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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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MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

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ARC 511 – Thesis Project

5 Star Hotel

Bhopal, Madhya Pradesh, India

Submitted by:

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B. ARCH
9th Semester, 5th Year

UNDER THE GUIDANCE OF

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DEPARTMENT OF ARCHITECTURE AND PLANNING

MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

CANDIDATE DECLARATION

The Thesis Project in the subject ARC 511, entitled "**5 Star Hotel, 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.

Date: 1st – 2nd Dec, 2025

Faculty Name
Thesis Guide

CERTIFICATION OF EXAMINATION

The Bachelor of Architecture Thesis Viva-Voce examination of Ms. Siddhi MIRI Scholar No.211110249, was held on 1/12/2025 to 2/12/25.

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ABSTRACT

This thesis presents the comprehensive development of a 5-Star Hotel at Shyamla Hills, Bhopal, formulated under the DBFOT model with the Madhya Pradesh Tourism Department as the nodal agency. This study integrates architectural design, site analysis, case study research, government guidelines, and sustainable planning strategies in composing a hospitality facility reflecting global standards of luxury, yet sensitive to ecological and cultural concerns in Bhopal.

The project is located next to the Upper Lake (Bada Talab), a Ramsar-listed wetland; hence, environmental protection, contour-sensitive planning, and landscape integration are intrinsic parts of the design approach. The thesis looks at statutory norms such as Ministry of Tourism guidelines, URDPFI standards, and Neufert parameters for circulation, zoning, fire safety, services, and room planning.

Extensive case studies of Taj Lakefront Bhopal, Radisson Bhopal, Avasa Hyderabad, and Radisson Blu Paschim Vihar provide insights into spatial organization, guest experience, vertical zoning, service planning, cultural integration, and operational efficiency. These learnings were used to inform the design strategy of the proposed hotel, emphasizing lake-facing guest rooms, banquet and convention spaces, recreational amenities, efficient back-of-house systems, and adherence to fire and security regulations.

The thesis then proceeds with a detailed architectural program, site inventory, and comparative analysis, which, in totality, enable an integrated understanding of 5-star hotel design. This project endeavors to reflect contemporary hospitality needs, sustainable development, cultural identity, and environmental stewardship within the sensitive Shyamla Hills context.

ACKNOWLEDGMENT

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I am also grateful to the officials of Madhya Pradesh Tourism (MPHCL) for imparting valuable information on project-related issues and bringing clarity on the site, development parameters, and the role of the DBFOT model-forming the bedrock of this thesis.

I am deeply grateful to all the hotels and hospitality professionals who facilitated case study visits at Taj Lakefront, Radisson Bhopal, Avasa Hyderabad, and Radisson Blu Paschim Vihar. Their cooperation and insights substantially enhanced the comparative analysis and pragmatic understanding of hotel operations and design.

I would like to recognize my classmates, friends, and family for their continuous motivation, emotional support, and believing in my work. Their encouragement helped me remain focused and dedicated throughout this journey.

I finally thank everyone, directly or indirectly, who contributed to the successful completion of this thesis on 5-Star Hotel Development at Shyamla Hills, Bhopal.

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CHAPTER 1:

INTRODUCTION

The hospitality sector's reliance on experience and the re-definition of luxury is a significant part of the modern experience economy. In this context, the architectural design of a 5-star hotel is important for developing a distinct space where hospitality can be presented with the combination of style, efficiency, and guest experiences. This thesis investigates the multifaceted design process of a 5-star hotel and explores the relationships between architecture, interior design, and the user-experience.

A hotel is a place providing paid temporary accommodation, and a 5-star hotel is the ideal idea of luxury, comfort, and service. A 5-star hotel aims to maintain the highest levels, together with the best possible lodging, fine dining, and service to fulfil the needs of each guest. The design of a 5-star hotel should facilitate an exquisite yet welcoming atmosphere while providing efficient working space for business guests as well as leisure guests.

Ultimately, this thesis will also examine how new technologies, sustainable design approaches and cultural context can help enhance the architectural identity of the 5-star hotel, and allow the hotel to become an integral part of the physical environment and provide a positive contribution to the local community.

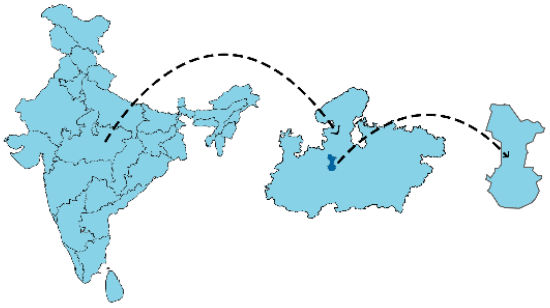
PROJECT DETAILS

- **Name of the Project:** Development, Operation & Maintenance and Management of Lakeview Residency Hotel, Bhopal on Design, Build, Finance, Operate, Transfer (DBFOT) Mode.
- **Proposing / Nodal Agency:** Madhya Pradesh Tourism (MPT) / MPHCL (Madhya Pradesh State Tourism Development Corporation).
- **Location:** Shyamala Hills, Bhopal, Madhya Pradesh, overlooking Bada Talab (Upper Lake).
- **Latitude & Longitude:** 23.24, 77.38
- **Land Area (Site Area):** ~7.16 Acres (28,975 sq. m.)
- **Existing Built-up Area:** ~87,521 sq. ft. (existing structures to be demolished)
- **Proposed Development:** 5-Star Hotel (minimum 150 rooms), Banquet & Convention facility (1000 pax), restaurants, cultural and tourism facilities.
- **Project Description / Scope:** Demolition of existing 42-room hotel and facilities; development of new 5-star hotel, banquet, theme restaurants, rooftop dining, spa & pool, cultural promotion zones; landscaping and parking development.
- **Estimated Project Cost:** INR 150 Crores (Total Project Cost ceiling mentioned)
- **Land Ownership**: Madhya Pradesh Tourism (via MPHCL)

- **Immediate Surroundings:**
  - North: Bada Talab (Ramsar site)
  - South: Jehan Numa Palace Road
  - East: Tribal Museum / Government buildings
  - West: Hotel Jehan Numa Palace and green buffers
- **Environment**: The site falls within the ecologically sensitive zone of Upper Lake and is subject to Wetlands Rules, 2017.

Built-Up Area (Existing)

- Approx. 87,521 sq. ft. total existing structures (to be demolished)
  - Main Hotel Building: 65,664 sq. ft.
  - MOA Spa: 5,607 sq. ft.
  - Railway Platform & Coach Restaurants: 9,814 sq. ft.
  - Swimming Pool & Services: ~4,767 sq. ft.
  - Other spaces: Hot & Cold restaurant, lawn, service areas





SITE PLAN WITH DIMENSION

- **Land Area (Site Area):** ~7.16 Acres (28,975 sq. m.)
- **Existing Built-up Area:** ~87,521 sq. ft. (existing structures to be demolished)
- **Building Height:** 30 m
- **Front Setback:** Minimum 6 m
- **Rear and Side Setback:** Minimum 3 m

Proposing Agency: Madhya Pradesh Hotel Corporation Ltd. (MPHCL)

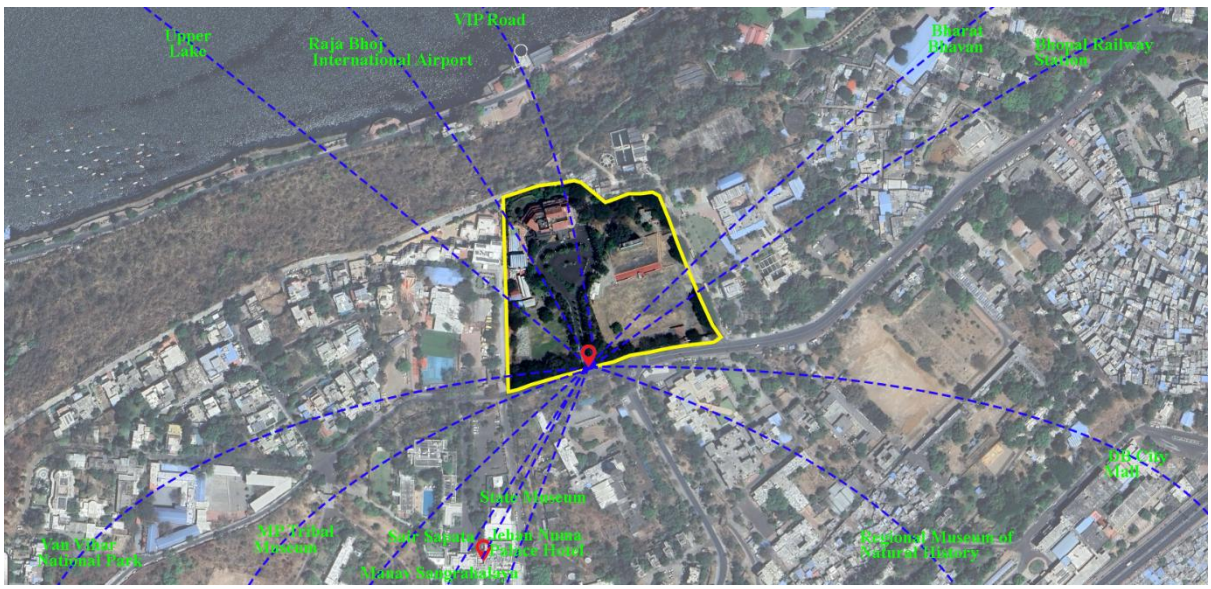
Legal Status: Incorporated under the Companies Act, 1956 as a government-owned corporation.

Ownership & Control: It is a Government of Madhya Pradesh undertaking, operating under the Department of Tourism (DoT).

Role in the Project: Identified as the "Authority" in the agreement.

Holds the leasehold rights for the MPT Lakeview Residency Hotel land and property. Responsible for granting the concession to the chosen private developer or concessionaire. Ensures compliance with project obligations, development standards, and operational measures during the entire 60-year concession period, which can be extended by 10 years. Facilitates coordination with other government agencies, such as for land use change, AAI height clearance, and environmental approvals.

CONNECTIVITY OF SITE



1. Jehan Numa Palace Hotel – 150 meters

2. Van Vihar National Park (Main Gate) – 500 meters

3. Upper Lake Boat Club / Lake Promenade – 300 meters

4. MP Tribal Museum – 800 meters

5. Regional Museum of Natural History – 1.5 kilometres

6. Sair Sapata (lakefront recreation area) – 2.5 kilometres

7. VIP Road (Main Arterial) – 600 meters

8. State Museum / Ravindra Bhavan – 2.8 kilometres

9. Bharat Bhavan (Cultural Complex) – 1.2 kilometres

10. Bhopal Railway Station – 7.5 kilometres

11. Raja Bhoj International Airport – 14.5 kilometres

12. DB City Mall (Commercial/Entertainment Hub) – 6.2 kilometres

13. Manav Sangrahalaya (Indira Gandhi Rastriya Manav Sangrahalaya) – 1.2 kilometres

SCOPE

A. To design, finance, construct and develop the Project (inclusive of any demolition activity which may be required to be undertaken on the Project) on the Project Site as set forth in Schedule I, along with the Project Facilities outlined in Schedule II, in adherence with the Specifications and Standards as set forth in Schedule III.

B. Operate and maintain the Project Facilities, within the specified Concession Period and as per the provisions of this Agreement and timely remit the Project Consideration to the Authority.

C. Performance and fulfilment of all other obligations of the Concessionaire in accordance with the Concession Agreement and matters incidental thereto, or necessary for the performance of any or all of the obligations of the Concessionaire under this Concession Agreement.

D. Transfer the Project to the Authority in the ‘as is where is and in good condition’ basis including movable and immovable assets at the time of handover, upon Termination in accordance with the provisions of this Agreement; and

E. Construct a hotel with a minimum 150 rooms and Banquet & Convention facility of 1000 pax with MICE facilities

F. The Concession Period shall start from the Compliance Date

LIMITATIONS

- The study is limited to the conceptual and schematic design stage. It does not include detailed construction drawings or cost estimation.
- The analysis relies on available secondary data and site observations. It does not conduct thorough user surveys or hospitality market feasibility studies.
- The project does not cover operational management, branding, or hotel staffing models. Its main focus is on architectural design.
- While it suggests sustainability features, the technical details of energy simulations and system integrations are only proposed at a conceptual level.
- The project is specific to the climatic, cultural, and economic context of Bhopal. It may not apply directly to other urban areas.

DETAILED LIST OF SPACES

Hotel & Guest Areas

- Minimum 150 guest rooms (standard, premium, suites)
- Reception and lobby lounge
- Guest lounges and waiting areas
- Business centre and meeting rooms
- VIP/Presidential suites
- Guest service rooms and storage

Food & Beverage Facilities

- All-day dining restaurant
- Rooftop restaurant / bar with lake view
- Specialty / theme restaurants (e.g. railway coach-style dining)
- Café and bakery
- Open-air / terrace dining
- Banquet kitchen and F&B prep zones

Convention & Banquet Facilities

- Large banquet hall with capacity of 1,000 pax (column-free preferred)
- Pre-function area
- Conference and meeting rooms
- Convention foyer / break-out space
- Washroom and green rooms for events
- Stage/backstage and A/V control rooms

Retail, Recreation & Cultural Facilities

- Souvenir and handicrafts shops / kiosks
- Cultural promotion spaces for folk performances
- Amphitheatre or open event lawn
- Drive-in or theme event space
- Art display walls / mini gallery

Wellness & Leisure

- Full-service spa and massage rooms
- Gym and fitness centre
- Yoga/meditation room
- Outdoor swimming pool with deck
- Indoor recreation lounge (games/library)

Parking & Service Infrastructure

- Multi-zone parking (surface and underground)
- Separate parking zones for guests, staff, and events
- Entry and exit gates with security booths
- Service yard and staff entry
- Utility block (transformers, DG sets, STP, WTP)

Landscape & Outdoor Spaces

- Landscaped lawns for outdoor dining/events
- Pathways, sitting plazas, fountains
- Open lawns for cultural or tourism activities
- Green buffer near lake (as per Wetlands Rule)

Back-of-House / Staff Areas

- Staff locker and restroom facilities
- Kitchen and F&B prep zones (including cold storage)
- Laundry and housekeeping
- Engineering and maintenance rooms
- Admin offices and security control room
- Garbage collection, segregation & compost area

CHAPTER 2: LITERATURE REVIEW

OVERVIEW

2.1MINISTRY OF TOURISM GUIDELINES:

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

I. Star Category Hotels: - 5 Star Deluxe, 5 Star, 4 Star, 3 Star, 2 Star & 1 Star

II. Heritage Category Hotels: - Heritage Grand, Heritage Classic & Heritage Basic

FOR APPROVAL-

Application Form should have the following details:

1. Proposed name of the Hotel.
2. Name of the promoters with a note on the business antecedents in not more than 60 words.
3. Complete postal address of the promoter with Telephone, Fax, and Email address.
4. Status of the owner/promoter:

a) If Public/private limited company with copies of Memorandum and Articles of Association.

b) If Partnership, a copy of Partnership Deed and Certificate of Registration.

c) If proprietary concern, name and address of proprietor/certificate of Registration.

5. Location of hotel site with postal address.

6.Details of the site.

a. Area (in sq. meters)

b. Title – owned / leased with copies of sale / lease deed.

c. Copy of Land Use Permit to construct Hotel from local authorities.

7. Distance (in Kms) from (a) Railway station (b) airport (c) main shopping center.

8.Details of the project:

i. Copy of Feasibility Report

ii. Star category planned

iii. Number of rooms (with attached bathrooms) and size for each type of room (in sq. Ft.)

iv. Size of bathrooms (in sq. Ft.)

v. Details of public areas with size in sq. ft. – Lobby / lounge; restaurants; bar; shopping; banquet/conference halls; business centre; health club; swimming pool; parking facilities (no. of vehicles)

vi. 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.).

a. Eco-friendly Practices Sewage Treatment Plant

b. rain water harvesting

c. waste management

9.Pollution control method for air, water, and light

10.Introduction of non-CFC equipment for refrigeration and air conditioning.

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

12. i) Details of Fire Fighting Measures/ Hydrants etc.
13. j) Date by which project is expected to be completed and become operational
14. k) Any other additional facilities
15. j) Security related features
16.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.

2.2CLASSIFICATION / RECLASSIFICATION OF OPERATIONAL HOTELS:

• 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.

• 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"

• Star Category Classification/Reclassification fees in Rs.

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

2.3 AREA OF HOTELS

S. No.	Public Areas	Private Areas (Staff)	Private Areas (Guests)	Semi – Private
1	Lobby + Reception	Administration Office	Single Bedroom	Banquet
2	Restaurants	Account Office	Double Bedroom	Dining Hall
3	Shops + Retail Store	Technical / Mechanical Room	Deluxe Bedroom	Multipurpose Hall
4	Lounge + bar	Bedrooms	Suite Bedroom	
5	Cloak Room	Laundry + Storage	Steam Room + Spa	
6	Parking	Kitchen + Storage	Lounge + Bar	
7	Recreational Areas (Outdoor)	Lockers + Washroom	Recreational Areas (Swimming Pool, Parks)	
8	Banquet	Waste Disposal	Reading	
9		Control Room		
10		Pantry		

2.4Checklist of Facilities for Classification/Re-classification of Hotels:

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							<u>Grade A cities:</u> One Multi cuisine Restaurant cum 24 hr. coffee shop / all day diner, one Specialty Restaurant and 24 hr. room service. <u>Grade B cities:</u> 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							<u>Grade A cities:</u> One Multi cuisine Restaurant cum 24 hr. coffee shop/ all day diner, one Speciality restaurant and 24 hr. room service. <u>Grade B cities:</u> One Multi cuisine Restaurant cum coffee shop open from 7 a.m. to 11 p.m., one Speciality restaurant and 24 hr. room service.
<u>Grade- A</u>: Delhi * Mumbai, Kolkata, Chennai, Bangalore, Pune, Hyderabad/ Secunderabad. <u>Grade– B</u>: Cities in the rest of the country excluding Grade 'A' cities.			<u>Note</u>: 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

2.5EXTERNAL ACCESS OF CONTROL:

1. Limiting Access Points

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

2. Perimeter Security System

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

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

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

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

3. Road Barriers

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

4. Shrubs and Vines

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

5. Patrolling

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

2.6 MATERIAL ACCESS CONTROL:

1. Guest Baggage Check

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

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

2.7 PEOPLE ACCESS CONTROL:

INTERNAL ACCESS CONTROL:

2.7.1. Walk-In Guests

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

2.7.2. 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.

2.7.3. 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.

2.7.4. Visitor Management System

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

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.

2.7.5. LIFT USAGE

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

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

2.8.OTHER SECURITY MEASURES:

2.81. Room Key Scanners

The US Department of Energy, through its Oak Ridge National Labs, has developed Mass Spectrometry Scanners which can analyse up to 1000 guest room access cards per hour. These can detect even a billionth

2.3 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. (Ministry of Tourism, 2022)

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

3.1. 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.

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

I The width of the abutting main street shall not be less than 12 m and one end of this street shall join another street not less than 12 m in width.

II The approach to the building and open spaces on all sides up to 6 m width and the layout shall be done in consultation with Chief Fire Officer of the city.

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

3.2. PARKING:

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

3.3. 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.

3.4 SETBACKS WITH RESPECT TO ABUTTING ROAD WIDTH

A. Front Setback

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

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

B. 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 o Upto height of 24 m with one setback: Minimum 6m o Between 24 m and 37.5 m with one setback: Minimum 9 m o 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	

3.5.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 pandean 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.
- Watchmen's booth, suction tank and pump-house, garbage shaft, sanitary block, parking lockup garages, electric cabin or substations and such other utility structures meant for the services of the building under consider ratio.

3.5.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.

3.6. 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.

3.7. 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.

3.8. 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

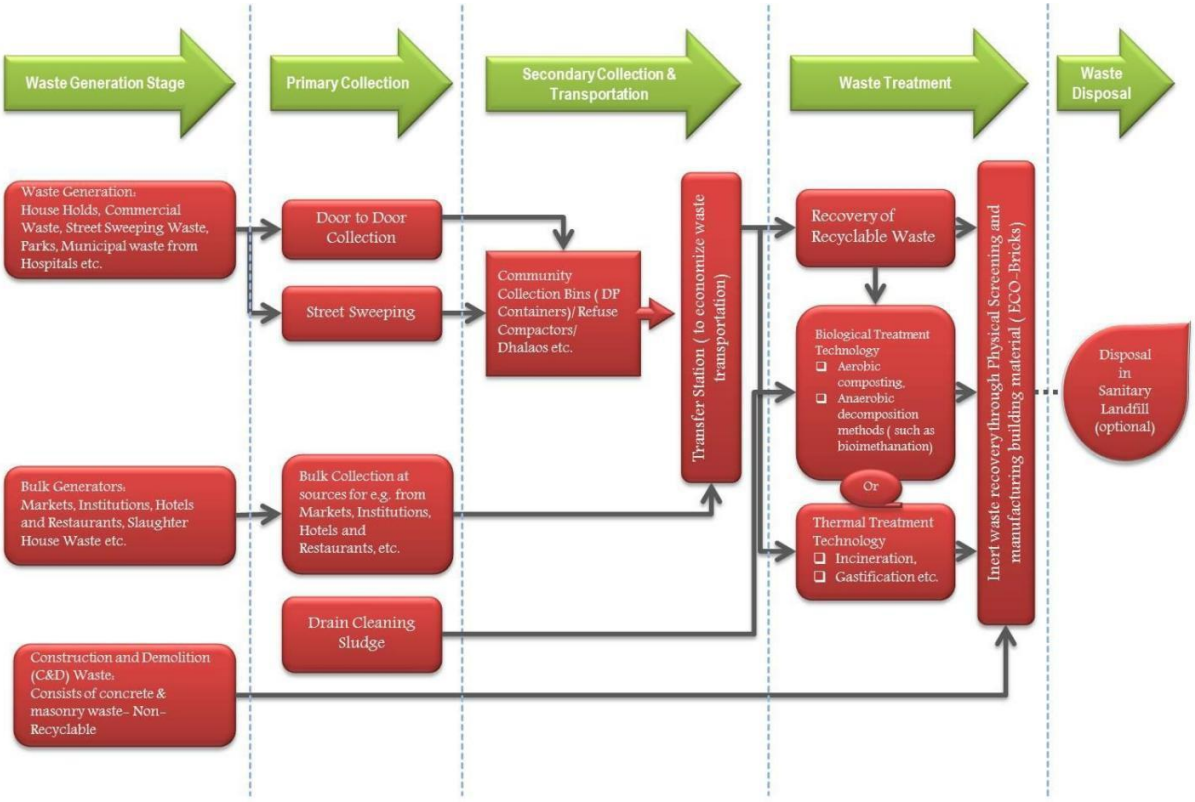
in which materials are identified as no longer being of value (being in the present form) and are either thrown away or gathered together for disposal. The following table indicates the waste generation per capita per day for estimation and forecast of waste generation for future for planning purposes:

INDIAN STANDARD CODE FOR HOTELS AND RESTAURANTS

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

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.

3.9. 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.

3.10. 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.

3.11. 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.

3.12. DOOR AND WINDOWS

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

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

3.13. 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.

3.14. 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

3.15. WATERSUPPLY

- There shall be adequate supply of safe and potable water. Running water shall be easily accessible to all rooms in which food is prepared or utensils are washed. Requirements for water supply for hotels and restaurants shall be as given

TABLE 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.

3.16. 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.

3.17. 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 ferments for drainage and sanitation shall conform to the requirements given. (Ministry of Urban Development (MoUD)., 2014)

TABLE 5 REQUIREMENTS OF DRAINAGE AND SANITATION FITMENTS IN RESTAURANTS

(*Clause* 14.1.1)

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.

TABLE 4 REQUIREMENTS OF DRAINAGE AND SANITATION FITMENTS IN HOTELS

(*Clause* 14.1.1)

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

iv)	Wash basins	1 per 10 persons omitting the wash basins installed in the room suite	1 per water-closet and urinal provided	1 per water-closet provided	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons
v)	Baths	1 per 10 persons omitting occupants of the room with bath *en suite*	—	—	—	—
vi)	Slop sinks	1 per 30 bedrooms, minimum 1 per floor	—	—	—	—
vii)	Kitchen sinks and dish washers	← 1 in each kitchen →				

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

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

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.

3.18. 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. (Bureau of Indian Standards (BIS), 1991)

3.19. 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

3.20. STORAGE OF FOOD STUFF

All perishable food shall be stored at the temperatures as given in

TABLE 6 STORAGE TEMPERATURES FOR FOODSTUFF

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.

3.21. 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

3.22.FIRE SAFETY REQUIREMENTS

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

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

taking all the persons on that floor as alternative escape routes may be rendered unsuitable and/or

unsafe due to fire.

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

Basements- It is essential that the fire resistance of the basement conforms to the highest order and all columns for separating the upper structure shall have grading not less than the standards laid down for Grade 3. (National Building Code of India, 2016)

NEUFERT Standards

1. Guest Room Dimensions

Room Type	**Area (min)**	**Features**
Single Room	14–16 m²	Bed, side table, desk, wardrobe, bath
Double Room	18–22 m²	Twin/double bed, desk, wardrobe, bath
Luxury Suite	35–50 m²	Separate lounge, bath with tub, dressing room

2. Bathrooms

Type	**Area**	**Notes**
Standard ensuite	3–5 m²	WC, washbasin, shower
Luxury ensuite	6–10 m²	WC, washbasin, shower/tub

3. Vertical Circulation

Component	**Standard Sizes**
Stair width	Min. 1.20 m (main staircases)
Lift lobby	Min. 1.80 m width
Lift car	1.10 × 2.10 m (6–8 persons)

4. Public Areas

Area	Recommended Area per Unit
Reception + Lobby	1.5–2 m² per guest room
Lounge Area	0.5–1 m² per guest room
Restaurant	1.2–1.5 m² per seat
Banquet Hall	1.5–2.0 m² per person
Kitchen (Main)	0.25–0.40 m² per meal/day
Back-of-House Services	~25–30% of total area

5. Parking (as per Neufert & URDPFI)

Cars: 2.5 m × 5.0 m
Two-wheelers: 1.0 m × 2.0 m
Bus drop-off area: 3.5 m width with turning radius ≥ 9 m

6. Circulation Ratios

- Circulation (horizontal + vertical): 15–20% of built-up area in hotels

Ideal room-to-circulation ratio: 1:0.3.

CHAPTER 4: SITE INVENTORY

OVERVIEW

The site inventory focuses on analysing the physical, environmental, and contextual characteristics of the proposed site for the 5-star hotel in Bhopal, Madhya Pradesh. The site inventory examines critical aspects such as location, accessibility, topography, climate, and surrounding infrastructure. It includes an evaluation of connectivity to major transportation hubs like airports, railway stations, and highways, as well as proximity to significant landmarks, business centres, and tourist attractions.

INTRODUCTION

Bhopal is in the center of India and is the capital of Madhya Pradesh. The city is approximately 463 square kilometers big. Bhopal is on the Malwa Plateau and is surrounded by hills. It has two big lakes, the Upper Lake and the Lower Lake, which is why it is called the City of Lakes. Because it is in the middle of India, it is a strategic center for business, transportation, and government.

4.1CLIMATE ANALYSIS



Peak Summer (Hottest Month)

-Month: May

-Temperature:

- Max: 42–45°C
- Min: 23–26°C

- Humidity: Low (20–30%)

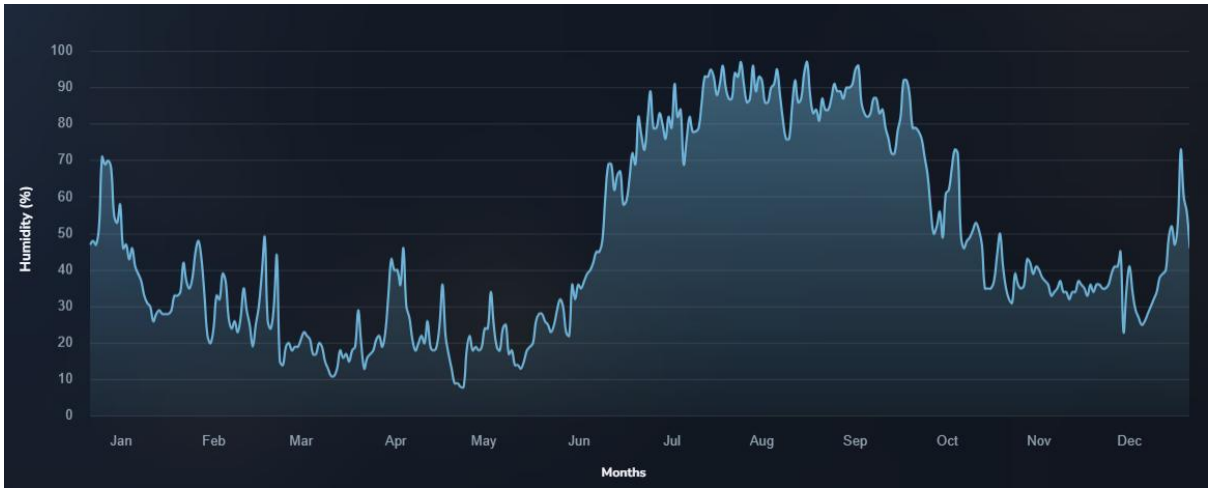
Peak Winter (Coldest Month)

-Month: January

-Temperature:

- Min: 6–8°C
- Max: 22–24°C

- Humidity: Low to moderate (~45–55%)



Maximum Humidity

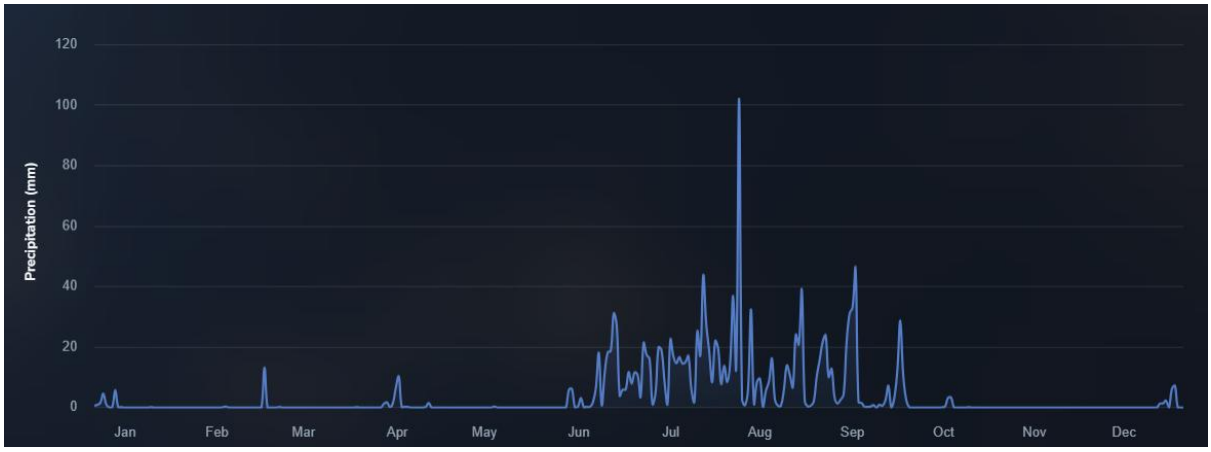
-Month: August (Monsoon Peak)

-Humidity: 85–90% (morning), ~75% (evening)

Minimum Humidity

-Month: May (Pre-Monsoon Summer)

-Humidity: 20–30%

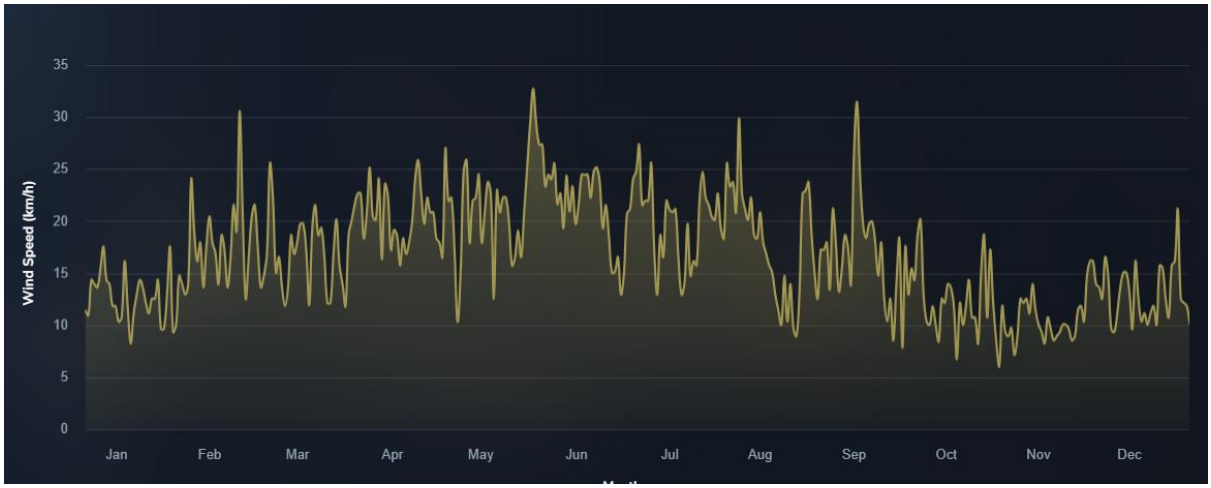


Maximum Rainfall

- Month: August
- Rainfall: 350–400 mm (highest monthly average)
- Conditions: Overcast skies, continuous rainfall, saturated ground, high humidity (~85–90%)

Minimum Rainfall

- Month: December
- Rainfall: 3–5 mm (lowest rainfall)
- Conditions: Clear skies, dry air, pleasant days



Maximum Wind Speed
-Month: June (peak pre-monsoon & early monsoon)
-Average Wind Speed: 15–20 km/h
-Wind Direction: Predominantly South-West (SW)
Minimum Wind Speed
-Month: November–December
-Average Wind Speed: 3–5 km/h
-Wind Direction: North-East (NE) or calm conditions (India Meteorological Department. Climate of Madhya Pradesh – Climatology Reports, IMD, 2023.)

4.2. Shyamla Hills Specific Topography

- Located on the south-western edge of Upper Lake (Bhojtal), on elevated ground.
- Terrain: Gently sloping to moderately steep hilly terrain with natural contours.
- Elevation: ~560–570 meters AMSL.
- View: Offers panoramic views of Upper Lake and the city skyline.
- Vegetation: Sparsely wooded with landscaped urban forest patches nearby.
- Geological composition: Hard rock base (Vindhyan sandstone) with lateritic soil overlay in some parts.
- Drainage: Natural slopes aid surface runoff into Upper Lake, requiring careful stormwater management.

4.3. Design Implications Based on Topography

- The mild slope enables the use of split-level architecture and basement parking without excessive excavation.
- The north-facing slope allows optimal placement of guest rooms and public areas for unobstructed lake views.
- Terraced landscaping and rainwater harvesting features can be integrated with natural contours.
- Minimal disruption to the site's slope is advisable due to its proximity to the Ramsar-listed Upper Lake (ecological buffer zone of 50 meters).

- Drainage design must prevent erosion or direct runoff into the lake, maintaining a vegetated buffer and bioswale systems.

4.4. SOIL

Soil Type: Lateritic black soil mixed with clayey and silty loam – typical of the Malwa plateau.

Nature:

- Moderately compact and well-draining at surface
- Strong bearing capacity in deeper layers – favorable for multistorey foundations
- May include weathered basalt and rocky strata at 2–3 m depth

Construction Implications:

- Soil suitable for raft foundations and RCC footings
- Retaining structures may be required along lake-facing slopes
- Soil stabilization needed near existing tree lines and contours

4.5. DRAINAGE

Natural Drainage Pattern

General Slope: South to North, gently sloping toward Upper Lake

Natural Drainage Flow:

- Site allows gravity-based runoff into northern edge
- Low-lying zones near the lake edge may experience minor waterlogging during peak

monsoon

4.6. Design Implications

- Stormwater must be captured through swales, drains, and rainwater harvesting pits
- No direct discharge allowed into the lake due to Wetlands Rules 2017
- Buffer landscaping to filter surface runoff naturally Water Supply

Existing Source: Municipal water supply (Bhopal Municipal Corporation) with storage and pumping systems

4.7. Project Requirements

- Domestic water demand for 150+ rooms, banquet, F&B, staff and landscape use
- Water treatment, reuse, and storage (as per MP Tourism & NBC norms)

Design Provision:

- Dual plumbing system (recycled + fresh water) recommended
- Rainwater harvesting system mandatory

• Fire water storage to be integrated separately as per NBC

4.8. Surface Water and Environmental Sensitivity

Adjacent Water Body: Upper Lake (Bada Talab) — classified as a Ramsar Site (wetland of international importance) Distance from Lake: The site shares its northern edge with the lake buffer zone

Wetlands Rule 2017 Mandate:

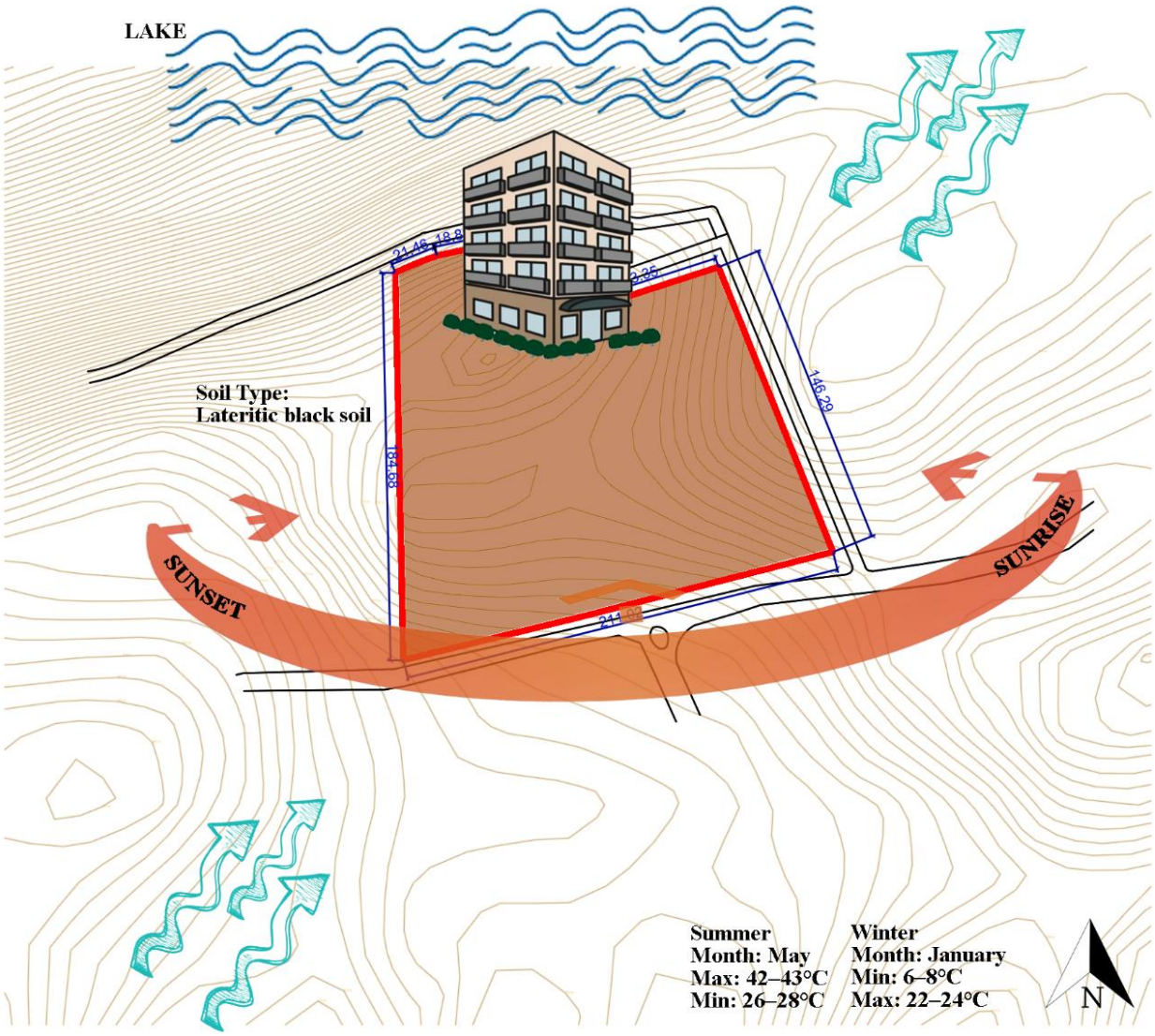
• No construction or permanent structure within 50 meters of the lake edge

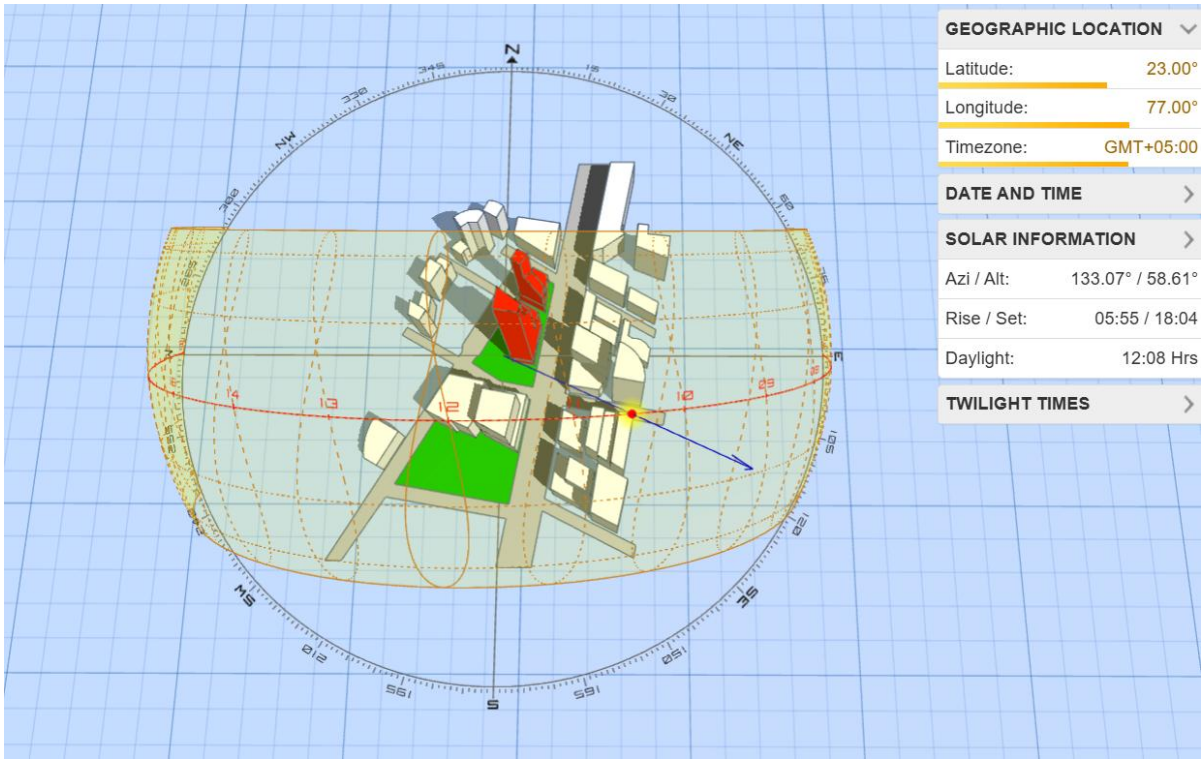
• Buffer zone to remain pervious, vegetated, and free of utilities

• Any landscape or softscape in this zone must allow for stormwater percolation Visual and Ecological Significance.

• Lake presence enhances microclimate, reduces temperature, and adds aesthetic value

• Any surface runoff must be treated through bioswales or rain gardens before entering buffer (Ministry of Environment, Forest and Climate Change., 2016)





4.9. Vegetation

Trees (Shade & Aesthetic Value)

- Neem (Azadirachta indica), hardy and drought-resistant
- Gulmohar (Delonix regia), beautiful flowering tree
- Ashoka (Polyalthia longifolia), tall and columnar; great for borders
- Palash (Butea monosperma), has flame-like flowers; local





2. Flowering & Ornamental Plants

- Bougainvillea, hardy climber with vibrant color
- Hibiscus, tolerates varied conditions and is attractive
- Marigold, offers seasonal color and is low maintenance





3. Shrubs & Hedges

- Duranta, a fast-growing hedge plant
- Tecoma, produces bright yellow flowers and grows well
- Acalypha, features decorative leaves







3. Shrubs & Hedges

- Duranta, a fast-growing hedge plant
- Tecoma, produces bright yellow flowers and grows well
- Acalypha, features decorative leaves





4. Ground Covers

- Wedelia, a creeping plant with yellow flowers that controls erosion
- Carpet grass, low maintenance with a soft cover
- Mondo Grass, ideal for areas around walkways





SITE VISIT PHOTOS













CHAPTER5: CASE STUDY 1

TAJ HOTEL, BHOPAL

5.1INTRODUCTION

- The Taj Lakefront, Bhopal epitomizes true luxury. Overlooking the upper lake and just 25 minutes from the international airport, this iconic landmark symbolizes the soul of Bhopal and its vision for tomorrow. The magnificent structure by the lakefront redefines fine living with its modern interiors, ornate and luxurious finishes. The design is intuitive to the region and inspired by the bell metal craft of Tikamgarh, the lakes and Zari work of Bhopal, the paisley prints of Bagh, the Durries of Sironi, and the Terracotta art of the state's tribal areas.
- Ready to be the new landmark of the city, it opens its doors to the world with 152 guest rooms, multi-cuisine and award-winning restaurants, recreation facilities, Jiva spa, modern meeting spaces, well-equipped conference rooms, and the city's largest banqueting facilities.



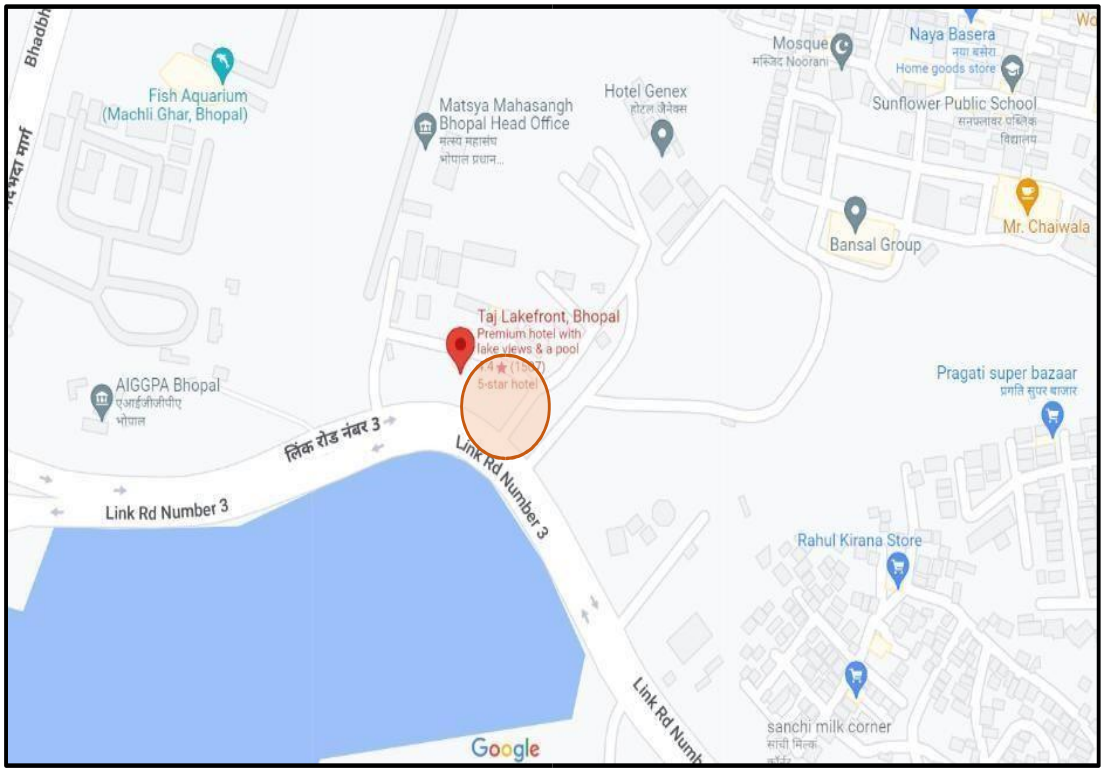


Details:

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

5.2. LOCATION

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



5.3.SITE BOUNDARY



------- Site Boundary

------- Circulation within the Site

Site Characteristics:

• The site has kind of trapezium shape having curved edge in front.

• As we investigate 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.

5.4. FACILITIES

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

Outdoors
- ✓ Outdoor furniture
- ✓ Sun terrace
- ✓ Terrace
- ✓ Garden

Activities
- ✓ Evening entertainment
- ✓ Games room

Food & Drink
- ✓ Bar
- ✓ Restaurant

Internet

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

Parking

Free private parking is possible on site (reservation is not needed).
- ✓ Electric vehicle charging station

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

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

Business facilities
- ✓ Business centre
- ✓ Meeting/banquet facilities

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

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

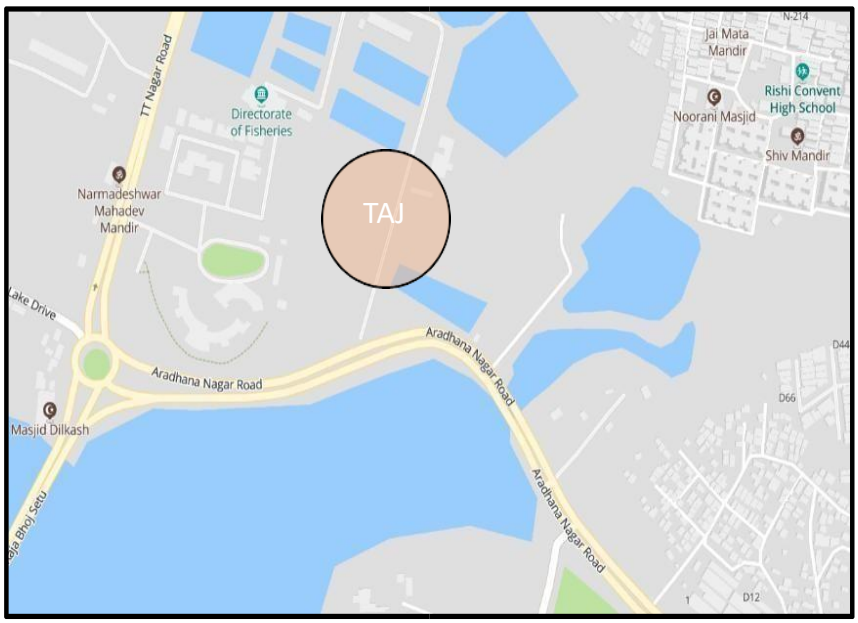
Outdoor swimming pool

Free! All pools are free of charge
- ✓ Open all year
- ✓ Opening times
- ✓ All ages welcome
- ✓ Pool/beach towels
- ✓ Pool bar
- ✓ Infinity pool
- ✓ Pool is on rooftop

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

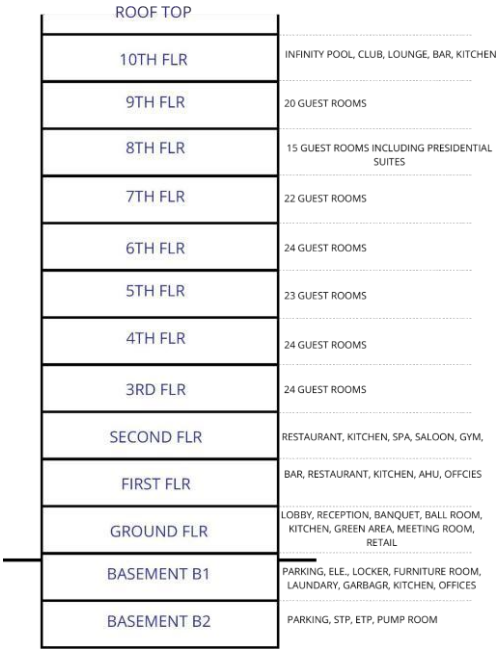
5.5. APPROACH ROAD

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



5.6. Vertical Zoning

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



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

	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

	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

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

	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**				

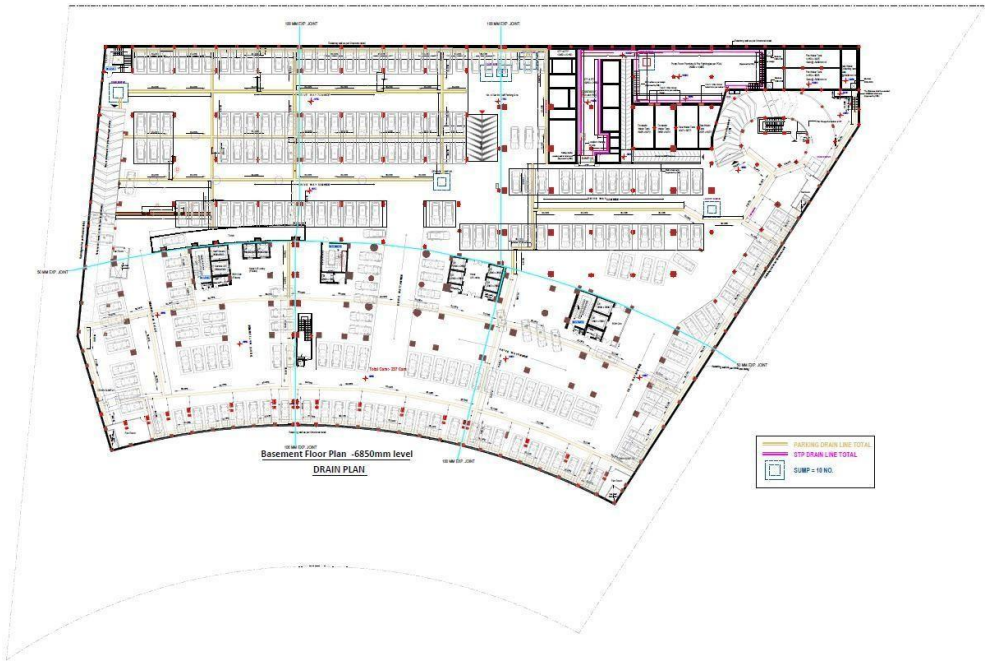
M.	Other BOH (exer mech)				
I	Mechanical Areas				
	LV Room	1	56	**56**	
	Indoor Transformers	2	22	**44**	
	LT Panel	1	74	**74**	
	DG Generator Room	1	97	**97**	
	Chiller Plant Room	1	125	**125**	
	Rainwater Tank	105 Cubic Meter			
	Municipal Tank	123 Cubic Meter			
	Raw Water Tank	123 Cubic Meter			
	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**	

Basement 2 Plan:

- Basement 2 is comprised with services amenities like STP, ETP WTP, Fire Tank, Domestic Water Tank etc. and parking spaces.

5.7. FLOOR PLANS



Basement 1 Plan:

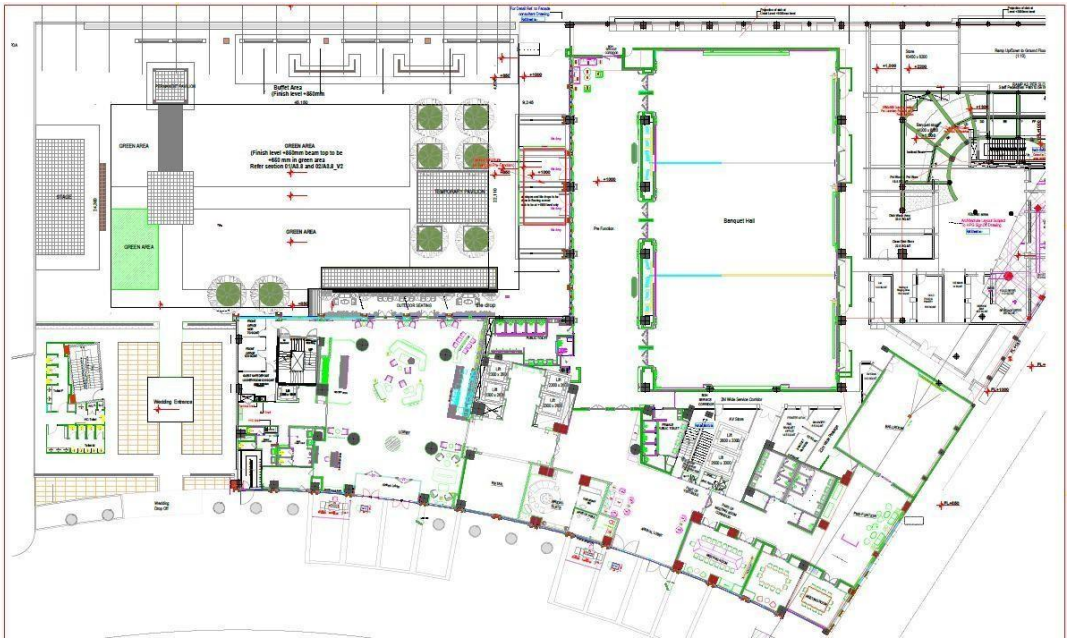
- Basement 1 mainly consist of different types of Offices spaces like housekeeping office, Finance Office, Sales office, Eng. office and Canteen, Storage, Laundry spaces etc.
- It also has parking spaces and services outlet.
- All the staff of taj lakefront uses basement 1 as an entrance and parking space respectively.



Ground Floor Plan:

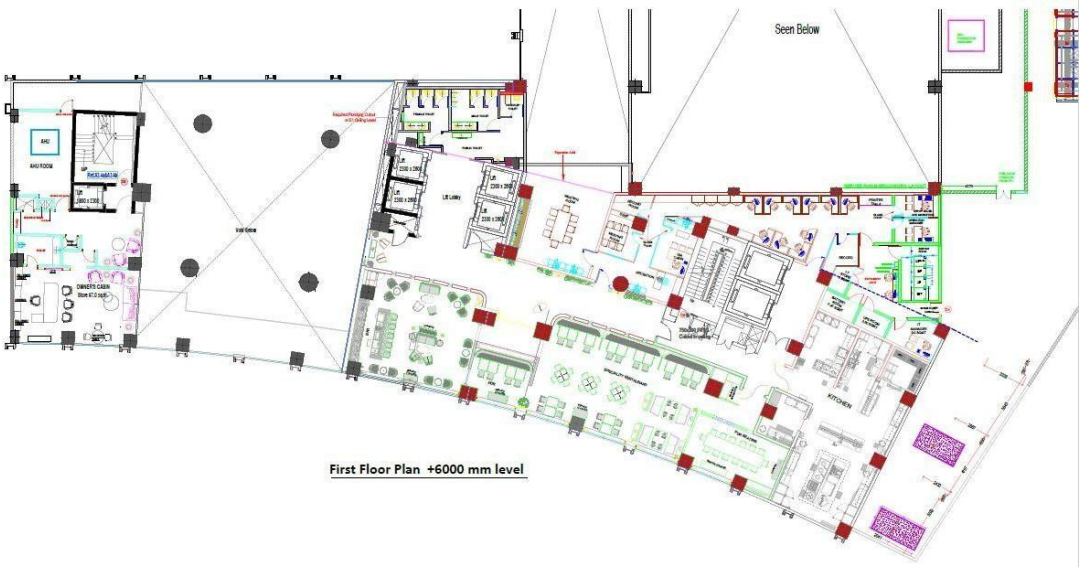
- The entrance lobby of the hotel has grand luxury feel as it has triple heighted spaces with very attractive false ceiling consist of cove lighting.
- There is a separate entrance has been provided including Banquet Hall, Meeting room, conference rooms.

- 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.



First Floor Plan:

- This floor has a Chinese Restaurant with a wonderful Chinese theme based interiors.
- Private Dining Restaurants are also provided in this floor.



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



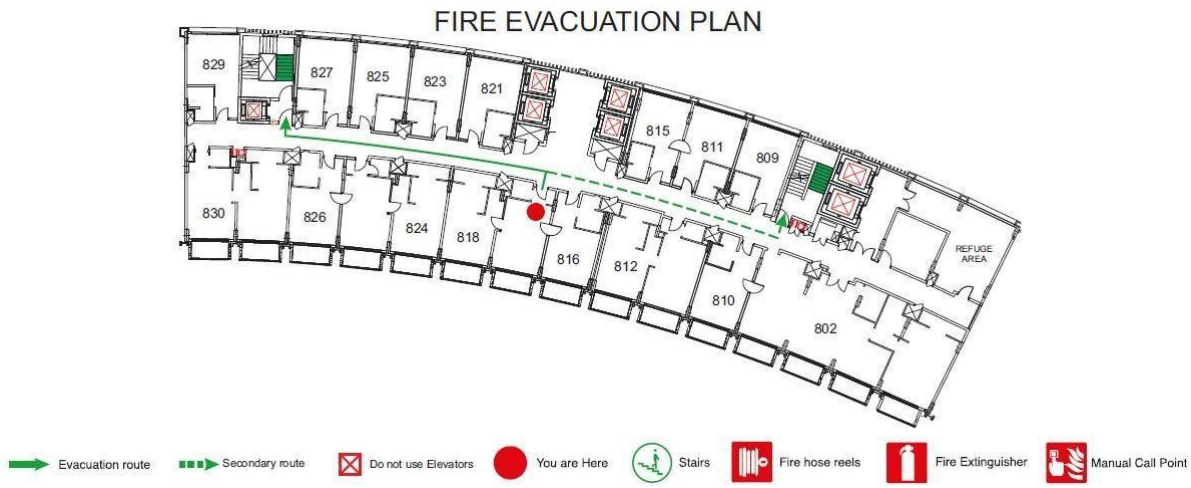
Typical Floor Plan (3rd to 7th) Floor:

- 24 guest rooms including Executive Suites, Twin Bedrooms are there in this floor.
- Housekeeping Room are also there in this room for room services.
- Specialty of these typical floor is that interior of lobby and corridors are fully different which gives different types of feeling at each different floor.



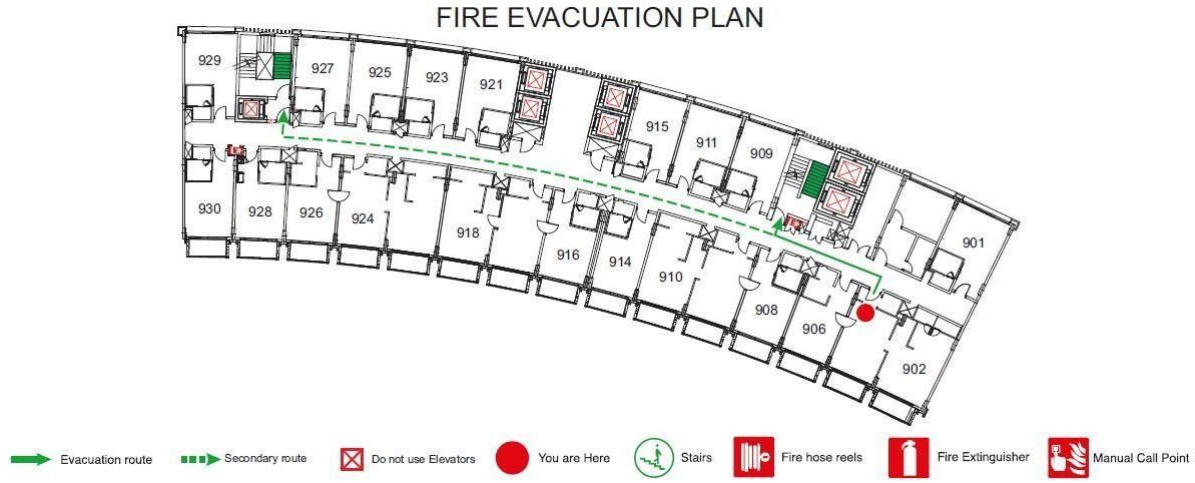
8th Floor Plan:

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



9th Floor Plan:

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



10th Floor Plan:

- Open terrace lounge, club area with the view of swimming pool is provided in the top floor of this Hotel.



5.8. 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

Tranquillity 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



Twin Room

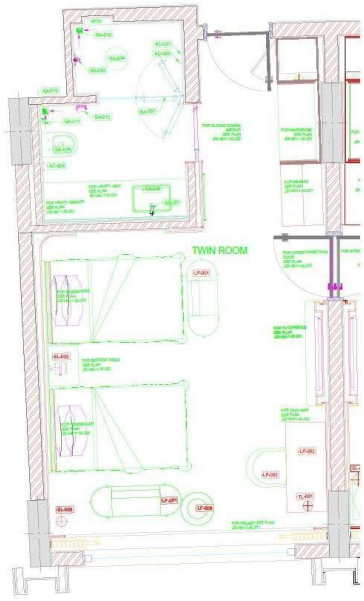
Framed by the picturesque backdrop of the hills, the Deluxe Rooms are the epitome of tranquillity and relaxation. The decor seamlessly merges the aesthetic philosophy of Madhya Pradesh with a European flair. Fully-equipped with quality amenities, including digital connectivity with smart TV and Taj's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



SIZE: 33 sq.m

SIGNATURE FEATURE: Spectacular vistas of the hills

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



OTHER CONVENIENCES

- Tea-coffee maker
- Forest Essentials bath amenities
- Choice of smoking & non-smoking accommodation
- Air conditioning
- 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

King Room

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



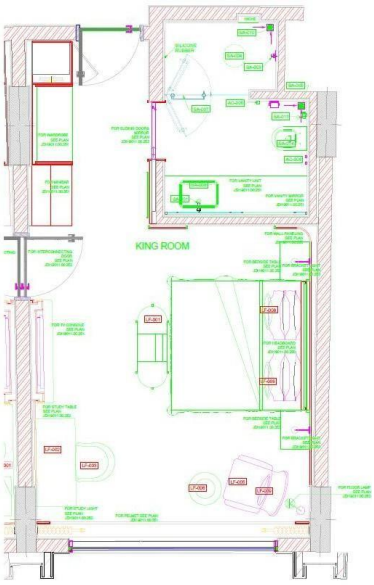
SIZE: 33 sq.m

SIGNATURE FEATURE: Spectacular vistas of the hills

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

OTHER CONVENIENCES

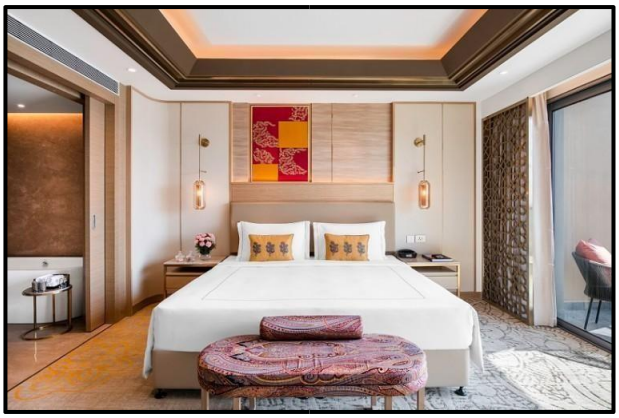
- Tea-coffee maker
- Forest Essentials bath amenities
- Choice of smoking & non-smoking accommodation
- Air conditioning
- Wi-Fi
- Iron & ironing board
- In-room bottled water
- Minibar
- Newspaper
- Full-length mirror, hair dryer, weighing scale
- 49-inch Smart LED TV
- Shower Cubicle



Presidential Suite

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

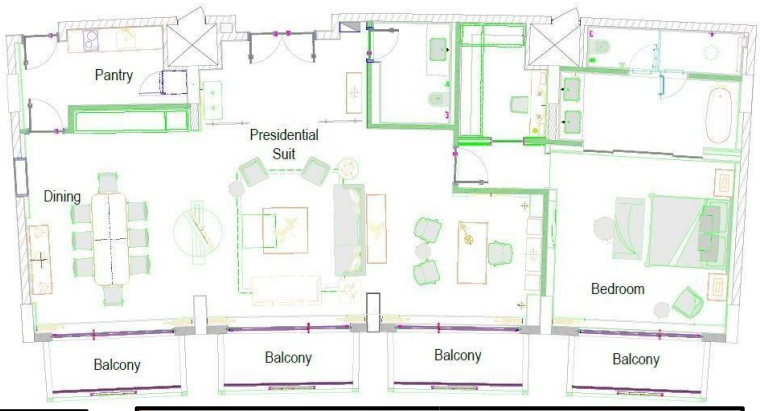




SIZE: 152 sq. m.

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

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







OTHER CONVENIENCES

- Forest Essentials bath amenities
- Air conditioning
- Bedroom with private balcony or veranda & bathroom • Living room with dining area, bedroom & bathroom
- Electronic safe.
- Tea coffee maker
- WIFI
- Iron & ironing board
- In-room bottled water
- Minibar
- Newspaper
- Full-length mirror, hair dryer, weighing scale
- 49-inch Smart LED TV
- Lake View
- Private Pantry

5.9. VIEW/INTERIOR OF SPACES



Spa & Sauna



PDR



Banquet Hall



Swimming pool



Restaurant Seating



Lounge/Bar

5.10. SERVICES

Electrical Services



L.T. panel room-60 sqm
Access width -4m



H.T. panel room-20 sqm



L.T. and H.T. panel room

Chiller Plant



L.T. and H.T. panel room
Height-3.9 m



Fire Fighting



Fire Fighting



Electrical Tray



AREA –150 sqm



Access width –1.8 m



Access for machinery
Width –6

Fire Pump



Control Panel for Fire Room 70 sqm
Tank Volume –72 cum



Water Storage 20,00,000

Water Treatment





Water Storage Tank Raw 90 sqm
(area-12 sqm)



Tank for swimming Pool



Boiler room with pump and Heat exchange



Overhead tank

STP



Cooling Towers



(Indian Hotels Company Ltd. Taj Lakefront Bhopal – Official Website, 2023.)

LEARNING FEATURES FROM CASE STUDY

5 Star hotel Taj lakefront

1. Site Planning - Orient towards lake view for guest experience and cooling benefits.
2. Cultural Context- Blend modern luxury with regional architectural.
3. Landscape Integration - Use of native plants, green buffers, and water features near natural lake.
4. Eco-Conscious Design- Apply passive cooling, efficient MEP, and water management systems.
5. The staircase at Taj Lakefront has ventilating windows, but as per NBC guidelines, fire escape staircases must be fully enclosed with fire-resistant materials and should not have openings that could let smoke in.
6. The guest lift machine room on the terrace has only an exhaust fan, but as per NBC, proper ventilation ducts or a mechanical system are required to prevent heat build-up and ensure safety—especially in 5-star hotels.
7. The diesel generator should be placed at a distance from 5-star hotel because it produces loud noise when the power goes out. Additionally, a proper acoustic system should be in place to minimize noise disturbance.
8. In a 5-star hotel, the ground floor does not have a gas supply and only uses electrical appliances for cooking, as combustible gases like LPG are considered high-risk in enclosed or public spaces.
9. There is no provision for a dumbwaiter system for transporting to vertical food service delivery to guest rooms.
10. There are two refuge areas located at 05th and 08th floor of the building.
11. Total 5 gates to enter and exit the property.

CASE STUDY VISIT:



CASE STUDY2: RADISSON, BHOPAL

2.1. INTRODUCTION

Radisson Hotel Bhopal is a contemporary hospitality development that blends modern architectural language with regional cultural identity. Designed to respond to Bhopal's composite climate, the building incorporates passive design strategies, efficient spatial planning, and sustainable features like sun-shading fins and natural ventilation.

A key highlight is the double-height lobby adorned with a Gond art mural, reflecting local craftsmanship. The massing is vertically compact, with a clear functional division between public zones and private guestrooms. With 104 rooms, flexible event spaces, and rooftop leisure areas, the hotel balances global standards with contextual sensitivity and cultural relevance.



Details:

PROJECT	RADISSON HOTEL
LOCATION	BHOPAL
CLIMATE	HUMID SUBTROPICAL
TOPOGRAPHY	PLAIN LAND
ARCHITECT	ARJUN MALIK
COMPLITION YEAR	2021
NO. OF ROOMS	104
SITE AREA	1.1 ACRE

2.2.Location

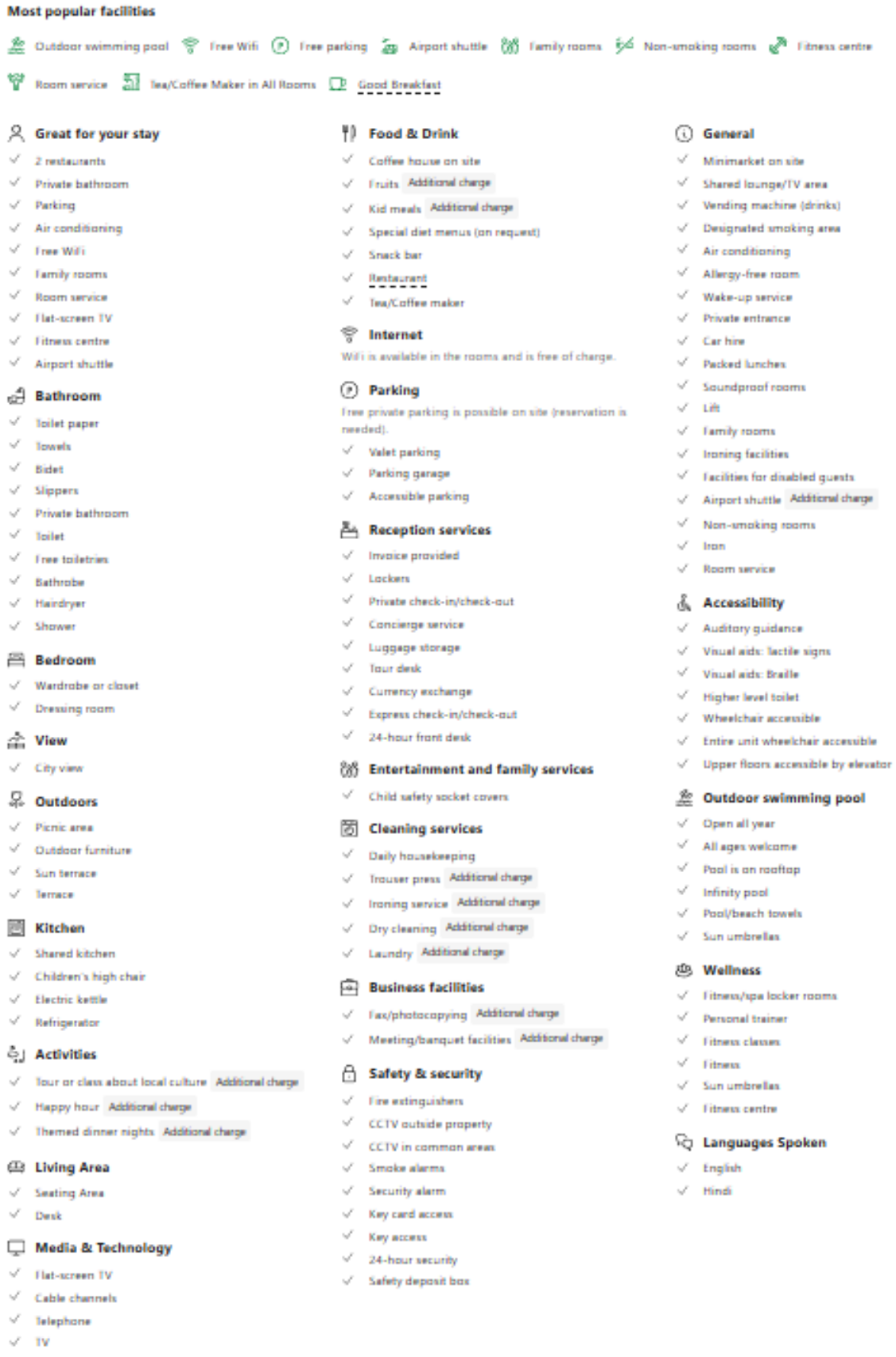
Located in Arera Colony, near 6 No. Stop, Bhopal, Madhya Pradesh, the site enjoys excellent connectivity to major city nodes like Habibganj Railway Station and Raja Bhoj Airport. It is surrounded by upscale residential and institutional developments.

Site Characteristics

- Located in Arera Colony, a prime urban area in Bhopal.
- Total site area is approximately 4,500 sq.m. (around 1.1 acres).
- Rectangular plot with efficient geometry for planning.
- Flat to gently sloping terrain, suitable for construction and drainage.
- Well-connected to major roads, Habibganj Railway Station, and Raja Bhoj Airport.
- Surrounded by residential, institutional, and commercial developments.
- Urban context with minimal existing vegetation; landscaping added during development.
- Site orientation supports passive design — access to natural light and ventilation.
  Ample road frontage for clear entry/exit and service access.
- Suitable for vertical zoning of hospitality functions (rooms, banquets, dining, services).

2.3. FACILITIES

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



Most popular facilities

Outdoor swimming pool · Free Wifi · Free parking · Airport shuttle · Family rooms · Non-smoking rooms · Fitness centre · Room service · Tea/Coffee Maker in All Rooms · Good Breakfast

Great for your stay
- 2 restaurants
- Private bathroom
- Parking
- Air conditioning
- Free WiFi
- Family rooms
- Room service
- Flat-screen TV
- Fitness centre
- Airport shuttle

Bathroom
- Toilet paper
- Towels
- Bidet
- Slippers
- Private bathroom
- Toilet
- Free toiletries
- Bathrobe
- Hairdryer
- Shower

Bedroom
- Wardrobe or closet
- Dressing room

View
- City view

Outdoors
- Picnic area
- Outdoor furniture
- Sun terrace
- Terrace

Kitchen
- Shared kitchen
- Children's high chair
- Electric kettle
- Refrigerator

Activities
- Tour or class about local culture — Additional charge
- Happy hour — Additional charge
- Themed dinner nights — Additional charge

Living Area
- Seating Area
- Desk

Media & Technology
- Flat-screen TV
- Cable channels
- Telephone
- TV

Food & Drink
- Coffee house on site
- Fruits — Additional charge
- Kid meals — Additional charge
- Special diet menus (on request)
- Snack bar
- Restaurant
- Tea/Coffee maker

Internet

WiFi is available in the rooms and is free of charge.

Parking

Free private parking is possible on site (reservation is needed).
- Valet parking
- Parking garage
- Accessible parking

Reception services
- Invoice provided
- Lockers
- Private check-in/check-out
- Concierge service
- Luggage storage
- Tour desk
- Currency exchange
- Express check-in/check-out
- 24-hour front desk

Entertainment and family services
- Child safety socket covers

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

Business facilities
- Fax/photocopying — Additional charge
- Meeting/banquet facilities — Additional charge

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

General
- Minimarket on site
- Shared lounge/TV area
- Vending machine (drinks)
- Designated smoking area
- Air conditioning
- Allergy-free room
- Wake-up service
- Private entrance
- Car hire
- Packed lunches
- Soundproof rooms
- Lift
- Family rooms
- Ironing facilities
- Facilities for disabled guests
- Airport shuttle — Additional charge
- Non-smoking rooms
- Iron
- Room service

Accessibility
- Auditory guidance
- Visual aids: tactile signs
- Visual aids: Braille
- Higher level toilet
- Wheelchair accessible
- Entire unit wheelchair accessible
- Upper floors accessible by elevator

Outdoor swimming pool
- Open all year
- All ages welcome
- Pool is on rooftop
- Infinity pool
- Pool/beach towels
- Sun umbrellas

Wellness
- Fitness/spa locker rooms
- Personal trainer
- Fitness classes
- Fitness
- Sun umbrellas
- Fitness centre

Languages Spoken
- English
- Hindi

2.4. APPROACH ROAD

What's nearby

Laxman Nagar Park	650 m
Swami Vivekanand Park	950 m
Kislaya Kanan Udyan	1.2 km
Tilak Nagar Park	1.2 km
Bhopal Vikas Pradhikaran Dwara Vikashit	1.7 km
Extension Arera Colony Garden	1.8 km
Smriti Park	2 km
Sarsvt Smarti Park	2.2 km
Rishabhdev Park-Alternate Gate	2.2 km
Sahapura Lake Garden	2.2 km

Restaurants & cafes

Restaurant • 9 To 11 Family Restaurant & Bakery	250 m
Restaurant • CJ Restaurant	250 m
Restaurant • Mahi da Dhaba	650 m

Top attractions

Museum of Man	9 km
Van Vihar National Park	12 km

Natural Beauty

Lake • Momos Factory Shah Pura Lake	2.3 km

Public transit

Train • Habibganj Station	4.1 km
Train • Misrod	4.3 km

Closest Airports

Rajah Bhoj Airport	16 km

2.5. Vertical Zoning

1. Basement / Lower Ground Floor

- Parking area
- Services (electrical rooms, AHUs, staff circulation)
- Storage and utility zones

2. Ground Floor / Podium Level

- Entrance lobby with double-height ceiling
- Reception and waiting lounge
- All-day dining restaurant (Fusion Café)
- Café/Patisserie (Just Baked)
- Lounge bar (Urzza)
- Administrative offices
- Concierge and luggage handling
- Public washrooms
- Vertical circulation cores (lifts and staircases)

3. First & Second Floor

- Banquet halls and meeting rooms (e.g., Grand Ballroom, Nurture, Nirvana, etc.)
- Pre-function areas
- Back-of-house service corridors
- Some guest rooms may also start on higher levels depending on layout

4. Upper Floors (Typical Guest Room Levels)

- 104 well-planned rooms across categories (Superior, Executive, Junior Suites, etc.)
- Housekeeping and service shafts at each level
- Access via high-speed lifts and service elevators

5. Terrace / Rooftop Level

- Rooftop swimming pool with lounging deck
- Outdoor terrace dining/banquet space (Infinity Terrace)
- Fitness center
- Mechanical and plant rooms (discreetly integrated)

2.6. LEARNING FEATURES FROM CASE STUDY

Radisson Hotel Bhopal

1.Site Orientation and Placement

- Radisson Hotel Bhopal is smartly placed facing the main road, making it easy to spot and access.

2.Zoning and Functional Layout

The site is **zoned efficiently**:

- **Public zones** (lobby, restaurants, banquet halls) at the front and ground level.
- **Semi-public zones** (meeting rooms, lounge, spa) placed centrally.
- **Private zones** (guest rooms) on upper floors.
- **Service areas** (kitchen, staff entries, storage) are placed discreetly toward the rear or basement.

3.Access and Circulation

- **Dedicated drop-off zones** near the entrance for guests.
- **Fire engine access road** (minimum 6m wide) is likely provided around the building as per NBC norms.

4.Landscape Planning

- **Green buffers and trees** are used to reduce noise and dust from the main road but no. of plants are less to reduce the noise and dust .
- **hardscape and softscape** around the entrance for visual appeal.

- **Outdoor seating areas, courtyards, and water features** enhance the guest experience.

5.Fire Safety & Life Safety

Equipped with fire detection systems, sprinklers, extinguishers, and smoke detectors. Marked fire escape routes, pressurized fire-rated staircases, emergency lighting, and PA [Public Address system] systems.

6.HVAC and Mechanical Systems

- Centrally air-conditioned with energy-efficient systems.
- Proper **ventilation and ducting** for kitchens, laundry, and utility areas.
- **No LPG** used in enclosed kitchen zones; electric or induction-based cooking preferred (as per NBC fire safety guidance for public buildings).

6. Issues that can be resolved

1. There are 3 guest elevators in the Radisson Hotel, but no separate elevator for luggage anywhere.
2. There are only 2 main service elevators, which may be insufficient during peak hours and could lead to operational issues.
3. There is no linen chute in the hotel; however, there is a linen room where used clothes are collected and then manually transported to the laundry area.
4. The pool has a good view, but the deck area is not well-designed or utilized properly, which limits its overall functionality and appeal.
5. The banquet hall was well-designed, as all the meeting rooms are connected through a common area that leads to a breakout space. A designated smoking area has been created there, which can be treated similarly to a refuge area. However, the refuge area is relatively small considering the banquet hall has a capacity of 650 people.
6. The fire escapes are well-placed, with access from key areas such as the restaurant, building corners, and the terrace. Overall, proper attention has been given to fire safety measures throughout the hotel.
7. the main lobby serves as the exclusive entry point for guests, ensuring a controlled and welcoming arrival experience while maintaining a clear spatial hierarchy in the overall planning. (Radisson Hotel Group. Radisson Bhopal – Brand & Property Details, 2023.)

CASE STUDY VISIT:



CASE STUDY3: HOTEL AVASA, HYDERABAD



Details:-

PROJECT	**AVASA**
LOCATION	**Hyderabad**
CLIMATE	**Tropical wet and dry climate**
TOPOGRAPHY	**Plain**
ARCHITECT	**Nandu Associates**
COMPLETION YEAR	**2012**
SITE AREA	**2.02 Acres**
NO OF ROOMS	**217**

3.1. DESIGN CONCEPT

1.It was designed with STEPPED TERRACE GARDENS with respect to the site.

- Its intimate interlude for relaxation, business & convention.
- With 98% of the lighting being led, Avasa is a highly environment friendly.

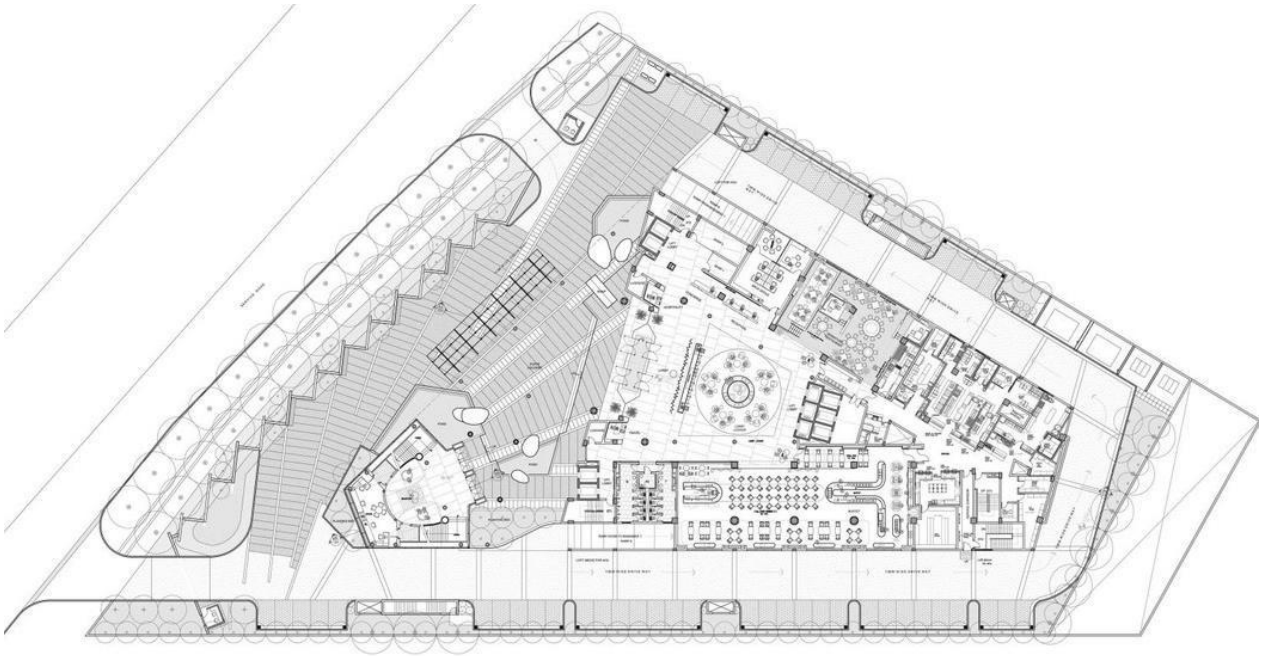
3. 2. SITE PLAN

- The site is wide towards the front road and narrows Down towards the back.
- The building follows the site, forming the letter 'A',
- Due to limited open space on site, continuous green space has been conceived in the form of stepped terraces third level to the top floor.

3.3. AMENITIES:

- It is a 11-floor frame structure with stepped terrace gardens.

- It consists of:
- 217 rooms
- 3 banquet halls
- 3 F&B restaurants Sky lounge
- Business lounge
- SPA
- Swimming pool



3.4. LOUNGE:

- Two atriums have been created to characterize the areas that they represent
- The lobby atrium at the ground level connects the grand lobby and the banquet halls.
- The central atrium is conceived at the third level and has been created under the stepped terraces, creating a sense of openness and a distinct scale
- This adds to the feeling of grandeur as one stands in the atrium

3.5. ELEVATORS:

There is total 14 floors including 3 basements

- 3 guest lifts with 8 people capacity are present at entrance lobby
- And 2 guest lifts are present at the entrance which Leads directly to sky bar in 10th&11th floors
- And 2 guest lifts are present at the entrance which leads directly to banquet halls in third floor
- 3 service lifts of capacity 13persons [1000kg] are present at service area from lower basement to 11 floors
- Total there are 7 guest lifts and 3 service lifts
- Size of 3 guest lifts 2x2.Sm
- Size of 4 guest lifts 3x2.Sm
- Size of 3 service lifts 3x2.5

3.6. BANQUET HALL- 3No.s.

- CONSTELLATION It has a separate entrance and a pre function area. It can accommodate 250 seating and it had common area for buffy this hall can be divided if required, by a sound proof partition giving two halls
- VEGA It had a capacity of seating of 100 people
- NOVA, it had a capacity of seating of 100 people

3.7. RECREATION:

- gym, - 12x9m
- spa - 12x9m
- swimming pool — 200sqm depth varies from 34feet capacity — 1Iakh 50 thousand liters .

3.8. CONFERENCE BANQUET HALLS:

- There are five conference halls which can accommodate all types of conferences, meetings, seminars,
- workshops & product
- 145.8 sq.m.
- 100 seat well equipped and well manned

3.9. ROOM FACILITIES:

- Individually controlled air conditioning,
- Sound proof rooms,
- Telephone-two per room
- International and national dialing
- Broad band internet access
- Tea /coffee makers
- sprinklers and smoke detectors
- fax machine available on request
- Electric current 220v SO cycles

3.10.MEET ORION:

- Boardroom
- 74 sq.m.
- 2S seater
- Situated away from disturbances

3.11. MEET OMNI

- Boardroom/ Classroom
- 70 sq.m.
- 2S seater

Avasa Silver: -

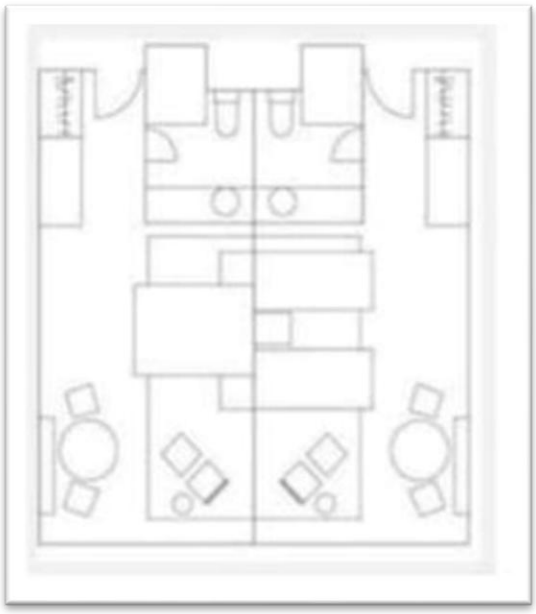
- Room —35 sqm Toilet —7 sqm LCD TV
- iPod docking station Wired & wireless broadband, internet Electronic safe Personal bar, Iron Board Complimentary Buffet Breakfast

3.12. Avasa Platinum Club: -

• Room — 35 sqm Toilet —7 sqm

- LCD TV, iPod docking station Wired & wireless broadband internet access Electronic safe, 1 Personal bar, Iron Board Complimentary Buffet Breakfast
- One Way Airport Convenience Media Hub, Happy Hour cocktails at Bridge Business Club.







3.13. Avasa Junior Suite: -

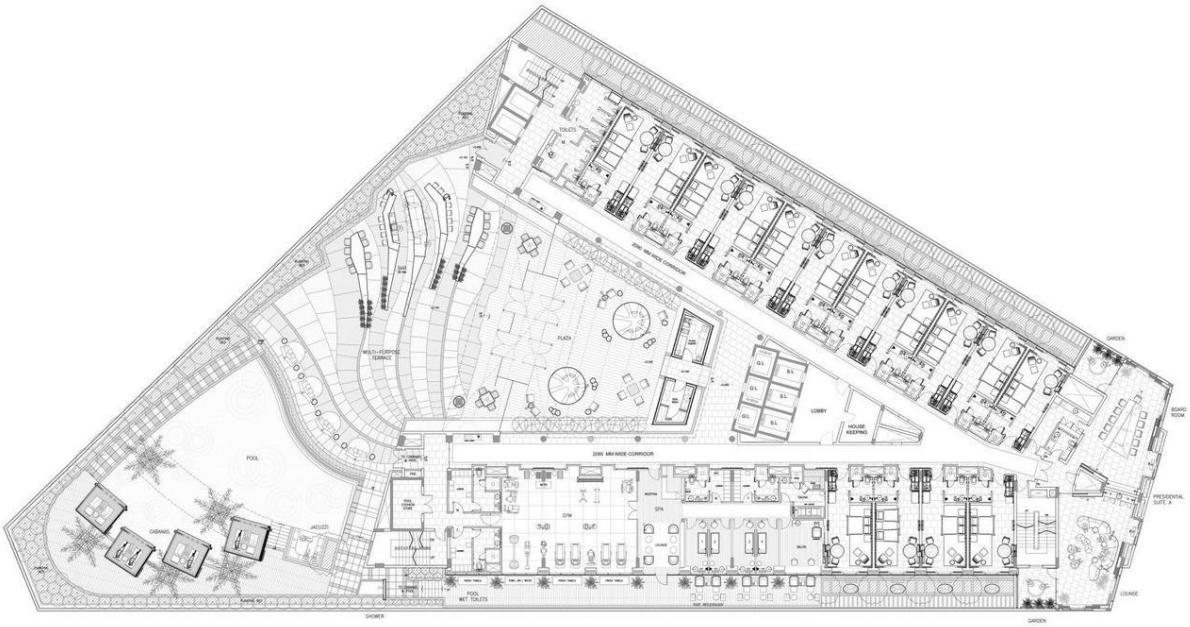
- Room —40 sqm,
- Toilet —12 sqm LCD TV,

iPod docking station Wired & wireless broadband internet Electronic safe, Personal bar,

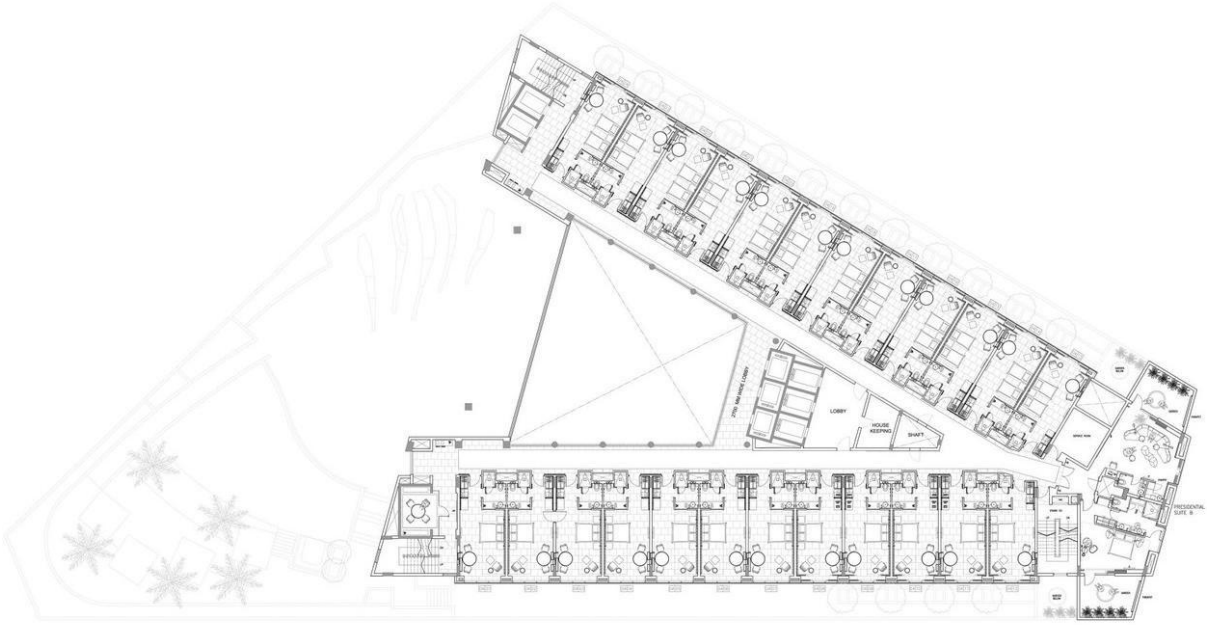
Iron Board Complimentary Buffet Breakfast An hours' use of the Meeting room Two-

way Airport conveyance .

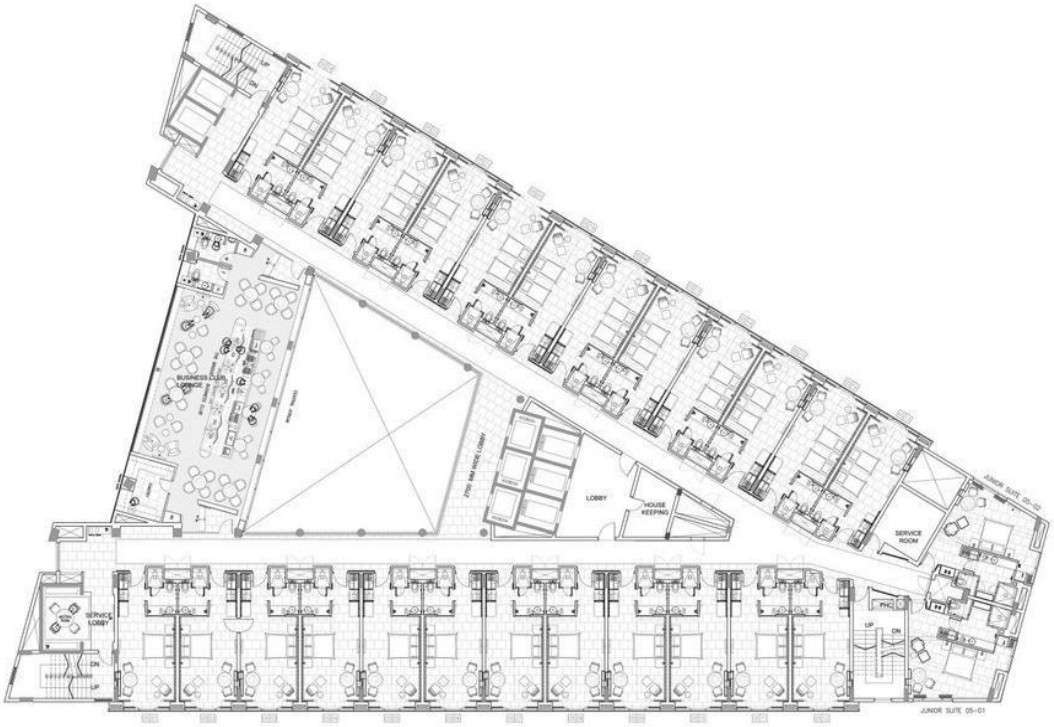
3rd Floor Plan



4th Floor Plan



5rd Floor Plan



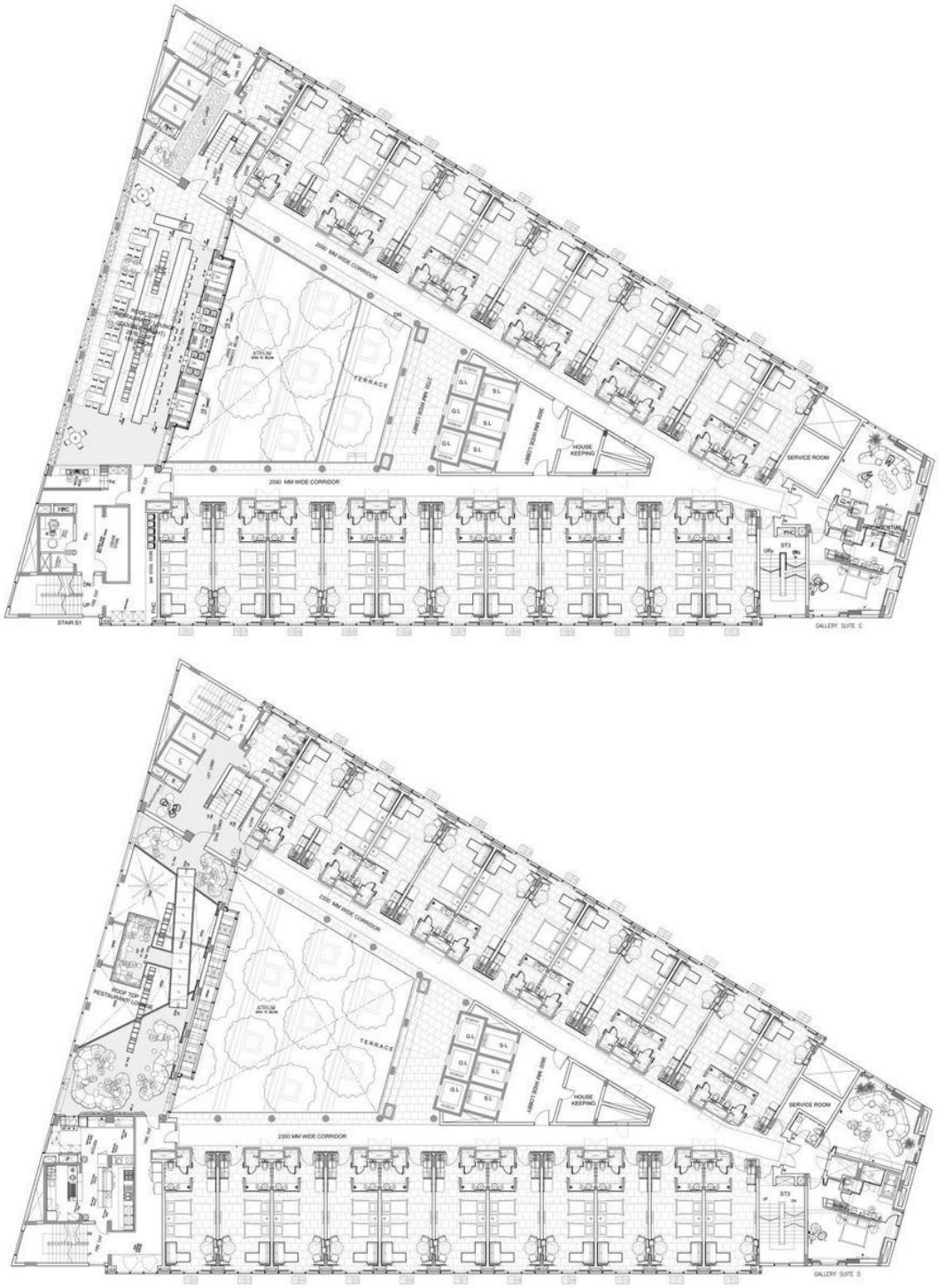
6rd Floor Plan



6rd Floor Plan



Top Floor



(Avasa Hotels. Avasa Hyderabad – Project Information, 2023.)

CASE STUDY4: RADISSON BLU, PASCHIM VIHAR

4.1. INTRODUCTION

Located 15 km from IGI Airport, Radisson Blu - Paschim Vihar is the third hotel from Carlson Group in Delhi. Based on Neo-Gothic style of architecture, the building is a typical business hotel with deep rooted commercial values. The ground floor of the hotel not only contains the lobby and coffee shop but also consists of a shopping mall whose services are inside the 3rd basement level. The ground floor also contains the entrance to the banquet lobby which is in turn on the 1st floor of the building.



Details:

PROJECT	RADISSON BLU
LOCATION	Paschim Vihar
CLIMATE	SUBTROPICAL CLIMATE
TOPOGRAPHY	PLAIN LAND
ARCHITECT	ANIL SHARMA ARCHITECTS, NEW DELHI
COMPLITION YEAR	2010
NO. OF ROOMS	200
SITE AREA	3.78 ACRES
FAR	4.0

4.2. LOCATION AND CONNECTIVITY

AIRPORT:

Indira Gandhi International Airport – 21 km

RAILWAY STATION:

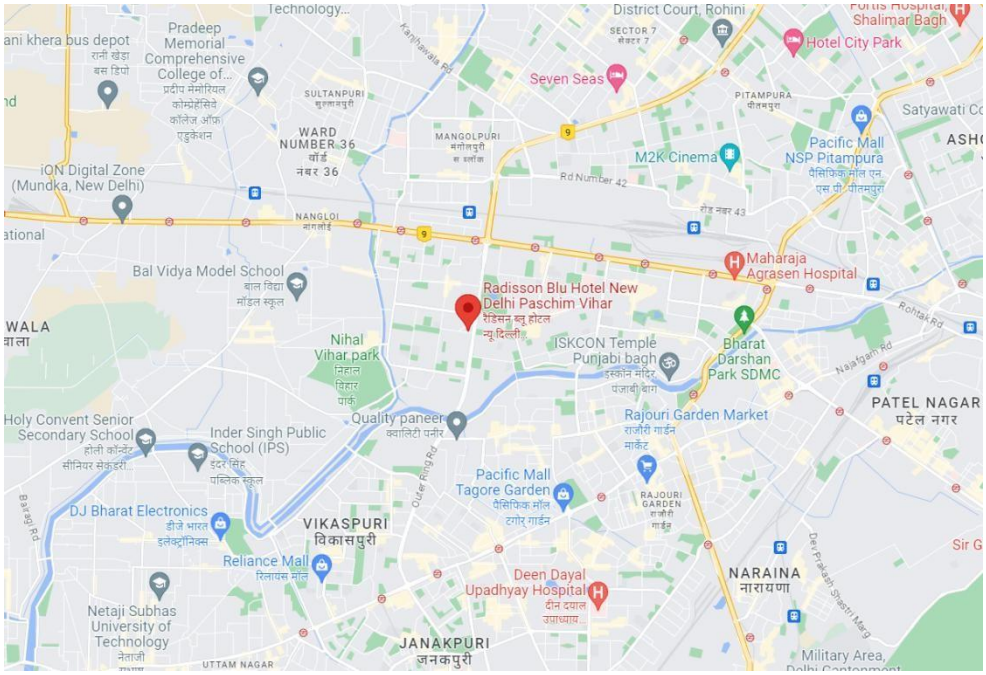
Hazrat Nizamuddin - 28km

METRO STATION

Peeragarhi – 1.5 km

HOSPITAL:

B K Memorial Hospital -2.5 km



4.3. SURROUNDING LANDUSE AND URBAN CHARACTER

As can be seen from the surrounding land use, the location of the hotel is not quite right and it also is in contrast with the surrounding urban character which is predominantly midrise and surrounded by vacant land. Figure above shows the immediate urban land use and thus the context of the building; and it can be seen clearly that it is contrast to its surroundings in one way or another.

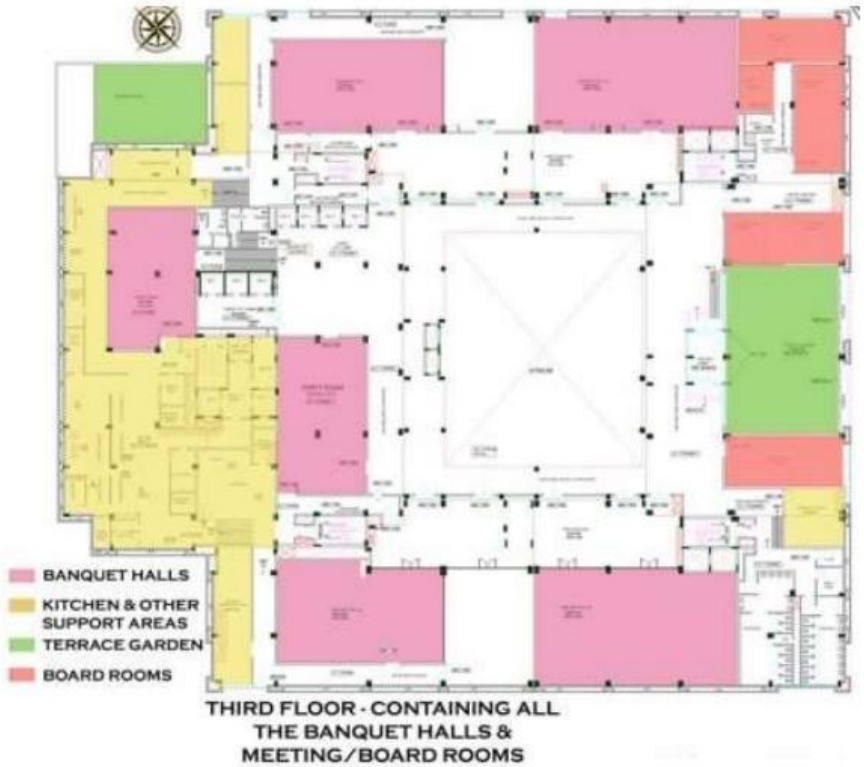


4.4. CIRCULATION



4.5. INTERNAL PLANNING

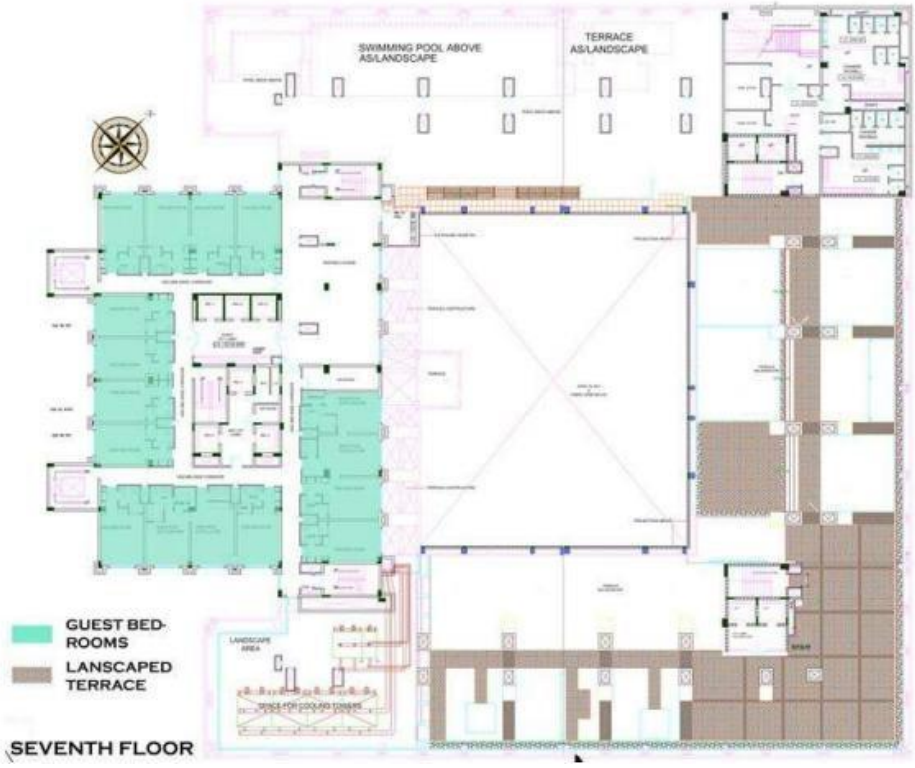
The internal planning of Radisson Blu is very efficient in terms of segregation of served and servants, and robust service planning. Also, the guest facilities are accessible to all the guests from every floor. Shown below are the schematic plans of the hotel floors showing the horizontal distribution of functional spaces.



Third Floor - Radisson Blu



Sixth Floor - Radisson Blu and Seventh Floor - Radisson Blu





Typical Guest Floor - Radisson Blu

4.6. INTERIORS

On entering the building, the first thing to show up is the Grand Lobby. Based on Neo-Gothic style of architecture, the materials and textures used give a very grand atmosphere.



As can be seen from the above Figure, the whole lobby is kept without furniture except for the reception desk and the concierge table. This is done to create a sense of vastness. Materials used in the lobby are white patterned tiles to create a Gothic Motif. The walls are clad with wall tiles of black colour. As evident from the picture, the lobby must rely on artificial lighting solutions for proper visual comfort, as there is an evident lack of day lighting. Mirrors are also used in abundance, to create a sense of vastness and to reflect the minimal amount of sunlight available.

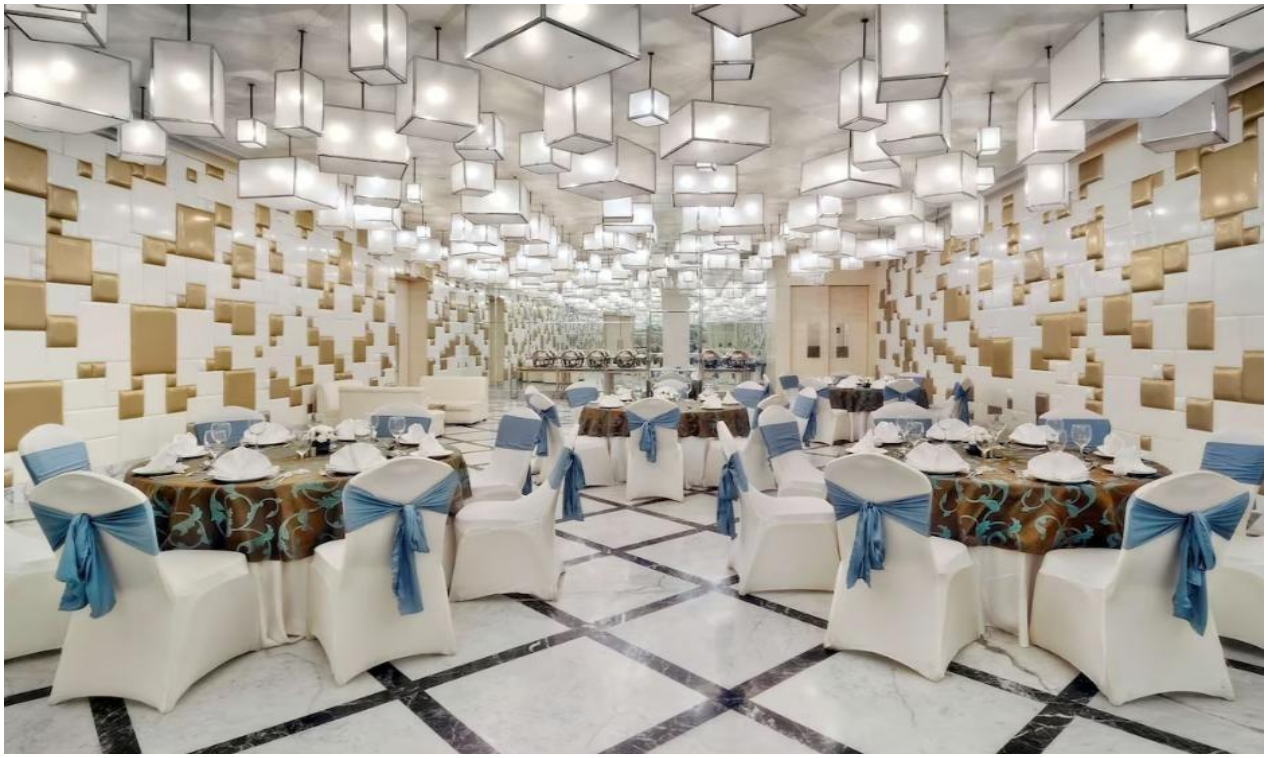
The materials used in the interior complement the exterior environment and create a sense of expanse; the materials being white and beige Italian marbles for flooring, and textured white paint for wall coating.

The lobby here is connected to the ‘Tea Lounge’ and the guest lift lobbies. There is no separate luggage elevator present. Guest lift lobbies are very illustriously decorated with black patterned wall tiles and contrasting white patterned tiles. For lighting there are chandeliers. As could be seen from Figure 40, the swimming pool is on the terrace of 6th floor. From the pool, the guest room stacking from 6th till 12th floor could be seen. It can be safely concluded that, design of Radisson Blu is governed by commercial values, thus the shape of building responds to the site constraints. As opposed to the free flowing and dynamic nature of Westin, it is more of a static design. But much thought has been put into the interior schemes of the hotel.

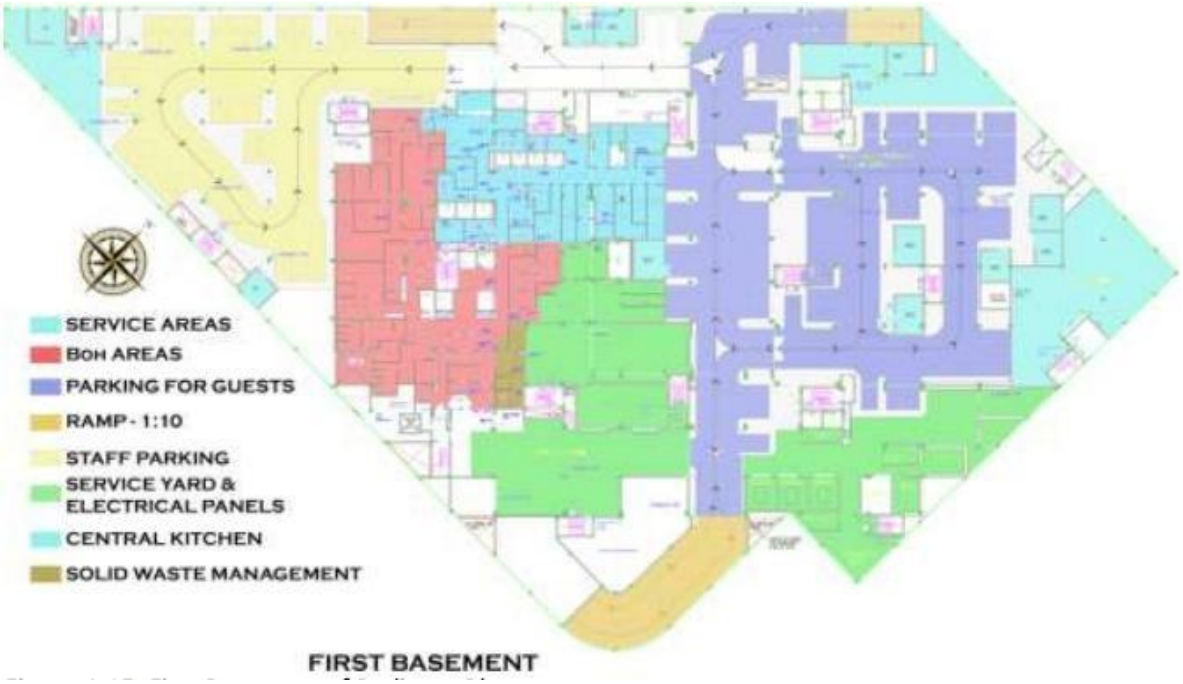








4.7. SERVICES



The Figure above shows all the service areas placed in the 1st basement of the hotel.



The Figure above shows all the service areas placed in the 2nd basement of the hotel.

The pictures below show some of the service-related areas in the hotel.





A.C Ducts in False Ceiling (Left) & Basement Ventilation (Right)





Laundry Room (Left) & Pump Room (Right)

HVAC Plant Room (Left) & Low-Tension Panel Room (Right)






Cable Trays inside False Ceiling (Left) & D.G Room (Right)




Fire

Hydrant Cabinet (Left) & Smoke Detectors (Right).

Fire hydrant cabinets (FHCs) are provided besides every fire escape staircase. Automatic sprinklers linked to smoke detectors (Honeywell).

The hotel has an installed capacity of 2000 tons of refrigeration and 750 tons for the diesel generators.



4.8. CONCLUSION

- The building seems to be in contrast with the surrounding built character.
- As can be observed from the site photographs of surrounding areas taken from pool area; neither the buildings heights nor form developed are in harmony.
- Being a 5-star property, the hotel must have a certain standard of design but, in this case, the hotel's design is so misplaced that it does not respond to either of the climatic or site conditions. The building is a standalone facility which could have been successful even if it were to be placed someplace else.
- Overall Radisson Blu is a well-designed hotel, adhering to the brand standards of Radisson group. It fulfils all the prerequisites to be a 5-star facility, the service design is impeccable, but the only place where there is an issue would be the overall design of the built structure, which is much monotonous when compared to the other study, i.e. WESTIN Gurgaon. (Radisson Hotel Group. Radisson Blu Paschim Vihar – Hotel Information, 2023.)

4.9. INFRENCE

The case study conducted on a 5-star hotel provides valuable insights into various aspects, including architecture and service. The hotel's architecture plays a significant role in creating a luxurious and visually appealing environment for guests. The case study reveals that the hotel's architecture is carefully designed to exude elegance and sophistication. The exterior facade is likely to be grand and imposing, with architectural elements that reflect the hotel's unique style and identity. The interior spaces are thoughtfully designed to create a sense of opulence, with spacious lobbies, high ceilings, and tasteful decor that seamlessly blend modern and traditional elements. Here are some inferences that can be drawn from such a case study:

Premium location: 5-star hotels are often located in prime areas such as city centres, beachfronts, or other prestigious locations. This suggests that the hotel may enjoy convenient access to attractions, business centres, or scenic views, adding value to the overall guest experience.

High-quality service: Being a 5-star hotel, it can be inferred that the hotel places a strong emphasis on providing exceptional customer service. They likely have well-trained staff members who are attentive to guests' needs and strive to create a positive experience.

Luxurious amenities: A 5-star hotel typically offers a range of luxurious amenities to cater to its guests. This may include features such as a spa, fitness centre, swimming pool, fine dining restaurants, room service, concierge service, and high-end furnishings and decor throughout the hotel.

Exquisite room design: Given the hotel's high rating, it can be inferred that the rooms are designed with elegance and attention to detail. This may include spacious layouts, comfortable beds, high-quality linens, modern technology, well-appointed bathrooms, and attractive interior design.

Personalized experiences: 5-star hotels often aim to provide personalized experiences tailored to individual guests. Inference can be made that the hotel may offer personalized greetings, special amenities or services, and the ability to cater to specific preferences or requirements of guests.

Attention to cleanliness and hygiene: A 5-star hotel is expected to maintain high standards of cleanliness and hygiene. Inference can be drawn that the hotel likely implements rigorous cleaning protocols, regular maintenance, and ensures that all areas of the hotel, including rooms, common areas, and dining establishments, are well-maintained and sanitized.

Focus on security and privacy: It can be inferred that the hotel places importance on guest security and privacy. This may include measures such as key card access to rooms, security personnel, CCTV surveillance, and discreet handling of guest information.

Comparative analysis of your site proposal with **Taj Lakefront** and **Radisson Hotel Bhopal** based on various architectural and planning parameters:

Parameters	Taj Lakefront	Radisson Hotel	Shyamla Hills site
No. of Rooms	152	104	Minimum 150 rooms (proposed)
Site Area	4.77 Acres	1.1 Acres	7.16 Acres
Topography	Plain	Plain	Gently sloping (lakefront hillside)
Surroundings	Near Upper Lake, Van Vihar, Museum	Urban setting, residential areas	Upper Lake, Jehan Numa Palace, Tribal Museum
Road Access	18m arterial road + 12m service lane	Close to main roads	Close to VIP Road, 150m from Jehan Numa
Proximity to Airport	~14 km	~18 km	~14.5 km
Proximity to Railway	~8 km	~6 km (Habibganj)	~7.5 km
Theme / Identity	Fusion of local crafts, art (Tikamgarh, Zari, Bagh)	Contemporary + Gond Art mural	Local identity, eco-sensitive, lakefront luxury
Use of Local Materials	Terracotta, metal craft detailing	Limited, modern finishes	Emphasis on regional materials encouraged
Basement	2 levels – Parking + services	1 level – Parking + services	-
Ground Floor	Lobby, banquet access, lobby lounge	Lobby, café, bar, admin, restaurant	-
Upper Floors	152 rooms, themed corridors per floor	104 rooms, typical guest floors	-
Rooftop	Lounge, club, pool	Rooftop pool, terrace banquet, fitness center	-
Basic Rooms	Twin, King – 33 sqm	Superior, Executive	
Suites	Executive Suite – 66 sqm	Junior Suite	
Luxury Suite	Presidential Suite – 152 sqm	Not specified	
Unique Features	Lakeside view, private balconies	Limited view	Focus on lake-facing rooms & terraces
Fire Safety	Refuge areas, enclosed staircase	Proper stair placement, pressurized staircases	To follow NBC norms, use refuge area at proper levels

HVAC	Centrally cooled, no LPG used in enclosed zones	Centrally cooled, no LPG	Electrical cooking, energy-efficient systems
Dumbwaiter	Not present	Not present	Can be included for better service circulation
Parking	Multiple basements	Single level	Surface + basement, separate zones for staff/guests
Elevators	Multiple elevators, luggage lift	No luggage lift, only 2 service elevators	Provision for dedicated service and guest lifts
Cultural Element	Craft-inspired interiors, regional identity	Gond art mural	Folk art zones, open-air cultural plaza
Landscape Integration	Front garden, rear service zone	Basic greenery + hardscape	Rich lakeside buffer zone, amphitheatre, event lawns
Rainwater Harvesting	Yes	Not clearly stated	Mandatory (Wetlands Rules)
Design Language	Culturally rooted luxury	Modern with contextual touches	Lake-oriented, culturally sensitive
Site Advantage	Lake view, large area	Compact urban plot	Ecological location, panoramic lake view

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5 STAR HOTEL, BHOPAL, MADHYA PRADESH

Thesis 2025

Comparative Analysis of Case Studies

Parameter	Live Case Study		Desk Case Study	
	Taj Lakefront, Bhopal	Radisson, Bhopal	Hotel Avasa, Hyderabad	Radisson Blu, Paschim Vihar
Location	Bhadbhada Rd, Lakefront	Arera Colony, Bhopal	Hyderabad IT hub	Paschim Vihar, Delhi
Architect	JOI Design	Arjun Malik	Nandu Associates	Anil Sharma Architects
Year Established	2021	2021	2012	2010
Ownership	Indian Hotels Company Ltd. (Taj Group)	Radisson Hotel Group	Nandu Associates	Carlson Group (Radisson Blu)
Site Area	4.77 acres	1.1 acres	2.02 acres	3.78 acres
Ground Coverage / FAR	FAR 2	Compact footprint	---	FAR 4
No. of Rooms	152	104	217	200
Topography	Plain land, lakefront	Plain land, urban site	Plain land	Plain land
Surroundings	Upper Lake, Van Vihar, green buffer	Residential + institutional	Commercial / IT hub	Mid-rise, vacant land
Road Access	18 m arterial + 12 m service	Good city connectivity	Wide front road	Arterial roads
Theme / Identity	Inspired by Tikamgarh craft, Zari, tribal art	Gond mural + passive fins	Stepped terrace gardens	Neo-Gothic business
Site Context	Lakefront, ecological buffer	Prime colony	Urban IT hub	Contrasting urban fabric
Basement	2 basements (services + parking)	1 basement	3 basements	3 basements
Ground Floor	Grand lobby, banquets	Double-height lobby, restaurants	Atrium lobby, banquets	Lobby + mall + banquet
Upper Floors	Guestrooms + specialty restaurants	Guestrooms + banquets	Rooms + stepped terrace	Guest floors stacked
Rooftop	Pool + lounge	Pool + terrace dining	Sky lounge	Pool (6th floor)
Basic Rooms	Twin / King	Superior / Executive	Deluxe	Standard
Suites	Executive Suites	Junior Suites	Platinum / Junior	Premium
Luxury Suite	Presidential Suite (152 sqm)	Executive	Large themed suites	Presidential Suite
Unique Features	Railway coach dining, lake-view rooftop	Infinity Terrace	Stepped terrace greens	Integrated shopping mall
Fire Safety	Fire tank, advanced systems	Sprinklers + hydrants	Detectors + sprinklers	Honeywell fire hydrants
HVAC	Central chiller	AHUs, efficient cooling	High-efficiency system	2000 TR plant
Service Lifts	Yes	Yes	3 service lifts	Yes
Parking	Multi-zone, basements	Basement	3 basement levels	Multi-level basements
Elevators	4Guest + 2service + 1Luggage lift	3Guest + 2service	7 guest + 3 service	Guest + service lifts
Cultural Element	Tribal crafts, local art	Gond mural	Atrium + terraces	Neo-Gothic décor
Landscape Integration	Lakefront lawns, green buffer	Urban landscaping	Terrace greens	Minimal
Linen chute	yes	no	yes	yes
Design	Heritage + Modern	Contemporary	Sustainable contemporary	Neo-Gothic
Special Features	Presidential Suite, lakefront view	Infinity Terrace, cultural mural	Stepped green terraces	Integrated mall
Use of Local Materials	Sandstone, marble, local craft finishes, wood	Glass façade with shading fins, murals, stone flooring	white marble,	Gothic motifs, Italian marble
				
Facade				

Case study Integration

Relevant Inferences from Case studies

Taj Lakefront, Bhopal



Integrates local crafts and cultural motifs into a modern hospitality experience.



Lakefront location enhances luxury value – views and microclimate become design drivers.



Landscape creates buffer zone between road and building.

Radisson, Bhopal



Compact site demonstrates efficient vertical zoning for guestrooms, banquets, and services.



Green buffers and trees are used to reduce noise and dust from the main road .



Rooftop swimming pool with lounging deck & outdoor terrace dining.

Hotel Avasa, Hyderabad



Unique stepped terrace gardens bring greenery into vertical design.



Due to limited open space on site, continuous green space has been conceived in the form of stepped terraces third level to the top floor.



Modern interiors, use of warm colours,

Radisson Blu, Paschim Vihar



On entering the building, the first thing to show up is the Grand Lobby. The materials and textures used give a very grand atmosphere.



Integration of a shopping mall prioritizes commercial viability over hospitality focus.



Heavy reliance on artificial lighting reduces sustainability and contextual fit.

LEARNING FEATURES FROM CASE STUDY

5 star hotel Taj lakefront

1.Taj Lakefront stairs have windows, but NBC says fire stairs must be enclosed with fireproof walls and no openings to stop smoke entry.

2.The lift machine room has only an exhaust fan, but NBC requires proper ducts or mechanical ventilation to avoid heat build-up and ensure safety.

3. Landscape Integration - Use of native plants, green buffers, and water features near natural lake.

Radisson Hotel Bhopal

1.There are 3 guest elevators in the Radisson Hotel, but no separate elevator for luggage anywhere.

2. There are only 2 main service elevators, which may be insufficient during peak hours and could lead to operational issues.

3.There is no linen chute in the hotel; however, there is a linen room where used clothes are collected and then manually transported to the laundry area.

CASE STYDY

SIDDHI MIRI | 211110249 | 9th SEMESTER
THESIS GUIDE : SURABHI MEHROTRA

5 STAR HOTEL, BHOPAL, MADHYA PRADESH

Thesis 2025

SITE STUDY

- Proposing / Nodal Agency: Madhya Pradesh Tourism (MPT) / MPHCL (Madhya Pradesh State Tourism Development Corporation).
- Location: Shyamala Hills, Bhopal, Madhya Pradesh, overlooking Bada Talab (Upper Lake).
- Latitude & Longitude: 23.24, 77.38



PROJECT DETAILS

- **Name of the Project:** Development, Operation & Maintenance and Management of Lakeview Residency Hotel, Bhopal on Design, Build, Finance, Operate, Transfer (DBFOT) Mode.
- **Proposing / Nodal Agency:** Madhya Pradesh Tourism (MPT) / MPHCL (Madhya Pradesh State Tourism Development Corporation).
- **Land Area (Site Area):** ~7.16 Acres (28,975 sq. m.)
- **Proposed Development:** 5-Star Hotel (minimum 150 rooms), Banquet & Convention facility (1000 pax), restaurants, cultural and tourism facilities.
- **Land Ownership:** Madhya Pradesh Tourism (via MPHCL)

ABOUT SITE PLAN

- **Land Area (Site Area):** ~7.16 Acres (28,975 sq. m.)
- **Building Height:** 30 m
- **Front Setback:** Minimum 6 m
- **Rear and Side Setback:** Minimum 3 m

Immediate Surroundings:

- **North:** Green buffer zone then hotel Ranjits lakeview
- **South:** Jehan Numa Palace Road
- **East:** Bharat Bhavan (Cultural Complex)
- **West:** NHDC Limited

SUN PATH

Summer: 1. Sun is at most overhead at noon.
2. Long days, harsh east & west sun in morning/evening.
3 building need deep overhangs south &vertical fins/jaalis on east west sides.

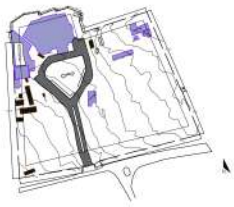
Winter: 1. Sun is low in the south
2. Days are short.
3. South facing walls/windows can welcome sun for warth & daylight.





EXISTING SITE

SITE WITH COUNTOURS



SCALE- 1:2100

SITE IMAGE

1. Main entrance
2. Way to theme reasturant
3. Theme resturant interior
4. hotel view
5. lobby
6.Lake view
7. Parking area
8. Drive in open theater
9. Drive in area
10. Canteen





CONNECTIVITY OF SITE

1. Jehan Numa Palace Hotel – 150 meters
2. Van Vihar National Park (Main Gate) – 2.9 kilometres
3. Upper Lake Boat Club / Lake Promenade – 2.3 kilometers
4. MP Tribal Museum – 1.8 kilometers
5. State Museum / Ravindra Bhavan – 1.2 kilometres
6. Bhopal Railway Station – 7.5 kilometres
7. Raja Bhoj International Airport – 14.5 kilometres
8. Bharat bhawan – 1.2 kilometres

CLIMATE

Bhopal has a humid subtropical climate .

Temperature:
Summer
- Max: 42–45°C
- Min: 23–26°C

Winter
- Min: 6–8°C
- Max: 22–24°C

Rainfall:
Maximum Rainfall
- Month: August
- Rainfall: 350–400 mm

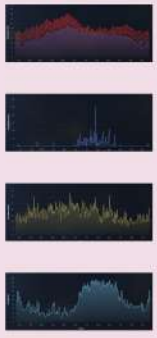
Minimum Rainfall
- Month: December
- Rainfall: 3–5 mm

WIND
Maximum Wind Speed
- Month: June (peak pre-monsoon & early monsoon)
- Average Wind Speed: 15–20 km/h
- Wind Direction: Predominantly South-West (SW)

Minimum Wind Speed
- Month: November–December
- Average Wind Speed: 3–5 km/h
- Wind Direction: North-East (NE) or calm conditions

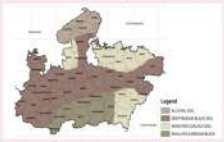
HUMIDITY
Maximum Humidity
- Month: August (Monsoon Peak)
- Humidity: 85–90% (morning), ~75% (evening)

Minimum Humidity
- Month: May (Pre-Monsoon Summer)
- Humidity: 20–30%



TOPOGRAPHY

- The site is part of the undulating Malwa plateau.
- Gently sloping terrain with elevation around 539–570 m.
- Natural depression towards the Upper Lake (Bhojtal) side, giving a downward slope for drainage.
- The site is nestled between Arera Hills and Shyamla Hills, providing a natural scenic backdrop.
- Mixed terrain: flat buildable portions + slope towards the water body.



SOIL TYPE

- The site has black cotton soil (characteristic of Bhopal region).
- Black cotton soil is tricky because it expands when wet and shrinks when dry, which causes cracks and uneven settlement if normal construction is done.
- Requires special foundation treatment (raft/ pile foundations often preferred).

Raft Foundation → Spreads the load over a large area, reduces settlement.

Pile Foundation → Transfers load to deeper, stable strata below the black cotton soil.

EXISITING TREES



Roystonea regia | Plumeria rubra | Frangipani | Ashoka Tree | Yellow oleander

S

- Premium location in Shyamla Hills, Bhopal.
- Adjacent to Upper Lake – offers panoramic views and cool microclimate.
- Excellent road connectivity to the city center.
- Close to major tourist spots (museums, parks, cultural complexes).

W

- High Humidity & Corrosion – Lakeside humidity can accelerate wear on metal fixtures and finishes.
- Noise & Activity – Tourist activities along the lakefront could conflict with luxury hotel ambience.

O

- Potential for a landmark lake-view luxury hotel.
- Rooftop dining and leisure areas with panoramic views.
- Landscaped gardens and outdoor event spaces.
- Scope for eco-tourism and cultural activity zones.
- Integration of wellness facilities (spa, yoga, meditation).

T

- Height restrictions imposed by Airport Authority.
- Risk of public protests or legal challenges if ecology is harmed.
- Design limitations to preserve the skyline and protect lake views.

SITE ANALYSIS

SIDDHI MIRI | 211110249 | 9th SEMESTER
THESIS GUIDE : SURABHI MEHROTRA

5 STAR HOTEL, BHOPAL, MADHYA PRADESH

Thesis 2025

Heritage Axis

(Shows linear form + heritage)

"Heritage Axis" is a design approach where a strong linear spine becomes the central or ganizing element of the hotel, inspired by the grand processional paths, palatial corridors, and geometries found in the heritage architecture of Bhopal. This axis guides movement, frames views, and integrates traditional elements such as jali, arches, creating a contemporary interpretation of Nawabi elegance."

HERITAGE ELEMENTS ALONG THE AXIS



1.They create a repetitive linear sequence.

2.Frame the view along the central axis.

3.Give instant heritage Nawabi identity.

4.Arches along the primary axis create rhythmic frames, echoing the arcaded corridors of Gohar Mahal and Shaukat Mahal. They guide the movement and enhance the ceremonial procession of the hotel.



1.A linear water rill marks the central axis.

2.Adds cooling + luxury feel.

3.Creates symmetry and movement.

4.Linear rill-style water channels parallel the axis, inspired by traditional charbagh and palace courtyards, reinforcing the movement and cool microclimate.



1.Creates dynamic light patterns along the linear path.

2.Adds privacy while maintaining transparency.

3.Inspired by Mughal and Nawabi jali patterns of Bhopal, the jali elements filter light along the axis, creating shadow play and adding cultural richness.



1.Strong linear or geometric patterns help highlight the direction.

2.Use traditional colors (ochre, terracotta, sandstone tones).

3.Locally sourced tiles, sandstone textures, and earthy finishes connect the hotel to Bhopal's material identity while grounding the heritage axis.

HERITAGE BUILDING



The building is organized along a linear East–West axis facing the Upper Lake.

Straight Entry Axis
Visual Alignment
Central Courtyard
Repeated Arches



The façade has a clear symmetric axis with a central projecting bay.

The central arch and windows stack vertically, creating a strong vertical axis.

Symmetrical Front
Central Entrance
Balanced Masses
Alignment of Arches & Windows



The mosque is planned on a perfectsymmetrical axis.

A central axial gateway leads directly to the courtyard and the prayer hall.

Strong Central Axis
Direct Line of Sight
Symmetrical Planning
Row of Arches

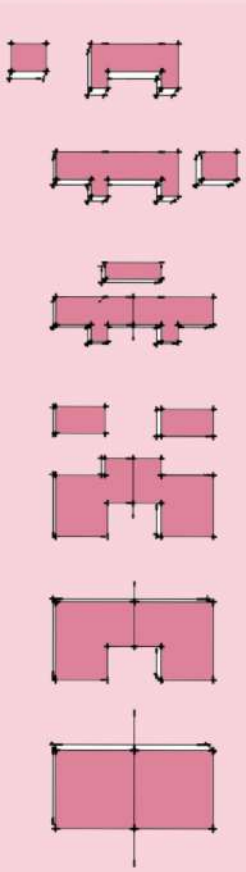


The building uses a strong symmetrical central axis with an arched gateway.

The central projection forms a vertical spine for the façade composition.

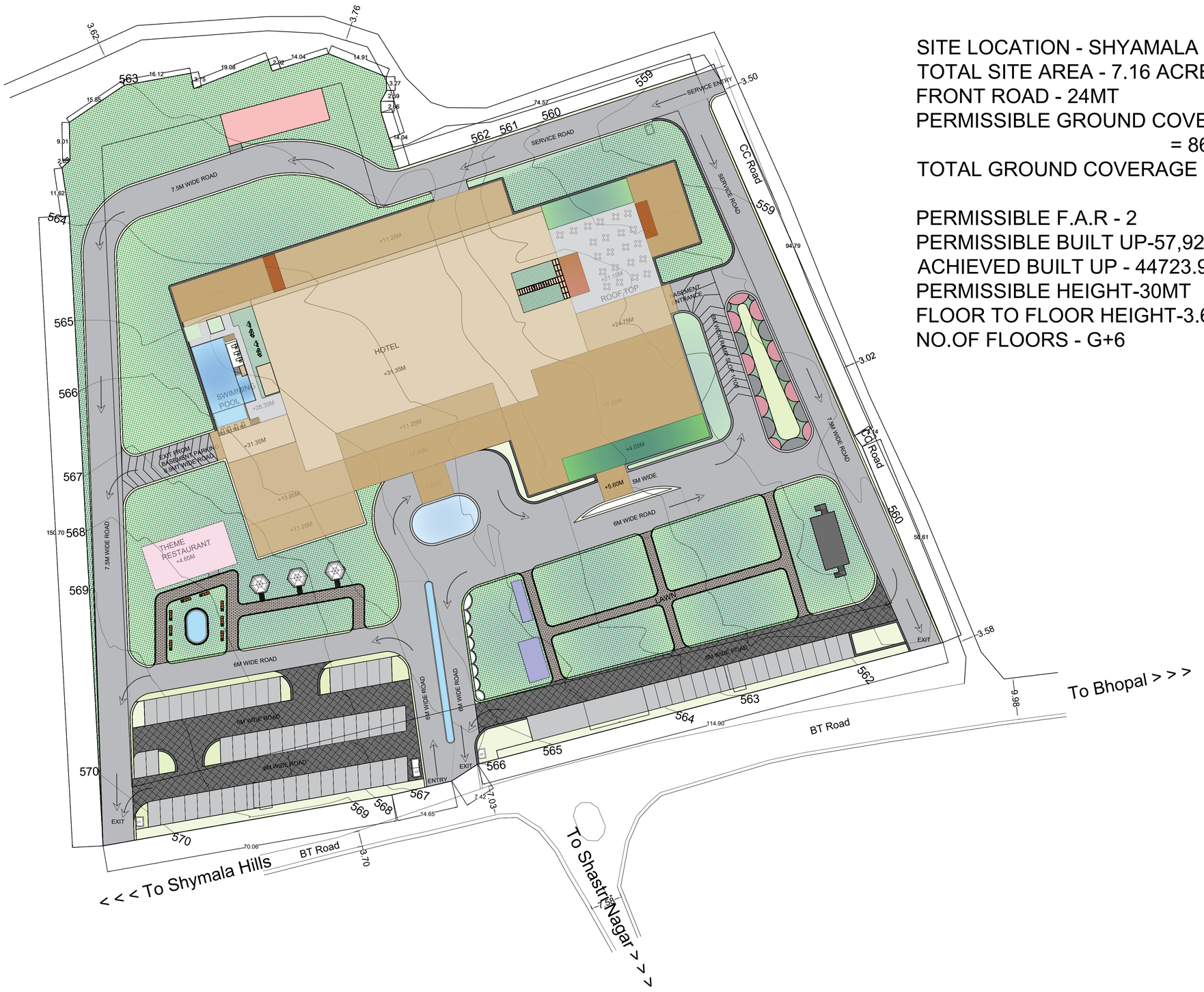
Central Arch Focus
Straight Visual View
Linear Movement Experience
Rhythmic Architecture

FORM DEVELOPMENT



DESIGN CONCEPT

SIDDHI MIRI | 211110249 | 9th SEMESTER
THESIS GUIDE : SURABHI MEHROTRA



SITE LOCATION - SHYAMALA HILLS, BHOPAL
TOTAL SITE AREA - 7.16 ACRES
FRONT ROAD - 24MT
PERMISSIBLE GROUND COVERAGE = 30%
= 8692.647SQ.M
TOTAL GROUND COVERAGE = 7937.25
= 91%
PERMISSIBLE F.A.R - 2
PERMISSIBLE BUILT UP-57,929SQ.M
ACHIEVED BUILT UP - 44723.98 = 77.2%
PERMISSIBLE HEIGHT-30MT
FLOOR TO FLOOR HEIGHT-3.6
NO.OF FLOORS - G+6

ARCHITECTURE AND PLANNING DEPARTMENT
MANIT BHOPAL

THESIS 2025-2026

TOPIC

5 STAR HOTEL DESIGN

LOCATION
BHOPAL

SHEET TITLE

SITE PLAN

GUIDED BY

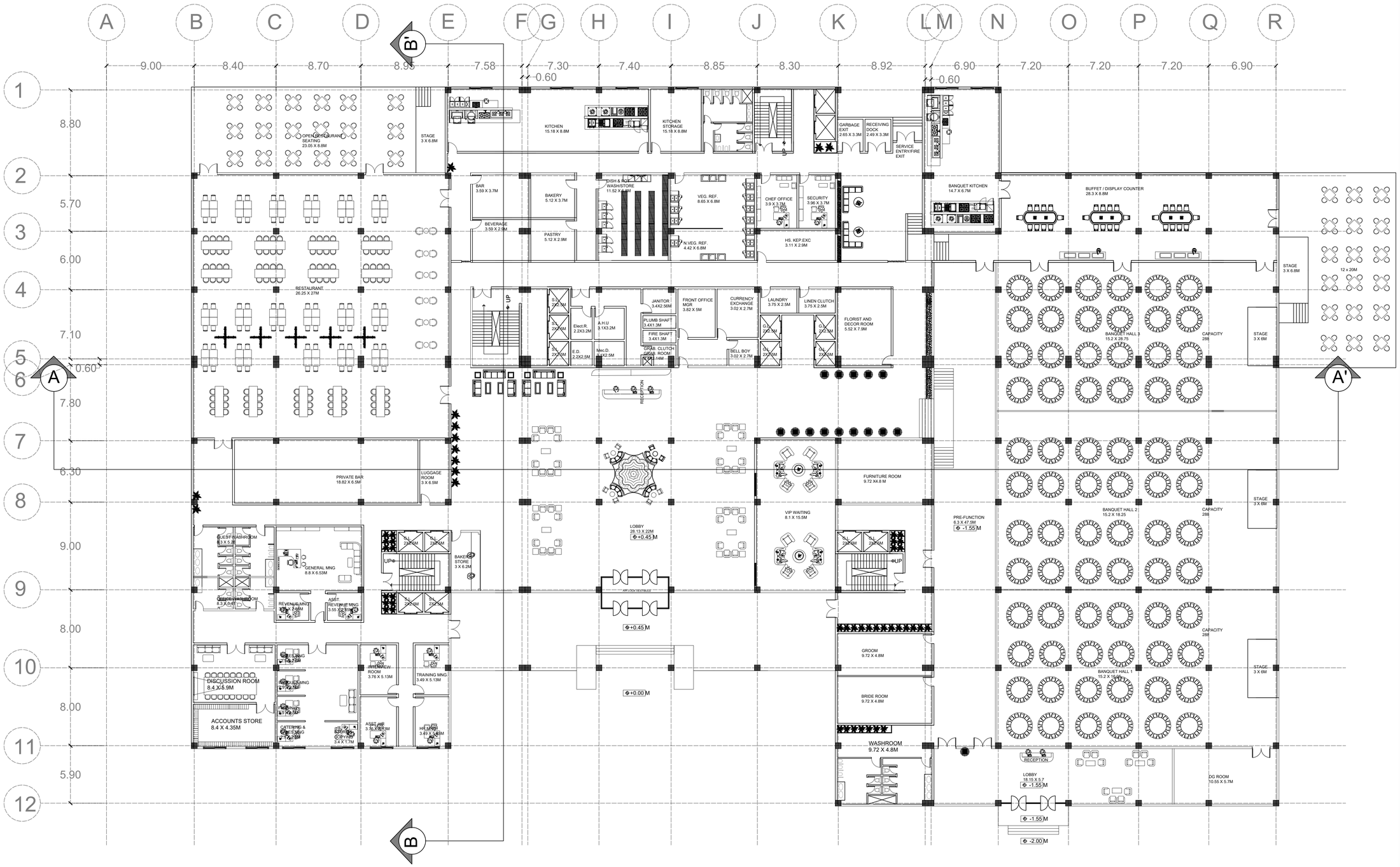
DR. SURABHI MEHROTRA

DESIGNED BY
SIDDHI
MIRI
Sch. No. -211110249

SCALE
1:500

NOTE : ALL DIMENSIONS ARE IN METER

SHEET No.



ARCHITECTURE AND PLANNING DEPARTMENT MANIT BHOPAL

THESIS 2025-2026

TOPIC

5 STAR HOTEL DESIGN

LOCATION
BHOPAL

SHEET TITLE

GROUND FLOOR PLAN

GUIDED BY

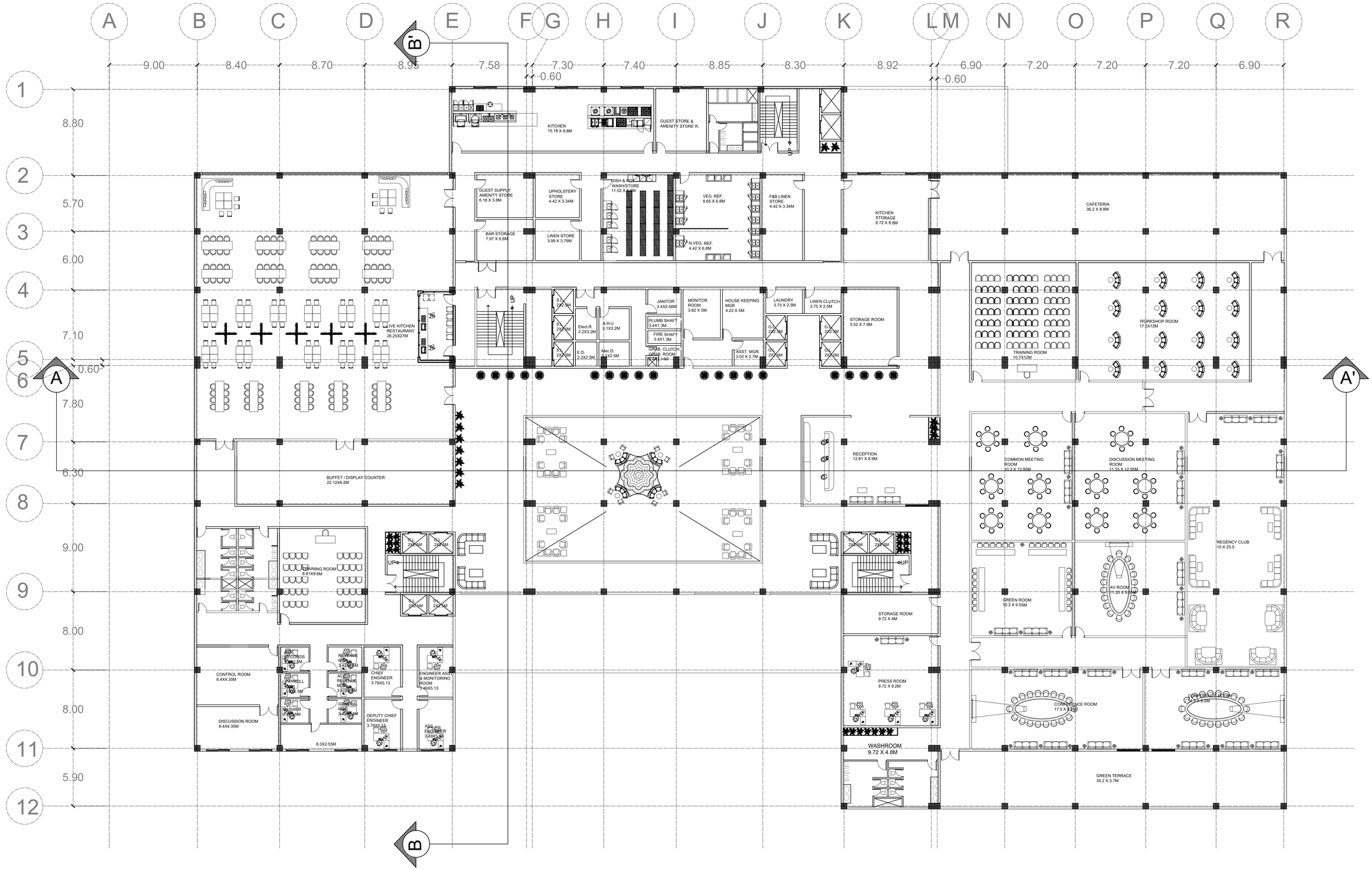
DR. SURABHI MEHROTRA

DESIGNED BY
SIDDHI
MIRI
Sch. No. -211110249

SCALE
1:200

NOTE : ALL DIMENSIONS ARE IN METER

SHEET No.



ARCHITECTURE AND PLANNING DEPARTMENT MANIT BHOPAL

THESIS 2025-2026

TOPIC

5 STAR HOTEL DESIGN

LOCATION
BHOPAL

SHEET TITLE

FIRST FLOOR PLAN

GUIDED BY

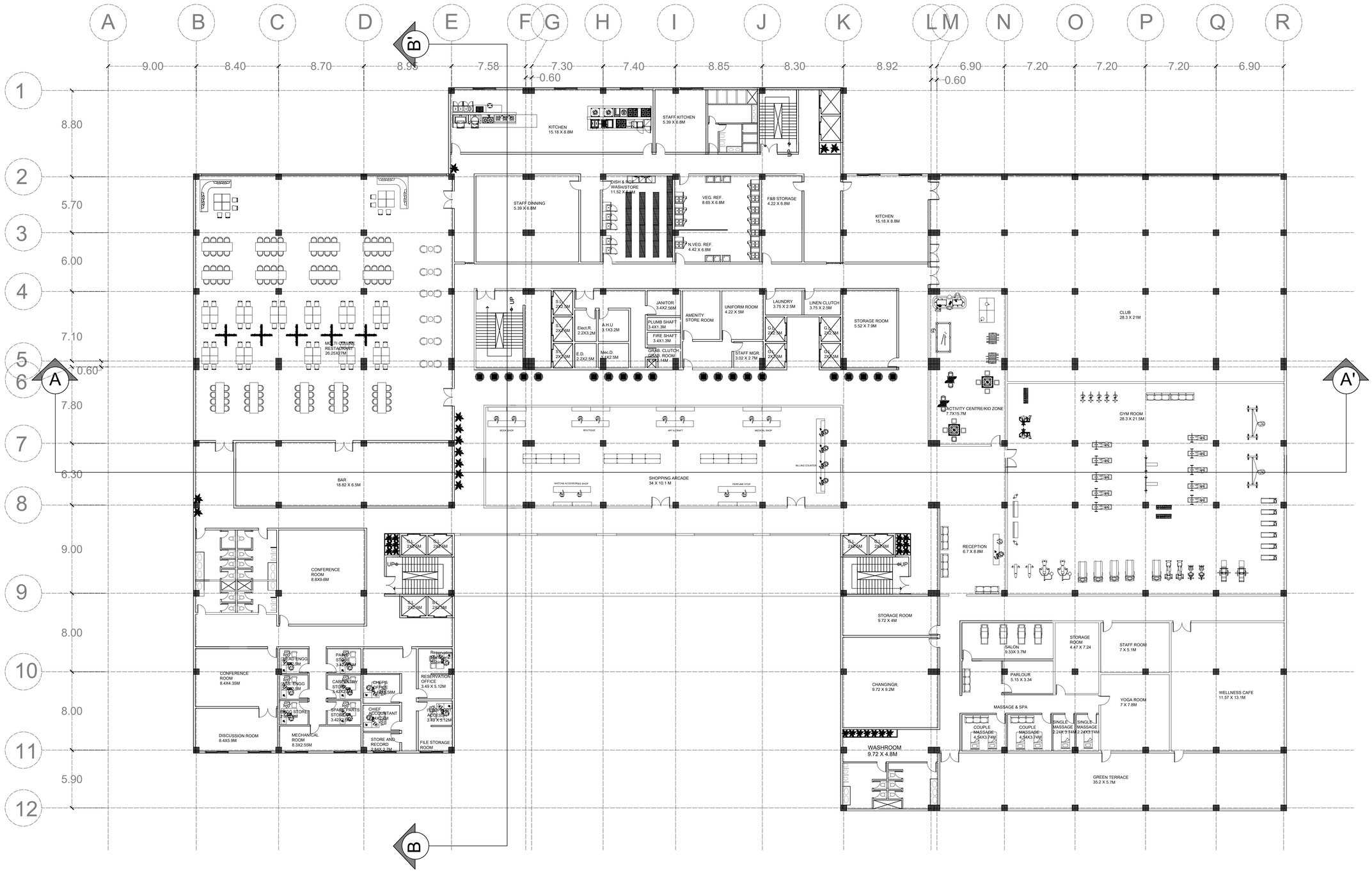
DR. SURABHI MEHROTRA

DESIGNED BY
SIDDHI
MIRI
Sch. No. -211110249

SCALE
1:200

NOTE : ALL DIMENSIONS ARE IN METER

SHEET No.



ARCHITECTURE AND PLANNING DEPARTMENT MANIT BHOPAL

THESIS 2025-2026

TOPIC

5 STAR HOTEL DESIGN

LOCATION
BHOPAL

SHEET TITLE

SECOND FLOOR PLAN

GUIDED BY

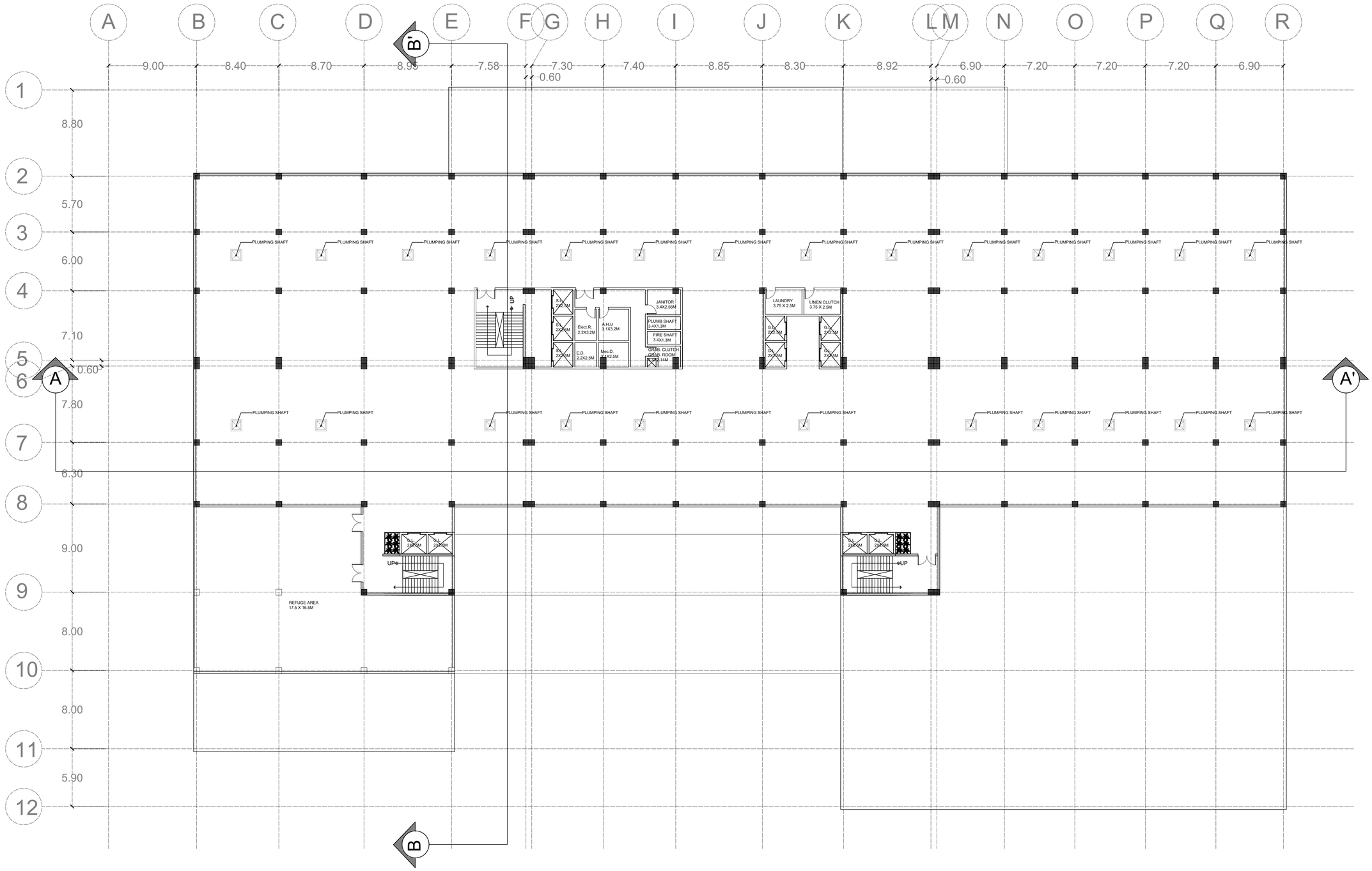
DR. SURABHI MEHROTRA

DESIGNED BY
SIDDHI
MIRI
Sch. No. -211110249

SCALE
1:200

NOTE : ALL DIMENSIONS ARE IN METER

SHEET No.



ARCHITECTURE AND PLANNING DEPARTMENT MANIT BHOPAL

THESIS 2025-2026

TOPIC

5 STAR HOTEL DESIGN

LOCATION
BHOPAL

SHEET TITLE

SERVICE FLOOR PLAN

GUIDED BY

DR. SURABHI MEHROTRA

DESIGNED BY
SIDDHI
MIRI
Sch. No. -211110249

SCALE
1:200

NOTE : ALL DIMENSIONS ARE IN METER

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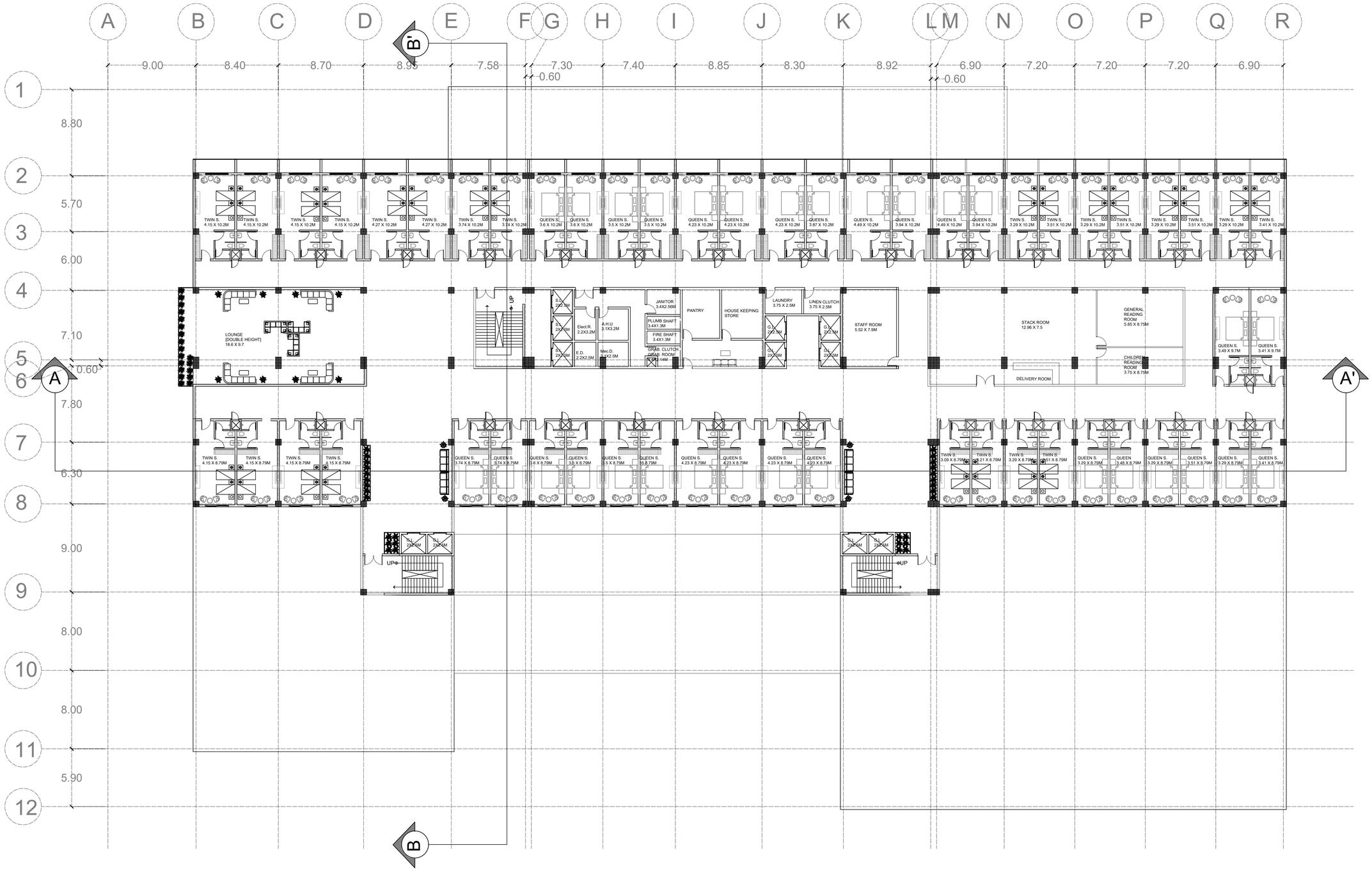

ARCHITECTURE AND PLANNING DEPARTMENT
MANIT BHOPAL

THESIS 2025-2026

TOPIC

5 STAR HOTEL DESIGN

LOCATION
BHOPAL

SHEET TITLE

THIRD FLOOR PLAN

GUIDED BY

DR. SURABHI MEHROTRA

DESIGNED BY
SIDDHI
MIRI
Sch. No. -211110249

SCALE
1:200

NOTE : ALL DIMENSIONS ARE IN METER

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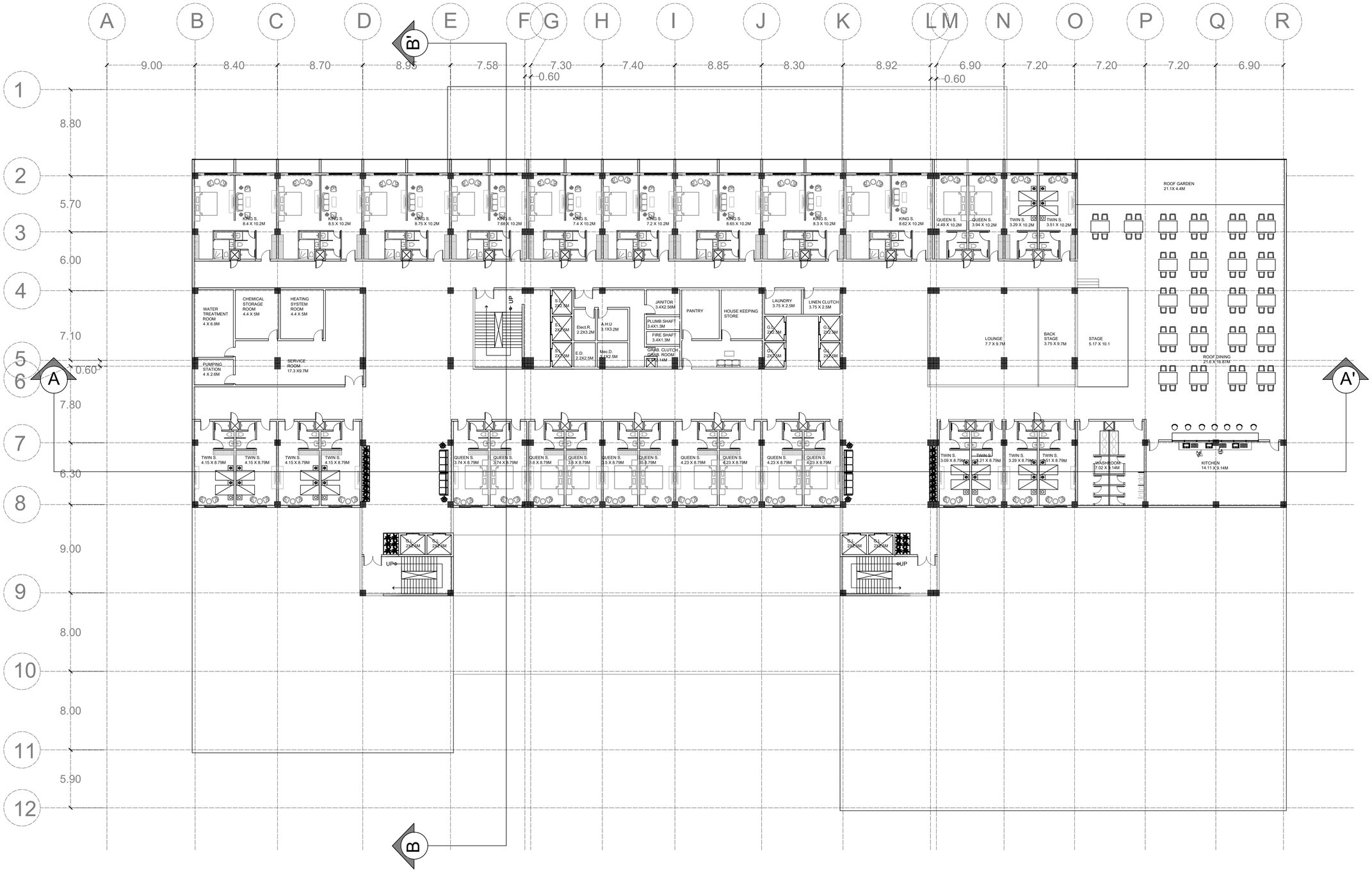


ARCHITECTURE AND PLANNING DEPARTMENT MANIT BHOPAL

THESIS 2025-2026

TOPIC

5 STAR HOTEL DESIGN

LOCATION
BHOPAL

SHEET TITLE

FIFTH FLOOR PLAN

GUIDED BY

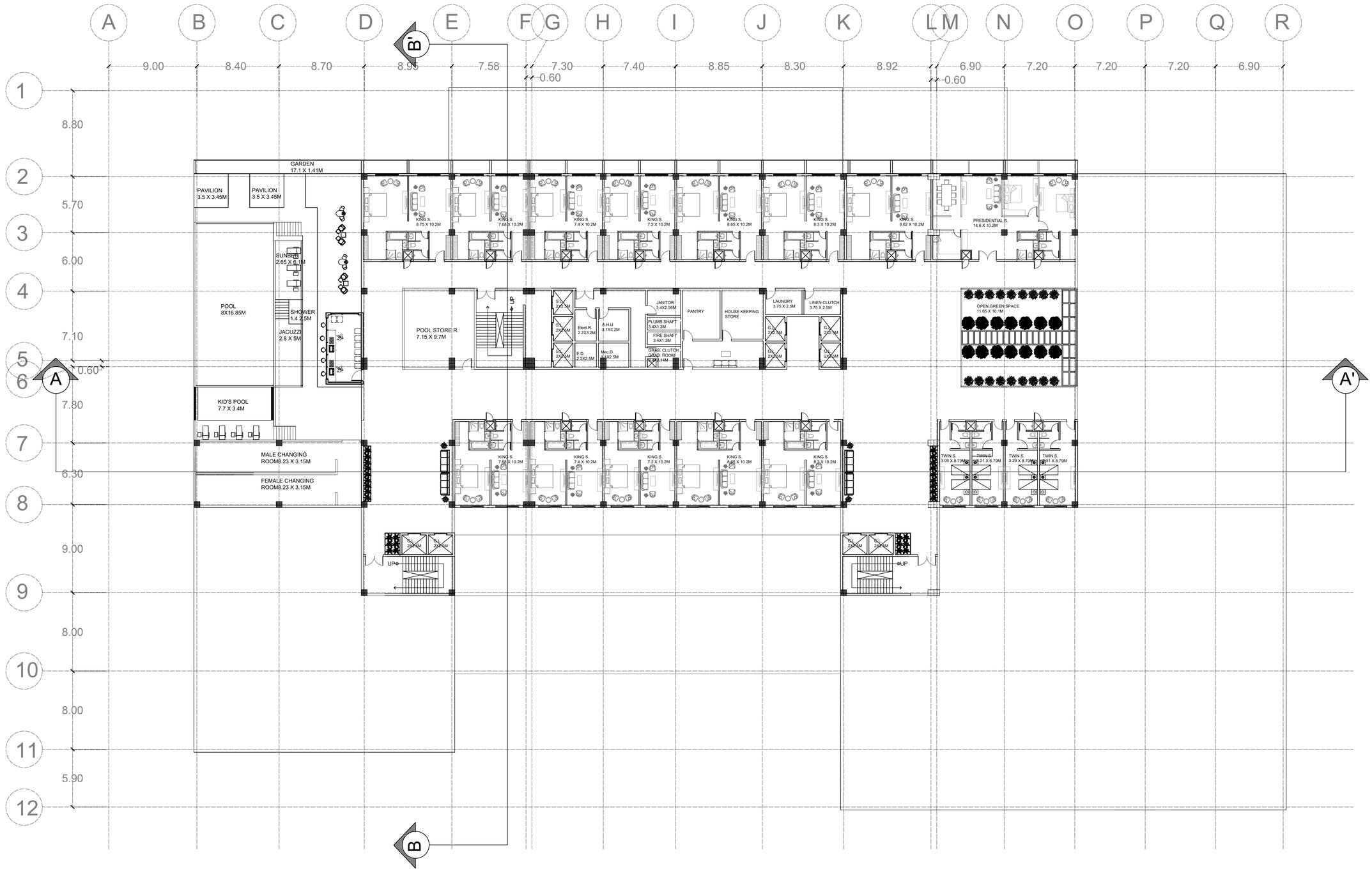
DR. SURABHI MEHROTRA

DESIGNED BY
SIDDHI
MIRI
Sch. No. -211110249

SCALE
1:200

NOTE : ALL DIMENSIONS ARE IN METER

SHEET No.



ARCHITECTURE AND PLANNING DEPARTMENT
MANIT BHOPAL

THESIS 2025-2026

TOPIC

5 STAR HOTEL DESIGN

LOCATION
BHOPAL

SHEET TITLE

SIXTH FLOOR PLAN

GUIDED BY

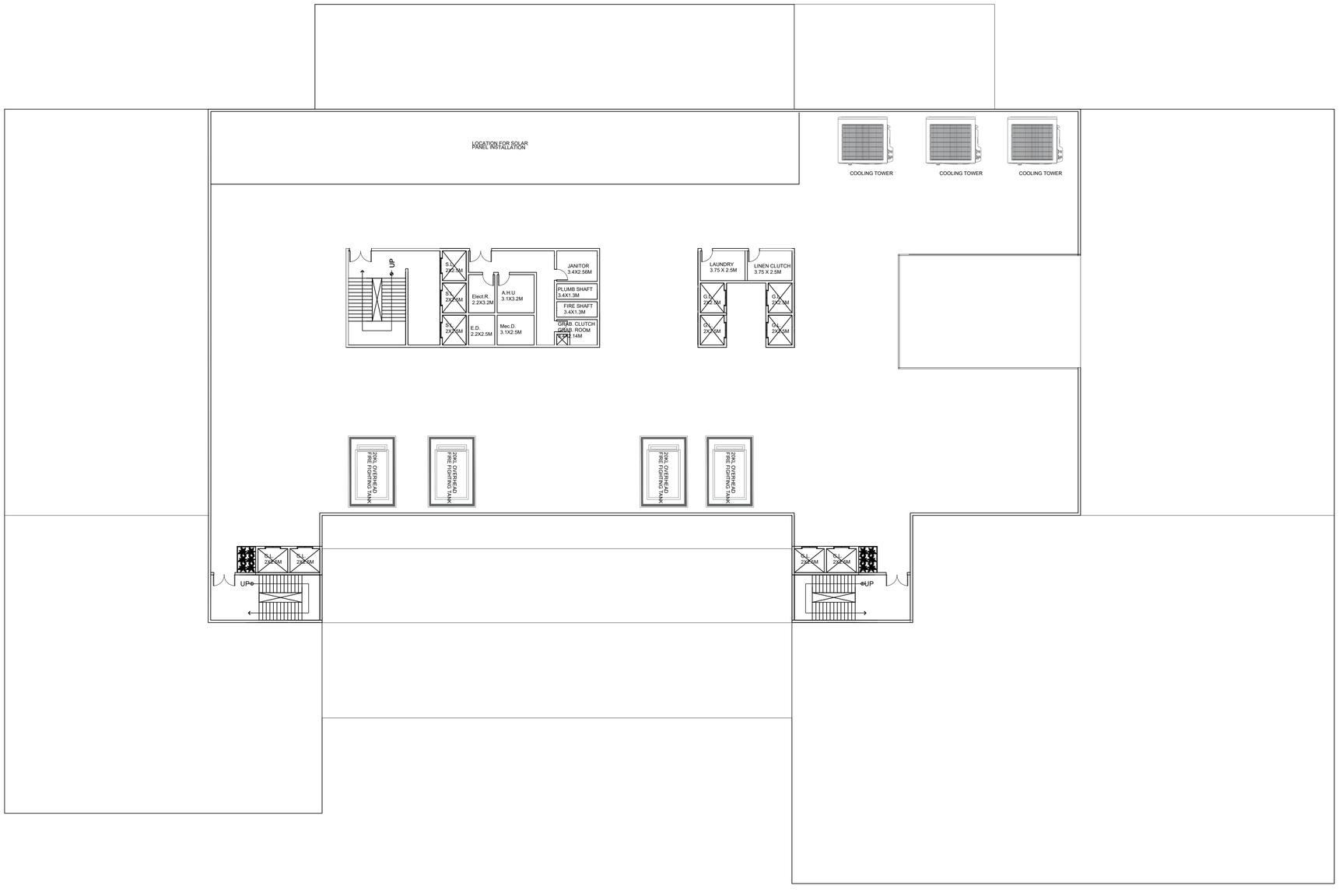
DR. SURABHI MEHROTRA

DESIGNED BY
SIDDHI
MIRI
Sch. No. -211110249

SCALE
1:200

NOTE : ALL DIMENSIONS ARE IN METER

SHEET No.



ARCHITECTURE AND PLANNING DEPARTMENT
MANIT BHOPAL

THESIS 2025-2026

TOPIC

5 STAR HOTEL DESIGN

LOCATION
BHOPAL

SHEET TITLE

TERRACE FLOOR PLAN

GUIDED BY

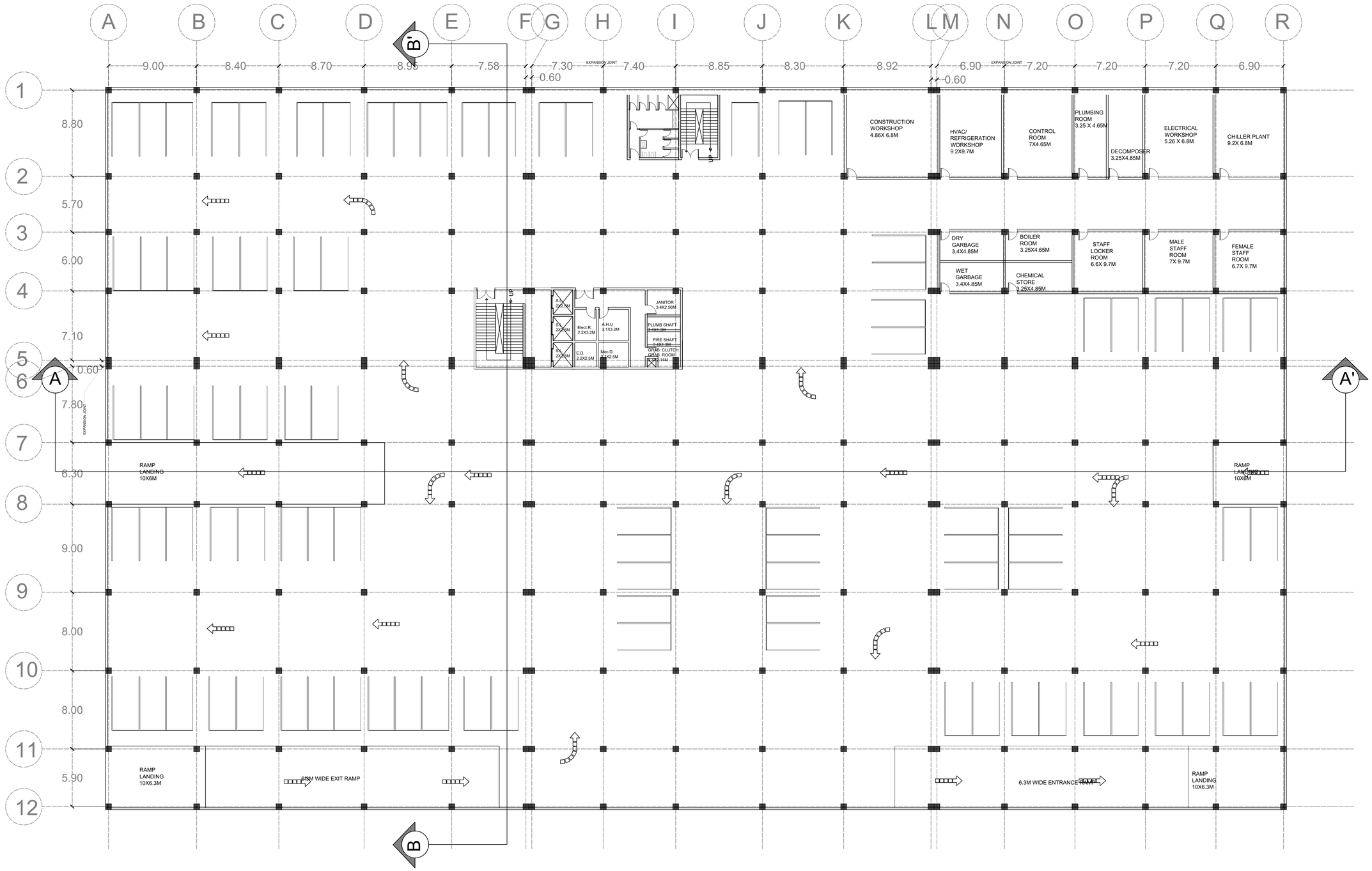
DR. SURABHI MEHROTRA

DESIGNED BY
SIDDHI
MIRI
Sch. No. -211110249

SCALE
1:200

NOTE : ALL DIMENSIONS ARE IN METER

SHEET No.



ARCHITECTURE AND PLANNING DEPARTMENT MANIT BHOPAL

THESIS 2025-2026

TOPIC

5 STAR HOTEL DESIGN

LOCATION
BHOPAL

SHEET TITLE

FIRST BASEMENT PLAN

GUIDED BY

DR. SURABHI MEHROTRA

DESIGNED BY
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MIRI
Sch. No. -211110249

SCALE
1:200

NOTE : ALL DIMENSIONS ARE IN METER

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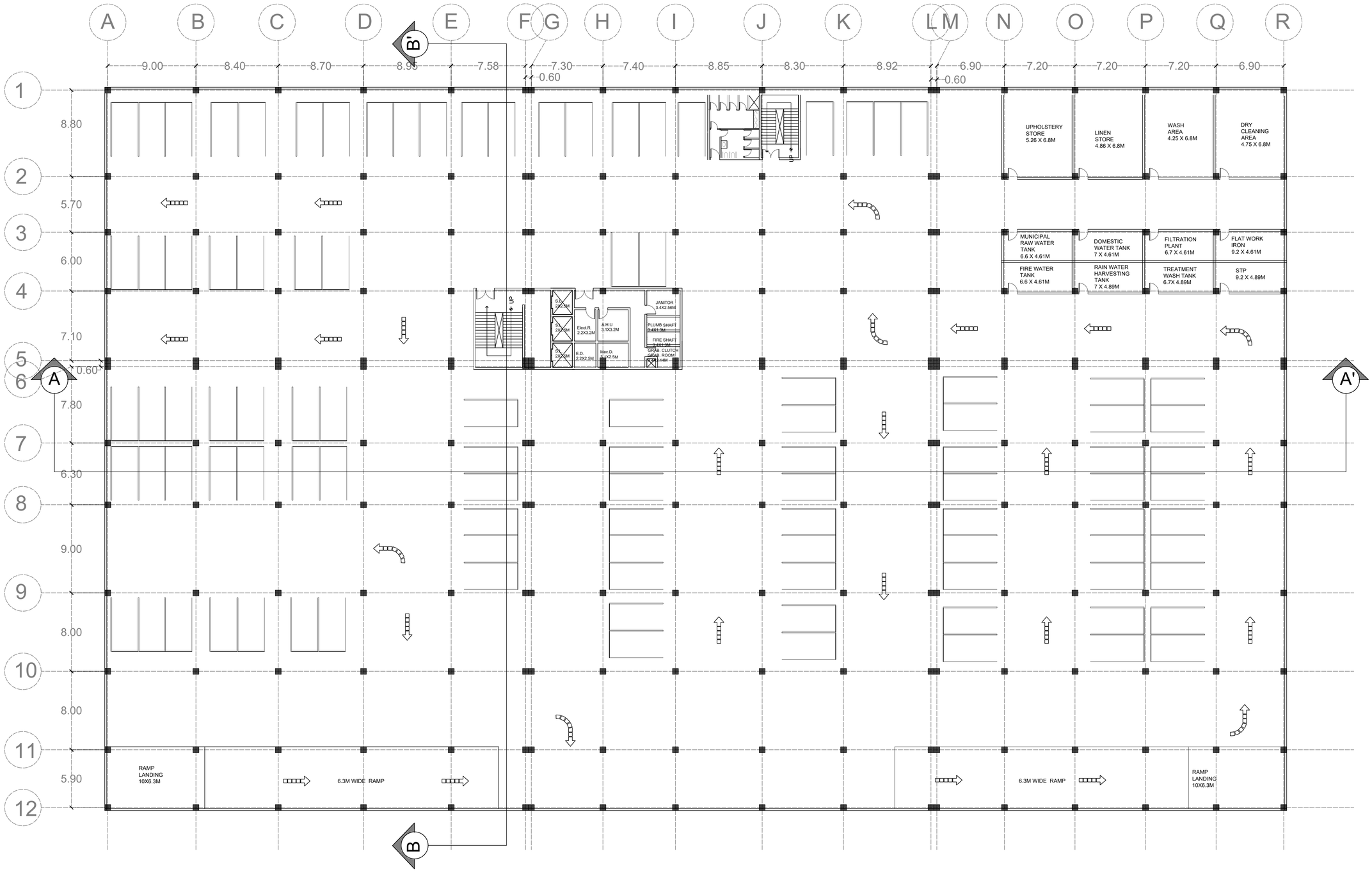

ARCHITECTURE AND PLANNING DEPARTMENT MANIT BHOPAL

THESIS 2025-2026

TOPIC

5 STAR HOTEL DESIGN

LOCATION
BHOPAL

SHEET TITLE

SECOND BASEMENT PLAN

GUIDED BY

DR. SURABHI MEHROTRA

DESIGNED BY
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MIRI
Sch. No. -211110249

SCALE
1:200

NOTE : ALL DIMENSIONS ARE IN METER

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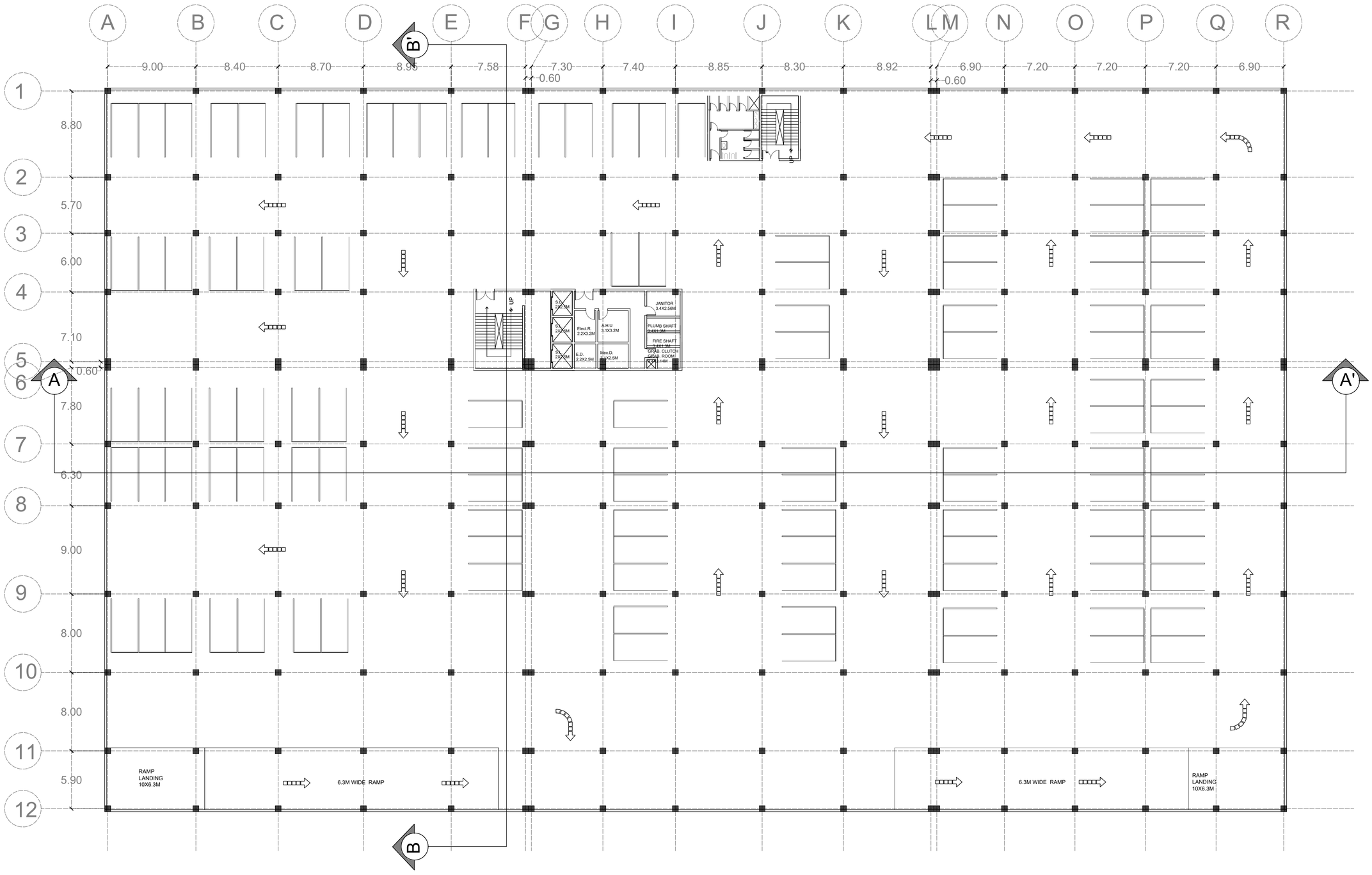

ARCHITECTURE AND PLANNING DEPARTMENT MANIT BHOPAL

THESIS 2025-2026

TOPIC

5 STAR HOTEL DESIGN

LOCATION
BHOPAL

SHEET TITLE

THIRD BASEMENT PLAN

GUIDED BY

DR. SURABHI MEHROTRA

DESIGNED BY
SIDDHI
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Sch. No. -211110249

SCALE
1:200

NOTE : ALL DIMENSIONS ARE IN METER

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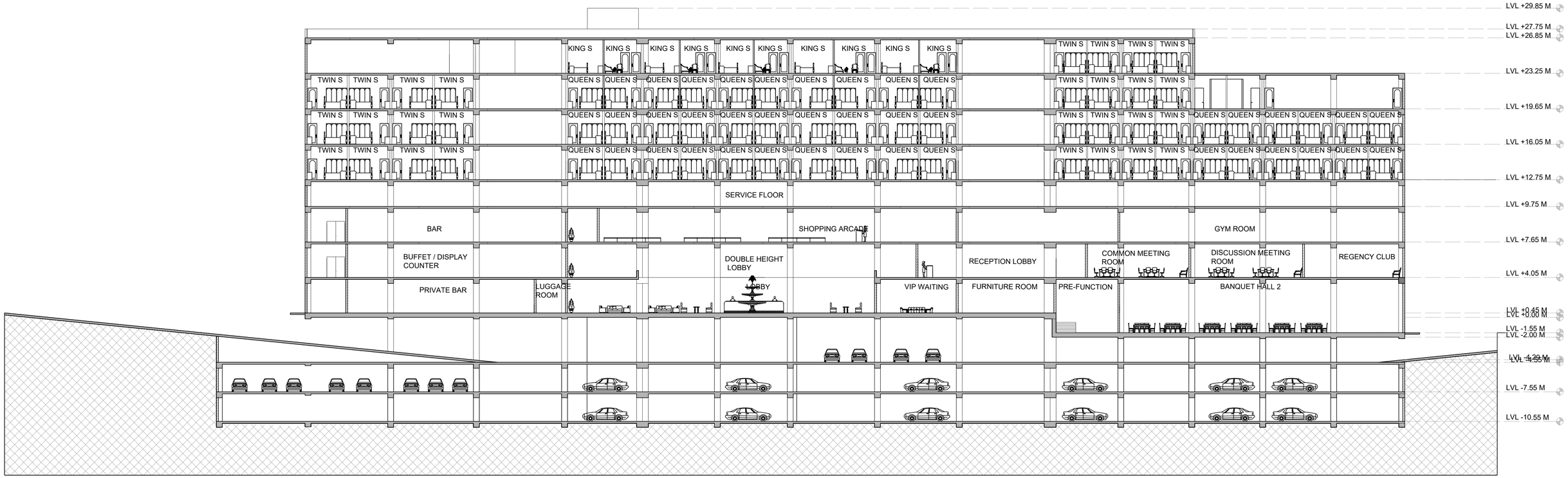

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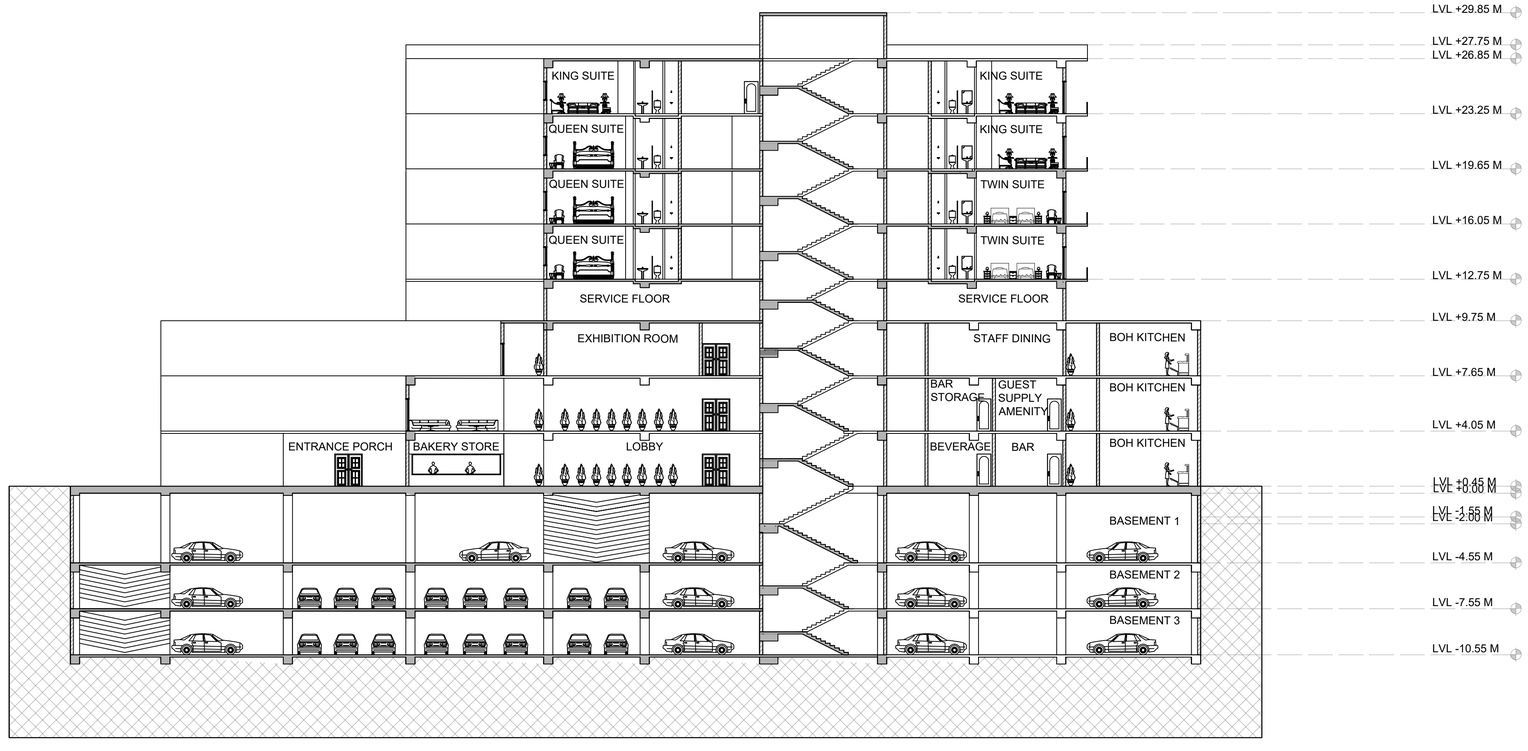

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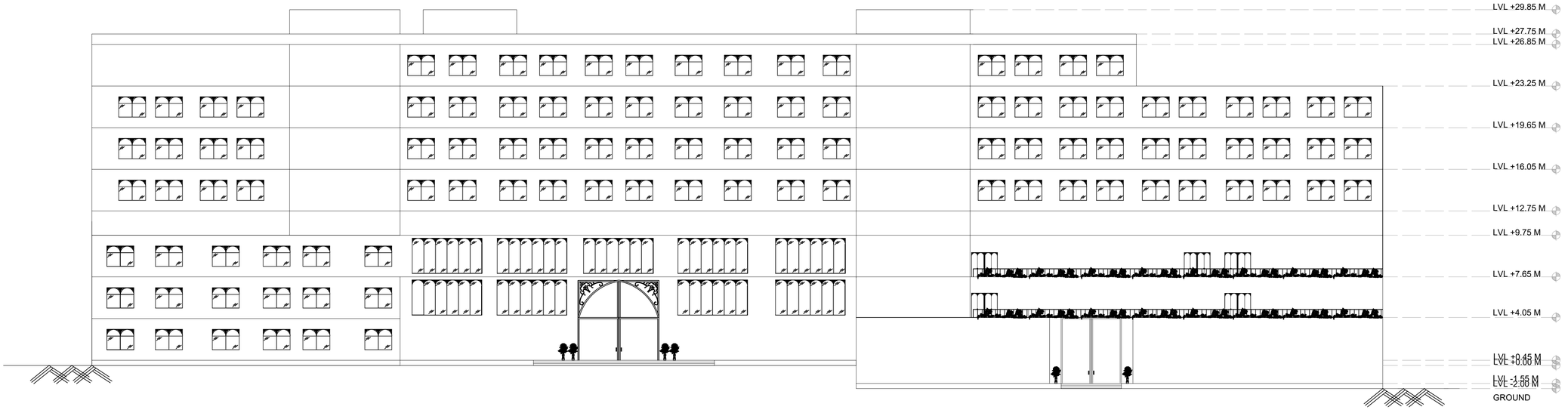


FRONT ELEVATION



BACK ELEVATION

ARCHITECTURE AND PLANNING DEPARTMENT
MANIT BHOPAL

THESIS 2025-2026

TOPIC

5 STAR HOTEL DESIGN

LOCATION
BHOPAL

SHEET TITLE

GROUND FLOOR PLAN

GUIDED BY

DR. SURABHI MEHROTRA

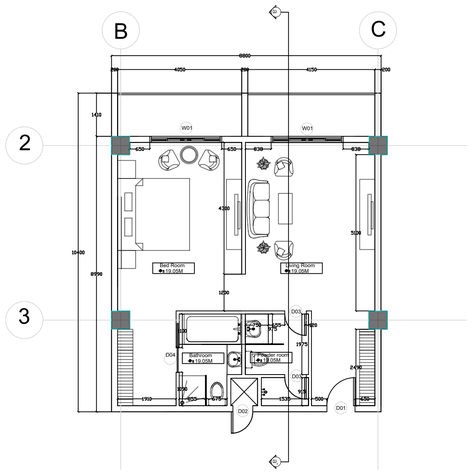
DESIGNED BY
SIDDHI
MIRI
Sch. No. -211110249

SCALE
1:200

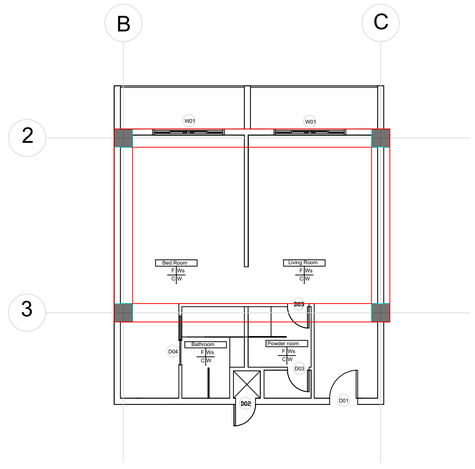
NOTE : ALL DIMENSIONS ARE IN METER

SHEET No.

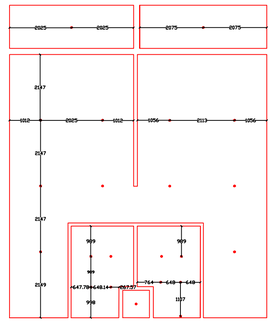
KING SUITE PLAN



BEAM PLAN



CEILING PLAN



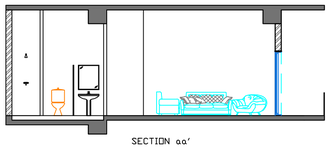
SCALE 1:100

SCHEDULE OF OPENING

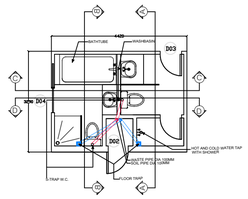
S.NO.	NAME OF OPENING	LINTEL	SILL	HEIGHT	WIDTH	NO.	SPECIFICATION
1	D01	2100	00	2100	900	1	1 PANEL WOODEN DOOR
2	D02	2100	00	2100	650	1	1 PANEL WOODEN DOOR
3	D03	2100	00	2100	700	1	1 PANEL WOODEN DOOR
4	D04	2100	00	2100	800	1	SLIDING DOOR
5	D05	2100	00	2100	2250	2	DOUBLE SLIDING DOOR

TOILET DETAILS

SCALE 1:100

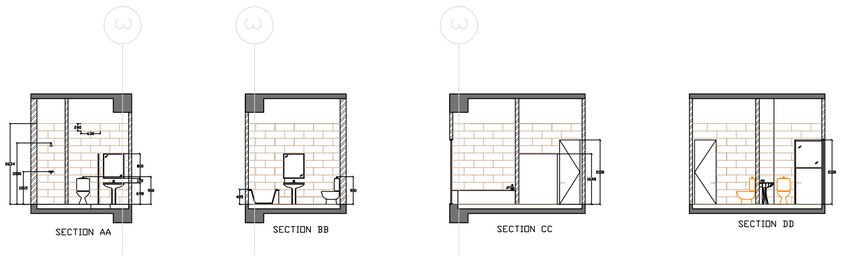


SECTION aa'



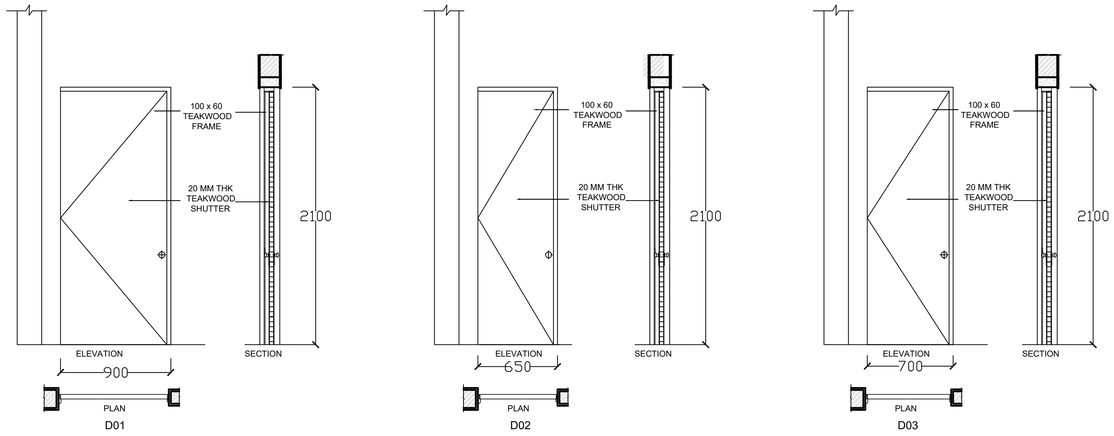
FIXTURES

S.NO	APPLIANCES / FIXTURE OPENING	BRAND
1	WASH BASIN	JAGUAR
2	WATER CLOST	JAGUAR
3	OVERHEAD SHOWER	JAGUAR
4	TAP	JAGUAR
5	BATHTUB	JAGUAR
	TILE	
1	TERRAZZO TILE	ORIENTBELL
	CEILING LIGHT	
1	RECESSED	PHILIPS



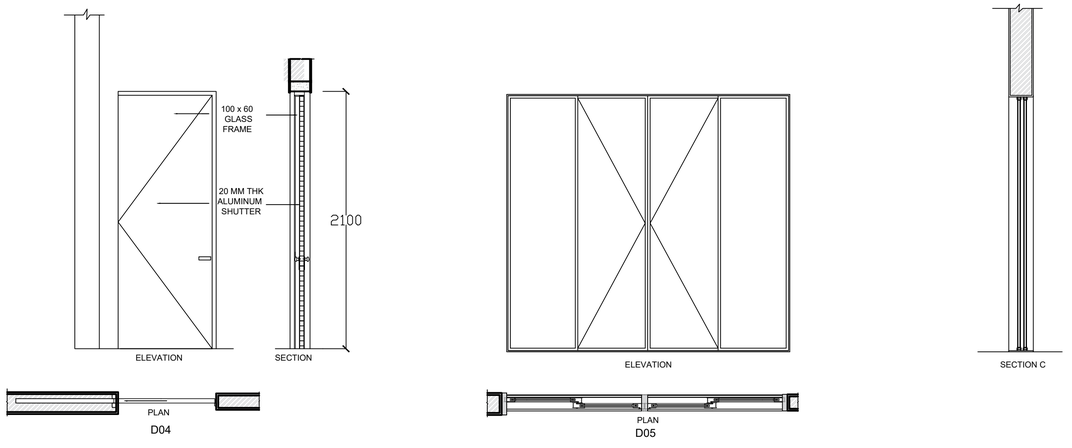
DOOR DETAILS

SCALE 1:25



DOOR DETAILS

SCALE 1:25



ARCHITECTURE AND PLANNING DEPARTMENT MANIT BHOPAL

THESIS 2025-2026

TOPIC

5 STAR HOTEL DESIGN

LOCATION
BHOPAL

SHEET TITLE

KING SUITE WORKING DRAWING

GUIDED BY

DR. SURABHI MEHROTRA

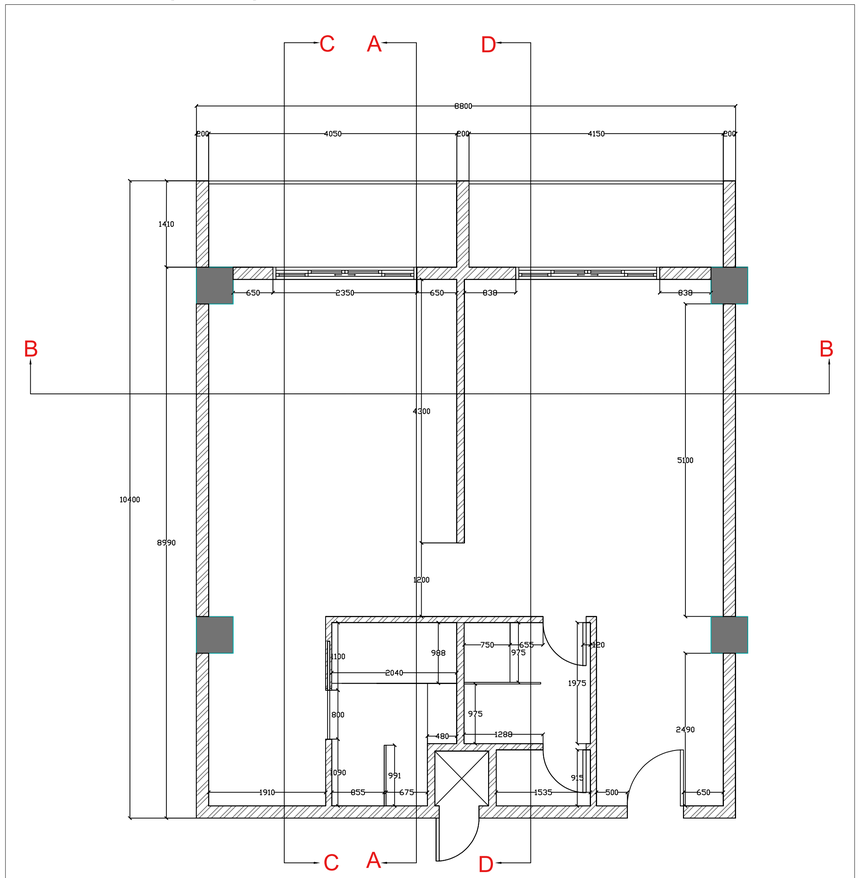
DESIGNED BY
SIDDHI
MIRI
Sch. No. -211110249

SCALE

NOTE : ALL DIMENSIONS ARE IN MM

SHEET No.

BRICKWORK PLAN[SCALE 1:50]



SECTION AA



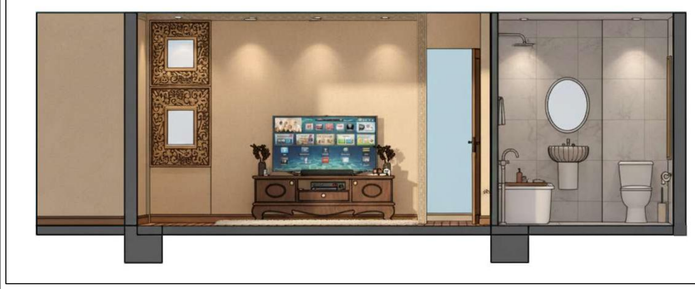
SECTION BB



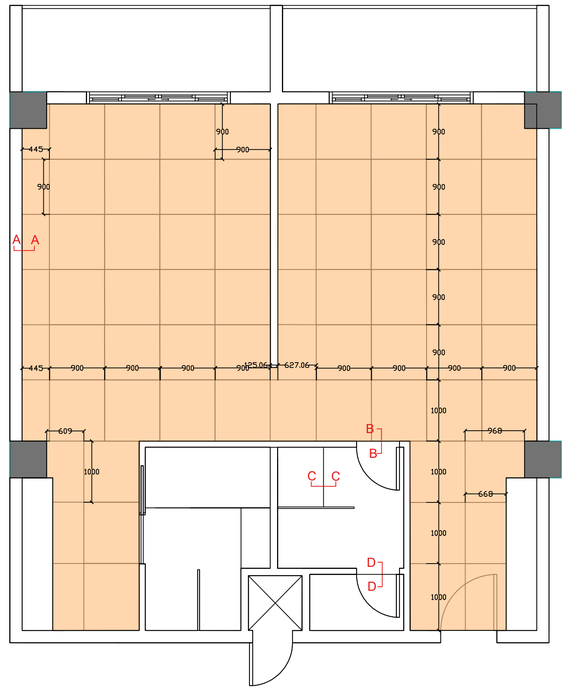
SECTION CC



SECTION DD



FLOORING LAYOUT [SCALE 1:50]


900
445
900
A
A
445
900
900
900

ELECTIVE: LANDSCAPE DESIGN

Thesis 2025

Hardscape & softscape - Landscape plantation and pavement material plan.

Flowering trees

S.No.	Local Name	Botanical Name	Description	Height & Spread	Legend	Image
1	Gulmohar	Delonix regia	1. Fern-like leaves and flamboyant display of orange-red flowers 2. Ornamental Deciduos Tree.	H: 6 -10m S: 8 - 12m		
2	Amaltas	Cassia fistula	1. Yellow golden shower tree. 2. Deciduos Tree	H: 6 - 8 m S: 4 - 5m		
3	Frangipani	Plumeria spp.	1. Its fragrant, waxy flowers in white, yellow, pink, and red. 2. Small, ornamental, semi-deciduous tree.	H: 3 - 4 m S: 5 - 6m		

Native Trees

S.No.	Local Name	Botanical Name	Description	Height & Spread	Legend	Image
1	Kachnar	Bauhinia variegata	1. bright pink or white Flowers. 2.attract hummingbirds and other birds. 3. Ornamental Tree.	H: 6 -8m S: 4 - 6m		
2	Ashoka	Saraca asoca	1. Ornamental and cultural tree. 2.umbrella-shaped canopy that creates a natural shade and adds elegance to any landscape.	H: 10 - 12m S: 1.5 - 2m		

Flower & Shrubs plants

S.No.	Local Name	Botanical Name	Description	Height & Spread	Legend	Image
1	Rose	Rosa spp.	1. Its fragrant and colorful blooms.	H: 1 -1.5m S: 1 - 1.5m		
2	Rangan	Ixora coccinea	1. A dense, evergreen shrub with clustered flowers in red, orange, yellow, or pink.	H: 1 -1.2m S: 1- 1.5m		
3	Pili Duranta	Duranta erecta 'Gold'	1 Compact, evergreen shrub with bright golden-yellow foliage.	H: 1 -1.5m S: 1.5m		
4	Kamal	Nelumbo nucifera	1. A floating aquatic plant with large leaves and iconic pink/white flowers.	H: 0.6 -1.5m S: 1- 2m		

Creepers

S.No.	Local Name	Botanical Name	Description	Height & Spread	Legend	Image
1	Climbing Ivy	Hedera helix	1. Its dense, dark green, lobed leaves. 2. It is a fast-growing, shade-tolerant, and low-maintenance plant.	H: 1 -1.5m S: 1 - 1.5m		

Pavement Material

S.No.	Location	Material Name	Material Description	Image
1	Roads	Cobblestone	1. Durable, provides grip 2. Permeable, rustic look. 3. Blends with hilly terrain.	
2	Parking	Interlocking Concrete Paving Blocks (ICPB) - Grey + dark Grey.	1. Strong for heavy loads 2. Aesthetically versatile 3. Reduces stormwater runoff	
3	Garden Seating	Stepping Stones	1. Blends with Nature 2. Permeable & Eco-Friendly 3. Safe & Slip-Resistant 4. Low Maintenance & Durable	
4	Paths for Pavillions	Grass Pavers	1. Eco-Friendly & Permeable 2. Natural Aesthetic 3. Durable & Low Maintenance.	



SIDDHI MIRI | 211110249 | 9th SEMESTER
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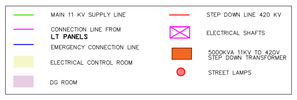
SITE ELECTRICAL PLAN



Electric Load Calculation		Calculation for emergency	
		total consumption	1118099.5 W
Avg consumption of electricity of a large hotel = 0.55 kWh/m^2 per day	Main line, Step Down 11kv to 433 v	providing 80% of ther building for consumption, 80% of 2075000	894479.6 W
$P(W) = 1000 \times E(kWh) / t(hr)$	(Considering time to be 24 hours every day)	Now 1000w = 1kva	
0.55 kwh/m^2 = 22.92 w/m2		894479.6 W =	894.48 kva
for safety factor we take 25 w/m2			
Total Consumption in watts		Perkins 1800 kVA diesel generator: The dimensions of this generator are 5000X2250X2800 mm	PROVIDE 1x 1800 Kva Diesel Generator
44723.98	1118099.5	Substation Size	
25			
now Ampere = watt/volts	1118099.5/433	Size of 1200 kva Transformer (approx): length = 1.6m, Width = 1.2m, Height = 1.8m Room Size for Transformer . 6m X 4m	
	2582.21		
Provide 1x5000 kva tranformer			

SITE WATER SUPPLY AND SEWAGE PLAN



Water Supply & Sanitation				STP			
User	Nos	Water requirement (L per day)	Total Requirement (in litres)	Total Water Demand	50150		
				90% of 297500	45225		
Beds	156	275	42750	RED	45225		
Rest. Seats	100	97	100	Dimensions (l*b*h)	3.2 x 2.5 x 6	48 Cum	
Office Employees	200	45	9000				
Total Water Demand			50150				
			50.25 Cum				
Size of UG Tank (h=6) (provide 3 UGT)			3.5 x 2.5 x 6				

ARCHITECTURE AND PLANNING DEPARTMENT
MANIT BHOPAL

THESIS 2025-2026

TOPIC

5 STAR HOTEL DESIGN

LOCATION
BHOPAL

SHEET TITLE

SITE SERVICE

GUIDED BY

DR. SURABHI MEHROTRA

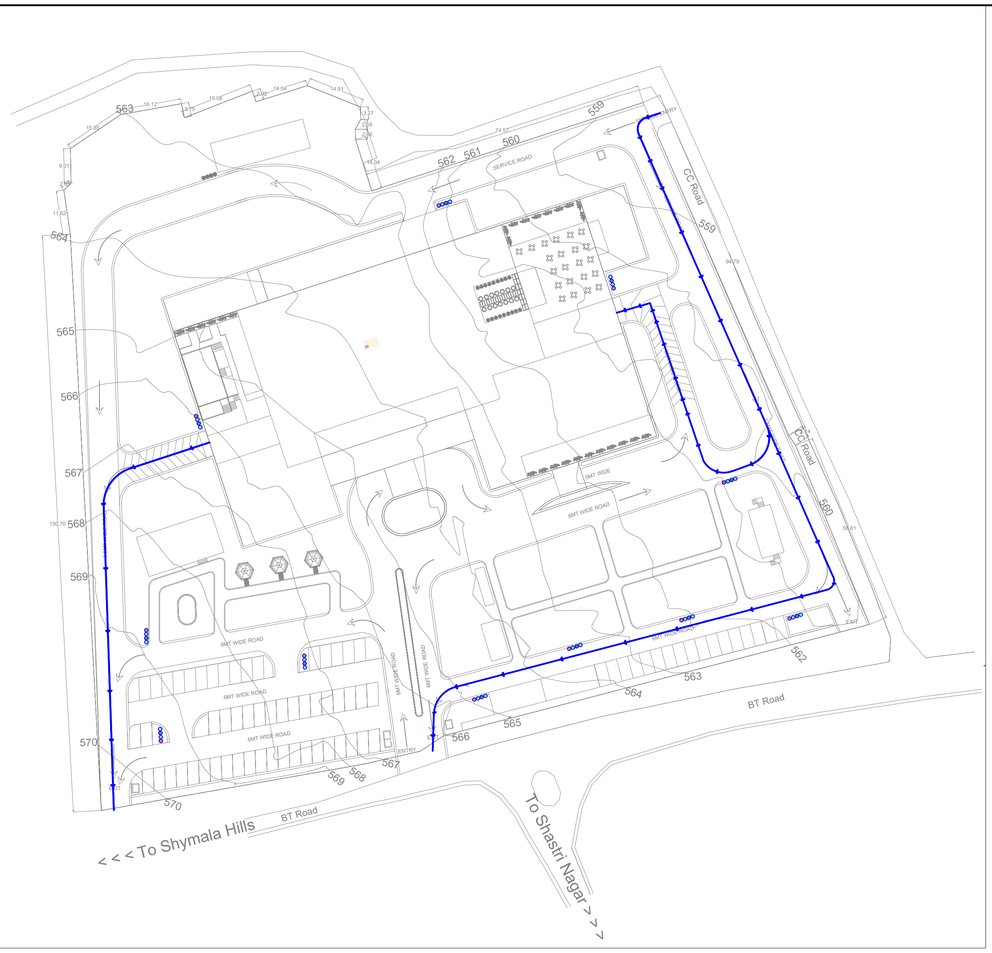
DESIGNED BY
SIDDHI
MIRI
Sch. No. -211110249

SCALE
1:800

NOTE : ALL DIMENSIONS ARE IN METER

SHEET No.



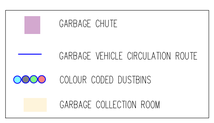


SITE FIRE FIGHTING PLAN



Fire Safety Requirements for Hotel (From table 23 of NBC Vol 2 PART 4)	
Fire Sprinkler Grid	3x3 to 4x4 m
TANK	**CAPACITY**
Underground tank	60000 L
	60 Cu.m
Size of UG tank (h=6)	3.5 x 2.5 x 6
Over head tank	6000 L
PUMPS	
2 electric and 1 Diesel Pump of capacity 850 L/min	
One electric Pump of capacity 180 L/min	

SITE WASTE MANAGEMENT PLAN



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15



