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**3 Star Resort**

Chorwad, Gujarat, India

Dec, 2025

# 3 Star Resort

Chorwad, Gujarat, India

BACHELOR OF ARCHITECTURE

BY

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DEPARTMENT OF ARCHITECTURE AND PLANNING

MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL

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# ARC 511 – Thesis Project

## 3 Star Resort

### Chorwad, Gujarat, India


**Submitted by:**

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B. ARCH
9th Semester, 5th Year


**UNDER THE GUIDANCE OF**

Dr. Alka Bharat


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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 "**3 Star Resort, Chorwad, Gujarat, 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**

**Dakshita Chopra**
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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**

**Dr. Alka Bharat**

## CERTIFICATION OF EXAMINATION

The Bachelor of Architecture Thesis Viva-Voce examination of Ms. Dakshita Chopra Scholar No.211110241, was held on 1/12/2025 to 2/12/25.

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# ABSTRACT

Chorwad Palace is a beautiful coastal landmark in Gujarat that once served as a royal retreat but has slowly fallen into neglect. Despite its stunning location and rich history, the palace today feels disconnected from the life and culture around it. This thesis explores how the palace can be restored and brought back to relevance by turning it into the heart of a sustainable beach resort.

The study looks at the site's climate, local community, heritage value, and regulatory constraints to understand how a sensitive and realistic design can take shape. Through research, case studies, and on-ground analysis, the project proposes a resort that respects the palace's original character while introducing new cottages, public spaces, and amenities that respond to the coastal environment.

A key part of the proposal is to ensure that the development benefits the surrounding community—especially local fishermen and artisans—by creating opportunities for livelihood, culture, and tourism. The overall aim is to revive Chorwad Palace not just as a building, but as a living place that celebrates history, supports local people, and offers visitors an authentic and memorable coastal experience.

# ACKNOWLEDGMENT

I would like to express my heartfelt gratitude to everyone who has supported me throughout the process of completing this report. Primarily, I would like to thank Maulana Azad National Institute of Technology, Bhopal for providing me with the resources and opportunities to conduct this research. Their unwavering support and encouragement have been instrumental in helping me achieve my academic goals.

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# CHAPTER 1

# INTRODUCTION

## 1.1 OVERVIEW

*Chorwad Palace, located along the Arabian Sea in Veraval, Gujarat, is a prominent historical landmark built in Indo-European style. Though once a summer retreat for royalty, the palace has suffered neglect over time. This project aims at the restoration and conservation of Chorwad Palace as a heritage and cultural core, while developing a sustainable coastal resort with newly designed cottages and amenities on the surrounding site. The integration of adaptive reuse, sustainable tourism, and traditional design principles will offer an immersive heritage-driven experience for visitors.*

## 1.2 BACKGROUND

Heritage coastal buildings across India face threats from time, climate, and modern neglect. Chorwad Palace, with its regal past and seafront presence, offers unique potential for heritage-led tourism. However, its fragile condition and lack of adaptive programming limit its current usability.

In parallel, Gujarat's coastline, rich in biodiversity and tourism potential, lacks resort developments that sensitively combine heritage conservation with sustainable coastal hospitality. The palace and its adjoining land provide a valuable opportunity to restore built heritage while creating an eco-sensitive, culturally rich resort through newly designed cottages and public spaces.

## 1.3 PROBLEM STATEMENT

Despite Chorwad Palace's architectural significance and scenic coastal location, it remains underutilized and physically deteriorating. There is an absence of initiatives that combine historical preservation with eco-tourism in this region. Additionally, existing resorts near coastal zones often disregard local materials, heritage context, and environmental sustainability.

There is a need for a sensitive restoration plan for the palace alongside a climate-responsive, culturally integrated resort master plan that provides modern comfort without compromising heritage integrity or coastal ecology.

## 1.4 AIM & OBJECTIVES

**Aim:**

To restore Chorwad Palace as a heritage landmark and design a new eco-tourism resort through vernacular, sustainable architecture that supports cultural tourism and community development.

**Objectives:**

- Restore Chorwad Palace using traditional techniques and preserve architectural features.
- Design new resort cottages and facilities within the site respecting heritage and coastal climate.
- Integrate passive design strategies for ventilation, thermal comfort, and shading.
- Include coastal protection measures and climate resilience in layout and landscape.
- Curate user experiences around heritage tours, local cuisine, wellness, and crafts.

## 1.5 SCOPE AND LIMITATIONS

**Scope:**

- Restoration of Chorwad Palace façade, interiors, and public areas.
- Site planning and design of independent resort cottages, spa, dining, and activity zones.
- Landscape design reflecting local ecology and heritage symbolism.
- Integration of rainwater harvesting, renewable energy, and solid waste systems.
- Creating a visitor loop combining history, leisure, and wellness experiences.

**Limitations:**

- Construction and budget constraints not included.
- Execution may depend on government approvals, coastal regulations (CRZ), and funding.
- Detailed financial feasibility and operations are beyond scope.

## 1.6 METHODOLOGY

- **Historical study:** Chorwad Palace (archives, gazetteers, material mapping).
- **Site analysis**: Wind, salt spray, sun path, topography, views, and coastal risks.
- **Literature review:** Literature review of resort design, adaptive reuse, and coastal construction.
- **Case studies:** heritage coastal resorts (Goa, Kerala, Neemrana).
- **User profiling:** for different tourist types (heritage, wellness).
- **Design development**: zoning, climate integration, spatial programming.
- **Sustainability strategy**: materials, energy systems, water, and waste design.

## 1.7 NEED FOR THE STUDY

- Chorwad Palace remains underrecognized and is degrading due to neglect.
- Gujarat lacks examples of restored palaces functioning as cultural tourism hubs.
- Growing demand for experiential resorts blending local culture with comfort.
- Opportunity to set a benchmark for integrating heritage with eco-tourism.
- Demonstrate how architecture can generate livelihood and preserve identity.
- Create an environmentally and culturally responsible alternative to conventional resort development.

## 1.8 SIGNIFICANCE OF THE PROJECT

- Revives an important historical monument through architectural conservation.
- Establishes a model for sensitive resort development near coastal heritage sites.
- Encourages local employment and craft revival through on-site cultural programming.
- Showcases sustainable coastal planning adaptable to similar heritage contexts.
- Enhances regional identity and puts Chorwad back on the cultural tourism map.
- Strengthens local culture through employment, craft promotion, and community engagement.

## 1.9 CHALLENGES AND SOLUTION

Designing the Chorwad Palace Resort presents a unique set of challenges due to its combination of heritage architecture, coastal ecology, and tourism-based livelihood goals. One of the primary challenges is restoring the deteriorated palace structure while preserving its architectural authenticity. Years of neglect, moisture damage, and structural degradation require careful conservation decisions, often with limited historical documentation, making the process highly sensitive and technically demanding.

Another major challenge lies in developing the surrounding resort masterplan within the strict Coastal Regulation Zone (CRZ) guidelines, which limit construction near the shoreline and mandate environmentally responsible development. Balancing guest amenities, circulation, and built form while ensuring compliance with ecological requirements demands a highly strategic approach.

The coastal climate also introduces practical constraints such as salinity, high humidity, and strong winds, which restrict material choices and long-term maintenance strategies. Additionally, integrating

the local fishing community and ensuring the project supports livelihood generation, cultural preservation, and community participation adds a significant social dimension to the design process.

To address these challenges, the project adopts a series of holistic solutions.

For the palace restoration, minimum intervention, reversible techniques, and material-compatible repairs are employed to retain historical integrity while making the structure functional for contemporary use. New construction is strategically located beyond the 200m HTL buffer zone, using lightweight structures, stilted platforms, and permeable landscapes to respect CRZ norms and coastal ecology.

Climate constraints are mitigated through passive architectural strategies, including shaded verandahs, cross-ventilation corridors, courtyards, and heat-reflective materials. A sustainable material palette—lime plaster, stone, terracotta, timber substitutes, coastal vegetation—ensures resilience and reduced environmental impact.

Socially, the design framework integrates community-oriented spaces such as craft courts, cultural plazas, fisherfolk interaction zones, and interpretive pathways. These contribute to local employment, empower artisans, and embed traditional knowledge into the resort experience. In essence, the project combines heritage sensitivity, environmental responsibility, and cultural inclusion to overcome its complex design challenges.

# CHAPTER 2

DESIGN BRIEF

## OVERVIEW

*3-Star Beach Resort at Chorwad, Gujarat, lies on the Arabian Sea and offers a unique coastal heritage setting characterized by the historic Chorwad Palace, a rocky shoreline, and stretches of open sandy beachfront. Its strategic location provides significant tourism potential, as it is surrounded by cultural and natural attractions, including the Somnath Temple and Gir National Park. The combination of heritage elements, natural beauty, and connectivity makes the site ideal for developing a sustainable and experiential beach resort which foster both relaxation and cultural exchange.*

## 2.1 PROJECT DETAILS

- **Project Title:** Development of Resort at Chorwad, Gujarat
- **Proposing agency:** Tourism Corporation of Gujarat Limited (TGCL)
- **Location:** Chorwad Beach, Junagadh District, Gujarat (approx. 20 km from Veraval, 70 km from Junagadh)

1.2 Brief Project Particulars

Brief particulars of the Project are as follows:

| Sr. No. | Key Information | Details |
|---|---|---|
| 1. | Project Title | **Development of Resort at Chorwad, Gujarat** |
| 2. | Location | Land admeasuring about **48,100 sq. m.** located on the Chorwad beach, around 3.6 km from the Chorwad city towards the southwest side at 21.8 km from the Chorwad Road Railway station, 29.3 km from Veraval Railway Station and about 41 km from the Keshod Airport and around 106 km from Porbandar Airport.<br>Location: 21.0004158640739, 70.22745634431269<br>Brief details of the site is placed at Annexure 3. |
| 3. | Estimated Project Cost | **Rs. 19.50 Crores (Rupees Nineteen Crores Fifty Lakhs Only) including the cost towards restoration of the Chorwad Palace** |
| 4. | Minimum Development Obligations | The Concessionaire shall be required to develop the following facilities: |

- **Site Context:** Coastal heritage site on the Arabian Sea, featuring a historic palace, rocky shoreline, and open beachfront

## 2.2 PROJECT SCOPE

- **Objective:** Restoration and adaptive reuse of Chorwad Palace with the development of a luxury beach resort.
- **Model:** Public–Private Partnership (PPP) on a DBFOT (Design, Build, Finance, Operate, Transfer) basis.
- **Concession Period:** 35 years from signing of agreement.
- **Construction Period:** 24 months after securing all statutory clearances (which must be done within 12 months of signing).

## 2.3 TENDER DETAILS

| Sr. No. | Key Information | Details |
|---|---|---|
| | | 1. **45 keys** (Luxury Rooms / Cottages / Tents) in 3-Star (or hotel having similar facilities) / Mid-Scale / Budget / Economy Hotel<br>2. Restaurants (Multi Cuisine Restaurant / Speciality Restaurant / Coffee Shop) – As per requirement<br>3. Restoration of old building (Old Chorwad Palace) as per prudent restoration practices.<br>o **TCGL has reserved an amount of Rs. 5.00 crore towards restoration of the Chorwad Palace. Concessionaire will be required to restore the building as per prudent practices and will be entitled to get the same amount reimbursed, up to a ceiling of Rs. 5.00 Cr (actual amount spent on restoration or Rs 5.00 Cr, whichever is lower) on initiating Commercial Operation of the Resort.**<br>4. Reconstruction of other buildings keeping architectural elements similar to the old building.<br>**5.** Provision of car parking to be made as per Local Building Bye-Laws or as directed by TCGL.<br>**6.** Other common and support facilities such as internal roads, streetlights, water harvesting system, solid waste disposal, storm water drainage system, main sewer line, water supply including storage tank(s), transformer, electrical sub-station, green patches etc. |

| | | |
|---|---|---|
| 5. | Optional Facilities | • Additional Tents / Cottages / Rooms<br>• Recreational area with Health Club and swimming pool<br>• Any other development with the approval of TCGL |
| 6. | Special Conditions | 1. The land shall not be used for the purpose other than tourism related activities and development.<br>2. Any demolition in the site, has to be pre-approved by TCGL in writing.<br>3. Clearance under CRZ, if applicable, needs to be obtained by the Concessionaire on its own.<br>4. TCGL at its discretion shall engage the services of a Conservation Architect, in capacities of Third-Party Agency, for approval of the Conservation Plan submitted by the Concessionaire. The fee to be paid to such an agency shall be shared equally by TCGL and the Concessionaire. |

### 2.3.1 Land & Lease Details

- **Ownership:** Land leased to developer on "as-is, where-is" basis
- **Lease Term:** Co-terminus with concession (35 years)
- **Lease Rent:** ₹1 per sq.m/year + applicable taxes
- **Possession:** Formal handover after signing lease deed and agreement

### 2.3.2 Regulatory Compliance

- **Applicable Regulations:**
    a) Local building byelaws
    b) Coastal Regulation Zone (CRZ) norms
    c) ASI / State Archaeology for heritage conservation
    d) Forest and Environment clearances (if required)
- **All permits and approvals must be obtained by the developer at their own cost.**

### 2.3.3 Minimum Development Obligations

| Component | Description |
|---|---|
| **Accommodation** | Minimum 45 luxury rooms/cottages/tents of 3-star or equivalent category |
| **F&B** | Multi-cuisine restaurant / specialty restaurant / coffee shop |
| **Heritage Restoration** | Restoration of Chorwad Palace (₹5 Cr reserved for reimbursement, subject to documentation and approval) |
| **Reconstruction** | Other buildings must retain visual and architectural harmony with the palace |
| **Parking & Infrastructure** | As per local bylaws and TCGL direction; includes internal roads, streetlights, STP, water supply, drainage, RWH, solid waste mgmt., etc. |

### 2.3.4 Optional Development Provisions

- Additional rooms, tents or cottages
- Health club, spa, gym, swimming pool
- Any other tourism-related facility approved by TCGL

### 2.3.5 Prohibited Development

- Any non-tourism development not permitted by Government of India / Gujarat

## 2.4 LIST OF SPACES & AREA PROGRAMMING

### 2.4.1 Mandatory Spaces (Minimum Development)

| Space | Description |
|---|---|
| **Luxury Rooms / Cottages / Tents** | Minimum 45 keys required, 3-star or equivalent category |
| **Restaurant / Dining** | Multi-cuisine restaurant or café; flexible per demand |

| | |
|---|---|
| **Restored Palace Zones** | Adaptive reuse into lobby, reception, suites, lounges, museum or cultural gallery |
| **Internal Roads** | Circulation, drop-off, service roads |
| **Parking** | As per local building byelaws – both guest and staff parking |
| **Admin Block** | Office spaces, reception, staff rooms |
| **Support Services** | Electrical substation, STP, water tank, drainage, waste disposal units, fire safety systems |
| **Landscaped Areas** | Open green spaces, gardens, buffer areas |
| **Security & Entry Gate** | Main gate with security check, CCTV, watchman's cabin |

### 2.4.2 Optional / Additional Facilities (Suggestive)

| Space | Description |
|---|---|
| **Swimming Pool** | Outdoor, luxury pool with deck and lounge area |
| **Spa & Wellness Zone** | Ayurveda center / massage rooms / meditation area |
| **Banquet / Conference Hall** | Indoor event or meeting space (linked with hospitality) |
| **Fitness Centre** | Gym, health club |
| **Cultural Pavilion / Amphitheatre** | For showcasing local dance, folk music, etc. |
| **Gift Shop / Souvenir Store** | For promoting local handicrafts, tourism |
| **Additional Rooms** | Tents / eco-cottages / treehouses (subject to approval) |

# CHAPTER 3

# LITERATURE REVIEW

## OVERVIEW

*This review examines literature on resort design, focusing on architectural principles, sustainability, guest experience, and cultural integration. It defines the research scope around functional design, eco-friendly practices, and luxury tourism. By analyzing journals, hospitality studies, and case studies, it establishes a conceptual framework to guide design decisions, ensuring alignment with current trends and best practices.*

## 3.1 THEORITICAL FRAMEWORK

- Genius Loci – Norberg-Schulz
  Architecture must respond to the spirit of place.
  Relevance: Maintaining the palace's identity, using coastal-sensitive materials, and designing cottages that blend with the natural and cultural setting.
- Kevin Lynch – Imageability
  Paths, nodes, landmarks, and edges enhance clarity of movement.
  Relevance: Palace as landmark, coastline as edge, cottage clusters as districts, and shaded walkways as paths.
- Adaptive Reuse Theory
  Heritage buildings should be preserved with minimal intervention and compatible materials.
  Relevance: Palace restoration through reversible, sensitive techniques.
- Sustainable Tourism Theory
  Tourism must protect ecology and empower communities.
  Relevance: Integration of local crafts, eco-friendly materials, and climate-responsive planning.

## 3.2 COMMUNITY PARTICIPATION & SOCIOCULTURAL LITERATURE

- John F.C. Turner – Participation Theory
  Communities are central to shaping their built environments.
  Relevance: Involving fishermen, artisans, and local residents in craft, cultural activities, and tourism-based livelihoods.
- Coastal Community Studies
  Fishing communities follow kinship-based clustering, outdoor working patterns, and strong cultural identity.
  Relevance: Cottage clusters, cultural plazas, and craft courts inspired by local settlement patterns.
- Occupational Literature
  Traditional fishing practices influence spatial needs such as net-drying areas, boat repair zones, and shaded workspaces.
  Relevance: Material palette and spatial organization reflect coastal craft and lifestyle.

## 3.3 GUJARAT TOURISM / CRZ GUIDELINES FOR BEACH RESORT DEVELOPMENT

| Requirement | Norm |
|---|---|
| Setback from HTL | ≥ 200 m (or hazard line), no construction within LTL–HTL |
| Plot size | ≥ 0.4 ha |
| Floor Space Index | ≤ 0.33 |
| Max height / Floors | ≤ 9 m; up to 2 floors |
| Groundwater use | Forbidden within 200 m; permitted 200–500 m w/ NOC |
| Sand work | No extraction/leveling within 500 m |
| Waste management | Must meet standards; no discharge to beach |
| Public access | ≥ 20 m gap between properties; min 500 m spacing |
| Sensitive areas | Construction prohibited |
| Approvals | GCZMA clearance; Tourism Dept approval; Forest Act if needed |

**Setback and Development Zone**

No construction allowed within 200 m landward from the High Tide Line (HTL) or between the Low Tide Line and HTL.

**Plot & Built-Up Limits**

- Minimum plot size must be ≥ 0.4 ha (~4,000 m²).
- Floor Space Index (FSI) max = 0.33; total covered area on all floors ≤ 33% of the plot. Open spaces must be landscaped with vegetation.

**Height & Floors**

Maximum height: up to 9 m to roof ridge, with no more than two floors (ground + one upper)

**Architecture & Environment**

- Design should mesh with the surrounding landscape and local architectural style.
- No flattening of sand dunes.
- Live fences or barbed wire fencing with plants may be allowed, provided no obstruction to public beach access.

**Groundwater & Sand Extraction**

- No groundwater tapping within 200 m of HTL. Between 200–500 m zone, tapping only with approval of the State/Central Ground Water Authority.
- No sand extraction, levelling, or digging on sandy stretches (except structural foundations or a pool) within 500 m of HTL .

**Waste & Pollution Control**

- Must meet applicable effluent, solid waste, emissions, and noise standards.
- No untreated effluents or solids discharged into waters or on the beach. Treatment systems are mandatory.

**Public Access & Spacing**

Maintain at least 20 m wide public access gap between any two resorts or hotels, and ensure minimum spacing of 500 m between properties.

## 3.4 EXISTING GUIDELINES FOR 3-STAR PROVISION OF HOTELS IN INDIA

### BEDROOM SIZE REQUIREMENTS

The minimum bedroom sizes (excluding bathroom) for each star category are as follows:

- 3-Star Hotels: Minimum of 130 sq. ft.
- For single occupancy rooms, the size may be a minimum of 90 sq. ft.

### LIFT REQUIREMENTS

Hotels are required to provide 2+ hour fire-rated lifts if their building height exceeds:

- Ground floor + two additional floors
- This is a necessary (N) requirement for all star categories (1-Star to 5-Star Deluxe)

Note: If the design is G+1 or G+2, providing a lift is optional but still strongly recommended for accessibility.

## ACCESSIBILITY PROVISIONS

### Dedicated Accessible Rooms

Hotels must provide at least one room specifically designed for differently abled guests. The room should include:

- Suitable low-height furniture
- Low peephole and clothes hangers
- Audible and visual (blinking light) alarm system
- Accessible bathroom with proper fittings

### Ramps and Access

- Ramps with anti-slip surfaces must be provided at entrances.
- Minimum door width: 1 meter to ensure wheelchair access.
- Free accessibility must be ensured in all public areas and at least one restaurant in 5-Star and 5-Star Deluxe hotels.

### Accessible Public Restrooms

- Must include a minimum door width of 1 meter
- Must be wheelchair accessible
- Include a low-height urinal (maximum 24”) with grab bars

## SAFETY AND FIRE PRECAUTIONS

### Fire Exit Signage

- Fire exit signs must be installed on all guest floors
- Must be connected to emergency or backup power
- This is a necessary (N) requirement

### Smoke Detectors

- Smoke detectors must be installed in all rooms
- Can be battery-operated

**Fire and Emergency Notices**

- Fire safety instructions and emergency procedures must be displayed behind the room door

**Window and curtain requirements**

- All guest room windows must have opaque curtains or screening
- Blackout curtains are mandatory in 4-Star, 5-Star, and 5-Star Deluxe hotels

**Water supply**

- Hotels must provide hot and cold running water, available 24 hours a day

## BALCONY

**"Balcony"** means the horizontal projection, including a hand rail, or balustrade to serve as passage or sitting out place.

5.2(a) Balcony projection may be permitted upto maximum 1.2 meters width only within 3 meters or more wide margins.

(b) Balcony may be permitted on ground floor provided margins to be left is 3 meters or more.

5.(15) a Balcony projection may be permitted upto maximum 1.2 mtrs. width only within 3 meters or more wide margins.

(b) Balcony may be permitted on ground floor provided margins to be left area 3 meters or more.

## PLINTH

The plinth height should not be less than 45cm.

## WIDTH OF LAY OUT ROAD

**For Industrial and commercial Development :**

| Road length | Width of roads |
|---|---|
| Up to 150 mtrs. | 9.0 mtrs. |
| Above 150 mtrs. & uptot 300 mtrs. | 12.0 mtrs. |
| Above 300 mtrs. & upto 1000 mtrs. | 14.0 mtrs. |
| Above 1000 mtrs. | 20.0 mtrs. |

6(2) The shape of the plot, the junction of the roads curves at the corners shall be designed as directed by GIDC.

6(3) In case of Termination of internal road or roads. 13.5 mtr. diameter turning circle or 12 mtrs. turning T shal be enfored.

6(4) There shall be minimum 4.5 mtr. distance between two detached structures open to sky in caso of residential and industrial development and 6 mtr. cleart distance between two detached structure. open to sky in case of commercial development.

## FLOOR SPACE INDEX (FSI)

9(1) For residetial and industrial development, the maximum permissible floor space index (FSI) of a building unit shall be 1.6 for law rise building. Maximum built up area on any floor for law rise building shall be 50% of the area of building unit for industrial and 40% for residential and commercial purpose. For commercial development, the maximum permissible floor space index for low rise buiding shall be 1.6.

9(2) Height of Building :- The maximum height shall not be more than 13. mtrs, for building with solid plinth and 15 mtrs. for building on stilts clear from the plot level to the top of the building. In case of building for mdustrial purpose, height of more than 13 meters may be permitted of required for industrial purpose and approved by Factory Inspector.

## ROAD SIDE MARGINS

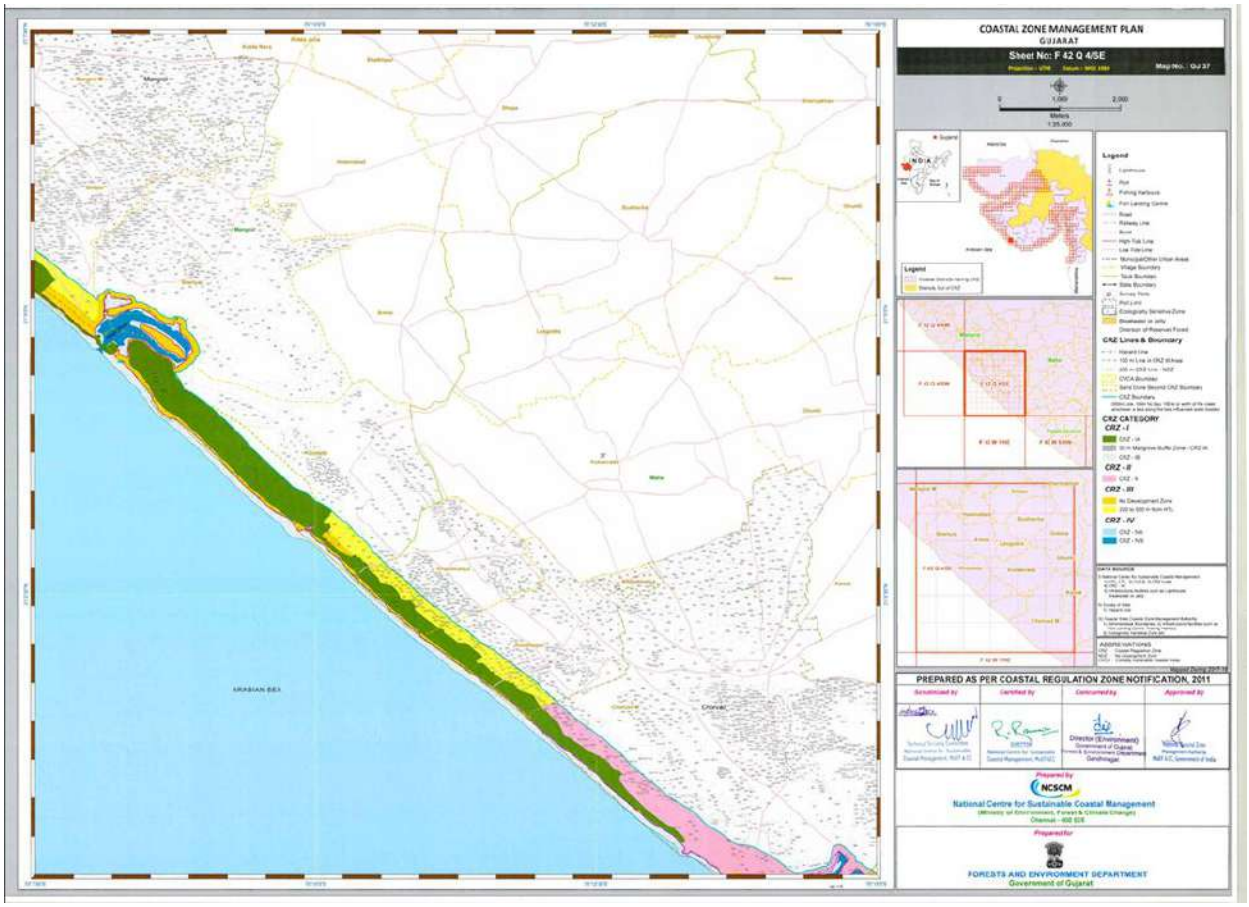
Marginal distance between two detached structures

| | |
|---|---|
| For residential development | 4.5 mtr. |
| For industrial development | 4.5 mtr. |
| For commercial development | 6.0 mtr. |

## TREE PLANTATION

(i) Building unit having 1000 sq. mtrs. and more area at the rate of 3 trees for every 200 sq. mtrs. of building unit, for all uses, shall have to be planted on the site plan/layout plan and also has to be maintained the same.

## COASTAL ZONE MANAGEMENT PLAN




Category-II (CRZ-II) :

The areas that have already been developed upto or close to the shore-line. For this purpose, "developed area" is referred to as that area within the municipal limits or in other legally designated urban areas which is already substantially built up and which has been provided with drainage and approach roads and other infrastructural facilities, such as water supply and sewerage mains.

CRZ-II

(i) Buildings shall be permitted neither on the seaward side of the existing road (or roads proposed in the approved Coastal Zone Management Plan of the area) nor on seaward side of existing authorised structures. Buildings permitted on the landward side of the existing and proposed roads/existing authorised structures shall be subject to the existing local Town and Country Planning Regulations including the existing norms of FSI/FAR.

(ii) Reconstruction of the authorised buildings to be permitted subject with the existing FSI/FAR norms and without change in the existing use.

(iii) The design and construction of buildings shall be consistent with the surrounding landscape and local architectural style.

**COMPOUND WALL**

22(1) Compound Wall : The height of compound wall shall not exceed 2 mtrs. from road level and where height exceeding the above is provided spacial approval of Managing Director GIDC shall be obtained.

## HEIGHT OF FLOOR

17(1) The minimum height of floors in a building measured from floor finish to bottom of the lowest structural member at any point shall be 2.8 mtrs. for residential development and 3 mtrs. for commercial development.

17(2) For dining space, verandah, bath room, corridor, puja room, coal room, passage, stair cabin and pump room the minimum height shall be 2 mtrs.

17(3) The maximum floor height shall not exceed 3.6 mtr.s for residential development, 4 mtrs. for industrial development and 3.60 mtrs. for commercial development. Also refer section 22. But this limit on height may be relaxed for industrial structures if required by industrial process subject to the fire fighting provision being made as per national building code in 17(4) the loft at a minimum height of 2 mtrs. not exceeding 1/ 4th of the area of room may be allowed in any room in residential development. In

## PARKING

| | Type of Use | Parking space required | Remarks. |
|---|---|---|---|
| 2. | Cinema theater, Public assembly hall, auditorium, stadium etc. | 1 sq.mtr. per seat. | 50% of the total parking space requirements shall be reserved for cars. |
| 3. | Commercial and business establishments including business office, bank, hostel, guest house, restaurant, institutional building and health facilities including hospital and nursing homes etc. | 30% of maximum permissible FSI. Note: I) The parking space so required shall be provided excluding required marginal space and built up area with solid plinth subject to other regulation, 2)20% of the parking space required at the ground level shall be exclusively earmarked for visitors. | 50% of the total parking space requirements shall be reserved for cars. |
| 4. | Community buildings such as community hall/marriage hall/community wadi/recreational club/and religious building, party not, club house etc. | 50% of Building Unit. | 50% of the total parking space requirements shall be reserved for cars. |

Parking reserved to the visitors shall be provided on ground level only.

21(2) The parking layout shall fulfill the following conditions, namely:-

(i) The minimum width of access to the street from parking space shall be 3.0 meters.

(ii) The car parking space shall have two independent accesses leading to street if its area capacity excees 300 sq.mtrs.

(iii) If the parking space is not provide at street level, the gradient of ram pleading to parking space shall not be more than 1 meter over a horizontal distance of 7 meters.

(iv) Clear heading of 2.8 mts shall be provided on every access leading to parking space and at any point in parking

## STAIR, LOBBIES & CORRIDORS

In case residential commercial and in public building the width of lobbies or crorridors in a building unit shall be as under.

(i) Minimum clear width corridors shall be 1 mtr. up to 3 mtr. length and for every additional length of 3 mtrs or part thereof, the width of corridors shall be increased by 15 cms. and upto a maximum of 2.5 mtrs.

(ii) The clear width of common stair shall not be less than 1.2 mtrs. Stair case upto 0.9 mtr. minimum width may be permited in single occupational residential bunglow/ apartment.

(iii) Minimum Stair width for more than six units tenaments on each floor shall be 1.5 mtrs.

(iv) The stair case shall be so located that it shall he within accessible distance of not more than 15 mtr. from any entrance of unit.

(v) Cantilever staircase of width upto 0.9 meters may be permitted in minimum 3 meters width margins in residential building.

## VENTILATION

20(1) Every room in residential building should be constructed such that the same shall have for the purpose of ventilation.

- A window or windows and/or ventilators clear of such frames, opening directly into an interior or exterior open air space or into an open verandah or gallery abutting on such open air spaces having an opening of not less than 1/10th of floor area of the room or an aggregate opening of door opening on outside open space. windows and ventilations of not less than 1/7th of the floor area of the room or kitchen.

## RAINWATER HARVESTING SYSTEM

Percolating well and Rainwater Harvesting System·

For the area of building unit above 500 sq.mtr. and up to 1500 sq.mtr., the owner/developer shall carryout water harvesting system as specified by the authority.

In case where the area of building unit exceeds 1500 sq.mtr. and upto 4000 sq.mtr. owner/developer has to provide/construct percolating well with rain water harvesting system in building unit and at the rate of one percolating well for every 4000 sq.mtr. or part thereof building unit.

(I) Conservation and Harvesting of Rain Water in Building:

Having Plinth built up area of 750 sq. mtrs. or more, every such building shall be provided with required facilities and infrastructure for conservation and harvesting of rain water viz;

(ii) Percolation Pits:

The ground surface around the building shall have percolation pit or bore as recommended by competent authority within the building site, or bore recharge. Such pits shall be filled with small pebbles or brick jelly or river sand and covered with perforated concrete slabs.

(iii) Terrace Water Collection:

The terrace may be connected to a sump or well bore through a filtering tank by PVC pipe as recommended by Competent Authority. A valve system shall be incorporated to enable the first part of the rain water collected to be discharged out to the solid if it is dirty.

(iv) Open ground:

(i) whenever there is open ground a portion of top solid should be removed and replaced with river sand to allow slow percolation of rain water.

(ii) Any other methods proved to be effective in conservation and harvesting of rain water may be adopted in each and every construction taken up.

## 3.4.1 GENERAL DEVELOPMENT CONTROL REGULATIONS

**PLINTH:**

Buildings are permitted to have a hollow plinth at the ground level, with a maximum clear height of 3.5 metres and a minimum of 0.30 metres from the finished ground level to the finished first floor level.

**CLEARANCE HEIGHT:**

- All habitable spaces must have a minimum height of 2.9 metres between finished floor levels.
- Circulation and service spaces (e.g., verandahs, bathrooms, passages, stair cabins, store rooms) must have a minimum clear height of 2.1 metres.
- Basements used exclusively for parking must maintain a minimum clear height of 2.8 metres and a maximum of 4.5 metres, though greater height may be allowed for mechanical parking systems.
- Hollow plinths for parking must have a maximum clear height of 3.5 metres.

**MEZZANINE AND LOFT:**

- Mezzanine floors are permitted with a minimum clear height of 2.1 metres and an area not exceeding 30% of the enclosed space. Lofts, with a maximum height of 1.2 metres, are also permitted under similar conditions.

**RAMPS:**

- Vehicular Ramps: For cars, a minimum ramp width of 3.0 metres and a minimum inner curve radius of 3.0 metres are specified. For trucks, these are 6.0 metres and 4.0 metres respectively. The maximum slope of any ramp is 1:7. A level platform of at least 4.5 metres in length is required at the end of ramps at ground and basement levels. A minimum clear height of 2.6 metres must be maintained throughout.

**STAIRCASES:**

- The dimensions (minimum flight width, tread, and riser) for staircases depend on the building's use and height. Escape routes leading to basements must have the same width as those used for exit and adhere to Fire Prevention and Life Safety Measure Regulations–2016.

**RAILINGS:**

- A parapet/railing of at least 1.15 metres in height from the finished floor level is required at all accessible edges, such as roof edges, staircases, terraces, and balconies.

**PAVING:**

- A minimum of 50% of the total open space (including marginal open spaces and common plots) in a building unit can be paved, with the remainder designed for rainwater recharge.

**ACCESS PATH:**

- The access path from the building unit entry to the building entry or plinth must have a minimum width of 1.8 metres with one user curve. For people with disability, the ramped path must incorporate guiding tiles and materials (conspicuously different in colour, material, or brightness to adjoining ground surfaces) and have a non-slip surface traverseable by a wheelchair user.

**DOOR REQUIREMENTS:**

- For internal doors of non-detached/semi-detached dwellings, at least one entrance must be accessible by people with a disability. The clear opening of the entrance door must be 900mm, with a level difference at the threshold not exceeding 12mm. Door handles and locks should be located between 900–1000mm above the floor.

**VENTILATION:**

- All habitable rooms require adequate ventilation from open or semi-open spaces (minimum 1/10th of the floor area), with aggregate openings of at least 1/7th of the room's floor area. Windows should compensate for any deficiency. Basements and all bathrooms/water closets also require adequate ventilation.

**AIR-CONDITIONING:**

- Air-conditioning in common areas like lobby, restaurants and verandahs, particularly those open to nature, may not be mandatory for nature-oriented hotels and resorts.

## 3.4.2 PARKING

**PARKING STANDARDS AND REQUIREMENTS**

**Cars:**

- Minimum Dimension: Each car parking space must have a minimum dimension of 2.5 metres × 5.0 metres.

- Access/Exit Lanes: Parking spaces should be connected to the street via an access/exit lane. The minimum width for a single-sided parking lane is 3 metres, while for double-sided parking, it is 6.6 metres.

**Two-Wheelers:**

- Minimum Dimension: Each two-wheeler parking space must have a minimum dimension of 0.90 metres × 2.0 metres.
- Access/Exit Lanes: The minimum width of the access/exit lane connecting to the street is 2.0 metres.
- Clear Height: A minimum clear height of 2.6 metres must be maintained at all points.

**Trucks:**

- Minimum Dimension: When truck parking is required, each space must have a minimum dimension of 4.0 metres × 10.0 metres.
- Access/Exit Lanes: The minimum width of the access/exit lane is 6.0 metres.

**Parking for People with Disability:**

- Mandatory Requirement: Parking for people with disability is required for all buildings, societies except detached and semi-detached dwelling units.
- Number of Spaces: A minimum of two accessible car parking spaces must be provided for every 25 car parking spaces or less.
- Bay and Transfer Lane: The space must have a minimum bay width of 3.6 metres to the side transfer lane, which can be shared by two successive parking bays.
- Location: Accessible parking bays must be located within 30 metres from the main building entrance.

**Basement Parking:**

- Basement: Basements can be exclusively used for parking. They must have a minimum clear height of 2.8 metres and a maximum of 4.5 metres, though greater height may be allowed for mechanical parking systems. If a basement is used for utilities or services, it must meet all relevant building code standards.
- Public and Private Garages: The regulations define both private garages (for parking) and public garages (operated for gain, for repairing, servicing, hiring, selling, or exhibiting vehicles).

**Mixed Development:**

- Mixed Development: In mixed-use developments, loading and unloading spaces are required as part of the application process.

    a) One space of 3.5 metres × 7.5 metres must be provided for every 1000 sq m of carpet area or part thereof.

    b) Ramp Widths: Ramps leading to loading and unloading spaces must have a minimum width of 6.0 metres and can also be used for general parking access.

    c) Location: These spaces are permitted on the ground level or in the first basement and are considered part of the overall parking area.

**Environmental Management:**

- Rainwater Harvesting: Mandatory for all buildings with ground coverage of 80 sq.mt and above, with specific systems (percolation pit/bore recharge or percolating well) depending on the building unit area.
- Greywater Recycling: Mandatory for "Hospitality: Hotels, Lodges, Guest houses" with a built-up area exceeding 10,000 sq.mt. This includes provisions for a recycling plant, separate plumbing, and the use of treated water for non-potable purposes (e.g., toilet flushing, gardening). The recycled water quality must conform to non-potable standards and be tested every six months.
- Solar Water Heating System: Mandatory for "Hospitality: Hotels, Lodges, Guest houses" with a built-up area exceeding 2,000 sq.mt.
- Tree Plantation: Building units larger than 100 sq.mt must provide a minimum of three trees for every 200 sq.mt area or part thereof. Trees should be shade-giving and must not obstruct fire fighting vehicles. A tree plantation deposit may be required

## 3.5 INDIAN NATIONAL TRUST FOR ART AND CULTURAL HERITAGE (INTACH)

### CONSERVATION OBJECTIVES

**Adaptive Reuse**

The re-use of historic buildings and neighbourhoods is economically sensible. It is an effective strategy to conserve architectural heritage, particularly by using traditional craftspeople in the process. Such re-use distinguishes between preservation as an ideal on the one hand and, on the other, the goal to prolong the useful life of architectural heritage by retaining as much (and not necessarily, all) of the surviving evidence as a vestigial presence.

Priority must be accorded to retaining the continuity of original functions. Any new use must be introduced only after studying its effect on the local context and must conform to the carrying capacity and vulnerability of the architectural heritage. All changes to the original fabric should be preceded and followed by comprehensive documentation. Additions and alterations must respect the

coherence of the whole, and must, to the extent possible, engage traditional materials, skills and knowledge in the process.

When it becomes necessary to modernise and comprehensively alter the original internal functional characteristics of the building or site, its external image must be retained. At the outset, the local community must be made aware of the changes envisaged and explained the benefits to be derived.

**Restoration/ Replication/ Rebuilding**

Restoration is an appropriate conservation strategy to reinstate the integrity or complete the fractured 'whole' of the architectural heritage/ site. It must aim to convey the meaning of the heritage in the most effective manner. It may include reassembling of displaced and dismembered components of the structure and conjectural building or replacement of missing or severely deteriorated parts of the fabric. Invariably, restoration work must be preceded and followed by comprehensive documentation in order to base interventions on informed understanding of the resource and its context, and in conformity with contemporary practices of local craftspeople.

In consonance with traditional ideals, replication can be accepted as an appropriate strategy not only to conserve unprotected historic buildings, but especially if such replication encourages historic ways of building.

At the urban level, the objective of rebuilding historic structures should be to enhance the visual and experiential quality of the built environment, thereby providing a local distinctiveness to contest the homogenising influence of globalisation.

In addition, reconstruction/ rebuilding can provide the impetus to develop a parallel market for local buildings materials and new opportunities for the use of alternative systems of building.

Reconstruction based on minimal physical evidence is appropriate where it is supported by the knowledge of local craftspeople, including folklore, beliefs, myths and legends, rituals, customs, oral traditions, etc. The objective of this practice must be to interpret the original meanings of the resource in the contemporary context and reinforce its bond with society.

**Employment generation**

Conservation strategy must focus on the potential for employing local raj mistris, labour and materials because this will prolong the economic viability of traditional ways of building. In conditions of resource scarcity, the use of architectural heritage can provide an alternate and more economic strategy to meet contemporary needs as well.

**Local material and traditional technology**

The use of local materials and traditional technologies must invariably be preferred. Their choice must be based on the availability of traditional knowledge systems. Modern substitutes should be considered only after their use is proven efficient and judicious and must not compromise the integrity and continuity of local building traditions.

It is necessary to recognise that the use of certain traditional building materials may be inadvisable on account of the damage this can cause to the natural ecological systems. Thus, the use of shell lime in coastal areas and wood generally may need to be judicially substituted with alternate materials.

**Integrated conservation**

Conservation of architectural heritage and sites must be integrated with the social and economic aspirations of society. Conservation-oriented development must be the preferred strategy for social and economic progress. This necessitates the formation of multi-disciplinary teams to undertake integrated conservation projects. Since social aspirations are diverse and often at odds with each other, the conservation team must include social workers to facilitate dialogue and decision-making.

**Sustainability**

The objective of conservation should be to sustain the building and/or the traditional skill and knowledge system of building. In this context, continuity must be seen as evolving over time. The test of its validity must be the positive contribution it makes to the quality of life of the local community.

**Selection criteria**

Although interrelated, the following three key attributes will determine whether a property is worthy of listing:

- Historic significance
- Historic integrity
- Historic context

One or more of these attributes need to be present in a building to make it worthy of listing.

**Historic significance**

Historic significance refers to the importance of a property to the history, architecture, archaeology, engineering or culture of a community, region or nation. In selecting a building, particular attention should be paid to the following:

- Association with events, activities or patterns.
- Association with important persons, including ordinary people who have made significant contribution to India's living heritage.
- Distinctive physical characteristics of design, construction or form, representing the work of a master craftsperson.

- Potential to yield important information, such as socio-economic history. Railway stations, town halls, clubs, markets, water works etc. are examples of such sites
- Technological innovation represented. For example: dams, bridges, etc.
- Town planning features such as squares, streets, avenues, etc. For example: Rajpath in New Delhi.

**Historic integrity**

Historic integrity refers to the property's historic identity, evidenced by the survival of physical characteristics and significant elements that existed during the property's historic period. The "original" identity includes changes and additions over historic time.

Historic integrity enables a property to illustrate significant aspects of its past. Not only must a property resemble its historic appearance, but it must also retain original materials, design features and aspects of construction dating from the period when it attained significance.

Historic integrity also relates to intangible values such as the building or site's cultural associations and traditions.

**Historic context**

Historic context refers to information about historic trends and properties grouped by an important theme in the history of a community, region or nation during a particular period of time.

Knowledge of historic context enables the public to understand a historic property as a product of its time.

**Precincts or properties with multiple owners**

A historic building complex may comprise of numerous ancillary structures besides the main structure. Each structure of the complex must be documented on individual proformas. For example, Jahangir Mahal, Diwan-i-Aam, Diwan-i-Khas and Moti Masjid all form part of the Agra Fort complex but are also individual buildings in their own right and, as such, must be documented individually.

**Methodology**

The determination of significance is the key component of methodology. All conservation decisions follow from the level of significance that is assigned to a building or site.

Listing work is comprised of two phases:

- Background research
- Field work

**Background research**

Before commencing actual fieldwork, the lister should gather basic information from various sources including gazetteers, travel books and other specialised books containing information about the architecture and history of the area to be listed and documented. This work could be done in university libraries, the ASI, the National Museum, the Central Secretariat, the respective State Secretariats, Institutes of Advanced Studies and Schools of Planning andArchitecture. In a given area, local experts and university scholars are resource persons who could also provide required guidance and help.

Background research helps to ensure that no important structure or representative style of building is left out of the list. It enables the identification of historic areas, historic development of the area, significant events in the area and important persons associated with the area. In some well-documented areas, distinctive physical characteristics of design, construction or form of building resource can also be identified.

**Field work**

First and foremost it is necessary to carry out a field survey to identify the buildings and the areas to be listed. Following this, a detailed physical inspection of the property and dialogues with appropriate local people such as the owners of the property, area residents, local panchayats, etc. need to be undertaken. By physically inspecting the property the lister can gather information regarding the physical fabric of the building, such as physical characteristics, period of construction, etc. that need to be cross-checked with the literature survey. By conducting a dialogue with area residents, the lister can determine the changes to the property over time, ownership details, historic function and activities, association with events and persons and the role of the property in local, regional or national history.

When gathering information, the lister must be mindful of proforma requirements (Article 5.12). The proforma is, first of all, a record of the property at the time of listing and consists of current name; historic or other name(s), location, approach and accessibility, current ownership, historic usage, and present use.

Claims of historic significance and integrity should be supported with descriptions of special features, state of preservation, relevant dates, etc.

**Mapping of vernacular architecture and historic settlements**

The major shortcoming of the current list of legally protected architectural heritage is that it does not recognise vernacular architecture and historic settlements as categories of heritage worthy of being conserved. The listing of unprotected architectural heritage and sites must, therefore, include this category. An example of such an inclusive document is INTACH's "Listing of Built Heritage of Delhi" published in 1999.

Sacred sites must be dealt with due sensitivity and knowledge of the local social and cultural imperatives governing their sanctity. Listing must record such characteristics associated with these sites.

**Detailed format for all the structures**

Information for each building or site should be recorded as per INTACH's standard format as described below.

- Each proforma must contain information about listers and reviewers. Listing must be carried out by or under the supervision of experienced conservation architects.
- At least one photograph of the property/ building should be recorded for identification purposes. All significant elements of the property also need to be photographed. All photographs should be properly catalogued.
- A conceptual plan (if available, a measured drawing) should be given for each building/ area listed.
- Any additional information related to or affecting the built heritage of the city/town/region documented and its conservation should be included as appendices, for example: laws and regulations on planning and conservation, etc.
- A glossary should be provided explaining the technical and the special words used must be provided. For example: "Imambara - a shrine/ religious structure of Shia Muslims".
- A bibliography of all books, publications, articles and unpublished work must be provided. The uniform format should be followed throughout.

**Grading**

The primary objective of listing is to record extant architectural heritage and sites. But the outcome of this process should invariably be to grade the listed heritage into a hierarchical series. This process must be undertaken in a rigorous and transparent manner by a multi-disciplinary team of experts whose recommendations should be available for public scrutiny. The importance of this process cannot be underestimated because its results determine subsequent conservation decisions. Such hierarchical categorisation facilitates the prioritisation of decisions relating to the future of architectural heritage and sites.
This Charter recommends that buildings and sites be classified as Grade I*, I, II and III in descending order of importance.

| Grade-I | Grade-I | Grade-I |
|---|---|---|
| **(A) Definition :**<br>Heritage Grade-I comprises buildings and precincts of national or historic importance, embodying excellence in architectural style, design, technology and material usage and/or aesthetics; they may be associated with a great historic event, personality, movement or institution. They have been and are the prime landmarks of the region. All natural sites shall fall within Grade-I. | Heritage Grade-II (A&B) comprises of buildings and precincts of regional or local importance possessing special architectural or aesthetic merit, or cultural or historical significance though of a lower scale than Heritage Grade-I. They are local landmarks, which contribute to the image and identity of the region. They may be the work of master craftsmen or may be models of proportion and ornamentation or designed to suit a particular climate. | Heritage Grade-III comprises building and precincts of importance for townscape; that evoke architectural, aesthetic, or sociological interest through not as much as in Heritage Grade-II. These contribute to determine the character of the locality and can be representative of lifestyle of a particular community or region and may also be distinguished by setting , or special character of the façade and uniformity of height, width and scale. |
| **(B) Objective:**<br>Heritage Grade-I richly deserves careful preservation. | Heritage Grade-II deserves intelligent conservation | Heritage Grade-II deserves intelligent conservation (though on a lesser scale than Grade-II and special protection to unique features and attributes). |

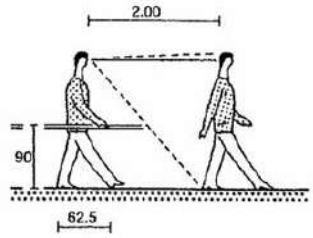
| | | |
|---|---|---|
| **(C) Scope for Changes:**<br>No interventions be permitted either on exterior or interior of the heritage building or natural features unless it is necessary in the interest of strengthening and prolonging the life of the buildings/or precincts or any part or features thereof. For this purpose, absolutely essential and minimum changes would be allowed and they must be in conformity with the original. | Grade-II(A) : Internal changes and adaptive re-use may by and large be allowed but subject to strict scrutiny. Care would be taken to ensure the conservation of all special aspects for which it is included in Heritage Grade-II.<br>Grade-II (B) : In addition to the above, extension or additional building in the same plot or compound could in certain circumstances, be allowed provided that the extension / additional building is in harmony with (and does not detract from) the existing heritage building(s) or precincts especially in terms of height and façade. | |
| **(D) Procedure:**<br>Development permission for the changes would be given on the advice of the Heritage Conservation Committee. | Development permission for the changes would be given on the advice of the Heritage Conservation Committee. | Development permission for changes would be given on the advice of the Heritage Conservation Committee. |
| **(E) Vistas / Surrounding Development :**<br>All development in areas surrounding Heritage Grade-I shall be regulated and controlled, ensuring that it does not mar the grandeur of, or view from Heritage Grade-I. | All development in areas surrounding Heritage Grade-II shall be regulated and controlled, ensuring that it does not mar the grandeur of, or view from Heritage Grade-II | All development in areas surrounding Heritage Grade-III shall be regulated and controlled, ensuring that it does not mar the grandeur of, or view from Heritage Grade-III. |

Buildings and sites classified as Grade I*, I and II should be conserved in accordance with the provisions of official and legal manuals of practice (for example, ASI's Works Manual). Some Grade II buildings, however, and all other listed buildings and sites, i.e. Grade III, may be conserved in accordance with principles enunciated in this Charter (Article 2.6). The decision to apply the principles enunciated in this Charter to Grade II buildings must invariably be based on the concurrence of the Advisory Committees of INTACH (Article 7.2.5).

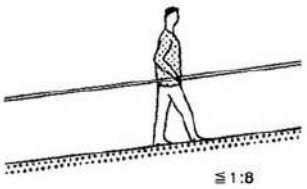
The process of listing should be constantly upgraded and the list updated in keeping with the availability of fresh information, financial and material resources, advances in technology and developments in the understanding of architectural heritage and its constituents.

## 3.6 NEUFERT ARCHITECTS DATA

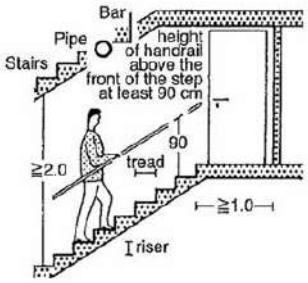
## Stairs



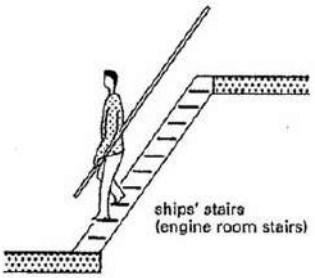

1 Standard stride of an adult on a horizontal surface



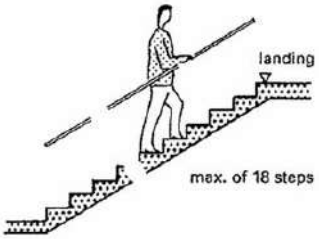

2 On a slope the stride is reduced: a comfortable slope is 1:10–1:8



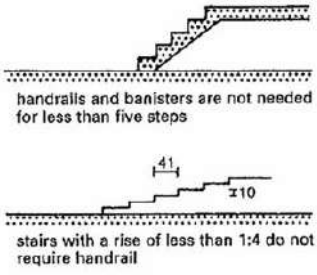

3 Good standard riser to tread ratio 17/29, stride 2 risers + 1 tread = approx. 62.5 cm



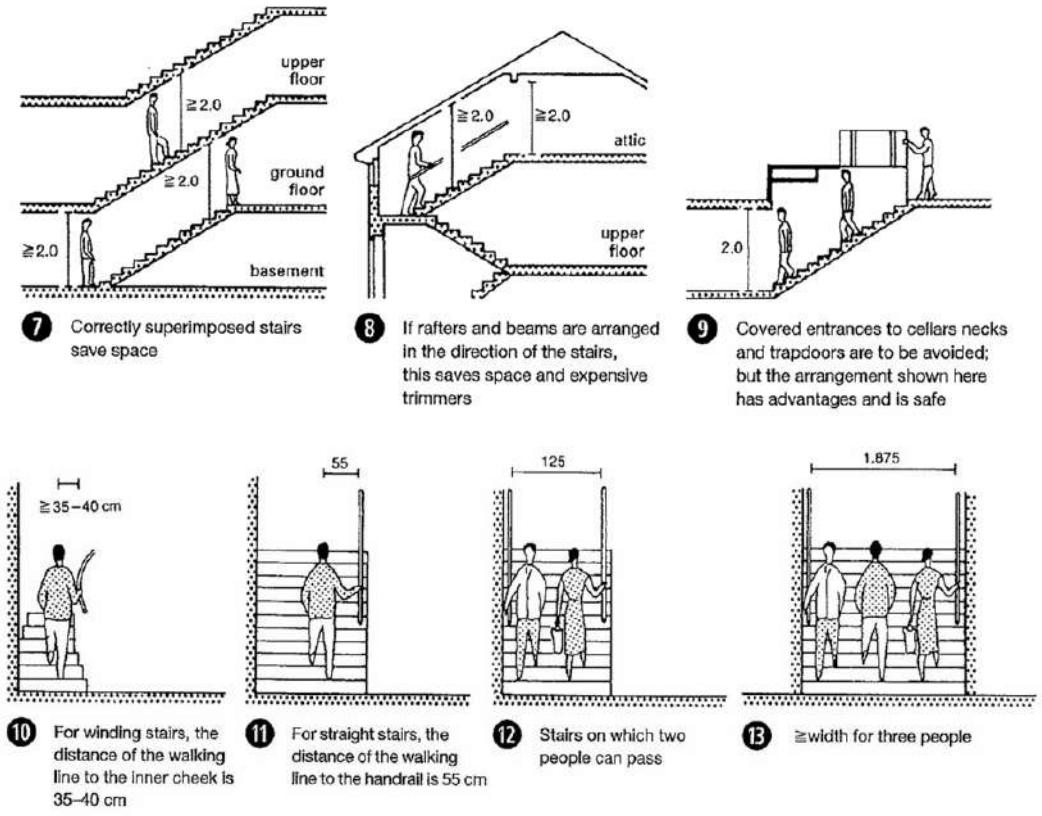

4 Ladder-type stairs with handrail




5 Normal stairs 17/29, landing after max. 18 steps for legally essential stairs. Prestigious-style stairs can climb up to a 4 m storey height without a landing.




6 Stairs without a handrail




## Type of hotels

According to the classification system of the German Hotel and Inn Association (DEHOGA), there are five categories, essentially determined by the room's size and features:

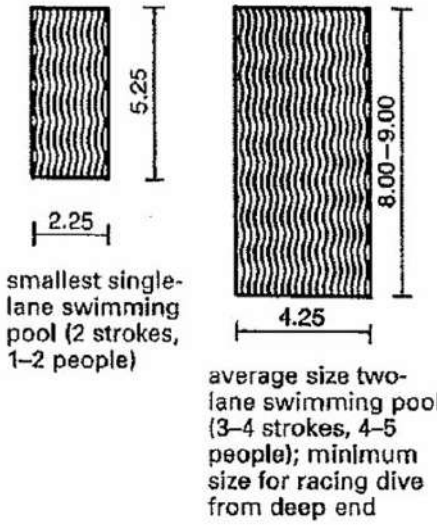
- 1 Star (Tourist): single room 8m2 , double room 12m2 (minimum area for 75% of the hotel rooms, without bathroom), bed, wardrobe, seat, washbasin in the room, reception as a separate area
- Stars (Standard): as before, but single room 12 m2, double room 16 m2 (minimum area for 75% of the hotel rooms, including bathroom and corridor), bathroom in room (for 70% of hotel rooms), seat per bed, colour television (in 70% of the hotel rooms)
- Stars (Comfort): as before, but single room 14 m2, double room 18 m2 (minimum area, see above), bathroom in room (for all rooms in the hotel), telephone, reception area with seating for group, independent reception
- Stars (First Class): as before, but single room 16 m2, double room 22 m2 (minimum area, see above), minibar, armchair/couch with coffee table, lobby with seating and drinks service
- Stars (Luxury): as before, but single room 18m2, double room 26m2, (minimum size, see above), 2% of the hotel rooms as suites (at least two), each with an armchair/sofa per bed, additional washbasin in double rooms and suites, additional colour television in suites, reception lobby.

## Swimming pools

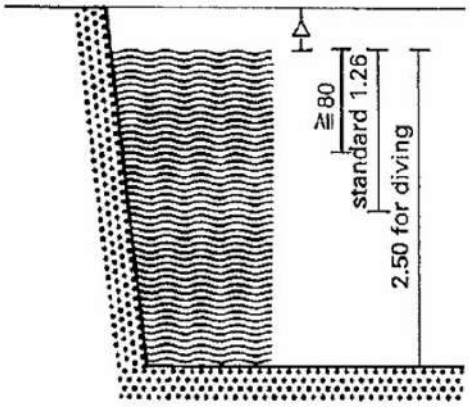
**Size:** Lane width 2.25 m, stroke length approx. 1.50 m, plus body length: 4 strokes = 8 m length. Water depth: chin height for the smallest adult, not the children! Difference between pool depth/ water depth. depends on the type of extractor system.

**Types of pool:**

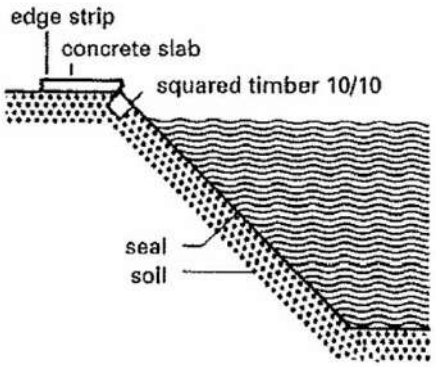
- Normal foil pool (foil = waterproof surface) on masonry-bearing construction, concrete, steel (also above ground) or sunk into ground. Polyester pools, seldom locally produced, mostly with pre fabricated elements, are generally not self-supporting. Lean concrete backfilling is necessary.
- Watertight concrete pool (two-sided in situ concrete, shotcrete with formwork for one side, pre-cast concrete elements); surface mostly ceramic or glass mosaic, occasionally paint (chlorine rubber, cement paint).



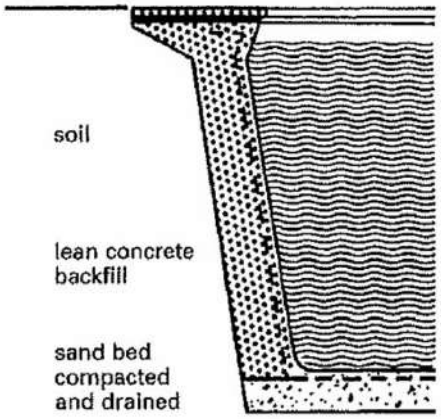

2 Pool sizes



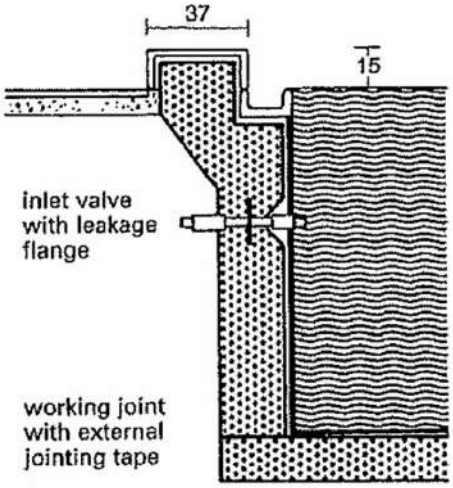

3 Pool depth



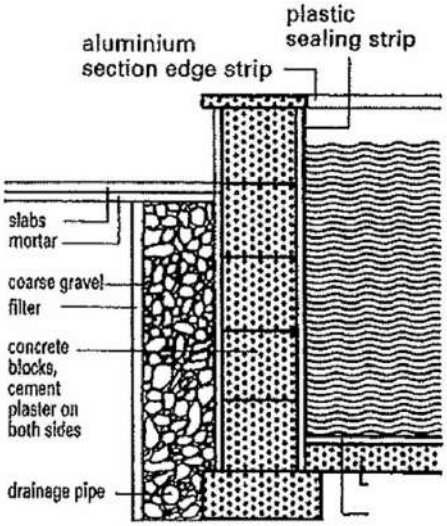

4 Sloping pool with foil; edge formed by timber beam




5 Single-skin prefabricated polyester pool




6 Reinforced concrete pool: simple version with Wiesbaden channel




7 Masonry pool with drainage

| Water | Season | | | Additional months | |
|---|---|---|---|---|---|
| temp. | 4 Months | 5 Months | 6 Months | 5th Month | 6th Month |
| 22°C | 1.25/6.5 | 1.33/7.2 | 1.55/7.8 | 1.65/7.2 | 2.65/7.8 |
| 23°C | 1.50/7.2 | 1.70/7.9 | 2.00/8.5 | 2.50/7.9 | 3.50/8.5 |
| 24°C | 2.08/7.9 | 2.26/8.6 | 2.66/9.2 | 2.98/8.6 | 4.66/9.2 |
| 25°C | 2.60/8.5 | 2.80/9.3 | 3.20/9.8 | 3.60/9.5 | 5.25/9.8 |
| 26°C | 3.50/9.2 | 3.75/10.0 | 4.00/10.5 | 4.75/10.0 | 5.25/10.5 |

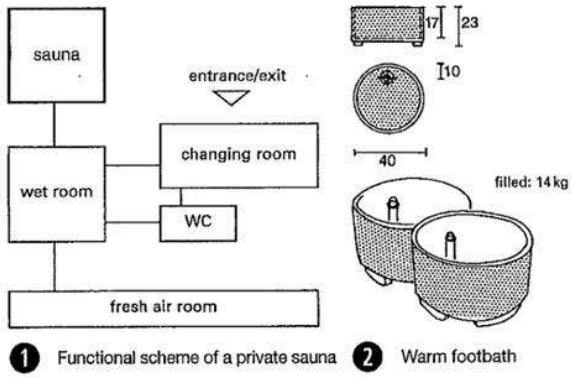
**8** Heat loss of an outdoor pool (average/maximum) in kWh/m²d according to measurements by energy company RWE. Special influences are not considered, e.g. considerable heat loss of public pools (hotel pool etc.) through the use of heated pool water for filter back-flushing (up to 1.5 kW/m²d or 1300 kcal/m²d).

## Spa

Free-standing sauna cabins or facilities (e.g. in the garden) are normally constructed of spruce in log cabin style, and are either self-built or bought pre-fabricated. The log cabins are available in various versions, either as sauna cabins. or also with shower and changing or relaxation room. There are also sauna cabins available as prefabricated or kit elements for installation in existing rooms.

**Sauna stove**: Sauna cabins for installation usually have electric stoves (which require a three-phase supply above a certain size), while log cabin types mostly have solid fuel stoves (which require a chimney).

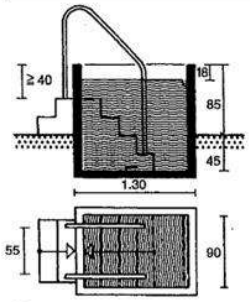
**Plunge pool**-max. depth 1.20 m. An important part of a proper sauna, a (warm) footbath with a seat are required.



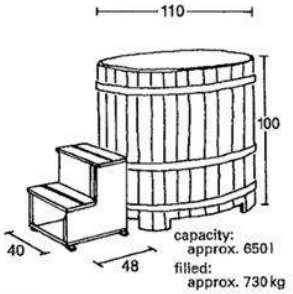
1 Functional scheme of a private sauna



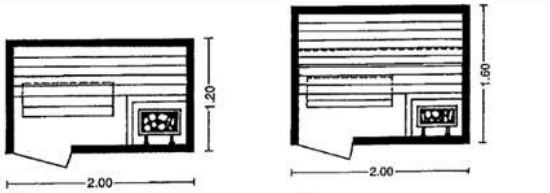
2 Warm footbath



3 Plunge pool

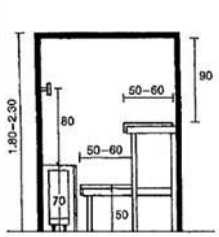


4 Wooden plunge tub

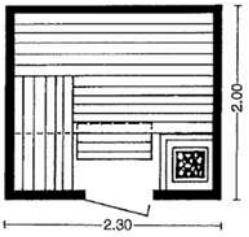



5 Sauna cabin: one person lying or two sitting

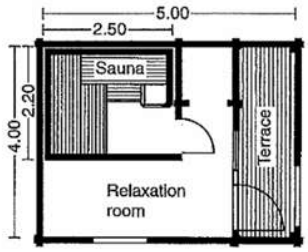
6 Sauna cabin: two people lying or three sitting



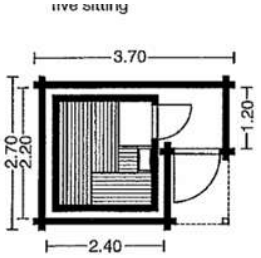

7 Cross-section



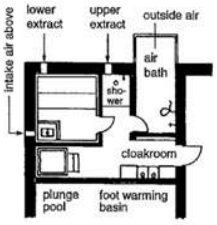

8 Sauna cabin: three people lying or five sitting



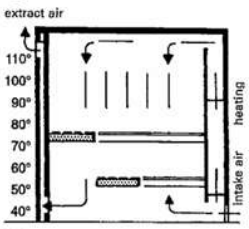

9 Sauna constructed as log cabin




10 Sauna cabin constructed as log cabin

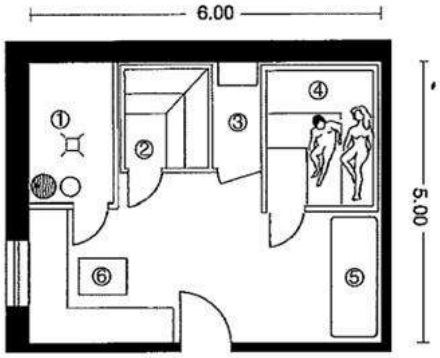



11 House sauna



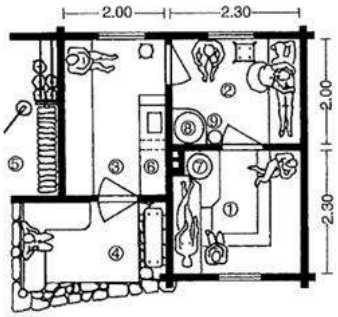

12 Cross-section of sauna with indirect heating (Bemberg)

① Shower
② Steam bath
③ Equipment
④ Sauna
⑤ Sun bench
⑥ Sitting & relaxation corner

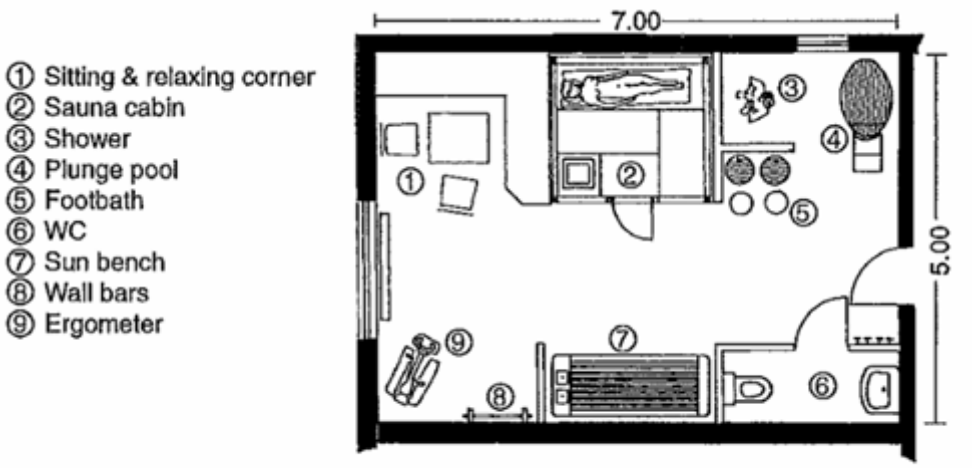



13 Sauna (installed, e.g. in cellar), 30 m², 4–6 people

① Sauna cabin
② Massage & washing room
③ Changing room
④ Veranda
⑤ Wood pile
⑥ Cubboard
⑦ Heating oven
⑧ Water kettle
⑨ Water tub




14 Sauna




⑮ Sauna, 35 m², 4–6 people, sauna cabin as built-in element

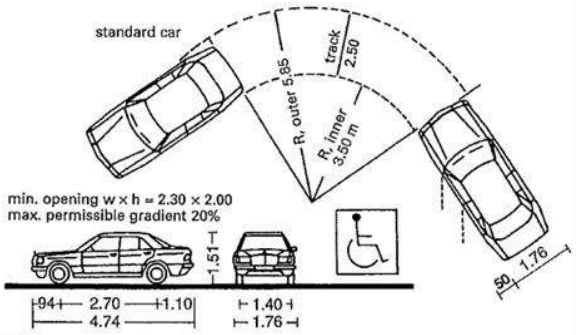
**Parking facility**

Vehicle turning

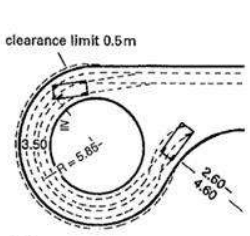
| Type of vehicle | External dimensions | | | | | | |
|---|---|---|---|---|---|---|---|
| | Length | Wheelbase | Overhang length | | Width | Height | External turning circle radius |
| | | | Front | Back | | | |
| | [m] | [m] | [m] | [m] | [m] | [m] | [m] |
| Bicycle | 1.90 | | | | 0.60 | 1.00 | |
| Moped | 1.80 | | | | 0.60 | 1.00 | |
| Motorcycle | 2.20 | | | | 0.70 | 1.00 | |
| Car | 4.74 | 2.70 | 0.94 | 1.10 | 1.76 | 1.51 | 5.85 |
| **HGVs:** | | | | | | | |
| Van/campervan | 6.89 | 3.95 | 0.96 | 1.98 | 2.17 | 2.70 | 7.35 |
| HGV (2 axles) | 9.46 | 5.20 | 1.40 | 2.86 | 2.29 | 3.80 | 9.77 |
| HGV (3 axles)[1] | 10.10 | 5.30[1] | 1.48 | 3.32 | 2.50[4] | 3.80 | 10.05 |
| HGVs with trailer: | 18.71 | | | | | | |
| Towing vehicle (3 axles)[1] | 9.70 | 5.28[1] | 1.50 | 2.92 | 2.50[4] | 4.00 | 10.30 |
| Trailer (2 axles) | 7.45 | 4.84 | 1.35[3] | 1.26 | 2.50 | 4.00 | 10.30 |
| **Articulated HGVs:** | 16.50 | | | | | | |
| Tractor unit (2 axles) | 6.08 | 3.80 | 1.43 | 0.85 | 2.50[4] | 4.00 | 7.90 |
| Semi-trailer (3 axles)[1] | 13.61 | 7.75[1] 1.61 | 4.25 | 2.50 | 4.00 | 7.90 | |
| **Buses:** | | | | | | | |
| Coach, bus | 12.00 | 5.80 | 2.85 | 3.35 | 2.50[4] | 3.70[6] | 10.50 |
| Coach, bus[2] | 13.70 | 6.35[2] | 2.87 | 4.48 | 2.50[4] | 3.70[6] | 11.25 |
| Coach, bus[2] | 14.95 | 6.95[2] | 3.10 | 4.90 | 2.50[4] | 3.70[6] | 11.95 |
| Articulated bus | 18.75 | 5.98/5.99 | 2.65 | 3.37 | 2.50[4] | 2.95 | 11.80 |
| **Refuse collection vehicles:** | | | | | | | |
| 2 axles (2 Mü) | 9.03 | 4.60 | 1.35 | 3.08 | 2.50[4] | 3.55 | 9.40 |
| 3 axles (3 Mü) | 9.90 | 4.77[1] | 1.53 | 3.60 | 2.50[4] | 3.55 | 10.25 |
| 3 axles (3 MüN)[2] | 9.95 | 3.90 | 1.35 | 4.70 | 2.50[4] | 3.55 | 8.60 |
| **Highest values permitted in Germany:** | | | | | | | |
| HGV | 12.00 | | | | | | |
| Trailer | 12.00 | | | | 2.55[4][5] | 4.00[6] | 12.50 |
| HGV with trailer | 18.75 | | | | | | |
| Articulated HGV | 16.50 | | | | | | |
| Articulated bus | 18.00 | | | | | | |

Notes: [1] for vehicles with 3 axles, the rear tandem axle is integrated to a middle axle
[2] for 3-axle vehicles with a trailing axle, the wheelbase corresponds to the distance between the front axle and the forward axle of the rear tandem axle
[3] without tow bar length
[4] without external mirror
[5] additional equipment for air-conditioned HGVs up to 2.60 m
[6] as double-decker bus 4.00 m

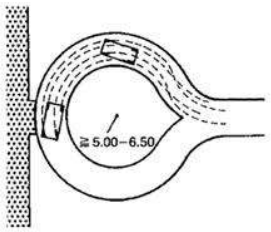
10 Basic vehicle data → p. 397–398




1 Standard car




2 Turning circle of a car




3 Entrance drive, car turning circle radius ≅5–6.50 m

| Type of vehicle | External dimensions | | | | | | |
|---|---|---|---|---|---|---|---|
| | Length | Wheelbase | Overhang length | | Width | Height | External turning circle radius |
| | | | Front | Back | | | |
| | [m] | [m] | [m] | [m] | [m] | [m] | [m] |
| Bicycle | 1.90 | | | | 0.60 | 1.00 | |
| Moped | 1.80 | | | | 0.60 | 1.00 | |
| Motorcycle | 2.20 | | | | 0.70 | 1.00 | |
| Car | 4.74 | 2.70 | 0.94 | 1.10 | 1.76 | 1.51 | 5.85 |
| **HGVs:** | | | | | | | |
| Van/campervan | 6.89 | 3.95 | 0.96 | 1.98 | 2.17 | 2.70 | 7.35 |
| HGV (2 axles) | 9.46 | 5.20 | 1.40 | 2.86 | 2.29 | 3.80 | 9.77 |
| HGV (3 axles)[1] | 10.10 | 5.30[1] | 1.48 | 3.32 | 2.50[4] | 3.80 | 10.05 |
| HGVs with trailer: | 18.71 | | | | | | |
| Towing vehicle (3 axles)[1] | 9.70 | 5.28[1] | 1.50 | 2.92 | 2.50[4] | 4.00 | 10.30 |
| Trailer (2 axles) | 7.45 | 4.84 | 1.35[3] | 1.26 | 2.50 | 4.00 | 10.30 |
| **Articulated HGVs:** | 16.50 | | | | | | |
| Tractor unit (2 axles) | 6.08 | 3.80 | 1.43 | 0.65 | 2.50[4] | 4.00 | 7.90 |
| Semi-trailer (3 axles)[1] | 13.61 | 7.75[1] 1.61 | 4.25 | 2.50 | 4.00 | 7.90 | |
| **Buses:** | | | | | | | |
| Coach, bus | 12.00 | 5.80 | 2.85 | 3.35 | 2.50[4] | 3.70[6] | 10.50 |
| Coach, bus[2] | 13.70 | 6.35[2] | 2.87 | 4.48 | 2.50[4] | 3.70[6] | 11.25 |
| Coach, bus[2] | 14.95 | 6.95[2] | 3.10 | 4.90 | 2.50[4] | 3.70[6] | 11.95 |
| Articulated bus | 18.75 | 5.98/5.99 | 2.65 | 3.37 | 2.50[4] | 2.95 | 11.80 |
| **Refuse collection vehicles:** | | | | | | | |
| 2 axles (2 MÜ) | 9.03 | 4.60 | 1.35 | 3.08 | 2.50[4] | 3.55 | 9.40 |
| 3 axles (3 MÜ) | 9.90 | 4.77[1] | 1.53 | 3.60 | 2.50[4] | 3.55 | 10.25 |
| 3 axles (3 MüN)[2] | 9.95 | 3.90 | 1.35 | 4.70 | 2.50[4] | 3.55 | 8.60 |
| **Highest values permitted in Germany:** | | | | | | | |
| HGV | 12.00 | | | | | | |
| Trailer | 12.00 | | | | 2.55[4][5] | 4.00[6] | 12.50 |
| HGV with trailer | 18.75 | | | | | | |
| Articulated HGV | 16.50 | | | | | | |
| Articulated bus | 18.00 | | | | | | |

Notes: [1] for vehicles with 3 axles, the rear tandem axle is integrated to a middle axle
[2] for 3-axle vehicles with a trailing axle, the wheelbase corresponds to the distance between the front axle and the forward axle of the rear tandem axle
[3] without tow bar length
[4] without external mirror
[5] additional equipment for air-conditioned HGVs up to 2.60 m
[6] as double-decker bus 4.00 m

10 Basic vehicle data → p. 397–398

# CHAPTER 4

## SITE INVENTORY

### OVERVIEW

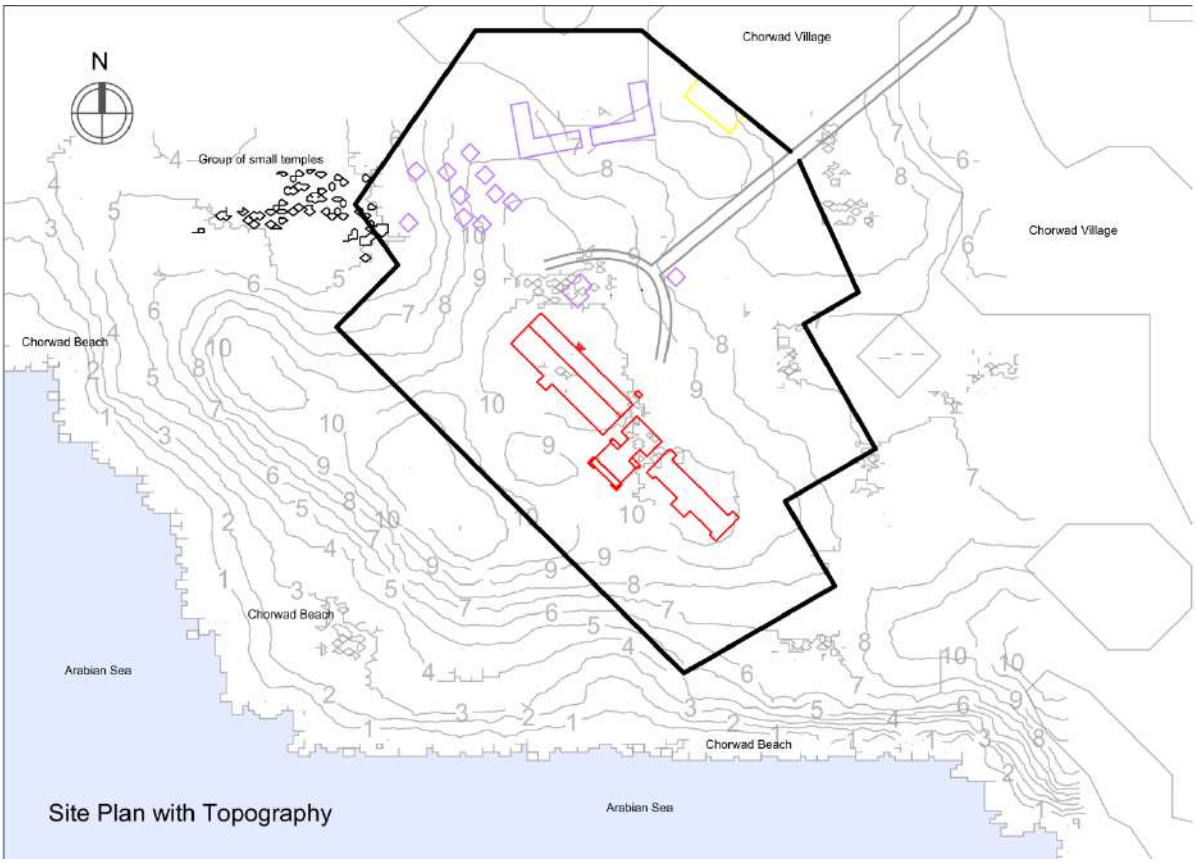
*A site inventory overview is crucial in the planning and design phase of a resort project, providing a comprehensive understanding of the site's characteristics and context. Conducting a thorough site inventory allows for informed decision-making, effective design solutions, and an understanding of how the site interacts with its natural, built, and cultural environment.*



## 4.1 SITE INVENTORY

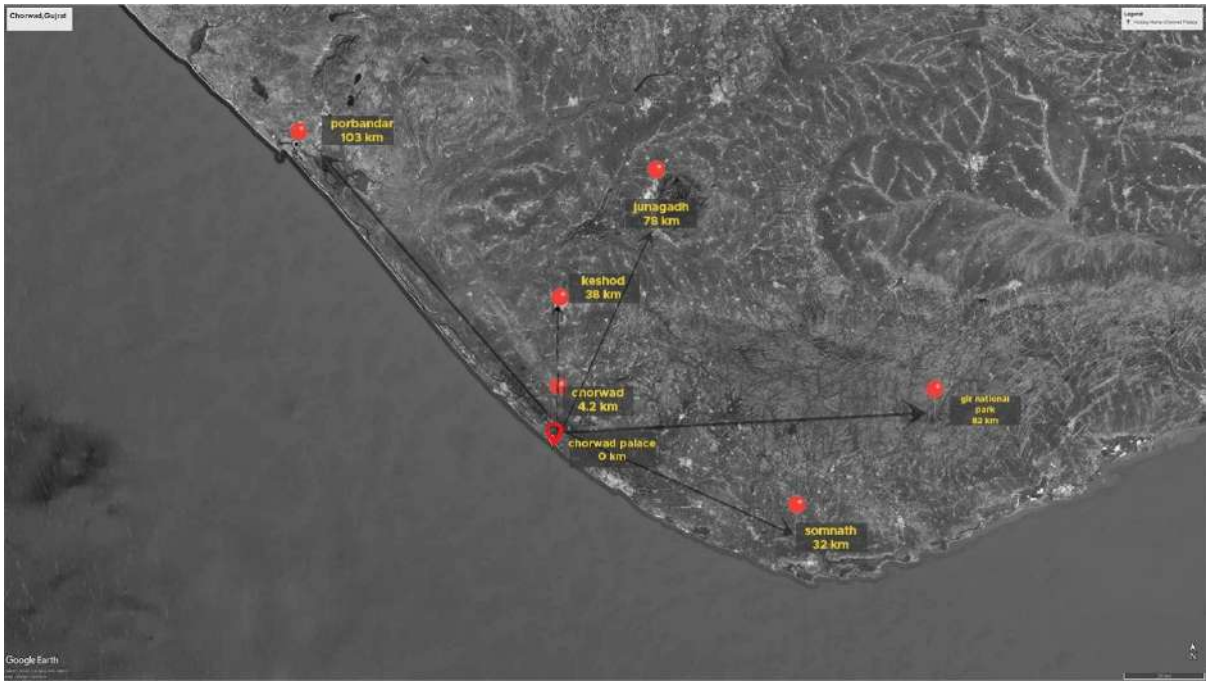



Site Plan




## 1. LOCATION & CONTEXT

**Distance:** Chorwad Beach is about 20–37 km south of Somnath and approximately 20 km from Veraval (Somnath Railway Station)






## 2. NEARBY INFRASTRUCTURE

Nearest rail access is Chorwad Road railway station (~6 km). Airports: Rajkot (~180 km) and Diu/Keshod (~40–110 km); road access via Somnath or Veraval on NH-51







## 3. HISTORICAL & CULTURAL HIGHLIGHTS

Chorwad Palace—often referred to as the Summer Palace or Daria Mahal—was built in 1930 by Nawab Muhammad Mahabat Khanji III, the ruler of Junagadh, as his coastal summer retreat on the shores of the Arabian Sea in Chorwad, Junagadh district, Gujarat. Constructed around 1928–1930, the palace blends Italian, Muslim, and colonial architectural styles, featuring lofty arched windows, balconies, projecting verandas, landscaped gardens and walkways perfect for seaside promenades.



Originally the exclusive pleasure palace of the Nawab and his entourage, complete with facilities to host royal banquets, horse stables, and lavish displays of luxury, the palace later became the central facility of a government-run beach resort developed by the Tourism Corporation of Gujarat Ltd (TCGL) in the 1970s. It was intended as India's only beach palace resort—a singular destination that combined heritage architecture with seaside relaxation.



By the late 2000s, the resort and palace were already described as dilapidated. Reports indicated that the palace porch had collapsed, while precious Belgian chandeliers, Italian furniture, and antique décor were stolen or vandalized. The adjoining TCGL cottages and support facilities, meant to host beach tourists, also became unusable due to decay and lack of upkeep. Even basic infrastructure such

as pathways, gardens, and lighting were left in poor condition, discouraging visitors and creating an image of abandonment.





**DOCUMENTATION OF BEACH RESORT**

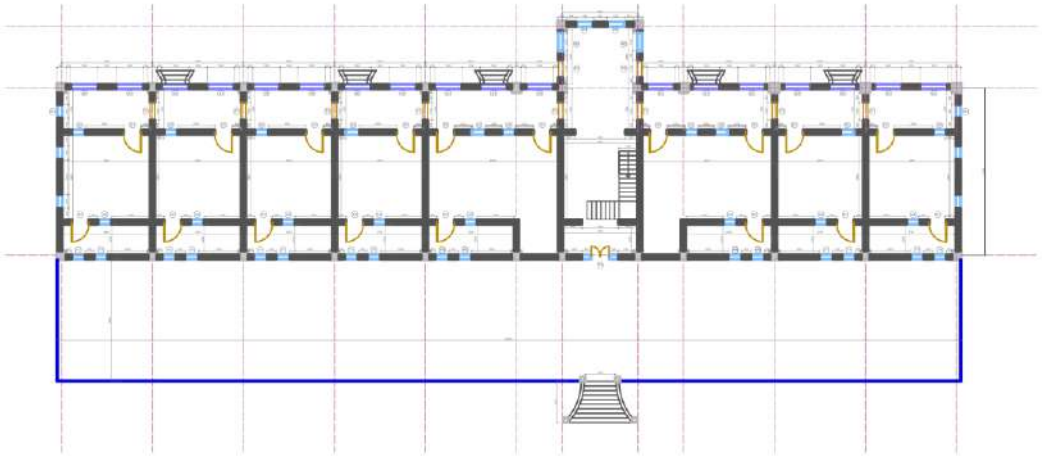


*Figure 1 PLAN OF BEACH RESORT*

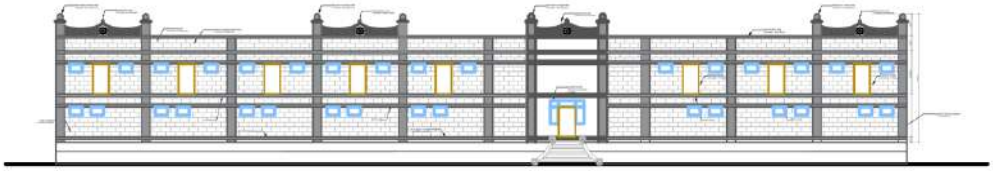


*Figure 2 ELEVATION (FRONT SIDE)*

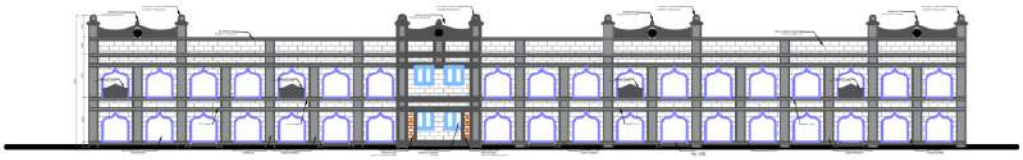


*Figure 3 ELEVATION (BEACH SIDE)*

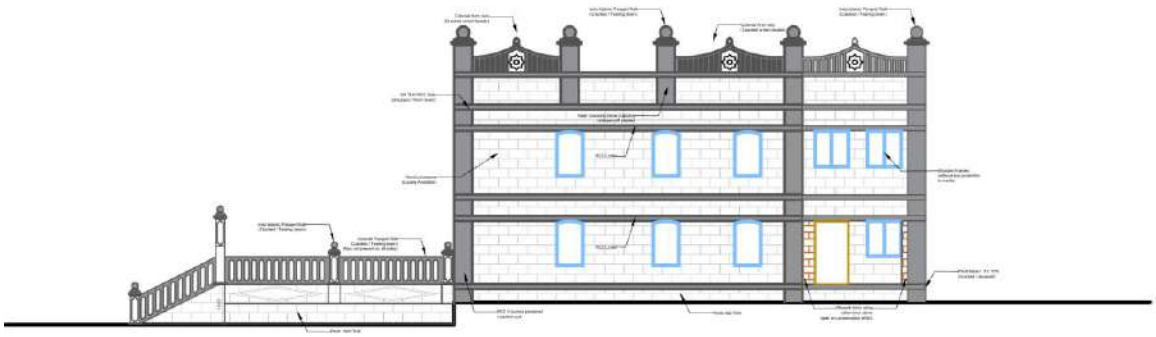


*Figure 4 SECTION OF BEACH RESORT*

**MATERIALS OF CHORWAD PALACE**

A full inventory of materials is assembled from the RFP documents, historical descriptions, and the site photographs. The original structure is primarily stone masonry with lime mortar and plaster (as in other Saurashtra palaces). Key materials include:

- **Stone:** The main walls are hewn from local trap (basalt) or similar volcanic rock; lighter Kaand limestone (a yellow-cream limestone) was used for decorative elements, cornices, and carving
- **Lime mortar & plaster:** Masonry joints and exterior finishes were set with lime-based mortar; surviving surfaces show rough lime plaster typical of period construction.
- **Timber:** Wood beams and joists (now largely collapsed) would have supported floors and roof trusses, as in comparable palaces.
- **Roofing:** The original roof likely had *terra-cotta* tile covering (common in coastal Gujarat). No intact roof survives, but fallen tiles and timber suggest a tiled roof structure.
- **Finishes:** Luxury interiors included marble, as indicated by reports of "marble bathtubs" in Chorwad Palace. Indeed, one source describes the palace's bathrooms as containing marble tubs and high-end decor Modern ceramic floor and wall tiles are visible in ruined bathrooms (Figure 3), but these are later additions. Windows and doors would have had glazed glass with metal or wooden frames and decorative iron grilles, as was customary.
- **Metals & Glass:** Iron grills, hinges, and hardware (typical of Muslim-influenced palaces) and glass (for the large arched windows) were also part of the construction.

These conclusions align with what little documentation exists. The Tender/RFP (2024) emphasizes *restoring* the old palace rather than replacing it, implying all original materials (stone, wood, etc.) should be conserved. In absence of a published materials list, the above summary integrates on-site evidence (photos) with period practice. The key takeaway is that Chorwad Palace was built of basalt masonry with Kaand limestone ornament, bound by lime plaster, and finished inside with marble and tile.





| Aspect | Recommendation |
|---|---|
| **Orientation** | SW-facing views, cross-ventilation NE–SW |
| **Sun Protection** | Deep overhangs, jaalis, shaded courtyards |
| **Ventilation** | Sea breeze harnessing with courtyards & high openings |
| **Materials** | Local stone, RCC frame, lime plaster, terracotta roof tiles |
| **Roofing** | Sloped (30–45°) or flat with drains, cyclone-tied structures |
| **Drainage** | Raised plinths, permeable paving, bioswales |
| **Landscape** | Windbreak trees, shaded trails, water features |
| **Style** | Fusion of Saurashtra heritage + modern eco-luxury |

**4. SWOT ANALYSIS**

| **Strengths** | **Weaknesses** |
|---|---|
| Very tranquil & scenic, ideal for relaxing | Not safe for swimming; drowning risk reported |
| Historic charm vis-a-vis palace & heritage | Minimal on-site infrastructure or amenities |
| Great sunsets/sunrises with natural backdrop | Limited water access; rough tides |

| **Opportunities** | **Threats** |
|---|---|
| Heritage-oriented tourism via palace resort | Safety hazards at sea; official bans previously issued |
| Local culture exploration & photography | Weather extremes (summer heat, rough monsoon seas) |

**5. SITE ORIENTATION & SUN PATH**

- Latitude: ~20.9° N
- Sun Path:
- Summer (June): High solar altitude (~85°); sun rises in NE, sets in NW
- Winter (Dec**):** Lower angle (~45–50°); sun rises in SE, sets in SW

**6. WIND PATTERNS & VENTILATION**

- Prevailing Winds:
- Summer/Monsoon (May–Sept): Strong SW winds (~25–30 km/h)
- Winter (Nov–Feb): Mild NE winds (~10–15 km/h)

**7. LANDSCAPE & MICROCLIMATE DESIGN**

- Use casuarina, palm, neem and other coastal salt-tolerant species as windbreaks.
- Create shaded pathways and green buffers to lower ambient heat.

**8. FLORA & FAUNA**

## A. Flora (plants)

| Name | Image | Season / Growth Pattern |
|---|---|---|
| Neem (Azadirachta indica) |  | Evergreen; flowers in spring (March–May) |
| Coconut Tree (Cocos nucifera) |  | Evergreen; fruits year-round, peak summer harvest |

| | | |
|---|---|---|
| Casuarina (Casuarina equisetifolia) |  | Evergreen; withstands coastal conditions all year |
| Mango (Mangifera indica) |  | Deciduous; fruits in summer (April–June) |
| Acacia (Various species) |  | Deciduous/Semi-evergreen; dry seasons preferred |
| Banyan (Ficus benghalensis) |  | grows year-round |
| Peepal (Ficus religiosa) |  | Semi-evergreen; sheds briefly in March |
| Pandanus (Pandanus tectorius) |  | Evergreen; thrives in coastal areas year-round |
| Karanja (Pongamia pinnata) |  | Deciduous; flowers in late spring/summer |
| Alexandrian Laurel (Calophyllum inophyllum) |  | Evergreen; blooms intermittently throughout year |

| | | |
|---|---|---|
| Cerbera manghas |  | Evergreen; flowers mainly in summer |
| White Mangrove (Avicennia marina) |  | Evergreen; thrives in brackish water, year-round |
| Beach Morning Glory (Ipomoea pes-caprae) |  | Perennial creeper; flowers year-round |
| Crinum asiaticum (poison bulb) |  | Summer or early fall |
| Indian Aloe (Aloe vera) |  | Perennial succulent; peak growth in dry season |
| Bougainvillea (Bougainvillea glabra) |  | Early summer through fall |
| | | |
| Frangipani (plumeria) |  | Flowering from december to april |

## B. Fauna (animals)

### a) Marine Life

- Mollusks: Pearl oysters and various sea slugs.
- Octopus: Known for their unique color-changing abilities.
- Echinoderms: Starfish, sea cucumbers, and sea urchins.
- Fish: Pufferfish, seahorses, stingrays, mudskippers, and a wide array of other finfish. Studies along the Chorwad Coast have documented diverse fish species, including Indian Mackerel (*Rastrelliger kanagurta*).
- Sea Turtles: Endangered species like Green Sea Turtle, Olive Ridley Sea Turtle, and Leatherback Sea Turtle.
- Sea Snakes: Several species of sea snakes inhabit the coastal waters.
- Mammals: Dugongs (Sea Cows) and smaller cetaceans like Finless Porpoises and various dolphin species.
- Coral: Coral reefs are present on 42 islands near the Gujarat coast.

### b) Birds

- Waterfowl: Dalmatian Pelican, White-eyed Pochard, and Indian Skimmer.
- Shorebirds: Greater Flamingo, Crab Plover, Sandpipers, and other shorebirds.
- Other Birds: Teals, fowls, Ibis, Curlews, Herons, Egrets, Ducks, Pelicans, Storks, Gulls, and Terns.
- Threatened Bird Species: The Black-necked Stork, a large wading bird.
- Migratory Birds: Winter Visitors (November - March/April):
    1. Ruddy Shelduck: A medium-sized waterfowl species.
    2. Bar-headed Goose: Known for its high-altitude migration over the Himalayas.
    3. Northern Pintail: A medium-sized dabbling duck.
    4. Northern Shoveler: Another duck species that winters in the Indian Subcontinent.
    5. Common Swallow: Migrates from Europe and Northern Asia to escape the cold.
    6. Siberian Crane: A notable winter visitor to the Rann of Kutch, which is a coastal region of Gujarat.
    7. Summer Visitors:
- Black-Crowned Night Heron: Migrates from Eastern Europe and Western Asia to the Indian Subcontinent.
- Eurasian Golden Oriole: Characterized by its bright yellow plumage.

- Blue-tailed Bee-eater: Primarily found in South and Southeast Asian countries and migrates to southern regions after breeding in North and Northwest India

**c) Terrestrial Fauna**

- Marsh Crocodiles: Inland wetlands in the Kachchh region, which is somewhat close to the coast, harbor the endangered Marsh Crocodile or Mugger Crocodile (*Crocodylus palustris*).
- Mammals: Depending on the distance from the coast and the presence of nearby protected areas like Girnar Wildlife Sanctuary, you might also find mammals such as:
    1. Nilgai or Blue Bull (*Boselaphus tragocamelus*)
    2. Indian Golden Jackal (*Canis aureus indicus*)
    3. Indian Grey Wolf (*Canis lupus pallipes*)
    4. Jungle Cat (*Felis chaus*)
    5. Mongoose
    6. Indian Hare

## 4.2 CLIMATE ANALYSIS

VERAVAL (25Km from CHORWAD)

- Location: Holiday Home Palace, Chorwad, Gujarat (near Veraval)
- Latitude/Longitude: 21.03°N, 70.23°E
- Climate Zone: Composite (hot-dry in summer, warm-humid in monsoon, mild winter)

**1. TEMPERATURE ANALYSIS**

**Data:**

- Max Temp: 42.1°C (May)
- Min Temp: 11.9°C (January)
- Mean Temp Range: 22°C (Jan) to 29.9°C (June)

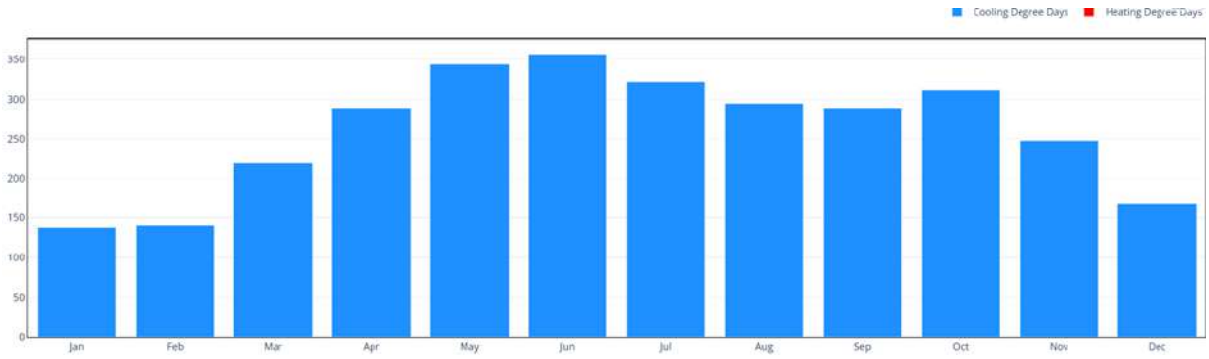
**Design Challenges:**

- High summer heat (Mar–June) → Thermal discomfort
- Cold nights in Jan → Slight insulation needed
- Large diurnal variation (day-night) in hot months

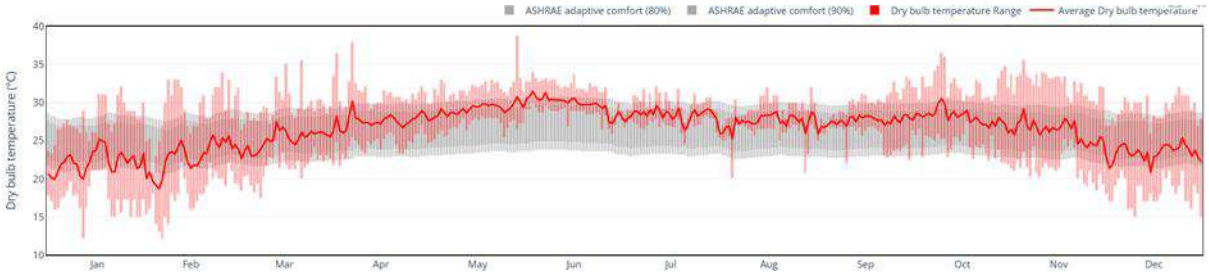
**Inferences for Resort Design:**

a) Use thermal mass (stone/brick) for stable indoor temps
b) Add roof insulation, light-coloured roofing, ventilated attic
c) Courtyards & terraces to enhance night-time cooling
d) Double-glazing or shading to reduce heat gain in rooms

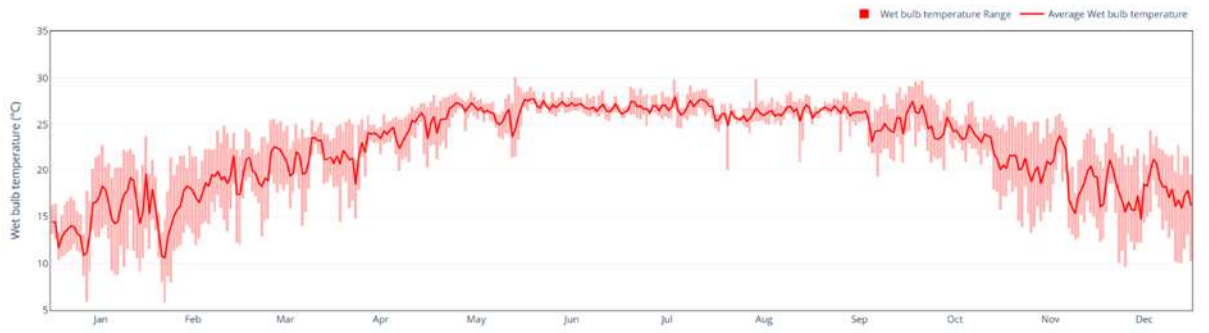
**Heating and Cooling Degree Days**




DRY BULB TEMPERATURE (YEARLY)




WET BULB TEMPERATURE (YEARLY)



DEW POINT TEMPERATURE (YEARLY)




## 2. HUMIDITY ANALYSIS

a) Highest: 89.7% (Aug)
b) Lowest: 35% (April)
c) Humidity rises from May and peaks in July–Sept

**Design Challenges:**

- Mold, condensation, mustiness in enclosed spaces during monsoon
- Reduced comfort due to high latent heat

**Inferences:**

- Use cross-ventilation and perforated elements like *jaalis*
- High ceilings, ventilation shafts

Use lime plaster, clay, and moisture-wicking materials

**HUMIDITY** (YEARLY)



## 3. WIND ANALYSIS

**Data:**

- Summer Wind: SW (Sea breeze)
- Winter Wind: NE (cool, dry)

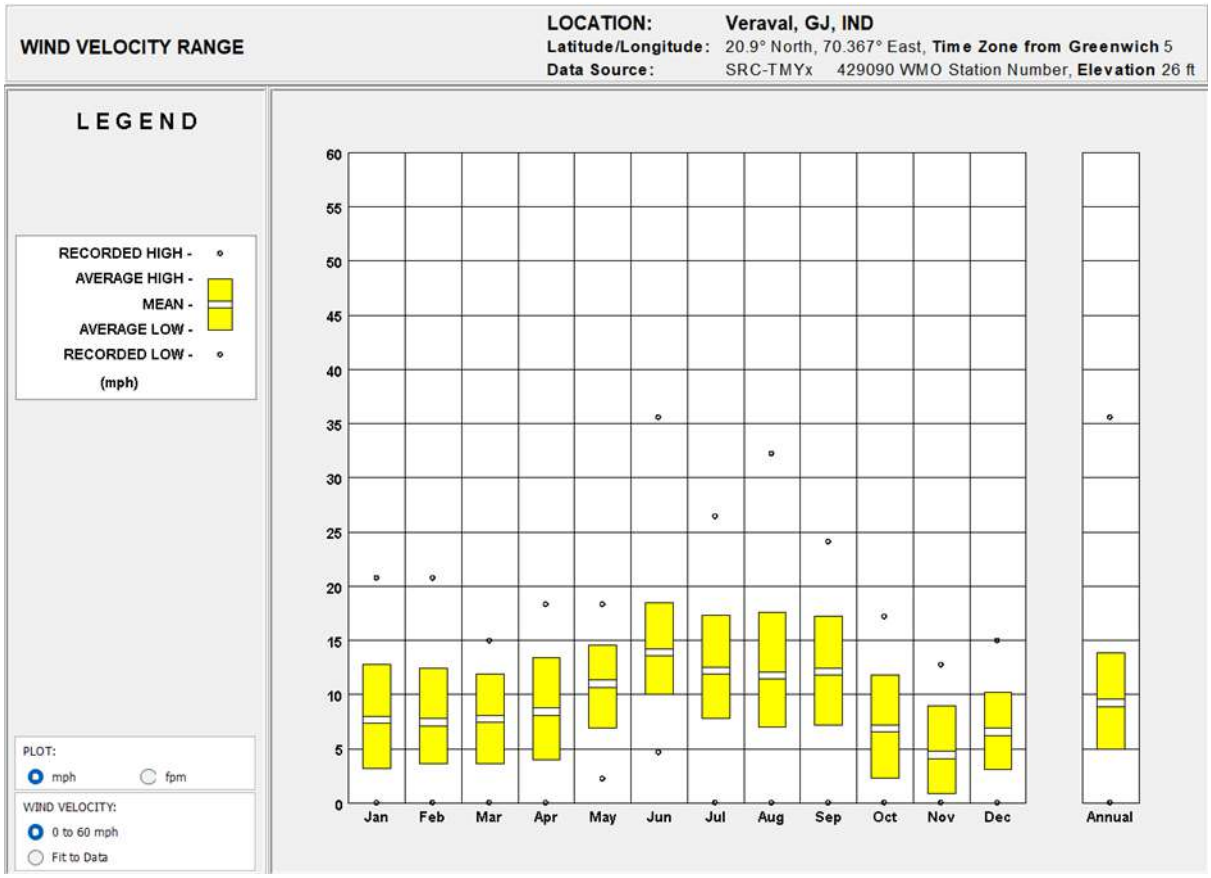
**Challenges:**

- Need to optimize natural ventilation in hot/humid months
- Avoid heat loss in winter

**Inferences:**

- Orient courtyards and windows toward SW
- Avoid major openings on NE side in winter

Use **wind towers**, **vent blocks**, **louvres** for guided air flow




**WIND ROSE (ANNUAL + SEASONAL)**

**Observations:**

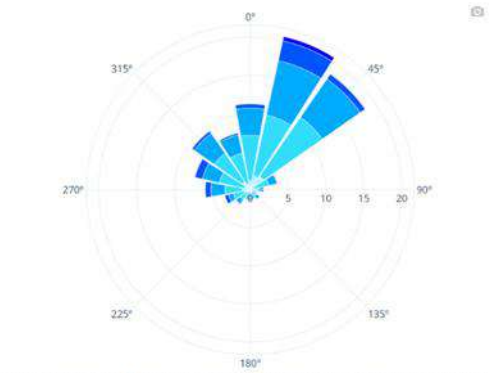
- Summer: Predominantly SW (favourable for ventilation)

- Winter: NE, drier and cooler

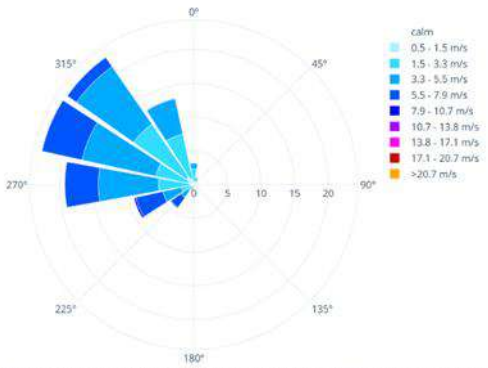
**Inferences:**

- Locate resort lounges, dining areas, verandahs along SW-facing orientations
- Dense planting on NE sides for wind buffering in winter

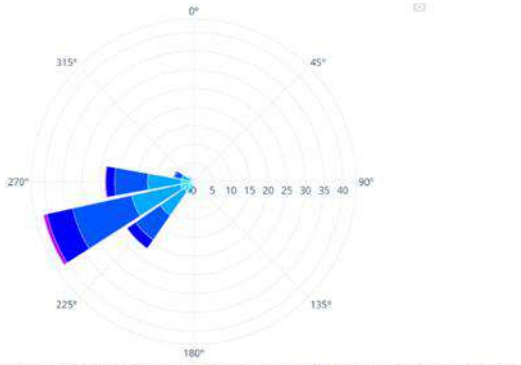
**SEASONAL WIND ROSE**



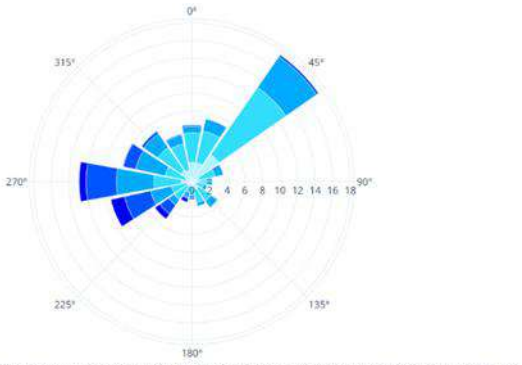

Observations between the months of Dec and Feb between 01:00 hours and 24:00 hours. Selected observations 2160 of 8760, or 24 %. 37 observations have calm winds.




Observations between the months of Mar and May between 01:00 hours and 24:00 hours. Selected observations 2208 of 8760, or 25 %. 21 observations have calm winds.

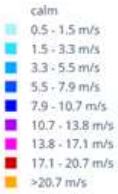



Observations between the months of Jun and Aug between 01:00 hours and 24:00 hours. Selected observations 2208 of 8760, or 25 %. 12 observations have calm winds.




Observations between the months of Sep and Dec between 01:00 hours and 24:00 hours. Selected observations 2928 of 8760, or 33 %. 88 observations have calm winds.




## 4. RAINFALL AND RAIN DAYS

**Data:**

- Total Annual: ~1100 mm (majority in July–Sept)
- Peak Rainfall: July (426 mm)

**Design Challenges:**

- Water stagnation
- Site flooding due to intense short-duration rainfall
- Soil erosion near coastal edges

**Inferences:**

a) Sloped roofs, deep overhangs, gutter systems
b) Rainwater harvesting tanks for utility use
c) Elevated plinths, well-drained paving
d) Use gravel channels, bioswales in landscaping

## 5. SOLAR RADIATION AND SUN PATH

**Data:**

- High sun angle in summer
- East & west façades get max exposure
- South walls get low sun angle (winter sun)

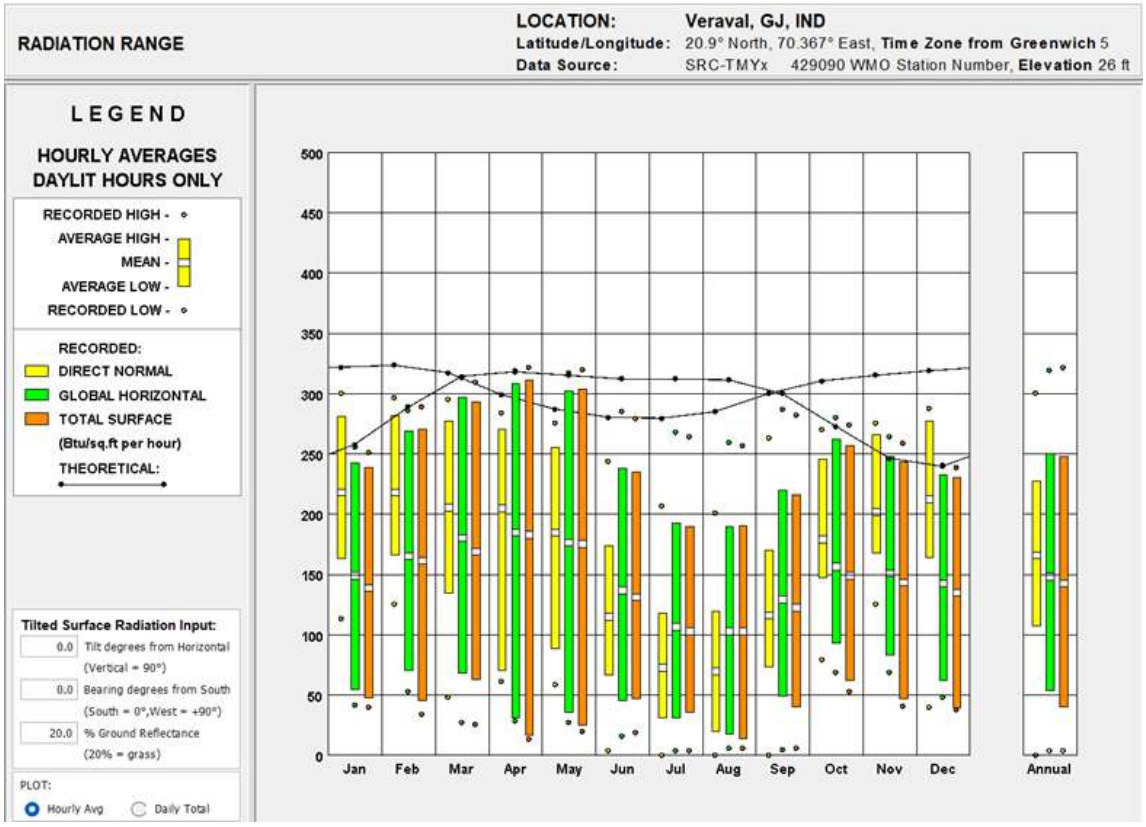
**Challenges:**

- Overheating on east & west walls
- Need daylighting without heat gain

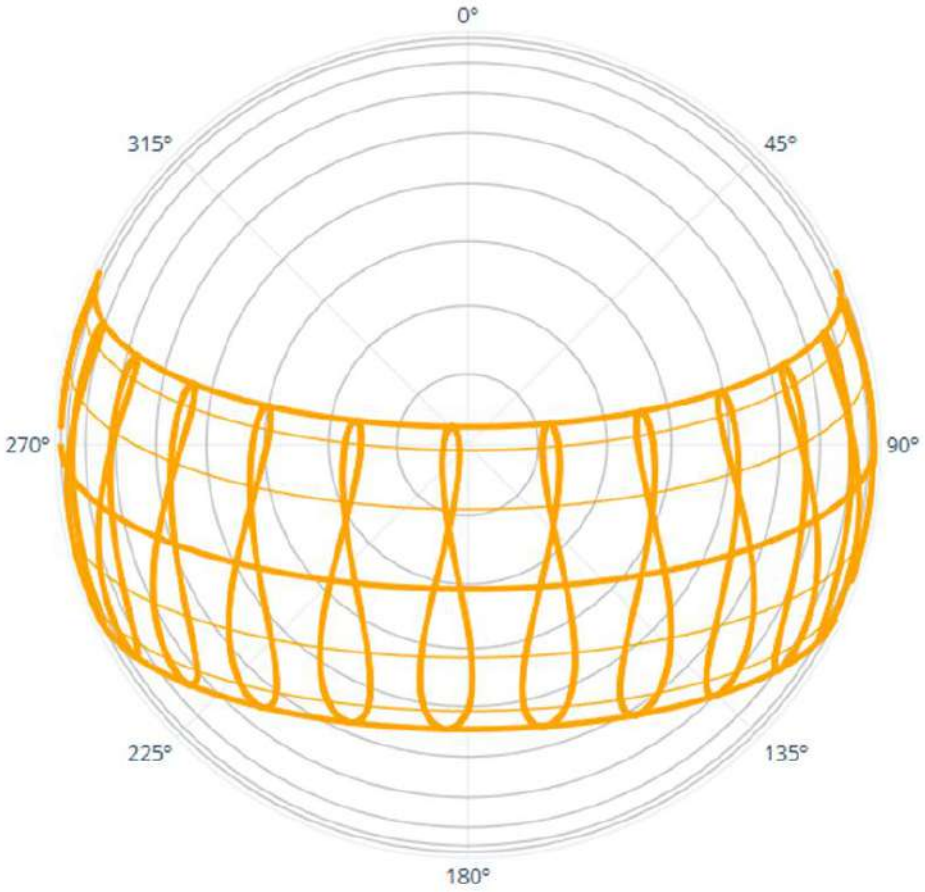
**Inferences:**

a) Horizontal shading (chajjas) on south
b) Vertical fins/louvres on east & west
c) Integrate light shelves, clerestories, and skylights

Use solar control glazing or tinted glass




**SUN PATH**




## 6. CLOUD COVER & SOLAR AVAILABILITY

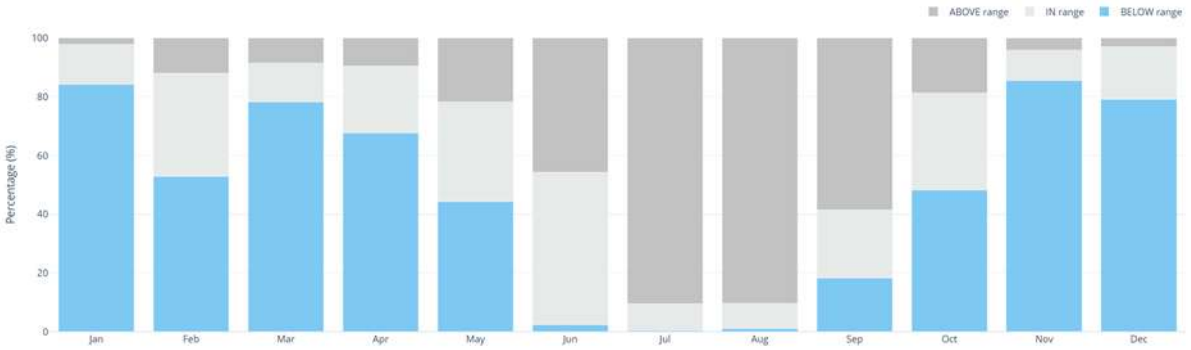
**Data:**

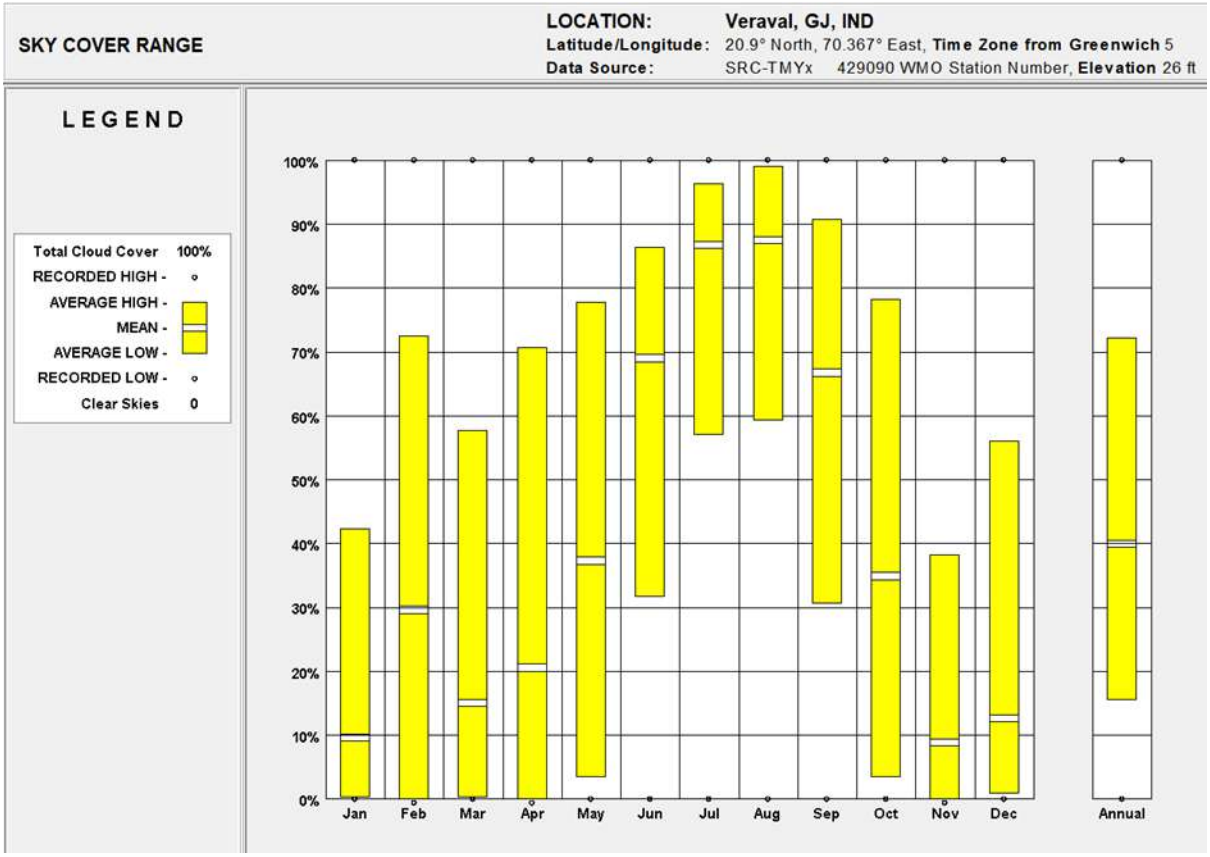
- July–Sept: cloudiest months → Reduced daylight
- Oct–May: mostly sunny

**Inferences:**

- Use daylight redirecting devices
- Incorporate skylights, light wells in shaded zones

## CLOUD COVERAGE




MAHONEY TABLE (Based on Monthly Data from Veraval)

| Month | Mean Temp (°C) | RH (%) | Rain | Mahoney Zones | Inferences |
|---|---|---|---|---|---|
| Jan | 22.23 | 48.5 | No | Comfort (Dry Winter) | Slight heating, open design |
| Mar–May | 25–29.1 | 70–78 | No | Hot-Dry | Thermal mass, courtyards, shade |
| Jun–Sep | 28–29.9 | 80–89 | High | Warm-Humid | Cross ventilation, rain protection |

| | | | | | |
|---|---|---|---|---|---|
| Oct | 28.1 | 74.5 | Low | Transition | Combine both strategies |
| Nov–Dec | 23–26 | 57–58 | No | Cool-Dry | Light thermal mass, openable glazing |

**KEY INFERENCES FOR RESORT DESIGN:**

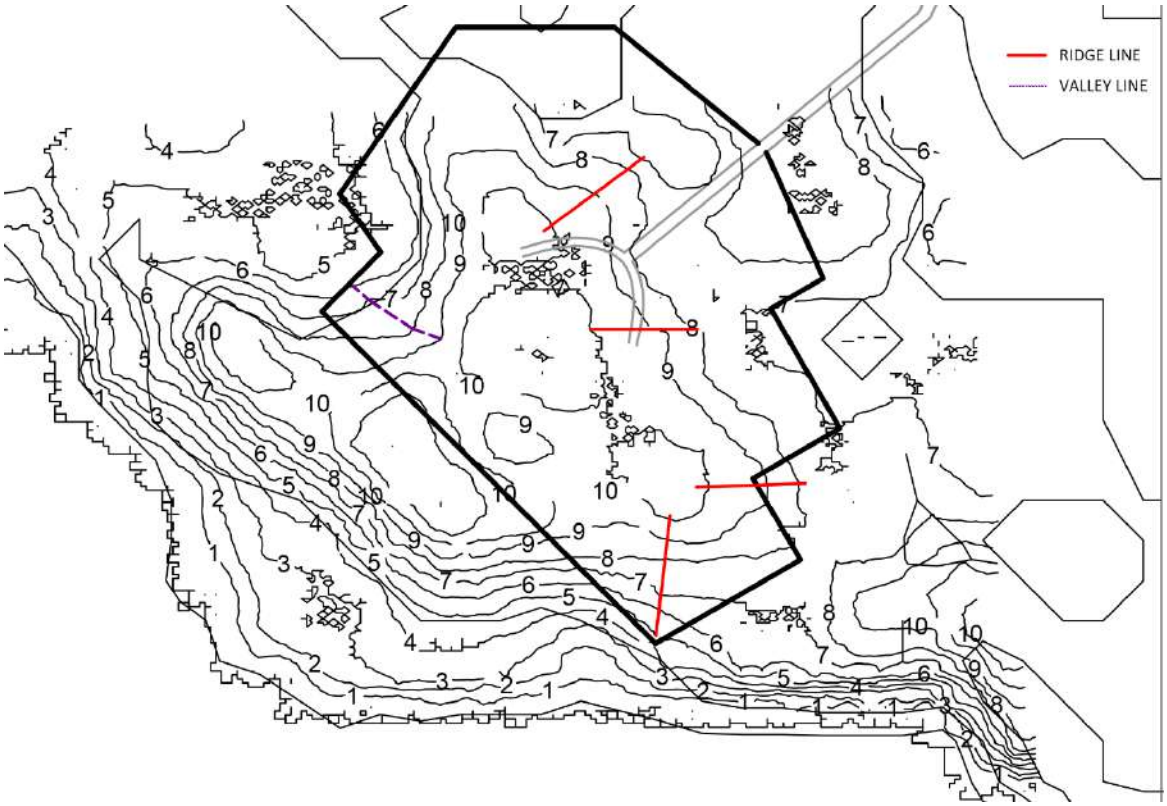
1. Blend of cooling and ventilation strategies across seasons
2. Outdoor-indoor transitions via shaded verandahs and pergolas
3. Maximized cross-ventilation for humid months
4. Rainproof but breathable design in monsoon
5. Use of traditional passive cooling: jaalis, courtyards, water features
6. Materials should be locally sourced, moisture-resistant, and breathable

MAHONEY TABLE-BASED DESIGN GUIDELINES:

| **Parameter** | **Recommendation** |
|---|---|
| Orientation | Long axis E-W to reduce sun on E/W walls |
| Openings | Moderate, with shading (louvers/chajjas) |
| Walls | Heavy (thermal mass) with light finishes |
| Roofs | Insulated, sloped with overhangs |
| Courtyards | Yes – shaded, vegetated, with water elements |
| Rain Response | High plinths, covered walkways, rainwater harvesting |
| Ventilation | Cross ventilation mandatory in all occupied spaces |

| | |
|---|---|
| Ground Surface | Permeable paving, grass or gravel to prevent runoff |
| Construction Material | Brick, stone, lime plaster, local laterite |

## 4.3 DRAINAGE ANALYSIS



## 4.4 SITE PHOTOS















# CHAPTER 5

## CASE STUDY & DESK APPRAISALS

### OVERVIEW

This chapter analyses four case studies- Kohinoor Resort, Azzaro Resort,- chosen for their beachside locations, climatic responsiveness and integration of historical buildings/elements. Key aspects like site planning, architectural character, climate responsiveness, cultural integration and service planning were studied, providing valuable insights for designing a beachside resort in Chorwad.

### CASE STUDY

### 5.1 KOHINOOR RESORT, DIU



#### OBJECTIVE OF THE CASE STUDY:

The objective of this case study is to analyze the architectural design, spatial planning, and functional aspects of Hotel Kohinoor, Diu, with a focus on its response to climate, cultural integration, and user experience. It aims to evaluate how the resort incorporates sustainable practices, aesthetic appeal, and efficient spatial organization to serve as a successful hospitality model in a coastal context.

**LOCATION:**

Hotel Kohinoor is situated in the Fudam (Fofrara) area along Nagoa Beach Road on the island of Diu, in the Union Territory of Dadra & Nagar Haveli and Daman & Diu, India. It sits directly opposite Azzaro Resort & Spa, roughly 4 km inland from Nagoa Beach and about 4 km from Diu Fort, offering strategic proximity to major attractions. The property is approximately 6.9–7.7 km from Diu Airport, making it an easy 12-minute drive by car. Located near landmarks such as the Kohinoor Water Park and Gangeshwar Mahadev Temple, the hotel blends accommodation with easy beach and heritage access, suitable for both leisure and pilgrimage visits.




*Location, The Kohinoor hotel*

**HISTORICAL CONTEXT:**

Hotel Kohinoor is located in Diu, a former Portuguese colony with a rich maritime and architectural legacy. After Diu's integration into India in 1961, the region gradually developed as a coastal tourism hub. Established in the late 20th century, Hotel Kohinoor reflects this shift, offering modern hospitality while being situated near historical landmarks like Diu Fort and Gangeshwar Temple. Its presence in the Fudam area showcases the town's evolution from a colonial outpost to a growing tourist destination.



*The kohinoor Hotel view*

**OWNER & ARCHITECT:**

**Owner:** Yatin Fugro, a Goan entrepreneur and hospitality developer; the property is managed under Hotel Sea-View Pvt. Ltd.

**Architect:** Rudra Natekar – credited with designing the hotel's resort-style ambiance, blending Portuguese/Mediterranean motifs with local craftsmanship and coastal sensitivity.

**Accessibility:**

- **By Air:** Located just 4–5 km from Diu Airport
- **By Train**: No railway station in Diu, Nearest station: Veraval Junction (~90 km).
- **By Road:** Well-connected by state transport and private buses**.**

**Proximity to Attractions:**

- **Naida Caves –** Around 2–3 km, one of the most popular caves on Diu.
- **Diu Museum & INS Khukri Memorial** – About 2 km away, located centrally in Diu town.
- **Diu Fort** – Roughly 2.5–3 km, a significant Portuguese-era landmark.
- **Nagoa Beach** – Approximately 3.6–5.8 km from the resort; less ideal for walking, better accessed via vehicle.

**Surroundings and Context:**

Hotel Kohinoor is situated in the calm Fudam area of Diu, along Nagoa Beach Road. Surrounded by greenery and low-rise development, it lies close to major attractions like Nagoa Beach, Diu Fort, and Gangeshwar Temple. The setting offers a quiet retreat with easy access to both the natural beauty an

historical charm of the island, making it ideal for tourists seeking a balance of relaxation and exploration.







*The Kohinoor surroundings*

**Architectural Style:**

Hotel Kohinoor features a Portuguese-inspired resort architecture, reflecting Diu's colonial heritage. The design includes arched windows, cream-colored façades, balconies (balcaos), and red-tiled roofs, creating a Mediterranean coastal village feel. The layout emphasizes courtyard planning, open spaces, and a central pool, blending heritage aesthetics with modern comfort and functionality.



*Building facade*

**Vernacular Elements:**

Hotel Kohinoor incorporates several vernacular elements inspired by Diu's regional and colonial past. Features such as arched openings, balcaos (covered porches), sloping red-tiled roofs, and locally sourced materials reflect the traditional Portuguese-Goan architectural language. The use of courtyards, natural ventilation, and shaded walkways also aligns with the local climate and cultural context, blending modern resort design with regional identity.

**Modern Design:**

While rooted in heritage aesthetics, Hotel Kohinoor incorporates modern design elements to enhance guest comfort and functionality. These include well-planned circulation, spacious interiors, contemporary furnishings, and modern amenities like a swimming pool, banquet hall, and wellness facilities. The architecture subtly balances traditional forms with clean, functional layouts, offering a refined resort experience suited to present-day hospitality standards.

**Eco-Friendly Practices:**

Hotel Kohinoor adopts several eco-friendly practices to promote sustainability. These include the use of natural ventilation and lighting, landscaped green spaces that reduce heat absorption, and local materials in construction to lower environmental impact. Water-saving fixtures, rainwater harvesting systems, and basic waste segregation measures also contribute to eco-conscious operations, reflecting an effort to harmonize with Diu's sensitive coastal environment.

**Inspiration:**

Hotel Kohinoor draws inspiration from Portuguese colonial architecture and the coastal charm of Diu. The design reflects the island's historical roots, with features like arched windows, balcaos, and red-tiled roofs, reminiscent of traditional Goan and Diu houses. The aim was to create a resort that blends heritage with comfort, offering guests an immersive experience rooted in the local architectural identity.

**Luxury:**

Hotel Kohinoor offers a luxurious stay through its spacious rooms, elegant interiors, and premium amenities such as a swimming pool, banquet hall, fine-dining restaurant, and landscaped gardens. The blend of heritage-inspired design with modern comforts creates an upscale resort experience, appealing to both leisure travelers and business guests seeking refined hospitality in a serene coastal setting.





*Luxury Rooms*

**AMENITIES:**

**Guest Amenities:**

- Swimming pool (outdoor) with Jacuzzi for relaxation and recreation
- Splash Water World (on-site water park) and Footloose Discotheque for entertainment
- Casino-style nightlife and party lawn ("Bageecha") accommodating up to ~200–600 people for events and gatherings.



*Swimming pool*



*Lawn*

**Business & Events:**

- Fully air-conditioned conference hall seating 45–150 people in theatre style.
- Board room for smaller meetings or executive sessions
- Outdoor party lawn "Bageecha", ideal for weddings, social gatherings, or corporate events (200–600 capacity)



*Fig 1; Conference room*



*Fig 2; Conference room*

**Rooms & In-Room Facilities**

- 50 well-furnished guest rooms: Classic Deluxe, Royal Deluxe, Royal Executive, and Suites
- All rooms equipped with air-conditioning, satellite TV, mini-bar, safe, telephone, and free Wi-Fi
- Attached bathrooms with hot and cold running water, complimentary toiletries, and daily housekeeping.

**Construction and design features:**

- Tiled sloping roofs and canopies to handle coastal rain and heat.
- Centralized layout: buildings arranged around common amenities like the pool and lawns.
- Multiple public amenities: discotheque, water park, spa, banquet hall, and pastry shop.
- Centralized layout: buildings arranged around common amenities like the pool and lawns.

**Lighting & Ventilation**

1. **Natural Lighting:**

- Large windows and verandahs allow ample daylight into rooms, reducing the need for artificial lighting during the day.
- Courtyards and open corridors are strategically placed to enable light penetration in inner spaces.

2. **Artificial Lighting:**

- Warm-toned lighting in common areas and guest rooms enhances comfort and hospitality.
- Emphasis on ambient lighting in the reception and lounge areas to create a welcoming mood.

**Ventilation Design**

1. **Passive Ventilation:**
    - Cross-ventilation is achieved through opposite-facing windows and open corridors.
    - Traditional courtyard planning encourages air movement within the building, especially in hot and humid climates like Diu.
    - The architecture borrows from Portuguese and coastal Indian styles, which favor natural ventilation over air conditioning reliance.
2. **Mechanical Ventilation:**

- Air conditioning is used in rooms and banquet halls; however, natural airflow reduces HVAC load, improving energy efficiency.
- Ceiling fans and ventilators support air circulation in semi-open spaces like balconies, dining pavilions, and lobbies.

**Sustainability Methods:**

- Low-rise bungalow layout reduces energy use (no elevators, less mechanical cooling).
- Courtyard and pool-centric planning promotes natural ventilation and passive cooling.
- Large windows and open balconies support daylighting and reduce reliance on artificial lighting.
- Use of Portuguese colonial design possibly includes locally available materials, minimizing transportation emissions and supporting local craftsmanship.

**Guest Experiences**:

- Smooth check-in/out
- Activities: Swimming pool & Waterpark
- Dining: Local & global cuisine
- Events: Indoor/outdoor venues for weddings & conferences

**Events**



*Restaurant in The Kohinoor, Diu*



*The Kohinoor hotel waterpark, Diu*

**Environmental and Cultural Integration:**

- Portuguese-inspired colonial architecture reflects Diu's historical and cultural identity (arches, balconies, pastel façades).

- Event spaces and banquet halls support local cultural events, weddings, and festivals.
- Central swimming pool and open spaces support passive cooling and social interaction
- Low-rise bungalow layout allows better air circulation and reduces energy demand (no elevators needed).

**SWOT ANALYSIS:**

- **Strengths**

1. Portuguese colonial-style architecture creates a culturally rich and attractive ambiance.
2. Large landscaped area (3.5 acres) with lush gardens, lawns, and open spaces for events.
3. Multiple amenities: swimming pool, discotheque, water park, pastry shop, spa, and banquet hall.

- **Weaknesses**

1. **Aging infrastructure:** visible deterioration in bathrooms, rooms, and furnishings.
2. **Poor maintenance:** broken fixtures, mold issues, and outdated interiors.

- **Opportunities**

1. Renovation and modernization can revive the property and improve guest satisfaction.
2. Sustainability upgrades like solar panels, rainwater harvesting, and waste management can attract eco-conscious travelers.

- **Threats**

1. **Strong competition** from newer, better-maintained resorts like Azzaro or beachside properties.
2. **Coastal wear and tear** from Diu's saline environment can accelerate property degradation.

**CASE STUDY INSIGHTS:**

1. **Responding to Local Culture & Climate**: Designed in Portuguese colonial architectural style, with cream-hued façades, moldings, pilasters, trellises, balconies, and pillared porticoes—reflecting Diu's heritage and creating a strong sense of place.
2. **Bungalow Typology:** Built as single or low-rise bungalow clusters with individual balconies, encouraging privacy while maintaining visual openness around the pool core. This low-rise

form helps reduce need for elevators, simplifies service circulation, and improves guest accessibility.

3. **Landscape & Amenity Integration:** Spread across 3.5 acres of lush gardens, lawns, and

outdoor event spaces—making available not only accommodation, but recreation zones like lawns for 600-person gatherings, a discotheque, water-park, spa, pool, pastry shop, and conference rooms.

**APPLICATION TO THESIS**

- Low-rise coastal built form is appropriate and visually harmonious.
- Pool or courtyard as a central social anchor enhances user experience and comfort.
- Portuguese-inspired details demonstrate how cultural identity can strengthen architectural language.
- Landscape-driven planning improves microclimate and guest comfort.
- Use of verandahs & shaded corridors is ideal for coastal climates.
- Event lawns can be important revenue generators for resorts.
- Semi-open circulation works well for balancing climate and aesthetics.

## 5.2 AZZARO RESORT, DIU



**OBJECTIVE OF CASE STUDY:**

The objective of this case study is to analyze Azzaro , Diu as a sustainable and culturally responsive hospitality project. It aims to:

1. Understand the site context and how the design responds to the coastal environment of Diu.
2. Study the architectural planning, spatial organization, and integration of vernacular design elements.
3. Evaluate the use of local materials and sustainable practices like natural ventilation and rainwater harvesting.
4. Assess the user experience, circulation, and functionality of the resort.
5. Explore the project's contribution to local tourism, culture, and economy.

**LOCATION:**

Azaro, officially known as *Azzaro Resort & Spa*, is located in the coastal town of Diu, which is part of the Union Territory of Dadra and Nagar Haveli and Daman and Diu, India. The resort is situated on Nagoa Beach Road in the Fudam area, directly opposite Hotel Kohinoor. It lies approximately 4 kilometers from Nagoa Beach and around 7 kilometers from the Diu Airport, offering convenient access for tourists. The location is also close to several key attractions such as the Diu Fort, Naida Caves, and Gangeshwar Mahadev Temple, making it a strategically positioned hospitality destination. Its placement near the Arabian Sea provides guests with scenic views and a coastal ambience, ideal for tourism and leisure activities.



**HISTORICAL CONTEXT:**

Portuguese Legacy: Diu was under Portuguese rule from 1546 to 1961, which left a lasting impact on the island's architecture, culture, and cuisine. The Portuguese influence is evident in structures like Diu Fort, St. Paul's Church, and various other colonial buildings. Azzaro Resort & Spa leverages this historical backdrop, providing guests easy access to explore these historical sites and immerse themselves in the island's unique Indo-Portuguese culture.

**CLIMATE:**

Diu enjoys a coastal climate influenced by the Arabian Sea.

1. **Temperature:** The weather is generally pleasant throughout the year.
    - Summer (March-May): Hot with temperatures reaching a maximum of 36°C.
    - Monsoon (June-September): South-west monsoon brings rain, but not as heavy as nearby South Gujarat. The average rainfall is around 560 mm per year, with July being the wettest month with an average rainfall of 311.68 mm and approximately 16 rainy days. Humidity averages close to 79% in July.
    - Winter (December-January): Mild with day temperatures around 20°C and nights around 15°C.

2. **Wind:** Diu is windy throughout the year. The average hourly wind speed in Diu experiences extreme seasonal variation. The windiest part of the year lasts for approximately 4 months, from May to September, with average wind speeds of more than 12.4 miles per hour. The windiest month in Diu is July, with an average hourly wind speed of 17.0 miles per hour. The predominant average hourly wind direction in Diu is from the west for most of the year.

3. **Topography**

- Diu is a small island located near the coast of Kathiawad, separated from the mainland by a narrow channel or creek.
- Elevation: The altitude of Diu is 6 meters above sea level. There are hillocks that reach a maximum height of 30 meters.
- Terrain: The topography is generally plain with undulating dips like typical sand-dune deposits.
- Coastal Features: Diu features several beautiful beaches, cliffs made of limestone, and bays. The beaches are not very deep, making them suitable for swimming and water sports

**Accessibility:**

- **By Air:** Located just 4–5 km from Diu Airport
- **By Train**: No railway station in Diu, Nearest station: Veraval Junction (~90 km).
- **By Road:** Well-connected by state transport and private buses**.**

**Proximity to Attractions:**

- **Naida Caves –** Around 2–3 km, one of the most popular caves on Diu.
- **Diu Museum & INS Khukri Memorial** – About 2 km away, located centrally in Diu town.
- **Diu Fort** – Roughly 2.5–3 km, a significant Portuguese-era landmark.
- **Nagoa Beach** – Approximately 3.6–5.8 km from the resort; less ideal for walking, better accessed via vehicle.






**CONCEPT AND DESIGN PHILOSOPHY:**

Architectural Style A blend of elements designed to create a luxurious and comfortable experience, drawing on both modern aesthetics and local contextEmbodies Victorian and Colonial architectural styles, characterized by pitched roofs, wooden flooring, period-style furnishings, and intricate detailing. The heritage character is maintained through the restoration of original elements and the use of antique décor.

Design Theme

Surrounded by a wide range of green land, Azzaro offers you peaceful, soothing and refreshing view. With gracious hospitality and courteous staff, experience the luxury and make your stay memorable. Every benefit clubbed together, Azzaro in Diu makes in for a perfect beach destination to get away from the hustle of the city.

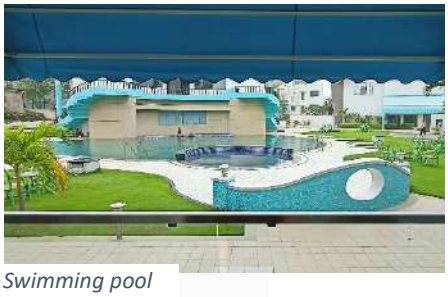
## MASTER PLAN AND ZONING



Private Party Space



Water tank tower



Swimming pool



Restaurant






Deluxe Rooms



Entrance

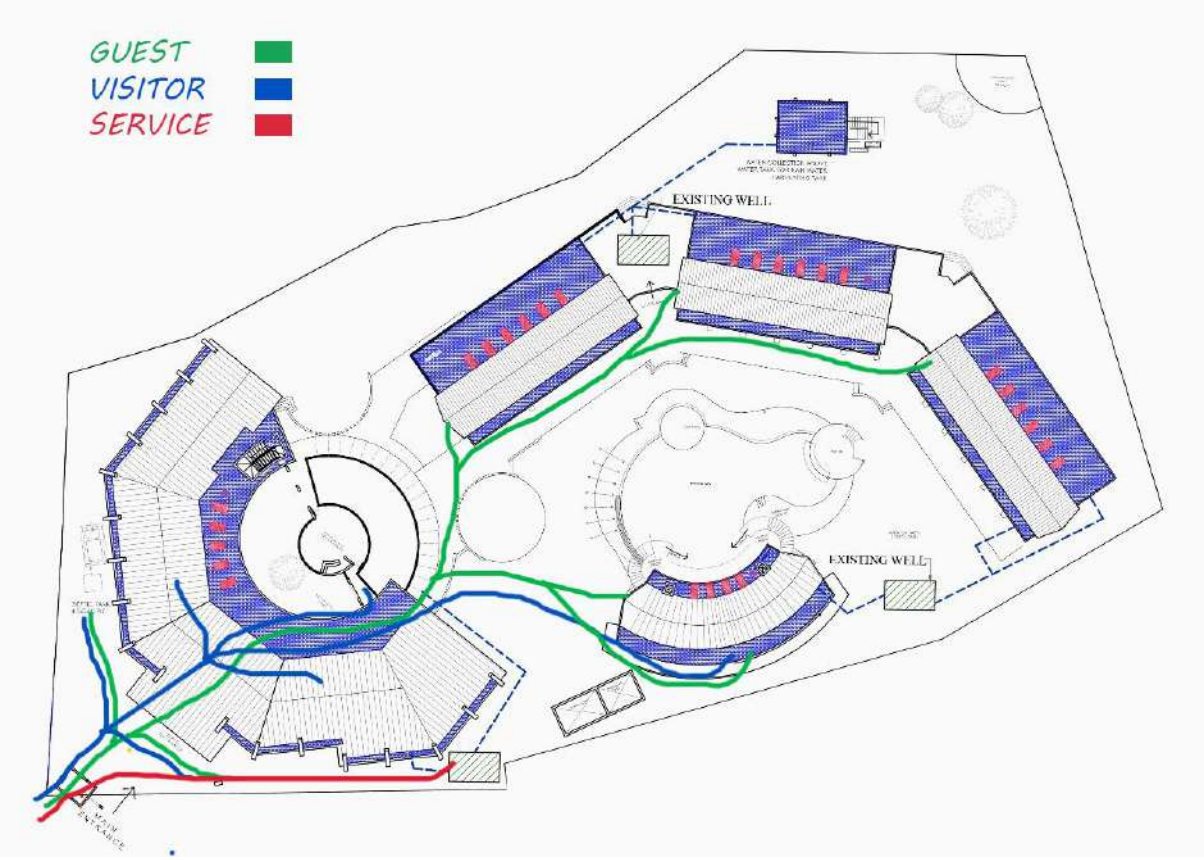


Lawn



Game zone

## CIRCULATION:




**AMENITIES:**

- **Swimming Pool –** Large outdoor pool with sun loungers and poolside service.
- **Spa & Wellness Center** – Full-service spa offering massages, therapies, and sauna.
- **Restaurant & Bar** – Multi-cuisine restaurant and a bar serving Indian, continental, and local dishes.
- **Free Wi-Fi** – Available in rooms and public areas.
- **Parking Facility** – Free private parking for guests.
- **Fitness Center** – Basic gym equipment available for guest use.

**LANDSCAPE DESIGN:**

- **Poolside Landscaping**: The swimming pool is a central feature, and the surrounding lawns contribute to its beauty, especially at night with thoughtful lighting. This suggests a deliberate effort to integrate the pool area with the natural surroundings.

**ROOM TYPOLOGIES:**

- **Total Rooms:** There is a total of 38 rooms at the resort.
- **Room Distribution:** These 38 rooms are spread across 1 floor.
- **Club Royal Rooms**: There are 36 Club Royal rooms.
- **Size:** Each Club Royal room is 225 sq. ft (21 sq. mt).
- **Occupancy:** Standard occupancy for a Club Royal room is 2 adults, and 1 extra guest can be accommodated.
- **Suites**: There are 2 luxurious suites.
- **Beds**: Rooms are equipped with King-sized beds. Some sources also mention the possibility of a sofa-cum-bed.





**CONSTRUCTION AND DESIGN FEATURES:**

**Exterior Features:**

- **Architecture:** Fusion of Portuguese colonial and modern tropical styles.
- **Structure:** RCC frame with local stone, brick masonry, and lime plaster.
- **Roofing:** Sloped tiled roofs with Mangalore tiles for thermal protection.
- **Open Spaces:** Courtyard layout, verandahs, shaded walkways, and landscaped gardens**.**
- **Landscaping:** Native plant species, water features, and paved stone pathways.





**Interior Features:**

- **Style:** Elegant, minimalist design with natural finishes.
- **Materials:** Use of wood, terracotta, and stone flooring for warmth and durability.
- **Furniture:** Locally crafted wooden furniture with soft furnishings.
- **Lighting:** Soft ambient lighting with natural daylight emphasis.
- **Decor:** Elements of local art, cultural motifs, and traditional crafts.







**Sustainable Design Method:**

- **Low-Rise Construction:** Spreads horizontally rather than vertically, reducing energy load on lifts and elevators (though it lacks lift access).

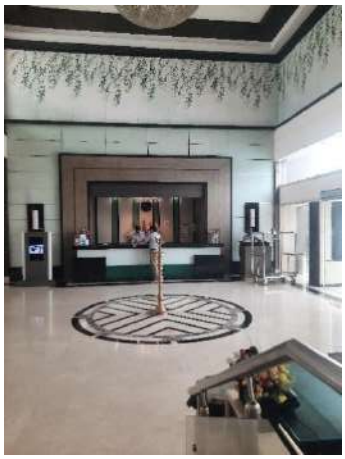
- **Natural Lighting:** Rooms and public areas designed with large windows and open spaces, allowing for maximum daylighting and reduced artificial lighting during the day.
- **Courtyard and Pool-Centric Planning:** Central pool and open courtyards enhance natural ventilation and passive cooling, reducing dependence on air conditioning.

**Lighting & Ventilation:**

- Large windows, verandahs, and courtyards allow abundant daylight, reducing dependency on artificial lighting during the day.
- Indoors, the resort uses warm**,** energy-efficient LED lights to create a cozy and inviting atmosphere.
- Rooms and common areas are planned with openings on opposite walls to allow natural airflow, keeping interiors cool without full-time air conditioning.
- Tall ceilings, shaded balconies, and pergolas help regulate temperature and circulate fresh air.






**GUEST EXPERIENCE:**

- **Check-In/Out:** Efficient with express service options.
- **Recreation:** Games room, children's play area, tea boutique, library, and fitness center.
- **Dining:** Multi-cuisine restaurant and in-house bar with ambient settings.

**EVENTS:**




**ENVIRONMENTAL & CULTURAL INTEGRATION:**

- Use of locally sourced stone, lime plaster, and terracotta reduces environmental impact and supports sustainability.
- Incorporates native plants and water features, blending built form with the natural surroundings.
- Rainwater harvesting, water-efficient fixtures, and waste segregation contribute to a low ecological footprint.
- Combines Portuguese colonial elements with contemporary design, reflecting Diu's rich heritage.
- Interiors showcase local craftsmanship, handmade furniture, and traditional art.
- The resort offers regional dishes and cultural experiences that connect guests to the local lifestyle.

**SWOT ANALYSIS:**

1. **Strengths**
   - Spacious, pool-facing rooms in a well-laid-out resort across ~10 acres, providing a pleasant ambiance and greenery.
   - Good food (especially breakfast) and decent hospitality highlighted in several reviews.
2. **Weaknesses**
   - Maintenance issues are common: broken tiles, chipped fittings, mold, leaks, faulty geysers—leading to discomfort.
   - No lift—but multiple floors, inconvenient for senior guests or families with luggage.
3. **Opportunities**
   - Renovation and improved infrastructure would significantly boost guest satisfaction—especially in bathrooms, corridors, and communal spaces.
   - Staff training and service upgrades could deliver a more consistent, welcoming experience.
   - Expanding menu options, adding seafood or more cuisine variety, would add value. Several reviews cite limited food choices.
4. **Threats**
   - Competition from newer, better-maintained resorts in Diu where guests expect higher standards at similar or lower rates.
   - High pricing relative to quality leading to poor value perception: many guests felt it's overpriced given current condition.

**CASE STUDY INSIGHTS:**

- **Importance of Long-Term Maintenance-Friendly Design:** Choosing weather-resistant materials (especially in humid coastal regions like Diu), and ensure the design allows for easy repair and access to plumbing, electricals, etc.
- **Integration of Nature and Built Form:** Design should blend built spaces with nature—gardens, water bodies, and open courtyards can create a luxurious yet calm environment.
- **Room Orientation & Views Enhance Luxury:** Orienting rooms towards best views (sea, garden, pool) using passive design principles (e.g., natural light, cross ventilation).
- **Coastal Context Awareness:** Using marine-grade materials, and design for wind shading and thermal comfort using pergolas, overhangs, and shaded courtyards.
- **Designing for Memory & Identity:** Design should reflect local materials, crafts, and architectural language to make it memorable and authentic, vernacular architecture fused with modern luxury (e.g., Portuguese colonial or Saurashtra coastal influences in Diu).

**APPLICATION TO THESIS:**

- Emphasize cultural identity and environmental consciousness.
- Pool-centric planning enhances microclimate and visual appeal.
- Low-rise block layout suits coastal wind patterns and ensures comfort.
- Lime plaster + tiled roofs are proven climate-responsive materials.
- Landscape integration improves comfort, privacy, and user experience.
- Semi-open verandahs and shaded corridors are essential in humid climates.

## DESK APPRAISAL:

### 6.1 RAAS Devigarh, Udaipur:



**Objective of the Case Study:**

The objective of this case study is to critically analyse the architectural, spatial, and contextual strategies adopted in the adaptive reuse of Devigarh Palace into RAAS Devigarh, a luxury heritage boutique hotel. It aims to understand the approach to heritage conservation and architectural intervention in a historically significant structure and examine how site planning, zoning, and circulation were developed to preserve spatial authenticity while introducing modern functionality.

- Project Name: RAAS Devigarh
- ARCHITECTS: Studio Lotus, Landscape by Prabhakar Bhagwat
- CLIENTS: walled city hotels pvt. Ltd.
- LOCATION: Delwara Village, approximately 28 km northeast of Udaipur, Rajasthan, India
- CONTEXT : Aravali HIIls
- PROJECT AREA: 4830 sq. m
- BUILT-UP AREA: Distributed across multi-levels of the palace and added courtyards
- ORIGINAL STRUCTURE: Devigarh Palace, built in the 18th century (circa 1760 AD) for the Jhala Rajput rulers
- FUNCTION: Heritage Luxury Boutique Hotel
- NUMBER OF ROOMS: 39 bespoke luxury suites
- RESTORATION PERIOD: Initial restoration completed in early 2000s; redesign of public spaces by Studio Lotus completed in 2018

**ACCESSIBILITY:**

- Distance from Airport - Maharana Pratap Airport km
- Distance from Railway Station - Udaipur City Railway Station: 31 km
- Distance from Top Attractions in the Area
- EklingjiTemple - 6.2 km
- Sahastra Bahu Temple - 8.4 km
- City Palace - 29-5 km
- Fateh Sagar Lake - 28 km
- Pichola Lake - 31.9 km

## Historical & Cultural Context

Delwara, once a seat of the Jhala Rajput dynasty, is rich in Jain and Hindu temple architecture. The palace originally served as a fort residence offering strategic views of the Aravalli hills. Long neglected, its restoration was intended not only to revive the structure but also to rejuvenate local craftsmanship and stimulate regional tourism.

Studio Lotus treated the palace as a "living museum" where the focus was on peeling back layers rather than adding decorative flourishes. The spatial character was enhanced through subtle material interventions and sensitive lighting, allowing the inherent beauty of the original structure to take center stage.






## Site Planning and Zoning

The palace complex occupies a hilltop location, naturally lending itself to vertical zoning. Studio Lotus retained the original circulation pattern while introducing new connections to enhance guest experience.

Zoning Breakdown:

- Arrival Forecourt: Accessed via a winding village path, the forecourt is a framed pause point with views of the palace above.
- Public Zones: Include the reception, lounge, restaurant, and bar areas—all housed in former royal halls.
- Durbar Hall: Transformed into a lounge with low seating, a custom-designed bar in wenge wood, and vaulted arches restored.
- Suites: 39 individually styled rooms located in former residential and administrative wings.

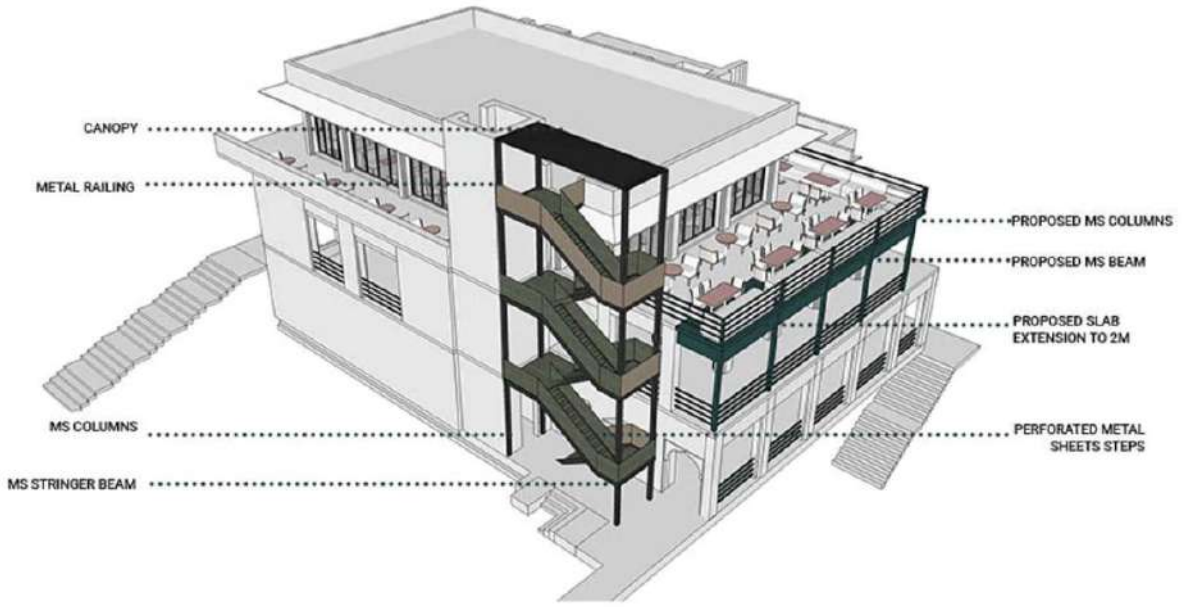
- Wellness & Spa: Tucked away in quieter wings, retaining the palace's intimate scale.
- Event Courtyards: Used for weddings, cultural events, and yoga sessions.
- Terraces & Gardens: Redesigned with flowering plants and herb gardens to add sensorial appeal.



**SPACES IN THE RESORT:**

- 39 Suites designed using local marbles and semi-precious stones and categorised as Garden Suites, Palace Suites, Aravali Suites and Devi Garh Suite.
- Garden Suites consist of a private lobby, garden and tented terrace. Traditionally designed these suites open to a large garden area of 590 sq ft. Furnished with white marble and semi - precious stones
- Palace Suites consist of an area of 721 sq ft and attached balconies or bay windows overlooking the village and the mountains. Furnished with marble combined with semi-precious stones
- Aravali Suites are spread over 810 sq.ft offering views of the Aravali hills, from the

balconies or large bay windows.




**STAIRCASE INTERVENTION**

- To connect the spaces, a metal staircase, rendered in the same grey as the local sandstone, has been crafted, whose perforated plates and metal balusters sit lightly against the solidity of the historic edifice.
- In the Durbar Hall, the shell has been similarly stripped of plaster to reveal the grey and red sandstone detailing.
- A bespoke wenge-wood bar forms the visual anchor in the lounge, with plush furnishings and low-hung lights introducing intimacy to the previously bare space.



## TYPES OF ROOMS:

### DEVI GARH GARDEN SUITE:

- Size: 590 sq ft.
- The Garden Suites are based on what most of Indian homes are like — opening into large private garden.
- The interiors of the suites are embroidered with pristine white marbles splashed with garden based colored furnishing, bedding and décor.
- The suite has a spacious bedroom with sitting area; the walls have garden theme artwork, and room has flower petals bowl.
- The private garden is attached with tented sit-out area well equipped with sitting furniture and soft cushions.
- The balcony attached opens to other views of RAAS Devi Garh.
- The marble furnished moderate sized private bathroom has bathtub, hair dryer, towels, cotton robes, and efficiently equipped with modern luxury toiletries.




### DEVI GARH PALACE SUITE:

- Size: 721 sq ft.
- The talking point about RAAS Devi Garh Palace Suite is its use of precious stones patterned with white pristine marble flooring.

- Each suite is uniquely designed based on the color of the stone used e.g. red-brown theme of jasper, shining green of malachite and royal blue color of lapis lazuli.
- The suite has a spacious bedroom adorned with collection of local artwork paintings, a large living room with separate sitting space and dining area and vibrant use of floral
- décor bowls.
- Balcony and bay windows opens to the beautiful landscape of Aravalli Hills.
- The marble furnished private bathroom is quite large and equipped with bathtub,
- modern luxury toiletries, hair dryer, cotton robes and towels.



**DEVI GARH ARAVALI SUITE**

- Size: 810 sq ft.
- The Aravalli Suite of RAAS Devi Garh is a unique Rajasthani style traditional artwork splashed on white textured wall and floors.
- The suite has a spacious bedroom adorned with contemporary floral artwork on the walls, and printed beddings, separate dining area equipped with Maharaja Style furniture and old-times wall hanging silver touched decors, separate sitting area adorned with local artwork paintings, in-room semi private black marble pool adorned with colourful petals.
- Relax in the balcony or by the bay windows to figure out the marvel of nature - the Aravalli Hills.
- Walk into the marble furnished private bathroom to use modern luxury toiletries, bathtub, towels, cotton robes and hair dryer.




**DEVI GARH SUITE**

- Size: 1200 sq ft.
- The presidential suite at RAAS Devi Garh Lebua is a luxury home away from home.
- The suite has a spacious bedroom in vibrant colored furnishing, bedding, décor

and wall artwork, separate dining area cum balcony that opens to breathtaking

view of Aravalli Hills.

- It has a separate sitting area adorned with local artwork paintings, the semi

private black marble pool spread with colorful petals opens into the landscape

view (maintaining complete privacy)/ private Jacuzzi will rejuvenate the stay; also

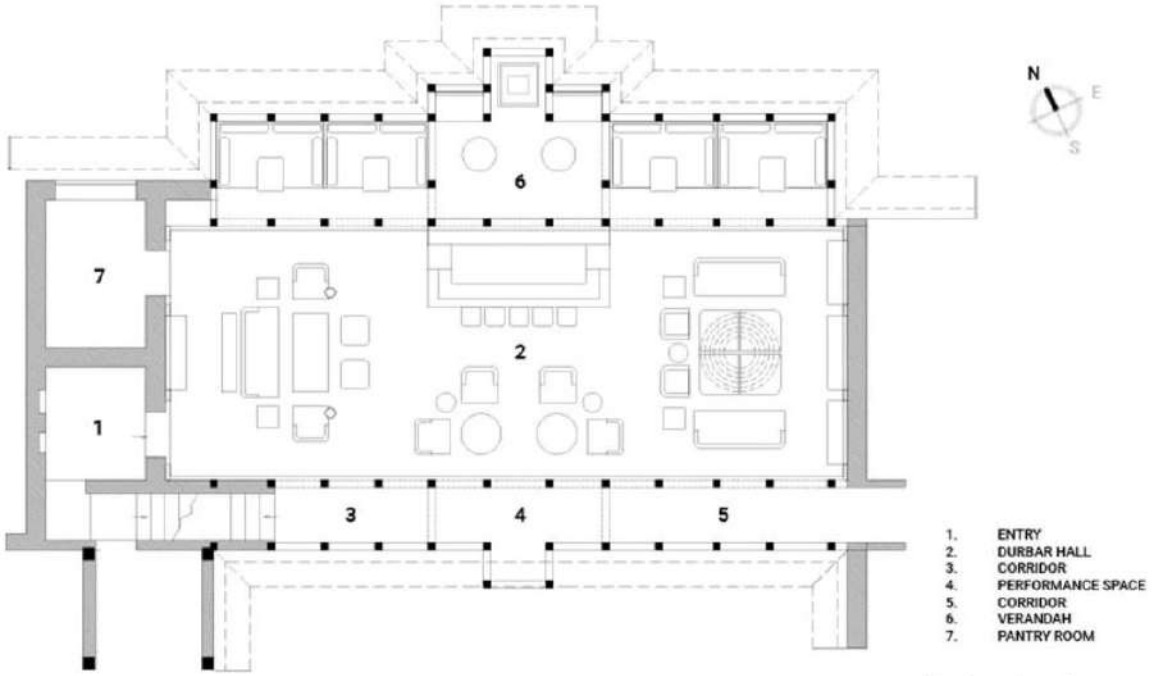
- take a moment in the private sun deck.



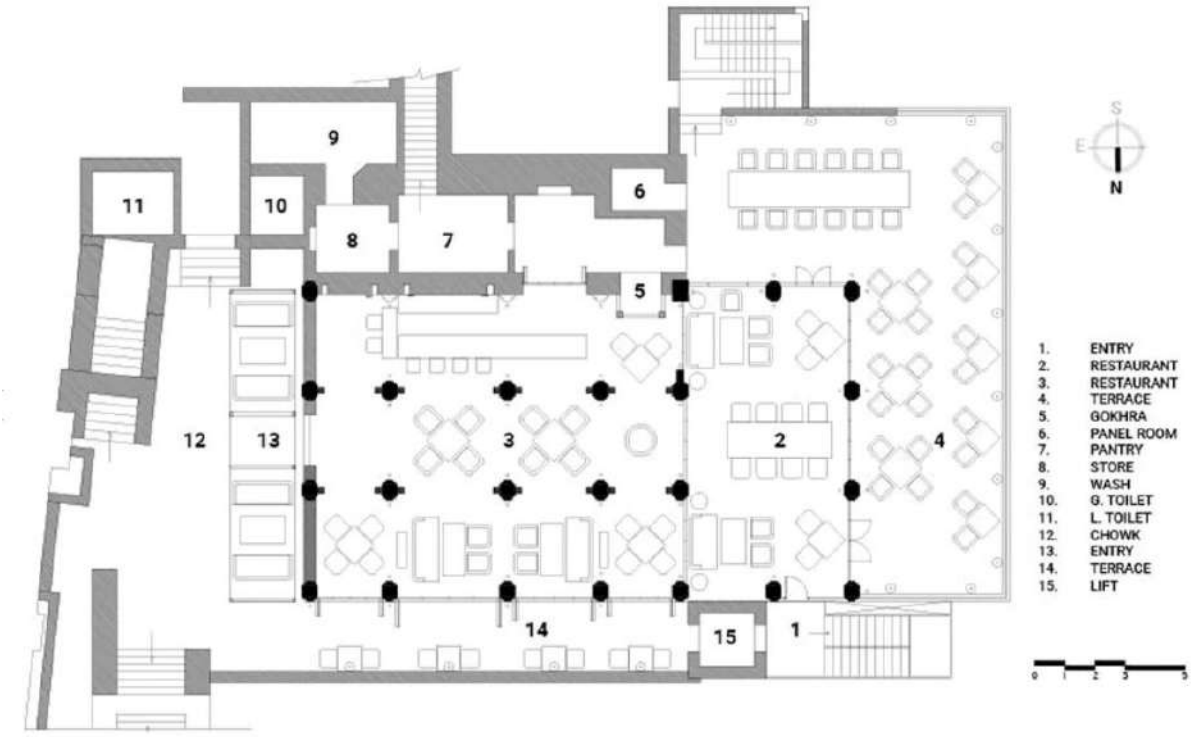

**Material Strategy:**

- Walls: Exposed original grey and red sandstone, stripped of white plaster.
- Flooring: Polished local marble and stone, paired with handmade terrazzo in public areas.
- Ceilings: Timber beam structures retained and reinforced.
- Furniture: Bespoke, minimal, crafted from wood and brass, echoing traditional forms without pastiche.
- Lighting: Custom-designed soft lighting, integrated into niches and arches to highlight architectural features.
- Windows: Arched, wooden-framed, with restored jalis allowing filtered light and air.

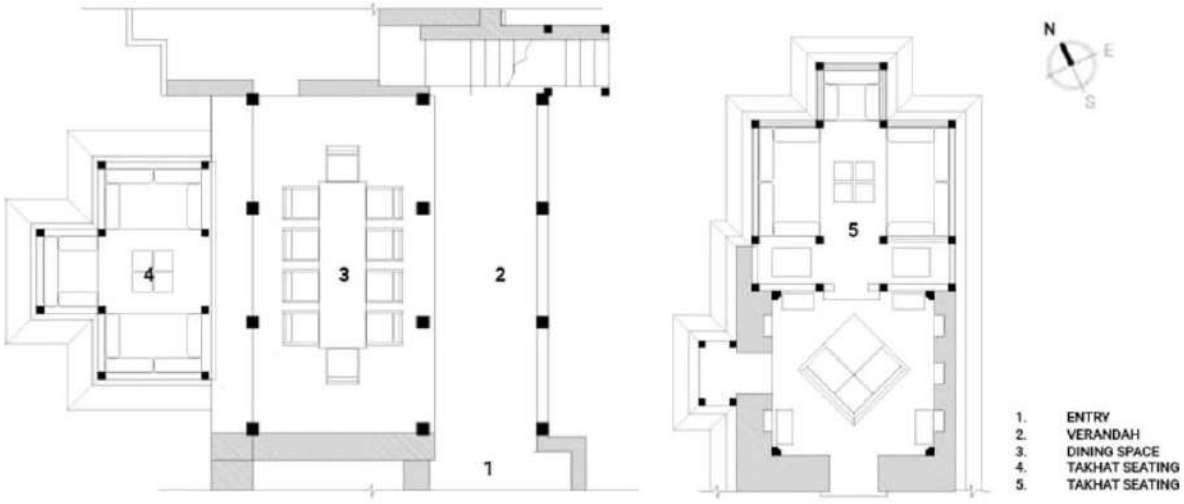
New elements—such as a metal staircase for vertical circulation—were inserted lightly and painted in tones that harmonized with the stone, to blend in rather than dominate.




DURBAR HALL LAYOUT




RESTAURANT LAYOUT




HAWA GOKHRA LAYOUT

SHEESH MAHAL

The Palace interiors, as part of an old restoration drive, had been swathed in white plaster which detracted from the user experience and induced a sense of monotony as one moved through the spaces.

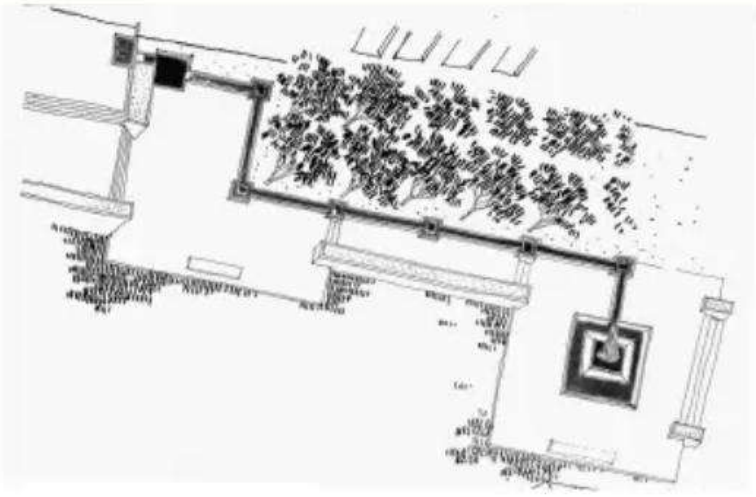
With the original sandstone columns stripped bare, the renewed F&B spaces in the poolside West Wing have been populated with contemporary inserts in timber and brass, and feature frescos in lime plaster. Besides design and structure, the hotel has also preserved much of the heritage associated with the fort, which was lying in ruins for many years until it was restored.

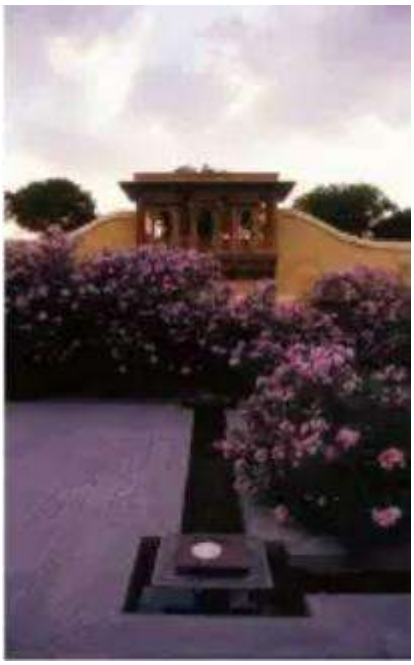


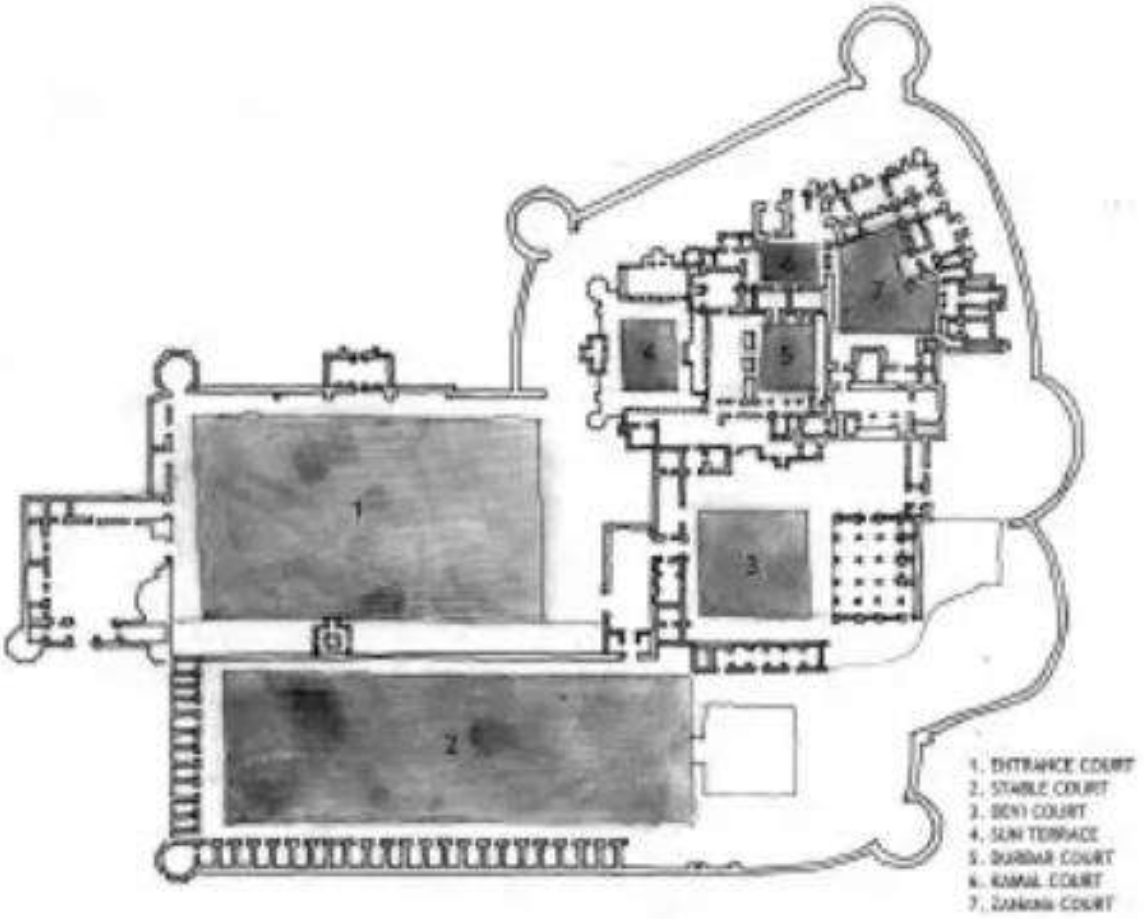


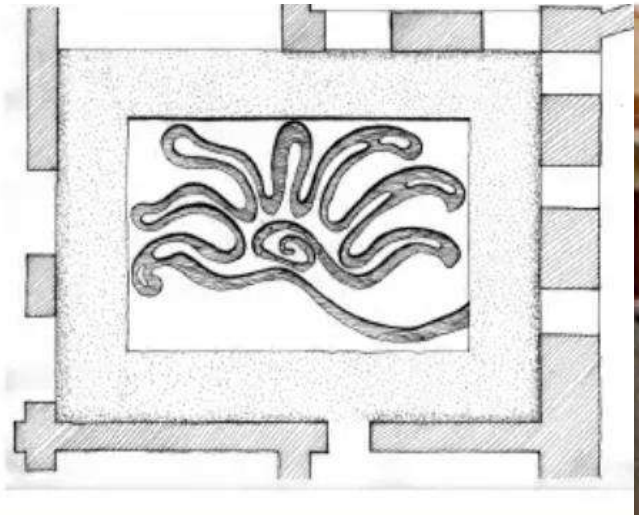
**LANDSCAPE**

At all times, the landscape is conscious of the desert and the scarcity of water that it is surrounded by. Systems have been created for the conservation and storage of water.In the Kamal Court water channels that run for 150 feet mimic the patterns of a lotus in bloom.






1. ENTRANCE COURT
2. STABLE COURT
3. DEVI COURT
4. SUN TERRACE
5. DURBAR COURT
6. KAMAL COURT
7. Zanana COURT





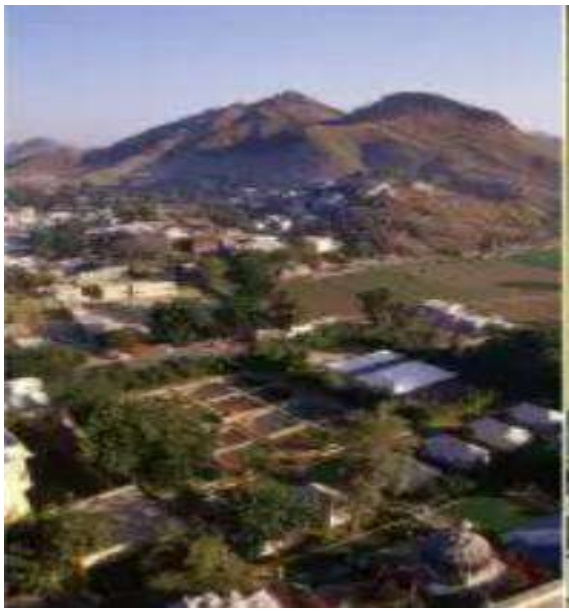
- The Zenana court holds at its centre a stambh made of stone. The fountain is a tribute to the courage of the women of Rajasthan.
- The smaller terraces mimic the mountains that they are surrounded by.
- The Darbar Court, or the Royal Court, is marked by a white marble throne, surrounded by black flooring. It suggests the representation of a Cosmos made up of its various elements and dualities.
- The throne is shaded by a Tree of Life.



DARBAR COURT



ZENANA COURT



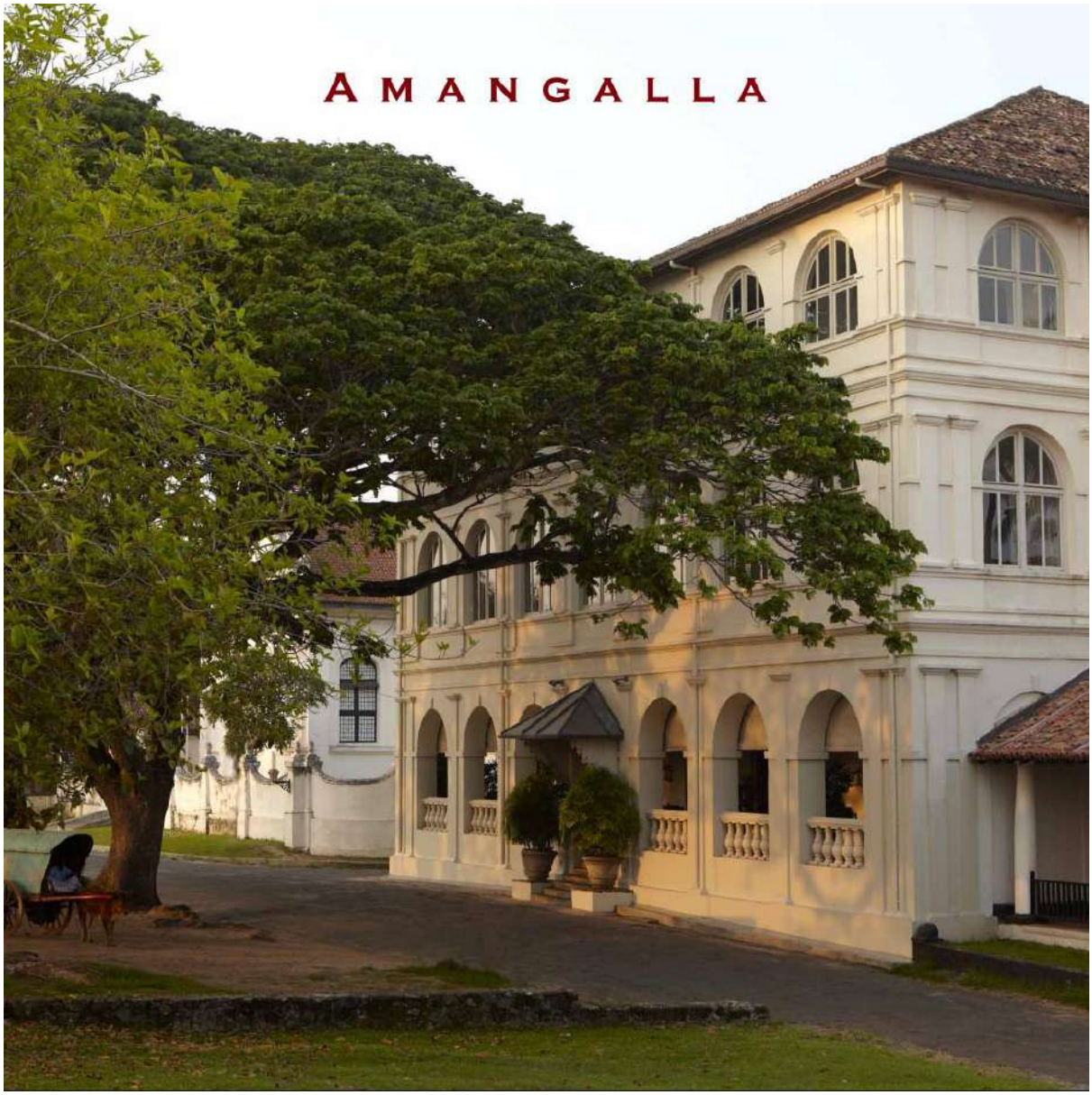


**Key Learnings for Chorwad Palace Resort :**

RAAS Devigarh offers a rich reference for working with a historic coastal site like Chorwad Palace. Key insights include:

- Adaptive reuse should celebrate original textures and materials rather than replacing them.
- Courtyards and terraces act as passive cooling zones and experiential spaces.
- Minimalist interiors inside historic shells create a powerful contrast without disturbing heritage.
- Landscape, courtyards, and circulation are tools for both heritage and hospitality.

## 6.2 AMANGALLA, TANGALLE(SRILANKA):



- **Project Name**: Amangalla
- **Original Structure**: New Oriental Hotel (once Dutch military command headquarters, circa 1684)
- **Function**: Heritage Luxury Boutique Hotel under Aman Resorts
- **Location**: Galle Fort, Sri Lanka (UNESCO World Heritage Site)
- **Architects**: Kerry Hill Architects (heritage restoration and adaptive reuse)
- **Client**: Aman Resorts
- **Site Area**: ~1.2 ha (~3 acres) within the fort compound
- **Rooms**: 29–33 guest rooms, suites, and a Garden House unit
- **Opened as Amangalla**: 2005 (New Oriental Hotel operated since 1865)



*New Oriental Hotel, Galle*

*Situated within 400-year old Galle Fort — a UNESCO World Heritage Site — Amangalla is housed in historic colonial buildings formerly known as the New Oriental Hotel. The property was founded in 1863 and traded under this name for 140 years.*

*Amangalla is Amanresorts' first property in Sri Lanka. It re-opened in February 2005 after extensive renovation and restoration.*

*Traders, merchants and Dutch and English colonists have all left an indelible stamp on the character of Galle Fort. Today it is part of Sri Lanka's living heritage and Amangalla plays an integral role.*

**HISTORICAL CONTEXT:**

The building, originally established as the Dutch commander's headquarters in the late 17th century, later became the New Oriental Hotel in 1865. Aman acquired and rebranded it as Amangalla in 2005. Galle Fort, which houses the hotel, is a living colonial town with Portuguese, Dutch, and British layers, designated as UNESCO heritage due to its urban and architectural significance.



The stately grande dame of Galle Fort, the historic heart of Galle on Sri Lanka's south coast, Amangalla boasts all the period charm of a bygone era and is gracious in every respect.

Combining *aman*, the Sanskrit word for 'peace' and *galla*, Sinhalese for the town of Galle, the hotel offers accommodation in 28 Bedrooms, Chambers and Suites, and a two-storey Garden House.

## Site Planning & Zoning




Amangalla occupies a continuous heritage building along Church Street inside Galle Fort, integrating the fort's pedestrian grid and sea-facing ramparts. Without formal plans available, the layout is reconstructed from documentation and visitor accounts:

- **Entrance & Great Hall (Zaal)**: First accessed from Fort Street via a shuttered veranda leading into a double-height formal lobby
- **Public Areas**: Include lounge, bar, and dining (Restaurant / Zaal) within adjoining heritage halls
- **Guest Suites**: Lined along deep verandahs, with views into gardens or fort streets and interiors featuring high ceilings and original wood/tile floors
- **Library**: Converted from colonial administrative quarters into a quiet study space featuring antique books and décor
- **Spa ("The Baths")**: Added at the rear, with hydrotherapy pools, saunas, and treatment rooms in a new wing crafted in terracotta and timber vernacular
- **Garden & Pool Courtyard**: Central tropical courtyard featuring a 21 m lap pool and palms, acting as a climate buffer and guest retreat.

Extending the length of the hotel on the ground floor is a lofty-ceilinged verandah. From here one can watch the comings and goings of the Fort while dining, enjoying a traditional afternoon tea, or sipping an evening drink.









Opening onto the verandah on one side, the Great Hall or 'Zaal' as it was known in Dutch colonial times features soaring ceilings, period lighting and stately overhead fans.









The Great Hall is a versatile space providing intimate settings with a colonial accent. Here one can sip a solo cup of Ceylon tea, enjoy an evening cocktail with friends or dine in style.

Situated at one end of the Great Hall and furnished with period tables and chairs, crisp white linens and antique silverware, the Dining Room (*left*) serves breakfast, lunch and dinner with a menu of traditional Sri Lankan and European fare.



**Architectural Language & Material Palette:**

Kerry Hill Architects emphasised preserving colonial texture while allowing modern comfort through subtle detailing:

- **Floors**: Retained original checkerboard tiles, varnished teak, and local stone flooring.
- **Walls**: Lime-plastered masonry in pale tones, thick enough for climate buffering (~1 m)
- **Ceilings**: High timber-framed ceilings with exposed rafters, aiding ventilation
- **Furniture & Lighting**: Antiques, rattan seating, brass fixtures, and subdued chandeliers in historic interiors.
- **New Interventions**: Discreet spa pavilion and pool cabanas with minimal visual impact, using local materials and low-scale footprints



Originally built in 1684 and converted into a hotel in 1865, Amangalla boasts more than 300 years of history. Polished teak floorboards date back to the building's origins and colorless antiques decorate the halls. Bedrooms, Chambers and Suites. Large picture windows offer views of the Fort or the hotel's lush gardens from every room.

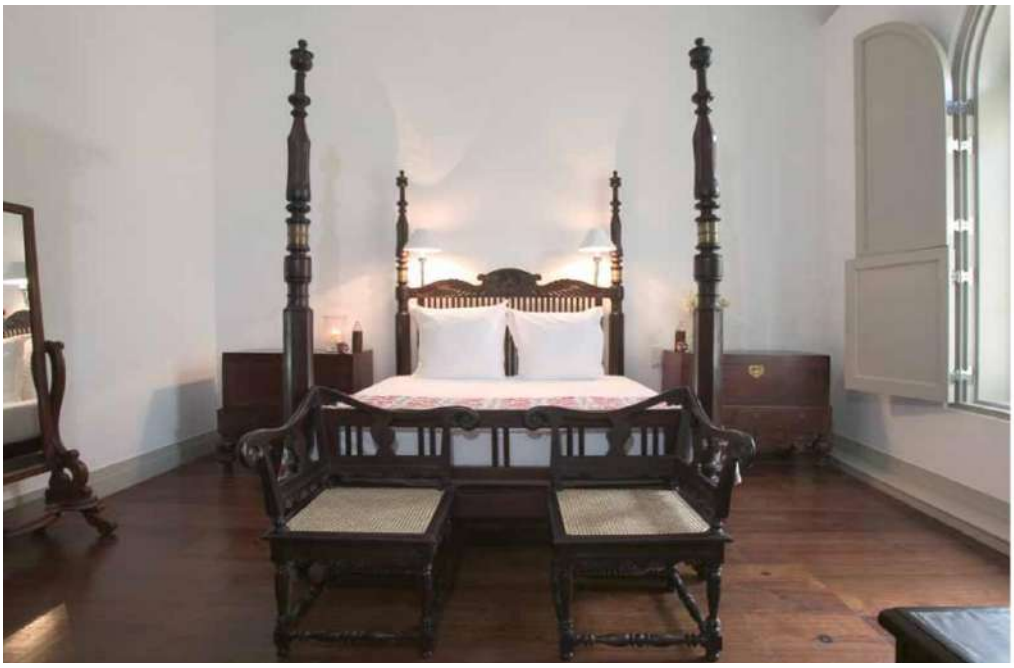






Airy and spacious, the Bedrooms, Chambers and Suites are decorated in the timeless, elegant style of the colonial era. White linen, dark wood and rattan are complemented by classic prints and touches of solid silver. Delicate Chincherinchee in glass vases are the hotel's signature bloom.







Furnishings also include king-size or twin beds, a writing desk, chaise lounge, planter's chair, dining table and *pentagamu* chest.

**Climate Response & Passive Design**

Located in a **hot-humid coastal climate**, strategies to enhance comfort include:

- **Natural Ventilation** via high ceilings, louvred shutters, and deep verandahs
- **Solar Shading** through verandah overhangs and courtyard greenery
- **Thermal Mass** from stone walls moderates interior temperatures
- **Cooling Landscapes**: Pool and garden areas act as evaporative cooling zones

**Circulation & Experiential Journey**

- **Arrival**: Via shuttered veranda, guests pass through the Great Hall for the first spatial reveal of interior grandeur and view of the courtyard.
- **Vertical Movement**: Access to upper suites via narrow staircases or discreet new lifts. Movement is slow-paced, rhythmical, and spatially framed.
- **Transitions**: Spatial compression and release—from enclosed halls to open verandahs, from corridors to garden vistas.



Bathrooms feature twin vanities, a shower, separate water closet and freestanding bathtubs. Hardwood towel stands, framed full-length mirrors and an ample armoire contribute to the genteel ambience.





Amangalla's spa is known as 'The Baths'. An arched hallway leads to five serene treatment rooms, an Ayurvedic consultation room and hydrotherapy chambers. The Baths also offers a Yoga Pavilion, a traditional Barber Shop and a Salon where manicures and pedicures can be enjoyed from the comfort of original planter's chairs.








**Sustainability & Community Integration**

According to Aman's corporate sustainability report:

- Uses locally sourced seasonal produce and spices from neighbouring villages
- Minimises single-use plastics, composts organic waste, and uses cloth laundry bags
- Supports local schools, including for deaf/blind students; part of the revenue supports Fort's preservation
- Conserves colonial heritage fabric while generating tourism-led heritage awareness



**KEY FINDINGS:**

- **Coastal Heritage Context**
  Amangalla sits in a humid, coastal climate just like Chorwad. Its use of passive strategies (verandahs, shaded courtyards, thick walls) offers valuable design cues for our site.

- **Subtlety Over Statement**
  While RAAS Devigarh introduces bold modern inserts, Amangalla shows how minimal, almost invisible interventions can enhance heritage better suited to Chorwad's more sensitive seaside palace setting.

- **Scale & Density**
  Amangalla's compact footprint (3 acres) works with narrow lanes and tight colonial plots. Chorwad's 12-acre site gives more spatial freedom, but the zoning logic—quiet public front, private rear gardens still applies.

- **Material & Mood**
  Both use local materials, but Amangalla leans toward a softer, aged aesthetic with lime plaster, antique wood, and filtered light—ideal for the serene resort at Chorwad.

- **Guest Experience**

  Amangalla offers a slow, immersive, and sensory-driven journey, a direct reference for creating layered spatial experiences at Chorwad without disrupting its existing architecture.

- Use of traditional details (shutters, arches) can echo regional coastal identity.
- Lime plaster & timber detailing help manage humidity and salinity.
- Thick lime-plastered walls improve climate comfort and authenticity.



A leisurely stroll through the Fort's bustling, narrow streets reveals colonial buildings still in use such as the Dutch-era Groote Kerk, the Governor's house, spice warehouses and the lighthouse. At day's end, residents stroll the seawall or gather on the ramparts to chat, fly kites and play cricket. Beyond the Fort, excursions to temples and tea plantations offer insight into the region's rich culture and natural beauty.













**COMPARATIVE ANALYSIS OF ALL CASE STUDIES :**

| **Criteria** | **Kohinoor Resort (Diu)** | **Azzaro Resort & Spa (Diu)** | **RAAS Devigarh (Udaipur)** | **Amangalla (Sri Lanka)** |
|---|---|---|---|---|
| Typology | Modern coastal resort | Premium coastal resort | Adaptive reuse palace resort | Adaptive reuse colonial resort |
| Architectural Style | Portuguese-inspired, low-rise | Indo-Portuguese + Victorian | Rajput palace with minimalistic interiors | Dutch-colonial coastal architecture |
| Heritage Value | Moderate | Low | Very High (18th century palace) | Very High (300+ years old) |
| Planning Approach | Pool-centric courtyard | Pool + wellness-centered | Sequential courtyards & terraces | Verandah-based + courtyard core |

| | | | | |
|---|---|---|---|---|
| Zoning Strategy | Clear public–semi public–private | Spacious lawn + spa zoning | Layered vertical zoning | Linear corridor + verandah zoning |
| Climate Response | Cross ventilation, tiled roofs, verandahs | Deep verandahs, thick walls, shading | Courtyards for cooling, thick stone | Lime plaster, verandahs, high ceilings |
| Materials | Lime plaster, roof tiles | Lime plaster, timber, tiles | Sandstone, white marble, lime plaster | Lime plaster, timber, clay tiles |
| Landscape Integration | Strong (central pool + lawns) | Strong (lawns, tropical vegetation) | Terraced landscape | Courtyards + shaded palm avenues |
| User Experience | Family-friendly, lively, event-oriented | Spa + leisure-oriented | Immersive, calm, culturally rich | Quiet, slow, sophisticated |
| Key Strengths | Microclimate cooling, large social spaces | Wellness focus, premium ambience | Authenticity, strong heritage narrative | Climate comfort, heritage simplicity |
| Weaknesses | Dated interiors, limited heritage | Maintenance issues | Constraint of preservation rules | Coastal weathering impacts |

INFERENCES FROM CASE STUDIES:

- Low-rise architecture works best in coastal environments.
- Courtyards, verandahs, and shaded walkways are essential for thermal comfort.
- Heritage cores require minimal, reversible interventions.
- Landscape must act as a climatic buffer, not decoration.
- Palace as experiential spine + cottages as clusters is the ideal planning model.
- Materiality should be local, coastal-appropriate, and heritage-friendly such as lime and the local khand stone.
- Sequential spatial storytelling (as seen in RAAS) enhances user experience.
- Event lawns + wellness zones add functional and commercial value and providing great views.
- Heritage + community integration should be the unique identity of the resort

# CHAPTER 6

CONCEPT

## 6.1 CONCEPT EVOLUTION

The concept for the Chorwad Palace Resort emerged through a systematic process of site understanding, demographic analysis, theoretical grounding, and case study evaluation. Rather than beginning with a predetermined theme, the concept was shaped organically as each layer of research revealed the cultural, social, and environmental realities of the site.

### 6.1.1 SITE UNDERSTANDING AND SOCIO-ECONOMIC OBSERVATIONS

The initial site visit highlighted that Chorwad village, despite its strategic coastal location and historical significance, remains underdeveloped. Inadequate infrastructure, limited employment avenues, and declining tourism contribute to economic stagnation.

Demographic insights and community interactions revealed:

- A strong sense of community cohesion, especially among fishing families.
- Occupational patterns centred around fishing, net weaving, rope making, and boat repair
- Settlement clusters shaped by kinship ties and collective labour
- Shared public spaces that support community routines

These observations established that livelihood and social identity are deeply intertwined with daily spatial practices in Chorwad.

### 6.1.2 THEORETICAL INSIGHT — JOHN F.C. TURNER'S PARTICIPATION THEORY

Further research directed the project towards the works of John F.C. Turner, whose Community Participation Theory argues that:

- Communities understand their own needs better than external agencies
- Built environments become successful when they support people's livelihood systems
- Architecture should empower communities by strengthening economic and social structures

This theoretical lens aligned directly with the socio-economic realities of Chorwad, emphasizing the need for a resort model that does not function in isolation but integrates and uplifts local livelihood practices.

### 6.1.3 CASE STUDY INFLUENCE — CHUKKIMANE RESORT, KARNATAKA

The Chukkimane Resort case study reinforced the value of:

- Community-oriented tourism
- Use of vernacular materials and local craft
- Human-scaled clustered planning
- Integration of cultural experiences into hospitality design

This example demonstrated how architecture can become a cultural and economic conduit, embedding local traditions within the guest experience.

### 6.1.4 DERIVING THE CONCEPT

The underdevelopment and livelihood needs of Chorwad catered through generating source of passive livelihood for them

- The cultural and occupational identity of the fishing community.
- Turner's theory of people-centered built environments.
- Lessons from community-integrated resort models such as Chukkimane about how they implemented activities and functions to involve the community in the project.

A cohesive direction for the project emerged.

## 6.2 CONCEPT STATEMENT: “Architecture as an Expression of Livelihood”

The design aims to express and enhance the livelihood patterns of the Chorwad community through architecture.The resort becomes a living cultural landscape where heritage, occupation, and community participation merge to create a sustainable coastal experience.”

The concept positions architecture as a medium that expresses, supports, and strengthens the livelihood patterns of the Chorwad community. It envisions the resort as a living cultural landscape, where heritage, occupation, and community participation are integrated into the spatial experience.

Under this concept:

- The palace becomes the cultural anchor.
- Cottage clusters reflect the organization of coastal settlements.
- Spaces for craft, fishing culture, storytelling, and community interaction are intentionally woven into the masterplan.
- Materiality and form draw from coastal vernacular traditions.
- Tourism functions as a socio-economic catalyst, enhancing local livelihoods.

## 6.3 CONCEPT PHILOSOPHY

- People Before Buildings – The project grows from the needs, culture, and livelihood of local communities.
- Heritage as Anchor– Chorwad Palace becomes the symbolic and experiential heart.
- Landscape as Medium– Pathways, clusters, and courts evolve organically like coastal village fabric.
- Livelihood as Expression – Spaces designed for craft, fishing culture, storytelling, and engagement.

## 6.4 CONCEPT NARRATIVE

The resort is imagined as a living coastal village where:

- The palace tells the story of history.
- The cottages reflect the rhythm of community life.
- The landscape mirrors the movement of the sea.
- Local people co-create the tourism experience
- Guests experience Chorwad not as outsiders, but through its culture, crafts, and coastal livelihood.








## 6.5 REFERENCS

Books & Academic Theories

Norberg-Schulz, C. (1980). Genius Loci: Towards a Phenomenology of Architecture. New York: Rizzoli.

Lynch, K. (1960). The Image of the City. Cambridge: MIT Press.

Turner, J. F. C. (1976). Housing by People: Towards Autonomy in Building Environments. London: Marion Boyars.

Neufert, E. (2012). Architects' Data (4th ed.). Oxford: Wiley-Blackwell.

Ching, F.D.K. (2014). Architecture: Form, Space & Order. New Jersey: Wiley.

Vale, B. & Vale, R. (1991). Green Architecture: Design for an Energy-Conscious Future. London: Thames & Hudson.

Krier, R. (1988). Architectural Composition. London: Academy Editions.Government Acts, Guidelines & Policies

Ministry of Environment, Forest and Climate Change (MoEFCC). (2011). Coastal Regulation Zone Notification, 2011 (and amendments). Government of India.

Tourism Corporation of Gujarat Ltd. (2024). Request for Proposal: Development of Resort at Chorwad, Junagadh. Government of Gujarat.

Ministry of Tourism. (2022). Hotels & Tourism Classification Guidelines (1–5 Star Categories). Government of India.

Town & Country Planning Department, Gujarat. (2021). General Development Control Regulations (GDCR). Government of Gujarat.

Central Public Health & Environmental Engineering Organisation (CPHEEO). (2020). Manual on Sewerage and Sewage Treatment Systems. Government of India.

Bureau of Indian Standards (BIS). (2016). National Building Code of India.

Forest & Environment Department, Gujarat. (2020). Coastal Zone Management Plan (CZMP).

Heritage & Conservation Sources

Indian National Trust for Art and Cultural Heritage (INTACH). (2014). Conservation Principles & Practice Guidelines. New Delhi: INTACH.

UNESCO. (2013). Guidelines for Cultural Heritage Preservation in Coastal Areas. Paris: UNESCO Publications.

Sircar, O. (2005). Heritage Conservation in India: Policies & Practice. New Delhi: INTACH.

Case Study Sources (Realistic & Credible)

Kohinoor Hotel & Resort. (2023). Hotel Brochure & Facilities Guide. Diu: Hotel Kohinoor Pvt. Ltd.

Azzaro Resort & Spa. (2023). Official Resort Information & Layout. Diu: Azzaro Resorts.

Daman & Diu Tourism Department. (2023). Tourism Overview & Resort Infrastructure Report. Government of India.

Climate & Site Data

India Meteorological Department (IMD). (2023). Climate Data of Veraval & Coastal Saurashtra. Ministry of Earth Sciences, Government of India.

National Institute of Hydrology. (2020). Coastal Gujarat Hydrology & Drainage Mapping. Government of India.

National Centre for Sustainable Coastal Management (NCSCM). (2018). Shoreline Change & Coastal Vulnerability Studies for Gujarat. Chennai: NCSCM.

Community, Culture & Sociological References

Singh, K. (2012). Coastal Communities of Gujarat: Culture, Livelihood and Traditions. Ahmedabad: Centre for Social Studies.

Desai, M. (2017). Living by the Sea: Fishing Communities of Saurashtra. New Delhi: Routledge India.Sharma, R. (2015). Socio-Cultural Dimensions of Tourism Development in Coastal India. Jaipur: Rawat Publications.

Architecture, Resorts & Tourism References

Edwards, B. (2005). Rough Guide to Sustainable Resort Architecture. London: Routledge.

Brooker, G. & Stone, S. (2004). Re-Readings: Interior Architecture and Adaptive Reuse. London: RIBA Publishing.

Becker, F. (2007). Hospitality Design: Culture, Climate and Comfort. Amsterdam: Elsevier.

Online Resources (Used for Case Study Validation)

Gujarat Tourism. (2024). Chorwad Beach & Daria Mahal Overview. Retrieved from https://www.gujarattourism.com

Diu Tourism. (2024). Hotels, Heritage & Visitor Facilities in Diu. Retrieved from official tourism website.

Project-Specific Sources

TCGL (Tourism Corporation of Gujarat Ltd.). (2024). Chorwad Palace—Historical Notes & Site Condition Report.

Junagadh District Gazetteer. (2022). History, Architecture & Royal Estates of Chorwad. Government of Gujarat.

# 01 INTRODUCTION

## 3-STAR RESORT, CHORWAD,GUJRAT

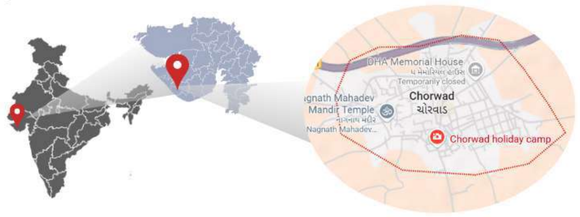
### CHORWAD PALACE RETREAT

Why 'chorwad palace retreat' ?

Chorwad Palace Retreat" retains the historic identity of the site while reflecting its new function. "Chorwad Palace" emphasises the cultural and architectural legacy of the location, and "Retreat" highlights its transformation into a place of leisure, rejuvenation, and hospitality. Together, the name expresses the project's vision of adaptive reuse—preserving heritage while creating a meaningful contemporary destination.

Where is Chorwad?

Chorwad is a coastal town located in Junagadh district, Gujarat, on the western coast of India along the Arabian Sea. It lies around 37 km from Somnath and 30 km from Junagadh city.
The town is historically significant for its royal palace, built in the 19th century, which once served as the summer retreat of the Nawabs of Junagadh. Today, Chorwad is known for its picturesque beaches, fishing community, and cultural heritage.




AIM: To design a sustainable three-star resort at Chorwad Palace, blending heritage restoration with modern hospitality to enhance cultural tourism in Gujarat.

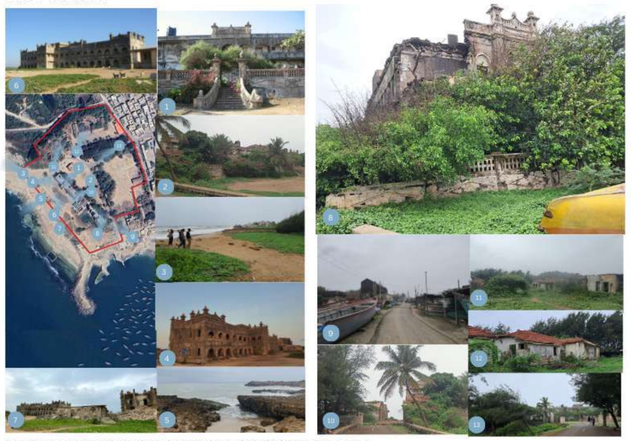
OBJECTIVES:

- To restore and adaptively reuse the historic Chorwad Palace.
- To design a resort that provides contemporary hospitality facilities.
- To establish harmony between heritage, environment, and modern design.
- To enhance tourism potential while preserving cultural identity.

NEED / RELEVANCE:

- Increasing importance of cultural and heritage-based tourism in India.
- Potential of Chorwad Palace as a heritage site to attract tourism.
- Need for sustainable, context-sensitive hospitality projects in coastal Gujarat.

**SITE VIEWS:**



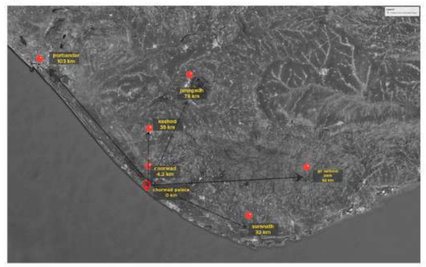
DEMARKATION OF SITE ON GOOGLE EARTH




**SITE DETAILS:**

| | |
|---|---|
| SITE LOCATION: | Chorwad, Gujarat |
| SITE COORDINATES | 21.0181° N, 70.2284° E |
| SITE AREA: | 48,100 SQM |
| FAR (FSI) | 1.8 |
| GROUND COVERAGE (65%) | 31,265 |
| MAX HEIGHT | 10M |
| SETBACK | 4.5m-front 3m-rest |
| POPULATION | 21,196 |
| ENTRY/EXIT | 1 min |
| SERVICE ENTRY | 1 |
| TOTAL BUILTUP AREA | 86580 SQM |

**CONNECTIVITY**



| | |
|---|---|
| • Chonvad Village Center | Approx. 4.2 KM |
| • Airport - Keshod Airport | Approx. 38 KM |
| • Railway - Chorvad Road | Approx. 11 KM |
| Veraval Junction | Approx. 29 KM |
| • Bus - G.S.R.T.C. Chorwad | prox. 4 KM |

**LANDMARKS AND NEARBY PLACES:**

| | | | |
|---|---|---|---|
| Dadheswar Mahadev | 01 KM | | |
| Somnath Temple | 32 KM | Veraval Fishinq Harbour | 57 KM |
| Prabhas Patan Museum | 31 KM | Sasan Gir National Park | 71 KM |
| Triveni Sangam. Somnath | 31 KM | Girnar Hill | 77 KM |
| Bhalka Tirth | 25 KM | | |

**TENDER DETAILS**

- Tender Authority Tourism Corporation of Gujarat Limited (TGCL)
- Proposal Year - 2024
- Estimated Project Cost - 19.50 Crores (5 Crores reserved for the restoration of the Ct•vwad Palace)
- Objective - Promote tourism in Chorwad with restoration and adaptive reuse Of Chorwad Palace With the development Of a luxury beach resort,
- Expected Impact - Eco-Cultural revitalization, economic boost. tourism. heritage revival

## TIMELINE

**A.D. 640 – VISIT OF HUEN SANG**



Chinese traveler Huen Sang described the region as a place of learning and culture, marking its early significance.



**1472 – SULTANATE RULE**

Under Sultan Mahmud Begda and his successors, the region saw growth in fortifications and settlements, strengthening coastal control.

**1573 – 1748 – MUGHAL ERA**



Junagadh came under the Mughal Empire, which influenced administration, trade, and cultural practices along the Gujarat coast.



**1748 – 1947 – BABI NAWABS**

The Babi Nawabs ruled for nearly two centuries. They developed Chorwad as a royal seaside retreat. The Chorwad Palace was built as a summer resort, reflecting Nawabi grandeur and leisure architecture.



**1947 – ACCESSION ISSUE**

The last Nawab, Mohabat Khanji III, acceded to Pakistan.
This was opposed by the people who supported joining India.
The Nawab fled to Karachi on 9 November 1947 after the formation of the Aarzi Hakumat (provisional government).




**1949 – INTEGRATION WITH INDIA**

The princely state merged with the Saurashtra State, and Chorwad Palace shifted from a royal retreat to a heritage landmark within independent India.

## PRIMARY USERS

- **Domestic & international tourists** (families, couples, cultural travellers)
- **Wellness seekers** (yoga, spa, retreats)
- **Corporate groups** (conferences, weddings)

**SECONDARY USERS**

- **Resort staff** (housekeeping, chefs, admin)
- **Local artisans** (crafts, performances)
- **Fishermen & farmers** (food supply, cultural link)
- **Vendors & service providers**

## DEMOGRAPHIC INFORMATION OF CHORWAD VILLAGE

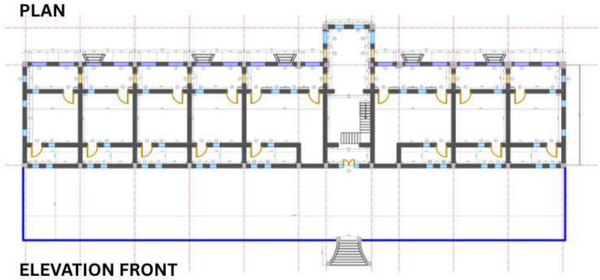
- **Population** — Small coastal settlement (approx. 21,200)
- **Occupation** — Majority engaged in fishing, agriculture, animal husbandry, and small-scale trade
- **Gender Ratio** — Nearly balanced, women are often involved in fish processing, household, and handicrafts
- **Cultural Features** — Strong coastal traditions, vibrant folk culture, local festivals and Gujarati cuisine

**EXISTING PALACE ON SITE**

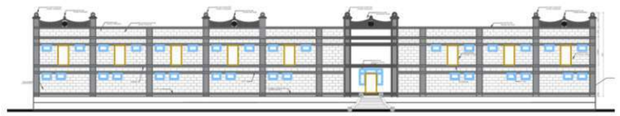




**PLAN**

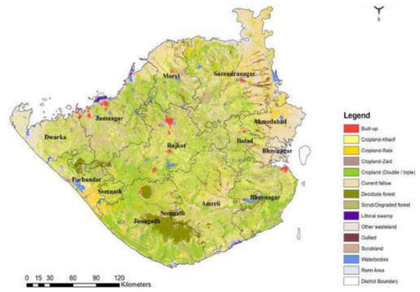


**ELEVATION FRONT**



**ELEVATION BEACH FACING**

**LANDUSE MAP OF GUJRAT**




OUR SITE:

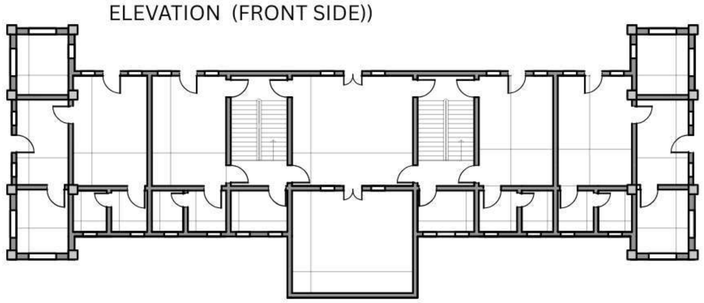
- Zone: Coastal Zone (CRZ area) with adjacent Agricultural Land.
- Primary Uses: Fishing-based settlements, cropland, and rural habitation.

# 02 EXISTING BUILDING

3-STAR RESORT, CHORWAD,GUJRAT



ELEVATION (FRONT SIDE))



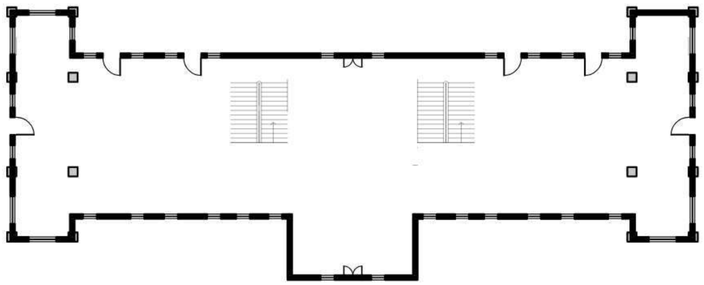
Heritage Building - Palace

0M 2M 4M 8M 16M

GROUND FLOOR PLAN OF EXISTING BEACH RESORT

## ADAPTIVE REUSE

FIRST FLOOR PLAN OF EXISTING BEACH RESORT



Heritage Building - Palace

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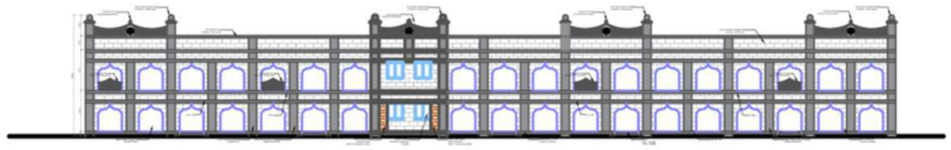
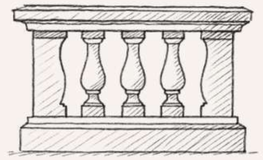


ELEVATION (BEACH SIDE))

## ARCHITECTURE STYLE

Blend of Italian, Muslim, and Colonial architecture style

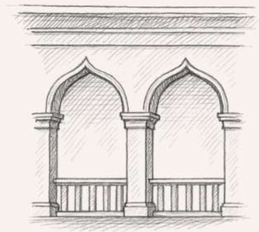
## ARCHITECTURE ELEMENTS



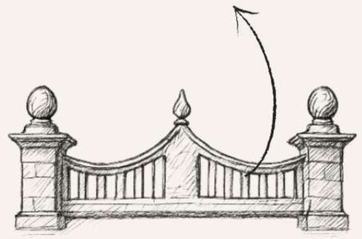
Balustrade



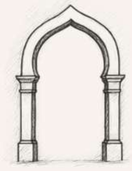
Casement Window



Arcade



Railing with balustrade



Arched window



Stone Pillar with Finial

# 03 CASE STUDY

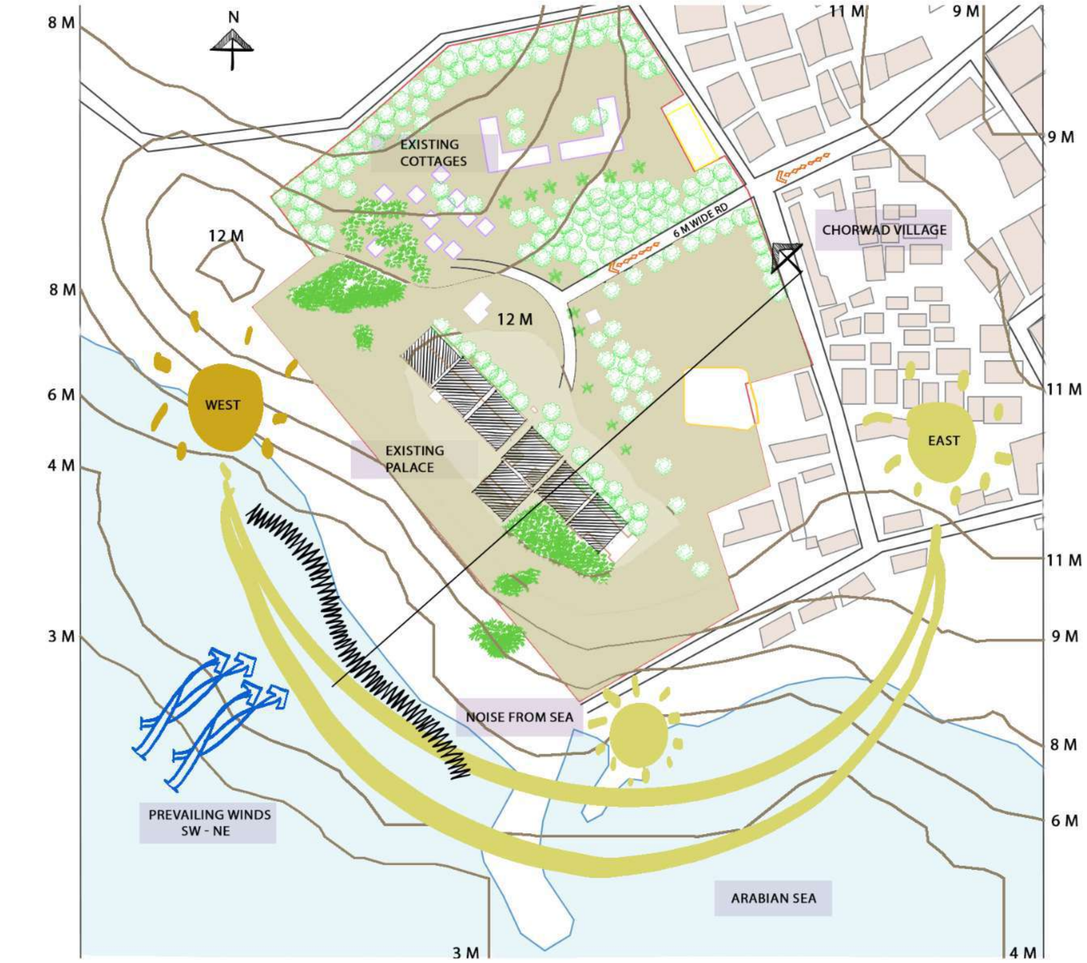
## 3-STAR RESORT, CHORWAD,GUJRAT

| PARAMETERS | CASE STUDIES | | DESK APPRAISALS | | DESIGN INFERENCES |
|---|---|---|---|---|---|
| | KOHINOOR RESORT | AZZARO RESORT & SPA | RAAS DEVIGARH | AMANGALLA,SRI LANKA | |
| |  |  |  |  | |
| **Location** | Fudam (Fofrara) area along Nagoa Beach Road, Diu  | Nagoa Beach Road in the Fudam area, Diu  | Delwara Village, approximately 28 km northeast of Udaipur, Rajasthan, India  | Galle Fort, Sri Lanka (UNESCO World Heritage Site)  | |
| **Typology** | Modern coastal resort  | Premium coastal resort  | Adaptive reuse palace resort  | Adaptive reuse colonial resort  | Adoption of modern coastal and heritage typologies through cottages and central cultural block |
| **Architectural Style** | Portuguese-inspired, low-rise | Indo-Portuguese + Victorian | Rajput palace with minimalistic interiors | Dutch-colonial coastal architecture | Coastal vernacular elements adopted for a stronger contextual character |
| **Heritage Value** | Moderate | Low | Very High (18th century palace | Very High (300+ years old) | Incorporate subtle heritage elements without heavy ornamentation |
| **Planning Approach** | Pool-centric courtyard | Pool + wellness-centered | Sequential courtyards & terraces | Verandah-based + courtyard core | Planning around central courtyard that spine guiding surrounding activities |
| **Zoning Strategy** | Clear public–semi public–private | Spacious lawn + spa zoning | Layered vertical zoning | Linear corridor + verandah zoning | Placement of public functions at entry, semi-public at central, cottages at peripheral |
| **Climate Response** | Cross ventilation, tiled roofs, verandahs | Deep verandahs, thick walls, shading | Courtyards for cooling, thick stone | Lime plaster, verandahs, high ceilings | Use of shaded edges, ventilated corridors, and thermal walls for passive cooling |
| **Materials** | Lime plaster, roof tiles | Lime plaster, timber, tiles | Sandstone, white marble, lime plaster | Lime plaster, timber, clay tiles | Adoption of lime plaster, stone bases, timber shading, clay-tile roofs for coastal durability |
| **Landscape Integration** | Strong (central pool + lawns) | Strong (lawns, tropical vegetation) | Terraced landscape | Courtyards + shaded palm avenues | Usage of courtyard , shaded walkways, and local coastal planting to unify all zones |
| **User Experience** |   Family-friendly, lively, event-oriented |   Family-friendly, lively, event-oriented |   Immersive, calm, culturally rich |   Quiet, slow, sophisticated | Progression: lively entrance → social core → secluded cottages |
| **Key Strengths** | Microclimate cooling, large social spaces | Wellness focus, premium ambience | Authenticity, strong heritage narrative | Climate comfort, heritage simplicity | Verandahs, courtyards, and landscape identity form as core layout elements |
| **Weaknesses** | Lime plaster, roof tiles | Lime plaster, timber, tile | Sandstone, white marble, lime plaster | Lime plaster, timber, clay tiles | Weak finishes and unshaded areas; use low-maintenance materials and shaded courts |

# 04 SITE ANALYSIS

## 3-STAR RESORT, CHORWAD,GUJRAT

**SITE PLAN**




0 25 50 100 150 200

**SITE SECTION**



### INFERENCES

1. Raised Plinths for Main resort buildings at least 1 - 1.5 m above recorded highest high-tide level.

2.STP - Located at lower elevation in the NW region for efficient drainage

3.Trees in the SW region to prevent salt water from see

4. Site slopes towards SW(Arabian sea).

5.Low lying zones made into rainwater harvesting ponds.

6. For vertical structures, step down design for better views.

7.Light-weight roofs to minimize seismic forces.

8.Symmetrical building layouts reduce torsional effects during earthquakes.

**S**

- Heritage palace
- coastal location
- proximity to Somnath tourism circuit.

**W**

- weak infrastructure
- seasonal tourism
- resource dependency.

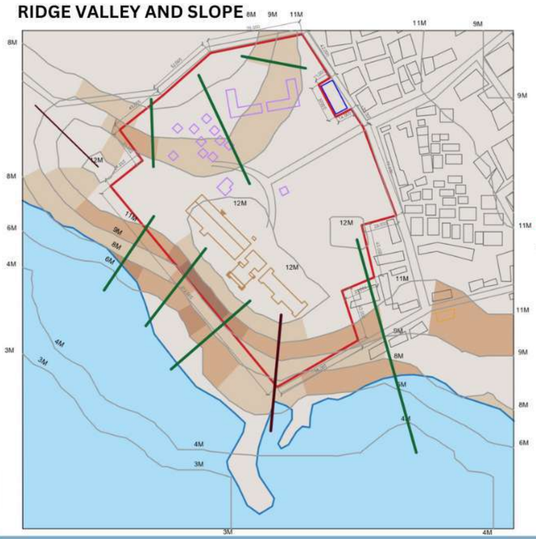
**T**

- Risk of cyclones, sea-level rise, and coastal erosion
- CRZ) restrictions may limit new development.

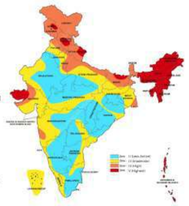
**O**

- Adaptive reuse,
- community livelihood,
- eco-tourism

**RIDGE VALLEY AND SLOPE**




The site falls under **Seismic Zone III** as per the Bureau of Indian Standards (BIS) seismic zoning map.

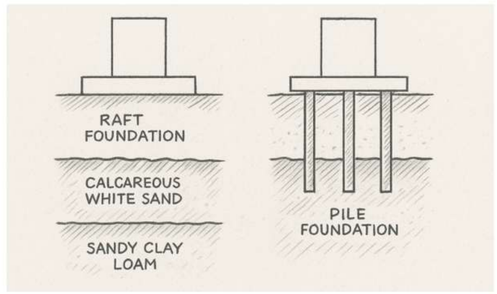


**FLORA AND FAUNA:**




**SOIL TYPE AND FOOTING**

Soil: Calcareous white sand with sandy–clay loam.
Suitable Foundation: Raft foundation for uniform loads; pile foundation for heavy structures.




**CLIMATE ANALYSIS**

**Temperature**

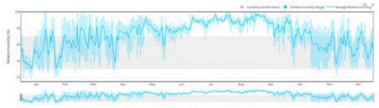
- Summers - Average Range: 25°C - 31°C
- Winters - Average Range: 20°C - 25°C
- Maximum Temperature: 42.1°C
- Minimum Temperature: 11.9°C

**Rainfall**

- Annual - 1100 mm (July–Sept)
- Peak Rainfall: July (426 mm)

**Wind Analysis**

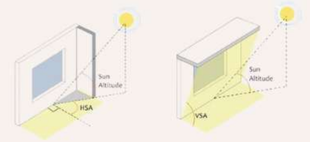
- Summer: Predominantly SW
- Winter: NE, drier and cooler



| Season | Months | Avg. Temperature (°C) | Typical climate / notes |
|---|---|---|---|
| Winter | Dec – Feb | 20°C – 24°C | Mild, dry and pleasant. Clear skies, low humidity; comfortable days, cooler mornings. |
| Summer | Mar – May | 24°C – 31°C | Gradual warming; humidity rises towards May. Afternoons get hot (peak in May), but sea breeze moderates temperatures compared with inland Gujarat. Thunderstorms/heat-haze possible late in the season. |
| Monsoon | Jun – Sep | 25°C – 29°C | Southwest monsoon — majority of annual rainfall. High humidity, overcast skies, frequent heavy showers and brief thunderstorms. |
| Autumn | Oct – Nov | 23°C – 28°C | Humidity falls, mostly clear skies and pleasant conditions — warm days and comfortable evenings. |

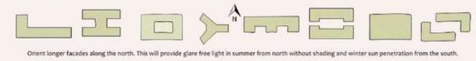
### DESIGN CONSIDERATIONS

Window overhangs or operable sunshades.



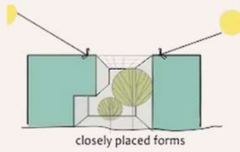

Minimize or eliminate west facing glazing to reduce summer and fall afternoon heat gain.

Long narrow building floorplan can help maximize cross ventilation in temperate and hot humid climates



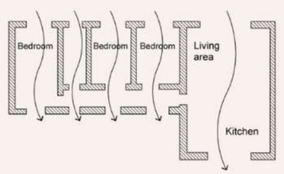
Orient longer facades along the north. This will provide glare free light in summer from north without shading and winter sun penetration from the south.

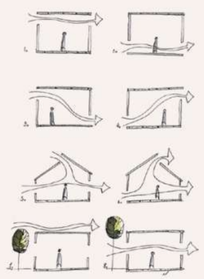
Enclosed well shaded courtyards, with a small fountain to provide wind-protected microclimates.




use plant materials (bushes, trees, ivy-covered walls) especially on the west to minimize heat gain.

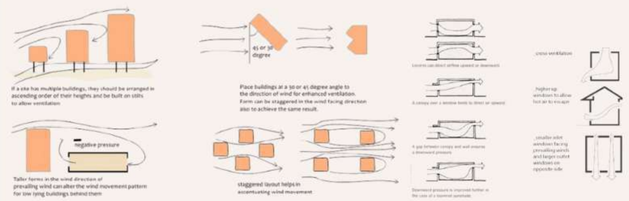
To facilitate cross ventilation, locate door and window openings on opposite sides of building with larger openings facing up-wind.



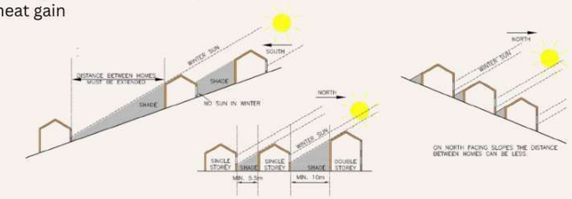



Orient most of the glass to the north, shaded by vertical fins

Light weight construction with openable walls and shaded outdoor areas, raised above ground.



Use light colored building materials and cool roofs to minimize conducted heat gain



# 05 CONCEPT

## 3-STAR RESORT, CHORWAD,GUJRAT

*What is concept?*

*A design concept is the core idea or guiding principle behind a building or space.*

**“What is this building about?”**
**“Why is it designed this way?”**

# Architecture as an expression ofLivelihood

To create a resort that is not just for the people, but with and by the people.

*Evolution of concept?*

Architecture as Livelihood has evolved through John F.C. Turner’s Participatory Design Theory. Turner, a British architect and housing theorist, believed that the people who use a space should be directly involved in its design and construction, making it more appropriate, sustainable, and empowering for the community.

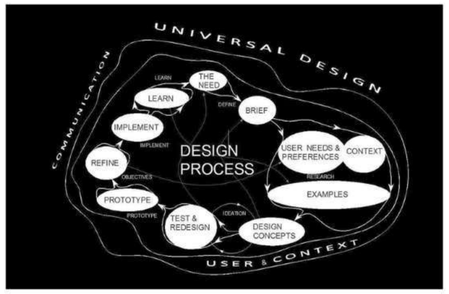
"When dwellers control the major decisions and are free to make their own contribution to the design, construction, and management of their housing, both the process and the environment produced stimulate individual and social well-being."

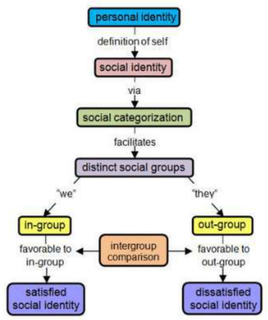
## *Core idea of participatory theory:*

- People have the right and the ability to design, build, and manage their own environments.
- The users of space should also be decision-makers in shaping it.
- Architecture must emerge from the community’s needs, not be imposed from the top down.
- Empowering people to create and maintain their own built environments results in more relevant, sustainable, and humane architecture.

**'Community based cooperative model'**

National Rural Livelihood Mission (NRLM) / Deendayal Antyodaya Yojana (DAY-NRLM)
Promotes self-help groups (SHGs), community institutions, and cooperative-based livelihood models in rural areas.




## *Why architecture as livelihood?*

Resorts often disconnect from their local context, becoming isolated luxury bubbles.

- Support the local economy
- Respect and revive traditional skills
- Offer guests meaningful experiences
- Create architecture that’s inclusive and socially responsible



**Understanding the Site**

- The surrounding community depends on fishing, crafts, and agriculture.
- Despite tourism potential, the local economy remains underdeveloped

Engaging local villagers not only as beneficiaries but as co-creators — integrating their skills, materials, and cultural knowledge into the architecture itself, so the design becomes both a source of livelihood and a true expression of place.

*How concept is implemented in design?*

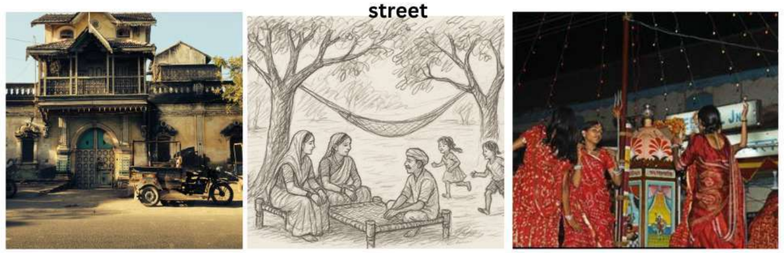
- Participatory Design
- Built by Local Hands
- Spaces that Generate Income(handicrafts stores)



### Outcomes

- Craft workshops (block printing, pottery, weaving) held by locals — for guest interaction.
- Farm-to-table experiences with cooking demos by village chefs.
- Folk evenings curated by a cultural coordinator — local youth get performance platforms.
- Community café operated by trained villagers.




**Spatial Experience Sequence - Chorwad Palace Resort**

*Movement from Public Cultural Experiences to Private Luxury Retreats*




### Zoning:

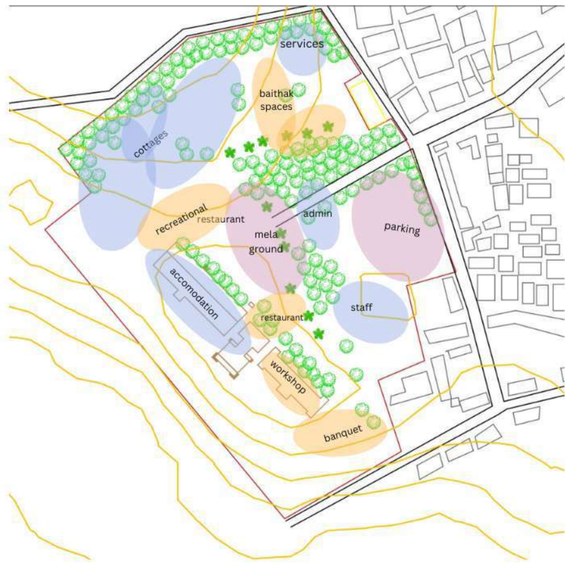
- Public spaces: the spaces which are open to both village residents and the guests. eg: mela street.
- Semi-private spaces: only the authorised people of the village who are involved have access. eg: workshop spaces.
- Private spaces: the luxury spaces where only guests are the user for a peaceful stay. eg: cottages

Public & Cultural:

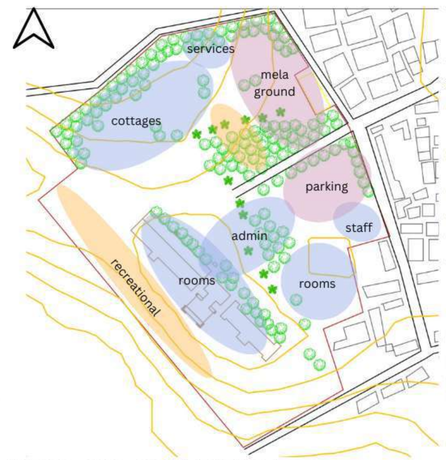
- Open-air craft courtyards
- Seasonal mela street with modular stalls
- Storytelling pavilions & folk performance zone.
- Festival lawn
- Open kitchen where the guests can enjoy the making of their favourite authentic local food

Private Luxury

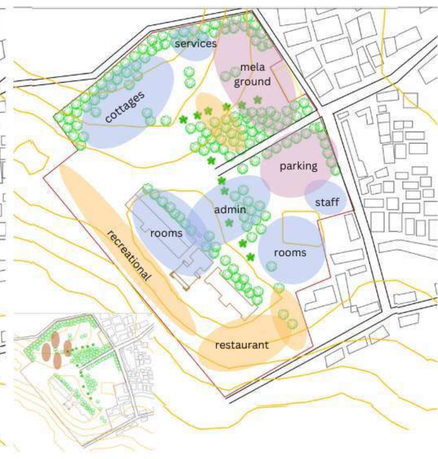
- Sea-facing villas with courtyards/plunge pools
- Garden decks for yoga/dining



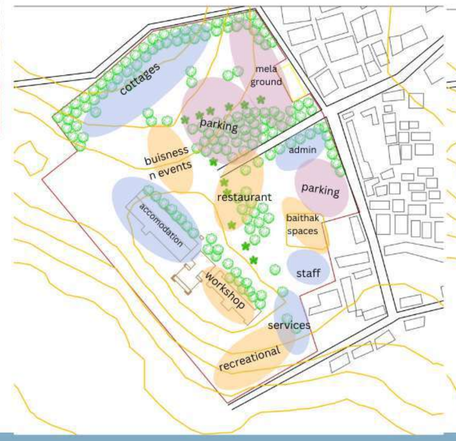

CONNECTIVITY



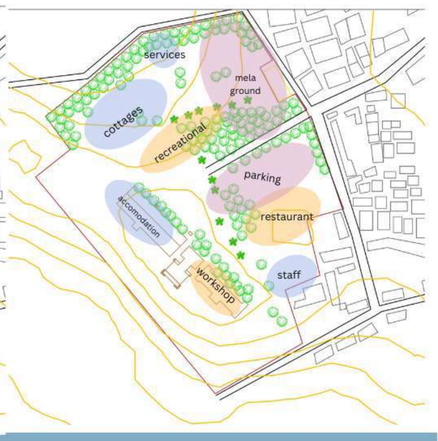

SUNPATH AND WIND PATH




VIEWS AND ORIENTATION




SITE SURROUNDINGS






Site Area – 11.88 acres / 48,100 SQM
- FAR permissible – 1.8
- Height permissible – 10.5 M
- Height achieved – 8 M
- Setbacks – 4.5 M rear, 3.5 M other sides

TOTAL built-up = 7,990 m²
Ground coverage achieved = 12.6%
FAR achieved = 0.2

**PARKING CALCULATIONS:**

1 Car = 1 ECS
2 Two-wheelers = 1 ECS
1 Bus = 2 ECS
1 Mini Bus = 1.5 ECS

| VEHICLE TYPE | COUNT | ECS RULE | ECS CALCULATED |
|---|---|---|---|
| CARS | 48 | 1 ECS PER CAR | 48 ECS |
| TWO WHEELERS | 25 | 2 BIKES =1 ECS | 13 ECS |
| BUS | 1 | 2 ECS PER BUS | 2 ECS |
| MINI BUS | 1 | 1.5 ECS | 1.5 ECS |

- LUXURY VILLA
- DELUXE COTTAGES
- STANDARD COTTAGES
- HOMESTAY COTTAGES
- ADMIN AND RECEPTION
- EXISTING PALACE
- RESTURANT
- BANQUET
- STAFF QUATER
- KITCHEN

# CHORWAD PALACE RETREAT

# SITE PLAN

SCALE

1:750

PROJECT TYPE:
3 STAR RESORT

THESIS GUIDE:
Dr. ALKA
BHARAT MA'AM

DAKSHITA CHOPRA
211110241

NOTE

SIGNATURE

NORTH

N




- Admin – 200 SQM
- Luxury villas (5 nos, G+1) – 1,540 SQM
- Deluxe rooms (20 nos, stacked) – 2,400 SQM
- Standard rooms (10 nos, stacked) – 900 SQM
- Homestay (8 nos total) – 400 SQM
- Restaurant – 250 SQM
- Recreational block – 300 SQM
- Staff quarters – 500 SQM

- LUXURY VILLA
- DELUXE COTTAGES
- STANDARD COTTAGES
- HOMESTAY COTTAGES
- ADMIN AND RECEPTION
- EXISTING PALACE
- RESTURANT
- BANQUET
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- KITCHEN

# CHORWAD PALACE RETREAT

# SITE PLAN

WITH G.F PLAN

SCALE

1:750

PROJECT TYPE:
3 STAR RESORT

THESIS GUIDE:
Dr. ALKA
BHARAT MA'AM

DAKSHITA CHOPRA
211110241

SIGNATURE

NORTH

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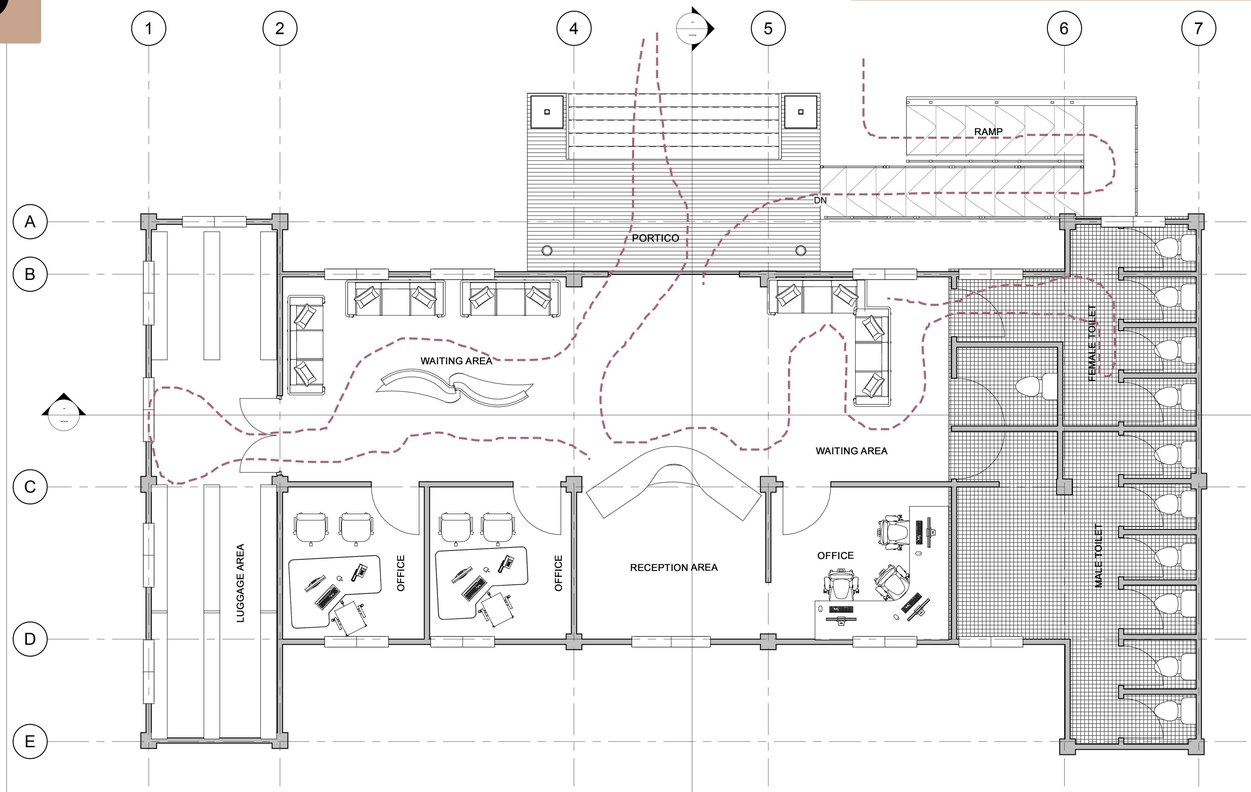
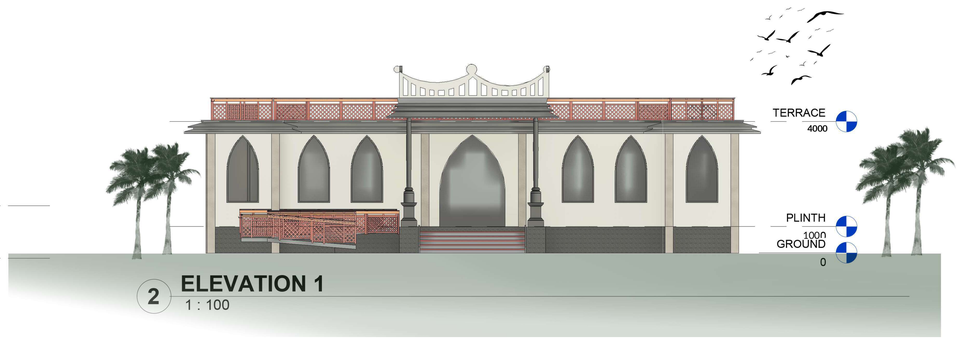
# 08

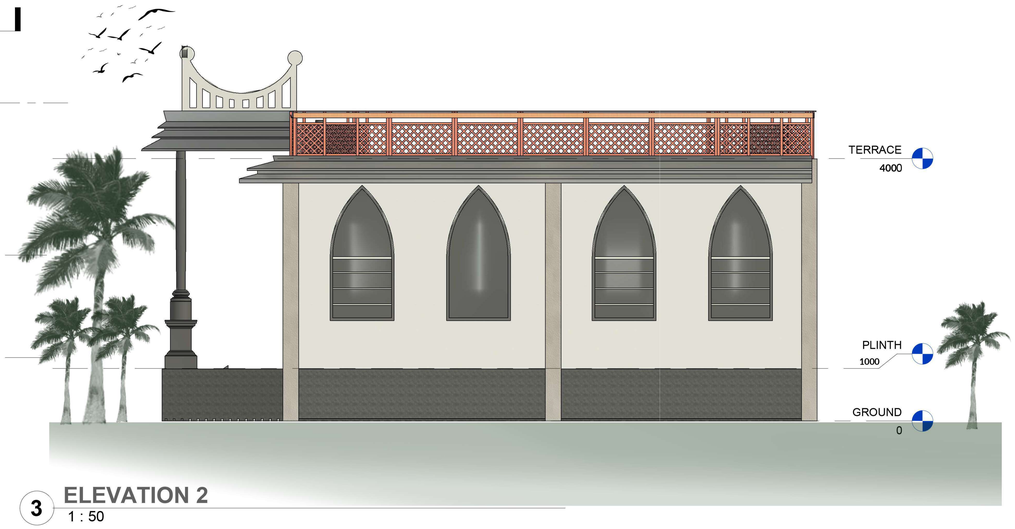
# ADMIN AND RECEPTION




**1 GROUND FLOOR PLAN**
1 : 50




**2 ELEVATION 1**
1 : 100




**3 ELEVATION 2**
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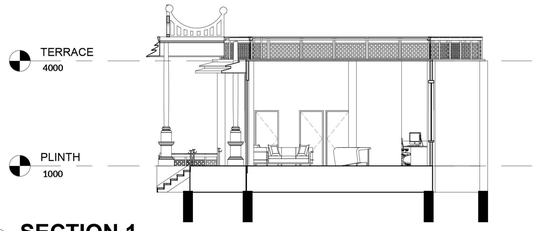
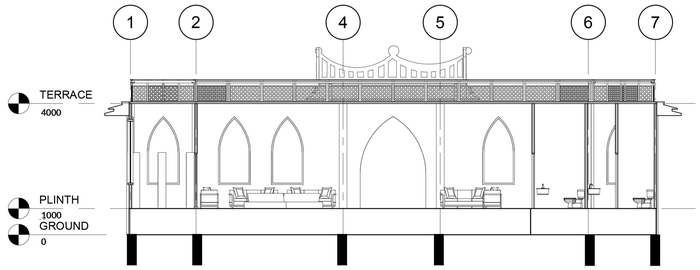



**4 SECTION 1**
1 : 100

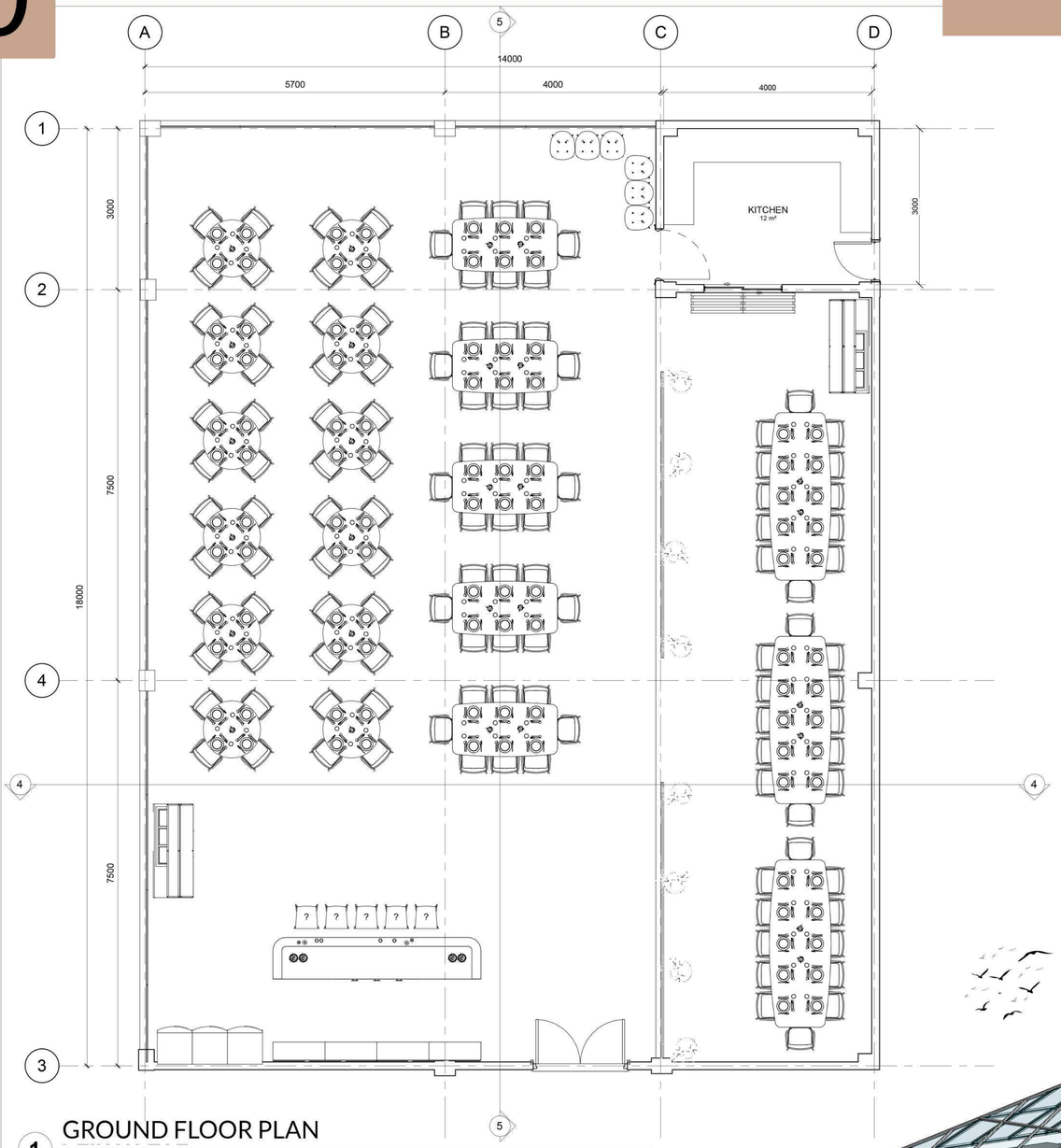



**5 SECTION 2**
1 : 100



**6 3D VIEW**

# RESTURANT




1 GROUND FLOOR PLAN
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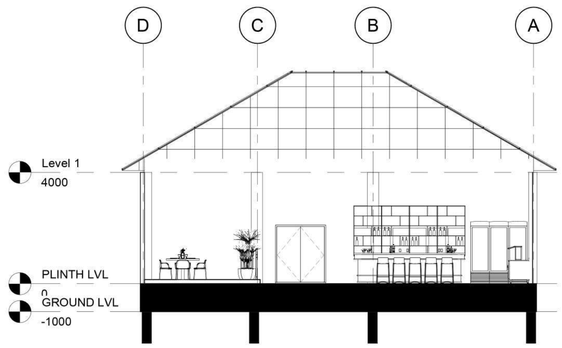
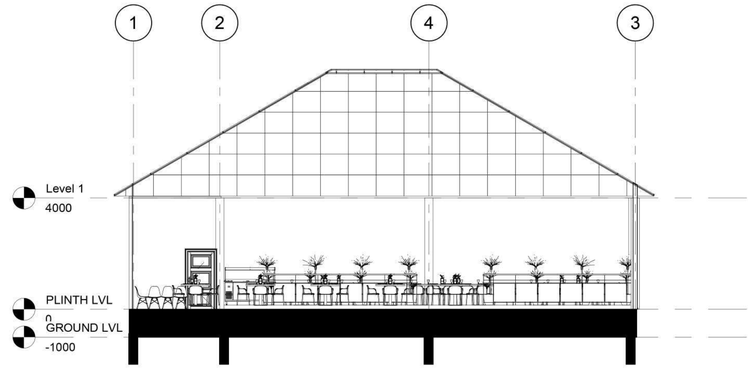
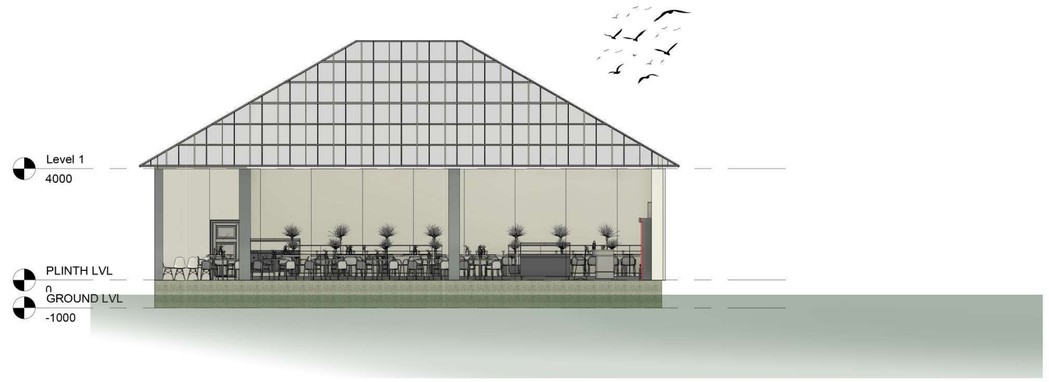


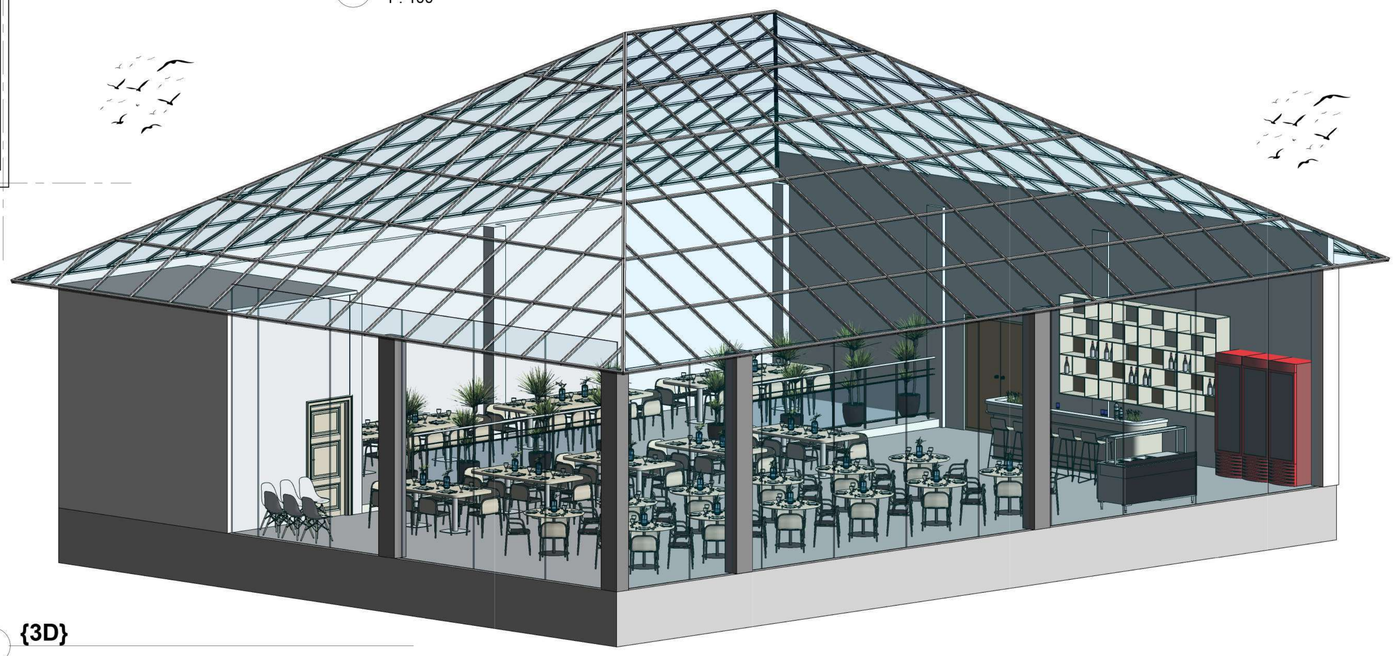

4 SECTION 1
1 : 100




5 SECTION 2
1 : 100

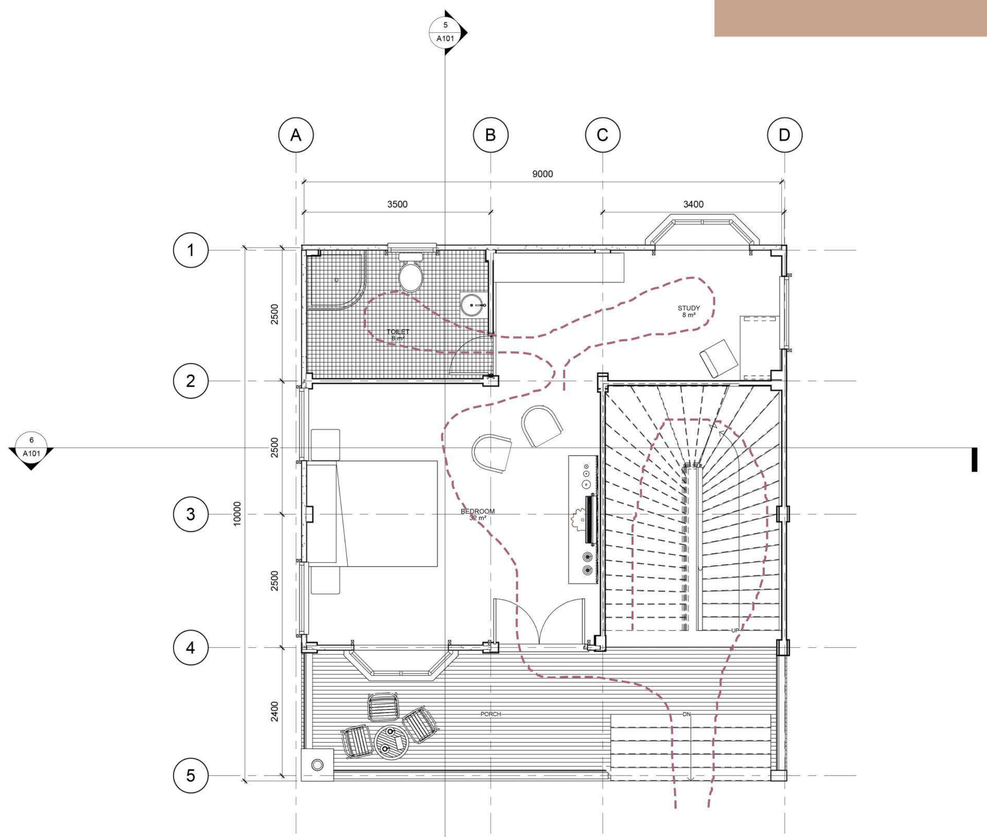



3 ELEVATION
1 : 100

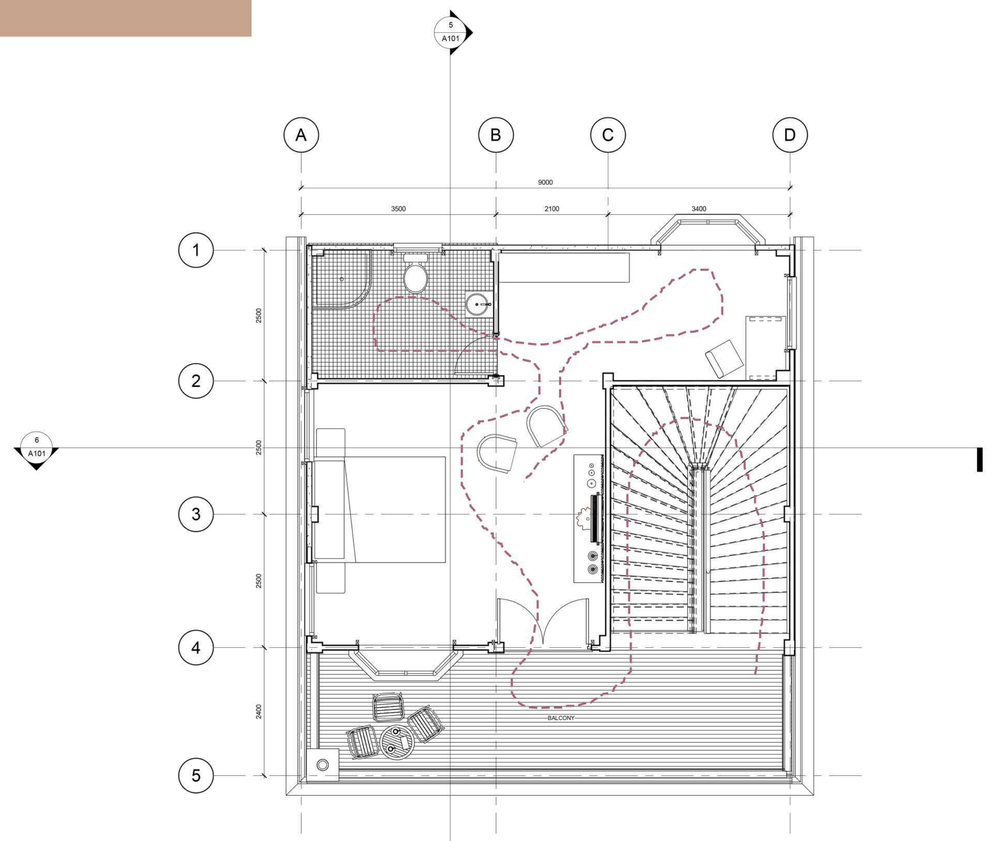


2 {3D}

# STANDARD COTTAGE




1 GROUND FLOOR PLAN
1 : 50




2 FIRST FLOOR PLAN
1 : 50

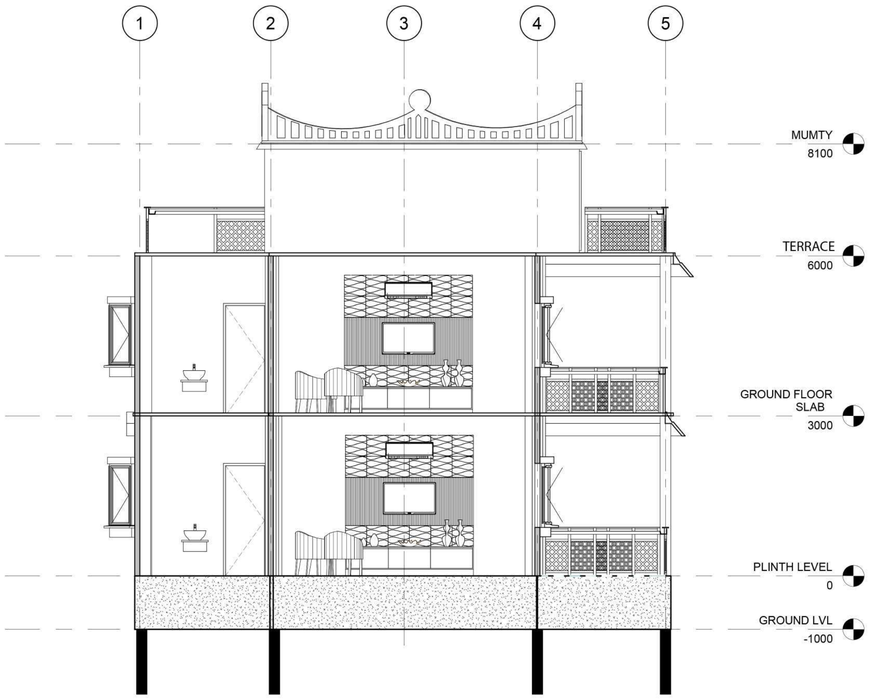



3 ELEVATION 1
1 : 50

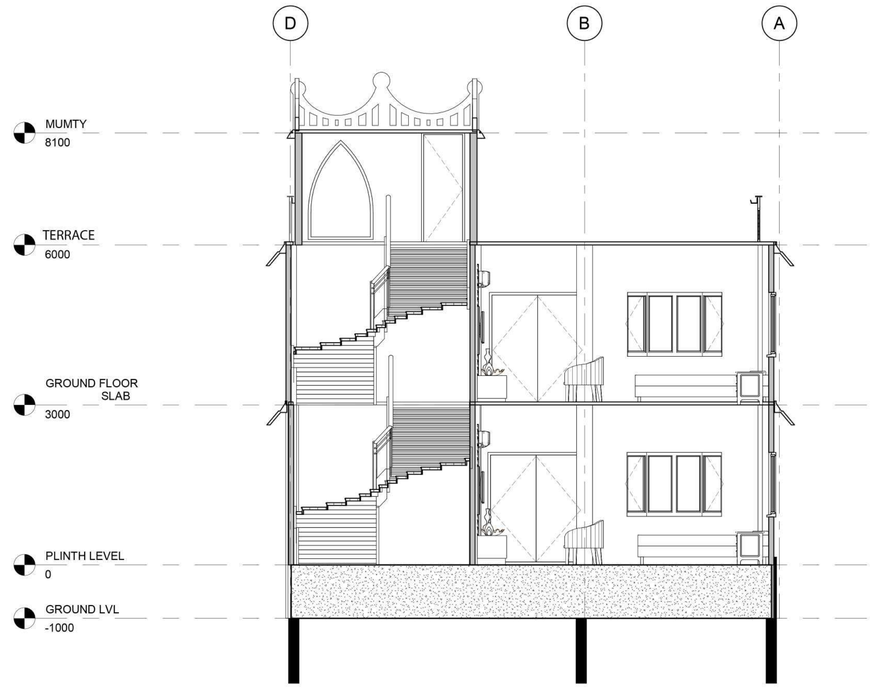



4 ELEVATION 2
1 : 50

# STANDARD COTTAGE




1 **Section 1**
1 : 50




2 **Section 2**
1 : 50

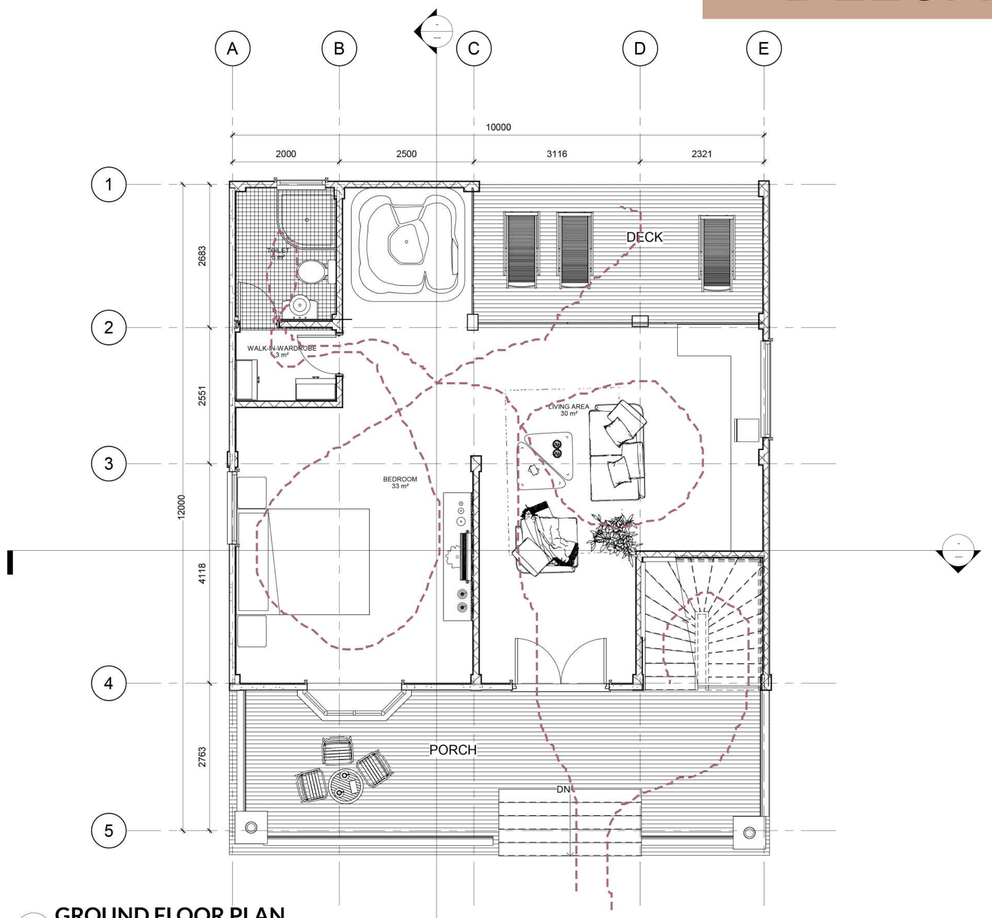


4 **VIEW 1**

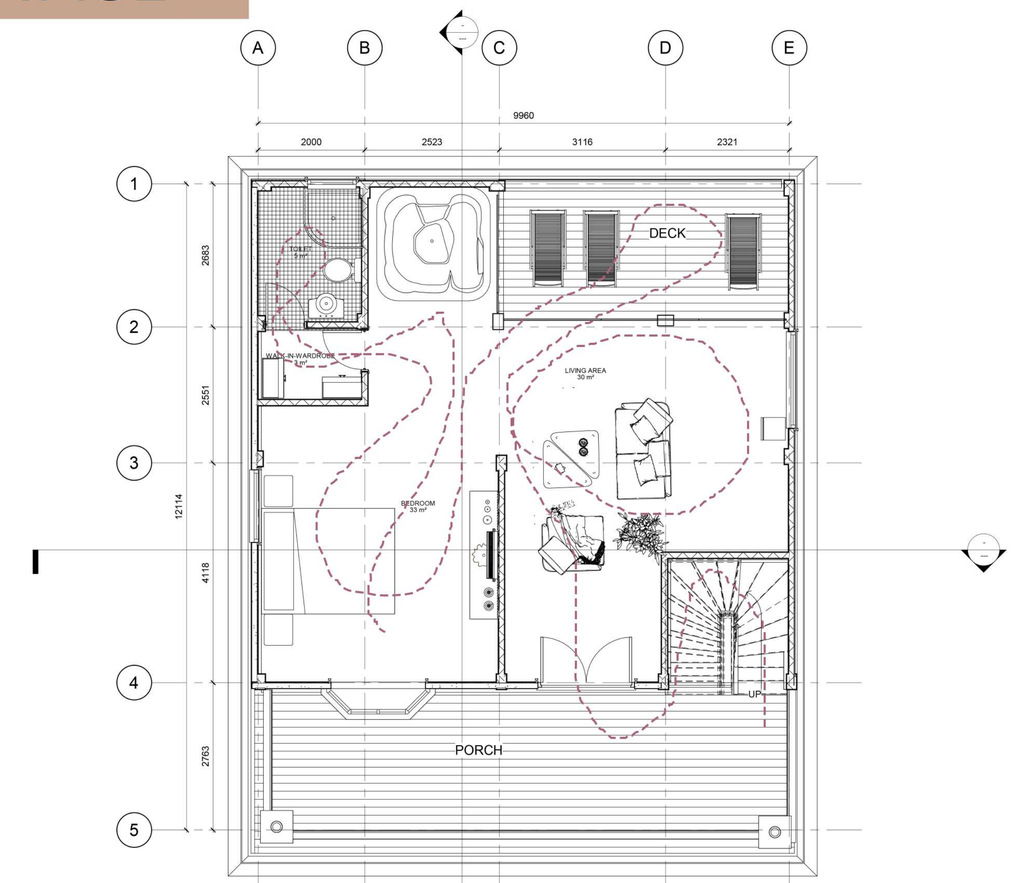


3 **VIEW 2**

# DELUXE COTTAGE



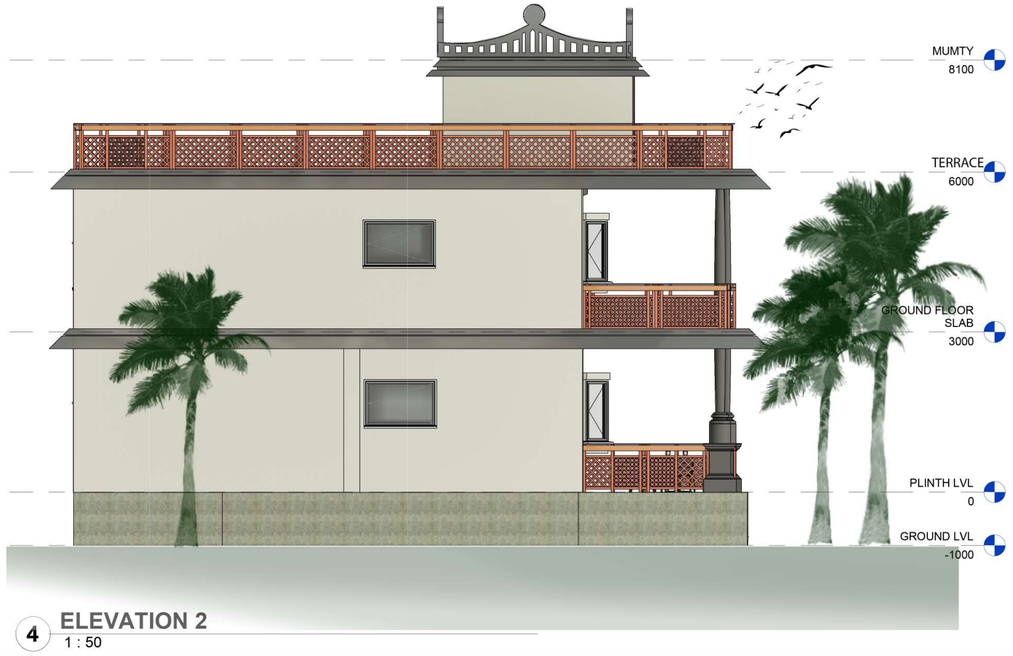

**2 GROUND FLOOR PLAN**
1 : 50




**1 FIRST FLOOR PLAN**
1 : 50

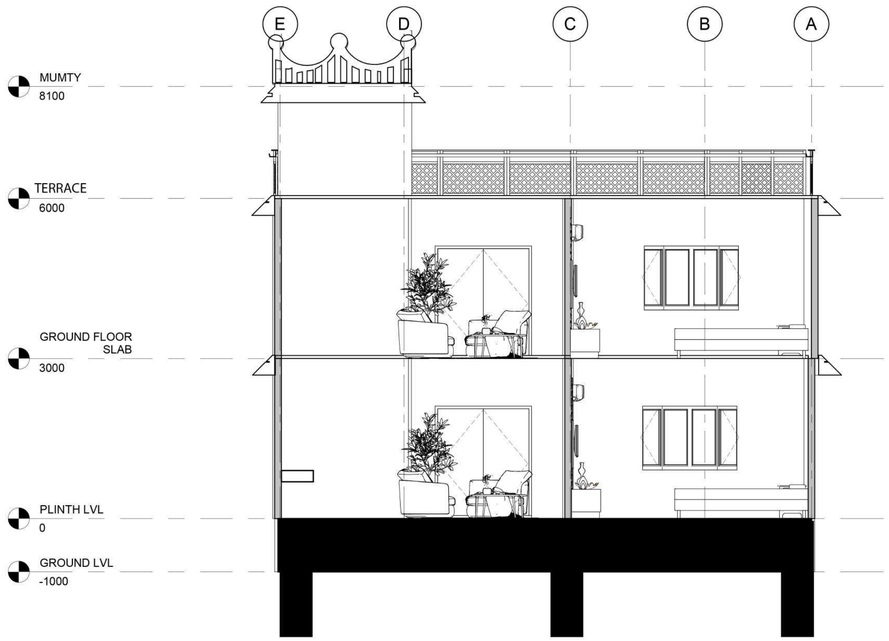



**3 ELEVATION 1**
1 : 50

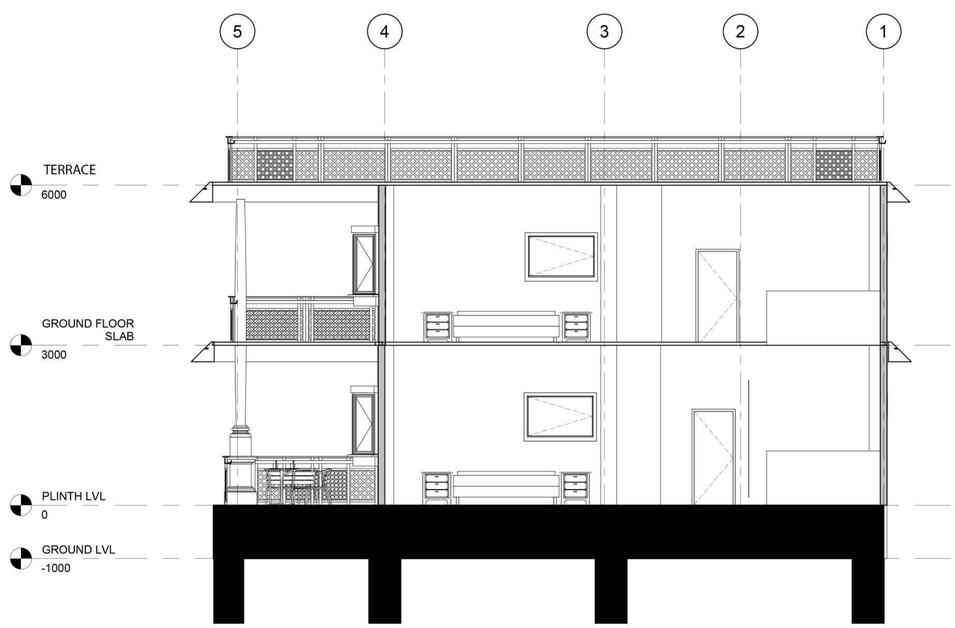



**4 ELEVATION 2**
1 : 50

# DELUXE COTTAGE




1 **Section 1**
1 : 50

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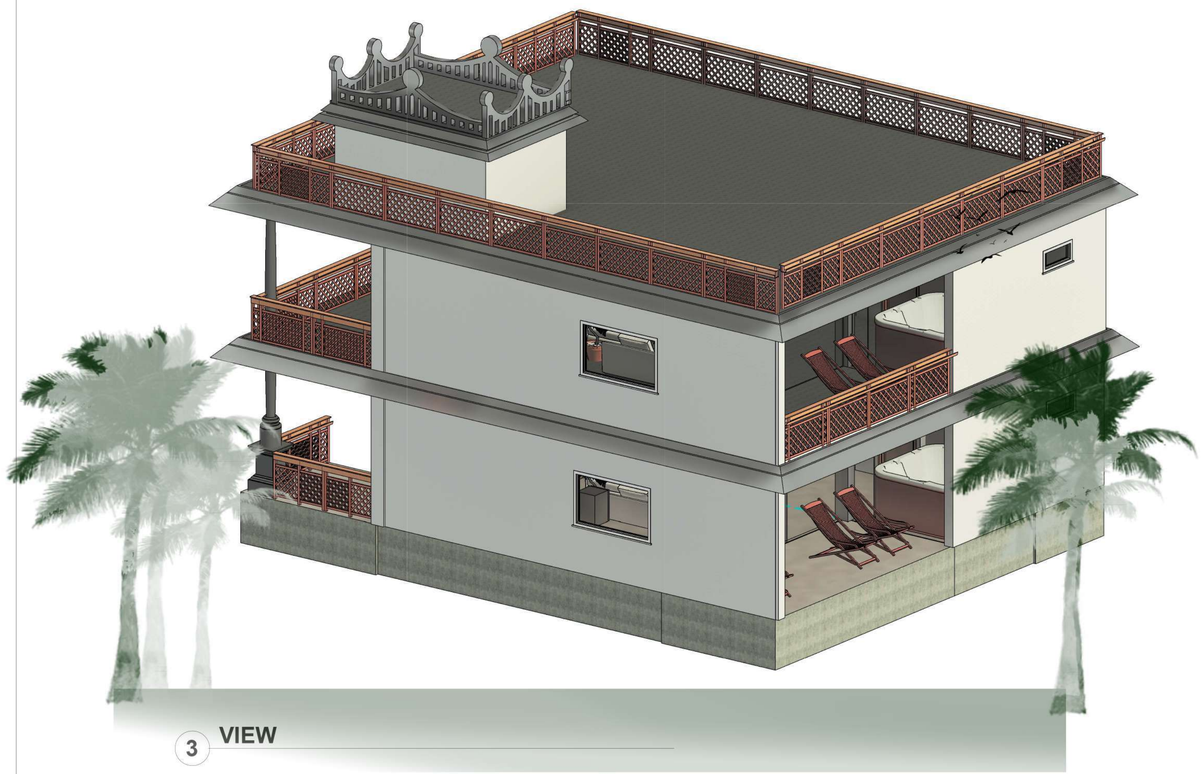
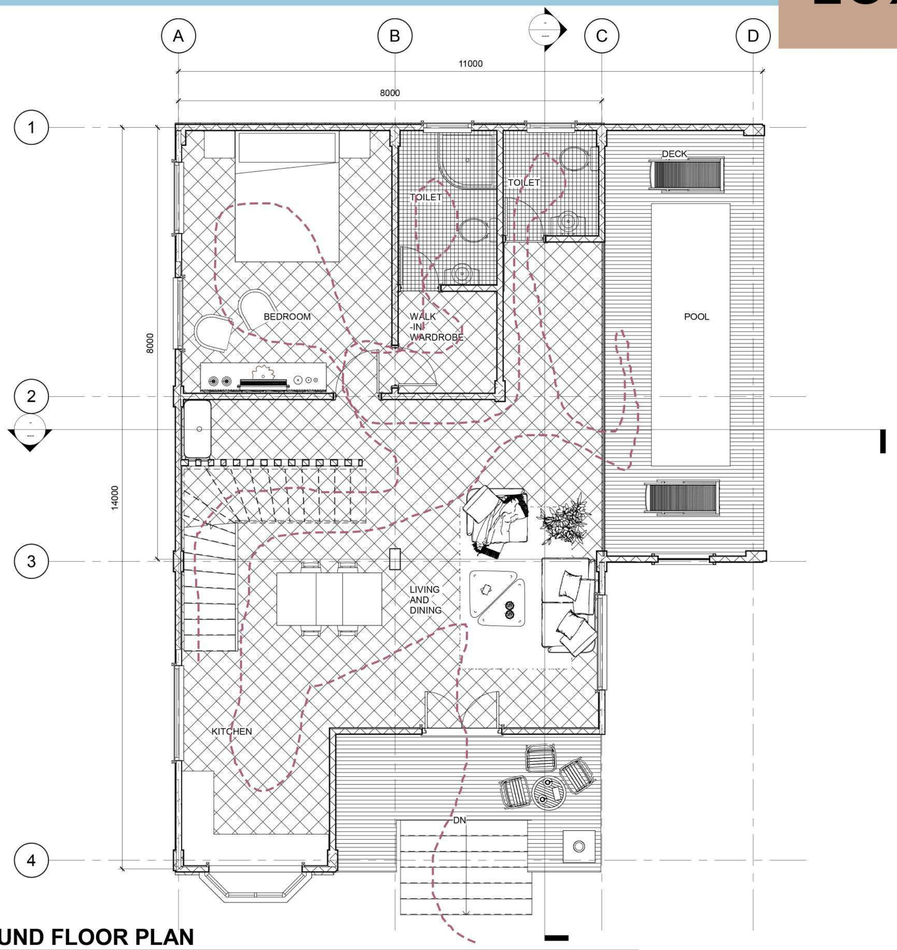


3 **VIEW**

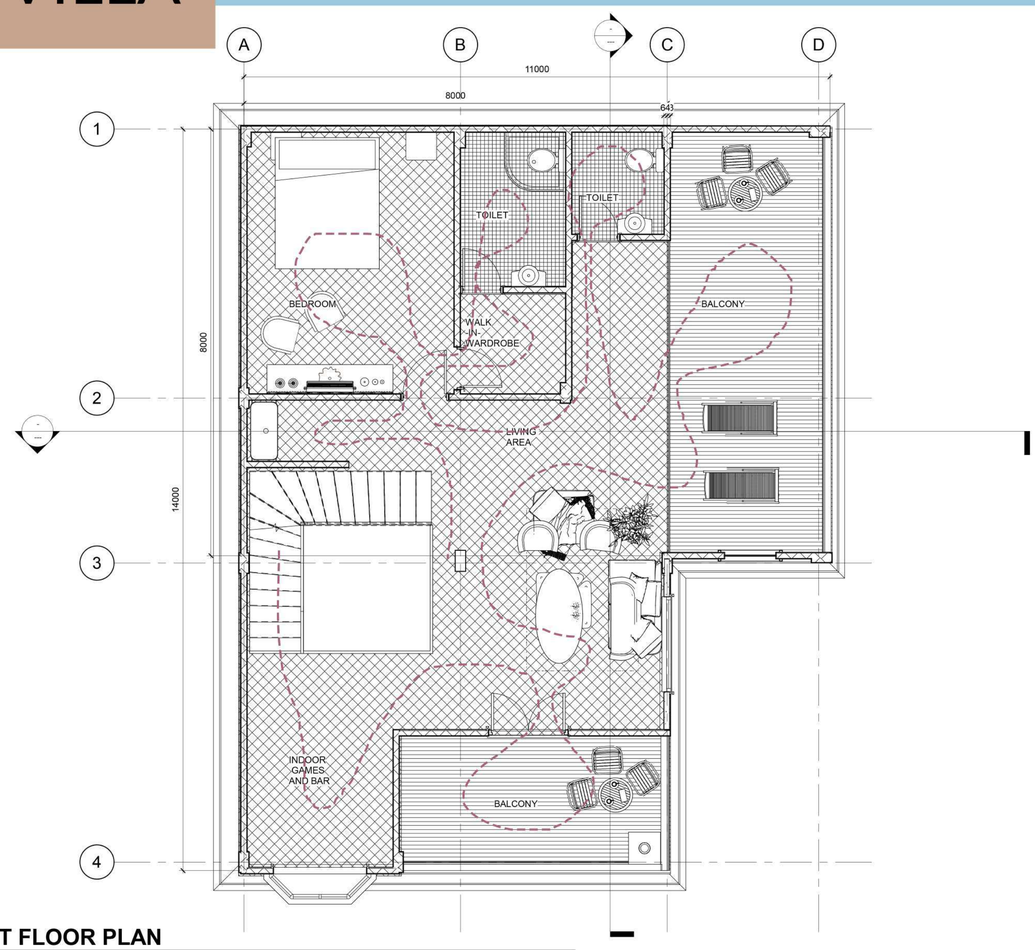


4 **VIEW**

# LUXURY VILLA




3 **GROUND FLOOR PLAN**
1 : 50




4 **FIRST FLOOR PLAN**
1 : 50

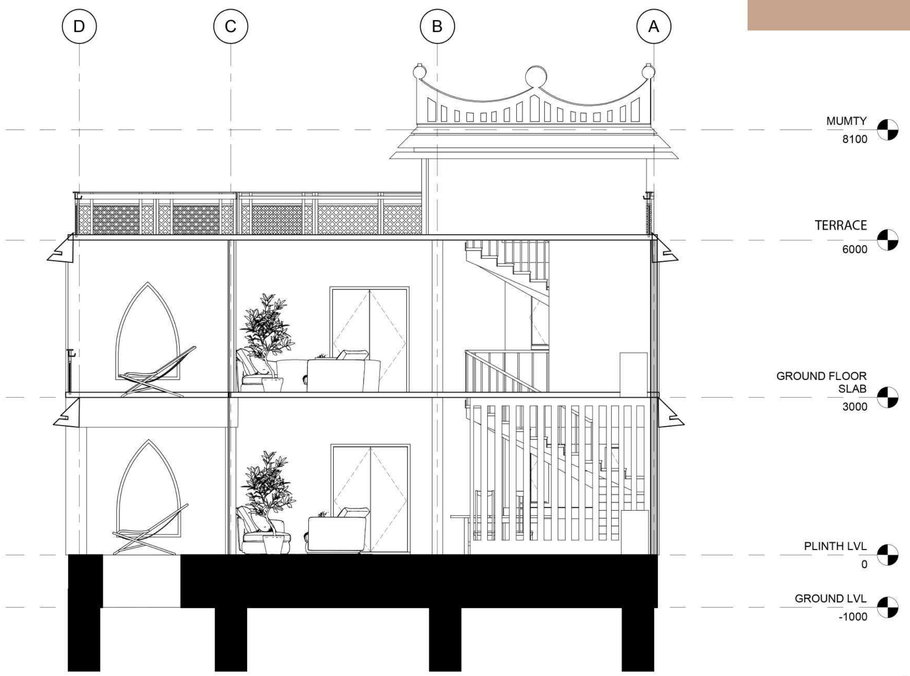



1 **ELEVATION 1**
1 : 50

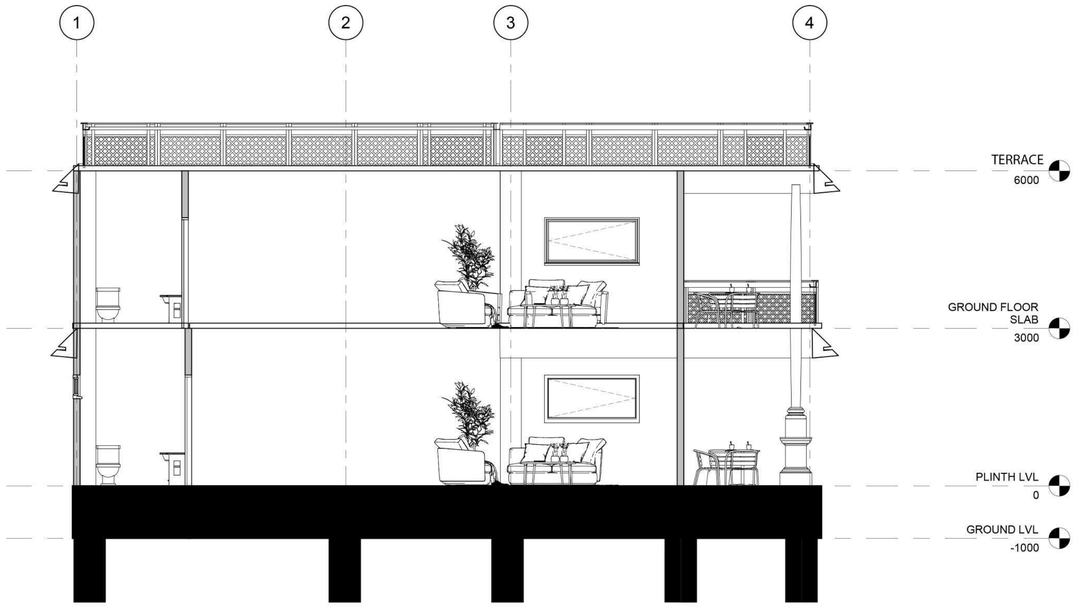



2 **ELEVATION 2**
1 : 50

# LUXURY VILLA




3 **SECTION 1**
1 : 50

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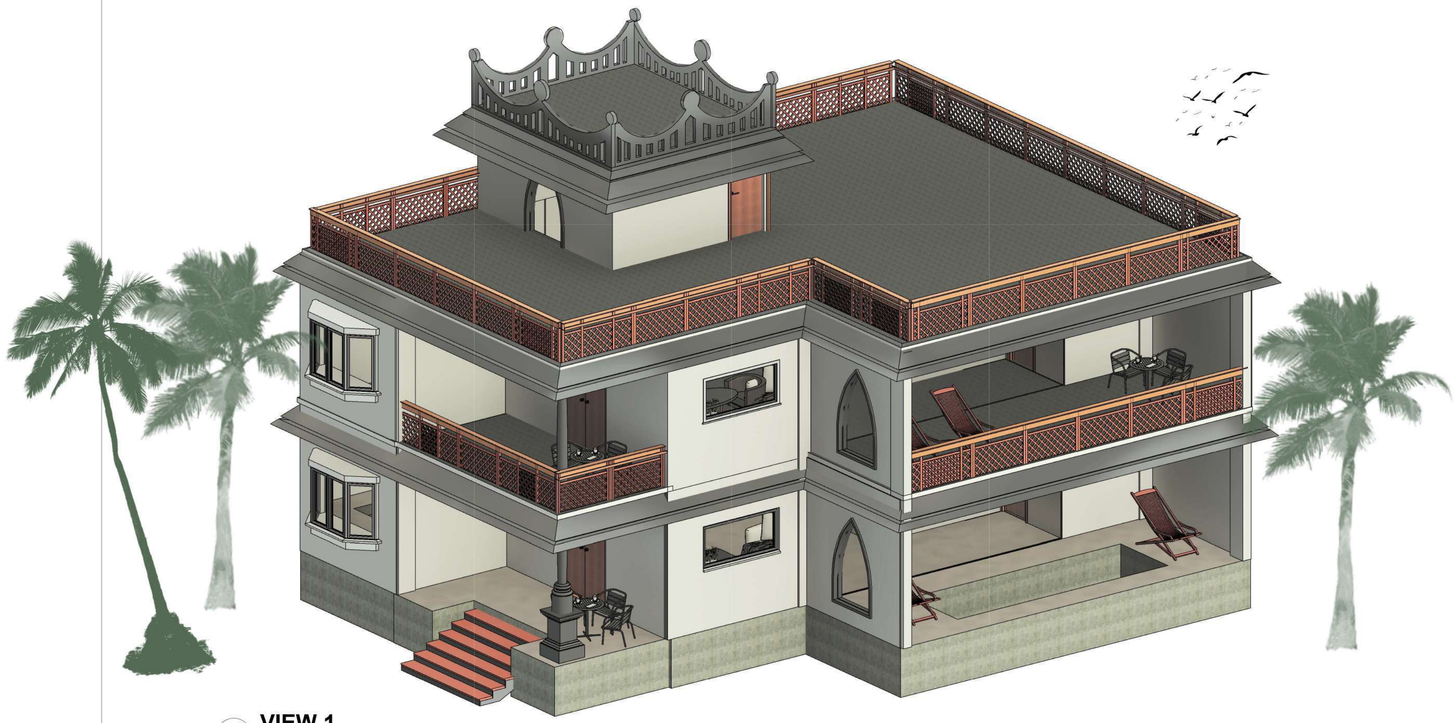
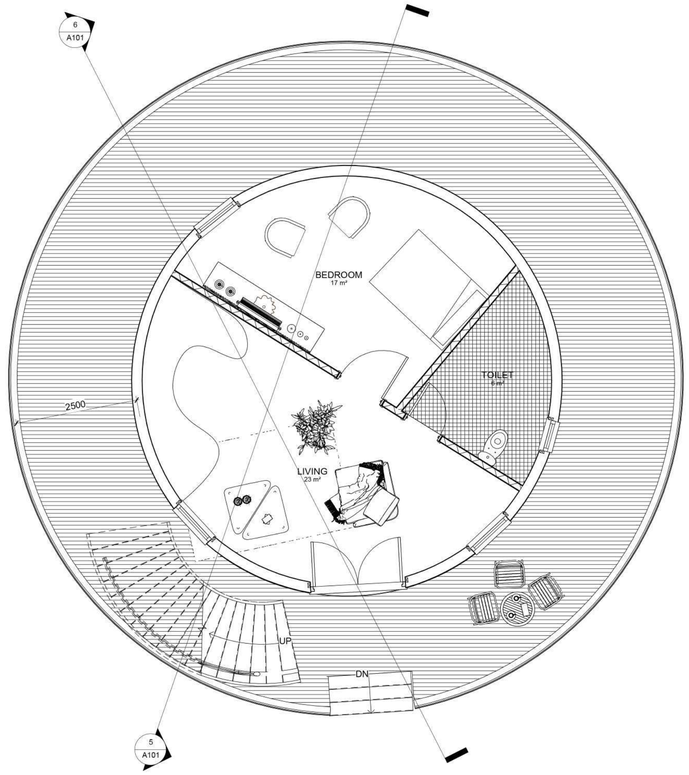


1 **VIEW 1**

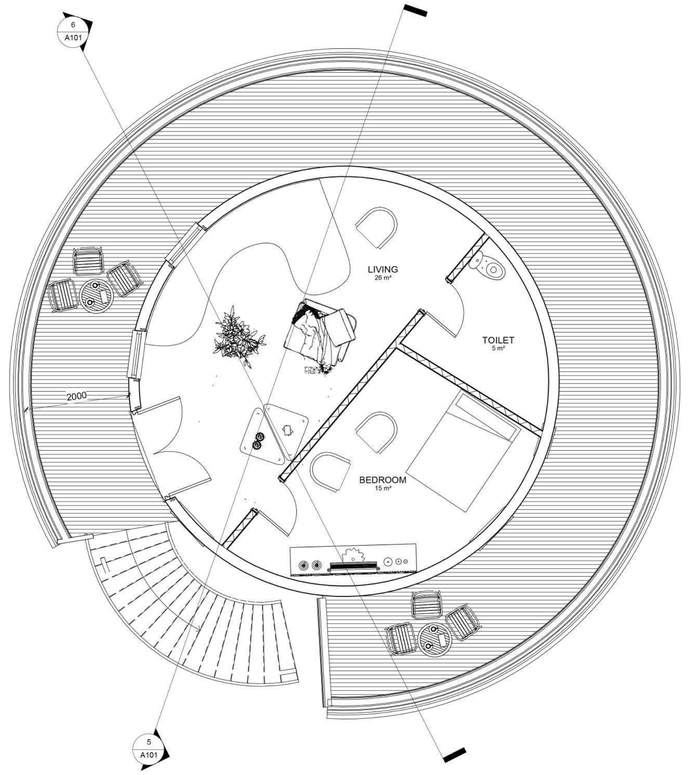


2 **VIEW 2**

# HOMESTAY COTTAGE




**1 GROUND FLOOR PLAN**
1 : 50




**2 FIRST FLOOR PLAN**
1 : 50

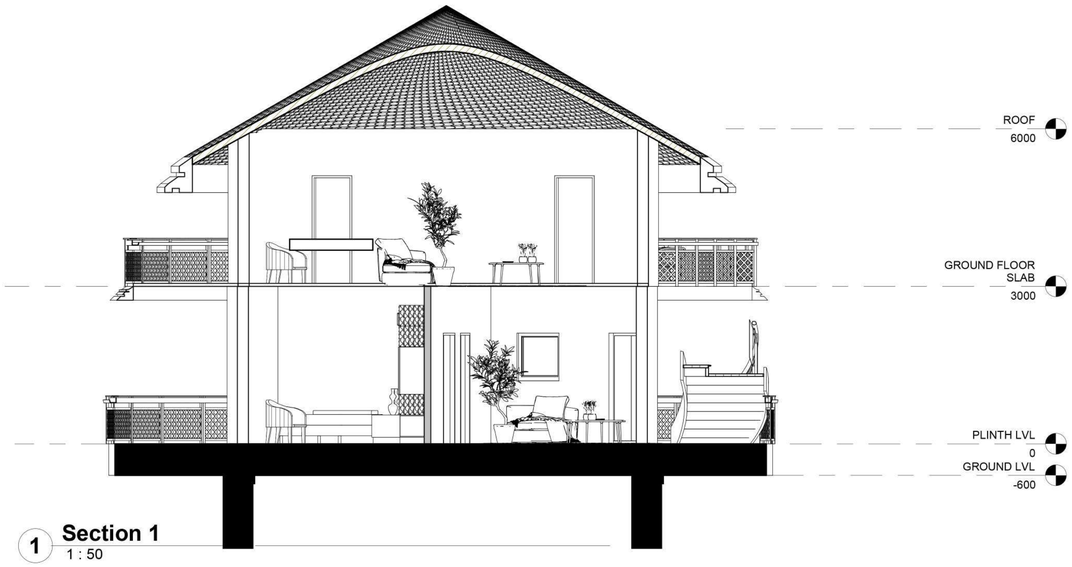



**3 ELEVATION 1**
1 : 50

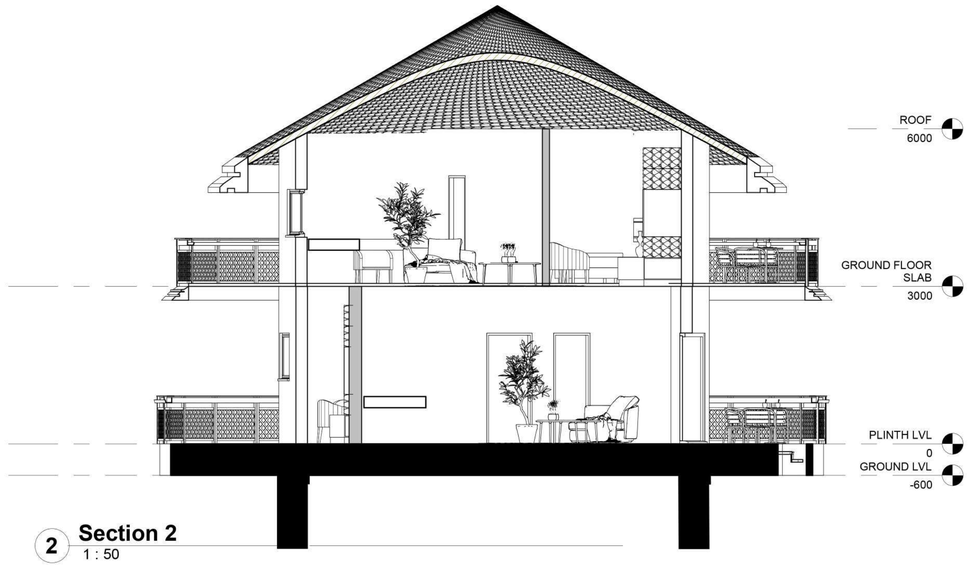



**4 ELEVATION 2**
1 : 50

# HOMESTAY COTTAGE




1 **Section 1**
1 : 50




2 **Section 2**
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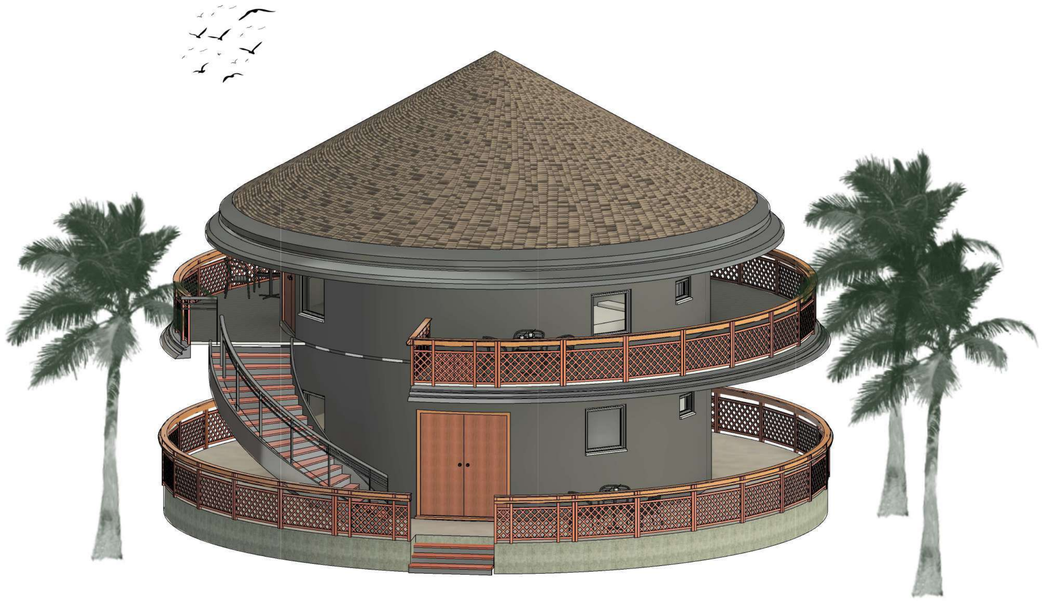
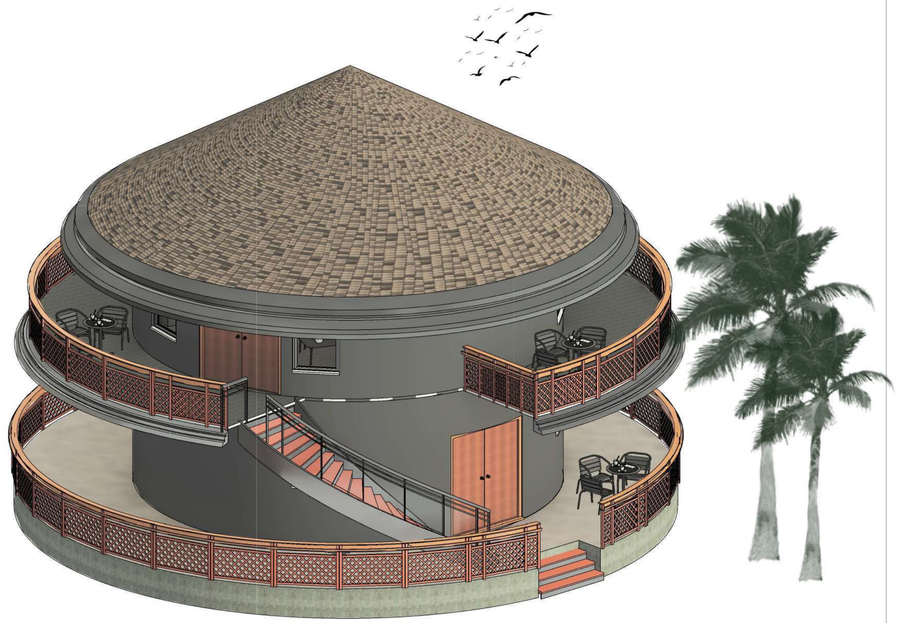
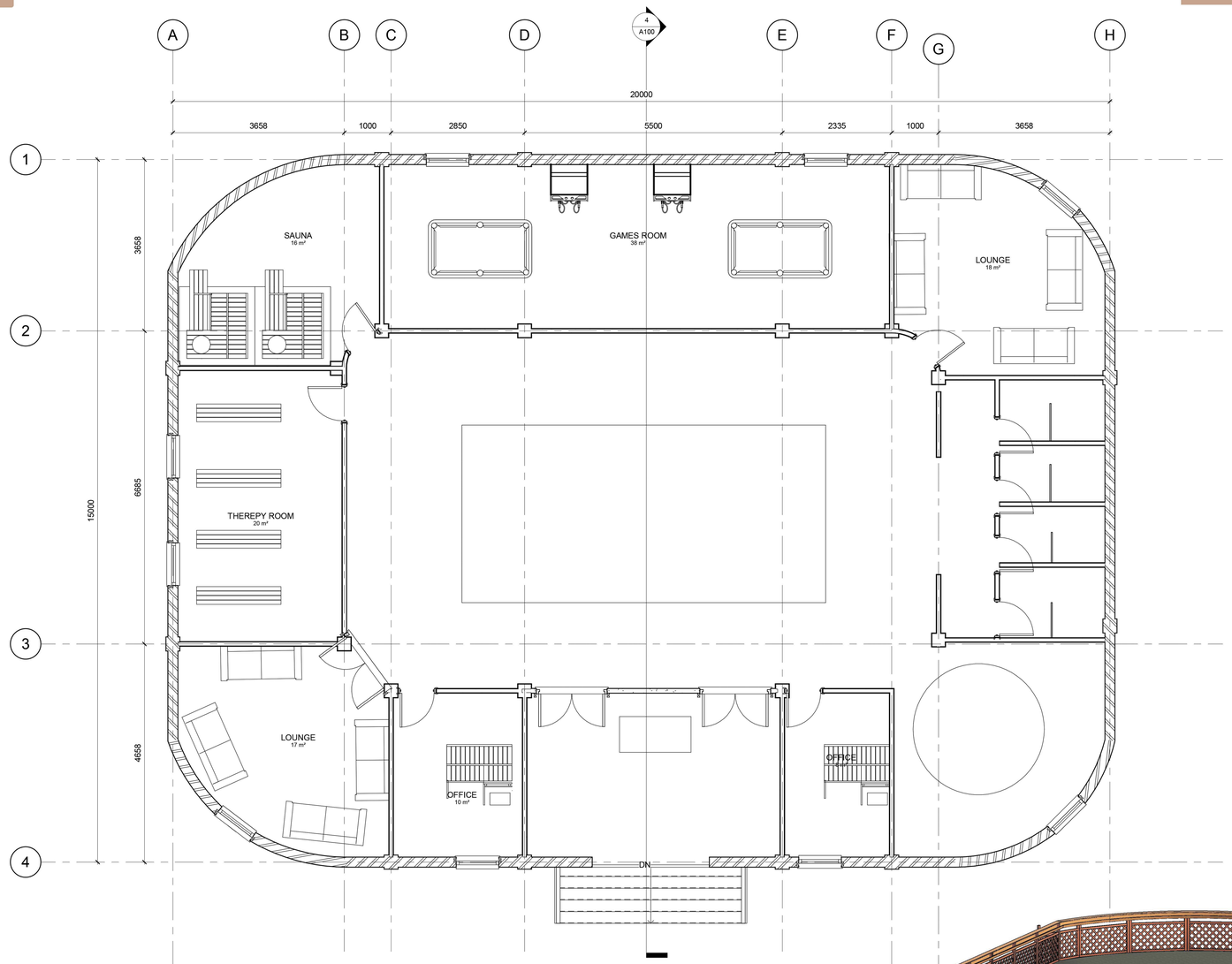


4 **VIEW 1**

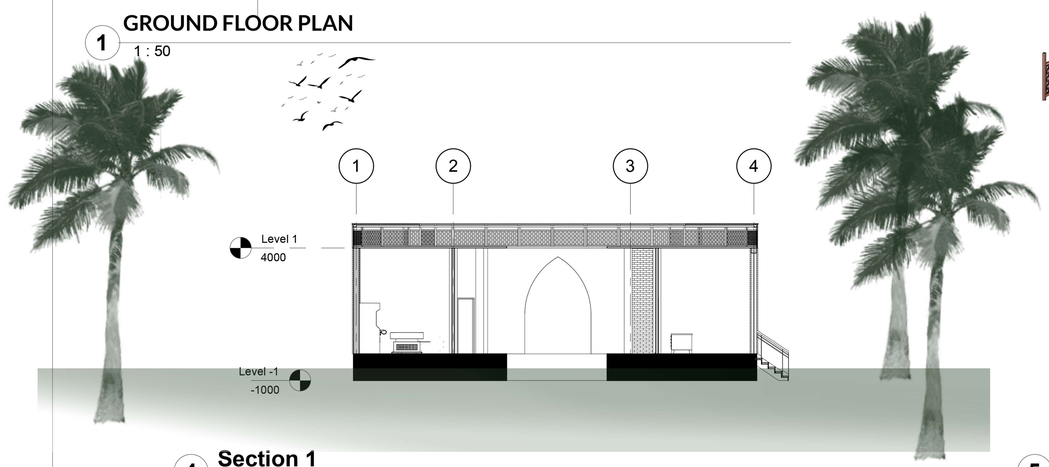


3 **VIEW 2**

# RECREATIONAL BLOCK




**1 GROUND FLOOR PLAN**
1 : 50




**4 Section 1**
1 : 100

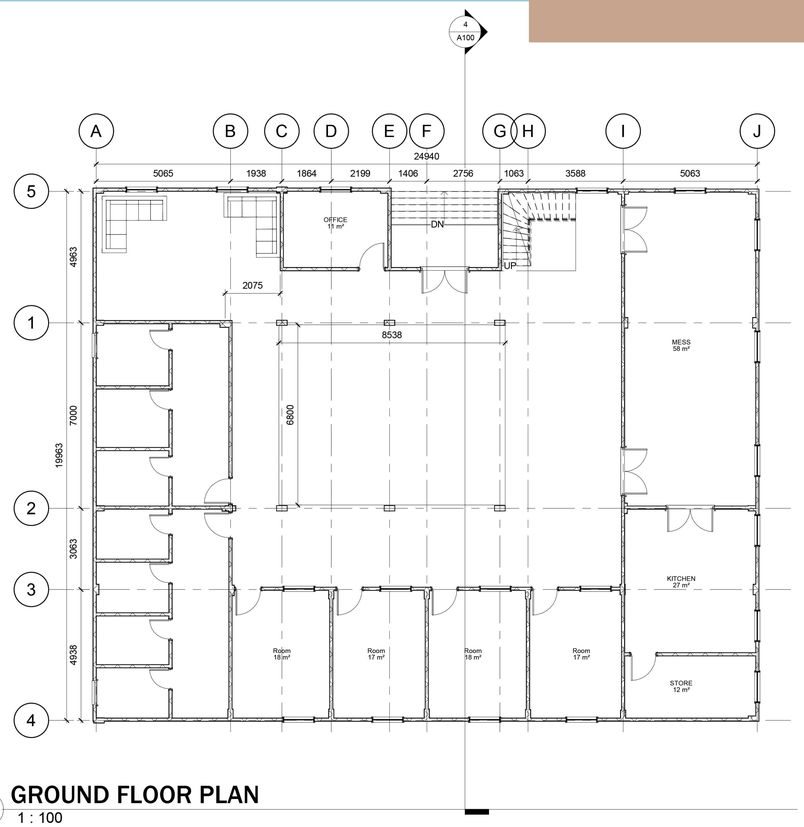



**3 ELEVATION-1**
1 : 100

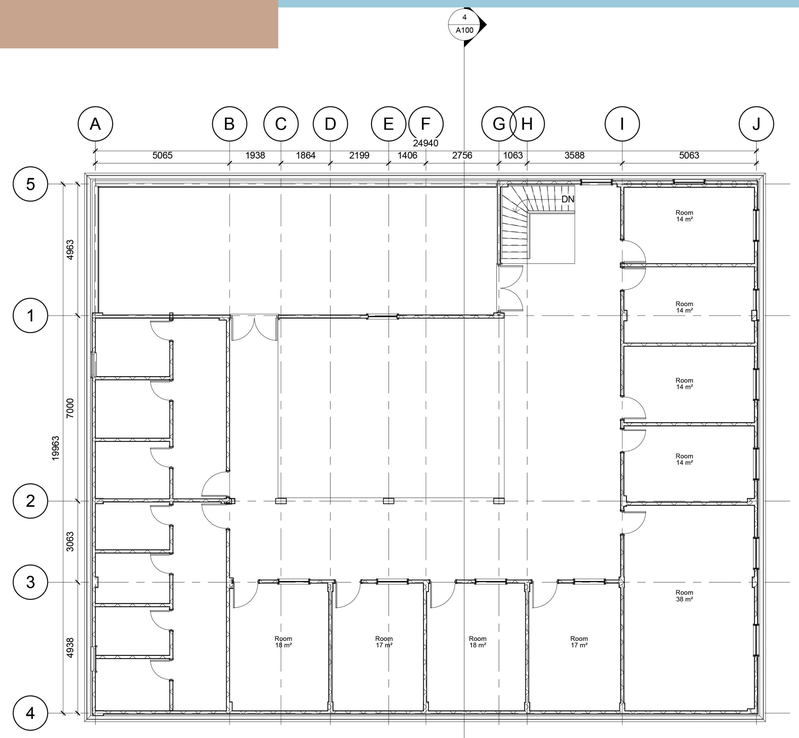


**5 {3D}**

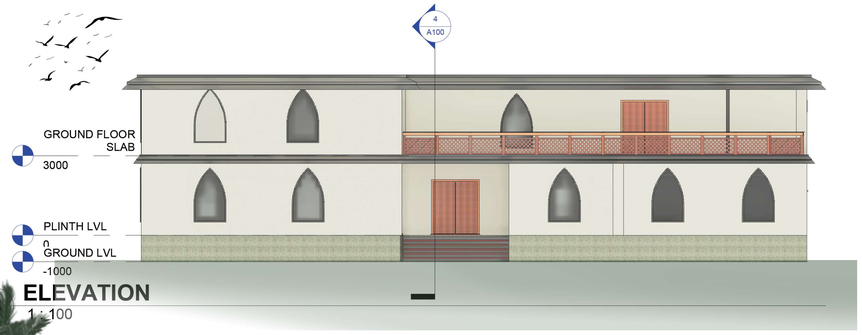
# STAFF QUARTER



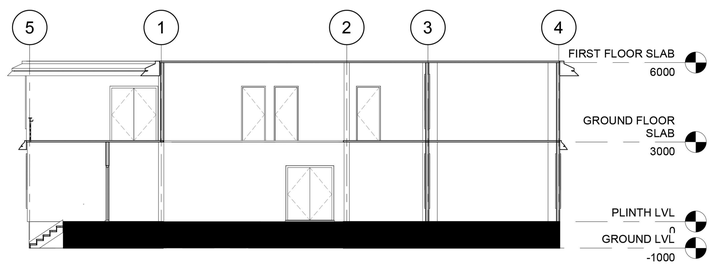

**1 GROUND FLOOR PLAN**
1 : 100



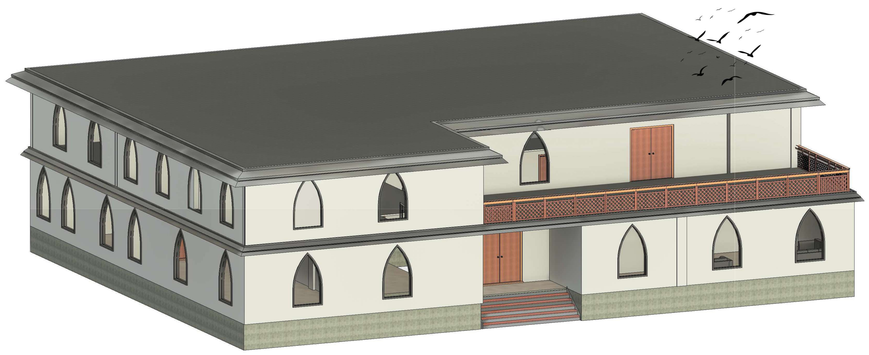

**2 FIRST FLOOR PLAN**
1 : 100




**3 ELEVATION**
1 : 100




**4 Section 1**
1 : 100

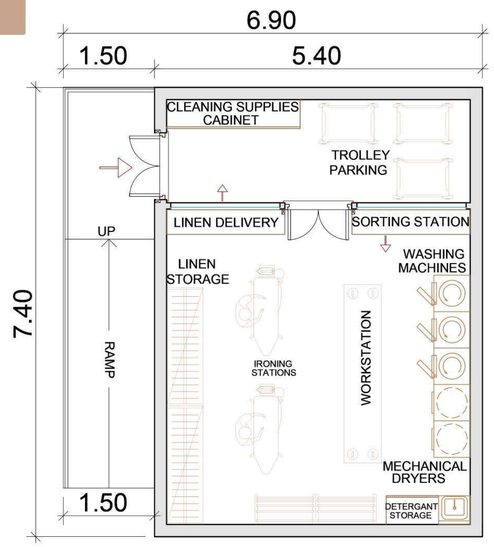


**5 VIEW 1**

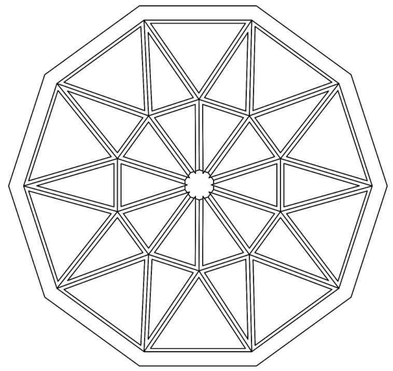


**6 VIEW 2**

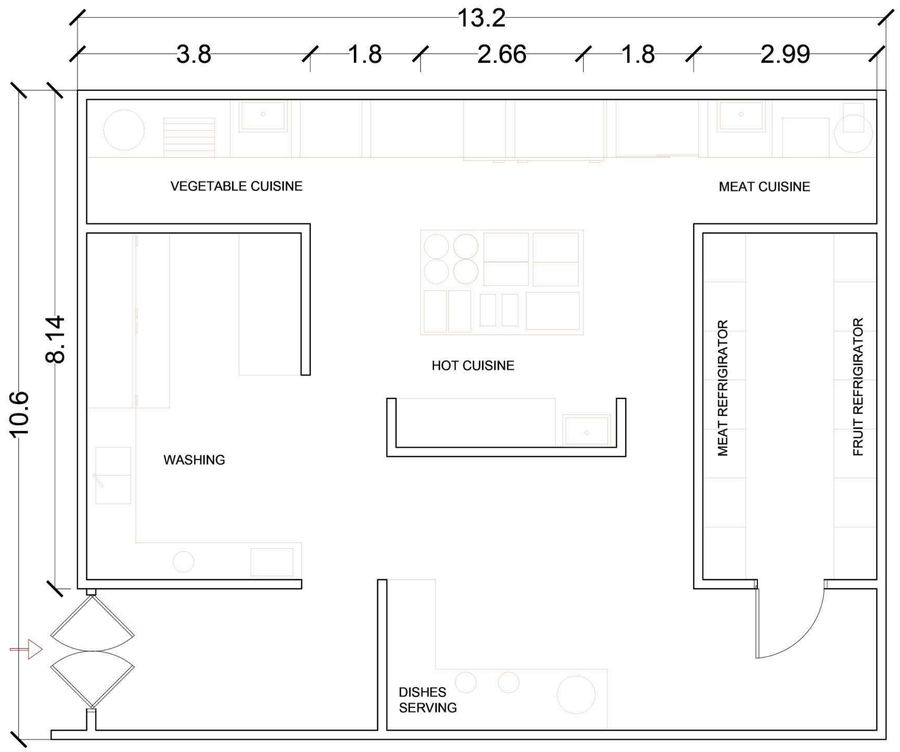
# MISCELLANEOUS



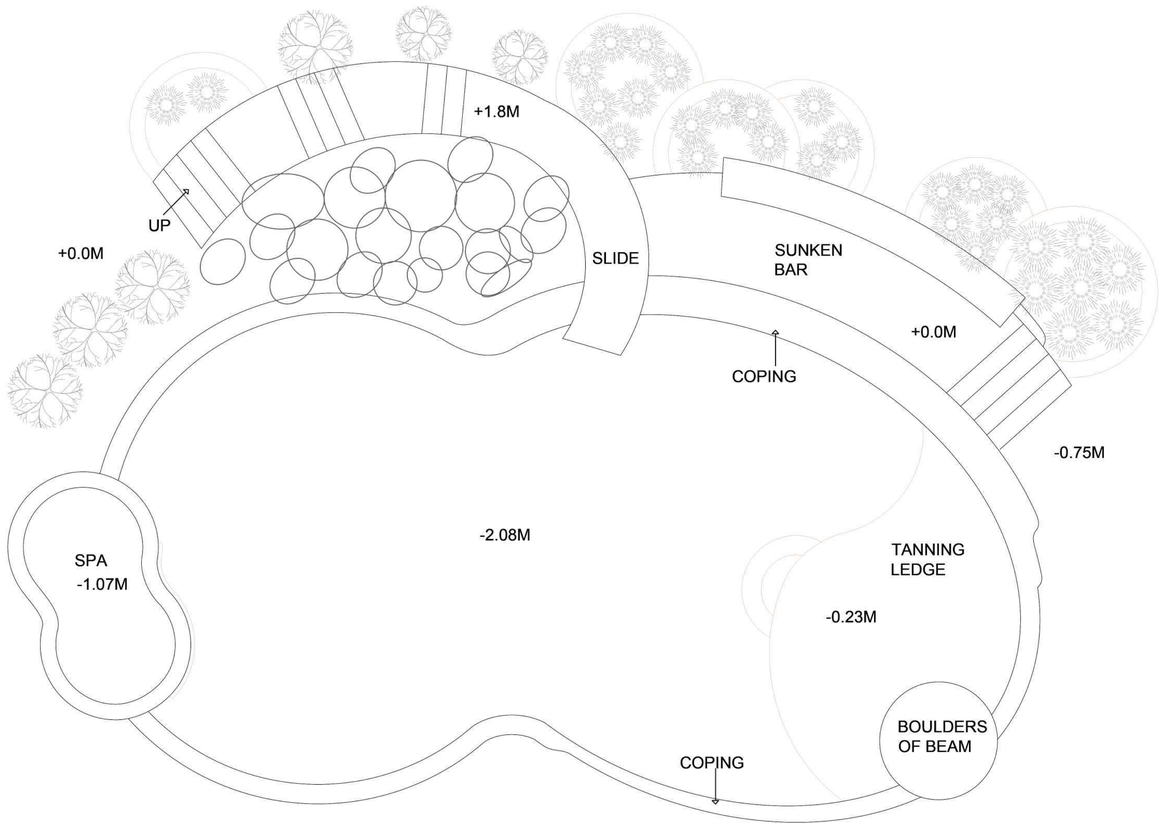

HOUSEKEEPING ROOM
Scale - 1:50



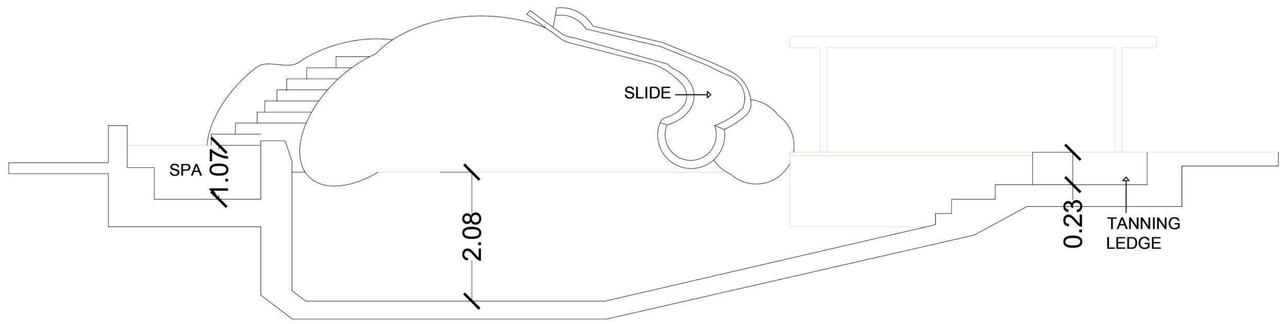
PAVILION
Scale - 1:50




KITCHEN
Scale - 1:50



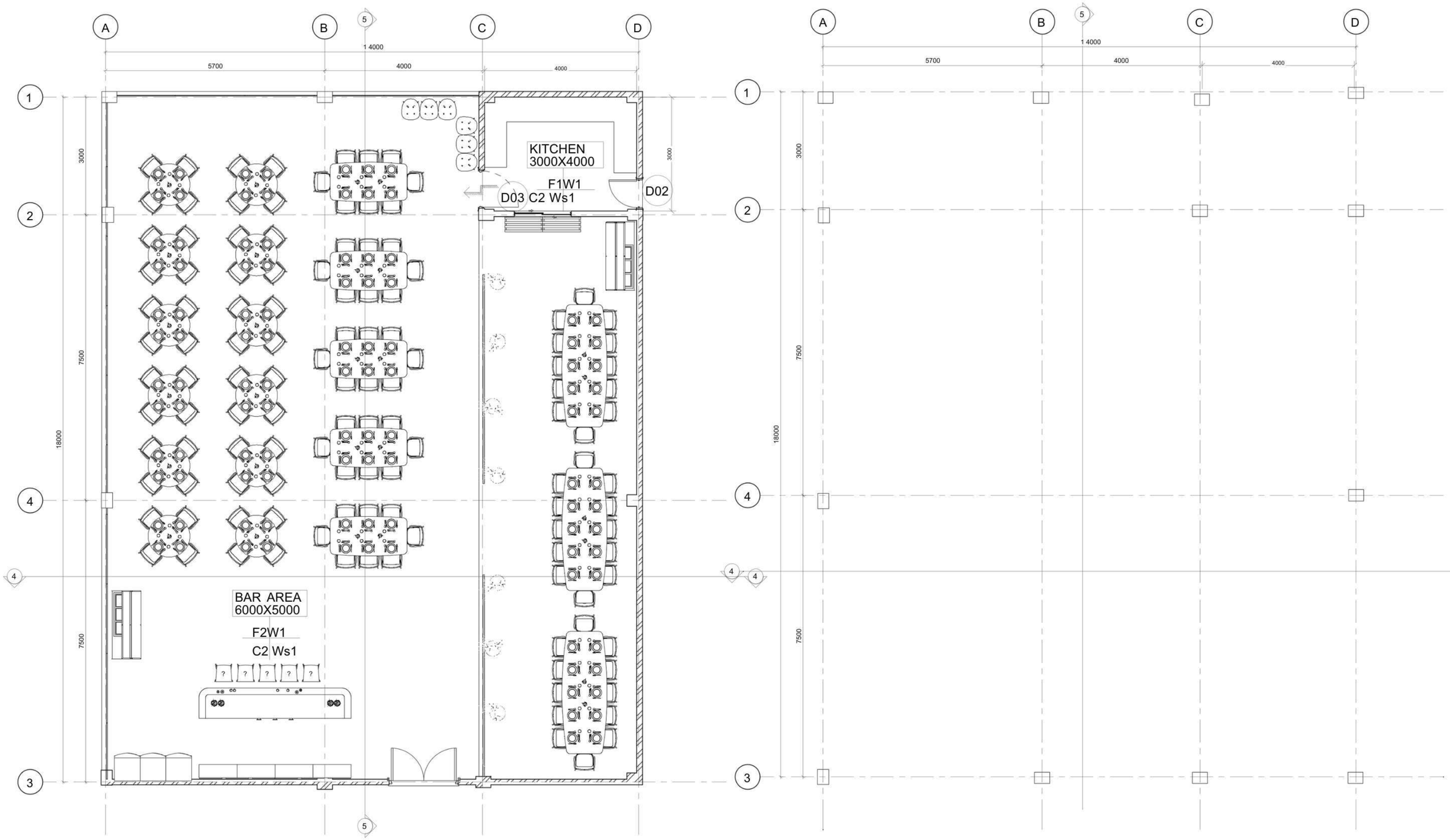

PLAN
Scale - 1:50




SECTION
Scale - 1:50

# WORKING DRAWING

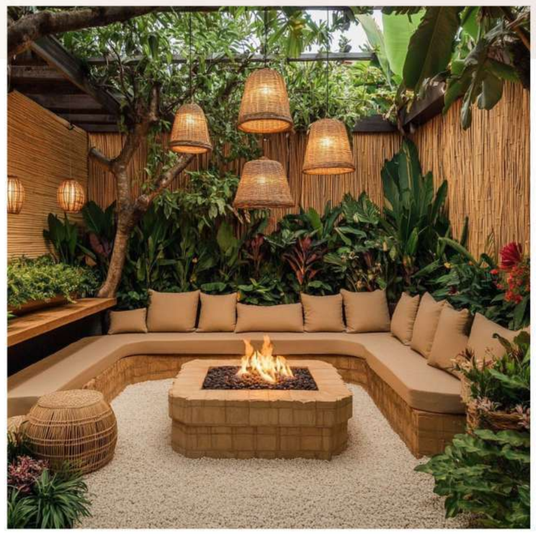
## 3-STAR RESORT, CHORWAD,GUJRAT

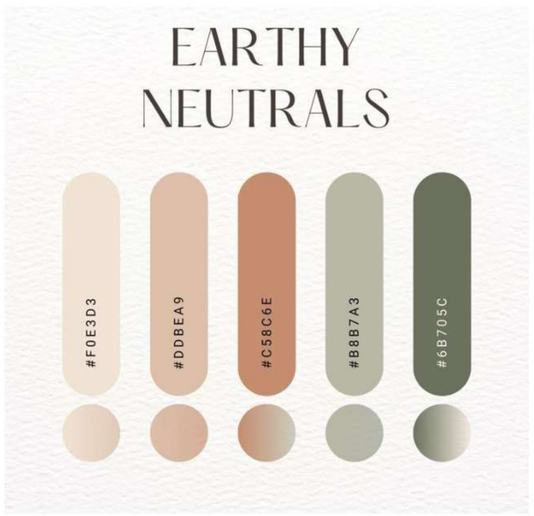


# INTERIOR DESIGN

## 3-STAR RESORT, CHORWAD,GUJRAT






## *modern rustic*









Modern rustic interiors combine clean modern lines with the warmth of raw, natural materials. The style uses wood, stone, and earthy textures against a simple, neutral backdrop to create a cozy yet contemporary feel. Spaces feel grounded and inviting, with natural light, muted tones, and minimal decoration allowing the materials to stand out. The overall mood is calm, organic, and effortlessly modern.

The duplex cottage interior follows a Modern Rustic theme — blending raw, natural materials with refined simplicity. The design celebrates the warmth of wood, the honesty of stone, and the handmade quality of local crafts. Light-filled interiors, textured finishes, and earthy tones create a calm, grounded environment that feels both luxurious and rooted in place.

**Color & Lighting Mood**
The color palette uses muted, earthy tones — beige, terracotta, soft greys, and off-white — balanced with natural wood and black metal highlights. Warm white lighting enhances textures and creates a cozy evening atmosphere.

**Furniture & Detailing**

- Living area: Custom wooden sofa with jute cushions, woven rug, handmade bamboo lamps.
- Bedroom: Wooden bed frame, cane headboard, fabric pendant lights, sea-view balcony.
- Stair & railing: Slim black metal frame with wooden handrail — minimal yet rustic.
- Decor: Clay pottery, woven baskets, framed textile art by local artisans.

**Spatial Character & Planning**
The duplex cottage is designed for long, relaxed stays — with living, dining, and outdoor sit-out on the lower floor, and a private bedroom suite on the upper level. Double-height volume enhances openness, while natural materials maintain intimacy and warmth. Large openings frame sea views and allow natural ventilation.



# 26 LANDSCAPE

## 3-STAR RESORT, CHORWAD,GUJRAT

The landscape is designed as a living narrative — telling the story of the coast, the craft, and the community. Each zone expresses a chapter of local life: from the native groves recalling village edges, to the herbal gardens echoing everyday livelihood. Pathways follow organic, net-like patterns inspired by fishermen's life, guiding visitors through spaces that blend ecology and experience. The landscape becomes more than scenery — it's a storyteller connecting land, culture, and people.


Bangda


Paplet


Catfish

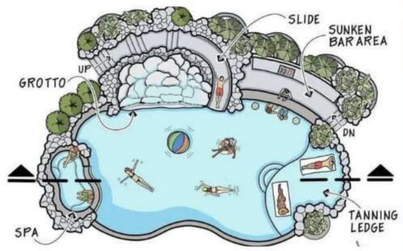

Greater Flamingo


Kentsh Plover


Dunlin









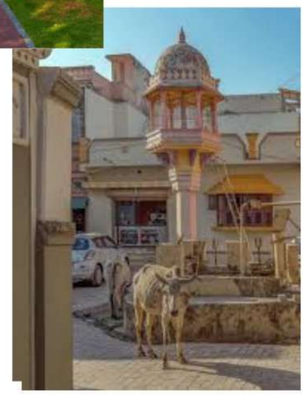
















# 27 LANDSCAPE

## 3-STAR RESORT, CHORWAD,GUJRAT




The landscape design aims to create a harmonious interface between built form, nature, and community. Inspired by the coastal ecology of Chorwad and the rustic livelihood of Saurashtra, the planting palette uses native and drought-tolerant species. Trees are arranged to frame sea views, provide microclimate comfort, and integrate seamlessly with the architectural character. The landscape becomes a medium for livelihood—encouraging local involvement in plantation, gardening, and herbal cultivation.

**Entry Plaza & Driveway**

Shade trees like Karanj and Neem create a cool, welcoming canopy. Amaltas adds seasonal color, making the arrival vibrant and regionally rooted.
(Karanj – hardy native, Neem – medicinal & cooling, Amaltas – golden bloom.)

**Coastal Edge & Seafront Path**

Salt-tolerant palms define the sea edge, offering wind protection and framing views. Vetiver binds the soil and adds coastal texture.

**Cottage Precinct**

Layered planting around cottages ensures privacy and openness. Frangipani and Hibiscus bring fragrance and color, while groundcovers soften edges.

**Event Lawn & Banquet Zone**

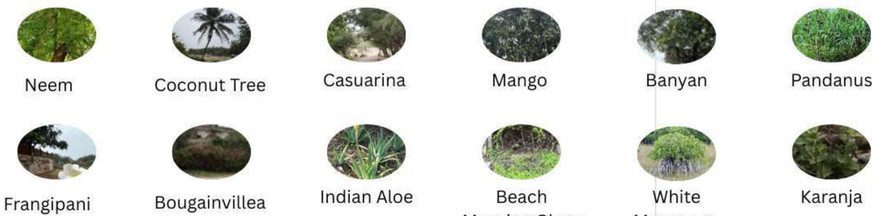
Palash and Cassia trees mark the lawn edge with seasonal color. Date palms add structure and rhythm for gatherings and outdoor functions.

**Community spaces**

Herbal and edible species like Tulsi, Mint, and Aloe connect landscape with livelihood, managed by local villagers for wellness and learning.

**Service & Buffer Zone**

Neem and Silver Oak act as natural windbreaks and privacy buffers, maintaining ecological balance along site edges.












**Neem (Azadirachta indica)**

- Type: Evergreen, hardy shade tree
- Height: 12–15 m
- Use: Shade, avenue planting, medicinal value
- Benefits: Air-purifying, drought-tolerant
- Landscape Note: Ideal for dry coastal zones; low maintenance

**Coconut Tree (Cocos nucifera)**

- Type: Tall palm
- Height: 20–25 m
- Use: Tropical character, iconic coastal identity
- Benefits: Wind-resistant, salt-tolerant
- Landscape Note: Perfect for beachfront buffers and axis framing

**Frangipani (Plumeria)**

- Type: Small ornamental tree
- Height: 3–5 m
- Use: Focal points, fragrance, tropical aesthetics
- Benefits: Low water demand
- Landscape Note: Use near entrances, villas, pathways

**Bougainvillea**

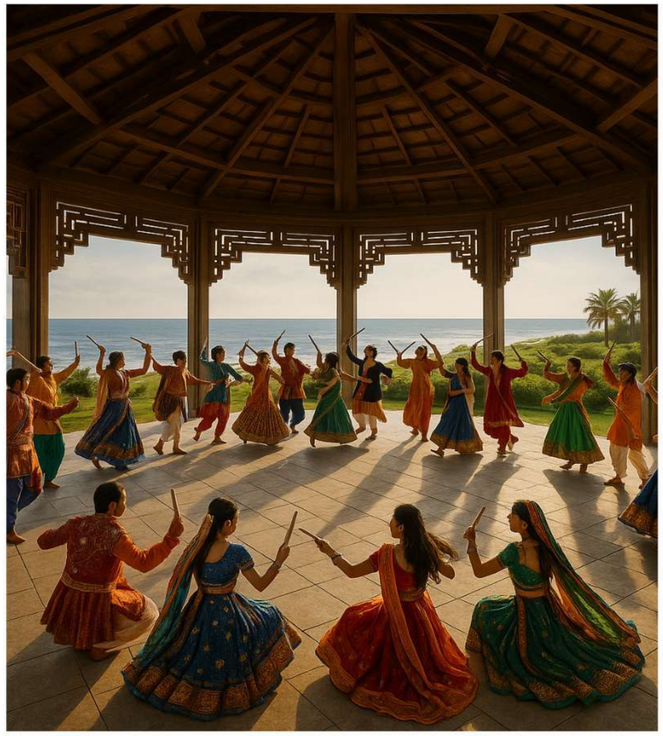
- Type: Climbers/shrubs
- Use: Colourful screening, boundary accents
- Benefits: Drought-tolerant, low maintenance
- Landscape Note: Ideal for pergolas, walls, arches

# VIEWS

3-STAR RESORT, CHORWAD,GUJRAT















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