

DESTINATION WEDDING RESORT AND TOURISM HUB

THESIS

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

By

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(DEEMED TO BE UNIVERSITY)**

**Accredited with Grade "A" by NAAC
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JUNE - 2021



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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **W.JOANNE SOPHIA (3621036)** who carried out the thesis entitled “**DESTINATION WEDDING RESORT AND TOURISM HUB**” under our supervision from January 2021 to June 2021.

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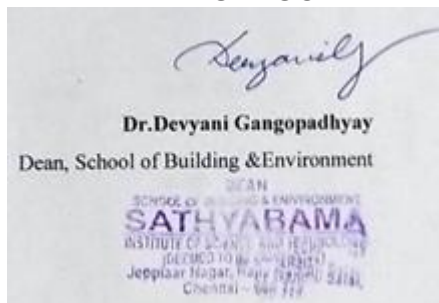
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DECLARATION

I, **W. JOANNE SOPHIA** hereby declare that the Project Report entitled “**DESTINATION WEDDING RESORT AND TOURISM HUB**” done by me under the guidance of **Ar.Madhumitha** (Internal Guide) **Ar. Ramesh kumar** (Internal Review Member) and **Ar.** (External Guide) Sathyabama Institute of Science and Technology is submitted in partial fulfillment of the requirements for the award of Bachelor of Architecture Degree.

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ABSTRACT

Today majority of wedding are preferred to be done in a tourist destination worldwide which offer wide variety of attractions, superior hotels and beach resorts as well as promote such attributes as beautiful landscape, distinctive flora and fauna, beautiful architecture. They like to spend about two to three days with all the family members and make the day best memorable one. This provides an interesting approach by including different wedding cultures which could be adopted by anyone for extra fun. The project provides an outlet to study the local and traditional architecture and how contemporary architecture can be integrated in it and covers design problems related to resort and tourist space.

A resort demands the formulation of an ambience which can provide people to relax and leisurely spend their time at the same time satisfying all the functional needs. With the increase in tourist places in different part of south India due to lack in hospitality some places have not yet developed. Resort that is going to be proposed here, is a commercial tourist resort which provides hospitality to both internal as well as external tourism as it cannot depend wholly on foreigners. This resort will perform multifunction, as it will have Restaurants, Conference halls, Banquet halls, Lodging suites, Individual Cottages, Heath Club, Small Library, performance space etc. Besides this, it will have services like Parking, Receptions, Plazas, Tourist Information Centre, and recreational spaces like Swimming Pool, Mini Golf Course, Lawn Tennis, Natural as well as artificial landscapes etc.

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1. INTRODUCTION

Design a destination resort to improve tourism of that particular place where there are more tourist places but they lack hospitality. So, to make a particular site an important destination for tourists is the major role of this project.

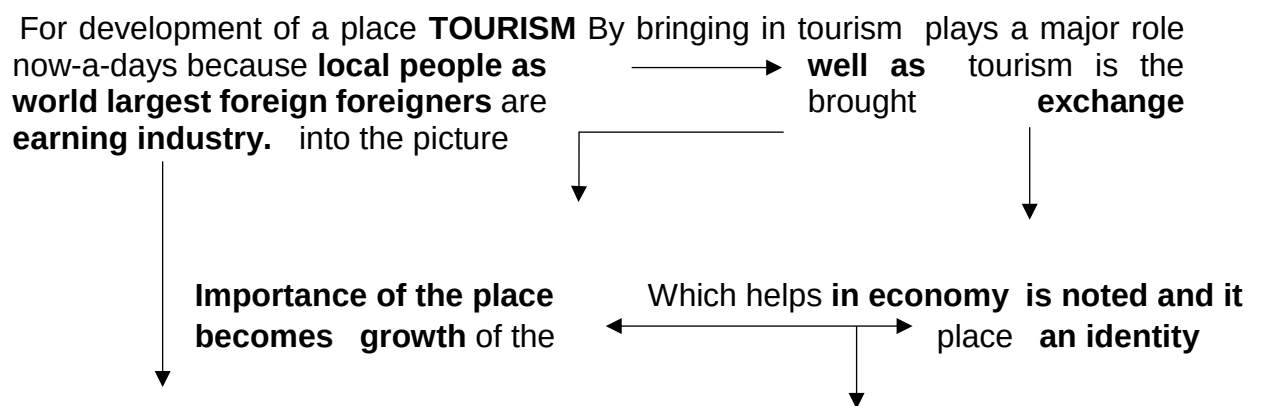
1.1 OBJECTIVE

- To Promote local culture through architectural design
- Different type of cottages and rooms with different type of views and facilities have been provided
- To create spaces which can suffice all needs related to leisure and tourism.
- Places which have dual function are to be implemented in this design
- Different types of venues are created for wedding ceremony with different views and different culture to make this resort a unique place for wedding in that destination.

1.2 SCOPE

- Tourism started developing in and around muttom , it was lacking due to lack of accommodation which will be solved after this.
- Different type of cultural wedding can be conducted here, so more of local and national or international level people come here.
- For international tourism, it functions as a luxurious cultural resort which provides all the facilities. It will help to promote tourism in muttom and encourage foreigner to come to stay in this very resort.
- Providing design solution considering the building functions and its relation with the climate and environment.

1.3 NEED OF THE PROJECT



So, for developing tourism there should be So, the **local settlement starts a unique feature that attracts the tourist to develop economy wise to the place.** That can be historical elements, culture, architecture, infrastructure, landscape, events, nature etc. These people to shopping, Which leads to a the destination overall **well-developed** experience of the trip. **place/ area.** features attract and contribute to the

In **Tamil Nadu tourist** attractions places are

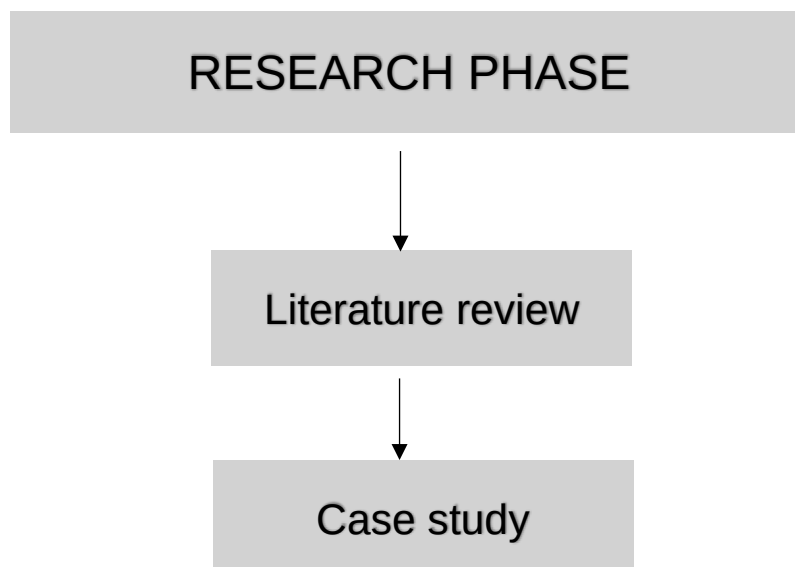
historical places, beaches, resorts, culture, —► **DESTINATION WEDDING**
tradition, shopping ↑ etc. and mainly the **RESORT & TOURISM HUB**
hospitality.

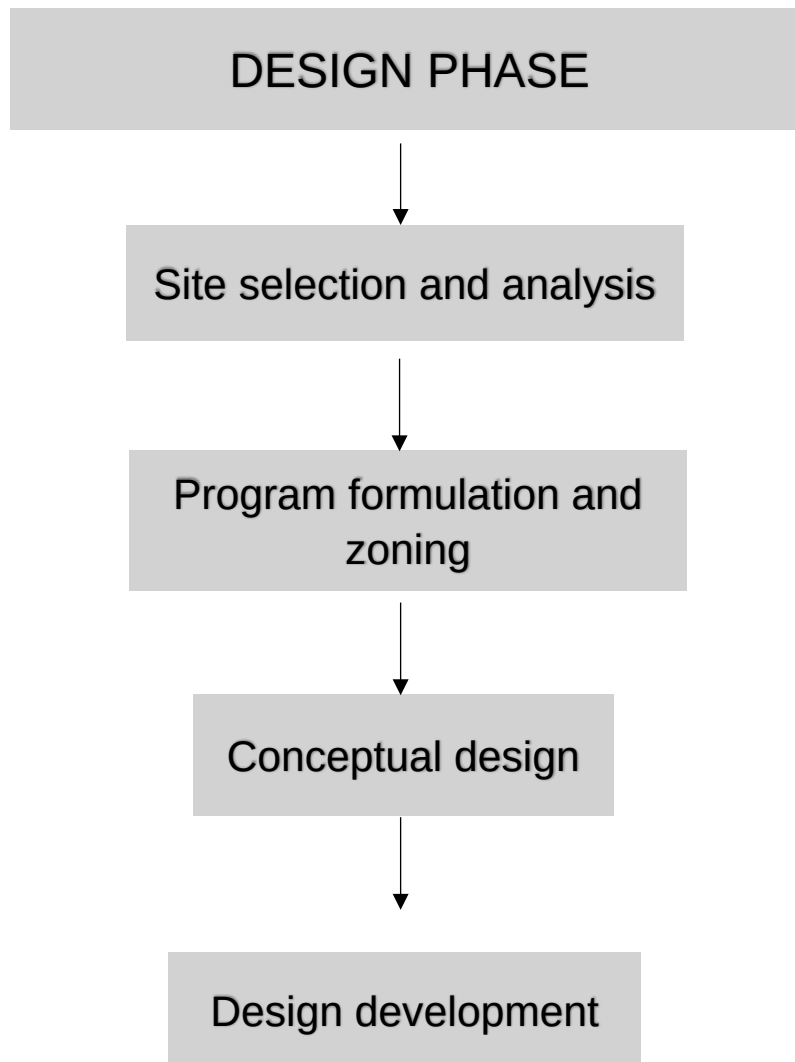
Since accommodation is lacking in some place's
tourism has not developed

1.5. BENEFITS OF RESORT AT MUTTOM LIGHTHOUSE

Muttom, being a fishing village, lacks any hotels/resorts or accommodation facilities for tourists and this is a major handicap for developing and promoting tourism at Muttom. The nearest resort is located at a distance of more than 21 km by road from Muttom. Resorts provide a wide range of amenities for their guests designed to make their vacation all the more enjoyable. The proposed resort can offer accommodations as well as a destination wedding facilities for different income group family's needs and budget. The kind of entertainment and recreational activities offered, as well as the extensive dining options are sure to attract more tourists to Muttom Lighthouse.

1.6. METHODOLOGY





2. LIVE CASE STUDY

2.1. SHERATON GRAND CHENNAI RESORT AND SPA

2.1.1. *Introduction*

It is located in Chennai, ECR road and designed by FHD architects. Its site area is about 10.29 acres and buildup are 22,000sqm – landscape 5481 sqm. The Resort site is placed in between the stretch of ECR towards the west & Bay of Bengal towards the East, Madras Crocodile Bank to the south, and Blue Bay Resort to the North. The site is 45km from Chennai and 10 minutes away from Kovalam Drive. The site is a very unique linear rectangular shape, connecting the East Coast Road and the sea. The major advantage of the site is the neighboring crocodile park on the south side that is covered with large old trees, thick shrubs, water bodies where you can spot live crocodile feedings, and more than 60 varieties of birds. “Hence, they intended to capture the existing nature as much as possible.



Figure 2.1 Site plan

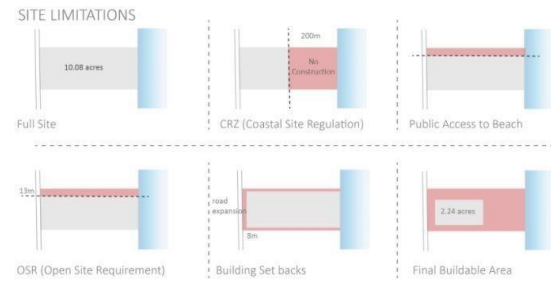


Figure 2.2 Site limitation

2.1.2. Site limitation

The 10.29 Acre site, owing to its adjacency to the beach, falls under Coastal Regulation Zone, which brings a lot of restrictions with it.

- CRZ has a 200m no construction zone from high tide area
- Beach is a public access area that needs a public road for access. A part of the site needs to be designed for this.
- Taking away all these areas, the final buildable area is restricted to 2.24 acres, that too away from the beach.
- Maximum allowable height of 2 floors, further restricts the building.

With these constraints, it is a challenge to achieve enough built space to generate revenue and to maximize rooms with beach view

2.1.3. Why resort?

The initial brief to developing a convention center cum wedding destination. FHD made their first proposal for the convention center. Economically, Convention center draws local guests for events around the week, while rooms draw revenue through local and international tourists, but mostly on weekends. FHD and the client recognized the need to balance the two, and the program added few rooms, and eventually, the project became a resort cum hotel with banquet facilities. Thereby, weekends draw tourists for rooms, while weekday banquet events bring guests to stay in rooms as well.

2.1.4. Site context

The site contour varies from +99m near the road to +94m on the coast. The contour creates the scope for the concept.

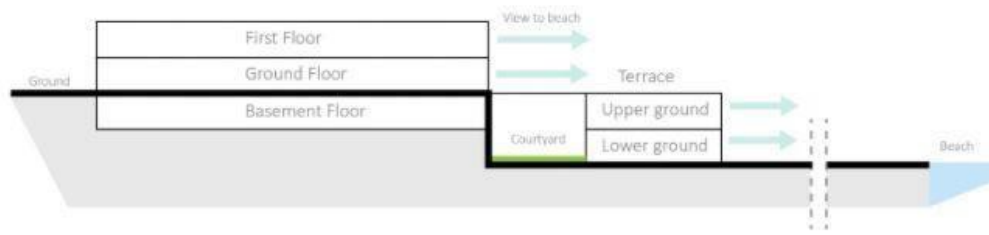


Figure 2.3 Site section

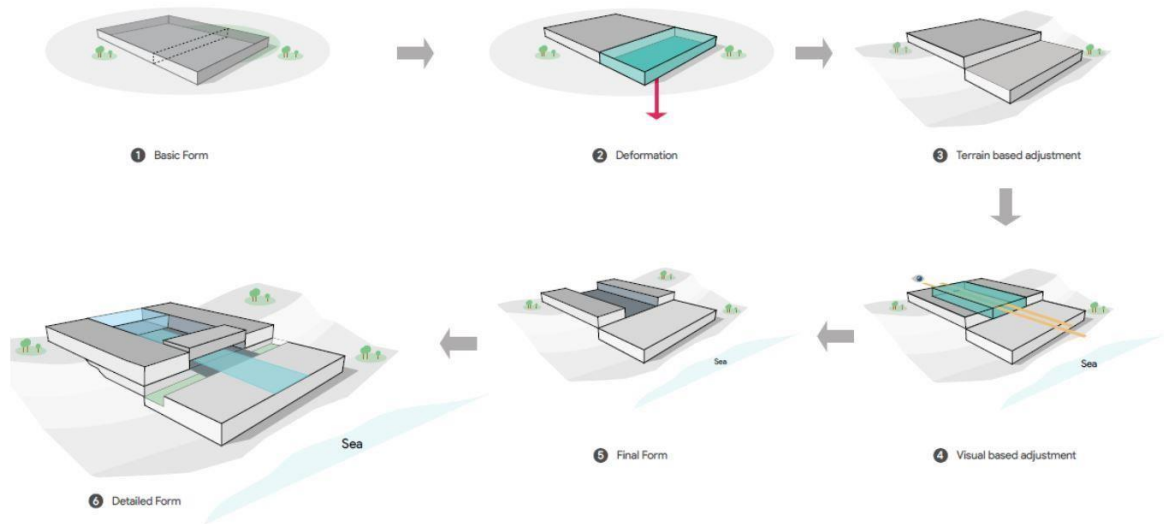


Figure 2.4 Concept

2.1.5. Site plan

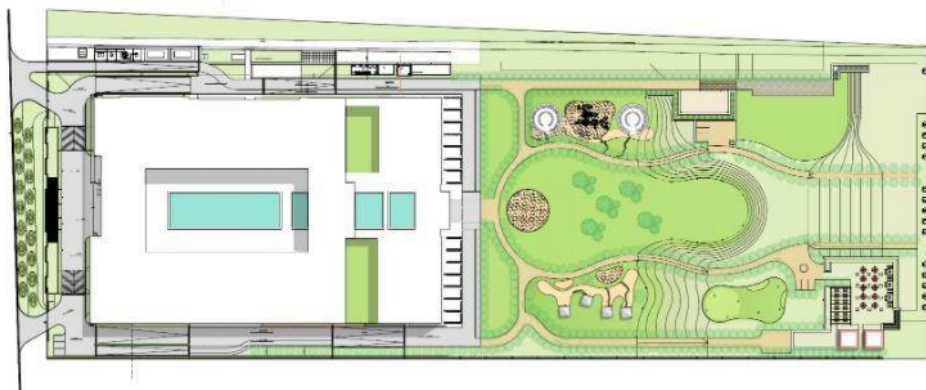


Figure 2.5 Site planning

The plan focusses on clean edges and clarity of circulation. The Resort offers amenities like Banquet Hall, Restaurant, Bar, Spa, Gym & Kids Zone. The Resort has been tailored with 126 Rooms of all kinds of Views, like Sea Facing, Central courtyard Facing, Landscape Facing & Partial Sea Facing Rooms. Rooms are arranged on double-loaded corridors, and yet achieve views for each unit due to strong visual features in the middle. The dining area visually opens out to the

courtyard between staggered blocks. The banquet area has ample pre-event space and flexible event space with independent access and exit. The pre-event space spills over to the central feature area. The recreational area connects parking on the basement in West block and Hospitality units on the Upper ground floor in East block. Services are provided on the Lower ground floor which buries itself under the parking zone.

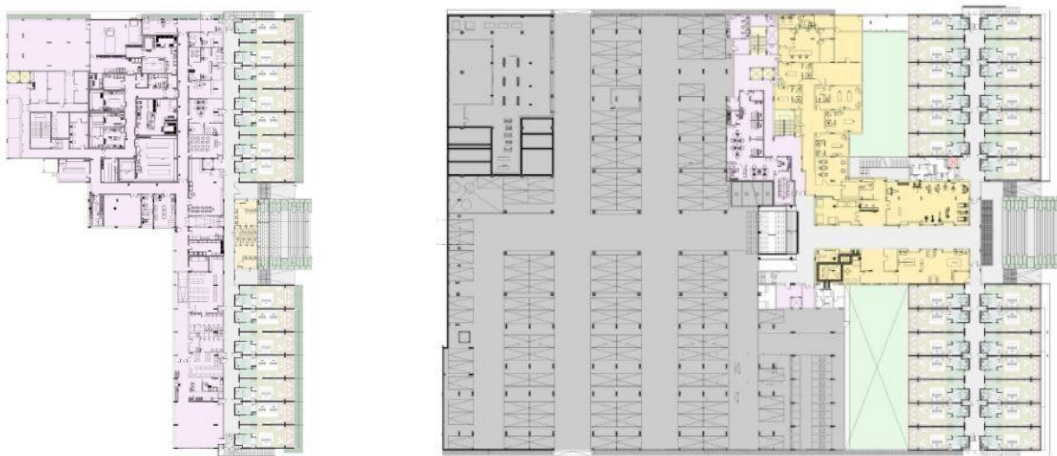


Figure 2. 6 Stilt and ground floor plan



Figure 2. 7 First floor plan



Figure 2.8 Second floor plan



Figure 2.9 Cottage's floor plan

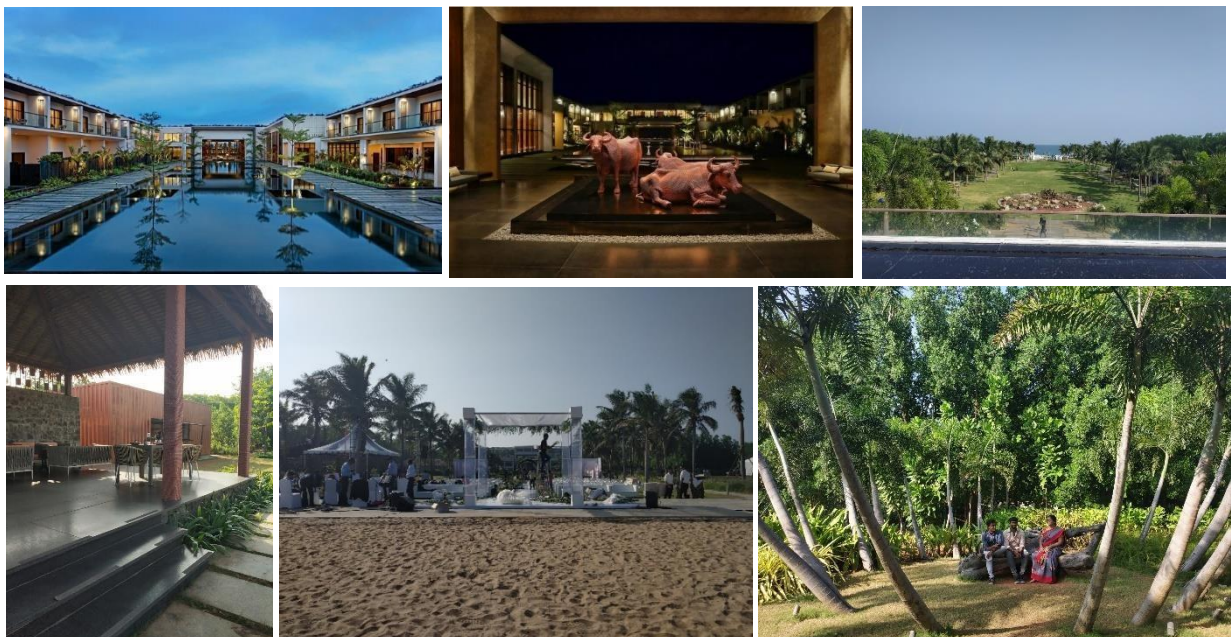




Figure 2. 14 Front porch



Figure 2. 13 Front porch

2.2.4. Parking



Figure 2. 15 Pathway

Two-wheeler and four-wheeler parking is segregated. Clear 7m for two-way parking has been given. Separate service parking is also given. Since the area is big, they have separated the parking one near the entrance and other parking in-between the rooms.

2.2.5. Conference room

Totally four conference room is present in the main reception block. All the halls have one common pre function area. These halls are categorized into different styles such as theatre, class room, u shape, etc., according to number of persons. These styles are accommodated using flexible partitions.

2.2.6. Connected by pathways

The concept of this beach resort is "Connected by Pathways". The pathway is 2m wide and has stone blocks with Korean grass of 5" creates interesting pattern. This free flowing gives clear view of where it is leaving. It is designed in such a way one can reach the destination with short time travel.



Figure 2. 17 Pathway

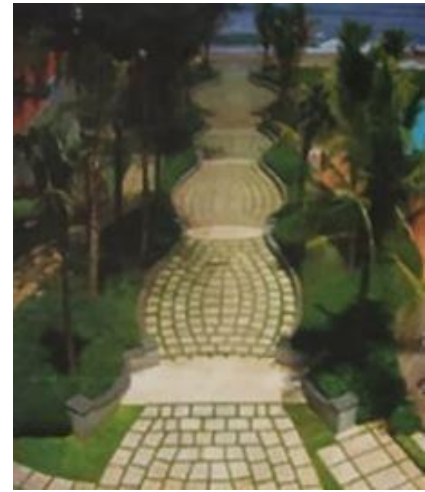


Figure 2. 16 Pathway

2.2.7. Banquet halls

2.2.7.1. Savannah I

Banquet hall that can be furnished according to your dream venue, for weddings / reception or social union, the hall can accommodate up to 1200 guests

2.2.7.2. Savannah II

Beach facing lawn with a water fountain as backdrop, ideal for small gatherings of 150 guests



Figure 2. 18 Wedding venue

2.2.7.3. Pier Hall

Meeting and presentation Hall that can seat 45 guests, with a view of the water.

2.2.7.4. Cabin

The boardroom fitted with the latest audio-visual equipment's for corporate meetings. Seats up to 15 delegates.

2.2.7.5. Port hall

These twin halls can accommodate up to 150 odd guests, equipped with audiovisuals and service area to cater for the guests

2.2.8. Restaurant

There are three types of restaurant:

The Wharf: Restaurant and Lounge bar which is fully made up of locally available materials that offers a comfortable, relaxing dining atmosphere with excellent views of the sea.

Santa Maria: The items on the menu includes Indian and continental multi cuisine along with the sea and the view accommodates 70 people approximately. Maritime

Tales: A bar present spirits for an evening of comfort and leisure by the sea.



Figure 2. 19 ^{Restaurant}

Kitchen service - Goods receiving & Store: There is no separate service entry. Goods are received mainly during untimed from the main entry through trucks.

2.2.9. New features

They have introduced sustainable rooms room with tensile fiber and with the container at the rear end of the site with the beach view.



Figure 2. 20 New modules

2.2.10. Type of rooms

There are about 157 hotel suites, chalets, and villas at Radisson blu temple bay resort Mamalapuram.

Chalet: The duplex cottages were totally renovated by demolishing the tile roof and the existing ground floor slab as the height was only at 8'. The floor heights of each floor were increased to 12' by constructing new slabs. Two cottages were created in the bottom and two more on the top with an external stair being added to the near of the cottage for access. Wide windows with clear glass were put on all the cottages that overlook the beach. The cottages are beautifully landscaped with lush green connecting pathways tying the key elements

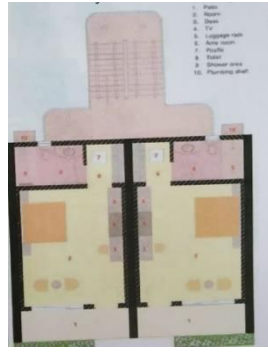


Figure 2. 21 Chalet

Bay Room: These warm and inviting rooms are furnished, with private sit-out and spacious bathrooms. All rooms have beautiful scenery that surround the Beach Resort and a private pool.

Meandering pool Villa: Separate cottages with elegant view of the sea and the Shore Temple, the contemporary furnishings include a mini bar, internet access and a bathtub opening to the skies.



Figure 2. 22 Meandering pool

2.2.11. Water treatment and supply



Water supply is mainly through underground bore wells. From well, water transferred to sump and then to treatment plant through chlorinated PVC pipes. This treated water is taken to several points through underground pipes. Inspection chambers are placed at every 15' throughout the resort. Reverse Osmosis Plant is used for treatment.

Figure 2. 25 Water treatment plant

2.2.12. Sewage treatment plant



Figure 2. 28 Sewage treatment plant

Sewage water is taken to treatment plant through underground pipes. Sewage water is treated using chlorinated tubs. 75 kl per day is treated. Water treated is used for garden watering purpose and waterbodies are also cleaned and filled using this treated water.

3. LITERATURE STUDY

3.1. RAVIZ KOVALAM RESORT

3.1.1. Introduction

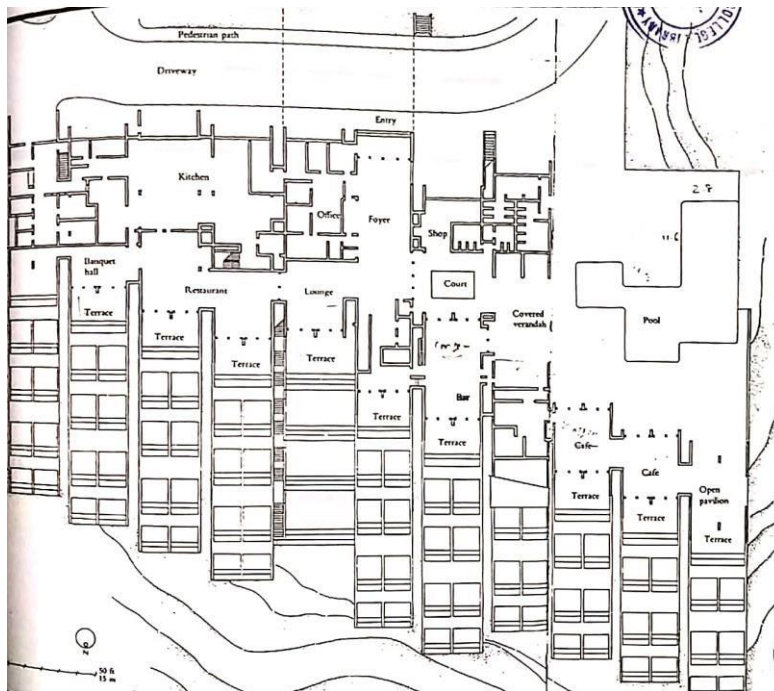


Figure 3. 1 Floor plan

It is located in Kovalam, Kerala and designed by Charles Correa. Its site area is about 64.5 acres and buildup is 31,525 sqm. To initiate one of the India's most spectacular beaches as a major beach resort area. The master plan does not concentrate all the facilities in one area, but generate a large number of potential

growth points, thus allowing a more flexible response to future demands. The resulting concept was a large mass, sloping towards the sea, ensuring each room had a frame to the breathtaking view that lay in front.

MAIN PRINCIPLE: stepped interlocking of spaces and open to sky, vernacularism.



Figure 3. 2 Views

Correa incorporated this local wisdom of natural ventilation in the Kovalam Beach Resort. Additionally, in order to preserve the natural beauty of the site, the facilities are all built into the hill slopes. The construction is entirely in the traditional style of Kerala—white plastered walls with red tiled roofs. Other pavilions consist of light bamboo chhatris with coir matting on the floor and local Kerala handicrafts.

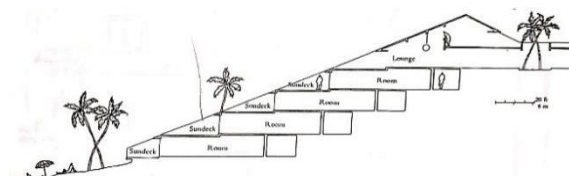
3.1.2. Accommodation

Accommodates 300 guests, the guest rooms come in 3 configurations:

1. On the edge of the beach hidden under the palm trees, they are suites for longer stay with cooking facilities etc.
2. Overlooking the beach there are 100 guests' rooms. here the facilities are such that every room gets its own private sundeck and the rooms itself have been cut into the hill. He has used the slope to create the various stories of the resort. The rooms are accessed from the interior of the slope, and then open out towards the view of the sea
3. Between these two there are hotel type rooms having the view of the sea.

3.1.2.1. Beach view rooms

This is a beach view rooms sits on a cliff offering panoramic views of kovalam shoreline. Stepped terrace that leads visually to the beach. The roofs form a uniform slope on the facade, leaving only the sundecks exposed. Functionally, this pyramid-like structure also allows each room to be well ventilated and well-lit



providing a view towards the sea.



3.1.2.2. Suites

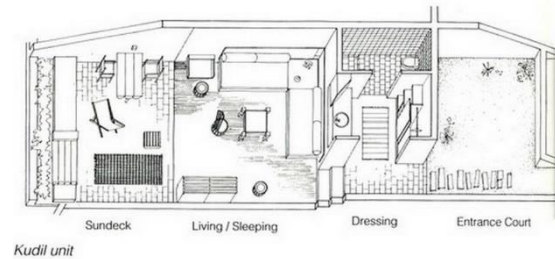
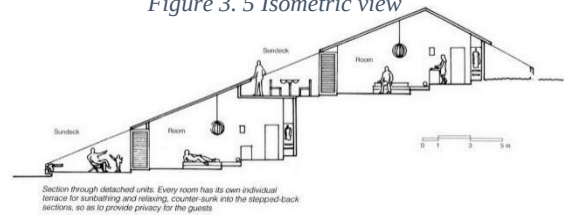


Figure 3. 5 Isometric view



Club suite:

A club suite is nearly twice the size of a club room. The extra space is taken up with expanded work spaces, five – features daylight bathrooms and private decks with sun beds. The suites are spacious, luxurious and other contemporary luxury in a spacious, open setting. Each suite is part of the Leela Kovalam club an exclusive hotel within a hotel and use of the gym and ocean rim infinity pool. Complimentary



use of gym and ocean rim infinity pool.

Room size: 840 sq ft

Location: The club

View: Ocean

Figure 3. 7 Club suite

Presidential suite:

A two-bedroom suite (king sized beds) with separate living cum dining area.

Dramatically sited on a rocky ledge with private sun decks – just a short walk from the beach. A blend of local tropical architecture and contemporary modern makes these fully equipped rooms both relaxing and functional.

Size: 1506 sq ft

Location: The club

View: Ocean

Duplex suite:

Perhaps the ultimate in ocean – front luxury, this two-level suite features a living room and private balcony on one level with an opulent bedroom upstairs looking out over the Arabian Sea. The suites come with exclusive access to fine dining, spa and fitness center, ocean rim infinity pool and library with cigar room. Each suite is part of the Leela kovalam club, an exclusive hotel within a hotel land use of the gym and ocean rim infinity pool.

Size: 1291 sq,ft

Location : The club

View : Ocean

Club room:

The club rooms offer a superior level of comfort and service. Each room is equipped with a stocked private bar, plasma tv, DVD and WiFi among a list of extras. The views of the Arabian Sea are stunning while the rooms offer a relaxing, stylish environment. Highly functional work stations and daylight bathrooms are just part of the package. Each club room is part of the Leela Kovalam Club, an exclusive hotel within a hotel.

Room size: 385 sq ft

Location: The club

View: Ocean

3.1.2.3. Garden view rooms

The ultimate in privacy and relaxation. These rooms are located on the beach level and are separate from the main block. Private sun decks open to manicured lawns leading to a short walk to the beach. Each room is equipped with a stocked private bar, Wi-Fi and a list of extras.

Size: 474 sq ft

Location: near the beach

View: Garden



Figure 3. 9 Garden view

Figure 3. 8 Garden top view

3.1.3. The Bar



The view here is out over the pool to the beach and beyond making the light filled bar a natural meeting place.

Figure 3. 10 The bar

3.1.4. Spa / Salon

The divya spa is an extraordinary building occupying 8000 square feet right on the cliff top. Divya itself means “light” and it light that defines and inspires everything here from the rooftop yoga. The primary focus of the spa is on Ayurveda treatments with 3 doctors and 20 therapists. The experience is personal and unique. Medicinal plants come fresh from the spa greenhouse.

3.1.5. Dinning

The Terrace - The terrace sits between sea and sky opposite the infinity pool



Figure 3. 11Dinning space

The Skybar - sky bar is perched on the cliff top, making it one the great locations along the coasts to watch the sun set

The Tides - The open air, a thatched roof and a fresh seafood grill make eating by the beach a breeze.

The Café at the Club - Interior café with no view

3.2. ZURI RESORT & SPA

3.2.1. Introduction

It is located in Kumarkom, Kerala, India and designed by Ar. Aiyar Mahesh. Its site area is about 18 acres and buildup is 13 acres with the artificial lagoon 5 acres. So,

the public zone is formed directly when you enter the site which is very good zoning and the rooms and villas are kept at the rare end of the site which will give privacy for the tourists and a good view of the lake.

Visitors by seasons

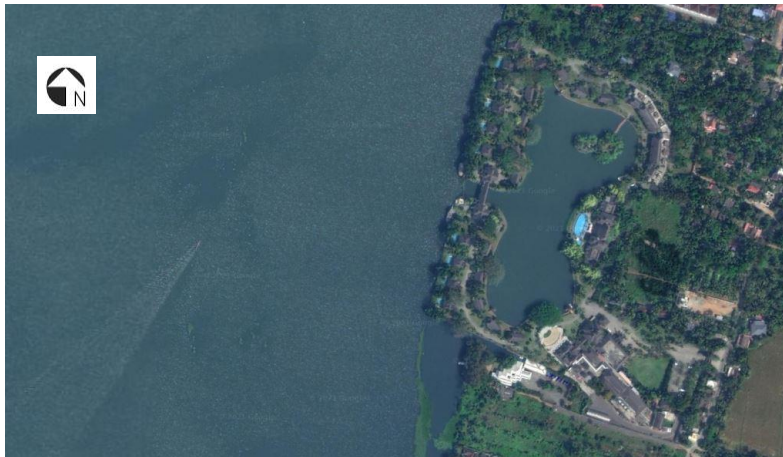
Nov-Feb: Peak, European

Jun to Aug: Arabians

Sept: Business class

Apr: Indians

3.2.2. Contextual analysis



So the entry of the site is only access by the visitors and there is a separate way for the service to happen at the entrance of the site. All the zone has been well designed to

Figure 3.

12 Site plan avoid negative spaces and to avoid maximum disturbance. The rooms are separated from the public movement in the site which is a very good aspect in the design. All the zone has been separated to avoid the cluster movement.



Concept was to build each villas or rooms, all with the view .So they have obtained this C-Shape pattern and they have created a lagoon (artificial lake) in the middle of the site for the view purpose which connect people with the nature at any point inside the site.



The bridge divides the lake and the lagoon which is also the concept of the resort as well as it acts as a visual aesthetic element. Centrally there is small island which connect by means of floating bridge.



The resort is built with traditional Kerala style architecture.



Spa the main attraction is kept at the center of the site and the infinite pool will give the view of lagoon and lake.

3.2.3. Multifunctional space

Multifunctional spaces bring a wider spectrum of environmental, social and economic benefits. Keeps a place always occupied and functional.

3.2.3.1. Amphitheater



Figure 3. 13 Amphitheater



Figure 3. 14 Multiuse purpose



Figure 3. 15 Cultural dance ceremony

Wedding ceremony

Amphitheater or 'mandap' against the serene backwaters or choose the greenery of lawn near poolside as your wedding ceremony location for your wedding ceremony.

Kerala cultural program in the evening in amphitheater

3.2.3.2. Mandap



Figure 3. 16 Artificial lake with the landscape



Figure 3. 17 used for marraiges



Figure 3. 19 Yoga location



Figure 3. 18 used for marraiges

3.2.4. Cottages

- The 28 Zuri cottages feature aesthetically developed 45sqm twin cottages with charming sit-out on the shores of manmade lagoon.
- The 10 majestic 70sqm villas feature a private garden and swimming pool facing Vembanad lake.

- There are about 16 zuri deluxe room and 18 zuri room in the hotel block which has the view of lagoon.

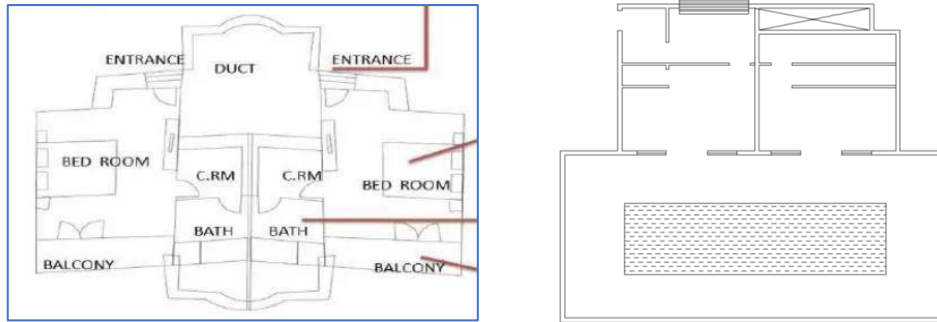


Figure 3.20 Planning

3.2.5. Material

- It is RCC framed structure which is constructed in local Kerala style.
- It has pitched roof, on that has applied aluminum plates tiles of Malaysia to give more natural & traditional look of Kerala
- As a form of landscape & for pedestal movement paving blocks used.



Figure 3.21 Materials used

3.3. KUMARAKOM LAKE RESORT

3.3.1. Introduction



Figure 3.22 Kumarakom lake resort

It is located in Kumarkom, Kerala, India and designed by Ar. Tony Joseph. Its site area is about 25 acres and buildup is 33184 Sqm. Kumarakom lake resort, acclaimed as the finest luxury heritage resort in India, nestles on the serene

banks of the lake vembanad , .One of India's hottest holiday spots ,Kerala. . Offering a complete range of new age amenities for a luxuriously comfortable stay .luxury-laden rooms ,villas

and suites. Ayurmana, the Ayurveda spa, swimming pool galore, traditionally Kerala teashop. Backwater cruise ,sunset cruise ,indoor games ,watersports including water skilling trips to Kottayam ,cycling ,village walks, evening shows of Kerala's traditional dance etc. Provides the guests a wonderful experience enriching and most cherished.

3.3.2. Concept

The concept of the resort was unique with respect to the others surrounding it. It was the first resort in the area to use an **already existing tarawad** for the design of the resort. The restaurant is situated in a 200-year-old ettukettu edaana kalamthat gurukal (master of martial arts) in thiruvalla. The building is beautifully detailed with many ornate architecture pieces.



Figure 3. 23 Tarawad

3.3.3. Site study

Kumarakom lake resort is situated on the 8.2 acres, west facing waterfront property .it sits on the banks of the vembanad lake in Kottayam district. there are internal waterways which run through the site, creating small artificial islands. The site is covered with buffalo grass and is extensively landscaped

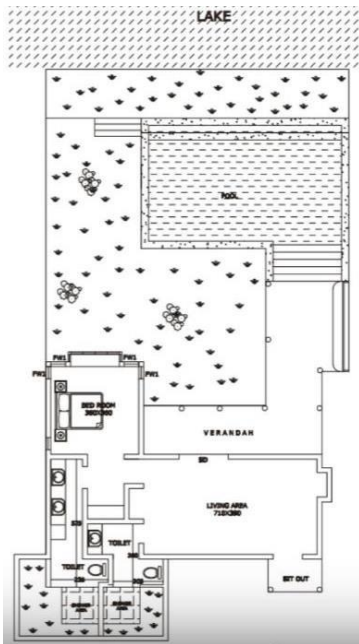
- The entrance to the hotel is on the east side of the site.
- The resort is open to vembanad lake on the west face of the property.
- Access to the waterfront is open to tourists staying at the resort via walkways which run along the property

3.3.4. Climate

Kerala, the land surrounded by pristine waters of the Arabian sea, has an equable climate that varies from season. Kumarakom's climate is moderate on account of its proximity to the ocean, with temperature rarely falling below 16deg C and rarely climbing higher than 38 deg C.

3.3.5. Accommodation

3.3.5.1. Presidential suites

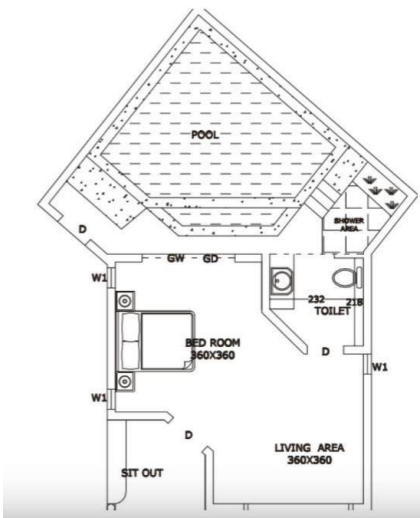


The presidential suite, each in its own royal seclusion, is the final word in traditional architecture charm, luxury and the ultimate in self-indulgence. With its very own view of the lake, a private pool, a private courtyard and regal interiors that exude the splendors of a prosperous era gone by, set yourself free and relish exotic brilliance.



Figure 3. 24 Presidential suites

3.3.5.2. Heritage lake view with private pool



Designed in Kerala traditional homestead style and with a private courtyard and plunge pool with jacuzzi, these villas at Kumarakom lake resort offer a panoramic view of the luminous Vembanad lake and the promise of a unique holiday experience.



Figure 3. 25 Heritage lake view villa

3.3.5.3. Meandering pool villas

Set on the twists and turns of a 250-m long meandering pool, each of the traditionally styled yet luxuriously modern meandering pool villas at kumarakom lake resort has access to the pool from individual and private bathing coves and cozy sit outs .the traditionally furnished meandering pool duplex villas merge the past with the present

with its luxurious bedroom overlooking the 250-meter long meandering swimming pool .each duplex villa possesses direct , individual access to the pool from its very own bathing cove and private sit-out.

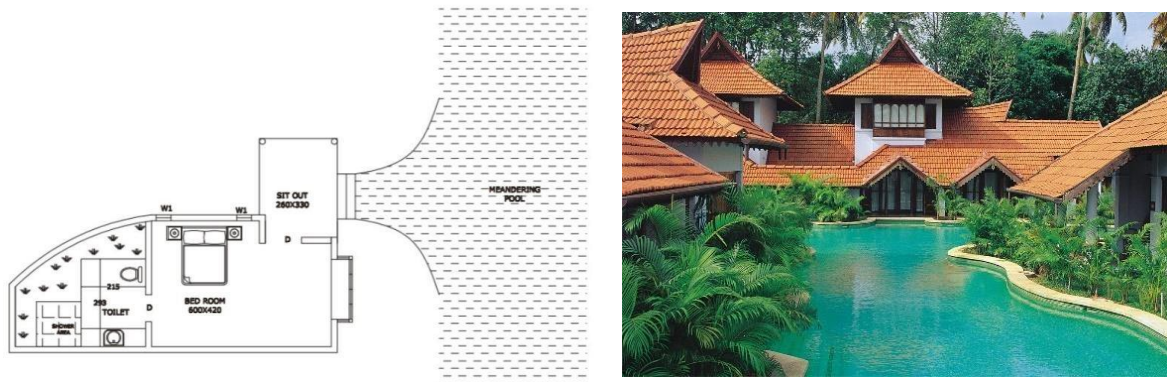


Figure 3. 26 Meandering pool villa

3.3.5.4. Heritage villas with private pool

These villas at kumarakom lake resort offer exotic and exclusive indulgences as each pluh villa, built in the style of the traditional homestead of kerala,has its own private courtyard with a private pool jacuzzi ,ensuring the creation of fabulous memories .moreover the villas offer a dazzling view of the exquisitely landscaped gardens and the clear lotus-strewn canals.

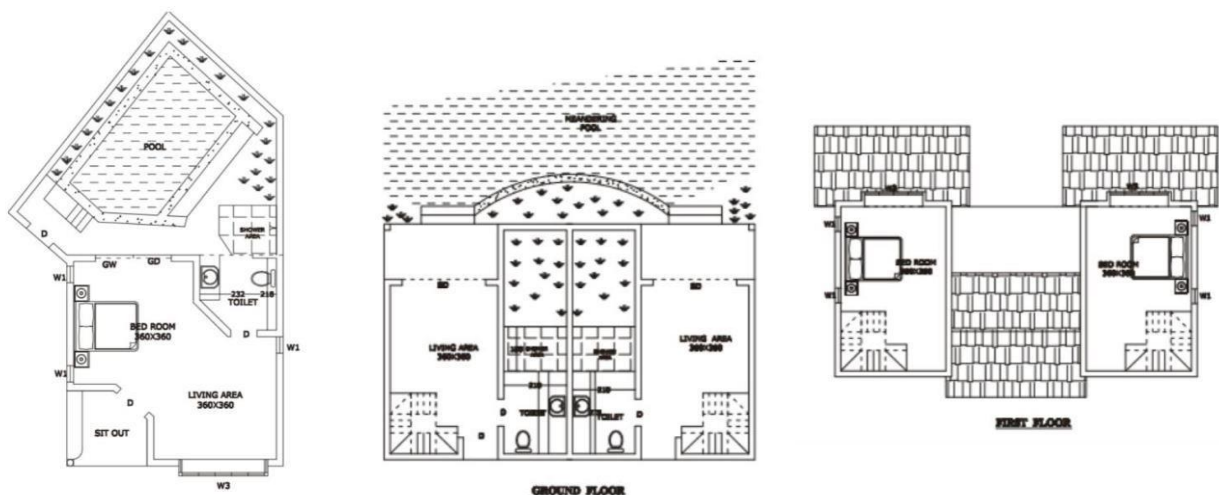


Figure 3. 27 Heritage villa with private pool

3.3.5.5. Meandering pool duplex villas

The traditionally furnished meandering pool duplex villas merge past with the present. Its luxurious bedroom overlooks the 250-meter-long meandering swimming

pool, and each possesses direct, individual access to the pool from its very own bathing cove.

3.3.5.6. *Luxury pavilion rooms*

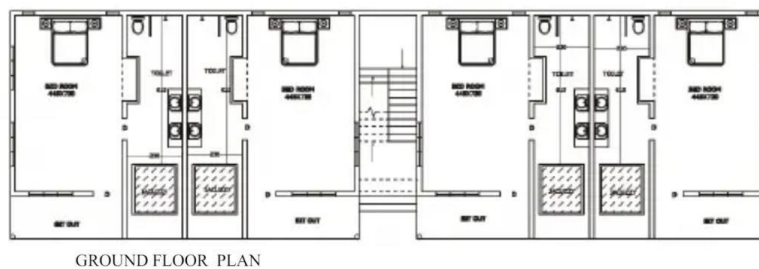
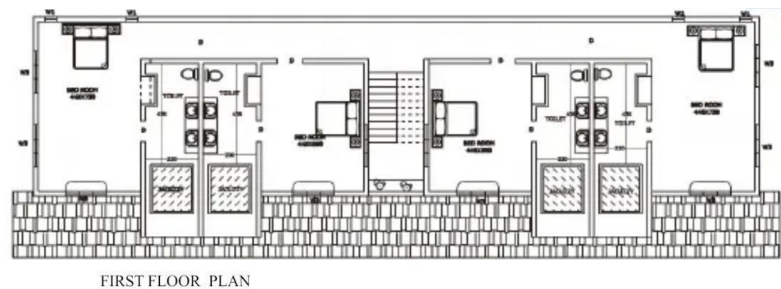


Figure 3. 28 Pavilion rooms



3.3.6. *Ettukettu the spatiality restaurant*



Figure 3. 29 Ettukettu restaurant

regal architecture. Commissioned by the king marthanda varma as a gift to his favored martial arts tutor, edamma kella that gurukkal, the mansion was built with all the magnificence of the homes of the nobility of those days. The ettukettu has been dismantled from its original location and relocated in all its glory at kumarakom lake resort, and is today dedicated to the culinary arts as it once was to martial arts.

Ettukettu, the multi-cuisine ,115 – seat restaurant owns the place of pride at kumarakom lake resort. A princely eight sided mansion with 2 central courtyard, the ettukettu speaks of the grandeur of yesteryear keralas

3.4. ANANTYA RESORT

3.4.1. *Introduction*

It is located in Kanyakumari, Tamilnadu, India and designed by Ar. Benny Kuriakose. Its site area is about 100 acres. Nestled in the midst of rubber plantations and chittar lake, Anantya resort, Kanyakumari, Tamil nadu is an ideal resort for vacationers and couple with the contemporary facilities. Anantya design is inspired by Laurie's baker

and Geoffrey Bawa ideals of minimalism, eco friendliness and trueness of materials. The resort has been designed to leave a minimal eco footprint, using reconditioned tiles and stone pillars, locally procured rubble and brick, sewage treatment and water saving, contour constructions and many other techniques. Anantya features 21 lake facing villas in 4 categories, each offering something special to the discerning traveler. The villas seamlessly blend the outdoors and the indoors and the indoors to create a refined space to retreat and relax. Rustic local finishes of mud walls exposed brickwork, handmade tiles on sloping roofs, rubble masonry mesh, and tasteful interior with large windows lets our guest experience the tropics from the comfort of the indoors.



Figure 3. 30 Anantya resort

3.4.2. Accommodation

Anantya features 21 lake facing villas in 4 categories, each offering something special to the discerning traveler.

3.4.2.1. Sadhana pool villa

The highest category of villas the sadhana are the ultimate luxury and closeness with nature –perfectly poised between outdoor and indoor. A living room and a bedroom with excellent views of the lake, a second bathroom, a plunge pool with the best view of the lake are additional features. the open-air concept bathroom is enveloped by mud walls and a water body.

3.4.2.2. Siddhi villa

These private villas with a compounded garden have a traditional “padipura” .Entrance which can be bolted from inside by the guest for total privacy. It has a Lilly pond and a thatched roof sit out / gazebo from which to enjoy the lake view. An open to sky seated bathing area is another attraction.

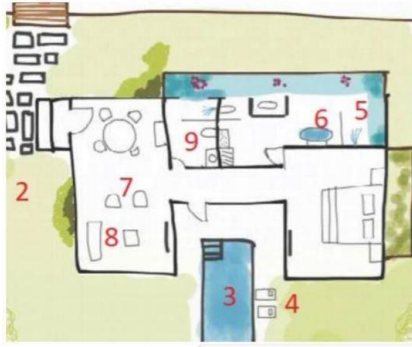


Figure 3.32 Sadhana pool villa

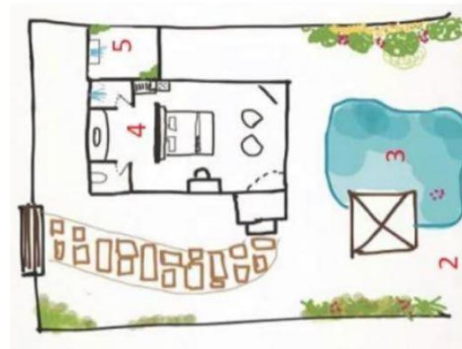


Figure 3.31 Sidhi pool villa

3.4.2.3. Chakra cottage

Each cottage is positioned to offer reasonable privacy in a huge landscape garden offering excellent views of the chittar lake. An open to sky private green yoga court allows yoga, meditation, contemplation and reflection at any time of the day/ night. Suitable for small wellness or family groups.

3.4.2.4. Veda jacuzzi villa

Similar in construction to the siddhi villas, these villas also have private compounded garden with the Lilly pond and site out. Open to sky outdoor jacuzzi with the view of the lake allows you to soak in nature.

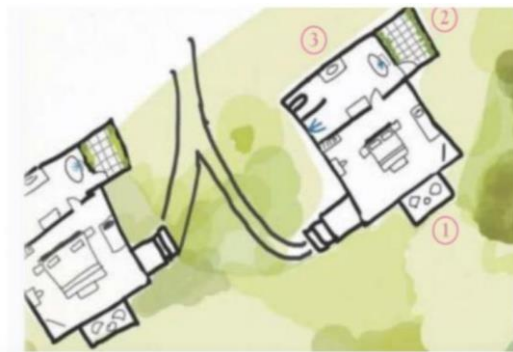


Figure 3.34 Chakra cottage



Figure 3.33 Veda jacuzzi villa

3.5. MAKENNA RESORT

3.5.1. Introduction



Figure 3. 35 Makenna resort

It is located in Brazil and designed by Drucker Arquitetos Associados. Its site area is about 103 acres and buildup is 6700 Sqm. Plan has been scattered in the site. rooms have their privacy since it is at the rear end of the site. Connectivity between the building is missing. Feels unsafe to be

out in night times and since it is vast area best place to conduct events and celebration.

3.5.2. Concept

- The challenge of this project was to interact with architectural space in a place marked by exuberant nature.
- In this site palm trees dominate the landscape.
- In order to make an intervention possible to accommodate the program of a resort, the buildings were distributed as follows: a club with a restaurant and leisure rooms, a spa, 16 bungalows and a service district.
- Instead of enslaving nature, the buildings dramatized the landscape even more, framing and revealing contours and unusual scenarios.

3.5.3. Program

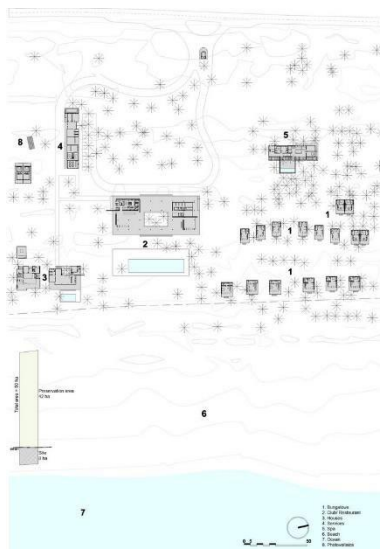


Figure 3. 36 Site plan

The design of the clubhouse and the bungalows follows the principles of modernism - and it is in this architecture of concrete that the counterpoint to the nature appears. The resort's clubhouse is a pavilion with overhangs creating terraces and interior-exterior transition spaces. Meanwhile, the bungalows have areas between 80 and 150 m2 and are oriented towards the sea.

3.5.4. Weather

To improve thermal comfort, along with the use of expanded polystyrene in the roofs, the buildings were raised from the ground providing cooling to the environment and easy access for maintenance of sanitary facilities. Due to the constant heat and high humidity, we chose front-back openings to facilitate air flow, decreasing indoor temperature and eliminating the use of air conditioning.



Figure 3. 37 Interiors

3.5.5. Plans

Club / Restaurant

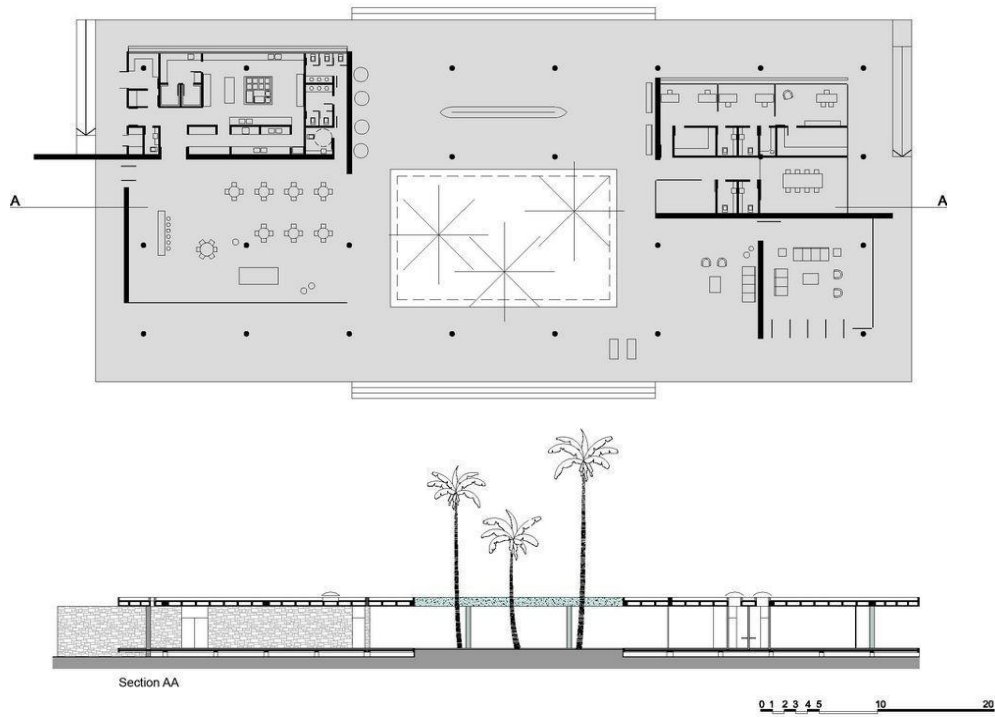


Figure 3. 38 Main block

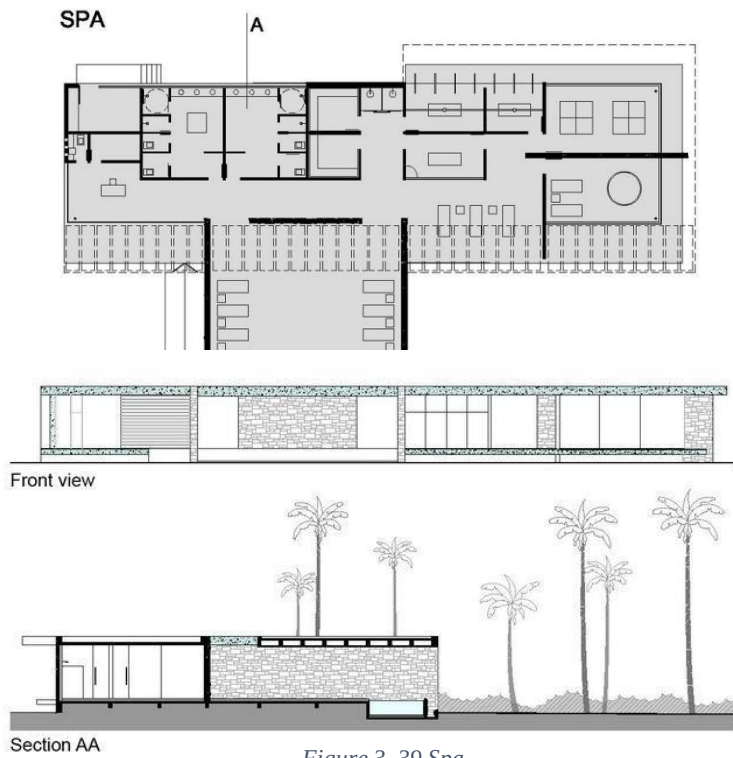


Figure 3. 39 Spa



Figure 3. 40 Bungalows

3.6. SUSONA BODRUM

3.6.1. Introduction

It is located in Torban mahallesi, Turkey and designed by Ar.Gokhan Avcioglu . Its site area is about 27500 Sqm. Bodrum is one of the most popular holiday destinations in Turkey. The designers were inspired by the concept of a water drop a high energy center and circular rings radiating outwards. Sleek and contemporary architectural forms are a key attribute, announcing the high level of luxury of the resort. The guests will have access to a rare sandy beach, a truly unique feature in a part of Bodrum that is rocky, an exclusive deck that provides dinghy services to accommodate yachters. Here the wedding happens in the central building rooftop events discover beautiful panoramic view over Torba Bay. Features space for up to 150 seated guests and 300 stand-up guests. Our hotel offers an exquisite backdrop for unforgettable beachfront ceremonies. Follow with a seated dinner at one of our beautiful restaurants.



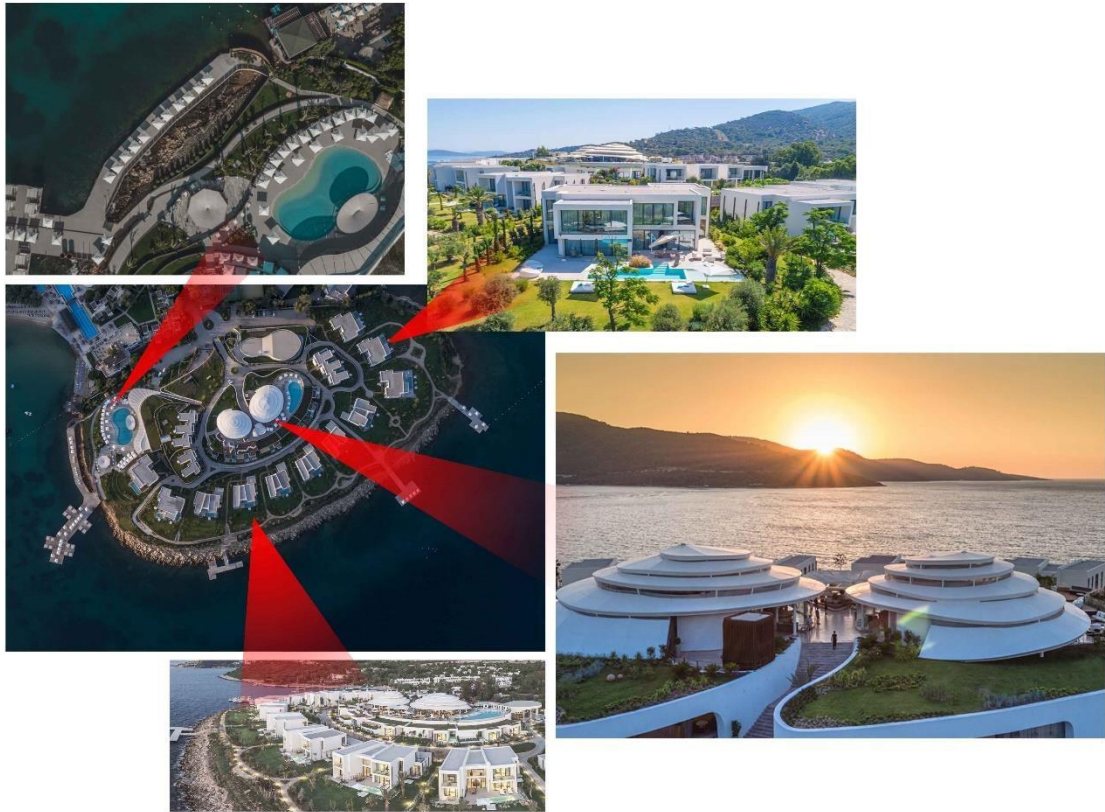


Figure 3.41 Program

3.6.2. Program

Centralized public zone which is easily accessible from the room for their needs and also the rooms and villas have their privacy. Hierarchy of the site is clearly seen. There are about 76 guest rooms, suits and villas feature panoramic sea views and interiors inspired by the sea. Each villa maximizes sea views whilst respecting and utilizing the existing site topography. There are 2 swimming pool one at the ground level and other one on the top infinity pool where the parties happen. The hotel units were designed in a fragmented organization creating more flexibility than if they were integrated into the site as a monolithic mass. Cross ventilation is established through landscaping between the units. Despite this fragmentation, there is continuity in hypetated between the lines of the hotel blocks. The necessity of privacy and the enjoyment of the location are perfectly balanced. Main attraction to the site is this building which is at the center and consist of restaurants, bar ,conference hall and banquet hall etc. with a view of the sea

3.6.3. Site plan

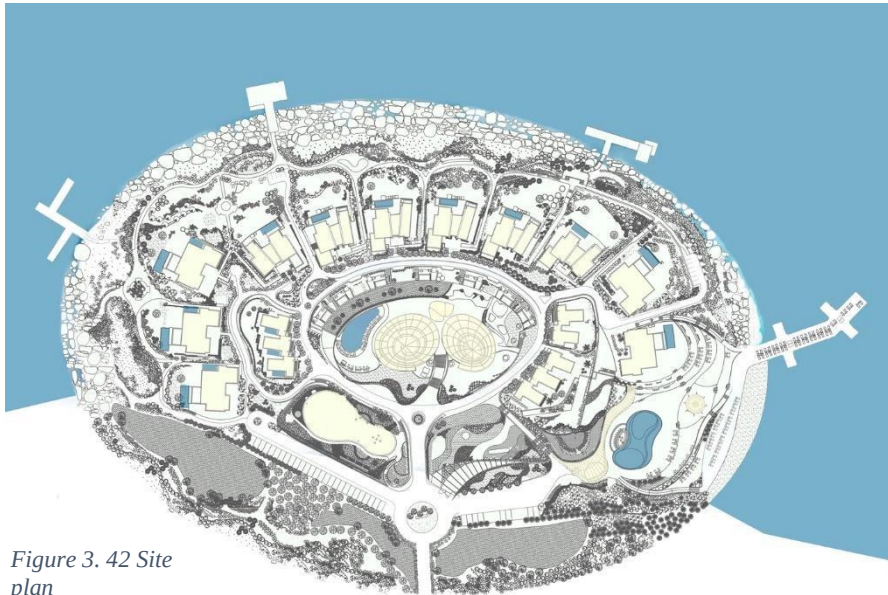


Figure 3. 42 Site plan

Plan has a circular rings shape with the public zone in the center which sets a icon of the site .

Hierarchy of site goes from the center to the bottom . Vehicular zone is stop in the

front itself so inside a site it will a pedestrian zone . All the rooms villas are facing towards the sea to have a good view.

3.6.4. Material

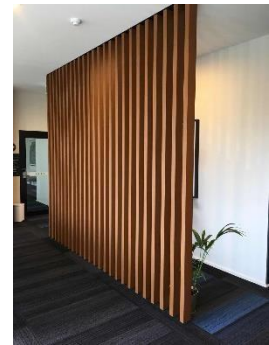
Locally quarried natural stone, sustainably sourced timber and water are the main materials within the interior design scheme. These materials not only offer a timeless quality, but, since they are sourced locally, they pour in thousands of years of history of Bodrum. Timber screens are also introduced to offer both climatic respite, and to create a unique visual feature.



Figure 3. 44 Quarried natural stone



Figure 3. 43 Timber



screen

3.6.5. Floor plans



Lower Floor
Administration Block

Figure 3. 45 Lower floor plan



Upper Floor
Restaurant and Sunset Bar

Figure 3. 46 Upper floor plan



Figure 3. 47 A type villa

A Type Villas



Figure 3. 48 B type villa

B Type Villas

3.7. COMPARITIVE STUDY

Table 3. 1 Comparative study on case studies and literature studies

	SHERATON GRAND CHENNAI RESORT	RADISSON BLU RESORT TEMPLE BAY	RAVEZ KOVALAM RESORT	ZURI RESORT & SPA	KUMARAKOM LAKE RESORT	ANANTYA RESORT	MAKENNA RESORT	SUSONA BODRUM RESORT	INFERENCE
LOCATION	Chennai	Mahabalipuram	Kovalam , Kerala	Zuri resort , kerala	Kumarakom ,Kerala	Kanyakumari , Tamilnadu	Brazil	Torban mahallesj, Turkey	Most of the resort are located at the main core or from the secondary road.proximity to the pourism spots and airport makes up an international destination spot.
AREA	10.29 Acres	44 Acres	64.5 Acres	18 Acres	25 Acres	1000 Acres	103 acres	27500 Sqm	—
CAPACITY	126 rooms	157 rooms	900 rooms	72 rooms	60 rooms	21 rooms	16 rooms	76 rooms	—
CLIMATE	Tropical climate	Tropical climate	Tropical climate	Tropical climate	Tropical climate	Tropical climate	Tropical climate & arid climate	Oceanic climate	—
BUILDING STYLE	Contemporary architecture	Traditional and contemporary architecture	Traditional style of Kerala	The resort is built with traditional Kerala style architecture.	They have followed traditional style of kerala	They have followed traditional style of kerala	clubhouse and the bungalows follows the principles of modernism	Sleek and contemporary architectural forms are a key attribute, announcing the high level of luxury of the resort	Building style depends on the site context
ACCESSIBILITY	Contemporary architecture	Access from the main road.It is a clustered planning access from one place to other is difficult but vista service makes it easy.	Site is accessed from the secondary road .Accesses from one place to ther is good .	Site is little far from the main road.connectivity between building are good	Site is accessed from the secondary road .	Site has a main access from the main road	Direct access to the site from the main road there connectivity building is poor and no shelter to stand between building .	Centralised public zone which is easily accessible from the room for there needs and also the rooms and villas have their privacy.	Accessibility is preferred to be from the main road so that it will be easy connectivity to the visitors. Connectivity between buildings are important.
PLANNING & ACCOMODATION	The site is a very unique linear rectangular shape 	Linear planning 	Stepped interlocking of spaces and open to sky ,vernacularism. 	So they have obtained this C-Shape pattern and they have created a lagoon (artificial lake) in the middle of the site for the view purpose which connect people with the nature at any point inside the site. 	Site is L-shaped and linear pattern in arrangement according to the shape of the site. There is a connectivity between blocks. 	The site has a scattered planning according to the type of rooms . 	Scattered planning and Connectivity between the building is missing 	The designers were inspired by the concept of a water drop a high energy center and circular rings radiating outwards. 	Planning according to the site boundaries .Views are expected in all kind of rooms since it's a beach resort . Planning should be flexible for further expansion. Clustered planning increases efficiency and interaction . views can be given easily since it is clustered . but in a hotel block planning for the views is little challenging
MATERIAL USED	Contemporary material - concrete ,glass etc	Local used material terracotta roofing and wood for framing and etc. Newly addvd material tensile fabric strudture and container.	The construction is entirely in the traditional style of Kerala—white plastered walls with red tiled roofs. Other pavilions consist of light bamboo chhatris with coir matting on the floor and local Kerala handicrafts.	It is RCC framed structure which is constructed in local Kerala style. It has pitched roof ,on that has applied aluminum plates tiles of Malaysia to give more natural & traditional look of Kerala As a form of landscape & for pedestal movement paving blocks used.	Local used material terracotta roofing and wood for framing and etc	Using reconditioned tiles and stone pillars.Rustic local finishes of mud walls exposed brickwork, handmade tiles on sloping roofs, rubble masonry mesh, and tasteful interior with large windows lets our guest experience the tropics from the comfort of the indoors.	Concrete	Locally quarried natural stone, sustainably sourced timber and water are the main materials within the interior design scheme. Timber screens are also introduced to offer both climatic respite, and to create a unique visual feature.	Material preference - local available materials which reduces time and cost.
PARKING	Underground parking	Parking has been zoned near the entrance and inside near the main building .	—	Vehicles are restricted at the entrance of the site	They have temporary parking facility at the entry of the site and a separate visitors parking at the side of the site.	Vehicles are restricted at the entrance of the site	—	Vehicles are restricted at the entrance of the site	Can be restricted to the entrance are better so that the full site can be pedestrian access and for long walk vistas can be used
PEDESTRIAN / VEHICULAR ACCESS	Vehicular access is restricted at the entry of the site and the full site has a proper pedestrian access.	Both vehicular and pedestrial access throught out the site	—	Vehicular access is restricted at the entry of the site and the full site has a proper pedestrian access.	Vehicular access is restricted at the entry of the site and the full site has a proper pedestrian access.	Vehicular access is restricted at the entry of the site and the full site has a proper pedestrian access.	pedestrian access inside the site	Vehicular access is restricted at the entry of the site and the full site has a proper pedestrian access.	If it is a small site vehicular access can be stopped at the entrance, if the site extent is large it will be difficult for the visitors to access .Vehicular access till porch and back house can be preferableor footprint by vistas make it more comfortable and interesting so that vehicular access can be stopped at entrance.

4. AREA ANALYSIS

4.1 . STANDARDS

4.1.1 TNCDRBR -2019

4.1.1.1. Structures in setback spaces

28. Structures in setback spaces.—Unless or otherwise specifically provided for elsewhere in these regulations, no structure shall be constructed within the minimum prescribed set back spaces except the following:

- a) In cases of Non High Rise buildings.—
 - (i) Sun-shades not exceeding 0.6m.
 - (ii) Motor room of area not exceeding 2 sq.m. each and height not exceeding 1.8m, without affecting parking and driveway requirements.
 - (iii) In case of Non High Rise Buildings with height upto 9.0m, open single flight or spiral staircase or open double flight staircase so long as such structure do not fall within 0.50 m from the side boundary or 1m. from the rear or front boundary of the site or street alignment.
 - (iv) A compound wall of height not exceeding 2.0m
 - (v) Watchman booth not exceeding 2.5m.x 2.5m. in size at each gate and height not exceeding 3m.
 - (vi) Gate pillars without or with arches with a min. headroom clearance of 5.50m available atleast to a width of 3.5m.
 - (vii) Meter Rooms for meter boxes or electrical panels along the boundary wall or external walls of the building with the projections not exceeding 0.60 meter from the abutting walls and the open Transformer without affecting parking and drive way, subject to the safety measures stipulated by Tamil Nadu Electricity Board.

Explanation: (i) In order to minimize traffic conflicts on to the abutting roads, the number of vehicular entry or exits to site shall be kept minimum and it shall not exceed

4.1.1.2. Planning parameters for non-high rise buildings

- (b) The minimum road width, FSI, set back etc. for **Non High Rise buildings upto 18.30m height and exceeding 16 dwelling units and exceeding 300 square meters of commercial building** shall be regulated according to the table below:

Sl No	Description	Continuous Building Areas	Other areas
1	2	3	4
A	Minimum road width	9.0 m	
B	Maximum Height	18.30 m	
C	Maximum FSI	2.0	
D	Minimum Set backs	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 set back	Abutting road width	FSB
		from 9.0m. upto 18m.	3.0m.
		More than 18m. upto 30.5m	4.5m.
		More than 30.5m.	6.0m.
ii)	Side Set back / Rear Set back	Nil	Height of the building
			SSB / RSB
			Upto 7m.
			1.0m.
			More than 7m. upto 12m.
			1.5m.
			More than 12m. upto 16.0m.
			2.5m.
			More than 16m. upto 18.30m.
			3.0m.

- (c) Passage

Description	Passage width
A. Non High Rise buildings upto 12m height	
If the site does not directly abut a public road but gains access through a private passage or through a part of the plot which can be treated as a passage from a public road of minimum width as prescribed above, the minimum width of such passage shall be as follows:	
When it is intended to 8 dwellings	a) CBA / EWS areas – 1 m b) Other areas – 3 m
B. Non High Rise buildings exceeding 12.0m in height upto 18.30m height or exceeding 16 dwelling units	
If the site does not directly abut a public road but gains access through a private exclusive passage or through a part of the plot which can be treated as a passage from a public road of minimum width as prescribed above, the minimum width of such passage shall be as follows:	

(i)	When it is intended to 8 dwellings or up to 600 square metres of commercial building and the length of the passage does not exceed 80 metres.	3.6 meters
(ii)	When it is intended to serve upto 12 dwellings or upto 2,400 square metres of commercial building and the length of the passage does not exceed 100 metres.	4.8 meters
(iii)	When it is intended to serve not more than 16 dwellings or up to 3000 square metres of commercial building and the length of passage does not exceed 120 metres.	6 meters
(iv)	When it is intended to serve not more than 20 dwellings or up to 6000 square metres of commercial building and the length of passage does not exceed 120 metres.	7.2 meters
(v)	When it is intended to serve more than 20 dwellings or more than 6000 square metres of commercial building.	9 meters

4.1.1.3. Corridor / veranda width

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

4.1.1.4. Parking for differently abled people

(c) **Parking:**

For parking of vehicles of differently-abled people, the following provisions shall apply:

- (i) Surface parking for two car spaces shall be provided near entrance for the physically differently-abled persons with maximum travel distance of 30m. from building entrance.
- (ii) The width of parking bay shall be minimum 3.6 meter.
- (iii) The information stating that the space is reserved for wheel chair users shall be conspicuously displayed.
- (iv) Guiding floor materials shall be provided or a device, which guides visually impaired persons with audible signals, or other devices, which serves the same purpose, shall be provided.

4.1.1.5. Toilets for differently abled people

(ix) **Toilets:**

One special W.C. in a set of toilets shall be provided for the use of differently abled with essential provision of washbasin near the entrance for the differently abled.

- (a) The minimum size shall be 1500 mm x 1750 mm.
- (b) Minimum clear opening of the door shall be 900mm and the door shall swing out.
- (c) Suitable arrangement of vertical/horizontal handrails with 50mm clearance from wall shall be made in the toilet.
- (d) The W.C. seat shall be 500mm from the floor.

4.1.1.6. Staircase requirements

(17) Stairways Requirements.— (a) Minimum width of staircase shall be:

- (i) (a) Ordinary Residential buildings..... 0.75 m
- (b) Other Residential buildings 0.90 m
- (ii) Assembly buildings like :
Auditoria, assembly halls..... 2.00 m
- (iii) All other buildings..... 1.50 m
- (iv) Educational institutions..... 2.00 m

b) Minimum tread

The minimum width of tread without nosing shall be 250mm for residential buildings. The minimum width of tread for other buildings shall be 300mm. In case of spiral staircases, it shall have the above minimum tread width at the outer end.

c) Maximum riser

The maximum height of riser shall be 190 mm for residential buildings and 150 mm for other buildings and these shall be limited to 15 per flight.

d) The minimum headroom in a passage under the landing of a staircase shall be 2.2m. The minimum clear headroom in any staircase shall be 2.2m.

4.1.1.7. Parking

(10) Restaurants and Hotels

(a) Restaurants, Fast Food outlets	
(A) Corporation or Municipal Areas	(B) Panchayat Areas
1 car space for every 50sq.m of floor area or part thereof and 1 two wheeler space for every 25sq.m of floor area or part thereof	1 car space for every 100sq.m of floor area or part thereof and 1 two wheeler space for every 50sq.m of floor area or part thereof
(b) Starred Hotels, Major Hotels and Lodges with more than 50 rooms in CMA	
1 car space for every 4-guest rooms and for the non-room area, 1 car space for every 100sq.m of floor area or part thereof and 1 two wheeler space for every 50sq.m of floor area or part thereof. For restaurants in these hotels – same as that specified for restaurants specified above.	
(c) Unstarred Hotels, other Hotels & Lodges	
1 car space for every 10-guest rooms and for the non-room area, 1 car space for every 100sq.m of floor area or part thereof and 1 two wheeler space for every 50sq.m of floor area or part thereof. For restaurants in these hotels – same as that specified for restaurants specified above.	

4.1.1.8. Off street parking standards

Off Street Parking Standards

(A) Stall Size:

The dimension of the parking stall for different kind of vehicles shall be:

Vehicle Type	Breadth (m)	Length (m)
Car	2.5	5.0
Two Wheelers	1.0	1.8
LCV	3.5	7.0
Lorry/Bus	3.5	10.0
Articulated Vehicles [Container Vehicles]	3.5	16.0

The stall dimensions mentioned above shall be clear of any structural members. Where a stall is adjacent to a large element such as a wall, minimum stall width shall be 2.7m for parallel parking and where cars cannot be parked by reversing, minimum stall length shall be 7.2m.

(B) Parking for Special (physically challenged) persons

For Buildings having more than 2 floors 10% of the required car/two wheelers parking spaces subject to minimum of 2 car spaces and 2 two-wheeler spaces shall be reserved for the physically handicapped persons near the entrance. This is to provide an exclusive reservation of car parking for physically handicapped and also to provide them easy access to the lift and staircase.

4.1.1.9. Sanitation requirements for hotels

Table:2 Sanitation Requirements for Hotels

Individual guest rooms shall have attached toilets. In addition, the following shall also be provided.

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 46-70 persons	Nil

4.1.1.10. Sanitation requirements for restaurants

Table:2 Sanitation Requirements for Hotels

Individual guest rooms shall have attached toilets. In addition, the following shall also be provided.

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 46-70 persons	Nil

			4 for 71-100 persons	
4.	Wash Basins	One per 10 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

Note: i) It may be assumed that the two-thirds of the number are males and one-third females

ii) One water tap with drainage arrangements shall be provided for every 50 persons or part thereof in the vicinity of water closet and urinals.

Table :10 Sanitation Requirements for Restaurants

Sl. No.	Sanitary Unit	For Public		For Staff	
		Male	Female	Male	Female
1.	Water Closet (W.C.)	One per 50 seats upto 200 seats. For over 200 seats, add at the rate of 1 per 100 seats or part thereof	One per 50 seats upto 200 seats. For over 200 seats, add at the rate of 1 per 100 seats or part thereof	1 for 15 persons. 2 for 16-35 persons. 3 for 36-65 persons. 4 for 66-100 persons.	1 per 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.
2.	Ablution Taps	One in each W.C.	One in each W.C.	One in each W.C.	One in each W.C.
3.	Urinals	One for 50 persons or part thereof	--	Nil upto 6 persons. 1 for 7-20 persons. 2 for 21-45 persons. 3 for 46-70 persons. 4 for 71-100 persons.	--

4.	Wash Basins	One for every water closet
5.	Kitchen Sinks & Dish Washer	One per each Kitchen
6.	Service Sink	One in the restaurant

4.1.2. Time saver standards or building

4.1.2.1. Restaurants and eating places

RESTAURANTS AND EATING PLACES

Restaurant Seating

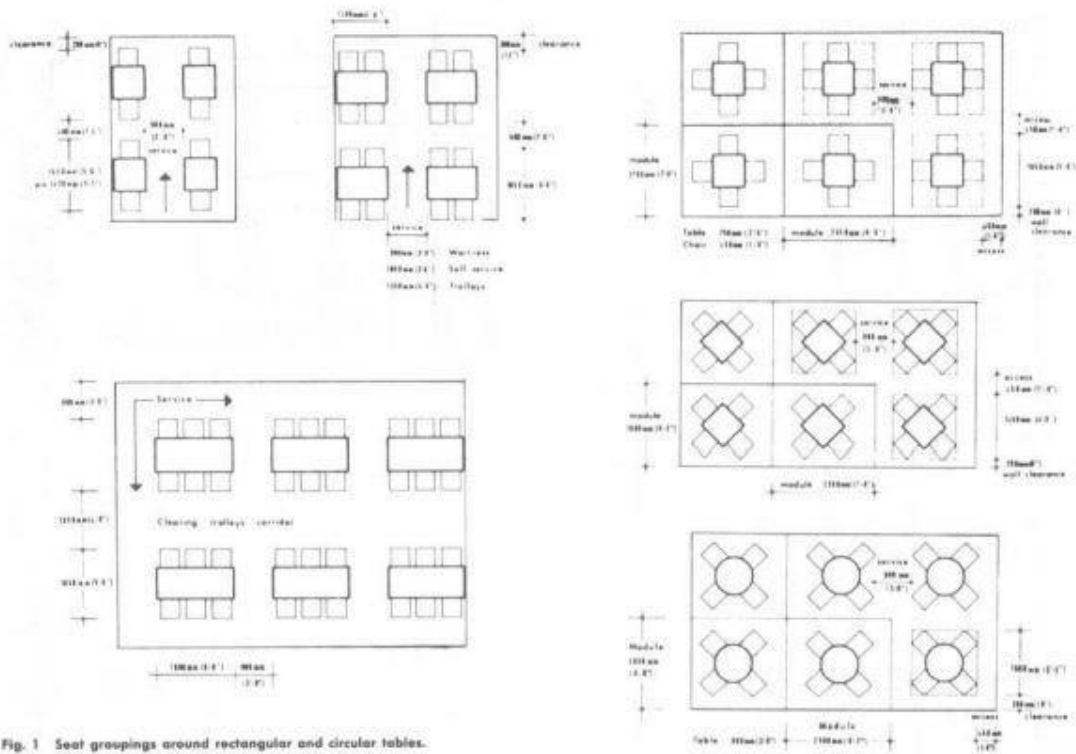


Fig. 1 Seat groupings around rectangular and circular tables.

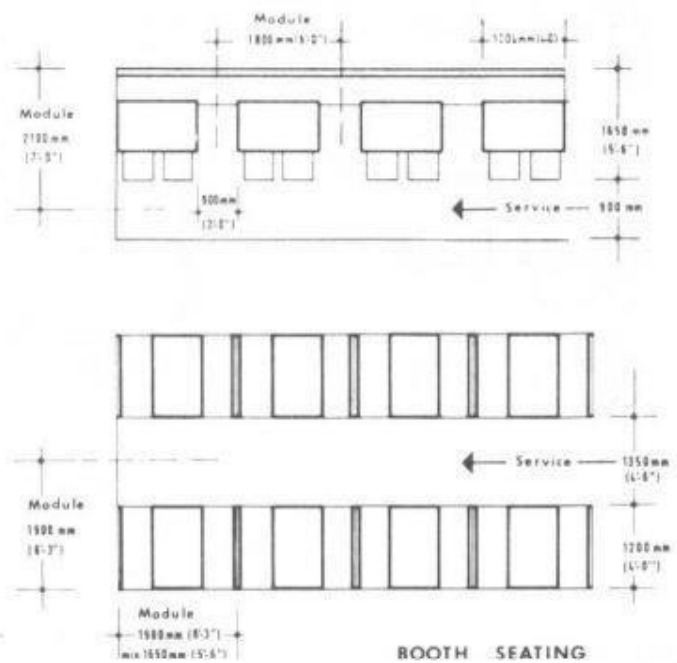
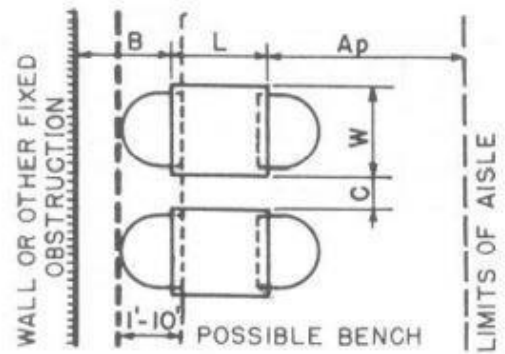
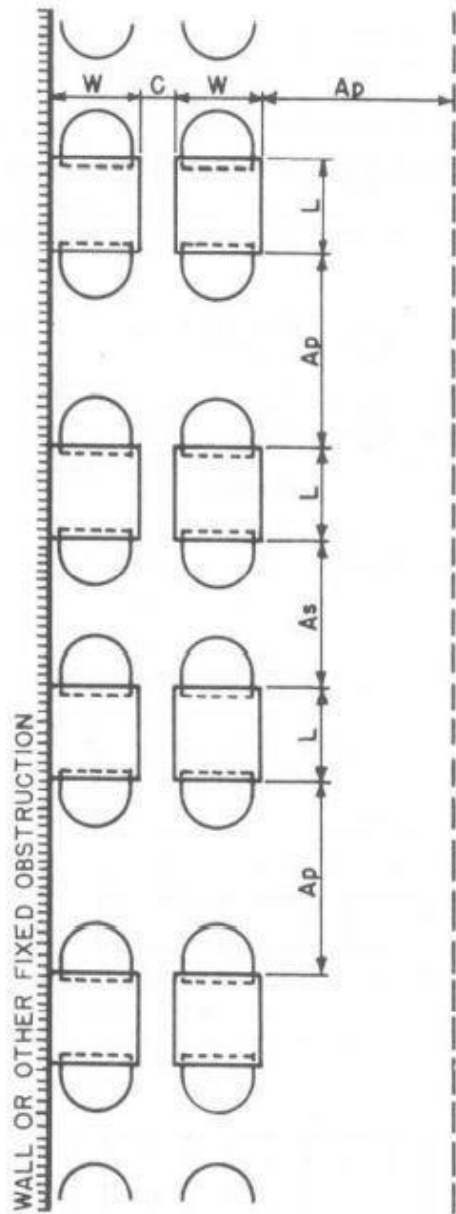


Fig. 2 Banquette seating arrangements and limiting dimensions including space for access and service.

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

RESTAURANTS AND EATING PLACES

Restaurant Seating



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

all dimensions in feet and inches

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

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

Fig. 4 Table and chair units.

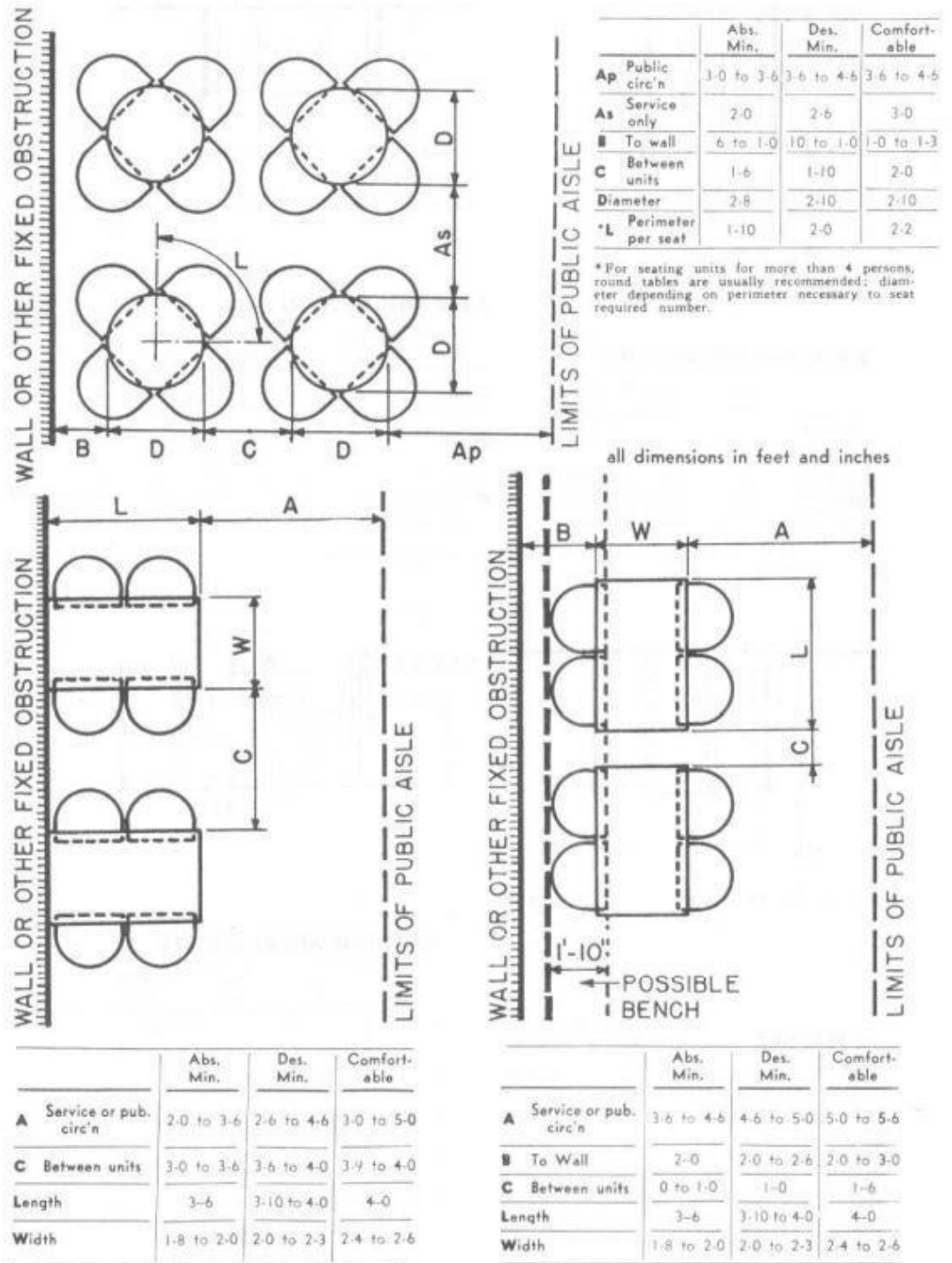
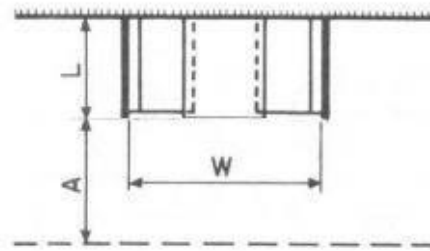
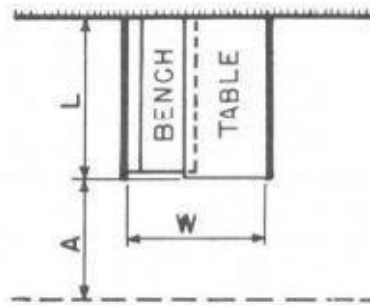


Fig. 4 (continued) Table and chair units.

RESTAURANTS AND EATING PLACES

Restaurant Seating



2 PERSONS SIDE BY SIDE

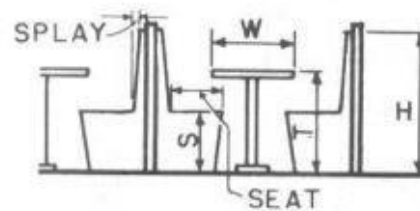
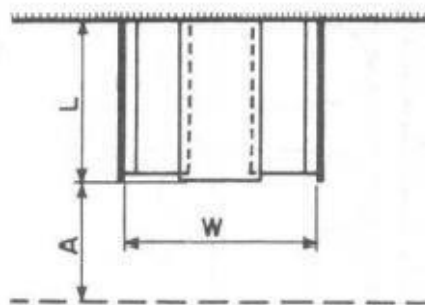
	Abs. Min.	Des. Min.	Comfortable
Service A and pub. circ'n	2-6	3-0	3-6
Length	3-6	3-9	4-0
Width	3-0	3-3	3-6

Note: This type not ordinarily recommended.

2 PERSONS FACE TO FACE

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

dimensions in feet and inches



4 PERSONS

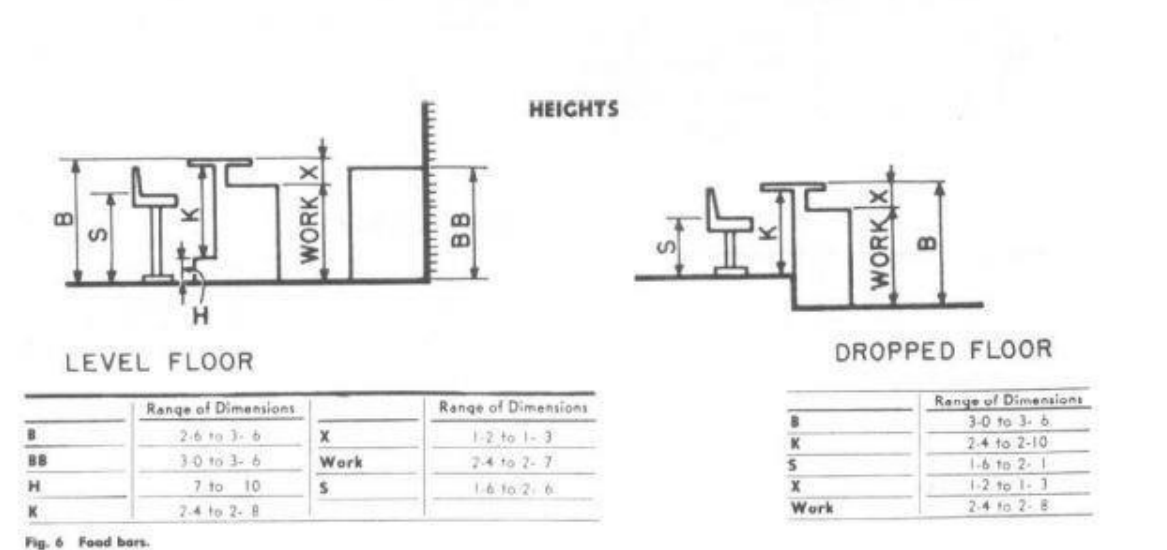
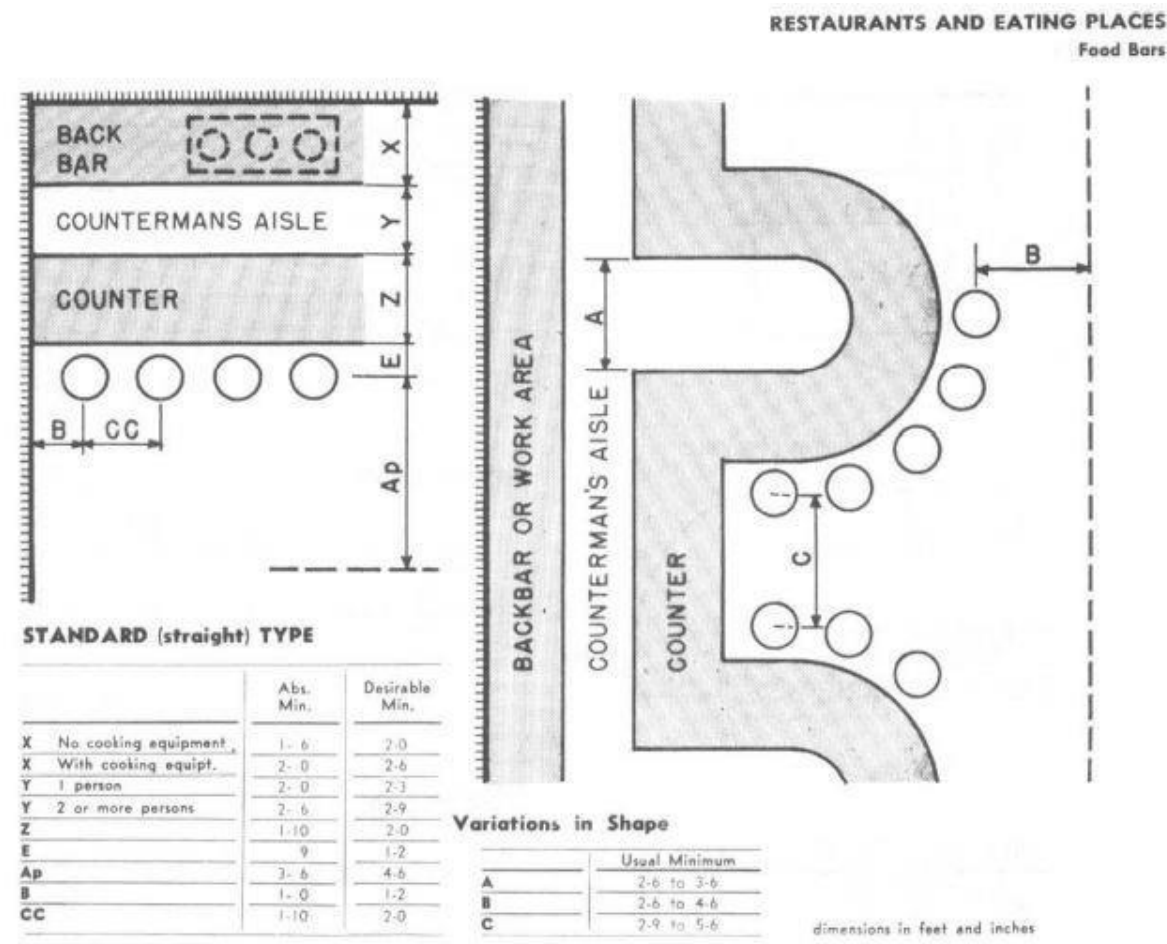
	Abs. Min.	Des. Min.	Comfortable
Service A and pub. circ'n	2-6 to 3-0	3-0 to 4-0	3-6 to 5-0
Length	3-6	3-9 to 4-0	4-0 to 4-2
Width	4-10 to 5-6	5-2 to 5-6	5-8 to 5-10

BOOTH FURNITURE HEIGHTS

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

Fig. 5 Booths.

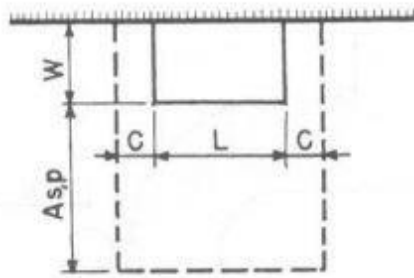
4.1.2.2. Food bar



4.1.2.3. Serving units

RESTAURANTS AND EATING PLACES

Serving Units

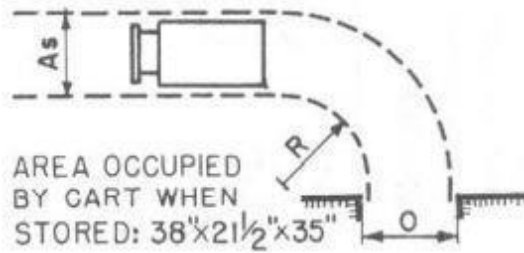


SERVING TABLE (& sideboard)

	Abs. Min.	Des. Min.	Comfortable
As Service only	2-6	3-0	3-6
Ap Public circ'n	2-0	2-6	3-0
C Clearance to adjacent units	2-0	2-3	2-6

Length | 30" x 20" x 42" is average
Width |

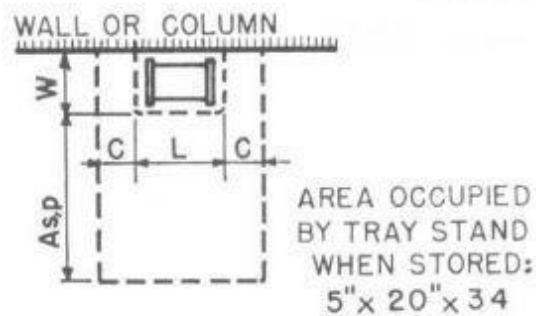
Display tables (hors d'oeuvres, etc.) usually 5' 0" x 2' 0" (wines), 3' 0" round



SERVING CART

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

Approx. area when stored: 38" x 21 1/2" x 35"

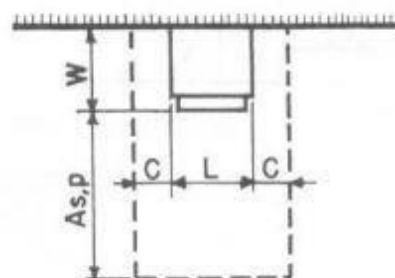


TRAY STAND

	Abs. Min.	Des. Min.	Comfortable
As Service only	2-6	3-0	3-6
Ap Public circ'n	2-0	2-6	3-0
C Clearance to adjacent units	2-0	2-3	2-6

Length (tray) | Depends on type of restaurant.
Width (tray) |

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



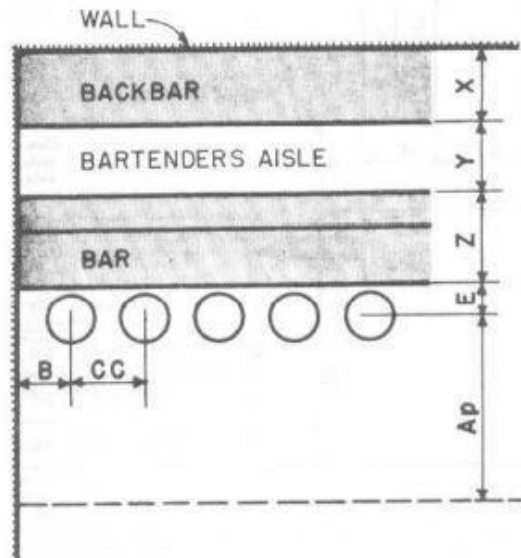
WATER COOLER

	Abs. Min.	Des. Min.	Comfortable
As Service only	2-6	3-0	3-6
Ap Public circ'n	2-0	2-6	3-0
C Clearance to adjacent units	Can arrange on top or front		

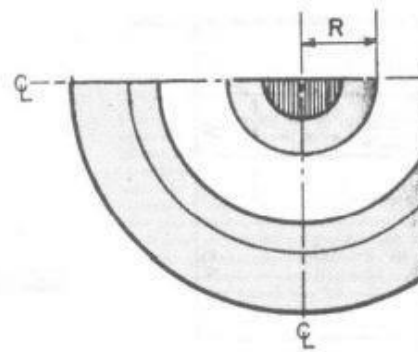
Length | Depends on capacity and if glass storage
Width | included

Fig. 7 Serving units.

4.1.2.4. Liquor bar


STRAIGHT TYPE—with or without stools

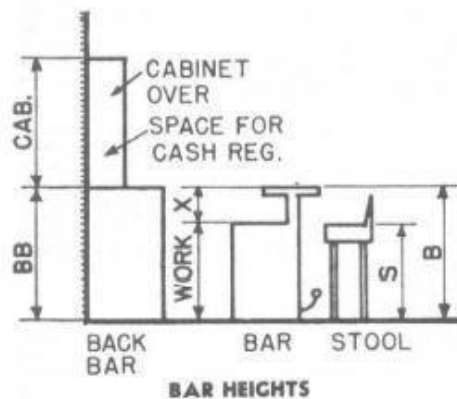
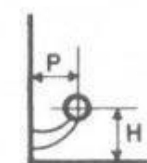
	Abs. Min.	Des. Min.	Comfort- able
Ap Public aisle	3-6 to 4-6	4-0 to 5-0	4-6 to 6-0
B Stool to wall	1-0 to 1-6	1-2 to 1-5	1-4 to 1-5
CC Stool, cent. to cent.	1-9 to 2-0	2-0	2-2 to 2-6
E Stool to bar	9 to 1-0	1-0	1-1 to 1-2
X Back bar	1-6 to 1-8	1-8 to 2-0	2-0 to 2-3
Y Bartender's aisle	2-0 to 2-2	2-6	3-0
Z Bar	2-3 to 2-6	2-5 to 2-6	2-8 to 2-9


CURVED TYPES: Radius R should be at least 2 ft.; other dimensions as for straight types.

Bar length: Allow from 1 ft. 6 in. to 1 ft. 10 in. per person for standup bars; 2 ft. for each stool.

Bar depth: No increase in depth is needed for more than 1 bartender, as each man should be provided with his own "set-up" space in the work counter and back-bar.

Service bars: These are usually from 6 to 8 ft. long; for 1-man service; from 10 to 12 ft. long if 2 bartenders are needed for peak service periods. No footrail, counter overhang, or stools are required. Location is often adjacent to kitchen and concealed from patrons; however, advertising values sometimes cause it to be set in public view. In the latter case, a rope rail or similar device, to discourage patrons from standing at the bar, is often advisable.


Fig. 8 Liquor bars.

RAIL OR STEP

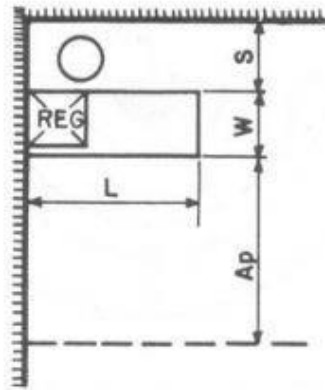
P = 7 to 10
H = 7 to 10

dimensions in feet and inches

	Usual Min.	Usual Max.
B	3-6	3-9
BB	3-6	3-9
Cab	3-0 to 3-10	5-0 to 5-7
S	2-4 to 2-6	2-7
Work	2-4	2-6
X	1-0 to 1-2	1-2 to 1-3

4.1.2.5. Non-dinning spaces

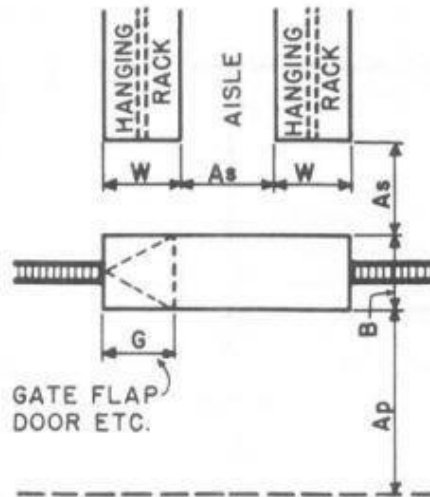
RESTAURANTS AND EATING PLACES
Nondining Spaces



CASHIER'S DESK and COUNTER

	Usual	Minimum
S Cashier's Aisle	2-0	2-6
Ap Public Aisle	3-6	5-0
Length	4-0	8-0
Width	2-0	2-4

Fig. 9 Nondining spaces.



CHECK ROOM

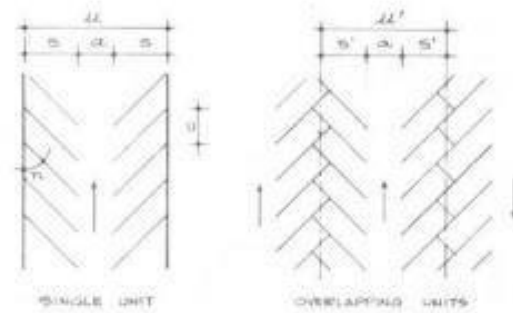
	Abs. Min.	Des. Min.	Comfortable
Ap	3-0	4-0	6-0
As	2-6	2-9	3-3
B	1-0	1-6	1-9
C	2-0	3-0	5-0
G	1-6	1-9	2-0
W	1-10	2-0	2-0

dimensions in feet and inches

4.1.2.6. Parking lots



Fig. 1 Definitions.



n	s	a	c	μ	s'	μ'
90°	19'0"	24'0"	9'0"	62'0"	19'0"	62'0"
60°	21'0"	18'0"	10'5"	60'0"	18'9"	55'6"
45°	19'10"	13'0"	12'9"	52'8"	16'7"	46'2"

Fig. 2 Parking layout dimensions.

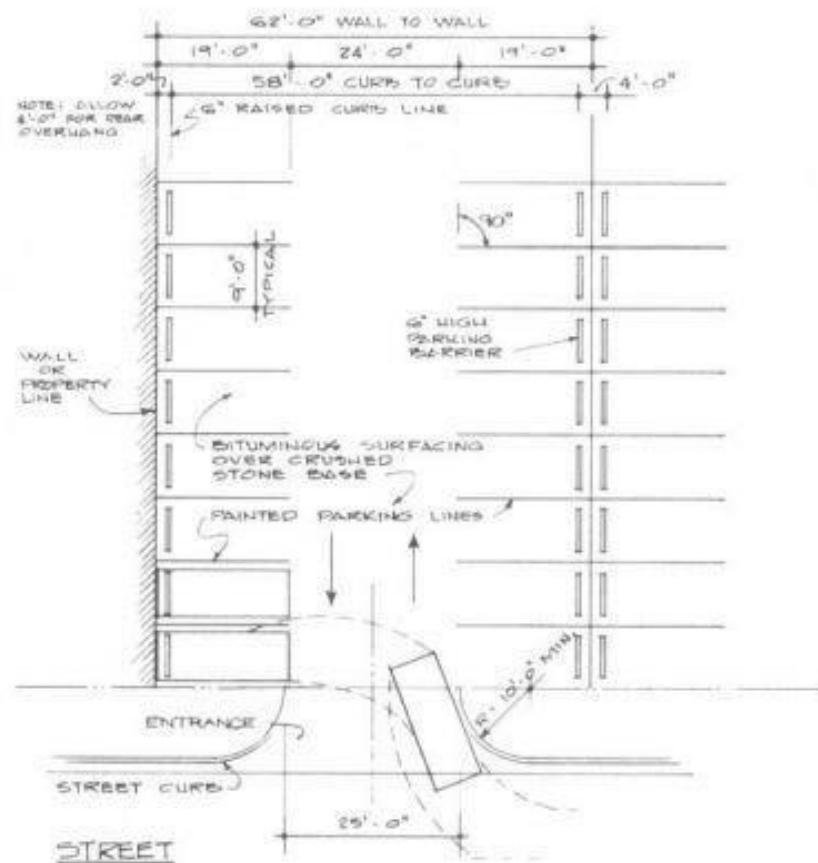


Fig. 3 Parking plan—90° parking.

PARKING LOTS

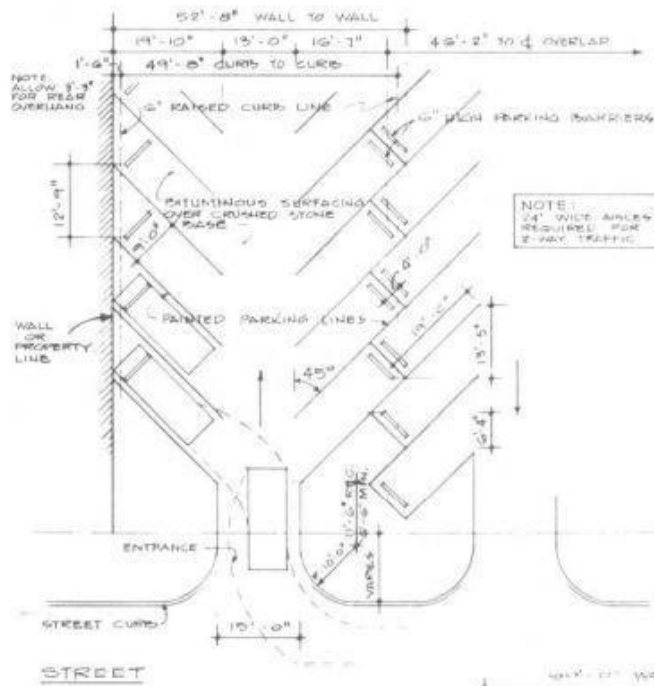


Fig. 4 Parking plan—45° parking.

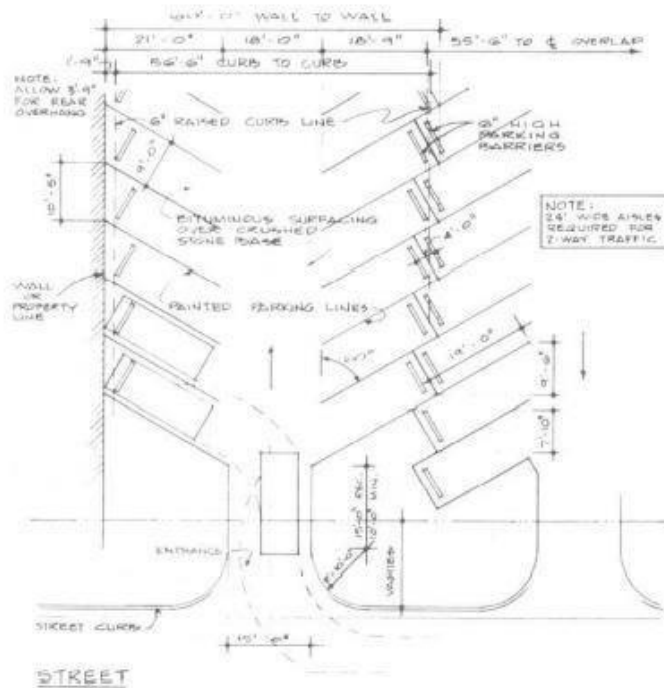


Fig. 5 Parking plan—60° parking.

4.1.2.7. Hotel room

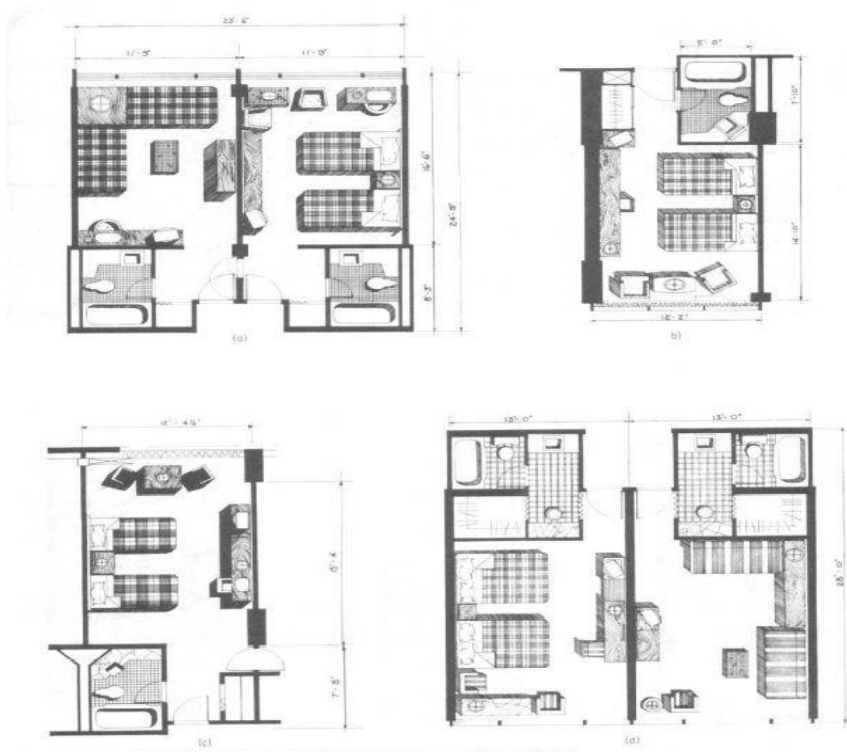


Fig. 5 (a) Uris Brothers Hotel, New York. (b) Americana Hotel, New York, typical tower room. (c) Loews N.Y. Motel, typical room. (d) Causeway Inn, Tampa, Florida.

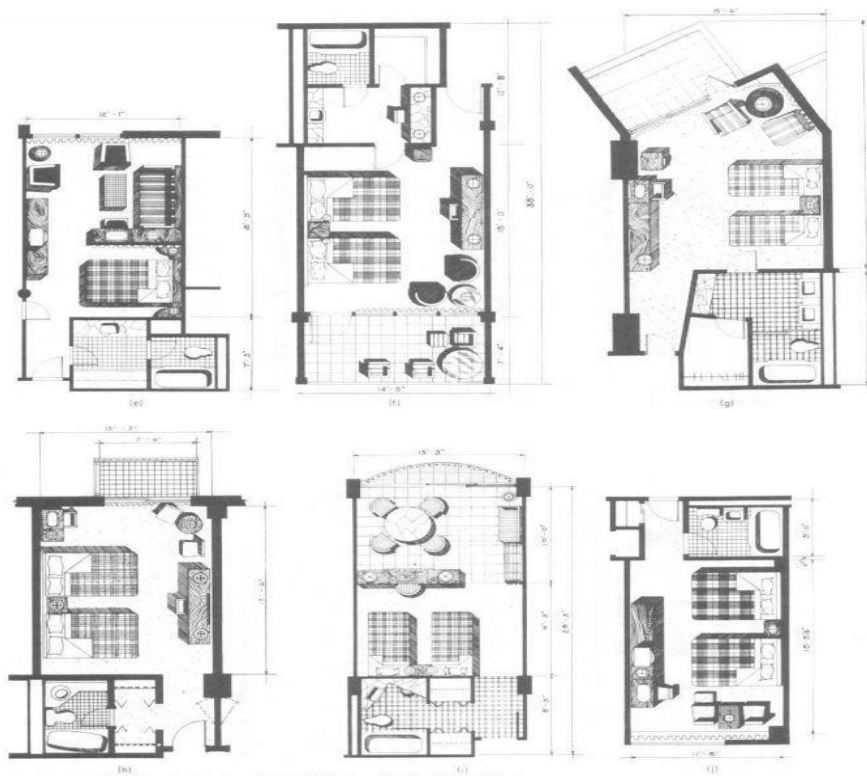


Fig. 5 (cont.) (e) Tampa International Inn, Tampa, Florida. (f) Indies House, Duck Key, Florida. (g) Americana Hotel, Dai Harbor, Florida. (h) Paradise Island Hotel, Paradise Island, Bahamas. (i) Americana of Puerto Rico, typical room layout. (j) Massena Motor Inn, Massena, N.Y.



Fig. 6 (cont.) (k) Chicopee Motor Inn, Chicopee, Massachusetts. (l) and (m) Thomas Circle Motor Hotel, Washington, D.C. (n) Riverview Motor Hotel, New York.

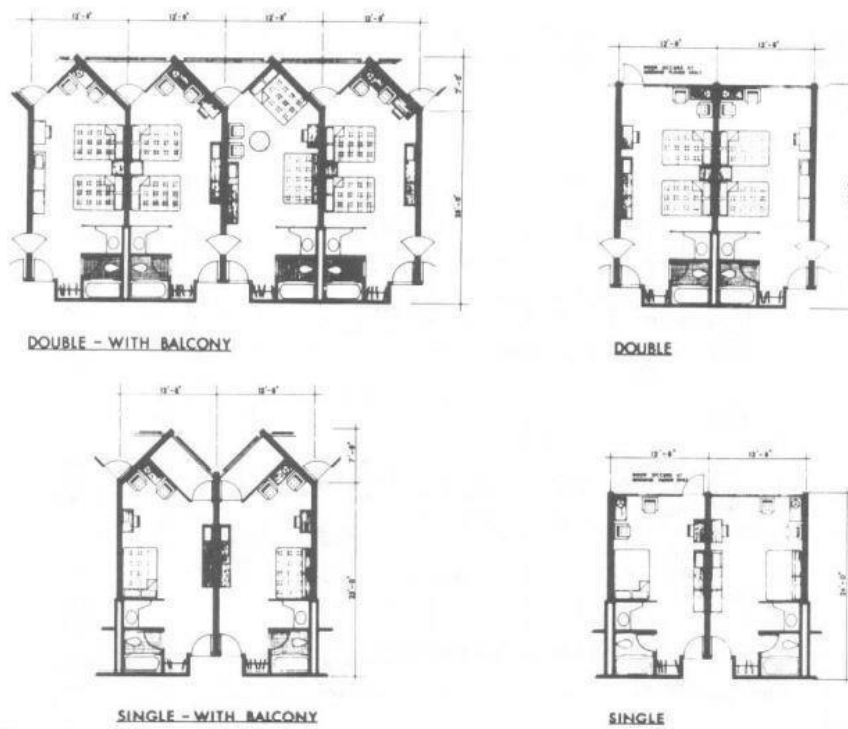
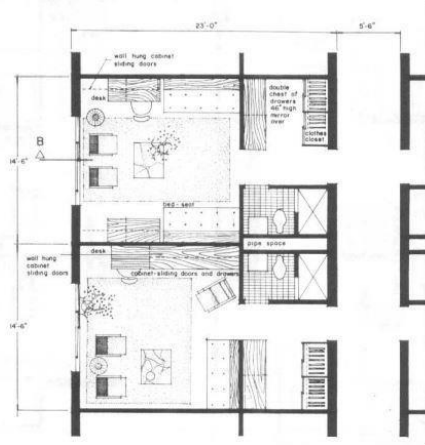
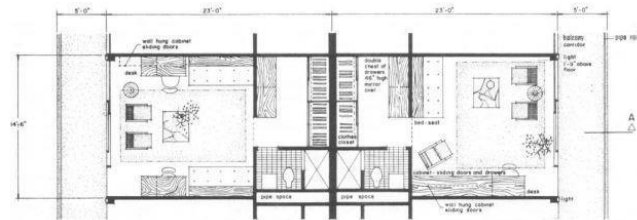
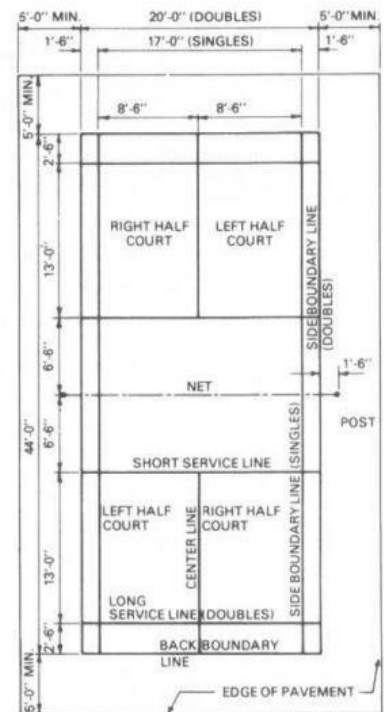
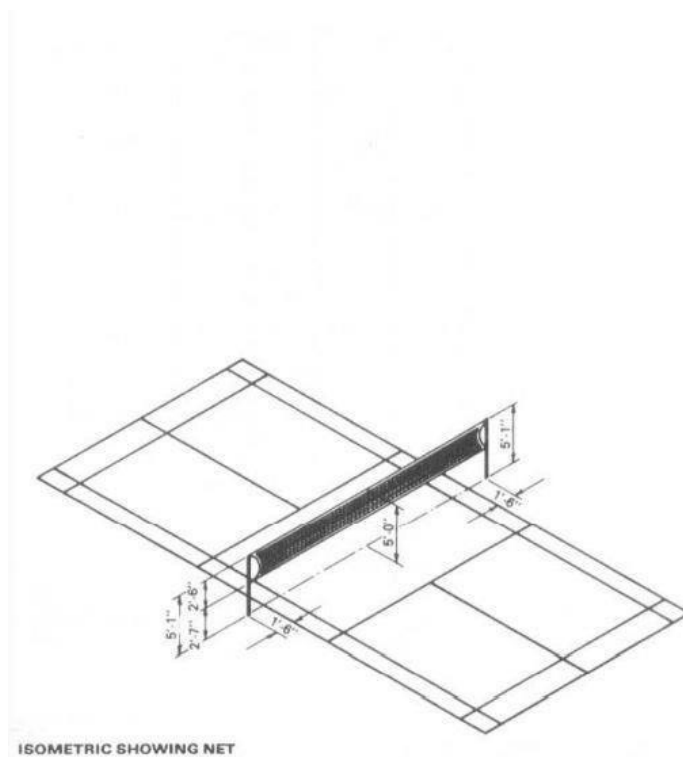


Fig. 7 Typical rooms, Quality Courts Motel prototype.



4.1.2.8. Badminton



4.1.2.9. Movie theatre

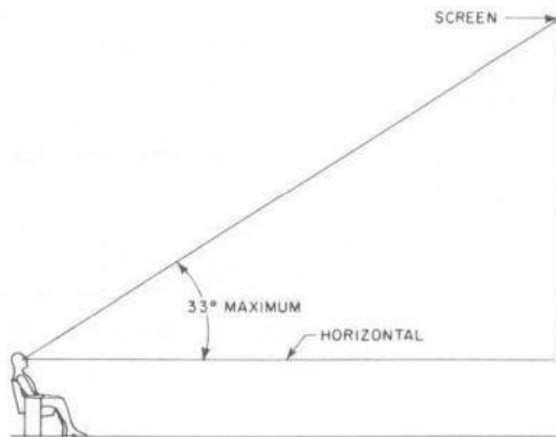


Fig. 1. Method of determining minimum distance from screen to first row of seats

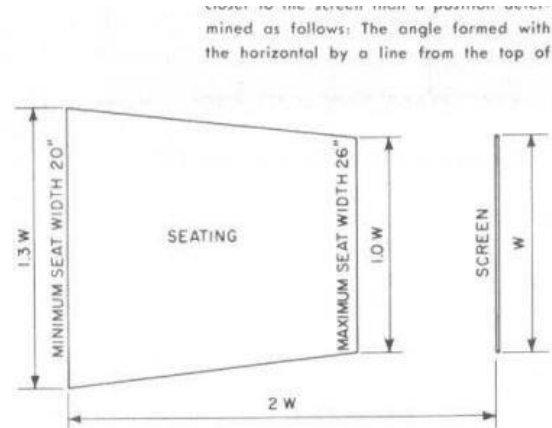


Fig. 2. Maximum viewing distance and maximum width of seating pattern



Fig. 3. Human-figure dimensions used in determining sight-line clearances

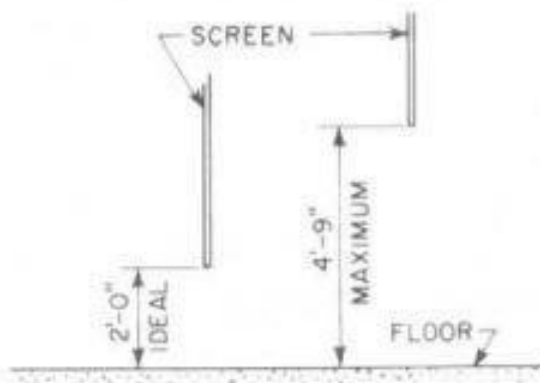


Fig. 4. Height of screen above floor at first row of seats

THIS TYPE OF CHAIR AVAILABLE IN STANDARD WIDTHS OF 19,20,21,AND 22 IN.

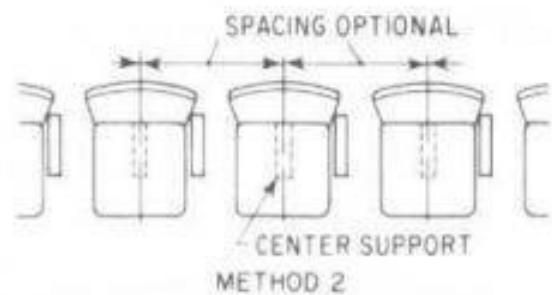
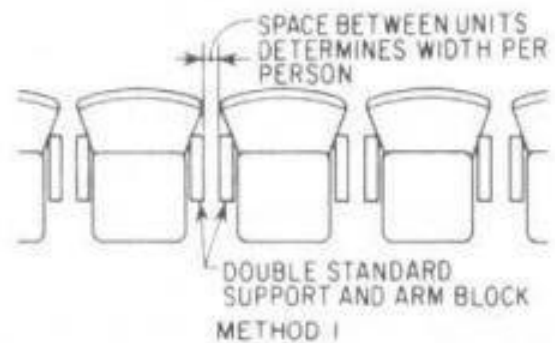


Fig. 5. Methods of obtaining wider spacing for chairs nearest screen

Maximum spacing for first row is 26 in.

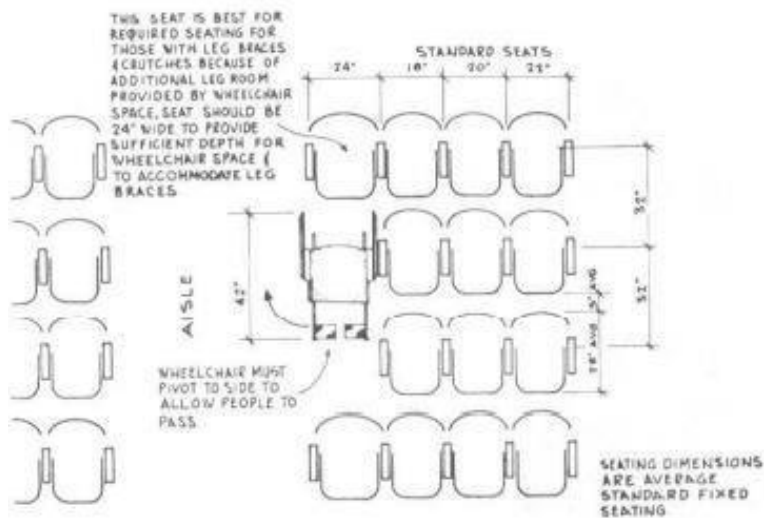


Fig. 12 Wheelchair seating space at aisles. Sight lines may be interrupted by wheelchair person because wheelchair seat is higher than fixed seats. This may be overcome by diagonal or other chair arrangement.

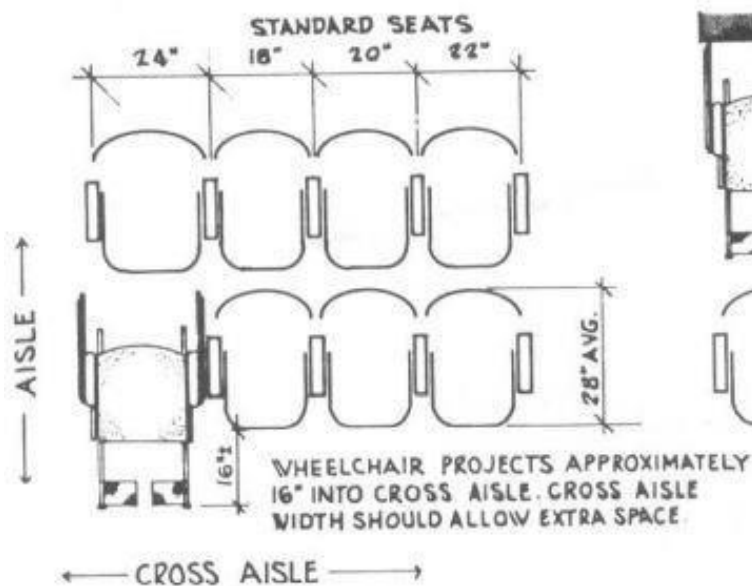


Fig. 13 Wheelchair seating space at cross aisle.



Fig. 15 Seating space requirements for braces and crutches.

An Illustrated Handbook of the Handicapped, Section of the North Carolina State Building Code. 1977, Ronald Mace, AIA and Betty Lovlett, Raleigh, N.C.

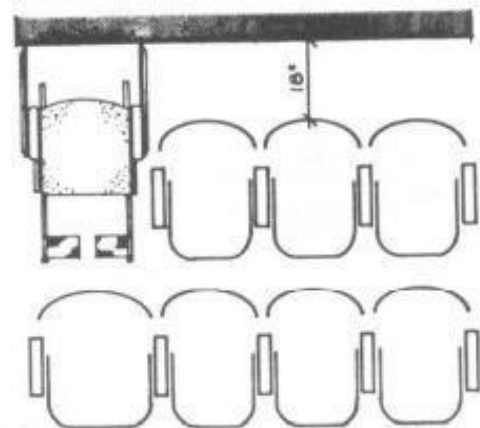
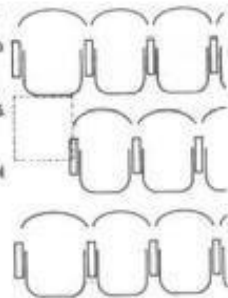


Fig. 14 Wheelchair seating space of back wall. If back wall is held 18" in away from top of seatback, wheelchair can park as shown without blocking row.

STAGGERED SEATING CAN PROVIDE ADEQUATE SPACE FOR AMBULANT HANDICAPPED SEAT BEHIND INSET ROW SHOULD BE 24" WIDE MINIMUM TO ALLOW EXTRA SEAT WIDTH FOR LEG BRACES SEAT BEHIND WHEELCHAIR SPACE AND AT CROSS AISLES ALSO ALLOW SPACE FOR PERSONS WITH LEG BRACES (SEE ABOVE)



Handicapped Seating

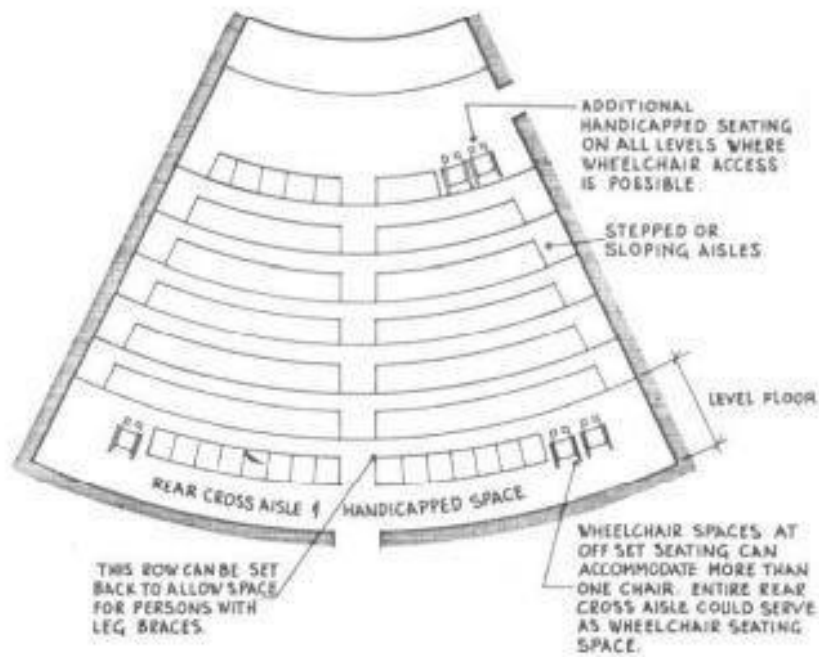


Fig. 16 Example plan: small theater.

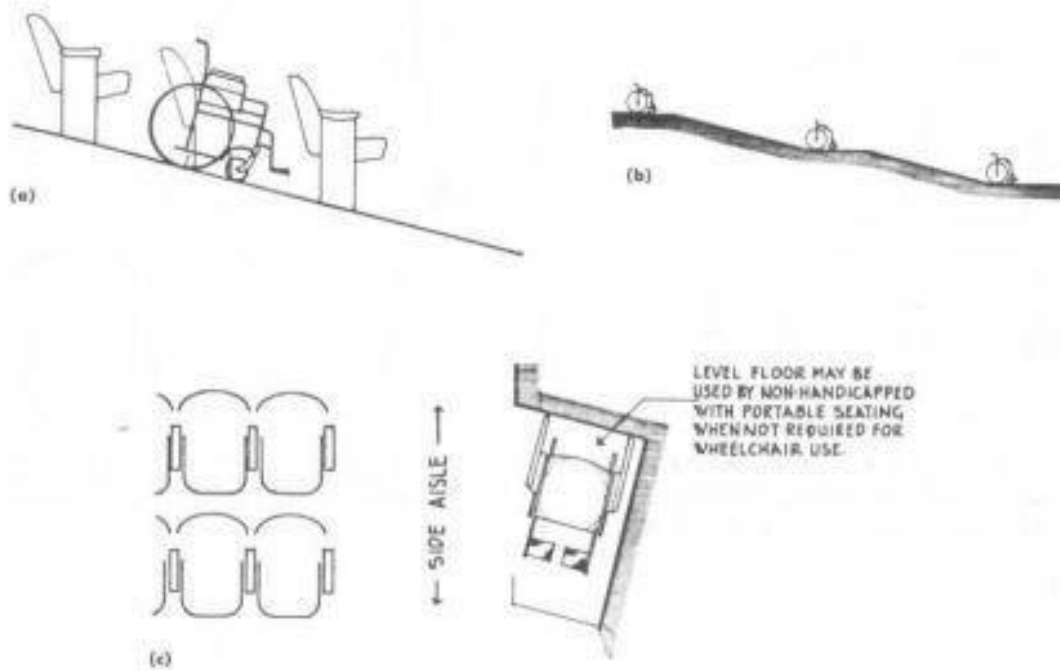
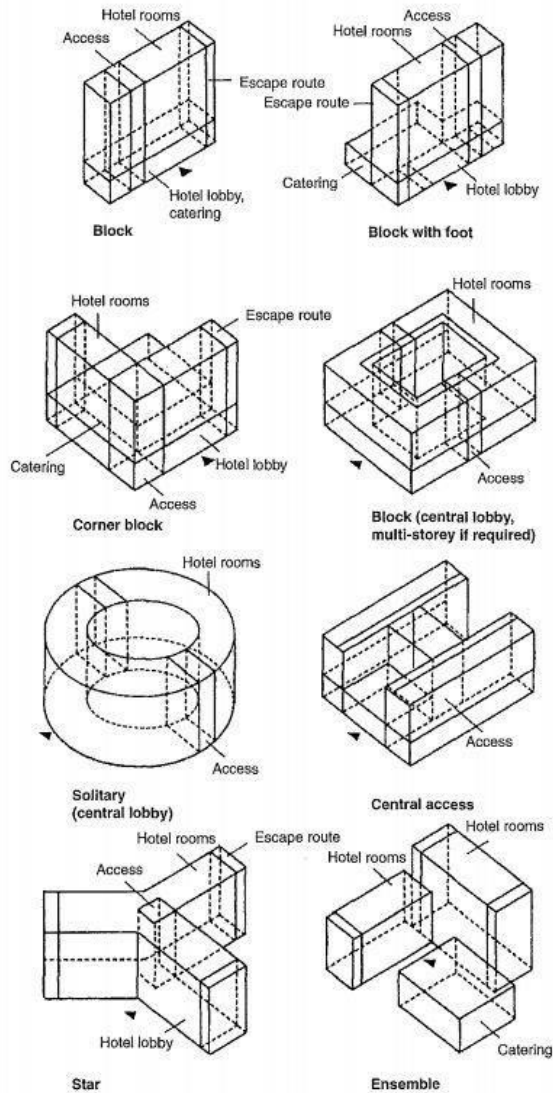


Fig. 17 Sloping floors in assembly seating. Steeply sloping floors (a) offset center of gravity for wheelchairs causing discomfort during long performances. For this reason it is preferred that wheelchairs be located where floor can remain level as at cross aisles (b), front and rear of theater, or in boxes to the side (c).

4.1.3. Neufert architect's data

HOTELS

Basics



1 Basic forms of hotels

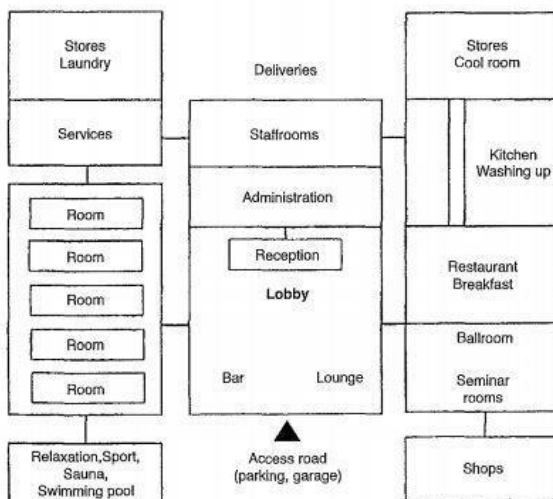
The hotel, formerly a business offering accommodation and catering, often with exclusive flair, has today become a complex and efficient (mass) service provider business with a wide spectrum of possibilities (conferences, wellness, holidays).

There are hotels in various price and comfort classes, which are classified according to five categories → p. 172. A scheme of the basic room and route relationships within a hotel is shown in → 2.

The essential areas are: **hotel lobby and reception** as the central, well-arranged and prestigious nerve centre between the various parts of the operation, **catering area** in connection with the hotel lobby (extent of the services depend on the hotel category), **administration**, a staff area, which is separately accessed and partly in direct connection with other areas of the hotel, **guest room area** with differentiated rooms and individual access areas arranged under the aspects of category, orientation and noise screening, **service area** with kitchens, store and associated rooms. The percentages of hotels' surface areas required for the various functions are shown in → 4.

Building regulations, building law code, zoning plans, etc.	general preconditions for the permissibility of a project; type and extent of the building use etc. → p. 56
MBO	general construction requirements for buildings and building elements, general fire protection requirements
DIN 4107	noise protection requirements, see → p. 480
Accommodation regulations	additional construction requirements for buildings and elements for the accommodation of large numbers of people (constructional requirements on walls, columns, floors, doors, escape routes, legally essential corridors, alarm systems, safety equipment etc.)
Catering guidelines	additional construction requirements for catering establishments (mostly related to fire protection)
Public assembly places regulations	additional construction requirements for buildings and elements in relation to the presence of crowds (escape routes, exits, corridors, windows, doors etc.)
Workplace regulations and guidelines	additional construction requirements for buildings and elements concerning health and safety at the workplace
Other requirements	e.g. requirements of the accident insurers, accident prevention regulations, health inspectors, trade supervisors

3 Laws, guidelines, provisions and regulations for the design of businesses offering accommodation and catering (excerpt)



2 Room and access scheme of a hotel

1. guest rooms, bathrooms, corridors, room service	50–60%
2. public areas, lobby, reception etc.	4–7%
3. catering	4–8%
4. events, ballroom, seminar rooms	4–12%
5. wellness/ fitness area	5–10%
6. other areas, cosmetics, hairdresser	1–2%
7. management, administration	1–2%
8. service area, kitchen, staff rooms, stores	9–14%
9. building services	5–10%

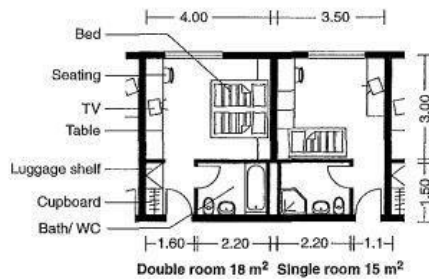
Parking and garage areas and special areas (e.g. wellness and bathing area) are also to be taken into account (and can vary widely according to the range of services)

Hotel type	m ² /room
1. luxury	90–110
2. first class	60–70
3. comfort	50–60
4. standard (holiday hotel, motel)	40–60
5. tourist (low-budget)	15–20

4 Guideline values for (above) shares of hotel surface area taken by each function and (below) gross areas per room in various categories of hotel

HOTELS

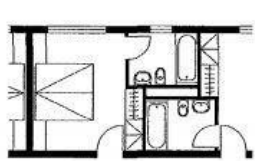
Rooms



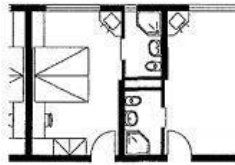
1 3-star hotel rooms showing features and main dimensions (according to DEHOGA classification, single room slightly enlarged)

Hotel rooms account for the largest share of a hotel by area. The quality of hotel rooms is an essential criterion for the evaluation of a hotel by a guest. Traditionally, the trend has been to standardise and schematise floor plans and arrangements → 1.

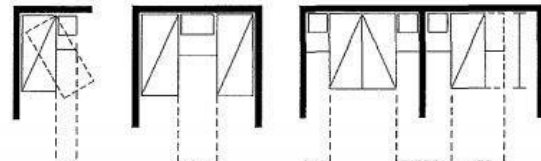
In light of the extended significance of the hotel room (living, relaxation, work and sleeping room), architects normally attempt to answer the economic and technical requirements by reflecting the demand for comfort through spatial division, while still meeting concerns for individuality and identity 2 – 11.



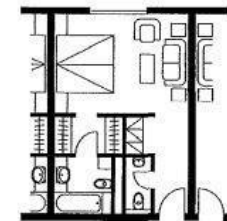
2 Bathrooms between hotel rooms



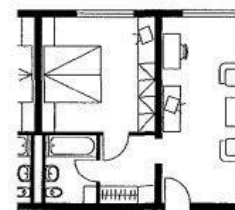
3 Bathrooms between hotel rooms



10 Minimum distance between hotel beds



4 Hotel room with extra WC



5 Two-room apartment

Hotel room features, according to DEHOGA (excerpt)

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:

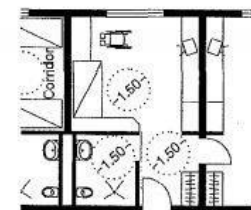
1 Star (Tourist): single room 8 m², double room 12 m² (minimum area for 75% of the hotel rooms, without bathroom), bed, wardrobe, seat, washbasin in the room, reception as a separate area

2 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)

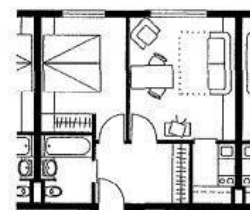
3 Stars (Comfort): as before, but single room 14 m², double room 18 m² (minimum area, see above), bathroom in room (for all rooms in the hotel), telephone, reception area with seating for group, independent reception

4 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

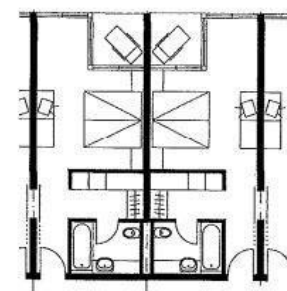
5 Stars (Luxury): as before, but single room 18 m², double room 26 m², (minimum size, see above), 2% of the hotel rooms as suites (at least two), each with an armchair/sofa per bed, additional washbasin in double rooms and suites, additional colour television in suites, reception lobby.



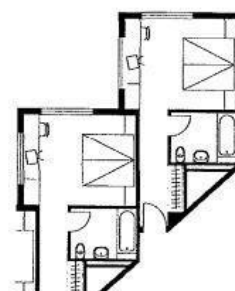
6 Hotel room accessible for a disabled person with space for accompanying person → p. 21



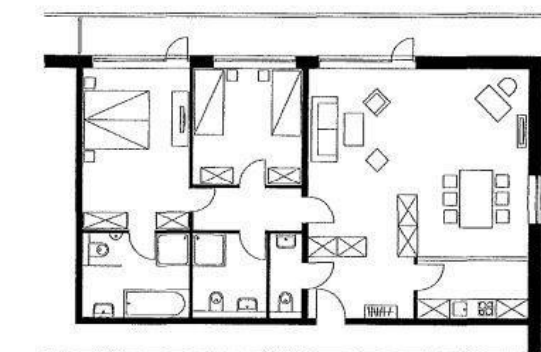
7 Two-room apartment with small kitchen



8 Hotel room with cupboard zone and balcony



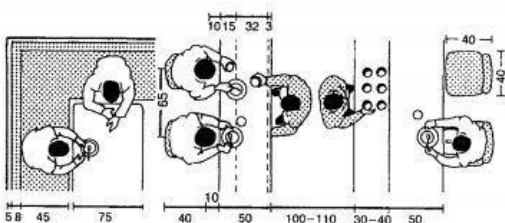
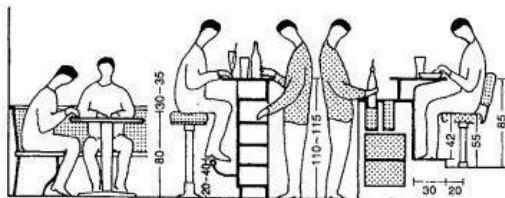
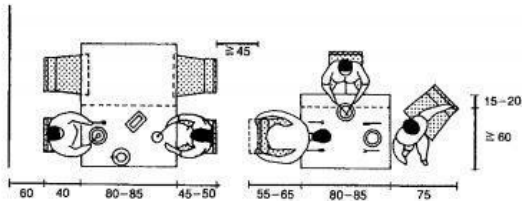
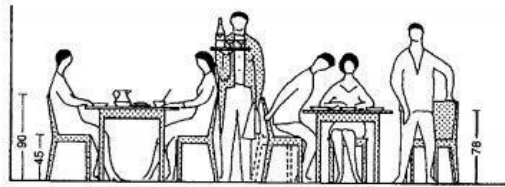
9 Diagonal room arrangement



11 Three-room apartment (suite) with cooking niche, two bathrooms and guest WC

CATERING

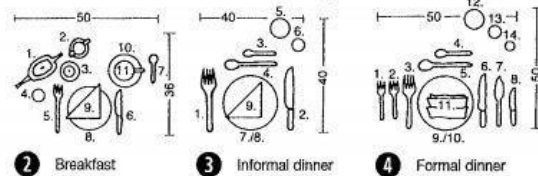
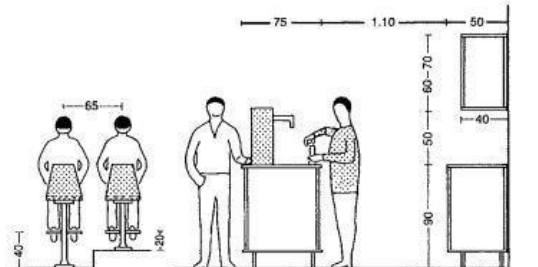
Restaurants



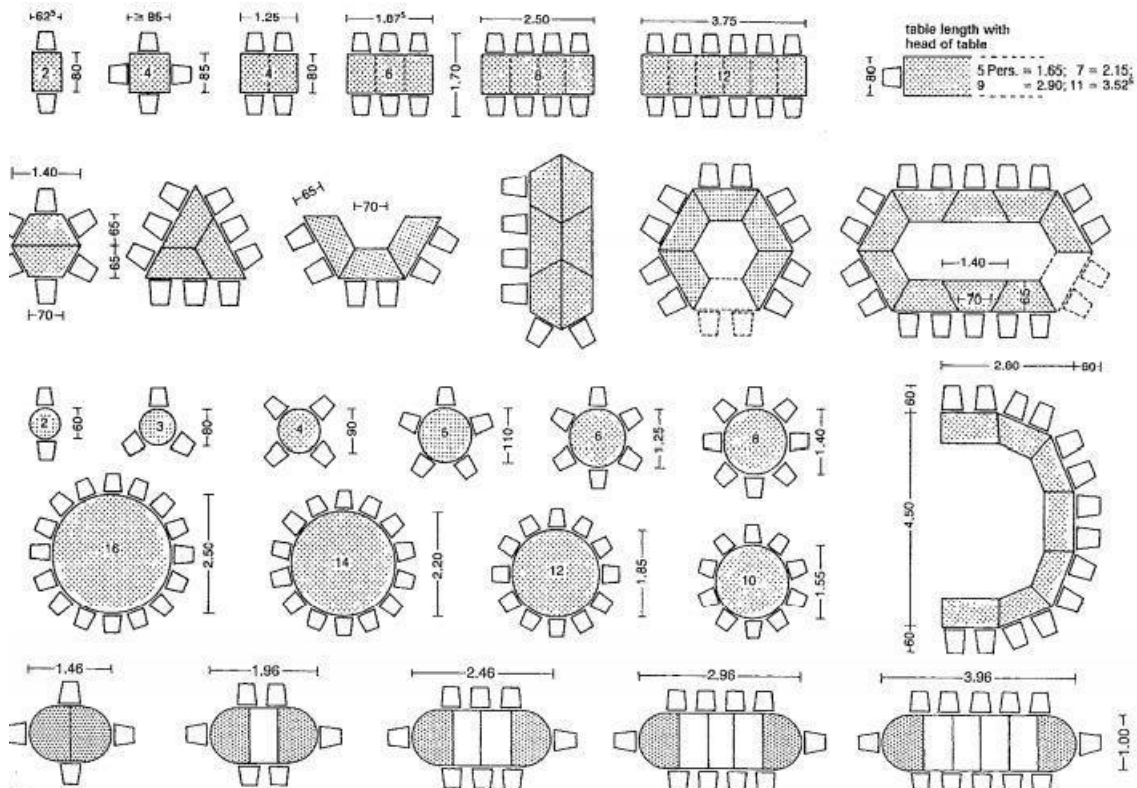
1 Space required for waiter and diner

To be able to eat in comfort, one person requires a table area around 60 cm wide and 30-40 cm deep → ② - ④. This provides sufficient distance between adjacent diners. Although an additional 20 cm space in the centre for dishes and large bowls is sometimes desirable, an overall width of 80-85 cm is suitable for a dining table. If the food is served on plates, then 70 cm is sufficient, and for fast food 60 cm table depth.

Distance between table and wall ≥ 75 cm → ①, because the chair alone requires a space of 50 cm. If the space between table and wall is also used for access, the distance should be ≥ 100 cm. Round tables need a little more space, a difference of up to 50 cm.

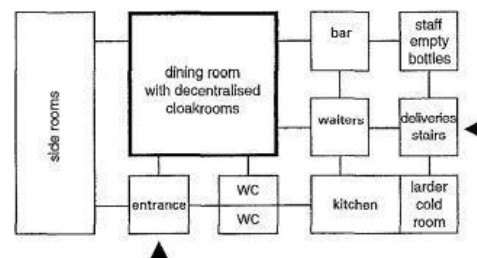
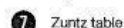
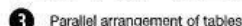
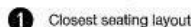


- ② Breakfast setting: 1 tea or coffee pot; 2 milk jug; 3 jam or butter bowl; 4 sugar bowl; 5 dessert fork; 6 dessert knife; 7 coffee or tea spoon; 8 dessert plate; 9 napkin; 10 saucer; 11 coffee cup
- ③ Informal dinner setting: 1 fork; 2 knife; 3 soup or dessert spoon; 4 spoon; 5 beer glass; 6 wine or dessert wine glass; 7 soup bowl; 8 dinner plate; 9 napkin
- ④ Formal dinner setting: 1 dessert fork; 2 fish fork; 3 fork; 4 soup or dessert spoon; 5 spoon; 6 knife; 7 fish knife; 8 dessert knife; 9 soup bowl; 10 dinner plate; 11 napkin; 12 beer glass; 13 red or white wine glass; 14 liqueur or dessert wine glass



5 Tables/seating

Restaurants



8 Functional scheme of a small restaurant

Floor area of dining room	Usable walking width
≤ 100 m ²	≥ 1.10 m
≤ 250 m ²	≥ 1.30 m
≤ 500 m ²	≥ 1.65 m
≤ 1000 m ²	≥ 1.80 m
> 1000 m ²	≥ 2.10 m

Dining places	WCs, gents	WCs, ladies	Urinals, no.	Channels (m)
≤50	1	1	2	2
≤50-200	2	2	4	3
200-400	3	4	6	4
≥400	— decision for each case —			

9 Usable width of stairs

Type	Seat occupancy per meal	Kitchen floor area (m ² /cover)	Dining room floor area (m ² /seat)
exclusive restaurant	1	0.7	1.8-2.0
restaurant with rapid turnover, e.g. department store	23	0.5-0.6	1.4-1.6
standard restaurant	1.5	0.4-0.5	1.6-1.8
inn, guest house	1	0.3-0.4	1.6-1.8

for storerooms, personnel rooms etc., add approx. 80% cover = seat x seat turnover.

11 Space requirements

10 Toilet facilities

Furnishing (tables)	No. places	Waiter (m ² /place)	Self-service (m ² /place)
square	4	1.25	1.25
rectangular, 4	4	1.10	1.25
rectangular 6	6	1.00	1.05
rectangular 8	8	1.10	1.10

12 Total space required for dining room: 1.4–1.6 m²/place

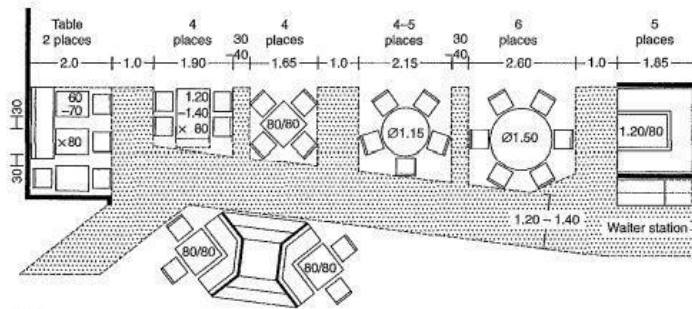
main aisles	min. 2.00 m wide
intermediate aisles	min. 0.90 m wide
side aisles	min. 1.20 m wide

13 Aisle widths

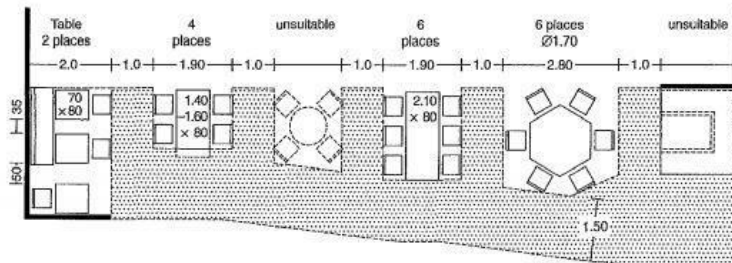
Toilets in public houses, bars or restaurants: Stairs to toilets, wash, staff and storage rooms, usable width ≤ 1.10 m. Clear walk-through height ≤ 2.10 m measured vertically. Window area $\leq 1/10$ of the floor area of a restaurant.

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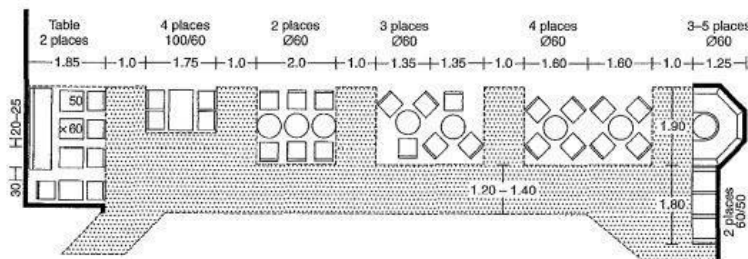
Dining Rooms, Service



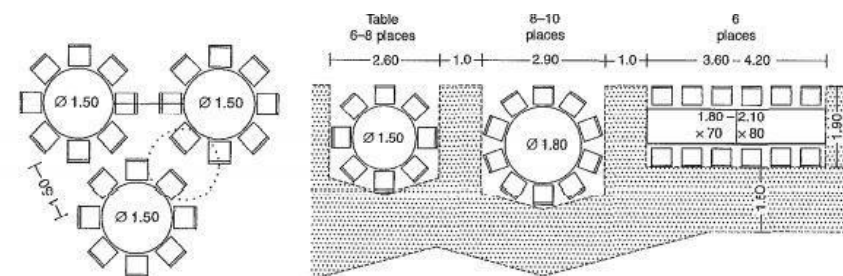
1 Table sizes in a restaurant: with predominantly plate service the table depth can be reduced to 70 cm



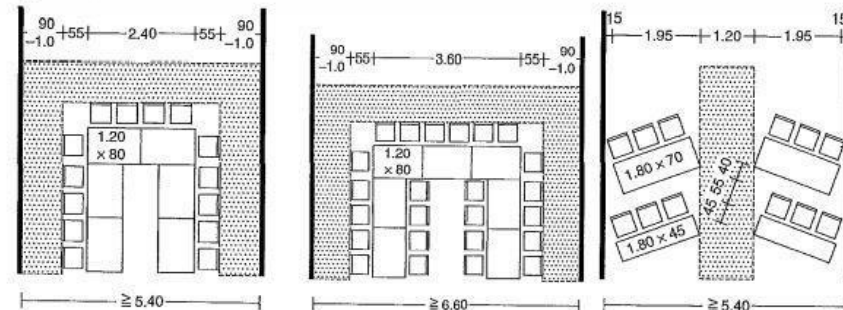
2 In a self-service restaurant



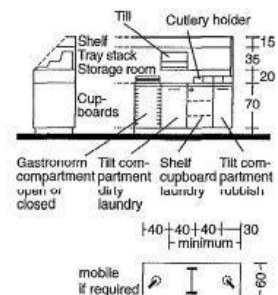
3 Bistro-café-bar



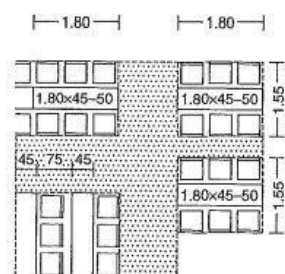
4 Banquet



5 Corporate and seminar rooms



6 Waiter station → 1



7 Events, meetings: without eating

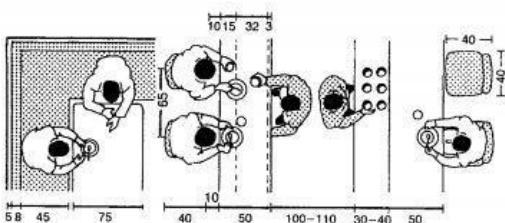
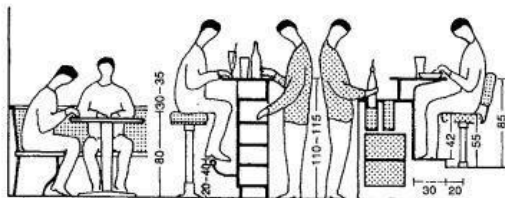
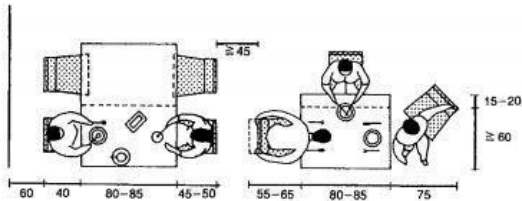
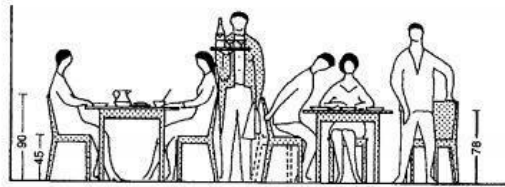
The space required varies very widely according to the character of a restaurant. Apart from fast food outlets, the least space required is in cafés. The most is needed in restaurants and diners. Diagonal arrangement of the tables generally takes up less space than an aligned pattern, with a space saving of up to 35%. Alcoves are beneficial for use of space because the distance between seats and wall is no longer required. In larger restaurants, many groups of tables (a waiter's 'territory') are collected together to form units.

Basically, the design of dining rooms based on 'number of heads = m²', formulas is to be avoided, as they are not applicable to rooms under 100 m² and can lead to false results. Fixing the dimensions of rooms should in any case be done from concrete furniture layout plans. The functional design of dining rooms involves determining the following:

1. Entrances and traffic axes, which limit the usable area, according to number and required width.
2. Service points (with the exception of variable forms of furniture): stations for 40 places each with at least one service point as centrally placed as possible.
3. Table sizes and shapes according to the character of the business and the expected guest structure. A good procedure is to design a percentage structure of desirable table sizes with various combinations, starting from the intended total capacity. Table sizes and shapes result from the intended use. Areas of about 20 (12-24) places are designed according to the character, type of business and intended visual organisation, to avoid the impression of a waiting room.

CATERING

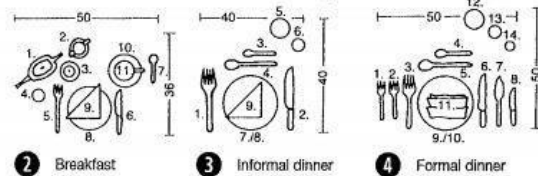
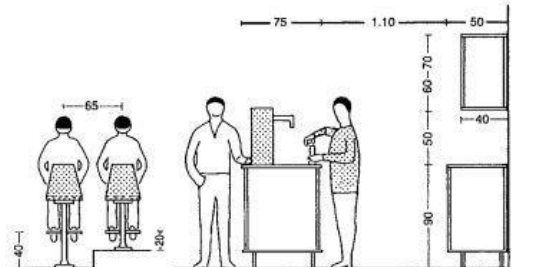
Restaurants



1 Space required for waiter and diner

To be able to eat in comfort, one person requires a table area around 60 cm wide and 30-40 cm deep → 2 - 4. This provides sufficient distance between adjacent diners. Although an additional 20 cm space in the centre for dishes and large bowls is sometimes desirable, an overall width of 80-85 cm is suitable for a dining table. If the food is served on plates, then 70 cm is sufficient, and for fast food 60 cm table depth.

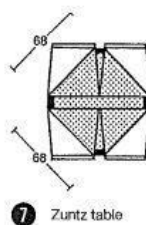
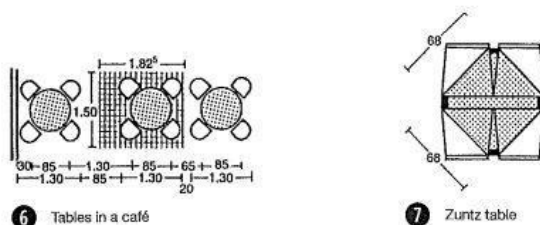
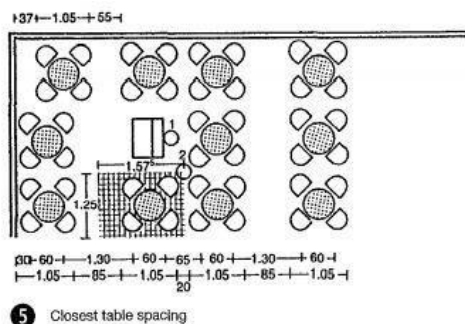
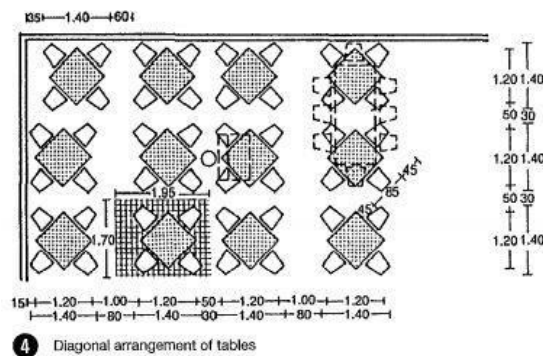
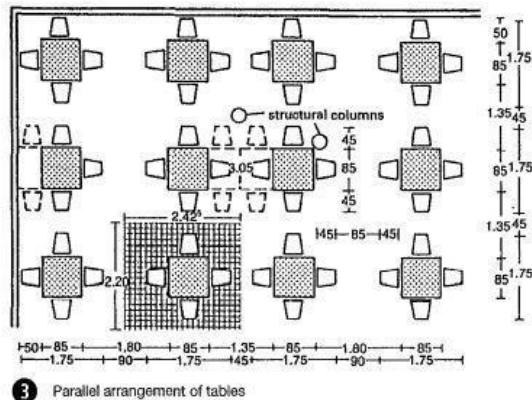
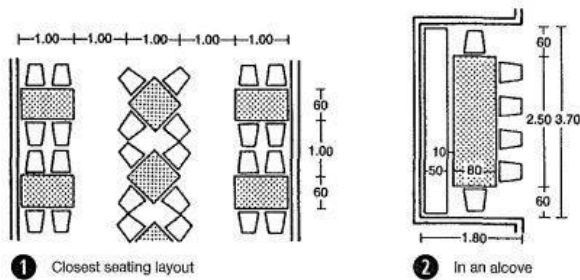
Distance between table and wall ≥ 75 cm → 1, because the chair alone requires a space of 50 cm. If the space between table and wall is also used for access, the distance should be ≥ 100 cm. Round tables need a little more space, a difference of up to 50 cm.



- 2 Breakfast setting: 1 tea or coffee pot; 2 milk jug; 3 jam or butter bowl; 4 sugar bowl; 5 dessert fork; 6 dessert knife; 7 coffee or tea spoon; 8 dessert plate; 9 napkin; 10 saucer; 11 coffee cup
- 3 Informal dinner setting: 1 fork; 2 knife; 3 soup or dessert spoon; 4 spoon; 5 beer glass, 6 wine or dessert wine glass; 7 soup bowl; 8 dinner plate; 9 napkin
- 4 Formal dinner setting: 1 dessert fork; 2 fish fork; 3 fork, 4 soup or dessert spoon; 5 spoon; 6 knife; 7 fish knife; 8 dessert knife; 9 soup bowl; 10 dinner plate, 11 napkin; 12 beer glass; 13 red or white wine glass; 14 liqueur or dessert wine glass

CATERING

Restaurants



Before any restaurant or other catering establishment is built, the organisational processes must be determined with the operator. The following have to be decided: what food will be on the menu, what quality and quantity will be on offer? Which service system will be used, whether à la carte with fixed or changing daily menus, plate or table service, self-service or mixed? For design purposes, it is important to know which target clientele is aimed for. The site itself will help to determine the most suitable type of restaurant.

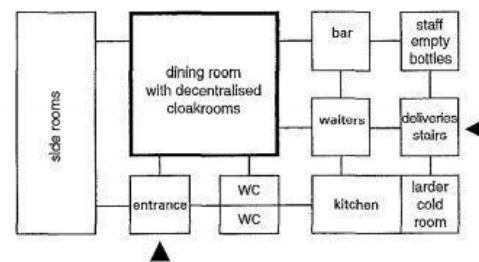
Appoint specialists in: kitchen equipment, electrical, heating, ventilation and sanitary design.

The main room in a restaurant is the dining room. Its furniture and fittings should be appropriate for the business. A number of additional tables or chairs should be available, so that table groupings are flexible. Provide special tables for regulars. Side rooms and conference rooms should always be flexibly furnished in order to permit variations. A food bar with fixed stools can be arranged for customers in a hurry. Larger dining rooms should be split into zones. Kitchen, side rooms, toilets and sanitary installations should be grouped around the dining room, also in the basement → **8**.

Columns in a dining room are best located in the centre of a group of tables or at the corners of the tables → **9**. The ceiling heights of dining areas with a floor area $\leq 50 \text{ m}^2 = 2.50 \text{ m}$, $> 50 \text{ m}^2 = 2.75 \text{ m}$ and $> 100 \text{ m}^2 \geq 3.00 \text{ m}$; above or below galleries $\geq 2.50 \text{ m}$.

Emergency exits 1.0 m wide per 150 people using them. Minimum clear width of aisles in restaurants 0.80 m, doors 0.90 m → **9**.

Toilets in public houses, bars or restaurants: Stairs to toilets, wash, staff and storage rooms, usable width $\leq 1.10 \text{ m}$. Clear walk-through height $\leq 2.10 \text{ m}$ measured vertically. Window area $\leq 1/10$ of the floor area of a restaurant.



8 Functional scheme of a small restaurant

Floor area of dining room	Usable walking width
$\leq 100 \text{ m}^2$	$\geq 1.10 \text{ m}$
$\leq 250 \text{ m}^2$	$\geq 1.30 \text{ m}$
$\leq 500 \text{ m}^2$	$\geq 1.65 \text{ m}$
$\leq 1000 \text{ m}^2$	$\geq 1.80 \text{ m}$
$> 1000 \text{ m}^2$	$\geq 2.10 \text{ m}$

9 Usable width of stairs

Type	Seat occupancy per meal	Kitchen floor area (m^2/cover)	Dining room floor area (m^2/seat)
exclusive restaurant	1	0.7	1.8–2.0
restaurant with rapid turnover, e.g. department store	23	0.5–0.6	1.4–1.6
standard restaurant	1.5	0.4–0.5	1.6–1.8
inn, guest house	1	0.3–0.4	1.6–1.8
for storerooms, personnel rooms etc., add approx. 80% cover = seat $\times$ seat turnover.			

11 Space requirements

Dining places	WCs, gents	WCs, ladies	Urinals, no.	Channel (m)
≤ 50	1	1	2	2
$\leq 50-200$	2	2	4	3
$\leq 200-400$	3	4	6	4
≤ 400	— decision for each case —			

10 Toilet facilities

Furnishing (tables)	No. places	Waiter places (m^2/place)	Self-service (m^2/place)
square	4	1.25	1.25
rectangular	4	1.10	1.25
rectangular	6	1.00	1.05
rectangular	8	1.10	1.10

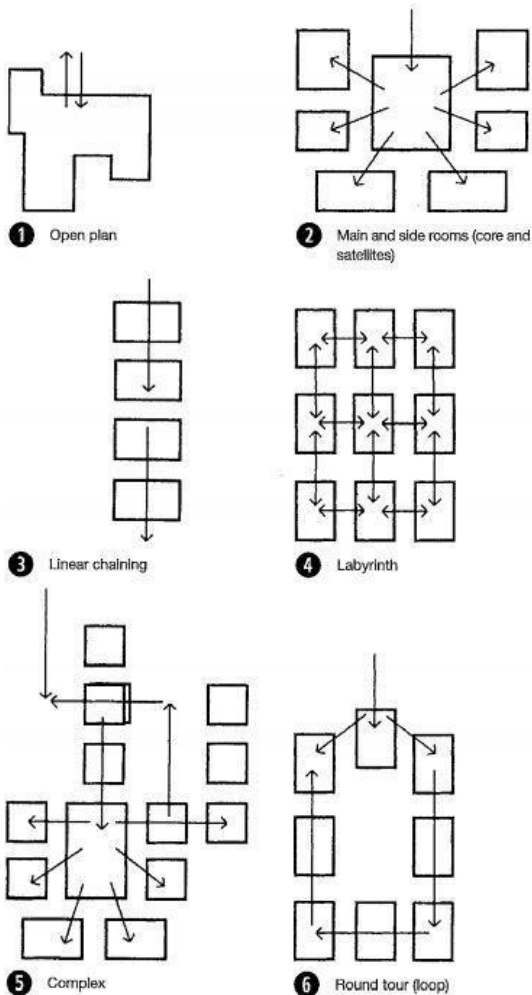
12 Total space required for dining room: 1.4–1.6 m^2/place

main aisles	min. 2.00 m wide
intermediate aisles	min. 0.90 m wide
side aisles	min. 1.20 m wide

13 Aisle widths

MUSEUMS AND ART GALLERIES

Display Rooms



The decisive factor in the layout of display rooms is the relationship between the collection and the way it is to be displayed (display concept). There are the following basic types of layout → 1 – 6:

Open plan → 1: large and visually autonomous items on display, free circulation, function rooms in basement.

Core and satellite rooms → 2: main room for orientation in the museum or the exhibition, side rooms for autonomous displays (themes/collections)

Linear chaining → 3: linear sequences of rooms, controlled circulation, clear orientation, separate entrance and exit.

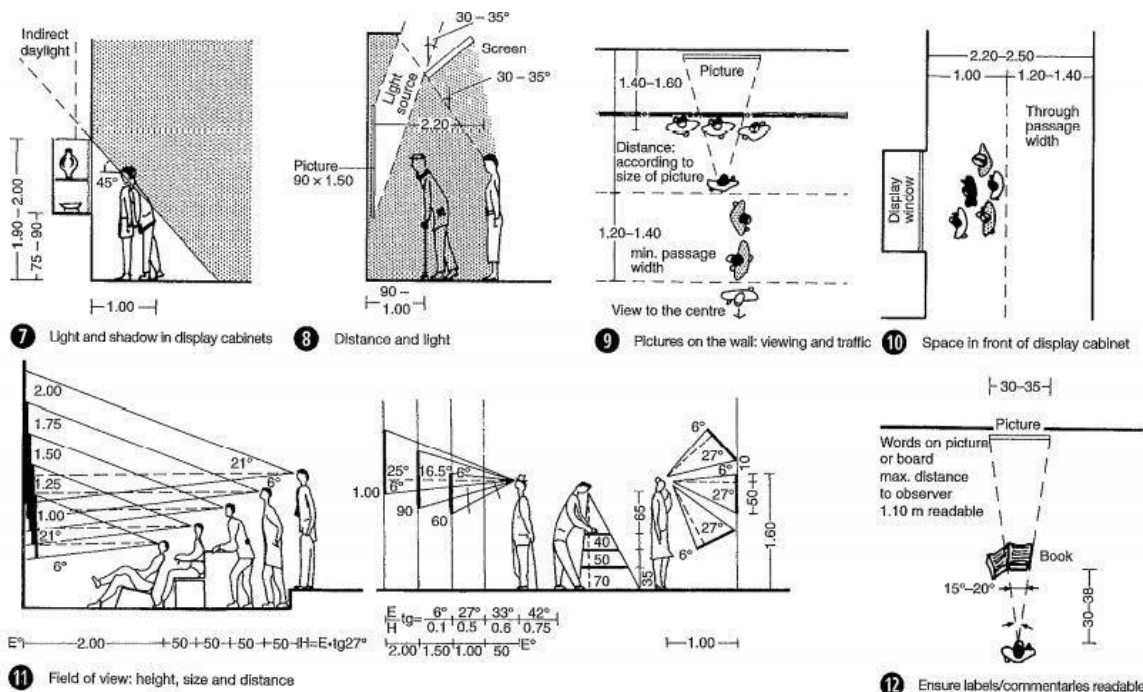
Labyrinth → 4: free circulation, guided route and direction are variable, entrance and exit can be separate.

Complex → 5: combined groups of rooms with typical features of → 1 – 4, complex organisation of collection and display concept.

Round tour (loop) → 6: similar to linear chaining → 3, controlled circulation leads back to entrance.

Display concept	Spatial arrangement
oriented on display items	open plan → 1
systematically oriented	main and side rooms (core and satellites) → 2
thematically oriented	linear chaining → 3, round tour → 6
complex oriented	labyrinth → 4, complex → 5

The size and height of the display and store rooms depend on the dimensions of the works and the extent of the collection, but the minimum height is 4 m clear.

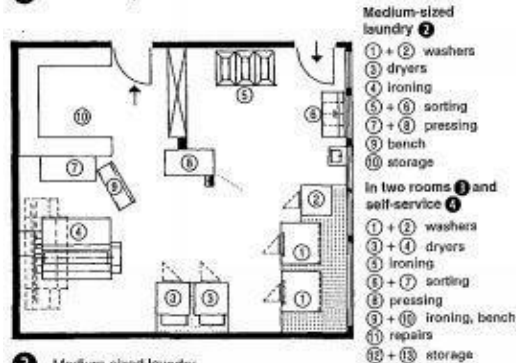


WORKSHOPS

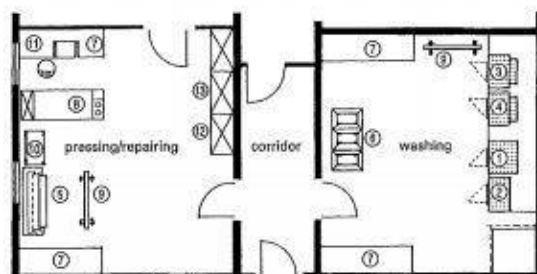
Laundry



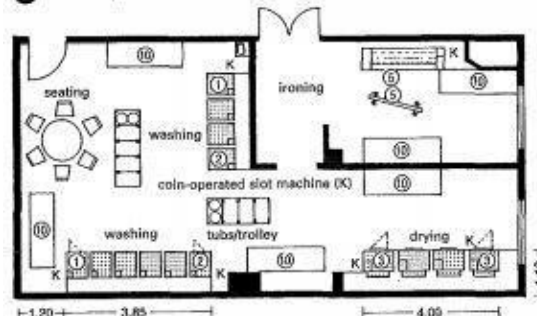
1 Small laundry for hotel



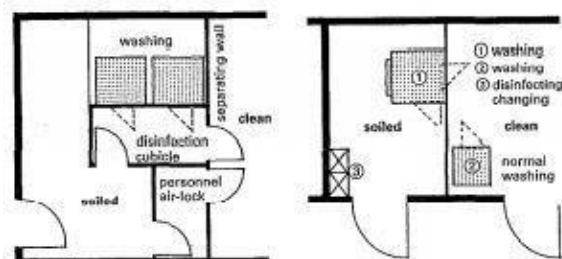
2 Medium-sized laundry



3 in two separate rooms



4 Self-service launderette



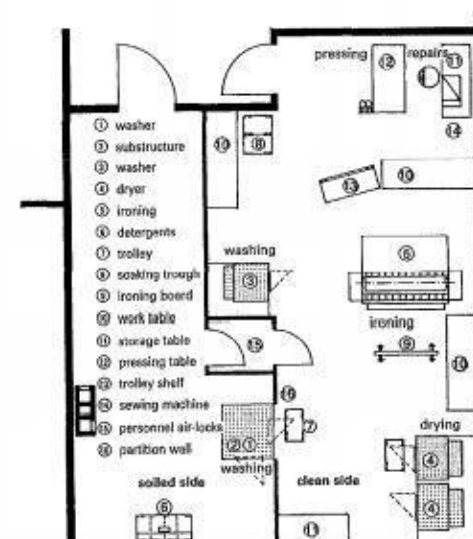
Laundries for hospital washing are to be separated into two areas for soiled and clean, each with their own entrance → 5 - 6, 8. In the soiled area, it must be possible to damp-clean and disinfect the floor, walls and external surfaces of built-in equipment and machines.

Passages between the dirty and clean sides of the laundry are to be equipped with personnel control lobbies plus hand disinfection and a place for protective clothing. The doors of the staff control lobby must be fitted with devices making it impossible to open both doors at once → 9.

gents	Weight (g)
shirt	170
light vest	100
heavy vest	150
short underpants	75
long underpants	180
pyjamas	450
handkerchief	20
pair of socks	70
ladies	
blouse	140
underclothes	140
petticoat	75
night dress	350
night shirt	170
handkerchief	10
apron	170
blouse	130
children	
small dress	110
underclothes	80
jacket, pullover	75
dungarees	25
handkerchief	15
pair of socks	70
pair of tights	100

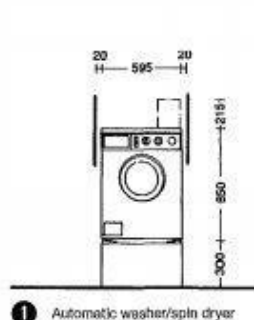
7 Average weights of clothes for washing

bathing	Weight (g)
bathrobe	900
towel	800
beach towel	400
hand towel	200
bathing trunks	100
bathing costume 1-pce	260
2-pce	200
bed linen	
bed cover	850
under-sheet	670
top sheet	600
pillow cover	200
table linen	
table cloth	370
long table cloth	1000
serviette	80
hand towel	100
tea towel	100
working clothes	
protective suit	1200
dungarees	800
apron	200
man's overalls	500
lady's overall	400

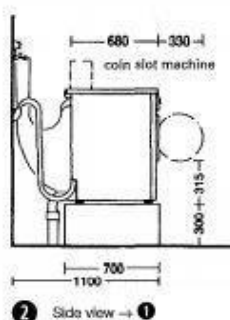


WORKSHOPS

Laundry



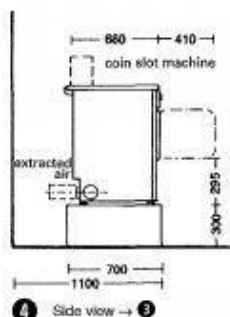
1 Automatic washer/spin dryer



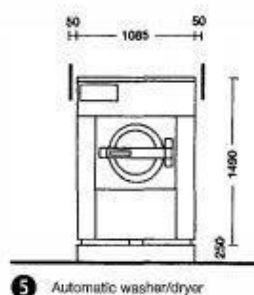
2 Side view → 1



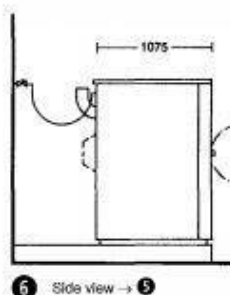
3 Automatic dryer



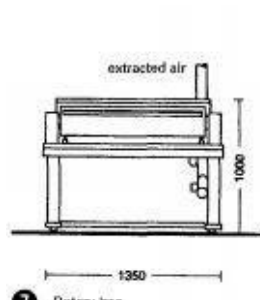
4 Side view → 3



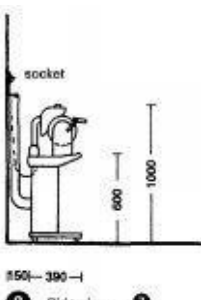
5 Automatic washer/dryer



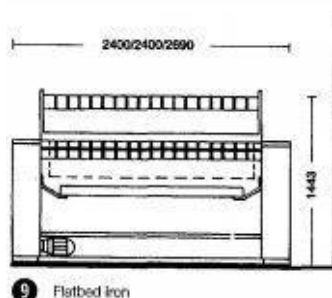
6 Side view → 5



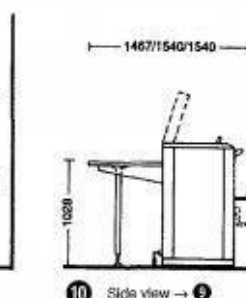
7 Rotary iron



8 Side view → 7



9 Flatbed iron



10 Side view → 9

Dry laundry produced per week:

Household: approx. 3 kg/person (ironing share approx. 40%)

Hotel: approx. 20 kg/bed (daily sheet and towel changing)

approx. 12–15 kg/bed (4 changes/week)

approx. 8–10 kg/bed (2–3 changes/week)

approx. 5 kg/bed (1 change/week)

(above values include hotel restaurant)

Guesthouse: approx. 3 kg/bed

Restaurant: approx. 1.5–3 kg/place

(for hotels, guesthouses and restaurants, ironing share approx. 75%)

Home for elderly: approx. 3 kg/bed (residential)

approx. 8 kg/bed (care home)

approx. 25 kg/bed (incontinent)

Children's home: approx. 4 kg/bed,

Baby home: approx. 10 kg/bed

Nursing and care establishments: approx. 4 kg/bed

approx. 25 kg/bed

(incontinent)

(for the above homes, ironing share approx. 60%)

Hospitals, clinics (up to approx. 200 beds):

general hospital: 12–15 kg/bed

maternity clinic with births: approx. 16 kg/bed

children's clinic: approx. 18 kg/bed

(for hospitals and clinics, ironing share approx. 70%)

care staff: approx. 3.5 kg/person

$$\text{Required washing capacity} = \frac{\text{washing quantity/week}}{\text{washing days/week} \times \text{washes/day}}$$

Example calculations:

1. Hotel with 80 beds (utilisation 60% = 48 beds)

4 bedding changes/week

daily towel changes (approx. 12 kg/bed)

table and kitchen washing

576 kg/wash

approx. 74 kg/week

650 kg/week

$$\text{required washing capacity} = \frac{650 \text{ kg}}{3 \times 7} = 18.6 \text{ kg/wash}$$

2. Hotel with 150 beds (utilisation 60% = 90 beds)

daily bed and towel changes (20 kg/bed)

90 beds @ 20 kg washing

table and kitchen washing

1800 kg/week

approx. 200 kg/week

2000 kg/week

$$\text{required washing capacity} = \frac{2000 \text{ kg}}{3 \times 7} = 57.1 \text{ kg/wash}$$

3. Home for elderly (50 residents, 70 care patients)

70 care places @ 12 kg washing

840 kg/week

$$\text{required washing capacity} = \frac{840 \text{ kg}}{5 \times 5} = 33.6 \text{ kg/wash}$$

50 residential places @ 3 kg washing

table and kitchen washing

150 kg/week

approx. 100 kg/week

250 kg/week

$$\text{required washing capacity} = \frac{250 \text{ kg}}{3 \times 6} = 8.3 \text{ kg/wash}$$

4. Block of flats with 90 residents

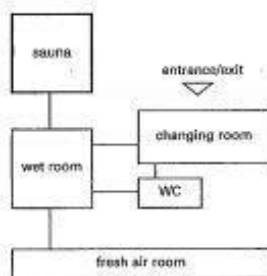
approx. 3 kg dry washing per person and week

90 people × 3 kg = 270 kg

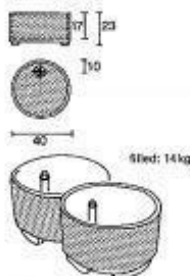
(6 days × 5 washes) = 9.0 kg/wash

5 kg/washing machine = 1.8 machines

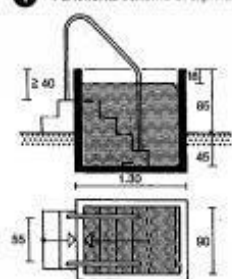
1.8 machines will be needed = 2 machines



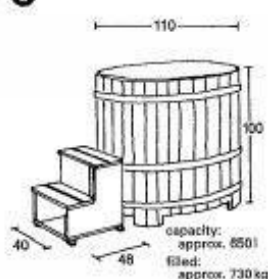
1 Functional scheme of a private sauna



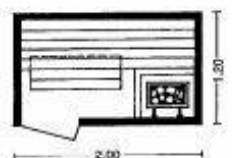
2 Warm footbath



3 Plunge pool



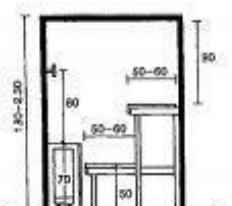
4 Wooden plunge tub



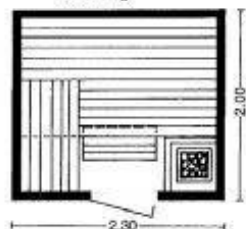
5 Sauna cabin: one person lying or two sitting



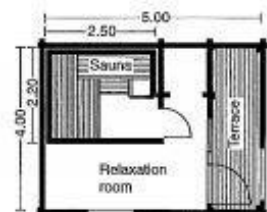
6 Sauna cabin: two people lying or three sitting



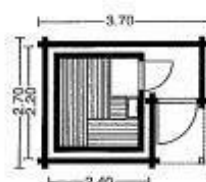
7 Cross-section



8 Sauna cabin: three people lying or five sitting



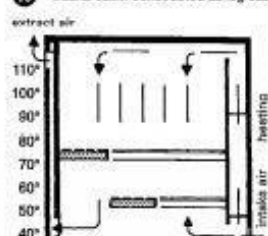
9 Sauna constructed as log cabin



10 Sauna cabin constructed as log cabin



11 House sauna



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

In contrast to the separated features of a commercially operated sauna → p. 373 f., the functions of a private sauna can all be integrated into one room, e.g. changing and relaxation (can also take place in the house) or pre-cleaning and cooling (can take place in the same room with the same sanitary facilities).

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 → 10 or also with shower and changing or relaxation room → 11. There are also sauna cabins available as prefabricated or kit elements for installation in existing rooms → 13 + 15.

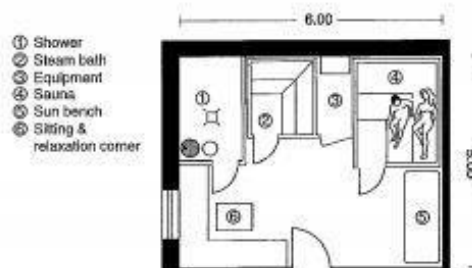
Sauna stove: Sauna cabins for installation usually have electric stoves (which require a three-phase supply above a certain size), while log cabin types mostly have solid fuel stoves (which require a chimney).

Plunge pool → 3 – 4 max. depth 1.20 m.

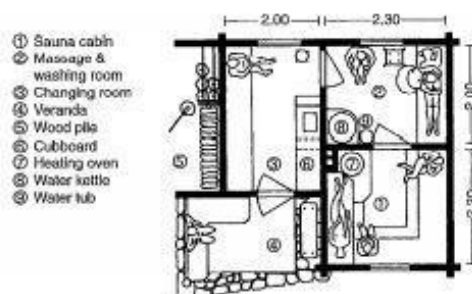
An important part of a proper sauna, a (warm) **footbath** → 2 with a seat are required.

Room temperatures: changing room 20–22°C, wash room ≥ 24–26°C, cooling room ≤ 18–20°C, rest room 20–22°C, massage room 20–22°C.

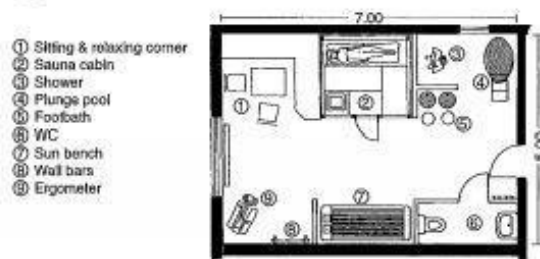
Humidity: 100°C: 2–5% rel. humidity, 80°C: 3–10% rel. humidity, 70°C: 5–15% rel. humidity, 60°C: 8–28% rel. humidity.



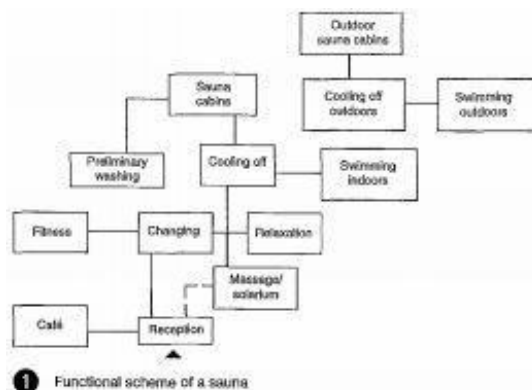
13 Sauna (installed, e.g. in cellar), 30 m², 4–6 people



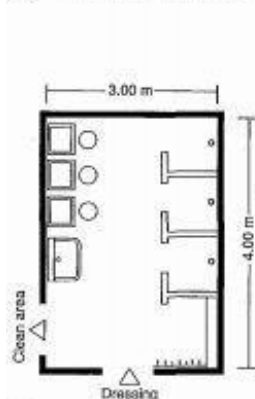
14 Sauna



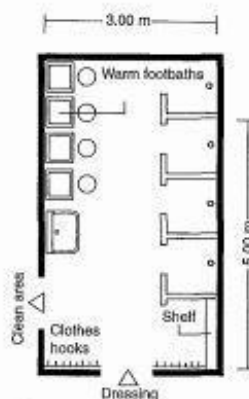
15 Sauna, 35 m², 4–6 people, sauna cabin as built-in element



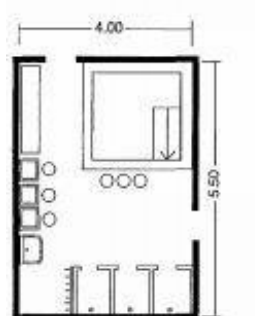
1 Functional scheme of a sauna



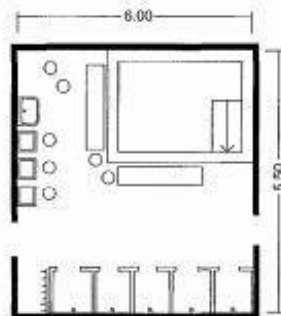
2 Wash room of size III, approx. 12.00 m²



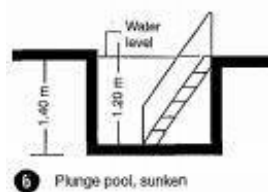
3 Wash room of size IV, approx. 15.00 m²



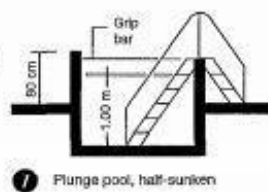
4 Cooling room of size III, approx. 22 m²



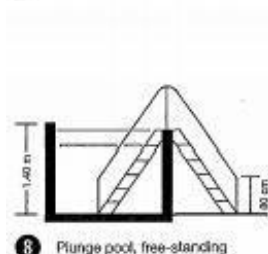
5 Cooling room of size IV, approx. 33 m²



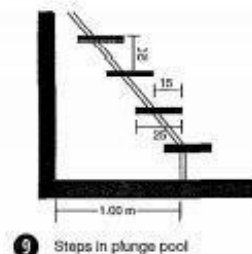
6 Plunge pool, sunken



7 Plunge pool, half-sunken



8 Plunge pool, free-standing



9 Steps in plunge pool

Spa is the general term for health and wellness establishments, which should generally include: sauna facility, massage and solarium, relaxation, fitness and condition training (including swimming → Indoor and outdoor swimming pools).

A commercially operated **sauna** (size III-IV → 9) will include:

Changing room, shower room with **washing facilities**, **sauna cabins**, **rest/relaxation room** and **subsidiary rooms** (staff room, reception, cash desk, sanitary facilities for visitors and staff). In public saunas, separate rooms are provided for changing, preliminary washing and toilets; for staff and visitors' toilets, the relevant building regulations apply. Access to swimming areas, food/drink providers and fitness areas is increasingly being offered in spa and wellness establishments.

The **wash room** is used for washing with warm water before entering the sauna → 2 - 3.

The **cooling room** is used for cooling off between visits to the sauna using cold air or cold water in, for example, plunge pools, pouring water, showers and footbaths → 4 - 5.

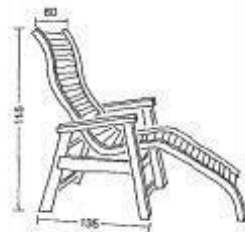
Size	No. sauna places	Type of use
I	2-4	very small or family sauna
II	4-5	family sauna
III	6-10	commercially operated sauna
IV	11-15	large commercially operated sauna

Room type	Size	Average room size (m²)	Places	Usable area (m²)
sauna	I	1.0-4.0	2-4	
	II	7.0-11.0	4-5	
	III	12.0-17.0	6-10	
	IV	17.5-21.0	11-15	
cooling room	II	16.0	up to 12	16.0
	III	22.0	up to 12	22.0
	IV	30.5	up to 17	30.5
	IV	30.5	up to 17	30.5
washing room	II	9.0	up to 8	9.00
	III	12.0	up to 12	12.00
	IV	17.0	up to 17	17.00
	IV	17.0	up to 17	17.00
changing room	II	16.0	up to 20	12.00
	III	24.0	up to 30	18.00
	IV	34.0	up to 45	20.00
	IV	34.0	up to 45	20.00
rest room	II	13.2	2-3	10.00
	III	18.0	6	20.00
	IV	27.0	8	30.00
	IV	27.0	8	30.00

Capacity parameter	Size			
	I	II	III	IV
no. sauna places	2-3	4-5	6-10	11-15
usable area (m²)	1.7-2.2	2.4-4.0	5.0-10.0	8-13
cabin size (m/place)	1.7-2.3	1.2-1.6	2.0-2.4	1.6-2.0
ceiling height (m)	2.00	2.10	2.40	2.40

In the smallest sauna with 2 seating levels: ceiling height: 1.90 m, min. 1.60 m, clear height above the upper seat: 1.00-1.10 m

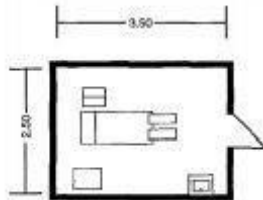
10 Approximate room and space requirements for various sizes of sauna (Höckert → note)



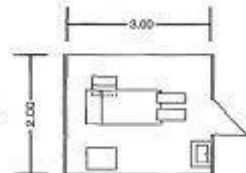
1 Ergonomic couch in the sitting position in relaxation room. Length in lying position: 1.70-1.80 m



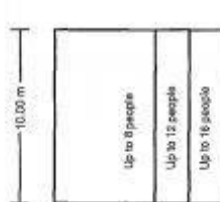
2 Massage couch with head rest



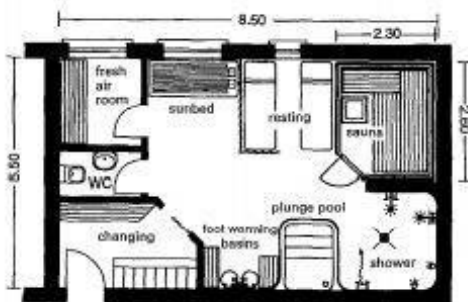
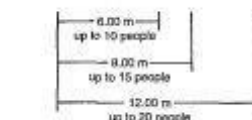
3 Massage room 8.75 m², surrounded by solid walls



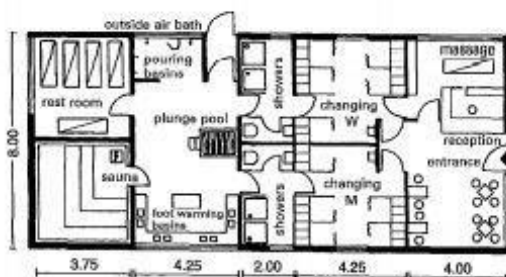
4 Massage compartment 6.00 m², separated by curtains



5 Pool sizes for swimming and exercise pools in sauna area (usable capacity)



6 Hotel sauna 5.50 x 6.50 m



7 Sauna for approx. 30 people

Rest room

Provides relaxation between or after visits to the sauna. It should be well ventilated and have visual contact with the outside and a low noise level. The design and furnishing should be suitable for rest and relaxation.

Solarium: an area of approx. 0.80 x 2.00 m is required per lying place. The side aisle width is 0.40 m.

Pool types and sizes → 6:

Whirlpool: for relaxation and recovery. Max. water depth: 1.0 m.

Exercise pool: for relaxation, rehabilitation, water gymnastics and health care, max. water depth: 1.35 m, water area 25-60 m².

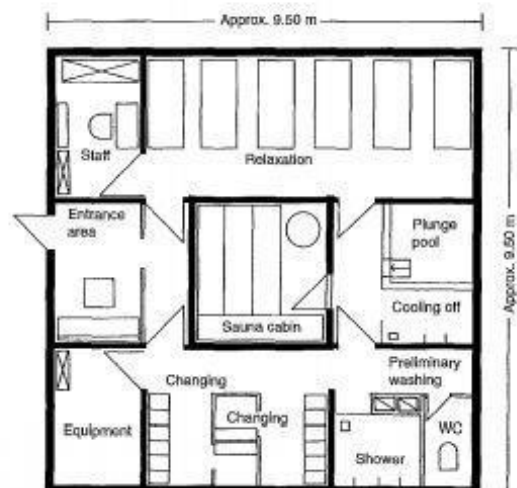
- **salt-water pool:** water with a salt content of min. 5.5 g sodium and 8.5 g chloride per litre.

- **mineral pool:** water with a mineral content of min. 1 g per litre.

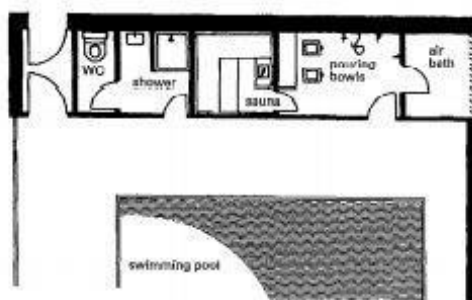
- **thermal pool:** water with a natural temperature >20°C. Because this pool is not for swimming, it can, according to use, be designed in almost any shape.

Size of sauna cabin (m²)	Air supply opening (cm²)	Air extraction opening (cm²)
5	100	70
10	150	105
15	200	140
20	250	175

8 Size of ventilation openings in relationship to floor area of sauna cabin (Höckert → refs)



9 Sauna facility with washing and cooling rooms for about 12 people, approx. 90 m²



10 Sauna and indoor swimming pool

4.2. AREA STATEMENT

RESORT

CAR PARKING

1 car parking for 4 guest houses = 80 rooms = 20 car parking

1 car parking for 100sqm = 18,282 sqm = 180 car parking

TOTALLY = 200 car parking

BIKE PARKING

50sqm = 1 bike parking

18,282sqm = 365 bike parking

Table 4. 1 Area statement

PROGRAM	CAPACITY	AREA IN SQM	NO OF UNIT	TOTAL AREA
PARKING				
Watchman room	3	10	3	30
RESORT				
Car parking	200	15		3000
Bike parking	365	1.5		547
WEDDING				
Car parking	500	15		7500
Bike parking	800	1.5		1200
Driver waiting area				30
Rest room	2	4.5	1	4.5
ADMIN / HOTEL BLOCK				
Reception counter	4	3.75	1	15
Lobby/Waiting area	15	2.3	1	35
Lobby/Waiting area	50	2.2	1	110
Tourist information center	20	1.5	1	30
Cafeteria	50	1.3	1	65
General Restaurant	100	1.5	4	600
Kitchen	10		1	200
Dry store	2		1	50
Chill store	2		1	50

Waste disposal area	2		1	15
Dish wash area	3		1	15
Staff toilet	2	4.5	1	4.5
Gents toilet	2	4.5	1	4.5
Ladies toilet	2	4.5	1	4.5
Internet room	20	2	1	40
Shop	20	1.5	1	30
Conference hall	50	1.5	1	75
RECREATIONAL SPACE				
Reception counter	4	3.75	1	15
Lobby/ Foyer	15	2.3	1	35
Kids activity center	20			40
indoor recreational space				75
Common activity center with carroms, chess table tennis	4			366.54
Amphitheater	200			300
Home theater	100	1.8	1	180
Swimming pool				600
Kids swimming pool				200
Changing room, shower ,toilet men				45
Changing room, shower ,toilet women				45
Storage room				21.5
Restrooms		1.2	2	150
Banquet hall 1	200	1.2	2	600
Banquet hall 2	200	1.2	2	600
General bar				190
Cocktail bar				225

Discotheque	100	150	1	150
DJ control room	2	20	1	20
Rest room for discotheq	10	4.5	10	45
Buffer room for discotheque				
HEALTH / AYURVEDIC DEPARTMENT				
Massage room with shower and steam bath 2				60.46
Spa room with dry court and shower bath				30.58
Staff room				9
Rest room				9
Yoga / meditation				105
Shower room				9
Hotel room with beach view	20	40		800
Living room				
Bedroom				
Toilet				
Shower area				
Balcony				

OFFICE				
Waiting lounge and reception	5	15	1	15
Chair person room	1	30	1	30
General manager room	1	30	1	30

House keeping manager	1	15	1	15
Administrative staff room	6	45	1	45
Accounting staff room	2	15	1	15
Control office	1	10	1	10
Mini conference room	50	75	1	75
Rest room	2	4.5	2	9
Utility room		10	1	10
SECONDARY MAIN SERVICE BLOCK				
Reception counter	2	8	1	8
Lobby /waiting	15	35	1	35
Restaurant	100	1.5	4	600
Restaurant	50	35	2	140
Internet café	20	40	1	40
Toilet				150
Kitchen				100
Dry store				50
Chill store				50
Waste disposal area				15
Dish wash area				170
Staff toilet	2	4.5	2	9
General bar				190
Cocktail bar				225
Discotheque	100	150	1	150
DJ control room	2	20	1	20
Rest room for discotheque	10	4.5	10	45
Buffer room for discotheque				
Rest room for staff	2	4.5	2	9
COTTAGES	80			
Presidential suites	3	300		900

Sit out				
Pool				
Living room				
Garden Veranda with dinning and view				
Bedroom				
Bathroom				
Open to sky Bathroom				

Beach view Villa with private pool	15	78		1170
Sit out				
Living area				
Bed room				
Toilet				
Shower area				
Pool				
Villa with private pool	10	60		600
Sit out				
living area				
Bed room				
toilet				
shower area				
Pool				
Meandering pool villa	20	60		1200
Sit out				
Bedroom				

Toilet				
Shower area				
Meandering pool Duplex villa	10	80		800
Sit out				
Living room				
Bedroom				
Toilet				
Shower area				
Villa for physically disavled	2	60		120
Sit out				
Bed room				
Toilet				
shower area				
Veranda				
BANQUET HALL / RESTAURANT				
Reception counter	2	8	1	8
Lobby /waiting	15	35	1	35
Restaurant	50	35	2	140
General Restaurant	100	1.5	4	600
Internet café	20	40	1	40
Toilet				150
Kitchen				100
Dry store				50
Chill store				50
Waste disposal area				15

Dish wash area				170
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Staff toilet	2	4.5	2	9
General bar				190
Cocktail bar				225
Discotheque	100	150	1	150
DJ control room	2	20	1	20
Rest room for discotheque	10	4.5	10	45
Buffer room for discotheque				
Rest room for staff	2	4.5	2	9
STAFF AREA				
Staff dining	15	20	1	20
Staff kitchen	5	10	1	10
Staff quarters	10	15	10	150
Rest room	2	4.5	2	9
Staff training center				50
laundry area	space requiremnets / guest room -		60	50
DESTINATION WEDDING				
Banquet hall 1	200	1.2	2	600
Banquet hall 2	200	1.2	2	600
Banquet hall 3	500	1.2	2	1200
banquet hallkitchen /pantry	0.2 sqm/seat			98

Destination ceremony				
Venue 1				10,000
Venue 2				5000
Venue 3				800
Venue 4				1000
Infinity pool				800

TOTAL - 18,282

$$18,282 + \text{Circulation } 30\% = 23,766$$

SITE AREA CALCULATION

Total site extent = 29 acres = 1,17,358sqm

Floor space index (FSI) = 2

Total Build up area = 58 acres

Site coverage = 13.05 acres = 52,811Sqm

No.of. floors = 4.4444 = 4 floors

5. SITE ANALYSIS

5.1. CONTEXTUAL STUDY

5.1.1. Location



Figure 5. 1 Site boundary

Muttom near Colachel, a tiny coastal village in the district, is a village in the Kanyakumari District of the Tamil Nadu State, India which is well known for its beautiful beach with r rocks & caves. Muttom is one of

the famous fishing villages, located 16 km from Nagercoil town and approximately 75 km from the Trivandrum International Airport and 121 km from Tuticorin Airport. The major occupation of people in Muttom is fishing. Road: The subject sites are situated next to Muttom Bus Terminus Air: The nearest airport is Thiruvananthapuram in Kerala, about 75 Km from Muttom. Rail: approximately 18 kms from Nagercoil railway station (the nearest rail connectivity).

5.1.2. Live proposal (resort with 60 cottages)

The Directorate General of Lighthouses & Lightships (DGLL), Ministry of Shipping (Central government) has identified 08 lighthouses across India to beautify their premises & provide access to tourists in order to facilitate and promote

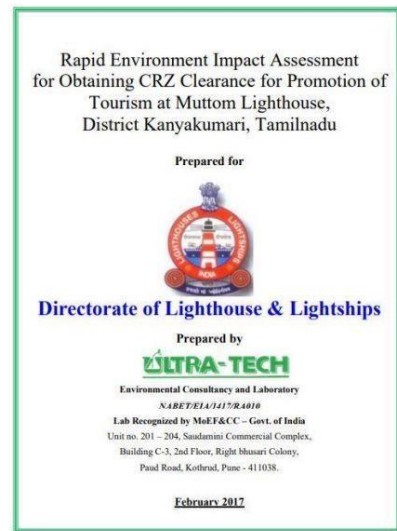
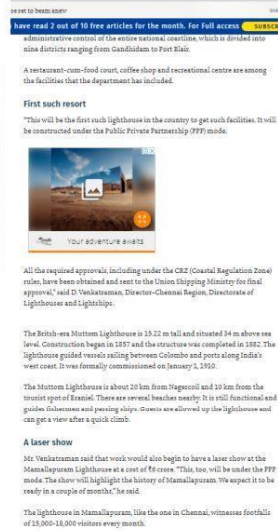


Figure 5. 2 Live proposal at Muttom

tourismat Lighthouses .Muttom Light House is one among these eight identified Lighthouses.

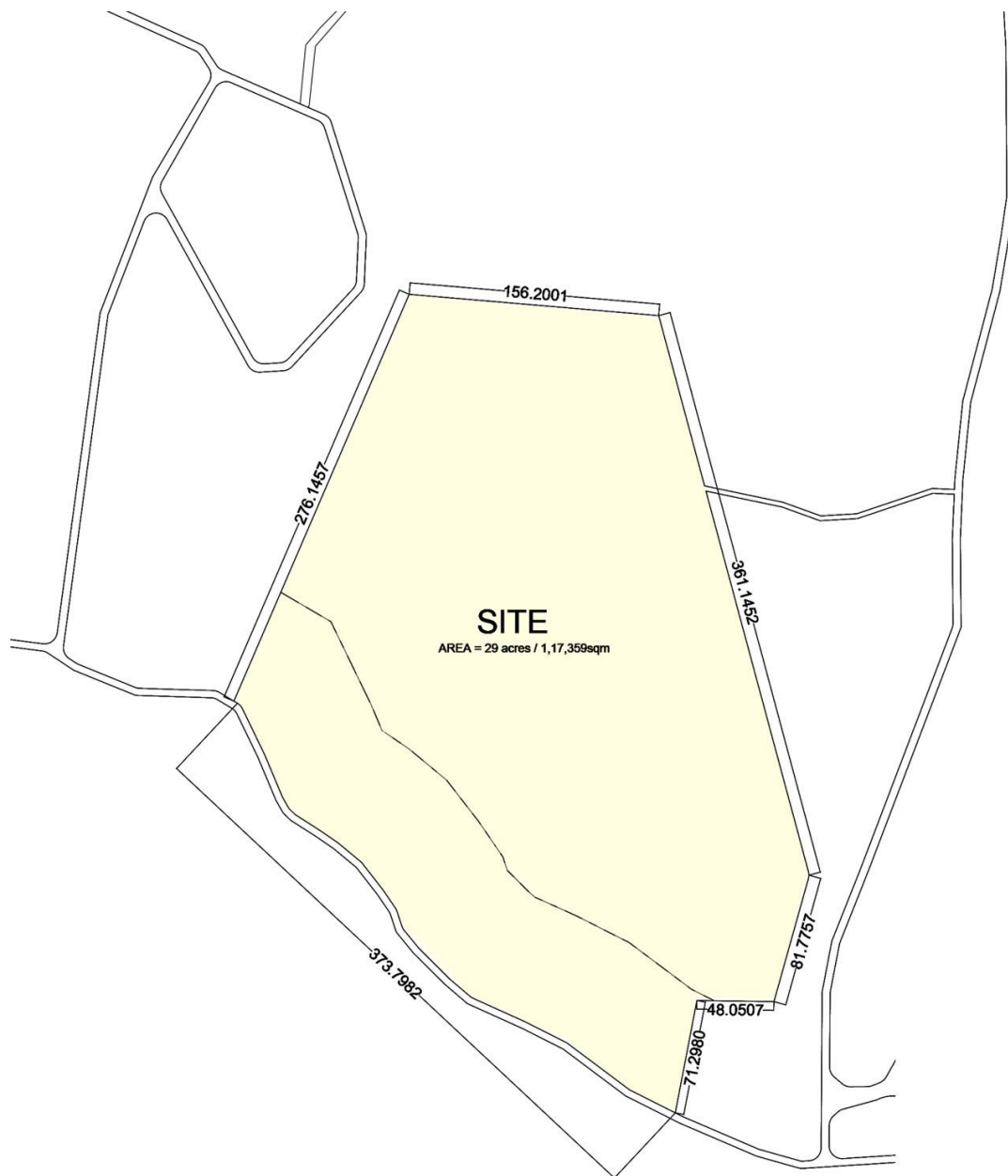


Figure 5. 3 Site dimension

5.1.3. Why this site

- To promote tourism near the site
- To enhance economy growth of the place for a well-developed area.
- There are many tourist areas near the site but now the tourist rate has dropped down due to the lack of hospitality
- There are small mandapam for the wedding near the site but with the experience of the beach and view there are no resort near the site where people near the site demand for nice wedding ceremony hall .

5.1.4. Accessibility

It is located 16 km from Nagercoil town and approximately 75 km from the Trivandrum International Airport and 121 km from Tuticorin Airport. Site has a connection with the state highway which connects to Nagercoil, Kanyakumari and Kolachal. Site has access from all four sides.



Figure 5. 4 Accessibility to the site

5.1.5. Landmark



Figure 5. 5 Landmarks near the site

5.1.5.1. Muttom beach

Just opposite to the site Muttom beach is located which is the main tourist feature which attracts tourists to this site. Many artists come here to paint a plein air art, since it has a beautiful sunrise & sunset point.

5.1.5.2. Light house

Government has started to develop muttom by developing the area around lighthouse . They have done a beautiful landscaping now the local people have started visiting the place frequently contains children's park and a view point.

5.1.5.3. All saints church muttom and Muttom harbour

All saints church muttom it is a acclaimed visitor destination, situated on the shores of the magnificent blue water of the bay of Bengal .

5.1.6. Chronology and Land use

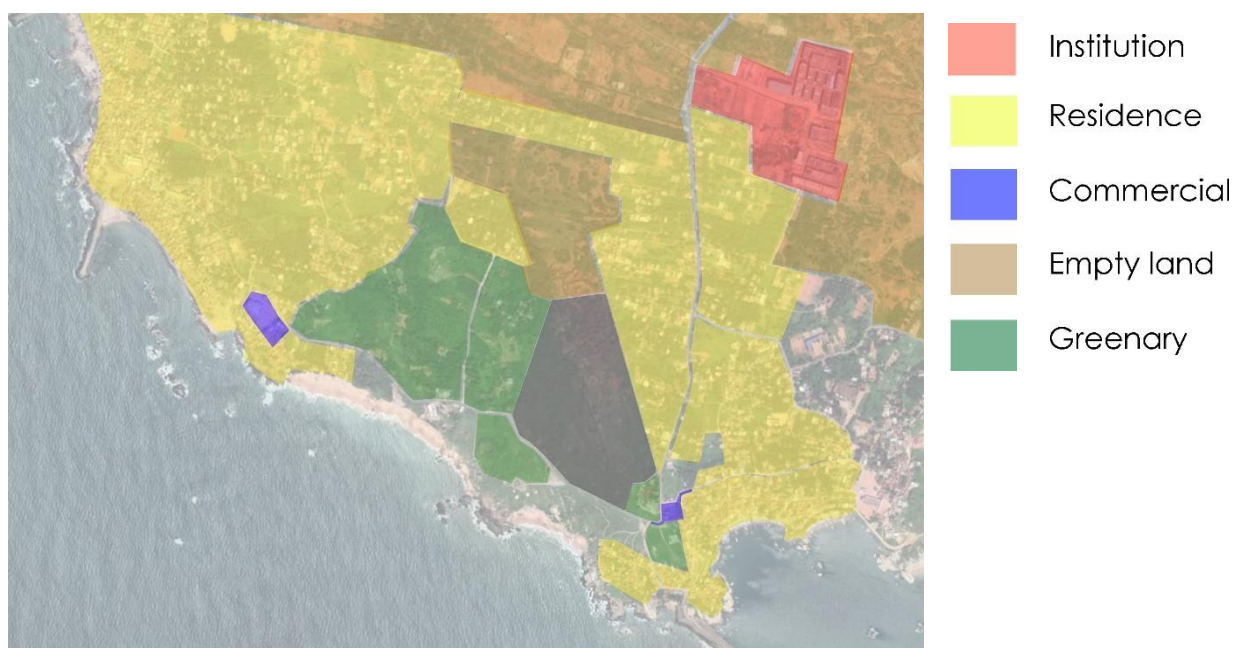


Figure 5. 6 Landuse map

It's a residential zone with the greenery towards the west and land behind the site towards the east it's a residential zone .

5.1.7. Category -III (CRZ III)

According to coastal zone management plan Tamil Nadu the site is under CRZ-III These will include coastal zone in the rural areas (developed and undeveloped) and also areas within Municipal limits or in other legally designated urban areas which are not substantially built up.

i) The area up to 200 meters from the HTL is to be earmarked as 'No Development Zone'. No construction shall be permitted within this zone except for repairs of existing authorized structures not exceeding existing FSI, existing plinth area and

- (ii) Development of vacant plots between 200 and 500 meters of High Tide Line in designated areas of CRZ-III with prior approval of Ministry of Environment and Forests (MEF) permitted for construction of hotels/beach resorts for temporary occupation of tourists/visitors subject to the conditions as stipulated in the guidelines at Annexure-II.
- (iii) Construction/reconstruction of dwelling units between 200 and 500 meters of the HTL permitted so long it is within the ambit of traditional rights and customary uses such as existing fishing villages and geoethanes. Building permission for such construction/reconstruction will be subject to the conditions that the total number of dwelling unit shall not be more than twice the number of existing units, total covered area on all floors shall not exceed 33 percent of the plot size; the overall height of construction shall not exceed 9 meters and construction shall not be more than 2 floors (ground floor plus one floor).
- (iv) Reconstruction/alterations of an existing authorized building permitted subject to (i) to (iii) above.

5.1.8. Population

5.1.8.1. Population of Kanyakumari district

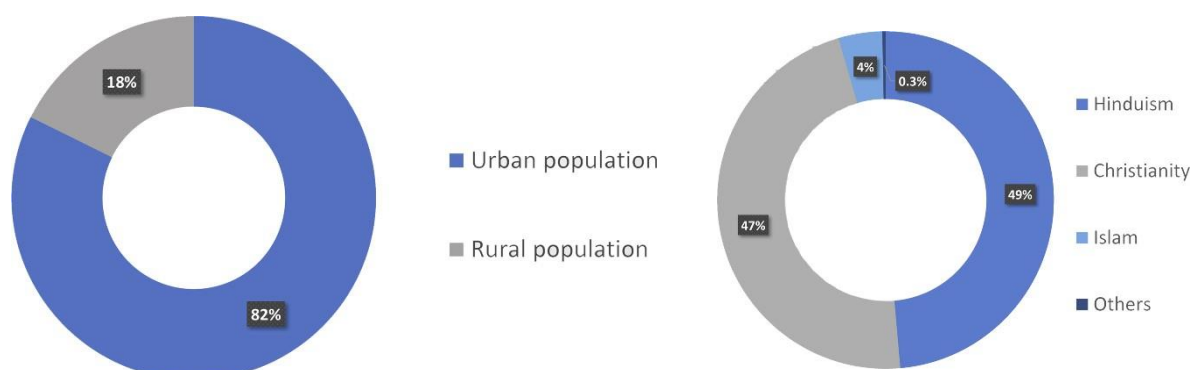


Figure 5.8 Population

Table 5.1 Population chart for Kanyakumari

Particular	value
Area	1684sqkm
population	18,70,374
urban population	82.33%
Decadal growth rate	11.60%
Male population	9,26,345
Female population	9,44,029
Density of population(person per sqm)	1111
Literacy	91.75%
Male literacy	93.65%
Female literacy	89.90%

Kanyakumari district has recorded second largest

urban population of 82.33% to the total population among the districts in Tamil Nadu and geographically spread over an area of 1684 Sqm .

In Muttom more than 99% of

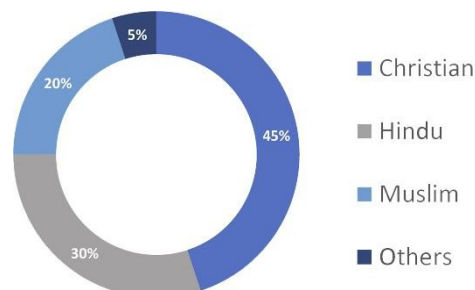
the village are Christians and they do a variety of jobs. Majority of the people are fishermen who do fishing related works. Most of the people are educated at least to the school level. As most of the residents are Catholics, it has a catholic administration committee which is elected democratically and headed by the parish priest of the All Saints Church. Floating population in muttom is 4000 per month.

5.1.8.2. Population of Muttom

Table 5. 2 Population chart for muttom

Village name	Total households	Total population	Total male	Total female	Sex ratio
Muttom	16,239	65,282	32,902	32,380	1019

	Literate	Illiterate
Population	53,213	12,069
Male	27,169	5,733
Female	26,044	6,336



Tourist Arrival during Plan Period (in lakh)																			
Sl No	Name of the Centres	2014			2015			2016			2017			2018			2019		
		D	F	T	D	F	T	D	F	T	D	F	T	D	F	T	D	F	T
1	Chennai	204.64	13.15	217.79	221.00	14.13	235.13	238.63	15.26	253.89	257.66	16.42	274.08	278.22	17.73	295.95	300.48	19.15	319.63
2	Chidambaram	9.83	0.81	10.64	10.62	0.87	11.49	11.44	0.95	12.39	12.36	1.03	13.39	13.35	1.13	14.48	14.42	1.22	15.64
3	Coimbatore	22.81	0.12	22.93	24.63	0.12	24.75	26.60	0.14	26.74	28.73	0.15	28.88	31.03	0.17	31.20	33.51	0.18	33.69
4	Coonoor	3.81	0.00	3.81	4.11	0.00	4.11	4.44	0.00	4.44	4.88	0.00	4.88	5.27	0.00	5.27	5.69	0.00	5.69
5	Courtallam	19.21	0.04	19.25	20.75	0.04	20.79	22.41	0.04	22.45	24.20	0.04	24.24	26.14	0.05	26.19	28.23	0.05	28.28
6	Elagiri	9.00	0.00	9.00	9.72	0.00	9.72	10.50	0.00	10.50	11.34	0.00	11.34	12.25	0.00	12.25	13.23	0.00	13.23
7	Hogenakkal	1.57	0.00	1.57	1.70	0.00	1.70	1.84	0.00	1.84	1.99	0.00	1.99	2.15	0.00	2.15	2.23	0.00	2.23
8	Kancheepuram	24.89	1.11	26.00	26.88	1.20	28.08	29.03	1.31	30.34	31.35	1.41	32.76	33.86	1.52	35.38	36.57	1.64	38.21
9	Kanniyakumari	43.50	1.14	44.64	46.98	1.23	48.21	50.74	1.33	52.07	54.80	1.44	56.24	59.18	1.56	60.74	63.91	1.68	65.59
10	Kodaikanal	68.81	1.59	70.40	74.31	1.72	76.03	80.25	1.86	82.11	86.67	2.01	88.68	93.60	2.17	95.77	101.09	2.34	103.43
11	Kumbakonam	12.02	0.04	12.06	12.98	0.04	13.02	14.02	0.04	14.06	15.14	0.04	15.18	16.35	0.04	16.39	17.66	0.04	17.70

Source : Results of Market Research by the CES.

D - Domestic
F - Foreign
T - Total

5.1.9. Tourism in Kanyakumari

Muttom sports a beautiful and tidy beach. Huge rocks standing at either sides of the beach give the beach a pristine look. Since the beach is usually less crowded, it makes an excellent shooting spot for filmmakers and a number of south bound films have already been shot in the village. The terrain of this village and its surroundings is hilly and from a height one can see an idyllic view of the place. One can watch both the sunrise and sunset from here. Kanyakumari is a coastal town in the state of Tamil Nadu .It is the southernmost point of peninsular India and meeting point of three oceans the bay of Bengal ,the Arabian sea and the Indian ocean . It is famous for its beautiful views of sunrise and sunset over the waters . Due to its proximity to the sea ,Kanyakumari enjoys a pleasant climate and can be visited through out the year. Best seasons are October and march .Muttom is a lovely spot for a picnic more of local people visit here offend , foreign tourism has reduced now due to lack of hospitality there is all saint church in the Portuguese of architecture and a 100 year old lighthouse . There are several



beaches

found



in muttom.



5.1.10. Views



Figure 5. 9 Tourist place near the site



onsite and offsite

1.View from muttom beach entry

2. View from the site towards south-west direction (Muttom beach)



3. Existing structure at the site . Guest house which was built 2008 but now it is completely damaged



4. View from the lighthouse



5. View from the site

Figure 5. 10 Views on -site and off - site

5.1.11. Material study

Due to the sloping shape of these roofs, the centre is high while the walls can remain low. This works well in ventilating the spaces as the hot air raises up and is ventilated through clay tiled roof keeping the lower part of the room relatively



Figure 5. 11 Locally available material for construction

The locally available material are lattice stone and brick for walls and sloped roof with mangalore tile or terracotta tile is used.

5.2. SITE STUDY

Location : Muttom, Kanyakumari District

Plot Number: 285 & 287

Site Area : 29.89 acres

Proposed Built-up Area : 8317 sq.mt.

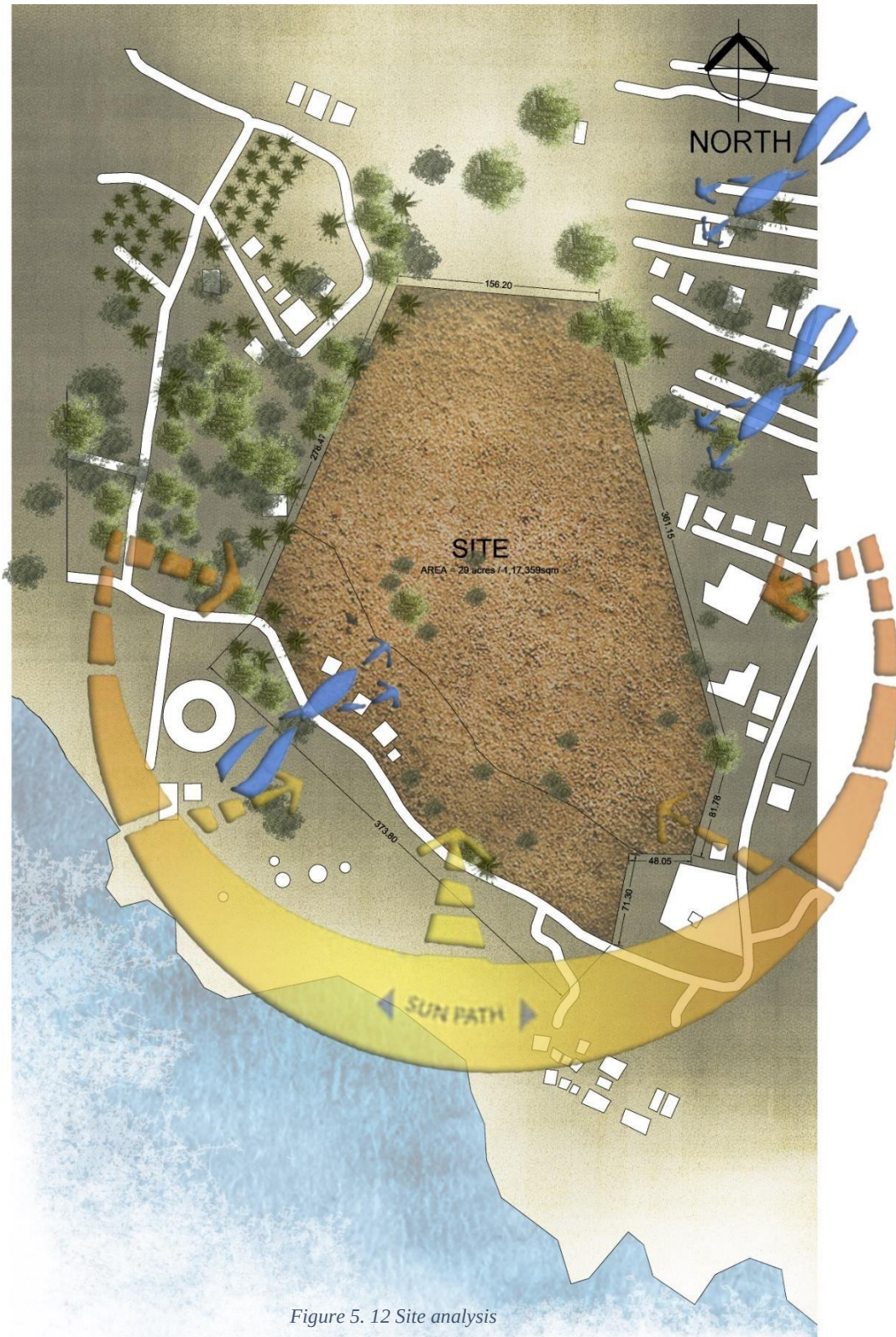


Figure 5. 12 Site analysis

5.2.1. Climate

The climate is tropical in Kanyakumari .The fact is that the sun is lower in the sky in winter than in summer allows us to plan & construct buildings that capture free heat in winter and reject the heat in summer. Since the site is south facing the orientation of the building maximum radiation during winter ,which is preferable . As south building facade has advantage of receiving more solar radiation during winter than that of receiving during summer .A small overhanging or curtain cut off the direct solar penetration during summer and allows it during winter. This is a beneficial aspect not available on any other facade.

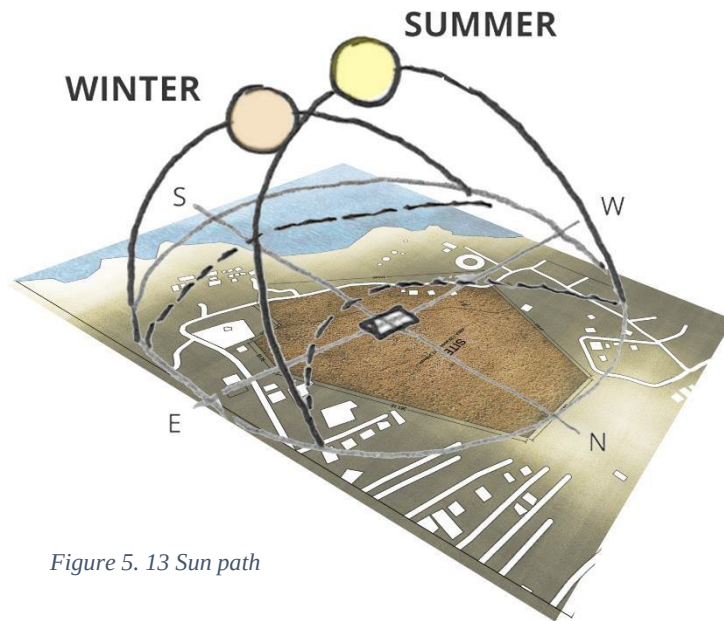


Figure 5. 13 Sun path

- Deep verandas or sunshades in the south & west facades would effectively exclude these strong evening rays.
- Trees and tall shrubs should be planted towards south & west of the site to protect the inmates from the afternoon heat and

to provide them with oxygen • The open water bodies in gardens should be kept in the north-east to enable the morning UV rays of the sunlight to destroy germs & bacteria .

- Windows & doors in the East to allow the Sun's UV rays to penetrate into the building in the mornings.

5.2.2. Temperature

The mean monthly maximum temperature ranges from 34.1° C in March, 34.9° C in April and 35.2° C in May. Mean monthly minimum temperature ranges from 21.8°C in December, 21.5 °C in January and 21.6° C in February. Summer wind from west south west to north-east and monsoon wind from north-east to south west.

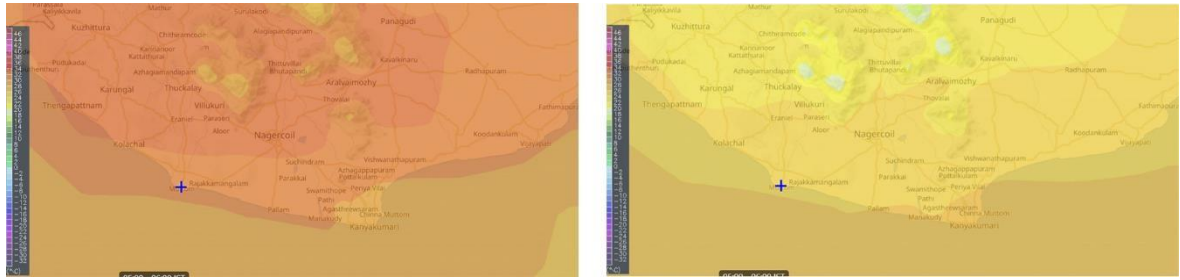


Figure 5. 14 Temperature

5.2.3. Contour

Currently the site is barren and vacant. The site drains to the Arabian Sea. The highest portion of the site is on the north and the lowest is towards the south where the water drains to the sea.

Water source = Underground water

Rainfall: The average annual rainfall at Kanyakumari is 61.3 mm, most of which is received in the months of October and November

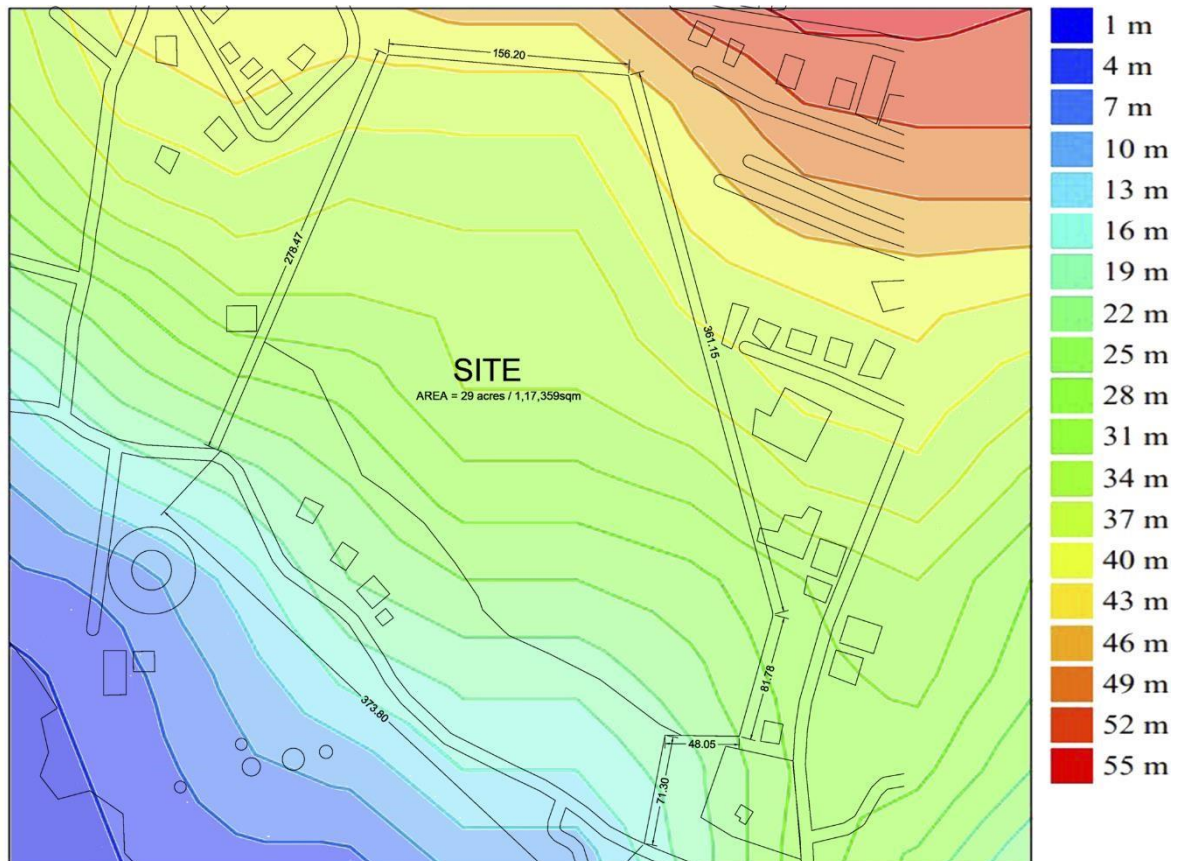


Figure 5. 15 Contour

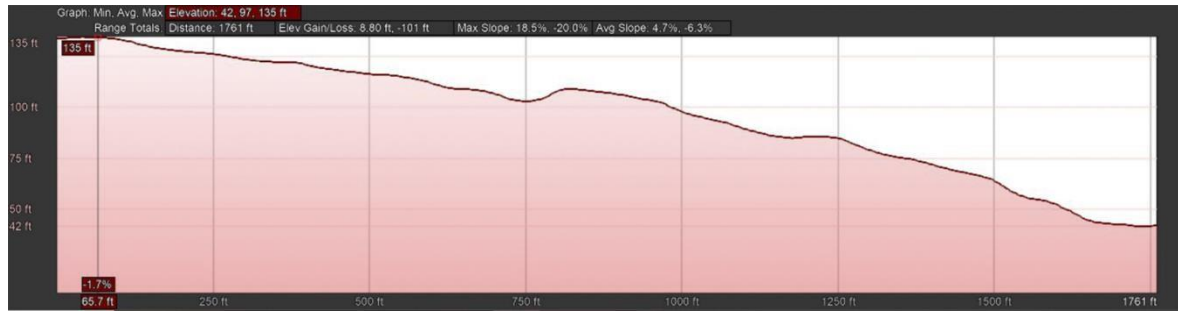


Figure 5.16 Contour section

5.2.4. Shadow analysis

5.2.4.1. During April and may month (summer)

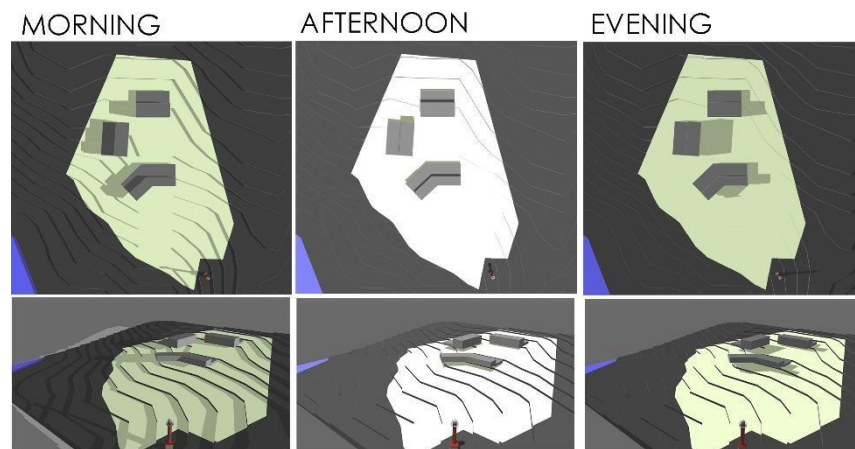


Figure 5.17 Shadow analysis during April and may month

In option 1 & 2 the buildings are facing the direct axis so one particular side receives particular ray and not much views are created. In 3 option a lite L shaped profile gives more views and sunset and sun rise can be seen from one point.

5.2.4.2. During November and December month (Winter)

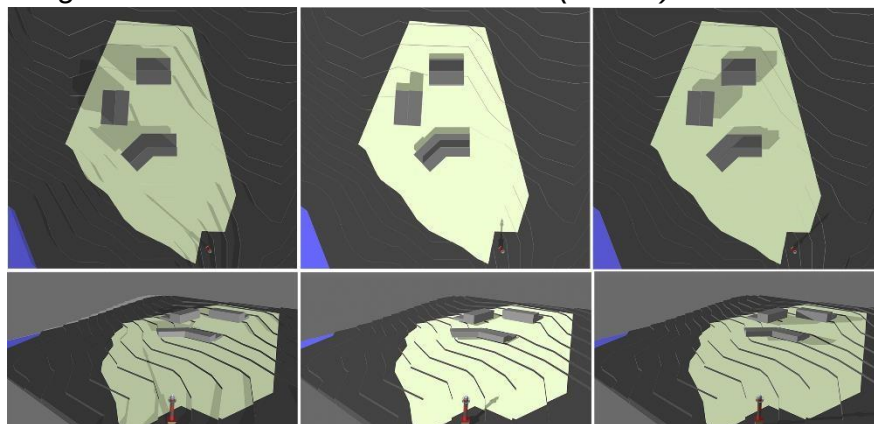


Figure 5.18 Shadow analysis during November and December month

5.2.5. Water flow

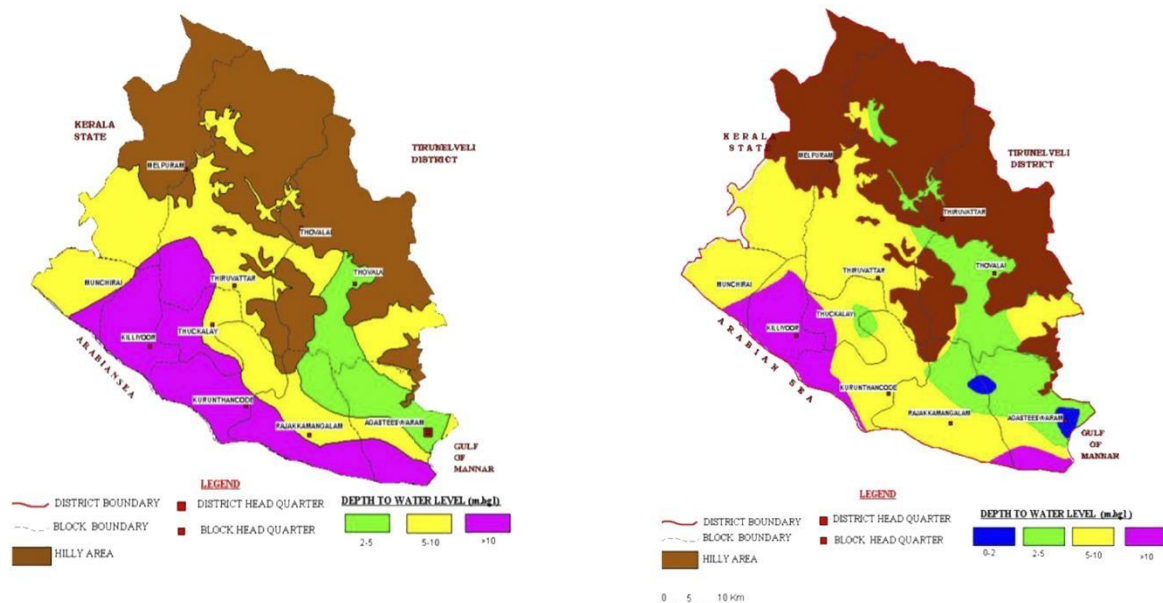


Figure 5. 19 Water supply to the site

The project site is located on the Arabian Sea coast. Most of the study area depend groundwater for the irrigation and day to day life. The groundwater level of the study area is depending upon the rainfall infiltration and seepage of water from surface water bodies. The nearby water bodies include Azhathankarai Uppalam, Periyakulam, Colachel Uppalam. Other water source includes small and large ponds, public wells, etc.

5.2.6. Soil type



Figure 5. 20 Soil type

Red loam soil is the most prevalent soil type of the district. The soil is enriched in clay content and plant nutrients. It is suited for a large variety of crops like coconut, paddy, pepper, vegetables etc.

Sr. No.	Parameter	Unit	S1	S2
1.	Soil Type	-	Sandy clay	Sandy clay
2.	Colour	-	Light Brown	Light Brown

5.2.7. Vegetation

The common species which were found in the project area were coconut tree, palm tree, jack fruit, Plantain tree. Shrubs Jasmin, lilies, rose etc



Figure 5. 21 Types of vegetation

5.2.8. Others

Drinking water is not a problem here as all the villages and towns have the facility of tap water and well water. Some villages also have hand pump and tube well as drinking water source. The proportion of electrified villages for the study area is impressive. All villages and town are enjoying power supply facility. Banking facilities are present in the urban and rural area.

5.2.9. SWOT Analysis

Strength

- Site near to the beach which gives nice view point
- Perfect site for destination wedding since there is no other resort nearby and no hall or mandapams even have a experience of the sea.
- Other than wedding season also site will be active with tourists.
- Noise free zone
- Contour (Views can be provided easily without any obstruction)

Weakness

- Sloped site
- Accessibility need to be developed inside site
- Difficult in connecting the places according to the proximity since it's a large site area

Opportunity

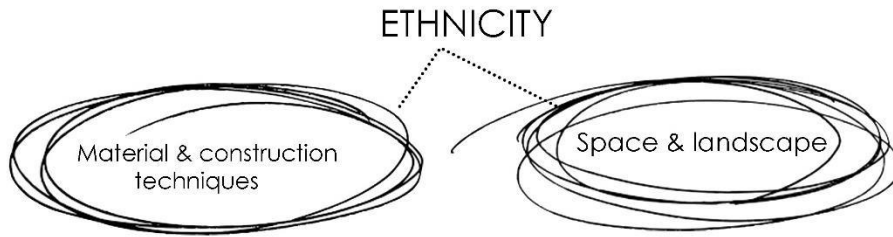
- Can give complete experience of beach
- Site will be occupied all the time since it is for both national and international visitors for both tourism and destination wedding celebration.

- Tourism development area

Threat

- There is a road between site and the beach
- Coastal regulation applied.

6. CONCEPT



Traditional architecture in contemporary composition



Sloping shape of these roofs, the centre is high while the walls can remain low. This works well in ventilating the spaces as the hot air raises up and is ventilated through clay tiled roof keeping the lower part of the room relatively cool. Usually design of houses in rural areas has the sloped roof with attic space for ventilation and other purposes like to collect rainfall etc. Having the same design elements but representing it in a modern and contemporary way is achieved by satisfying its purposes.

Creating views & Ventilation

For a beach resort the primary view point is the **beach** and next preferred for the view might be **frontage with the beautiful landscape** or view of some other facilities such as a **artificial lake, open spaces etc**

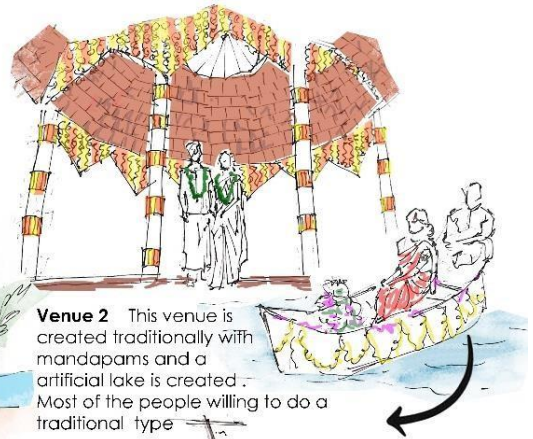


Diverse wedding culture in one place



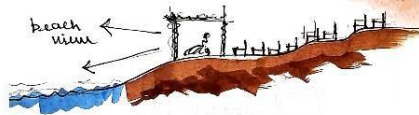
Venue 1 with the beach view where most of the christian religion prefer this venue for there engagement or wedding reception or etc with the beach as a beautiful backdrop.

A lanscape element can also be incorporated for the photoshoot etc.This can also be used as place where tourist people relax (multi-use space)

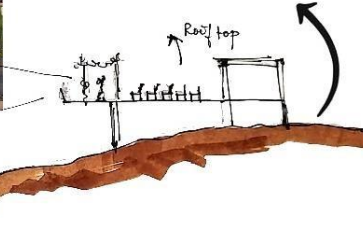


Venue 2 This venue is created traditionally with mandapams and a artificial lake is created. Most of the people willing to do a traditional type

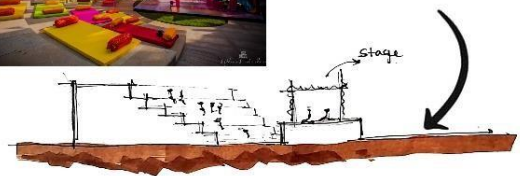
Kerala style wedding with a lake view .Mostly hindus will prefer this venue



Venue 3 Roof top venue with the arial view of the full site and the beach. Mostly like party , celebra- tion can be done here.



Venue 4 Its a amphitheater that can be multifunctional here more of a north indian traditional function like sangeet ect, can be done.



Cross ventilation

It is the most common ventilation pattern used in coastal region. Cross ventilation is the easiest, most common, and often least expensive form of passive cooling and ventilation.

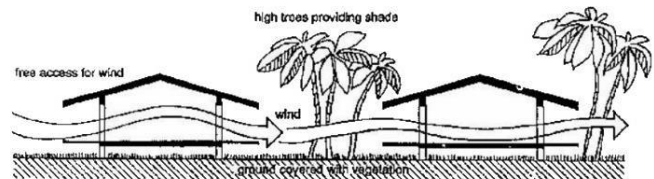


- Louver windows provide free passage of air and sufficient light even when closed ,provide sufficient privacy and also protection against excessive daylight and glare inside buildings with- out in any way affecting ventilation. (It can be customised and can be con- trolled)



- Louver windows can be opened to nearly the full width of the window. this creates maximum air flow, in or out.

- The blades can be angled to control the air flow.
- Louver is energy efficient as it uses the natural ventilation to reduce your heating and cooling cost.



An unshaded pavements should be avoided as far as possible because air should not be allowed to pass oversuch hotsurfaces before reaching buildings . High trees with wide, shading crowns provide significant protec- tion solar radiation and should be incorporated as much as possible into any landscape planning.

High bushes, however, should be avoided near buildings because the space between the ground vegetation and the high crowns of the trees should remain open, providing free access for the wind at the level of the living spaces.

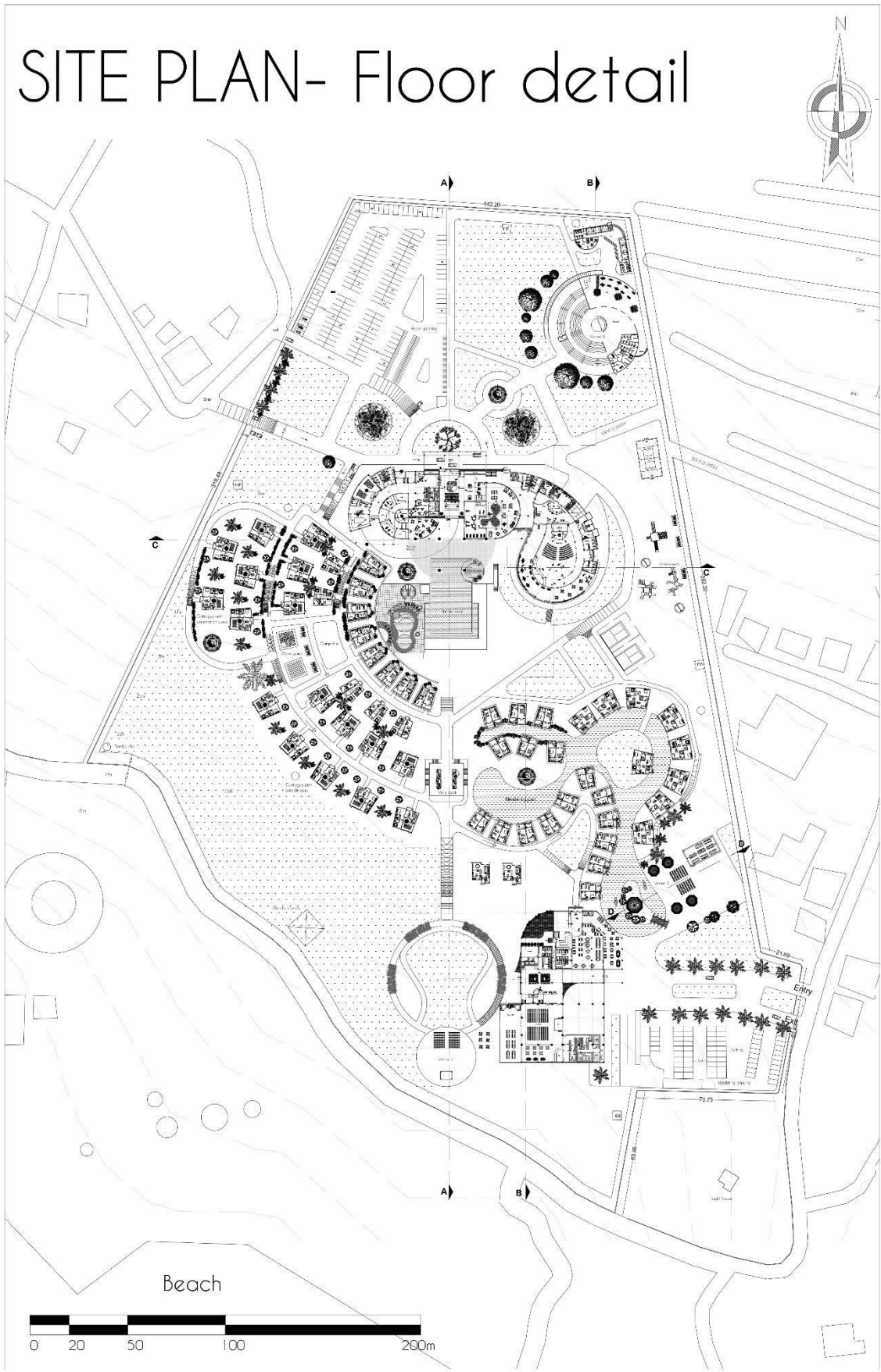
7. DESIGN AND PLANNING

7.1. SITE PLAN - Site area = 30acres Plot coverage = 15.156Sqm = 3acres

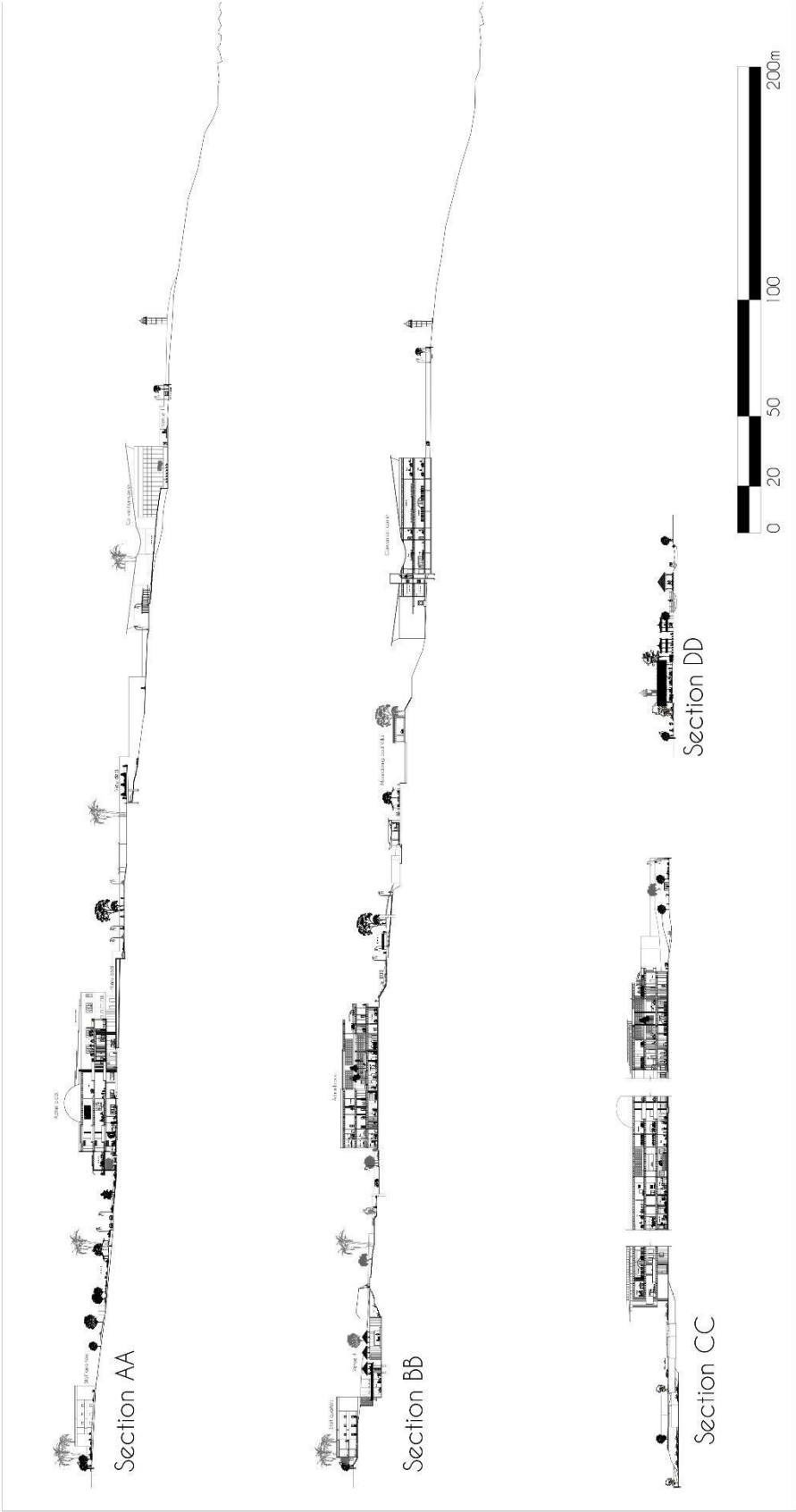
SITE PLAN- Roof detail



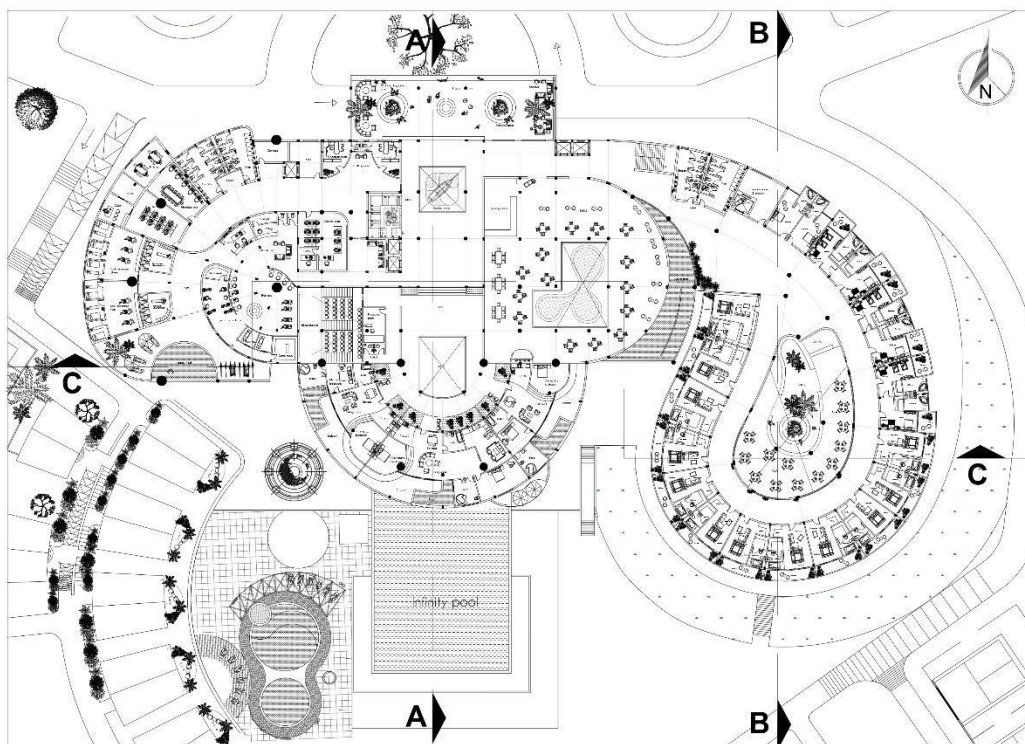
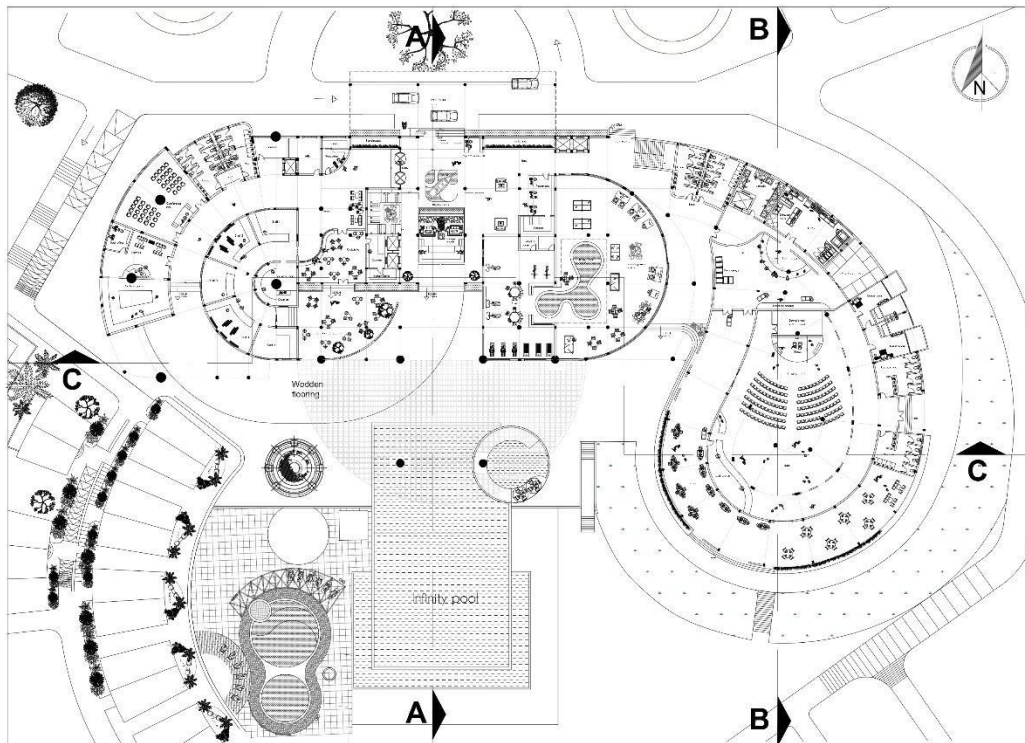
7.2. SITE PLAN – Floor data

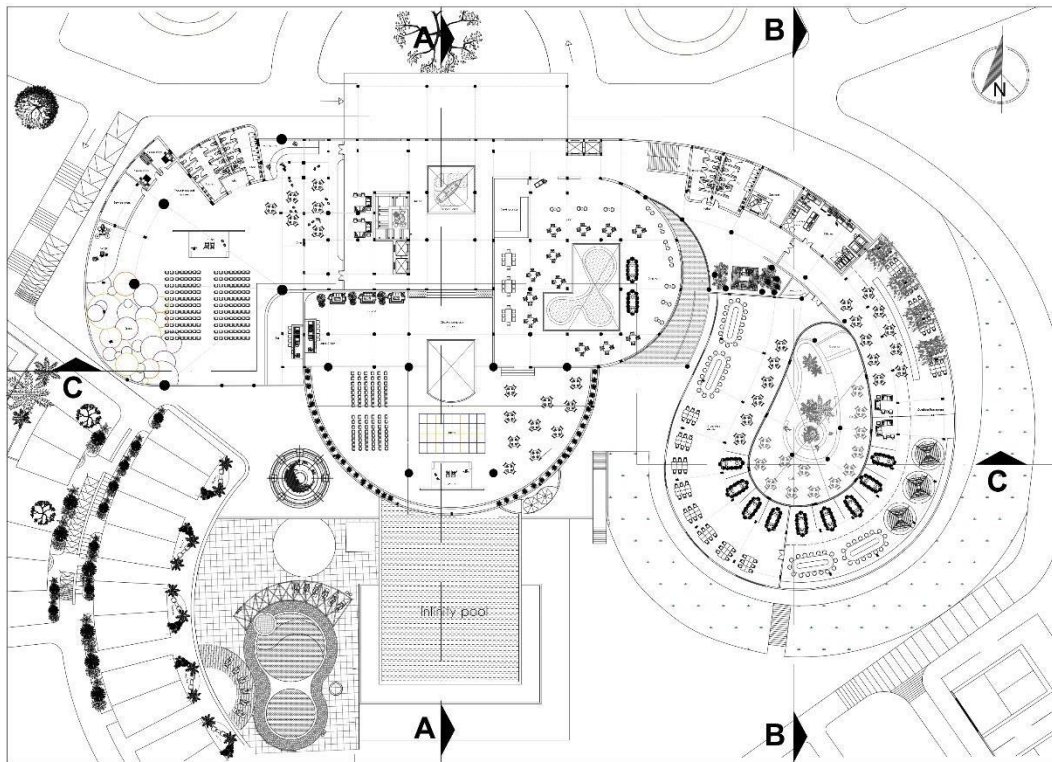


7.3. SITE SECTION

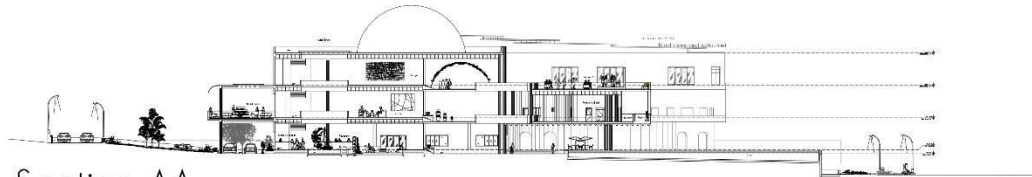
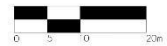


7.4. ADMIN BLOCK

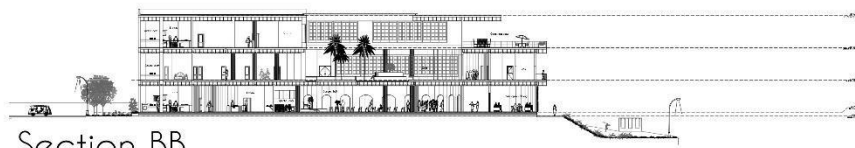




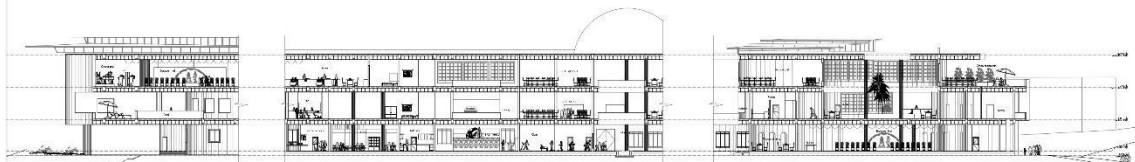
Second floor plan Area = 6155 Sqm



Section AA

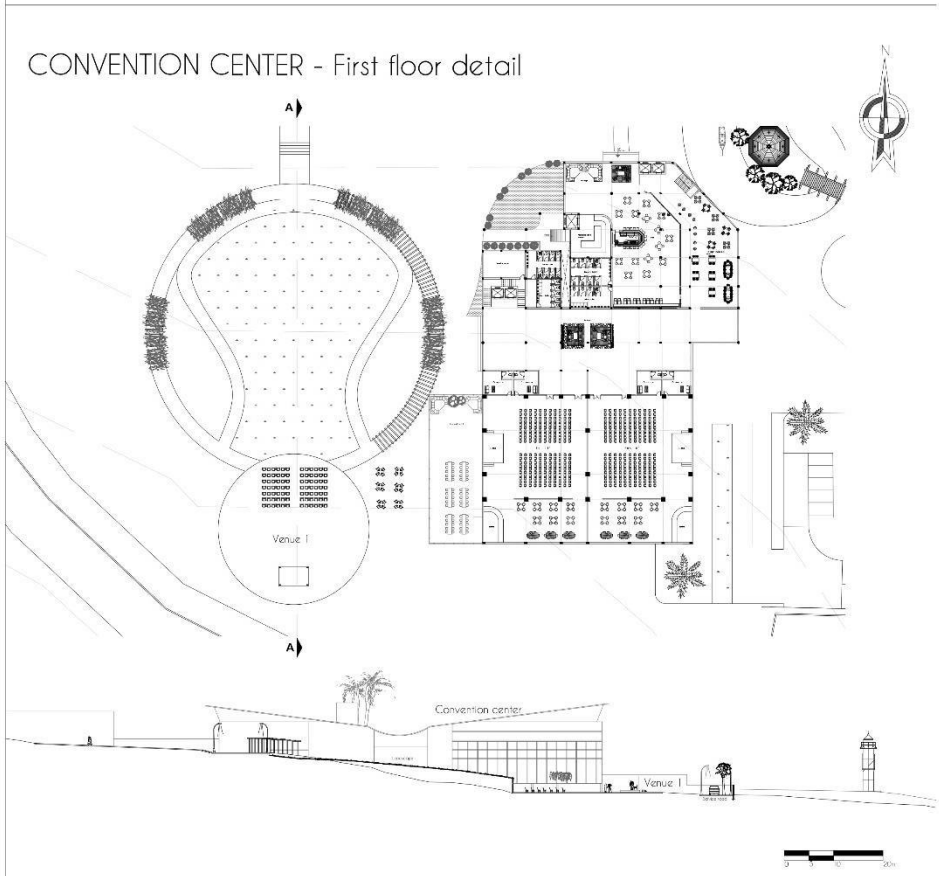
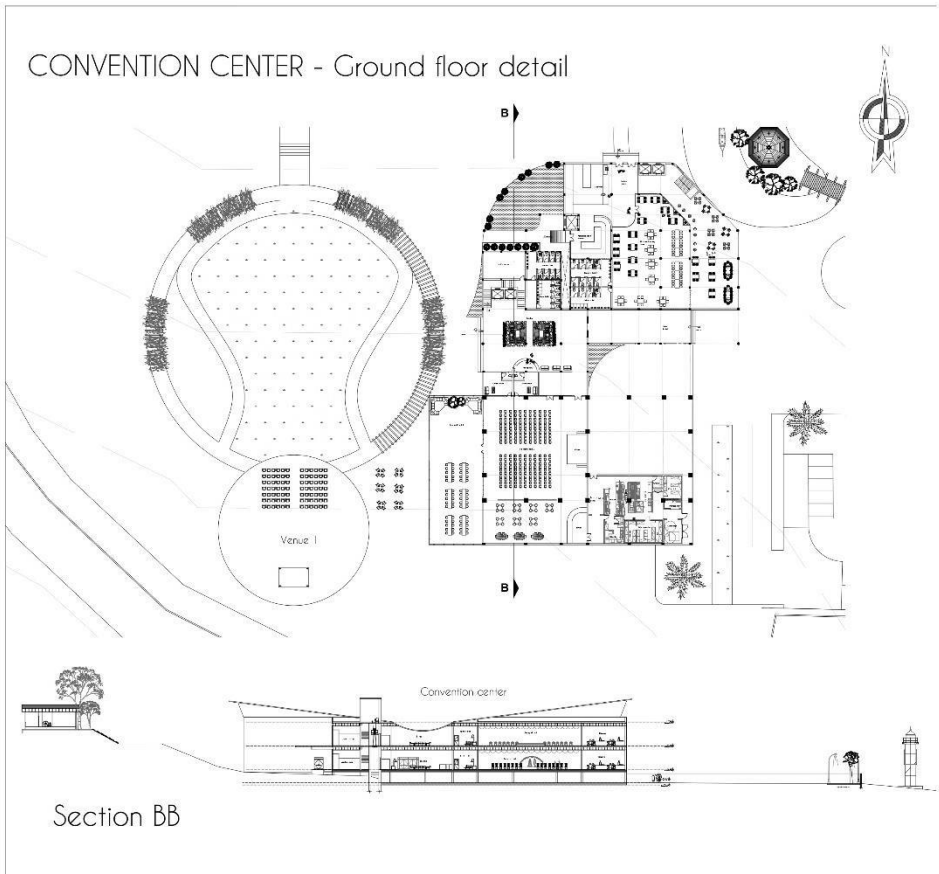


Section BB

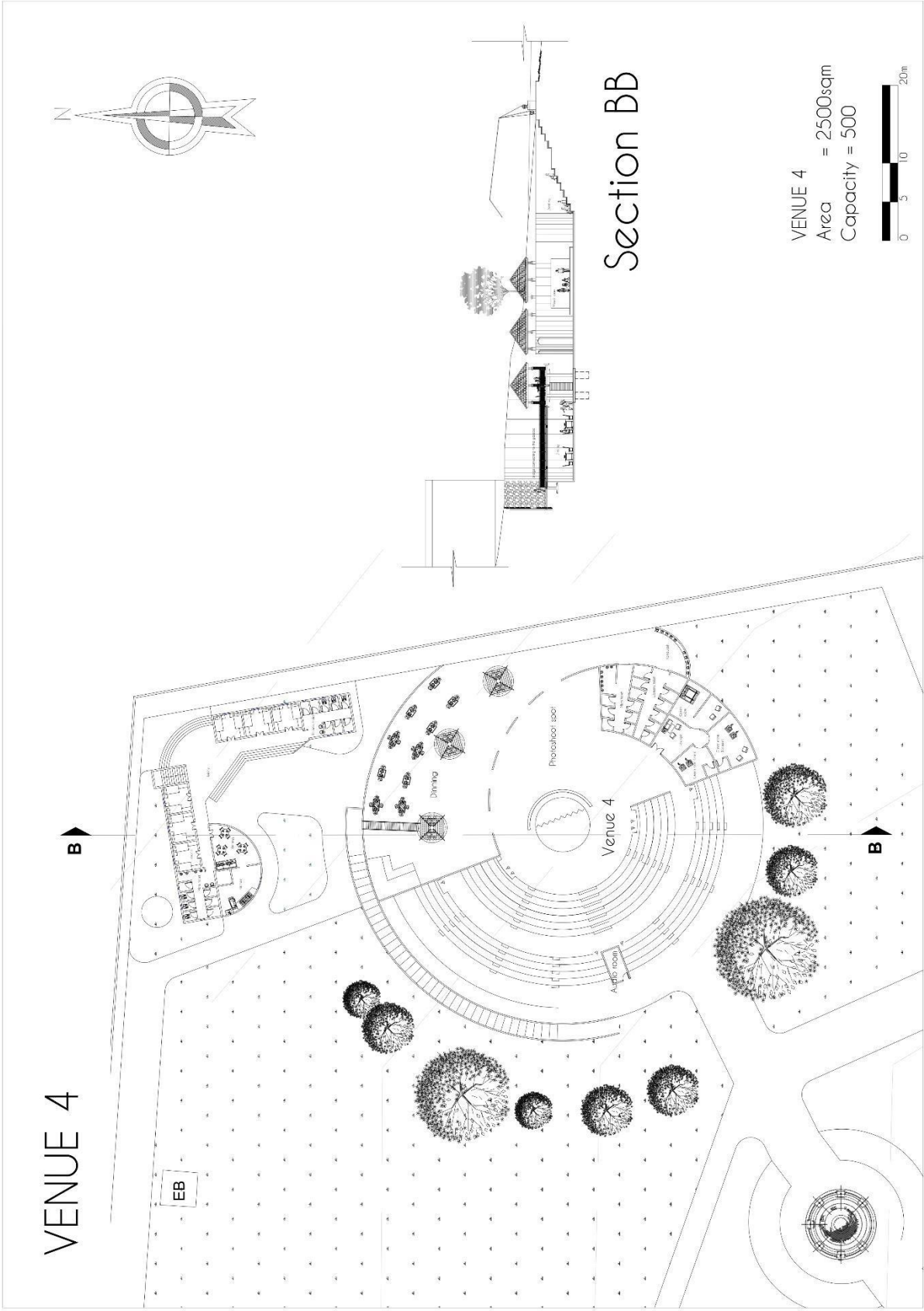


Section CC

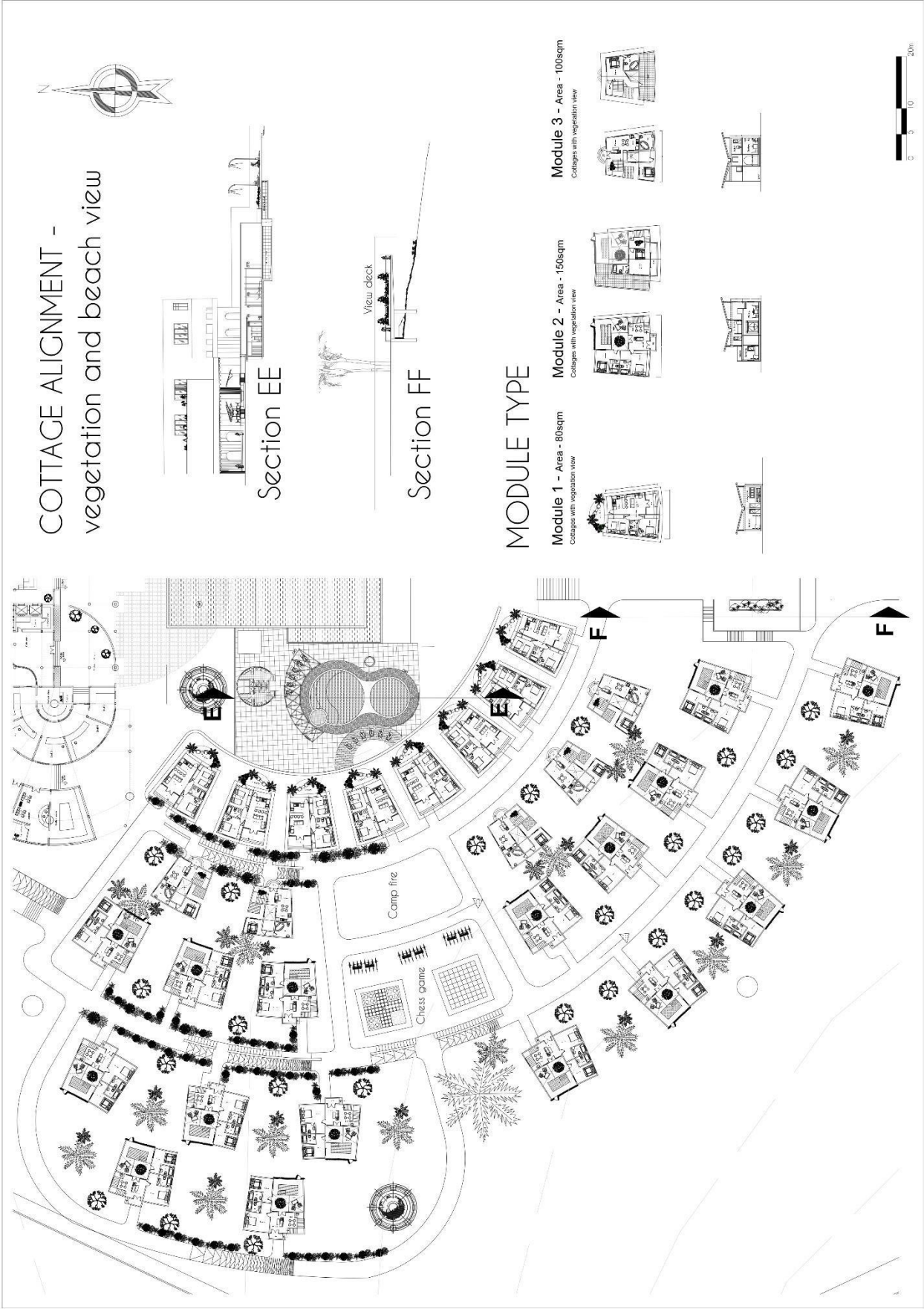
7.5. CONVENTION CENTER



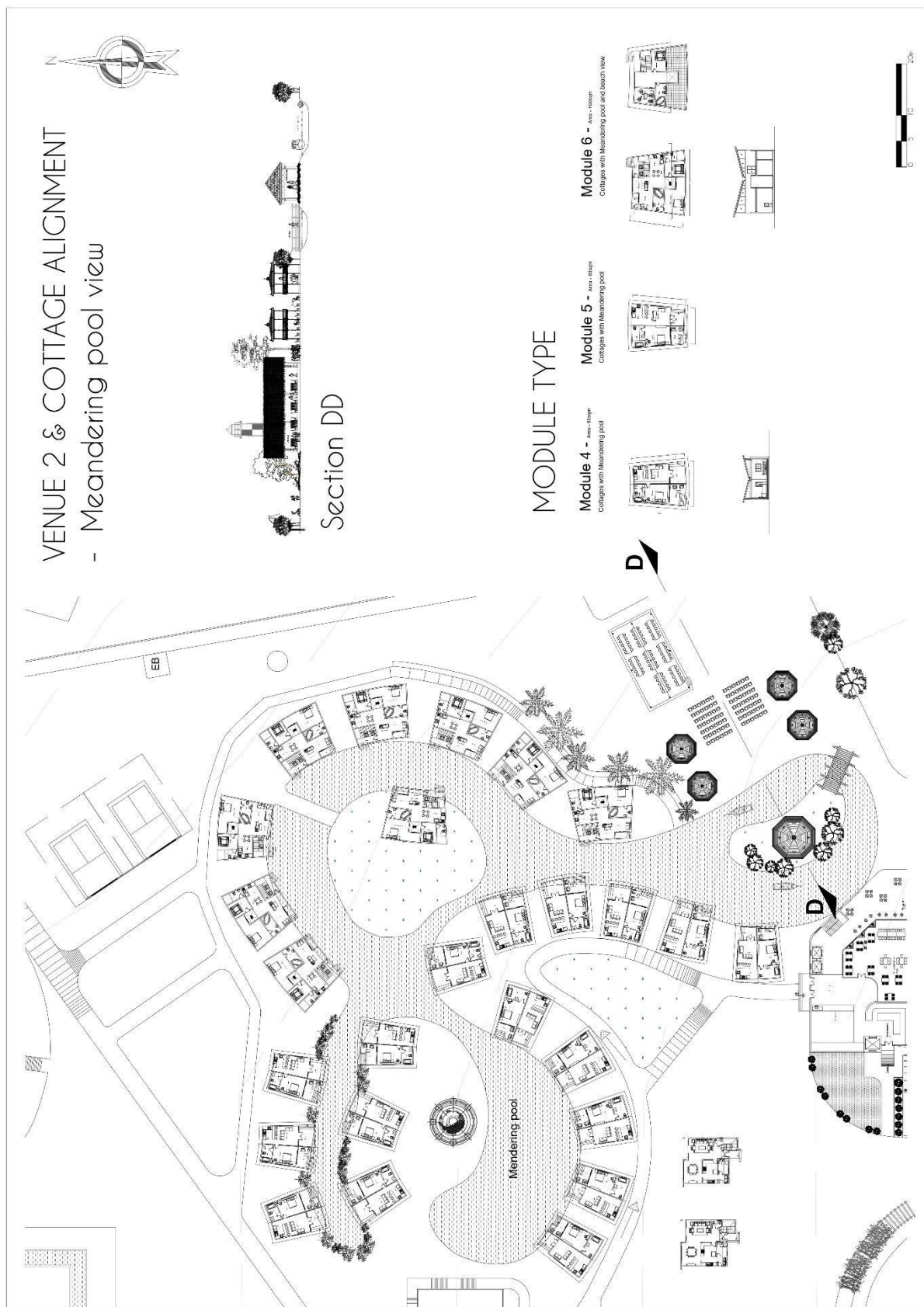
7.6 VENUE 4



7.7. COTTAGE ALLIGMENT



7.8. VENUE 2 & COTTAGE ALLIGMENT



8.CONCLUSION

This design has engraved all the natural features to attract the common people well as external tourist. The project is multifunctional with cottages, restaurants, conference halls, banquet halls as well as destination wedding venues which follows cultural practices of several states. The environment is fun filled and landscape both artificial and natural adds on a great view for the whole site. The destination wedding concept is becoming viral these days and will add in great value to the site and location. Incorporating the whole design with respect to the contour and designing landscapes accordingly was a major challenge. But using the natural conditions of contour and having level differences provides natural view of the sea from any part of the site.

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- SITE ANALYSIS BY Edward.T.White
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