two-room suites overlooking the lake

Occupancy Details: Up to 3 guests. Max Adults: 3, Max Children: 2

OTHER CONVENIENCES

- Tea-coffee maker
- Forest Essentials bath amenities
- Air conditioning
- Separate living area
- Electronic safe.
- WiFi
- Iron & ironing board
- In-room bottled water
- Minibar
- Newspaper
- Full-length mirror, hair dryer, weighingscale
- 49-inch Smart LED TV



Figure 114 Executive suite floor plan & photos

Twin Room

Framed by the picturesque backdrop of the hills, the Deluxe Rooms are the epitome of tranquillity and relaxation. The decor seamlessly merges the aesthetic philosophy of Madhya Pradesh with a European flair. Fully-equipped with quality amenities, including digital connectivity with smart TV and Taj's signature service, the Deluxe Rooms offer an unmatched experience of comfort. Includes complimentary access to the hotel gym and wet areas.





SIZE: 33 sq.m

SIGNATURE FEATURE: Spectacular vistas of the hills

Occupancy Details: Up to 3 guests. Max Adults: 3, Max Children: 2

OTHER CONVENIENCES

- Tea-coffee maker
- Forest Essentials bath amenities
- Choice of smoking & non-smoking accommodation
- Air conditioning
- WiFi
- Iron & ironing board
- In-room bottled water
- Minibar
- Newspaper
- Full-length mirror, hair dryer, weighing scale
- 49-inch Smart LED TV
- Shower Cubicle

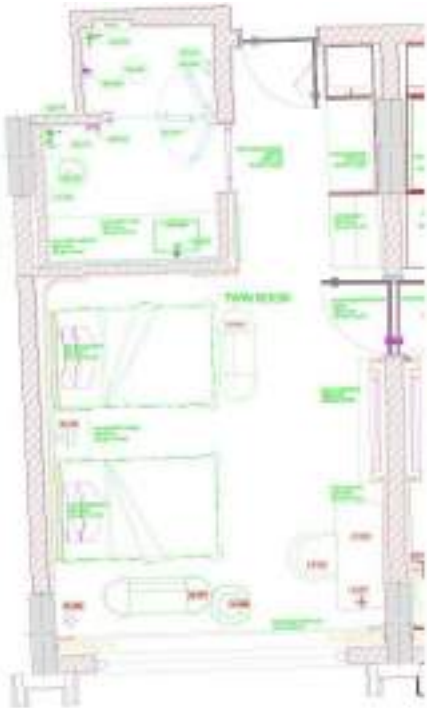


Figure 115 Twin room plan & photos

King Room

Framed by the picturesque backdrop of the hills, the Deluxe Rooms are the epitome of tranquillity and relaxation. The decor seamlessly merges the aesthetic philosophy of Madhya Pradesh with a European flair. Fully equipped with quality amenities, including digital connectivity with smart TV and Taj's signature service, the Deluxe Rooms offer an unmatched experience of comfort. Includes complimentary access to the hotel gym and wet areas.



SIZE: 33 sq.m

SIGNATURE FEATURE: Spectacular vistas of the hills

Occupancy Details: Up to 3 guests. Max Adults: 3, Max Children: 2

OTHER CONVENIENCES

- Tea-coffee maker
- Forest Essentials bath amenities
- Choice of smoking & non-smoking accommodation
- Air conditioning
- WiFi
- Iron & ironing board
- In-room bottled water
- Minibar
- Newspaper
- Full-length mirror, hair dryer, weighing scale
- 49-inch Smart LED TV



Figure 116 King room plan and photo

Presidential Suite

Bhopal is the land of the Nawabs and Begums, and epitomizing this rich culture is the Presidential Suite of the Taj Lakefront, Bhopal. With interiors that give an ethereal glimpse into the bygone era and a private balcony in every room overlooking the glorious city, the Presidential Suite is a perfect union of the multitude of generations. A lavish experience, embodied by an elegant living room, a plush dining area and a palatial master bedroom, await your presence in the opulence of the Presidential Suite at the Taj Lakefront, Bhopal.





SIZE: 152 sq.m

SIGNATURE FEATURE: A regal experience in the heart of the country

Occupancy Details: Up to 3 guests. Max Adults: 3, Max Children: 2





Figure 117 Presidential suite photos

OTHER CONVENIENCES

- Forest Essentials bath amenities
- Air conditioning
- Bedroom with private balcony or verandah & bathroom
- Living room with dining area, bedroom & bathroom
- Electronic safe.

- Tea coffee maker
- WiFi
- Iron & ironing board
- In-room bottled water
- Minibar
- Newspaper
- Full-length mirror, hair dryer, weighing scale
- 49-inch Smart LED TV
- Lake View
- Private Pantry

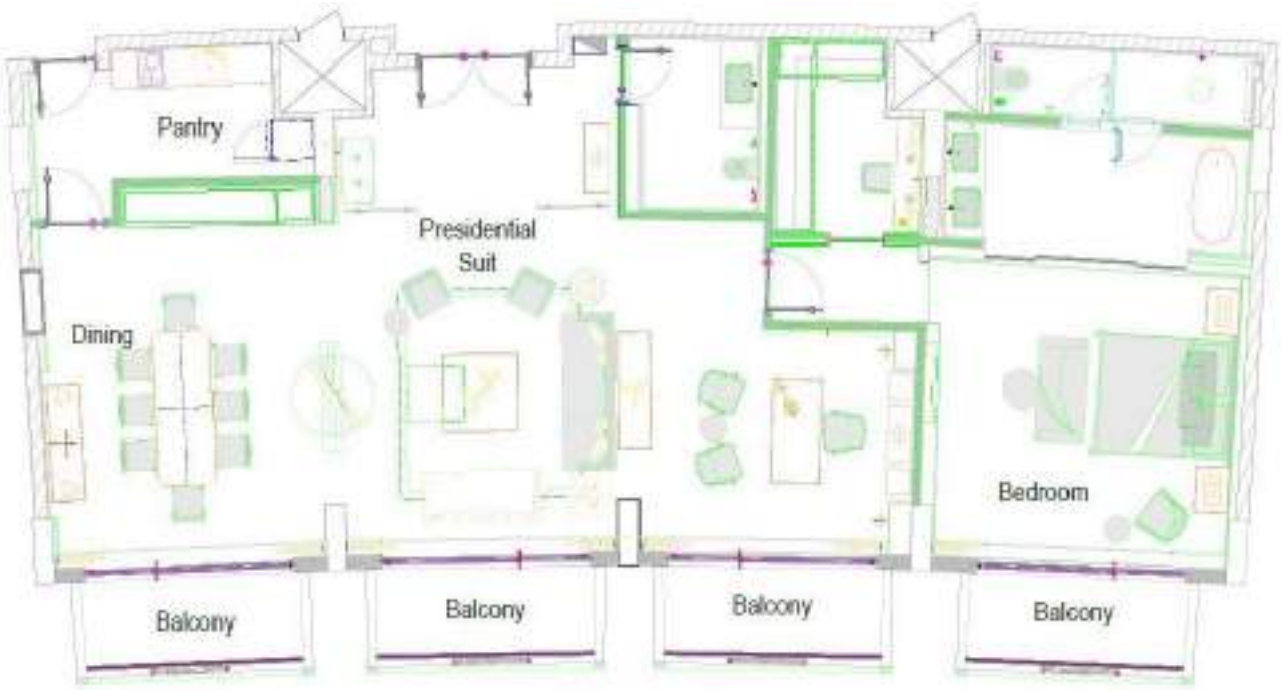


Figure 118 Presidential suite plan

4.2.10 VIEW/INTERIOR OF SPACES



Spa & Sauna



PDR



Banquet Hall



Swimming pool



Restaurant Seating



Lounge/Bar

4.2.11 SERVICES



Figure 119a LT & HT Panel Room, Fire Fighting & Electrical Tray

4.2.12 INFERENCES

- Smoke extraction fans should be there in basement.
- Water tanks can be placed in basement with stp and wtp.
- Duct opening can be treated with landscaping
- Large banquet halls can be divided in to 2 or more parts for more no. of enevts,
- Services should not be compromised.
- Guest floors can be divided into different interior themes for having different identity
- Different lanes for waiting, drop off and pickup.

4.3 DESK APPRAISAL: VIVANTA BY TAJ — GURGAON

Location: Sector 44, Gurgaon, Haryana, India

Architect: WOW Architects | Warner Wong Design

Year of Completion: 2013

Style: Contemporary, High-Tech

Function: Luxury Business Hotel



Figure 120 Taj Vivanta Gurgaon

4.3.1 DESIGN CONCEPT

The architectural concept for Vivanta by Taj Gurgaon is rooted in the idea of a "modern Indian palace" – reimagined for a dense, urban corporate context. Rather than emulating traditional forms, the building interprets indigenous spatial grammar: courtyards, screened façades, axial planning, and layered transitions. The architecture avoids over symbolism, instead expressing Indian material tactility and filtered thresholds of light and privacy.

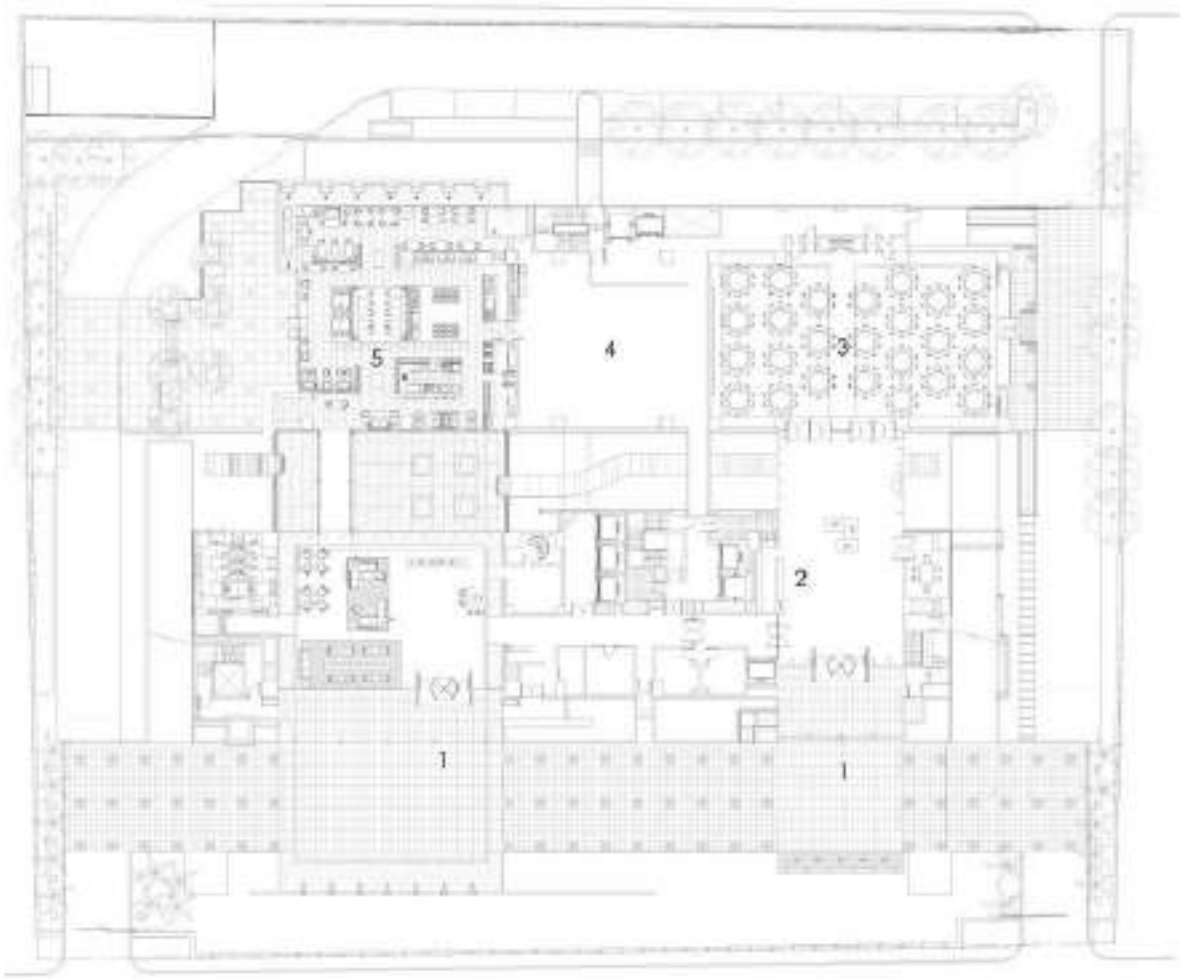
Key concepts:

- Controlled procession of spaces through solid-to-void-to-solid sequences.
- Layering of transparency and opacity using fritted glass and granite cladding.
- Visual and climatic buffer via "jali façade" reinterpretation.
- Hierarchical spatial zoning aligned to functional flow: public → semi-public → private.

4.3.2 SITE CONTEXT & ORIENTATION

- Site Area: Approximately 25,000 sq.m (6.2 acres).
- Location: Sector 44, Gurgaon, within a dense urban business district.
- Orientation: Entry on western edge; long sides face north–south, ensuring optimal daylighting and minimal heat gain.
- Terrain: Flat, with a terraced podium introduced for sectional zoning of public and private programs.

The project consciously integrates with the city’s vertical skyline while asserting its grounded architectural language through solid massing and introspective courtyards.



GROUND FLOOR PLAN

LEGEND:

1 DROP-OFF
2 PRE-FUNCTION ROOM
3 BALLROOM
4 MAIN KITCHEN
5 MAIN DINER
6 LIFT LOBBY
7 BUSINESS CENTRE
8 SMALL MEETING ROOMS
9 MEETING ROOM
10 ALFRESCO GARDEN
11 CELEBRITY RESTAURANT

0 10 20 50

N

Figure 121 Ground Floor plan

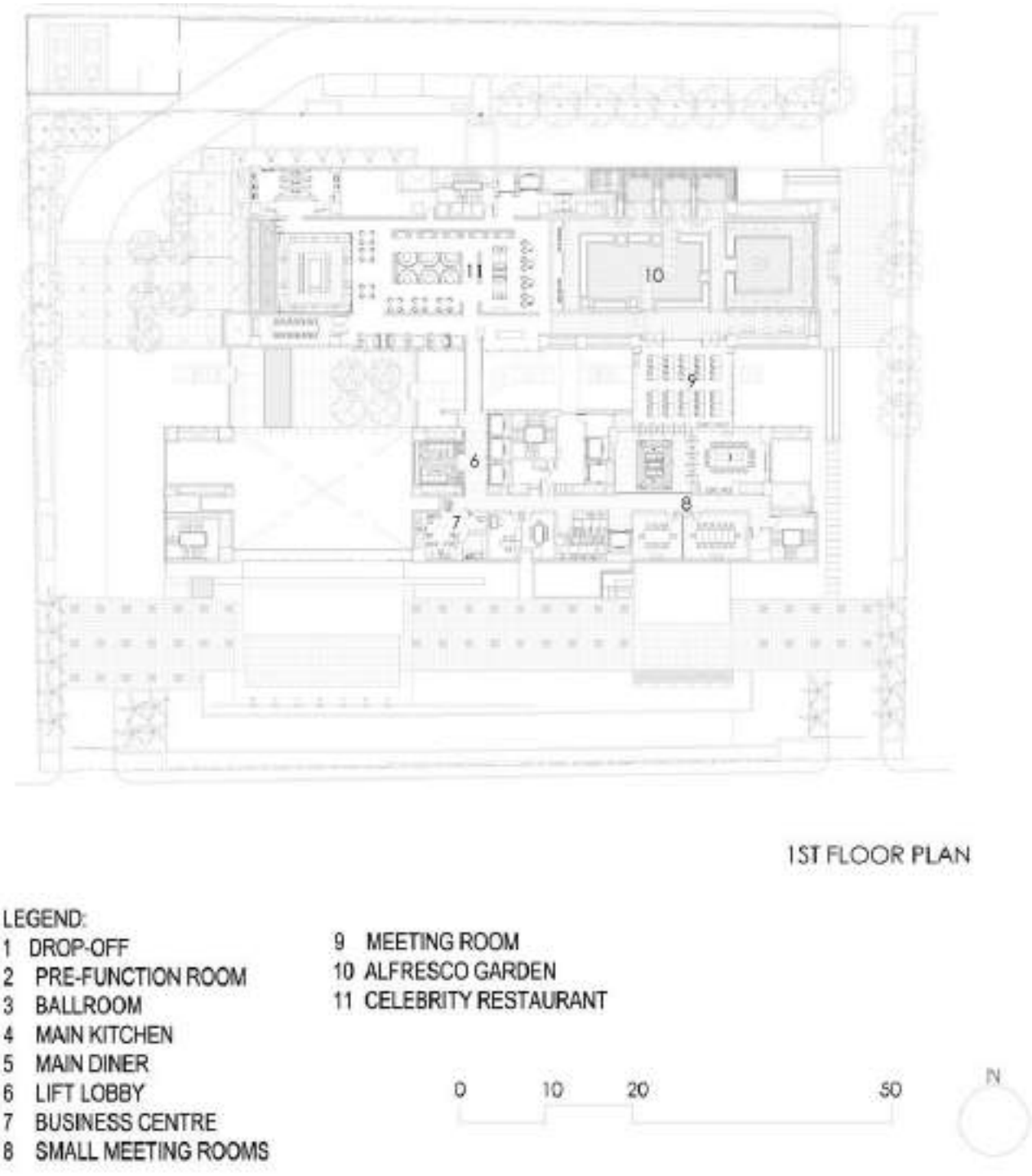


Figure 122 First floor plan

4.3.3 MASSING & FORM

- Two primary wings intersect over a central podium:
    - Guestroom wing (east-west axis), 11 floors tall.
    - Banquet and F&B block (north-south), forming an L-shaped layout.
- The form articulates horizontality through:

- Layered podium levels for public functions.
- Vertical guestroom bar with punched openings and shading fins.
- Intermediate bridges and courtyard zones acting as spatial thresholds.

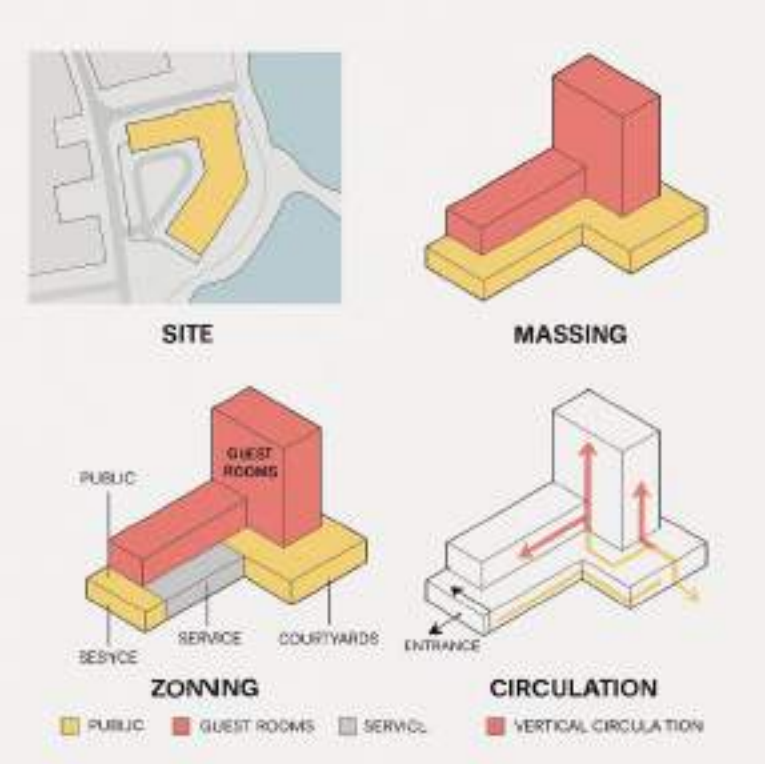


Figure 123 Massing and Form

4.3.4 PLANNING ORGANIZATION

Entry & Transition

- Drop-off framed by polished granite wall and reflective canopy.
- Entry aligned diagonally to draw the visitor into a triple-height reception lounge (approx. 9m).
- Lobby visually and physically opens into a water courtyard – a central organizing spine for all public amenities.

Circulation

- Vertical: 6 guest elevators + 2 service elevators.
- Horizontal: Central double-loaded corridors for rooms; lateral connectivity via glass link bridges at mezzanine and upper levels.

Functional Zoning

Table 35Functional Zoning

Zone	Location	Description
Public Spaces	Ground & Podium	Lobby, lounge, dining, bar, meeting areas

Semi-public Spaces	Podium & Mezzanine	Banquet, courtyard café, spa
Private Guest Rooms	Above Podium	208 rooms + suites (floors 3 to 10)
Service Areas	Basement & Rear Side	BOH, staff circulation, service kitchen

4.3.5 COURTYARDS & CLIMATIC STRATEGY

- Primary internal courtyard (~12 x 30 m): defines the building's center, used as a passive cooling device, visual connector, and event space.
- Reflecting pool and native planting maintain microclimate and thermal comfort.
- Jali-inspired façade fins reduce solar gain and create dynamic light filtering across all guest floors.
- Roofscapes landscaped to improve thermal mass and reduce urban heat impact.





Figure 124 Courtyards

4.3.6 KEY FACILITIES

Table 36 Facilities

Space	Approximate Dimensions/Area
Lobby Lounge	~1000 sq ft, 9 m ceiling
Banquet Hall	10,000 sq ft, 6.5 m clear height, partitionable
Meeting Rooms (x3)	500–700 sq ft each
Board Room	~350 sq ft
All-day Dining (Latitude)	~2000 sq ft + kitchen
Thai Pavilion Restaurant	~1800 sq. ft
Bar & Lounge (Tease)	Indoor + alfresco (~1500 sq ft)
Jiva Spa	700–800 sq. m (with 5–6 treatment rooms)
Fitness & Wellness	~200 sq m
Swimming Pool	15 x 5 m with deck
Executive Lounge	~1000 sq ft (top floor)

4.3.7 ROOM TYPOLOGIES

Table 37 Rooms Typology

Room Type	Area (approx.)	Key Features
Superior Room	28–32 m²	King/twin beds, writing table, view window, glass bathroom
Deluxe Room	35–38 m²	Lounging corner, premium fixtures
Executive Suite	50–60 m²	Separated living, walk-in closet, tub & shower
Presidential Suite	~100 m²	Dining for 6, living, pantry, luxury bath

4.3.8 MATERIALS & CONSTRUCTION SYSTEMS

- Structure: RCC frame with flat slab system for flexibility and speed.
- Façade: Combination of dry-clad granite, aluminum fins, and high-performance double-glazed units.
- Flooring: Lobby (statuario marble), rooms (engineered wood), banquet (carpet with granite inserts).
- Walls: Textured paint with wood panels and acoustic absorption layers in rooms.

Figure 125 cladding





4.3.9 SERVICES & SUSTAINABILITY

- Water Supply:
    - Municipal with treated borewell backup.
    - Rainwater harvesting tanks in basement.
    - STP capacity ~100 KL/day.
- HVAC:
    - Central chiller plant with VRV backup.
    - In-room FCUs with motion-based control.
- Electrical:
    - Dual HT grid + 100% DG backup.
    - LED lighting with sensors in corridors and BOH.
    - UPS for critical systems.
- Sustainability:
    - Low-VOC materials and adhesives.
    - Courtyards for passive ventilation.
    - Roof insulation and landscape.
    - Water-efficient fixtures.

4.3.10 ARCHITECTURAL ANALYSIS

- The design blends cultural reference and contemporary planning seamlessly.

- Use of water courts and glazing promotes spatial openness, despite the urban density.
- Subtle layering of spaces (opaque → semi-transparent → transparent) provides a psychological and thermal gradient.
- Light plays a central role: jali screens, glazed bridges, and open voids dramatize the interior atmosphere

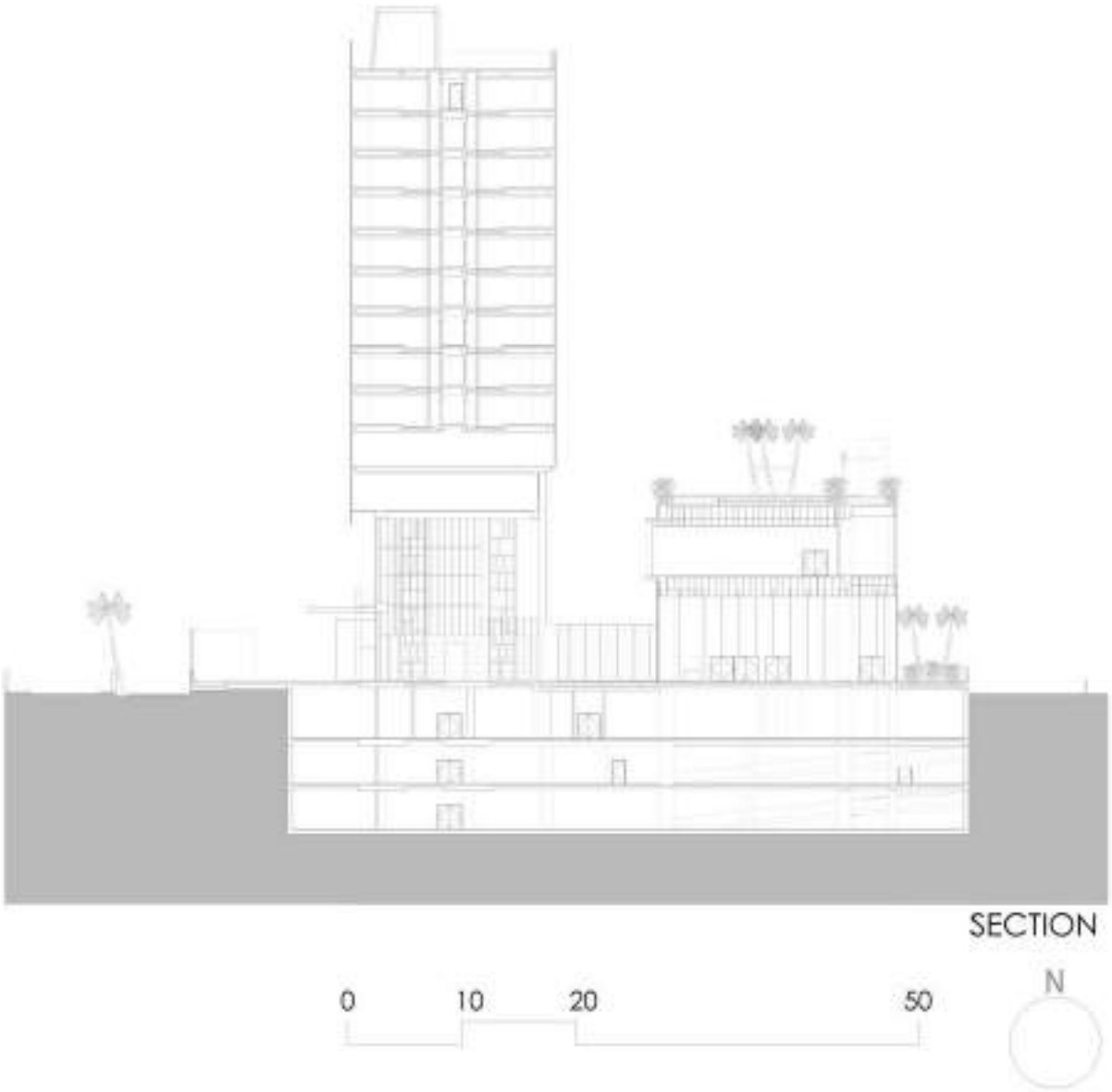


Figure 126 Section

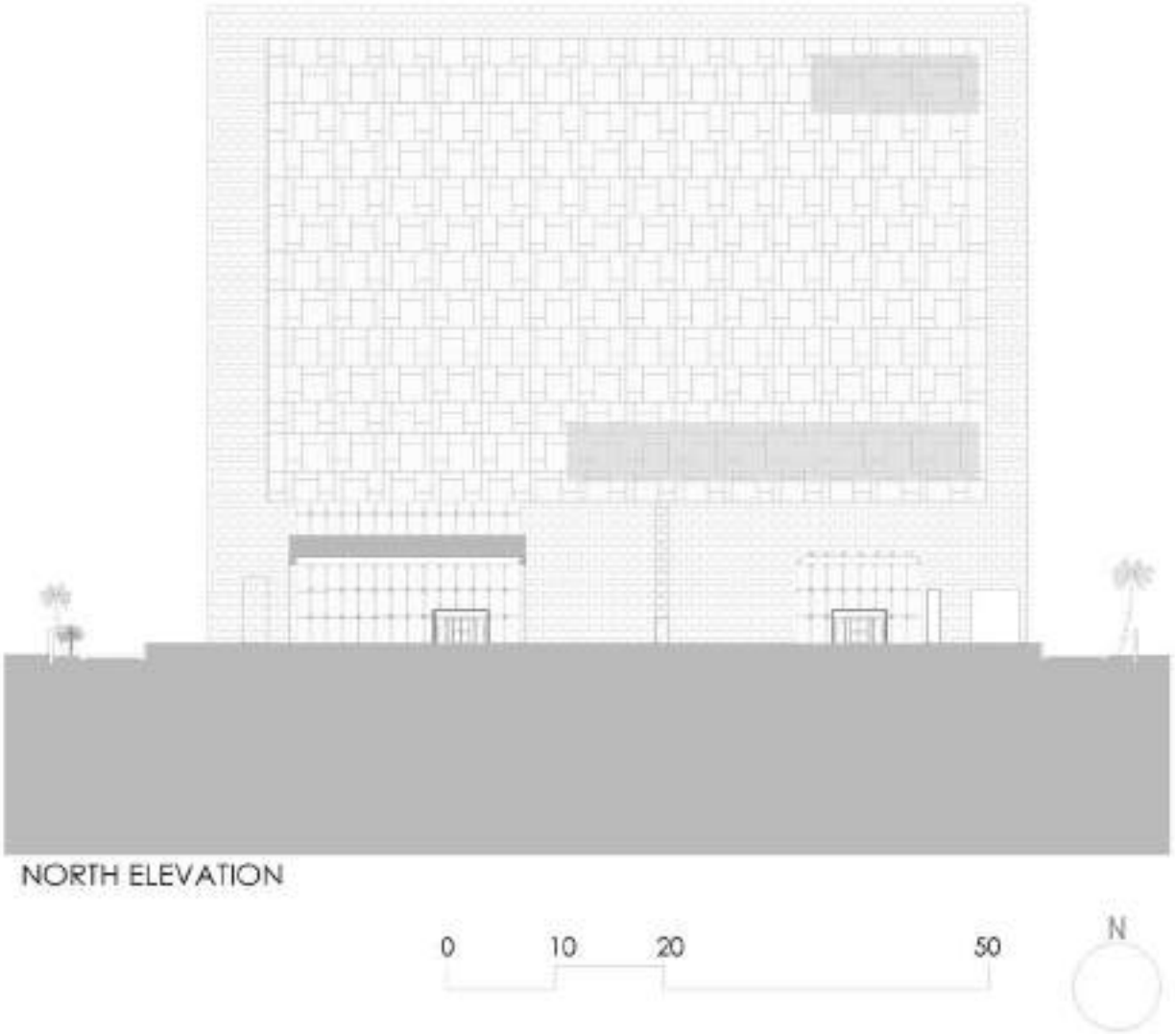


Figure 127 North Elevation

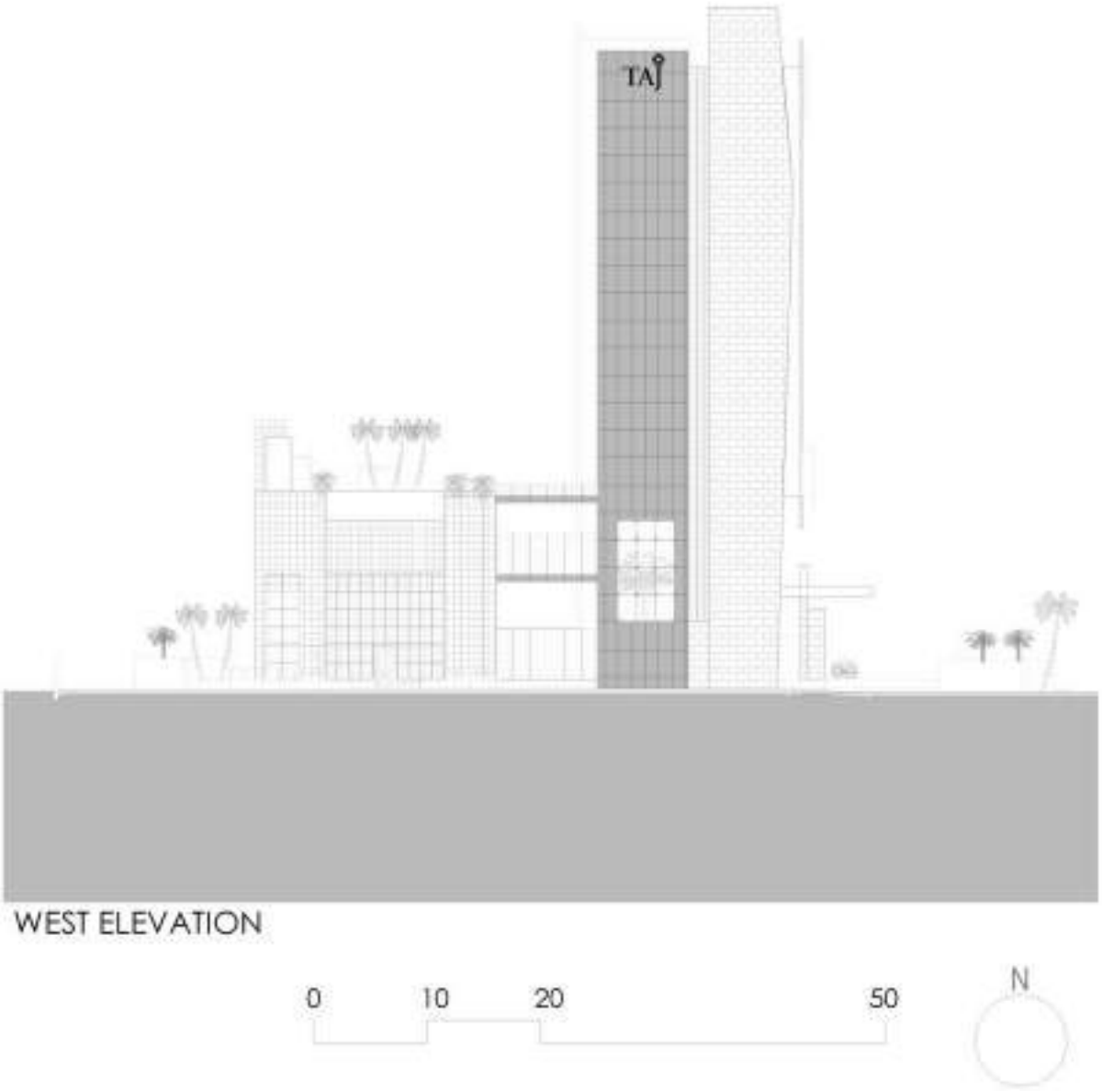


Figure 128 West Elevation

4.4 DESK APPRAISAL: VIVANTA HOTEL, WHITEFEILD BANGLORE

- LOCATION Whitefield Main Rd, Agrahara, Whitefield, Bengaluru, Karnataka 560066
- SITE AREA: 4 acres
- ARCHITECTS: WOW architects
- NO OF STOREY: G+4
- HOSPITALITY
- RATING: 5 star rated
- ROOMS: 140 rooms



Figure 129 Vivanta, Bangalore

4.4.1 DESIGN CONCEPT

Vivanta Whitefield was conceived as a fusion between architecture, landscape, and cultural storytelling. Inspired by the Möbius strip and the fluidity of Indian classical dance, the architecture forms a continuous ribbon of space—a "landscraper"—that links all public zones into one experiential promenade.

Key Ideas:

- Form mimics motion: continuous, fluid podium winds across the site.
- Glass façade pixelates the site's original green-scape, embedding memory into the material palette.
- Spaces unfold as sequences of open-to-sky courts, shaded walkways, sunken gardens, and flowing terraces.

4.4.2 PLANNING & CIRCULATION

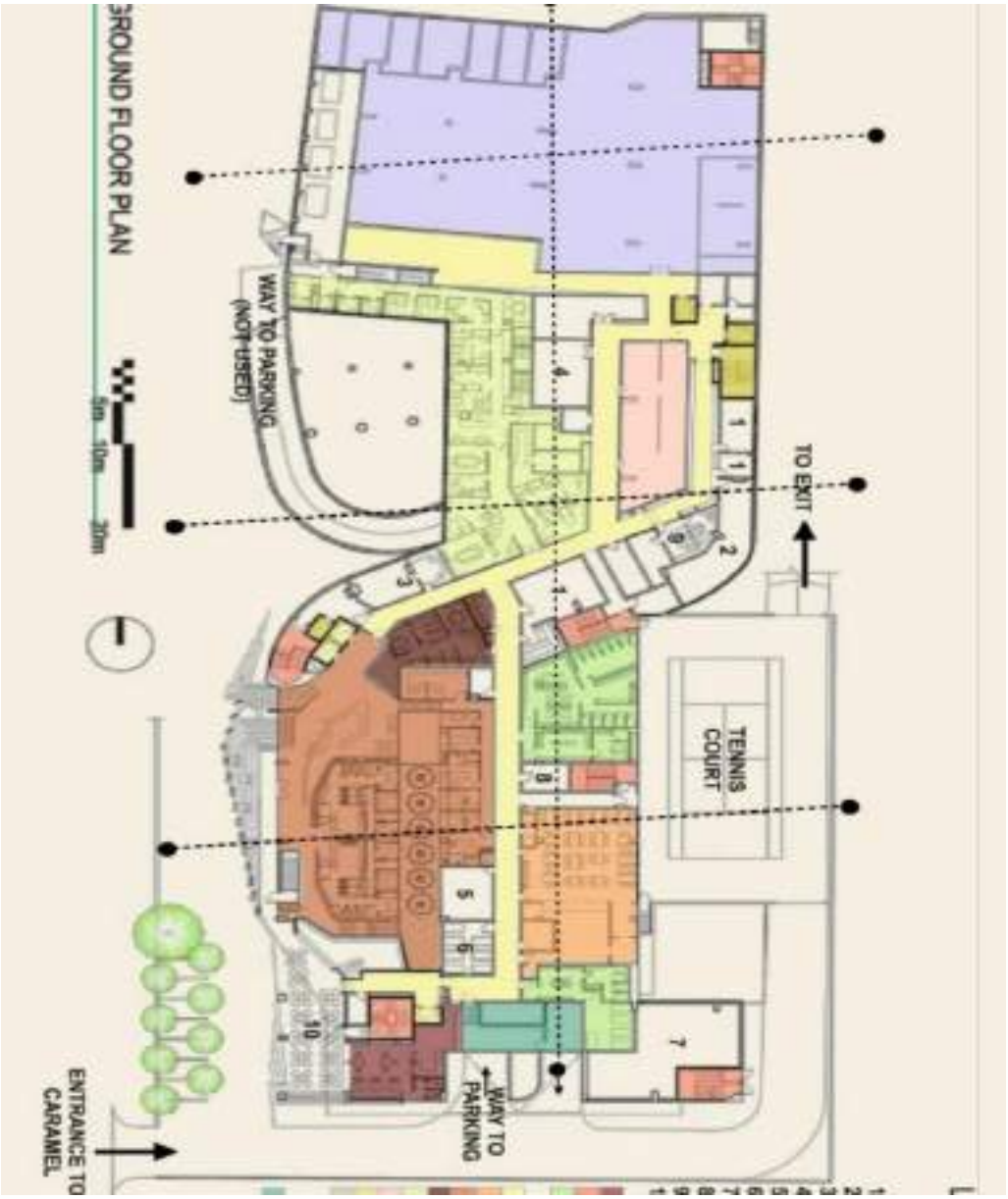
Planning Element	Description
Site Area	~19,638 m² (4.8 acres), near ITPB
Massing	3-story room block floats above a landscaped podium
Zoning	Public (ground/podium), Semi-public (event spaces), Private (upper floors)
Circulation	Linear promenade connects drop-off → lobby → courtyard → dining & pool
Entrance	Sweeping vehicular drop-off integrated with podium elevation

Vertical Circulation:

- Guest lifts: 4 panoramic elevators in central core
- Service lifts: 2 BOH-access lifts in rear wing

- Guest stairs: 2 enclosed fire escape staircases

GROUND FLOOR PLAN



Legend:
1. Lenin room
2. House keeping office
3. it room
4. Liquor store
5. Training room
6. Bunker room
7. Stp
8. Electrical panal room
9. Staff office
10. Caramel outdoor seating

Figure 130 GROUND FLOOR PLAN

FIRST FLOOR PLAN



Legend:

1. Lenin room
2. House keeping office
3. it room
4. Liquor store
5. Training room
6. Bunker room
7. Stp
8. Electrical panal room
9. Staff office
10. Caramel outdoor seating

Figure 131 FIRST FLOOR PLAN

SECOND FLOOR PLAN



Legend
1. Vip lounge
2. Charm/delight room
3. Deluxe allure suite
4. Lenin
5. Loft suite
6. Nirvana presidential suite

Agenda(bussiness center)
6 Fire exit
7 Terracota (speciality restaurant)
8 Circulation
9 Toilet
10 Service lifts/stairs

Figure 132 SECOND FLOOR PLAN

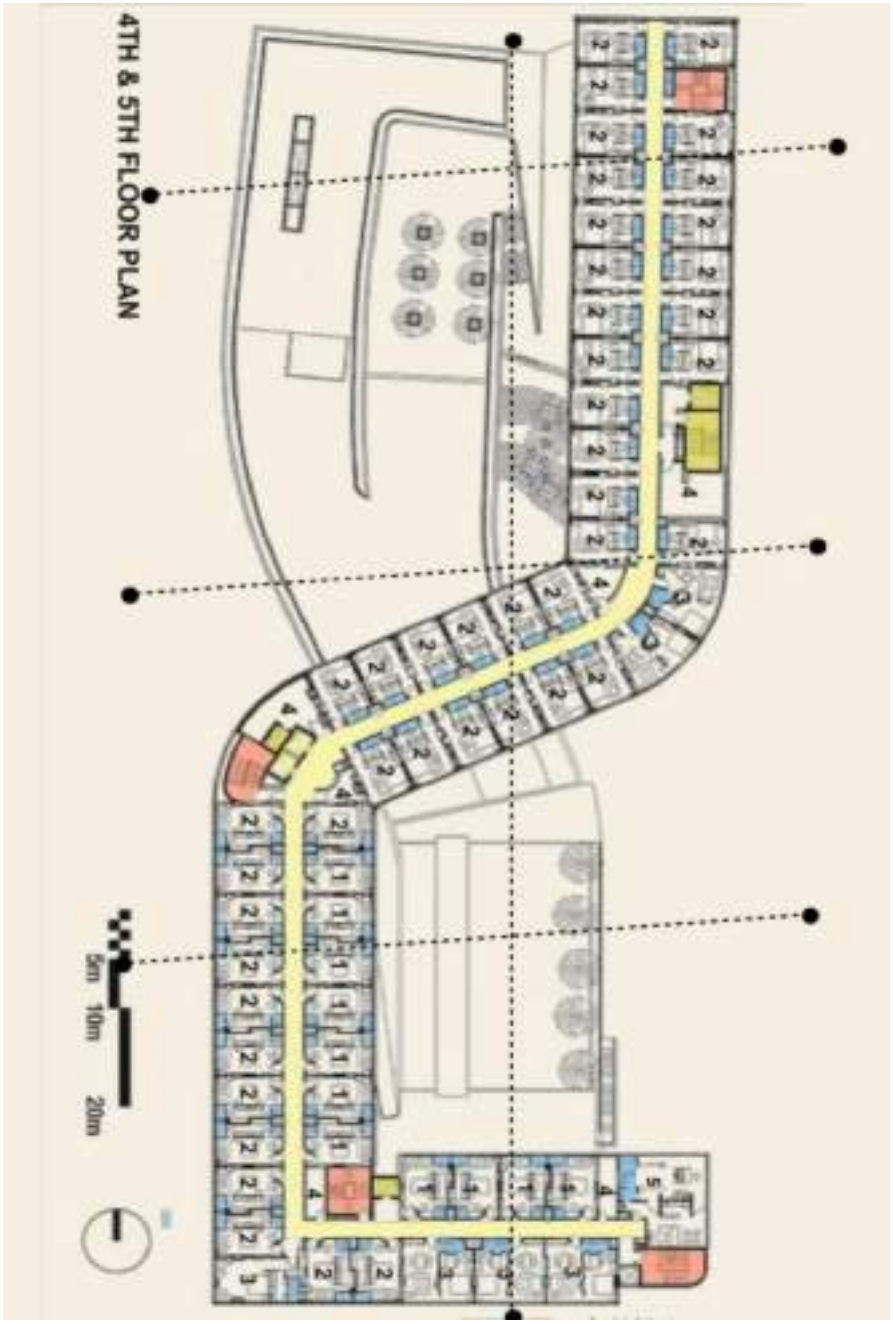
THIRD FLOOR PLAN



Legend
1 indulgence room
2 charm/delight room
3 deluxe allure suite
4 lenin
5 temptation suite
6 Fire exit
7 Tease kitchen
8 Tease bar & restaurant-middle east seating
9 Tease-high energy zone
10 Tease-lawn seating
11 Circulation
12 Toilet

Figure 133 THIRD FLOOR PLAN

FOURTH AND FIFTH FLOOR PLAN



Legends
1 indulgence room
2 charm/delight room
3 deluxe allure suite
4 lenin
5 temptation suite
6 Fire exit
7 Circulation
8 Toilet
9 Service lifts/stairs

Figure 134 FOURTH ANF FIFTH FLOOR PLAN

ELEVATIONS



Figure 137 WEST ELEVATION



Figure 135 SOUTH ELEVATION

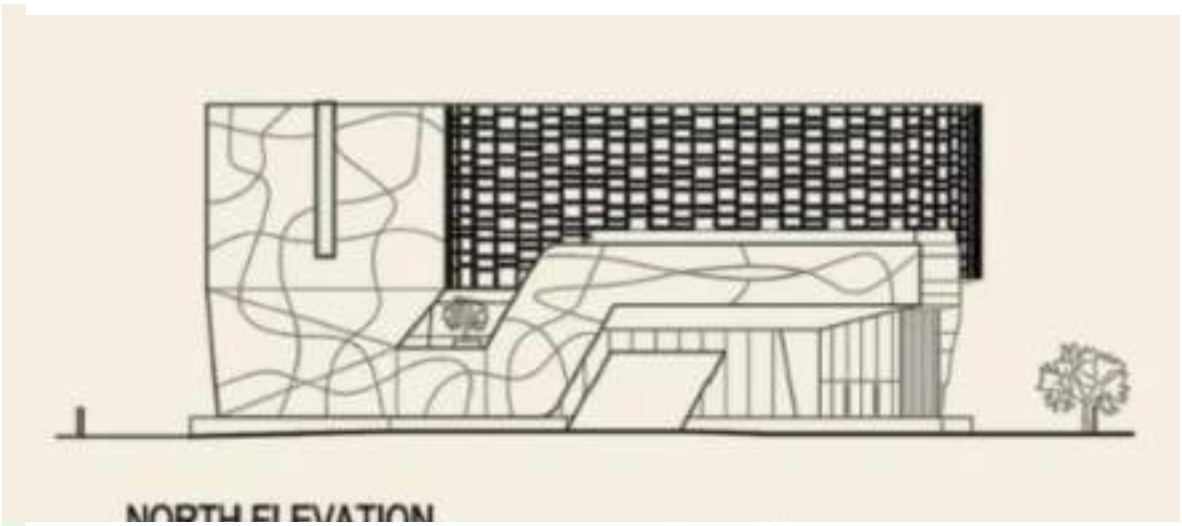


Figure 136 NORTH ELEVATION

SECTIONS

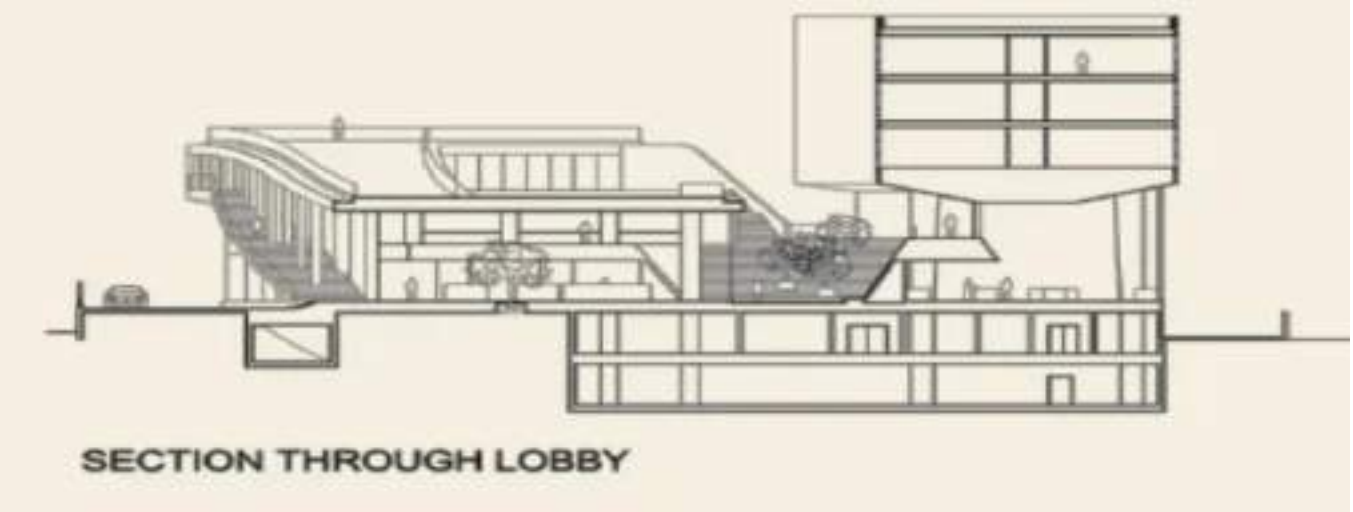


Figure 139 SECTION THROUGH LOBBY

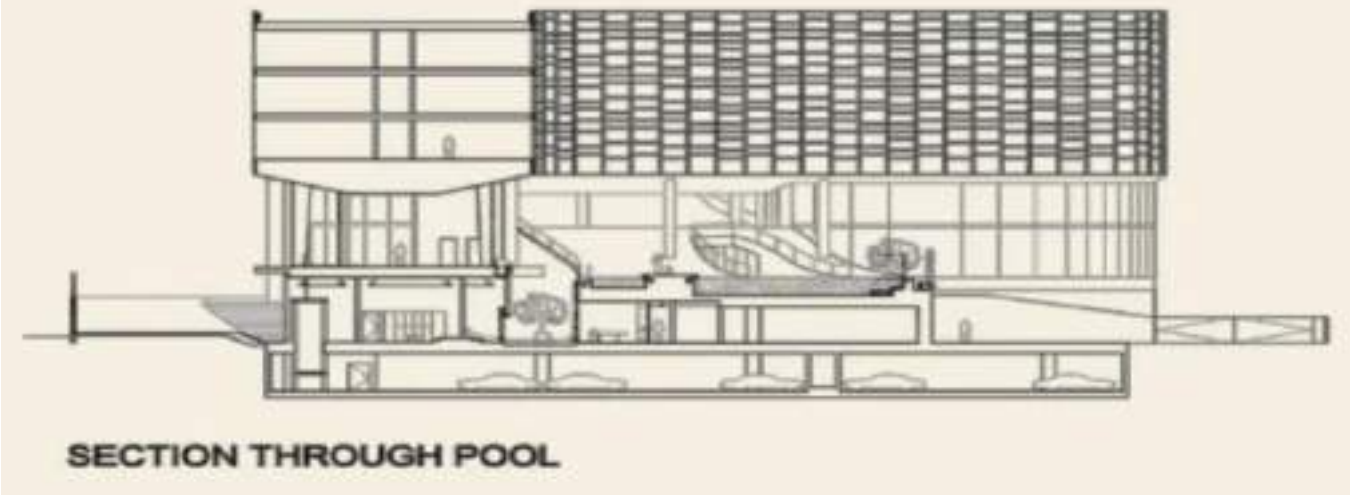


Figure 138 SECTION THROUGH POOL

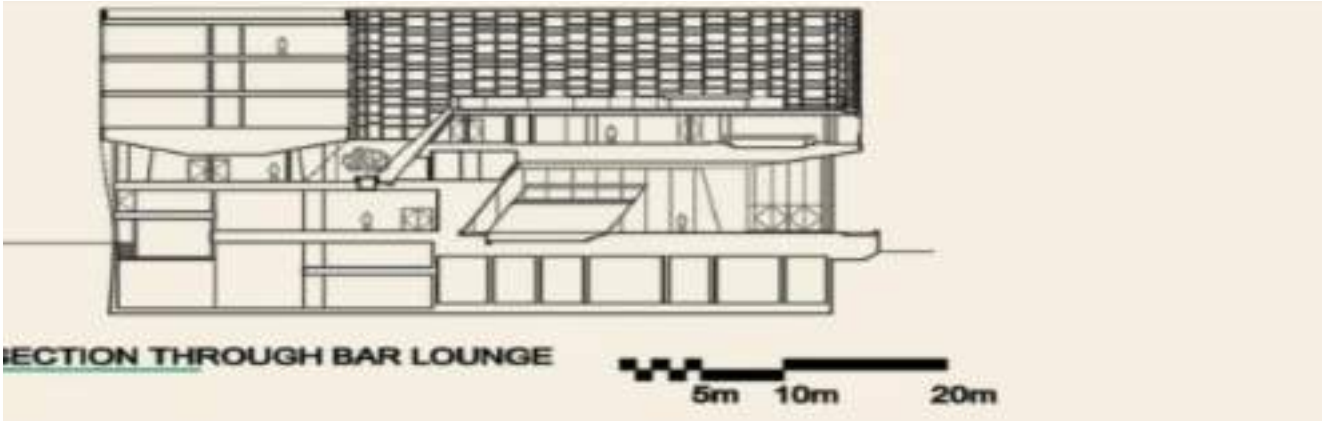


Figure 140 SECTION THROUGH BAR LOUNGE

4.4.3LOUNGE & LOBBY

- Double-height lobby (~9 m) opens into a sculpted landscape courtyard.
- Lounge is integrated with reception, featuring modular seating and textured granite walls.
- Water features and planters visually extend interior into exterior.

4.4.4 ROOM TYPOLOGY

Type	Area	Description
Superior Room	~30 m²	Basic amenities, full-height glazing
Deluxe Room	~35–38 m²	Bay window seating, upgraded bath
Allure Suite	~45 m²	Lounge seating, glass partitioned bath
Temptation Suite	~70 m²	Living & dining, walk-in closet
Loft Suite	85–95 m²	Duplex layout, private terrace

All rooms offer:

- Motorized blackout blinds
- Low-E laminated glazing
- Acoustically treated wall panels
- Daylighting controls with sensor-based lighting
- Room size- 327 sq ft
- Ergonomically designed study table and chair
- Television - 32" LCD TV screen with home theatre system and surround sound to personalize your entertainment
- Internet Protocol telephone
- Bathrooms with shower cubicles (rain shower) and toilet area
- Bath amenities are Forest Essentials made from natural ingredients
- Electronic safe
- Housekeeping service twice daily - morning cleaning and evening turndown
- Rollaway beds and cribs available on request.




Figure 143 Superior room




Figure 142 Deluxe room




Figure 141 Deluxe room

4.4.5 BARS & RESTAURANTS

Table 38 Bars and restaurant

Facility	Area / Description
Latitude	~580 m², all-day dining, live kitchen
Terracotta	~315 m², specialty Indian cuisine
Tease Bar	~300 m², indoor/outdoor with acoustic screens
Caramel Café	Grab-and-go, attached to central courtyard

Restaurants face the central court and spill out into covered and open-air dining terraces.





Figure 144 DINING

4.4.6 BANQUETS & CONFERENCING

Table 39 Banquets and restuarant

Space	Capacity / Area	Description
Banquet Hall	~450 pax, 500 m²	Column-free, divisible, 5.5 m clear height
Meeting Rooms	3 x 60–80 pax	AV-integrated, modular layouts
Boardroom	12–16 seater	Acoustic walls, smart lighting
Oval Centre	~650 m² total	Independent entrance, video conferencing suites

4.4.7 RECREATION & AMENITIES

- Swimming Pool: 25m x 10.7m, overflow type, timber deck
- Kids Pool: ~15m x 3m with shallow edge
- Jiva Spa: ~600 m² with 5 treatment rooms, meditation court
- Gymnasium: ~180 m² with cardio and weight zones
- Indoor Badminton Court: Multipurpose hall with acoustic walls



Figure 146 GYMNASIUM



Figure 147 JIVA SPA

Figure 145

4.4.8 MATERIALITY & AESTHETICS

- Façade: Pixelated ceramic frit glass, greens and blues (OTTV compliant)
- Walls: Bush-hammered concrete, bagged plaster, and wood veneer
- Floors:

- Lobby: Italian marble
- Rooms: Engineered timber
- Wet areas: Slip-resistant granite tiles

Visual language maintains a warm modernist character, with cultural cues abstracted into texture and color.

4.4.9 SERVICES

Table 40 Services

Service Area	Description
Water Supply	Dual source (municipal + borewell); 75 KL treated tank; 2-stage filtration
STP	100 KLD capacity with treated water reused for landscaping and flushing
Electrical	Dual HT supply, 100% DG backup; LED + daylight sensors
HVAC	Centralized chilled water plant; room-based FCUs with VAV control
Waste Management	Segregated wet/dry units; in-house composting

4.4.10 SUSTAINABILITY

- Green roof podium for thermal insulation
- Rainwater harvesting (2 tanks, ~90 KL total)
- Façade orientation optimized to reduce west heat gain
- Glazing with high shading coefficient
- Natural cross-ventilation in podium areas

4.4.11 OBSERVATIONS

- The Möbius-style planning encourages kinetic movement and reduces the sense of hierarchy between zones.
- Podium serves multiple roles: landscape, circulation, and insulation.
- Façade simultaneously performs thermally and narratively—telling the story of the site's lost ecology.
- Public and private functions interweave fluidly through architectural layering.
- Sustainability is not an added feature—it is intrinsic to the spatial and material language.

4.5 COMPARITIVE ANALYSIS

Parameters	Novotel Visakhapatnam	Taj Lakefront, Bhopal	Vivanta by Taj, Gurgaon	Vivanta Whitefield, Bangalore

Location Context	Beachfront; urban leisure district	Lakeside edge; eco-sensitive urban pocket	CBD zone; business-centric location	IT corridor; peri-urban high-density node
Site Area & Zoning	~10 acres; CRZ II coastal regulation	Urban core with ecological setbacks	Limited plot; vertical zoning strategy	Medium plot with zoning for mixed-use synergy
Design Concept	Coastal leisure + MICE integration	Iconic vertical identity + lakefront openness	Sleek corporate identity with urban elegance	Hybrid hospitality: business + casual luxury
Massing & Form	Linear, horizontal sprawl; maximizes sea frontage	Vertical tower with cascading terraces	High-rise compact tower	Composite volumes with interlocked masses
Planning Organization	Front-back axial zoning; linear spatial hierarchy	Central vertical core; zoning around service spine	Atrium-led zoning for guest experience	Offset volumes; circulation around courtyards
Room Typology	Sea-facing premium rooms & executive suites	Mix of room categories including luxury suites	Deluxe, executive, suite, and presidential	Superior, deluxe, and business-class suites
Public Amenities	Infinity pool, spa, banquet lawns, F&B outlets	Rooftop lounge, multiple restaurants, banquet halls	Wellness zone, bars, lounges, boardrooms	Rooftop pool, fitness, banquets, all-day dining
Banquet & Convention Facilities	Large capacity (2500+ pax); MICE-focused	Multiple mid-sized banquets for events	Formal boardrooms and modular halls	Multipurpose banquet with reconfigurable partitions
Circulation Strategy	Guest/staff segregation; sea-facing corridor alignment	Zoning via vertical circulation core	Elevator banks optimized for business guests	Central lift core with radial access to rooms
Service Core Design	BOH in basement; discrete service corridors	Multi-level BOH with vertical connection	Seamless BOH integrated in planning	Layered BOH zones; noise-buffered from rooms
Sustainability Features	Natural ventilation, solar integration, CRZ compliance	High-efficiency glazing, rainwater harvesting	LEED-grade features, passive systems	Vernacular material use, daylight optimization

Material Palette	Stone, concrete, coastal-resistant finishes	Glazing + local stone cladding	Metal, textured wood, structural glass	glass, wood finishes with earth tones
Landscape Integration	Amphitheatre, lawns, coastal planting, kiosks	Elevated greens, lakeside decks, shaded courts	Minimal green; small-scale edge landscaping	Courtyards, edge buffer planting, walkable zones

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THE 5-STAR HOTEL

THESIS GUIDE-
PROF. PREETI ONKAR SINGH

TAHIRA SAFEY
211110051

INTRODUCTION

INTRODUCTION TO THE CITY

Visakhapatnam (Vizag), the largest city of Andhra Pradesh, is located on the east coast along the Bay of Bengal. It is an important port city, industrial hub, and tourism destination, known for its scenic beaches, natural harbour, and cultural heritage. Major attractions include Kailasagiri, RK Beach, Submarine Museum, Dolphin's Nose, Araku Valley, and Simhachalam Temple.
With rapid industrialization, growth of IT/ITES sectors, and focus on tourism, Vizag is emerging as a vibrant metropolitan city with immense opportunities for hospitality and recreation infrastructure.

AIM OF THE PROJECT

To develop a **a 5-Star Hotel/Resort with Convention Centre and Waterfront Entertainment Facilities** along Beach Road, Visakhapatnam, on a PPP basis, thereby boosting tourism, business, and leisure activities in the region.

PROJECT DETAILS

Authority: Visakhapatnam Metropolitan Regional Development Authority (VMRDA)
Location: VMRDA park along Beach Road, Visakhapatnam, Andhra Pradesh, India
Site Coordinates : 17.7241° N, 83.3395° E
Site area : 10.7 acre (43305.16 sqm.)
Land use: Recreational zones (master plan 2041)
Estimated Cost: ₹240 Crores (approx.)



CLIMATE

Visakhapatnam has a **tropical wet and dry climate** with strong coastal influence from **the Bay of Bengal**. Summers (March–June) are hot and humid, reaching 39–41°C, while winters (Nov–Feb) are mild at 18–25°C. The city receives about 1100 mm annual rainfall, mainly from June–Oct during the southwest monsoon, with occasional cyclones. Humidity stays high (60–90%), but sea breezes provide relief and ventilation. Average wind speeds range 3–6 m/s, and sunshine is about 8–9 hours daily. These conditions demand climate-responsive designs that enhance ventilation, minimize heat gain, and ensure cyclone resilience.

TEMPERATURE	RAINFALL	WIND SPEED	HUMIDITY
Min.- 18°C	Min.- 24.8 mm	Min.- 2 m/s	Min.- 60%
Max.- 39°C	Max.- 259.5 mm	Max.- 12 m/s	Max.- 92%
Avg.- 27°C	Avg.- 1100 mm/a	Avg.- 5.5 m/s	Avg.- 75%

DEMOGRAPHICS

POPULATION	LANGUAGE	LITERACY RATE	RELIGION
Males-873,699	Telugu - 82.45%	Overall ~81.8%	Hinduism ~ 80–85%
Females-854,529	Urdu - 2.8%	Male ~87.3%	Islam ~ 5–8%
Sex ratio-978	Hindi - 2.2%	Female ~76.2%	Christianity ~ 4%
			Others ~ 1.0 - 0.5%

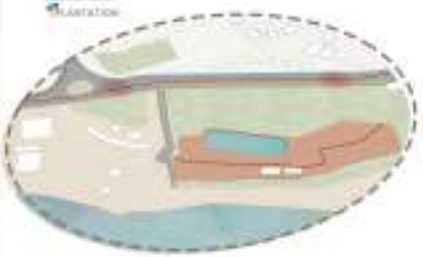




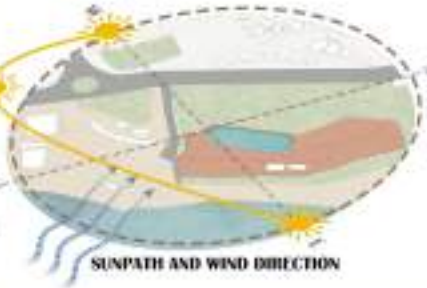
SITE AND ITS SURROUNDINGS



EXISTING FEATURE AND VEGETATION



SITE ACCESIBILITY



SUNPATH AND WIND DIRECTION

HISTORICAL INFERENCES

PRE COLONIAL
BEFORE 1800
Architecture Type: Traditional vernacular architecture
Materials: Laterite stone, mud, lime plaster, wood, Mangalore tiles
Features: Sloping roofs, internal courtyards, narrow streets, verandahs
Examples: Gurdhist Influence (Thotlakonda, Bavikonda)

PRE INDEPENDENCE
1800 - 1940
Architecture Type: Neoclassical colonial buildings
Features: Tall windows, shutters, wrought iron
Examples: Railway quarters, King George Hospital
Materials: Brick masonry, sloped tile roofing

COMMERCIAL RISE
1970 - 2000
Architecture Type: Contemporary commercial & institutional buildings
Features: Glass façades, atriums, composite/mixed-use developments
Examples: CMR Central, Vizag Central, IT

SUSTAINABLE
2000 - 2010
Trends: Smart city proposals, green architecture, luxury housing
Features: Rainwater harvesting, solar panels, ventilation-oriented designs
Examples: Eco- parks, high-end resorts, low-rises



Architecture Type: British colonial architecture
Features: Large columns, high ceilings, arcaded verandahs, pitched tiled roofs
Examples: Church conventions, Old Port Buildings, St. Aloysius School
Materials: Brick masonry, lime mortar, teakwood

1800 - 1900
COLONIAL PERIOD

Architecture Type: Modernist, functionalist architecture
Features: Flat RCC roofs, boxy forms, minimal ornamentation
Influence: Industrial growth due to Visakhapatnam Steel Plant & Shipyard
Examples: Government housing colonies, PSU offices, Visakhapatnam Port buildings

1950 - 1970
POST INDEPENDENCE

Trends: Towards smarter energy, water-front redevelopments, urban resilience
Features: Smart mobility hubs, walkable mixed-use districts, climate-responsive architecture
Initiatives Under: Smart City projects, Waterfront park development

2020 - PRESENT
SMART CITY ERA

VEGETATION



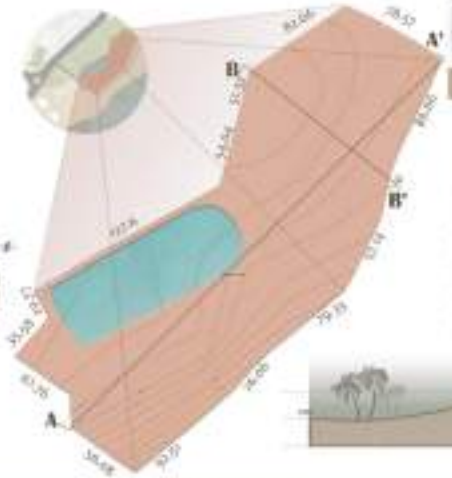


Coconut Palms (Cocos nucifera): Tall, slender, slightly leaning trunks. Highly tolerant of saline conditions and sandy loamy soils.
Tall Trees:
Indian Almond (Terminalia catappa), Ficus, Toddy Palm (Borassus flabellifer)
Casuarina (Casuarina equisetifolia): Tall, straight, and slender trunk.
Ornamental hedge plants: Ixora hybrid (Bloodleaf), Acalypha wilkesiana (Copperleaf plant), Alternanthera dentata (Purple Alternanthera).
Groundcover & Lawns: Doob grass / Bermuda grass.



PROXIMITY

- **Visakhapatnam Railway Station (VSKP)** – 6.3 km
- **Visakhapatnam International Airport (VTZ)** – 15.1 km
- **NH-16 (Chennai–Kolkata Highway)** – 3.5 km
- **RK Beach** – 1.2 km
- **Kailasagiri Hill Park** – 7.5 km
- **Submarine Museum (INS Kurusura)** – 1.4 km
- **Visakhapatnam Port Cruise Terminal** – 7.2 km
- **City Bus Stand (RTC Complex)** – 5.6 km
- **Proposed Metro Corridor** – passes adjacent to the site (as per VMRDA Smart Plan)



TOPOGRAPHY

The park is primarily **flat to gently undulating**, lying adjacent to the coastline with a gradual slope downward toward the Bay of Bengal.

SOIL TYPE

The park area features **alluvial sandy loam soil** with good drainage capacity. This type of soil, though slightly saline due to the sea breeze, is suitable for a variety of ornamental and coastal plant species. The pH is generally neutral to **slightly alkaline** (6.8 – 7.5), with a **sandy to sandy-loam texture**, promoting root aeration and ease of landscaping.

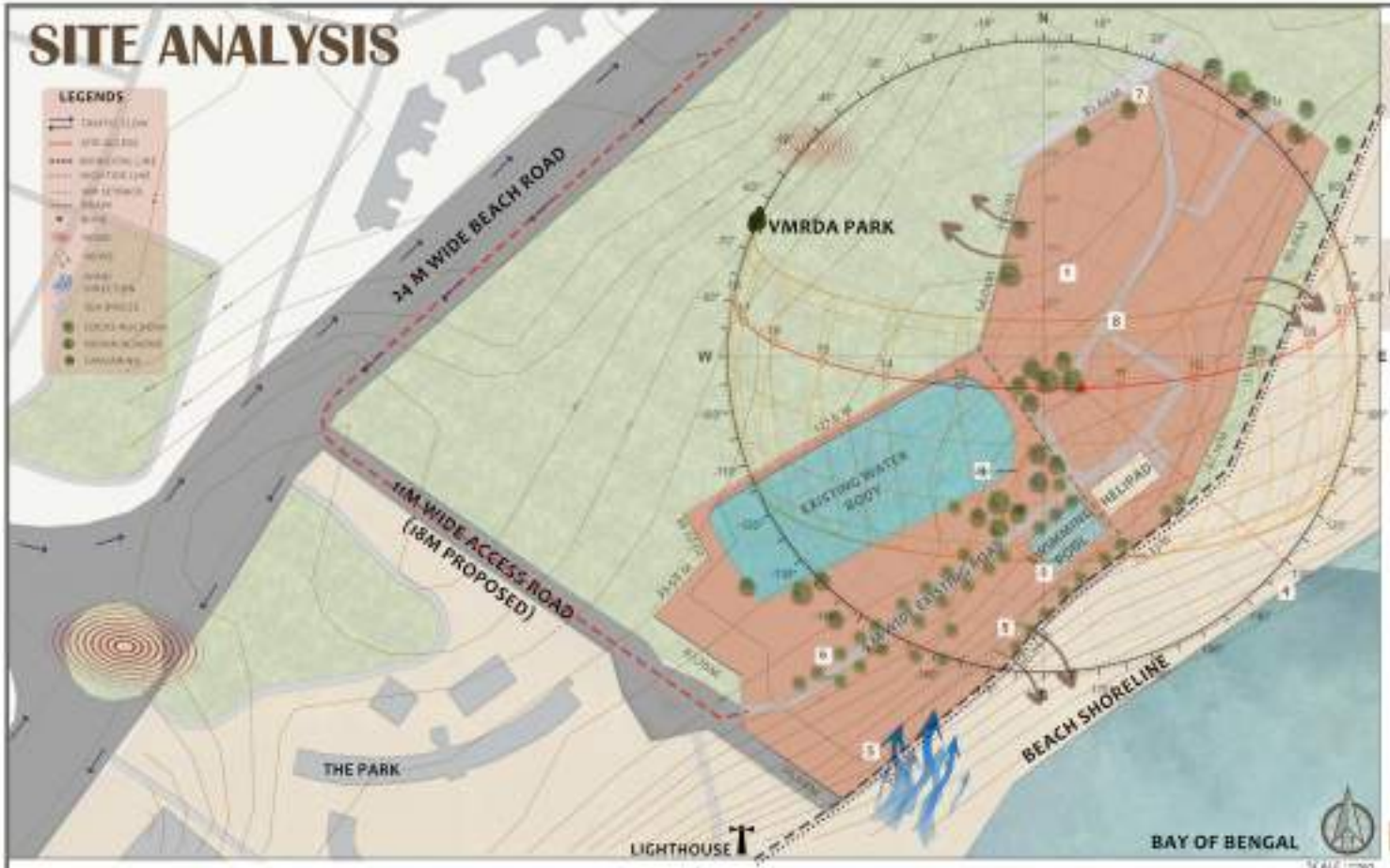


SECTION BB'



SECTION AA'

SITE ANALYSIS



SCALE 1:250

S The site's **strengths** include its **prime coastal location** on Beach Road near RK Beach, Submarine Museum, and Kailasagiri, along with **excellent connectivity** to the airport, railway, and highways. It is a **coastal hub** with over 1 million visitors annually, has flat topography for easy planning, plus **sea views**, **natural ventilation**, and **strong cultural context**.

W Its **weaknesses** are its **coastal vulnerability** to cyclones, **high humidity and salinity** causing corrosion of materials, glazing, and building services, **seasonal tourist dependency**, **traffic congestion** on Beach Road may cause accessibility challenges during peak hours, **sandy soil** with low load capacity, and limited elevation for dramatic design.

O The **opportunities** include growth in **luxury tourism, MICE and wedding events**, scope for **integration with nature** through sea-view terraces, tropical landscaping, and beachfront leisure activities, **sustainable features** like solar and rainwater harvesting, **cultural branding** with Andhra crafts, and leveraging **existing recreational assets** for VIP and leisure activities.

T The **threats** involve risks from cyclones, heavy monsoons, and strong winds, CRZ restrictions, competition from nearby hotels like Novotel and The Park, Rapid urbanization pressure can lead to traffic congestion, visual clutter, and reduced scenic charm around the site, seasonal occupancy fluctuations.

BYELAWS/ CRZ-II NORMS

F.A.R. AND GROUND COVERAGE

Site Area: 10.78 acres = 43,301.36 sq.m

Permissible FAR: 2.5 (VUDA – VPT lands)

Permissible Built-up Area:
43,301.36 × 2.5 = 108,253.41 sq.m

Ground Coverage (NBC): 30%

Permissible Ground Coverage Area:
43,301.36 × 0.30 = 12,990.41 sq.m

Maximum Building Height: 30 m (as per RFP).

Approach Road Width: 18 m proposed (as per RFP) – adequate for permissible height of 30 m.

Minimum Open Space: 12 m on all sides

CRZ-II NORMS

- Development only on **landward side of existing road.**
- **10 m minimum setback from HTL** (as per CRZ rules).
- **No new permanent construction** permitted on seaward side within NDZ.
- Temporary, lightweight beachfront structures (decks, cabanas, landscaping, promenades) may be allowed.

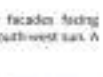
APPLICABLE CODES/RULES

- Andhra Pradesh Building Rules, 2017 (G.O. MS. No. 115)
- VUDA / VPT Lands Development Control Regulations
- National Building Code (NBC, for GC % guidance)
- CRZ Notification 2011/2019 (MoEFCC)

SITE INFERENCES



ORIENTATION: Buildings should be oriented **towards the sea** with longer facades facing east–west to capture **maximum sea views** while minimizing heat gain from the south-west sun. A **stepped/terraced block** is recommended for maximum room frontage.



OPEN SPACE INTEGRATION
Infinity pool + deck placed between hotel block and sea for seamless **indoor–outdoor connection. Rooftop level luxury sky bar / restaurant** with panoramic view of coastline.



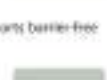
SHADING: Due to **high humidity and coastal heat, shading devices** such as deep overhangs, pergolas, and vertical fins should be used. **Vegetation belts** with palms and casuarina can act as natural sun-breakers. **Shading devices & double glazing** to reduce heat gain.



LANDSCAPE: Existing **coconut, casuarina, palm trees, hedges** provide strong landscape character. **Retain major trees**. Integrate them into walkways, poolside, open dining, and jogging tracks. Design zoning around green buffers and visual corridors.



TOPOGRAPHY: The site has a **gentle slope** and largely **flat terrain,** which supports barrier-free design and easy development of large-scale lawns, pools, and event spaces.



SAFETY: The site's **coastal vulnerability** to **cyclones and salinity** requires **cyclone-resistant structures,** marine-grade materials, and elevated services. Compliance with CRZ regulations is essential.



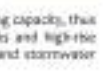
VENTILATION: The site's **south-east coastal breezes** allow for **natural cross-ventilation.** Open courtyards, atriums, and shaded corridors can reduce dependence on mechanical cooling.



PLACEMENT: **Guest room** blocks should be placed on the **sea-facing side** for premium views. **Banquets, restaurants, and convention spaces** should be placed near the **entrance** for easy access, while service areas remain hidden at the rear.



FOUNDATION: The site consists of **sandy loamy soil,** which has moderate bearing capacity, thus a **raft foundation or pile foundation** is recommended for major hotel blocks and high-rise portions to ensure structural stability. Elevated plinth of 1.2–1.5 m for flood and stormwater safety.



USER EXPERIENCE: The beachfront's **dynamic-to-calm rhythm of waves** inspires zoning where **active recreation** (pool, promenade, events) transitions smoothly into **serene retreats** (suites, spa, yoga decks), creating an **endless user experience.**

PHOTOS



















CASE STUDY

NOVOTEL, VISHAKHAPATNAM



ABOUT
Location - Beach Road, Vishakhapatnam
Architect - Not Specified
Site Area - 5 acres
No. of Rooms - 205
Floors - 8 floors

IDEOLOGY
Design Philosophy - Stepped massing to align with beachfront Metro design concept.
Aesthetic Style- Clean lines, open plan, local materials.
Zoning - Podium for public spaces, upper levels for rooms.

ROOMS
Superior Room- 29 m²
Deluxe Room - 35-40 m²
Suite - 50-60 m² Executive
96 m² Presidential

FACILITY
Restaurants & Bars - 4 The Square, Harbour Vue, Zaffran, Rad Bowl
Banquet Area- 11,000 m² VCConvention + others
Recreational Facilities - Infinity pool, gym, spa, jogging track

MATERIAL
Modern glazing systems for views and performance
Clean plaster or rendered façades aligning with Metro design style
Warm, functional, and durable interior finishes (**wood-look, painted surfaces, tiles**)

SERVICES
Water supply - Municipal + borewell, rainwater harvesting
HVAC - Central chilled water, room control
Waste Management - Segregation, Planetri initiative
Power Backup - DG backup
Sustainability Notes - Low-flow fixtures, landscape integration

INTERFACES
- Adopt **stepped massing** to maximize sea views from most rooms.
- Use fully **glazed façades** strategically for daylight and panoramic views.
- Incorporate a **podium level** that merges public spaces with outdoor landscaped decks.
- Integrate an **infinity pool and landscaped terraces** as visual highlights.
- Plan **modular room layouts** with smart controls and strong sound insulation.
- Provide **multiple F&B outlets** with prime views, ensuring seamless BOH connectivity.
- Keep **BOH circulation hidden** and efficient, with provisions for waste disposal and security.

TAJ LAKEFRONT, BHOPAL



ABOUT
Location - Bhadbhada Road, Bhopal
Architect - JGA Design
Site Area - 4.77 acres
No. of Rooms - 151
Floors- G+9

IDEOLOGY
Design Philosophy - Inspired by local crafts like Zari work, Terracotta, Dhokra art, Bell metal, etc.
Aesthetic Style- Ornate interiors with regional art integration.
Zoning - Grand entrance, banquet in GF, typical rooms from 1st floor onwards.

ROOMS
Superior Room - 33 m²
Deluxe Room - 33 m²
Suite - 66 m² Executive
152 m² Presidential

FACILITY
Restaurants & Bars - Ming (Chinese), Pikni, Rooftop lounge.
Banquet Area- Raj Mahal, Sheesh Mahal (divisible), pre-function lobby
Recreational Facilities - Gym, spa, rooftop pool, children's zone

MATERIAL
Stone: Jali work
Terracotta: Cladding elements
Timber: Detailing and finishes
Marble: Flooring and luxury interiors
Local craftsmanship integrated into design
RCC frame with traditional material infill
Use of **regional natural materials**

SERVICES
Water supply - STP + WTP, borewell, RO, fire tanks in basement.
HVAC - Centralized AC, FCU in rooms
Waste Management - Smoke extraction, basement services.
Power Backup - 2 DGs (1250 & 1010 kVA), 8s delay, soundproofed.
Sustainability Notes - Water reuse, landscape screening.

INTERFACES
- **Orient building mass** to frame key views (taxyses) for premium rooms.
- Infuse interiors with **cultural or thematic elements** for identity.
- Design **separate entrances** for different functions (guest, banquets, service).
- Use **landscaped forecourts** to create a strong arrival sequence.
- Include wellness zones and **flexible banquet halls** for multi-use appeal.
- Design **luxury suites with private balconies** and high noise control.
- Integrate **outdoor dining** linked to the site's natural features.
- Locate major **BOH in basement/service zones** to minimize disruption.

VIVANTA ,GURGAON



ABOUT
Location- Sector 44, Gurgaon
Architect - WOW Architects
Site Area - 6.1 acres
No. of Rooms - 206
Floors- 11 floors

IDEOLOGY
Design Philosophy - Contemporary Indian palace for an urban setting with light-solid layering.
Aesthetic Style- High-tech minimalism with Indian spatial grammar reinterpretation.
Zoning - Layered ground , podium , upper floors

ROOMS
Superior Room- 28-31 m²
Deluxe Room - 35-38 m²
Suite - 52-60 m² Executive
168 m² Presidential

FACILITY
Restaurants & Bars - Latitude, Thai Pavilion, Tease Bar
Banquet Area - 12,000 sq ft hall + meeting rooms, boardroom
Recreational Facilities - Spa (700-800 m²), pool, gym, courtyard café

MATERIAL
Glass: For sleek, modern façades and transparency
Concrete: Structural clarity with modern reinterpretation
Metal finishes: Used in detailing and façades
Minimalist palette: High-tech aesthetics
Minimalist interiors with **glass + polished concrete**

SERVICES
Water supply - Municipal + borewell, rainwater harvesting.
HVAC - Central chiller + VRV backup, motion sensors.
Waste Management - Composting, STP (100 KL/day), rainwater harvesting.
Power Backup - 100% DG backup, dual HT
Sustainability Notes - Courtyards for passive cooling, low-VOC materials.

INTERFACES
- Employ **climate-responsive façades** such as brise soleil for shading.
- Use **courtyard-centered layouts** for natural ventilation and social interaction.
- Raise **public functions onto podiums** with central water features as focal points.
- Provide **multiple vertical circulation cores** to improve flow and efficiency.
- Incorporate **rooftop pools and landscaped terraces** to enhance guest experience.
- Design compact, business-oriented rooms with **high-tech amenities.**
- Ensure **F&B spaces connect with public zones** yet hide service routes.

VIVANTA ,WHITEFIELD



ABOUT
Location- Whitefield, Bengaluru
Architect - WOW Architects
Site Area - 6.8 acres
No. of Rooms - 140
Floors- G+4

IDEOLOGY
Design Philosophy - Inspired by fluidity (Wobbly strip): continuous public spaces; kinetic design flow
Aesthetic Style- Warm modernism with narrative façade reflecting site ecology
Zoning - Ground/podium , upper floors , continuous promenade through site

ROOMS
Superior Room- 30 m²
Deluxe Room - 35-38 m²
Suite - 45 m² Allure
70 m² Temptation
55 m² Loft suite

FACILITY
Restaurants & Bars - Latitude, Terracotta, Tease Bar, Caramel Café
Banquet Area- 500 m² banquet + Oval Centre 650 m² + 3 meeting rooms
Recreational Facilities - Pool (25 x 10.7m), spa, gym, kids pool, badminton court

MATERIAL
Glass: Vibrant façade with color variations
Concrete: Strong base structure, zoning reinforcement
Green Roof Materials: For sustainability
Modern finishes: Interiors with warm tones reflecting site ecology

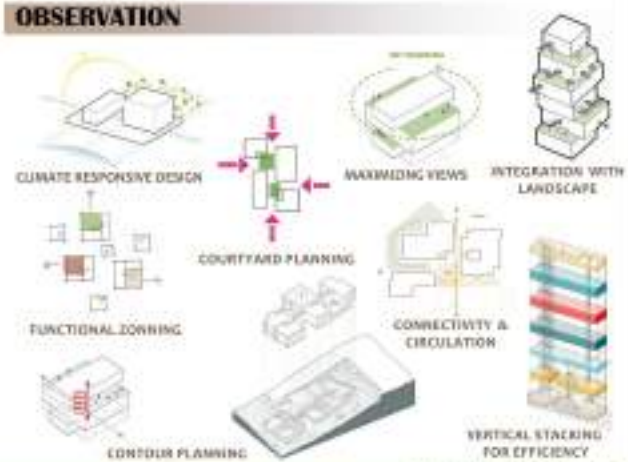
SERVICES
Water supply - Municipal + borewell, dual filtration system.
HVAC - Chiller + FCUs with VAV control.
Waste Management - Wet/dry segregation, composting, STP 100 KLD
Power Backup - 100% backup, LED + sensor-based lighting.
Sustainability Notes- Green roof, façade optimization, cross-ventilation.

INTERFACES
- Explore dynamic circulation forms to enhance guest movement and experience.
- Use façade design as a storytelling element reflecting the site's character.
- Make the podium level a multi-use public green space.
- Integrate panoramic lifts as part of the experiential journey.
- Provide multi-level gardens and wellness facilities for recreation.
- Offer a variety of room configurations, including duplexes, for diverse guests.
- Add outdoor F&B experiences like terrace cafés and bars.
- Keep BOH centralized within podiums for efficient operations and sustainability.

AREA STATEMENT (IN SQM)

SPACES		NOVOTEL, VIZAG	TAJ LAKEFRONT, BHOPAL	VIVANTA, GURGAON	VIVANTA, WHITEFIELD
LOBBY	FRONT DESK	-	200	140	90
	LOUNGE AREA	980	250	280	230
	TOILET	-	-	15	35
	LOUNGE (F&B)	-	80	-	-
	LIFT/LIFT	3	-	-	-
BANQUETS	BANQUET HALL	-	650	670	200
	PRE FUNCTIONAL AREA	-	90	75	80
	CONFERENCE ROOM	-	55	-	60
	MEETING ROOMS	40	-	-	35
	BUSINESS CENTRE	20	-	37	25
	TOILETS	-	68	-	60
RECREATIONAL	SWIMMING POOL	-	148	145	120
	CHANGE ROOM	-	28	22	-
	GYMM	-	50	40	-
	MASSAGE ROOM	-	-	-	32
	SAUNA/BATH	-	60	85	-
ROOMS	SUPERIOR ROOM	20	33	28	30
	DELUXE ROOM	35	35	35	35
	SUITES	95	60	80	75
	PRESIDENTIAL	90	150	90	95
KITCHEN	MAIN KITCHEN	-	115	80	90
	ROOM SERVICE KIT	-	35	-	-
	PANTRY	-	32	-	-
	BAKERY	-	50	-	-
	DISH WASH	-	28	-	-
	POT WASH	-	15	-	-
	COLD KITCHEN	-	18	-	-
	CAFE KITCHEN	-	12	-	30
	SHOW KITCHEN	-	8	-	-
	BAR PANTRY	-	15	-	-
	BAR COUNTER	-	5	-	-
	CHEF'S OFFICE	-	8	-	-
BACK OF HOUSE	HOUSE KEEPING	-	150	110	-
	LAWN ROOM	-	50	52	-
	LAUNDARY	-	100	105	-
	SECURITY	-	100	105	-
	STAFF SERVICES	-	50	52	-
	MEDICAL FACILITY	-	120	32	-
	CANTEEN	-	120	120	-
	BOH SERVICES	-	1550	1,900	-
	MAINTENANCE ROOM	-	450	450	-
	SERVER ROOM	-	50	52	32
	DATA CENTRE	-	75	78	-
	ENGINEER AND MAINTENANCE	-	100	105	-

OBSERVATION



CONCEPT



WATER PARADOX

The **Water Paradox** concept draws inspiration from the fluidity and unpredictability of water—its ability to both **connect and separate spaces,** to be still yet in motion. The design uses curvilinear lines and soft filleted corners to create building forms that flow seamlessly around the site's existing zoning features.
Ultimately, the Water Paradox is not just a theme but a **spatial philosophy** — an architectural language that invites guests to embrace both **rest and excitement, solitude and celebration**. It transforms the hotel into a living reflection of the ocean's spirit, where every pathway, courtyard, and view captures the ever-changing yet harmonious nature of water.



CONNECTIVITY
Spaces are visually and physically connected like streams feeding into one another, ensuring guests move naturally between calm and dynamic zones.



FLOW & MOVEMENT
Inspired by the continuous flow of water, the spatial arrangement allows effortless movement between activity hubs, leisure areas, and private retreats, creating a seamless experiential journey across site.



SOFTNESS
Rounded corners, filleted edges, and fluid building outlines mimic the eroded smoothness of stones shaped by water.



RHYTHM & REPETITION
Strategic placement of views, sounds, textures, and light patterns inspired by water's movement enhances guest experience, from the lively sound of cascades to the still reflection pools.

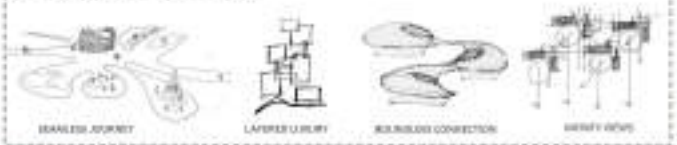
WATER AS A DESIGN ELEMENT



CLIMATIC RESPONSIVE DESIGN



ENDLESS EXPERIENCE TO USER



CONTEMPORARY STYLE

The hotel adopts a contemporary style, defined by clean lines, fluid forms, and an emphasis on openness and flexibility. The design integrates glass, steel, and natural materials to create **transparency and light-filled spaces.** Curved geometries and seamless indoor-outdoor transitions reflect modern aesthetics while supporting **comfort, sustainability, and user experience.** This contemporary approach ensures the design feels **timeless, innovative, and contextually responsive.**



- Clean lines
- Warm natural material
- Glass and steel



- Connectivity
- Openness
- Transparency
- Light filled spaces



- Arched Corridor
- Fluid form
- Functionality
- Timeless approach



- Natural & sustainable materials
- Modern geometry



- Seamless indoor-outdoor connection
- Wooden finishes

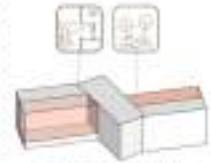
SUSTAINABLE FEATURES



FORM IDEATION



01 BLOCK MASSING & PROGRAM INSERTION



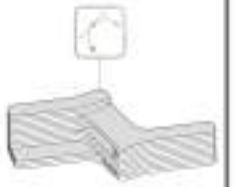
02 RAISE CUT TO CREATE VIEWS & TERRACE



03 STEPPING DOWN THE MASS



04 VOID TO CHANNEL WIND AND FRAME VIEWS

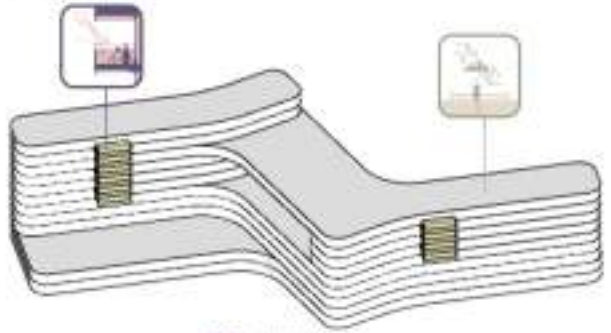


05 CURVED EDGES TO IMPROVE WIND FLOW

SITE ZONING



The zoning diagram is inspired by the qualities of water, dividing the site into **dynamic, transitional, and calm zones.** This helps in creating a balance between active functions such as **banquets and recreation,** and calmer spaces like **guest rooms and relaxation areas.** The use of **soft, curved flow lines** allows movement across the site to **feel smooth and continuous.** In this way, each zone has its own identity while still staying connected as part of one unified design.



06 VIEW-ORIENTED PROJECTIONS

DESIGN PHILOSOPHY



"A design that transitions from chaos to calm, mirroring water's duality—fluid yet still. Spaces flow seamlessly, creating dynamic energy that softens into serene experiences."

The planning integrates fluid circulation patterns, organic zoning, and local water features to connect diverse functions while maintaining visual and experiential harmony.
Built forms and open spaces are arranged to encourage connectivity, preserve privacy, and enhance interaction with natural elements, ensuring a balance between human engagement and personal retreat. The design celebrates seamless indoor-outdoor integration, sustainable orientation, and sensory richness inspired by the timeless paradox of water.

SPATIAL ZONING



VERTICAL ZONING





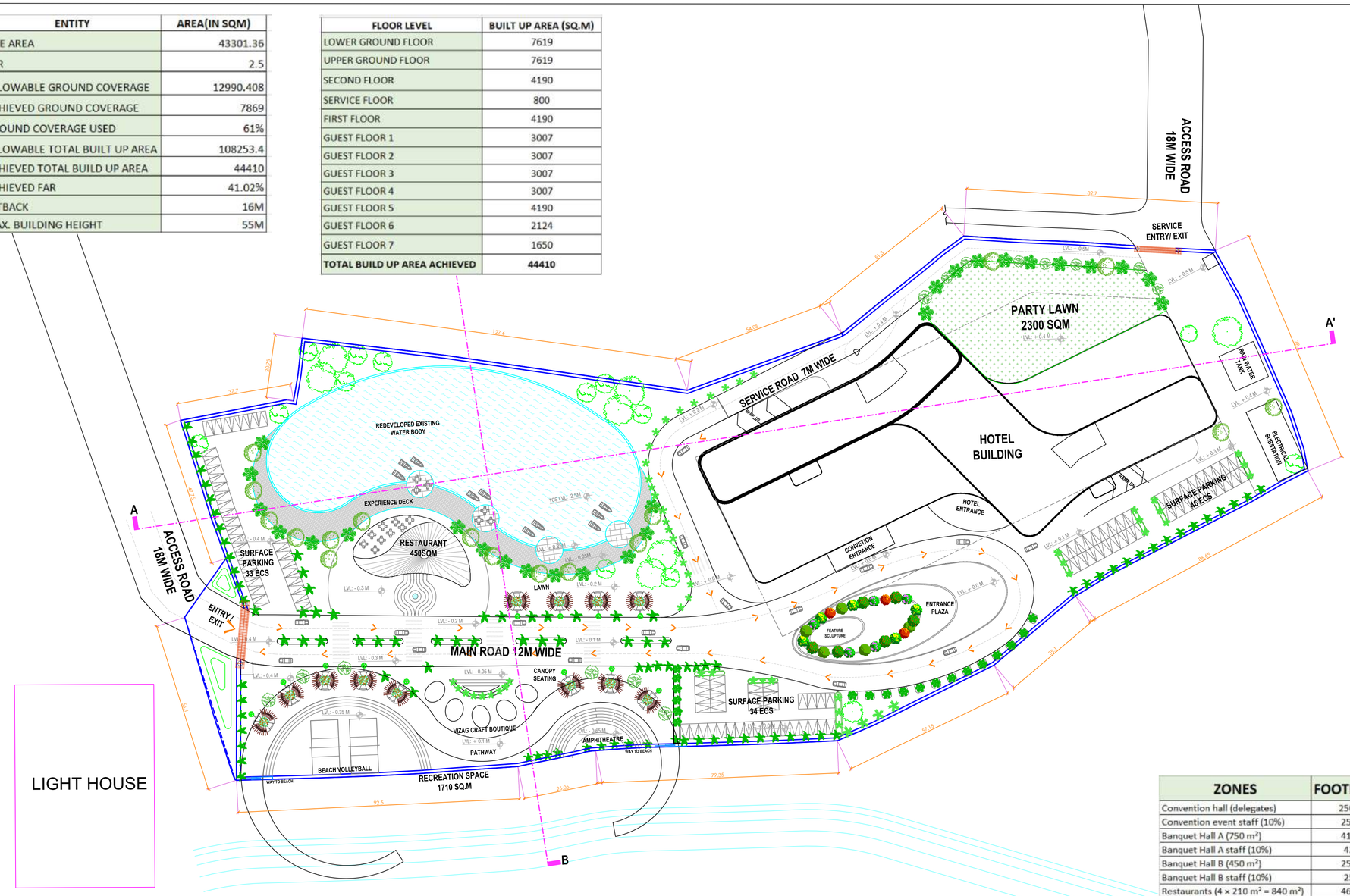
THE 5-STAR HOTEL

THESIS GUIDE:
PROF. PREETI ONKAR SINGH

TAHIRA SAFEY
211110051

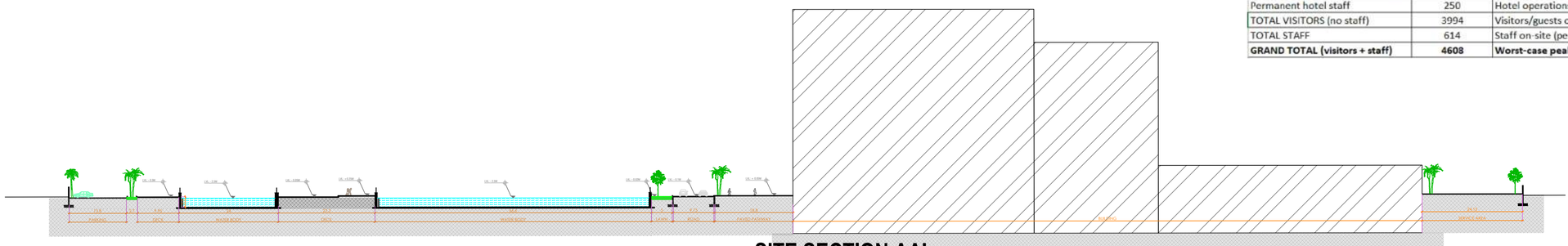
ENTITY	AREA(IN SQM)
SITE AREA	43301.36
FAR	2.5
ALLOWABLE GROUND COVERAGE	12990.408
ACHIEVED GROUND COVERAGE	7869
GROUND COVERAGE USED	61%
ALLOWABLE TOTAL BUILT UP AREA	108253.4
ACHIEVED TOTAL BUILD UP AREA	44410
ACHIEVED FAR	41.02%
SETBACK	16M
MAX. BUILDING HEIGHT	55M

FLOOR LEVEL	BUILT UP AREA (SQ.M)
LOWER GROUND FLOOR	7619
UPPER GROUND FLOOR	7619
SECOND FLOOR	4190
SERVICE FLOOR	800
FIRST FLOOR	4190
GUEST FLOOR 1	3007
GUEST FLOOR 2	3007
GUEST FLOOR 3	3007
GUEST FLOOR 4	3007
GUEST FLOOR 5	4190
GUEST FLOOR 6	2124
GUEST FLOOR 7	1650
TOTAL BUILD UP AREA ACHIEVED	**44410**

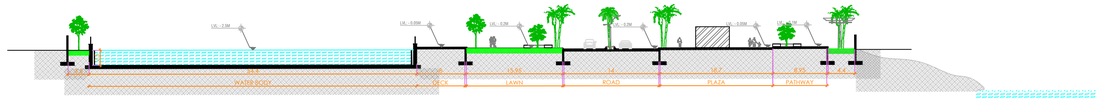


LIGHT HOUSE

ZONES	FOOTFALL	REMARK
Convention hall (delegates)	2500	
Convention event staff (10%)	250	Assumed 10% of delegates
Banquet Hall A (750 m²)	417	750 ÷ 1.8 ≈ 417 persons
Banquet Hall A staff (10%)	42	≈10% service staff
Banquet Hall B (450 m²)	250	450 ÷ 1.8 ≈ 250 persons
Banquet Hall B staff (10%)	25	≈10% service staff
Restaurants (4 × 210 m² = 840 m²)	467	840 ÷ 1.8 ≈ 467 covers
Restaurant staff (10%)	47	≈10% of covers
Overnight hotel guests (200 rooms)	360	200 rooms × 1.8 pax
Permanent hotel staff	250	Hotel operations staff
TOTAL VISITORS (no staff)	3994	Visitors/guests only
TOTAL STAFF	614	Staff on-site (perm + event)
GRAND TOTAL (visitors + staff)	**4608**	**Worst-case peak load**



SITE SECTION AA'
(SCALE 1:500)



SITE SECTION BB'
(SCALE 1:500)

KEY PLAN

REVISION

Rev.	Date	Description	Appr'd

NOTES

ALL DIMENSIONS ARE IN mm (MILLIMETER).

DRAWING SHALL NOT BE SCALED AND ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.

IN CASE OF ANY DISCREPENCY FOUND IN DRAWINGS AND DETAILS, IT SHALL BE BROUGHT TO THE NOTICE OF THE ARCHITECT, AND RECTIFIED, PRIOR TO ITS EXECUTION.

THIS DRAWING IS ISSUED STRICTLY WITH AN UNDERSTANDING THAT IT WILL BE USED ONLY FOR THE PURPOSE MENTIONED AND SHALL BE RETURNED AFTER COMPLETION.

THIS DRAWING SHALL BE REFERED ONLY FOR THE PURPOSE MENTIONED IN ITS TITLE (FLOORING PATTERN, FALSE CEILING, SHUTTERING PATTERN, ELECTRICAL, PLUMBING, ETC.)

MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - SITE PLAN

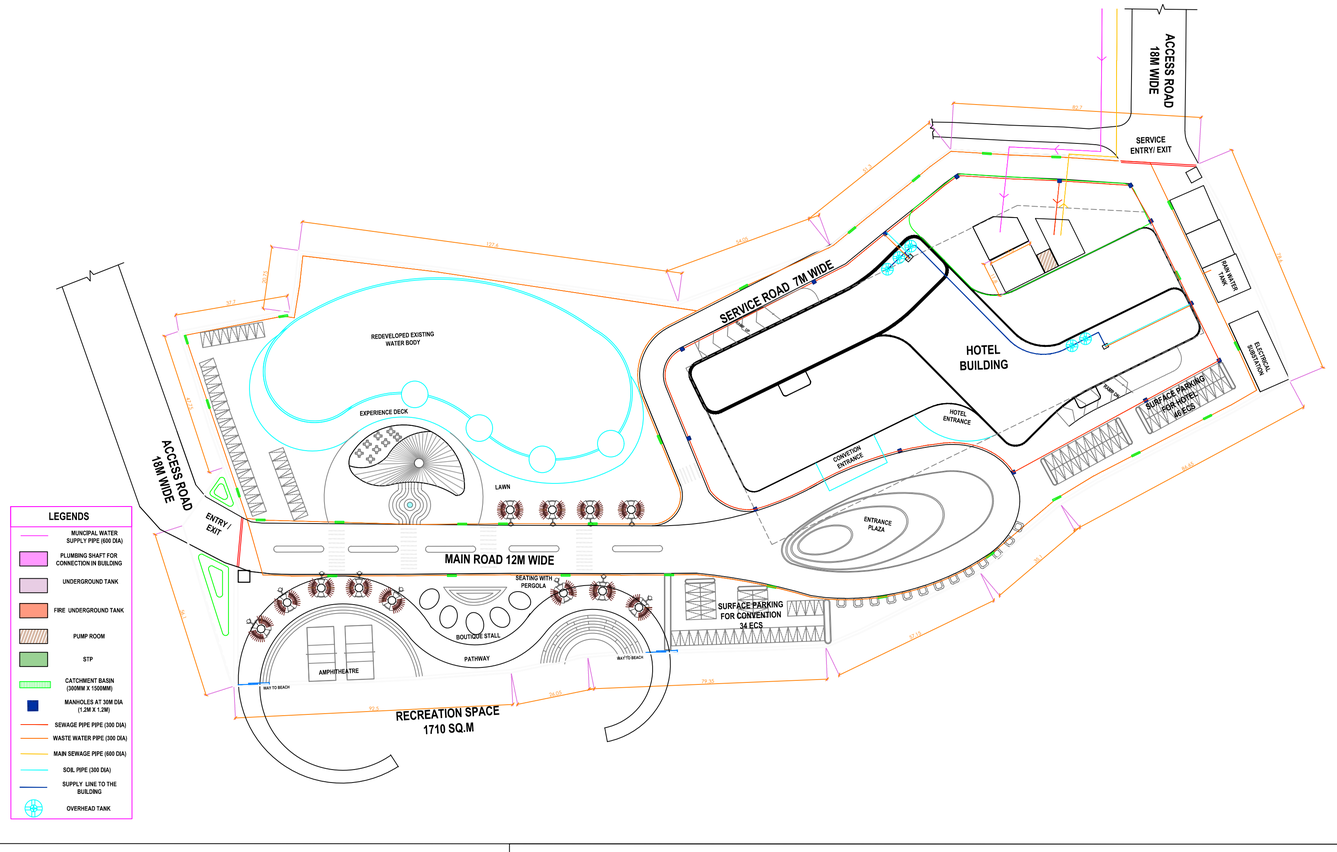
GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:750 **DWG. NO. - 1**

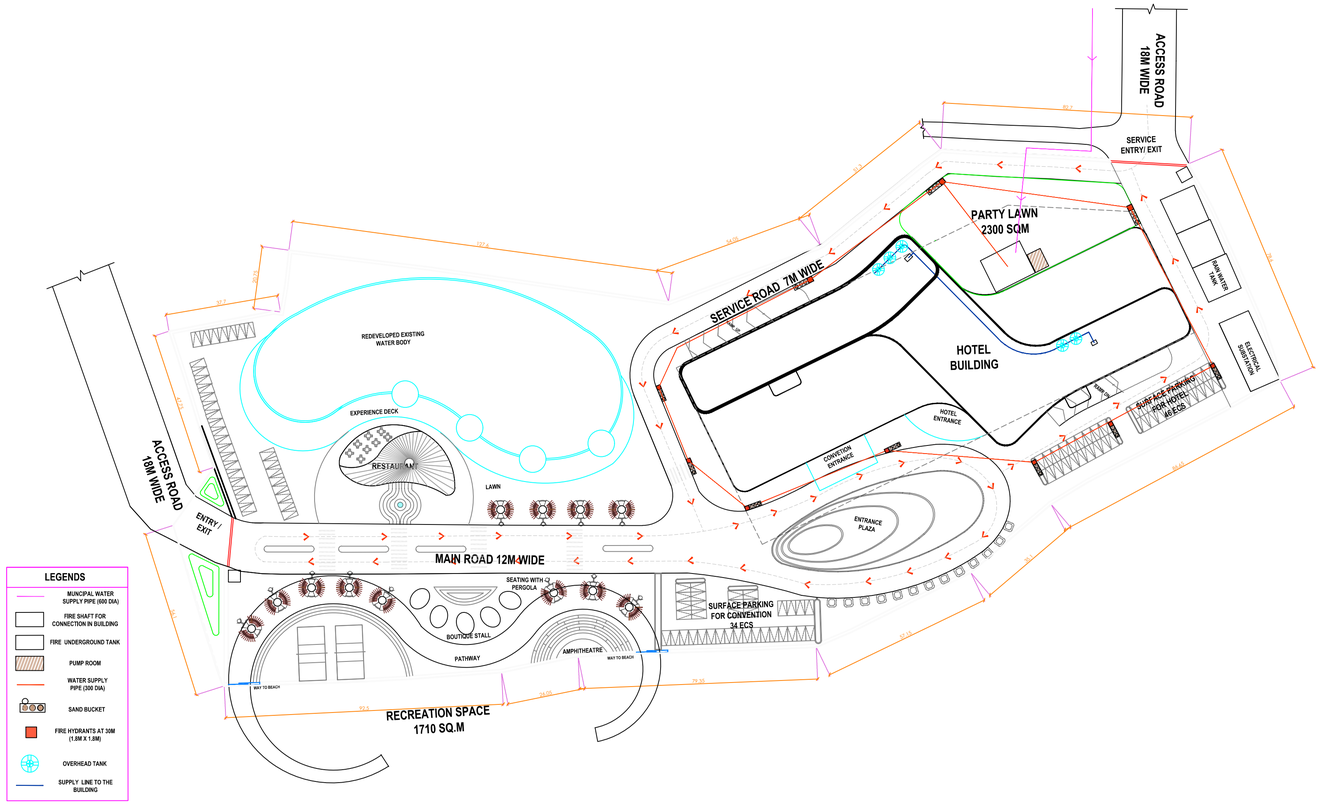
SITE WATER SUPPLY AND SEWAGE PLAN



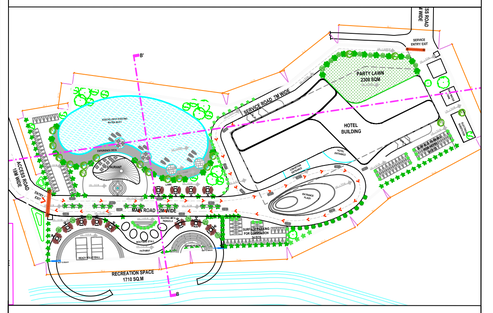
WATER SUPPLY AND SANITATION			
User (space)	**Nos (peak/day, scaled)**	**Water req'n (L per head / seat / day)**	**Total requirement (L/day)**
Guest rooms (staying guests)	208	320	**66,560**
Restaurants (all 4 outlets combined)	2,432	70 (per seat / per cover)	**1,70,240**
Bar	516	70	**36,120**
Café	387	70	**27,090**
Rooftop restaurant	80	70	**17,780**
Banquets (dining)	226	70	**15,820**
Convention (assembly / visitors)	129	15 (assembly visitor)	**1,935**
Recreation (pool, salon, gym)	54	45 (clubhouse)	**2,430**
Staff (on duty / staff movements)	269	45 (office/staff)	**12,105**
Walk-ins / Lobby visitors	86	15 (visitor)	**1,290**
TOTAL (peak day)	**4,608**	—	**3,51,370**
SIZE OF UG TANK (1.5 DAYS STORAGE)	**14M X 12.5M X 3M**		**5,50,000**
SIZE OF OVERHEAD TANK	**3*20000L**		**60,000**
STP			
Total water demand	3,51,370		
90% of total water demand	316233		
SIZE OF STP	17.6M X 9.5M X 3M	5,00,000	

SITE FIRE FIGHTING PLAN

FIRE SAFETY REQUIREMENTS FOR HOTEL	
Fire Sprinkler Grid	3×3 to 4×4 m (typical grid
Underground tank	3,00,000
Size of UG tank (depth = 3 m)	**12.5 × 9 × 3.0 m**
Overhead (terrace) fire tank	2* 10,000
Pumps (recommended)	**2 electric + 1 diesel** each **850 L/min** (main firefighting set) **+ 1**



KEY PLAN



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MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - SITE SERVICES

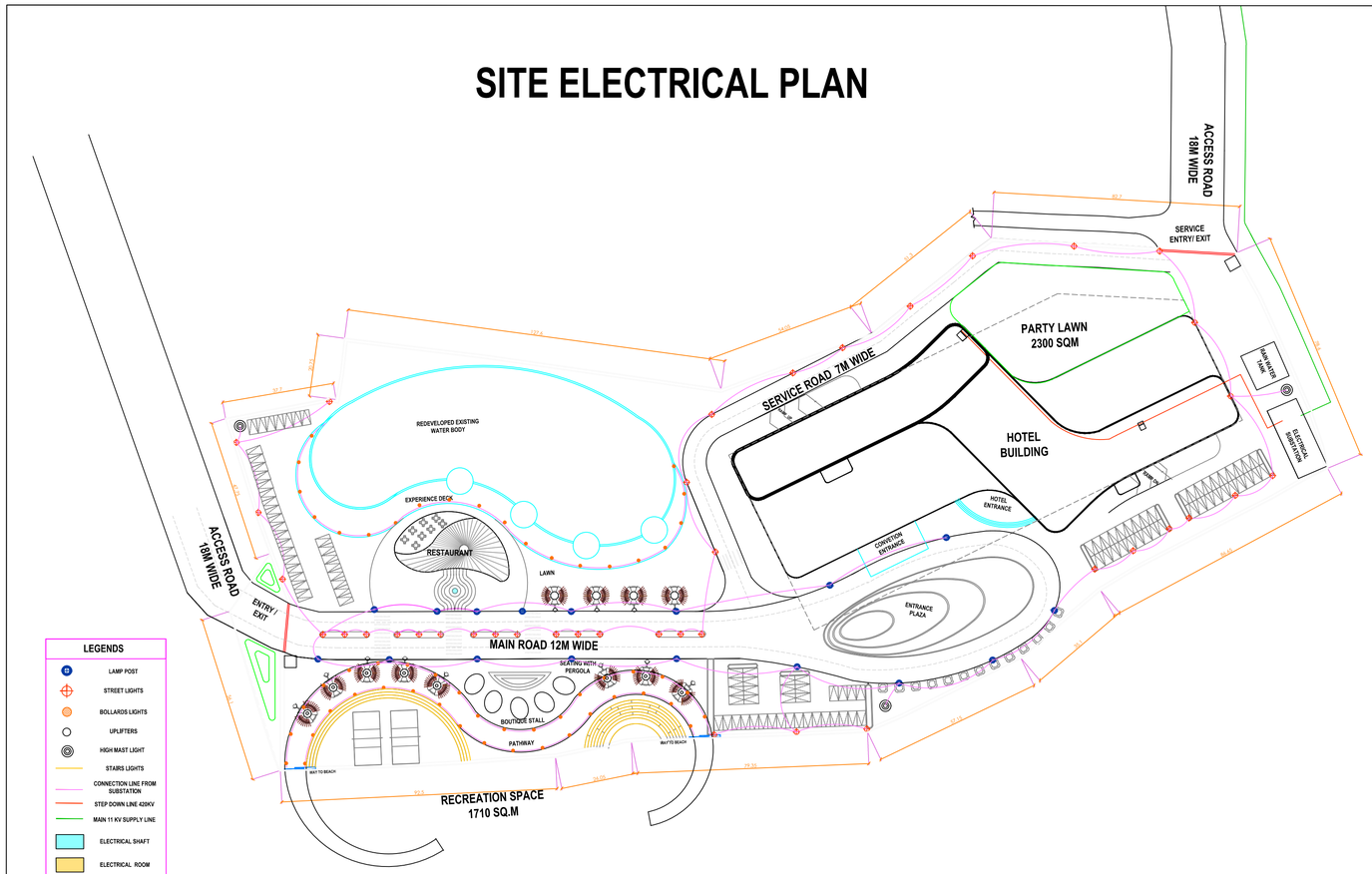
GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

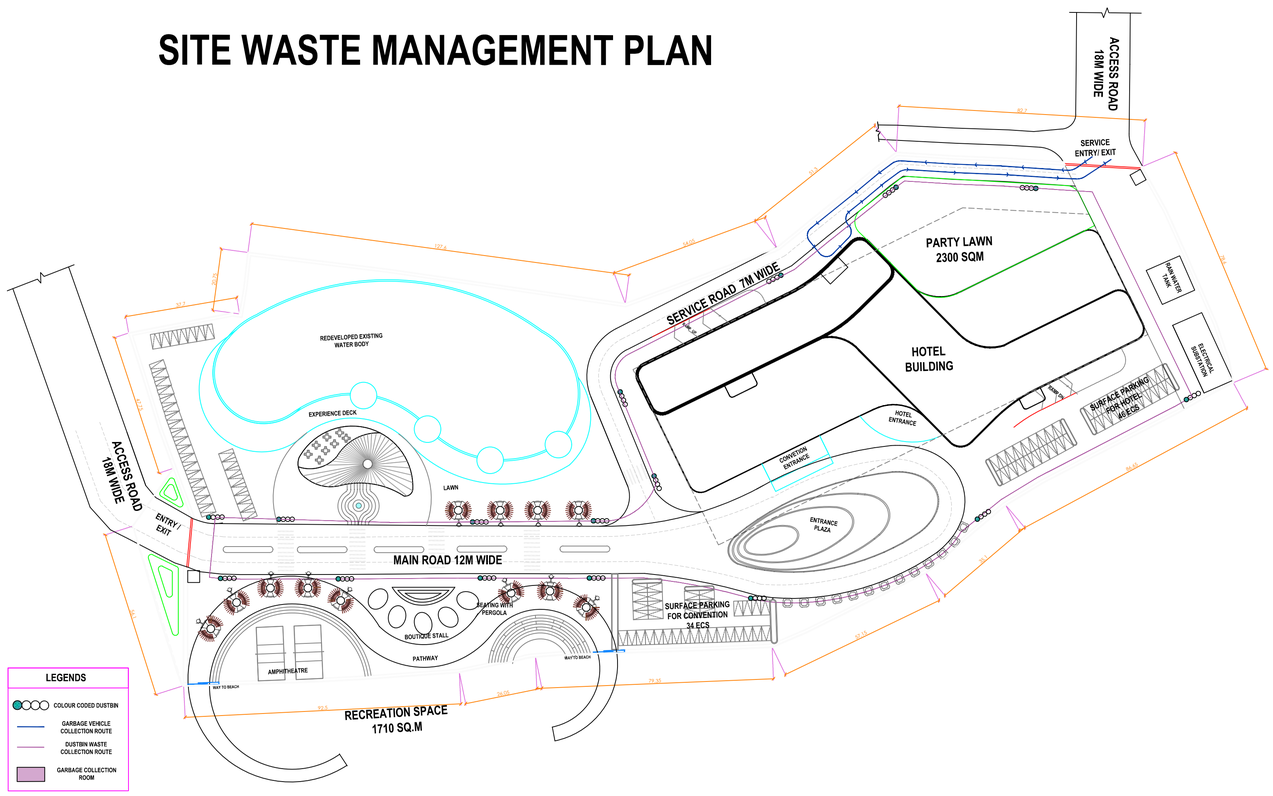
DATE - 17/09/2025

SCALE - 1:1000 **DWG. NO. - 1**

SITE ELECTRICAL PLAN



SITE WASTE MANAGEMENT PLAN



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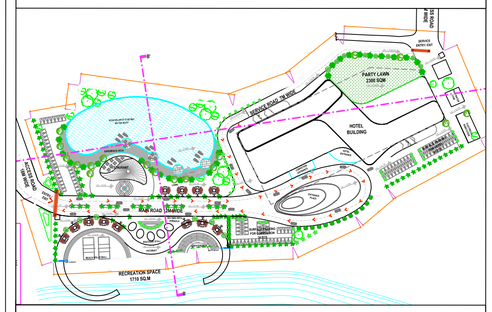

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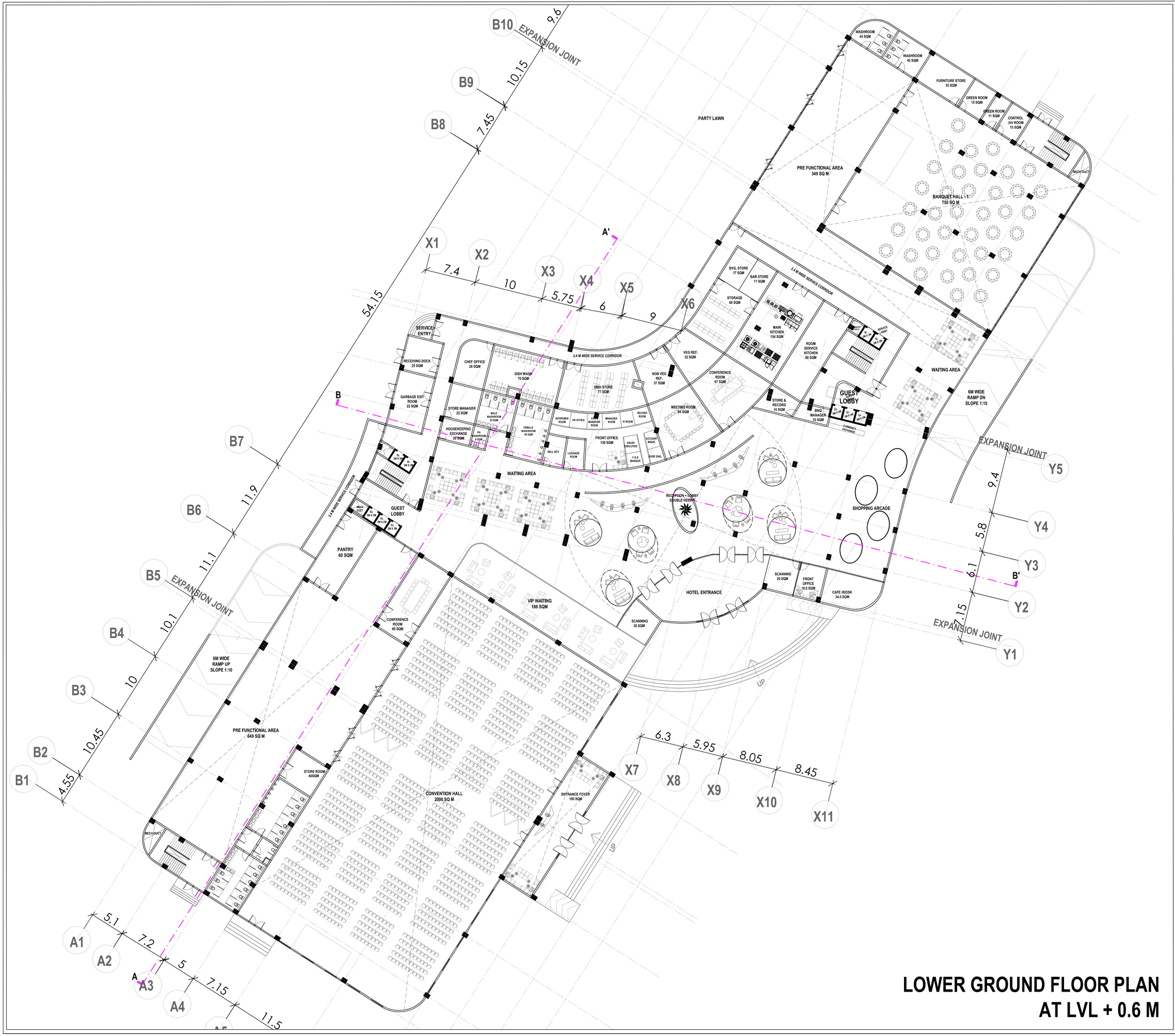
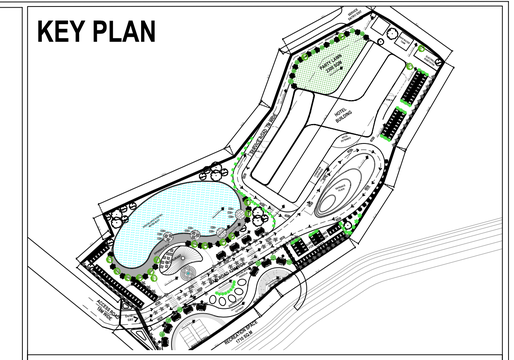
DATE - 17/09/2025

SCALE - 1:1000 **DWG. NO. - 1**



LOWER GROUND FLOOR PLAN AT LVL + 0.6 M

KEY PLAN



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MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - FLOOR PLANS

GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:250 **DWG. NO. - 2**

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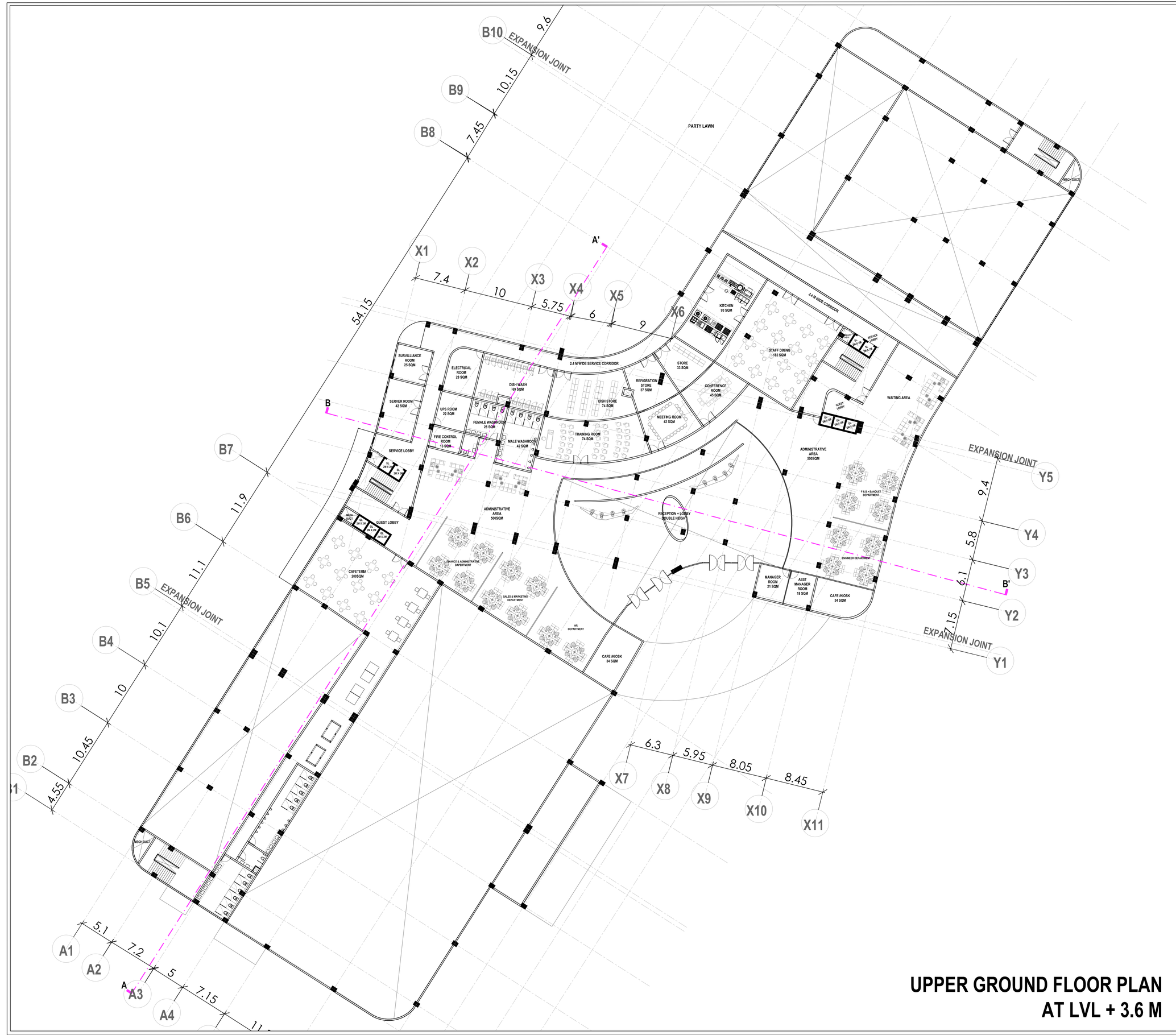
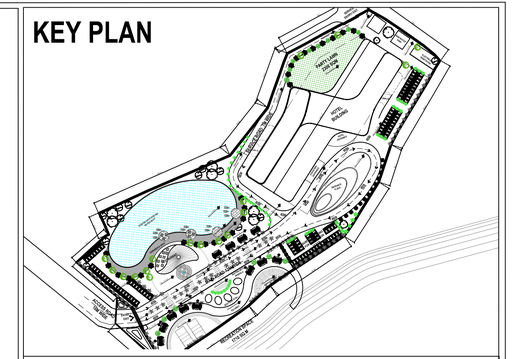


UPPER GROUND FLOOR PLAN
AT LVL + 3.6 M

KEY PLAN



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PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - FLOOR PLANS

GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:250 **DWG. NO. - 3**

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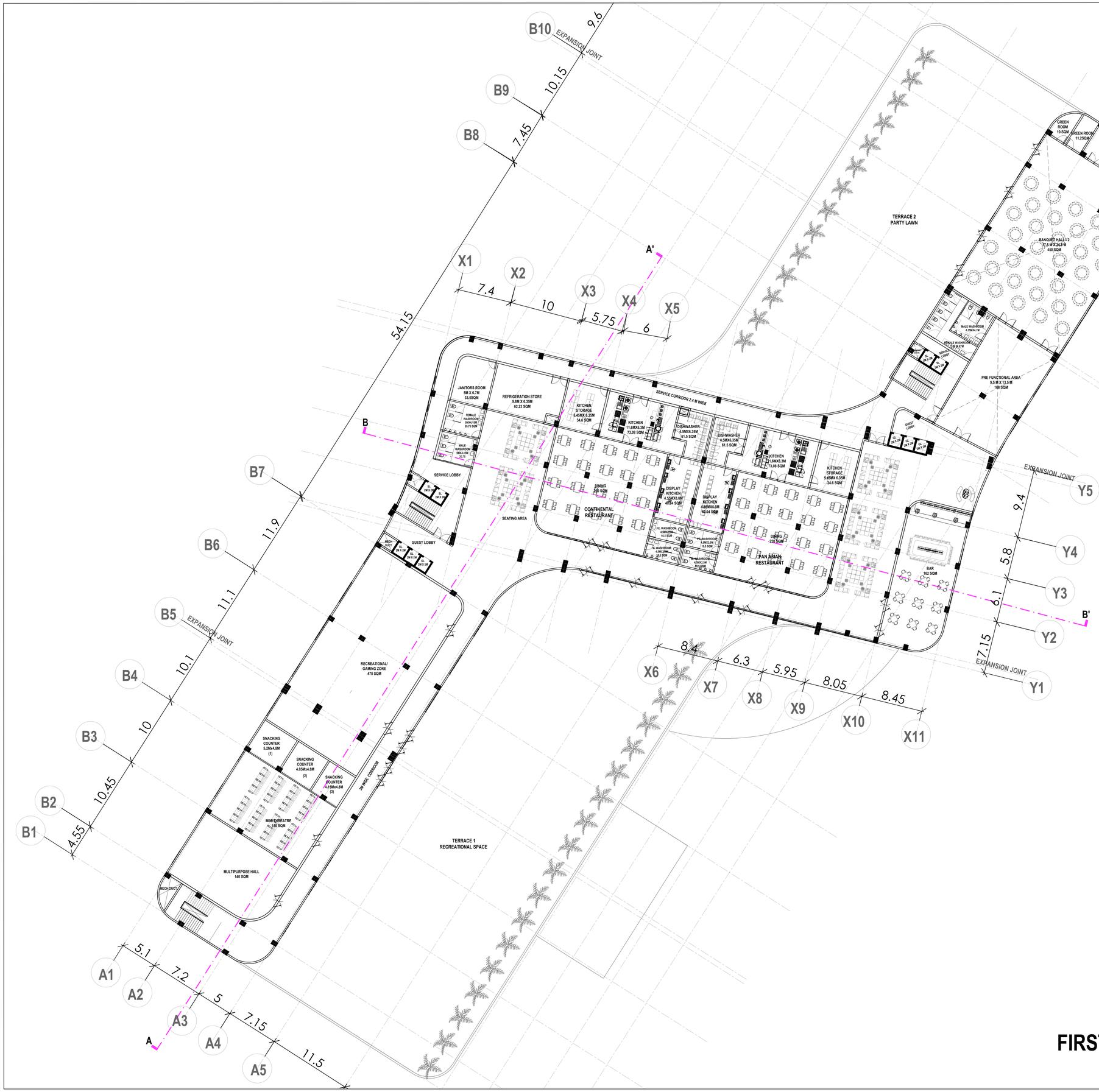
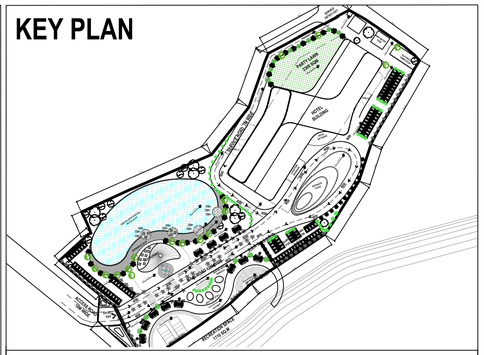


FIRST FLOOR PLAN AT LVL + 7.8 M

KEY PLAN



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PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - FLOOR PLANS

GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:250

DWG. NO. -4

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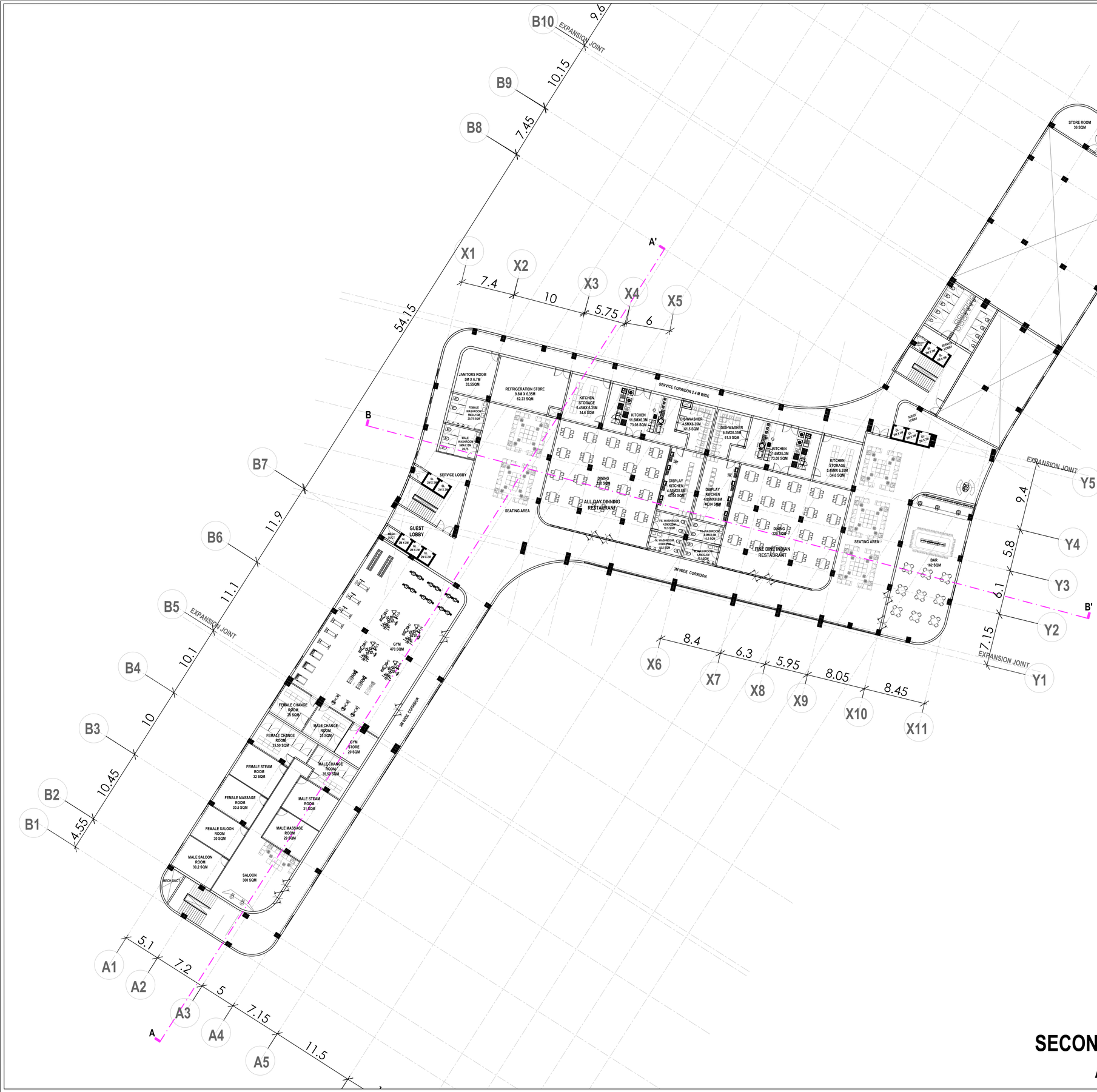
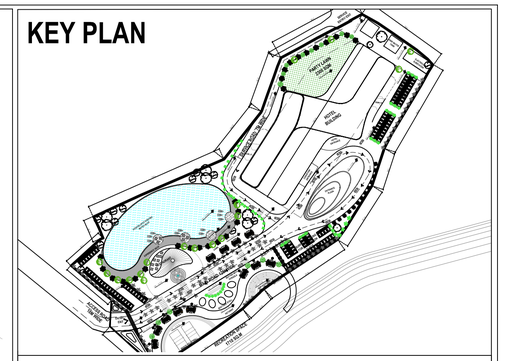


SECOND FLOOR PLAN AT LVL + 11.4 M

KEY PLAN



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PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - FLOOR PLANS

GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:250 **DWG. NO. - 5**

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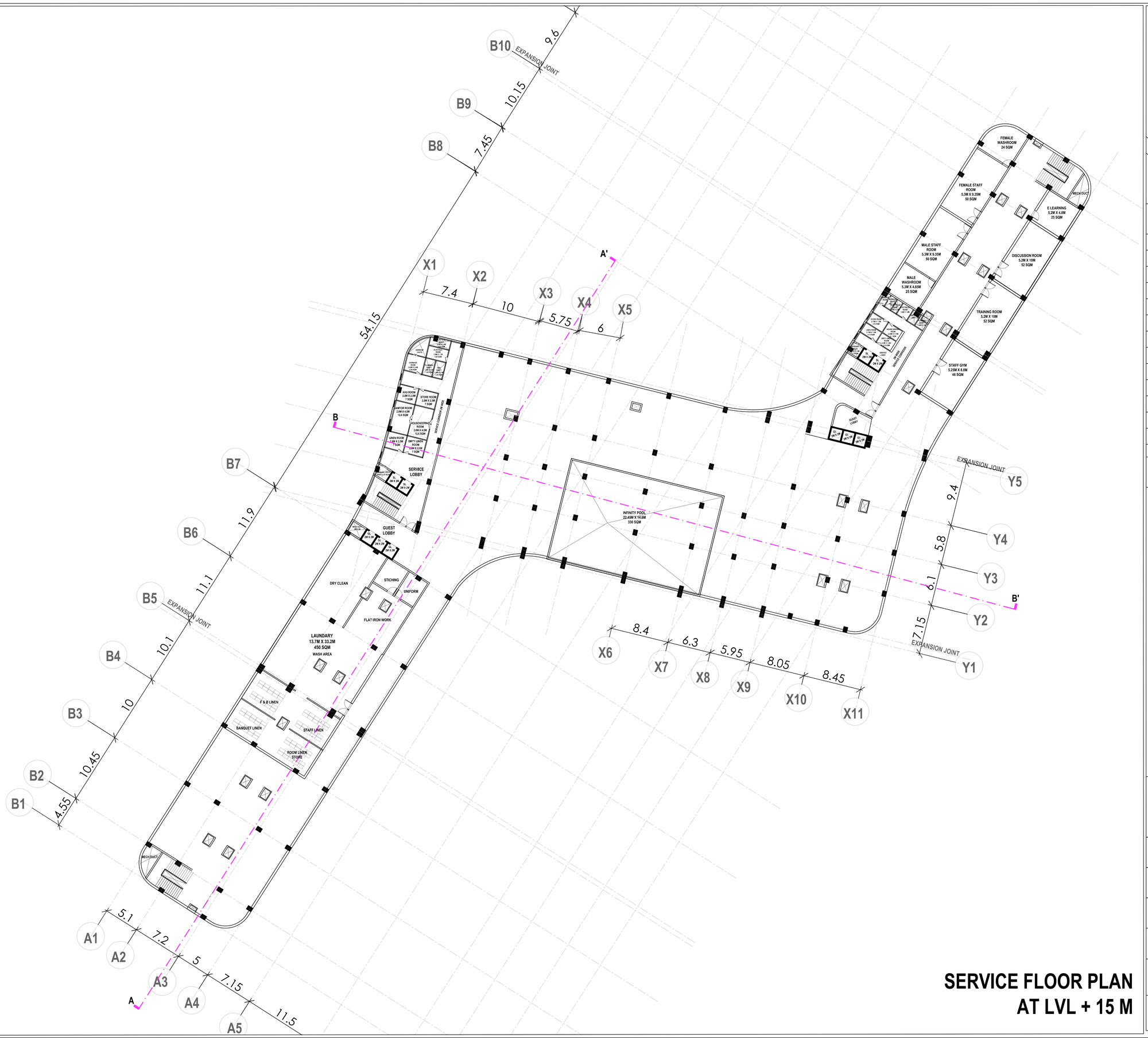
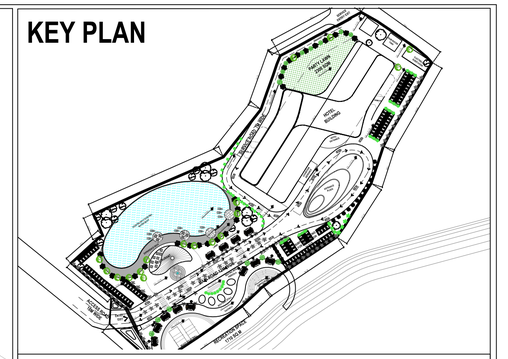


SERVICE FLOOR PLAN AT LVL + 15 M

KEY PLAN



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MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - SERVICEFLOOR PLANS

GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:250 **DWG. NO. - 6**

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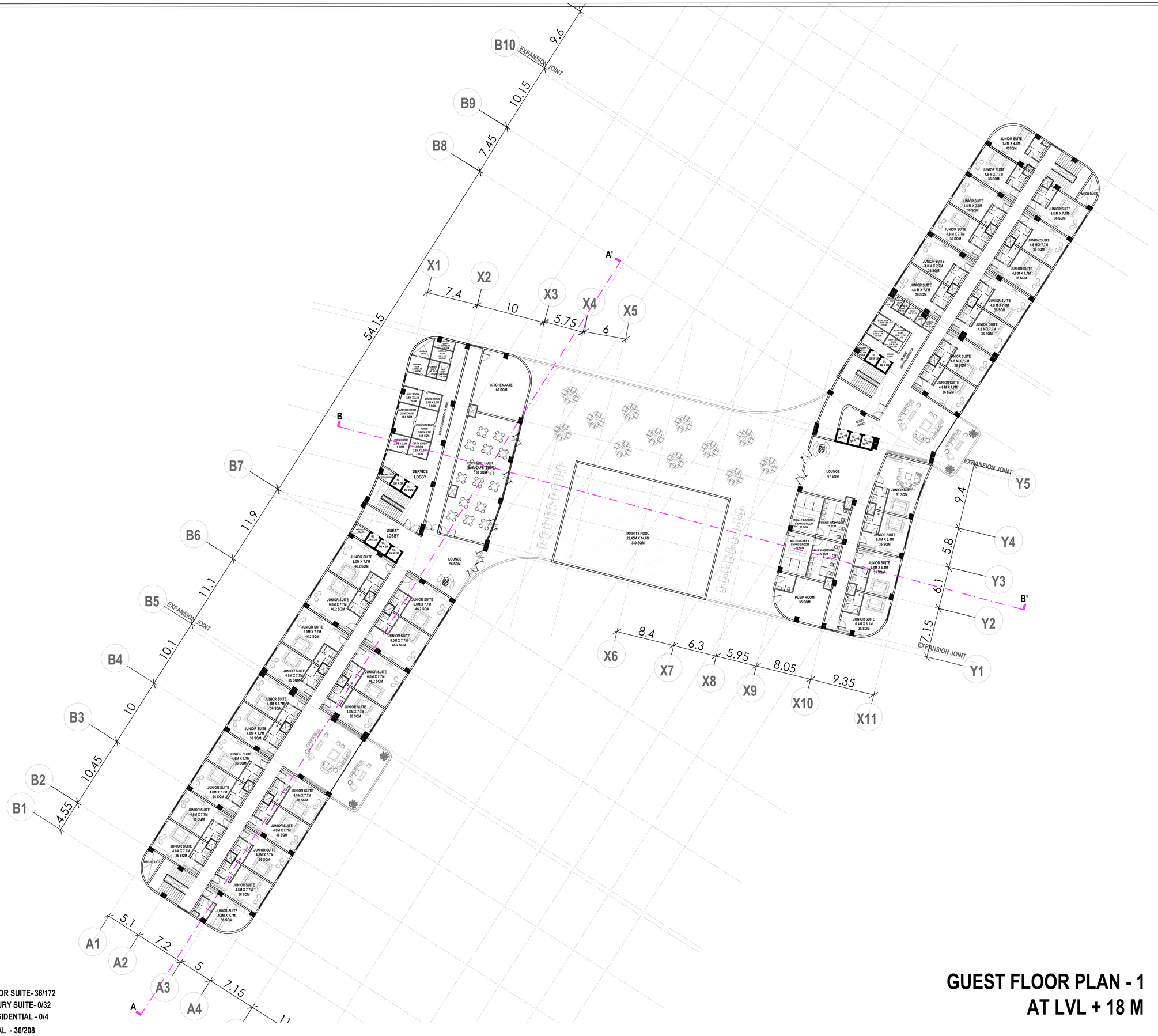
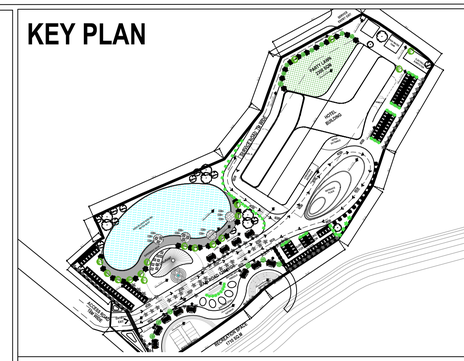


JUNIOR SUITE- 36/172
LUXURY SUITE- 0/32
PRESIDENTIAL - 0/4
TOTAL - 36/208

GUEST FLOOR PLAN - 1
AT LVL + 18 M

KEY PLAN



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PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - FLOOR PLANS

GUIDED BY - PROF. PREETI ONKAR SINGH

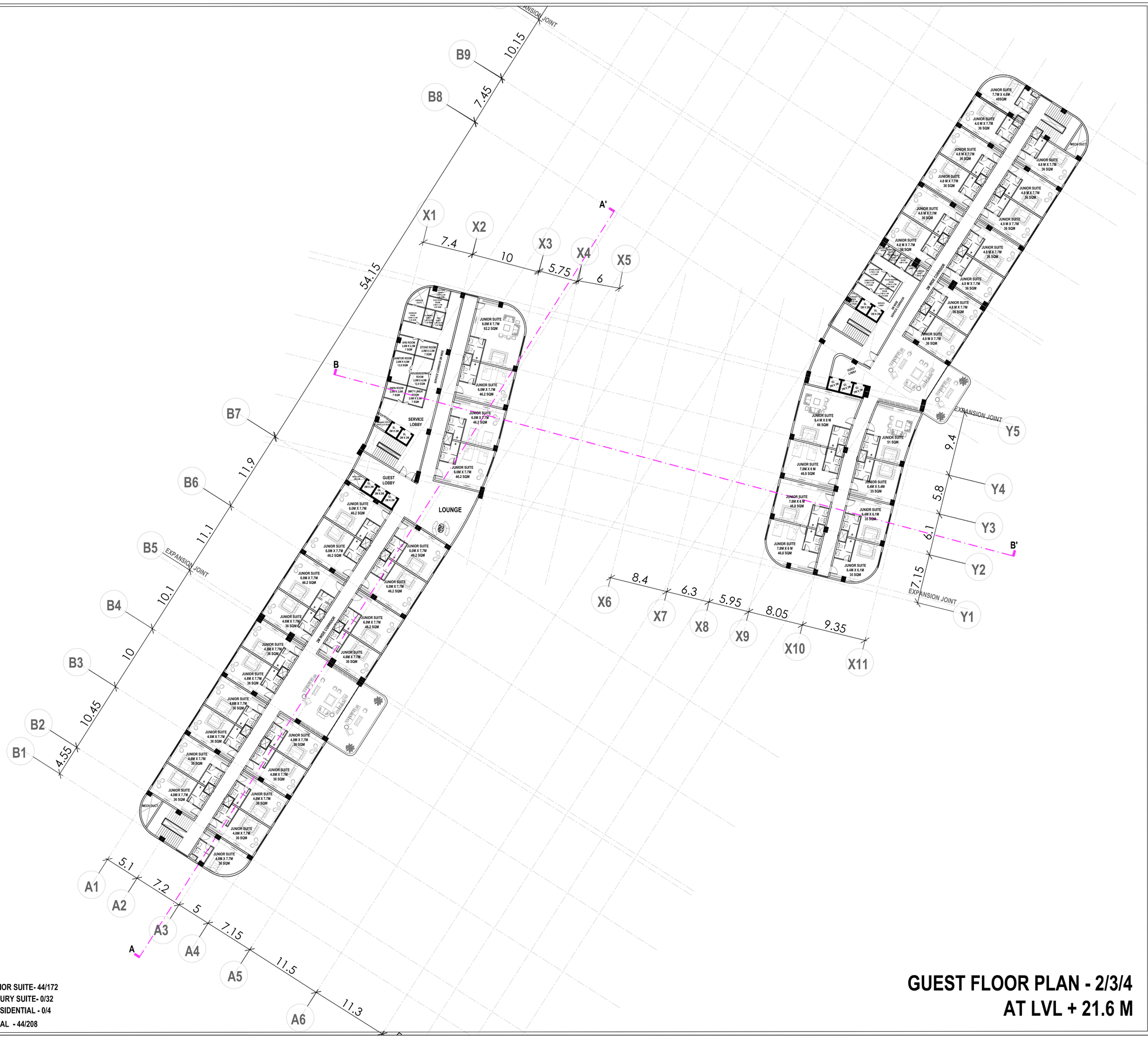
DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:250

DWG. NO. - 7

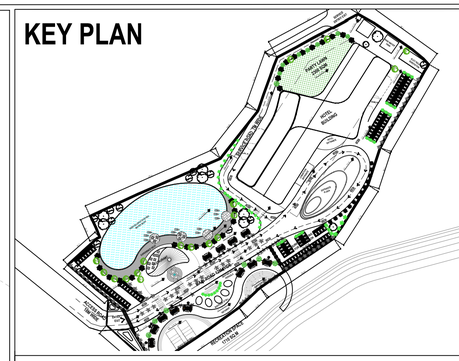
N



JUNIOR SUITE- 44/172
LUXURY SUITE- 0/32
PRESIDENTIAL - 0/4
TOTAL - 44/208

GUEST FLOOR PLAN - 2/3/4
AT LVL + 21.6 M

KEY PLAN



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SHEET TITLE - FLOOR PLANS

GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:250 **DWG. NO. - 8**

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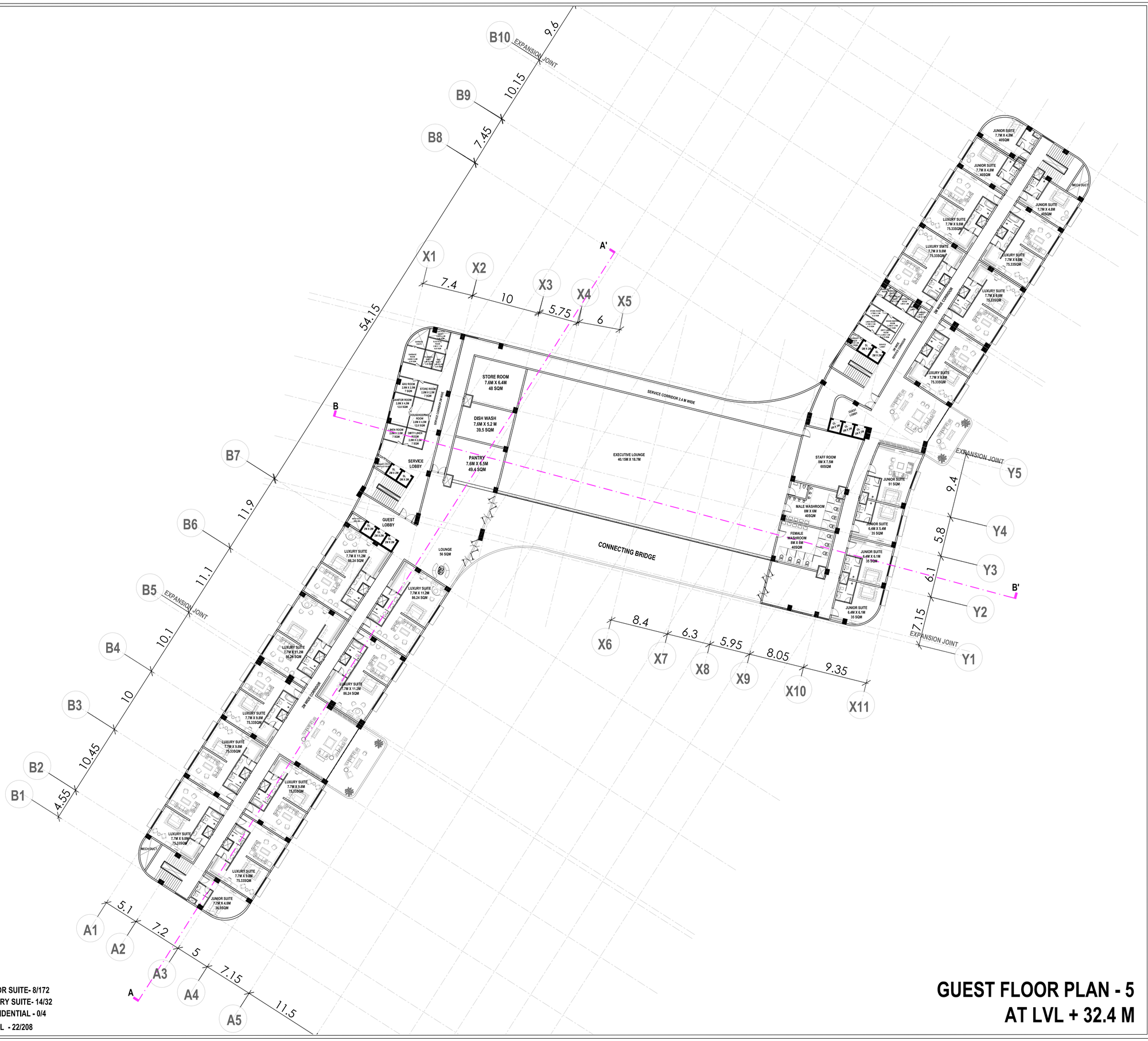
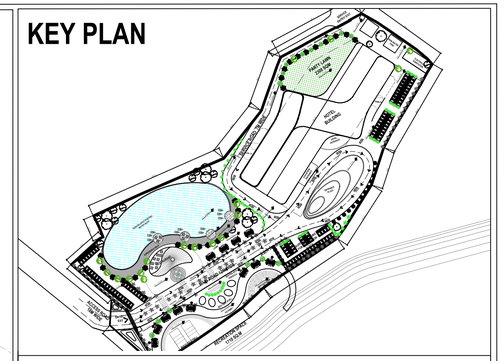


JUNIOR SUITE- 8/172
LUXURY SUITE- 14/32
PRESIDENTIAL - 0/4
TOTAL - 22/208

GUEST FLOOR PLAN - 5
AT LVL + 32.4 M

KEY PLAN



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SHEET TITLE - FLOOR PLANS

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DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:250 DWG. NO. - 9

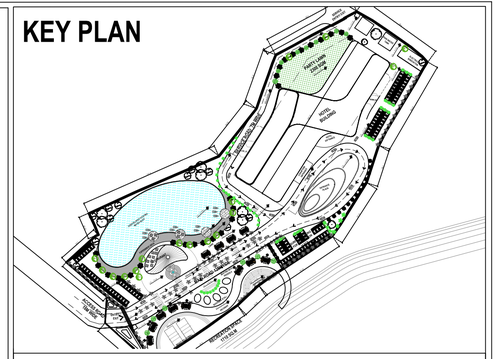
N



JUNIOR SUITE- 1/172
LUXURY SUITE- 9/32
PRESIDENTIAL - 2/4
TOTAL - 12/208

GUEST FLOOR PLAN - 6
AT LVL + 36 M

KEY PLAN



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SHEET TITLE - FLOOR PLANS

GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:250 **DWG. NO. - 10**

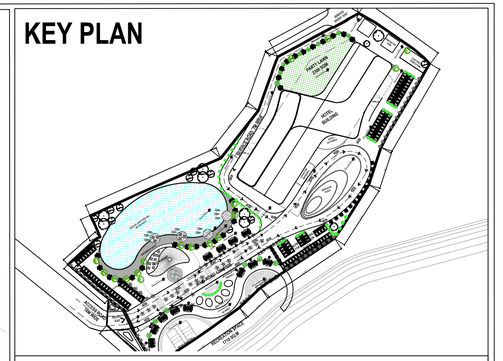
N



JUNIOR SUITE- 1/172
LUXURY SUITE- 9/32
PRESIDENTIAL - 2/4
TOTAL - 12/208

GUEST FLOOR PLAN - 7
AT LVL + 39.6 M

KEY PLAN



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PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - FLOOR PLANS

GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:250 DWG. NO. - 11

N

PARKING (IN ECS)

SPACES	AREA/NO.	REQUIRED	GIVEN	REMARKS
HOTEL				
GUEST ROOM	8000	240	250	3ECS/100M2
RESTURANTS	840	25.2	40	1ECS/50M2
BANQUETS	1200	24	66	2ECS/100M2
CONVENTION HALL	2000	40	96	2ECS/100M2
OTHERS				
RESTRAUNT	250	5	**10**	1ECS/50M2
RECREATIONAL SPACE		33.42	21	10%
STAFF PARKING		36.762	50	10%
VISITOR PARKING		48.52584	50	12%
SERVICE		32.92	35	10%
TOTAL				
		485.82784	618	
DIVISION				
SURFACE PARKING		48.582784	104	10%
BASEMENT		437.24506	514	
TOTAL		485.82784	618	



BASEMENT PLAN - 1

178 - FOUR WHEELER EACH
58 - TWO WHEELER EACH

KEY PLAN



REVISION

Rev.	Date	Description	Appr'd

NOTES

ALL DIMENSIONS ARE IN mm (MILLIMETER).

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MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - FLOOR PLANS

GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:300 **DWG. NO. - 1**

N

PARKING (IN ECS)

SPACES	AREA/NO.	REQUIRED	GIVEN	REMARKS
HOTEL				
GUEST ROOM	8000	240	250	3ECS/100M2
RESTURANTS	840	25.2	40	1ECS/50M2
BANQUETS	1200	24	66	2ECS/100M2
CONVENTION HALL	2000	40	96	2ECS/100M2
OTHERS				
RESTRAUNT	250	5	**10**	1ECS/50M2
RECREATIONAL SPACE		33.42	21	10%
STAFF PARKING		36.762	50	10%
VISITOR PARKING		48.52584	50	12%
SERVICE		32.92	35	10%
TOTAL				
		485.82784	618	
DIVISION				
SURFACE PARKING		48.582784	104	10%
BASEMENT		437.24506	514	
TOTAL		485.82784	618	



BASEMENT PLAN - 2

178 - FOUR WHEELER EACH

58 - TWO WHEELER EACH

KEY PLAN



REVISION

Rev.	Date	Description	Appr'd

NOTES

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MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - FLOOR PLANS

GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:300 **DWG. NO. - 1**

N

PARKING (IN ECS)

SPACES	AREA/NO.	REQUIRED	GIVEN	REMARKS
HOTEL				
GUEST ROOM	8000	240	250	3ECS/100M2
RESTURANTS	840	25.2	40	1ECS/50M2
BANQUETS	1200	24	66	2ECS/100M2
CONVENTION HALL	2000	40	96	2ECS/100M2
OTHERS				
RESTRAUNT	250	5	**10**	1ECS/50M2
RECREATIONAL SPACE		33.42	21	10%
STAFF PARKING		36.762	50	10%
VISITOR PARKING		48.52584	50	12%
SERVICE		32.92	35	10%
TOTAL				
		485.82784	618	
DIVISION				
SURFACE PARKING		48.582784	104	10%
BASEMENT		437.24506	514	
TOTAL		485.82784	618	

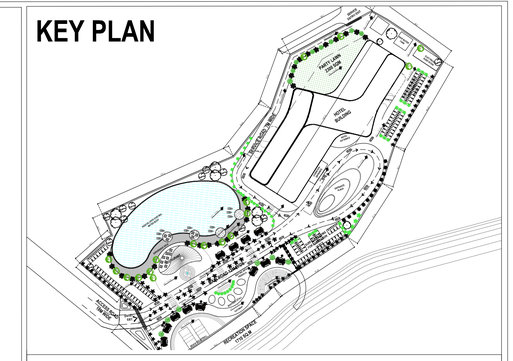


BASEMENT PLAN - 3

158 - FOUR WHEELER EACH

58 - TWO WHEELER EACH

KEY PLAN



REVISION

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MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - FLOOR PLANS

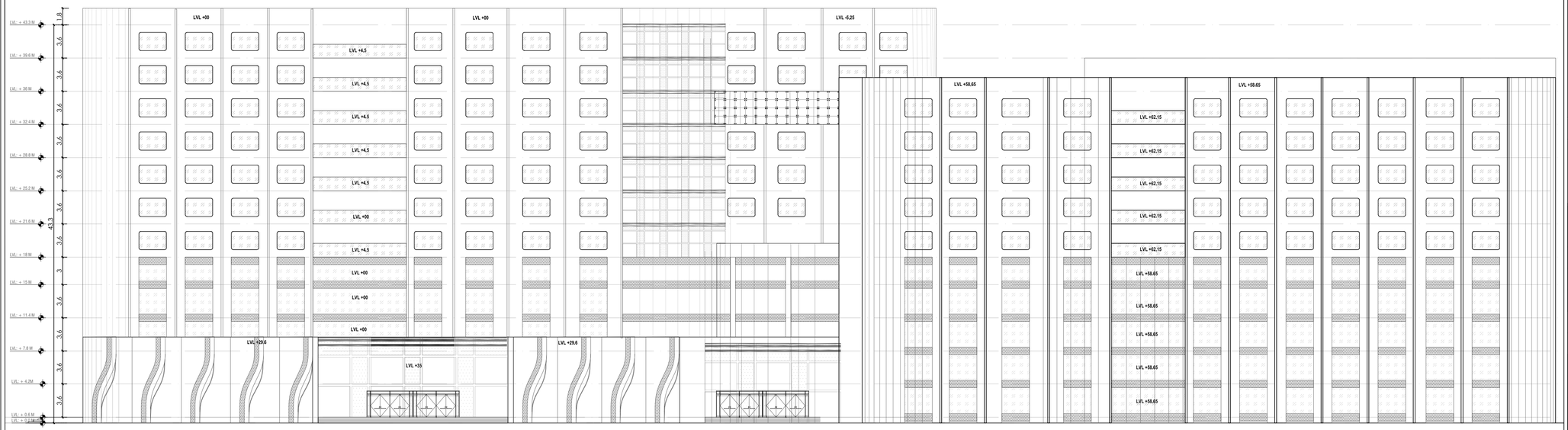
GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:300 **DWG. NO. - 1**

N

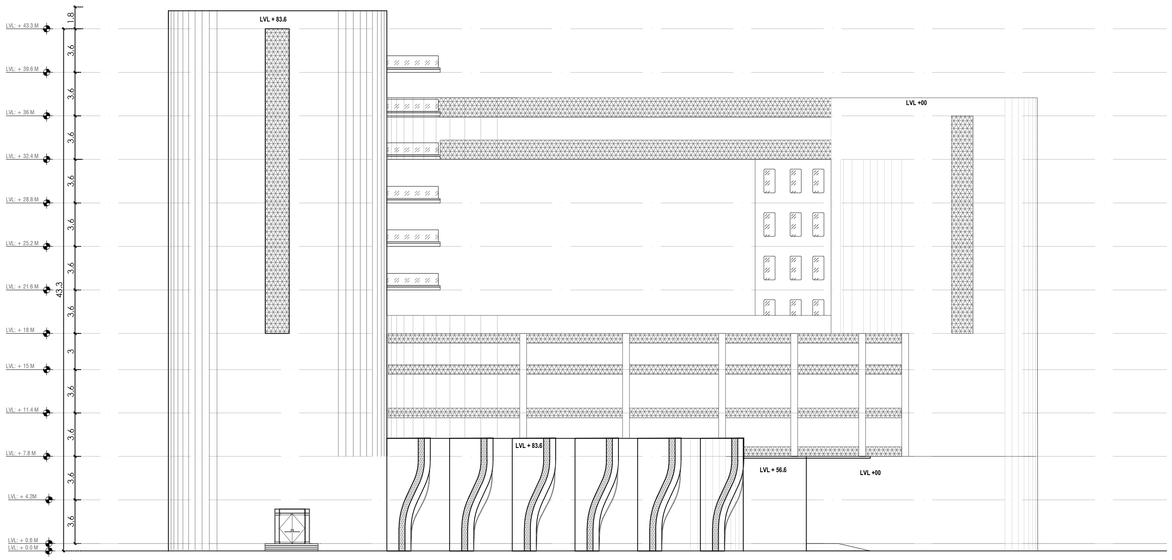


FRONT ELEVATION





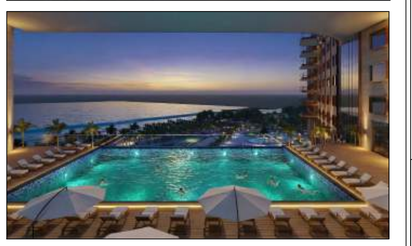




SIDE ELEVATION







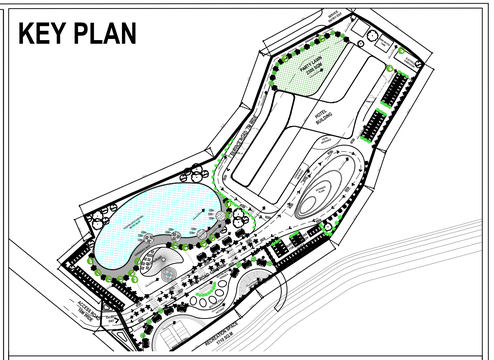








KEY PLAN



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MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - ELEVATION

GUIDED BY - PROF. PREETI ONKAR SINGH

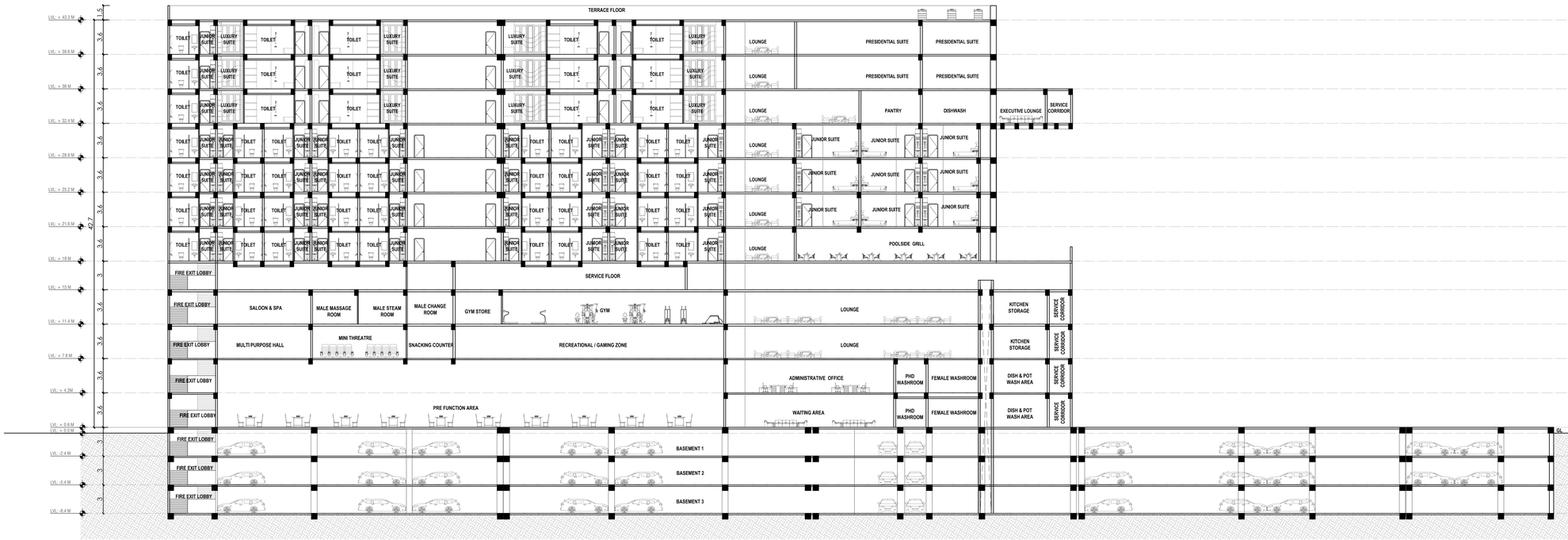
DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

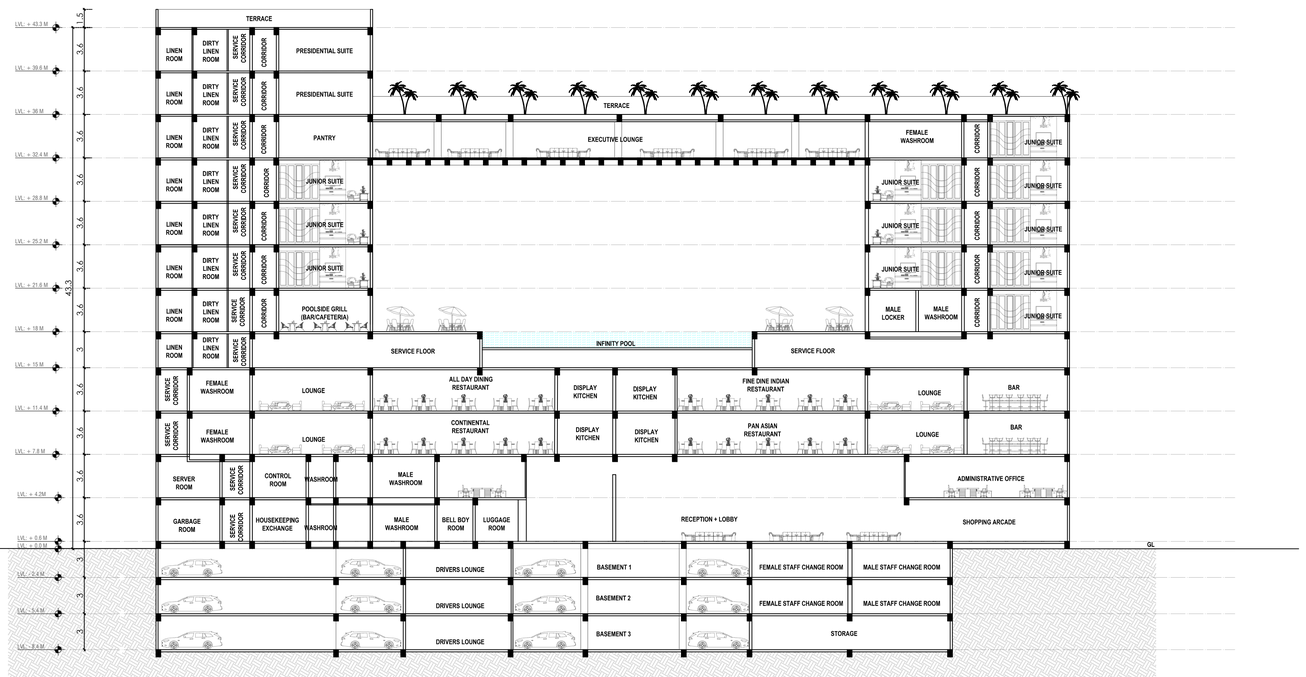
SCALE - 1:250

DWG. NO. - 14

N

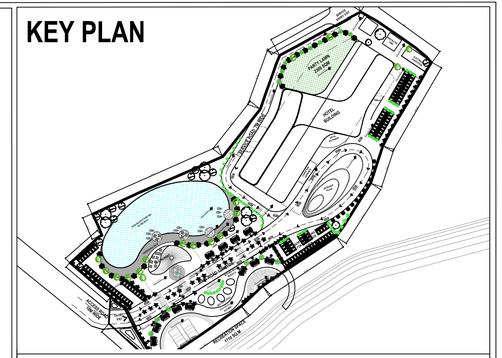


SECTION-AA'



SECTION - BB'

KEY PLAN



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Rev.	Date	Description	Appr'd

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MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - SECTION

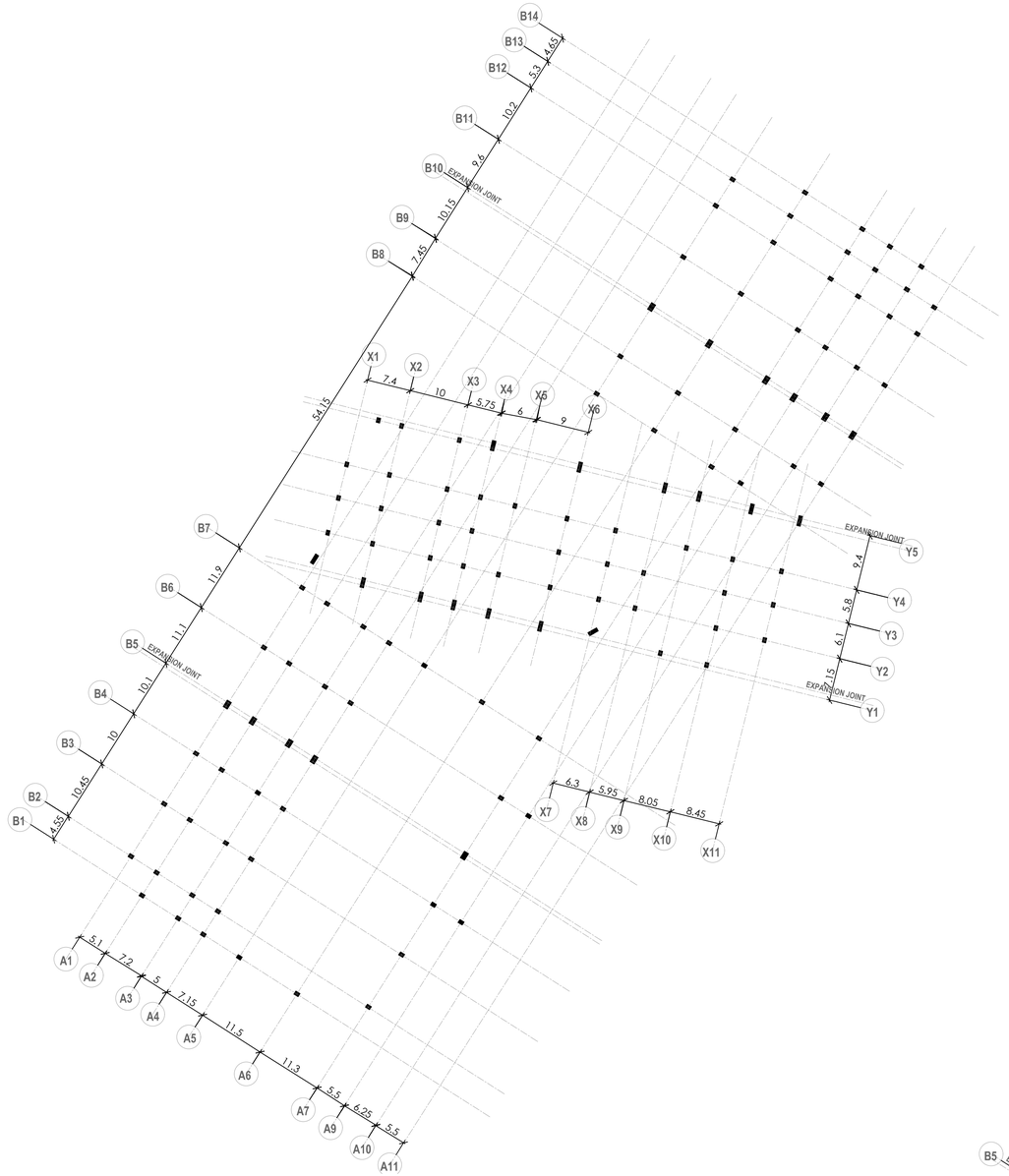
GUIDED BY - PROF. PREETI ONKAR SINGH

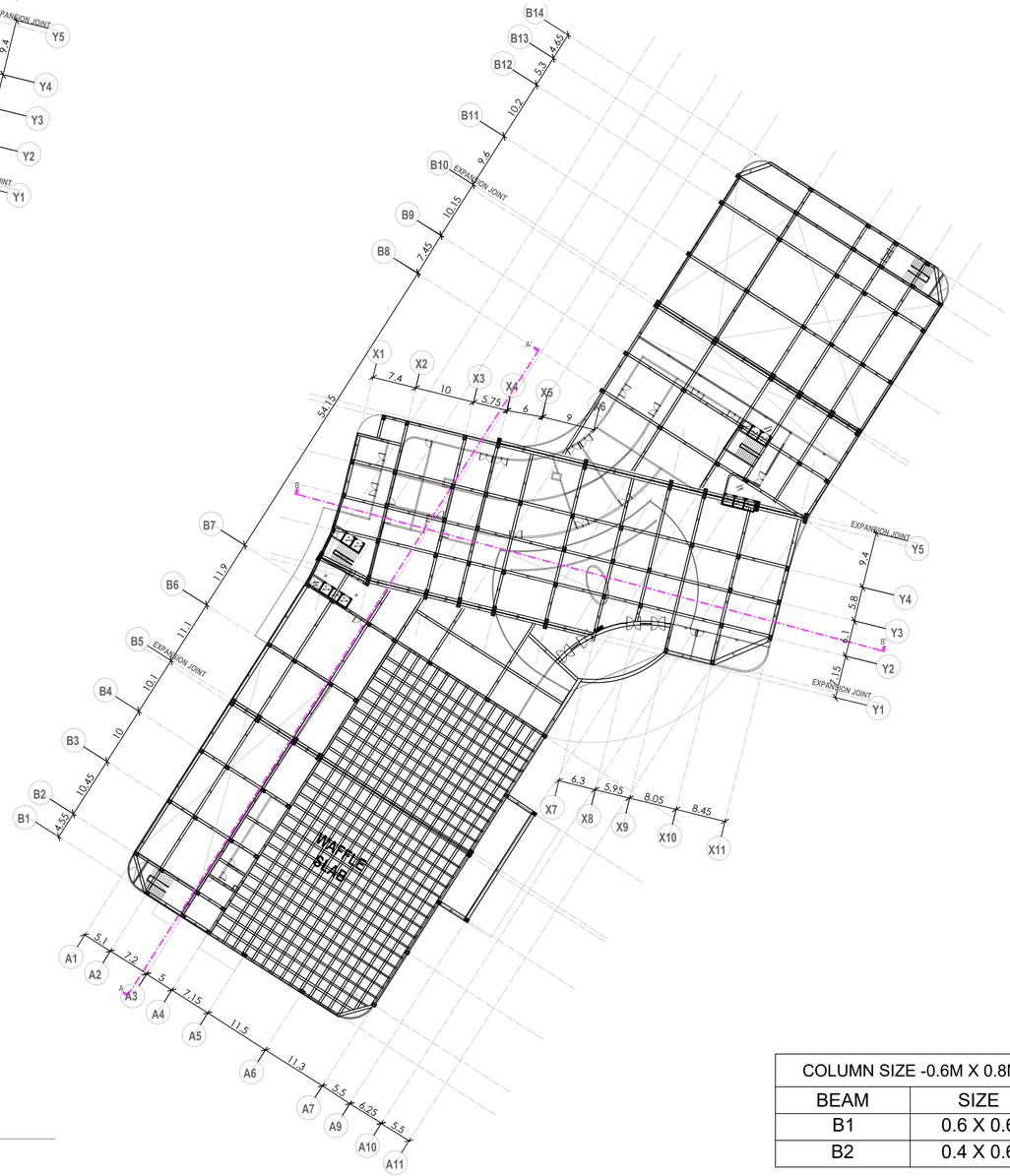
DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:250 **DWG. NO. - 12**

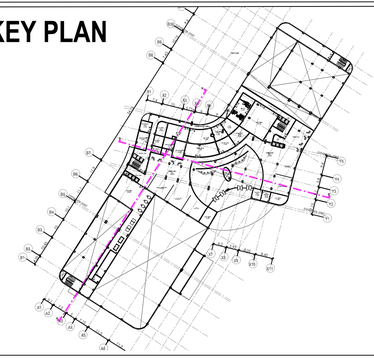
N





COLUMN SIZE -0.6M X 0.8M	
BEAM	SIZE
B1	0.6 X 0.6
B2	0.4 X 0.6

KEY PLAN



REVISION

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MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - UPPER GROUND FLOOR COLUMN & BEAM LAYOUT

GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:500

DWG. NO. - 1

N

INTERIOR CONCEPT

Inspired by the calm elegance of the coast, the design follows a Contemporary Luxury Hotel theme. The space blends rose gold metal accents, walnut wood textures, and beige marble flooring to evoke warmth and sophistication. Soft lighting, neutral tones, and minimal detailing create a serene yet refined ambiance that reflects modern comfort with a touch of seaside tranquility.

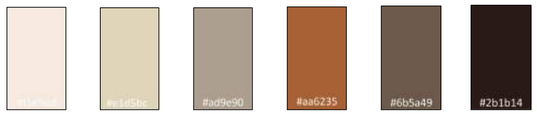


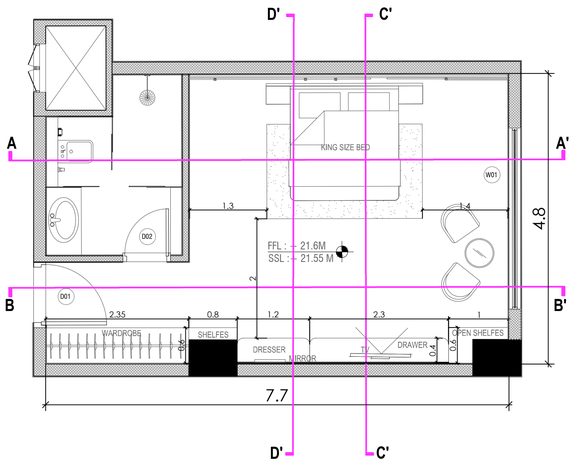


MATERIAL PALETTE

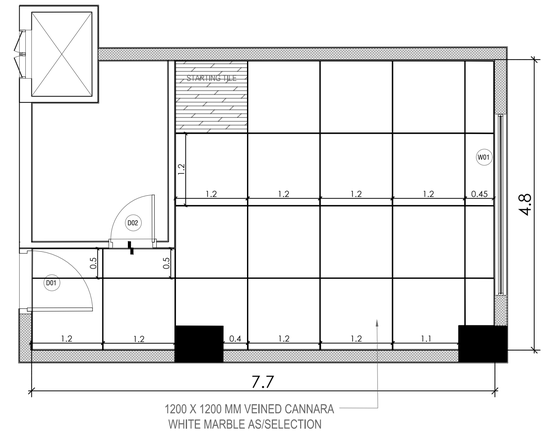


COLOUR PALETTE

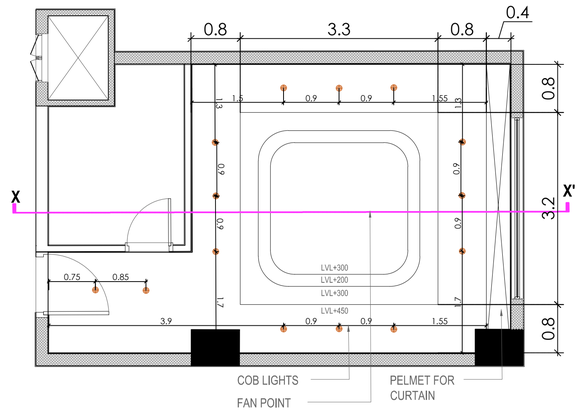




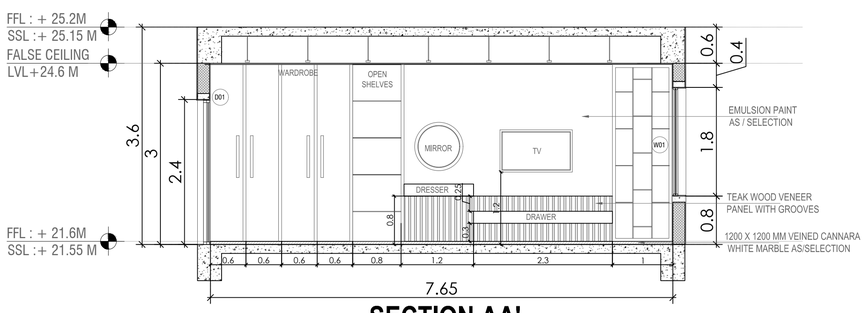
FURNITURE LAYOUT



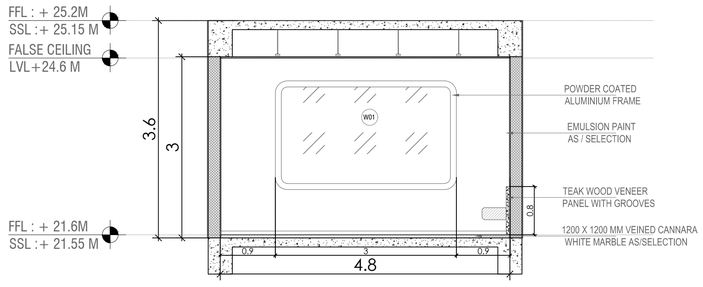
FLOORING LAYOUT



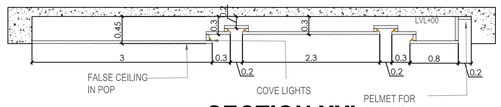
FALSE CEILING LAYOUT



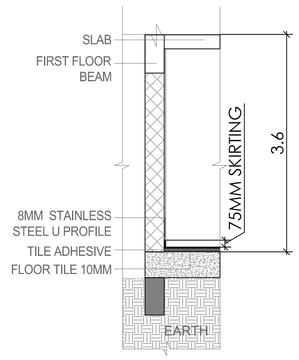
SECTION AA'



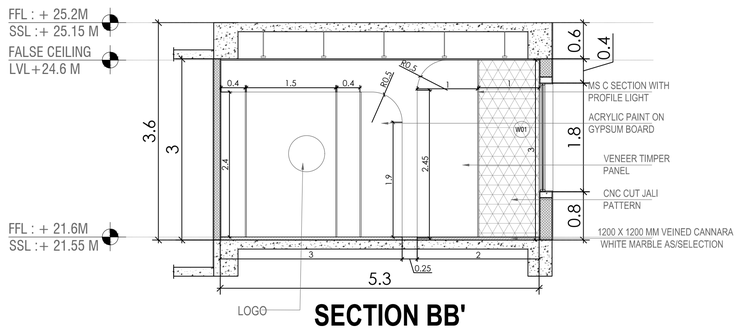
SECTION CC'



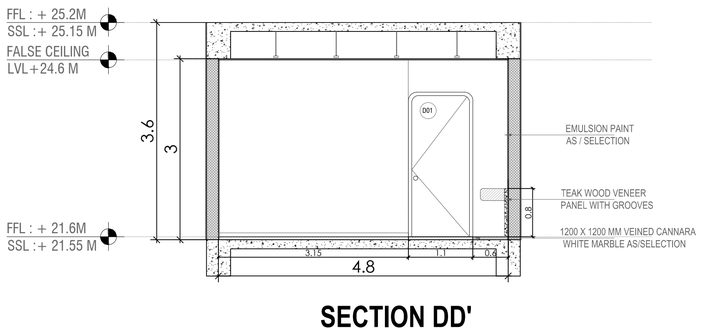
SECTION XX'



SKIRTING DETAIL



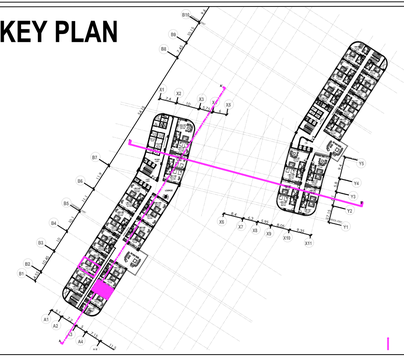
SECTION BB'



SECTION DD'

OPENING SCHEDULE				
NAME	WIDTH	LINTEL HT.	SILL HT.	COUNT
DOOR				
D01	1100 MM	2400 MM	-	1
D02	800 MM	2100 MM	-	1
WINDOW				
W01	3000MM	2400MM	800MM	1

KEY PLAN



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MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - INTERIOR OF JUNIOR SUITE

GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:50

DWG. NO. -

N

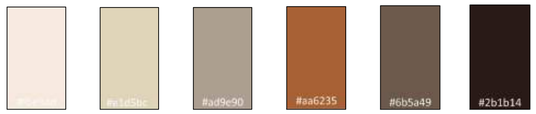
INTERIOR STYLE

The lobby reflects a **contemporary luxury style** with clean lines, warm tones, elegant lighting, and modern sculptural forms. The space feels grand yet welcoming, enhanced by balanced symmetry, refined detailing, and soft, sophisticated furniture that creates a premium 5-star hotel ambiance.

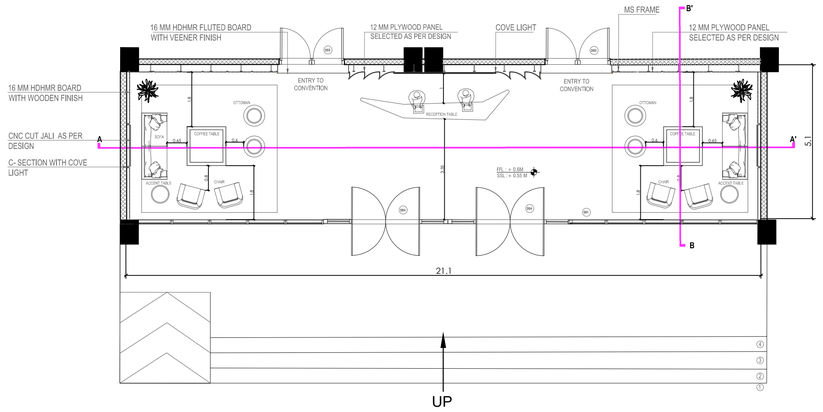
MATERIAL PALETTE



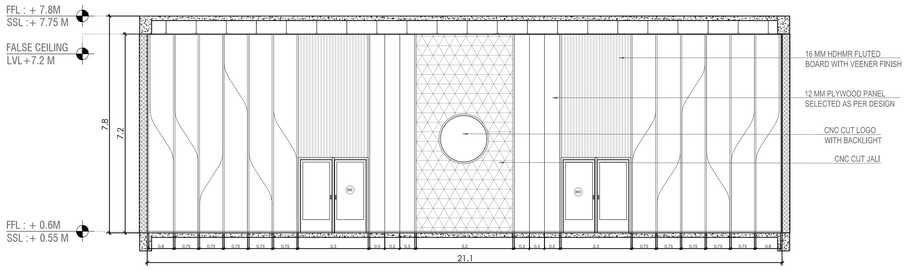
COLOUR PALETTE



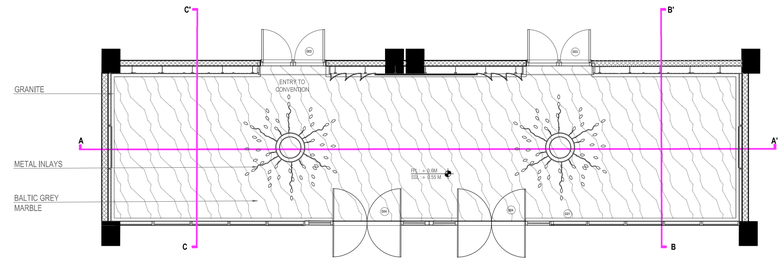




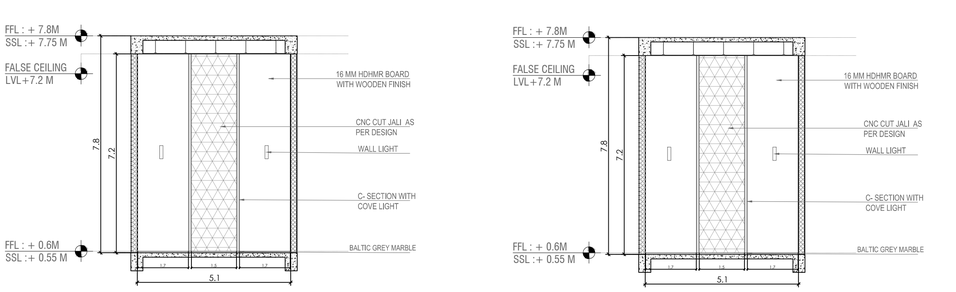
FURNITURE LAYOUT



SECTION AA'



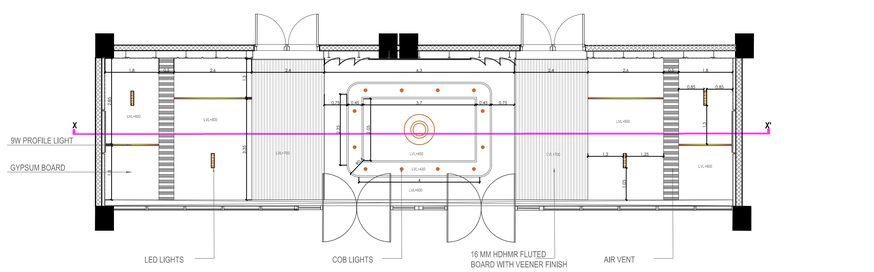
FLOORING LAYOUT



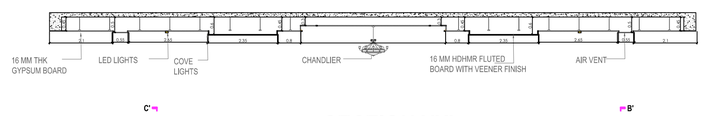
SECTION BB'

SECTION CC'

OPENING SCHEDULE					
NAME	WIDTH	LINTEL HT.	SILL HT.	COUNT	TYPE
DOOR					
D03	2400 MM	2400 MM	-	2	DOUBLE DOOR
D04	2200 MM	2400 MM	-	2	SWING DOOR
GLAZING					
G01	1200MM	1200MM		1	FIXED GLASS



REFLECTED CEILING PLAN



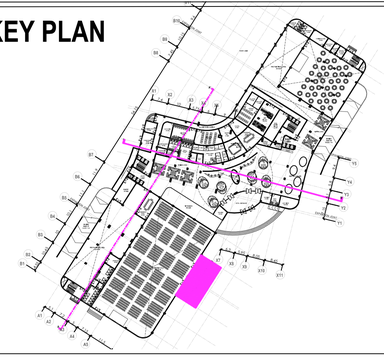
SECTION XX'







KEY PLAN



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MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - INTERIOR OF CONVENTION LOBBY

GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:100 **DWG. NO. -**

N

INTERIOR STYLE

A calm, contemporary beachside dining space inspired by coastal freshness and open horizons. The concept focuses on creating a relaxed yet elegant atmosphere with airy layouts, soft ambient lighting, and a seamless connection between indoor dining and the seaside environment. The design promotes comfort, openness, and a refreshing coastal experience suitable for a 5-star beach hotel.

MATERIAL PALETTE



COLOUR PALETTE



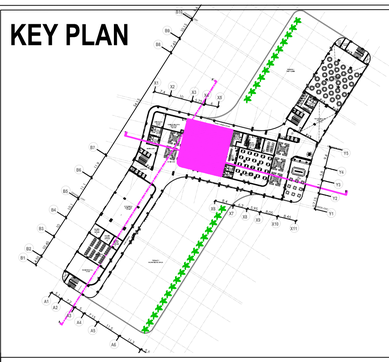






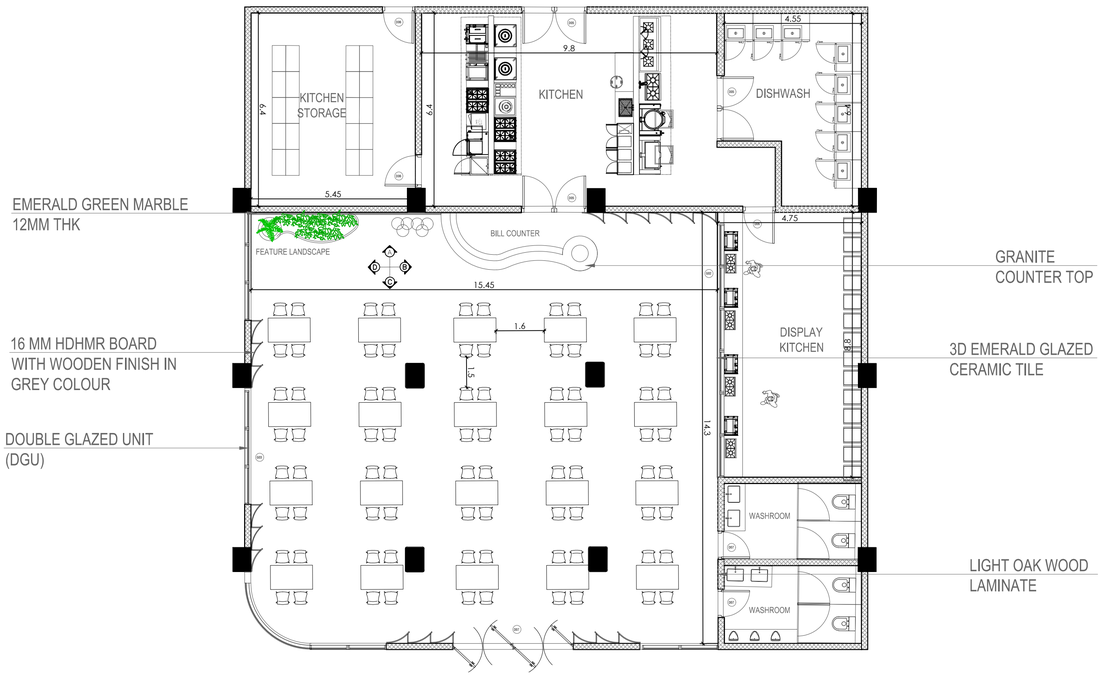


KEY PLAN

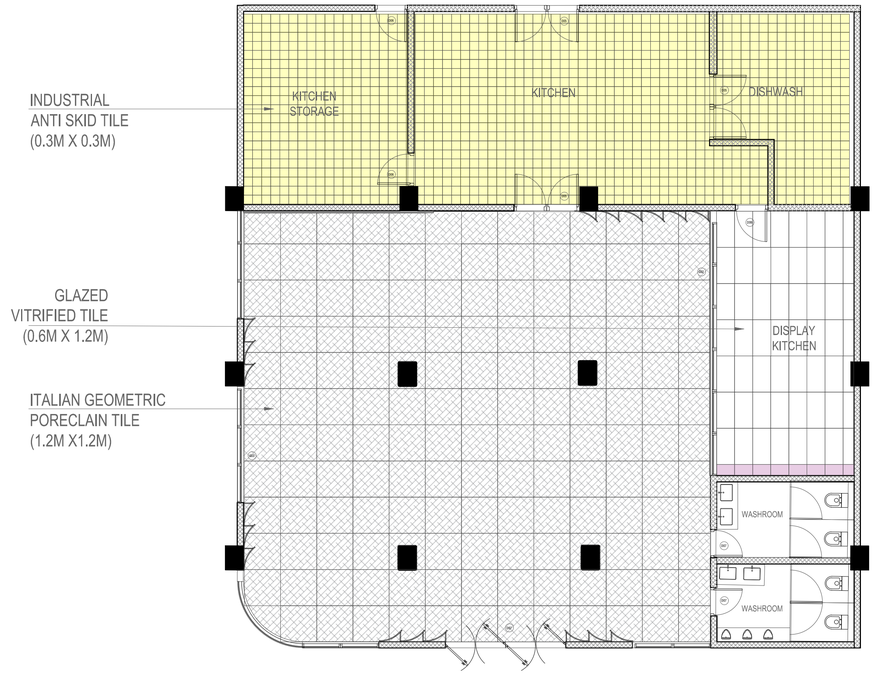


REVISION

Rev.	Date	Description	Appr'd



FURNITURE LAYOUT



FLOORING LAYOUT



ELEVATION - WALL 'A'



ELEVATION - WALL 'B'



ELEVATION - WALL 'C'



ELEVATION - WALL 'D'

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MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - INTERIOR OF CONTINENTAL RESTUARANT

GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - 1:100 **DWG. NO. -**

N

LANDSCAPE

The landscape is designed around **the Water Paradox**, using fluid forms inspired by the coast to blend activity, relaxation, and nature. The existing waterbody becomes the focal point, enhanced with decks, promenades, and recreation zones. Existing trees are preserved and paired with native coastal planting for ecological balance. Soft curves, layered green pockets, and defined hardscape plazas create a seamless flow across party lawns, amphitheatre, waterfront areas, and arrival zones—offering guests a calm yet dynamic resort experience.



KEY PLAN



REVISION

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MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - LANDSCAPE

GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE - **DWG. NO.**

FLOWERING TREES

S. No.	Local Name	Botanical Name	Description	Height & Spread	Legend	Real Image
1	Frangipani	Plumeria alba	Fragrant white blooms; tropical & sculptural	H: 3–6 m, S: 4–6 m		
2	Indian Coral Tree	Erythrina variegata	Red flowers, coastal native	H: 6–10 m; S: 4–8 m		
3	Cassia fistula	Cassia fistula	Yellow Golden Shower Tree; cyclone-bloom	H: 8–10 m; S: 4–6 m		
4	Pink Trumpet Tree	Tabebuia rosea	Deciduous, trumpet-shaped pink flowers, dramatic spring bloom	H: 8–11 m; S: 6–8 m		
5	Pink Shower Tree	Cassia javanica	Tropical flowering tree; showers of pink-white blossoms	H: 10–12 m; S: 8–10 m		

NATIVE & COASTAL TREE

S. No.	Local Name	Botanical Name	Description	Height & Spread	Legend	Real Image
1	Coconut Palm	Cocos nucifera	Iconic coastal palm; salt-tolerant; native to area	H: 20–25 m; S: 6–8 m		
2	Casuarina	Casuarina equisetifolia	Windbreaker tree; ideal for low-water areas	H: 8–12 m; S: 4–6 m		
3	Indian almond	Terminalia catappa	Coastal native with spreading form; autumn foliage	H: 10–15 m; S: 8–10 m		
4	Frangipani	Plumeria alba	Shade tree; nitrogen-fixing; salt-tolerant	H: 3–6 m; S: 4–6 m		
5	Sea Grape	Coccoloba uvifera	Broad, round leathery leaves; sculptural coastal form; very small & salt-tolerant	H: 4–8 m; S: 4–6 m		

GRASS

S. No.	Common Name	Botanical Name	Description	Height & Spread	Real Image
1	Bermuda Grass	Cynodon dactylon	Fine-bladed, drought-tolerant grass; ideal for lawns and sports turf	H: 10–30 cm	
2	Buffalo Grass	Stenotaphrum secundatum	Coarse-bladed, salt-tolerant coastal grass; forms dense mat	H: 15–20 cm	

PALM TREE

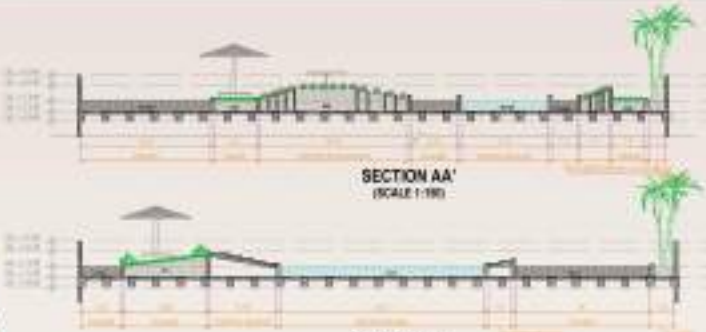
S. No.	Local Name	Botanical Name	Description	Height & Spread	Legend	Real Image
1	Coconut Palm	Cocos nucifera	Iconic coastal palm; salt-tolerant	H: 20–25 m		
2	Areca Palm	Dypsis lutescens	Multi-stemmed; feathery fronds; shade-tolerant	H: 6–8 m		
3	Fishtail Palm	Caryota urens	Bipinnate leaves; dramatic form; monocarpic	H: 15–20 m		

MATERIAL

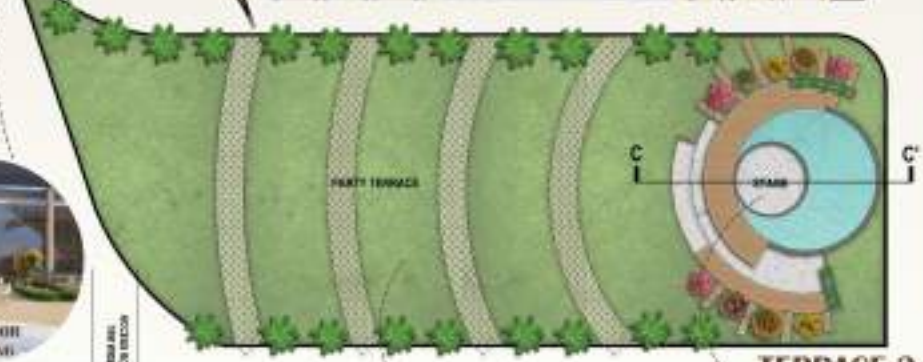
S. No.	Location	Material Name	Material Description	Image / Legend
1	Main Driveway	Charcoal Aggregate Concrete	Durable, non-slip finish with natural stone exposure; elegant, low-maintenance with high wear resistance	
2	Services & Parking	Interlocking Concrete Paving Blocks (Grey)	Heavy-duty, permeable pavers; easy drainage; low maintenance	
3	Amphitheatre Steps	Stone Veneer / Ferrocement	Weathered & earth-textured; natural stone appearance; textured non-slip surface	
4	Boardwalk Deck / Outdoor Café	Reclaimed Composite Pavers	Premium composite; reduces maintenance; durable & elegant	
5	Amphitheatre Steps & Recreation Area	Textured Hard Stone	Durable, non-slip, soft beige hues blend with coastal landscape	
6	Party Lawn Pathways	Grass Pavers	Eco-friendly permeable; recharges basin with sustainable use	
7	Perimeter Walk / Jogging Track	Resin Bonded / Rubberized Flooring	Comfortable cushioned, anti-slip, suitable for all-weather outdoor use	
8	Entry arrival / Boulevard Zone	Granite stone	Durable & iconic texture; Removable and fully resistant; suitable for heavy vehicular and pedestrian movement	

TERRACE LANDSCAPE

























SITE LIGHTING PLAN

SCALE- 1:100



SECTION CC'

KEY PLAN



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MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - TERRACE LANDSCAPE

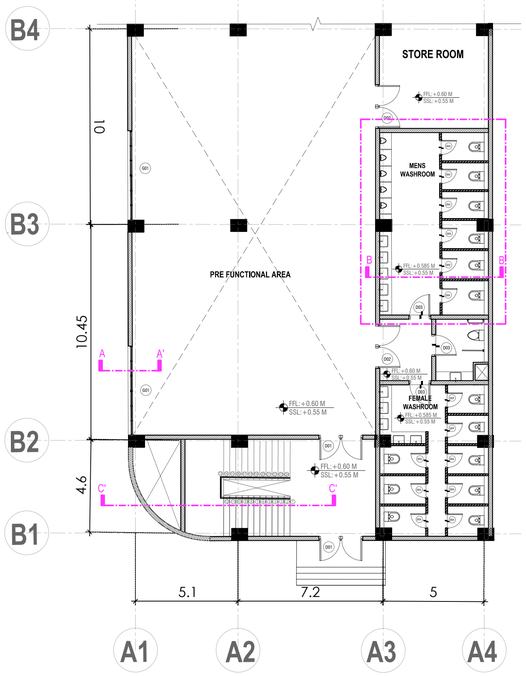
GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

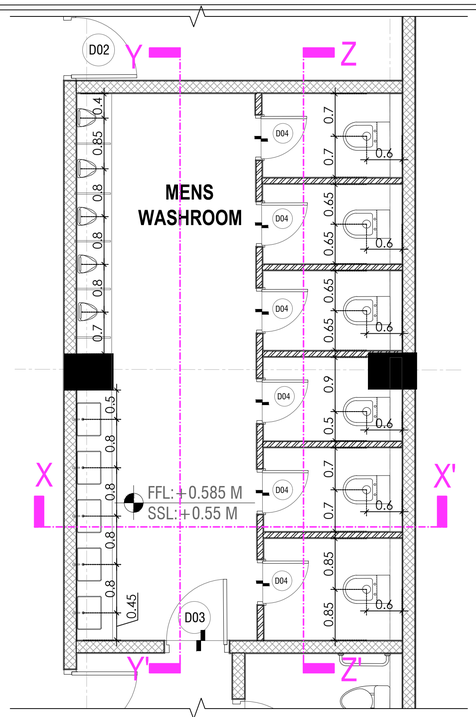
DATE - 17/06/2025

SCALE -

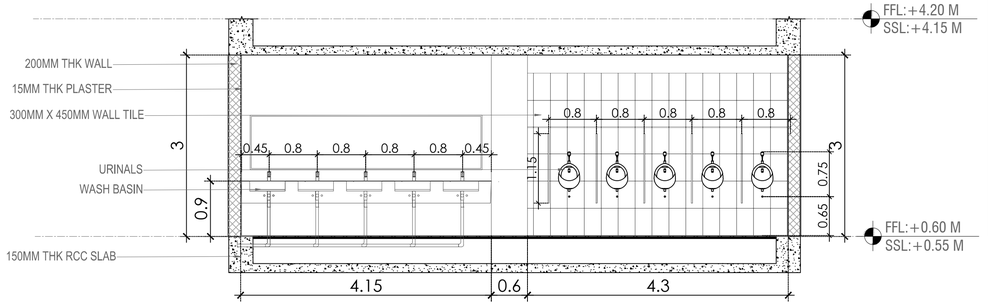
DWG. NO. -



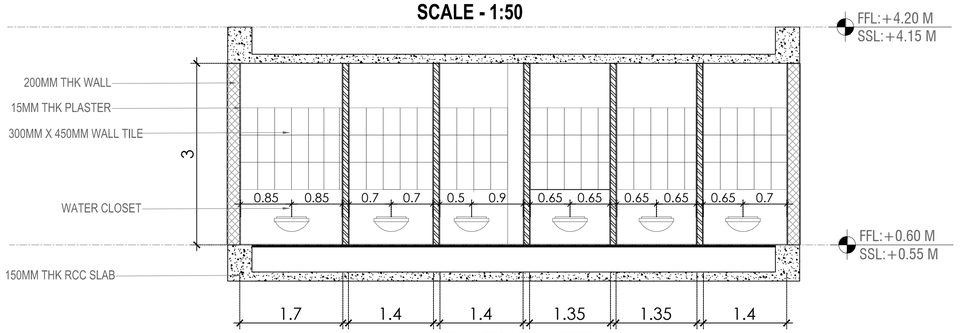
FINISH FLOOR LEVEL
SCALE - 1:150



MENS WASHROOM
SCALE - 1:50



SECTION YY'
SCALE - 1:50



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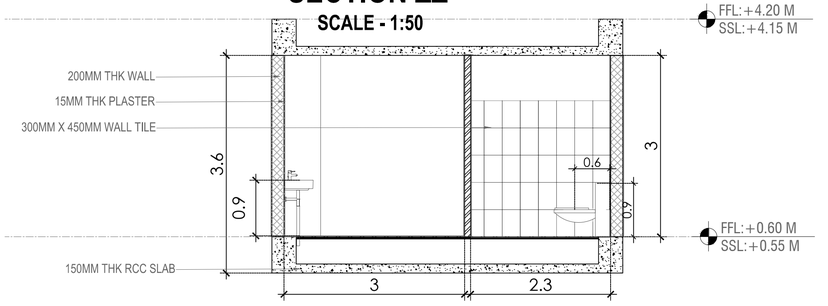

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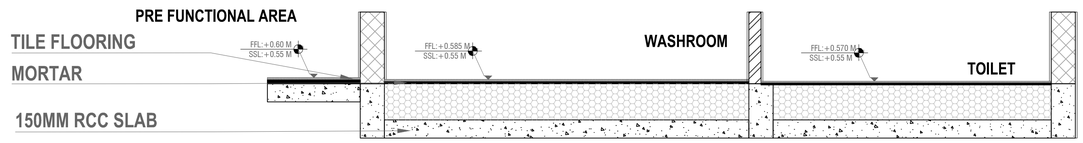
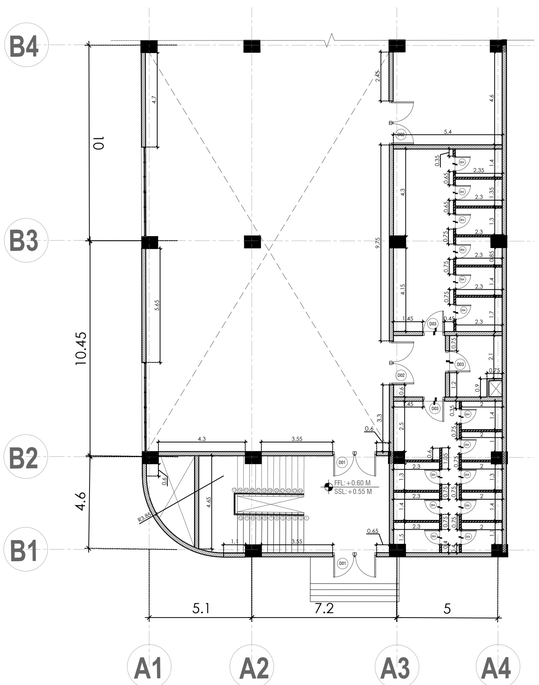
SCALE - 1:50



SECTION BB'
SCALE - 1:25



BRICKWORK LAYOUT
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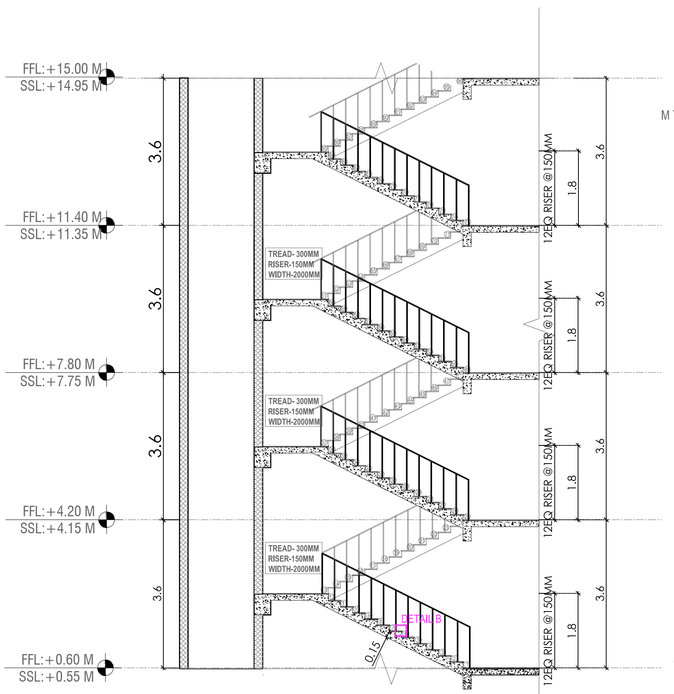
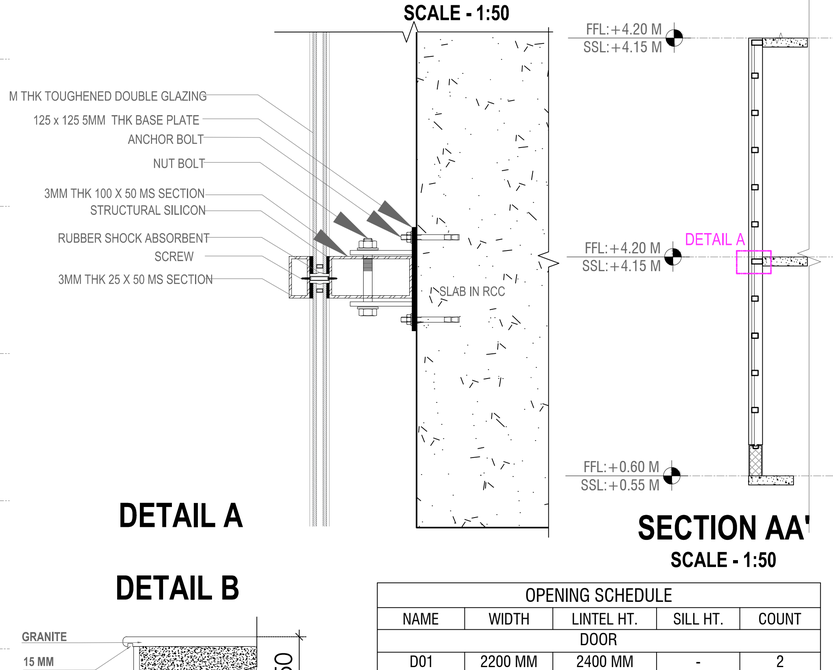


SECTION CC'
SCALE - 1:75



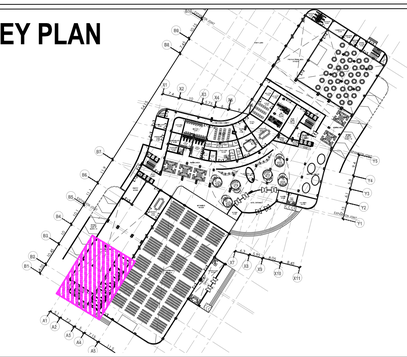
DETAIL A

DETAIL B

SECTION AA'
SCALE - 1:50

OPENING SCHEDULE				
NAME	WIDTH	LINTEL HT.	SILL HT.	COUNT
DOOR				
D01	2200 MM	2400 MM	-	2
D02	2000 MM	2400 MM	-	2
D03	1100 MM	2400 MM		3
D04	750MM	2100MM		14

KEY PLAN



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PROJECT - 5 STAR HOTEL, VISHAKHAPATNAM

SHEET TITLE - WORKING DRAWING

GUIDED BY - PROF. PREETI ONKAR SINGH

DRAWN BY - TAHIRA SAIFY

DATE - 17/09/2025

SCALE -

DWG. NO. - 1

N




























Horizon


Horizon







