

SEASIDE BOUTIQUE RESORT
(Chettinad Style)

A THESIS

Submitted in partial fulfillment of the requirements for the award of
Bachelor of Architecture degree

By

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SCHOOL OF BUILDING AND ENVIRONMENT

SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY) Accredited

With Grade “A++” by NAAC

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BONAFIDE CERTIFICATE

This is to certify that Thesis Report is the bonafide work of **PRITHIKA D. (39210062)** who carried out the Thesis entitled "**SEASIDE BOUTIQUE RESORTS (CHETTINAD STYLE)**" under our supervision from December 2023 to May 2024.

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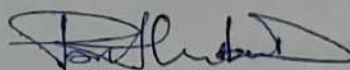
External Examiner

DECLARATION

I, PRITHIKA D hereby declare that the Thesis Report entitled "**SEASIDE BOUTIQUE RESORT (chettinad style)**" done by me under the guidance of **Ar. Brindha** (Internal Guide), (Internal Review Member) and **Dr. Arulmalar Ramaraj** (External Guide) Sathyabama Institute of Science and Technology is submitted in partial fulfillment of the requirements for the award of Bachelor of Architecture Degree.

DATE: 23-05-2024

PLACE: Chennai



SIGNATURE OF THE CANDIDATE

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PRITHIKA D

THESIS SYNOPSIS

The primary objective of this thesis is to design a seaside boutique resort that encapsulates the essence of the Chettinad style, a traditional architectural style from the Chettinad region in Tamil Nadu, India. The resort aims to provide a unique, luxurious experience that blends the tranquillity of the seaside with the rich cultural heritage of Chettinad.

The challenge lies in integrating the distinct architectural elements of Chettinad style, known for its intricate detailing, spacious courtyards, and ornate embellishments, with the serene and expansive nature of a seaside landscape. The design must ensure sustainability, respect the local culture, and enhance the natural beauty of the seaside. The expected outcome is a design for a seaside boutique resort that is a harmonious blend of Chettinad architecture and the natural seaside landscape. The resort will aim to offer a unique holiday experience, promoting local culture and sustainable tourism.

This project will demonstrate how traditional architectural styles can be adapted to modern contexts, promoting cultural preservation and sustainable design. It will contribute to the field of architecture by providing a case study on the fusion of heritage and nature in resort design.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Boutique hotels are small, stylish and personalized establishments that offer a unique and luxurious experience to their guests. Unlike large chain hotels and motels, boutique hotels have a distinctive theme and design that reflect their vision and values. Boutique hotels usually have between 3 and 50 rooms, each with its own character and amenities. Some boutique hotels may have modern features such as Wi-Fi, air-conditioning and cable TV, while others may opt for a more minimalist and tranquil approach. Boutique hotels are not part of any standardized group, but rather stand out as individual and original places to stay.

1.2 NEED OF THE PROJECT

The boutique resort concept is a testament to the evolving demands of the modern traveler, seeking not just a place to stay but an enriching experience. These resorts are a fusion of luxury and locality, offering high-end amenities while celebrating the cultural and environmental ethos of their surroundings. This approach to hospitality not only caters to the discerning guest but also fosters a symbiotic relationship with the local community, setting a new standard for responsible tourism.

1.3 AIM AND OBJECTIVE

(a) To establish a Chettinad style boutique hotel that provides an authentic and luxurious experience, capturing the rich cultural heritage and intricate architecture of the Chettinad region.

(b) Aim to offer personalized services and curated experiences that allow guests to immerse themselves in local traditions, savor regional cuisine, and enjoy the unique charm of our boutique hotel.

1.4 METHODOLOGY

1. Literature Review and Case Studies: The first step involves a thorough literature review of Chettinad architecture and seaside resort design. This includes studying books, research papers, and architectural journals.

2. Site Analysis: An extensive site analysis will be carried out to understand the local climate, topography, vegetation, and culture. Factors like wind direction, sun path, views, access, and services will be considered.

3. Design Development: The design development stage involves translating the concept into a functional and aesthetically pleasing design. This includes space planning, form development, and landscape design. The design will incorporate key elements of Chettinad architecture such as courtyards, ornate detailing, and use of local materials.

4. 3D Modelling and Simulation: The design will be modelled in 3D to visualize the spatial qualities and aesthetics.

1.5 SCOPE OF THE PROJECT

Tourists who visited Chettinad were the participants in this study. The purpose of this study is to gain insights into the diverse events and culture of the region, and to contribute to efforts to preserve these cultural elements from disappearing.

The thesis will delve into the rich cultural heritage of Chettinad and how it is reflected in weddings. This includes traditional rituals, customs, and practices unique to Chettinad.

CHAPTER 2

LITERATURE CASE STUDIES

2.1 WHO ARE CHETTIARS?

Chettiars are the sub-group of the tamil community who is one of the wealthiest communities in Tamil Nadu. Chettiars are classified as high-ranking social groups in Tamil Nadu, the Indian state. Chettiars who are living in a city are called nagarathars that means the city dwellers. Chettiars are usually live in a joint family they share the house among the family members. Now the chettiars are not mostly live in a joint family, they all got settled in various places and they come when the vacation or festival occurs.



Figure 2.1 Image of chettars and lifestyle

2.1.1 ORIGIN OF THE CHETTIARS

Chettiars were originally lived in the Chola kingdom, Kaveripoompatinam also known as poompuhar which is located near the seashore of the southeast area of Tamilnadu. Kaveripoompattinam was the capital of early Chola kings, it was once a developed port city. Chettiars groups were originally formed in Poompuhar, from 789 BC they were lived.



Figure 2.2 Image of chettinad house



2.1.2 TYPES OF CHETTIYARS

1. Nattukottai Chettiyars (Nagarathar)

Place of Origin: Tamil Nadu- Pudukottai, Ramnad, Sivagangai

2. Vaniya Chettiyars

Place of Origin: Tamil Nadu

3. 24 MTC (Manar Telungu Chettiyars)

Place of Origin: TamilNadu, Kerala, Andrapradesh

4. Perankan Chitty

Place of Origin: Malaysia, Singapore



Figure 2.3 Image of chettinad house exterior

2.1.3 CHETTIARS TIMELINE

789 BC - Chettiar community formed Around

1201 -Migrated to Karaikudi

1201 to 1850 - Started developing their business by trading to foreign countries

1850 to 1900 -Magnificent features and quality are implemented through palatial houses

1900 to 1930 -After World War II they were forced to stop trading and the business has become dull

1930 to 1950 -Men were left their native and moved to abroad for the job and somewhere into banking.

From 1950 -Occasionally, the houses were used for functions and some are partly rented for commercials and residence

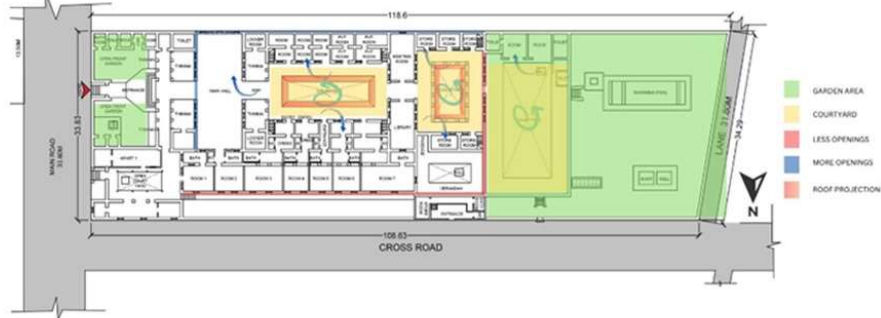
2.1.4 MIGRATION

For about 1400 years chettiars were lived in poompuhar. Later, around the 13th century, flood was affected kaveripoompatinam, the settlement was collapsed. Then, they decided to migrate to the raised terrain area where the chances of flooding is less. So, the chettiars were migrated to the Pandya kingdom region, Karaikudi, the interior of the southeast part of Tamilnadu. Chettiars were shifted to Karaikudi and its surrounding to develop new settlements. Chettiars were originally lived in the Chola kingdom, Kaveripoompatinam also known as poompuhar which is located near the seashore of the southeast area of Tamilnadu

2.1.5 BUILDING TYPOLOGY

Chettinad region has more residence typology. It is divided into three clusters (Clan, Caste and Kinship)

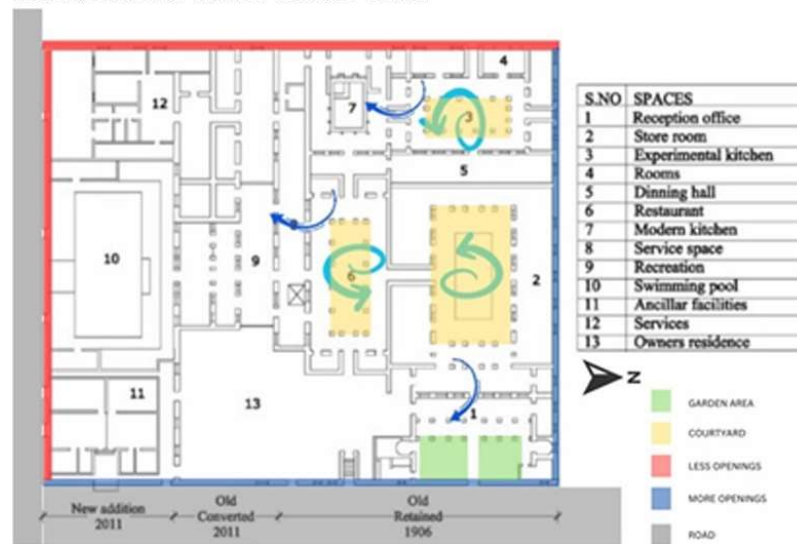
Cluster I (4 settlements): • Kothamangalam • Pallathur • Kanad Kathan • Kottaiyur



Cluster II (4 settlements): • Athangudi • Chokalingampudur • Karaikudi • Kandanur



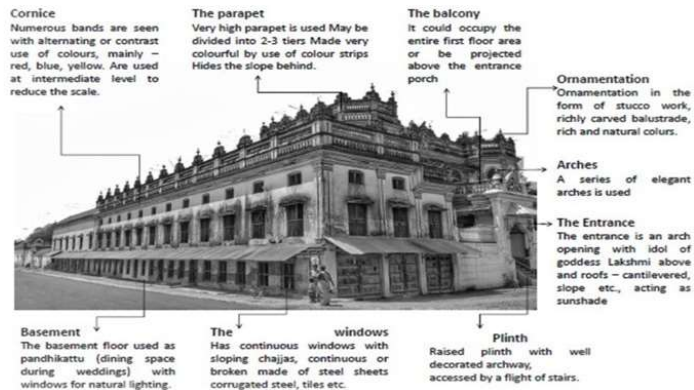
Cluster III (3 settlements): • Rayavaram • Kadalapatti • Arimalam



2.1.6 SPACES AND ITS PURPOSE

The various spaces in the typical Chettinad house are the following:

- ❑ Madhil Suveru - The compound wall abutting the front street.
- ❑ Nadaipaathai - The central highlighted access.
- ❑ Keezh Paththi - The lower paved area and a raised platform.
- ❑ Kannakkupillai ari - Accountant room.
- ❑ Pattagasalai - Men's relaxing room.
- ❑ Valavu, Erandam kattu, Mundram kattu - Two or three courtyards first of bigger scale to conduct functions and to celebrate festivals, second of slightly larger scale used for household activities and the third for the services like cooking, washing etc.
- ❑ Suttru paththi - Corridors surrounding courtyards, series of rooms at two levels around the courtyards
- ❑ Arias/Valayu veeadu - first set of rooms for sleeping and second set of rooms for storing valuables.
- ❑ Patikkattu - Staircases at all the four corners accessed from the corridor of the kitchen.
- ❑ Aduppadi/Samayal Arai - Large kitchen with traditional choolas - open hearth using firewood
- ❑ Bhojana - A dining hall in front.
- ❑ Pinpura/Kollaipura - The rear yard for cattle and rough uses with a well for water supply.
- ❑ Pinkadhavu - The rear doorway exiting into the rear street



FOOD CULTURE OF CHETTINAD

Chettiar food is a feast for the gourmet. With a generous dose of pepper and not chilli, making it spicy but not hot

The dishes are hot and spicy with fresh ground masalas. They also make a lot of sun dried salted vegetables called vatthals, during the season and use them in the off season, reflecting the dry environment of the region and economic nature. The meat is restricted to fish, prawn, lobster, crab, chicken and mutton. Chettians do not eat beef and pork. Most of the dishes are eaten with rice and rice based accompaniments



ABOUT CHETTINAD ARTS AND CRAFTS MAKING PROCESS OF ATHANGUDI TILES

ATHANGUDI TILES

Athangudi tiles, flooring tile are manufacturing in the place called Athangudi, its been manufacturing more than 100 years. They are eco friendly ,aesthetics and durable over decades.It shines naturally,doesnot need any artificial polish. There are over 150 families are manufacturing the tile.Tiles are exporting all across the India,Kerala Karnataka,Chennai are the majorly exporting places.

Size - 25.4 cm x 25.4 cm
Thickness - 18mm
Per stone weight - 2.3Kg

The material that we need for making athangudi tiles are cement,sand,colouring oxide, glass frame and mould. Three pre process will be done before start making the tile,
Dry mixture- Sand + cement
Wet mixture- sand + cement + water
Pigment mixture- Sand + cement + colouring oxide

CHETTINAD SAREE:

Chettinad cotton saree are famous all over Tamil Nadu, which is practiced for several years. Checked and strips are the most common design in the chettinad sarees. Chettinad sarees are made with pure cotton, its other name is kandagi.

BASKET WEAVING :

The baskets are woven with palmyra leaves or recycled plastic wires. Products range from small baskets called kottan that come in a set of one, three or five, to bigger laundry bags. Pouches, tray, flower baskets, picnic baskets and more are newer additions.



Kerosene is applied on the frame for easy removal of finished tiles.



The metal border frame is placed on the glass slab which is used as the base for the tile.



Design frame is placed on the glass slab to make the design



Color solutions are poured in respected compartments of the design frame



Dry mixture of sand and cement is sprinkled on the design to avoid mixing of



Mixture of cement, sand and baby jelly is filled till the required thickness of the tile is obtained.



Pressure is applied on the tile to set the cement mixture firmly.



The bordered frame is removed from the finished frame.



The bordered frame is removed from the finished frame



After curing process the tiles are kept in the sunlight for drying.



The dried tiles are kept in the water tank for curing process



Finished tiles are arranged and kept for drying at room temperature.

2.2 CAPO BOUTIQUE HOTEL

LOCATION: BATROUN, LEBANON

ARCHITECT: CARL GERGES ARCHITECTS

AREA: 6300 m²

YEAR: 2022

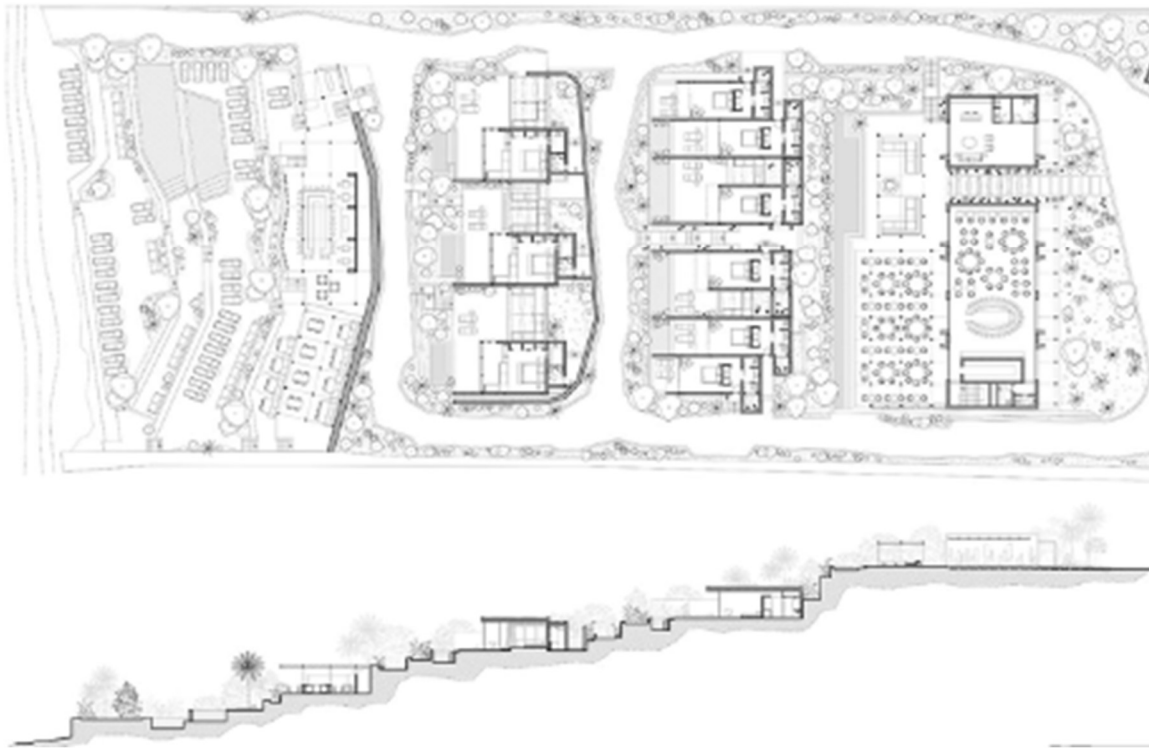


Figure 2.4 Image of plan and section

Capo resort makes a grand entrance with majestic cacti and elegant white canopies guiding guests into the main outdoor area. Here, a cozy cushioned majlis encircles a central firepit, creating a welcoming atmosphere. As evening falls, guests are encouraged to indulge in stargazing near a serene longitudinal pool adorned with water lilies. This not only evokes a feeling of tranquility but also frames a breathtaking view.



Figure 2.5 Image of grand entrance

The architecture of Capo bears a striking resemblance to a sailing boat when viewed from a distance. This symbolism holds great significance for the resort, which is appropriately named “Captain,” as it draws inspiration from the ancient Lebanese civilizations that thrived in one of the world’s oldest ports. The studio scattered the cluster of units in five descending levels on land.



Figure 2.6 Image of pool and landscape

The pools’ textured sandy finish cleverly replicates the hues of the sea throughout the day, creating an illusion of boundlessness and seamlessly mergin

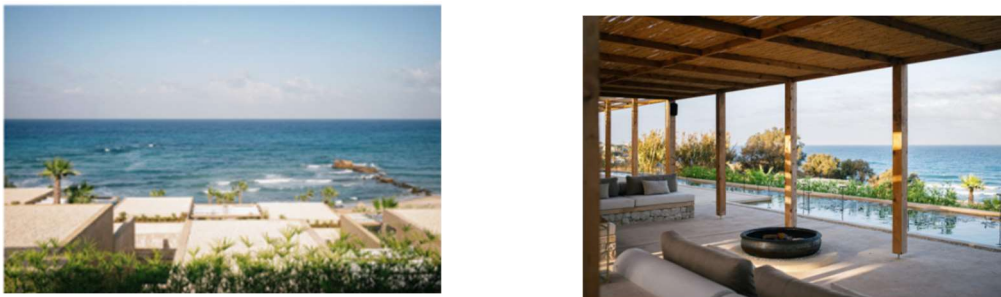


Figure 2.7 Image of admin

2.3 RAAS CHHATRASAGAR HOTEL

LOCATION: DISTRICT PALI, INDIA

ARCHITECT: Studio Lotus

AREA: 1860 m²

YEAR: 2019



Figure 2.8 Image of site plan

RAAS Chhatrasagar is located near the historic town of Nimaj, Rajasthan. Chhatrasagar is an artificial lake that formed a hundred years ago when a local Rajput chieftain created an embankment across a tributary to the Luni.

At the centre of the experience is the Baradari, situated over the dam; designed using a lightweight metal frame, the Baradari is a contemporary expression of the Rajputana twelve-pillared pavilion.

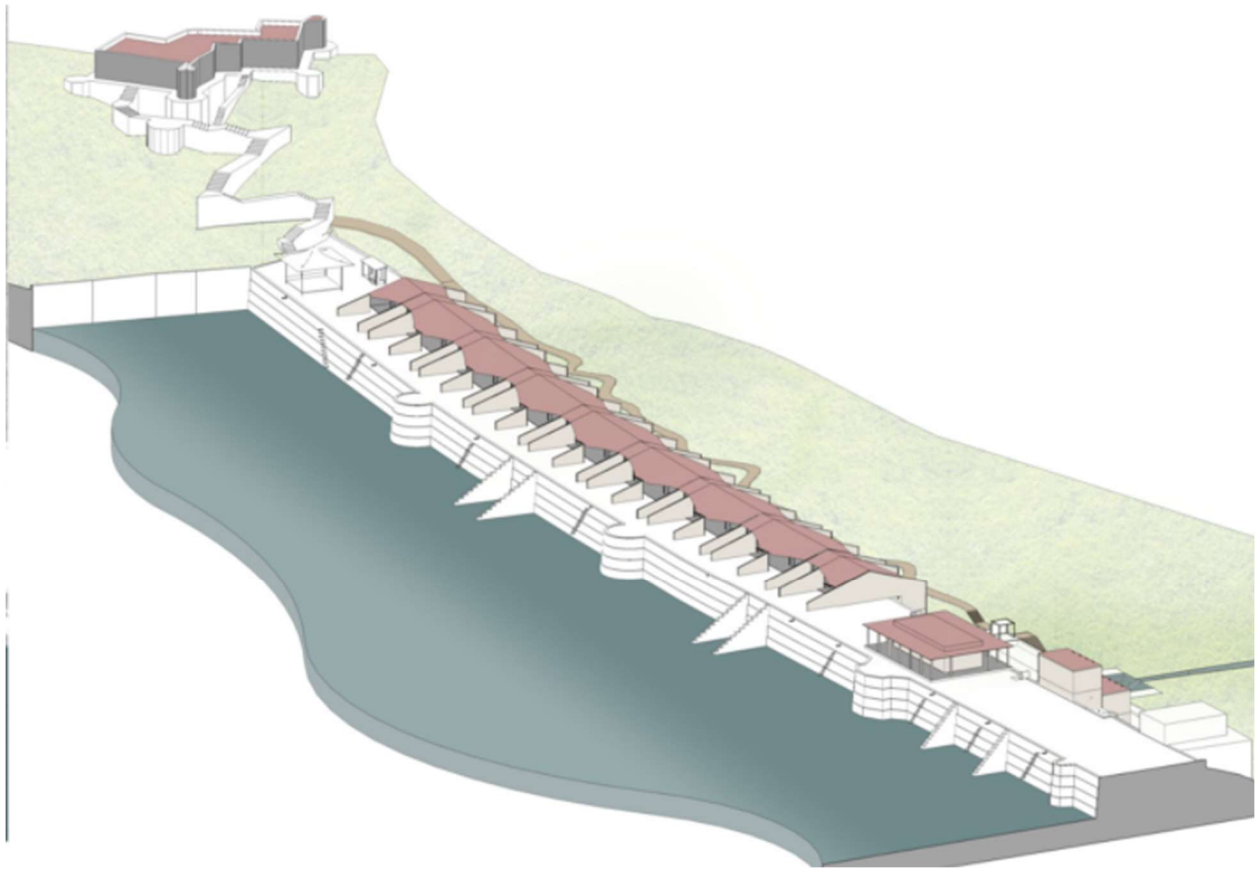


Figure 2.9 Image of site model

Expanding the erstwhile temporary tourist camps set up across the embankment, RAAS Chhatrasagar is a 20-key property designed to tread lightly on the site. The sensitive ecological context of the site made it imperative that all additions to the locale — especially those permanent in nature — be erected with minimal impact. Keeping this in mind system of low-impact foundations and lightweight superstructures for the newest iteration of the hospitality destination.

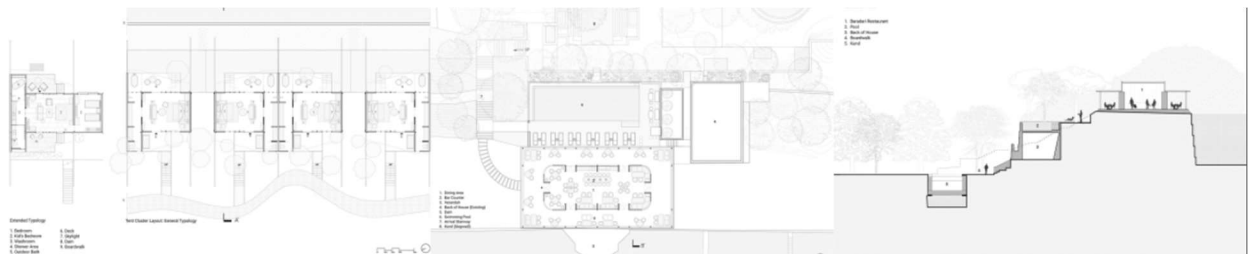


Figure 2.10 Image of plan and section

2.4 HOTEL BOUTIQUE CACAO

LOCATION: PLAYA DEL CARMEN, MEXICO

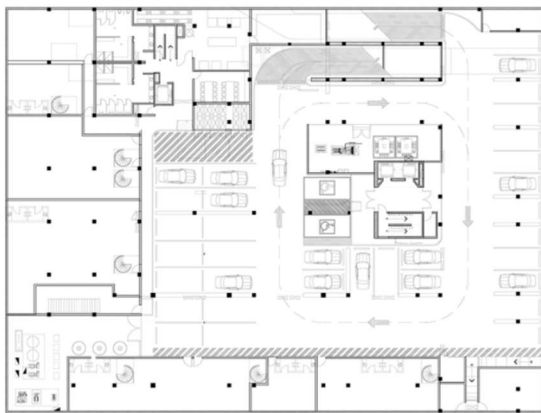
ARCHITECT:rdlp ARCHITECTS

AREA:9067 m²

YEAR:2013

The hotel is conceived around Mexican culture and its aesthetic values that translate into an avant-garde concept where the central patio serves as the heart of the complex, which in turn stands out for its special care in the geometry of the building and the use of natural materials.

BASEMENT PLAN



GROUND FLOOR

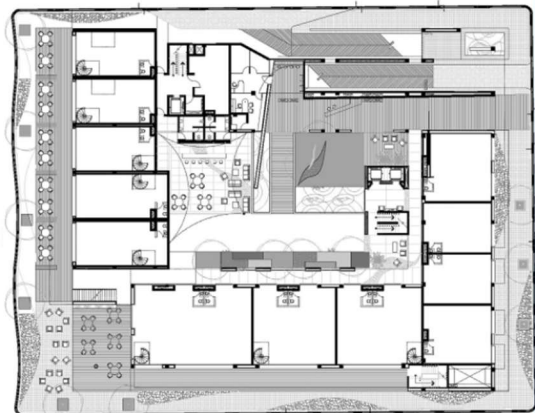


Figure 2.11 Image of plan

The hotel is accessed from two sides of the building, to the northwest is the main access to the hotel, and to the southeast facing the pedestrian road is a secondary access that invites you to enter the heart of the hotel.

FIRST FLOOR



SECOND FLOOR



Figure 2.12 Image of plan

Figure 2.13 Image of plan

being located in an area with continuous winds, proposed to create some 10x10 square modules that would house the hotel rooms located from the second to the fourth level, separated by open walkways 1.5m wide, which allows generating the circulation of access to the rooms and the free passage of the wind, allowing it to cool the rooms as cross ventilation throughout the hotel, at the same time that the desired plasticity for the building is addressed.

The rooms are located from the second to the fourth level, leaving the roof for the amenities areas such as the pool, gym, business center, and sun terraces.

Finally, another important challenge was making the most of natural ventilation, which allows creating a fresh environment naturally.



The main limitation of the project was to comply with an extensive hotel and commerce program, without losing an elegant and attractive line within the desired plastic for the building.

Material Used :

- 1. Travertine Marble – Facade – Marmoles Arca
- 2. Trespa – Ceiling – Meteon Walnut Line - BASA
- 3. Hurricane Resistant Windows - Pretecho
- 4. Italian Porcelain Plank Tile - Versitalia

THIRD FLOOR

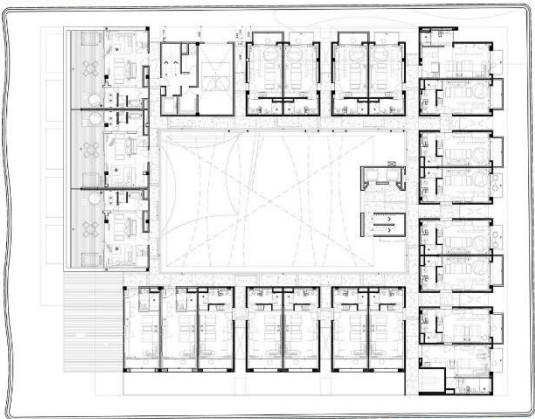
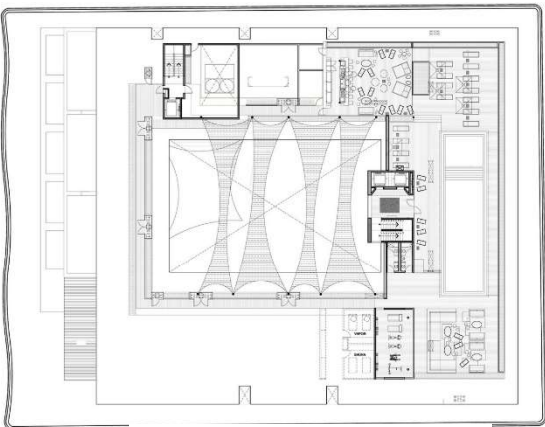


Figure 2.14 Image of interior

FORTH FLOOR



TERRACE

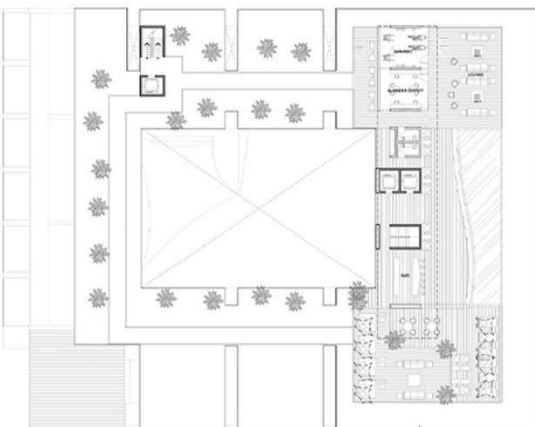


Figure 2.15 Image of plan

SECTION

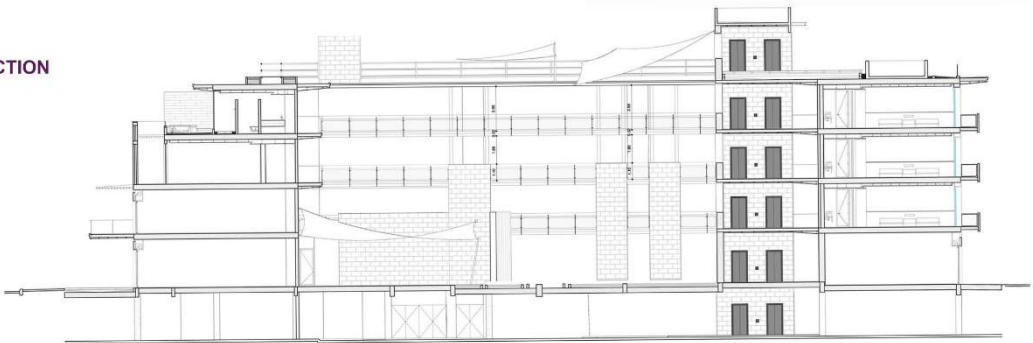


Figure 2.16 Image of section

2.5 CHENGDU SWAN LAKE BOUTIQUE HOTEL

LOCATION: CHENGDU, CHINA

ARCHITECT: We&Arch

AREA: 3000 m²

YEAR: 2021



Figure 2.17 Image of plan

A number of guest room units, reception spaces, restaurants, and tea rooms are set up, kind of random but orderly. Furthermore, these function units are combed into similar and controllable forms to make up the boundary of the settlement, melting away the track of artificial planning.



Figure 2.18 Image of exterior

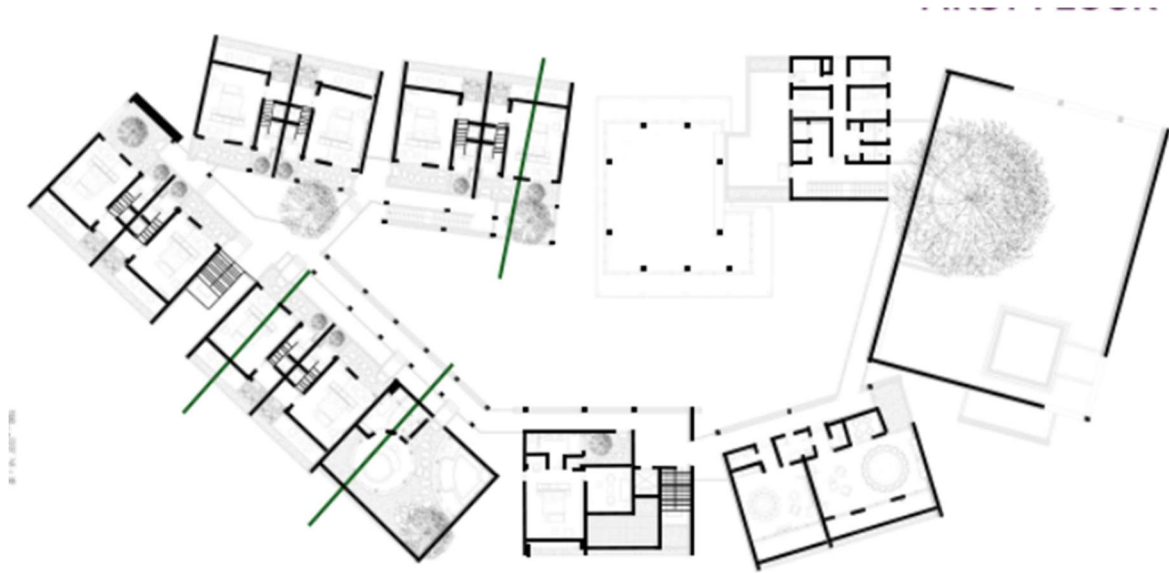


Figure 2.19 Image of plan

Bamboo Yard: Passing through a square courtyard formed by bamboo forest and a 20-meter-high preserved camphor tree, is the entrance of the hotel. And the reception pavilion awaits there. The closed volume, which is formed by a rough exposed concrete frame and a rubble wall, is the largest unit in the settlement. The path, the reception pavilion, and the lotus pond make up the preciseness of the space. Passing through this precise geometric space, the free scattered public areas and guest rooms appear.

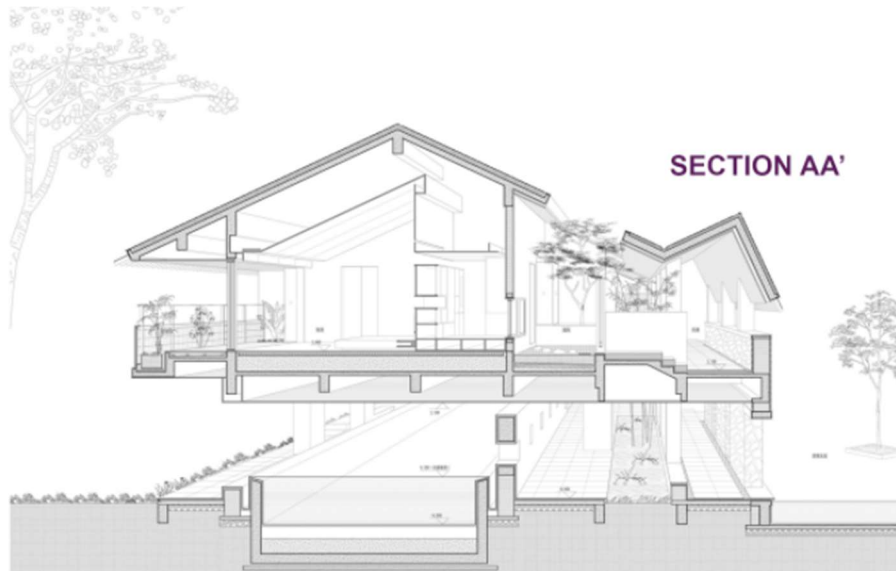


Figure 2.20 Image of section

SECTION BB'

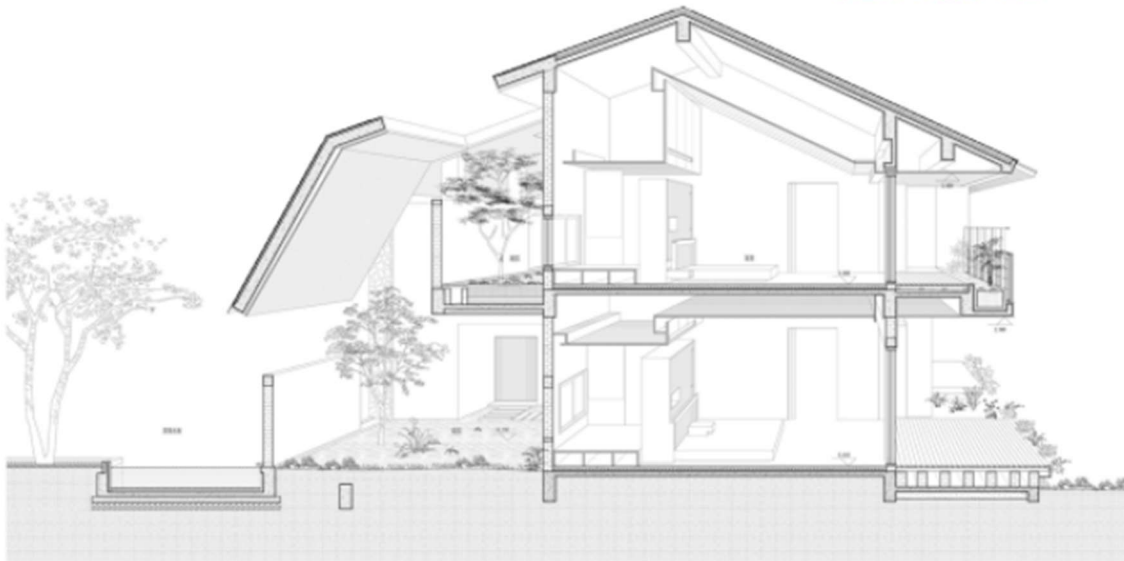


Figure 2.21 Image of section

SECTION CC'

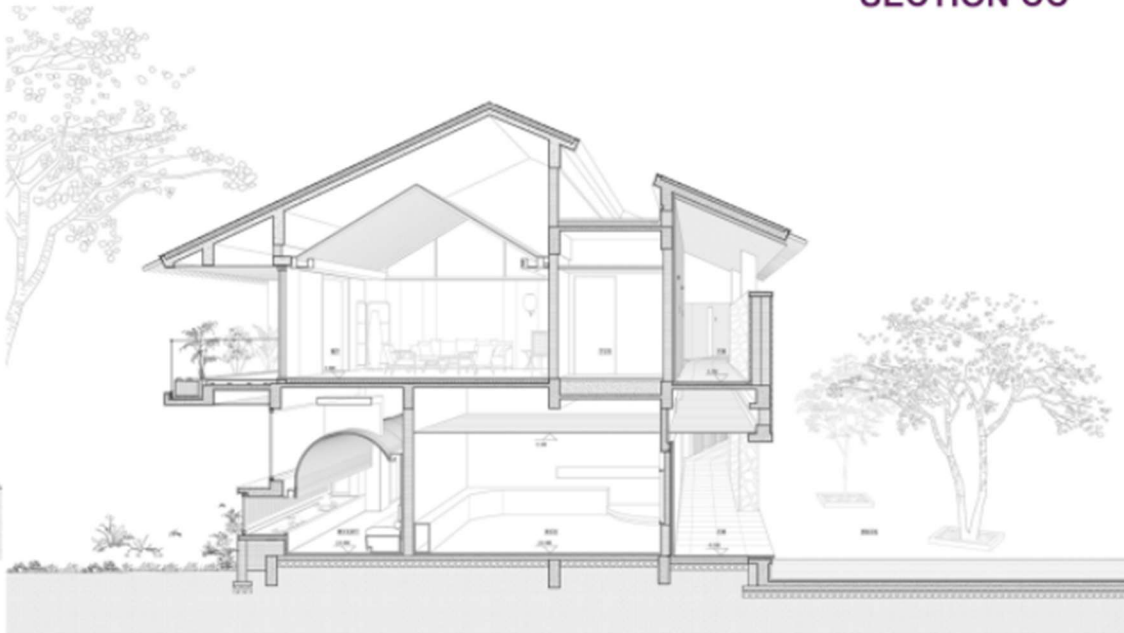


Figure 2.22 Image of section

2.6 LOST VILLA BOUTIQUE HOTEL

LOCATION: ZHONGWEI, CHINA

ARCHITECT: DAS Lab

AREA: 2000 m²

YEAR: 2019

There are 15 rooms in the hotel, each room was injected with different characteristics and has a framed view to the river or to the fruit-bearing forest. By creating different room types, DAS Lab tries to experiment on different models, scales and materials to re-evaluate the relationship between human and nature.

Inheriting from local houses, the hotel is designed with flat houses, terraces, courtyards and reed-topped eaves galleries to encourage more outdoor activities.



Figure 2.23 Image of ground floor plan

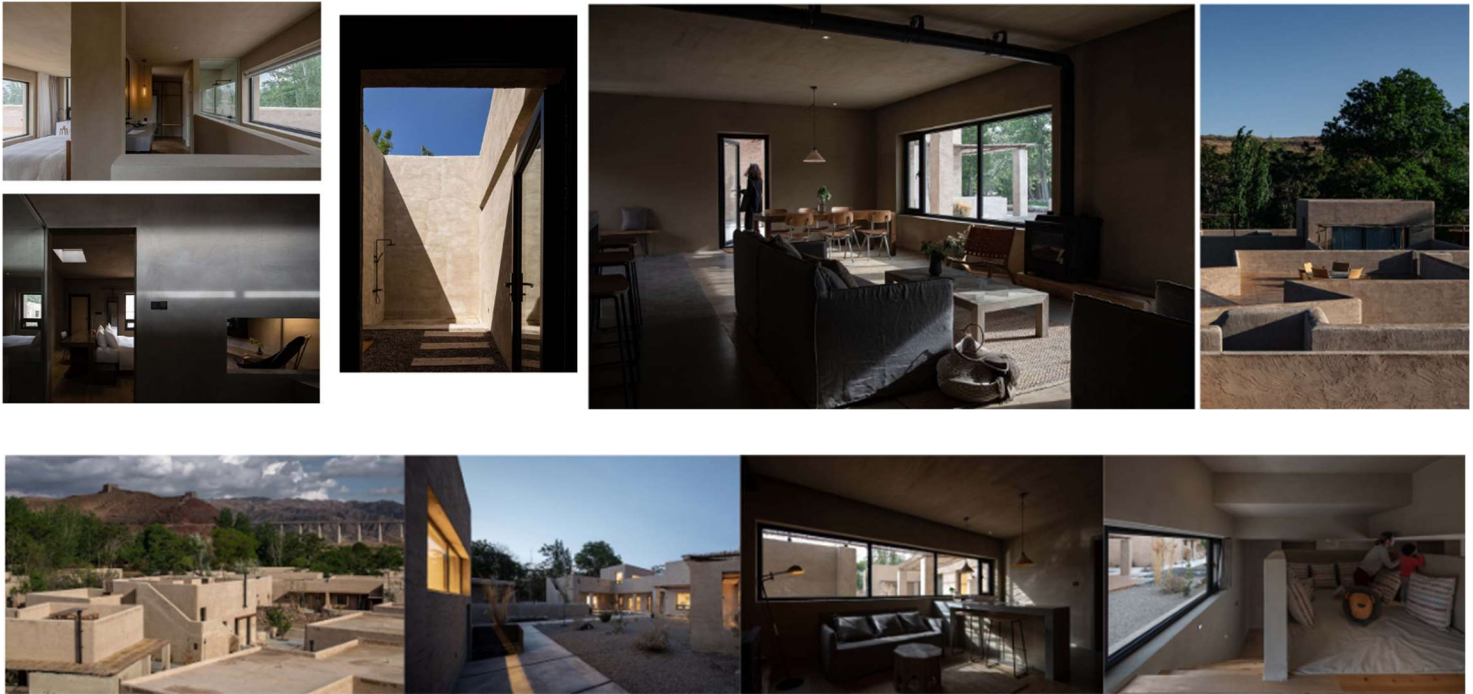


Figure 2.24 Image of interior and exterior



Figure 2.25 Image of first floor

We used a special treatment of cement mortar on the exterior walls to restore the texture of rammed earth wall from local buildings, so the architecture will look beautifully “old” after being exposed to winds and rains after a while.

Light is a key element in the interior. Light is the shadow, when all decorations and colors are visually hidden in the heaviness of space, you will only see the light and the shadow changing with time, playing a symphony on the walls and floors and conveying the spirituality of the space, which stimulates strong emotional resonance.



Figure 2.26 Image of first floor



Figure 2.27 Image of huge living cum dining

2.7 SUNYATA ECO HOTEL

LOCATION: CHIKMAGALUR, INDIA

ARCHITECT: Design Kacheri

AREA:930m²

YEAR:2021



Figure 2.28 Image of ground floor

This approach extends beyond just the materials chosen or construction techniques but also to the entire construction process and the day to day operations once the hotel started functioning. The requirements and functioning of a boutique hotel where aesthetics, experience, comfort and luxury go hand in hand were given utmost importance. The project brief was to achieve these in a completely eco friendly manner with the least amount of carbon footprint possible.



Figure 2.28 Image of interior and exterior



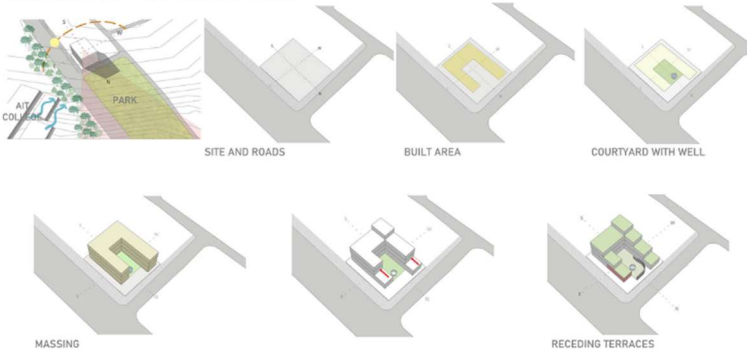
Figure 2.29 Image of first floor

The hotel is primarily built with locally available earth which is used in various forms - mud blocks, poured earth, rammed earth and mud concrete. Natural light, ventilation and heat is regulated by incorporating brick jaalis and mutual shading techniques. This hotel is largely designed as a load bearing structure and thus avoiding concrete columns. Age old alternative construction techniques like brick vaults, jack arch roofs, precast hourdi clay roofs and filler slabs have all been used to help reduce concrete.



Figure 2.30 Image of second floor

ANALYSIS & FORM DEVELOPMENT



The layout of the project is inspired by the 'thotti mane' or courtyard houses which is the vernacular style of construction in the malnad region. The structure is designed considering bioclimatic principles. There are a series of receding terraces looking out to the park adjacent to the site and the hills in a distance. These terraces also help in collecting maximum rain water during the seasonal monsoons while letting in the pleasant north light into the rooms. The rain water from the terraces is further routed to the central courtyard and stored in large rain water storage tanks created between the foundation. These tanks can store up to 45,000 litres of water and the remaining is directed to recharge the open well.

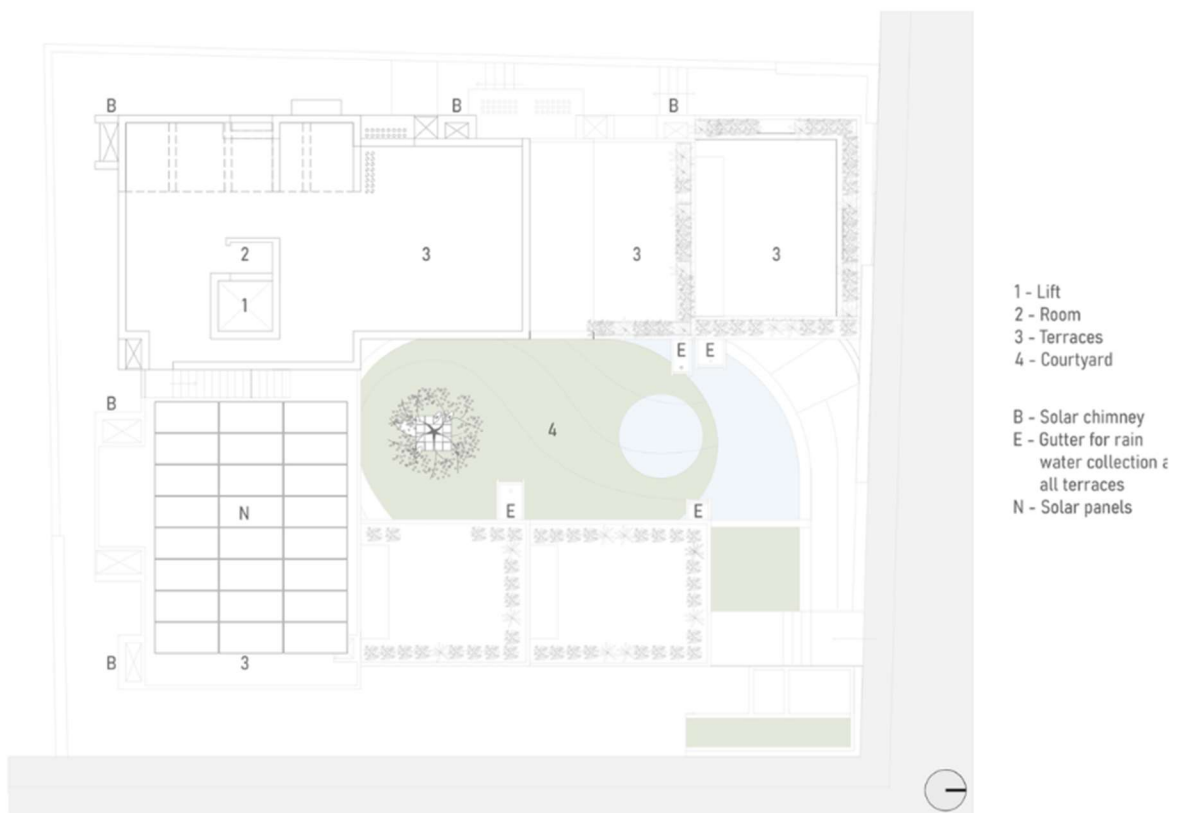


Figure 2.31 Image of third floor

Passive cooling is achieved by incorporating a combination of solar chimneys(along the south & west walls) and earth air tunnels connected to cool air shafts that open into each room inducing passive ventilation, thus avoiding air conditioning in all spaces. Three loops of HDPE pipes of approximately 75m length each are placed at -3.5m from natural ground level. these pipes start and end at the air handling units in the basement. Solar panels are used for producing electricity and the panels were installed in a phased manner.



Figure 2.32 Image of terrace

ZONING AND PROGRAMME



Figure 2.33 Image of zoning

CHAPTER 3

DATA COLLECTION AND STANDARDS

FSI AND SETBACKS

Sl.No.	Description	Category of industries		
		Cottage Industries	Green & Orange industries	Red industries (Special & Hazardous)
A.	Minimum road width	7m.	7m.	7m.
B.	Maximum Height	18.30m.	18.30m	18.30m.
C.	Normally Permissible FSI	1.50	1.50	1.50
D.	Minimum Setback	Where Street Alignment/new road is prescribed, it shall be from that street alignment/new road line. In the case of others, it shall be from the property boundary.		
(i)	Front Setback	Abutting road width less than 9m	Front Setback 1.5m	6.0m
		9m. to 18m.	3.0m.	
		18m. to 30.50m.	4.5m	
		More than 30.5m.	6.0m.	
(ii)	Side Setback	1.50m.	3.0m.	6.0m.
(iii)	Rear Setback	Nil	2.0m.	6.0m.

Figure 3.1 FSI and setbacks

PARKING

(C) Driveway and Aisle Widths

Driveway:

The driveway width shall be 3.0m for one-way movement and 6.0m for two-way movement.

Aisle Widths:

Aisle is a access lane leading to/abutting the individual parking lot within a parking facility. The aisle widths for different types of parking shall be:

Vehicle Type	Parallel Parking	All angles up to 60°	Angles above 60° & Perpendicular parking
Two Wheeler	1.5m	1.5m	1.5m
Car	3.0m	3.0m	4.5m.
LCV/Truck/Bus	7.0m	7.0m	10.0m

The width of the driveway and the aisle shall be free from kerb and other encumbrances.

(D) Width Entry and Exit Gates

The width of entry or exit gates shall be a minimum of 3.0m

(E) Gradient

Slope of parking spaces shall be not more than 4% in any direction.

(F) Turning Radius

Sufficient turning radius shall be provided for adequate manoeuvring of vehicle

(G) Ramps

The minimum clear width of the ramps shall be 3.0 m for one-way movement and 6.0m for two-way movement. Gradient shall not be steeper than 1 in 8.

(H) Headroom

The clear headroom (between floor and beam bottom) shall be minimum 2.2metres

Figure 3.2 parking

Sl. No.	Sanitary Unit	For Residential Public staff	For non residential Staff	
			For male	For female
1.	Water Closet (W.C.)	One per 8 Persons omitting occupants of the attached water closet minimum of 2 if both sexes are lodged	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons Add 1 for every 6 persons or part thereof
2.	Ablution Taps	One in each W.C	One in each W.C	One in each W.C.
3.	Urinals	Nil	Nil up to 6 persons 1 for 7-20 persons 2 for 21-45 persons 3 for 40-70 persons	Nil
4.	Wash Basins	One per 10 persons	4 for 71-100 persons 1 for 15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons
5.	Baths	One per 10 persons	Nil	Nil
6.	Cleaner's sinks	One per 10 persons. Less occupants of room with bath in suite	Nil	Nil
7.	Kitchen Sink	One in each Kitchen	One in each Kitchen	One in each Kitchen

Figure 3.3 sanitary unit

42. Corridor / Verandah Width.— The minimum width of corridor or verandah within buildings shall be as given below.

Sl. No.	Building use or type	Minimum width of corridor or verandah
(i)	Residential buildings	1.0 m
(ii)	Assembly buildings such as Auditoriums, Kalyanamandapams, cinema theatres, Religious buildings, temples, mosques or churches and other buildings of public assembly	2.0 m
(iii)	Institutional buildings	
a)	Government offices	2.0 m
b)	Hospitals	2.4 m
c)	Educational Buildings such a schools, colleges, Research Institutions	2.0 m
d)	Commercial buildings such as private offices, Nursing Homes, etc.	2.0 m
e)	All other buildings including hotels	1.5m

Figure 3.4 building type

CHAPTER 4

SITE ANALYSIS

4.1 LOCATION

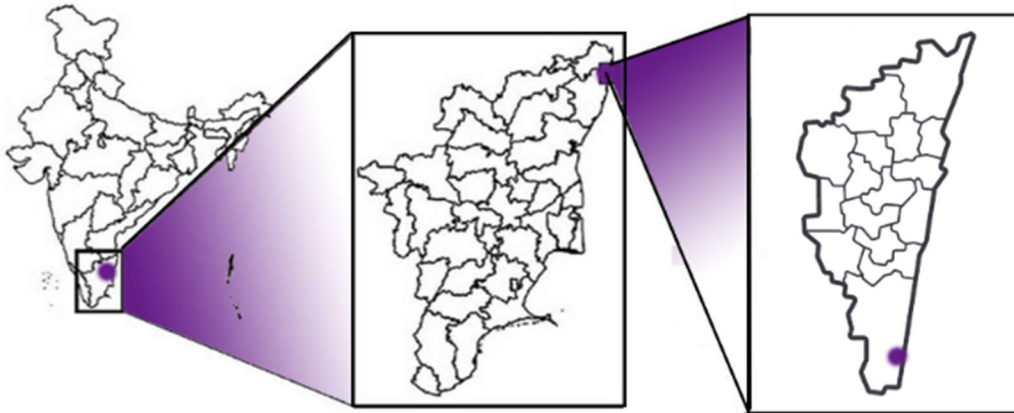


Figure 4.1 location of the site

LOCATION: ECR, CHENNAI, TAMIL NADU, INDIA

LONGITUDE: 80°14'44.58"E

LATITUDE: 12°49'42.41"N

TOTAL SITE AREA: 19 ARES

CLIMATE: HOT AND HUMID

TOPOGRAPHY: COASTAL

4.2 ACCESSIBILITY:

NEAREST BUSSTOP: MUTHUKADU 500M

NEAREST RAILWAY STATION: TIRUVANMIYUR 13.7KM

AIRPORT: CHENNAI AIRPORT.

4.3 NEIGHBOURHOOD CONTEXT

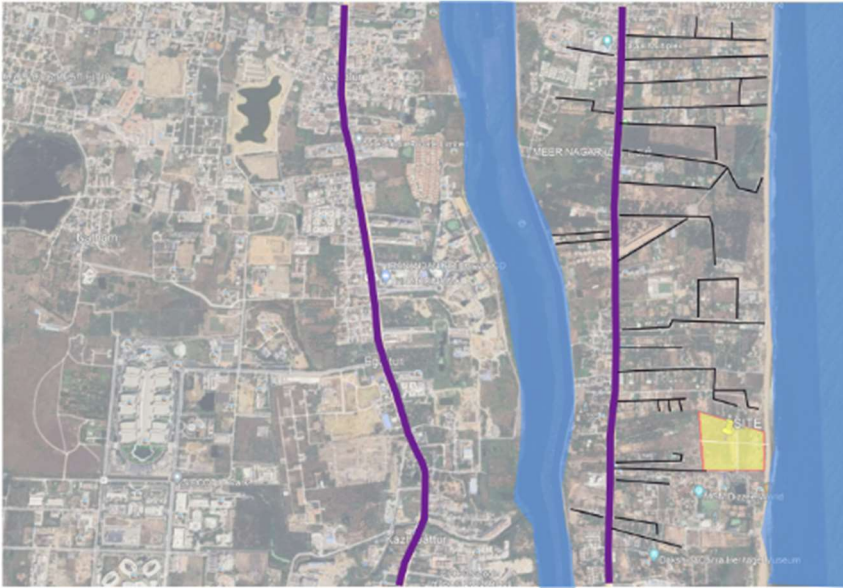


Figure 4.2 road network

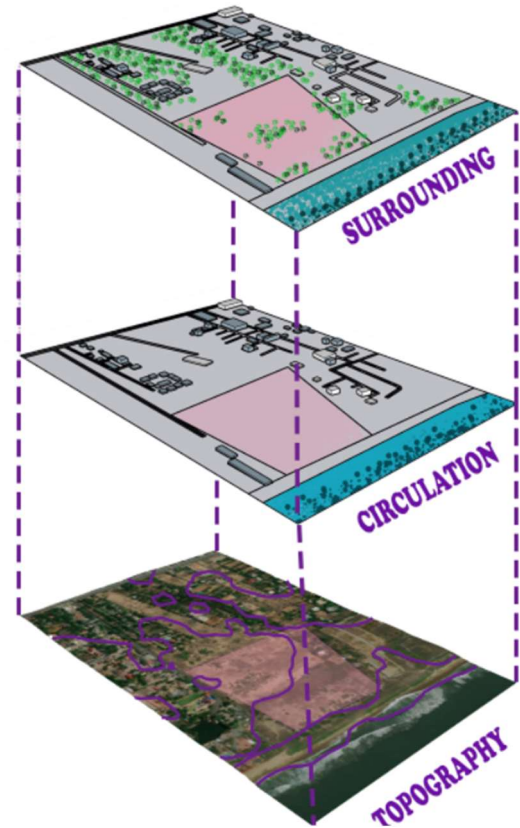
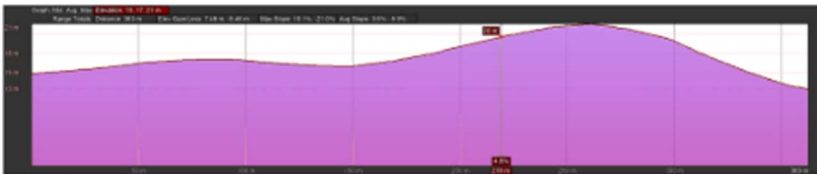


Figure 4.3 surrounding, circulation, topography

4.4 SITE SECTION

SECTION AA'



SECTION BB'

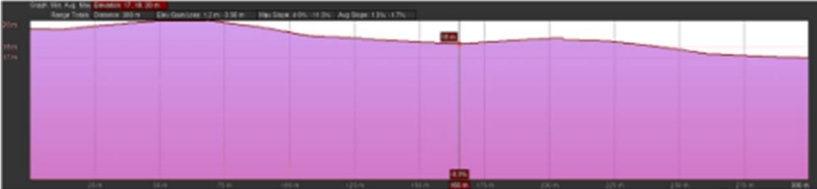
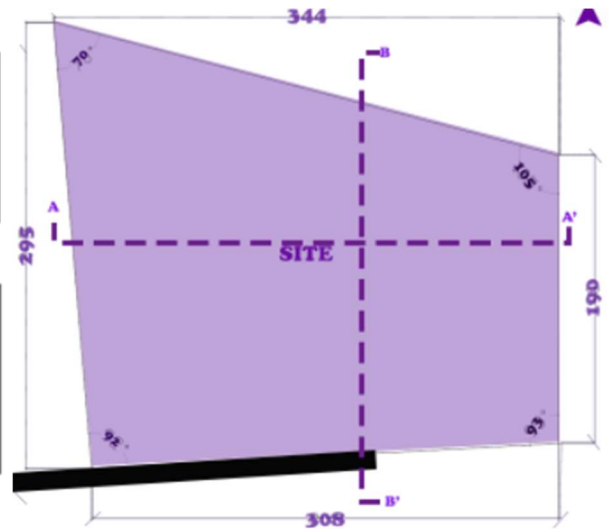


Figure 4.4 site section



4.5 SITE PHOTOS



Figure 4.5 site photos

4.6 SWOT ANALYSIS

STRENGTH

- 1.Scenic Beauty: ECR is known for its scenic beauty, making it a popular route for travelers.
- 2.Connectivity: It connects Chennai with Cuddalore through Pondicherry, serving as an important road corridor in Tamil Nadu.

WEAK

- 1.Safety Concerns: The road had dangerous curves and other geometric deficiencies leading to a number of accidents.
- 2.Environmental Restrictions: There were restrictions from the Ministry of Environment and Forests (MoEF) on land acquisition, tree cutting, road width etc.

OPPORTUNITY

- 1.Four Laning Project: The government has decided to widen the road to four lanes with a median from Akkarai to Mamallapuram due to the increase in traffic and number of accidents.
- 2.Infrastructure Development: The government has plans to widen the road into a four-lane divided highway till Kanyakumari.

THREAT

- 1.Increase in Accidents: The increase in traffic over the past few years and the increase in the number of accidents have necessitated the government to take action.
- 2.Climate: Chennai features a tropical wet and dry climate which could potentially affect the road conditions.

CHAPTER 5

ARCHITECTURAL DESIGN

5.1 SPATIAL REQUIREMENTS

SPACES	AREA(sq.m)	SPACES2	AREA(sq.m)3
SECURITY ROOM	32sq.m	TOILET	45sq.m
RESTAURANT	490 sq.m	CLUBHOUSE	650sq.m
RECEPTION	32sq.m	TOILET	45sq.m
WAITING AREA	26sq.m	CAFE	45sq.m
DINNING AREA	442sq.m	SPA	68sq.m
KITCHEN	130sq.m	GYM	85sq.m
TOILET	56sq.m	INDOOR GAME	120sq.m
SPA	240sq.m	LIBRARY	95sq.m
FOOT MASSAGE	60sq.m	INDOOR KIDS AREA	95sq.m
BODY TREATMENT	70sq.m	PAVILLON	15sq.m
NATURAL TREATMENT	50sq.m	PRESIDENTAL VILLA	220sq.m
STOREROOM	20sq.m	CHANGING ROOM	180sq.m
TOILET	20sq.m	SWIMMING POOL	550sq.m
RECEPTION AND WAITING	20sq.m	DECK	100sq.m
ADMIN	655sq.m	CAFE	60sq.m
LOBBY	188sq.m	BUFFET AREA	62sq.m
RECEPTION	30sq.m	SEAVIEW VILLA	220sq.m
DIRECTORS ROOM	17.5sq.m	KITCHEN	120sq.m
RECORD ROOM	11sq.m	STANDARD VILLA	70sq.m
PRINCIPAL ROOM	9.2sq.m	TWIN VILLA	200sq.m
ACCOUNTS ROOM	45sq.m	HOUSEKEEPING	400sq.m
TOILET	10sq.m	STP	50sq.m
CONFERENCE ROOM	45sq.m	TRASH COLLECTING AREA	50sq.m
TOTAL			8945 SQ.M

Figure 5.1 area statement

5.2 CONCEPT

5.2.1 Strategies can be followed at site level:

(a) Orientation:

The built forms longer facades can be oriented facing the east and west directions. The east and north side orientations can have the larger window open it helps in avoiding the direct exposure to sunlight and also allows the interior to receive ample amounts of indirect natural light and help preventing solar heat gain

(b) Courtyard effect:

Courtyard can be microclimate modifier and controller it helps in evaporative cooling and increase of heat loss through ventilation. Usually open to the sky. The heat transfer that takes place within a courtyard is affected greatly by - the Airflow, thermal mass, solar radiation. Due to the incident solar radiation in the courtyard the air in it becomes warmer and rises up to replace it cool air from the ground level floors the rough the louvered openings of the room the producing the air flow

(c) Authentic Architecture: The resort should reflect the rich cultural heritage of Chettinad. The architecture should be reminiscent of the 18th-century mansions, embellished with marble and Burma teak. The design should include wide courtyards and spacious rooms.

(d) Heritage Rooms: The resort could offer well-designed heritage rooms equipped with modern amenities. Each room could be decorated with a blend of design and heritage collections.

(e) Culinary Experience: The resort should offer the famous Chettinad cuisine. A dining hall could serve both local and western cuisine.

(f) Luxurious Gardens: The resort could feature luxurious gardens planted with different species of palm trees. The central courtyard could be the heart of the resort, where cosmic energy enters and shines into the whole house.

(g) Spa and Wellness: The resort could offer Ayurvedic massage treatments to rejuvenate the senses. A spa area could provide a range of wellness treatments.

5.2.2 MATERIALS AND CONSTRUCTION TECHNIQUES

Materials:

1. **Burmese Teak:** Imported from Burma, this wood is known for its durability and is extensively used in Chettinad houses.
2. **Italian Marble:** This high-quality marble is imported from Italy and used in the construction of Chettinad houses.
3. **Belgian Glass:** Imported from Belgium, this glass is used to enhance the aesthetic appeal of the houses.
4. **Athangudi Tiles:** These are colorful tiles made from locally sourced clay. They are handcrafted into various colors and patterns and used for wall cladding and flooring.
5. **Other Materials:** Other materials used include Dutch ceramic tiles, cast iron, stained glass, and Bohemian chandeliers.



Figure 5.2 Chettinad columns, Athangudi tiles and granite stone along the edges, eave boards, timber rafters etc. add character to the house.

Construction Techniques:

1. Carved Pillars and Doors: The Chettinad house is known for its beautiful carved doors and pillars, which are typically used in the construction of grand buildings. These works of art are made of wood, stone, or granite.

2. Wall Plastering: Wall plastering is an important part of the construction of traditional Chettinad houses. The plaster is applied to the walls in multiple layers, and each layer is left to dry before the next one is added.

3. Stucco Work: Stucco is a decorative plastering technique that is often used in the construction of Chettinad houses.

4. Courtyards (Thinnai): These open-air spaces serve as gathering areas for family members and guests. The Thinnai is often adorned with intricately carved wooden pillars and ornate arches.

5. Vaastu Shastra: Chettinad house architecture design also incorporates elements of Vaastu Shastra, an ancient Indian architectural science that emphasizes harmony and positive energy flow within a space.

5.2.3 ROOFING

1. Pitched Roofs: Chettinad houses are known for their pitched or sloping roofs. These roofs not only increase the capacity of the enclosed space but also ensure environmental sustainability.

2. Materials: The roofs are typically made of clay tiles or thatch. These materials are designed to protect the house from the heavy monsoon rains that are common in the region.

3. Supporting Structures: The roofs are supported by wooden beams or columns. These structures are often intricately carved and decorated, adding to the aesthetic appeal of the house.

4. Rainwater Harvesting: The sloping design of the roofs allows for the collection of rainwater during the monsoon season. This feature contributes to the ecological sustainability of the house by facilitating rainwater harvesting.

5. Climate Consideration: The roofing system is designed keeping in mind the hot and humid climate of the region. The double-roof system made of baked clay tiles has an extension called chajjas.

6. Durability: The materials used in the roofing system, such as clay tiles, ensure the longevity of the structure.

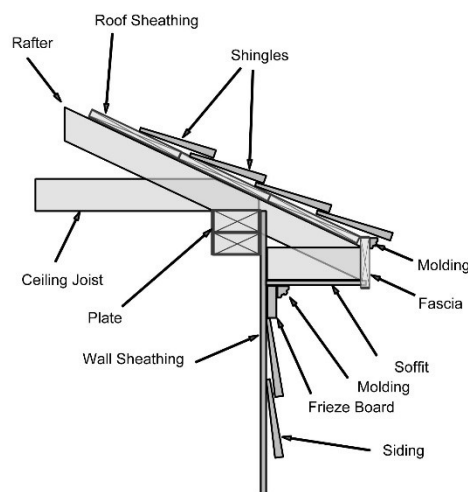


Figure 5.3 Chettinad roof details

5.2.4 FLOORING

1. Athangudi Tiles: The flooring of Chettinad houses is typically adorned with Athangudi tiles. These tiles are handmade and come from the hamlet of Athangudi in the Chettinad region of Tamil Nadu. They are known for their vibrant colors, intricate patterns, and special shine. These tiles are made from locally sourced clay that has been burned and glazed. They are skillfully created by hand into patterns of varying colors and designs. They are used for both wall cladding and flooring in residences.

2. Materials: The tiles are crafted using local materials like cement, sand, and natural dyes. This ensures the durability and longevity of the flooring.

3. Climate Consideration: The flooring system is designed keeping in mind the hot and humid climate of the region. Red oxide was a popular flooring option to keep the floors cool.

4. Design: The designs of the tiles are normally chess-board style. The most traditionally used colors are yellow or red with the typical floral and diamond borders.

5. Craftsmanship: The creation of these tiles involves a high level of craftsmanship. Each tile is made by hand, ensuring a unique and high-quality product.



Figure 5.4 Chettinad flooring

5.3 DETAILED DRAWINGS

5.3.1 SITE PLAN:



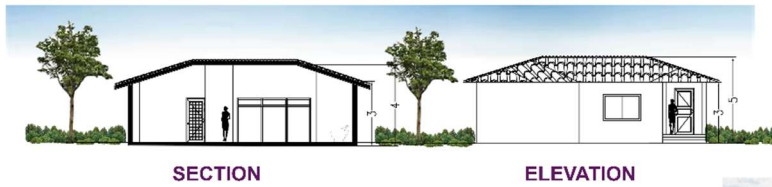
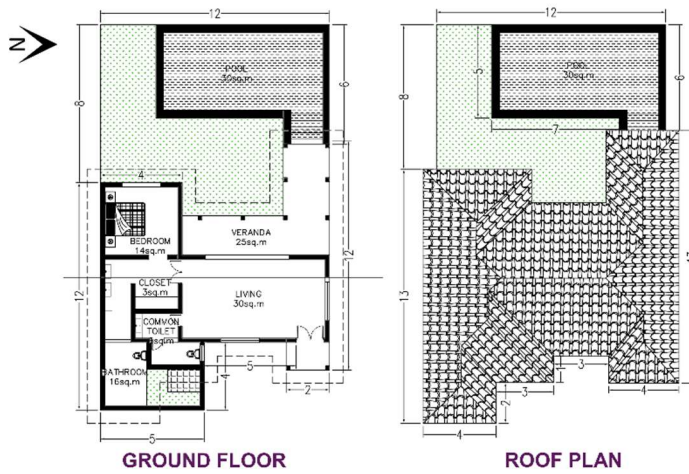
plate 5.5 site plan

5.3.2 MASTER PLAN:



plate 5.6 master plan

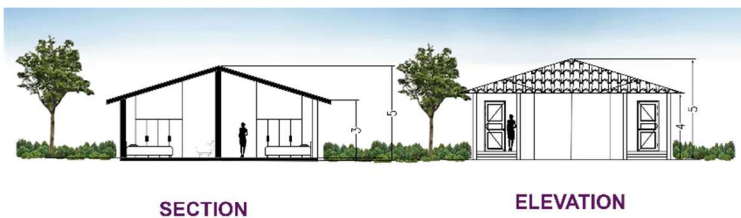
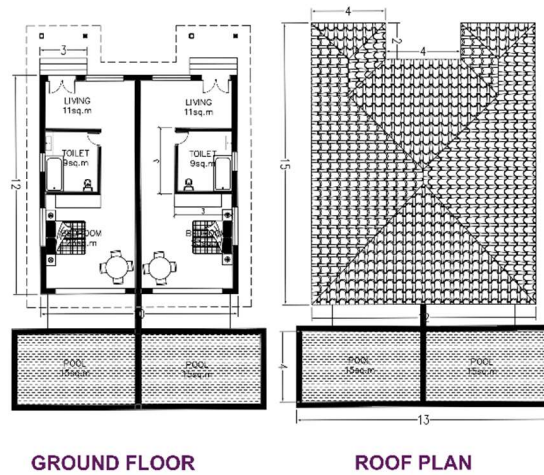
5.3.3 BLOCK PLANS:



PRESIDENTIAL VILLA EXTERIOR

TWIN POOL VILLA EXTERIOR

SCALE 1:100



SCALE 1:100

VILLA PLAN | SECTION | ELEVATION

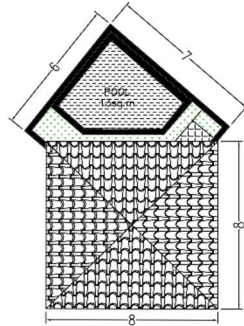
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KEY PLAN



GROUND FLOOR



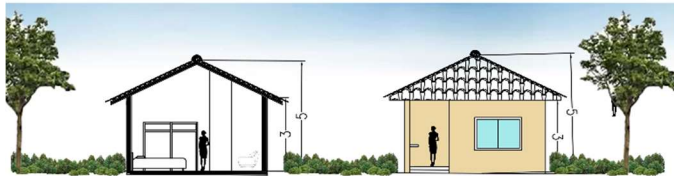
ROOF PLAN



SCALE 1:100



KEY PLAN

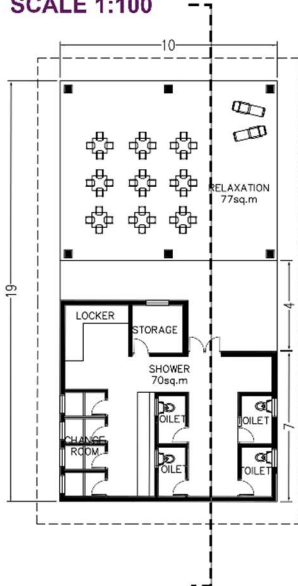


SECTION

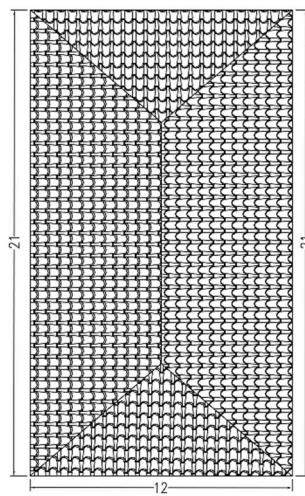
ELEVATION



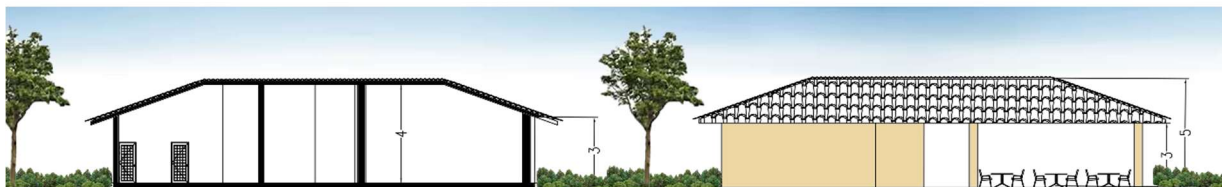
SCALE 1:100



GROUND FLOOR



ROOF PLAN

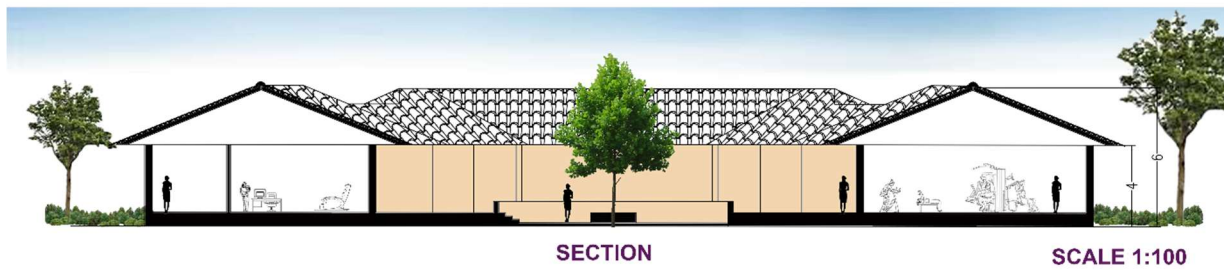
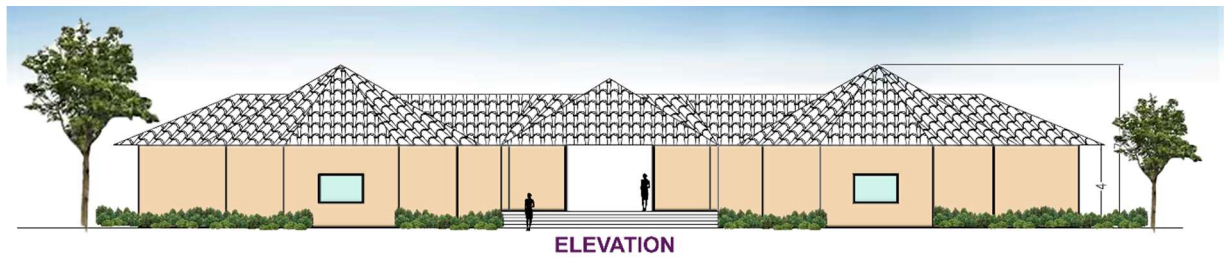
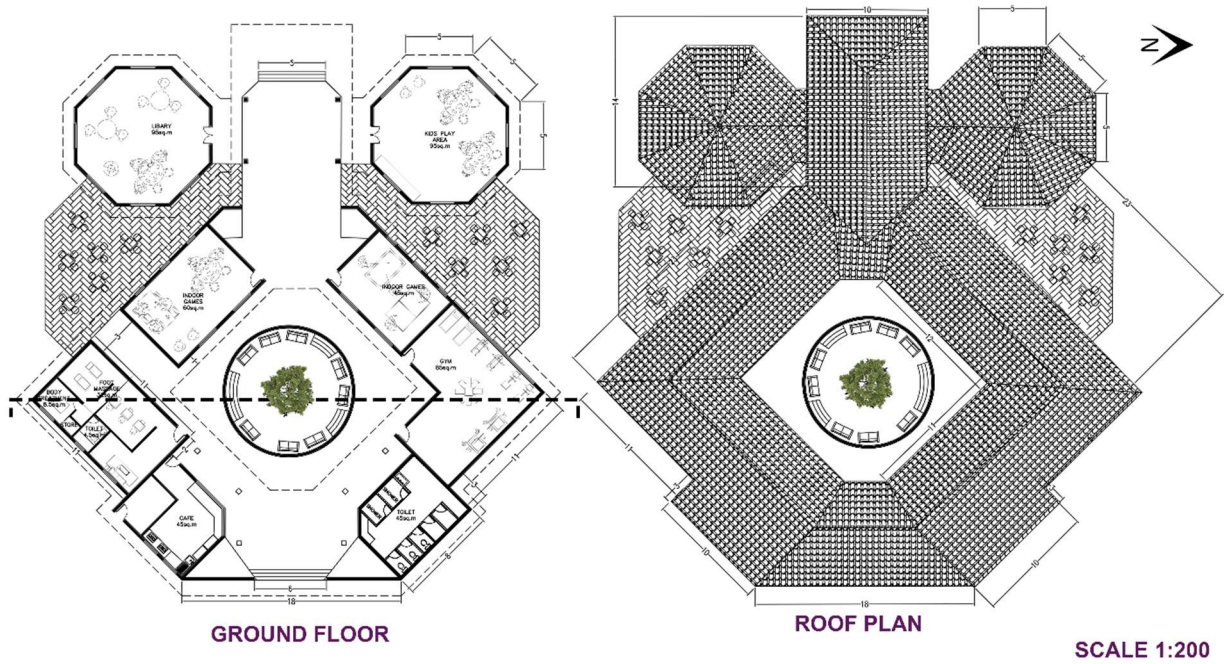


SECTION

ELEVATION

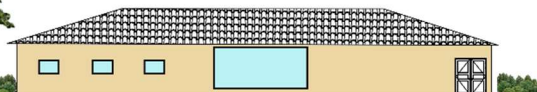
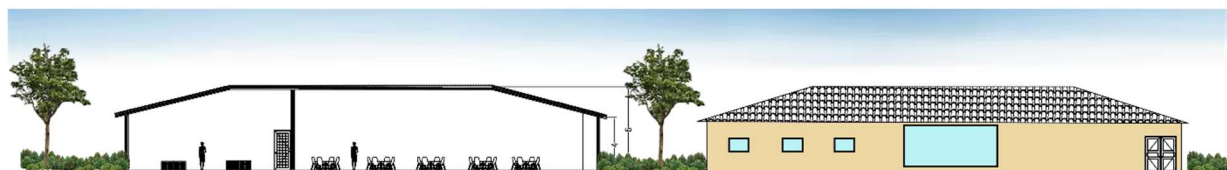
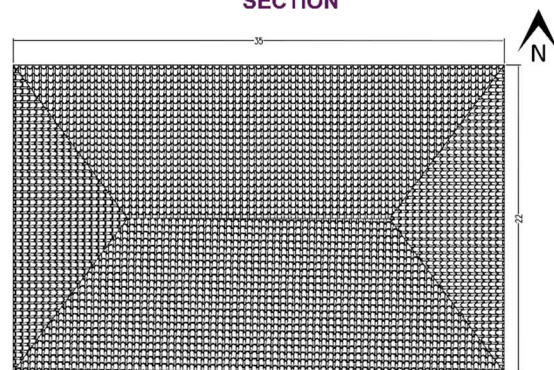
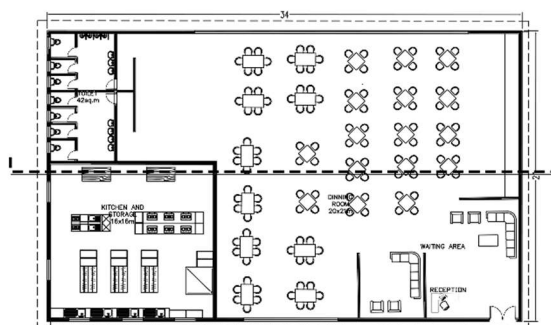
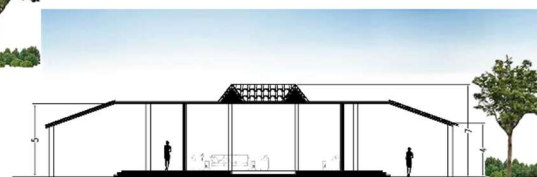
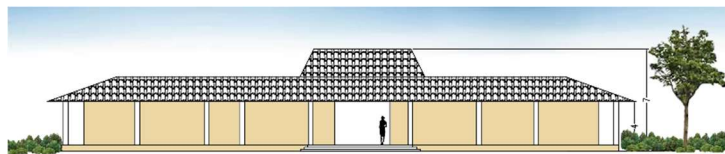
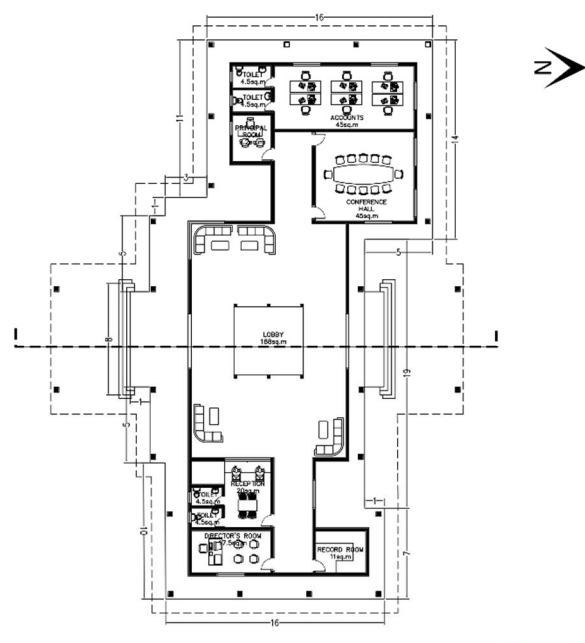
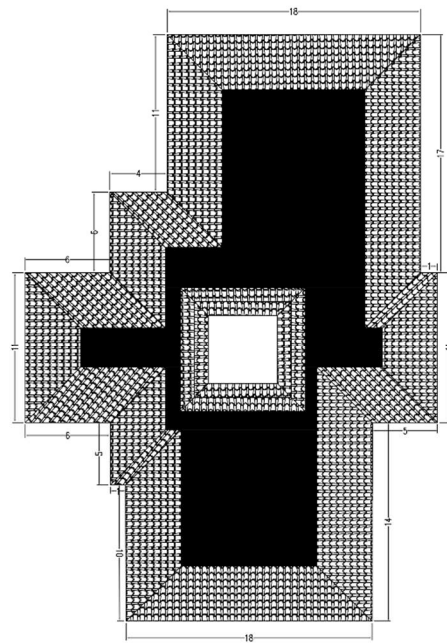
VILLA AND CHANGING ROOM PLAN | SECTION | ELEVATION

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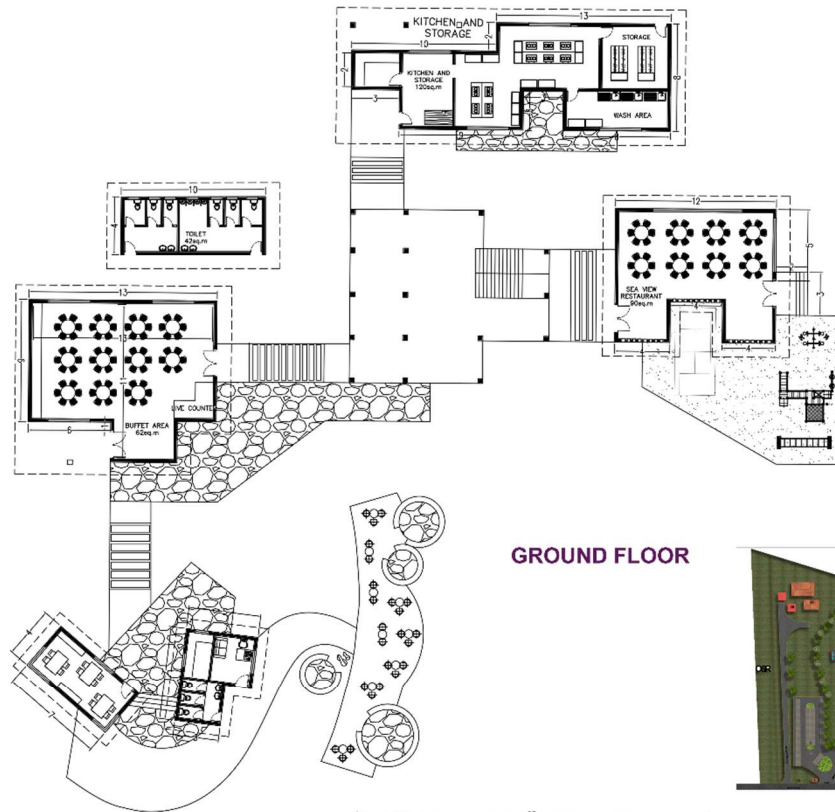


CLUBHOUSE PLAN | SECTION | ELEVATION

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ADMIN AND RESTAURANT PLAN | SECTION | ELEVATION

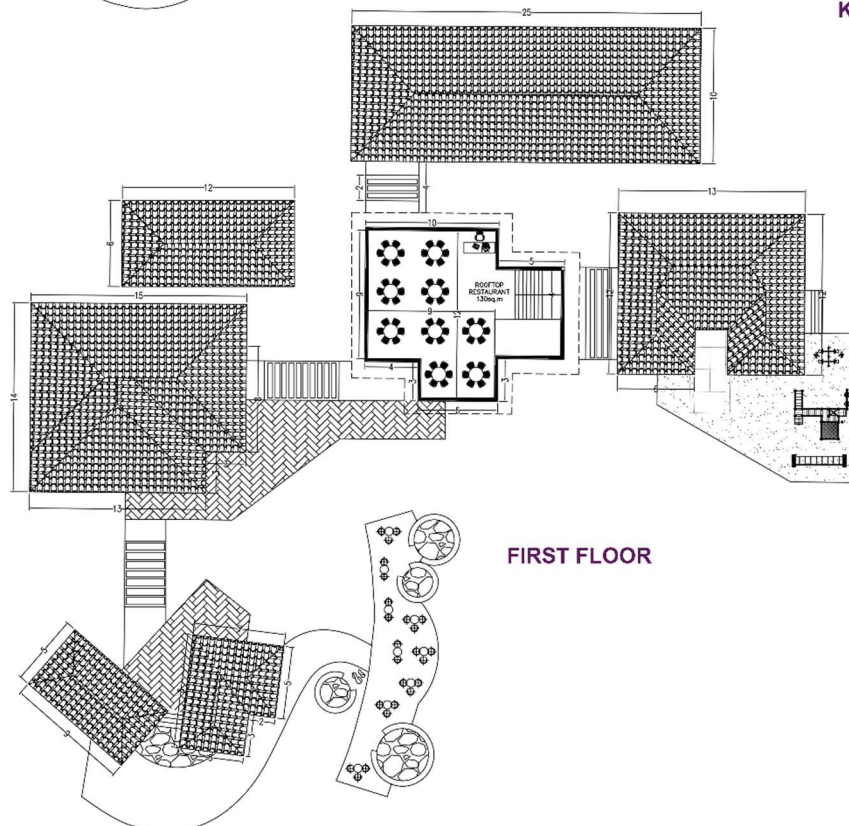


GROUND FLOOR



KEY PLAN

SCALE 1:200



FIRST FLOOR

SCALE 1:200

BEACH VIEW RESTAURANT PLAN

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CHAPTER 6

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