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5 Star Hotel

Bhopal, Madhya Pradesh, India

Dec, 2025

5 Star Hotel

Bhopal, Madhya Pradesh, India

BACHELOR OF ARCHITECTURE

BY

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DEPARTMENT OF ARCHITECTURE AND PLANNING

MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

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5 STAR HOTEL

Bhopal, Madhya Pradesh

AR-511 ARCHITECTURAL THESIS

DETAILED PROJECT REPORT

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For the partial fulfilment of the requirements for the award of degree of

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By-

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

Date: 1st – 2nd Dec, 2025

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RECOMMENDATION

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

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CERTIFICATION OF EXAMINATION

The Bachelor of Architecture Thesis Viva-Voce examination of Ms. Riya Bodhe Scholar No.211110211, was held on 1/12/2025 to 2/12/25.

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ABSTRACT

This thesis report explores the architectural design and planning of a 5-star luxury hotel in Bhopal, Madhya Pradesh, with the objective of creating a world-class hospitality destination. The study encompasses an in-depth site analysis and literature review to understand the spatial, functional, and experiential requirements of high-end hotels. Emphasis is placed on the integration of architectural aesthetics, advanced technology, sustainability, and contextual responsiveness.

The design proposal aims to deliver a seamless fusion of luxury, functionality, and sustainability, offering a human-cantered experience through intuitive spatial planning and fluid circulation. Special attention is given to the relationship between the hotel's exterior setting and interior environment, ensuring harmony with the urban context while enhancing guest comfort and satisfaction.

Targeted toward affluent travellers, business professionals, and global tourists, the hotel aspires to become a landmark that contributes to Hyderabad's skyline and tourism economy. With premium amenities, sophisticated interiors, and innovative design, the project seeks to redefine luxury hospitality and position Bhopal as a premier destination for high-end tourism and business engagements.

In addition to addressing architectural and operational excellence, the project also emphasizes cultural sensitivity and the enhancement of user experience through art, landscape, and locally inspired design elements. The proposal reflects a commitment to creating not just a functional space, but an experiential environment that resonates with the ethos of Bhopal while aligning with international hospitality standards.

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1. DESIGN BRIEF

1.1 INTRODUCTION

In the evolving landscape of global tourism and luxury travel, the design of a 5-star hotel has transcended conventional hospitality to become a statement of lifestyle, cultural integration, and experiential excellence. This thesis explores the architectural vision for a luxury 5-star hotel located in Shyamla Hills, Bhopal — a site of historical prominence and natural beauty, overlooking the scenic Upper Lake. The project seeks to redefine luxury hospitality in Central India by offering a destination that harmonizes opulence with environmental and cultural sensitivity.

Positioned in a rapidly developing urban center, the proposed hotel aims to attract both domestic and international travellers, including business professionals, cultural tourists, and leisure seekers. The thesis examines the architectural strategies required to establish a premium hospitality facility that not only meets the global standards of 5-star accommodation but also embraces the local context through materiality, climate-responsive design, and regional aesthetics.

Beyond spatial planning and visual appeal, the study places emphasis on integrating sustainable technologies, intelligent systems, and wellness-driven design. It reflects on how architecture can facilitate immersive guest experiences by fostering a seamless connection between interior and exterior spaces, leveraging panoramic views, natural light, and biophilic principles. Ultimately, this thesis aspires to conceptualize a hotel that is not just a place to stay—but a landmark of Bhopal's cultural identity and a catalyst for elevated tourism in Madhya Pradesh.

1.2 AIM

To develop a functional, sustainable, and aesthetically appealing 5-star hotel that caters to luxury accommodation, business conventions, recreation, and fine dining, while harmonizing with its lakefront surroundings.

1.3 OBJECTIVE

- To design a high-end hospitality complex that aligns with official 5-star classification standards set by the Ministry of Tourism.
- To cater to the evolving needs and expectations of modern travellers, offering luxury, comfort, and advanced amenities.
- To enhance the tourism potential of Bhopal by creating a destination that attracts both domestic and international visitors.
- To contribute to the city's urban and cultural landscape by creating a landmark that reflects architectural excellence.
- To ensure a sustainable and eco-conscious development that responds to the site's environmental context.
- To integrate local cultural elements and materials into the design, reinforcing a sense of place and regional identity.
- To provide a seamless guest experience through thoughtful spatial planning, efficient

circulation, and high-quality services.

- To support the local economy by creating employment opportunities and encouraging tourism-related businesses.

1.4 SITE LOCATION

- Name: Lakeview Residency Site
- Location: Shyamla Hills, Bhopal, Madhya Pradesh
- Coordinates: Latitude: 23.243043872752793, Longitude: 77.38768911349595
- Access: 24-meter-wide Jehan Numa Palace Road, connected to VIP Road and Bhopal Airport
- Nearby Landmarks: Jehan Numa Palace, Upper Lake, Birla Museum, Manav Sangrahalaya



Figure 1 Bhopal, Madhya Pradesh



Figure 2 Shyamla hills, Bhopal, Madhya Pradesh

1.5 PROJECT DETAILS

- Project Name: Lakeview Residency Hotel, Bhopal
- Site Area: ~7.16 acres
- Existing Built-up Area: ~87,521 sq. ft (to be demolished)
- Proposed Development: 5-star hotel with premium facilities
- Minimum Room Count: 150 luxury rooms
- Convention Facility: Hall with 1000 pax capacity
- Amenities: Restaurants, cafés, spa, gym, pool, landscaped areas
- Estimated Cost: ₹150 Crore
- Model: DBFOT (Design, Build, Finance, Operate, Transfer)
- Tenure: 60 years, extendable by 10 years
- Objective: Boost tourism, create jobs, and enhance lakefront development

1.6 PROPOSING AGENCY

- Authority: Madhya Pradesh Hotel Corporation Ltd (MPHCL), subsidiary of MPSTDC
- Mode: DBFOT (Design-Build-Finance-Operate-Transfer) for 60 years (±10-year extension)
- Lease: Site leased to Concessionaire; title for land and built-up area during concession
- Demolition & Development: Concessionaire to demolish existing structure and build ≥150-room, 5-star hotel + 1,000 pax convention hall + ancillary amenities
- Regulatory Compliance: Must follow all applicable laws (environmental, municipal, building bye-laws) and Ministry of Tourism 5-star standards
- No Subsidies: MP Tourism Policy 2025 subsidies not permissible
- SPV Requirement: Concessionaire to incorporate a private-limited SPV under Companies Act 2013
- Selection Process: Single-stage – eligibility → technical (≥70/100) → financial (highest revenue share)
- Consortium Equity: Lead holds ≥51% (first 10 yrs) then ≥26%; others ≥10%; O&M operator may forego equity for 10-yr service commitment
- Oversight: MPHCL reviews/delays RFP amendments, approvals (DPR, GFC), escrow setup, audited financials for revenue share.

1.7 SCOPE OF WORK

The Concessionaire shall be responsible for the following:

1. **Demolition**
    - Demolish the existing built-up area (~87,521 sq. ft) on the site as per applicable laws including environmental, municipal, building bye-laws, and development control regulations.
2. **Development of Facilities**
    - Design and construct a minimum 5-star hotel with:
        - At least 150 guest rooms
        - Banquet and Convention Hall with capacity of 1000 pax
        - Ancillary and permitted facilities under MP Tourism Policy 2025
        - Restaurants, cafés, lounges, spa, wellness, fitness centers, and other

leisure/recreational amenities
        - Infrastructure including internal roads, parking, landscaping, and utilities
3. **Compliance**
    - Ensure full compliance with:
        - Building bye-laws, local development rules, and applicable national standards
        - Hotel and Restaurant Approval Classification Committee (HRACC) standards for 5-star classification under Ministry of Tourism, Government of India
4. **Financing**
    - Mobilize and manage all finances for:
        - Demolition
        - Planning, designing, construction, furnishing, and commissioning
        - Operation and maintenance throughout the concession period
5. **Approvals & Clearances**
    - Obtain all statutory approvals required for:
        - Demolition
        - Construction and layout
        - Hotel operations and services (health, fire, safety, tourism, etc.)
6. **Operation and Maintenance**
    - Operate and manage the hotel and its associated facilities for the entire concession period of 60 years (extendable by 10 years)
    - Maintain quality, safety, hygiene, and environmental standards
7. **Transfer Obligations**
    - At the end of the concession period, the fully functional and maintained facility is to be transferred back to the Authority (MPHCL) as per the Concession Agreement terms
8. **Revenue Obligations**
    - Pay Annual Concession Fee and a percentage of Gross Revenue (≥ 3%) to MPHCL
    - Submit audited financial statements annually for revenue share calculation
9. **Timeline for Completion**
    - Complete all construction and obtain operational readiness within 36 months from the Compliance Date

1.8 DETAILED LIST OF SPACES

- Minimum 150 guest rooms
- Banquet and Convention Centre (≥1000 pax capacity)
- Additional Guest Rooms (if required)
- Themed Restaurants and Food Courts
- Rooftop and Heritage Dining Options
- Lounges, Bars, Cafés
- Spa & Wellness Center
- Fitness and Recreation Areas
- Multiple Banquet Halls
- Event Lawns and Amphitheatre/Open Stage

- Cultural Promotion Zones (showcasing crafts, cuisine, music, art, etc.)
- Drive-in Theatre (existing lawn redevelopment)
- Administrative offices, back-of-house service areas, and staff zones
- Parking: Surface and basement (2 zones mentioned in layout)
- Landscaped public and semi-public zones

Sl. No.	Component Description	Approx. Built-up Area (Sq. Ft.)
1	Hotel Main Building (42 Rooms)	65,664
2	MOA Spa	5,607
3	Swimming Pool	2,236
4	Railway Platform Restaurant	4,046
5	Railway Coach Restaurant	5,768
6	Hot & Cold Restaurant	892
7	Open Area	777
8	Services	2,531
	Total Built-up Area	**87,521 sq. ft**

Table 1 Area requirement

1.9 ABOUT SITE

The proposed site for the Lakeview Residency Hotel is situated in the premium and picturesque locality of **Shyamala Hills** in **Bhopal**, Madhya Pradesh. This location benefits from direct proximity to **Upper Lake (Bhojtal)**, one of the largest artificial lakes in India, providing a stunning lakefront setting ideal for luxury hospitality development.

Key Features:

- **Coordinates**:
  - Latitude: 23.2430
  - Longitude: 77.3876
- **Site Area**: The plot spans approximately 7.16 acres.
- **Existing Structures**: Currently, the site includes about 87,521 sq. ft of built-up area consisting of a 42-room hotel, restaurants (including railway-themed dining), a spa, and a swimming pool. All existing buildings are proposed to be demolished to make way for the new development.
- **Connectivity**:
  - The site is accessible via a 24-meter-wide road (Jehan Numa Palace Road) and connects easily to the city's main landmarks including Raja Bhoj Airport, Birla Museum, Sair Sapata, and Manav Sangrahalaya.
- **Surroundings**:
  - North: Green buffer zone adjacent to Upper Lake
  - South: Major access road (Jehan Numa Palace Road)
  - East & West: Privately owned plots
  - The area is home to other notable hospitality establishments like Jehan Numa

Palace Hotel and Ivy Suites, enhancing its value as a hotel destination.

- **Site Character**:
  - The lake-facing location offers a serene and natural ambiance.
  - As the site lies within a sensitive ecological and heritage zone, the new development must reflect contextual design and adhere to environmental and architectural guidelines.
- **Regulatory Context**:
  - The land falls under the Bhopal Municipal Corporation's jurisdiction.
  - Developers are required to comply with zoning laws, building regulations, environmental mandates, and Ministry of Tourism's 5-star classification standards.

1.10 SITE SURROUNDING

- The project site is situated in the culturally rich and environmentally sensitive area of Shyamala Hills, Bhopal, known for its picturesque setting along the Upper Lake (Bhojtal).
- To the north, the site is flanked by a designated green zone, offering uninterrupted views of the lake and acting as a natural buffer.
- To the south, the site is accessible via the 24-meter-wide Jehan Numa Palace Road, which connects efficiently to the city's internal road network and major destinations.
- To the east and west, the land is bordered by privately owned properties, some of which are residential or used for hospitality purposes.
- The surroundings include several notable establishments such as the Jehan Numa Palace Hotel, Ivy Suites, and The Ten Suites, reinforcing the area's identity as a luxury hotel corridor.
- Additionally, prominent attractions like Birla Museum, Sair Sapata, Manav Sangrahalaya, and Van Vihar National Park are within close proximity, making the site highly attractive for both business and leisure tourism.
- The area is characterized by its calm, green setting, lakefront views, and cultural vibrancy, ideal for upscale hospitality development.

1.11 ZONING REGULATION

- The project site falls under the jurisdiction of the Bhopal Municipal Corporation and is governed by applicable zoning norms as per the city's Master Plan and Development Control Regulations.
- The land is zoned for tourism and hospitality use, allowing for the development of a minimum 5-star hotel facility with supporting amenities.
- The project must comply with all relevant building bye-laws, height restrictions, ground coverage, floor area ratio (FAR), and setback regulations applicable to Shyamala Hills and lakefront developments.
- Being in close proximity to Upper Lake, the project must adhere to environmental clearance norms and maintain the ecological integrity of the site.
- Any construction on the site must also comply with the standards set by the Hotel and Restaurant Approval and Classification Committee (HRACC) under the Ministry of Tourism, ensuring that all built facilities meet 5-star classification benchmarks.
- The Concessionaire is responsible for obtaining all required approvals and NOCs,

including those from local municipal authorities, environmental bodies, fire services, and tourism departments before beginning construction.

- The project must also be sensitive to the heritage and urban character of the area, given its prominent location and scenic context, ensuring that the design integrates harmoniously with its surroundings.

1.12 SETBACK REGULATION

- As per the applicable Bhopal Development Plan 2005 (amended 2013) and town planning norms, the site is governed by standard zoning and development control rules under the jurisdiction of the Bhopal Municipal Corporation and Town & Country Planning (T&CP) Department.
- The site's land use is designated as residential, however, hospitality and tourism-related developments—such as a 5-star hotel—are permitted under the provisions of the Madhya Pradesh Tourism Policy and through appropriate planning approvals.
- The permitted Floor Area Ratio (FAR) for the site is 1:2, allowing a total built-up area up to twice the plot area, subject to setback and open space requirements.
- The maximum permissible building height is 30 meters, and the allowed ground coverage is 30%, which ensures that a majority of the land area is reserved for open and landscaped spaces.
- While the exact dimensions of front, side, and rear setbacks are not explicitly specified in the tender document, the RFP states that all construction must comply with the prevailing master plan, building bye-laws, and T&CP regulations. Hence, it is the responsibility of the developer to refer to the applicable codes to ensure correct setback distances as per the final building height and FAR utilization.
- The Concessionaire is also required to conduct due diligence and submit a Detailed Project Report (DPR) that incorporates proper zoning and setback compliance for approval by the Authority before beginning construction.

1.13 DESIGN BRIEF

- The project envisions the redevelopment of the existing Lakeview Residency site at Shyamala Hills, Bhopal, into a minimum 5-star category hotel that meets international standards in terms of architecture, amenities, and guest experience.
- The design scope includes complete demolition of the existing built-up structure of approximately 87,521 sq. ft and construction of a luxury hospitality complex with a minimum of 150 rooms, along with a convention and banquet hall that can accommodate at least 1,000 people.
- The proposed design must incorporate multiple restaurants, cafés, lounges, a wellness spa, fitness center, and recreational zones, all reflecting a high-end user experience suited for business, leisure, and cultural tourism.
- The site, being located along the Upper Lake, demands a context-sensitive and environmentally responsive design. It should blend seamlessly with the natural surroundings, maintain ecological balance, and enhance the scenic value of the lakefront.
- The architecture is expected to reflect modern design principles while ensuring compliance with heritage and environmental guidelines, especially considering the location within a green zone and cultural corridor.

- The built form must be designed in accordance with the Hotel and Restaurant Approval and Classification Committee (HRACC) norms of the Ministry of Tourism, Government of India, to ensure eligibility for 5-star classification.
- The layout should promote optimum circulation, privacy, and functional zoning for public areas, service zones, guest accommodation, and back-of-house operations. Provisions for ample parking, landscaping, and buffer zones must also be integrated.
- The design should emphasize energy efficiency, sustainability, and ease of maintenance, aligning with global hospitality standards and responsible development goals.
- The project must adhere to all applicable building bye-laws, setback regulations, and development control norms of the Bhopal Municipal Corporation and the Town & Country Planning Department.
- Finally, the proposed development should elevate the image of Bhopal as a modern, eco-sensitive tourism destination and act as a landmark hospitality node within the Shyamala Hills precinct.

List of spaces required for 5-star hotels as per the tender document-

- Minimum 150 guest rooms
- Convention/banquet hall (capacity: 1000 pax)
- Themed restaurants and rooftop dining
- Cafés, lounges, and bars
- Spa, wellness center, and fitness gym
- Swimming pool
- Open-air event lawn / Amphitheatre
- Spaces for cultural showcases (crafts, cuisine, folk music)
- Retail shops, kiosks, and souvenir stalls
- Reception, lobby, and concierge
- Back-of-house (BOH) areas and staff facilities
- Surface and basement parking
- Admin offices, storage, and utility rooms
- DG sets, fire safety, and medical room
- Public toilets and drinking water stations
- Landscaped gardens, water features, and seating zones

Sl. No.	Area/ Component Description	Approx. Built Up Area (Sq. Ft)
1.	Hotel Main Building with 42 Rooms	65,664
2.	MOA Spa	5,607
3.	Swimming Pool	2,236
4.	Railway Platform Restaurant	4,046
5.	Railway Coach Restaurant	5,768
6.	Hot & Cold Restaurant	892
7.	Open Area	777
8.	Services	2,531
	Total	**87,521**

Note: The bidders shall undertake their own due diligence exercise to ascertain the actual built-up area at the subject site.



Table: Project Site/MPT Lake View Residency Details

Area	Shyamala Hills, Bhopal
Location/Site	The subject property is located at Shyamala Hills, Bhopal, towards the eastern side of Upper Lake i.e., central region of Bhopal city. The subject location has many prominent government institutions and building. The prominent hospitality developments in vicinity of the subject site include Jehan Numa Palace, Ivy Suites, The Ten Suites etc. The subject micro-markets enjoys express connectivity via 24 m wide VIP Road (north) to the Bhopal Raja Bhoj Airport and other touristy places like Birla Museum, Sair Sapata, Interpretation Centre - Manav Sangrahalaya via 24 mts. wide Jehan Numa Palace Road.
Location Coordinates	**Latitude:** 23.243043872752793 **Longitude:** 77.38768911349595
Approach Road	24 mts. wide primary access road – Jehan Numa Palace Road
Site Boundaries	The subject property is surrounded by: • North: Green Zone adjacent to Bhopal Upper Lake • South: 24 mts. wide primary access road – Jehan Numa Palace Road • East: Other's property • West: Other's property
Land Area & Built-Up Area	The land area of the subject property admeasures approx. 7.16 acres while the total built-up area of the subject development admeasures approx. 87,521 sq. ft. The demarcated map of Project Site is provided along with the Site Plan along with this RFP and marked as **Appendix VIII**.

2. LITERATURE REVIEW

The hospitality industry, particularly the design and planning of five-star hotels, represents a confluence of luxury, functionality, and cultural expression. As global tourism and business travel continue to evolve, the expectations from luxury accommodations have grown significantly—not just in terms of aesthetics, but also in sustainability, technology integration, spatial efficiency, and user experience. A literature review is essential to understand the theoretical frameworks, design standards, and case studies that define successful five-star hotel developments across the world.

This review aims to explore key academic writings, architectural theories, hospitality design guidelines, and relevant codes and regulations that influence the planning and execution of luxury hotel projects. It examines spatial planning strategies, guest experience design, service zoning, environmental considerations, and the integration of local context into global hospitality trends. By synthesizing insights from various scholarly sources, the review provides a strong foundation for shaping a comprehensive and context-sensitive hotel design, ensuring both functional efficiency and memorable guest experiences.

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:

- **Star Category Hotels**: - 5 Star Deluxe, 5 Star, 4 Star, 3 Star, 2 Star & 1 Star
- **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:
    - If Public/private limited company with copies of Memorandum and Articles of Association.
    - If Partnership, a copy of Partnership Deed and Certificate of Registration.
    - If proprietary concern, name and address of proprietor/certificate of Registration.

5. Location of hotel site with postal address.
6. Details of the site.
    - Area (in sq. meters).
    - Title – owned / leased with copies of sale / lease deed.
    - Copy of Land Use Permit to construct Hotel from local authorities.
    - Distance (in Kms) from (a) Railway station (b) airport (c) main shopping center.

7. Details of the project:

- Copy of Feasibility Report
- Star category planned
- Number of rooms (with attached bathrooms) and size for each type of room (in sq.ft.)
- Size of bathrooms (in sq.ft.)
- 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)
- 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.).
- 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.
- Energy / water conservation (use of CFL lamps, solar energy, water saving devices / taps)
- Details of Fire Fighting Measures/ Hydrants etc.
- Date by which project is expected to be completed and become operational
- Any other additional facilities
- Security related features
- 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

4) The hotel must comply with all applicable local laws, including fire safety regulations, building codes, and environmental guidelines, to be considered eligible for classification/reclassification.

5) All applications must be submitted along with complete supporting documents, including photographs of facilities, room layouts, and details of services provided, to enable proper assessment during inspection.

2.1.3 AREA OF HOTELS

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		

Table 2 space classification (Neufarts data)

As per MoU norms, hotel spaces are systematically classified into Public, Private (Staff), Private (Guest), and Semi-Private areas to maintain operational efficiency, ensure privacy, and deliver a high standard of guest service. Public areas such as lobbies, restaurants, retail outlets, and parking are accessible to all visitors and serve as interaction and service zones. Private areas for staff include administrative offices, kitchens, laundry, and mechanical rooms, which are crucial for backend operations and restricted from guest access. Guest private areas like standard rooms, suites, spas, and recreational facilities are designed for comfort, privacy, and personalized experience, accessible only to staying guests. Semi-private areas such as banquet halls, formal dining rooms, and multipurpose halls accommodate events and gatherings, with limited access. This classification ensures smooth spatial flow, guest satisfaction, and adherence to hotel star-rating and safety regulations set by the Ministry of Tourism.

The classification of hotel areas is essential for maintaining order, functionality, and safety within the premises. It helps in clearly defining access zones, ensuring that guests enjoy privacy and comfort while staff can perform their duties efficiently without disrupting guest experiences. This segregation also supports better crowd management, enhances security, and ensures hygiene by limiting access to sensitive service areas. From a regulatory perspective, such classification is a fundamental requirement for star rating approvals, as it reflects compliance with standards related to space planning, operational flow, and service delivery. Ultimately, it contributes to the overall quality, professionalism, and reputation of the hotel.

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

Table 3 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

2.1.4 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-

- 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.
- 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.
- 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.

2.1.5 MATERIAL ACCESS CONTROL

1. Guest Baggage Check

- 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
- Handheld bags must be checked at the entry point.

2.1.6 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'.

2.1.7 INTERNAL ACCESSS 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
   - The practice of people entering the lobby and taking the lift to any floor must be stopped.
   - 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.

2.1.8 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.

2.1.9 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 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.

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.

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.

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

- Entrance should be easy to locate and adequately signposted
- Consider installing automatic or semi-automatic doors
- Avoid thresholds; if unavoidable, they should be no higher than 6mm
- There should be a landing of at least 1800mm x 1800mm immediately next to the door.

2.2.3 LOBBY, RECEPTIONS AND HOUSE PHONES

1. 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.

2. 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.

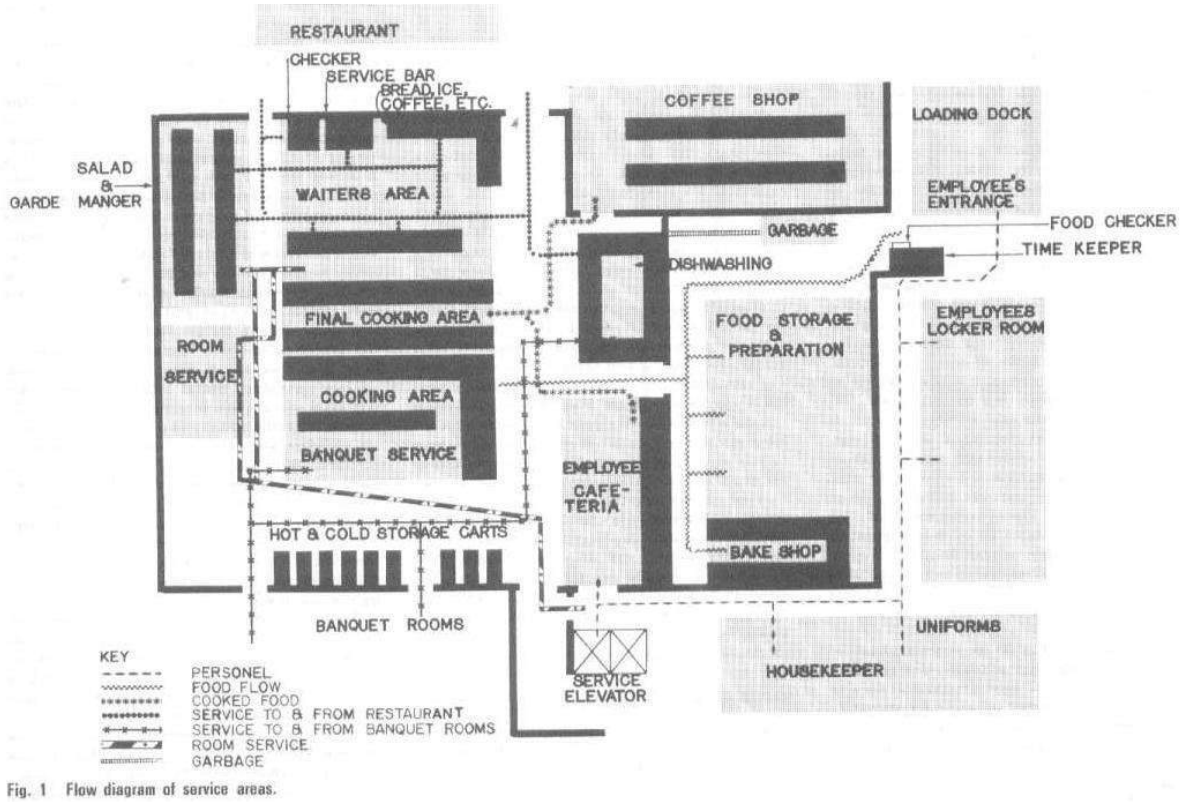


Figure 3 Flow Diagram of Service Area (ITC Hotel Manual)

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 LAUNDRY 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 SERVICE

- 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 garden manager area.

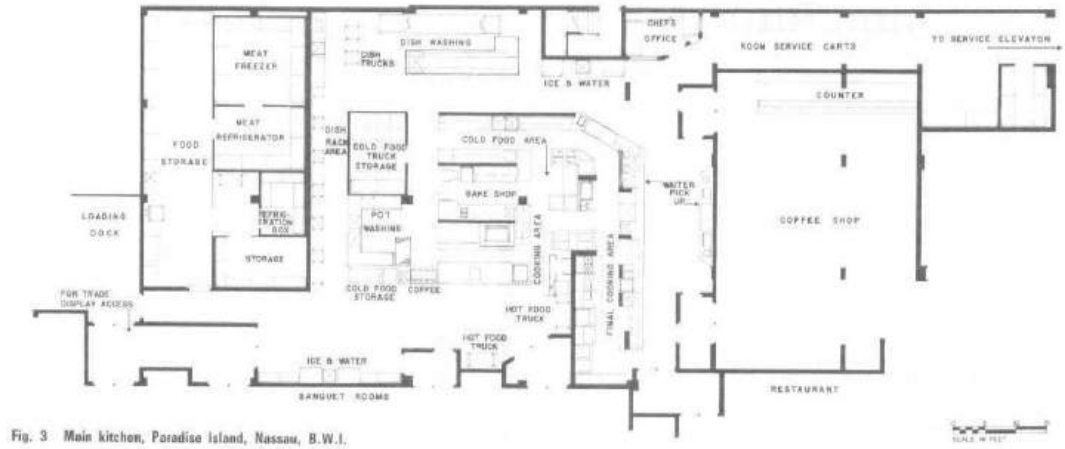


Fig. 3 Main kitchen, Paradise Island, Nassau, B.W.I.

Figure 4 7 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 garden 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

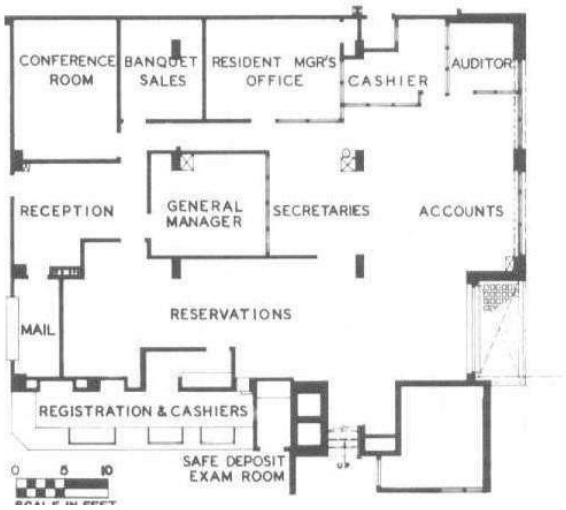


Figure 5 Admin Plan, Churchhill Hotel London

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 RESTAURANT FACILITIES

- 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 GUEST ROOM

- 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.

According to Time-Saver Standards for Building Types, guest rooms in a 5-star hotel must meet specific design and functional criteria to ensure luxury and compliance with classification norms. Each room should have a minimum area of around 300 sq. ft., with larger dimensions for suites, and must include a sleeping area, seating space, writing desk, wardrobe, and a well-planned attached bathroom of at least 45–50 sq. ft. High ceilings (minimum 9 ft.), soundproofing, and privacy features are essential, along with modern amenities such as air conditioning, Wi-Fi, minibar, safe, and TV.

Corridors leading to rooms should be at least 6 ft. wide for smooth circulation. Rooms must also follow fire safety regulations with smoke detectors and emergency systems, and at least one room per floor should be accessible to differently-abled guests, ensuring both comfort and universal design standards are upheld.

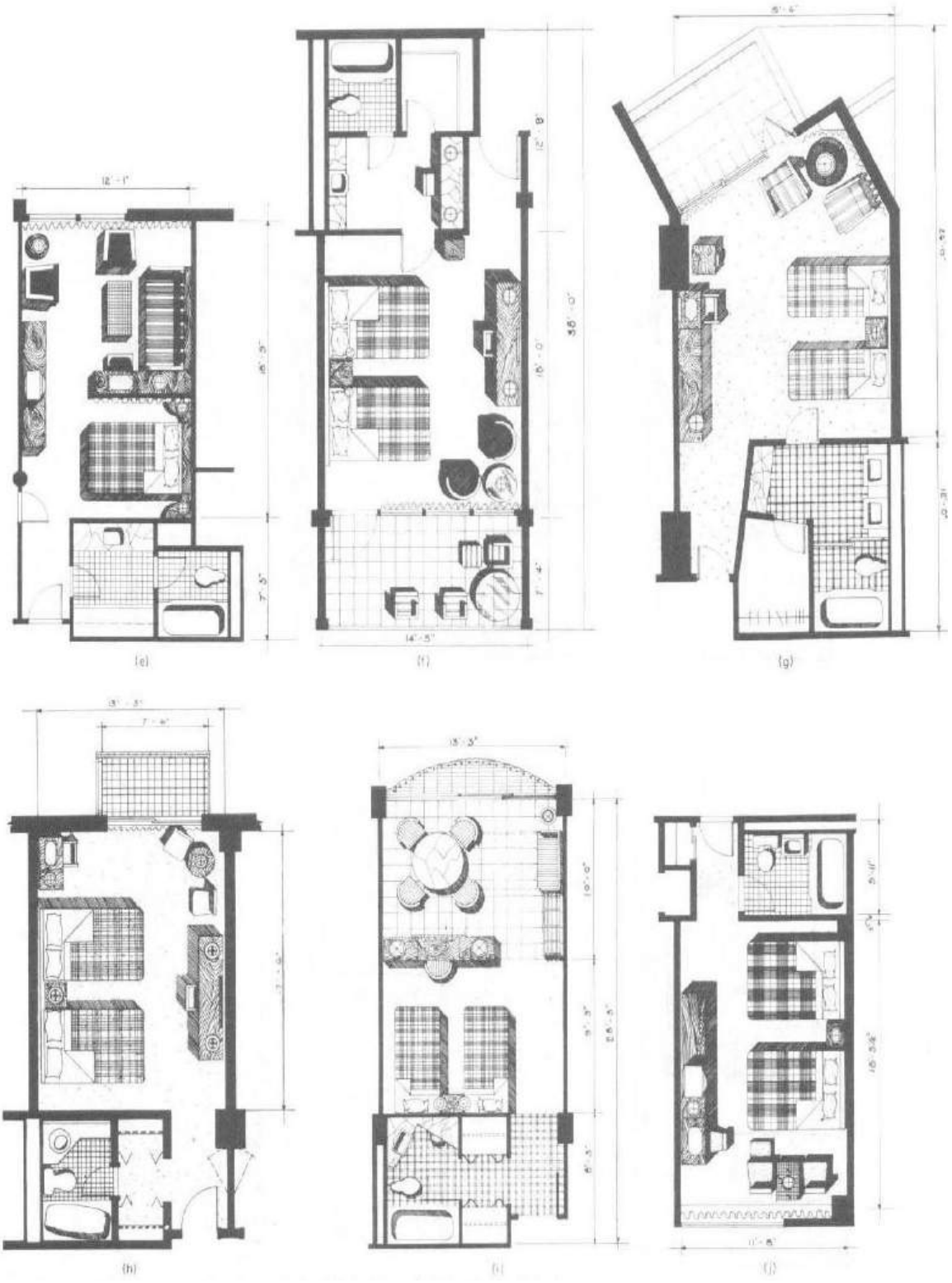


Figure 6 9 Guest room details (ITC Hotel Manual)

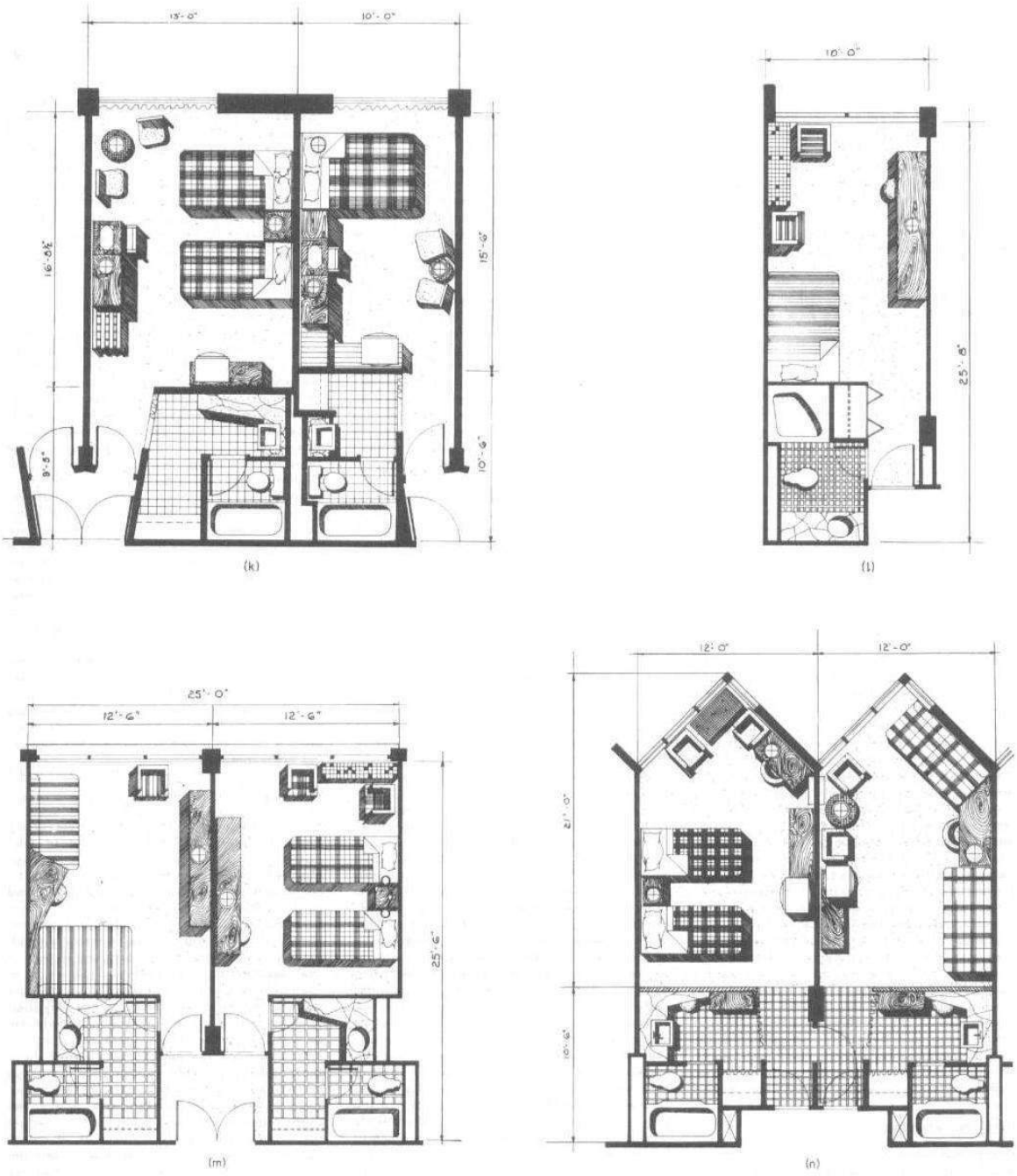


Fig. 5 (cont.) (k) Chicopee Motor Inn, Chicopee, Massachusetts. (l) and (m) Thomas Circle Motor Hotel, Washington, D.C. (n) Riverview Motor Hotel, New York.

Figure 7 Guest room details (ITC Hotel Manual)

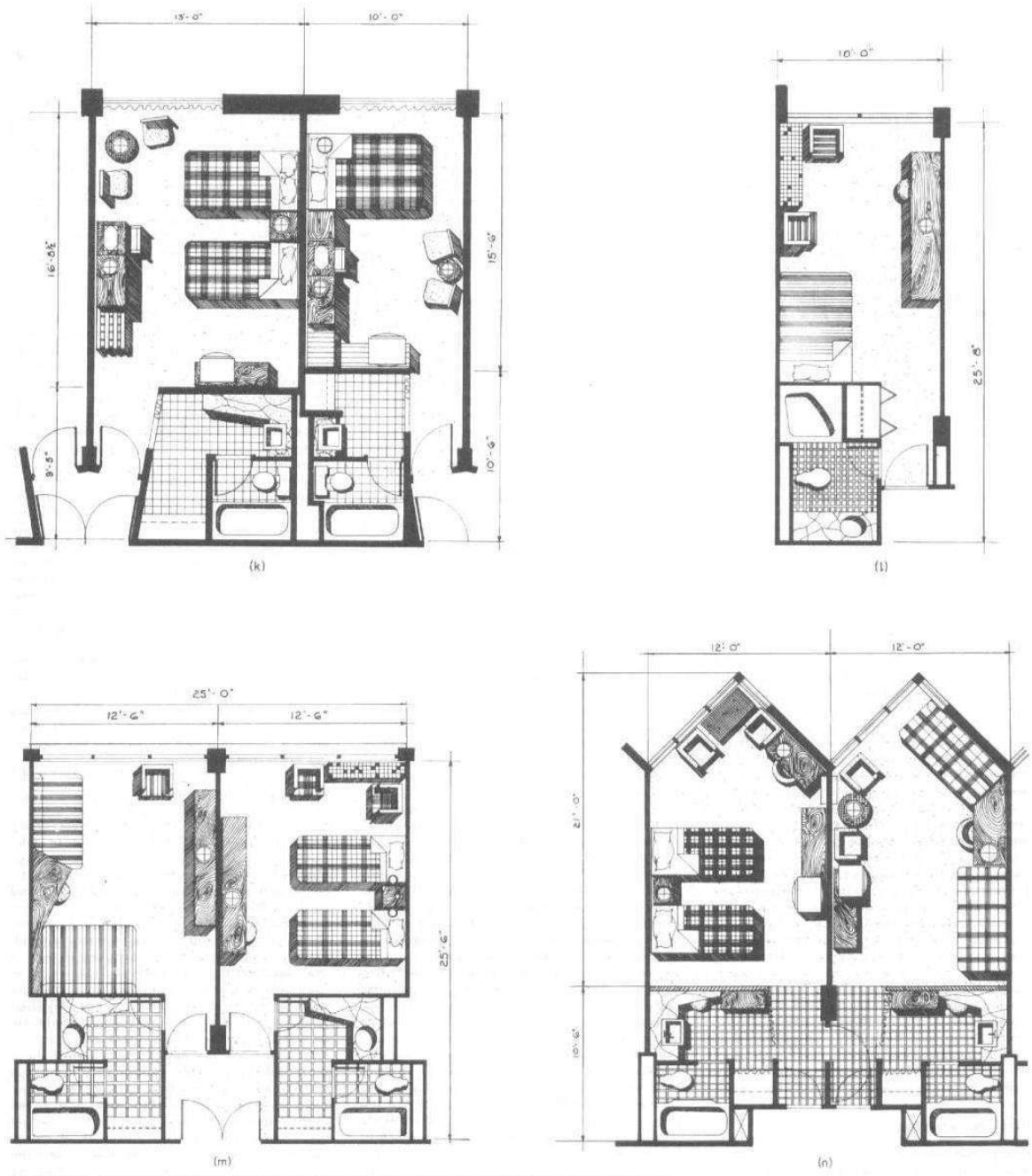


Fig. 5 (cont.) (k) Chicopee Motor Inn, Chicopee, Massachusetts. (l) and (m) Thomas Circle Motor Hotel, Washington, D.C. (n) Riverview Motor Hotel, New York.

Figure 8 Guest room details (ITC Hotel Manual)

2.3.16 GUEST BATHROOMS

- 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 GUESTS CLOSET

- 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 SERVICE SPACES

- 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 FACILITY

- 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.
- 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.

2.4 TIME SAVER STANDARDS (BUILDING TYPES)-RESTAURANTS

2.4.1 SPACE REQUIREMENT

- 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 sq. ft

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 4 Area Specifications (TSS)

- Table 5 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.

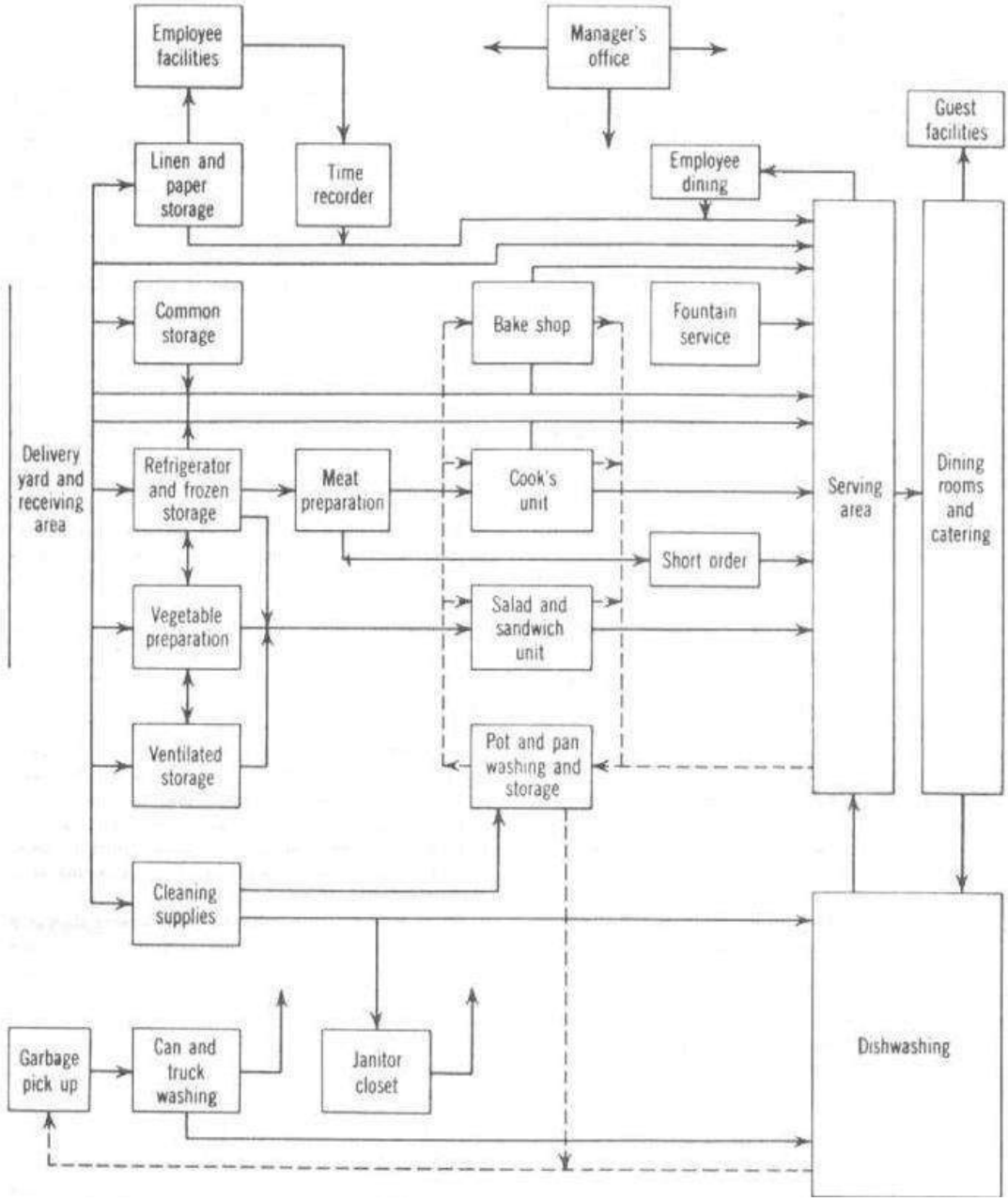


Figure 9 Flow Diagram Showing Functional Relationships (TSS)

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

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

Table 5 Vatiations in Space needs in Relation to numbers Served

- 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.

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

Table 6 Square Feet Of Kitchen Space Per Meal For Food Facilities of Different Type And Size

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.

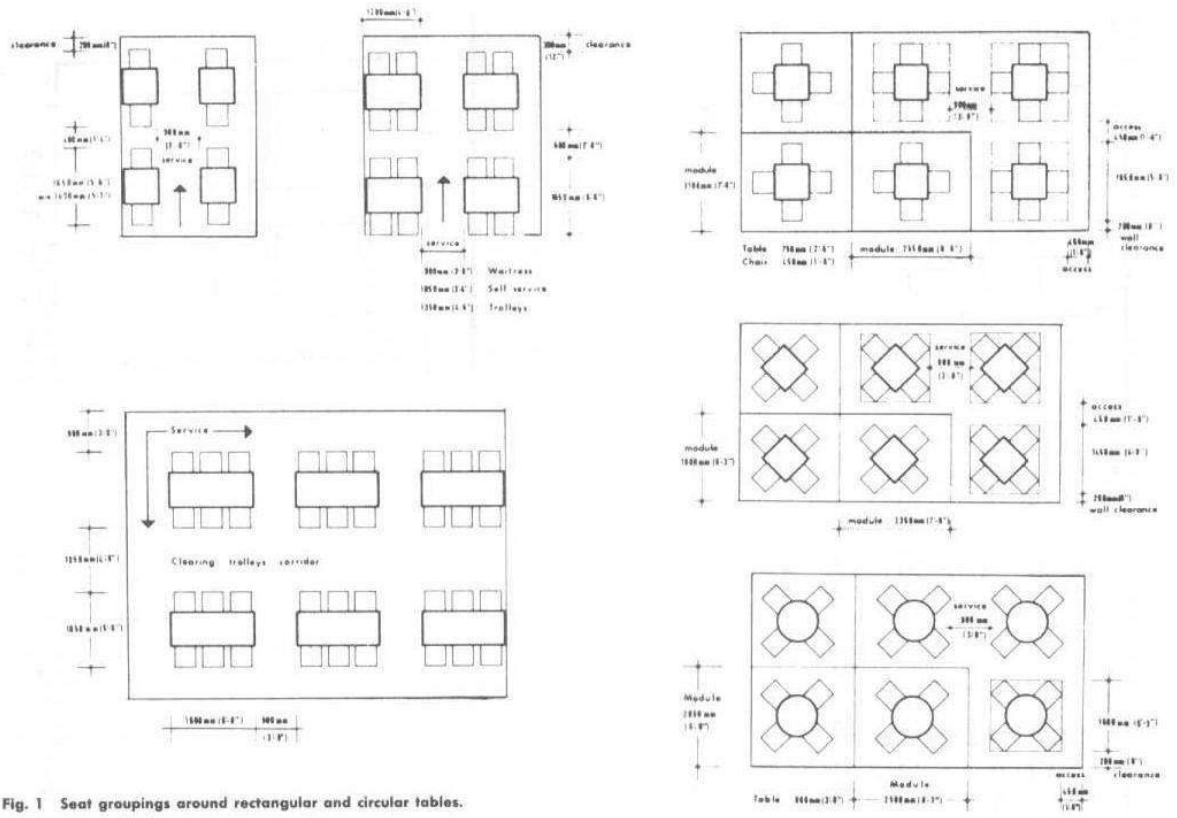


Fig. 1 Seat groupings around rectangular and circular tables.

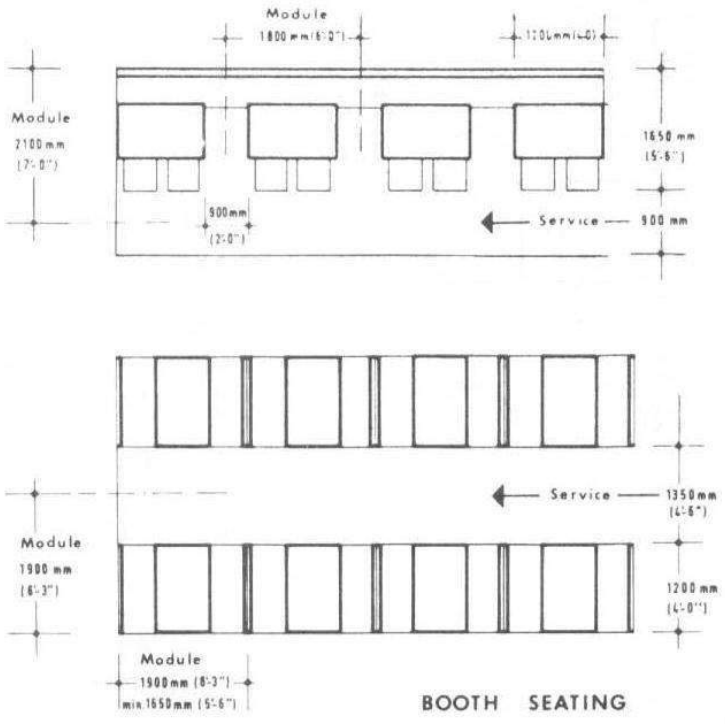
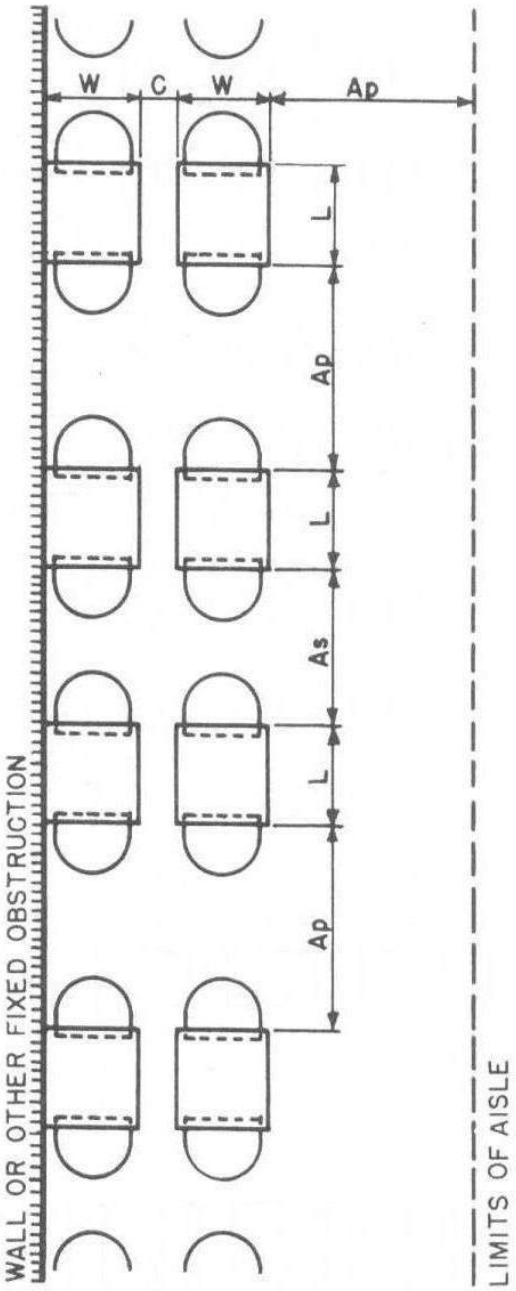
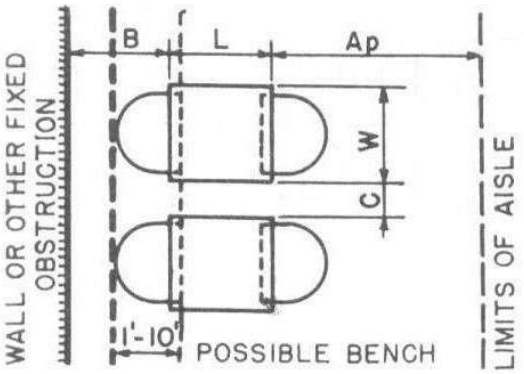


Fig. 2 Banquette seating arrangements and limiting dimensions including space for access and service.

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

Figure 10 Seating Arrangements (TSS)





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

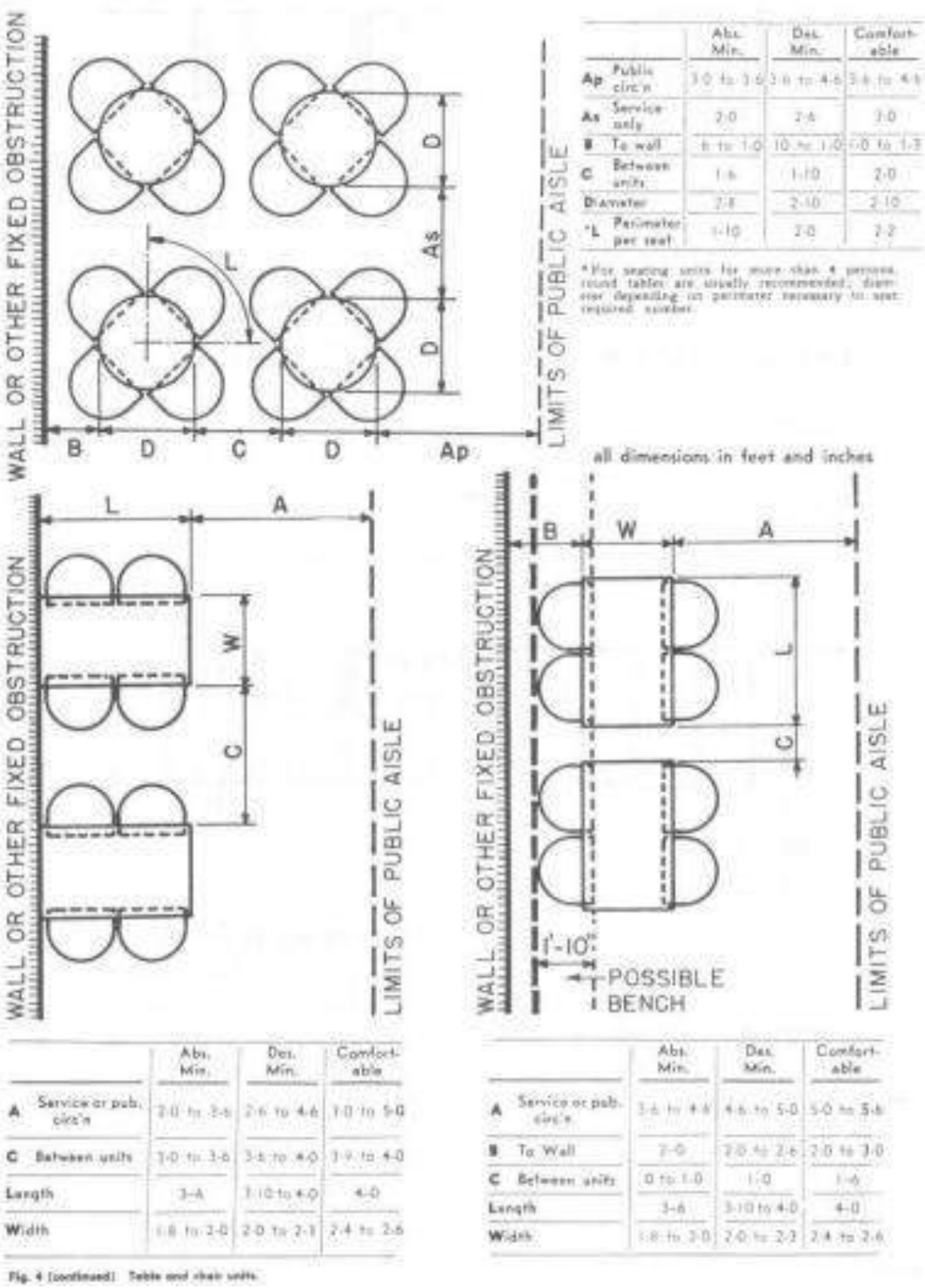
all dimensions in feet and inches

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

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

Fig. 4 Table and chair units.

Figure 11 Table & Chair Units (TSS)



		Abs. Min.	Des. Min.	Comfortable
Ap	Public circ'n	3-0 to 3-6	3-6 to 4-6	5-6 to 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
Diameter		2-8	2-10	2-10
*L	Perimeter per seat	1-10	2-0	2-2

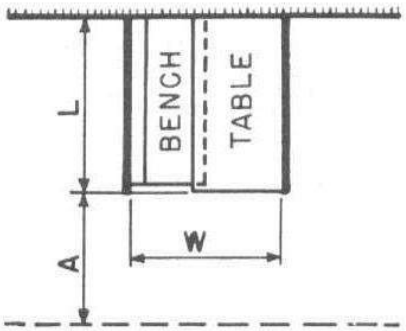
*For seating units for more than 4 persons, round tables are usually recommended; diameter depending on perimeter necessary to seat required number.

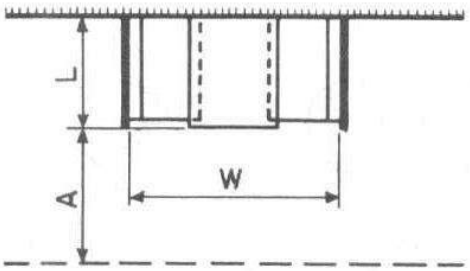
		Abs. Min.	Des. Min.	Comfortable
A	Service or pub. circ'n	2-0 to 3-6	2-6 to 4-6	3-0 to 5-0
C	Between units	3-0 to 3-6	3-6 to 4-0	3-9 to 4-0
Length		3-6	3-10 to 4-0	4-0
Width		1-8 to 2-0	2-0 to 2-3	2-4 to 2-6

		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 12 Table & Units (TSS)





2 PERSONS SIDE BY SIDE

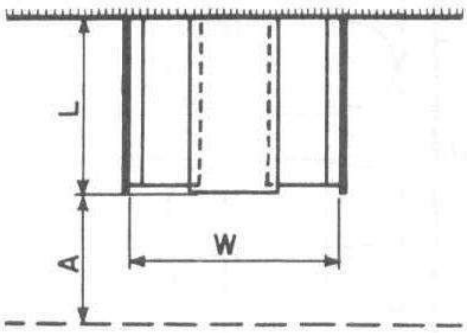
	Abs. Min.	Des. Min.	Comfort-able
Service A and pub. circ'n	2–6	3–0	3–6
Length	3–6	3–9	4–0
Width	3–0	3–3	3–6

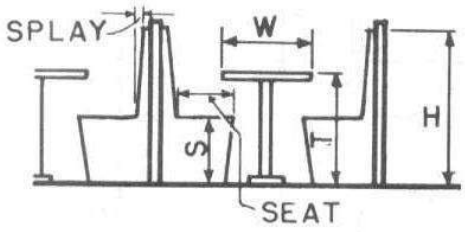
Note: This type not ordinarily recommended.

2 PERSONS FACE TO FACE

	Abs. Min.	Des. Min.	Comfort-able
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

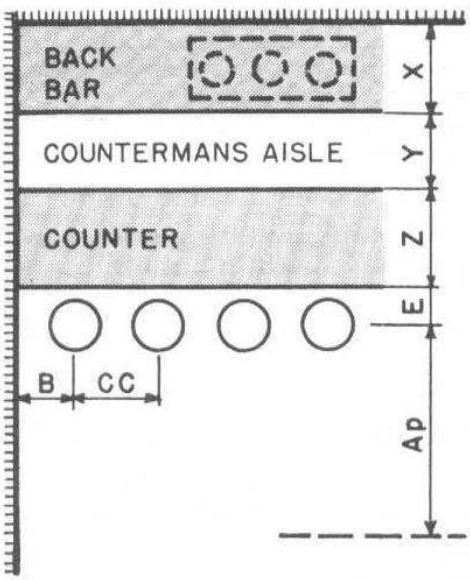
	Abs. Min.	Des. Min.	Comfort-able
Service A and pub. circ'n	2–6 to 3–0	3–0 to 4–0	3–6 to 5–0
Length	3–6	3–9 to 4–0	4–0 to 4–2
Width	4–10 to 5–6	5–2 to 5–6	5–8 to 5–10

BOOTH FURNITURE HEIGHTS

	Abs. Min.	Des. Min.	Comfort-able
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

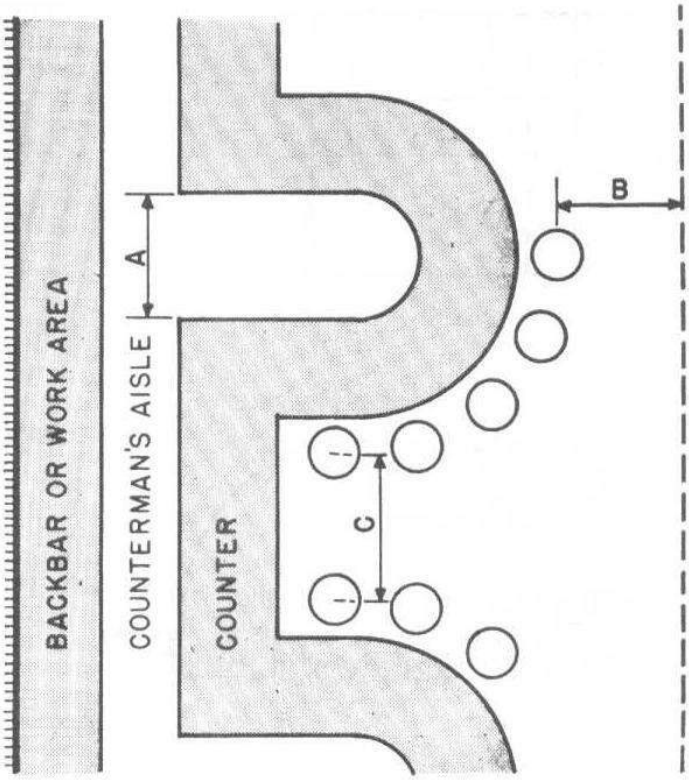
Fig. 5 Booths.

Figure 13 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

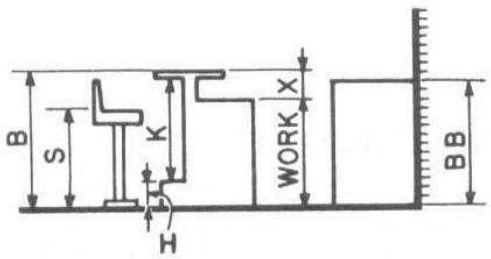


Variations in Shape

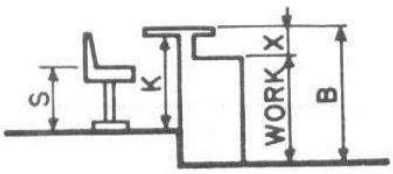
	Usual Minimum
A	2-6 to 3-6
B	2-6 to 4-6
C	2-9 to 5-6

dimensions in feet and inches

HEIGHTS



LEVEL FLOOR



DROPPED FLOOR

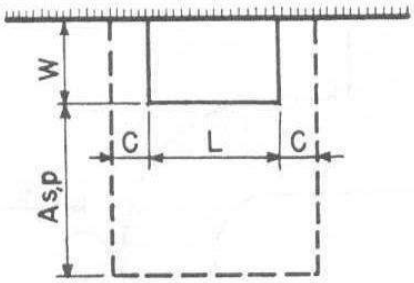
	Range of Dimensions		Range of Dimensions
B	2-6 to 3- 6	X	1-2 to 1- 3
BB	3-0 to 3- 6	Work	2-4 to 2- 7
H	7 to 10	S	1-6 to 2- 6
K	2-4 to 2- 8		

	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 14 Food Bars (TSS)

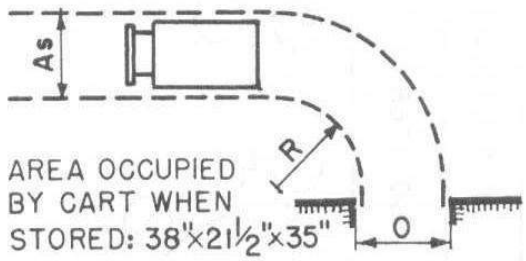
Serving Units



SERVING TABLE (& sideboard)

		Abs. Min.	Des. Min.	Comfort-able
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 / Width	30" x 20" x 42" is average.			

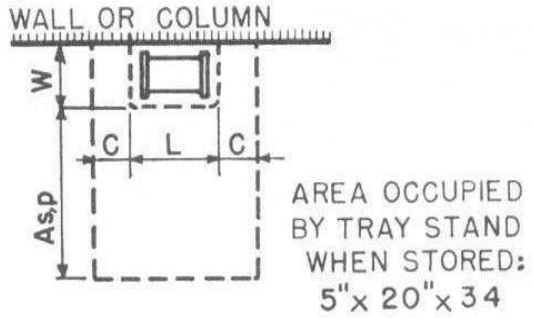
Display tables (hors d'oeuvres, etc.) usually 5' 0" x 2' 0"; (wines), 3' 0" round



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

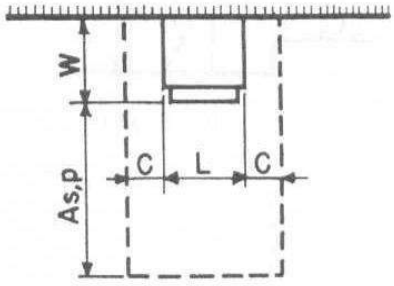
Approx. area when stored: 38" x 21½" x 35"



TRAY STAND

		Abs. Min.	Des. Min.	Comfort-able
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) / Width (tray)	Depends on type of restaurant.			

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



WATER COOLER

		Abs. Min.	Des. Min.	Comfort-able
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 arrange on top or front		
Length / Width	Depends on capacity and if glass storage included.			

Fig. 7 Serving units.

Figure 15 Serving Units (TSS)

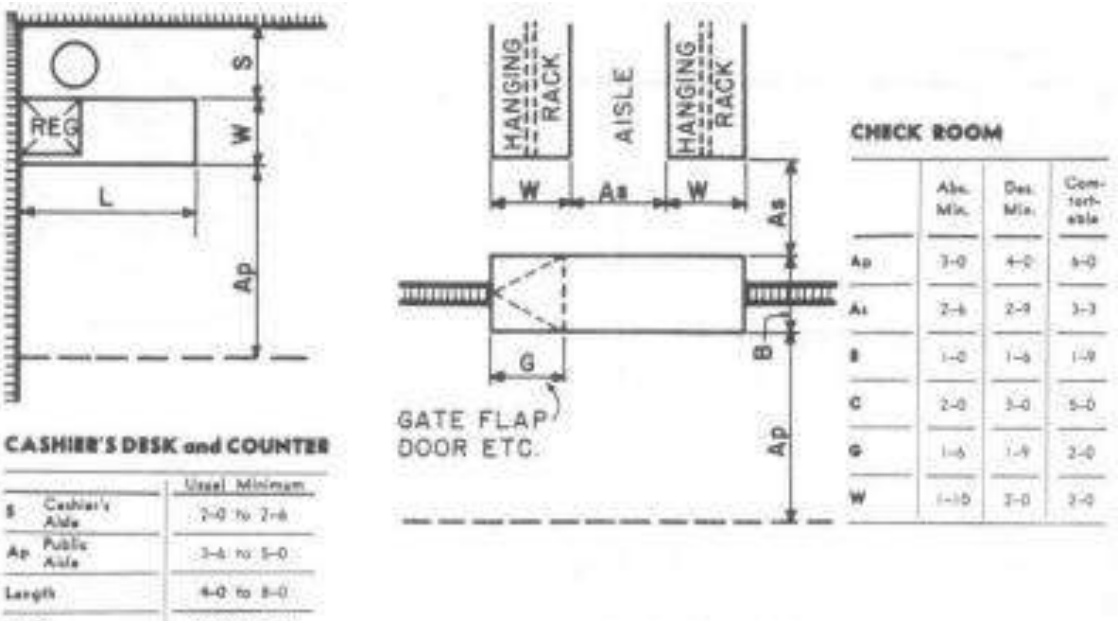


Figure 16 Nondining Spaces (TSS)

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 storages 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 AREA

- 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 CASHIOR AND 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

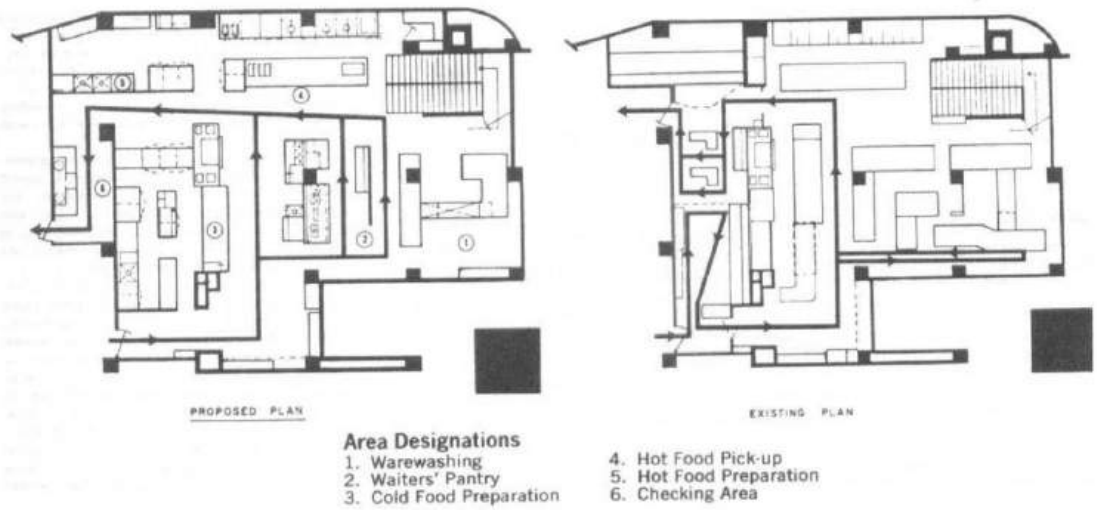


Figure 18 Traffic movement through aisle side

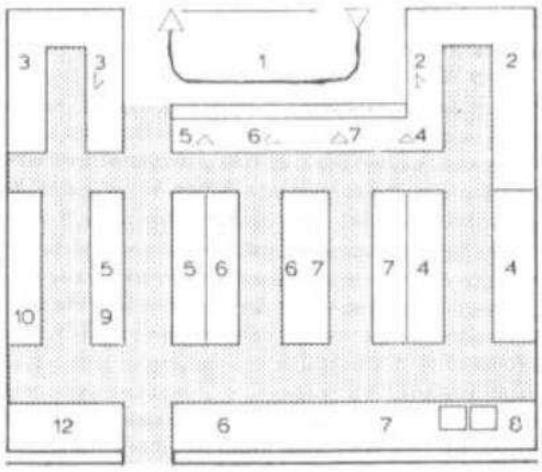


Fig. 1 Hotel or restaurant kitchen or French restaurant of high standard. Capacity for main meals: Hotel—100–200 persons / menu, 100 persons / à la carte. Restaurant—200–300 persons / mealtime from 11:30 to 1:30. Waiters' passageway: tangential. Kitchen: Linear arrangement with large installations in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

Figure 17 Kitchen for 100-200 Persons

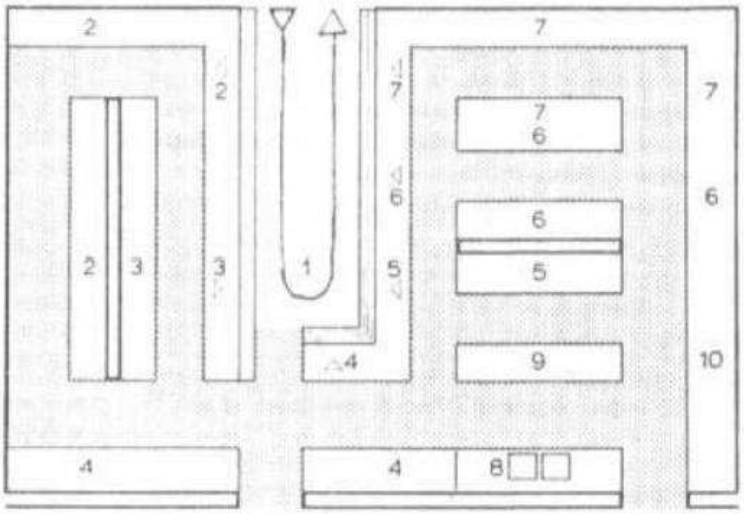


Fig. 2 Hotel or restaurant kitchen. Capacity: With this layout, a 200-seat restaurant will be able to handle three full sittings. This layout can also take care of a hotel with 100 guests and can also accommodate a restaurant open to the general public, an outdoor restaurant, and a private dining area 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.

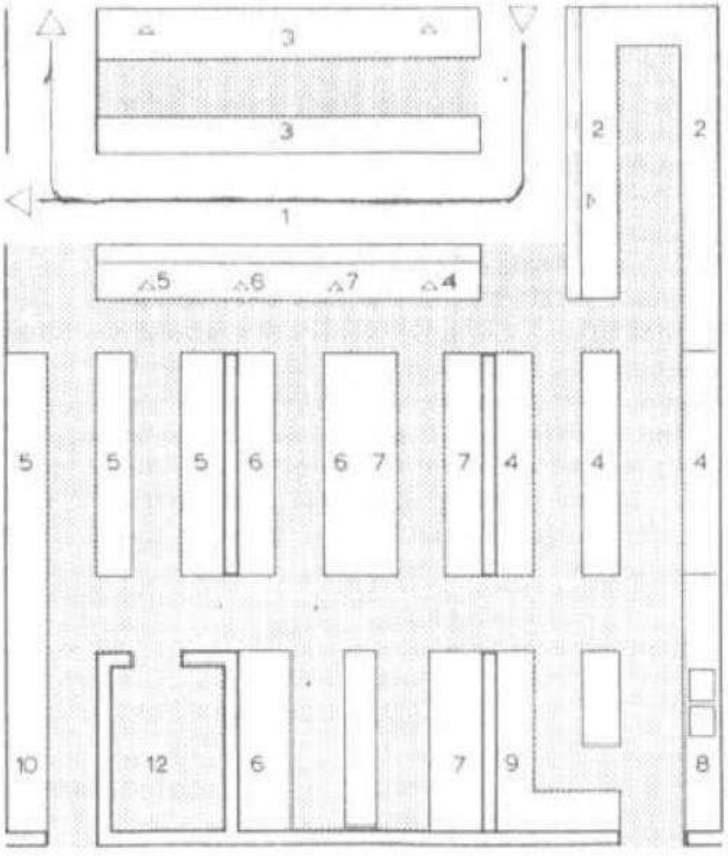


Fig. 3 Large restaurant kitchen for restaurants with many private party and conference facilities or with commissary and catering capacity for other businesses. Suitable also for large hotel with large restaurant for the general public. Capacity: 800–1,000 persons (e.g., 200 seats and fourfold reoccupancy). 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 19 Kitchen for 400 Persons (Up), and 800 persons (Down)

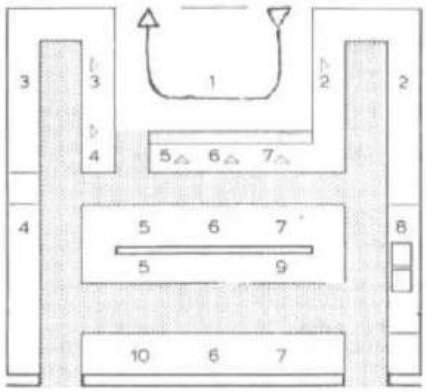


Figure 23 Kitchen for Excursion Restaurants

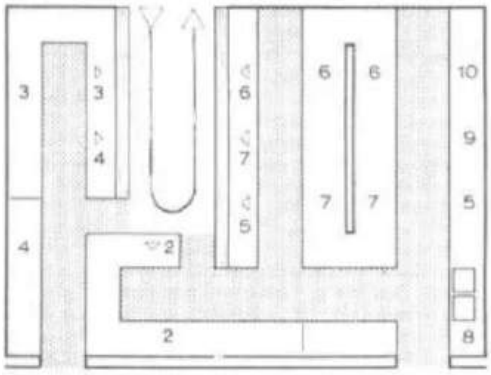


Figure 22 Kitchen for 600 persons, fourfold occupancy of 150 parsons

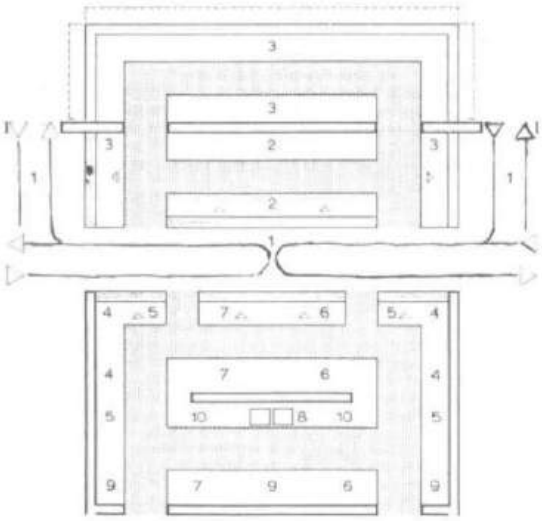


Figure 21 Kitchen for 1000 Persons

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

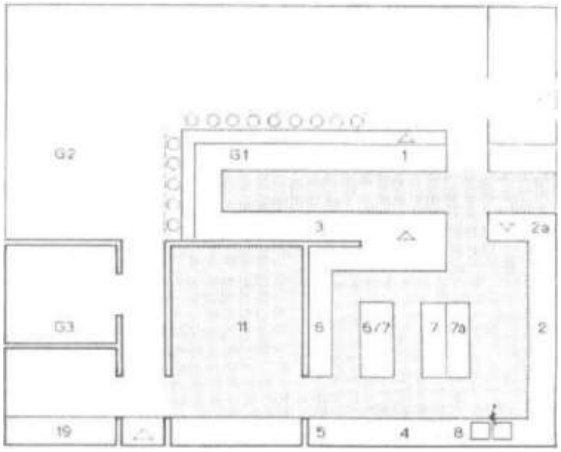


Figure 20 Snack Bar

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

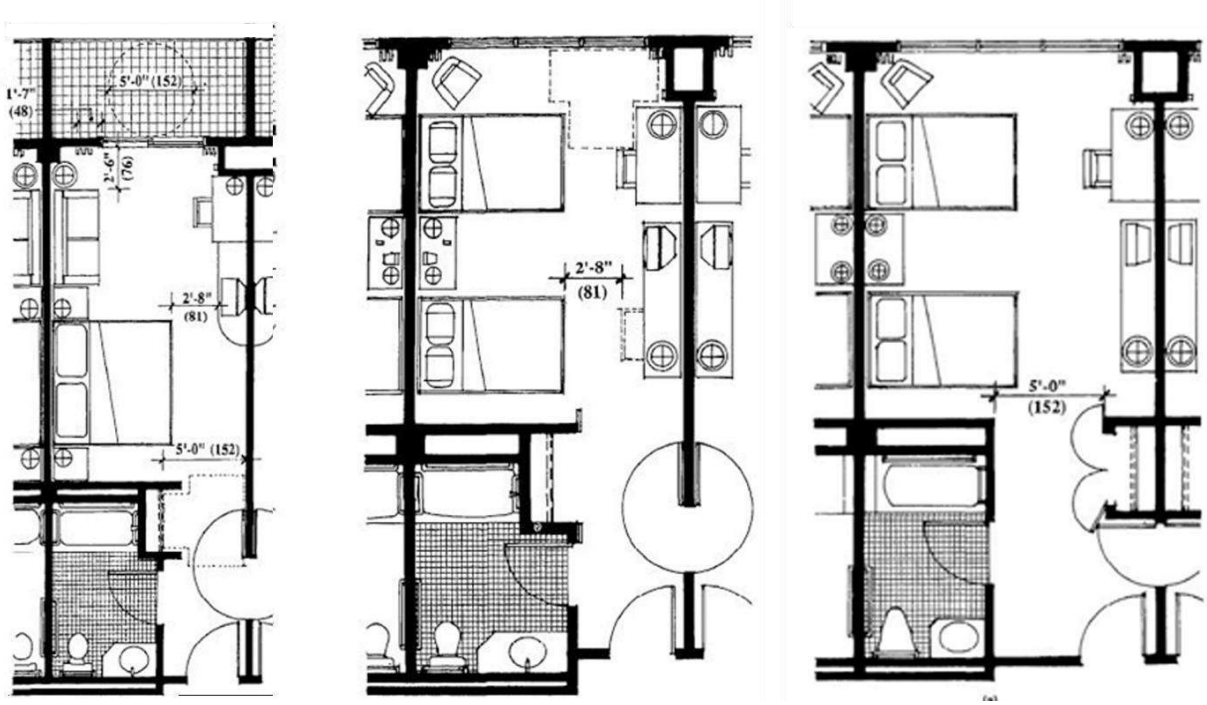


Figure 24 Room arrangements with 12, 13 & 14 ft bay spacing

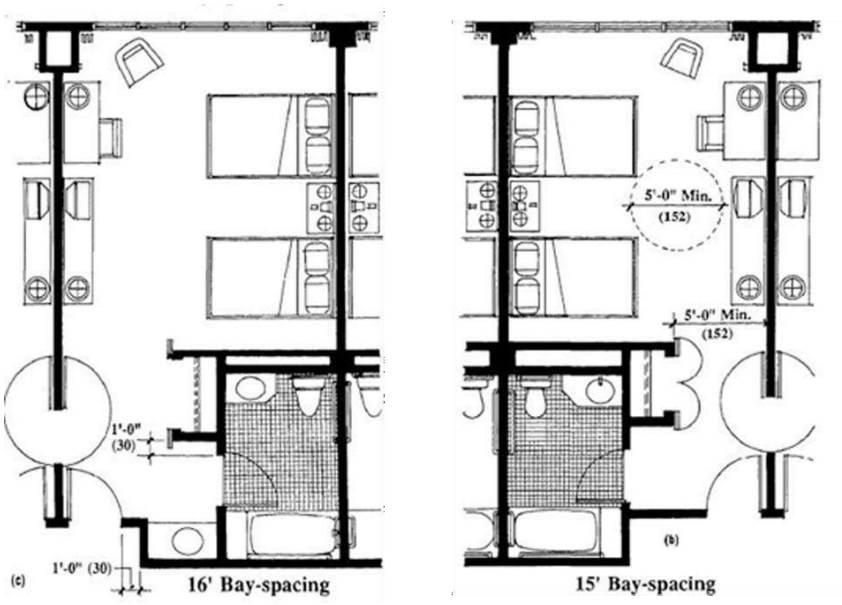
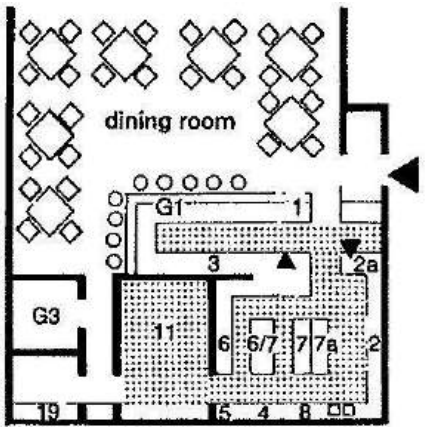


Figure 25 Room Arrangements with 16 & 15 ft Bay Spacing

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.

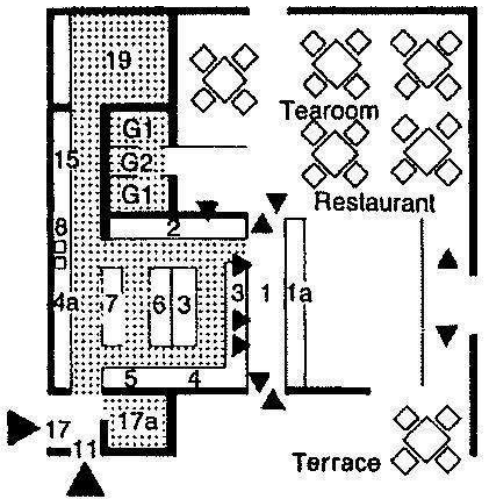


1 meals and drinks servery
2 dishwasher
2a crockery returns
3 drinks bar with mixer, toaster, food containers etc.
4 oven for small pastry items
5 food storage
6 rotisserie
6/7 cooker rings
7a water boiler and steam machine
8 pot and pan washer
11 stores/office; catering size refrigerators and freezers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

Figure 26 Snack Bar Arrangements

2.6.3 CAFE, RESTAURANT AMD 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 27 Cafe-restaurant Arrangement

CAFE-

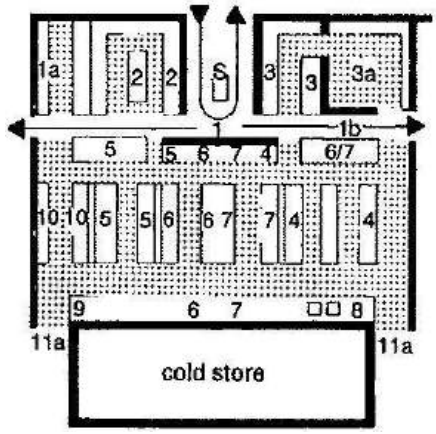
Alcohol-free drinks, except bottled premium beer, liqueurs etc., patisserie and light food- cold and hot.

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.



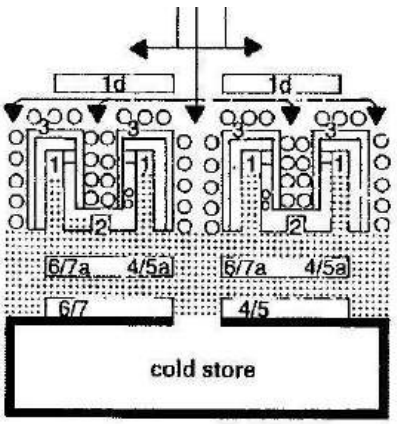
1 waiters' walkway
1a garden service counter
2 dish-washing area
3 drinks counter
3a drinks cellar
4 pastry counter
5 cold dishes
6 hot dishes and sauces
6/7 table with hot store
8 pot and pan washer
9 vegetable preparation
10 meat preparation
11a deliveries, and access to stores, offices, staff cloakrooms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

Figure 28 Large Hotel Restaurant Kitchen

RESTAURANT WITH BUFFET AND VENDING MACHINE-

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 29 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.

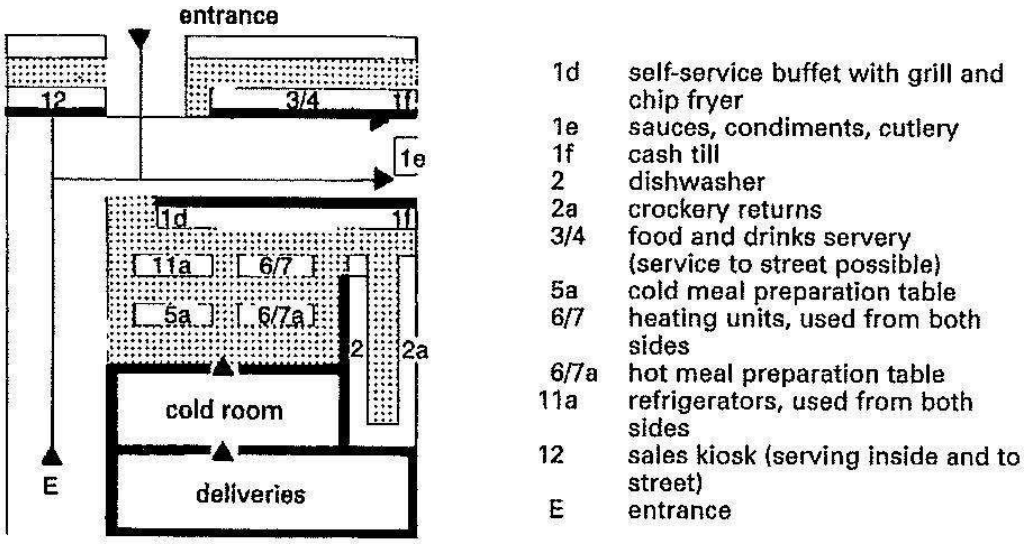
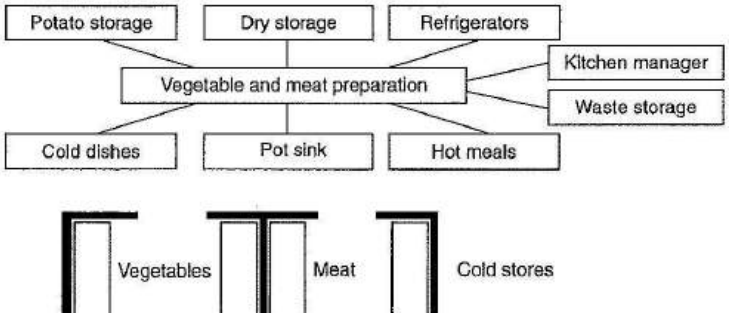


Figure 30 Self Service restaurant

FUNCTION AND ORGANIZATION OF RESTAURANT KITCHENS-

- 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.



Restaurant kitchens are functionally organized into distinct areas to maximize efficiency and workflow. Common sections include storage, food preparation, cooking, service, dish return, and cleaning. These areas are often arranged based on the flow of food from raw ingredients to the finished dish.

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).

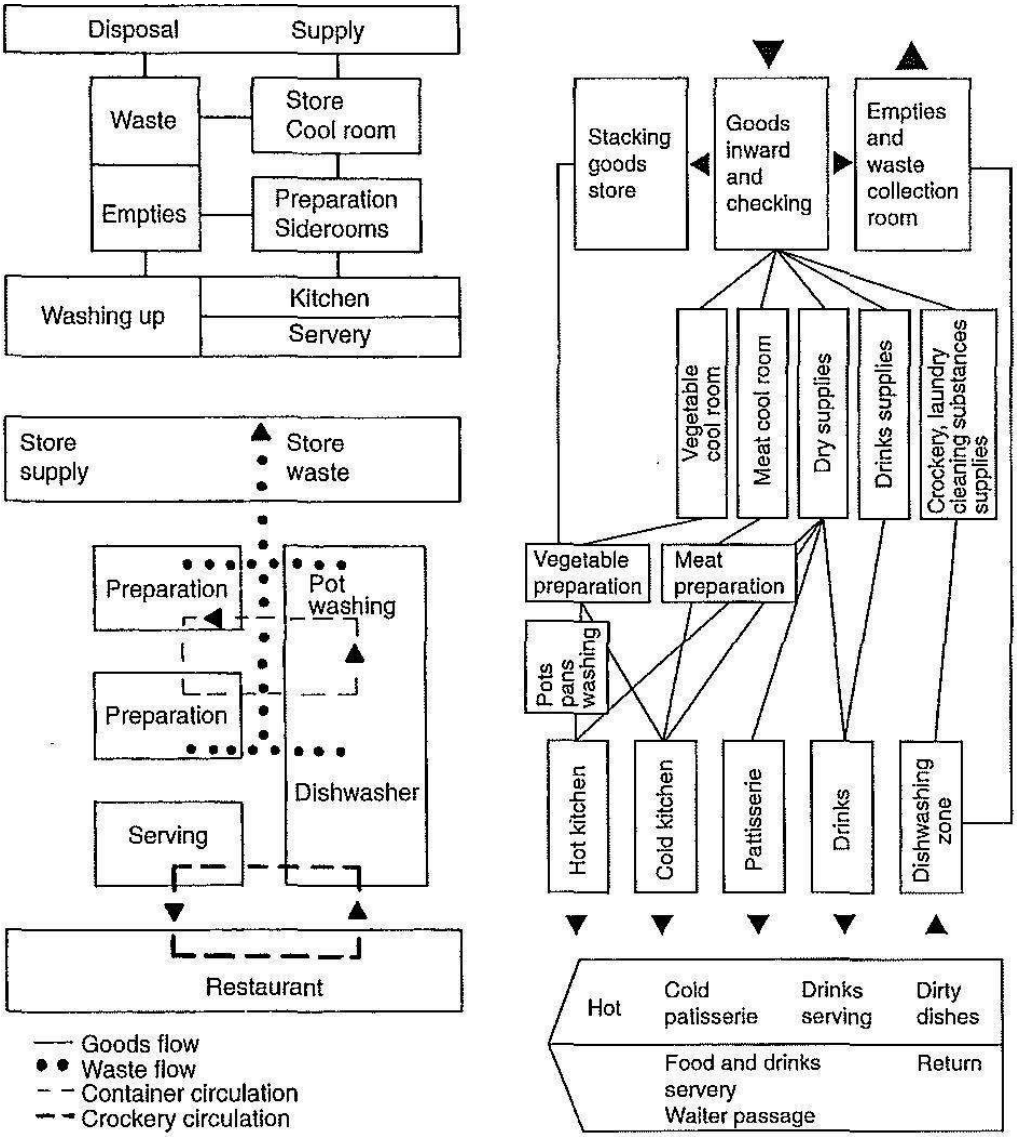


Figure 31 Restaurant Kitchen; Functions & Restaurant kitchen; Organization

PERCENTAGE OF TOTAL KITCHEN SPACE-

- 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

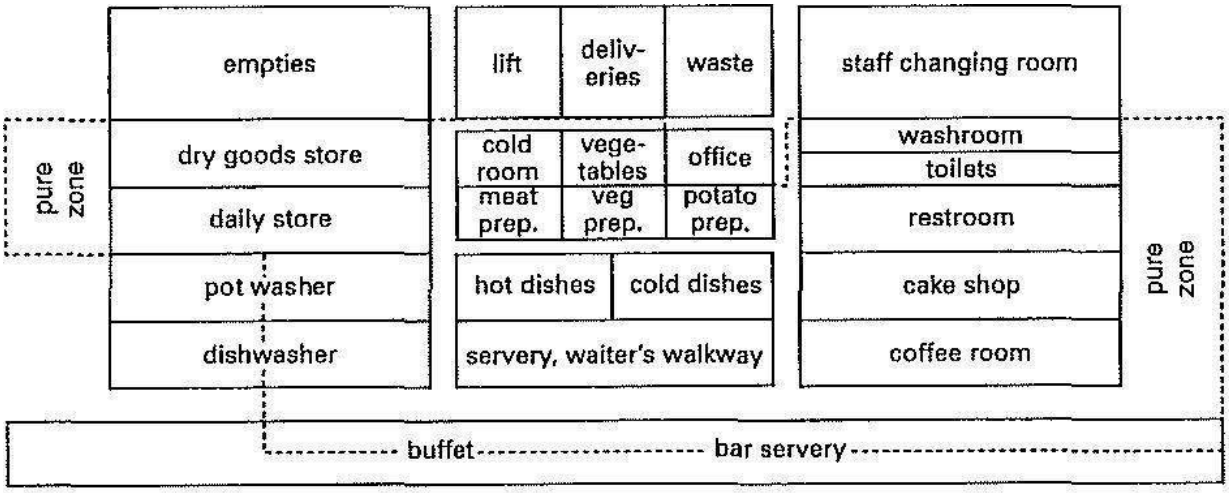
carefully zoned and fully equipped kitchen facilities. Large businesses (service areas, fast food restaurants, large hotel kitchens) achieve considerably higher place numbers, often with an integrated eating bar or self-service areas.

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 7 Kitchen Areas: space required (sqm/seat)

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

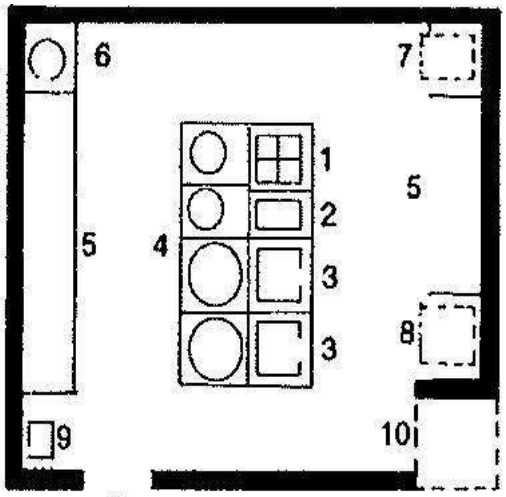
Table 8 Basis for dimensions and space requirements



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!)

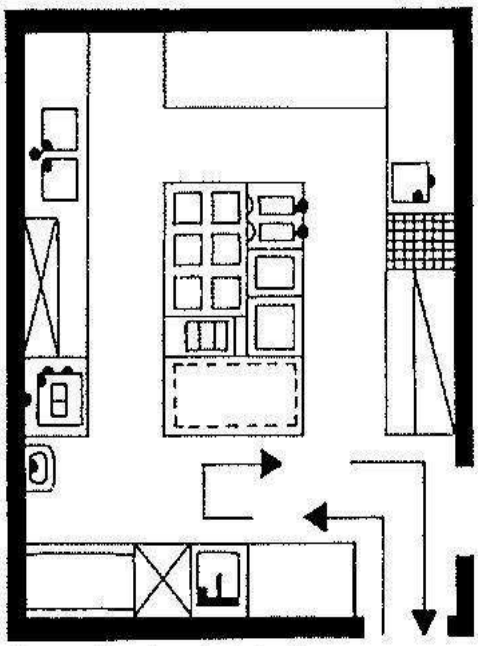
Figure 32 Functionality of Kitchen Areas

Restaurant kitchens are functionally organized into distinct areas to maximize efficiency and workflow. Common sections include storage, food preparation, cooking, service, dish return, and cleaning. These areas are often arranged based on the flow of food from raw ingredients to the finished dish.



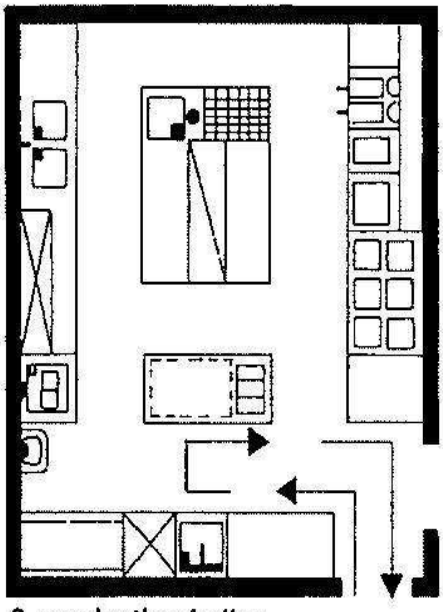
1 cooker
2 deep fat fryer
3 griddle
4 water boiler
5 work surface
6 cooker
7 double-deck oven
8 convectomat
9 hand basin
10 storage area

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



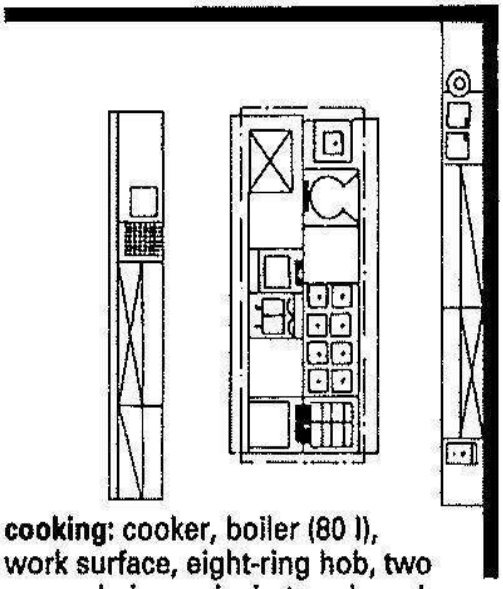
1. production in block

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 33 Organization of kitchen space

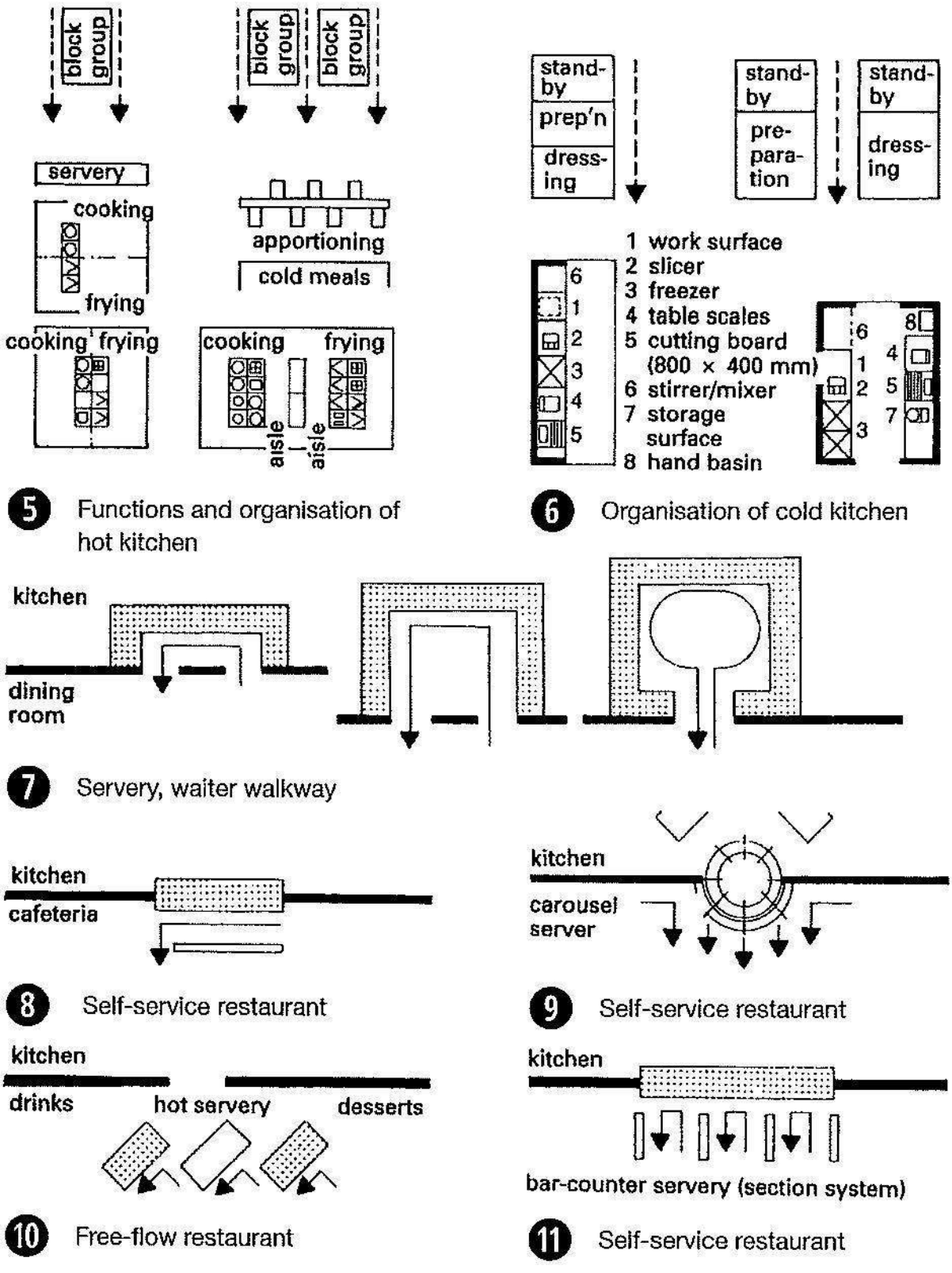


Figure 34 Functionality of Kitchen spaces through flow diagrams

2.6.4 BASIC SCHEMES OF HOTEL

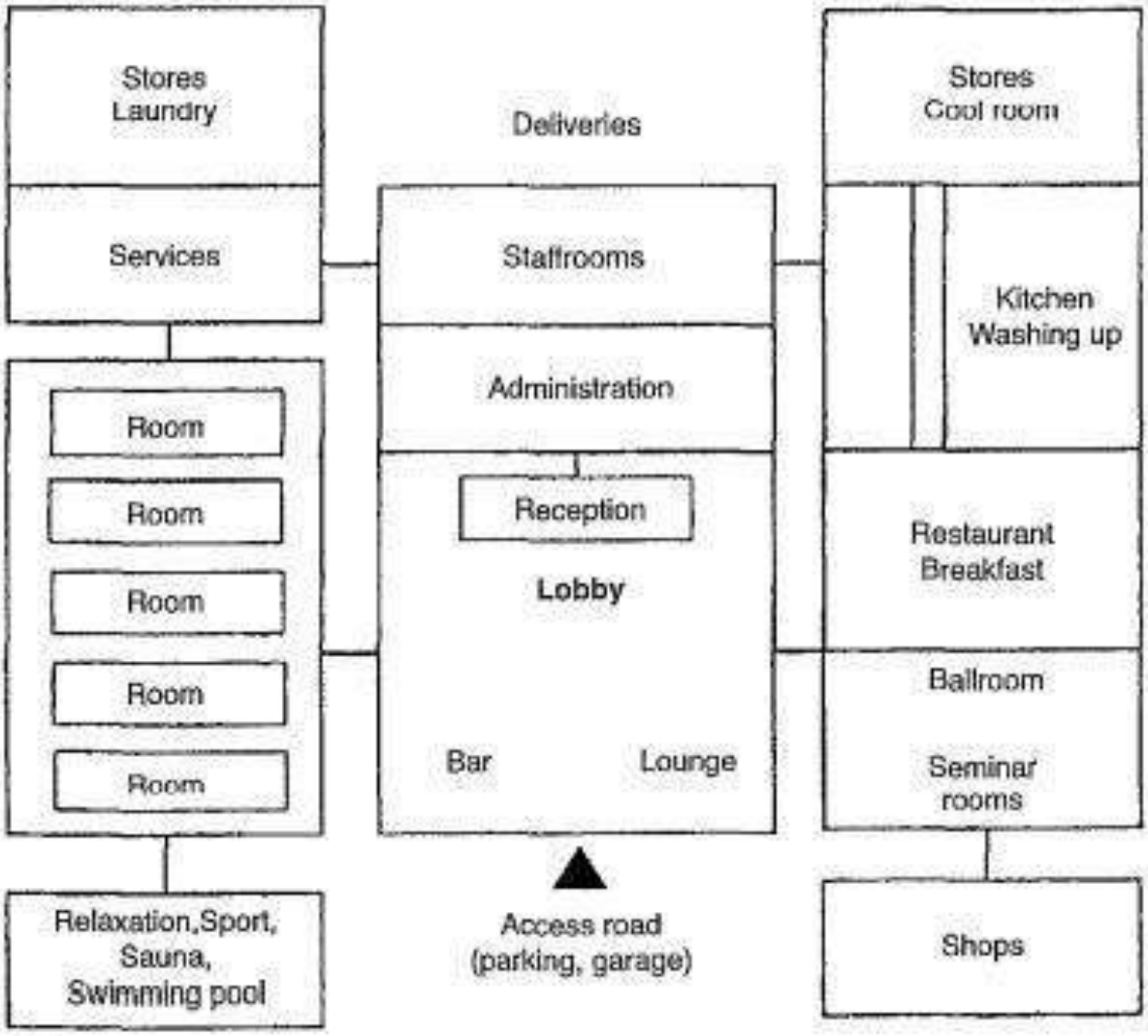


Figure 35 Route relationship between spaces

THE PERCENTAGES OF HOTELS' SURFACE AREAS REQUIRED FOR THE VARIOUS FUNCTIONS ARE SHOWN BELOW

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

Table 9 Percentage of hotel area required

- 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 color 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 center 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.

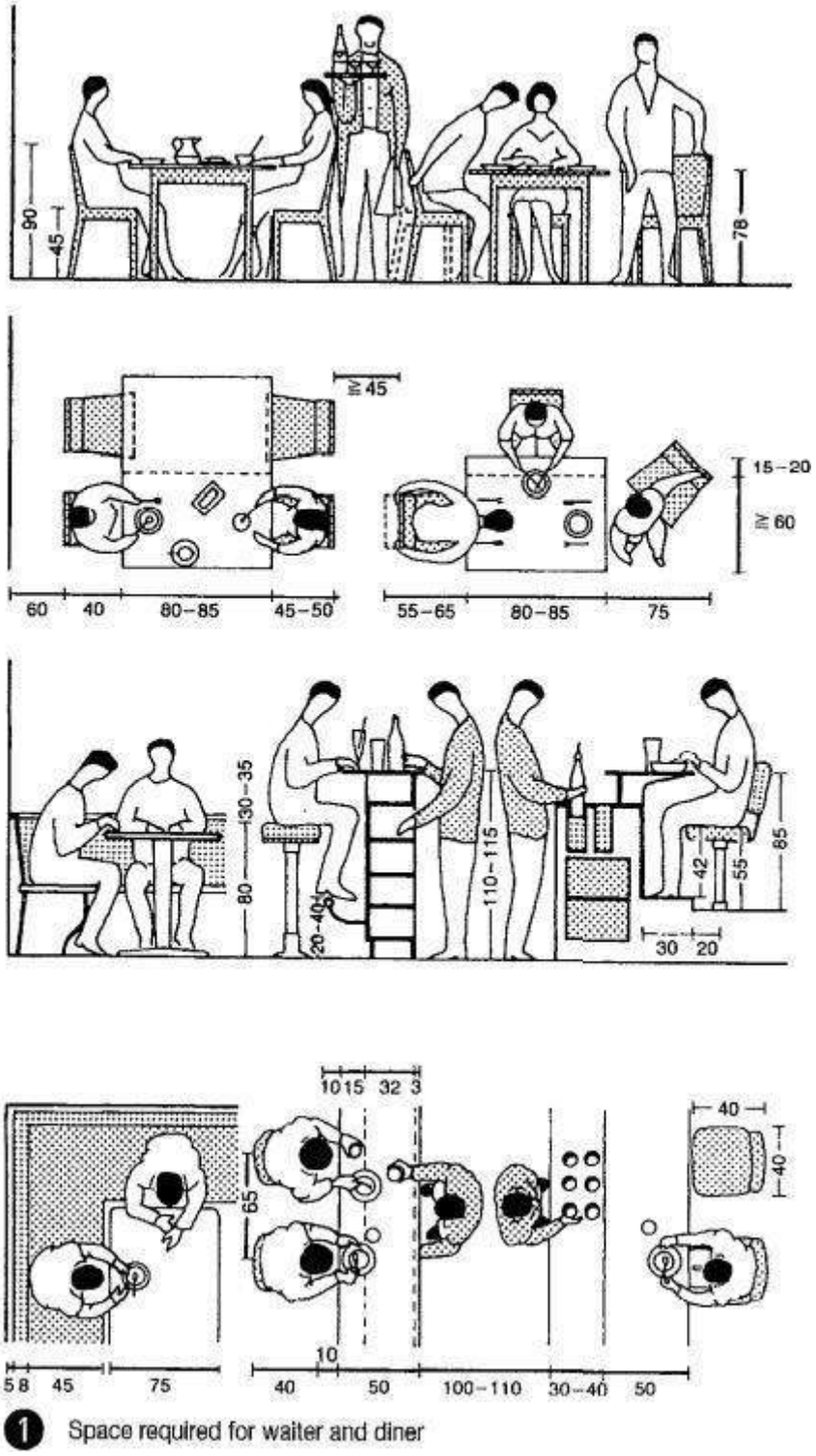


Figure 36 Space required for waiter and diner

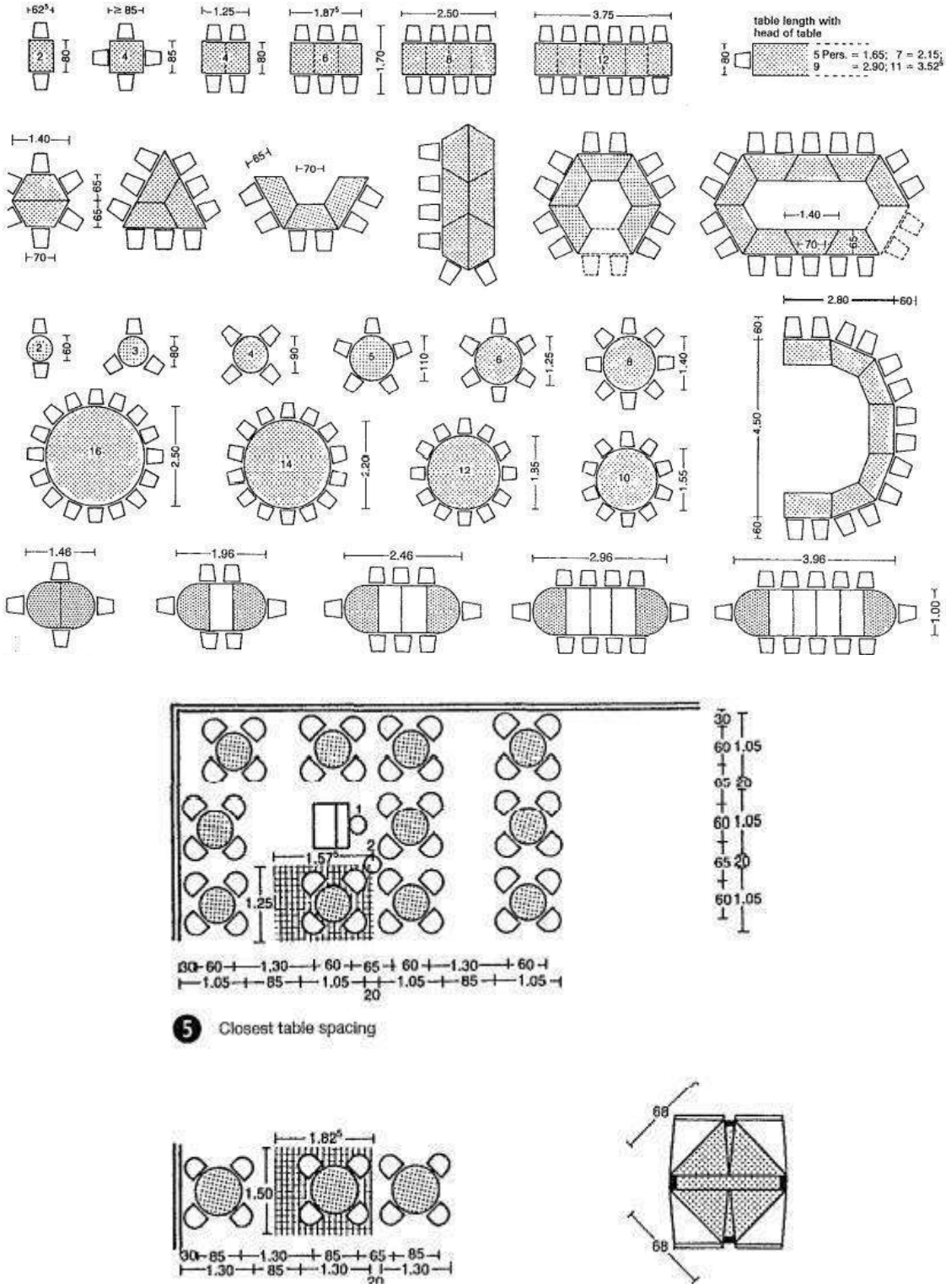
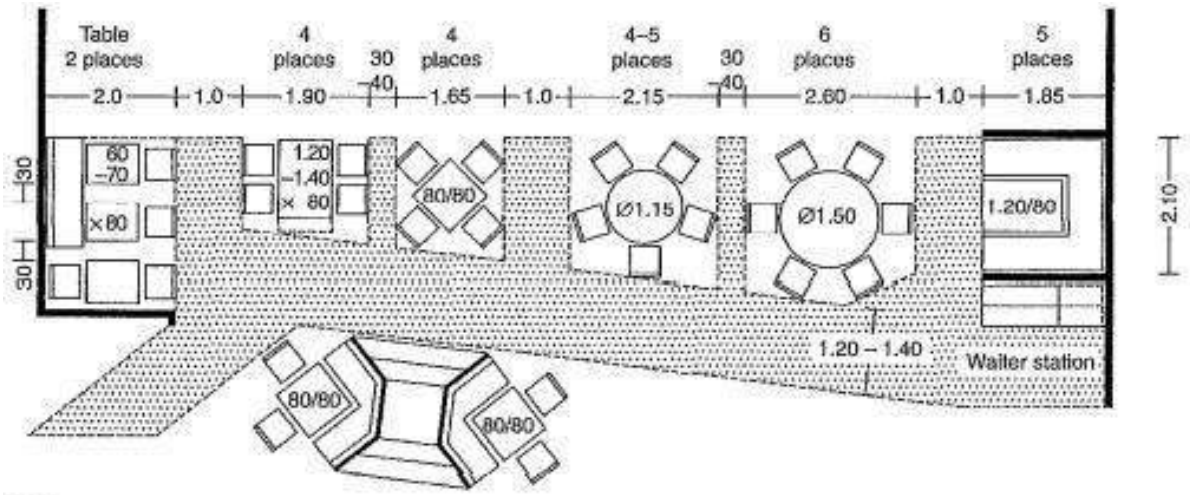
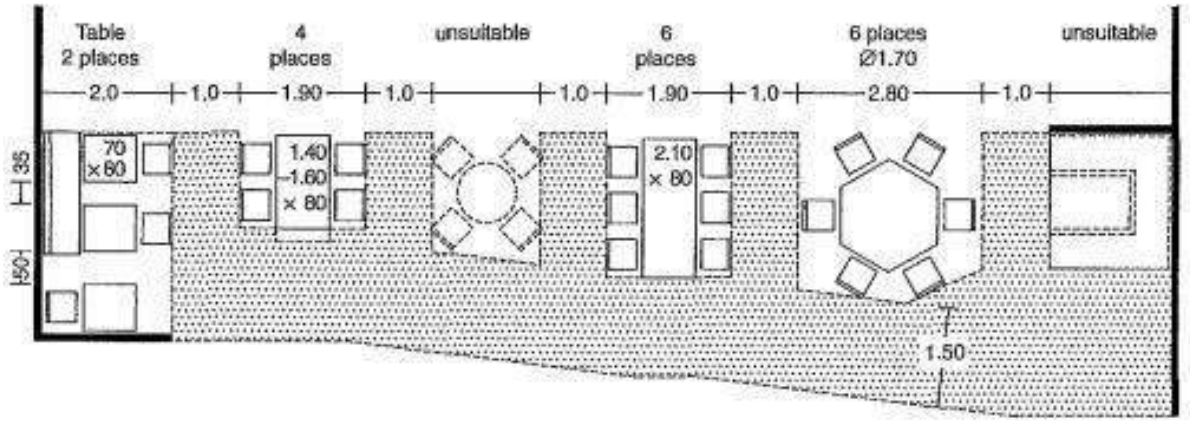


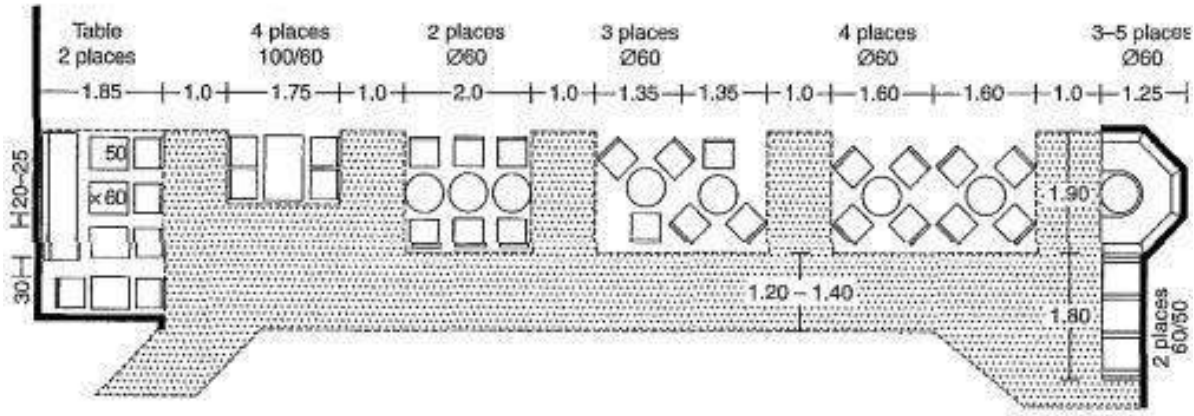
Figure 37 Arrangements of dining tables



1 Table sizes in a restaurant: with predominantly plate service the table depth can be reduced to 70 cm

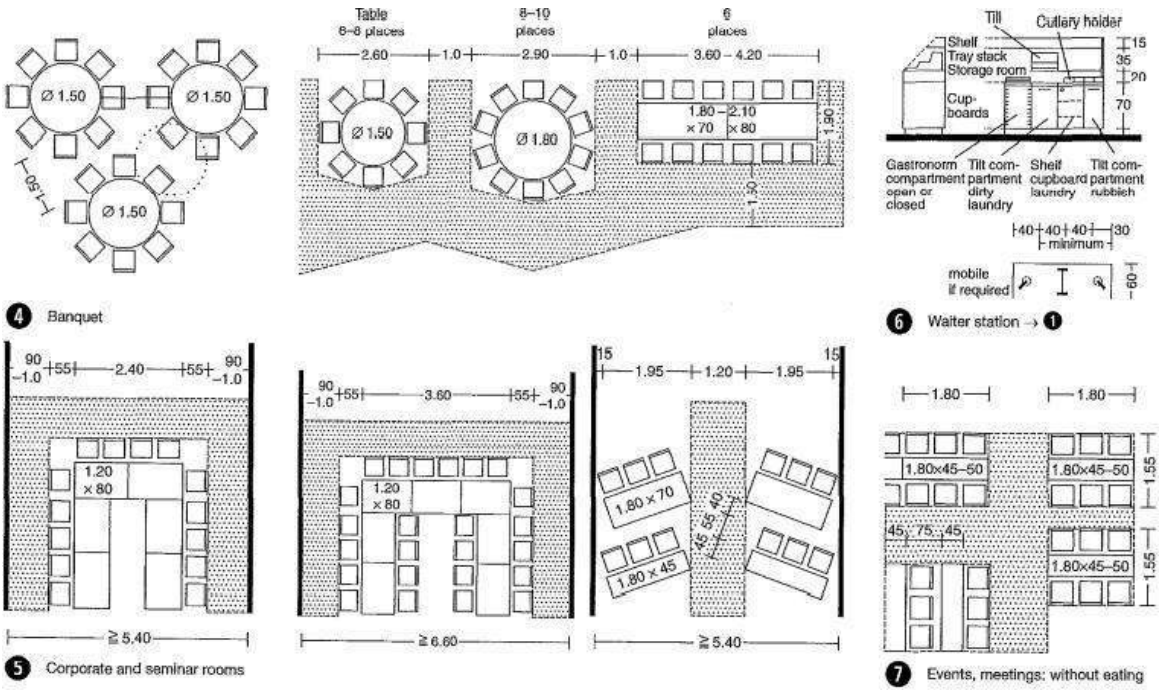


2 In a self-service restaurant



3 Bistro–café–bar

Figure 38 Dining Table arrangements in different eating spaces



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

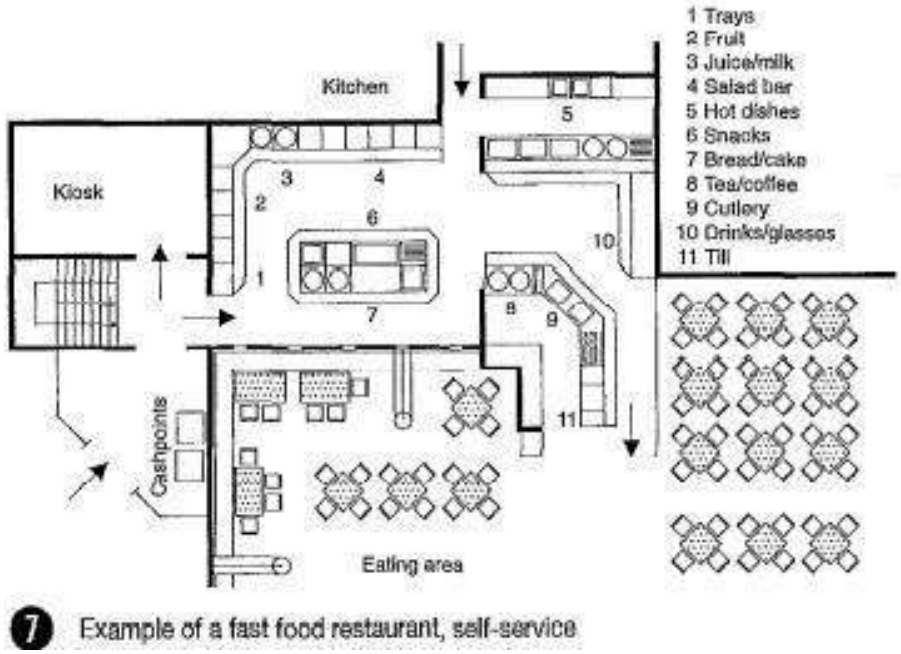


Figure 39 Dining table arrangements in different eating spaces with an example of self-service restaurant

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:

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.

Table 10 Means of Access (NBC, 2005)

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

- 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.
- 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.
- The main entrance to the plot shall be of minimum 6 m width to allow easy access to fire engine.

2.7.2 PARKING

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

Table 11 ECS requirement

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.

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

Source: UDPFI Guidelines 1996.

Table 12 Minimum setbacks

2.7.4 SETBACKS WITH RESPECT TO ABUTTING ROAD WIDTH

FRONT SETBACK

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

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	

Table 13 Front setback w.r.t. abutting road width

REAR AND SIDE SETBACK FOR BUILDING HEIGHTS ABOVE 10M

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

Table 14 Side & Rare setback w.r.t. abutting road width

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

- Garden, rockery, water well and well structures, plant nursery, water pool, swimming pool (if un covered), platform around a tree, landscaping, tank, fountain, bench, chabutra with open to pandunen closed on sides by walls and the like.
- Drainage culvert, conduit, catch pit, gully pit, chamber, gutter and the like.
- Compound wall, gate, un-storied porch and portico, canopy, slide, swing, uncovered staircase, ramps are as covered by chajja and the like.

2.7.5 GROUND COVERAGE & FAR

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

Source: UDPFI Guidelines 1996, MPD.

Table 15 Ground Coverage & FAR

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.

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.

Table 16 Water supply requirement in LCD

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:

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

Table 17 Waste generation

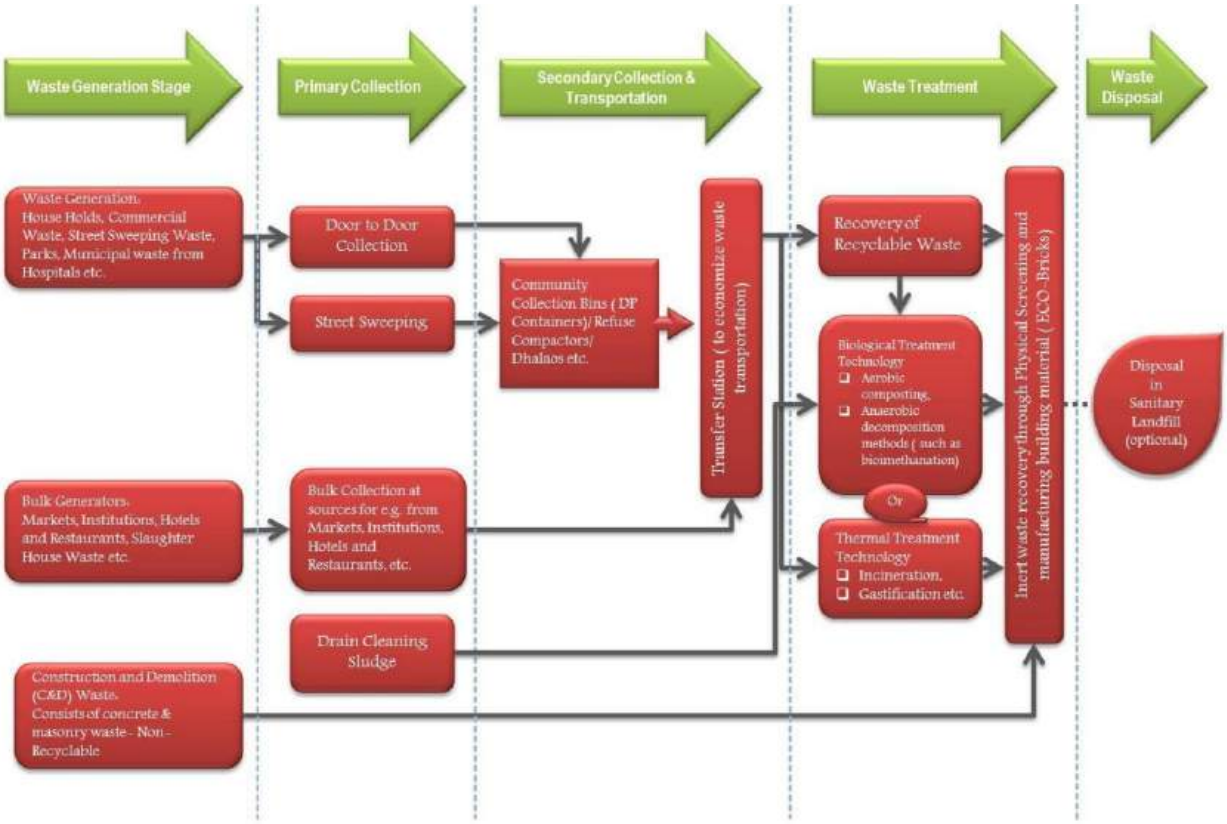


Figure 40 Flow diagram of waste disposal

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 DOORS 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 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.

Table 18 Recommended values of illumination – IS Codes

2.8.7 VENTILATION

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

TABLE 2 VENTILATION REQUIREMENTS FOR NON-AIRCONDITIONED BUILDINGS

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

Table 19 Ventilation Requirements - IS Codes

2.8.8 WATER SUPPLY

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

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.

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.

Table 20 Water requirement in hotel

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 satisfactorily disposed of. The drainage shall be so designed as to cause no stagnation at the maximum discharge rate for which the different units are designed. The requirements for firments for drainage and sanitation shall conform to the requirements given

TABLE 4 REQUIREMENTS OF DRAINAGE AND SANITATION FITMENTS IN HOTELS

(*Clause* 14.1.1)

Sl No.	Fitments	For Residential Public and Staff	For Public Rooms		For Non-Residential Staff	
			For Males	For Females	For Males	For Females
(1)	(2)	(3)	(4)	(5)	(6)	(7)
i)	Water-closets	1 per 8 persons omitting occupants of the room with attached water-closets; minimum of 2 if both sexes are lodged	1 per 100 persons up to 400 persons; and for over 400, add at the rate of 1 per 250 persons or part thereof	2 per 100 persons up to 200 persons; and for over 200, add at the rate of 1 per 100 persons or part thereof	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons
ii)	Ablution taps	1 in each water-closet	1 in each water-closet	1 in each water-closet	1 in each water-closet	1 in each water-closet
		1 water tap with draining arrangements shall be provided for every 50 persons or part thereof in the vicinity of water-closets and urinals				
iii)	Urinals	—	1 per 50 persons or part thereof	—	Nil up to 6 persons 1 for 7-20 persons 2 for 21-45 persons 3 for 46-70 persons 4 for 71-100 persons	—

Table 21 Drainage & Sanitation fitments in hotels- IS Codes

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 22 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

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.

Table 23 Storage temperatures for food

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 REQUIREMENT

- 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.

Fire safety requirements for 5-star hotel according to MOT (Ministry of tourism) are given below:

- Fire NOC: Mandatory fire clearance certificate from the local fire authority before operation and periodic renewal.
- Fire Detection System: Intelligent smoke detectors, manual call points, and alarm systems in all rooms and public areas.
- Firefighting Equipment: Automatic sprinklers, wet risers, hose reels, hydrants, and extinguishers on every floor.
- Emergency Exits & Staircases: Minimum two fire escape staircases with fire-rated doors, illuminated signage, and clear evacuation routes.
- Smoke & Ventilation Control: Pressurized staircases, smoke extraction systems, and proper mechanical ventilation in basements.
- Emergency Power & Lighting: Backup generator/inverter for fire alarms, lighting, lifts, and firefighting systems.
- Fire Command Centre & Training: Central fire control room with system panels; staff must undergo regular fire safety training and drills.
- Kitchen & Interior Safety: Fire suppression systems in kitchens, gas leak detectors, and use of fire-retardant materials in interiors.

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

Table 24 Classification of structural components – IS Codes

2.8 BHOOMI VIKAS NIYAM (RULES)

1. Permissible Land Use for Hotel Development

- Clause: Rule 14 (Page 13)
- Description: No person can carry out development (including hotels) unless they obtain prior written development permission from the relevant authority.
- Requirement for 5-Star Hotel:
- The land must be zoned for commercial or mixed-use.
- Submit proposal including layout, ownership documents, and service details to Town and Country Planning Department (TCPD).

2. Building and Development Permissions

- Clause: Rule 14 (1)– (6), Page 13

- What to submit:
- Site plan
- Layout plan
- Ownership documents
- Structural & architectural drawings
- Environmental service plans
- Permission is needed before starting any construction activity.

3. FAR (Floor Area Ratio) for Hotel Projects

- Clause: Rule 61, Table 7 (Page 43)
- Description:
- Base FAR: 1.5 for commercial buildings (including hotels) with plot area >3000 sq.
- Maximum Ground Coverage: 50%
- Premium FAR:
- Up to 25% extra FAR can be purchased by paying premium fees to the authority.

FLOOR AREA RATIO FOR DIFFERENT USE GROUP

S.No.	Use Group	FAR*	Category
(1)	(2)	(3)	(4)
1.	Resdential	1.25	
2.	Commercial	2.50 2.00 1.75 1.50 1.25	City Centre Sub-city center Community Center Local Shopping Centre Convenience Shopping Centre
3.	Public Semi-public	1.00	Administrative Areas / Education and Research/ Health/Social/Cultural/ Institutional
4.	Industrial	as per rule 48	as per rule 48

4. Setback Requirements

- Clause: Rule 61(2)(a), Table 6 (Page 42)
- For High-Rise Commercial/Hotel Buildings (height >15 m):
- Front Setback: 9 meters
- Side Setback: 6 meters
- Rear Setback: 6 meters
- These open spaces must be maintained clear of construction except where permitted.

5. Building Height Norms

- Clause: Rule 2(18), Definitions (Page 4)
- Definition: Building height is measured from the average ground level to the top of the terrace slab (not including architectural features or parapet).
- High-Rise Rule:
    - Buildings taller than **15 meters** are classified as **high-rise** and require:
        - Structural Safety Clearance
        - Fire Department Clearance
        - Lift Safety Standards
- Note: Rooftop structures like tanks and mechanical floors may be exempt if within prescribed limits

TABLE No. 4

[See Rule 42(1)]

DEVELOPMENT NORMS FOR PLOTS / LANDS ON WHICH BUILDING(S) WITH HEIGHT ABOVE 12.5 M AND UPTO 30 M IS PROPOSED:

S. No.	Road Width in meters	Minimum plot/land (area in sq.m.)	Frontage in meters	FAR	[1][Ground Coverage per-centage	Building Height in meters	Front M.O.S. in meters	Sides/ rear in MOS in meters
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.	12.0 m. and above	1000 sq. m.	18 m.	1:1.50	-	Up to 18 meters	7.5	6.0
2.	18 m. & above	1500 sq. m.	21 m.	1:1.75	-	Up to 24 meters	9.0	6.0
3.	24 m. & above	2000 sq. m.	30 m.	1:2.0	-]	Up to 30 meters	12.00 m.	7.5 m.

Note: [*Deleted*]

TABLE No. 5

[See Rule 42(2) above]

DEVELOPMENT NORMS FOR PLOTS / LANDS ON WHICH HIGH RISE BUILDING(S) IS PROPOSED

S. No.	Road Width	Minimum plot/land size (area in sq.m.)	Frontage in meters	FAR	Ground Coverage per-centage	Building Height in meters	M.O.S. Front side in meters	MOS Sides/ rear
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.	30 m. and above	2500	30 m.	1:2.25	30	Up to 45 meters	15.00 m.	7.5 m.
2.	36 m. and above	3000	40 m.	1:2.50	30	Up to 60 meters	18.00 m.	9.0 m.
3.	45 m. and above	3500	45 m.	1:2.75	30	Up to 75 meters	21 m.	9 m.
4.	60 m. and above	4000	50 m.	1:3.0	30	Up to 90 meters	24.00	10 m.
5.	75 m. and above	4500	60 m.	1:3.0	30	Above 90 meters	30.00	12 m.

6. Parking Space Requirements

- Clause: Rule 53, Table 4 (Page 38)
- Requirements for Hotels:
- 1 Car Parking per 2 rooms
- 1 Bus Parking per 50 rooms
- Additional parking for:
    - Staff
    - Visitors
    - Banquet halls
    - Restaurants

- Type of Parking Allowed:
- Basement
- Stilt
- Surface parking

S. No.	Components	Planning area having population 2.0 to 5.0 lacs	Planning area having population above 5.0 lacs
(1)	(2)	(3)	(4)
1.	Minimum Plot / Land area	4000 Square meters	10000 Square meters
2.	Minimum Road width in front	12 meters	18 meters
3.	Minimum frontage	25 meters	40 meters
4.	Maximum FAR	0.10	0.10
5.	Maximum Ground Coverage	10 per cent.	10 per cent.
6.	Minimum Parking Area in the front	30 per cent. of plot / land area	40 per cent. of plot / land area
7.	M.O.S. : Front	6.0 meters after parking space	6.0 meters after parking space
8.	Permissibility in land use	Residential / Commercial / Agriculture / PSP	Residential / Commercial / Agriculture

7. Fire Safety Provisions

- Clause: Rule 58 (Page 41)
- Mandatory for all high-rise and public buildings (like hotels):
- Fire escape staircases
- Fire alarms
- Sprinkler systems
- Underground and overhead water tanks
- Fire-fighting pump rooms
- Must obtain Fire NOC from the Fire Department before starting construction.

8. Environmental & Green Infrastructure Norms

- Clause: Rule 53 Amendment (Gazette Notification – 2021)
- New mandatory systems for hotels:
- Rainwater harvesting system
- Sewage Treatment Plant (STP)
- Solar water heating system
- EV (Electric Vehicle) charging infrastructure
- Applicable for plots larger than 2000 sq.m or high-rise/commercial buildings.

9. Other Structural & Safety Conditions

- Must comply with the National Building Code (NBC) standards.
- Structural stability certificate is needed from a registered structural engineer.
- Basement construction must follow waterproofing, ventilation, and ramp slope norms (Rule 56).

2.9 CONTOUR GUIDELINES

1. Preserve Natural Land Profile (Contours)

- Bhumi Vikas Rule 59 (Page 41): Land must retain its original slope/contour. Major cutting or filling is prohibited without special approval.
- NBC Part 3, Clause 4.2.4: Prefer stepped building design over mass excavation. Maintain the natural grade of the site.

✓ Implementation: Design multi-level structures that follow the terrain (e.g., terraces) instead of flattening the land.

2. Limit Earth Cutting and Filling

- Bhumi Vikas Rule 59: Requires special permission for major alterations to ground profile.
- NBC Part 10, Clause 5.5: Minimize soil cutting; use temporary stabilizers (like grass turf, jute mats) during construction.

✓ Implementation: Avoid large-scale levelling; use retaining platforms, not complete slope flattening.

3. Mandatory Retaining Walls with Drainage

- Bhumi Vikas Rule 59: Retaining walls are compulsory wherever slope is modified.
- NBC Part 6 & 10: Retaining structures must include back drainage and be structurally sound to prevent erosion or collapse.

✓ Implementation: Design stone/concrete retaining walls with proper weep holes and rear drainpipes.

4. Prevent Obstruction to Natural Drainage

- Bhumi Vikas Rule 57 (Page 40): Do not block or alter natural watercourses or flow lines.
- NBC Part 9 (Plumbing): Provide site grading, slope-based stormwater channels, and catch basins.

✓ Implementation: Plan hotel orientation and drainage to respect water paths across the slope.

5. Foundation Design Adapted to Slopes

- NBC Part 6 (Soils and Foundations): Use specialized foundations for contour sites:
  - Step foundations
  - Raft or pile footings
- Bhumi Vikas (Structural rules, Rule 58): Ensure soil-bearing capacity and slope stability with certified design.

✓ Implementation: Conduct geotechnical testing and engage licensed structural engineers for design.

6. Erosion Control Measures

- NBC Part 10 (Clause 5.3): Protect slopes using:

- Stone pitching
- Vegetation (grass/ground cover)
- Geotextile sheets
- Bhumi Vikas Rule 59: No slope alteration allowed without structural safeguards.

✓ Implementation: Cover loose soil with green cover or geogrids to prevent monsoon erosion.

7. Access Road and Pathway Design

- NBC Part 3, Clause 4.2.5: Design roads parallel to contour, not against it.
- Max slope: 1:10 (10%)
- Bhumi Vikas (implied under access norms): Maintain vehicular accessibility without disturbing slopes.

✓ Implementation: Use zig-zag road alignments or switchbacks to reduce gradient for cars and fire vehicles.

8. Environmental Considerations

- Bhumi Vikas (Zone sensitivity): Areas near Upper Lake or green buffers require special clearances.
- NBC Volume 1, Part 10: Sloping sites near ecological zones should maintain buffer zones, use landscape barriers, and avoid tree cutting.

✓ Implementation: Maintain green belts and submit Environmental Impact Assessment (EIA) if in sensitive zones.

9. Construction Phasing and Stabilization

- NBC Part 10, Clause 5.5: Construction on sloping land should be phased.
- Use temporary support like sandbags, trenches, and seeding on raw slopes during construction.

✓ Implementation: Step-by-step excavation, with each phase stabilized before moving to the next.

10. Required Approvals and Documents

- Bhumi Vikas Rule 14 & 59: Requires submission of:
- Topographic contour survey
- Slope stability report
- Drainage and erosion plans
- NBC All Parts (integrated approvals): Must include foundation design, safety features, and stormwater layout.

✓ Implementation: Include slope protection and grading details in drawings submitted for Development & Building Permission.

3. SITE INVENTORY

3.1 CONNECTIVITY TO THE SITE

3.1.1 INTRODUCTION

The Lakeview Residency Hotel project is envisioned as a landmark 5-star luxury destination nestled in the culturally rich and ecologically sensitive locale of Shyamla Hills, Bhopal. Situated on a sprawling 7.16-acre site with direct access from the 24-meter-wide Jehan Numa Palace Road, the site boasts panoramic views of the iconic Upper Lake and is surrounded by significant cultural institutions such as the Jehan Numa Palace, Birla Museum, and Manav Sangrahalaya. Its strategic connectivity to VIP Road and Bhopal Airport enhances its accessibility for domestic and international visitors alike.

This site inventory report is grounded in the architectural intent of the thesis, which aims to redefine luxury hospitality in Central India. The report analyses the site through environmental, geographical, cultural, and infrastructural lenses, aligning with the larger vision of creating a destination that blends global standards of opulence with local identity. The decision to demolish the existing built-up area (~87,521 sq. ft) and redevelop it as a contemporary 5-star facility marks a significant shift in land use, warranting a thorough examination of existing site conditions.

Through this analysis, the report seeks to evaluate the site's potential for climate-responsive and sustainable development, identify key visual and ecological assets, and understand contextual relationships with adjacent landmarks. The insights gathered here will inform future design decisions that integrate natural topography, lake-facing views, cultural resonance, and modern technologies—ultimately contributing to an immersive and environmentally conscious guest experience that elevates Bhopal's presence in India's luxury hospitality sector.



Figure 41 Site- Shyamla hills, Bhopal, Madhya Pradesh

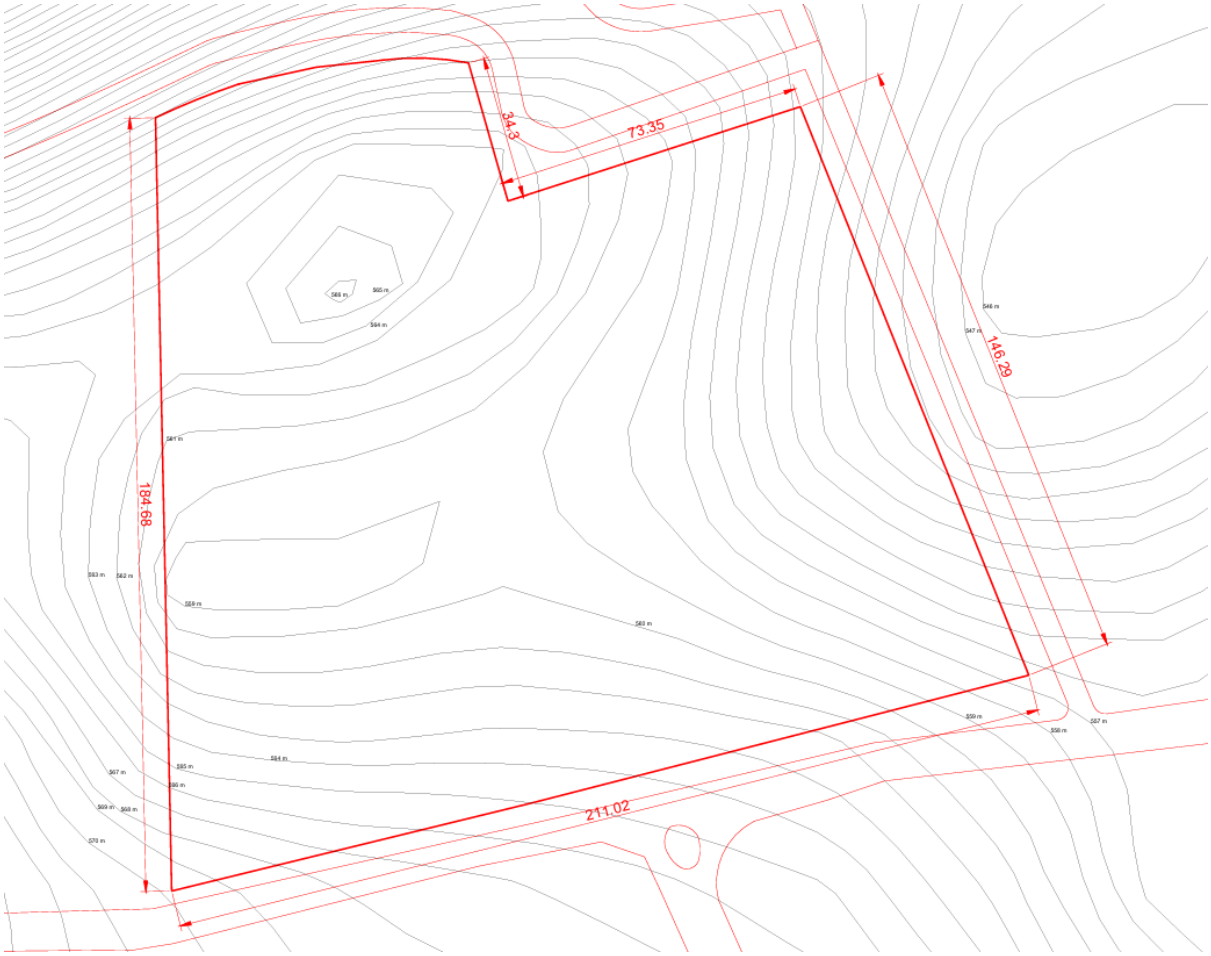


Figure 43 Site dimensions



Figure 42 views from site

Table: Project Site/MPT Lake View Residency Details

Area	Shyamala Hills, Bhopal
Location/Site	The subject property is located at Shyamala Hills, Bhopal, towards the eastern side of Upper Lake i.e., central region of Bhopal city. The subject location has many prominent government institutions and building. The prominent hospitality developments in vicinity of the subject site include Jehan Numa Palace, Ivy Suites, The Ten Suites etc. The subject micro-markets enjoys express connectivity via 24 m wide VIP Road (north) to the Bhopal Raja Bhoj Airport and other touristy places like Birla Museum, Sair Sapata, Interpretation Centre - Manav Sangrahalaya via 24 mts. wide Jehan Numa Palace Road.
Location Coordinates	**Latitude:** 23.243043872752793 **Longitude:** 77.38768911349595
Approach Road	24 mts. wide primary access road – Jehan Numa Palace Road
Site Boundaries	The subject property is surrounded by: • North: Green Zone adjacent to Bhopal Upper Lake • South: 24 mts. wide primary access road – Jehan Numa Palace Road • East: Other's property • West: Other's property
Land Area & Built-Up Area	The land area of the subject property admeasures approx. 7.16 acres while the total built-up area of the subject development admeasures approx. 87,521 sq. ft. The demarcated map of Project Site is provided along with the Site Plan along with this RFP and marked as **Appendix VIII**.



Figure 44 site visit group photo

3.1.2 ROADWAYS

The Lakeview Residency Hotel is located in Shyamla Hills, Bhopal, a prime area known for its natural beauty and cultural landmarks. The site is well-connected by major roads, making it highly accessible for tourists, business travelers, and locals.

Primary Access:

- Jehan Numa Palace Road (24m wide): Main approach road to the site, branching from VIP Road, offering smooth vehicular access in a quiet, upscale area.

Major Roads to Reach the Site:

- VIP Road (Lake View Road): Connects to New Market, Roshanpura, Taj-ul-Masajid, and Bharat Bhavan. Runs along Upper Lake and links to Airport and Kolar Road.
- Shyamla Hills Road: Internal loop road connecting landmarks like Manav Sangrahalaya and Birla Museum; joins Jehan Numa Palace Road.
- Rani Kamlapati Station Road (via Link Roads): Connects to VIP Road through Link Road No. 1 or 3 via T.T. Nagar.
- Raja Bhoj Airport Road (via Lalghati Square): Connects to VIP Road; approx. 14 km from the airport.

Approach Summary:

- From Rani Kamlapati Station: Station Road → Link Road 1/3 → Roshanpura → VIP Road → Jehan Numa Palace Road → Site
- From Airport: Airport Road → Lalghati → VIP Road → Jehan Numa Palace Road → Site
- From New Market/TT Nagar: Link Road 1 → Roshanpura → VIP Road → Jehan Numa Palace Road → Site

3.1.3 RAILWAYS

The Lakeview Residency Hotel in Shyamla Hills, Bhopal, enjoys excellent railway connectivity through two major railway stations that link Bhopal to national and regional routes.

1. Rani Kamlapati Railway Station (RKMP):

- Formerly known as Habib Ganj Railway Station, RKMP is a modern, world-class station located approximately 10 km from the site.
- It is a key terminal for premium trains like the Vande Bharat Express, Shatabdi Express, and other high-speed and long-distance trains.
- Travelers can reach the site from RKMP via Link Road No. 1 or 3, passing through T.T. Nagar and Roshanpura, then connecting to VIP Road and finally to Jehan Numa Palace Road.

2. Bhopal Junction Railway Station:

- Located about 8.5 km from the site, it is Bhopal's central and busiest station, handling major north-south and east-west railway traffic.
- The station connects to the site via Station Road, Roshanpura Square, VIP Road, and then Jehan Numa Palace Road.

- It is ideal for guests arriving from different parts of India via express, mail, and passenger trains.

3.1.4 AIRWAYS

- **Nearest Airport:** Raja Bhoj International Airport, Bhopal
- **Distance from Site:** ~14 km
- **Travel Time:** ~30–35 minutes by car
- **Route:** Airport Road → Lalghati Square → VIP Road → Jehan Numa Palace Road → Site
- **Connectivity:** Regular domestic flights to Delhi, Mumbai, Bangalore, Hyderabad, etc.
- **Transport Options:** Available taxi services, Ola/Uber, and private pickups

3.2 PROXIMITY

- Name: Lakeview Residency Site
- Location: Shyamla Hills, Bhopal, Madhya Pradesh
- Coordinates: Latitude: 23.243043872752793, Longitude: 77.38768911349595
- Access: 24-meter-wide Jehan Numa Palace Road, connected to VIP Road and Bhopal Airport
- Nearby Landmarks: Jehan Numa Palace, Upper Lake, Birla Museum, Manav Sangrahalaya



The Lakeview Residency Hotel site is advantageously located in Shyamla Hills, Bhopal, offering close proximity to some of the city's most prominent cultural, natural, and institutional landmarks. Surrounded by a rich urban context, the site lies within walking distance of heritage icons like Jehan Numa Palace and Upper Lake, while also being well-connected to important city nodes such as New Market, Manav Sangrahalaya, and Birla Museum. Key transportation hubs, including Bhopal Junction, Rani Kamlapati Railway Station, and Raja Bhoj International Airport, are easily accessible, ensuring smooth regional and national connectivity. This strategic location enhances the site's potential to serve both leisure and business travelers, while embedding the hotel experience within the cultural and ecological fabric of Bhopal.

Category	Place / Landmark	Approx. Distance from Site	Direction / Access Route
Cultural Landmark	Jehan Numa Palace	100 m	Directly adjacent via Jehan Numa Palace Road
Natural Feature	Upper Lake (Bada Talab)	200 m	West – walkable via Jehan Numa Palace Road
Museum	Birla Museum	1.5 km	South – via Shyamla Hills Road
Museum	Manav Sangrahalaya	2.2 km	South-West – via Shyamla Hills Road
Transport Hub	Bhopal Junction Railway Station	~8.5 km	East – via Roshanpura → VIP Road
Transport Hub	Rani Kamlapati Railway Station	~10 km	South-East – via Link Road No. 1 or 3
Airport	Raja Bhoj International Airport	~14 km	North-West – via Airport Road → VIP Road
CBD / Market	New Market (T.T. Nagar)	~3.5 km	East – via Roshanpura Square
Healthcare	Hamidia Hospital	~5.5 km	North-East – via VIP Road
Education	Regional Institute of Education	~2.8 km	South-East – via Link Road

Table 25 Proximity chart

3.3 SITE ACCESSIBILITY AND TRAFFIC

The Lakeview Residency Hotel site enjoys excellent accessibility due to its strategic location along the 24-meter-wide Jehan Numa Palace Road, which connects directly to the prominent VIP Road. This arterial network links the site to major city zones such as New Market, T.T. Nagar, and Roshanpura Square, while also providing smooth access to the Bhopal Airport, railway stations, and key cultural destinations. The road width supports two-way vehicular flow, accommodating both private and service vehicles essential for hotel operations. Traffic in the Shyamla Hills area remains moderate due to its primarily residential and institutional character, which helps maintain a peaceful and exclusive environment—ideal for luxury hospitality. Additionally, multiple approach roads and proximity to main junctions ensure

efficient dispersal and minimal congestion, even during peak tourist seasons.



Sl. No.	Area/ Component Description	Approx. Built Up Area (Sq. Ft)
1.	Hotel Main Building with 42 Rooms	65,664
2.	MOA Spa	5,607
3.	Swimming Pool	2,236
4.	Railway Platform Restaurant	4,046
5.	Railway Coach Restaurant	5,768
6.	Hot & Cold Restaurant	892
7.	Open Area	777
8.	Services	2,531
	Total	**87,521**

Note: The bidders shall undertake their own due diligence exercise to ascertain the actual built-up area at the subject site.

The site offers a mix of unique structures and outdated facilities. Key elements like the Railway Coach and Platform Restaurants, MOA Spa, and Swimming Pool can be preserved and refurbished due to their experiential and functional value. However, the Hotel Main Building, being outdated and occupying the largest area, should be demolished and rebuilt to meet modern 5-star standards. Smaller components like the Hot & Cold Restaurant, Open Area, and Service zones can also be redesigned to suit the new layout, improve efficiency, and enhance the guest experience.

3.4 CLIMATE ANALYSIS

A thorough understanding of the local climate is essential for designing a responsive and sustainable built environment. The site for the proposed Lakeview Residency Hotel, located in Shyamla Hills, Bhopal, lies within India's composite climate zone, which is marked by distinct seasonal variations including hot summers, monsoon rains, and mild winters. The site's proximity to Upper Lake and its placement within a green and elevated terrain further influence its microclimate, offering potential for passive design strategies. This climatic analysis aims to assess the key environmental parameters—such as temperature, humidity, rainfall, solar exposure, and wind patterns—that will directly inform design decisions related to orientation, shading, material selection, and thermal comfort for the proposed 5-star development.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Nov	Oct	Dec	Year
Record high °C (°F)	32.0 (89.6)	37.0 (98.6)	43.0 (109.4)	47.0 (116.6)	50.0 (122.0)	48.0 (118.4)	41.0 (105.8)	35.0 (95.0)	36.0 (96.8)	37.0 (98.6)	35.0 (95.0)	33.0 (91.4)	50.0 (122.0)
Average high °C (°F)	26.03 (78.85)	29.87 (85.77)	34.75 (94.55)	39.64 (103.35)	41.76 (107.17)	37.31 (99.16)	30.77 (87.39)	28.91 (84.04)	30.29 (86.52)	32.14 (89.85)	30.11 (86.2)	26.91 (80.44)	32.37 (90.27)
Daily mean °C (°F)	21.01 (69.82)	25.33 (77.59)	30.89 (87.6)	36.3 (97.34)	38.83 (101.89)	34.69 (94.44)	28.71 (83.68)	26.88 (80.38)	27.76 (81.97)	28.66 (83.59)	26.01 (78.82)	21.93 (71.47)	28.92 (84.06)
Average low °C (°F)	13.26 (55.87)	17.1 (62.78)	22.14 (71.85)	27.72 (81.9)	30.99 (87.78)	28.97 (84.15)	25.18 (77.32)	23.49 (74.28)	22.92 (73.26)	22.13 (71.83)	19.07 (66.33)	14.64 (58.35)	22.3 (72.14)
Record low °C (°F)	7.0 (44.6)	8.0 (46.4)	14.0 (57.2)	21.0 (69.8)	27.0 (80.6)	16.0 (60.8)	22.0 (71.6)	17.0 (62.6)	20.0 (68.0)	17.0 (62.6)	13.0 (55.4)	8.0 (46.4)	7.0 (44.6)
Average precipitation mm (inches)	12.22 (0.48)	14.7 (0.58)	10.87 (0.43)	5.16 (0.2)	6.7 (0.26)	255.46 (10.06)	516.95 (20.35)	528.96 (20.83)	227.85 (8.97)	35.09 (1.38)	8.95 (0.35)	5.58 (0.22)	135.71 (5.34)
Average precipitation days (≥ 1.0 mm)	2.0	2.64	2.0	1.73	2.36	16.09	26.73	28.27	18.18	5.09	1.73	1.36	9.02
Average relative humidity (%)	44.58	34.16	21.63	15.84	17.85	45.7	76.37	85.54	76.99	49.7	40.68	40.63	45.81
Mean monthly sunshine hours	9.4	11.46	11.46	12.26	13.23	13.3	11.66	10.63	10.37	9.43	8.64	8.62	10.87

Figure 46 overall climatic data of Bhopal

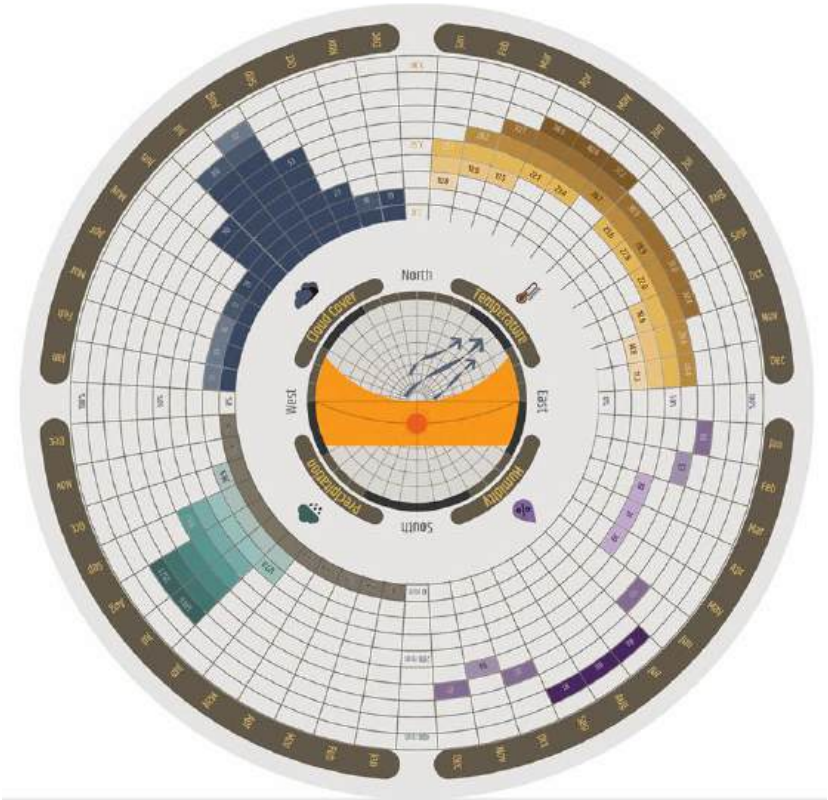


Figure 45 climatic chart

- **Temperature:**
  Bhopal experiences high summer temperatures ranging from 35°C to 45°C (April–June), and winter temperatures ranging between 10°C to 25°C (November–February). Transitional months like March and October offer moderate weather conditions.

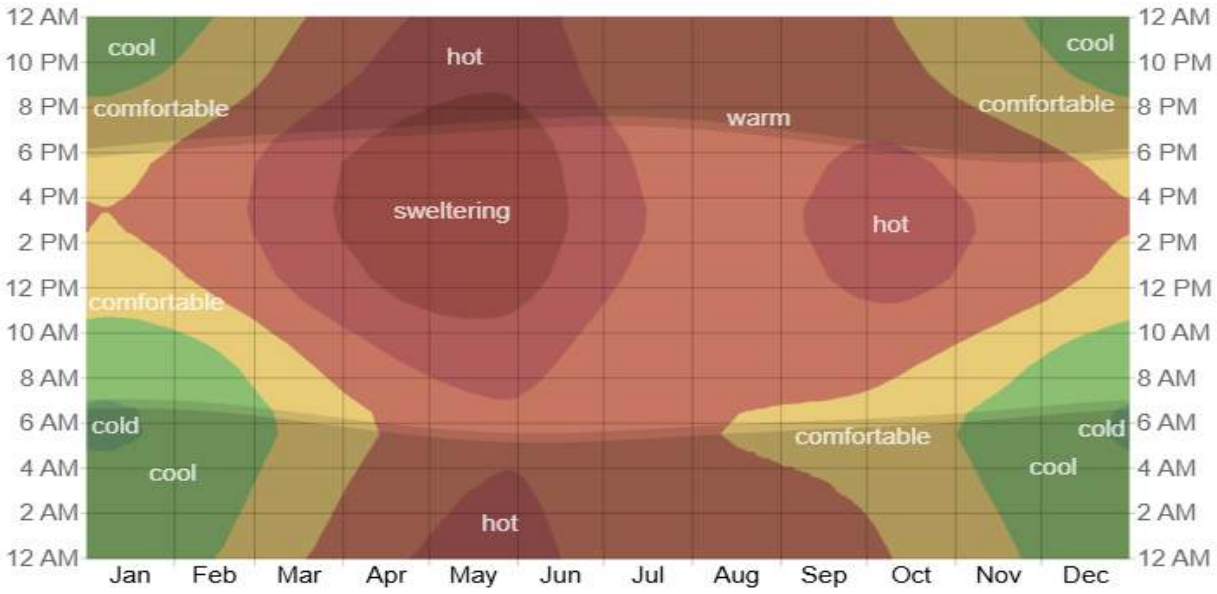
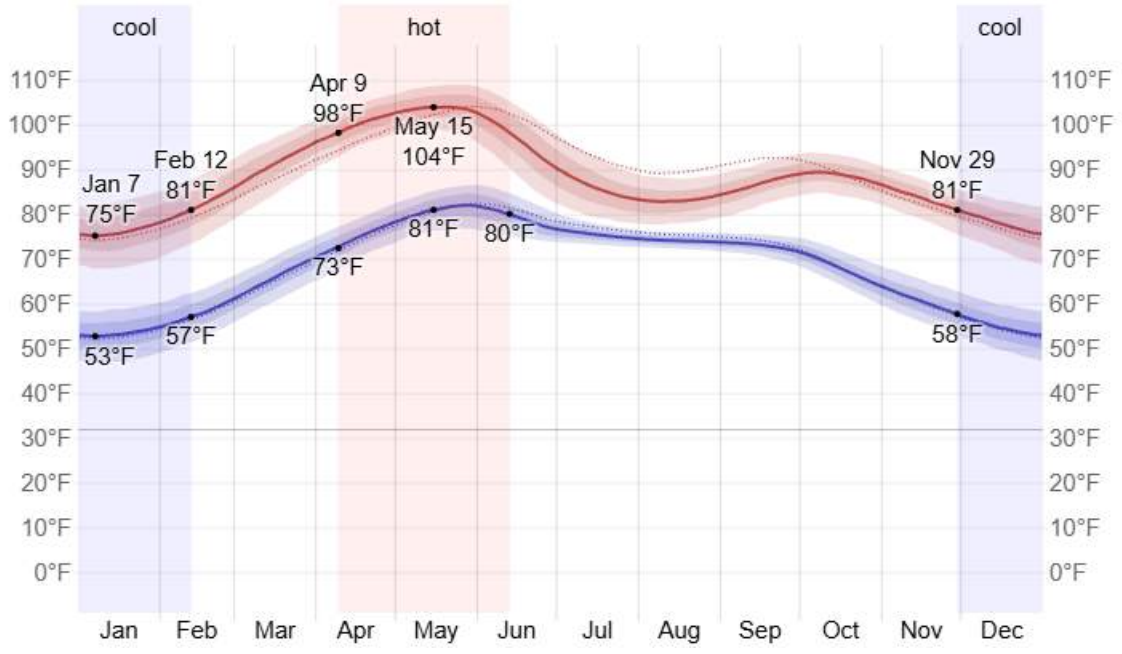


Figure 47 isopleth temperature chart



Average	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High	76°F	82°F	92°F	100°F	104°F	97°F	86°F	83°F	87°F	89°F	84°F	78°F
Temp.	64°F	70°F	79°F	88°F	93°F	88°F	80°F	78°F	80°F	78°F	72°F	66°F
Low	54°F	58°F	66°F	75°F	81°F	79°F	76°F	74°F	73°F	68°F	60°F	55°F

- **Rainfall:**
  The site receives substantial rainfall during the monsoon season (June to September), with an average annual precipitation of around 1200–1300 mm. Proper drainage planning and weather-resistant materials will be essential.

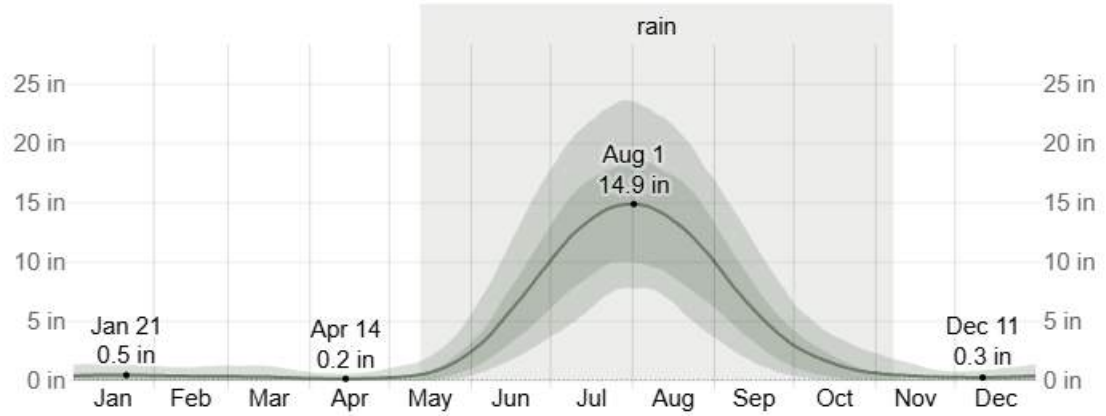


Figure 48 Rainfall chart

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall	0.5″	0.4″	0.3″	0.2″	0.7″	5.8″	13.6″	13.5″	6.1″	1.4″	0.4″	0.3″

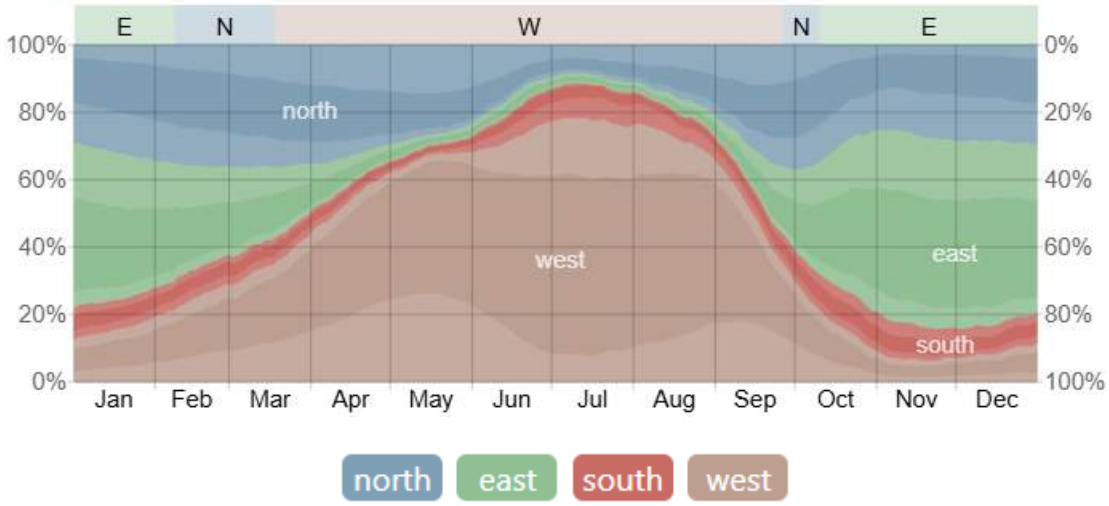
- **Humidity:**
  Humidity levels are relatively high during the monsoon and moderate throughout the year, influencing material selection, ventilation, and façade treatment.



Figure 49 Humidity chart

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Muggy days	0.2d	0.2d	0.3d	0.3d	4.7d	21.2d	30.4d	30.9d	26.1d	8.8d	1.5d	0.3d

- **Wind Patterns:**
  Predominant wind direction is from the southwest during the monsoon, and north/northeast in winter. Site orientation and openings can be optimized to facilitate natural ventilation.



- Annual Average: Winds in Bhopal predominantly blew from the west to southwest, with speeds around 11.8 km/h on average.
- Seasonal Variations (2024):
  - Winter (Jan–Feb): Primarily north / north-west winds.
  - Pre-Monsoon (Mar–May): Shift toward north-west in March, transitioning to south-west by April–May.
  - Monsoon (Jun–Aug): Winds brought moist air predominantly from the west to south-west
  - Post-Monsoon (Sep–Dec): A return to north-west and north directions

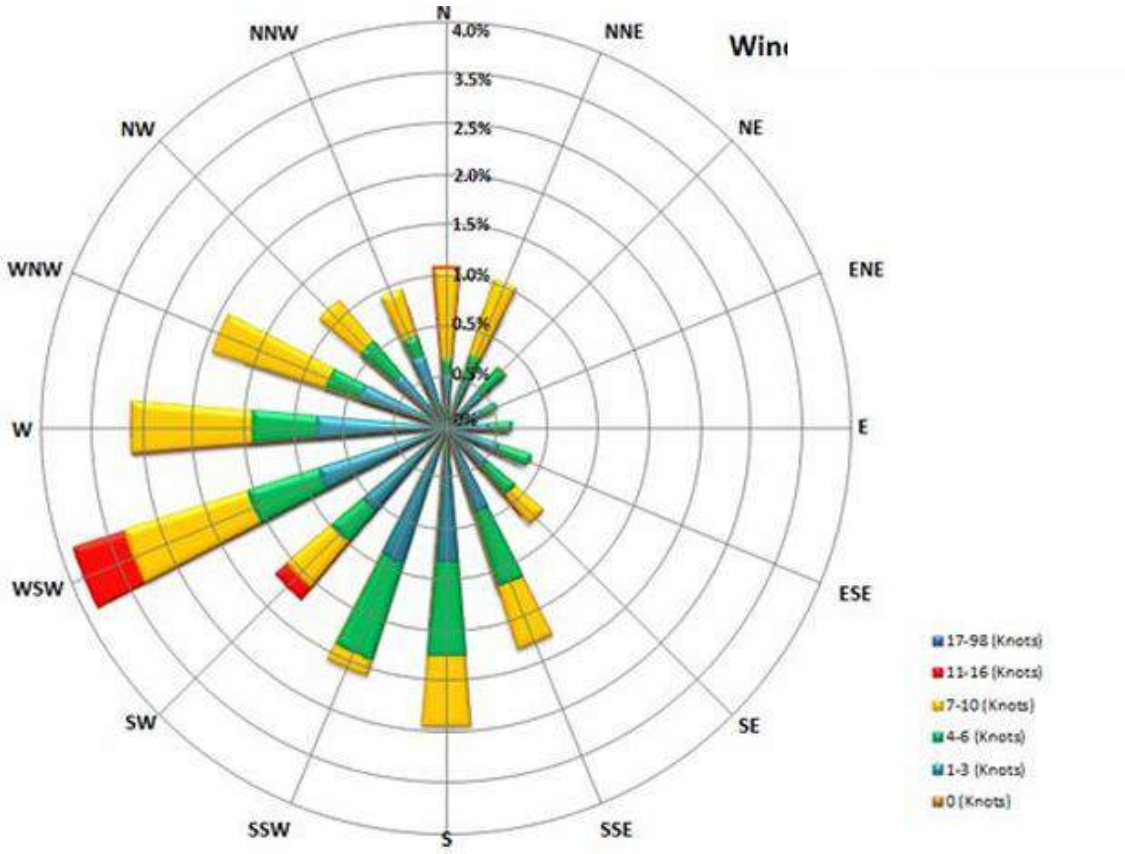


Figure 50 Wind direction of Bhopal

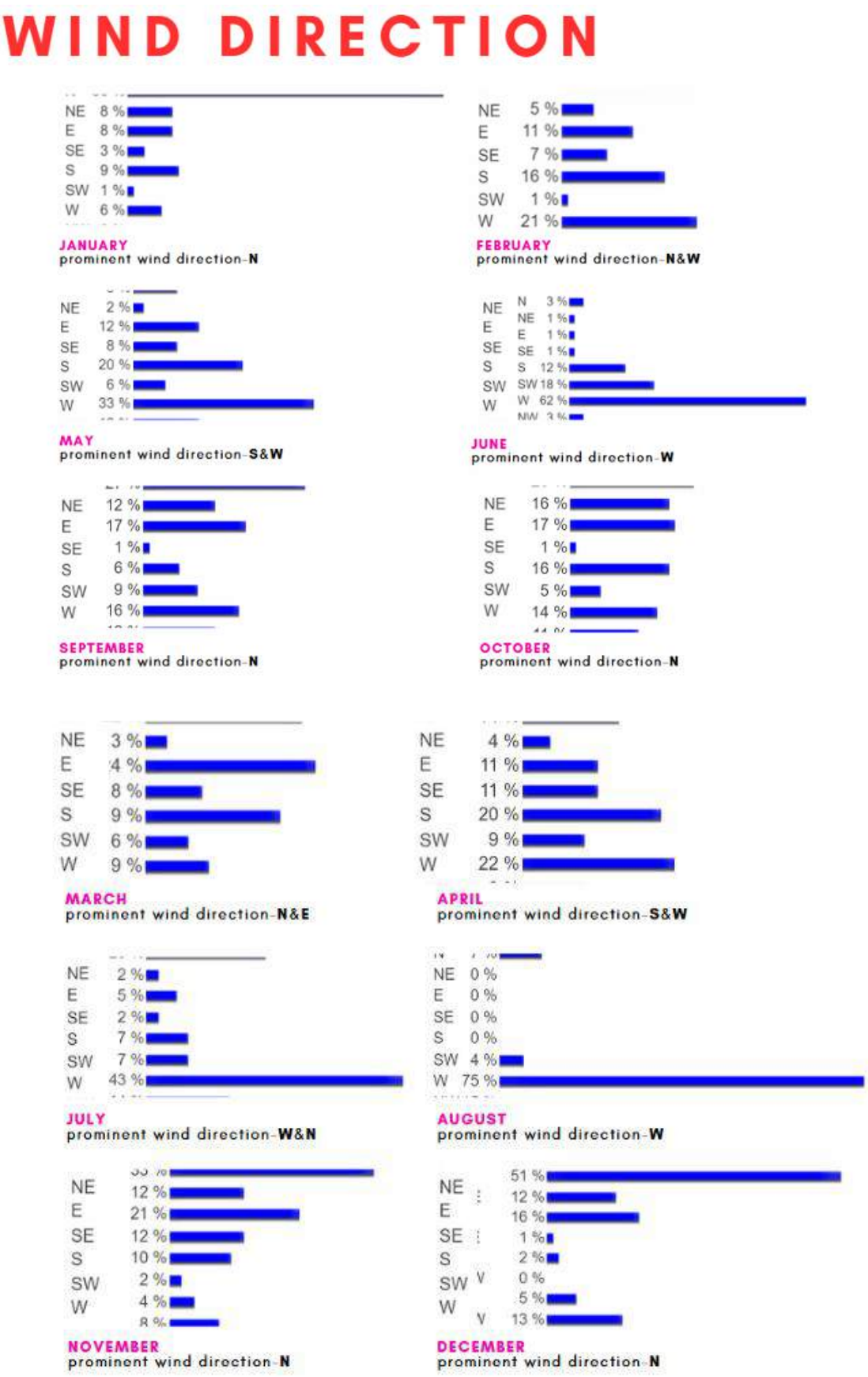


Figure 51 mothwise wind direction of Bhopal

Inferences – Summer Winds (Bhopal)

- Predominantly blow from the southwest (June to August – monsoon season).
- Winds are moist and strong, bringing heavy rainfall and humidity.
- Can be used for natural ventilation and passive cooling when captured effectively.
- Openings and windows should be oriented to maximize airflow from the southwest.
- Landscape planning can include windbreaks or porous barriers to control wind force.
- Structures should be designed with waterproofing and drainage solutions to manage moisture from wind-driven rain.

Inferences – Winter Winds (Bhopal)

- Blow mainly from the north and northwest (November to February).
- These winds are cool and dry, reducing overall humidity.
- North-facing openings may cause heat loss and cold drafts, so should be minimized or well-insulated.
- Landscaping or built buffers can be used to shield cold winter winds.
- Winter winds offer limited ventilation benefits but can be managed for thermal comfort with proper orientation and material use.

Understanding seasonal wind patterns in Bhopal supports the design of ventilation strategies, façade treatments, and landscape planning to enhance comfort and energy efficiency year-round.

- **Precipitation:**
  The site at Shyamla Hills, Bhopal, lies in a composite climate zone with hot summers, mild winters, and a pronounced monsoon season. It receives significant annual rainfall (approx. 1200–1300 mm) during June to September.

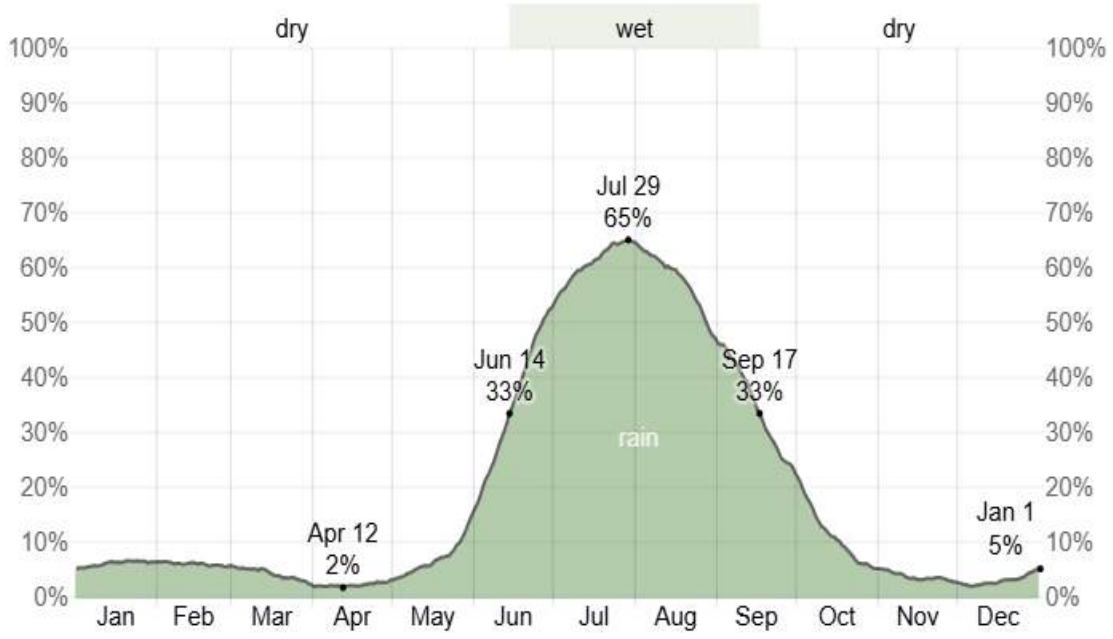


Figure 52 precipitation

- **Sun path diagram:**

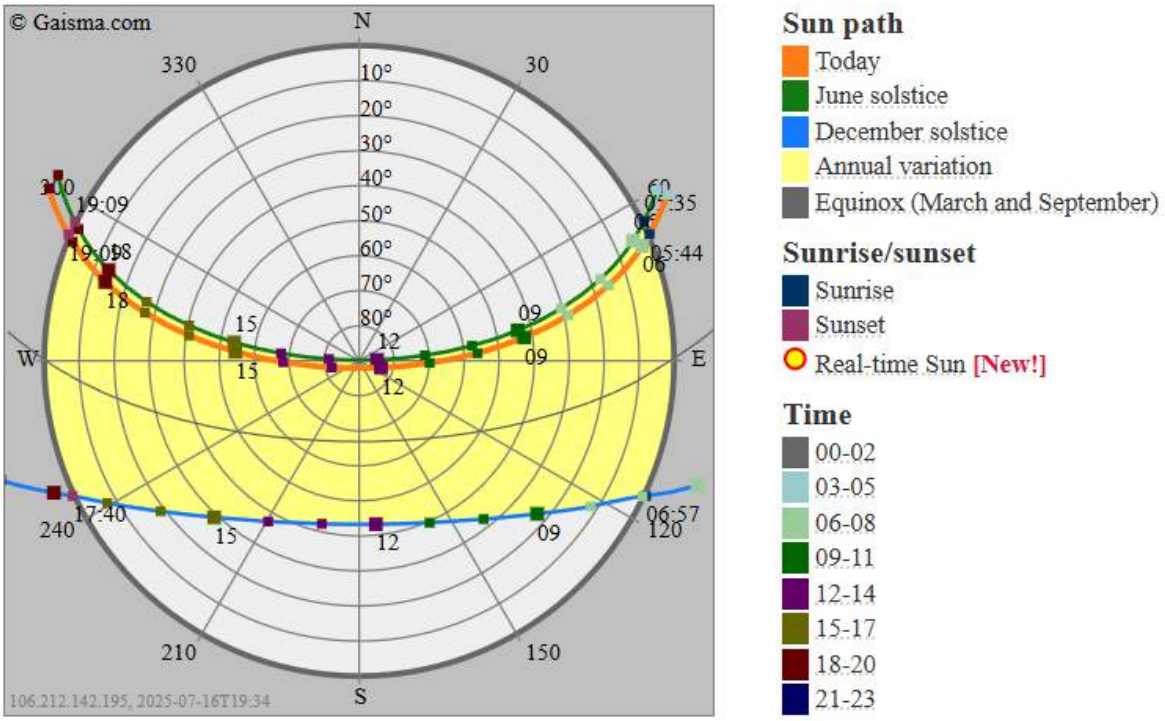
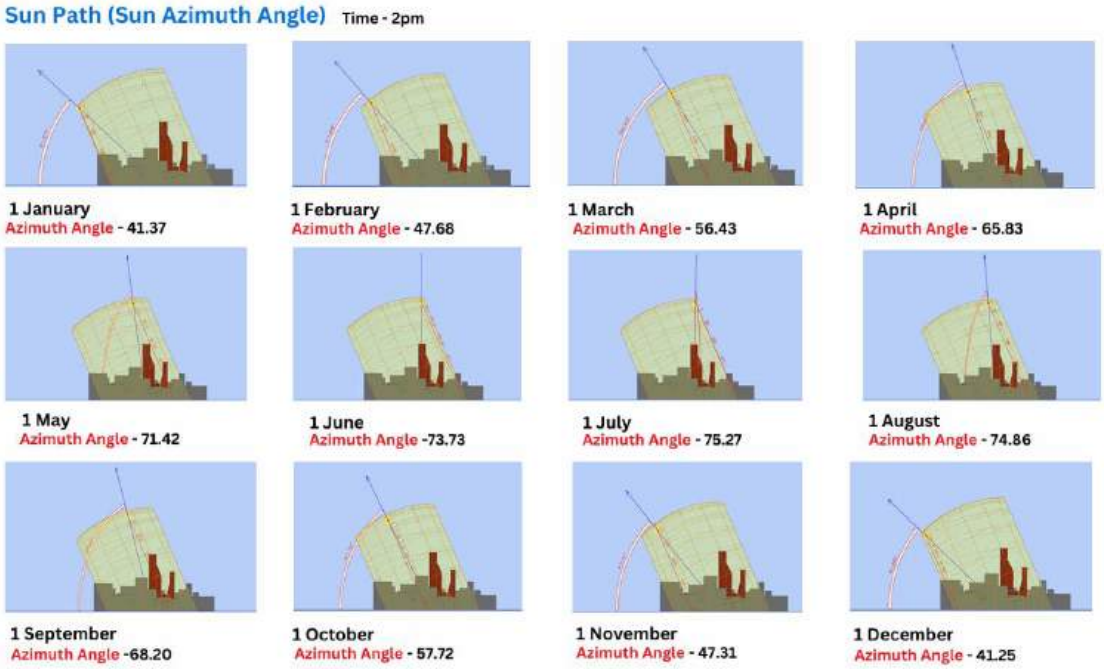


Figure 53 sun path diagram

Bhopal, located at Latitude 23.24°N, experiences significant variations in solar angles throughout the year due to its position in the tropical zone. The sun rises in the northeast and sets in the northwest during summers, while in winter, it rises in the southeast and sets in the southwest. The sun remains high in the sky during summer months, resulting in strong overhead solar radiation, whereas in winters, the sun path is lower and more angled. This sun path analysis is crucial for the orientation of building blocks, designing shaded façades, optimizing daylighting, and reducing heat gain. It supports the use of north-south orientation for rooms and public areas, with strategic shading on the east and west to minimize glare and overheating, especially for guest-facing spaces.



Inferences – Summer Sun (Bhopal)

- Sun rises in the northeast and sets in the northwest.
- Sun path is high and almost overhead, especially at noon.
- Leads to increased heat gain on roofs and upper façades.
- Horizontal shading devices (overhangs, pergolas) are most effective.
- South-facing walls need sun protection during midday hours.
- Use of reflective materials and roof insulation is recommended.

Inferences – Winter Sun (Bhopal)

- Sun rises in the southeast and sets in the southwest.
- Sun remains at a low angle throughout the day.
- Allows deeper penetration of sunlight into interior spaces.
- Ideal for passive solar heating, especially in south-facing rooms.
- Larger south-facing openings can be used to maximize daylight and warmth.
- Minimal shading is required; design can embrace sunlight for comfort.

These sun path inferences support climate-responsive design strategies for energy efficiency, occupant comfort, and optimal building orientation in Bhopal.

3.4.1 CLIMATIC INFERENCES

Parameter	Characteristics (Bhopal)	Impact on Design
Summer	Very hot (up to 45°C), high solar radiation	Heat protection, solar control needed
Winter	Mild (as low as 10°C), dry winds	Opportunity for passive solar heating
Monsoon	Heavy rainfall (1200–1300 mm/year)	Rainwater management, waterproofing
Sun Path	High in summer, low in winter (SE to NW shift)	Dynamic shading required
Wind Direction	SW in summer/monsoon, NW in winter	Wind-responsive design beneficial

Table 26 climatic inference table

DESIGN INFERENCES FOR A MODERN VERTICAL 5-STAR HOTEL IN BHOPAL-

1. Orientation & Massing

- Longer façades should face north and south to minimize solar gain from east and west.
- Orient guest rooms and lounges to face Upper Lake (northwest) for views and cooler microclimate.
- Use staggered massing or stepped forms to allow shaded terraces and airflow at various levels.
- Vertical zoning: place heat-generating services (kitchens, HVAC rooms) on the shaded/utility side.

2. Façade Design & Shading

- South façades: Use horizontal overhangs, louvers, or pergolas to block high summer sun.
- East and west façades: Use vertical fins, double-skin façades, or light shelves to reduce glare and heat.
- Employ high-performance glazing (low-E, double-glazed) to control heat gain while maximizing daylight.
- Include dynamic façades or smart louvers to adapt to seasonal changes.

3. Natural Ventilation & Wind Use

- Capture southwest monsoon winds using operable windows, cross-ventilation corridors, and ventilation shafts.
- Minimize north-facing openings in winter to reduce heat loss from cold winds.
- Design central atrium, ventilation courts, or sky gardens at upper levels to enhance vertical airflow and act as thermal buffers.
- Integrate ventilated double walls in guestroom zones for passive cooling.

4. Thermal Mass & Insulation

- Use high thermal mass materials (RCC, brick) for core walls to absorb heat during the day and release it at night.
- Add thermal insulation layers to roofs and external walls to control indoor temperature variation.
- Use green roofs or cool roofs with high SRI (solar reflectance index) to reduce heat absorption at the top levels.

5. Water Management & Monsoon Response

- Design sloped roofs and balconies with concealed rainwater drains.
- Use permeable paving and stormwater detention tanks in landscaping to handle intense rainfall.
- Harvest rainwater from vertical surfaces and rooftop for reuse in landscaping and HVAC.

COOLING STRATEGIES FOR COMPOSITE CLIMATE (BHOPAL)-

Passive Cooling Techniques:

- Shading Devices: Pergolas, brise-soleil, balconies, recessed windows.
- Cross Ventilation: Narrow floorplates, aligned windows, central courtyards.
- Evaporative Cooling: Water bodies, misting near entrances, fountains in open areas.
- Green Buffers: Vertical green walls, shaded landscaping, and trees along western edge.

Active Cooling Strategies (Modern Systems):

- HVAC Zoning: Divide building by use and orientation for efficient cooling.
- Variable Refrigerant Flow (VRF) Systems: Energy-efficient and ideal for buildings with varied usage.
- Geothermal Cooling (if feasible): Using constant underground temperature for HVAC

efficiency.

- Chilled Beams or Radiant Cooling: Reduce air movement, ideal for luxury guest spaces.
- Building Management System (BMS): Automates air conditioning, blinds, lighting based on occupancy and temperature.

Sustainability & Energy Optimization Suggestions-

- Integrate solar panels on rooftops and canopies for hot water and partial energy generation.
- Use BEE 5-star rated equipment, LED lighting, and motion sensors in corridors and back-of-house areas.
- Apply for LEED/GRIHA certification by focusing on climate-responsive envelope design and water efficiency.
- Integrate biophilic design – interior courtyards, indoor plants, and lake-facing shaded verandahs to reduce heat stress and enhance wellness.

3.5 NEIGHBORHOOD CONTEXT

IMMEDIATE NEIGHBORHOOD LANDMARKS (WITHIN 1–2 KM RADIUS):

- Jehan Numa Palace Hotel – heritage 5-star hotel (adjacent, ~100 m)
- Upper Lake (Bhojtal) – scenic lakefront (~200 m west)
- Van Vihar National Park – protected green buffer (~700 m southwest)
- State Tribal Museum – cultural institution (~500 m south)
- Manav Sangrahalaya (Indira Gandhi Rastriya Manav Sangrahalaya) – open-air anthropological museum (~850 m south)
- Birla Museum & Temple (Lakshmi Narayan Temple) – historical + spiritual site (~1.5 km east)
- Bharat Bhawan – multi-arts complex (~1.3 km southeast)



Figure 60 Jehan Numa palace



Figure 59 upper lake



Figure 58 Van vihar

Figure 57 Site



Figure 55 Tribal Museum



Figure 56 Manav sangrahalay



Figure 54 Birla Mandir

NEARBY INSTITUTIONS AND AREAS (2–5 KM RADIUS):

- Ravindra Bhavan – government auditorium (~2.2 km)
- Sadar Manzil & Gauhar Mahal – historical palaces (~3.5 km)
- MP Tourism Boat Club – leisure activity zone (~1 km)
- Taj-ul-Masajid – one of India's largest mosques (~3.8 km)
- New Market Area – main commercial hub (~3.5 km)
- Bhopal Railway Station (Bhopal Jn.) – ~5.2 km
- Raja Bhoj Airport – ~13.5 km via VIP Road



Figure 63 Ravindra Bhawan



Figure 61 Gauhar Mahal



Figure 62 Boat club



Figure 66 Taj ul masjid



Figure 65 New market



Figure 64 Bhopal junction

3.5.1 ARCHITECTURE FEATURES OF BHOPAL

- **Heritage Fusion:** Bhopal architecture blends Indo-Islamic, Mughal, and colonial influences seen in elements like domes, arches, jharokhas, and chhatris. These can inspire façade articulation or interior themes in a modern hotel context.







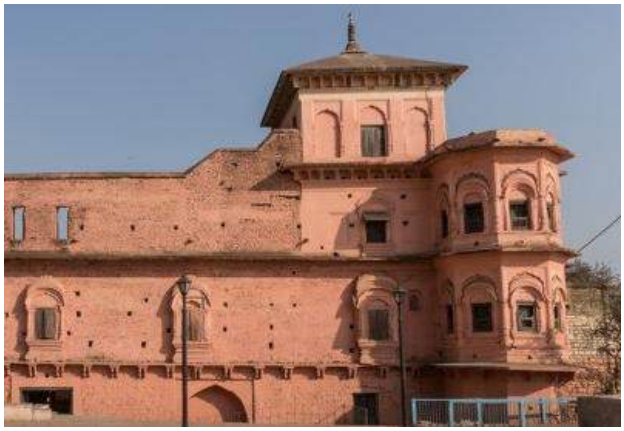
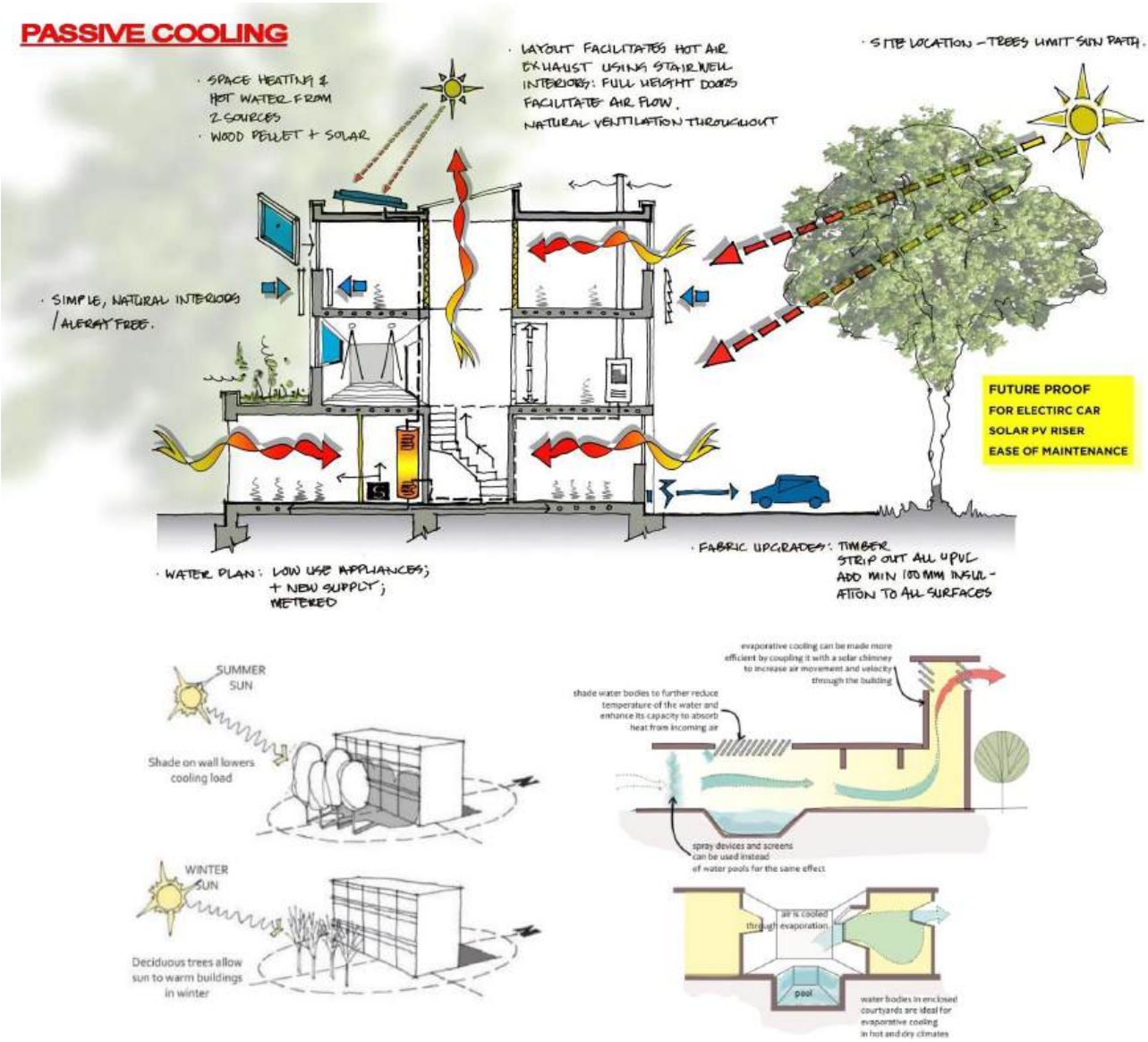
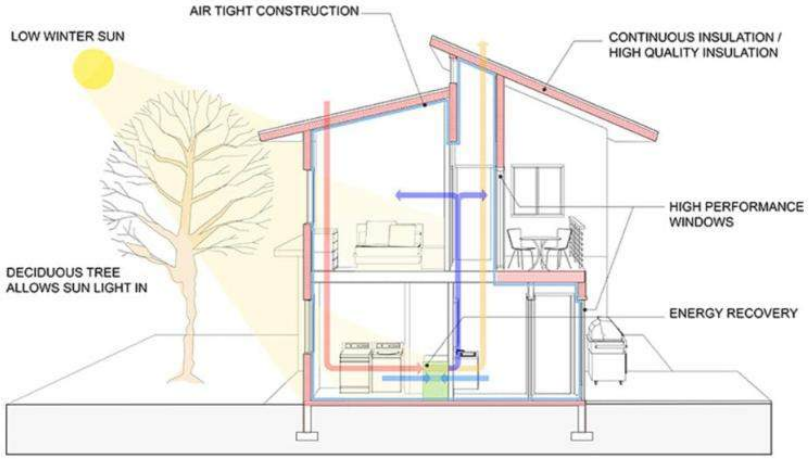


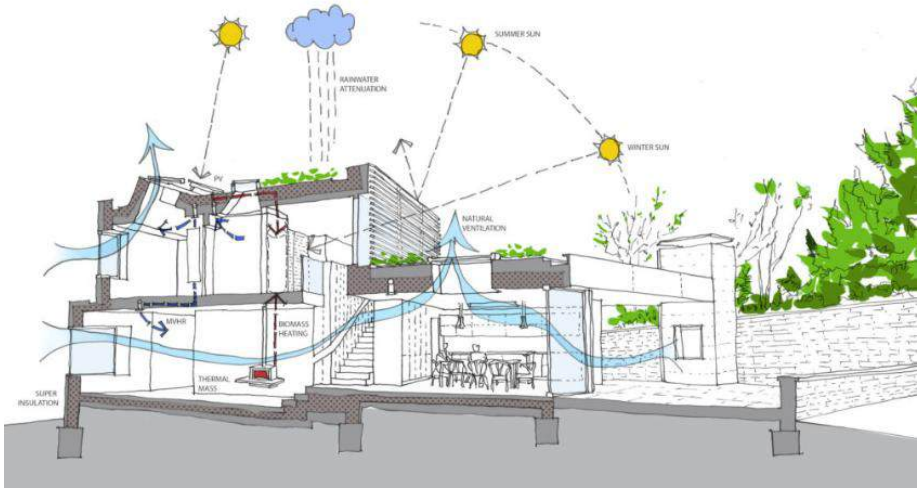
Figure 67 Heritage elements of Bhopal

- **Climate-Responsive Design:** Traditional features like courtyards, jaalis, deep verandahs, and thick stone walls promote passive cooling, essential for Bhopal's hot climate. These can be reinterpreted with modern materials and technologies.





PASSIVE HOUSE WINTER DIAGRAM



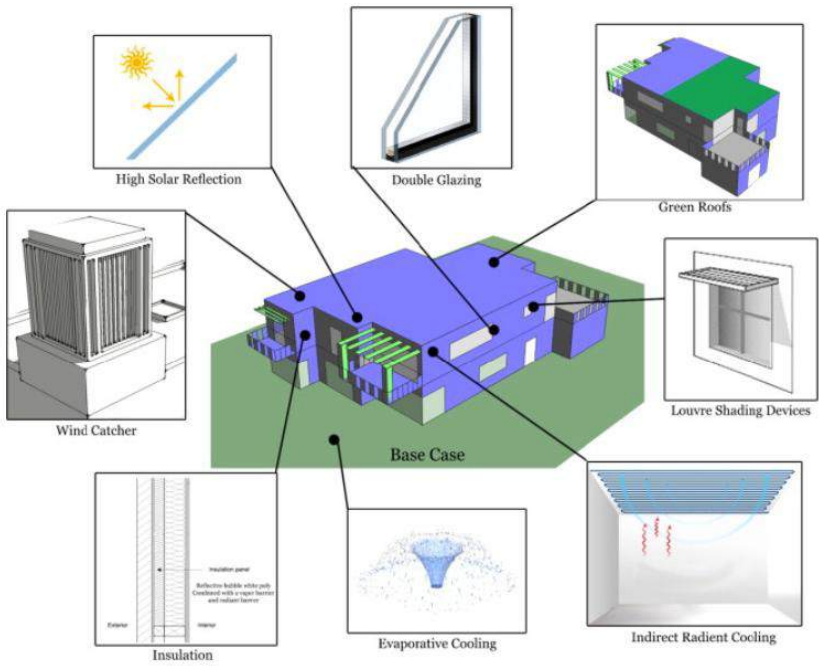


Figure 68 Passive cooling techniques

- **Local Materials:** Use of red sandstone, lime plaster, handmade bricks, and exposed stonework reflects the regional identity and promotes sustainability. These can be paired with glass and steel for a balanced modern aesthetic.




Figure 69 local materials

- **Cultural Integration:** Tribal art (Gond, Bhil), local crafts, and water features are integral to Bhopal's identity. Incorporating these in interiors, landscaping, and public areas adds cultural depth to the guest experience.






Figure 70 nature and cultural integration

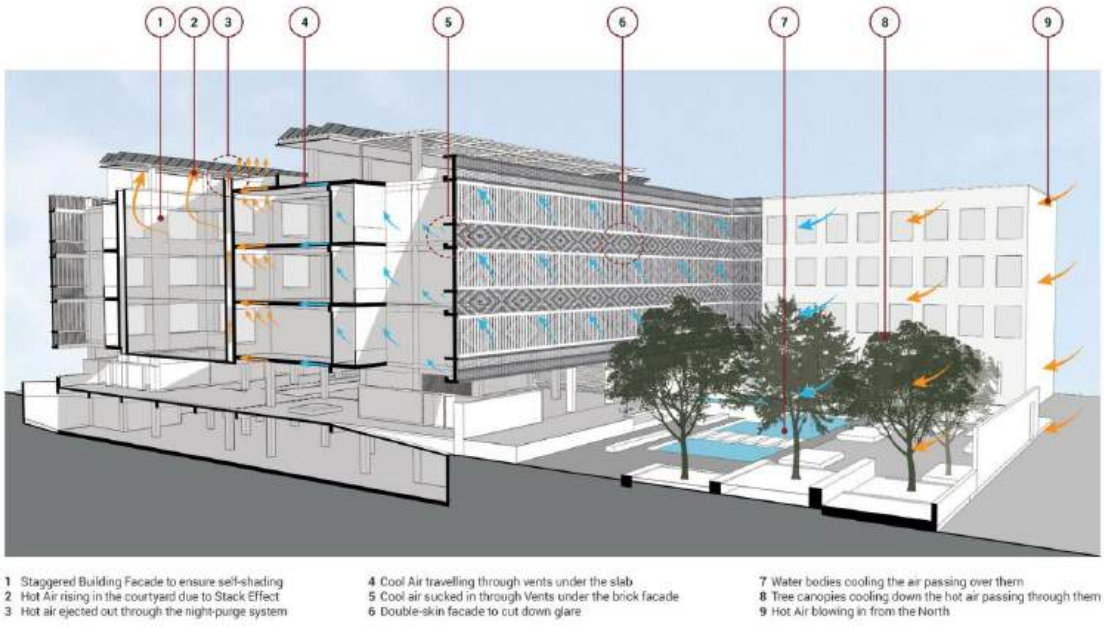
- **Natural Context:** The site's proximity to Upper Lake and Van Vihar calls for lake-facing terraces, stepped massing, and framed views to blend the built form with Bhopal's natural beauty.



Figure 71 upper lake (water body)

- **Modern Luxury Blend:** Grand arrival zones, sky lounges, vertical gardens, and smart facades can bring in 5-star functionality while respecting Bhopal's architectural roots.





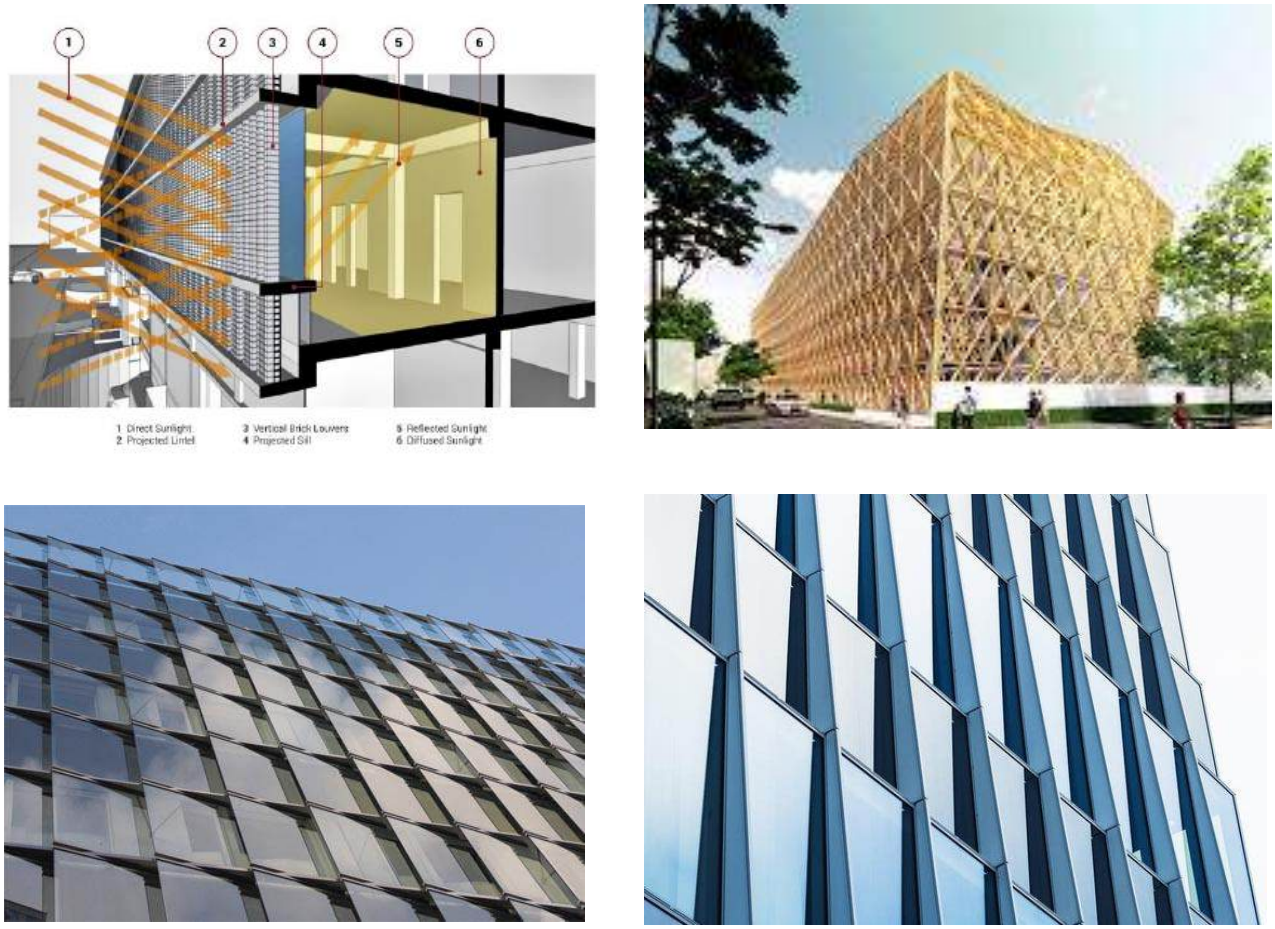


Figure 72 energy efficient facade design

3.5.2 LANDSCAPE AND TOPOGRAPHY

The site is located in the scenic and historically significant Shyamla Hills area of Bhopal, characterized by a gently undulating terrain with natural slopes. It is positioned adjacent to the Upper Lake, offering panoramic views of the water body and surrounding greenery. The topography slopes slightly towards the lake, aiding in natural drainage and offering opportunities for stepped or terraced building design.
The landscape around the site is lush, with dense tree cover, natural rock formations, and existing vegetation that can be preserved and integrated into the design to maintain ecological sensitivity. The site benefits from a tranquil, green environment, ideal for creating outdoor leisure areas, courtyards, and terraces that embrace the natural surroundings.
Its elevated position relative to parts of the city provides visual connectivity to major landmarks while ensuring privacy and serenity, which are key features for a luxury 5-star hotel setting.

TOPOGRAPHY

1. **Undulating Terrain**

- The site is part of the Shyamla Hills, meaning the land has gentle natural slopes rather than being completely flat.
- This undulation offers design opportunities for split-level planning, stepped terraces, or contour-based landscaping.

2. **Elevated Landform**
- Located on higher ground compared to the surrounding city areas, especially on the side facing Upper Lake.
- This elevation provides unobstructed views of the lake and surrounding greenery—ideal for placing guest rooms, lounges, or restaurants with scenic vistas.

3. **Sloping Towards the Lake**
- The natural gradient of the site gently slopes down westward toward Upper Lake, aiding in gravity-based drainage and landscape zoning.

4. **Rocky Subsoil in Pockets**
- Some portions of Shyamla Hills feature exposed rocky strata, which could impact foundation design and offer aesthetic rock garden possibilities if retained.

5. **Natural Vegetation and Trees**
- The site and its edges have mature trees and green cover, giving it a naturally shaded microclimate, crucial for passive cooling and creating a luxury resort-like experience.

VEGETATION

Shyamla Hills is among the most ecologically significant and greenest areas in Bhopal, known for its diverse flora and serene natural setting. The area offers a rich blend of native vegetation, ornamental landscaping, and urban forest patches, making it ideal for a hospitality project that aspires to integrate nature into its design.

1. Native Tree Species

The region supports a variety of tropical dry deciduous species that thrive in Bhopal's semi-arid climate. These include:

- Neem (Azadirachta indica): A hardy, drought-resistant tree known for its medicinal value and dense canopy.
- Peepal (Ficus religiosa): A large sacred fig tree that provides ample shade and attracts birds.
- Banyan (Ficus benghalensis): A spreading tree with aerial roots, often forming natural canopies.
- Jamun (Syzygium cumini): A fruit-bearing tree with high ecological and economic value.
- Babool (Acacia nilotica): Common in dry regions, known for its soil-enriching properties.



Figure 73 Native trees

2. Ornamental and Landscape Vegetation

In and around the Shyamla Hills region, planned urban planting complements the native vegetation, especially along roads and near institutions and hotels. Commonly found species include:

- Ashoka (Polyalthia longifolia): Tall and columnar, often used for visual screening.
- Gulmohar (Delonix regia): Known for its bright red-orange flowers and broad canopy.
- Amaltas (Cassia fistula): Produces vibrant yellow blooms during summer.
- Bougainvillea: Drought-tolerant climber used for fencing and decorative purposes.

These species add aesthetic value, seasonal variation, and color to the streetscape.



Figure 74Ornamental vegetation

3. Ground Vegetation and Shrubs

The understorey includes a mix of grasses, flowering shrubs, and native bushes, which support soil stability, biodiversity, and pollinators:

- Lantana camara (wildflower shrub)
- Plumbago, Hibiscus, Ixora, and Duranta
- Native grasses and medicinal herbs

These provide soft landscaping elements that are easy to maintain and drought-tolerant.



Figure 75 Shrubs

4. Ecological Influence from Van Vihar and Upper Lake

Located near Van Vihar National Park and Upper Lake, your site benefits from the surrounding green zones that maintain urban biodiversity. Migratory birds, butterflies, and small mammals frequent the area, creating a peaceful, natural ambiance that can be enhanced through sensitive landscape planning.

5. Design Implication

- The rich vegetation palette supports:
- Biophilic design
- Natural shading
- Rainwater percolation
- Landscape buffers and privacy screens
- Cooling of outdoor areas through evapotranspiration

INFERENCES

1. Climatic Response

- Orientation: Align major built masses along the north-south axis to reduce direct solar gain.
- Facade Treatment: Use double-skin façades, vertical fins, deep overhangs, and louvers on east and west faces to minimize glare and heat.
- Natural Ventilation: Design for cross ventilation using operable windows, atriums, and central courtyards, considering prevailing summer southwest winds.
- Shading: Incorporate pergolas, verandahs, jalis, and green buffers for shaded outdoor seating and circulation areas.

2. Cooling Strategies

- Use passive cooling techniques: evaporative cooling through water features, shaded terraces, green roofs, and reflective materials.
- Install high-albedo roofs and insulated walls to reduce heat gain.
- Integrate indoor plants, ventilated double-height lobbies, and sky gardens for biophilic cooling.
- Employ energy-efficient HVAC systems, preferably with zonal controls and sensor-based automation.

3. Landscape Integration

- Preserve existing trees and plan around mature vegetation.
- Create tiered green terraces to blend built form with the natural slope.
- Introduce view decks and infinity-edge pools facing the Upper Lake.
- Use local and drought-resistant plants to reduce water use and maintain regional character.

4. Site Context & Circulation

- Leverage the site's 24m-wide Jehan Numa Palace Road for primary access.
- Create dedicated drop-off zones for VIPs and events near main entrances.
- Ensure separate service and staff entry from a secondary internal road.
- Design basement or podium parking to optimize land use and maintain landscape continuity.

5. Architectural Identity

- Blend modern design language (glass, steel, concrete) with contextual elements like stone cladding, lattice screens, and warm tones to resonate with Bhopal’s cultural identity.
- Take cues from Bhopal's regal and natural setting — use symmetrical layouts, water courts, and colonnaded paths subtly inspired by palatial and museum architecture nearby.

6. Functional Zoning

- Allocate lower floors for public zones – reception, restaurants, banquets, and spas.
- Position guest rooms and suites on higher floors with lake views.
- Design sky lounges, rooftop dining, or wellness decks to utilize panoramic surroundings.
- Ensure discreet service circulation through back corridors and vertical cores.

7. Sustainability and Technology

- Aim for green building certifications (e.g., GRIHA, IGBC, LEED).
- Integrate solar panels, greywater recycling, rainwater harvesting, and smart energy systems.
- Use automated lighting, BMS (Building Management System), and intelligent room controls for comfort and efficiency.

3.5.3 NOISE AND SENSORY NEAR MY SITE

1. Visual

- Panoramic views of the Upper Lake from higher ground offer a scenic and calming backdrop.
- Dense green cover and heritage architecture (like Jehan Numa Palace) add aesthetic richness.
- Movement of people, occasional tourist buses, and palace-like built forms create a visually dynamic and culturally layered environment.

2. Auditory

- The area is mostly quiet and serene, especially during mornings and late evenings.
- Sounds of birds, rustling leaves, and distant water activity from the lake dominate.
- Occasional traffic noise from Jehan Numa Palace Road and tourist activity, especially during weekends or festivals.

3. Olfactory (Smell)

- Pleasant, earthy smells from the surrounding vegetation and nearby gardens.
- Occasionally mixed with aromas from nearby restaurants in Jehan Numa Palace and open-air cafes.
- A fresh breeze from the lake sometimes carries the scent of water and algae, especially post-monsoon.

4. Tactile

- Warm and humid during summer; slightly cooler in shaded, vegetated areas.
- Surfaces like stone pavements and metal railings can get hot in summer sun.
- A refreshing breeze from the lake provides natural comfort, especially in evenings.

5. Thermal

- Site experiences strong solar radiation, especially on exposed hardscapes.
- Areas under tree canopy or near the lake are noticeably cooler.
- Design must account for thermal comfort zones using shaded outdoor lounges and cooling landscapes.

6. Noise

- Low ambient noise due to surrounding greenery and low-density development.
- Moderate vehicular noise along Jehan Numa Palace Road and VIP Road during peak hours.
- Occasional tourist noise from nearby Jehan Numa Palace and museums on weekends.
- Natural sounds like birdsong and rustling leaves enhance the peaceful ambiance.
- Temporary construction noise may occur from nearby urban development.
- Overall, the site offers a calm and serene environment, suitable for luxury hospitality

3.6 SITE VIEWS











Figure 76 MPT Lakeview residency Area



Figure 77 Bhopal express restaurant



Figure 78 Drive in theatre, Spa and swimming pool, Parking

4. CASE STUDY

4.1 CASE STUDY: TAJ HOTEL, BHOPAL

4.1.1 INTRODUCTION

As part of the thesis on luxury hospitality design, Taj Lakefront, Bhopal has been selected as a case study due to its strategic location, thoughtful architecture, and adherence to 5-star standards. Situated on VIP Road in Shyamla Hills, the hotel overlooks the tranquil Upper Lake, offering an excellent example of how a luxury hotel can harmonize with its natural surroundings, urban context, and cultural identity. Operated by the Indian Hotels Company Limited (IHCL), the hotel exemplifies a balance between aesthetic elegance, functionality, and sustainability.

The case study focuses on understanding the hotel's site planning, spatial organization, design language, services, circulation, and guest experience, all of which align with the goals of the proposed thesis project. Through this analysis, the study aims to extract relevant architectural inferences and strategies that can inform the design of a modern, context-sensitive 5-star hotel in Bhopal.





Figure 79 Taj Hotel, Bhopal

DETAILS-

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

4.1.2 LOCATION

Taj Lakefront Hotel is located on the prominent VIP Road in Shyamla Hills, Bhopal, Madhya Pradesh. The site enjoys a prime position overlooking the expansive Upper Lake, offering panoramic views and a serene natural setting. It is well-connected to major city landmarks such as the Jehan Numa Palace, Van Vihar National Park, Birla Temple, and Manav Sangrahalaya. The location lies within close proximity to the city center making it easily accessible for both domestic and international travelers. The surrounding area is a blend of government institutions, heritage zones, and green spaces, making the site highly suitable for a luxury hospitality destination.

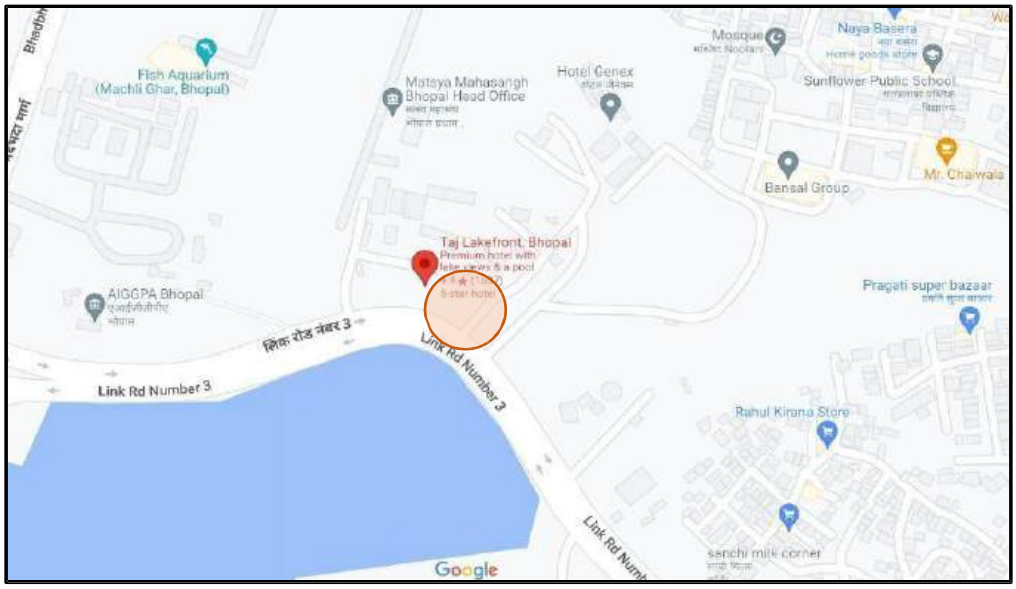


Figure 80 Location on google maps

4.1.3 SITE BOUNDARIES



Figure 81 Site boundaries

4.1.4 SITE CHARACTERISTICS

- Located on VIP Road, Shyamla Hills – a prestigious, scenic area.
- Offers panoramic views of Upper Lake.
- Gentle sloping topography enables terraced design.
- Well-connected to airport (12 km) and railway station (8 km).
- Surrounded by landmarks like Van Vihar, Jehan Numa Palace, and museums.
- Low noise levels, ideal for a luxury stay.
- Benefits from natural ventilation and south-west winds.
- Situated in a secure and clean government-regulated zone.

SITE AND BUILDING CHARACTERISTIC

- 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 landscape by 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.

4.1.5 FACILITIES

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

4.1.6 APPROACHING 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 82 Approaching Road

4.1.7 VERTICAL ZONING

ROOF TOP	
10TH FLR	INFINITY POOL, CLUB, LOUNGE, BAR, KITCHEN
9TH FLR	20 GUEST ROOMS
8TH FLR	15 GUEST ROOMS INCLUDING PRESIDENTIAL SUITES
7TH FLR	22 GUEST ROOMS
6TH FLR	24 GUEST ROOMS
5TH FLR	23 GUEST ROOMS
4TH FLR	24 GUEST ROOMS
3RD FLR	24 GUEST ROOMS
SECOND FLR	RESTAURANT, KITCHEN, SPA, SALOON, GYM,
FIRST FLR	BAR, RESTAURANT, KITCHEN, AHU, OFFCIES
GROUND FLR	LOBBY, RECEPTION, BANQUET, BALL ROOM, KITCHEN, GREEN AREA, MEETING ROOM, RETAIL
BASEMENT B1	PARKING, ELE., LOCKER, FURNITURE ROOM, LAUNDARY, GARBAGR, KITCHEN, OFFICES
BASEMENT B2	PARKING, STP, ETP, PUMP ROOM

4.1.8 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

Table 27 Area statement 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

Table 28 Area statement 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

Table 29 Area statement 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**				

Table 30 Area statement 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**	

Table 31 Area statement 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	

Table 32 Area statement 6

4.1.9 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.

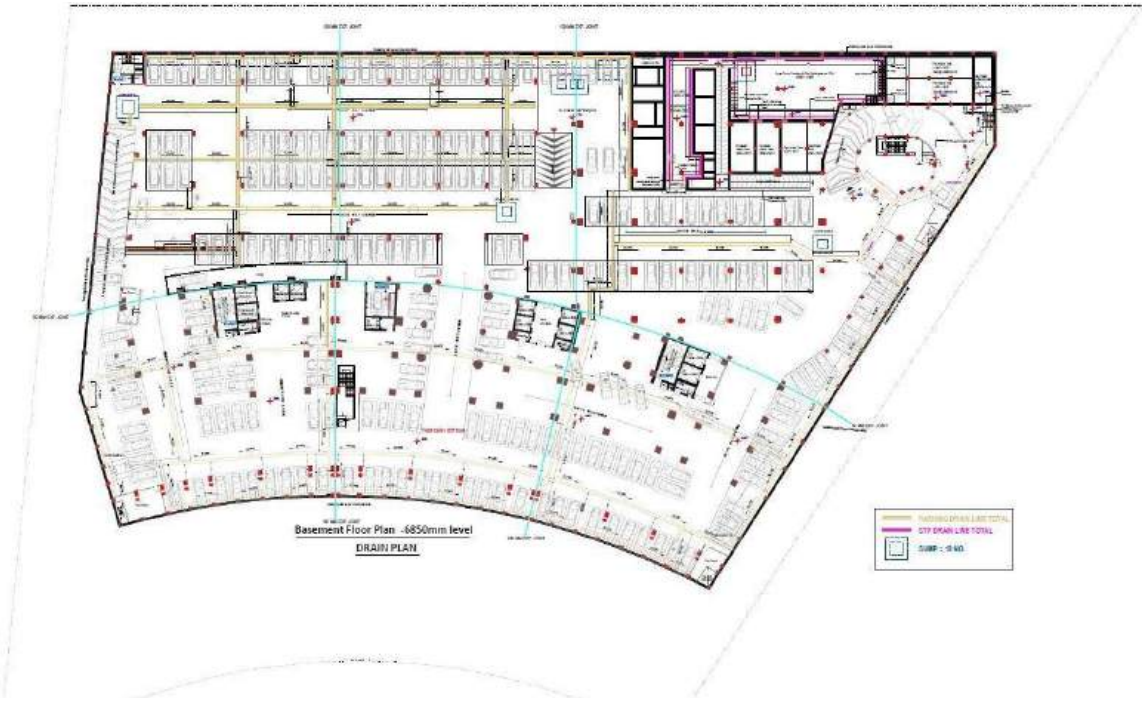


Figure 83 Basement 2 plan

Raw Water tank Capacity: 90 KL & 125 KL

Domestic Water tank Capicity:118 KL & 123 KL

Fire Water tank Capacity:_1. 200 KL, 2. 200 KL

WTP Process: Raw Water → Sand Filter_ → Activated Carbon → Hyper Filtration →

Kitchen/ Boilers





Figure 84 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

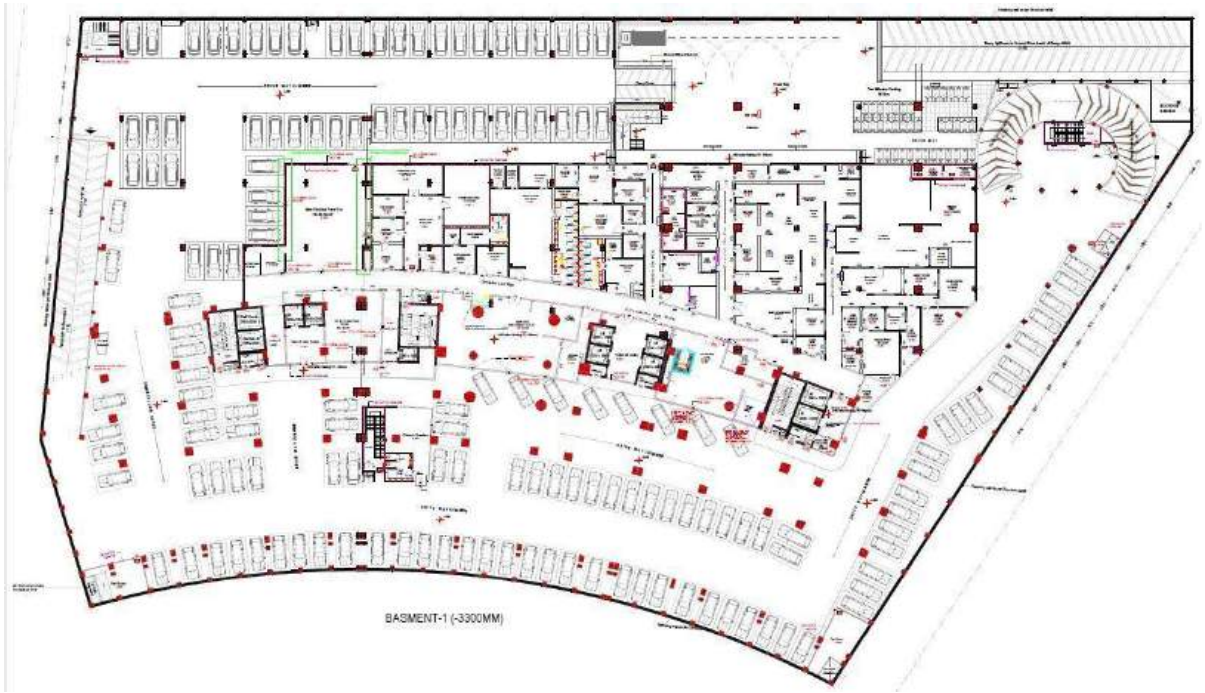


Figure 85 Basement 1 plan

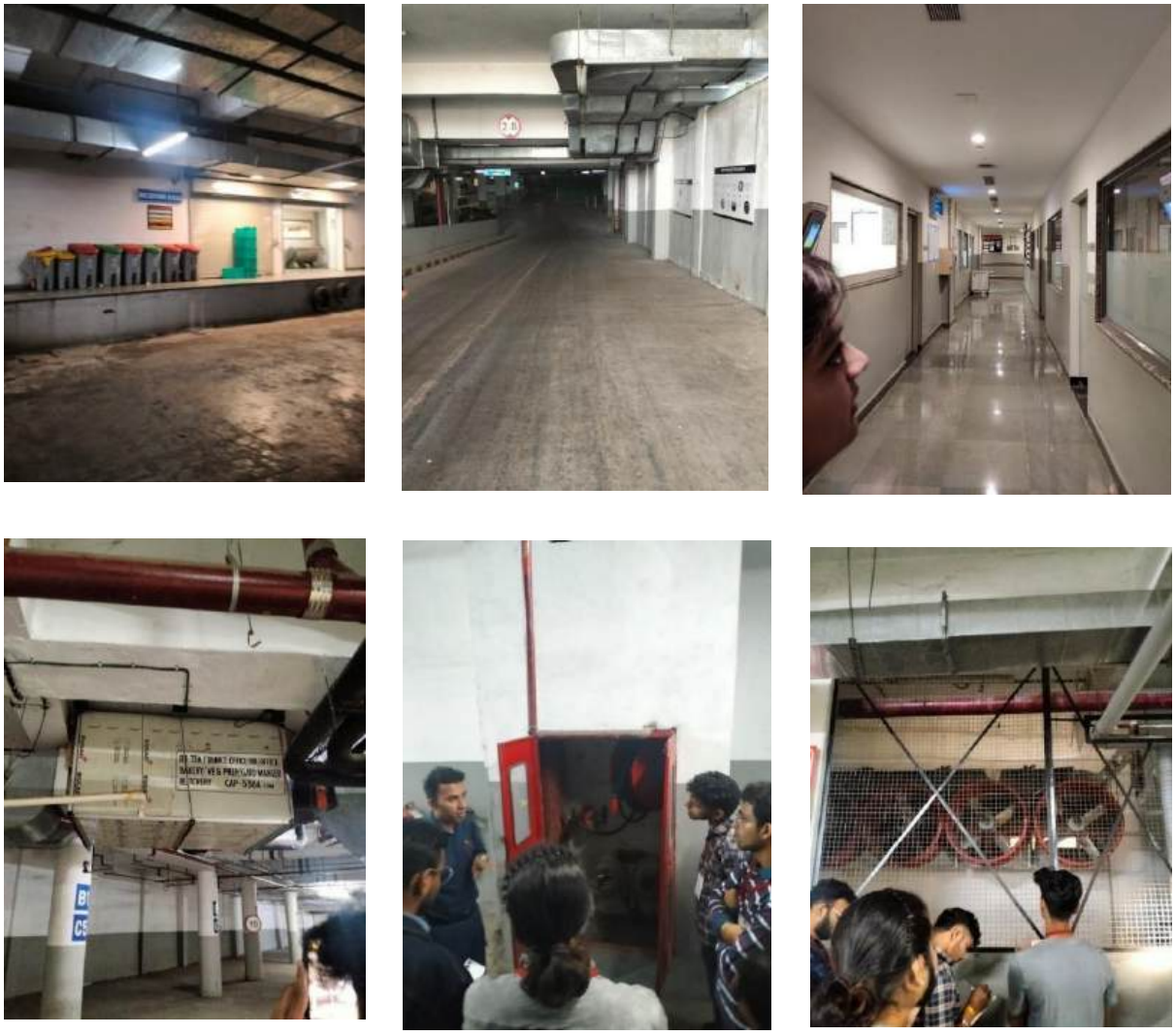


Figure 86 Basement 1

Ground Floor Plan:

- The entrance lobby of the hotel has grand luxury feel as it has triple heighted spaces with very attractive false ceiling consist of cove lighting.
- There is a separate entrance has been provided including Banquet Hall, Meeting room, 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 as a 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 takes 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 up to 45 dB in guest floors.

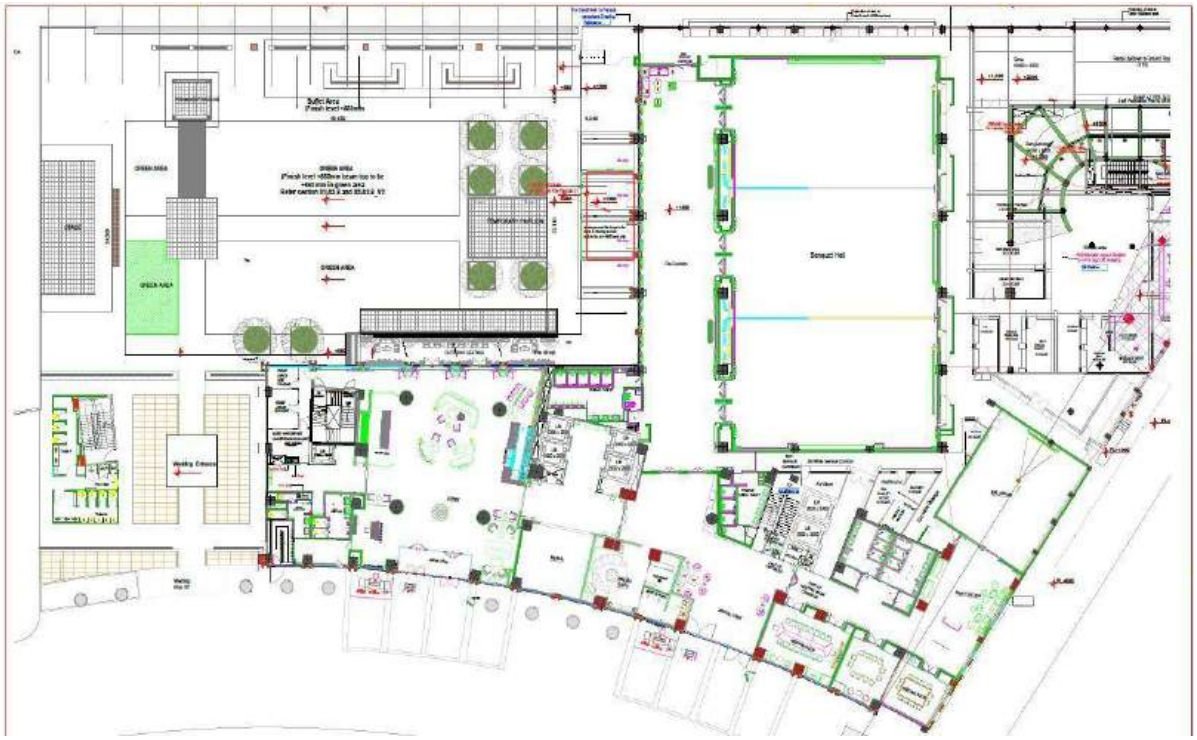


Figure 87 ground floor plan

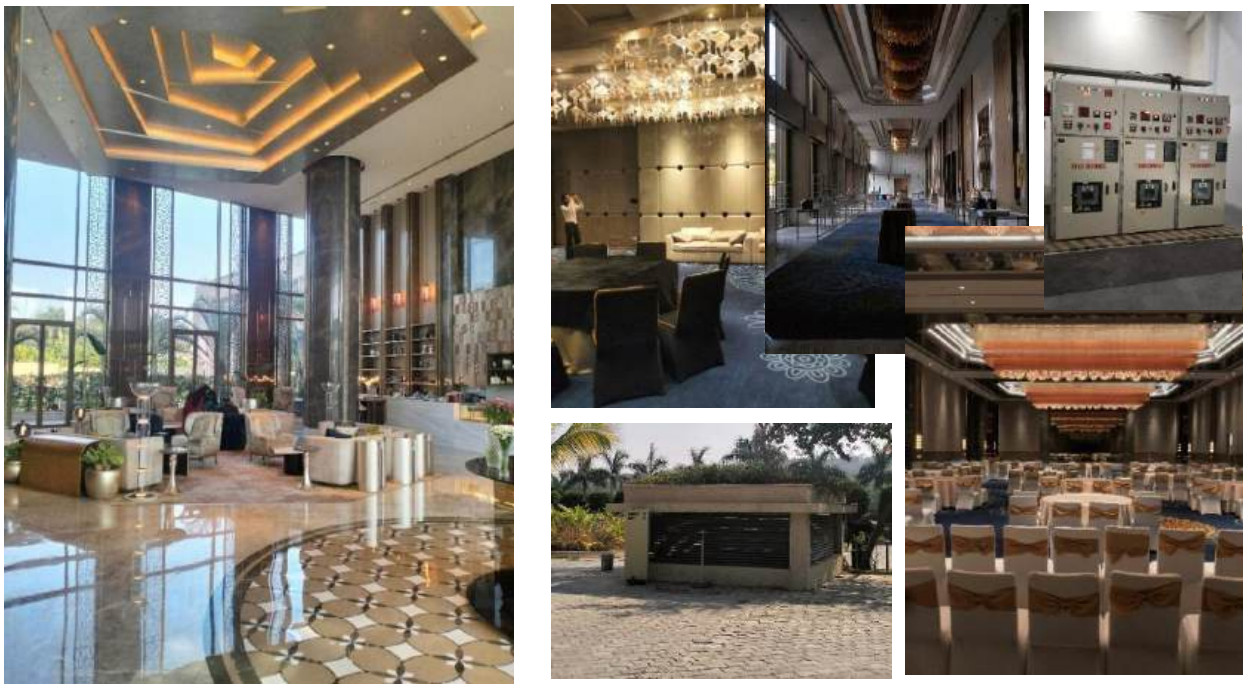


Figure 88 Ground floor plan and pictures (reception, banquet, duct opening, UPS)

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

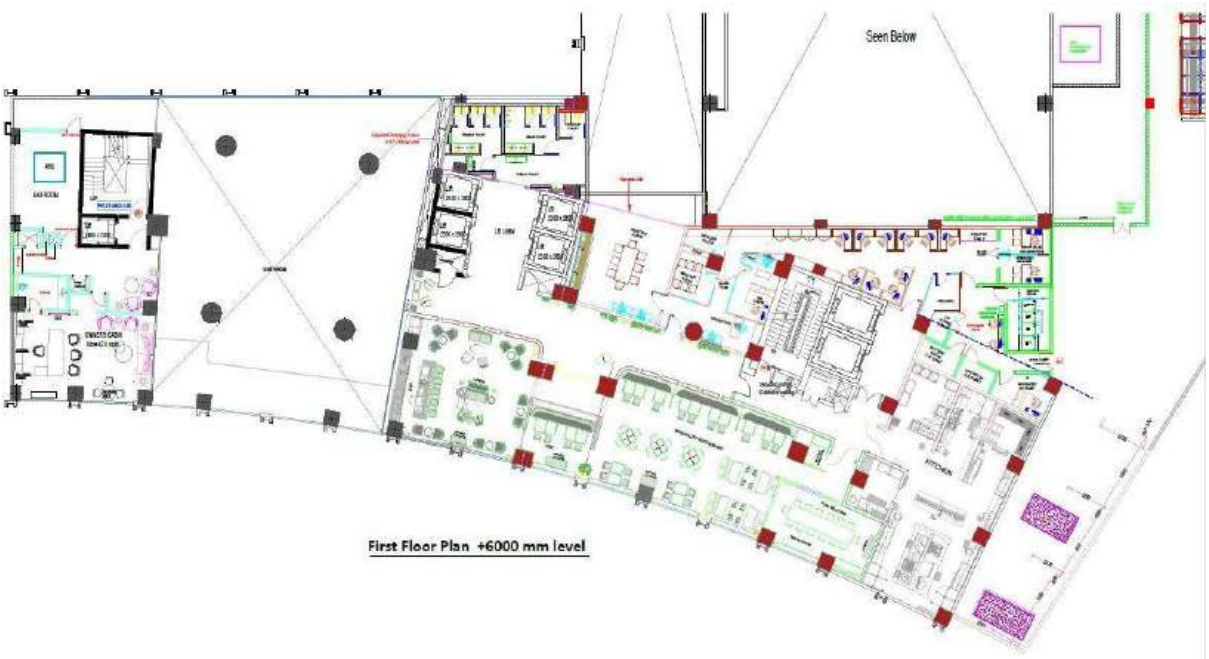


Figure 89 First floor plan

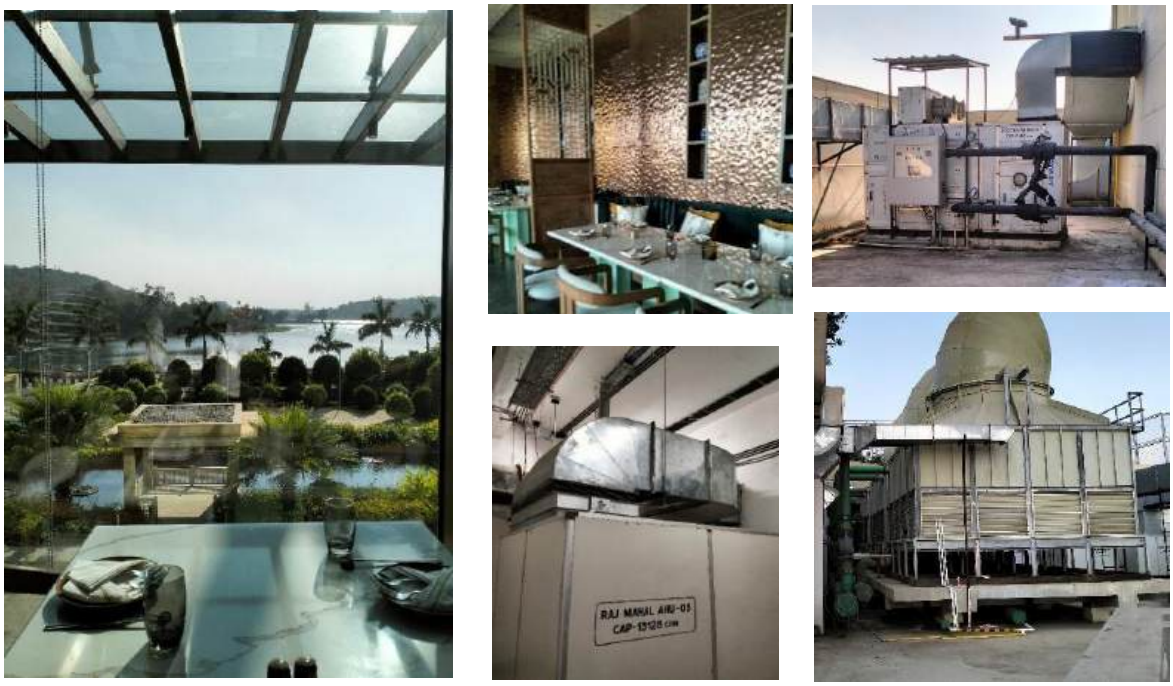


Figure 90 First floor plan and pictures (restaurant & chiller)

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 class facilities



Figure 91 Second floor plan

Service floor 2.5:





Figure 92 Pipelines and other services in service floor

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 this typical floor is that interior of lobby and corridors are fully different which gives different types of feeling at each different floor. FCU in Rooms 1.5 T, Suites 2 T

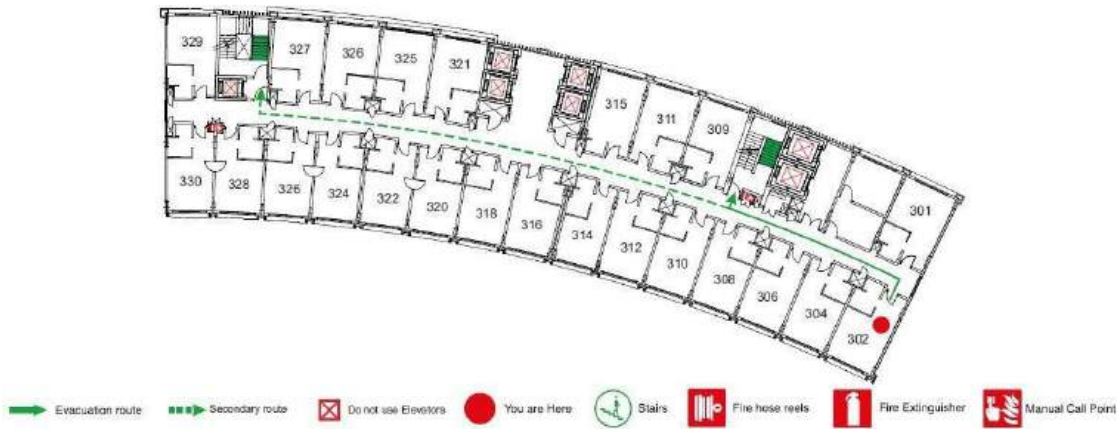


Figure 94 Typical floor plan



Figure 93 Guest room

- Deluxe Rooms (King / Twin): Approximately 33 m² (355 ft²), available with hill or lake views.
- Luxury Rooms (King / Twin): Similar size but offered as enhanced décor variants, some with balcony and lake-facing views (around 38 m² / 410 ft²).
- Suites (Executive & Luxury Suites): Range from 60 m² (710 ft²) to 76 m² (820 ft²) with separate living area and bedroom.
- Presidential Suite: Spacious luxury accommodation (~152 m² / 1,635 ft²) with premium amenities.

8th Floor Plan:

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

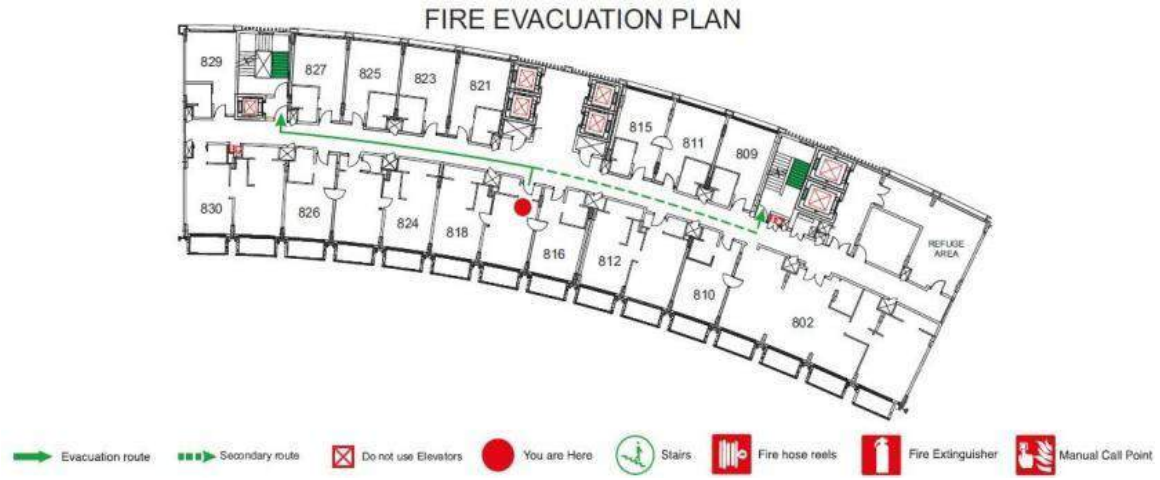


Figure 95 8th floor plan

9th Floor Plan:

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



Figure 96 9th floor plan

9.5th Floor Plan:

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 97 10th floor plan and pictures (rooftop rest. bar & swimming pool)

4.1.10 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.
- Wi-Fi
- Iron & ironing board
- In-room bottled water
- Minibar
- Newspaper
- Full-length mirror, hair dryer, weighing scale
- 49-inch Smart LED TV



Figure 98 Executive suite floor plan & photos

The Executive Suites at Taj Lakefront Bhopal offer 66 m² of elegant space with separate bedroom, living, and dining areas. Located on upper floors, they feature lake views, a king-size bed, Smart TV, minibar, workspace, and a luxurious bathroom with tub and shower—perfect for business or leisure stays.

Twin Room:

Framed by the picturesque backdrop of the hills, the Deluxe Rooms are the epitome of tranquility 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
- Wi-Fi
- Iron & ironing board
- In-room bottled water
- Minibar
- Newspaper
- Full-length mirror, hair dryer, weighing scale
- 49-inch Smart LED TV
- Shower Cubicle

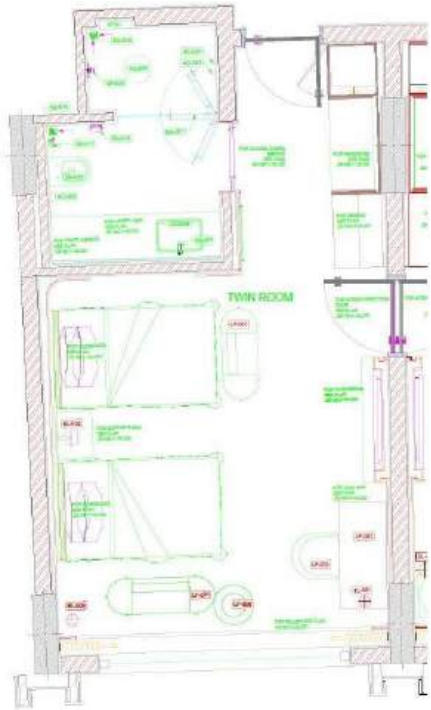


Figure 99 Twin room plan and photos

The Deluxe Twin Rooms at Taj Lakefront Bhopal are 33 m² rooms with two twin beds, ideal for up to three guests. They offer lake or hill views, modern amenities, and a stylish, comfortable setting for business or leisure stays.

King Room:

Framed by the picturesque backdrop of the hills, the Deluxe Rooms are the epitome of tranquility 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
- Wi-Fi
- Iron & ironing board
- In-room bottled water
- Minibar
- Newspaper
- Full-length mirror, hair dryer, weighing scale
- 49-inch Smart LED TV

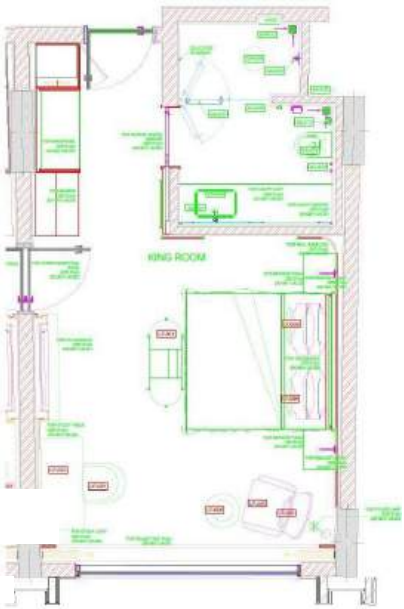


Figure 100 King room plan and photos

The King Room at Taj Lakefront Bhopal is a 33 m² space with a king-size bed, modern interiors, and views of Upper Lake or hills. It includes a Smart TV, minibar, work desk, premium toiletries, and a well-appointed bathroom—ideal for a luxurious and comfortable stay.

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.

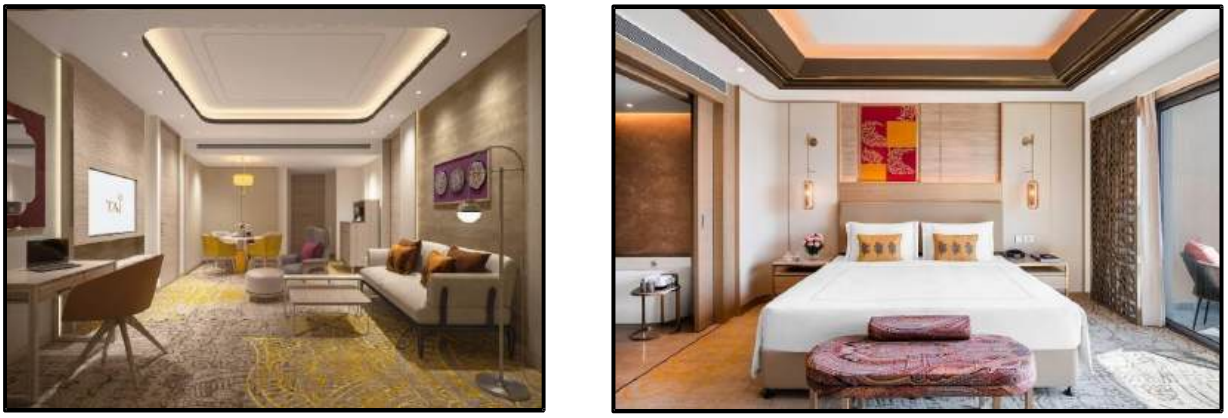


Figure 101 Presidential suite

- 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 102 Presidential suite photos

The Presidential Suite at Taj Lakefront Bhopal spans 152 m², offering a king-size bedroom, living and dining areas, and a private balcony with lake views. It features luxury amenities like a Smart TV, minibar, bathtub, and is designed for both elegance and comfort, with accessibility options available.

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
- Wi-Fi
- 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

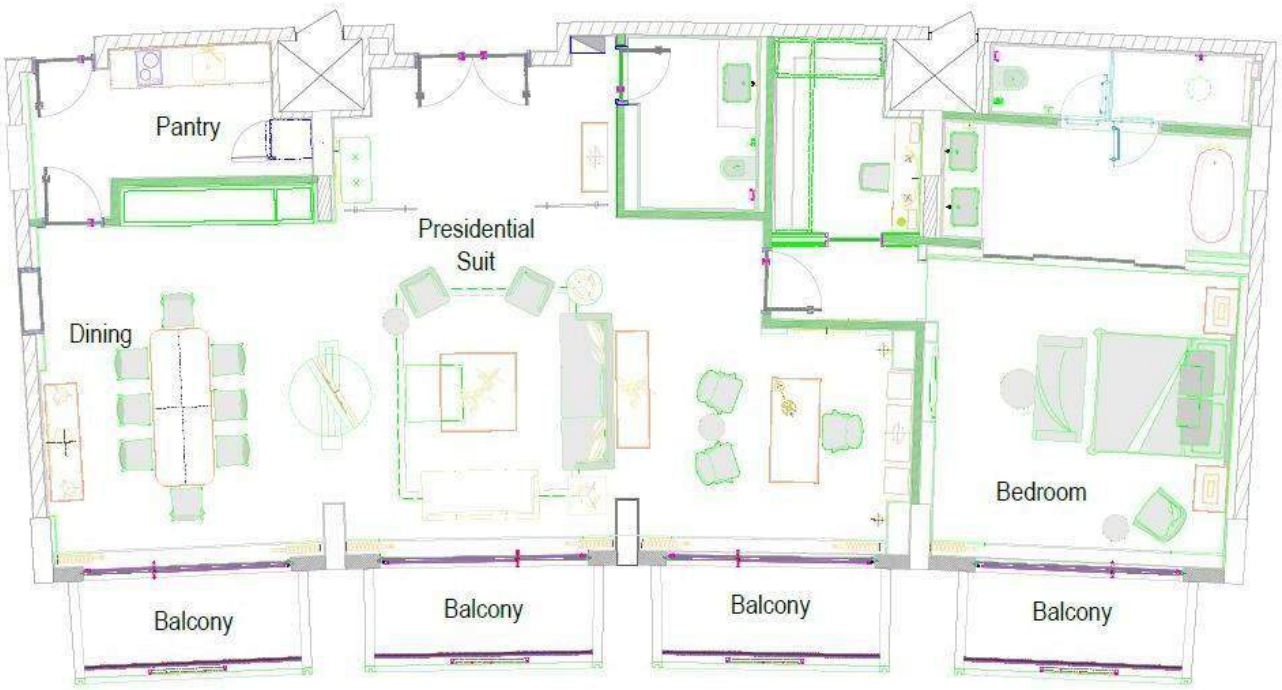


Figure 103 Presidential suite

4.1.11 VIEW/INTERIOR OF SPACES



Spa & Sauna



PDR



Banquet Hall



Swimming pool



Restaurant Seating



Lounge/Bar

4.1.12 SERVICES



Figure 104 electric services

4.1.13 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 events,
- 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.

- **CHILLER PLANT**



AREA –150 sqm



Access width –1.8 m



Access for machinery Width –6



Control Panel for Fire Room 70 sqm



Water Storage 20,00,000 Tank Volume –72 cum

- **WATER TREATMENT**



Water Storage Tank Raw 90 sq





Tank for swimming Pool (area-12 sqm)

- **DISPOSAL AREA**



- **LAUNDARY**

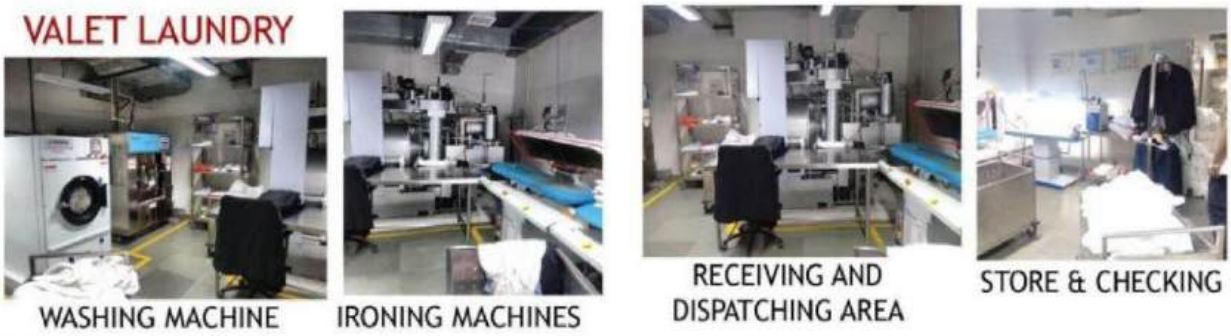




Figure 105 visit group photo

4.2 CASE STUDY: RADISSON HOTEL, BHOPAL

4.2.1 INTRODUCTION

Radisson Hotel Bhopal, inaugurated in 2021, is a distinguished 5-star property located in the heart of Bhopal, Madhya Pradesh. Strategically positioned in the upscale locality of Gulmohar Colony, the hotel caters to both business and leisure travelers, offering world-class amenities combined with a deep sense of local cultural expression. Developed by the Radisson Hotel Group, the property reflects a modern, luxurious design language while harmoniously integrating traditional elements of Madhya Pradesh's heritage.

What sets Radisson Bhopal apart is its emphasis on regional identity and craftsmanship. The interiors are enriched with Gond art, a tribal form native to the region, showcased prominently through curated wall installations and a striking 200-hour handcrafted mural in the hotel's lobby—crafted by skilled local artisans. These elements not only provide a strong visual identity but also offer guests a unique cultural immersion.

Comprising 104 well-appointed rooms and suites, the hotel boasts a diverse mix of facilities including multiple fine-dining restaurants, a rooftop infinity pool, fitness and wellness zones, and expansive banquet and conference spaces capable of accommodating up to 1,400 guests. Its strategic proximity to key transit hubs like Rani Kamlapati Railway Station and Raja Bhoj International Airport, along with its accessibility to major tourist and business landmarks, makes it a prime destination for high-end hospitality in central India.

Radisson Bhopal exemplifies the next generation of urban hotel design—focusing on sustainability, regional aesthetics, and guest-centric planning, offering a perfect case study in the integration of culture, comfort, and functionality in a metropolitan setting.



Figure 106 Radisson hotel Bhopal

Attribute	Description
Operator / Brand	Radisson Hotel Group (Radisson)
Location	Gulmohar Main Road, opposite Savoy Complex, Bawadiya Kalan, Bhopal, MP
Opening Year	2021
Site Area	Approx. 4,500 m² (~0.45 ha)
Guest Rooms & Suites	104 units: Superior, Executive, Junior Suite, Deluxe Suite, Executive Suits
Meeting & Event Space	Approx. 3,900 m² (41,979 sq ft): 7 indoor venues (Grand Ballroom 1 & 2, Nurture, Nirvana, Review, Refresh, Renew) + 2 outdoor venues (Grand Terrace, Infinity Terrace)
Capacities	Indoor spaces: up to ~1,200 pax; Outdoor terraces: up to ~1,400 pax
Key Facilities	Dining (Fusion Café, Wok Thai, Just Baked, Urzza Lounge Bar), rooftop pool, fitness center, bakery, business center, sustainable operations

4.2.2 LOCATION AND NEARBY ACCESS

Radisson Hotel Bhopal is strategically located in the Gulmohar Colony area of Bawadiya Kalan, one of Bhopal's most well-planned and premium residential and institutional zones. The hotel is positioned on Gulmohar Main Road, directly opposite the Savoy Complex, making it easily identifiable and well-connected to both city centers and transport hubs.
The location is approximately:

- 40 minutes (approx. 18–20 km) from Raja Bhoj International Airport, ensuring convenience for national and international travelers.
- 10–15 minutes (approx. 5–7 km) from Rani Kamlapati Railway Station (Habibganj), India's first privatized, world-class railway station, offering excellent rail connectivity across India.
- Well connected to major city arteries like Hoshangabad Road, MP Nagar, and Kolar Road, enabling smooth access for both private and commercial vehicles.

The surrounding area features a mix of upscale residences, commercial establishments, educational institutions, hospitals, and government offices, making it an ideal choice for business travelers, event attendees, and tourists.

Nearby Landmarks & Attractions:

- Upper Lake (Bhojtal) – 8 km: Bhopal's most iconic water body offering boating and lakeside promenade experiences.
- Sanchi Stupa – 45 km: UNESCO World Heritage site of Buddhist architecture.
- Van Vihar National Park – 10 km: Urban Forest reserve offering wildlife encounters and nature trails.
- Bhimbetka Rock Shelters – 50 km: Prehistoric cave paintings and rock formations, also UNESCO-listed.
- Birla Mandir & Museum – 6.5 km: Religious and cultural landmark.
- Manav Sangrahalaya (Museum of Mankind) – 9 km: Open-air anthropological museum showcasing India's tribal heritage.



Figure 107 Radisson hotel Bhopal location

4.2.3 SITE AND BUILDING CHARACTERISTICS

Radisson Hotel Bhopal is sited on a rectangular urban-edge plot measuring approximately 4,500 m² (0.45 hectares), with its primary frontage along Gulmohar Main Road, directly facing the Savoy Complex in the well-established locality of Bawadiya Kalan.

Site key Features:

- **Road Frontage & Accessibility**: The site enjoys direct vehicular and pedestrian access from the Gulmohar arterial road, which is a primary commercial street. This enables a smooth approach for both private cars and commercial taxis.
- **Buffer from Traffic:** The hotel site includes well-landscaped setbacks and a green buffer that reduce noise intrusion and provide privacy from the main road, enhancing the guest experience.
- **Zoning and Surroundings:** The surrounding neighborhood is primarily residential and institutional, with amenities such as banks, shopping complexes, hospitals, and schools within a 1–2 km radius, making it a mixed-use urban context.
- **Shape and Planning:** The compact rectangular geometry of the plot supports efficient spatial planning with designated zones for:

- Valet parking and guest drop-off
- Service entry and exit
- Emergency access
- Landscaped entrance plaza and buffer green areas

- **Topography & Vegetation: The** site is largely flat, with minimal grading required. It includes limited existing vegetation, which has been retained and enhanced with new

landscaping and shading elements.





Figure 108 Site features

Building Characteristics:

The architecture of Radisson Hotel Bhopal reflects a contemporary urban typology, thoughtfully integrated with regional art and sustainable design elements.

Building key Features:

- **Form & Massing:**
- A mid-rise block of 6 floors, articulated with step-backs and roof terraces to reduce visual bulk and promote better ventilation and daylight.
- Vertical and horizontal volumes are broken with facade articulation to avoid monolithic appearance.

- **Façade Design:**

- Features double-glazed glass windows to minimize heat gain and ensure acoustic comfort.
- High-performance façade materials including LED lighting, sun-shading devices, and thermally insulated finishes for energy efficiency.

- **Cultural Integration:**
- The entrance lobby is highlighted by a hand-painted Gond mural created by local artisans over 200 hours, reflecting Bhopal's tribal heritage and adding cultural depth to the modern interiors.

- **Interior Planning:**
- A grand entrance lobby with high ceilings, an art wall, and controlled daylighting.
- Public zones like lounges, restaurants, and ballrooms are located on lower levels, while rooms and suites are distributed on upper floors for privacy and views.

- **Sustainability Initiatives:**
- Operates under certified green hospitality standards.
- Incorporates LED lighting, smart HVAC systems, and water-saving fixtures.
- Encourages local sourcing of materials and artworks.

- **Rooftop & Recreational Zones:**
- The rooftop swimming pool and terrace lounge offer panoramic views of the city and serve as signature leisure attractions.

- **Circulation & Light:**
- Corridors are naturally lit, with openings planned to enable cross-ventilation and reduce dependence on artificial lighting.



Figure 109 building facade



Figure 110 Radisson hotel, Bhopal

4.2.4 FACILITIES

Radisson Bhopal offers a comprehensive range of luxury, business, wellness, and support services, establishing it as a fully integrated 5-star hospitality destination tailored for both leisure and corporate guests.

A. Dining Facilities
The hotel features a curated culinary experience through multiple themed outlets:

- **Fusion Café (All-day Dining)**
- Offers global multi-cuisine menus in a vibrant, modern setting.
- Ideal for breakfast buffets, business lunches, and family dinners.
- Features live cooking stations and seasonal menu rotations.
- **Wok Thai (Pan-Asian Fine Dining)**
- Specializes in Southeast Asian cuisine, including Thai, Japanese, and Chinese dishes.
- Designed with thematic interiors reflecting Asian minimalism.
- Includes intimate booth seating and an open kitchen concept.
- **Just Baked (Bakery & Lounge)**
- A boutique café offering freshly baked pastries, cakes, and hot beverages.
- Also serves as a casual meeting spot with comfortable seating and high-speed Wi-Fi.
- **Urzza Lounge Bar**
- A stylish evening bar serving craft cocktails, international wines, and a tapas-style menu.
- Includes plush seating, soft lighting, and curated music playlists to enhance guest experience.

B. Wellness & Recreation Facilities

- **Rooftop Infinity Pool**
- Located on the terrace level, it provides panoramic views of Bhopal.
- Includes a deck with loungers and shaded seating, ideal for leisure and events.
- **24-hour Fitness Center**
- Fully equipped with modern cardio and strength training machines.
- Accessible via guest key cards; includes changing rooms and sanitization protocols.
- **Yoga & Meditation Sessions**
- Held in designated wellness zones or open terrace spaces.

- Tailored to long-stay and business guests seeking balance and relaxation.

C. Business & Event Facilities

The hotel is equipped with state-of-the-art MICE (Meetings, Incentives, Conferences, and Exhibitions) infrastructure, catering to events of varying scales:

- **7 Indoor Meeting Venues**
- Includes two grand ballrooms, each with approx. 10,010 sq ft area.
- Modular partitions allow flexible configurations for seminars, banquets, and workshops.
- High ceilings, chandelier lighting, and acoustically treated interiors.
- **2 Outdoor Event Terraces**
- Landscaped terraces ideal for weddings, receptions, and social gatherings.
- Scenic city views enhance the ambiance, especially during evening events.
- Event Capacity
- Designed to host between 15 to 1,400 guests, depending on event type and setup.
- **AV & Tech Support**
- All venues come with advanced audiovisual equipment, projectors, sound systems, and on-site tech support.





Figure 112 Dining facilities



Figure 111 infinity pool



Figure 113 event and meeting facilities

D. Guest & Support Services

To ensure comfort, efficiency, and a personalized stay, Radisson Bhopal offers:

- Concierge Desk
- Assists with transportation, sightseeing, restaurant reservations, and city information.

- Valet Parking & Secure Car Parking
- Managed through a smart valet system with surveillance and token-based pickup.

- Dry Cleaning & Laundry
- Same-day laundry and express dry-cleaning service available for business travelers.

- Currency Exchange
- In-house service with daily conversion rates and safe transaction protocols.

- Express Check-in & Check-out
- Digital kiosks and app-based check-in reduce wait time for business guests.

- Safety & Security
- Includes in-room safety deposit boxes, 24x7 security staff, and CCTV surveillance across the premises.

- Tour & Travel Desk
- Offers guided excursions to local attractions like Sanchi Stupa and Bhimbetka.

4.2.5 VERTICAL ZONING

The Radisson Hotel Bhopal is a 7-storey building in total, including:
- Ground / Lobby Level
- 1st Floor
- 2nd to 5th Floors – Mid-levels and upper guest room floors
- 6th Floor / Rooftop Level – Pool, terrace lounge, and events deck

Building Level	**Key Functions**
Rooftop Level	- Infinity poo l- Terrace lounge - Rooftop events deck
Upper Floors	- Executive Suites - Back-of-house (BOH) services - Vertical circulation core
Mid-Levels	- Junior Suites - Deluxe Suites
First Floors	- Superior Rooms - Executive Rooms
Ground / Lobby Level	- Main lobby & reception - Concierge desk - Just Baked (bakery/lounge) - Fusion Café (all-day dining) - Lounge seating areas

4.2.6 GUEST ROOM TYPOLOGIES

1. Superior Room
- **Category:** Entry-level guest room
- **Size:** Approx. 30–35 sqm
- **Features:**
    - King or twin beds
    - Desk, lounge chair
    - City view
    - Smart TV, Wi-Fi, minibar, safe

- **Target Guests:** Solo travellers, short-stay business or leisure guests

2. Executive Room
- **Category:** Enhanced room option
- **Size:** Approx. 35–40 sqm
- **Features:**
  - Upgraded interior design
  - Better views or corner locations
  - Enhanced amenities (larger workspace, better toiletries)
- **Location:** Same or higher floors than Superior rooms

3. Junior Suite
- **Category:** Entry-level suite
- **Size:** Approx. 45–55 sqm
- **Features:**
  - Separated living and sleeping zones
  - Sofa and lounge space
  - Extra bathroom or powder area
- **Ideal For:** Business professionals or couples seeking comfort

4. Deluxe Suite
- **Category:** Mid-level suite
- **Size:** Approx. 60–75 sqm
- **Features:**
  - Spacious living area with dining
  - Enhanced furnishing and lighting
  - Dedicated dressing space
- **Location:** Mid-level floors

5. Executive Suite
- **Category:** Premium suite
- **Size:** Approx. 80–100 sqm
- **Features:**
  - Bedroom + large living + dedicated work area
  - Large bathrooms with bathtubs
  - Premium views and privacy
- **Target Guests:** VIP guests, long-stay executives

Radisson Hotel Bhopal blends contemporary luxury with local heritage, featuring interiors inspired by Madhya Pradesh's Gond art, highlighted by a hand-crafted mural in the lobby. Spread across 4,500 sqm, the hotel offers 104 modern rooms and suites with ergonomic workspaces, along with versatile event spaces covering 3,900 sqm, including grand ballrooms and scenic terraces for up to 1,400 guests. With a rooftop pool, fitness centre, multiple dining outlets, and sustainable design practices, the hotel combines cultural elegance with modern functionality, making it a landmark for business and leisure travelers in the city.
Ask ChatGPT





Figure 114 group visit phot

5. DESK APPRAISAL CASE STUDY

5.1 CASE STUDY: VIVANTA BY TAJ, WHITEFIELD, BANGALORE

5.1.1 INTRODUCTION



Figure 115 Vivanta by Taj, Bangalore

Vivanta by Taj, Bangalore is a premium 5-star business hotel located adjacent to the Kempegowda International Airport. Designed by Edifice Consultants, this hotel is a seamless blend of contemporary architecture and functional luxury tailored for the needs of modern-day travelers, particularly business professionals and transit guests. Spread across a strategically positioned site, the design emphasizes efficient zoning, acoustic insulation, and visual connectivity with the surrounding landscape.

The hotel stands as an architectural response to its unique context — balancing the hustle of airport movement with tranquil spatial experiences. With 151 elegantly designed rooms, multiple dining venues, banquet facilities, and wellness spaces, Vivanta by Taj sets a benchmark in sustainable and guest-centric hotel design. It exemplifies how thoughtful planning and modern aesthetics can co-exist within a high-performance hospitality environment.

5.1.2 ABOUT

The architectural concept of Vivanta by Taj, Bangalore, designed by Edifice Consultants, revolves around creating a tranquil and refined hospitality experience at the edge of a bustling international airport. The L-shaped layout was strategically planned to buffer the building from runway noise while embracing a central landscaped courtyard that offers visual calm and spatial relief. Emphasizing a seamless blend of modern luxury and functionality, the design uses clean lines, acoustic materials, and large glazed openings to provide both openness and insulation. Guest rooms are oriented to maximize views of either the airport or internal gardens, while public areas integrate natural textures, water features, and subtle lighting to foster a

serene yet sophisticated ambiance. Sustainability is embedded through passive design, solar heating, and rainwater harvesting, making the hotel not just a destination but an oasis for transit and business travelers alike.

5.1.3 LOCATION

Vivanta by Taj, Bangalore is strategically located adjacent to Kempegowda International Airport in Devanahalli, North Bangalore. Positioned just 500 meters from the airport terminal, the hotel is designed to cater primarily to business travelers, transit passengers, and airline crews. Its location offers unmatched connectivity to the city's growing commercial zones such as Hebbal, Yelahanka, and the Aerospace SEZ, while also benefiting from the tranquil outskirts of the urban core. Despite its proximity to a high-traffic transport hub, the site is set against a backdrop of expansive open land, allowing the architecture to blend modernity with calm, airport-edge luxury. The hotel's placement ensures both convenience and a distinct sense of exclusivity, making it an ideal address for short stays and high-profile corporate engagements.



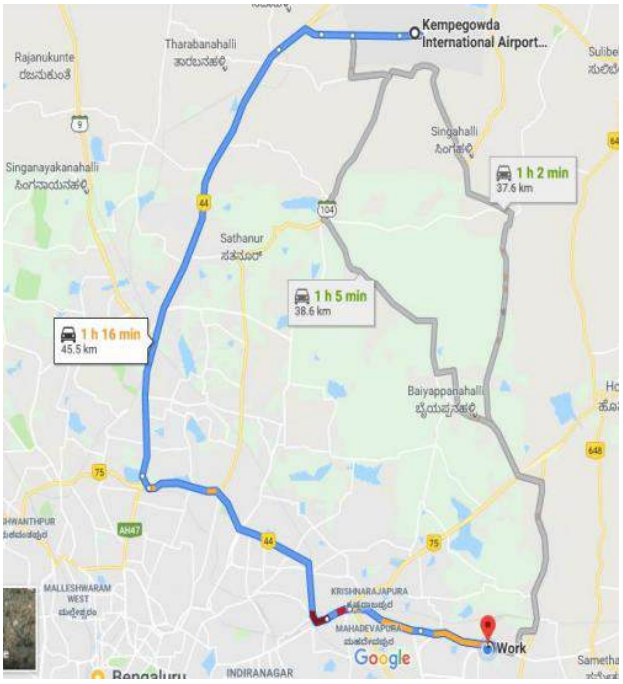
Figure 116 Location

- Metro stations (ITPL & Pattandur Agrahara) are within 2-minute walking distance and are wheelchair accessible.
- BMTC bus stop (ITPL Gate) is nearby with frequent city-wide routes.
- Good walkability inside ITPL tech park with malls, offices, and cafés nearby.
- Easy access to autos and app-based cabs like Uber and Rapido.
- Metro and hotel are both wheelchair-friendly, though footpaths outside the tech park may vary in quality.

Vivanta by Taj, Whitefield, enjoys excellent neighbourhood accessibility with close proximity to metro stations and bus stops. The area is well-connected, pedestrian-friendly within the tech park, and supported by various transport options. Its location ensures convenience for both business and leisure travellers, including those with mobility needs.

5.1.4 CONNECTIVITY

- 500 m from Kempegowda International Airport
- Direct access via NH-44 and Airport Road
- 30–40 mins to central Bangalore (MG Road, CBD)
- Close to Devanahalli Business Park & Aerospace SEZ
- Serviced by BMTC Vayu Vajra airport buses
- Easy cab, shuttle, and metro connectivity (upcoming)



- Standing at the main entrance to the International Tech Park, Bangalore (ITPB).
- Located 45 km away from the Airport, 18 km away from the CBD of the city.
- Gateway statement between the IT Park and the developing city around it.
- Architects: WOW Architects | Warner Wong Design
- Location: Whitefield, Bangalore, Karnataka, India
- Collaborator: Spazzio Design Architecture
- Client: The Indian Hotels Company Limited (IHCL)
- Area: 19638.0 sqm
- Project Year: 2009
- Photographs: Aaron Pocock

Figure 117 Connectivity

5.1.5 CONCEPT DESIGN

The concept design of Vivanta by Taj – Whitefield, Bengaluru, by WOW Architects | Warner Wong Design, is rooted in the idea of a "landscraper" — a horizontally stretched building that contrasts with the typical vertical hotel towers. Inspired by the form of a Möbius strip, the podium loops around in a continuous, seamless flow that merges architecture with landscape. The design draws from the fluidity of Indian classical dance, creating dynamic, curving public spaces that encourage interaction and movement. Landscaped terraces, green roofs, and sloping garden planes are integrated into the structure to enhance sustainability, reduce heat, and promote rainwater harvesting. The pixelated glass façade reflects the surrounding environment and provides thermal efficiency while maintaining views. This design not only redefines luxury business hospitality but also responds contextually to its tech-park setting, creating a harmonious blend of cultural expression, modern design, and environmental sensitivity.

- Landscraper horizontal form
- Möbius strip-inspired podium
- Fluid spaces inspired by Indian dance
- Integrated green roofs and sloped landscaping
- Pixelated reflective glass façade
- Use of local materials and craftsmanship
- Blended public and private zones
- Subtle branding through surface design

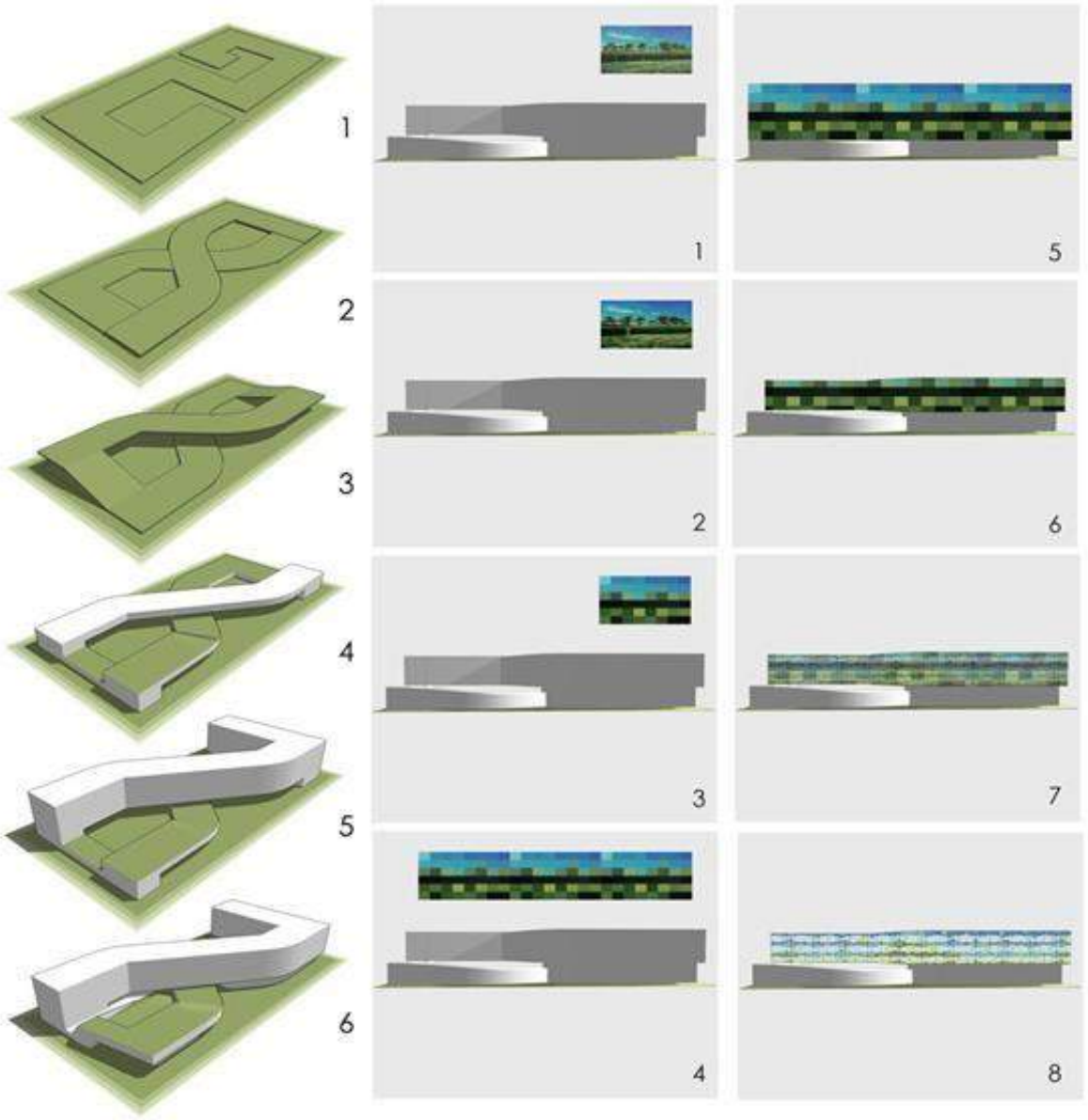


Figure 118 concept design

- Integrated green roofs that reduce heat gain and enhance insulation
- Sloped landscaped surfaces merging with the building's form
- Use of native plant species to minimize water consumption
- Rainwater harvesting systems incorporated into landscape design
- Landscaped areas designed as social gathering spaces
- Landscaping used to visually connect indoor and outdoor spaces
- Natural shading provided by trees and vegetation to lower cooling loads
- Terraced gardens that follow the building's Möbius loop geometry

The green landscaping seamlessly integrates sustainability with design, enhancing thermal comfort, water efficiency, and user experience.

5.1.6 FACILITIES AND CIRCULATION

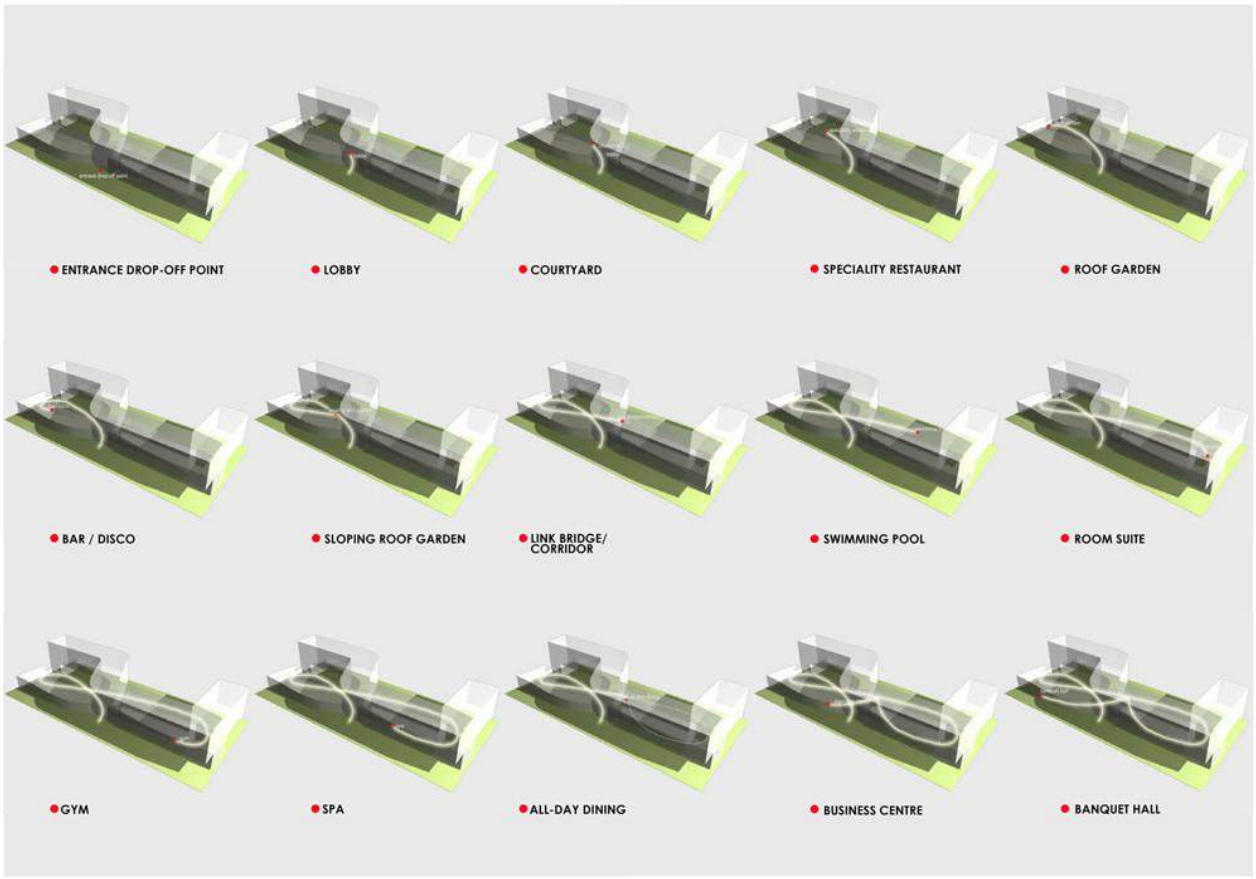


Figure 119 Facilities

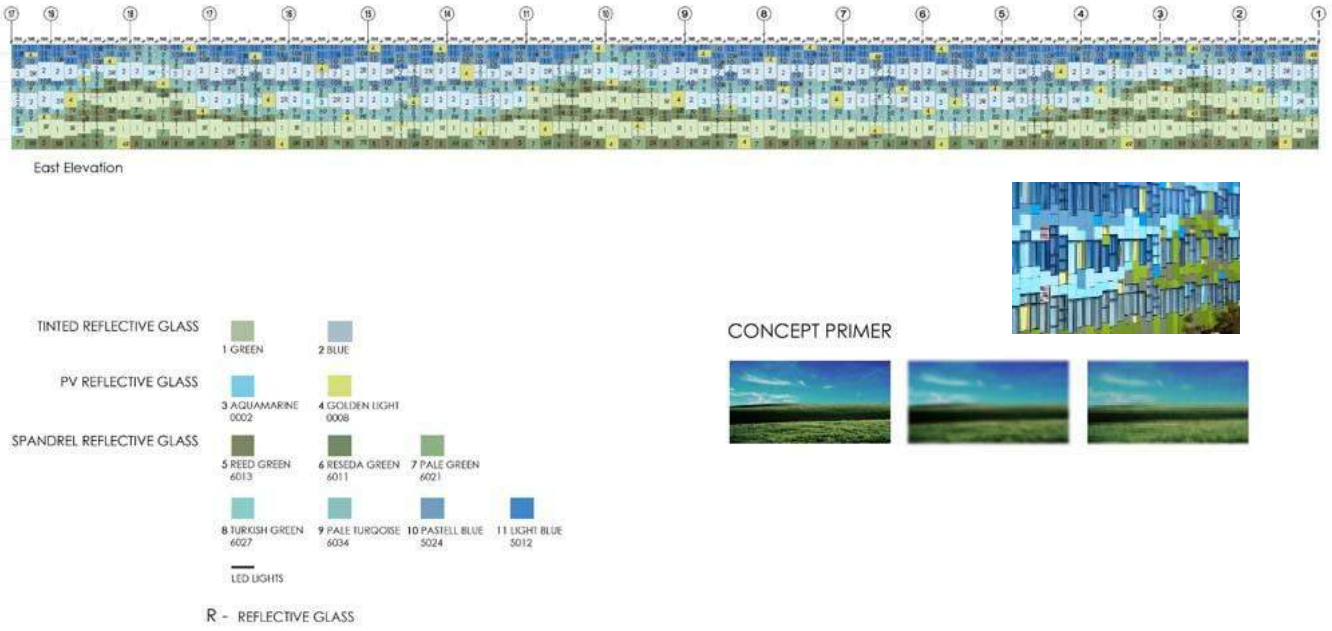
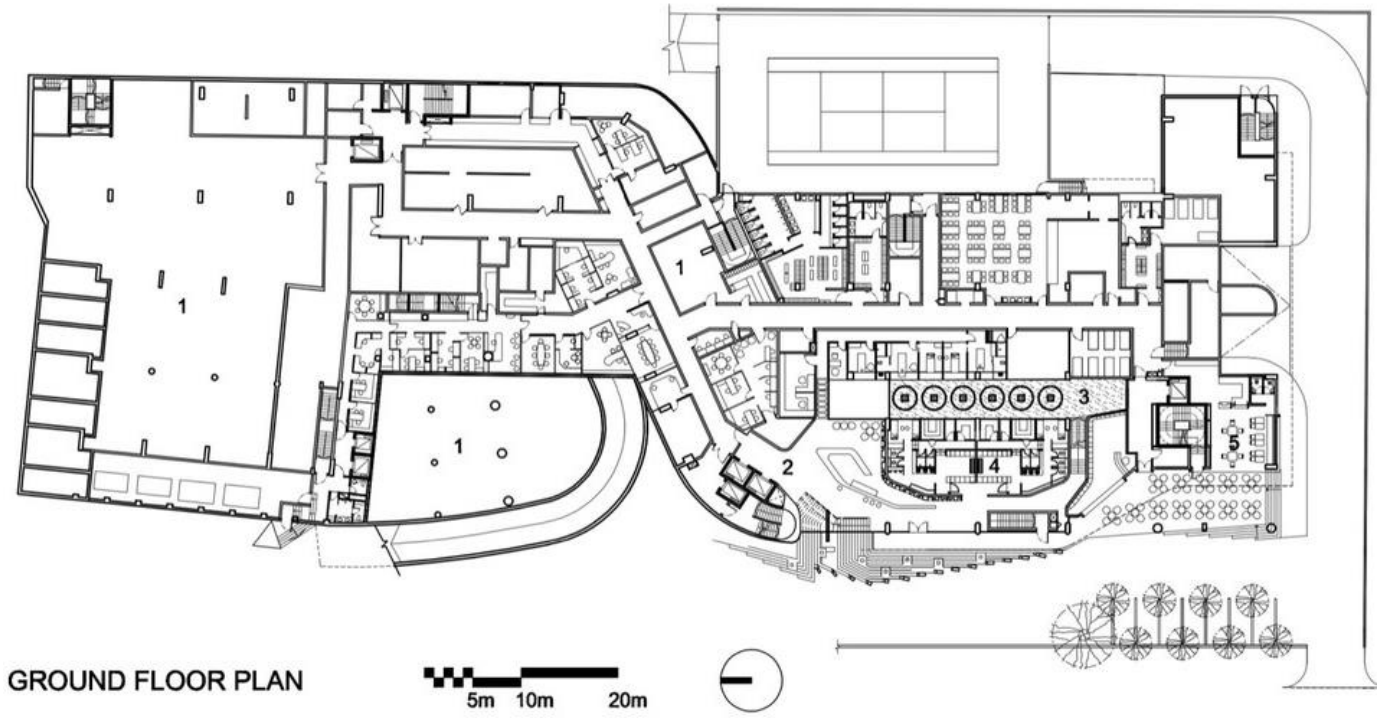
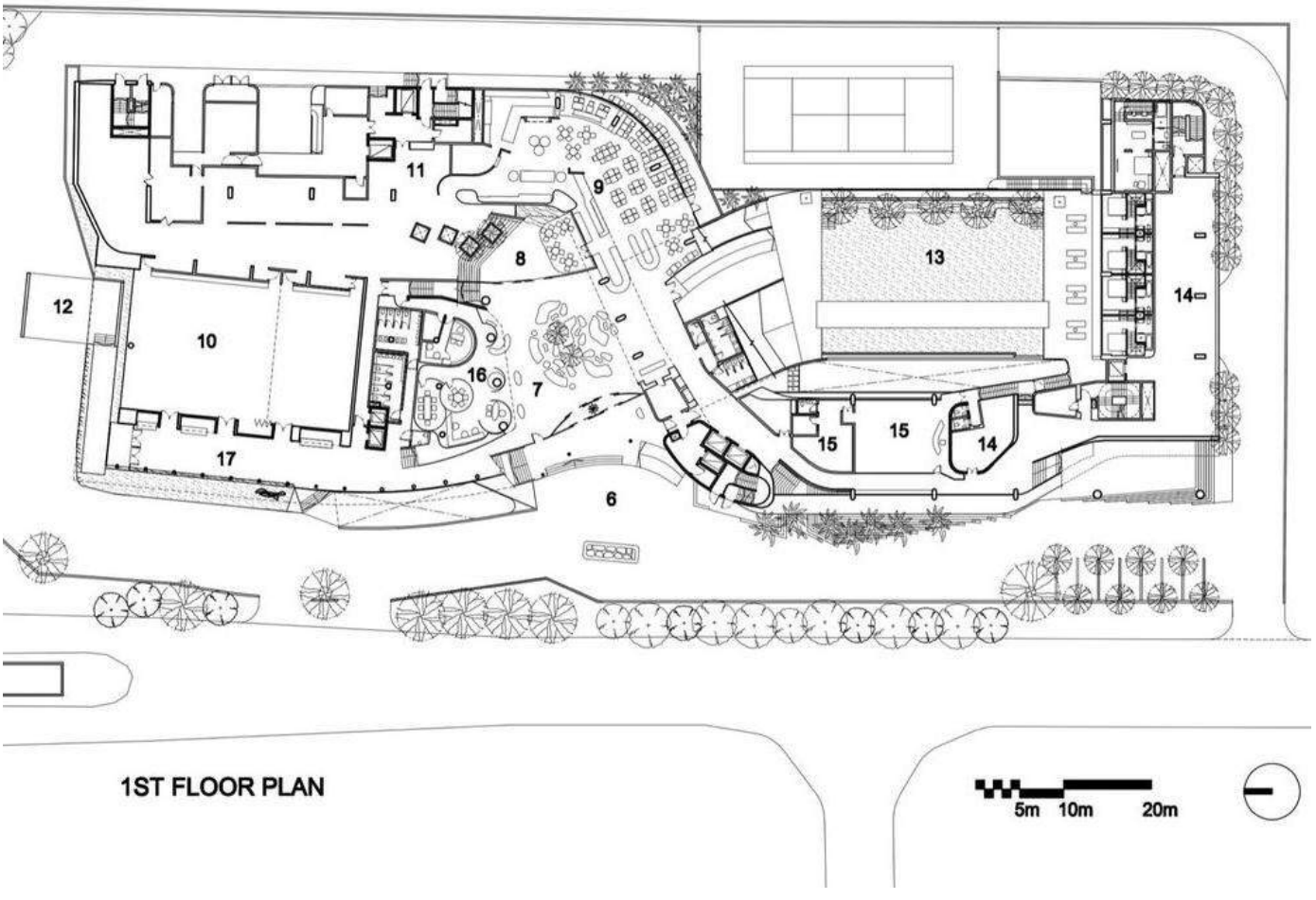


Figure 120 Facade concept

The façade features a pixelated pattern of reflective glass inspired by the surrounding sky and greenery, offering both visual harmony and thermal efficiency.

5.1.7 FLOOR PLANS





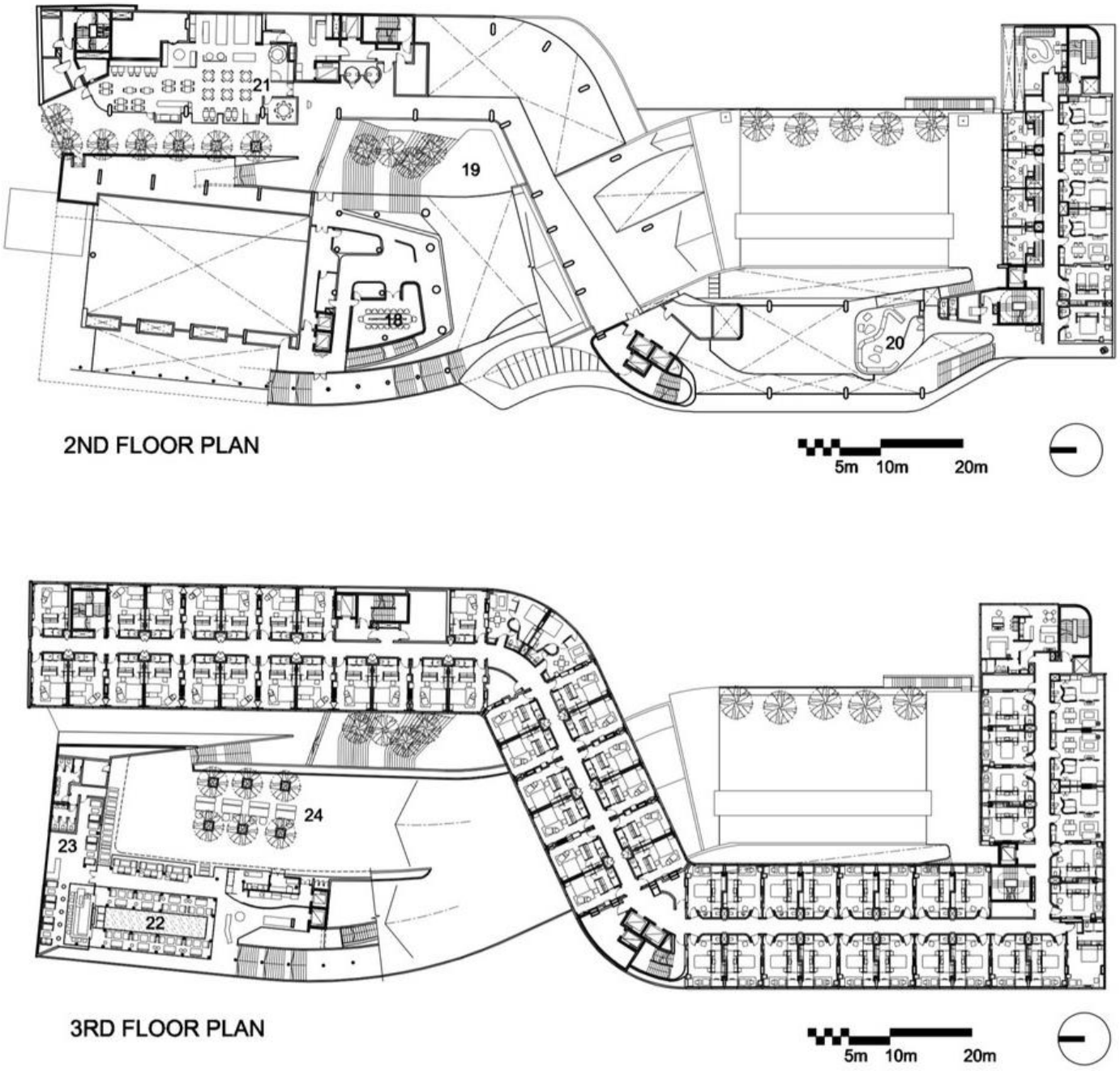


Figure 121 Floor plans

- Clear zoning of public, semi-public, and private areas
- Central circulation spine for efficient vertical and horizontal movement
- Separate service cores to ensure back-of-house operations don't interfere with guest areas
- Looped circulation based on Möbius strip concept for intuitive navigation
- Strategic room placement for optimal natural light and external views
- Integrated indoor-outdoor connectivity through landscaped courtyards and terraces
- Flexible event and dining spaces adaptable for different functions
- Efficient space utilization ensuring compact yet luxurious room layouts

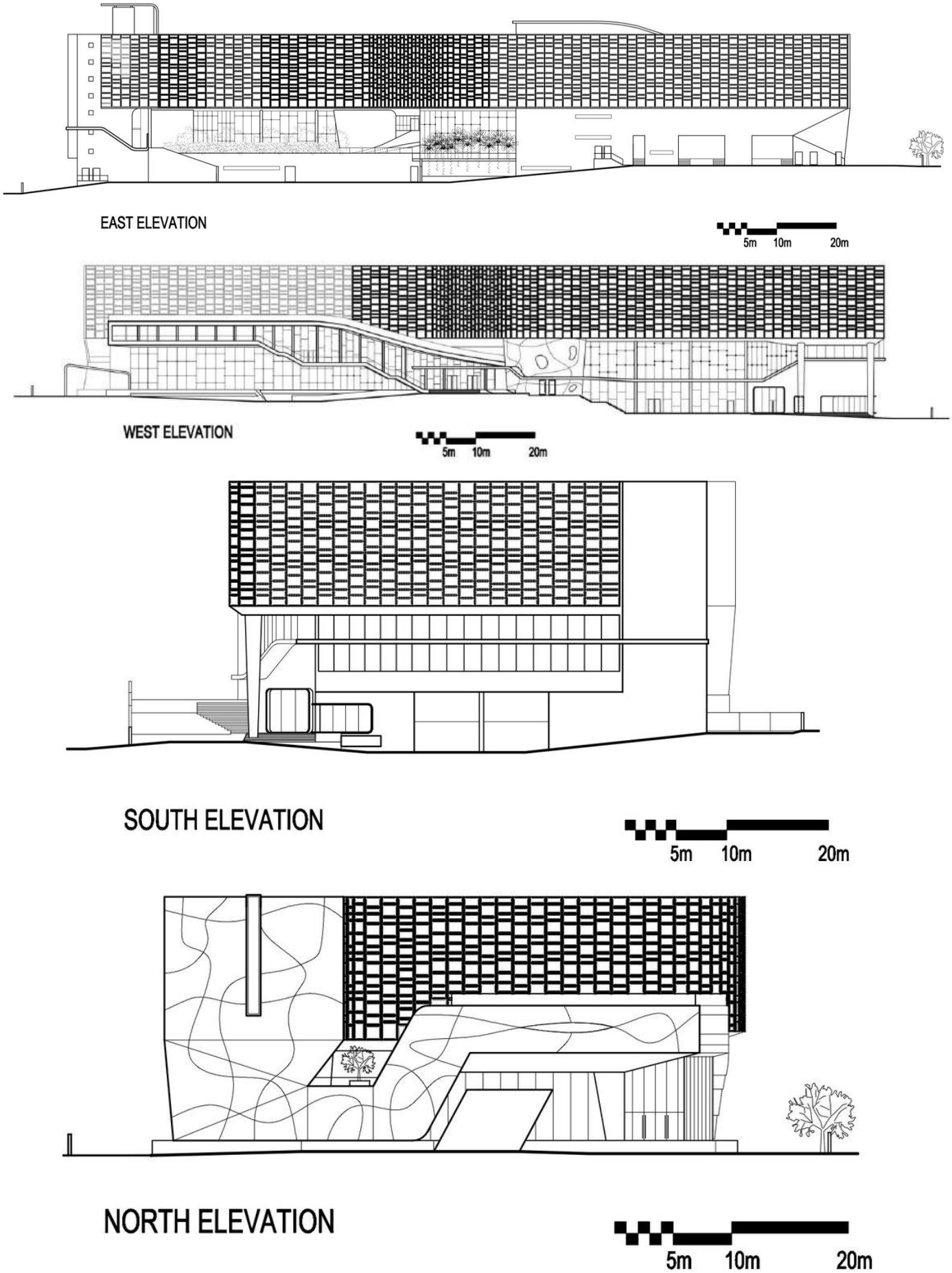
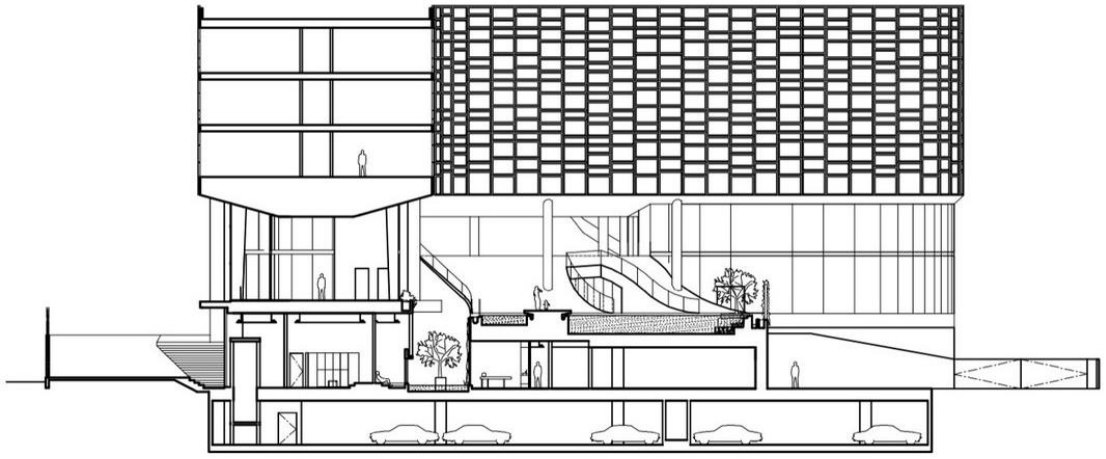
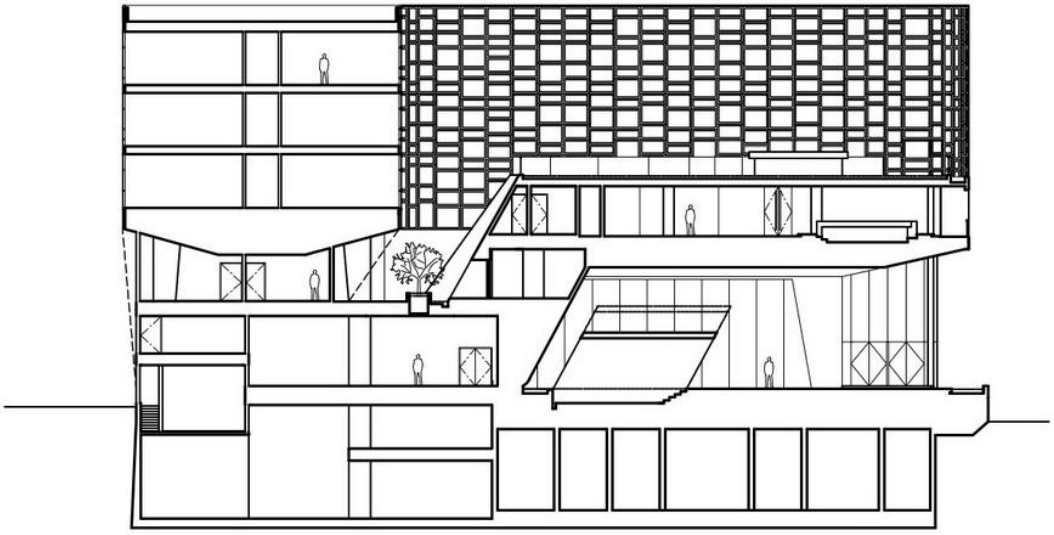


Figure 122 Elevations

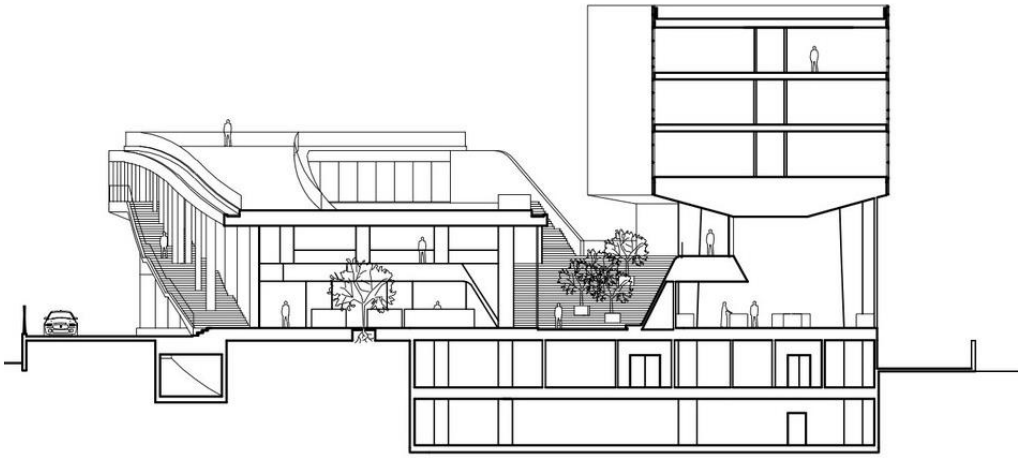


SECTION THROUGH POOL



SECTION THROUGH BAR LOUNGE

5m 10m 20m



SECTION THROUGH LOBBY

5m 10m 20m

Figure 123 Sections

5.1.8 GUEST ROOM TYPOLOGIES

Room Type	No of Rooms
Superior Room City View Queen Bed	89
Deluxe Room Garden View Queen Bed	48
Premium Room Pool View Queen Bed	33
Deluxe Suite City View King Bed	21
Premium Suite Pool View King Bed	3
Loft Suite Pool View King Bed	4
Vivanta Suite Pool View King Bed	1

Table 33 room typologies

Here are the room typologies at Vivanta by Taj – Whitefield, Bengaluru, along with occupancy, room size, and key facilities:

- **Superior Room (City View, Queen Bed)**
  - Occupancy: up to 3 guests
  - Size: ~30 m² (327 ft²)
  - Facilities: queen bed, city view, workstation, free Wi-Fi, kettle, iron, minibar, smart TV, ergonomic seating, shower cubicle

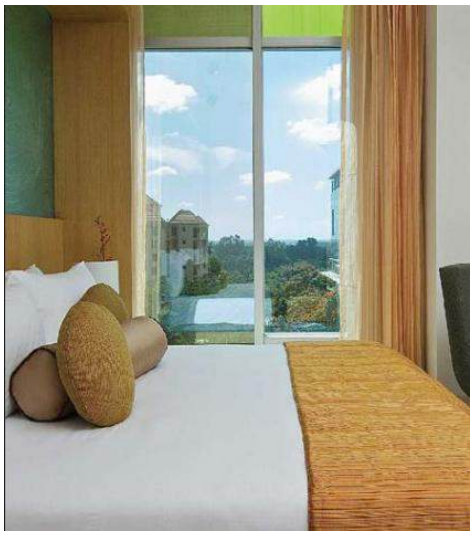


Figure 124 superior room



Figure 125 delux room

- **Deluxe Room (Garden View, Queen Bed)**
  - Occupancy: up to 3 guests
  - Size: ~30 m² (327 ft²)
  - Facilities: queen bed, garden view, ergonomic workstation, Wi-Fi, kettle, iron, minibar, smart TV, shower cubicle

- **Premium Room (Pool View, Queen Bed)**
  - Occupancy: up to 3 guests
  - Size: ~30 m² (327 ft²)
  - Facilities: pool-view queen room, minibar, tea/coffee maker, Wi-Fi, ergonomic seating, smart TV, shower cubicle, access to hotel leisure amenities.



Figure 126 premium room

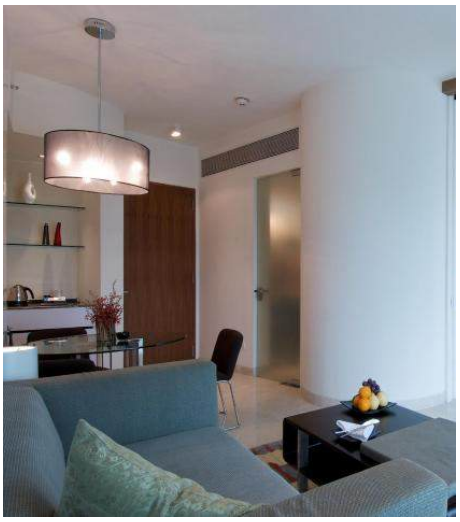


Figure 127 delux suite

- **Deluxe Suite (City View, King Bed)**
  - Occupancy: up to 3 guests
  - Size: ~42 m² (447 ft²)
  - Facilities: separate living room, dining area, king-size bed, bath tub + shower cubicle, yoga kit (on request), Wi-Fi, minibar, smart TV.
- **Premium Suite (Pool View, King Bed)**
  - Occupancy: up to 3 guests
  - Size: ~72 m² (770 ft²)
  - Facilities: spacious living and dining area, king bed, bath tub + shower cubicle, premium INARA amenities, Wi-Fi, minibar, smart TV.
- **Loft Suite (Pool View, King Bed)**
  - Occupancy: up to 3 guests
  - Size: ~86 m² (925 ft²) over two levels
  - Facilities: double-height living area, mezzanine bedroom, kitchenette, minibar, Wi-Fi, premium amenities, bathtub and shower, smart TV.

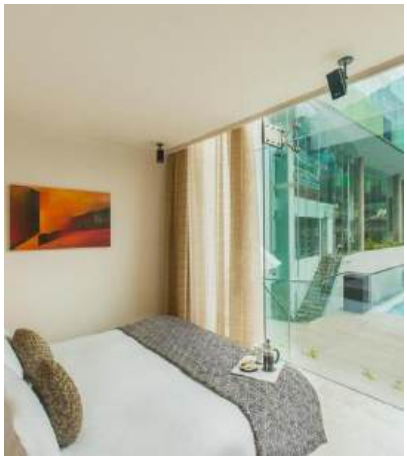


Figure 129 premium suite



Figure 130 loft suite



Figure 128 vivanta suite

- **Vivanta Suite (Pool View, King Bed)**
  - Occupancy: up to 3 guests
  - Size: ~89 m² (~960 ft²)
  - Facilities: two-level suite with living, dining and vanity/lounge spaces, luxurious bath, premium INARA toiletries, Wi-Fi, minibar, kitchenette.

5.1.9 FACILITIES

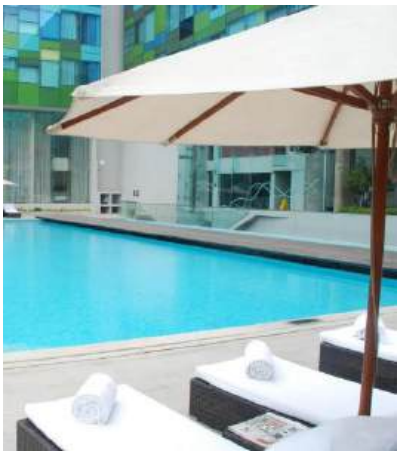


Figure 139 swimming pool



Figure 138 gym

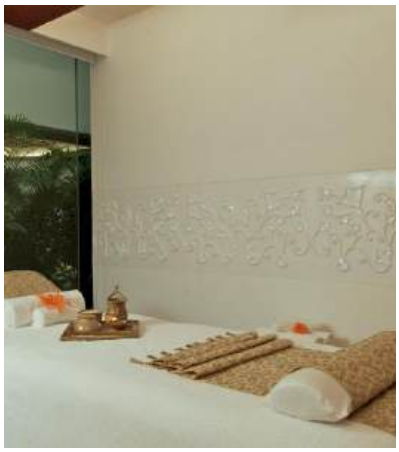


Figure 137 spa



Figure 136 conference hall



Figure 135 meeting hall



Figure 134 latitude



Figure 133 restaurant



Figure 132 tease



Figure 131 Bar

5.2 CASE STUDY: WESTIN HOTEL, GURGAON

5.2.1 INTRODUCTION

The Westin Gurgaon, New Delhi, is a prominent five-star luxury hotel that exemplifies contemporary design, wellness-oriented hospitality, and world-class functionality. Strategically located in the heart of Gurgaon's business district, the hotel caters to both corporate and leisure travelers with its modern architecture, expansive event spaces, and signature wellness amenities. Its design philosophy blends sleek urban aesthetics with biophilic elements, creating an environment that promotes comfort, rejuvenation, and productivity. The property houses spacious guest rooms and suites, versatile banquet and meeting facilities, multiple fine-dining options, and recreational features such as a spa, pool, and fitness studio. This desk appraisal study explores the architectural planning, spatial organization, interior design concepts, and sustainability features that define the hotel as a benchmark for luxury hospitality in an urban setting.



Figure 140 Westin Gurgaon

5.2.2 ABOUT

The Westin Gurgaon, New Delhi, showcases a contemporary design that blends luxury with wellness-oriented spaces. Its architecture features a sleek façade with glass and stone elements, while interiors emphasize openness, natural light, and biophilic details. The layout transitions seamlessly from grand public areas to private guest zones, highlighted by landscaped courtyards and fluid circulation. The banquet and event spaces incorporate artistic elements, custom finishes, and adaptable lighting, reflecting a balance of functionality and elegance. The overall design creates a serene urban retreat that aligns with Westin's focus on comfort, rejuvenation, and modern hospitality.

PROJECT	WESTIN HOTEL
LOCATION	GURGAO
CLIMATE	SUBTROPICAL CLIMATE
TOPOGRAPHY	PLAIN LAND
ARCHITECT	STUDIO U+A NEW YORK/GURGAO
COMPLITION YEAR	2010
NO. OF ROOMS	310
SITE AREA	4.39 acre
FAR	1.5

5.2.3 LOCATION AND CONNECTIVITY

- Located at 1 MG Road, Sector 29, Gurugram, in the Millennium City Centre.
- Close to major commercial hubs – Kingdom of Dreams, Cyber City, MGF Metropolitan Mall.
- Distance to IGI Airport: approx. 14–15 km (25–30 mins by car).
- Metro Access: Near IFFCO Chowk Metro Station (Yellow Line) – ~5 min walks.
- Huda City Centre Metro Station is ~2 km away (5–10 min drive).
- Well connected to Delhi and NCR via NH-48 and major arterial roads.
- Easy availability of cabs, buses, and airport transfers.
- Upcoming metro expansions and road corridors will further improve connectivity.



Figure 141 Location



Figure 142 Land use

5.2.4 FORM DEVELOPMENT

- Designed on an elongated urban site along MG Road in Gurgaon.
- Entry defined by a glass porte-cochère over a reflective pool.
- Two-storey granite podium forms the base, housing restaurants, lobby, and function spaces.
- Podium elements are distinct blocks clad in travertine, bronze, and marble.
- Above the podium rises a sweeping convex guest-room wing with a fritted glass façade, curving northwards.
- South façade features sandstone cladding with deeply recessed openings for shade and privacy.
- Central space includes a landscaped garden courtyard with an infinity-edge pool.
- Form balances solid and transparent elements, creating contrast between urban presence and interior calm.
- The curved glass wing acts as a beacon at night, enhancing the hotel's urban identity.

The building form of The Westin Gurgaon offers both aesthetic appeal and functional efficiency, with a curved glass façade that creates a striking urban identity while maximizing natural light and views. The solid south-facing façade reduces heat gain, enhancing energy efficiency. Its podium separates public and private zones for better circulation and privacy, while the landscaped courtyard and infinity pool provide a serene retreat within a busy city context. The use of varied materials like stone, glass, and bronze adds a timeless, luxurious character to the overall design.

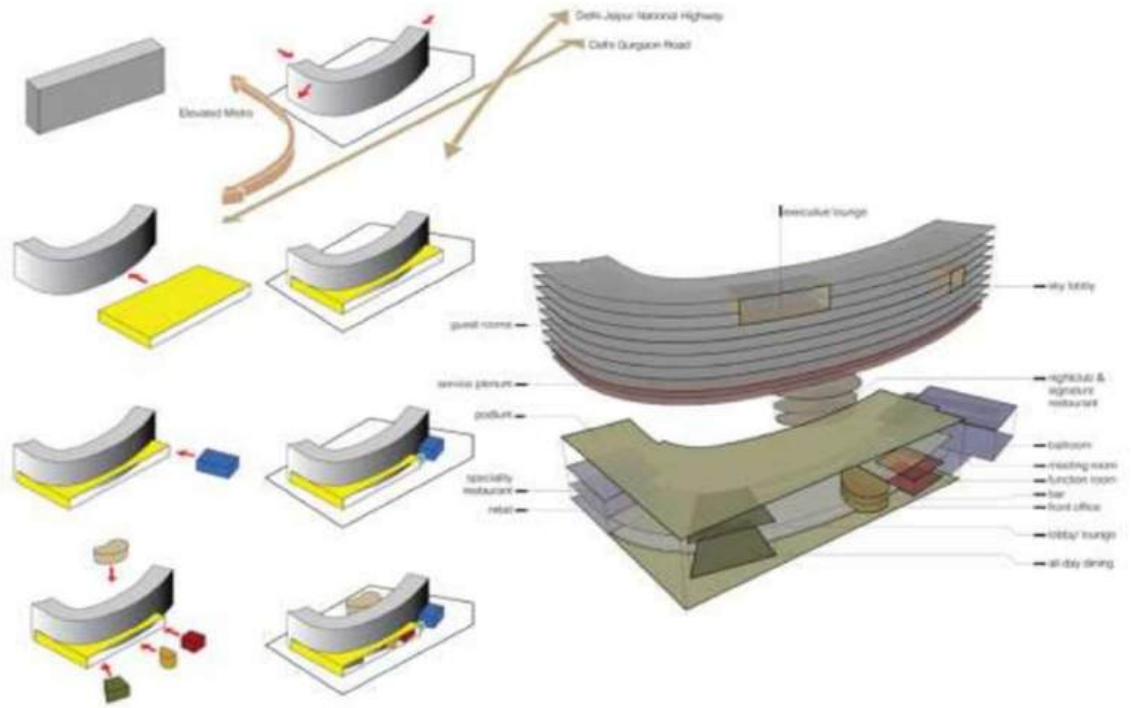


Figure 143 Form development

5.2.5 TRAVERSE SECTION



Figure 144 Section

- 2 Basement Levels – for parking, services, and staff areas.
- Two-storey granite podium – houses lobby, restaurants, and ballroom in double-height spaces.
- Seven-storey guest-room wing – curved block above podium with north glass façade and south sandstone façade.
- Double-loaded corridor – guest rooms arranged on both sides with varying layouts for north and south facades.
- Central landscaped courtyard with infinity pool – creates an open, serene space at ground level.

- Cantilevered restaurant/nightclub block – bronze-clad form projecting outward above the podium.

5.2.6 DISTRIBUTION OF FUNCTIONAL SPACE

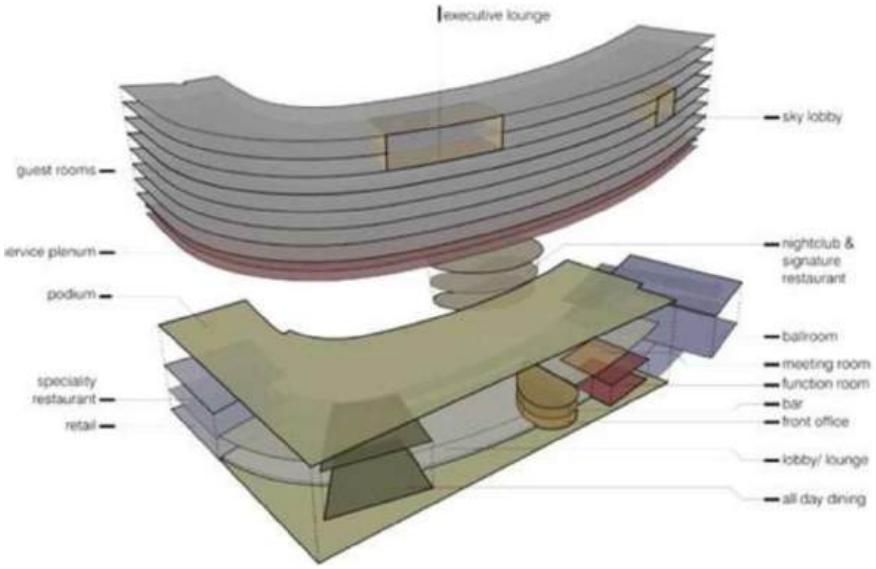


Figure 145 Functional space

The functional zoning of The Westin Gurgaon is organized to ensure a clear separation between public, semi-public, and private areas. The lower levels include retail spaces and specialty restaurants, making them easily accessible to visitors. The podium floors house the main public functions such as the lobby, lounge, all-day dining, front office, bar, meeting rooms, function rooms, and the grand ballroom. Above the podium, a cantilevered block accommodates the nightclub and signature restaurant, providing a distinctive visual element. Between the podium and the guest-room tower lies a service plenum that houses essential building services. The upper curved tower contains guest rooms arranged around a sky lobby, while the topmost level is dedicated to the executive lounge for premium guests. This layout ensures smooth circulation, efficient services, and clear zoning of private and public spaces.



Figure 146 view



Figure 147 front façade

5.2.7 CIRCULATION PLANS

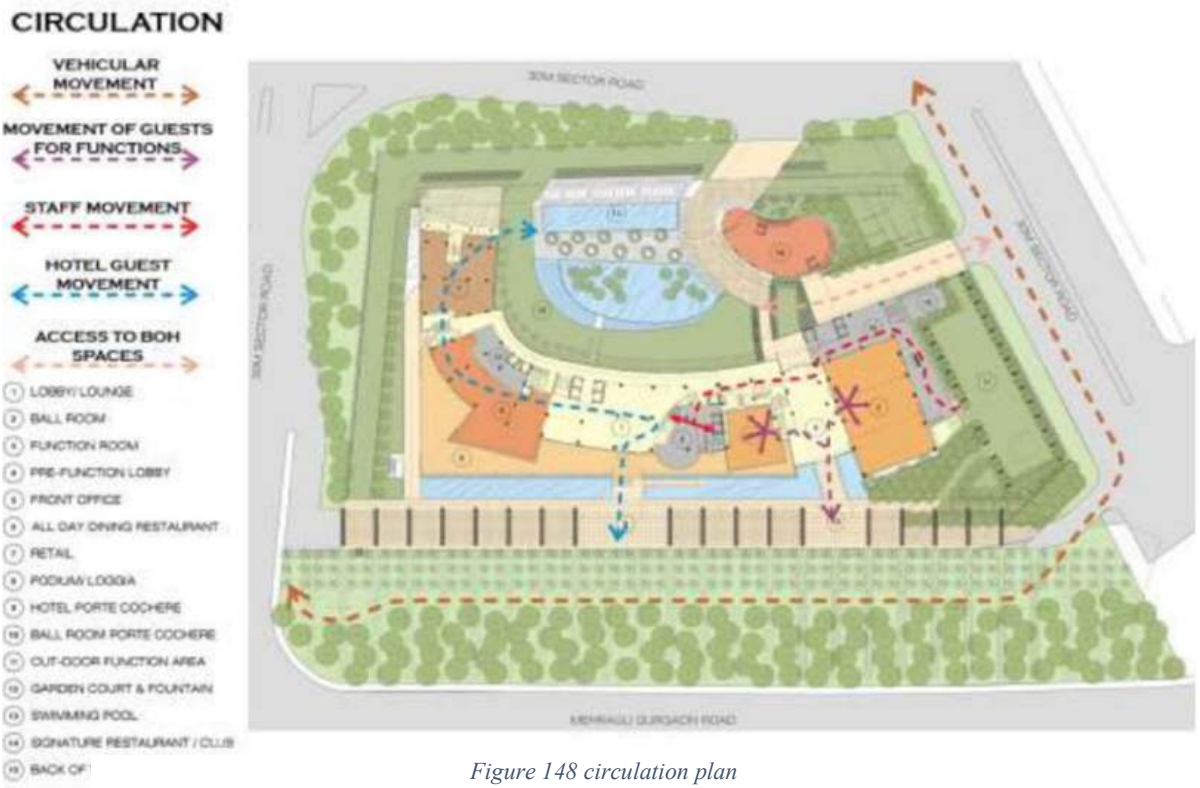


Figure 148 circulation plan

The circulation plan of The Westin Gurgaon is designed to ensure smooth movement for different user groups while maintaining clear zoning and access control. Vehicular movement is organized along the site periphery with dedicated drop-off areas at the hotel porte-cochere and ballroom porte-cochere. Guest movement for hotel functions follows a direct path from the main entrance through the lobby and pre-function areas toward the ballroom and function rooms. Hotel guests have a separate circulation route leading from the entrance and lobby to the guest-room elevators, ensuring privacy. Staff movement and access to back-of-house (BOH) areas are planned separately through service corridors and entries, avoiding conflict with guest paths. The plan also integrates access to outdoor areas such as the garden court, fountain, swimming pool, and signature restaurant/club, providing seamless connectivity between indoor and outdoor spaces while maintaining efficient segregation of public, private, and service flows.

5.2.8 FLOOR PLANS

GROUND FLOOR-

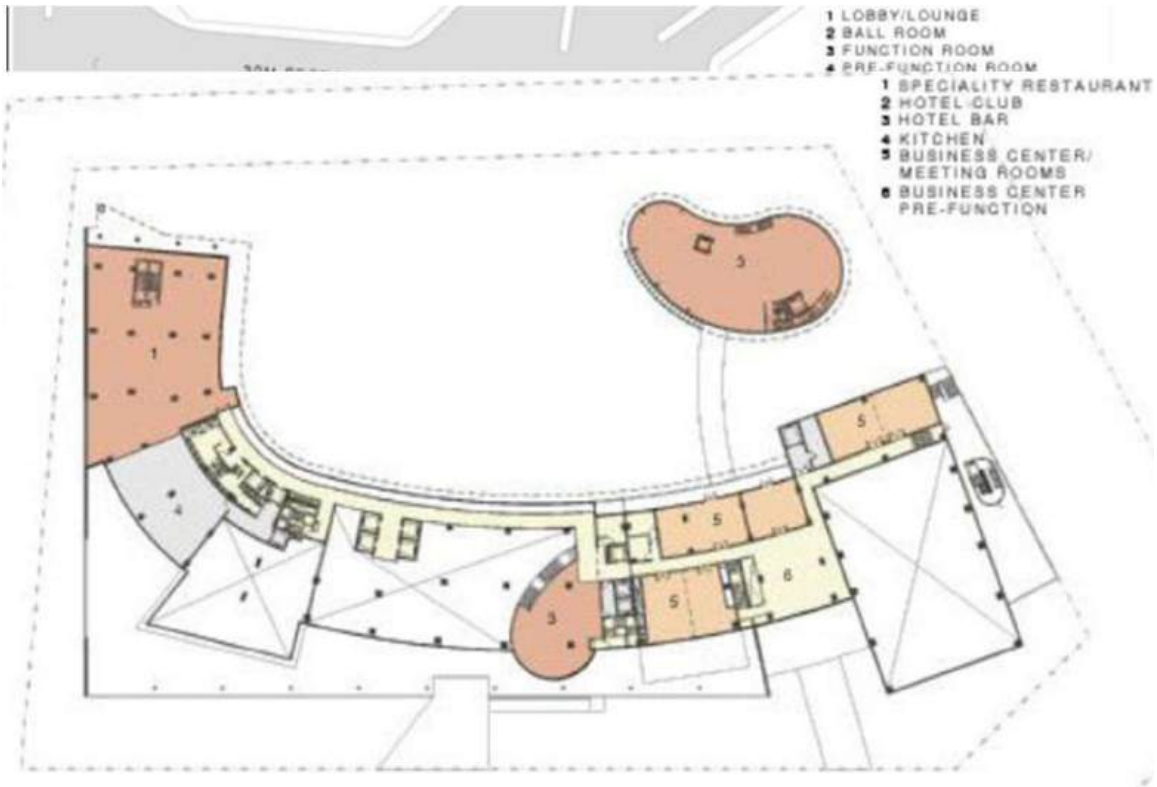


Figure 149 Ground floor

1. Lobby/Lounge – Main reception and guest lounge area.
2. Ballroom – Large event hall for functions and gatherings.
3. Function Rooms – Smaller meeting and event spaces.
4. Pre-Function Room – Foyer space connected to the ballroom and function rooms.
5. Specialty Restaurant – Premium dining outlet.
6. Hotel Club – Lounge or club area for social gatherings.
7. Hotel Bar – Dedicated bar space for guests.
8. Kitchen – Service kitchen supporting F&B outlets and events.
9. Business Center / Meeting Rooms – Spaces for conferences and corporate use.

10. Pre-Function for Business Center – Waiting or circulation space linked to business facilities.

These spaces are arranged to provide easy access from the lobby to dining, events, and business facilities, with service areas like the kitchen placed strategically for smooth operations.

FIRST FLOOR-

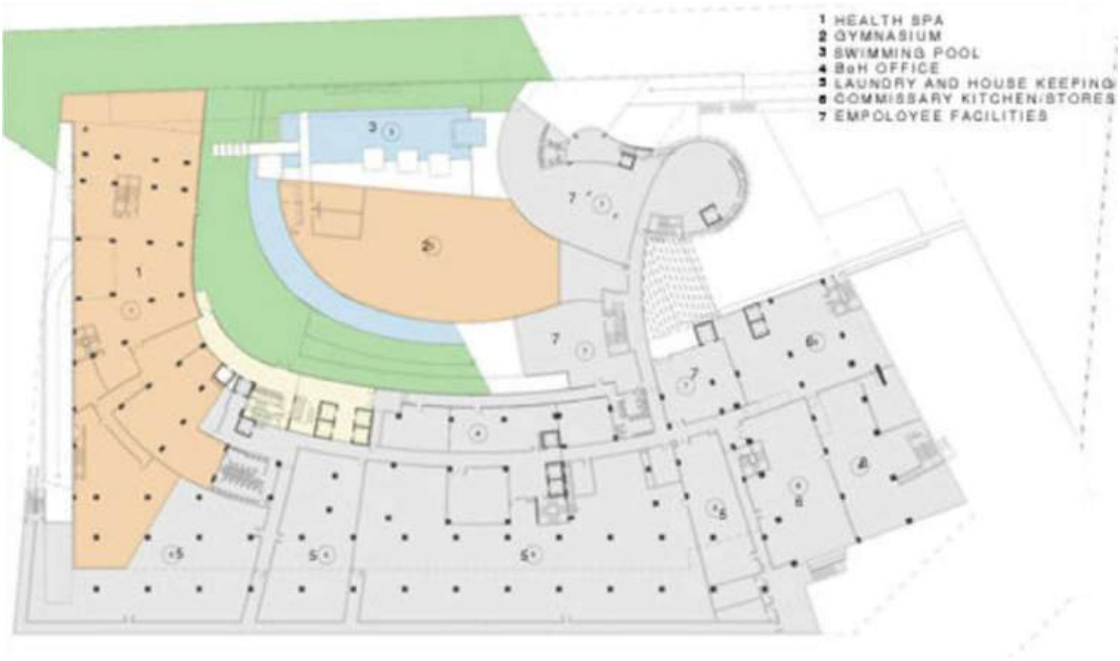


Figure 150 First floor

1. Health Spa – A wellness facility offering treatments and relaxation spaces.
2. Gymnasium – A fitness center for guests.
3. Swimming Pool – An outdoor pool area integrated with landscaped surroundings.
4. BOH (Back of House) Office – Operational offices for hotel management and staff.
5. Laundry and Housekeeping – Service areas for cleaning and guest-room upkeep.
6. Commissary Kitchen/Stores – Central kitchen and storage areas for food and supplies.
7. Employee Facilities – Spaces for staff, including changing rooms, rest areas, and support facilities.

The layout shows a clear division of guest amenities (spa, gym, pool) on one side and service/support areas (kitchen, laundry, BOH offices) on the other, ensuring smooth operations while keeping service functions away from guest activity zones.

TYPICAL FLOORS-

The typical floors of The Westin Gurgaon are designed to maximize guest comfort, privacy, and operational efficiency while aligning with the building's distinctive curved form. These floors primarily accommodate various categories of guest rooms, including standard rooms, executive suites, double suites, and south-facing premium suites, organized along a double-loaded corridor. The layout ensures optimal natural light and views, with rooms strategically oriented towards the city or landscaped areas. Select floors also feature terrace gardens, offering exclusive outdoor spaces for certain suites. Back-of-house offices are integrated within the floor plan to support seamless hotel operations without interfering with guest circulation.

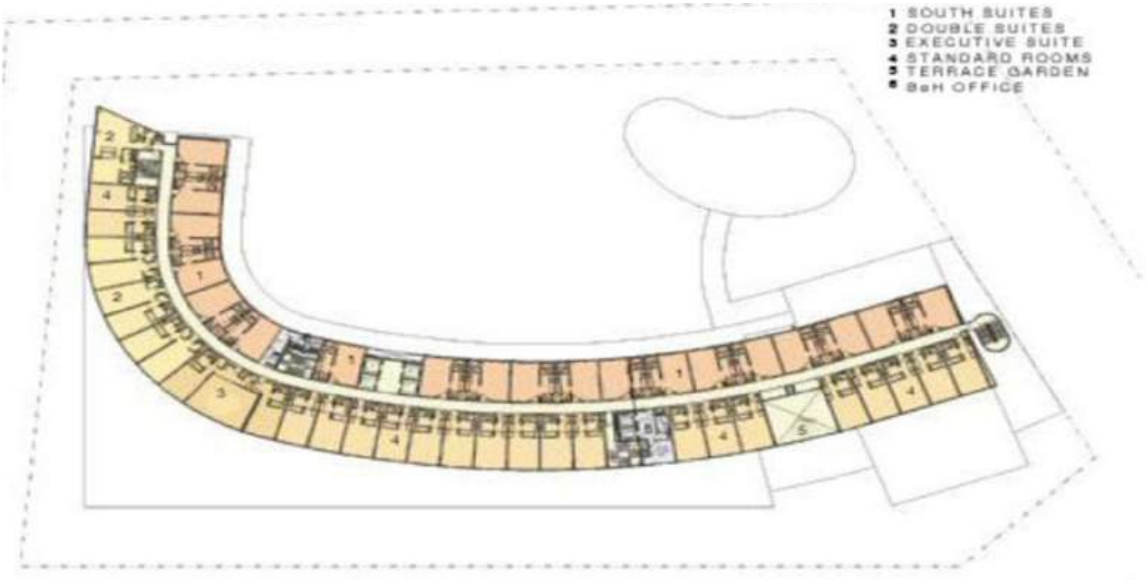


Figure 151 Typical floor

1. South Suites – Premium suites located on the south side.
2. Double Suites – Larger suites for families or multiple guests.
3. Executive Suite – High-end suites with enhanced amenities.
4. Standard Rooms – Regular guest rooms arranged along the curved corridor.
5. Terrace Garden – Outdoor landscaped area accessible from certain rooms.
6. Back-of-House (BoH) Office – Service areas for staff operations on the guest floors.

The layout shows a double-loaded corridor with guest rooms on both sides, ensuring efficient circulation and maximum room frontage, while service areas are kept to one side for staff use without disturbing guests.

5.2.9 STRUCTURAL OVERVIEW

1. Structural Team & Contractors: Designed by Spazzio Design Architecture, with Kalpataru Projects International and Ahluwalia Contracts executing the build. Structural engineering consultancy was led by Vintech Consultants, known for innovative solutions in complex hospitality structures

2. Load-Bearing Strategy: The hotel utilizes a flat-plate concrete slab system, supported by a two-storey granite-clad podium and an asymmetrical, curved guest-room block above. This arrangement facilitates unobstructed interior spaces and smooth transfer of vertical loads.

3. Cantilevered Elements: The kidney-shaped signature restaurant/nightclub is supported on a cantilevered bronze-clad volume, adding visual drama while requiring precise structural planning to balance lateral loads.

4. Transparent-opaque façade balance: The north elevation uses floor-to-ceiling fritted glass panels, fixed to structural framing for solar control, whereas the south presents a solid sandstone façade with deep punched openings, effectively managing solar gain

and structural integrity.

5. Garden Court & Void Strategy: A double-height central courtyard over the gym and pool area is created via structural recesses in the guest-room block, allowing daylight penetration and spatial layering while enabling load transfer around the void.

6. Basements & Services: Two basement levels accommodate parking, MEP systems, and support zones. These areas rely on reinforced concrete foundations, basement retaining walls, and floor systems designed for heavy live/dead loads.

SERVICES-

- Air conditioning - Central A.C plant located in basement with AHUs for guest rooms on the respective floors and in plenum for banquet halls
- Electrical layout - Transformer is located beside Prego. Main panels are located in the basement with shafts running to serve all the floors.
- Fire protection - There is a fire escape staircase on the western corner of the hotel with every floor provided with four fire hydrant closets.



Figure 152 structure

5.2.10 VERTICAL ZONING

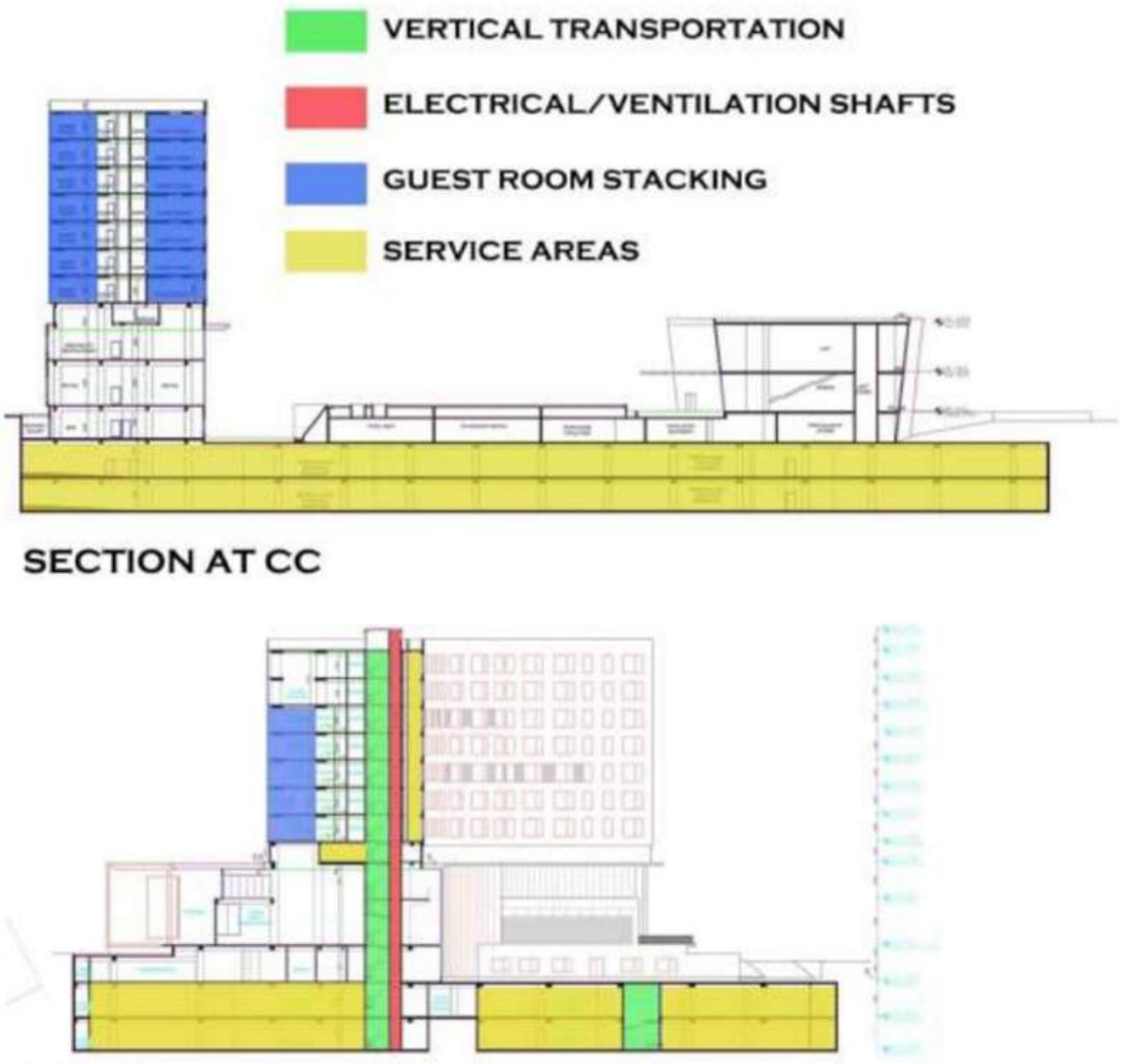


Figure 153 Vertical zoning

1. Service Areas (Yellow)

- Located in the basement and podium levels.
- Include kitchens, housekeeping, laundry, storage, and other back-of-house facilities.

2. Guest Room Stacking (Blue)

- Upper floors contain stacked guest rooms, including standard rooms and suites.
- Arranged along a double-loaded corridor for efficient circulation.

3. Vertical Transportation (Green)

- Elevator and stair cores provide access to all levels from basements to guest room floors.
- Ensures separation of service and guest circulation.

4. Electrical/Ventilation Shafts (Red)

- Service shafts run vertically to supply MEP services to all floors.
- Centralized placement allows efficient distribution of electrical, plumbing, and HVAC systems.

6. DESIGN INFERENCES

6.1 SITE INVENTORY INFERENCES-

1. **Entrances and Exits**

- **Primary Entry:** Utilize the 24 m-wide Jehan Numa Palace Road for the main guest entry and VIP drop-off zones.
- **Service Entry**: Provide a separate service/staff entry from a secondary internal road to avoid congestion.
- **Pedestrian Access**: Dedicated pedestrian paths leading to the lobby and public areas to ensure safety and experience.
- **Vehicular Circulation**: Zig-zag or contour-following driveways (max slope 1:10) for parking access and fire tender movement.

2. **Foundation Design**

- The site has rocky subsoil and natural slopes, so step foundations, raft or pile footings are recommended.
- Retaining walls with drainage (weep holes) must be included to prevent erosion and ensure slope stability.
- Avoid mass excavation—use contour-based split-level design to reduce environmental impact.

3. **Noise Protection**

- The site is mostly quiet with natural bird sounds and lake ambience, but occasional traffic noise exists.
- Use tree buffers, earth berms, and Jali screens on the road-facing side to block noise without obstructing ventilation.
- Interior planning can position service and utility zones towards the road to act as noise buffers for guest rooms.

4. **Orientation & Climatic Response**

- Align long façades along the north-south axis to reduce solar gain from the east and west.
- Guest rooms and lounges should face the Upper Lake (northwest) to capture views and cooler breezes.
- Use staggered massing or stepped terraces to create shaded decks and airflow between levels.

5. **Cooling Strategies (Bhopal Composite Climate)**

- **Passive:** Pergolas, deep verandas, recessed windows, cross-ventilation corridors, water bodies, vertical gardens.
- **Active:** VRF systems, zonal HVAC, radiant cooling, BMS-based automation for lighting and air-conditioning.
- Use green roofs and high-SRI materials to reduce heat gain at upper levels.

6. **Vernacular Materials**

- Combine local red sandstone, lime plaster, handmade bricks, and exposed stone for façades and interiors.

- Add Jali screens, deep verandas, and colonnades inspired by Mughal and Islamic architecture.
- Interior elements can integrate Gond and Bhil tribal art, reflecting Bhopal's cultural heritage.

UNIQUE DESIGN STRATEGIES FROM SITE INVENTORY-

♦ **Modern Glass + Roman & Islamic Arches**
- Use **arched double-height glazing** in public areas such as the lobby and banquet halls.
- Combine **transparent glass façades** with **Roman and Islamic-style arches** to create a balance between modern luxury and cultural heritage.
- These arches can frame scenic views, acting as visual landmarks from outside and inside.

♦ **Terrace Gardening & Biophilic Design**
- Incorporate **tiered green terraces** along the natural slopes of the site.
- Plant **native trees** such as Neem, Peepal, Banyan, and Jamun for shade, biodiversity, and passive cooling.
- Terrace gardens will serve as **relaxation zones, café decks, and event spaces**, enhancing the resort-like ambience.

♦ **Indoor-Outdoor Connectivity**
- Introduce **sky gardens, semi-open courtyards, and lake-facing decks**.
- Design **retractable glass walls** in lounges and restaurants to create convertible indoor-outdoor spaces.
- Ensure **cross-ventilation and natural lighting** through courtyards and open atriums.

♦ **Cultural & Heritage Expression**
- Use **Islamic arches, Mughal-style water courts, and colonnaded walkways** in public areas.
- Blend **locally sourced sandstone, terracotta, and jali screens** with glass and steel to merge tradition with modernity.
- Integrate **digital interactive art walls** featuring Gond and Bhil tribal art, celebrating local culture.

♦ **Climate-Sensitive Design**
- Orient **guest rooms northwest** to capture lake views and cool breezes.
- Use **double-skin façades** with stone or perforated panels on east and west façades to reduce heat gain.
- Implement **passive cooling strategies** like evaporative cooling pools, mist fountains, and deep verandas.

♦ **Tiered Water Courtyards with Roman-Islamic Fusion**
- Design **stepped water channels and pools** inspired by Mughal Charbagh layouts.
- These features provide **visual connectors between public spaces** while working as **passive cooling elements**.

♦ **Double-Skin Glass Façade with Jali Patterns**
- Use **locally inspired jali patterns** on perforated stone/metal screens over modern glass façades.

- Creates **diffused daylight, reduced heat gain, and cultural aesthetics**.

♦ **Multi-Level Terrace Gardens with Interactive Zones**
- Develop **multi-level terraces with cafés, lounges, and event decks** overlooking Upper Lake.
- Use **pergolas and arches for shade**, integrating them into the structural design.

♦ **Hybrid Archways in Structural Design**
- Incorporate **Roman arches for entrances** and **Islamic pointed arches in courtyards**.
- Use **frameless glass with arches** for a modern yet culturally rooted look.

♦ **Split-Level Public Spaces**
- Plan **lobby, restaurants, and banquet halls on split levels** to follow the natural slope.
- This enhances **visual connectivity between spaces** and reduces earthwork.

♦ **Sunken Courtyard with Water-Fed Cooling**
- Create **sunken gardens or open-air atriums** with misting systems and fountains.
- These areas work as **cooling hubs** and offer unique guest experiences.

♦ **Cultural Interactive Walls**
- Install **digital and static art walls** showcasing local tribal art combined with natural textures like sandstone and terracotta.
- Enhances the **cultural identity of the hotel** while adding a luxury appeal.

♦ **Indoor-Outdoor Flexible Lounges**
- Provide **lounges with retractable glass walls** that can open during pleasant weather.
- Connect these lounges to landscaped decks for social gatherings.

♦ **Dynamic Shading Structures**
- Use **movable pergolas or tensile shading devices** on terraces and decks.
- Adaptable shading improves comfort and energy efficiency.

♦ **Rooftop Infinity Deck Overlooking Upper Lake**
- Create a **signature rooftop bar, restaurant, or event deck**.
- Add an **infinity pool with Islamic arches framing the lake view**, combining luxury with heritage aesthetics.

These strategies combine **climate-responsive design**, **heritage expression**, and **modern hospitality requirements**, resulting in a **luxury hotel that is sustainable, culturally rooted, and visually iconic for Bhopal**.

6.2 CASE STUDY INFERENCES-

♦ Westin Gurgaon

Building Form:

- Curved glass façade with a sweeping convex guest-room wing.
- Podium base with distinct travertine, bronze, and marble blocks.
- Central landscaped courtyard with an infinity-edge pool.
- Cantilevered bronze-clad restaurant/nightclub adds drama.

Site Zoning:

- Two basement levels for parking and services.
- Podium houses lobby, restaurants, and ballroom.
- Above podium: guest rooms in a curved block with double-loaded corridors.
- Clear segregation of public, semi-public, and private areas.

Material Use:

- Blend of glass, stone, and bronze for a modern yet timeless look.

♦ Radisson Bhopal

Building Form:

- Mid-rise block (6 floors) with step-backs and roof terraces to reduce bulk.
- Articulated façade to avoid a monolithic appearance.
- Rooftop pool and terrace lounge as signature features.

Site Zoning:

- Compact rectangular site with efficient zoning for valet, guest drop-off, and service entry.
- Green buffers to reduce road noise and enhance privacy.
- Public zones on lower floors, rooms on upper levels.

Material & Vernacular Integration:

- Gond tribal art showcased in murals and interiors, created by local artisans.
- Double-glazed windows, sun-shading devices, thermally insulated finishes.
- Cultural identity expressed through art while using high-performance façade materials.

♦ Vivanta by Taj Bangalore

Building Form:

- "Landscraper" horizontal form inspired by a Möbius strip.
- Fluid, dynamic spaces inspired by Indian classical dance.
- Integrated green roofs, sloped landscaped surfaces, and pixelated glass façade.

Site Zoning:

- L-shaped layout to buffer airport noise while enclosing a central landscaped courtyard.
- Clear division of public and private zones with strong indoor-outdoor connectivity.

Material & Vernacular Integration:

- Use of local materials and craftsmanship.
- Green roofs and landscaping to reduce heat gain and promote rainwater harvesting.

♦ Taj Lakefront Bhopal

Building Form:

- Symmetrical façade with curved frontage inspired by the lakefront site.
- Landscaped front arrival plaza with water features.
- Terraced massing to enhance lake-facing views.

Site Zoning:

- Front part for guest arrival and landscape.
- Back side for services and operational access.
- Banquet halls on lower floors and guest rooms/suites on upper floors facing the lake.

Material & Vernacular Integration:

- Symmetrical layouts and colonnaded pathways inspired by palatial architecture.
- Interiors incorporating local heritage motifs and artworks.

Key Learnings-

Building Form Ideas:

- Curved façade with mixed materials (Westin Gurgaon).
- Step-back terraces to reduce bulk (Radisson Bhopal).
- Horizontal “landscraper” with fluid spaces (Vivanta Bangalore).
- Symmetrical façade with lake-facing terraces (Taj Bhopal).

Site Zoning Strategies:

- Separate guest and service entries (all case studies).
- Central landscaped courtyards for light, ventilation, and views.
- Rooftop leisure decks and pools as signature elements.

Vernacular & Cultural Expression:

- Gond/Bhil tribal art and murals (Radisson Bhopal).
- Palatial water courts and colonnades (Taj Bhopal).
- Local craftsmanship and green roofs (Vivanta Bangalore).
- Stone, bronze, and glass to achieve modern-luxury appeal (Westin Gurgaon).







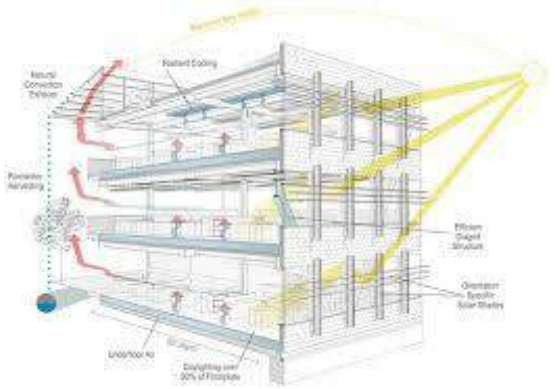




Figure 154 Design inferences

REFERENCES

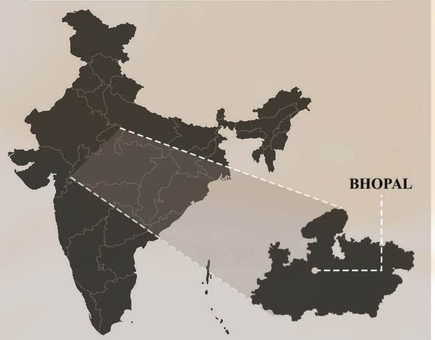
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FINAL SHEETS


ECOVANA
ECOVANA
LUXE GRANDEUR

SITE ANALYSIS

Name of the project: Development of a 5-star hotel with premium facilities at Bhopal
Proposing Authority: Madhya Pradesh Hotel Corporation Ltd (MPHCL), subsidiary of Madhya Pradesh State Tourism Development Corporation Ltd. (MPSTDC)
Location: MPT area, Shyamala Hills, Bhopal, Madhya Pradesh
Site Coordinates: Latitude 23.243043, Longitude 77.387689
Landmarks : Jehan Numa Palace, Upper Lake, Birla Museum, Manav Sangrahalaya.



PROJECT DETAILS

SR. NO.	DESCRIPTION	PROPOSED
1	SITE AREA (SQ.M)	28975.5 SQ.M
2	SITE AREA (ACRE)	7.16 ACRE
3	GROUND COVERAGE	30%
4	BUILDING HEIGHT	32 M
5	FAR	2
6	FRONT SETBACK	12 M
7	REAR & SIDE SETBACK	7.5 M
8	MAX. BUILT UP AREA (SQ.M)	57929 SQ.M
9	BASEMENT	3

ACCESSIBILITY

North: Green buffer zone along Upper Lake, accessible via internal paths.

East: Access to nearby hospitality and residential plots through local roads.

West: Cultural landmarks like Birla Museum, Manav Sangrahalaya, and Van Vihar via lakefront road.

South: Main entry from 24 m wide Jehan Numa Palace Road connecting to VIP Road and city center.

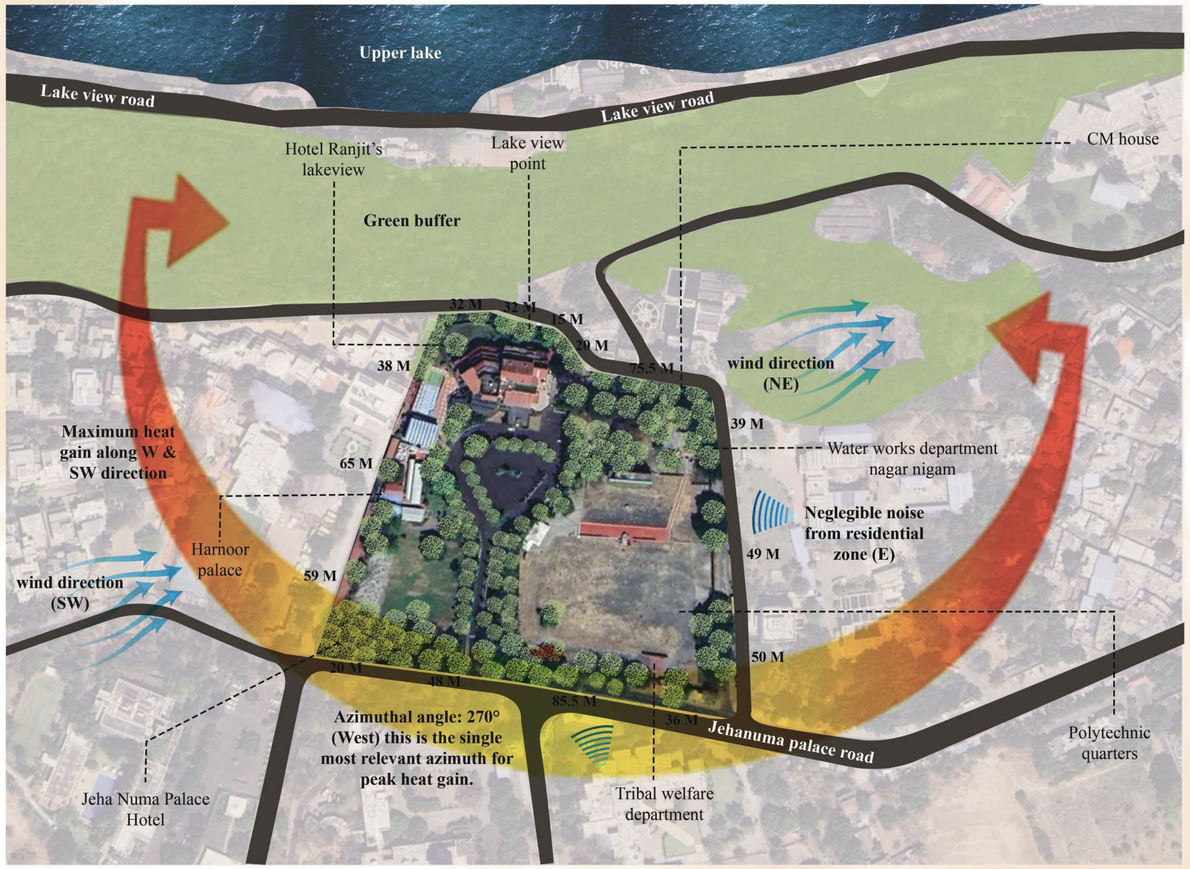
VEGETATION

Shyamala Hills is a green, biodiverse zone featuring **evergreen native trees** like neem, peepal, and banyan, along with a rich layer of shrubs and grasses. It also includes vibrant **ornamental species** such as gulmohar and amaltas, adding visual character to the landscape.

LAND USE

- Dominated by government and institutional land use in the immediate vicinity.
- Notable hospitality presence, including hotels and guest houses.
- Surrounded by cultural, recreational, and tourism-oriented areas.
- Directly connected to natural open spaces, especially near the Upper Lake.

SITE ANALYSIS



CLIMATE

The site has a **composite climate,** showing clear seasonal shifts with hot summers, humid monsoons, and cool winters, requiring adaptable design strategies for comfort throughout the year.

Temperature: 12 °C minimum (January nights); up to 40–43 °C maximum in peak summer.

Humidity: Peaks at 76% in August; drops to 18% in April.

Rainfall: Highest 346 mm in July; lowest 4 mm in April.

Wind: Predominantly from the west, especially March–September (79% of hours).

SWOT ANALYSIS

Strength:

The site's strength lies in its **prime Shyamala Hills location** with **panoramic Upper Lake views**, supported by close access to cultural, recreational, and tourist landmarks. Its **excellent connectivity** to the airport and city center further enhances accessibility and strategic value.

Weakness:

The site's weaknesses include the **need to demolish existing structures**, which adds to initial cost and effort. Its l**imited area restricts horizontal expansion**, and the **steep contours** make construction more challenging, requiring careful planning and engineering.

Opportunity:

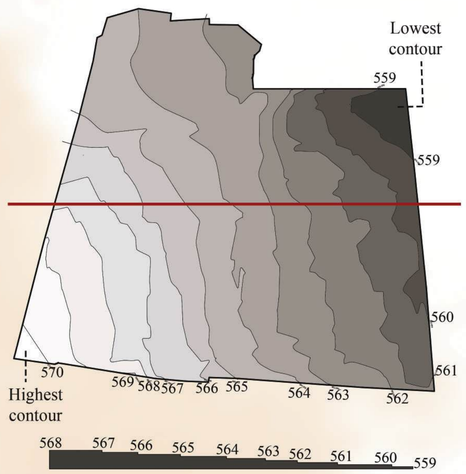
The site presents an opportunity to develop a landmark **eco-sensitive luxury hospitality project** that **boosts tourism** while showcasing sustainable design and maximizing its natural setting.

Threats:

The site's gentle slope toward the Upper Lake poses **risks of drainage issues**, erosion, and sediment runoff, requiring **careful construction** measures and strict regulatory compliance to prevent environmental impact.

SOIL TYPE AND TOPOGRAPHY

The site has **medium black soil (accd. to CGWB (Central ground water board))** with good bearing capacity but shallow bedrock in some zones. The topography features a gentle to moderate slope toward the Upper Lake, **enabling natural drainage but requiring careful runoff control and terracing**. The undulating contours support stepped building design and offer enhanced lake views. Due to the soil characteristics and contour variation, **raft foundations** are suitable for managing differential settlement, while **pile foundations** may be required in areas where deeper, more stable strata are needed.



Contour Inferences-

Minimizes cutting and filling, reducing cost and site disturbance.

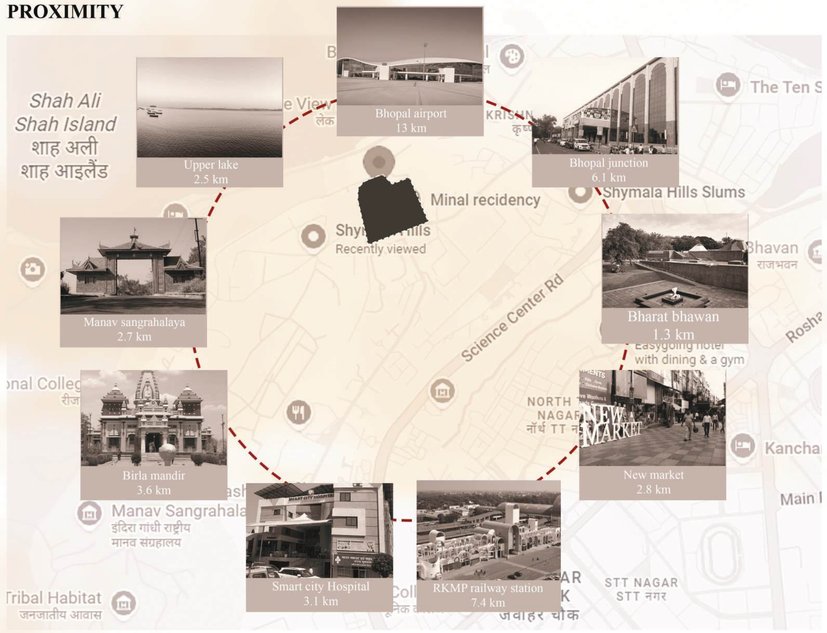
Respects natural drainage, preventing erosion and waterlogging.

Allows stepped terraces for views, light, and ventilation.

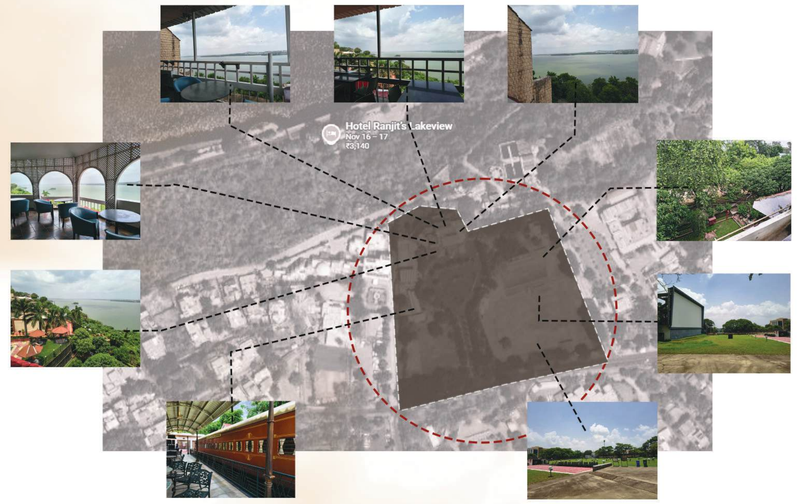
Enhances landscape aesthetics by creating multi-level green pockets, sloped gardens, and natural amphitheatre-like spaces.

Scale: 1:1500

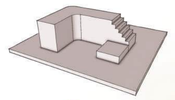
PROXIMITY



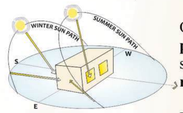
SITE SURROUNDINGS AND VIEWS



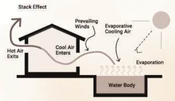
INFERENCES



Natural contours are utilised to **minimise cut-and-fill**, support **stepped building design**, and maintain natural drainage for **better landscape integration.**



Orientation **reduces west-facing exposure** to counter Bhopal's harsh summer sun while **maximising natural daylight.**



Balconies face the lake to capture views and **enhance indoor–outdoor interaction.**

Water bodies and landscape features moderate the microclimate, improve thermal comfort, and elevate site aesthetics.



Green terraces reduce heat gain, aid rainwater harvesting, and provide usable recreational spaces.



The **site layout allows multiple access points**, enabling smooth movement and dedicated entrances for different functions.



A **western green buffer minimises heat gain,** adds shading, and improves environmental performance.

Terrace solar panels harness intense sunlight to reduce energy consumption and boost sustainability.

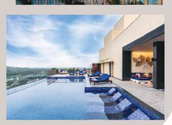
CASE STUDY

TAJ LAKEFRONT, BHOPAL



Location – Link Road 3, Prempura Road, Bhopal; hillside plot overlooking Upper Lake.
Completion – Completed in 2021.
Architects – Aedas Singapore (design architect) and Kushwah & Kushwah Architects, Bhopal (local architects).
Site Area – 4 acres (approx. 16,194 sq.m).
Built-up Area – 19,846 sq.m
F.A.R. – 2.0.
Height – 54 metres including basements.
Floors – 10 above-ground floors + 2 basements.
Basements – DG sets, WTP/STP/ETP, fire tanks, services, and parking.
Rooms – 152 rooms (142 rooms + 10 suites).
Materials – Natural stone, terracotta, modern glazing, and local crafts (metalwork, zari, textiles).
Theme – Blend of regional heritage with contemporary luxury; lakefront resort–urban hybrid.
Features – Infinity pool with lake views, triple-height lobby, banquet halls, and interiors featuring regional art and crafts.
Landscape – 2,000 sq.m banquet lawn, Satpura Terrace, lake-facing gardens, and naturally ventilated outdoor areas.
Concept – Fusion of traditional regional craftsmanship with modern luxury.



RADISSON HOTEL, BHOPAL



Location – Gulmohar Colony (Bawadia Kalan), Bhopal; prime urban area.
Completion – Completed in 2021.
Site Context – Urban infill site within a compact residential–commercial zone.
Developers – Shiva Infrastructures; architects not clearly specified.
Site Area – 1 acre (approx. 4,046.80 sq.m).
F.A.R. – 2.0.
Floors – 8 floors + 1 basement.
Basement – On-site parking, basement floor parking, and garbage/storage areas.
Rooms – Total 104 rooms.
Materials – Modern facade with DGU glazing, shading devices, and insulated finishes.
Theme – Contemporary business hotel with strong MICE orientation; terraces used as social spaces.
Features – Rooftop infinity pool with event deck, naturally lit corridors, Gond mural (200+ hours of craftwork).
Landscape – Urban green buffers and rooftop terraces.
Concept – Contemporary functional design with cultural elements (art-infused interiors).
Safety – Standard hotel fire compliance (sprinklers, exits); detailed specs not publicly available.



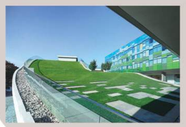


VIVANTA BY TAJ, WHITEFIELD, BANGALORE



Location – Whitefield, opposite/near International Tech Park, Bangalore.
Completion – Completed in 2009.
Site Context – Tech-hub business district surrounded by major IT parks.
Architects – WOW Architects and Warner Wong Design (Singapore).
Site Area – 4.8 acres (approx. 19,638 sq.m).
F.A.R. – 1.7.
Floors – 4–5 floors.
Basement – 1 basement for parking and event-support functions.
Rooms – 199–200 rooms.
Materials – Terracotta elements, reflective glass, and an earthy color palette.
Theme – Courtyard-centric "landscaper" concept with terracotta-inspired earthy aesthetics.
Features – Loop podium inspired by the Möbius strip, strong indoor–outdoor connectivity, and a central landscaped courtyard.
Landscape – Central green courtyard, roof gardens, and rainwater-harvesting interventions.
Concept – Modern organic fluidity (loop/Möbius-inspired form) with earthy, terracotta-based materiality.






WESTIN HOTEL, GURGAON, NEW DELHI



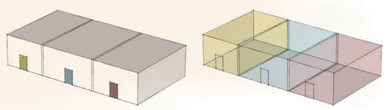
Location – MG Road, Sector 29, Gurgaon CBD, near NH-8 and Metro, Gurgaon/New Delhi.
Completion – Completed in 2010.
Site Context – Elongated CBD site with major arterial frontage along NH-8 and MG Road.
Architects – Warren Wong Design and Studio U+A (New York & Gurgaon).
Site Area – 4.39 acres (approx. 17,770 sq.m).
F.A.R. – 1.5.
Floors – 10 floors (2 basements + 2 podium + 7 guest floors).
Basements – 2 basements for parking and MEP services.
Rooms – 310–313 rooms.
Materials – Sandstone on south façade with deep reveals, fritted glass on north façade, and bronze cladding elements.
Theme – "Urban resort" combining luxury and wellness; strong contextual modern expression.
Features – Bronze-clad cantilevered restaurant, reflective water entry court, double-height lobby, and sculptural curved glass above a stone/bronze podium.
Landscape – Landscaped central court, infinity pool integrated with podium garden.
Concept – International modernism blended with contextual stone + glass vocabulary; wellness-centric urban resort character.





INFERENCES FROM CASE STUDIES

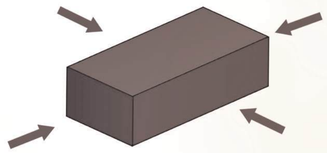
Large banquet halls consistently function as flexible, column-free spaces with seperate guest entrance and segregated service routes, where the pre-function, main hall, and BOH zones are clearly separated for smooth operations.



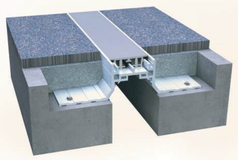
Rooftop infinity pools are strategically positioned so their vanishing edge blends with nearby water bodies, creating a luxurious environment while offering an uninterrupted and stunning lake view.



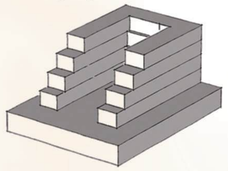
Circulation is optimized by providing multiple, clearly separated entrances such as the main guest entry, a dedicated banquet entry, independent BOH/service access, and isolated parking routes ensuring smooth movement, privacy, and efficient operations across all functions.



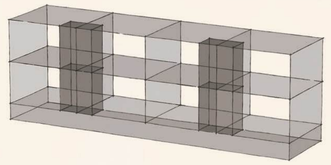
Expansion joints are essential in large hotel structures, as they effectively absorb thermal movement and prevent structural cracking ensuring durability and stability across extensive podiums, towers, and connected building segments.



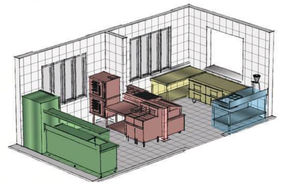
Stepping the upper floors not only establishes a distinctive and iconic architectural profile but also enhances outward views for guest rooms and creates opportunities for landscaped terrace levels, enriching both the visual character and environmental quality of the hotel.



Using one shared plumbing shaft for two adjacent guest-room bathrooms is more efficient, as it reduces redundant shafts, lowers construction and maintenance costs, and simplifies vertical service routing while keeping services more accessible and organized.



5-star hotel kitchens follow a four-zone layout—receiving/storage, preparation, cooking, and dishwashing/dispatch—to ensure hygienic separation, smooth workflow, and efficient high-volume food service.



Encorporating curved building elements not only elevates the architectural aesthetics through smoother, more dynamic forms but also improves functionality by guiding circulation, enhancing aerodynamics, maximizing views, and softening the massing to create a more welcoming and efficient built environment.



DESIGN CONCEPT

"Ecovana Luxe Grandeur" presents a modern 5-star hotel where nature and contemporary architecture merge effortlessly. The design uses clean lines, functional planning, local materials, and soft daylight to create a serene yet luxurious atmosphere. Every space feels refined, calm, and connected to greenery, offering guests a grand biophilic experience within a distinctly modern form.

The hotel features a sleek modern architectural form enhanced by large openings, clean lines, and functional planning. Lush landscaping with native plants, water features, and green terraces seamlessly softens the structure, blending nature with contemporary luxury.

COMPARITIVE ANALYSIS



Spaces	Taj Lakefront, Bhopal	Radisson hotel, Bhopal	Vivanta by Taj, Whitefield	Westin hotel, Gurgaon	Inferences
Lobby	sq.m	sq.m	sq.m	sq.m	sq.m
Front desk	~	44	40	38	50
Lounge area	~	74.66	100	160	160
Toilets	~	~	30	48	48
Luggage store	~	10	15	15	15
Bell man	~	5	4	5	5
Guest lifts	~	~	11	11	11
Business centre	~	~	36	35	36
Retail shops	~	~	25	25	25
Offices					
General manager	~	~	15	15	15
Secretary GM	~	~	9	9	9
FO MGR	~	~	5	9	9
Revenue MGR	~	~	4	5	5
F & B MGR	~	~	10	10	10
Reservation office	~	~	8	8	8
Discussion rooms	~	~	25	25	25
Work Station	~	~	6	5	5
Chief accountant	~	~	8	8	8
Credit manager	~	~	5	5	5
Cashier	~	~	10	10	10
Controller	~	~	5	5	5
Payroll manager	~	~	5	5	5
Accounts records	~	~	10	10	10
Meeting room	~	~	25	25	25
Computer room MGR	~	~	17	17	17
UPS	~	~	35	35	35
Records	~	~	30	30	30
Storage & copying	~	~	19	18	20
Sales MGR	~	~	18	9	9
Banquets					
Banquets MGR	22	22	18	22	22
Banquet hall	560	560	450	560	560
Pre-function area	160	160	160	160	160
Conference room	55	55	70	55	55
Toilets	68	68	60	68	68
Recreational Facilities					
Swimming pool	140	500	100	140	140
Pool change room	33	~	50	33	33
Gym	25	166.8	100	25	25
Massage rooms	25	161.1	60	40	40
Saloon			50	50	50
Guest Rooms					
Double bed rooms	33	35	27	30	30
Suites	38	40	45	87	87
Twin bed rooms	33	35	30	32	32
Gallery Suite	~	70	~	~	~
Kitchen					
Main Kitchen	115	135	85	115	115
Room Service Kit	35	35	20	35	35
Pantry	~	30	32	32	32
Bakery	~	~	20	20	20
Commissary	~	~	40	40	40
Dishwash	~	~	20	20	20
Pot wash	~	~	15	15	15
Cold kitchen	~	~	10	10	10
Cafe kitchen	~	~	12	12	12
Show kitchen	~	~	8	8	8
Bar pantry	~	64.3	15	15	15
Bar counter	~	~	8	8	8
Chef's office	~	~	6	8	8
Housekeeping					
Issue/tailor/dirties	8	8	5	8	8
Housekeeper ex.	~	10	10	10	10
H/SK office	~	~	16	16	16
House keeper asst.	~	~	8	8	8
Guest supply store	~	~	10	10	10
Bulk linen store	~	~	8	8	8
Dead store	~	~	8	8	8

RIYA BODHE
211110211
THESIS DESIGN

THESIS GUIDE:
DR. SUPRIYA VYAS MA'AM

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CONCEPT & ZONING

LOCATION

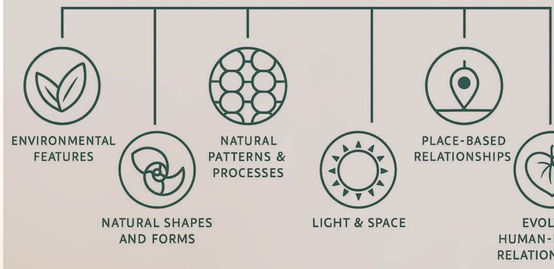
Name of the project: Development of a 5-star hotel with premium facilities at Bhopal
Proposing Authority: Madhya Pradesh Hotel Corporation Ltd (MPHCL), subsidiary of Madhya Pradesh State Tourism Development Corporation Ltd. (MPSTDC)
Location: MPT area, Shyamala Hills, Bhopal, Madhya Pradesh
Site Coordinates: Latitude 23.243043,
Longitude 77.387689
Landmarks : Jehan Numa Palace, Upper Lake, Birla Museum, Manav Sangrahalaya.



DESIGN CONCEPT

"Ecovana Luxe Grandeur" creates a modern luxury hotel where clean contemporary architecture is seamlessly blended with nature. The design uses local materials, natural daylight, and lush greenery to form a calm, refined, biophilic experience that feels grand yet serene.

Biophilic design integrates nature into architecture through greenery, daylight, natural materials, and organic elements. It creates spaces that feel calmer, healthier, and more connected to the environment, enhancing both comfort and overall user experience.



WHY THIS CONCEPT?

Balances luxury and nature, creating a unique modern biophilic identity.

Enhances guest comfort and wellness through greenery, daylight, and natural materials.

Supports functional modern planning while keeping the spaces visually calm and elegant.

Creates a serene retreat-like atmosphere within a contemporary architectural form.

Strengthens the hotel's character by **blending ecological calm with grand aesthetics.**

MATERIALS

- **Low-E Double Glazing**: For modern curtain walls that reduce heat gain and maximize daylight.
- **Aluminium / Metal Frames:** Durable, sleek supports for glazing with a clean contemporary finish.
- **Glass Balustrades & Steel Railings:** Minimal, transparent edges that enhance modern aesthetics.
- **Textured Plaster / Microcement:** Smooth, refined exterior surfaces complementing glazing.
- **Brushed Metal Accents:** Brass/bronze/black steel highlights for entrances and feature elements.
- **Terrace Landscape Materials:** Stone pavers, wood-finish decks, pebbles, and planter edges for green terraces.



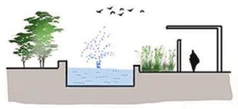




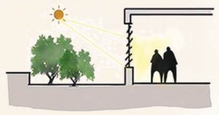
CONCEPTUAL INFERENCE

The design ensures **constant visibility of greenery, water, and natural light**, creating a calming environment that strengthens the guest's sense of comfort and well-being.


VISUAL CONNECTION WITH NATURE


NON-VISUAL CONNECTION WITH NATURE

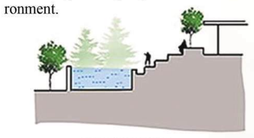
Soft, evenly filtered daylight is used to create a calm, glare-free ambience that **enhances comfort and highlights** natural textures throughout the hotel.


DYNAMIC AND DIFFUSED LIGHT

Subtle natural elements like gentle air movement, soft rustling plants, or faint water sounds **create momentary sensory cues** that make the environment feel alive and refreshing.


NON- RYTHMIC SENSORY STIMULI

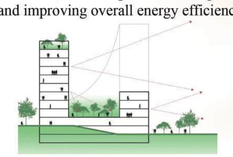
The inclusion of calm water features enhances **tranquility, cools the microclimate, and adds a soothing sensory** experience to the hotel environment.


PRESENCE OF WATER

Controlled airflow and stable indoor temperatures **create a comfortable, soothing environment** that supports guest well-being and relaxation.


THERMAL AND AIRFLOW VARIABILITY

A green roof lowers heat gain by insulating the terrace surface, reducing indoor temperature loads and improving overall energy efficiency.

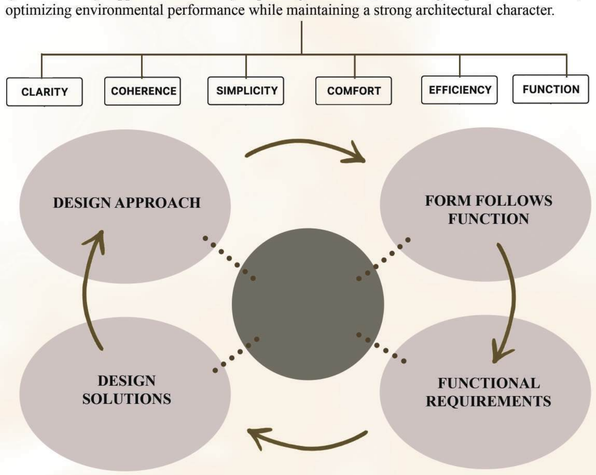


The stepped building form **enhances natural airflow** by guiding wind smoothly across terraces. This improves ventilation, reduces heat buildup, and supports comfortable outdoor spaces.



DESIGN APPROACH

This flowchart explains how the hotel's form evolves from simple geometric blocks into a functional, dynamic massing where every curve, step, and cut-out responds to circulation, airflow, views, and guest experience. By letting form lead the design logic, the building achieves a cohesive identity that naturally supports functionality improving movement, enhancing biophilic connections, and optimizing environmental performance while maintaining a strong architectural character.



SITE ZONING



FACADE MATERIAL

Alucobond, an **aluminium panel sheet** used for exterior cladding, is ideal for Bhopal's climate. It provides a premium aesthetic, pairs beautifully with terrace greenery, supports lightweight terracing, offers strong thermal performance, withstands harsh weather, resists monsoon humidity, and delivers long-lasting durability with very low maintenance.

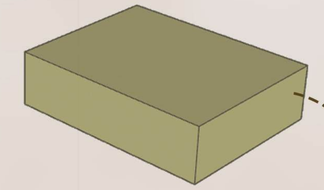


VERTICAL ZONING

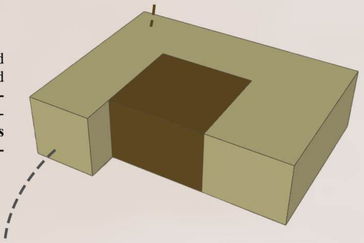
The hotel follows clear vertical zoning public functions at the podium, guest amenities at mid-levels, and rooms rising above forming a streamlined stacked height that suits Bhopal's skyline while maximizing views and ventilation.

TERRACE	+32.85m	INFINITE POOL	TERRACE FLOOR	
9TH	+29.25m	POOL SERVICE	RECREATIONAL	
8TH	+25.65m	GUEST FLOOR 5		
7TH	+22.05m	GUEST FLOOR 4		
6TH	+18.45m	GUEST FLOOR 3		
5TH	+14.85m	GUEST FLOOR 2		
4TH	+11.25m	GUEST FLOOR 1		
3RD	+11.25m	SERVICE FLOOR 1		
2ND	+7.65m			
1ST	+4.05m	OFFICE LOBBY	HOTEL LOBBY	BANQUET HALL
GF	+0.45m			
B1	-2.55m	PARKING/ MEP		
B2	-5.55m	PARKING/ MEP		
B3	-8.55m	PARKING/ MEP		
		GL		

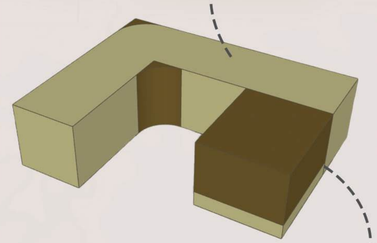
FORM EVOLUTION



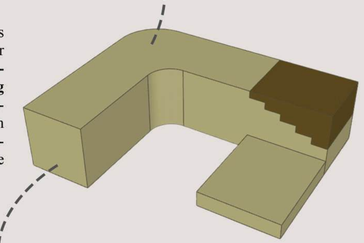
The form begins as a **simple cuboid**, establishing a clean and contemporary base geometry. This pure mass helps define the initial footprint, circulation logic, and structural clarity before **further sculpting the shape into a more dynamic and functional design.**



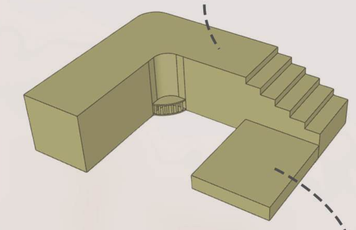
The central portion of the cuboid is carved out to create a covered **drop-off and entrance courtyard,** introducing a Mughal-inspired garden that **enhances openness, welcome, and identity.**



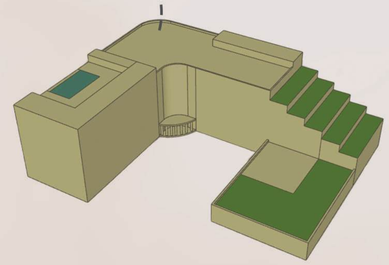
In this stage, the sharp entrance cutouts are softened into **smooth curves** to create a luxurious, welcoming arrival experience. A secondary cutout is added on one side of the mass to **enhance natural air movement above the banquet hall**, improving ventilation and giving the form a more dynamic architectural character.



In this stage, stepped cut-outs are introduced on the upper levels **to promote better natural airflow** while **creating green terraces**. These landscaped steps soften the modern massing, enhance biophilic connection, and visually integrate the built form with nature.



The form is fully developed with integrated **curves and stepped terraces**, balancing simplicity with functionality. This stage creates a refined, modern, and efficient hotel form that enhances luxury, airflow, greenery, and overall performance.



Green terraces are fully integrated into the architecture, and a **rooftop swimming pool** is added to provide a dramatic visual experience, elevate luxury, and complete the **biophilic form**.

SITE PLAN

LOCATION

MPT area, Shyamala Hills,
Jehanuma paace Bhopal,
Madhya Pradesh

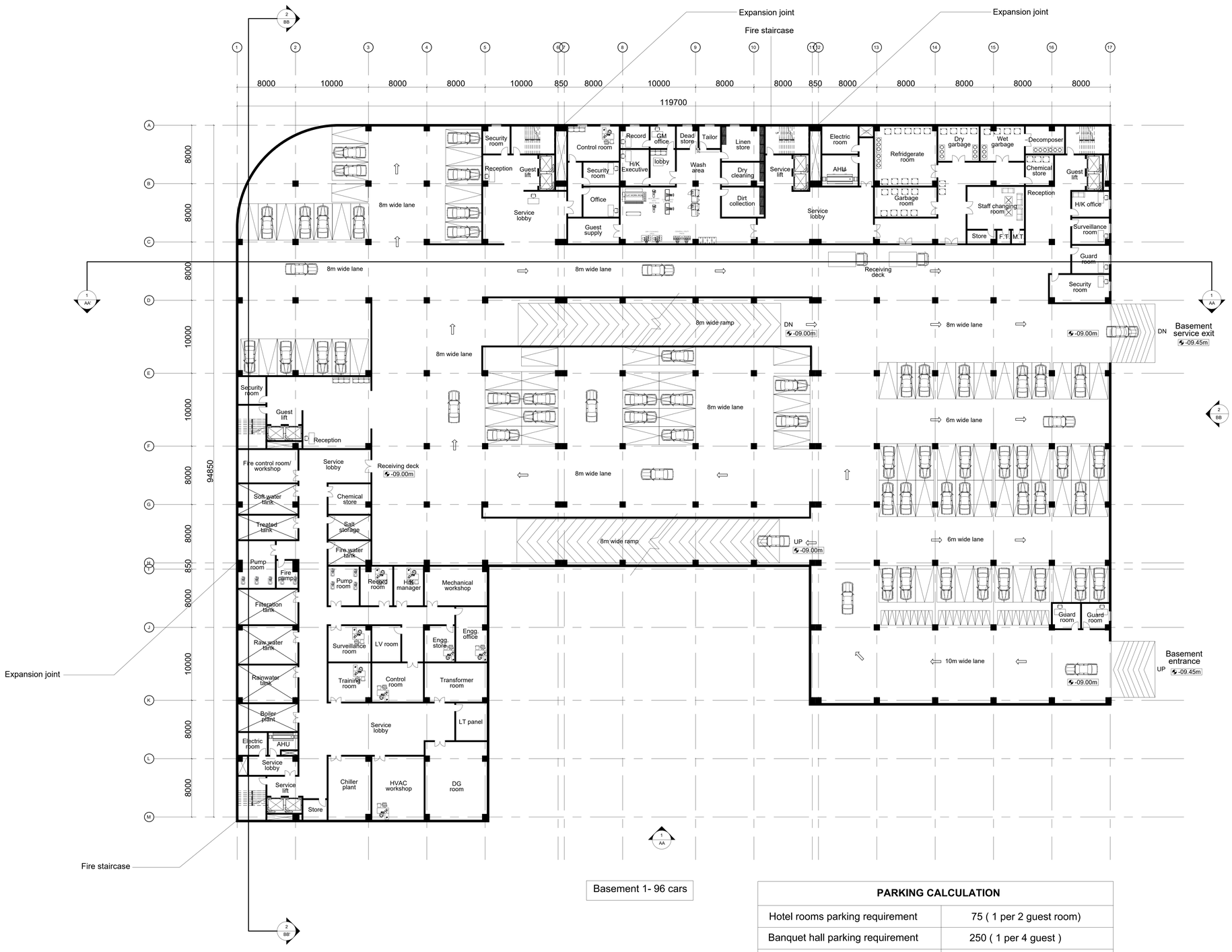
SR. NO.	DESCRIPTION	PROPOSED
1	SITE AREA (SQ.M)	28975.5 SQ.M
2	SITE AREA (ACRE)	7.16 ACRE
3	GROUND COVERAGE	30%
4	BUILDING HEIGHT	32 M
5	FAR	2
6	FRONT SETBACK	12 M
7	REAR & SIDE SETBACK	7.5 M
8	MAX. BUILT UP AREA (SQ.M)	57929 SQ.M
9	BASEMENT	3



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RIYA BODHE
21111021

BASEMENT PLAN 1



PARKING CALCULATION	
Hotel rooms parking requirement	75 (1 per 2 guest room)
Banquet hall parking requirement	250 (1 per 4 guest)
Staff parking requirement	100 (1 per 1 staff)
Total parking requirement	425 Cars
Total parking achieved	458 Cars

5- STAR HOTEL, BHOPAL

LOCATION :

MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

DRAWING :

BASEMENT 1 PLAN

NORTH :

SCALE :

1:200

DATE :

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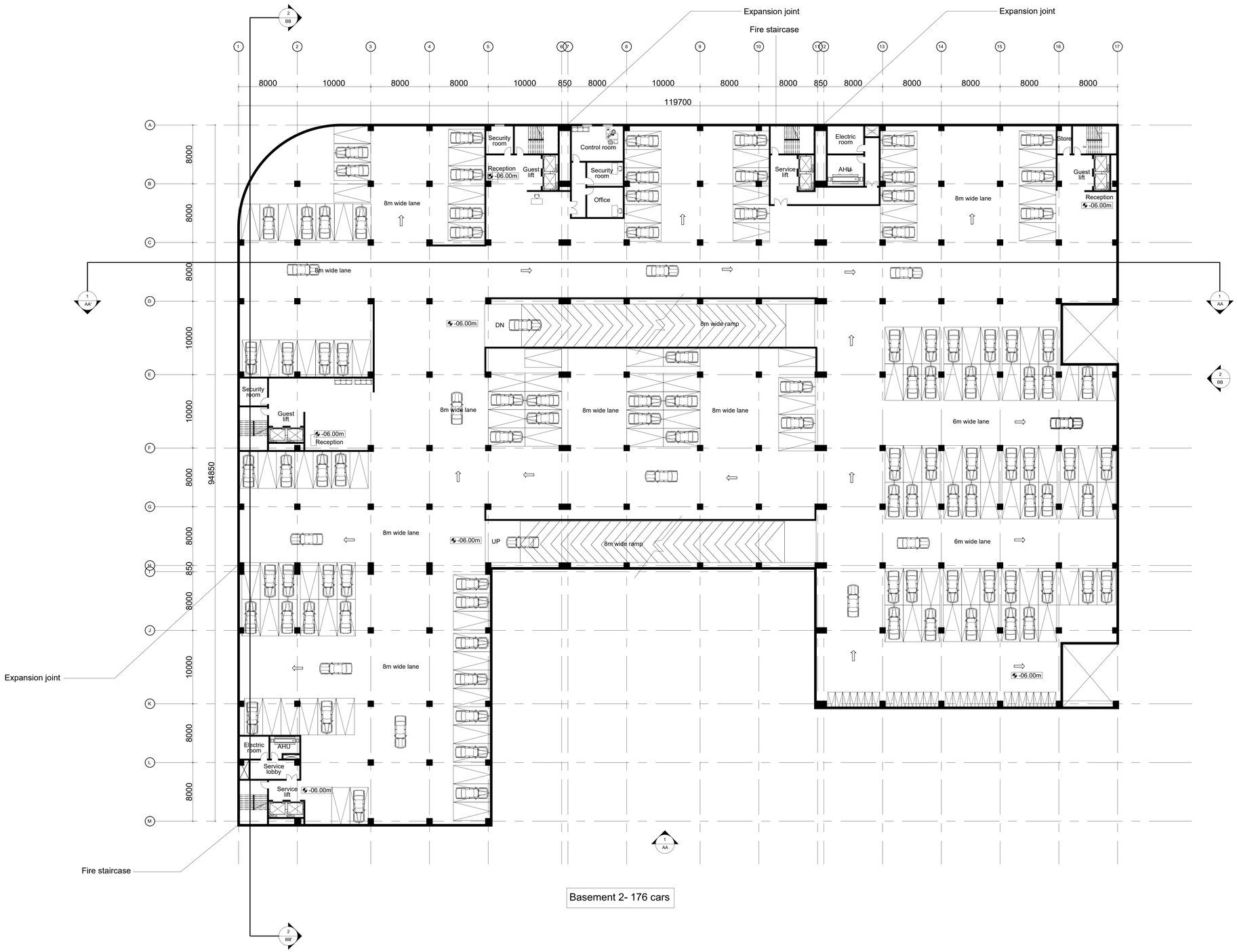
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BASEMENT PLAN 2



5- STAR HOTEL, BHOPAL

LOCATION :

MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

DRAWING :

BASEMENT 2 PLAN

NORTH :

SCALE :

1:200

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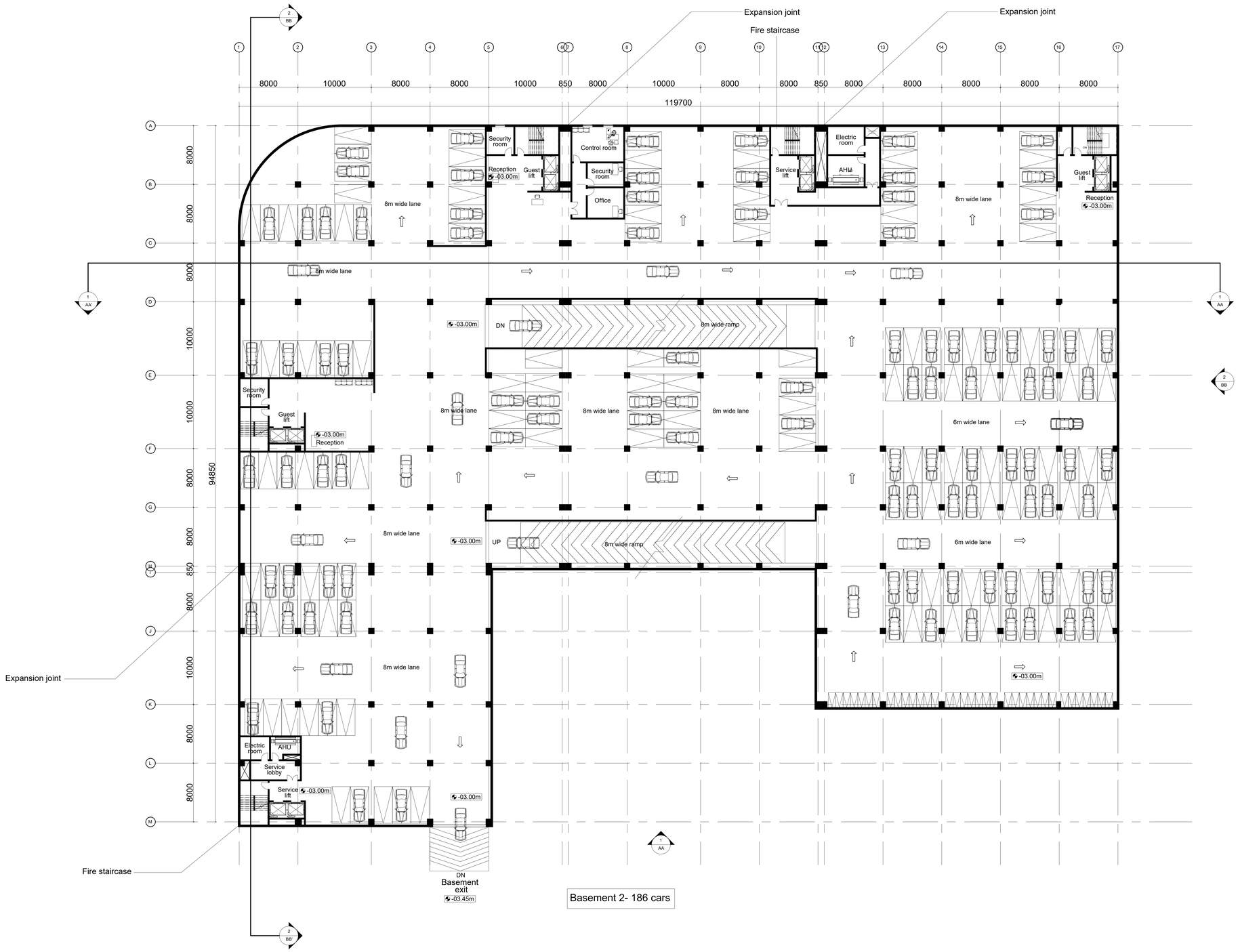
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BASEMENT PLAN 3



5- STAR HOTEL, BHOPAL

LOCATION :

MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

DRAWING :

BASEMENT 3 PLAN

NORTH :

SCALE :

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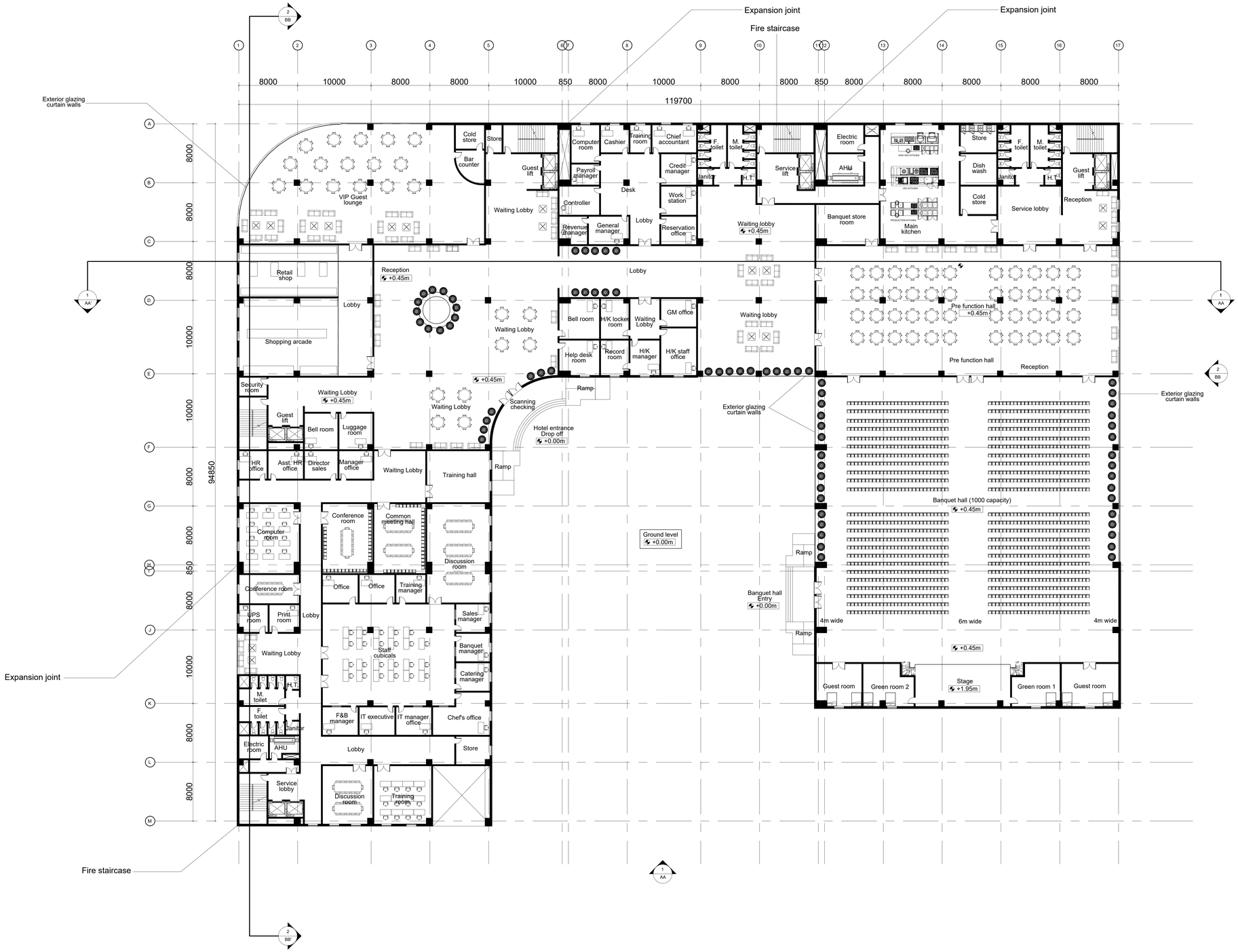
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GROUND FLOOR PLAN



5- STAR HOTEL, BHOPAL

LOCATION :

MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

DRAWING :

GROUND FLOOR PLAN

NORTH :

SCALE :

1:200

DATE :

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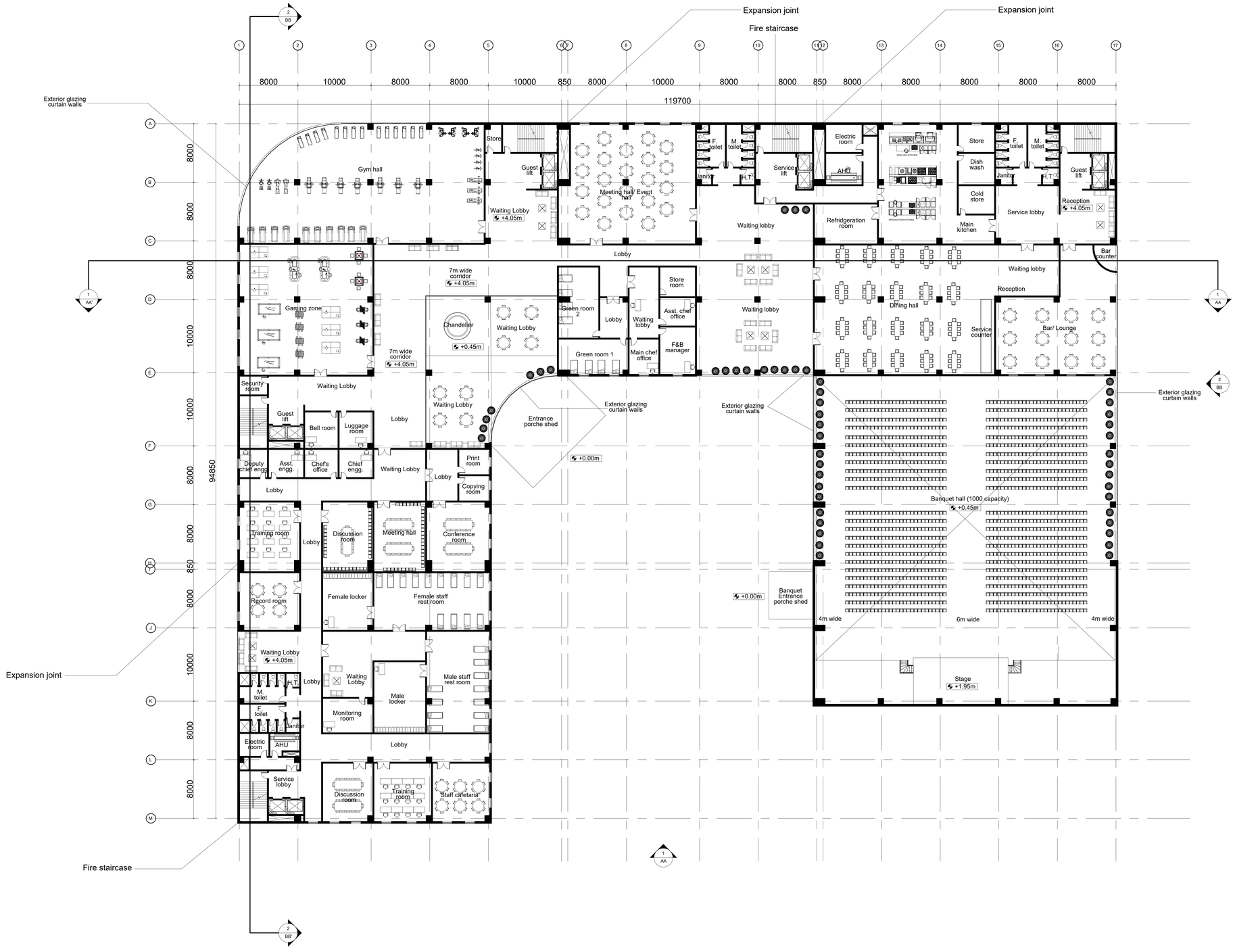
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FIRST FLOOR PLAN



5- STAR HOTEL, BHOPAL

LOCATION :

MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

DRAWING :

FIRST FLOOR PLAN

NORTH :

SCALE :

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DATE :

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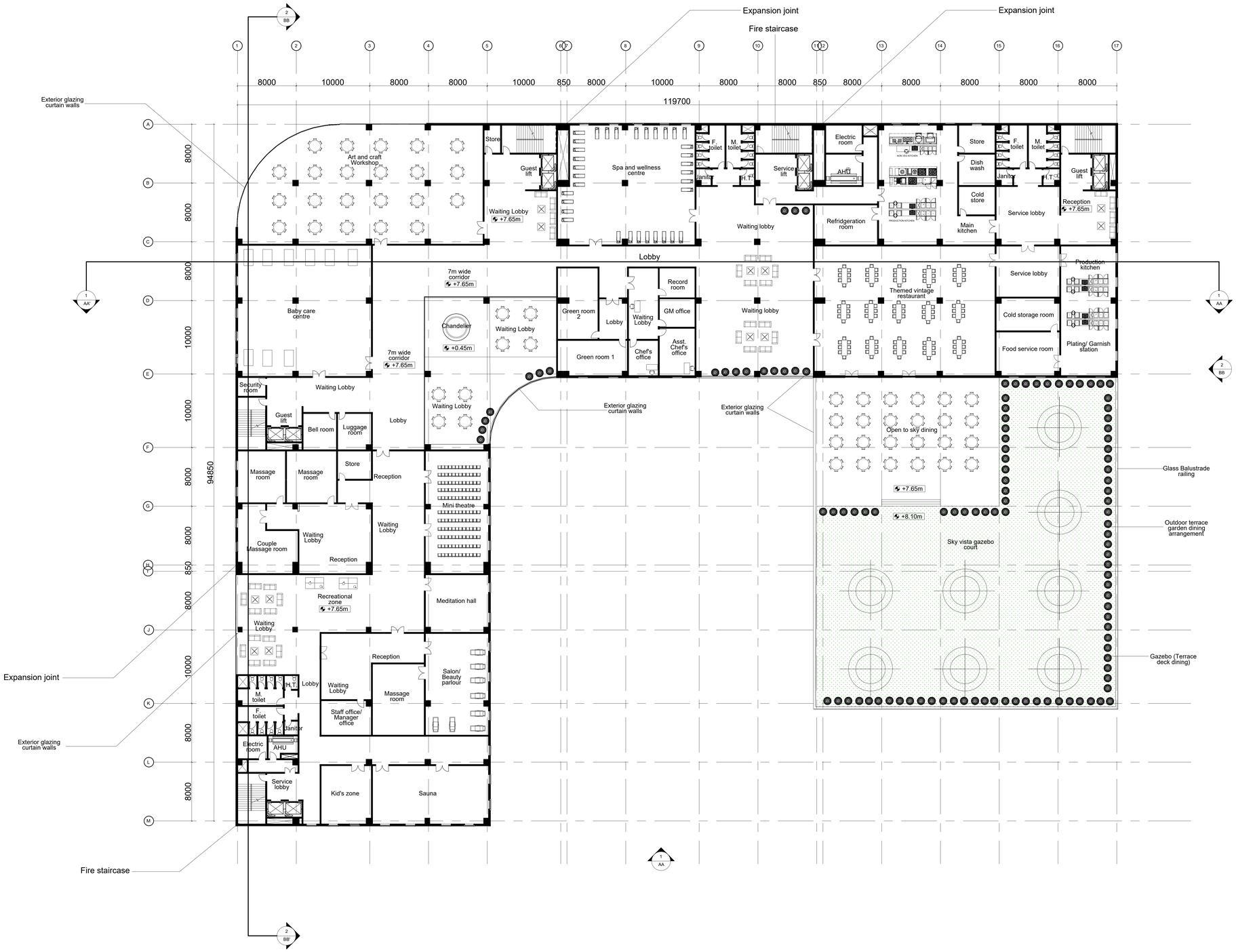
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THESIS DESIGN

DRG NO :

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SECOND FLOOR FLOOR



5- STAR HOTEL, BHOPAL

LOCATION :

MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

DRAWING :

SECOND FLOOR PLAN

NORTH :

SCALE :

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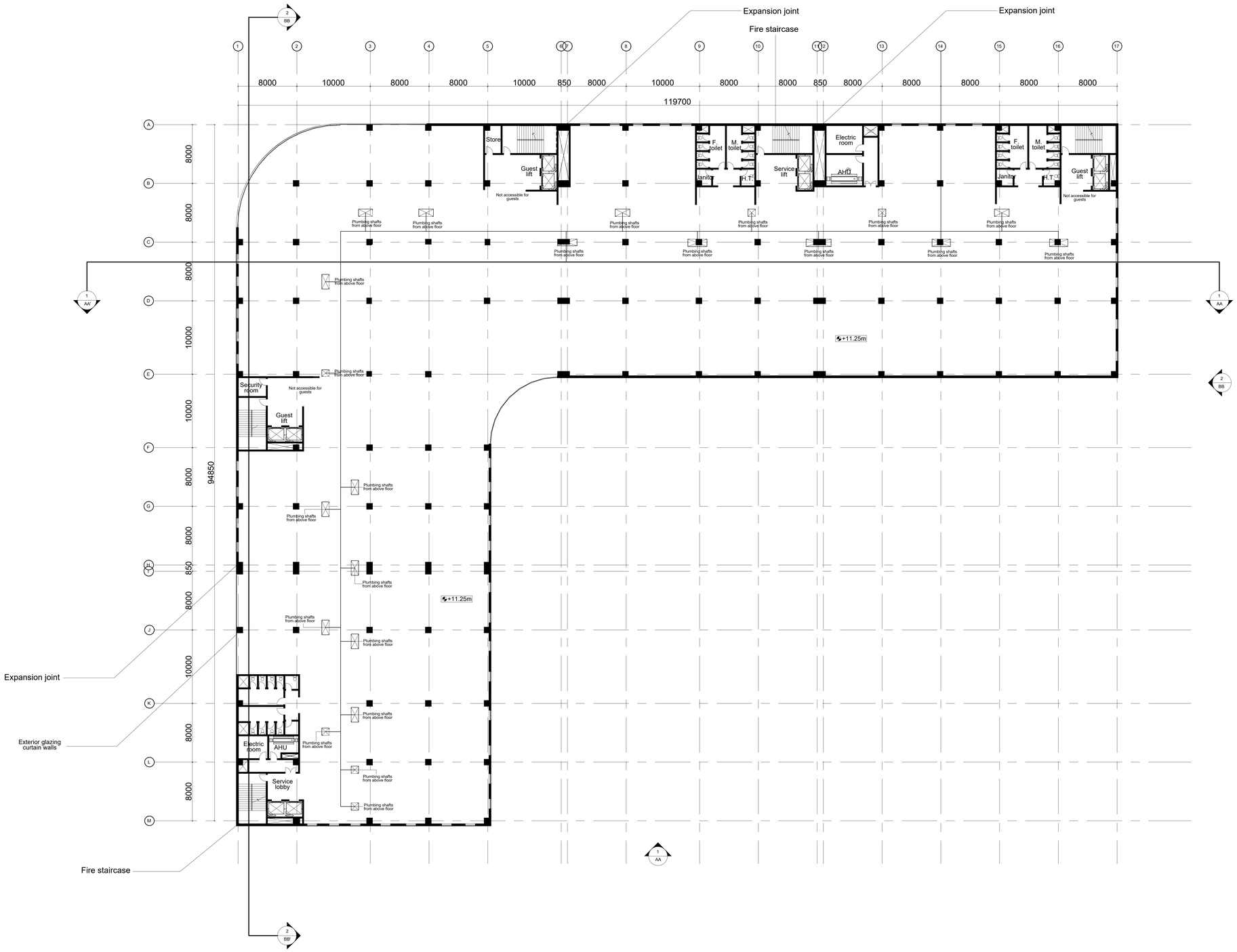
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DRG NO :

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SERVICE FLOOR



5- STAR HOTEL, BHOPAL

LOCATION :

MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

DRAWING :

SERVICE FLOOR

NORTH :

SCALE :

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DATE :

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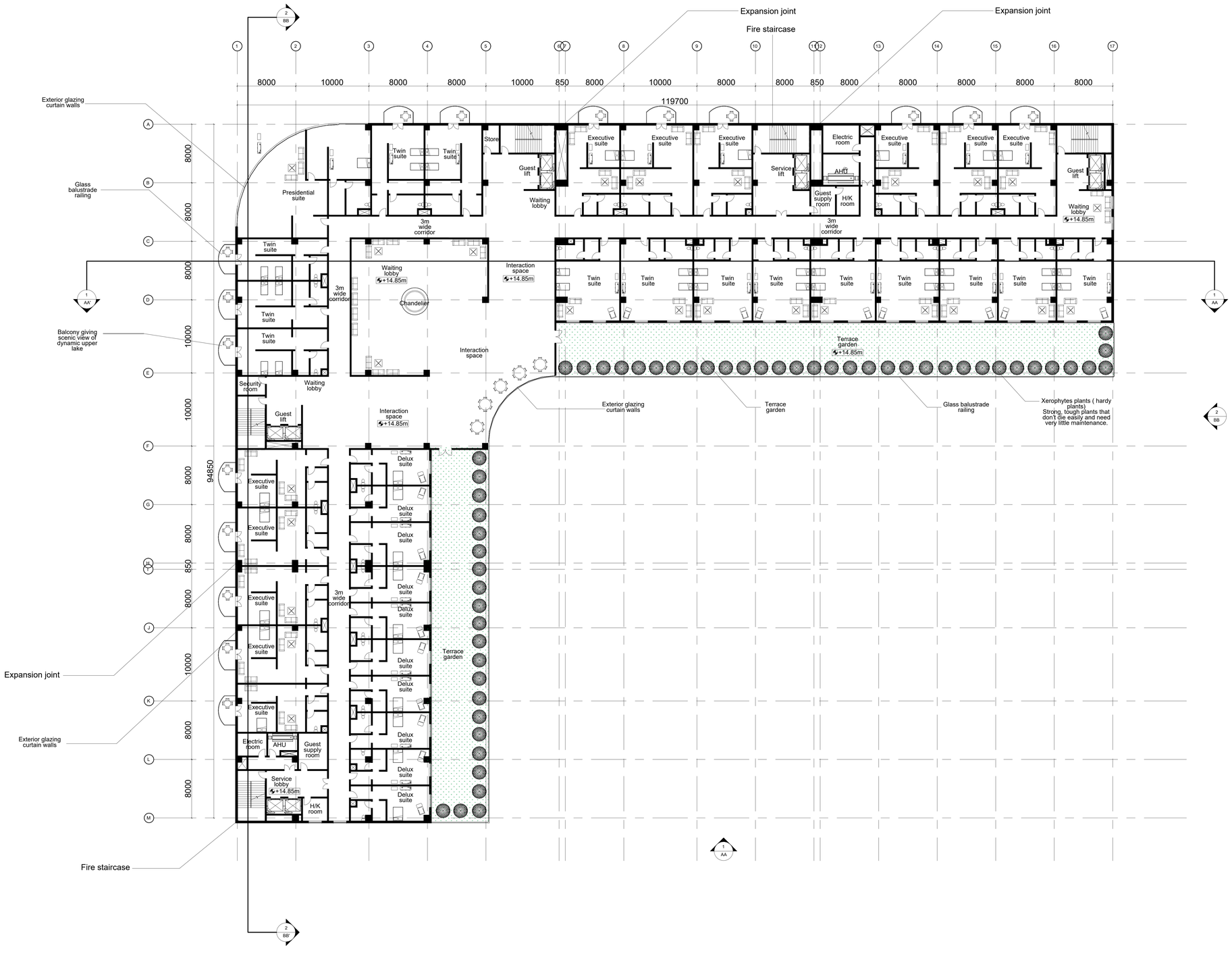
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GUEST FLOOR PLAN 1



5- STAR HOTEL, BHOPAL

LOCATION :

MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

DRAWING :

GUEST FLOOR PLAN 1

NORTH :

SCALE :

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DATE :

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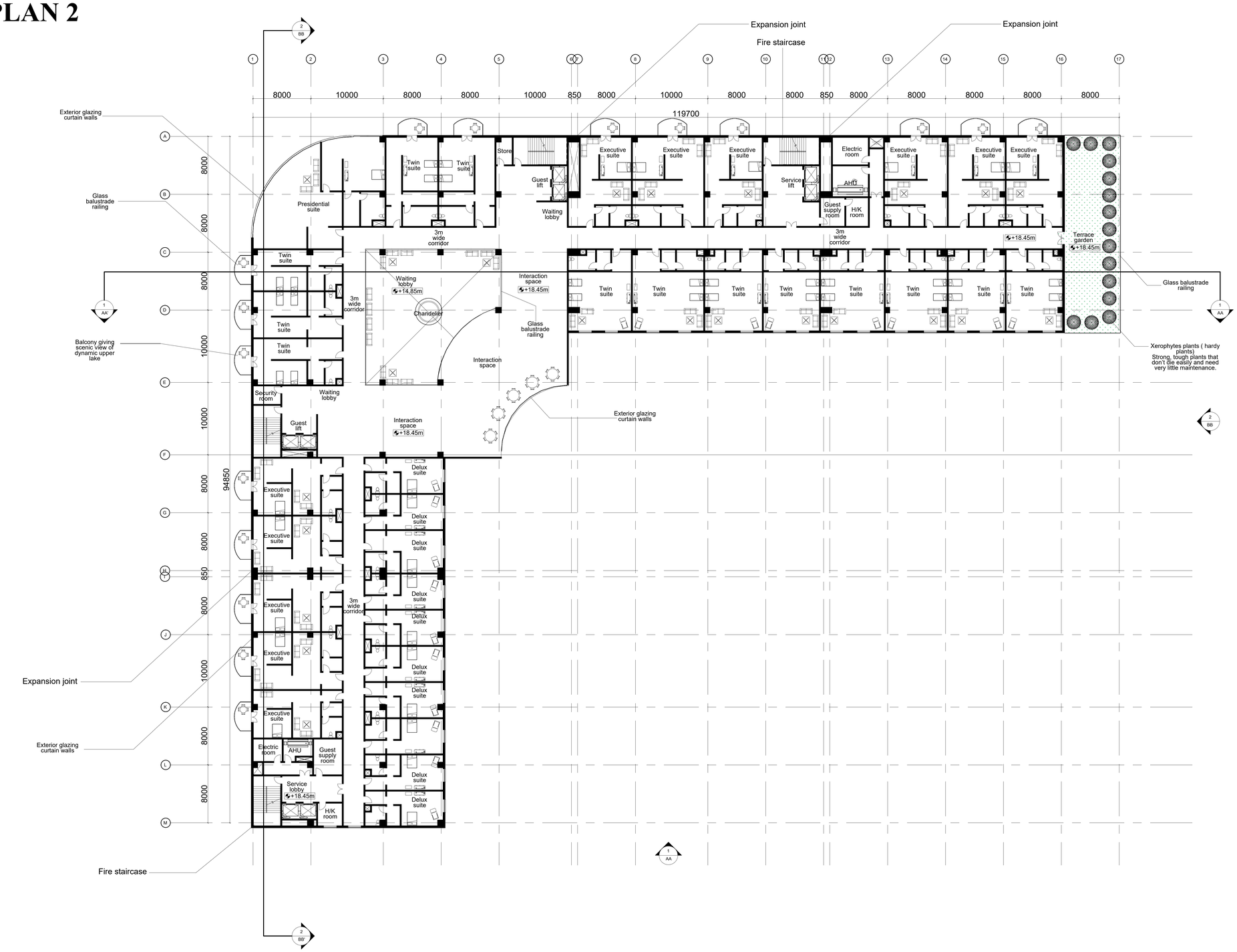
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GUEST FLOOR PLAN 2



5- STAR HOTEL, BHOPAL

LOCATION :

MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

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GUEST FLOOR PLAN 2

NORTH :

SCALE :

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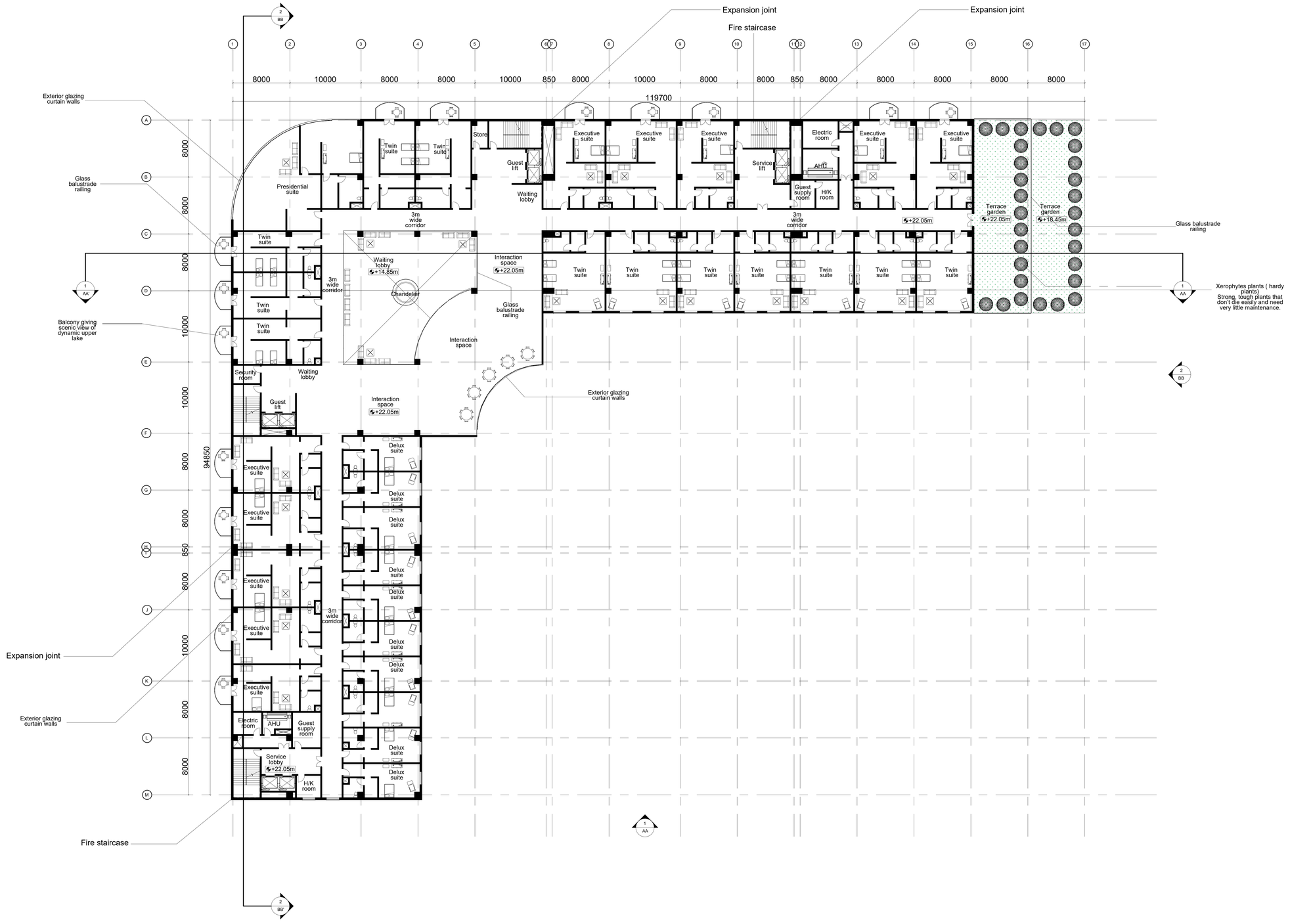
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GUEST FLOOR PLAN 3



5- STAR HOTEL, BHOPAL

LOCATION :

MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

DRAWING :
GUEST FLOOR PLAN 3

NORTH :

SCALE :
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DATE :
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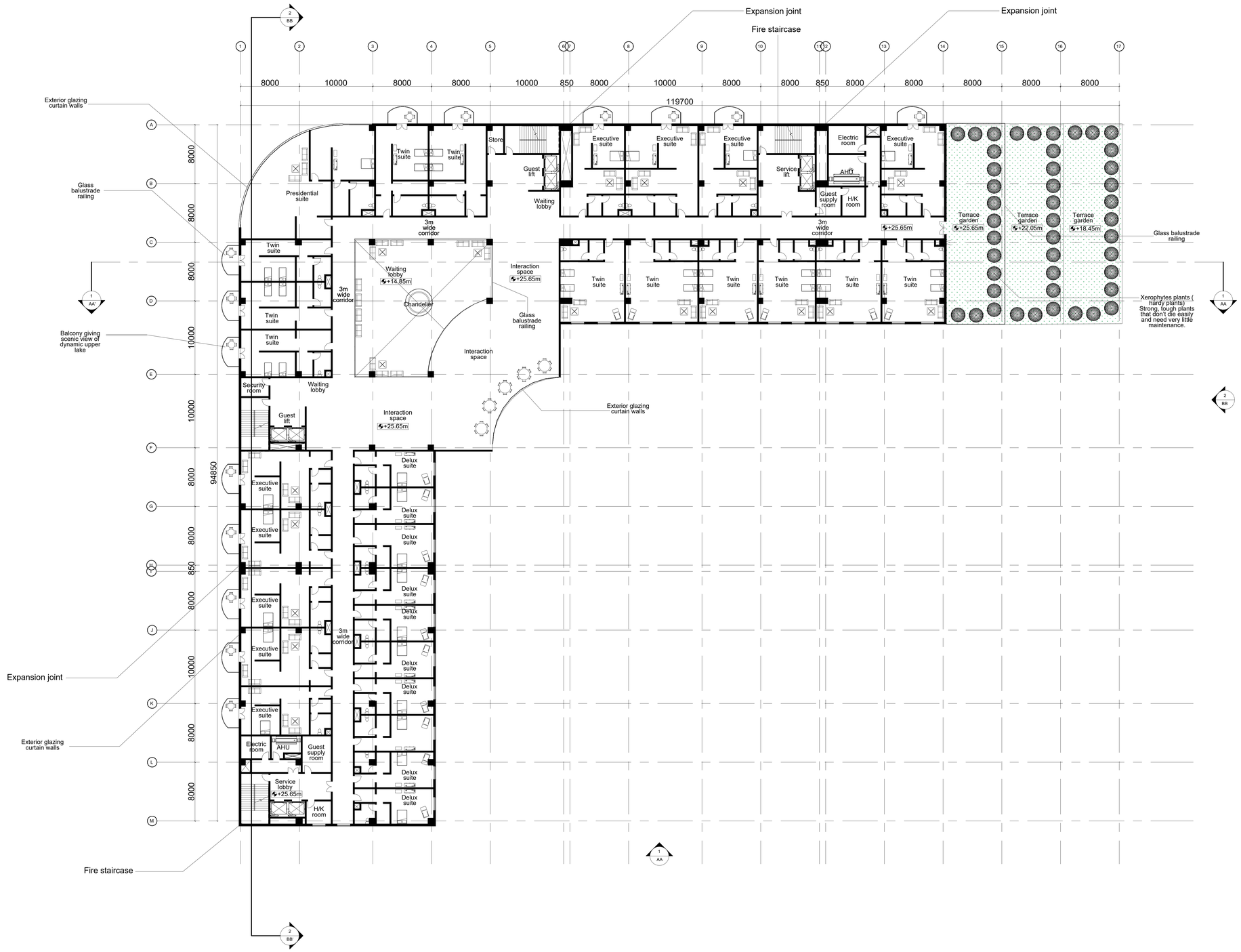
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9TH SEM SEC-B
THESIS DESIGN

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GUEST FLOOR PLAN 4



5- STAR HOTEL, BHOPAL

LOCATION :

MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

DRAWING : GUEST FLOOR PLAN 4

NORTH :

SCALE : 1:200

DATE : 02/ 12 / 2025

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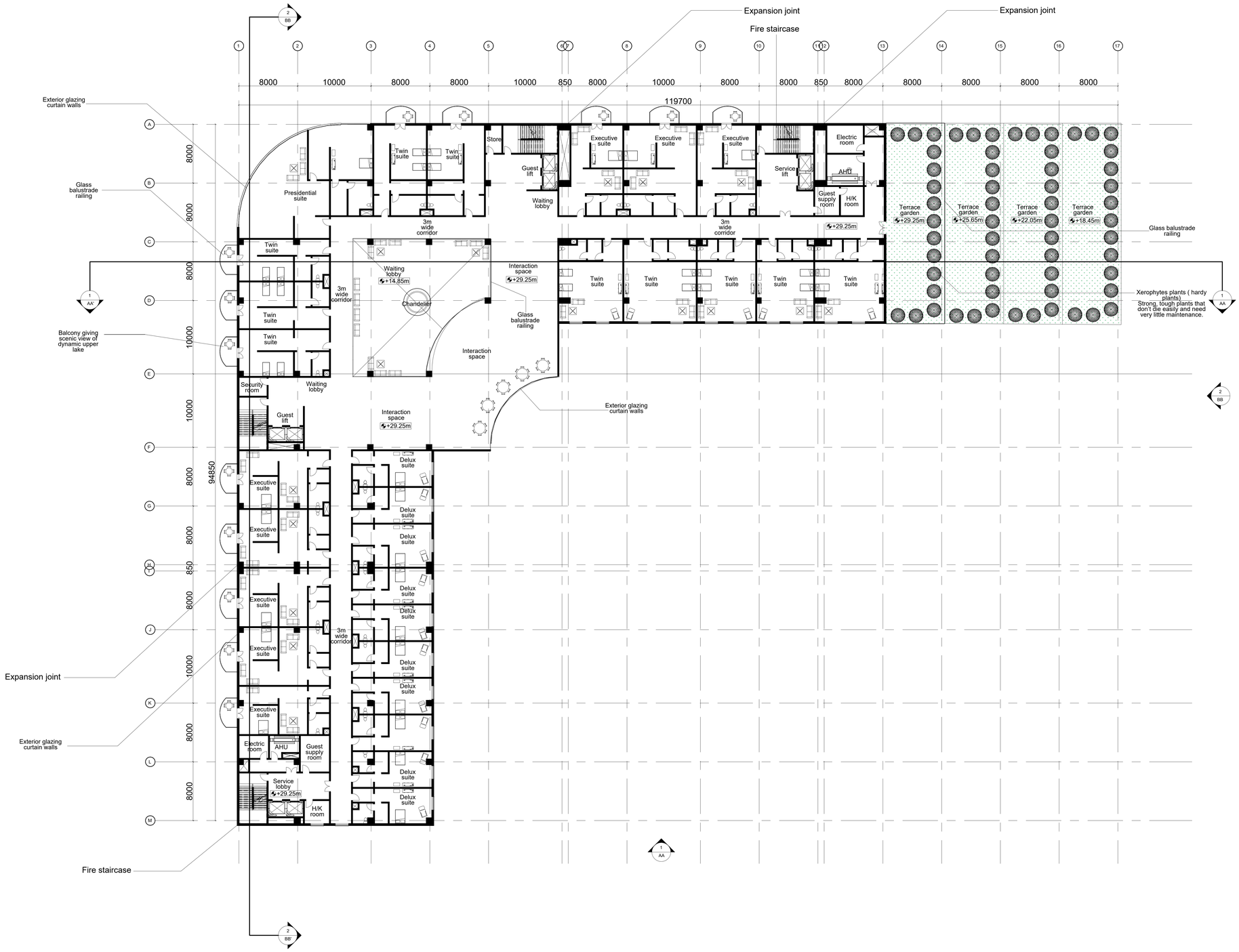
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9TH SEM SEC-B
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GUEST FLOOR PLAN 5



5- STAR HOTEL, BHOPAL

LOCATION :

MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

DRAWING :

GUEST FLOOR PLAN 5

NORTH :

SCALE :

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DATE :

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THESIS GUIDE :

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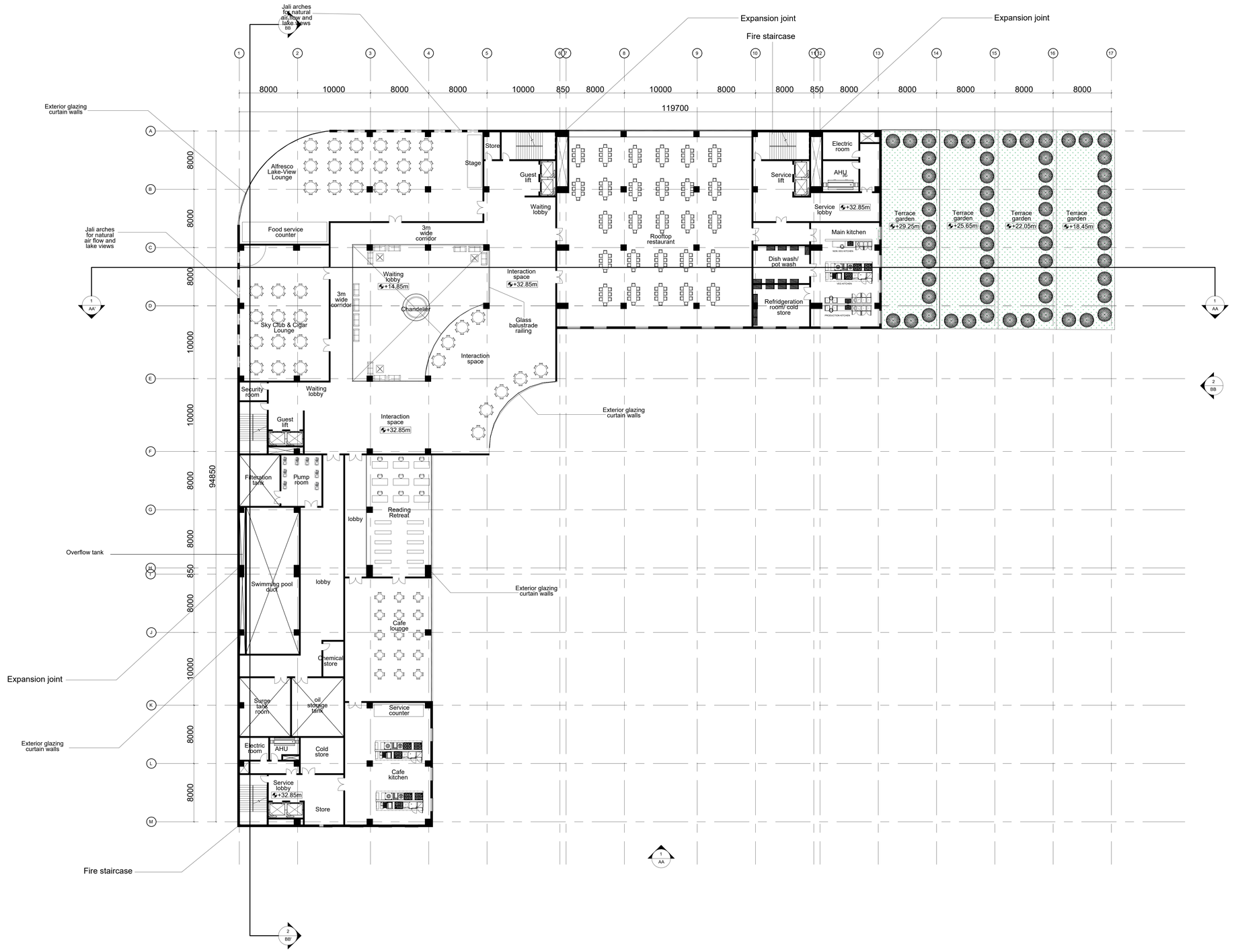
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RECREATIONAL FLOOR PLAN



5- STAR HOTEL, BHOPAL

LOCATION :

MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

DRAWING :

RECREATIONAL FLOOR PLAN

NORTH :

SCALE :

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DATE :

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THESIS GUIDE :

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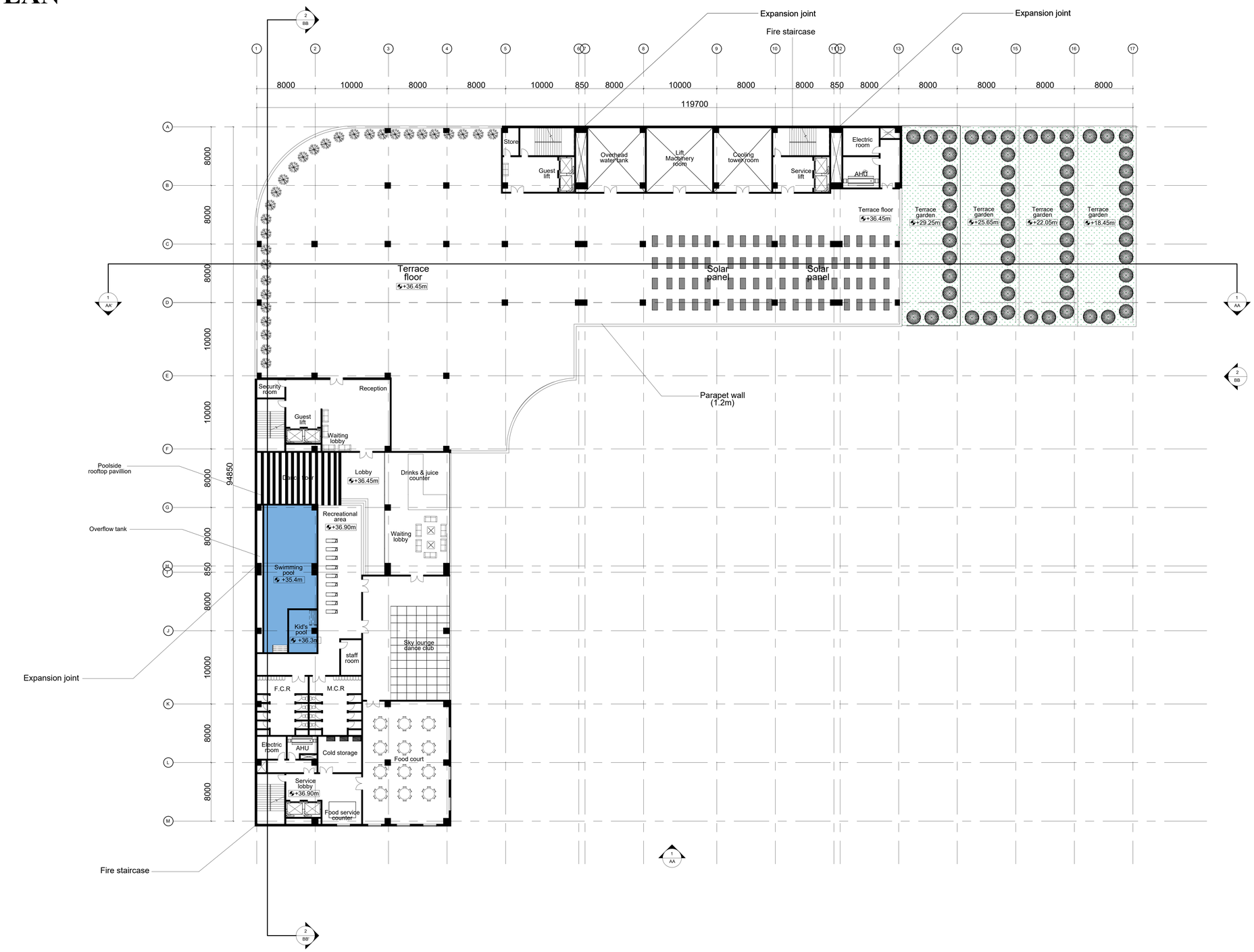
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THESIS DESIGN

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TERRACE FLOOR PLAN



5- STAR HOTEL, BHOPAL

LOCATION :

MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

DRAWING :

TERRACE FLOOR PLAN

NORTH :

SCALE :

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DATE :

02/ 12 / 2025

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THESIS GUIDE :

DR. SUPRIYA VYAS MA'AM

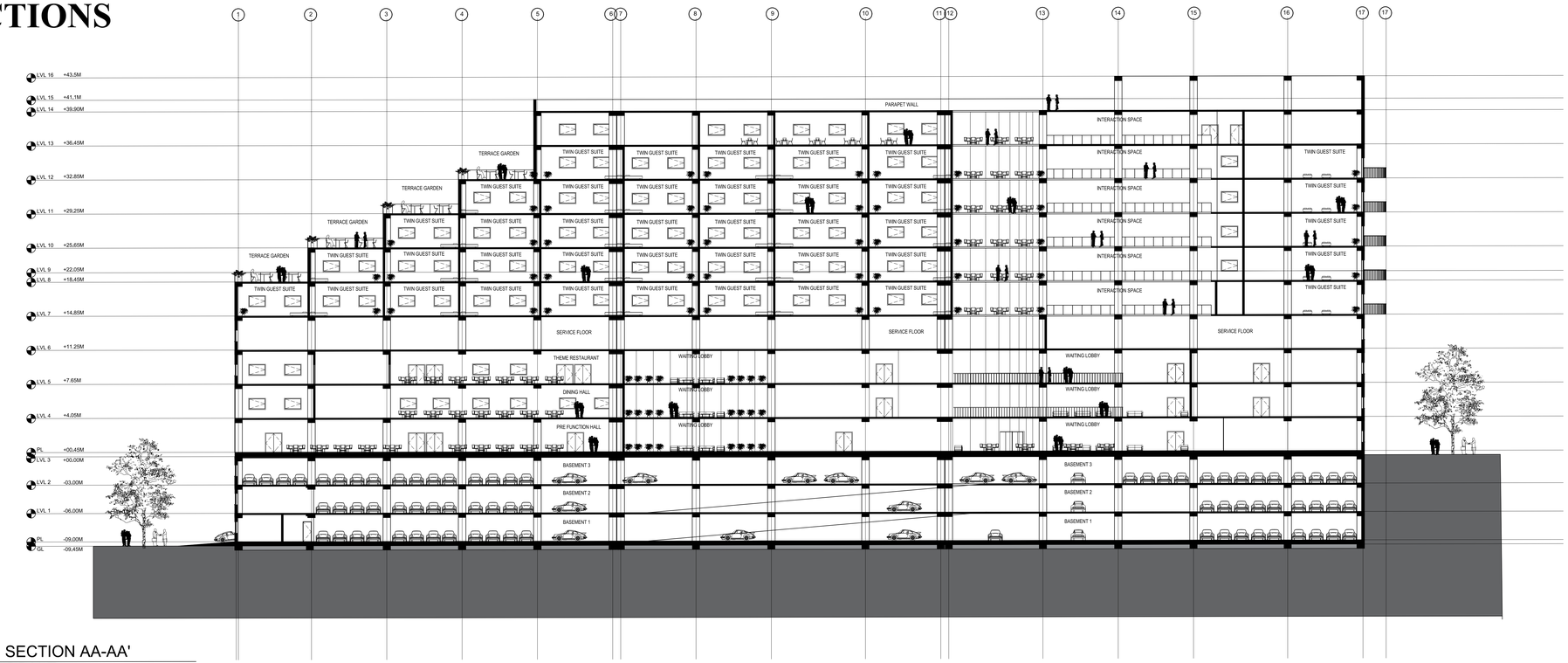
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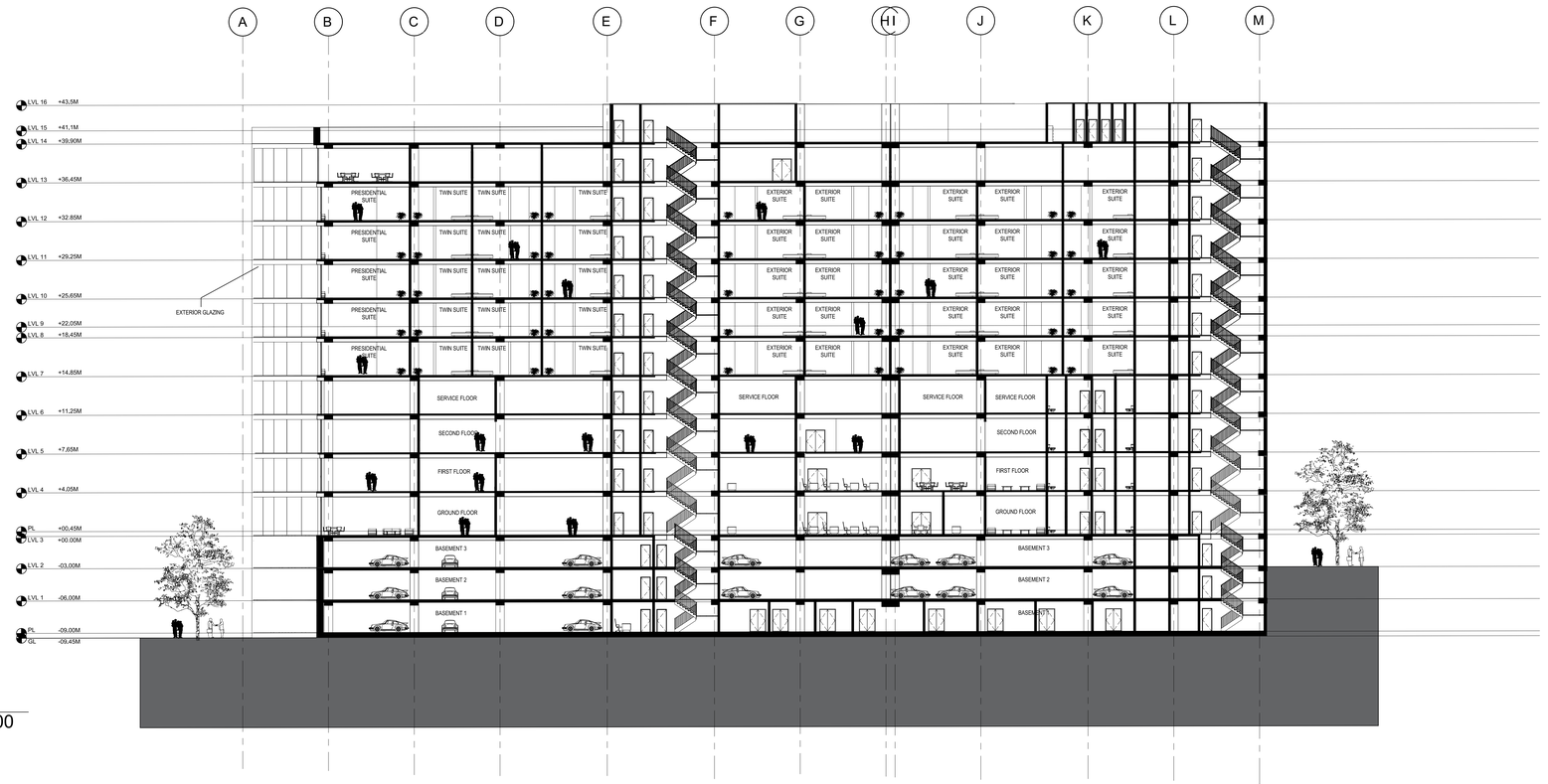
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SECTIONS



A SECTION AA-AA'
SCALE 1:200



B SECTION BB-BB'
SCALE 1:200

5- STAR HOTEL, BHOPAL

LOCATION :

MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

DRAWING :
SECTIONS

NORTH :

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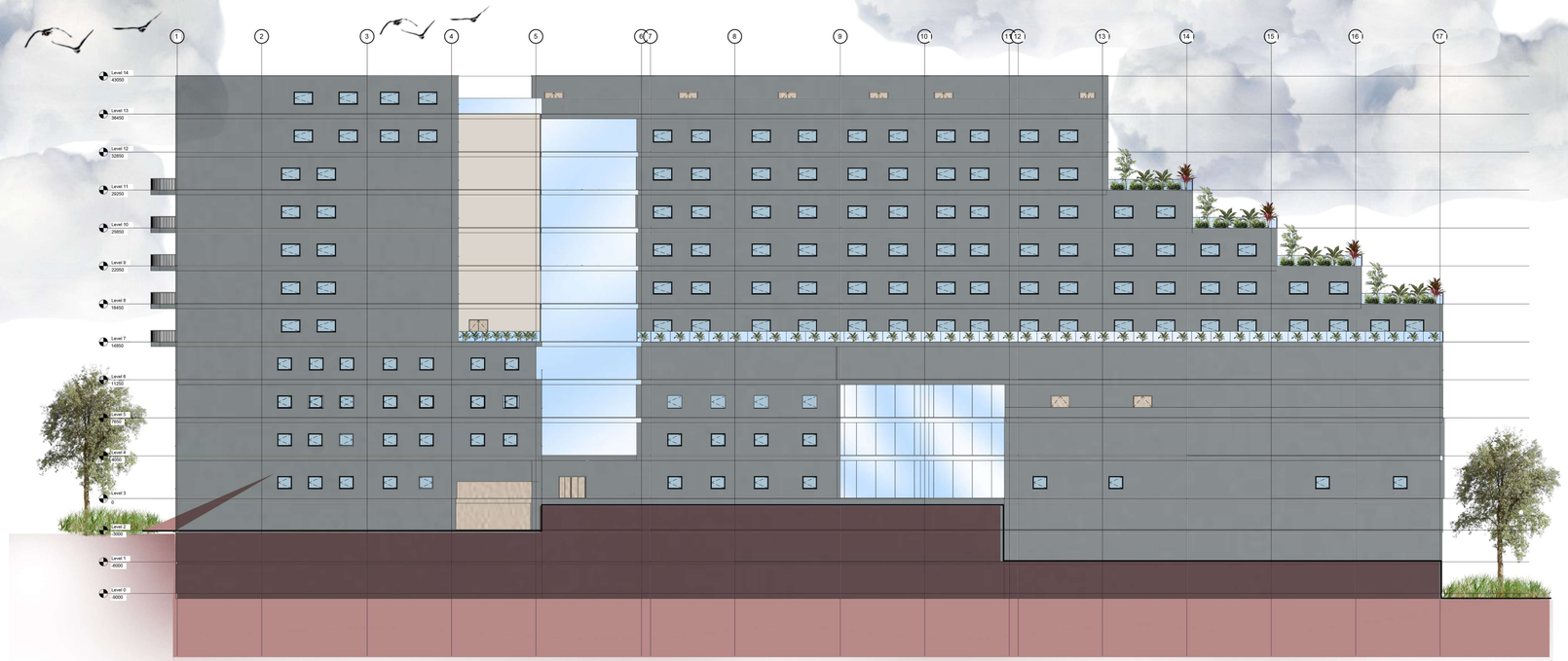
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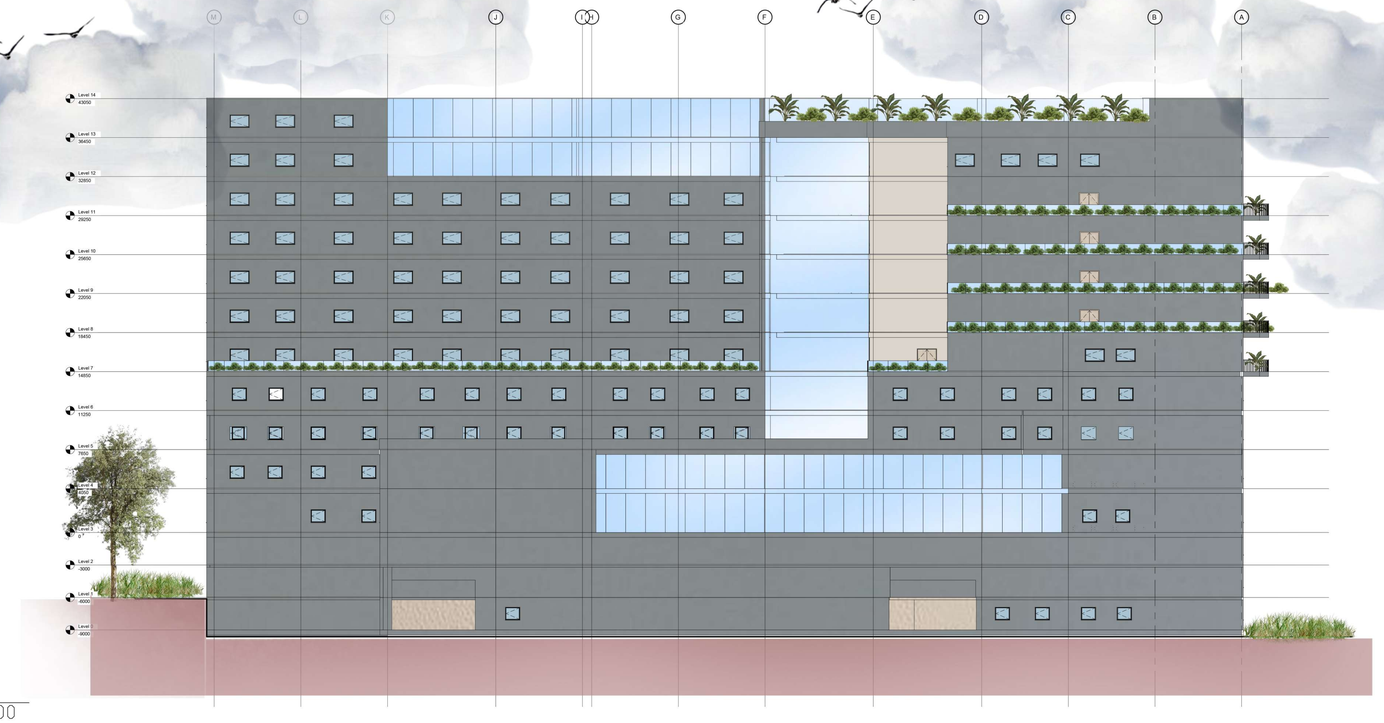
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ELEVATIONS



A ELEVATION AA
SCALE 1:200



B ELEVATION BB
SCALE 1:200

5- STAR HOTEL, BHOPAL

LOCATION :

MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

DRAWING :
ELEVATIONS

NORTH :

SCALE :
1:200

DATE :
02/ 12 / 2025

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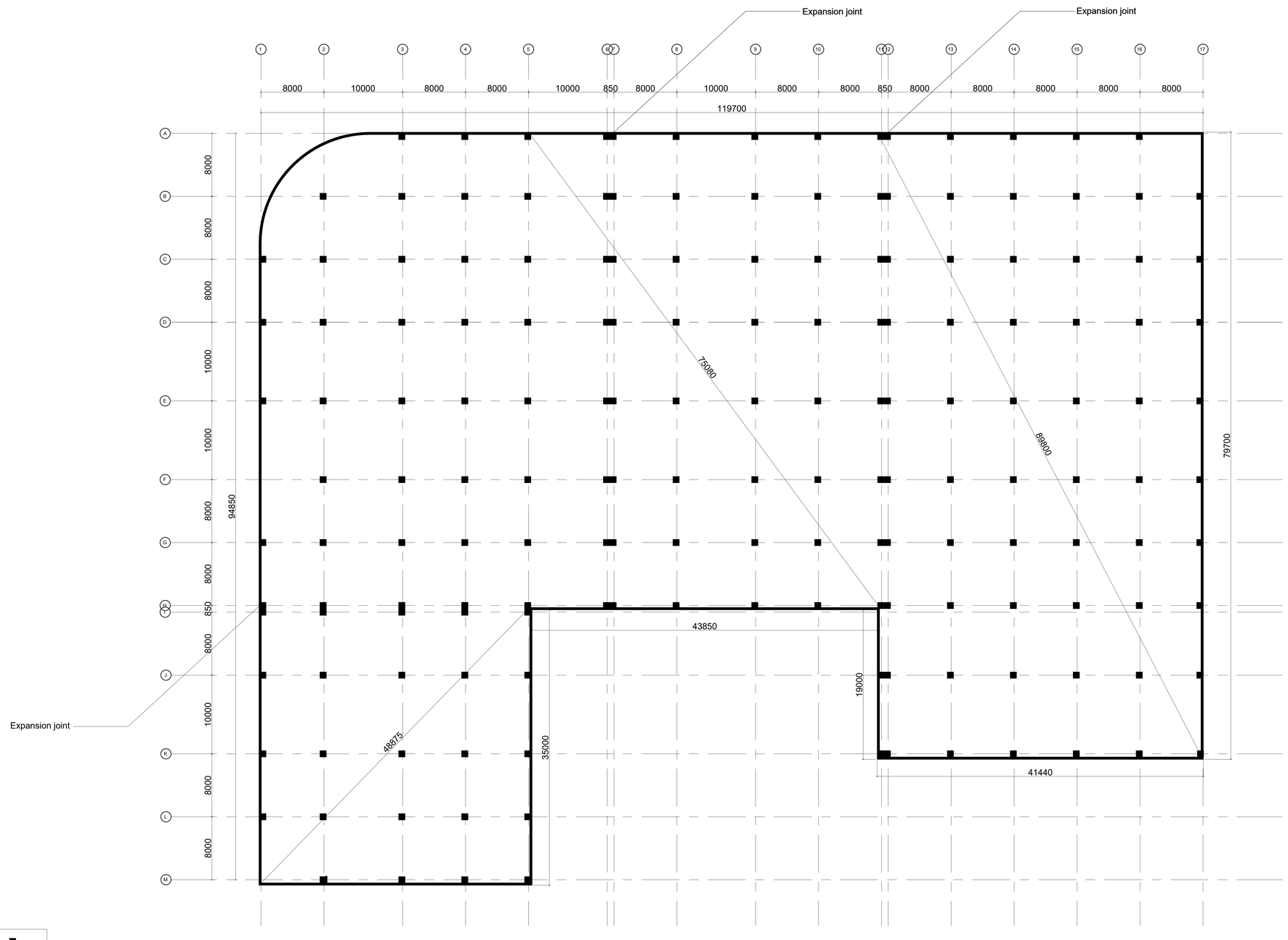
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COLUMN LAYOUT PLAN



5- STAR HOTEL, BHOPAL

LOCATION :

MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

DRAWING :

COLUMN LAYOUT PLAN

NORTH :

SCALE :

1:200

DATE :

02/ 12 / 2025

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LANDSCAPE

LOCATION

MPT area, Shyamala Hills,
Jehanuma paace Bhopal,
Madhya Pradesh

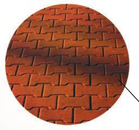
SOFTSCAPE

LOCAL NAME	BOTANICAL NAME	HEIGHT & FOILAGE	USES	IMAGES
False Ashoka / Mast Tree	Polyalthia longifolia	10–20 m, tall, slim, evergreen	For boundary plantation, privacy and formal look	
Jamun	Syzygium cumini	15–25 m, large shady canopy, evergreen	Gives strong shade and supports birds	
Bakul / Maulsari	Mimusops elengi	8–15 m, medium sized, fragrant flowers	Best for entry, courtyards, seating areas due to pleasant fragrance	
Weeping Fig	Ficus benjamina	10–20 m, dense green canopy	Good for large shaded lawns and green softness	
Champak / Sonchampa	Magnolia champaca	10–20 m, evergreen, highly fragrant yellow flowers	Creates premium peaceful ambiance	
Jarul / Pride of India	Lagerstroemia speciosa	6–12 m, pink/purple flowers, light shade	Adds color and beauty to walkways and campus roads	
Flame of Forest	Butea monosperma	8–12 m, bright orange red flowers	Strong local identity, cultural appeal	
Gulmohar	Delonix regia	8–15 m, wide spreading canopy, red flowers	Creates grand & dramatic flower canopy	

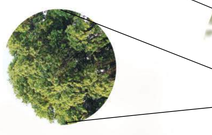
SOFTSCAPE

S. NO.	LOCATION	MATERIAL	ADVANTAGES	IMAGE
1	Roads	Ashphalt concrete	✓Durable for heavy traffic. ✓ Smooth and easy to maintain.	
2	Parking	Interlocking Concrete Paving Blocks (ICPB) - Grey + pink	✓ Strong for heavy loads ✓ Reduces stormwater runoff	
3	Pathways beside roads	Flagstone Pavers	✓ Durable ✓ Resistant to heavy rain ✓ Slip-resistant	
4	Paths for Pavilions and natural trails	Stepping Stones	✓ Permeable & Eco-Friendly ✓ Low Maintenance & Durable	





INTERLOCKING PAVER BLOCK ALONG THE ROAD FOR PEDESTRIAN PATHWAYS





A GAZEBO IS USED TO PROVIDE COMFORTABLE SHADE FROM THE HARSH SUN AND ALLOWS US CONNECTING TO NATURE.



STREET LIGHTS ACT AS ESSENTIAL HARDSCAPE ELEMENTS THAT ENHANCE SAFETY, VISIBILITY, AND NIGHTTIME AESTHETICS ALONG PATHWAYS AND ROADS.



WATER BODIES ARE USED TO COOL THE SURROUNDINGS NATURALLY, CREATE VISUAL SOFTNESS, AND ENHANCE THE PEACEFUL, NATURE-CONNECTED ATMOSPHERE OF THE SITE.



STEPPING STONES ON GRASS GIVES NANTURAL FEEL WHILE ALSO HELPS IN WATER PERCOLATION AND AVOID STAGERRING OF WATER

SCALE- 1 : 500

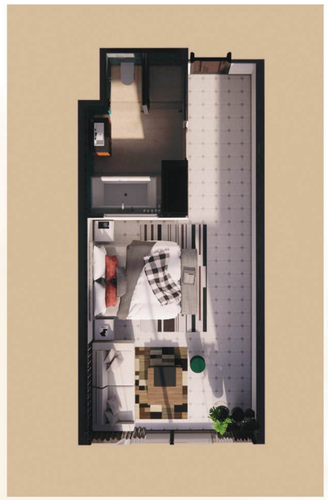
NATIVE EVERGREEN AND SEASONAL FLOWERING TREES ARE USED TO MAINTAIN THE NATURAL CHARACTER OF SHYAMLA HILLS WHILE CREATING SHADE AND VISUAL INTEREST. SOFT GARDEN PATHWAYS AND SHADED SEATING AREAS OFFER A COMFORTABLE AND PEACEFUL OUTDOOR EXPERIENCE.

ON-SITE PARKING FOR 80 CARS ENSURES CONVENIENT ACCESS AND SMOOTH GUEST CIRCULATION.

INTERIOR



DELUX SUITE



COLOUR PALETTE

I selected a white, grey to brown color palette to create a calm and timeless interior atmosphere suitable for a 5-star hotel room. White flooring and surfaces reflect light, making the room feel spacious and fresh, while grey tones add sophistication and neutrality. The warm brown shades fromwood and fabric accents balance the cool tones, adding comfort, luxury, and a sense of intimacy. Together, the palette offers a perfect blend of elegance, warmth, and visual harmony, enhancing the guest's overall relaxation experience.

CORRIDOR AMBIENCE



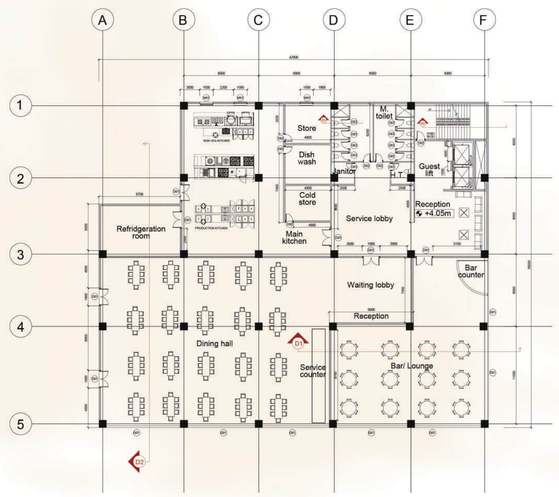












PLAN









LUXURY ELEMENTS



VINTAGE SHOW DESK



RUSTIC VINTAGE POT



RESTAURANT



TEXTURES



WOOD



LINEN



GRANITE



CONCRETE

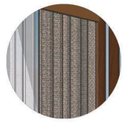


CLAY



Wall – Plywood Panels

Commercial/BWP plywood sheets (6–12 mm) used as cladding.
Often finished with veneer/laminate + PU polish.
Hides wiring and services inside walls.
Adds warmth, texture, and premium visual appeal.
Improves acoustics and gives a seamless interior finish.



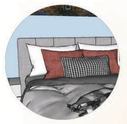
Textured Thick Curtains

Made of polyester–cotton blend or blackout fabric.
Blocks external light and ensures privacy.
Helps in noise reduction and thermal insulation.
Adds texture and softness to the interior palette.



Carpet

Nylon / polypropylene carpet or carpet tiles.
Feels soft and comfortable underfoot.
Reduces footstep noise → improves room acoustics.
Visually defines the bed/lounge area and adds warmth.



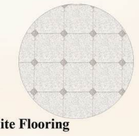
Bedsheet & Cushions

Bedsheet: Cotton or cotton-polyester blend.
Cushions: Foam/microfiber filling with soft fabric covers.
Ensures comfort and hygiene for sleeping.
Adds color, softness, and decorative accents to the room.



Textured Fabric-Covered Stool

Frame: Wooden or metal, cushioned with high-density foam.
Upholstery: Linen, suede, velvet, or textured fabric.
Acts as additional seating or a luggage bench.
Texture enhances luxury and breaks monotony of flat surfaces.



White Flooring

Material: Vitrified tiles / porcelain tiles / marble.
Reflects light and visually enlarges the room.
Creates a clean, minimal and premium look.
Neutral base to highlight furniture and room accents.

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THESIS DESIGN

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3D VISUALS

ECOVANA GRANDEUR







FRONT FACADE







STEPPED TERRACE



BALCONY VIEW



OPEN TO SKY
RESTAURANT SEATING



AIREAL VIEW OF OPEN TO
SKY RESTAURANT





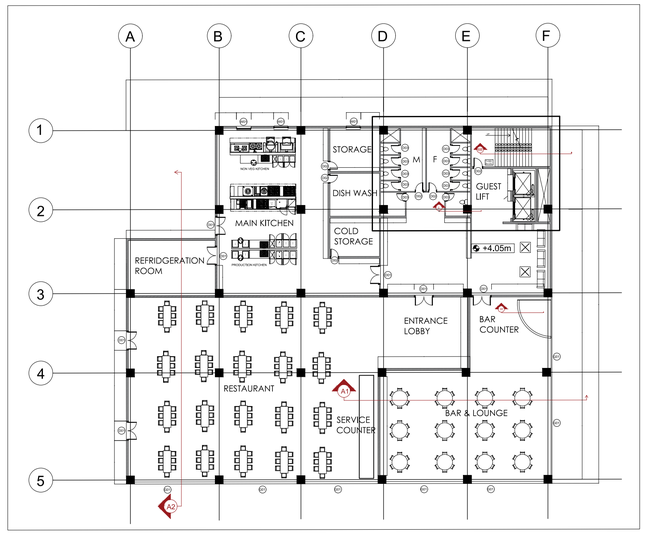


INFINITY ROOFTOP POOL

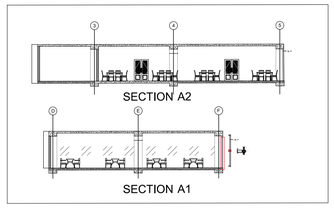


INFINITY ROOFTOP POOL

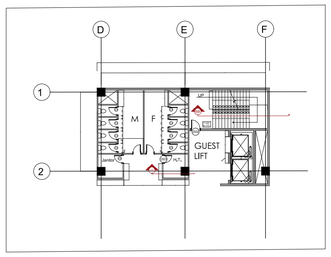
WORKING DRAWING- RESTAURANT



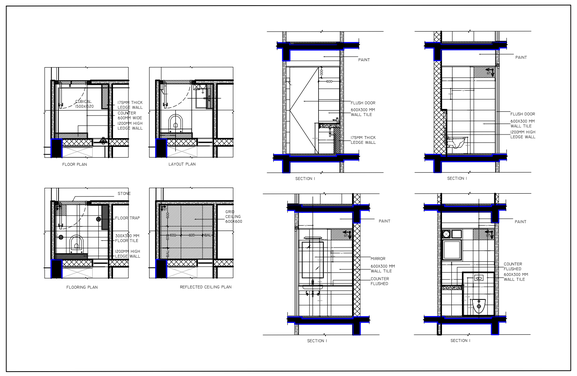
A RESTAURANT LAYOUT
SCALE 1: 300



A RESTAURANT SECTION
SCALE 1: 300

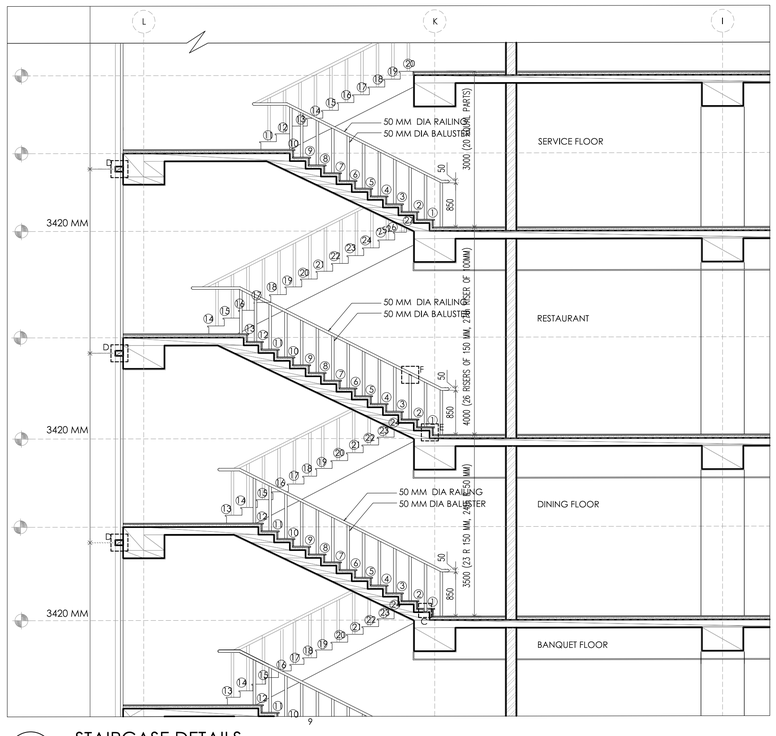


D CUTOUT PLAN
SCALE 1: 300

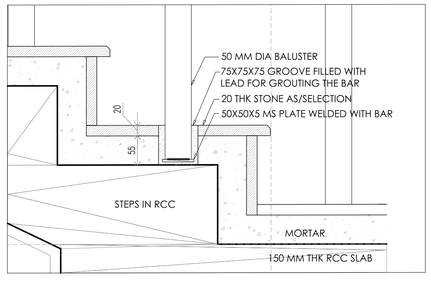


I TOILET DETAILS
SCALE 1: 200

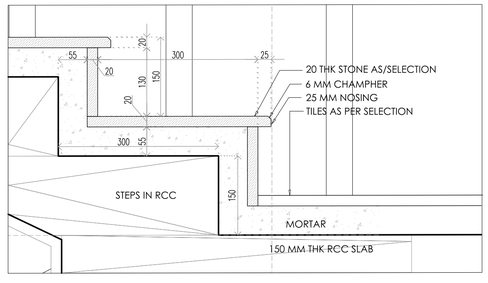
SCHEDULE OF OPENINGS							
NO.	TYPE	NO.S	SILL	LINTLE	HEIGHT	WIDTH	SPECIFICATIONS
1.	D01	7	200	2200	2200	1900	DOUBLE LEAF TEAK WOOD DOOR
2.	D02	6	200	2200	2200	900	SINGLE LEAF ENGINEERED WOOD DOOR
3.	D03	10	200	2200	2200	800	PVC (POLYVINYLCHLORIDE)
4.	W01	3	900	2400	1500	1500	
4.	G01		0		3600	29000	GLAZING FIXED ON ALUMINIUM PANNEL



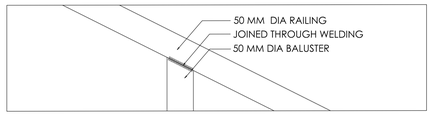
BB STAIRCASE DETAILS
1: 200



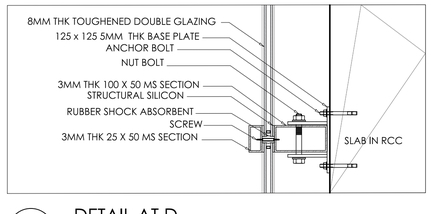
C DETAIL AT C
1: 10



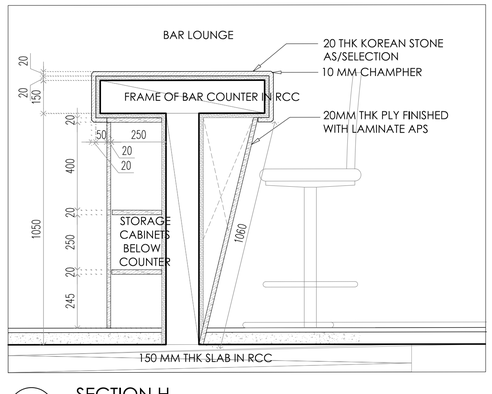
E DETAIL AT E
1: 10



F DETAIL AT F
1: 10



D DETAIL AT D
1: 10



H SECTION H
1: 30

5- STAR HOTEL, BHOPAL

LOCATION :
MPT AREA, SHYAMLA HILLS, JEHANUMA PALACE ROAD, BHOPAL, MADHYA PRADESH

DRAWING :
WORKING DRAWING- RESTAURANT

NORTH :

SCALE :

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