



THESIS REPORT ON  
**“CONVENTION CENTRE (BODHGAYA) “**

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE  
DEGREE OF:

**BACHELOR OF ARCHITECTURE**  
BY  
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THESIS GUIDE  
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**TO THE**  
**SCHOOL OF ARCHITECTURE AND PLANNING**  
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**LUCKNOW.**

**SCHOOL OF ARCHITECTURE AND PLANNING  
BABU BANARASI DAS UNIVERSITY, LUCKNOW (U.P.).**

**CERTIFICATE**

I hereby recommend that the thesis entitled“CONVENTION CENTRE)-----“  
under the supervision, is the bonafide work of the students and can be accepted as  
partial fulfillment of the requirement for the degree of Bachelor’s degree in  
architecture, school of Architecture and Planning, BBDU, Lucknow.

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My parents, saying thanks is nothing, just accept this as a tribute to what you have made me. It would not have been possible without my My friend- KAMRAN AHMAD and DIVYANSH MISHRA. Though words hardly express the true emotions, still I would like to thank all my near and dear ones who helped and guided

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# INTRODUCTION

The development of convention centres, are increasingly being acknowledged for their role in stimulating local economies and improving the quality of life of a nation's citizens, conference and business tourism is hence a very important sector of the global tourism industry. The booming convention market necessitates creation of not merely a convention centre but a convention destination with exhibition facilities, shopping plazas, clusters of hotels backward forward linkages with international airports, mass transit systems and adequate parking.

- A convention is a gathering of individuals who meet at an arranged place and time to discuss or engage in some common interest.
- Conventions are often planned and coordinated by professional meeting and convention planners, generally by staff of the convention's hosting company.
- Most large cities will have a convention centre dedicated to hosting such events. The term MICE - Meetings Incentives Conventions and Exhibitions is widely used in Asia as a description of the industry.
- There are various types of conventions ; the most common conventions are based upon industry, profession and fandom.

# CONVENTION CENTER

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## **Difference between Business hotel and convention hotel**

Business hotels are a resource, which are only used to complement the work of the offices in the city.

They provide lodgings for business travelers, which come to your city's offices to negotiate deals Unlike other business hotels the convention hotel has a rather communal life in space, organizations and dimensions

# Justification of the Topic

Nowadays the rapid development of megacities and metro cities are the cause of the growth of population, industries and business sectors. There is a need to expose the activities and creativities in front of people across the globe to promote new trends and cultures. As a result a space is required to gather people where this kind of events can be taken place. This is the concept of a convention centre where people can gather to share and earn various experiences.

These centres emphasizes both public and private events. Encourages tourism developments, business developments, cultural activities, social gathering and amusements. Objectives To create a place for social and cultural gathering. To create a venue for exhibition and interaction. To create interactive spaces and landscaping to generate public interest.

## Scope of Work

To evolve a design with forms and spaces with distinct architectural characteristics focusing on space utilization and functions . This project deals with the design which is well adoptable in terms of typology, function and climatic conditions. The project will be design oriented and detailing of structural elements and services detailing are come under the limitations

Convention Centers	Hotels & Resorts
Advantages	
<ul style="list-style-type: none"> <li>• Designed especially to serve the purpose</li> <li>• Usually operated by professionals</li> <li>• Equipped to host any kind of MICE event</li> <li>• Easier to move exhibits in-out</li> <li>• Cheaper booth construction</li> <li>• Adequate parking spaces</li> </ul>	<ul style="list-style-type: none"> <li>• Accommodation rooms</li> <li>• Cheaper facilities rental (off-peak season)</li> <li>• Higher attendee capture rate</li> <li>• Usually higher quality catering service</li> <li>• Better overall atmosphere</li> </ul>
Disadvantages	
<ul style="list-style-type: none"> <li>• No accommodation rooms</li> <li>• Layouts difficult to organize in old centers</li> <li>• Space may be unavailable</li> </ul>	<ul style="list-style-type: none"> <li>• Facilities not especially for MICE event</li> <li>• May lack certain amenities</li> <li>• Exhibits may be difficult to manage</li> <li>• Tedious security measures on floor</li> <li>• Limited parking spaces</li> </ul>

## • Conventions benefits :

It directly benefits the entrepreneurs in the tourism sector. It boosts the local economy. It benefits the chosen city through economic growth, and also gives greater touristic prominence to the city. It creates new jobs, such as professionals hired to host the event. It benefits professionals such as taxi drivers, hoteliers, small business owners, and boosts cultural tourism. Travellers visiting the city go to places such as galleries, museums, shows, theatres, In addition, Team Building, a focal point for the professionals attending the event, is a great way for the development and improvement of professionals in business tourism Conventions will assist in improving the qualifications of the professionals who attend these events. The attendees also get the opportunity to visit different places, thus improving and boosting the statics for tourist and local economy.

## **SITE STUDY GENERAL INTRODUCTION**

This project envisages the setting up of an International Convention Center (ICC) at Magadh University (MU) in Bodh - Gaya , Bihar, India . The convention center would be within the precincts of land owned by the Magadh University and would be operationalised on a Public - Private - Partnership (PPP) model with the help of private investors, in accordance with rules and regulations laid down by the Government of Bihar. Once operational, the convention center would house a convention facility of international standards. Closely integrated with the convention center would be accommodation of mid - market and luxury categories, and an arts and craft village. The ICC at Bodh Gaya is envisaged to be a world class convention facility at a World Heritage Site which is mostly visited by Buddhist countries such as Japan, China, Singapore, Indonesia and Sri Lanka. With a future oriented development at an attractive location in Bodh Gaya with allied quality hospitality infrastructure demands, such a facility would be cherished for a long time by the people and visitors of this holy city. Magadh University, Bodh Gaya, India

**LOCATION ANALYSIS:** Bihar, the ancient land of Buddha, has witnessed golden period of Indian history. The state has its capital at Patna, which is situated on the bank of the holy river Ganga. Bodh Gaya has been a place of supreme importance for Buddhist religion, for more than 2500 years. Magadh University, formed in 1961 by the Government of Bihar has been an important educational center at Bodh Gaya ever since. The university has a strategic location in Bodh Gaya and is only 3 - 4 kms from the Mahabodhi temple, a UNESCO - declared World Heritage Site





# **SITE ANALYSIS**

## **INTRODUCTION**

**WHAT IS A CONVENTION CENTRE?** A convention center or conference centre is a large building that is designed to hold a convention, where individuals and groups gather to promote and share common interests.

Convention centers typically offer sufficient floor area to accommodate several thousand attendees. Very large venues, suitable for major trade shows, are sometimes known as exhibition halls. Convention centers typically have at least one auditorium and may also contain concert halls, lecture halls, meeting rooms, and conference rooms. Some large resort area hotels include a convention center.

## **NEED OF CONVENTION CENTRE**

The idea behind convention centers is to bolster the local economy by attracting visitors who would otherwise spend their money elsewhere. The best measure of success is the number of hotel ,room•nights they generate.

## **WHY BODHGAYA?**

Bodhgaya is one of the most important and sacred Buddhist pilgrimage center in the world. It was here under a banyan tree, the Bodhi Tree, Gautama attained supreme knowledge to become Buddha, the Enlightened One.

## Components

## Function/Activity

### 1. ASSEMBLY SPACE



### 2. PUBLIC TOILET



### 3. AUDITORIUM



### 4. CONFERENCE ROOMS



### 5. BOARDROOMS

### 6. ANCILLARY SPACES

### 7. ASSEMBLY AND SUPPORT AREA



### 8. ACCOMMODATION SPACES



a place for gathering or meeting or conventions  
includes all sorts of spaces of convention center that actually use for purpose of meeting



The challenge is to make it safe whilst fulfilling a host of essential requirements:

- Clean
- Dispose of bodily wastes in a clean hygienic manner
- High reliability



An **auditorium** is a room built to enable an audience to hear and watch performances



For theatres, the number of auditoria (or auditoriums) is expressed as the number of **screens**.



Conference rooms are **for conference calls, board meetings, management discussions, and other major decision-making situations.**



This is a special, upgraded conference room with a fixed table, executive chairs, high level finishes, front and rear screen projections, and a private lounge or anteroom



Secondary spaces that support the main **convention halls**, administrative sections, staff rooms, etc.



provided throughout the conference core, providing opportunities for frequent informal gathering



There should be provision of pre function areas and such support functions such as conference services, audiovisuals etc.

#### PRIVATE TYPE

allow you to create and share Check-ins exclusively with a single locked team in Range. Once membership of a team is locked, only those team members will be able to view and react to Check-ins shared.

#### DORMETRY TYPE

a residence hall providing rooms for individuals or for groups usually without private baths.

#### RESIDENTIAL ACCOMMODATION FOR DELEGATES/PARTICIPANTS

applicable only if, promoters, desire to have residential accommodation <sup>13</sup>



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### Meeting facility with lodging

- hotels that include their own convention space
- accommodation and other related facilities
- Example-Hyderabad usually located adjacent to or near a hotel ad Marriott Hotel & Convention Centre



### Meeting facility without lodging

- convention centers that do not include accommodation
- usually located adjacent to or near a hotel
- Example-International Centre Goa, Dona Paula (ICG- Dona Paula)



### Others

- any convention and meeting facilities designed to hold large numbers of people
- Can exist alone (e.g., stadiums, arenas, parks, etc.) or within other structures (e.g., university lecture halls, museums, theaters). Example-Samrat Ashok Convention Center, Patna.



# SITE LOCATION

Bodh Gaya in Bihar 127.8km from Patna, the capital of Bihar, is the holiest place for Buddhists who come for a visit from all over the world

An exalted historical past defines Bodh Gaya or Bodhi manda , as one of the most revered places for Buddhists. Home to the Mahabodhi Temple with the diamond throne and the holy Bodhi tree, it assumes a special place in Buddhist culture. One of the four most important sites of pilgrimage for the Buddhists, Bodh Gaya is an abode of spiritual recreation and historical delight. Gautama Buddha, the founder of Buddhism, was said to have achieved enlightenment under the shade of a revered Bodhi tree here. Located on the shores of River Niranjana, Gaya boasts of shrines dedicated to the Buddha by various countries like China, Japan and Bangladesh. The sacred place also offers an intriguing insight into the culture and history of Indian philosophy along with a plethora of archaeological surprises. The Mahabodhi Temple Complex is a spiritual haven for both seekers and art enthusiasts alike.

The famed site where Gautam Buddha is believed to attained enlightenment, Mahabodhi Temple is the central site that attracts tourists and pilgrims to the city of Bodh Gaya. A UNESCO World heritage site, this temple complex houses structures built in the Dravidian style, as opposed to the usual Nagara style of temples. The principal points of interest here are the Bodhi Tree; the Vajrasana ('Seat of Stability'), also called the Diamond Throne; a red sandstone platform which marks the spot where the Buddha meditated; the Mahabodhi Temple his enlightenment.



# ABOUT THE SITE

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# SITE ANALYSIS

Development Controls

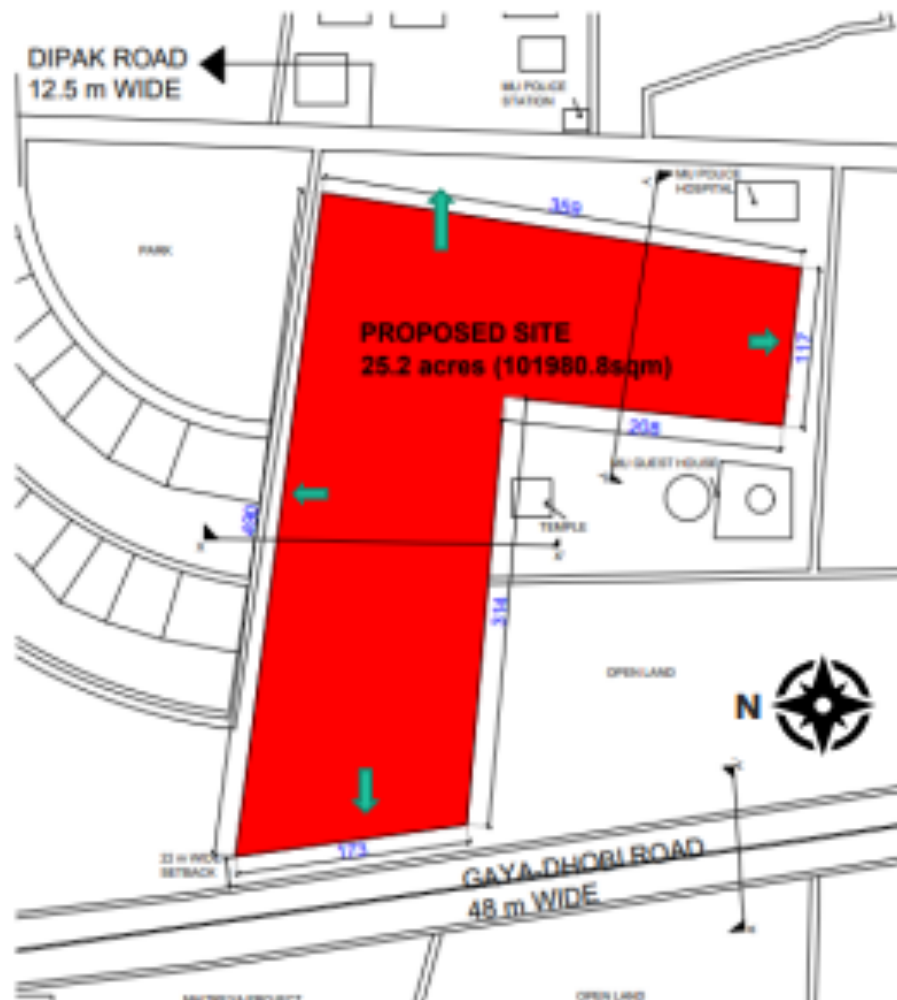
Site area- 25.2  
acres(101980.8sqm)

FAR 1.5

Permissible Built up  
area- 35%

Key Features: Flat  
terrain with road access  
on 2 side Green buffer  
zone of 50 m front of  
the site.

Location Located  
towards the back gate  
of Magadh University.



**LAND TYPE-** AGRICULTURE LAND TOPOGRAPHY- FLAT LAND

VEGETATION –50 m FOM THE FRONT In and around site napa  
cabbage, lemmon grass. **JURISDICTIONS**

**SERVICES** **POWER**  
**SUPPLY-**South Bihar Power Distribution **HYDROLOGICAL** **MAPOF**  
**GAYA DISTRICT**

**NEARBY SUBSTATION-**South Bihar Power Distribution at 2.7 km  
distance

**SOIL CONDITION-**Agriculture land (alluvial soil)

**Water Supply** - Ground water is the main source. Water table  
varies from 0-5 m at the bed of the River Niranjana and from 6-  
12m in the site.

**Sewage and Sanitation-** Bodhgaya does not have a sewer  
system. In the site soil/ sludge water either flows through the  
unpaved (kaccha) drains along the road side.

**THE SITE JURISDICTION-**Bodhgaya Nagar Panchayat. 3.1 km  
Distance from the site.

## Proposed Project Components

I. International Convention Centre Facility: Estimated to be spread over a total area of 11.33 acre (45,870 sq.m), it is proposed to have the following facilities: a) Plenary hall with retractable seating for 1000 delegates b) Hitech convention hall with a 500-seater capacity c) Meeting rooms, numbering six, with a total capacity of 420 delegates d) Board rooms, numbering two and seating 45 delegates and VVIP rooms/lounges e) Exhibition space f) Public area (reception, public toilets )

II. Accommodation Facility: a) Mid-Market accommodation: Estimated to be spread over 6.5 acre (26,316 sq.m), the mid market accommodation should be able to house 200 rooms for delegates. b) Deluxe accommodation: Estimated to be spread over 5 acres (20,243 sq.m), the deluxe/premium accommodation would accommodate 100 rooms for delegates.

III. Craft Village: Estimated to be spread over an area of 2.37 acre (9595 sq m) to provide a boost to the local artisans and handicrafts. In addition to the craft bazaar, it would also include a food court and Car Parking facility. Any other development as per the applicable byelaws can also be developed.





## HYDROLOGICAL MAP OF GAYA DISTRICT

LAND USE	SYMBOL	GROUND WATER POTENTIAL
Recent alluvium (clay, silty sand, gravel etc.)		Moderately good 50 - 100 m in R
Quaternary / Mio. sand		Poor yield prospects 20 - 50 m in R
Brackish ground		



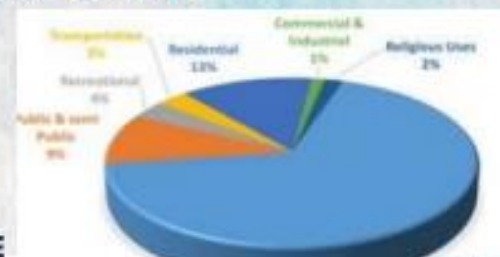
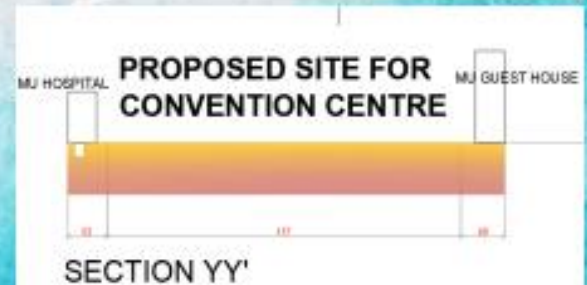
VIEW OF NH



SITE IMAGE



VIEW OF MU FROM THE SITE



# SITE SURROUNDINGS



## ACCESSIBILITY

**NEAREST RAILWAY STATION-(GAYA) GAYA JN 13.94 Kms**

**BUS-** A main road connects the town of Bodh Gaya to the city of Gaya. Bihar State Tourism Corporation runs bus services (standard as well as deluxe buses) from Patna to Bodh Gaya twice daily. Apart from Patna, bus services are also available from Nalanda, Rajgir, Varanasi and Kathmandu Road/Self Drive. A lot of taxi operators provide cab services to Gaya. Though Gaya is just 3 hours away from Patna (if you avoid the Gaya market) but very few travellers would prefer to drive from Patna or other nearby towns to Bodh Gaya.

**By Air** Gaya is the nearest airport which is approximately 17 kilometres from the town of Bodh Gaya.



## **MAJOR LANDMARKS**

### **Mahabodhi Temple**

Bodh Gaya is 15 km from Gaya and is about 96 km from Patna. Located at 2.6 KM Distance from the site. The Great Buddha statue is one of the popular stops on the Buddhist pilgrimage and tourist routes in Bodh Gaya, Bihar. The statue is 19.5 m high representing the Buddha seated in a meditation pose, or dhyana mudra, on a lotus in the open air. The total height of the construction is 80 ft Distance from the Site- 2.5km

### **The Royal Bhutan Monastery**

Royal Bhutan Monastery is a magnificent Buddhist monastery and temple located in Bodhgaya, Bihar. Distance from the Site- 2.3 km Archaeological Museum Bodhgaya Archaeological Museum of Bodhgaya is a museum of archaeology in Bodhgaya, Bihar, India, located in close proximity to the Mahabodhi Temple complex

## **UPCOMING PROPOSALS NEAR THE SITE**

The Maitreya Project is an international organisation, operating since 1990, which intends to construct statues of Maitreya Buddha in India and perhaps elsewhere. Initial plans were for a 152- metre (500 ft) colossal statue



# CLIMATE ANALYSIS

Bodh Gaya has a Warm and humid, dry winter climate. The district's yearly temperature is 29.91°C (85.84°F) and it is 3.94% higher than India's averages. Bodh Gaya typically receives about 20.64 millimeters (0.81 inches) of precipitation and has 25.82 rainy days (7.07% of the time) annually.

## **B O D H G A Y A SOIL**

The soils are made of drift alluvium and do not have their origin from the source rock . CLIMATE The climate in Bodhgaya block is subtropical humid and can be divided into three seasons. Summer start in April and ends in mid-June, the rainy season (Kharif) goes from mid-June to the end of September and the winter season (Rabi) from October to May. In Gaya district, the average monsoon rainfall can severely varied according to the year. It is also important to note that rainfall is not enough to grow paddy without irrigation.

## **WEATHER**

The weather averages for the month of February, temperature averages around 29°C and at night it feels like 15°C. In February, Bodh Gaya gets on an average 13.85mm of rain and approximately 1 rainy days in the month. Humidity is close to 45%

# SWOT ANALYSIS

## STRENGTH

Lies on the main national highway road. Site is surrounded by the Magadh University Campus of Bodhgaya. Site surrounding has been allocated for tourist spots and hotels. Access through a dedicated service lane. Good air and road connectivity.

## WEAKNESS

A lack of adequate public transport facilities near the site. Chances of congestion to the only access to the road as the site is surrounded by University

## OPPORTUNITIES

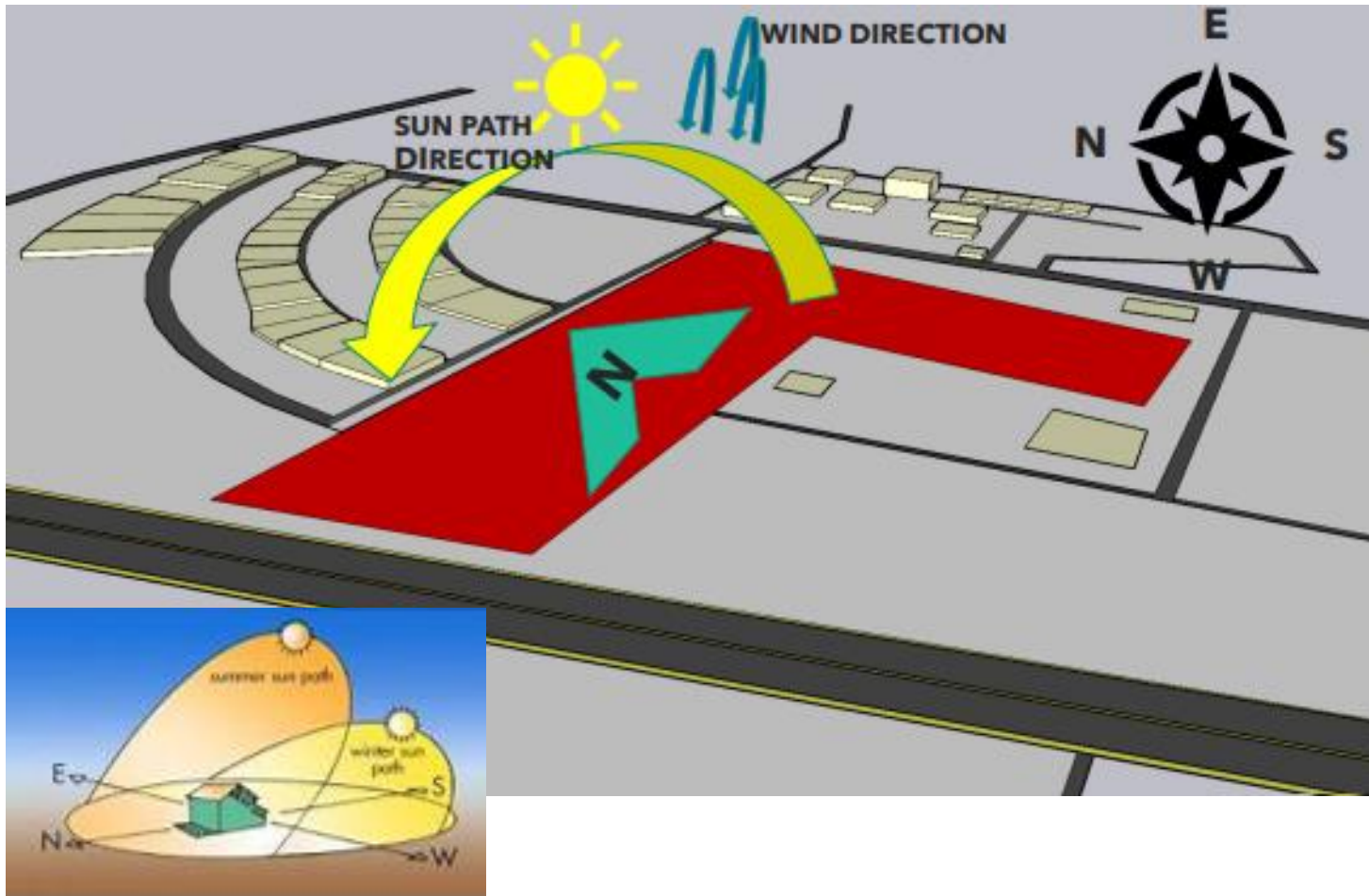
Exchange of good practices among the partnership. Use of different tools both traditional and new ones. Marketing techniques by developers may promote details which are irrelevant to investors or buyers High growth in number of tourist spots may focus on profit making rather than quality Construction

## THREATS

Marketing techniques by developers may promote details which are irrelevant to investors or buyers High growth in number of tourist spots may focus on profit making rather than quality Construction



# SUN PATH AND AIR MOVEMENT



**Sun Path and Solar Position** The sun's path varies throughout the year. In the summer the sun is high in the sky, and rises and sets north of east-west in the northern hemisphere (in the southern hemisphere, it's south of east-west). It also rises much earlier and sets much later in summer than in winter. To study the extreme of hot summer sun, you often want to study the sun's path on the summer solstice, the day when the sun is at its highest noon altitude

## **The Movement of Air**

Wind due to differences in pressure

Wind due to differences in pressure Movement of air caused by temperature or pressure differences is wind. Where there are differences of pressure between two places, a pressure gradient exists, across which air moves: from the high pressure region to the low pressure region

## Wind due to differences in temperature

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In the winter the sun is low in the sky, and rises and sets south of east-west in the northern hemisphere (in the southern hemisphere, it's north of east-west).

## DESIGN IDEA

### AIM

The aim is to provide the world class amenities and infrastructure to the city.

To invite all sections of society at one single place to exchange ideas, thought and knowledge for the growth of the society.

To invite corporate to come and have their time at leisure apart from attending continuous meetings and seminars.

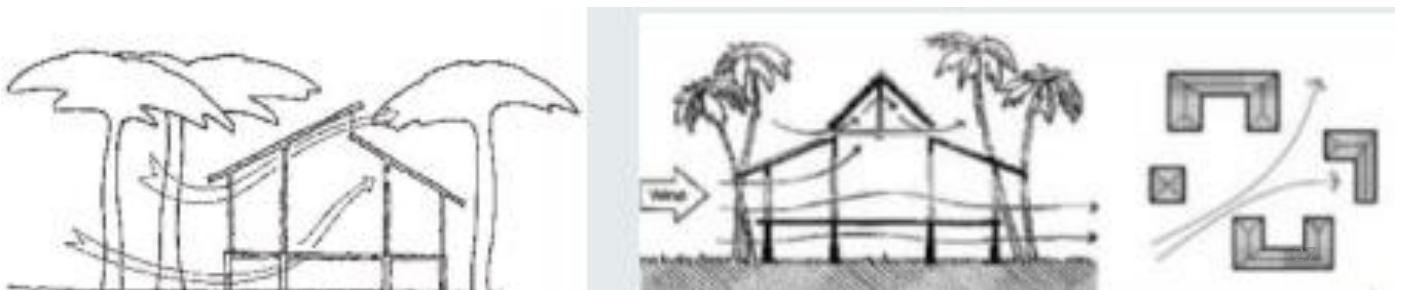
- At a local level, the project's main purpose is to educate and train local communities and craftsmen to confidently combine the use of their traditional building methods with sustainable technologies simultaneously maintaining an ecological balance.
- By pioneering an awareness of sustainable living, the aim would be to open new avenues to sustainable building and endeavour to bring bamboo centred building technologies into the conventional construction industry.

# DESIGN CONSIDERATION

## FORM AND ORIENTATION

The shape of a building affects the ventilation. A spread-out building is better for the cross-ventilation than a compact one because it provides more wall area and in more directions for catching the winds. The building openings have to be well situated to increase this. When we consider the orientation of a building, the main issue is the orientation of the windows. If there is a conflict between the wind and the solar consideration, the cross ventilation should be the primary factor to consider in warm-humid climate

**VENTILATION** In a warm-humid climate shading and ventilation are really important. The flow of outdoor air may provide a direct physiological cooling effect even if the air is warm. The buildings have to be placed to increase the cross ventilation. Orientation of buildings for the ventilation does not mean that the buildings have to be perpendicular to the wind direction. Oblique winds between 30 and 120 degrees to the wall can also provide cross-ventilation. This can be intensified by some vegetation which provide shade and deflection.





## FORM AND ORIENTATION

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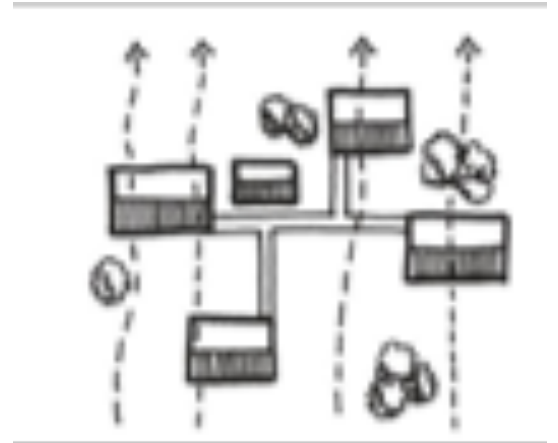
### WINDOWS

To increase the cross-ventilation large openings can be designed. However, in that case solar radiation can penetrate directly into the interior of the building if they are not correctly shaded. If the windows are unshaded, the glass area has to be limited to 15% of the facade area. An increase of the glass area to 30% will increase the room cooling power needed by 30%-50% and facades to the west are most affected.



## - Sun orientation

As the warm-humid climate zones are located near the equator, orientation of the settlements pattern should be placed preferably on southern or northern slopes. The best orientation is longer sides facing north and south directions to protect from the solar radiations. However the east and west sides should be shaded by shading devices.



SUNLIGHT & VENTILATION

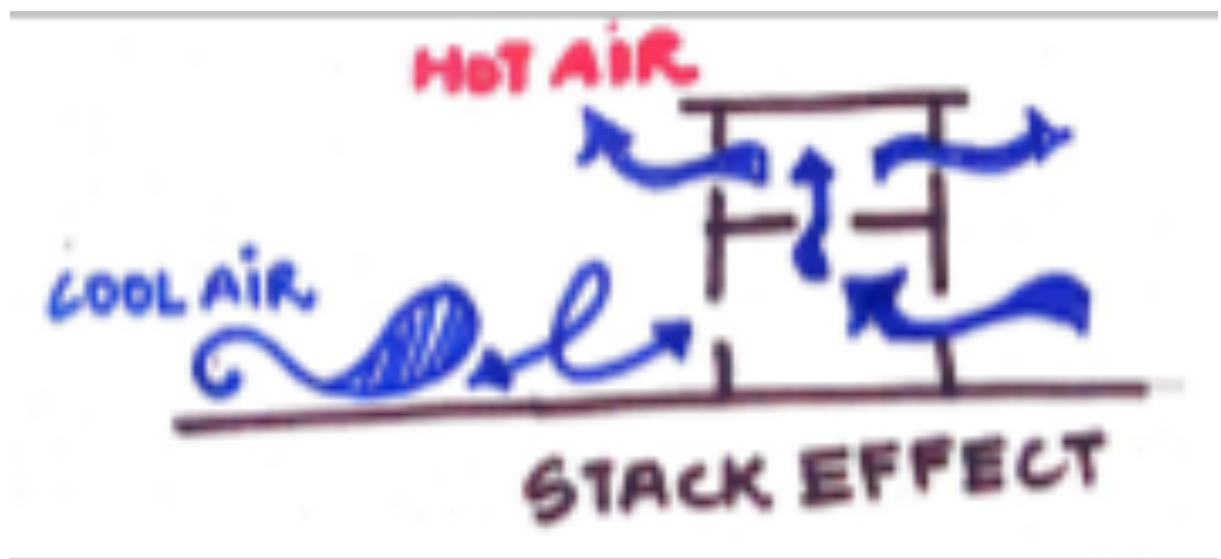
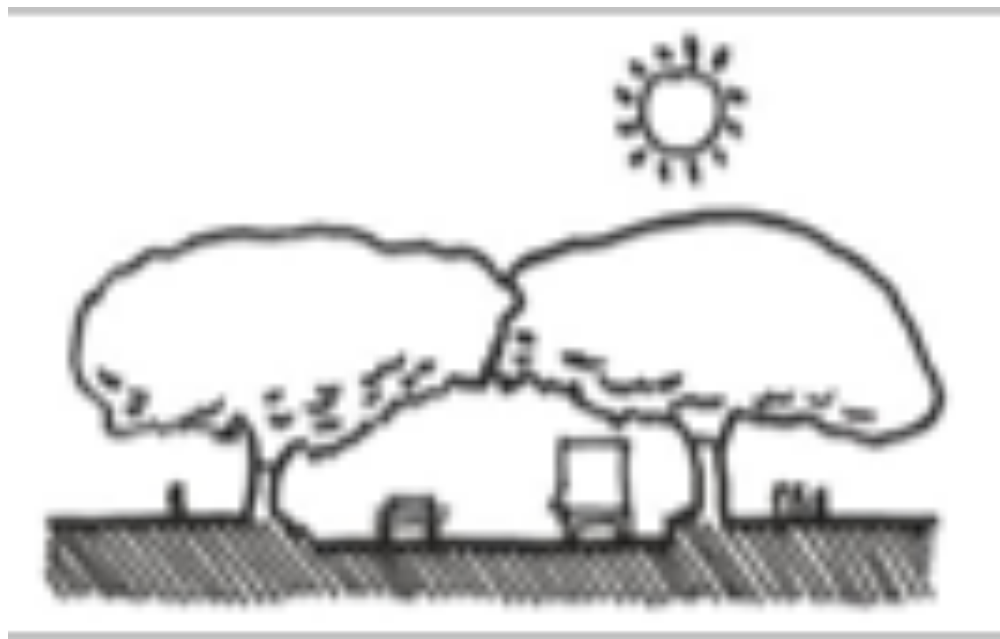


CROSS VENTILATION



## Wind orientation

Primary wind direction and secondary wind direction should be considered while designing the buildings. Elongating the settlement in a line across the prevailing wind direction gives low resistance to air movement and is therefore the ideal solution. Building should be oriented along the wind direction with the longer axis intercepting the predominant wind directions.

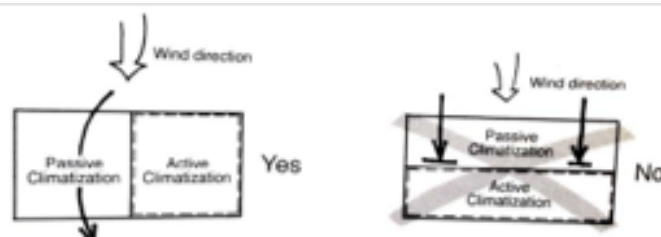


## PASSIVE AND ACTIVE HOUSE

Using passive systems does not exclude the use of an active system when it is needed. A particular attention has to be given to the building design. To design a dwelling for partial cooling, for example the bedroom, the cooled rooms have to be placed to not disturb the cross-ventilation. The cooled room must be airtight. To install air-conditioning in separate rooms can cause some problems. If a room has a lower temperature than the other one, some condensation can occur. The walls and floor of the this room should be insulated to raise the temperature. The passive room has also need to be cross-ventilated.

: Inlet at lower level and outlet at higher level : Canopy effect by trees - Sun orientation As the warm-humid climate zones are located near the equator, orientation of the settlements pattern should be placed preferably on southern or northern slopes. The best orientation is longer sides facing north and south directions to protect from the solar radiations.

However the east and west sides should be shaded by shading devices. - Wind orientation Primary wind direction and secondary wind direction should be considered while designing the buildings. Elongating the settlement in a line across the prevailing wind direction gives low resistance to air movement and is therefore the ideal solution. Building should be oriented along the wind direction with the longer axis intercepting the predominant wind directions.




# CASE STUDY-01

The TFC & CM project located at Bada Lalpur, Varanasi, being developed by Ministry of Textile on 7.93 acres land and having constructed area of around 43,450 sqm. The project is expected to be completed by August 2017 and will offer facilities such as Convention hall, Exhibition area, Shops, Marts, Food Court, Restaurants, Guest Houses, Dormitories, Offices, Crafts Museum and Amphitheater along with support infrastructure and amenities focused at providing integrated platform for promotion of Handloom, Handicrafts and Carpet Sector of Varanasi region.



- Name of Project- Trade Facilitation Centre & Crafts Museum at Varanasi
- Owner-Ministry of Textiles Govt. of India.
- Site Area/Location 7.93 Acres land near Kendranchal Colony at Bada La
- Construction Agency-Tata Projects Limited.
- Construction Started-2014
- Construction completed-2017

Floors	<b>BLOCK 1</b> Marts cum Office	<b>BLOCK 2</b> Convention Centre cum Exhibition	<b>BLOCK 3</b> Food Court cum Guest House	<b>BLOCK 4</b> Shopping Arcade	Entrance Plaza	<b>BLOCK 5</b> Museum
Basement (2 levels)	Parking capacity (369 no's of cars 434 no's of 2 wheelers approx.)			-	-	
Ground Floor	<ul style="list-style-type: none"> <li>• Marts (11 no's)</li> <li>• Exhibition Space (open courtyard)</li> <li>• Public Amenities</li> </ul>	<ul style="list-style-type: none"> <li>• Convention Centre with VIP Lounge and green rooms.</li> <li>• Atrium (Triple height)</li> <li>• Exhibition Gallery</li> <li>• Atrium and convention center can be converted to exhibition space.</li> <li>• Public Amenities</li> </ul>	<ul style="list-style-type: none"> <li>• Food Kiosks (9 no's)</li> <li>• Kitchen Area/ Store</li> <li>• Indoor Seating Area</li> <li>• Courtyard Seating Area</li> <li>• Public Amenities</li> <li>• Courtyard can be converted to multi-purpose exhibition space.</li> </ul>	<ul style="list-style-type: none"> <li>• Enquiry Counter</li> <li>• Shops (14 no's),</li> <li>• Space for Kiosks.</li> </ul>	Entrance Plaza with courtyard surrounded with 18 M high petals 	Not applicable in the present scope of work
1st Floor	<ul style="list-style-type: none"> <li>• Marts (13 no's)</li> <li>• ATMs (2nos)</li> <li>• Gallery (1no)</li> <li>• Public Amenities</li> </ul>	<ul style="list-style-type: none"> <li>• Marts (8 Nos)</li> <li>• Exhibition Gallery all around atrium</li> <li>• Public Amenities</li> </ul>	<ul style="list-style-type: none"> <li>• Restaurants (2nos) with Kitchen Areas</li> <li>• Public Amenities</li> </ul>	<ul style="list-style-type: none"> <li>• Shops (14 no's)</li> <li>• Lounge</li> </ul>		
2nd Floor	<ul style="list-style-type: none"> <li>• Marts (15 Nos)</li> <li>• Business Centre</li> <li>• Public Amenities</li> </ul>	<ul style="list-style-type: none"> <li>• Marts (4 Nos)</li> <li>• Exhibition Gallery all around atrium.</li> </ul>	<ul style="list-style-type: none"> <li>• 15 Nos Dormitory Rooms (Total 81 Beds)</li> <li>• Office Space</li> <li>• Lounge Seating</li> <li>• Public Amenities</li> </ul>	NA		
3rd Floor	<ul style="list-style-type: none"> <li>• Marts (13nos)</li> <li>• National Centre for Trade Information</li> </ul>	NA	<ul style="list-style-type: none"> <li>• Double Occupancy Guest Rooms with attached toilets (18 no's),</li> <li>• Common Hall and Pantry Office Space</li> <li>• Public Amenities</li> </ul>	NA		

## BLOCK 1:

MARTS CUM OFFICE BLOCK: G+3 structure, having total built-up area of 6,050 sq. mt (excluding basements).

Ground Floor :The ground floor of the block consists of Marts (11 Nos) and a large central courtyard capable of hosting events and exhibitions First Floor: The first floor of the block consists of Marts (13 Nos), 2 ATM blocks and exhibition gallery capable of hosting events and exhibitions

- Lift lobby with 3 passenger elevators. Second Floor The second floor of the block consists of Marts (15 Nos) and business center. Third Floor The third floor of the block consists of Marts (13 Nos and National Centre for Trade Information.



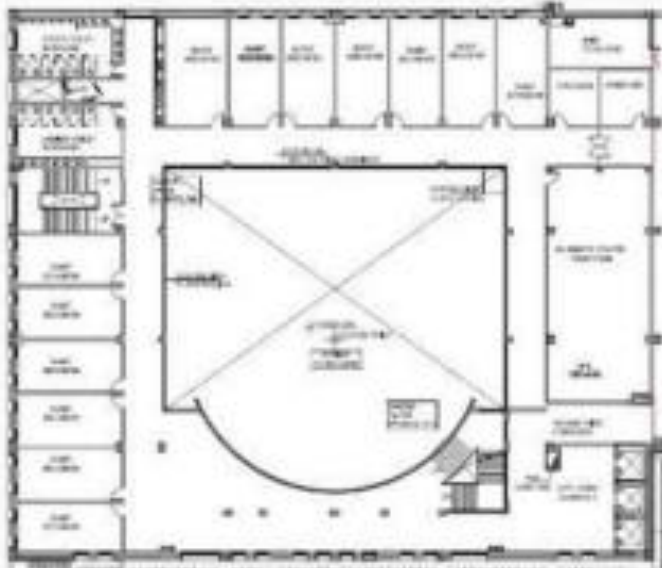
# **FLOOR PLANS OF BLOCK 1 (MART CUM OFFICE)**



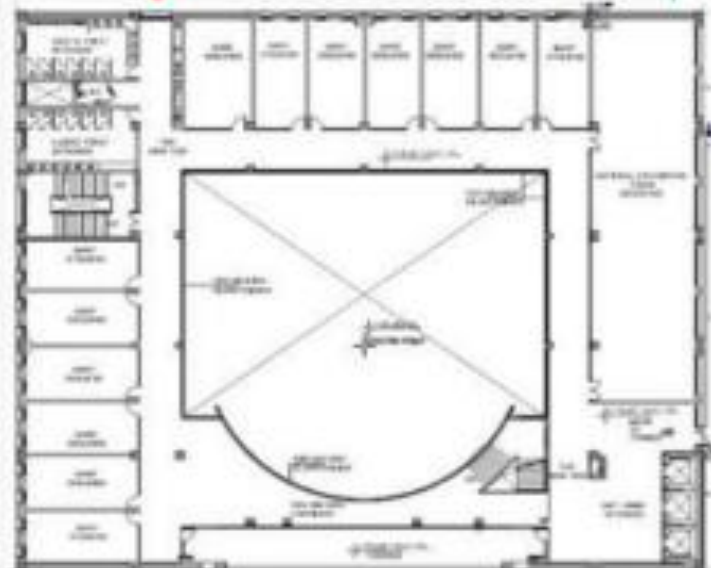
**Ground Floor Plan**



**First Floor Plan**



**Second Floor Plan**



**Third Floor Plan**

## **Facilities Available**

- Marts are provided as warm shell facility with all basic amenities installed such as flooring, false ceiling, partitions, ambient lighting, central air-conditioning etc. as per the design guidelines for the facility.
- All core services such as electrical, fire alarm, fire-fighting, air-conditioning, plumbing, power backup etc.
- Business center and National Centre for Trade Information Office are provided as warm shell facility with all basic amenities installed along with office furniture.
- Lift lobby with 3 passenger elevators.
- Public amenities for gents, ladies and physically handicapped.
- Common areas are non-air conditioned and finished with flooring, false ceiling, ambient lighting, firefighting, systems, PA system etc

## **BLOCK 2:**

**CONVENTION CUM EXHIBITION HALL:** G+2 structure, having total built-up area of 7560sq. mt (excluding basements).  
**Ground Floor** The ground floor of the block consists of triple height state of the art convention center sizing 52 M x 33 M. The convention hall is accompanied with VIP lounge, green room for both male and female participants along with adequate public amenities. The triple height atrium provides a grand entrance to the block and capable of hosting events and exhibitions. **First Floor** consists of Marts (8 Nos) along with Exhibition Gallery.

### **OVERALL PLANNING**

- The theatre is a fan shaped typology.
- The auditorium is surrounded by two foyers each of 130 sqm .
- Two staircases occupying area of 30 sqm. Each is located in both sides.
- Toilets on both the sides are located adjoining the foyer each with 6 cubicles and an area of 70 sqm.
- At the back stage there is a 6m wide corridor.
- Beside this corridor various spaces such as : 1.lift lobby  
2.conference rooms

### **DETAILS**

- Distance between seats and stage : 4.2 M
- Height of the ceiling: 3.5 M in the last row 7.2 M in the first row 6.5 M from the stage.
- Distance between each row (seating) is 0.50 M
- Slope angle: 10 deg
- Aisle Width : 1.5 M at the first row.
- Duct spacing: 2.5M
- Speaker spacing: 2M

## STRUCTURAL DETAILS

- The auditorium is mainly held by an RCC framed system.
- The two shorter sides contains 7 columns and the longer sides contains 5 columns.
- Centre to Centre column distance is 6M.
- The slab is monolithic and is two way slab surrounded by columns

## AUDITORIUM PLANNING

- Fan shaped form.
- It has 4 Aisles each of varying width from 1.5 to 2.1M.
- The stage has an area of 100 SQM.(6mx14M).
- It has totally 21 rows.
- Each row contains 30 seats

**BLOCK 3: FOOD COURT CUM GUEST HOUSE:** G+3 structure, having total built-up area of 7470sq. mt (excluding basements). Ground Floor The ground floor of the block consists of food court with both indoor and outdoor seating spaces. The courtyard space has been envisaged to be converted to form exhibition space or area for other activities as per requirement. The floor comprises of the following components

Description	Total Units	Unit Size (mm)
Kiosk1	7	3920 x 5570
Kiosk2	1	3735 x 5570
Kiosk3	1	4910 x 13640
Cash Counter	2	5140 x 2585
Kitchen Addition Area	1	18045 x 2770
Indoor AC seating area	1	40900 x 13700
Outdoor Seating area	1	26600 x 26970

First Floor First floor consists of restaurants as detailed below

Description	Total Units	Unit Size (mm)
Restaurant 1	1	30155 x 14790
Restaurant 2	1	13025 x 19270
Kitchen Space	1	28610 X 5500
Shop	1	2400 x 2255

Second Floor Second Floor consists of dormitories and an office space as detailed below:

Description	Total Units	Unit Size (mm)	Beds
Dormitory (Type 1)	1	10420 x 7700	10 Nos
Dormitory (Type 2)	1	7790 x 5875	6 Nos
Dormitory (Type 3)	2	5255 x 8785	5 Nos Each
Dormitory (Type 4)	4	3920 x 8785	5 Nos Each
Dormitory (Type 5)	2	8220 x 3920	4 Nos Each
Dormitory (Type 6)	1	8220 x 4970	4 Nos
Dormitory (Type 7)	1	10485 x 5685	6 Nos
Dormitory (Type 8)	1	5560 x 11070	6 Nos
Dormitory (Type 9)	1	3905 x 11070	6 Nos
Dormitory (Type 10)	1	4105 x 11070	5 Nos
Office	1	6340 x 11770	-

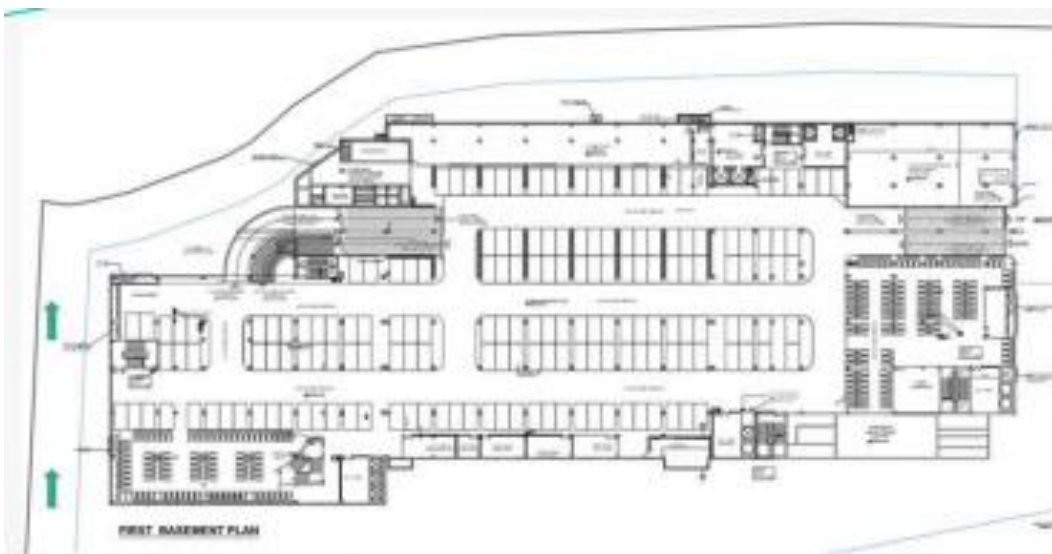
## BLOCK 4:

SHOPPING ARCADE G+1 structure having total built-up area of 2,300 sq. mt. Shopping Arcade has a total of 28 Shops, located on Ground and First floor levels, having aa area of about 320 Sq. ft.

**BLOCK 5: CRAFTS MUSEUM** The Museum block, a G+2 structure having total built-up area of 3950 sq. mt  
 Amphitheater: The open air theatre surrounded by the arms of the Museum Block has been designed to accommodate 250 to 300 guests and shall host multiple cultural events and light and sound shows



**BASEMENT LEVEL** The basement is of 2 levels consisting total parking of 369 cars and 434 2 wheelers capacity



**BASEMENT PLAN 01**



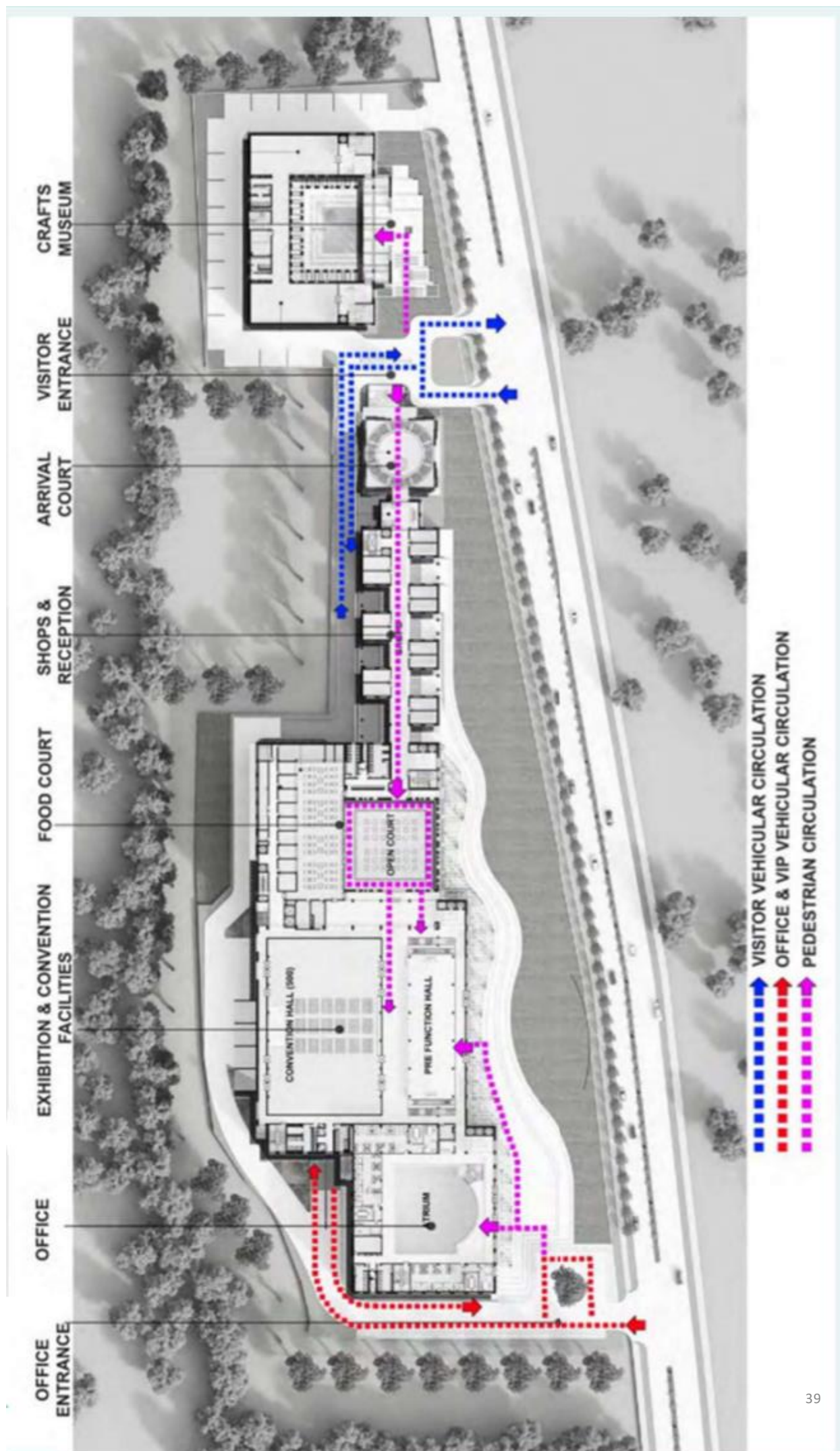
**BASEMENT PLAN 02**

## **BUILDING MATERIALS**

- Vitrified tiles are used for flooring of Interior space,
- Flooring of common area is of sand stone flooring.
- Flooring of open courtyard is of stone flooring.
- Flooring of convention hall is of Granite.
- Acoustical Tile Flooring in the interior spaces.
- Gypsum Board False ceiling in the open area.
- Gypsum False Ceiling in the convention hall.

## **FURNITURE**

- Retractable Seating in the convention hall.
- Planters and inbuilt seating's in the open courtyard.

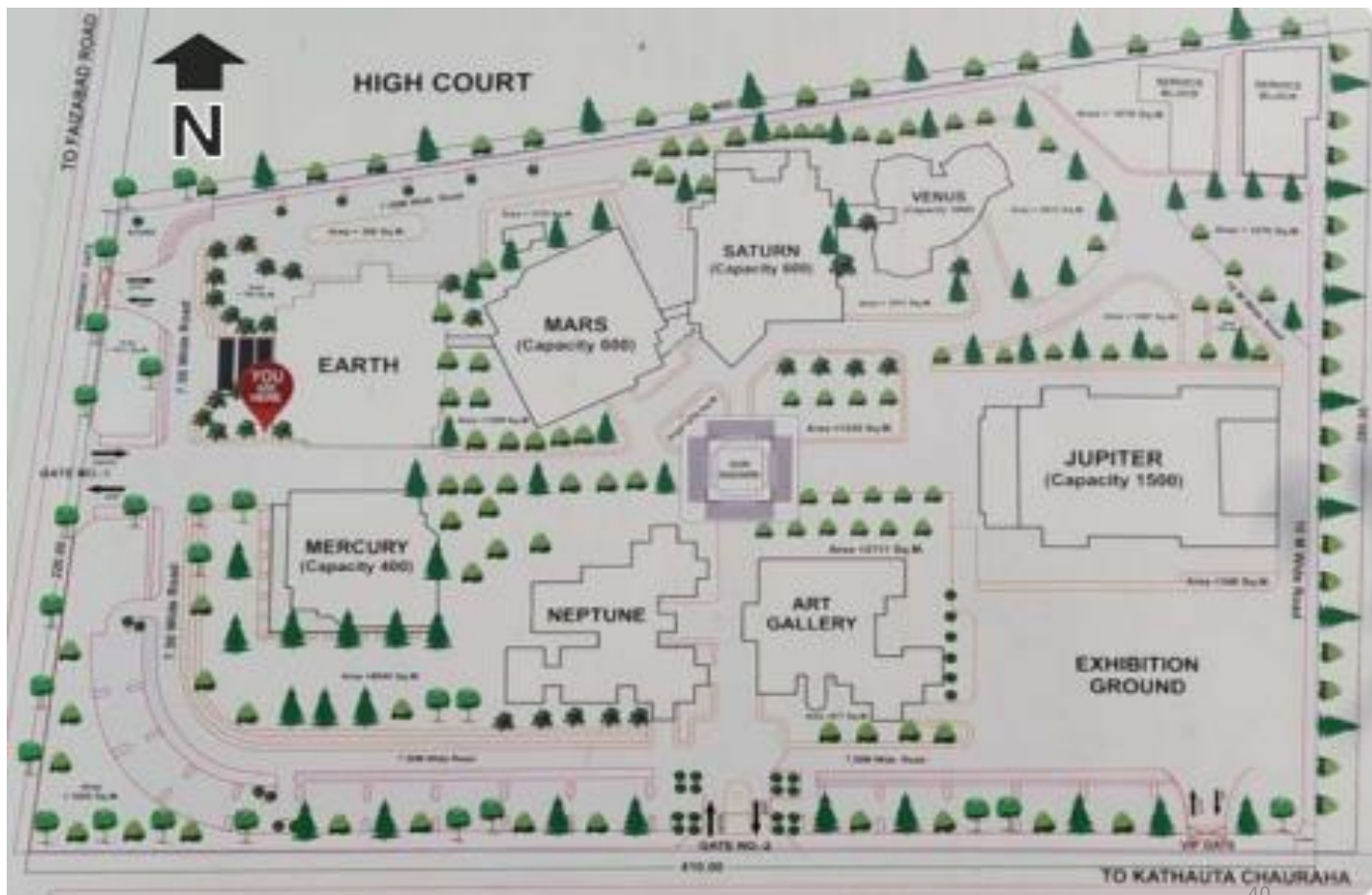


## CASE STUDY-02

**Indira Gandhi Pratishthan** which is the largest science and technology centre in Uttar Pradesh. Indira Gandhi Pratishthan situated in Lucknow, India which is a perfect venue for all types of events & trade shows.

**ABOUT:** - The Indra Gandhi Pratishthan is a building is memorial to Smt. Indra Gandhi. - It is visualized as a symbol and institutional monument. The project was designed by Sikka Associates Delhi.

**LOCATION AND SURROUNDINGS:** STATE - Uttar Pradesh.  
DISTRICT- Lucknow. AREA - 25 Acre (1,01,171 sqm) – It is located in Vibhuti Khand Gomti Nagar, lucknow . To its north is the New Lucknow High Court and to its south is the TCS building and Omex convenient





## **PLANNING CONCEPT: -**

In Indra Gandhi Pratishthan , the campus consists of eight blocks. –

All the blocks are planned around the Indira Stambh which is the focal point of the campus. - All the bl are two or three storey high. Indra Gandhi Pratishthan has two entrance gateways from two roads. 1- fr the west 2- From the south. Mandi Parishad road, - Use of pink Dhaulpur stone and rough chisled red sandstone on the facade gives a feeling of boldness, which reflects the bold personality of Indra Gandhi

### **1.ART GALLERY**

### **2.NEPTUNE**

### **3.JUPITER**

### **4.MERCURY**

### **5.EARTH**

### **6. PLUTO**

### **7. MARS**

### **8. SATURN**



**Based on the Concept  
of 'PLANETS OF SOLAR  
SYSTEM' IN MEMORIAL TO  
SMT. INDIRA GANDHI.**

### **1. ART GALLERY**

It is a three story high building.

A central atrium with staircase and ramp for handicapped connecting floors.

It is provided with halls for display, painting and sculptors, workshop area and office area for staff.

Dhaulpur stone. Red chisled sandstone



## **SURFACE TREATMENT –**

The auditorium have floors which are covered by carpets and walls with acoustic panels.

Stage having wooden flooring and gypsum false ceiling.

Green rooms have kota stone on floor.

The entrance foyer, lobbies and corridors have vetrified glazed tiles for flooring and sand stone cladding on walls and gypsum for ceiling



## **BANQUET HALL**



-This is a single storey building.

-It has a huge hall which serves for marriage and receptions.

It is provided with an entrance foyer, a hall (40.95 x 20.81m) and kitchen at the rear end of the building

## **LIBRARY**

It has an administration room, stacking room and an audio visual room.

Reading hall is provided on the ground floor as well as the first floor.

Rare books section is provided on the second floor.

## DEAD STUDY-01

### HYDERABAD INTERNATIONAL CONVENTION CENTRE (H.I.C.C)

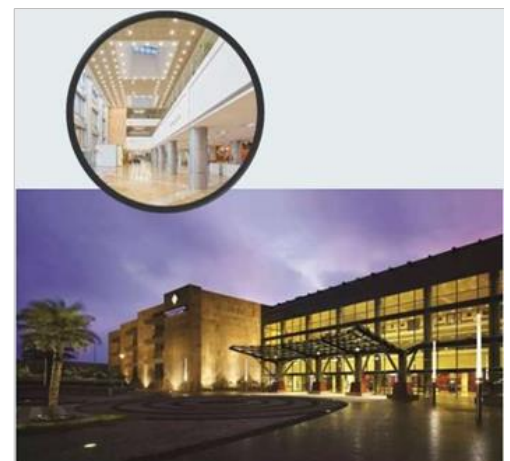
H.I.C.C is India's first purpose-built and state-of-the-art convention facility managed by Accor, the world's leading hospitality and Tourism management group.

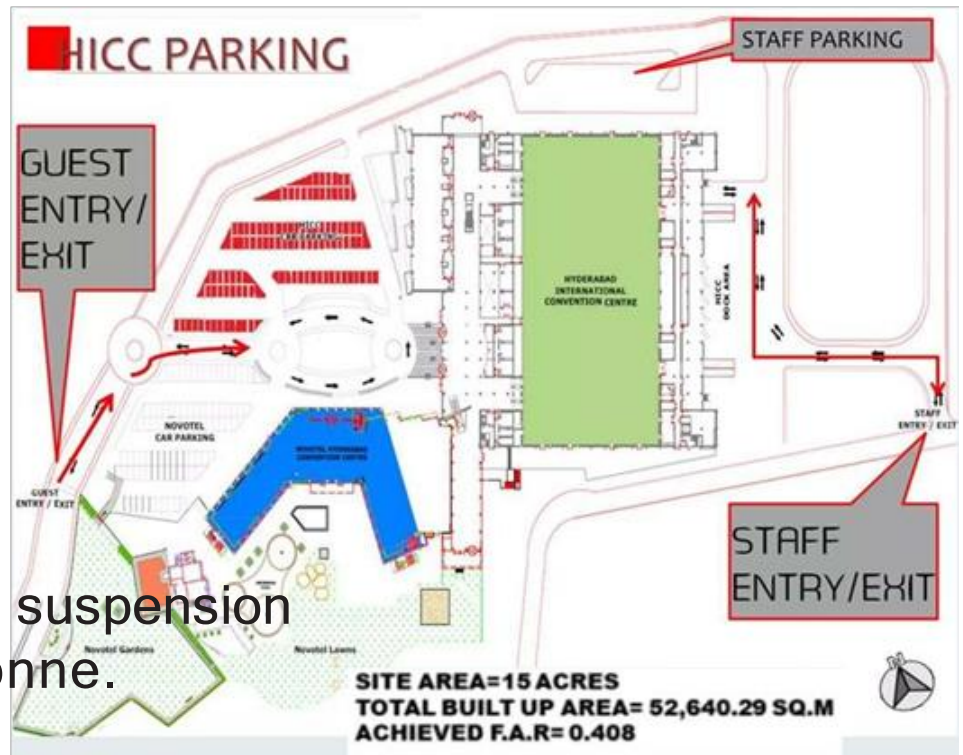
- HICC is the only Green Globe Certified Convention Centre in India.
- HICC in every aspect, be it infrastructure, service or technology, compares with the best in the world.
- It has been conceived and designed to assist in executing world class events, whether they are Conventions for 5000 delegates, seminars for 500.



### REASON FOR CASE SELECTION

- To study the function of the multipurpose hall.
- It is the best convention centre from the last 3 years.





## Rigging Beam

Each beam has a suspension capacity of one tonne.

## Service Pits & Power Supply

power, water, and internet supply. 100% power back-up.



## KEY FEATURES

**Built facilities-** A pillar less main hall spanning over 6480 sq. m. which can be partitioned into six smaller halls with globally acclaimed design, technology.

**Ceiling Height** Clear ceiling height of 12.5m with rooftop catwalk and truss to withhold heavy suspension.



## AREA ANALYSIS

- HICC GROUND COVERAGE= 15,922.3 SQ.M
- BUILT UP AREA= 34,634.3 SQ.M
- NOVOTEL HOTEL GROUND COVERAGE= 2,311.14 SQ.M
- BUILT UP AREA= 18,005.99 SQ.M
- TOTAL BUILT UP AREA=52,640.26 SQ.M

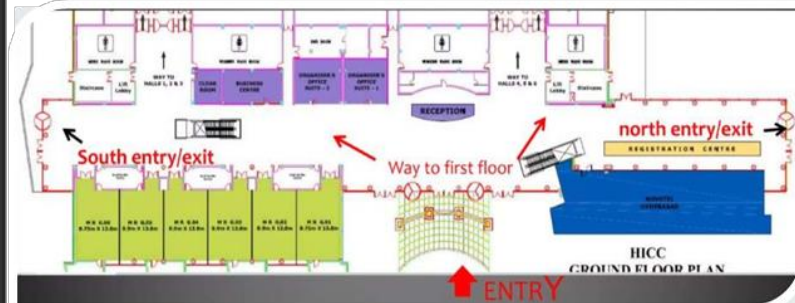


## HICC

Area: 6480 Sq. M.

Can be partitioned into Six separate halls.

**Features-** Wheelchair Lift conventions for 5,000 delegates, seminars for 500 or meetings for just 50.



Fair Park is a serene open area exclusively meant for high-profile corporate events and social gatherings. With beautiful landscaped gardens and picturesque surroundings, the Fair Park makes a perfect stage for hosting banquet dinners and intimate meetings.

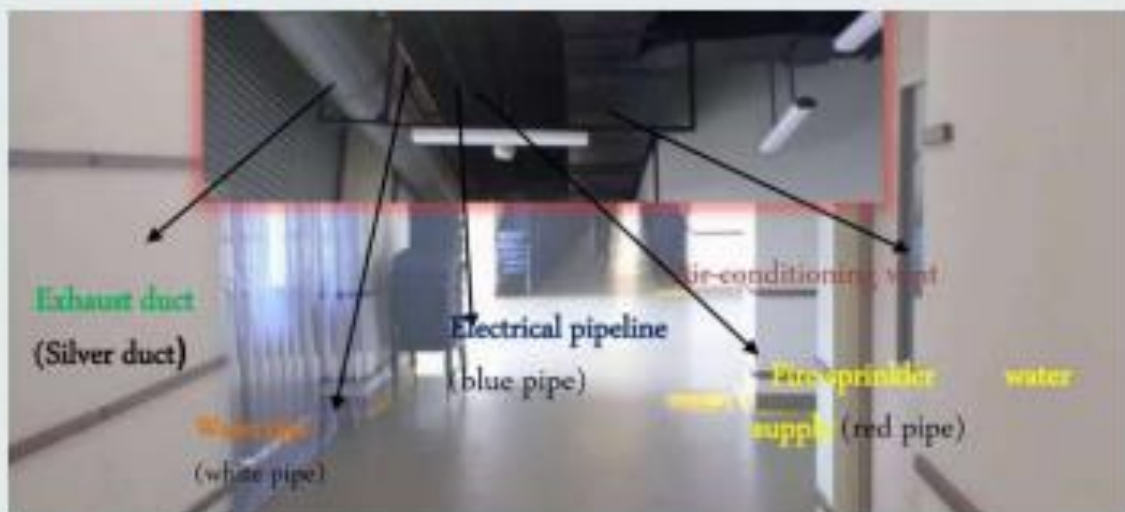


## ACCOUSTICAL ANALYSIS

### HYDERABAD INTERNATIONAL CONVENTION CENTRE

- ZIG ZAG ARRANGMENT OF ACCOUSTIC WALL PANELS AT SIDE WALLS
- CURVY SIDE WALLS TO ROOF CEILINGS FROM FINISHES WITH FIBRE CEMENT BOARDS WITH WHITE PAINT FINISH -20 MM THICK POLISHED TIMBER IS LAID OVER THE SURFACE OF THE STAGE FOR SOUND ABSORPTION.
- VELOUR ACCOUSTIC CURTAINS ARE USED AT THE BACKSTAGE TO DAMPEN SOUND WAVES.
- SEATING-SELF LIFTING FOAM WITH POLYURETHANE FOAM BECAUSE OF ITS ABILITY TO ABSORB SOUND AND PREVENT ECHOES.
- ACCOUSTICAL TIMBER PANELS ARE PLACED ON A TWO LAYERED 15 MM GYPSUM DRYWALL WITH 150MM AIR GAP INSULATED WITH 50MM OF ROCKWOOL FOAM.
- ACCOUSTIC FABRIC FIBREGLASS PANELS ARE LOCATED AT THE BACK OF THE THEATRE. THEY ELIMINATE UNWANTED REFLECTIONS AND CONTROL EXCESSIVE REVERBERATION.
- MEDIUM PILE CARPET IS COVERED OVER THE CONCRETE FLOORING FOR SOUND ABSORPTION

### BUILDING SERVICES

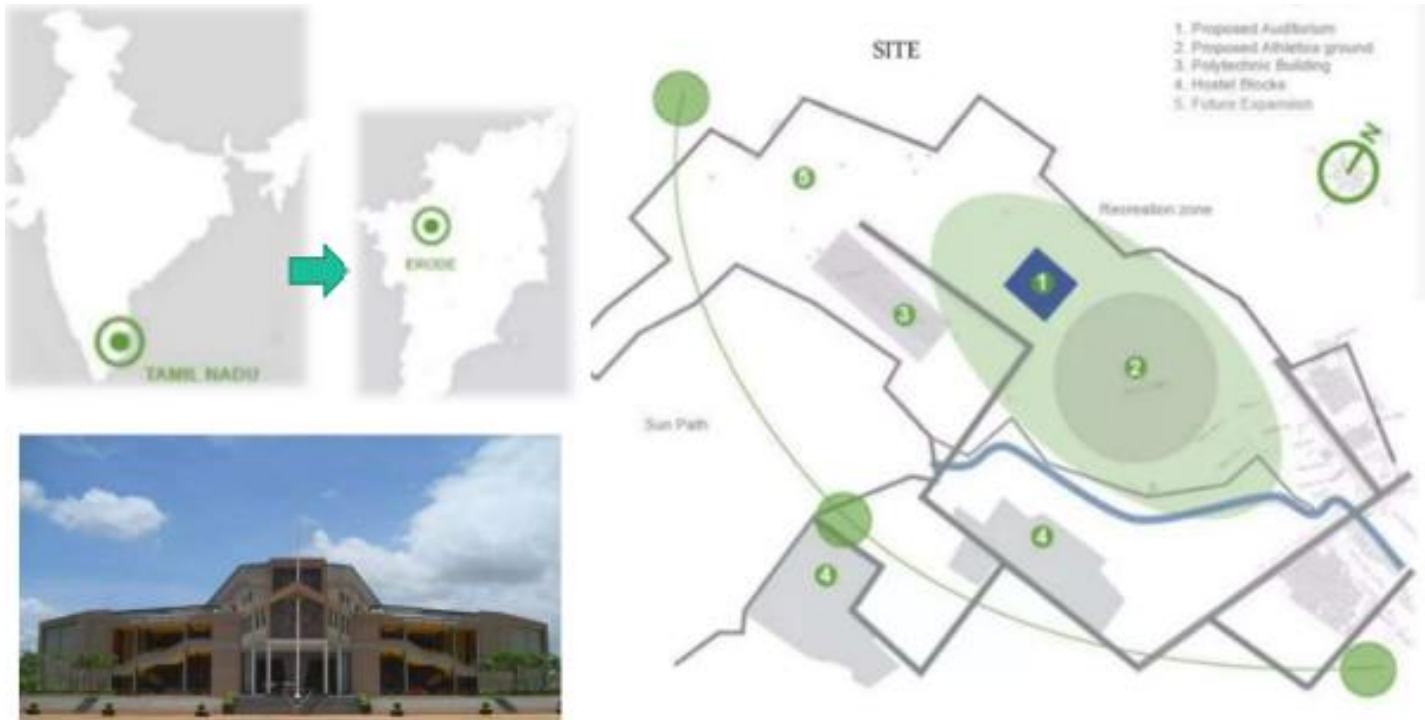




# DEAD STUDY 02

## INTRODUCTION

THE KONGU CONVENTION CENTRE, TAMIL NADU “Inspired from a “GARUDA IN FLIGHT”, Architects create one of Asia’s largest Indoor Arena with Multi-Purpose use of Spaces.”



## LOCATION: TAMIL NADU

**ABOUT** - The Kongu Convention Centre located at Erode in Tamil Nadu, India.

- It consists of a multipurpose hall which is one of the largest in India with a seating capacity of 4500 persons.
- Alternatively it has one indoor basket ball court and four indoor badminton courts which are used as sports halls.
- The building also has the facilities for Conference halls , Seminar halls , Training centre , Guest rooms and VIP rooms , Offices , High-tech Audio Visual facilities for Global conferencing , Cafeteria , Offices etc.
- The construction completed in July 2010
- built up area of 18,600 sq metres.
- The Architects Prof. Charanjit Shah and Ar. Gurpreet Shah

## Requirements

1. The client's need was to have a large scale auditorium with stage and seating capacity to accommodate **4500** persons.
2. The backroom facilities to also function as seminar rooms & rehearsal.
3. The building will also serve as a background to the athletics arena which also acts a large gathering space for college functions.
4. Saluting bay for exterior sports facilities rooms.
5. The auditorium will also have multi-purpose usage for indoor sports activity



## DESIGN OBJECTIVES

Achieving fluidity in functions by serving multiple purposes within the same building.

Achieving low construction costs

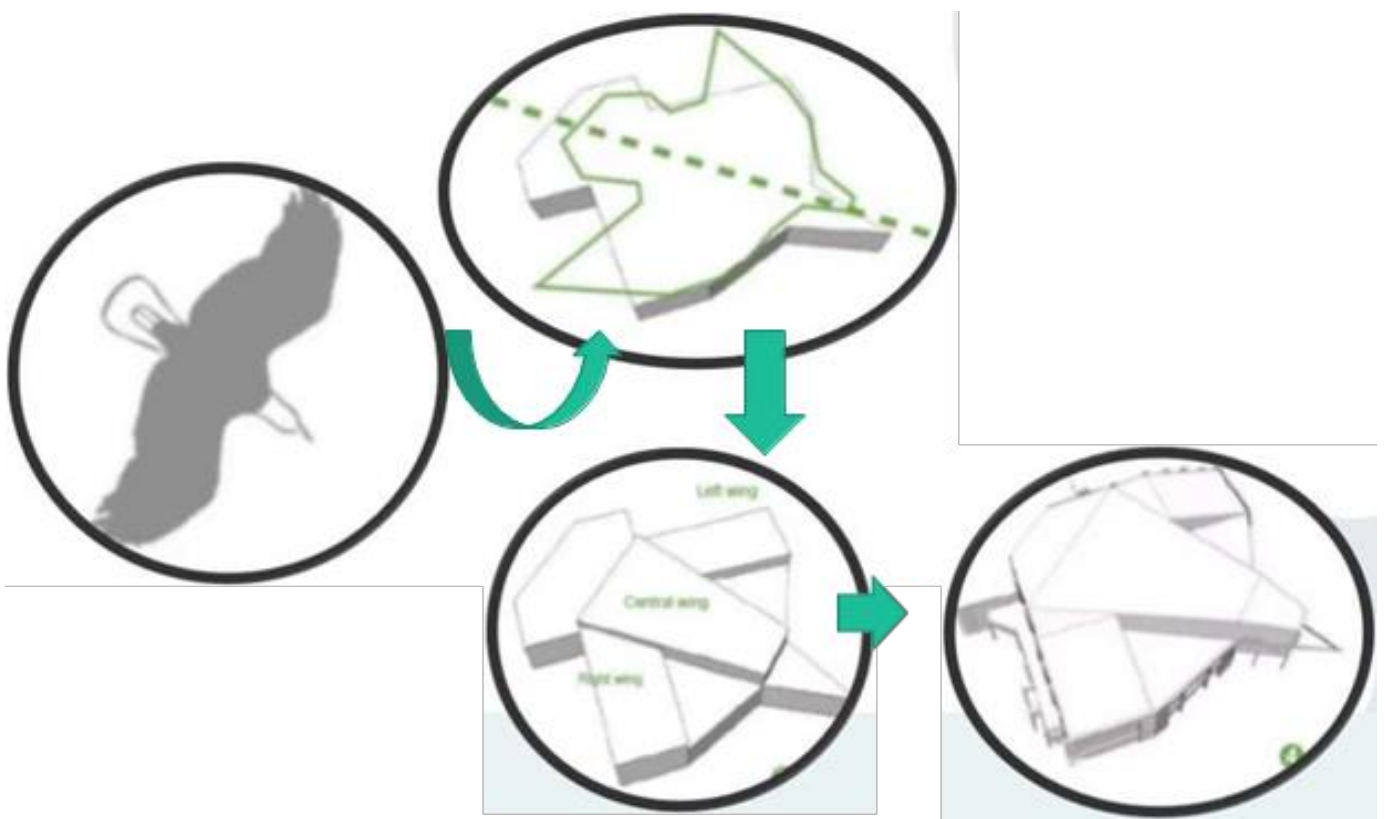
Breaking the monotony of the sterile geometry of the Institute campus

Designing a symbolic and an iconic structure

Use of sustainable materials and techniques (both active and passive) thereby incorporating energy efficiency

# CONCEPT

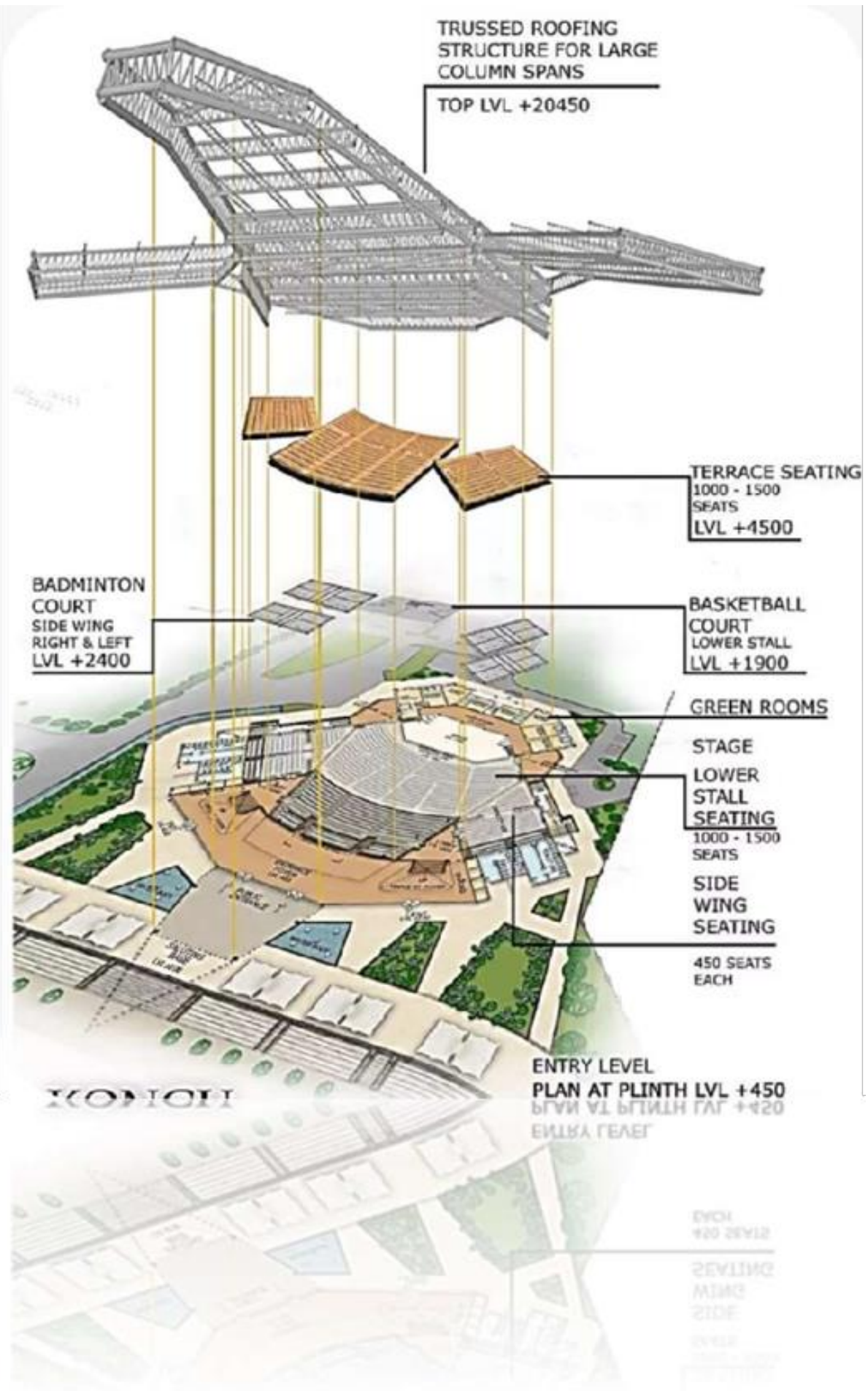
The Architects Prof. Charanjit Shah and Ar. Gurpreet Shah wanted to break the monotony of the Kongu Engineering Campus. A form that is dynamic and can define identity of the campus was contemplated.



## DESIGN CONSIDERATION

1. ACHIEVING FLUIDITY IN FUNCTIONS BY SERVING MULTIPLE PURPOSES
2. ACHIEVING LOW CONSTRUCTIONS COSTS.
3. BREAKING THE MONOTONY OF THE STERILE GEOMETRY OF THE INSTITUTIONS CAMPUS.
4. DESIGNING A SYMBOLIC AND AN ICONIC STRUCTURE.
5. INCORPORATED LARGE AND AMBIENT COLUMN FREE SPACE \





# LITERATURE STUDY

PROPORTION :

THESE ARE OBTAINED FROM THE SPECTATOR'S PSYCHOLOGICAL PERCEPTION AND VIEWING ANGLE, AS WELL AS THE REQUIREMENT FOR A GOOD VIEW FROM ALL SEATS. HEAD MOVEMENT SHOULD BE ACCORDING TO FOLLOWING:

- 30° → NO MOVEMENT
- 60° → SLIGHT MOVEMENT
- 110° → SLIGHT EYE & SLIGHT SHOULDER MOVEMENT
- 360° → FULL MOVEMENT AT A DEPTH OF 24M OF HOUSE →

PROSCENIUM WIDTH – 13M AT A DEPTH OF 32M OF HOUSE →  
PROSCENIUM WIDTH

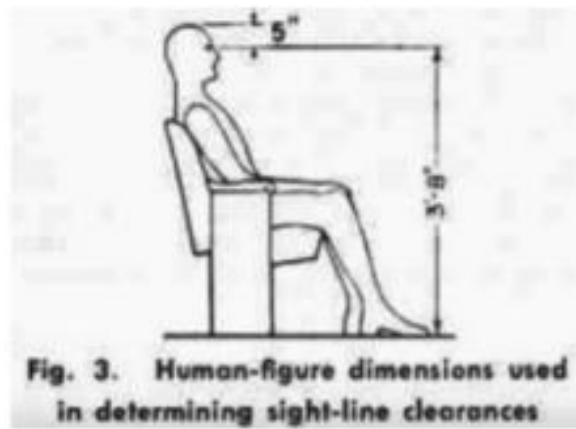
FOR EVERY MEMBER OF THE AUDIENCE TO HAVE AN UNINTERRUPTED VIEW OF PLATFORM OR STAGE OVER THE HEADS IN FRONT AND PLAN OF AUDITORIUM NEED TO CONFIRM TO THE LIMITATIONS SET BY VERTICAL AND HORIZONTAL SIGHTLINES. IN CASE OF CIRCLES IT SHOULD BE ENSURED THAT FULL DEPTH OF STAGE CAN BE SEEN , EVEN FROM UPPER SEAT

Foyers, crush halls, attached rooms: All the enclosed spaces, such as foyers, lounges, flanking verandas, etc., adjacent to the auditorium should be isolated from the main hall by suitable ( well fitting ) doors so that the acoustics of the hall are not influenced by these rooms;

## BALCONY

Balcony should be provided considering that the sight lines (max 30 degree from horizontal ) does not get hampered and also reflected sound path which can create a dead spot





**SEATING** : AREA PER SEAT VARIES FROM  
0.38 SQ MT-3.05 SQ MT

**EXIT, ESCAPE** : 1M WIDE PER 150  
PERSON (MIN. WIDTH 0.8M)

Area required: The floor area of the hall including, gangways (excluding the stage ) should be calculated on the basis of 0.6 to 0.9 sq. m per person

**Balcony:** Where a balcony is provided, its projection into the hall should not be more than twice the free height of the opening of the balcony recess.

**Doors and windows:** The external noise level is high, properly fitted doors and windows should be provided. Their rebates should preferably be lined with draught strip rubber or felt.

**Line of sight:** The elevation of the balcony seats should be such that line of sight is not inclined more than 30 degrees to the horizontal.

**Angle of floor:** As an empirical rule the angle of elevation of the inclined floor in an auditorium should not be less than 8 degrees.

## LENGTH OF ROW:

❑ MAX. NO. OF 16 SEAT PER AISLE, 25 SEATS PER AISLE IS PERMISSIBLE IF ONE SIDE EXIT DOOR OF 1M WIDTH IS PROVIDED PER 3-4 ROWS.

❑ MIN. AISLE WIDTH IS 1M, GOING SHALL BE

❑ BETWEEN 280MM TO 355MM, AND RISER SHOULD BE 115MM TO 190MM.

EXIT, ESCAPE : 1M WIDE PER 150 PERSON (MIN. WIDTH 0.8M).

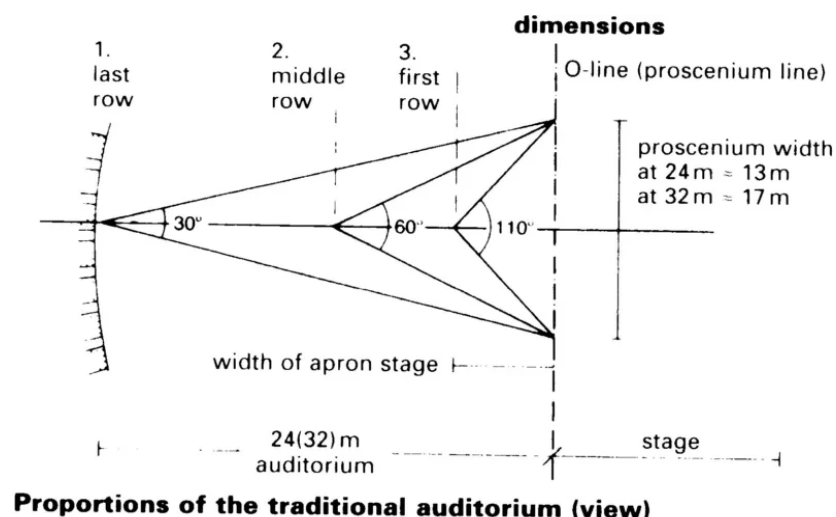
❑ MIN. DISTANCE OF PROJECTION SCREEN FROM WALL IS 1.2M.

❑ MIN. HEIGHT OF PROJECTOR ROOM FROM LAST ROW IS 2.1M.

❑ IT IS PERFORATED (SOUND PERMEABLE).

**Max. Distance from the curtain wall:** In the case of theatres a person with normal vision should be able to discern facial expressions of the performers. In order to satisfy these condition, the distance of the 'farthest seat from the curtain line should not normally exceed 23 m.

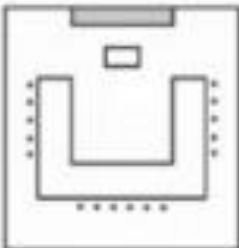
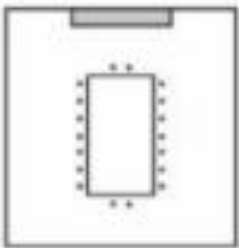
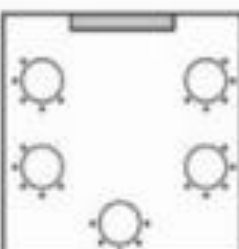
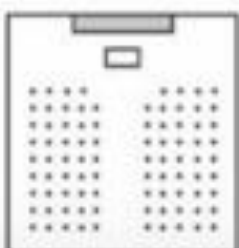
**Stage:** The size of the stage depends upon the type of performance the hall is to cater for. It would be large for theatres, while it would be comparatively small for cinema halls which again depends on the size of the screen



# CONFERENCE ROOM

A conference hall or conference room is a room provided for singular events large conferences such as arenas or concert halls. Conference rooms can be win-such as business conferences and meetings

## TYPES OF SEATING

	Type	Description	Layout
1.	U shaped	<ul style="list-style-type: none"> <li>• Seating around three sides of the room.</li> <li>• It is good for presentations from front.</li> <li>• Presentation space in the middle of the room.</li> <li>• Can be used for up to 50 persons.</li> <li>• Per seat area is 3.25m<sup>2</sup>.</li> </ul>	
2.	Boardroom style	<ul style="list-style-type: none"> <li>• Centrally located table.</li> <li>• Classic layout ideal for debate and discussion.</li> <li>• Seating capacity 5-30 persons.</li> <li>• Per seat area is 3.71m<sup>2</sup>.</li> </ul>	
3.	Cabaret style	<ul style="list-style-type: none"> <li>• All delegates facing front-center on round tables.</li> <li>• Large space in the middle of the room.</li> <li>• Ideal for small-group work.</li> <li>• Per seat area is 1.57m<sup>2</sup>.</li> </ul>	
4.	Theater style	<ul style="list-style-type: none"> <li>• Used for product launches, presentations, displays.</li> <li>• Used to present to large numbers of delegates.</li> <li>• Can be used for 100-250 persons.</li> <li>• Per seat area is 0.83 m<sup>2</sup>.</li> </ul>	

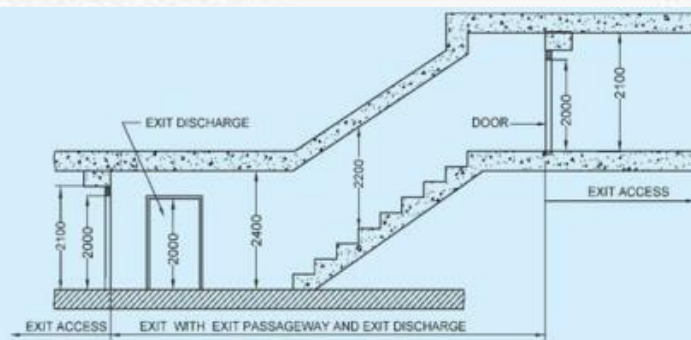


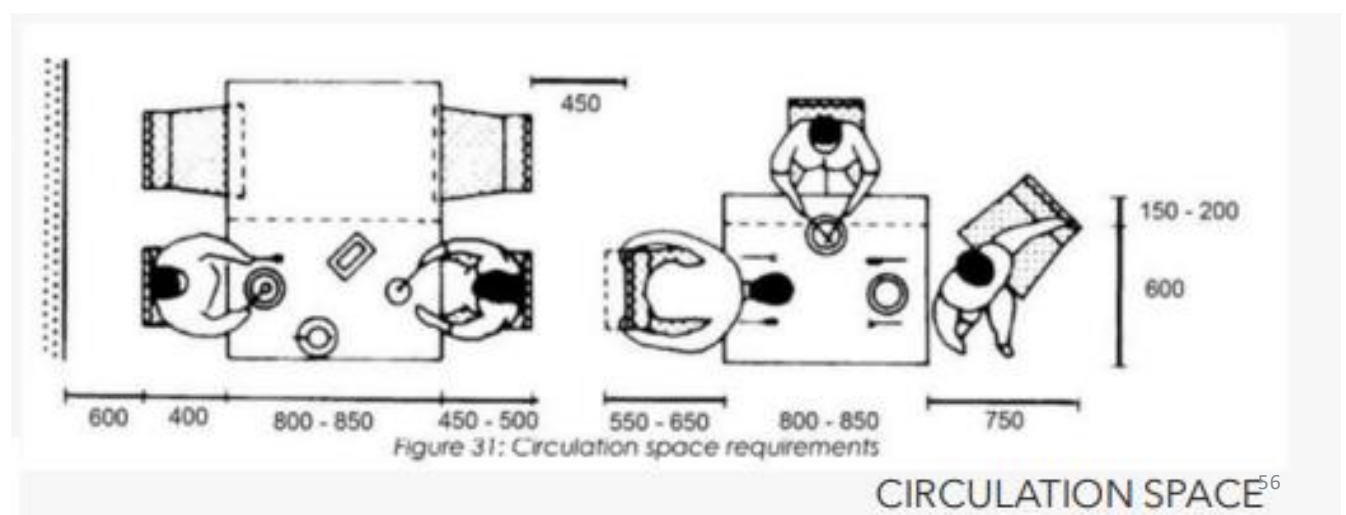
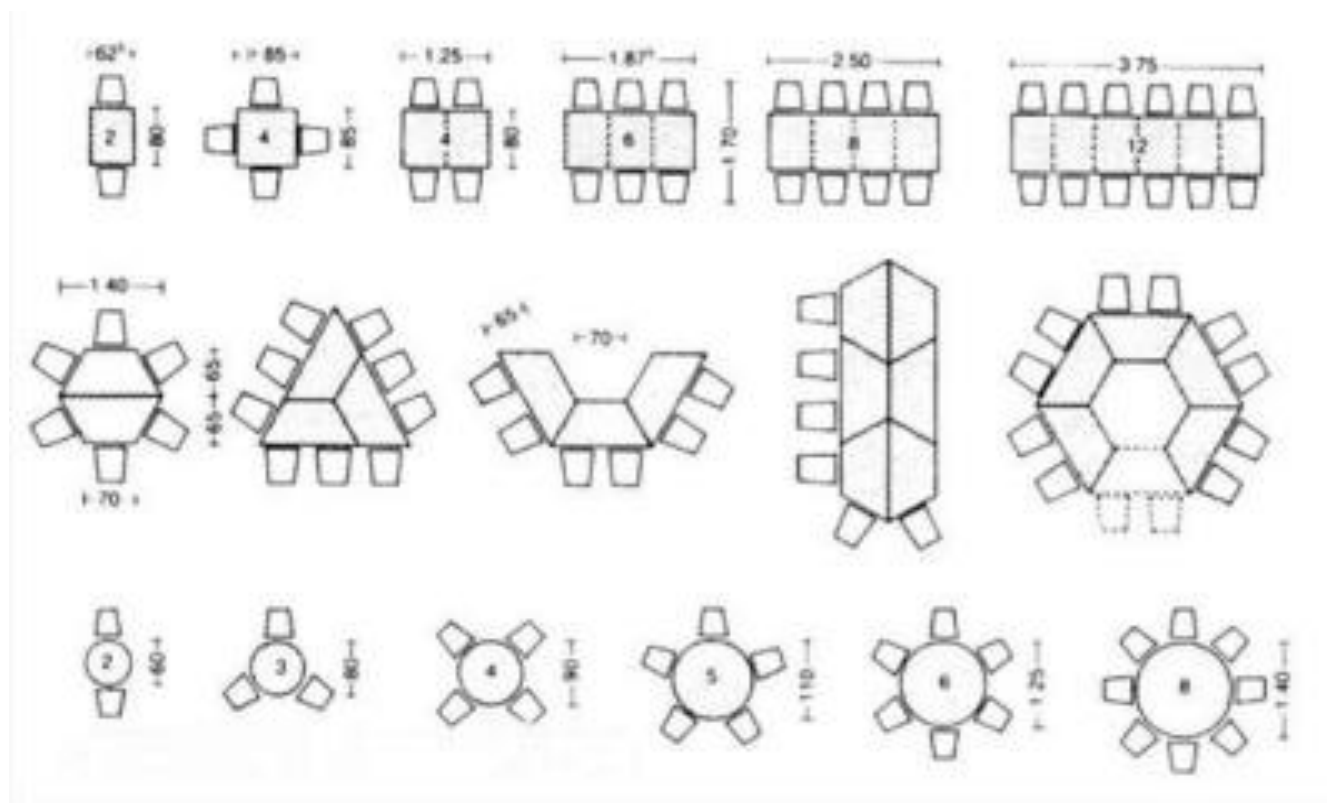
FIG. 5 MINIMUM HEAD ROOM MEASUREMENT

EXIT PASSAGEWAY DIMENSION

## RESTAURANTS

### CIRCULATION SPACE Space standards:

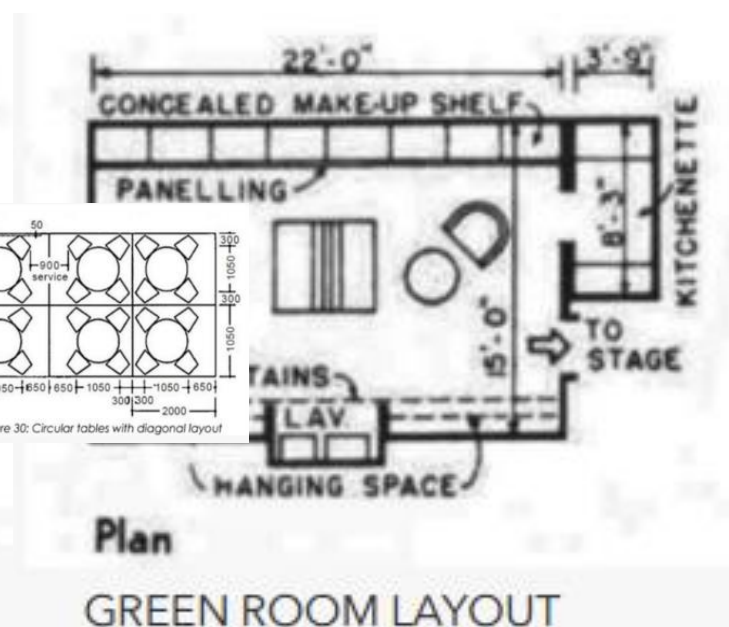
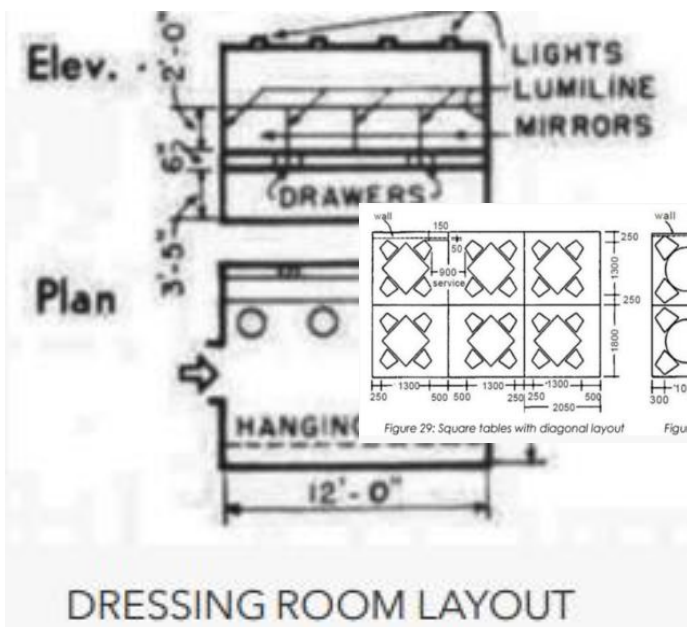
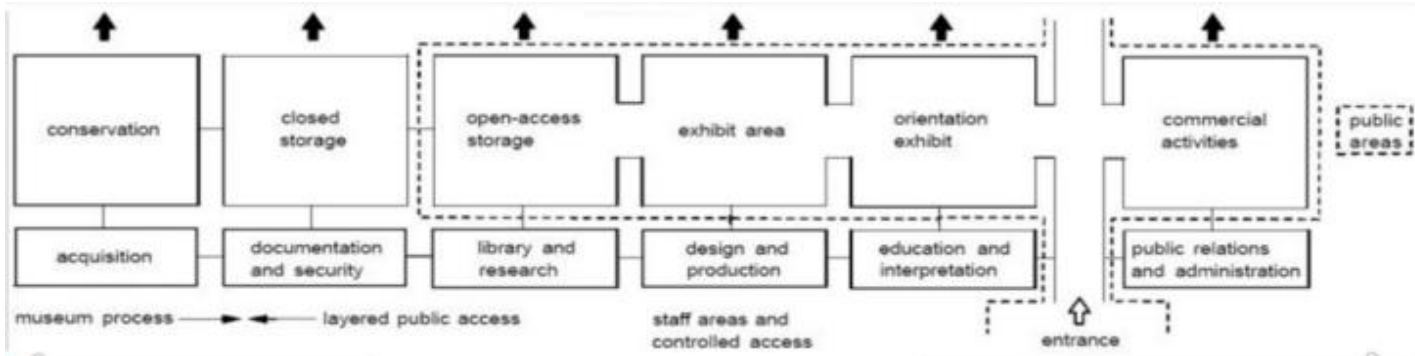
- To eat comfortably, one person requires a 600mm wide and 400mm
- There must be clarity in organization between self-service, fast food ,
- Service aisles should be minimum 900mm to 1350mm wide if used both
- Area required per person ranges from 1.3- 1.9 m<sup>2</sup>.
- Restaurants should be planned so that a variety of seating arrangement is possible





# EXHIBITION GALLERIES

An Exhibition is an organized presentation and display of a selection of items. In practice, exhibitions usually occur within museums, galleries and exhibition halls, and World's Fairs



DRESSING ROOM LAYOUT

GREEN ROOM LAYOUT

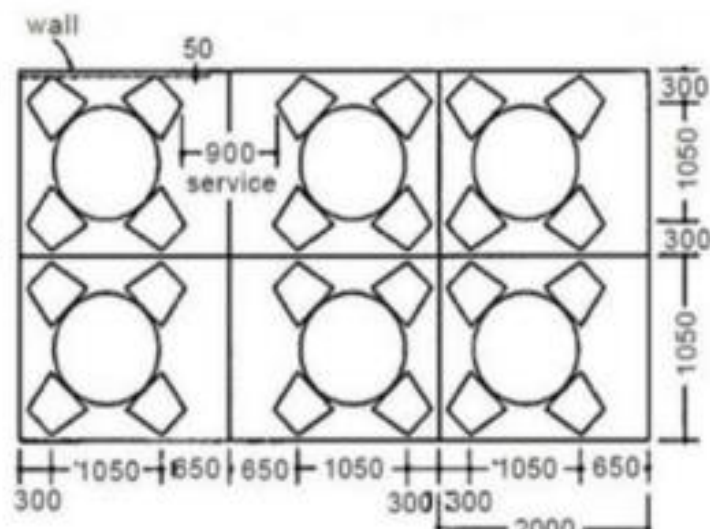
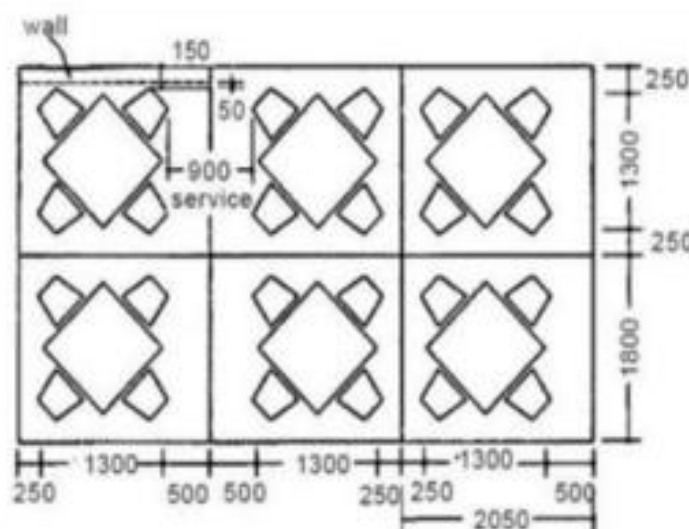


Figure 29: Square tables with diagonal layout

Figure 30: Circular tables with diagonal layout



# CONCEPT

## INSPIRATION

**Sanchi** is a [Buddhist complex](#), famous for its Great Stupa, on a hilltop at [Sanchi Town](#) in [Raisen District](#) of the [State](#) of [Madhya Pradesh](#), India. It is located, about 23 kilometers from [Raisen town](#), district headquarter and 46 kilometres (29 mi) north-east of [Bhopal](#), capital of [Madhya Pradesh](#).

The Great [Stupa](#) at Sanchi is one of the oldest stone structures in India, and an important monument of [Indian Architecture](#).

Buddhist architecture is one of the most beautiful and awe-Inspiring styles in the world. the concept behind the convention centre design is a buddhist stupa. the stupa is a buddhist piece of architecture built to rest the relics of buddha.



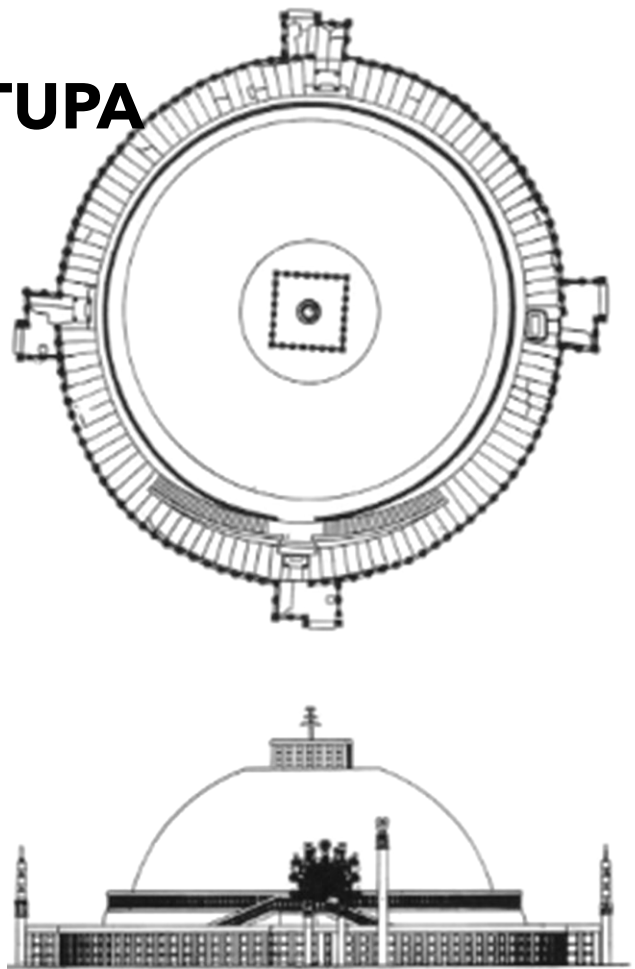
THE **DOM** THAT IS A PART OF THE STUPA IS AN UNIQUE FEATURE IN BUDDHIST ARCHITECTURE, THE MASSIVE 10 M RADIUS DOME PLACED AT THE CENTRE OF THE BUILT BLOCK GOVERNS THE BEAUTY

THE GEODESIC DOME HOUSES THE HISTORICAL MUSEUM STANDS OUT BECAUSE OF IYS UNIQUE FORM,

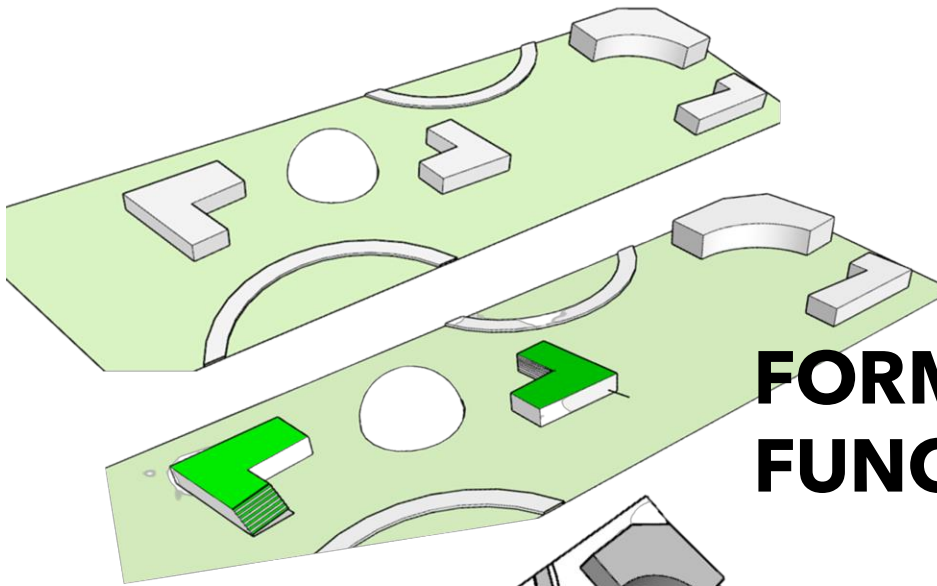
A FACADE RUNS THROUGH IT SURFACE, OF THE DESIGN.

## **SIGNIFICANCE OF STUPA IN BUDDHISM**

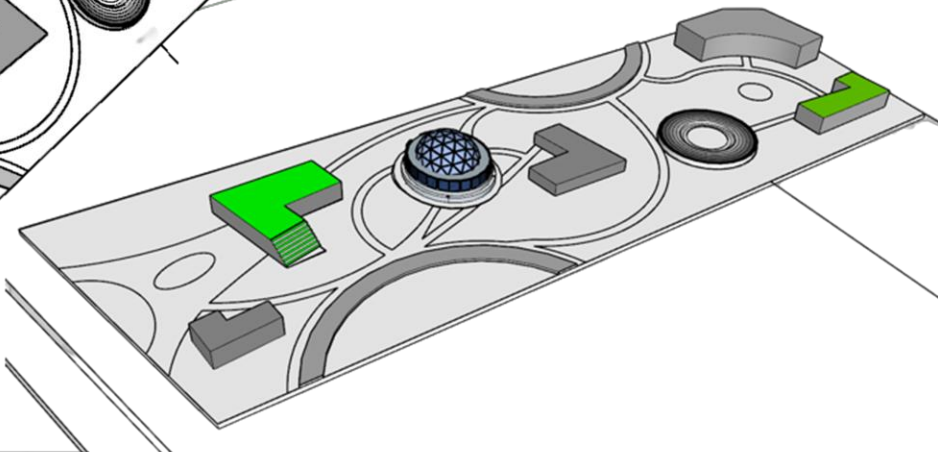
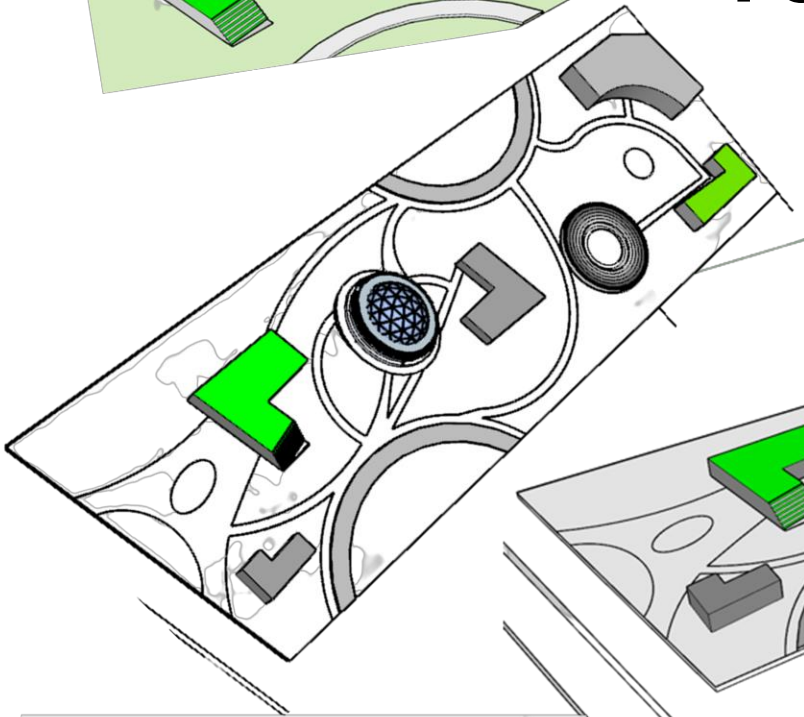
Buddhist stupas were **originally built to house the earthly remains of the historical Buddha and his associates** and are almost invariably found at sites sacred to Buddhism. The concept of a relic was afterward extended to include sacred texts.



# FORM EVOLUTION



**FORM FOLLOWS FUNCTION**



## Advantages of an L-Shaped House Plan

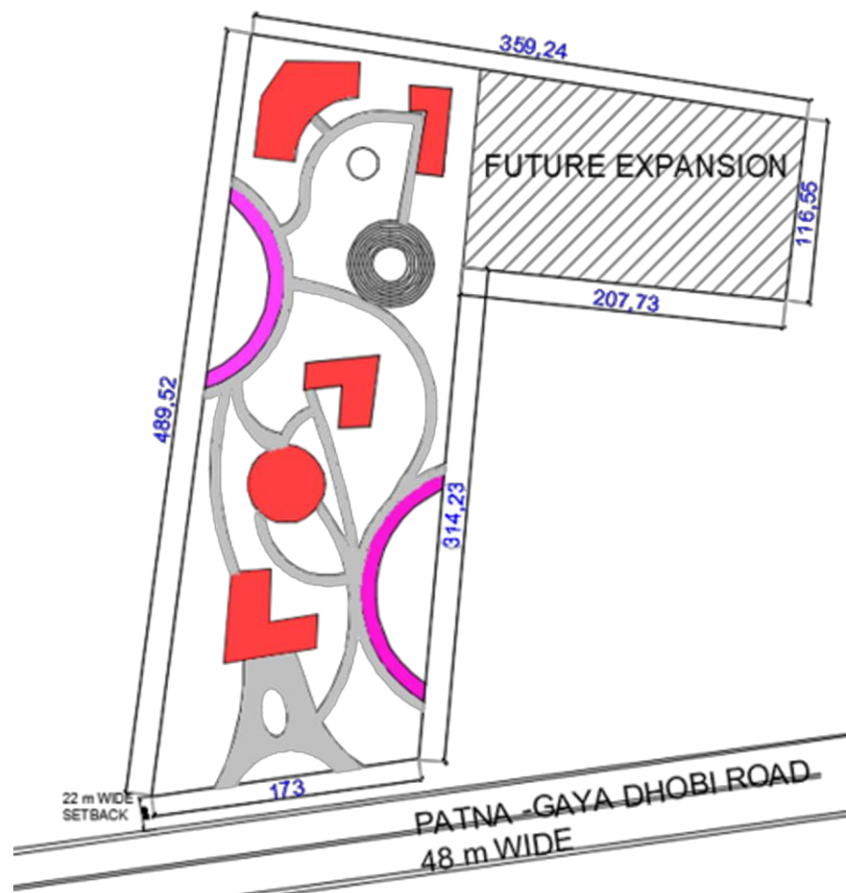
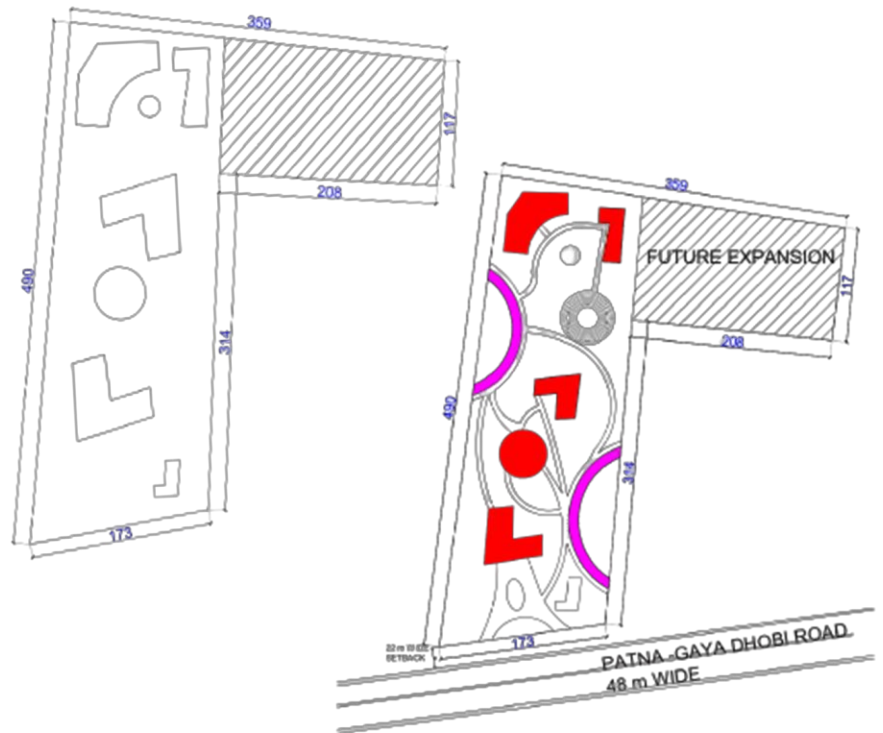
- Wide Open Spaces. An open floor concept creates an inviting, bright, and welcoming space with a breezy feel. ...
- Indoor-Outdoor Harmony. The layout of the L-shape design lends itself to a seamless continuity of the indoors and outdoors. ...
- Unlimited Possibilities. ...
- Breathtaking Views.



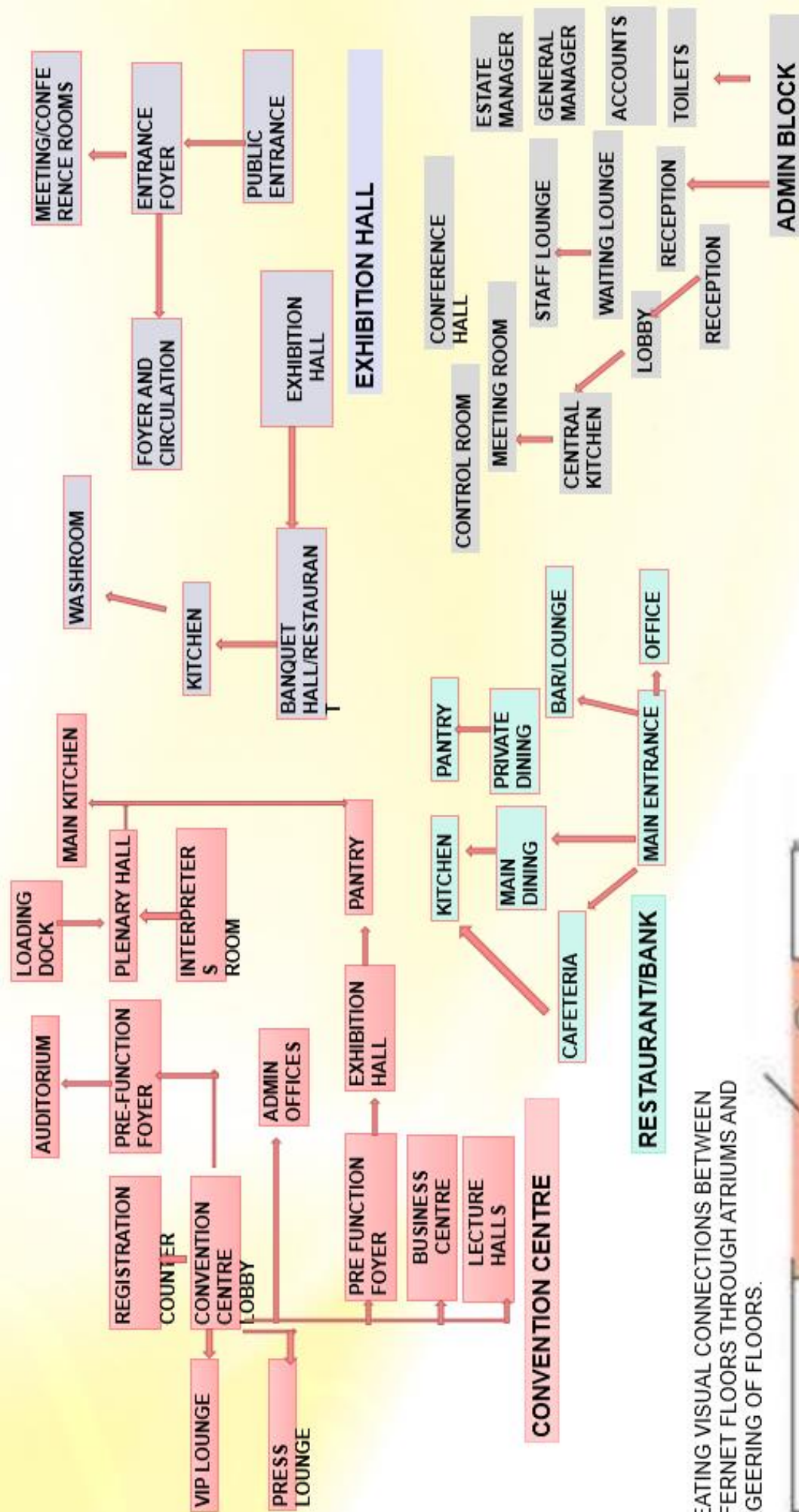


# SITE EVOLUTION

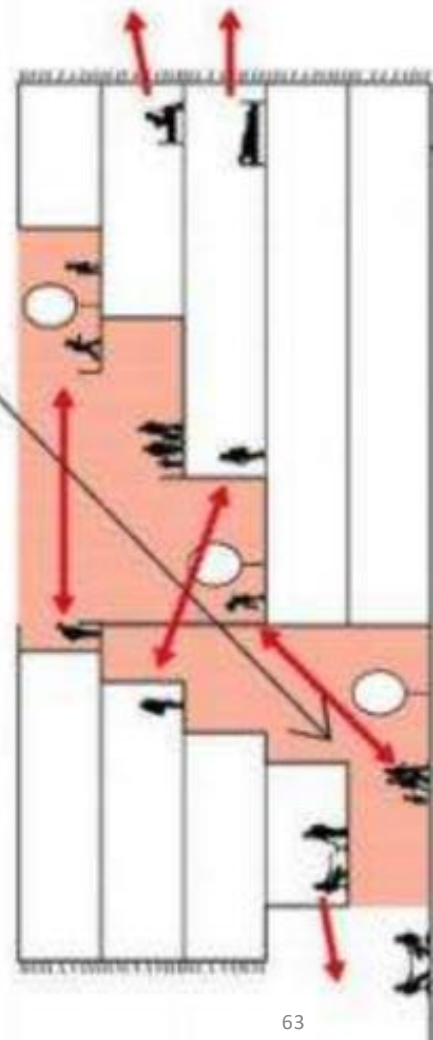
Connectivity architecture connects main functional blocks or entities of a system with well-defined interfaces enabling interoperability, fluent data flows and information sharing in timely manner.



# BUBBLE DIAGRAMS

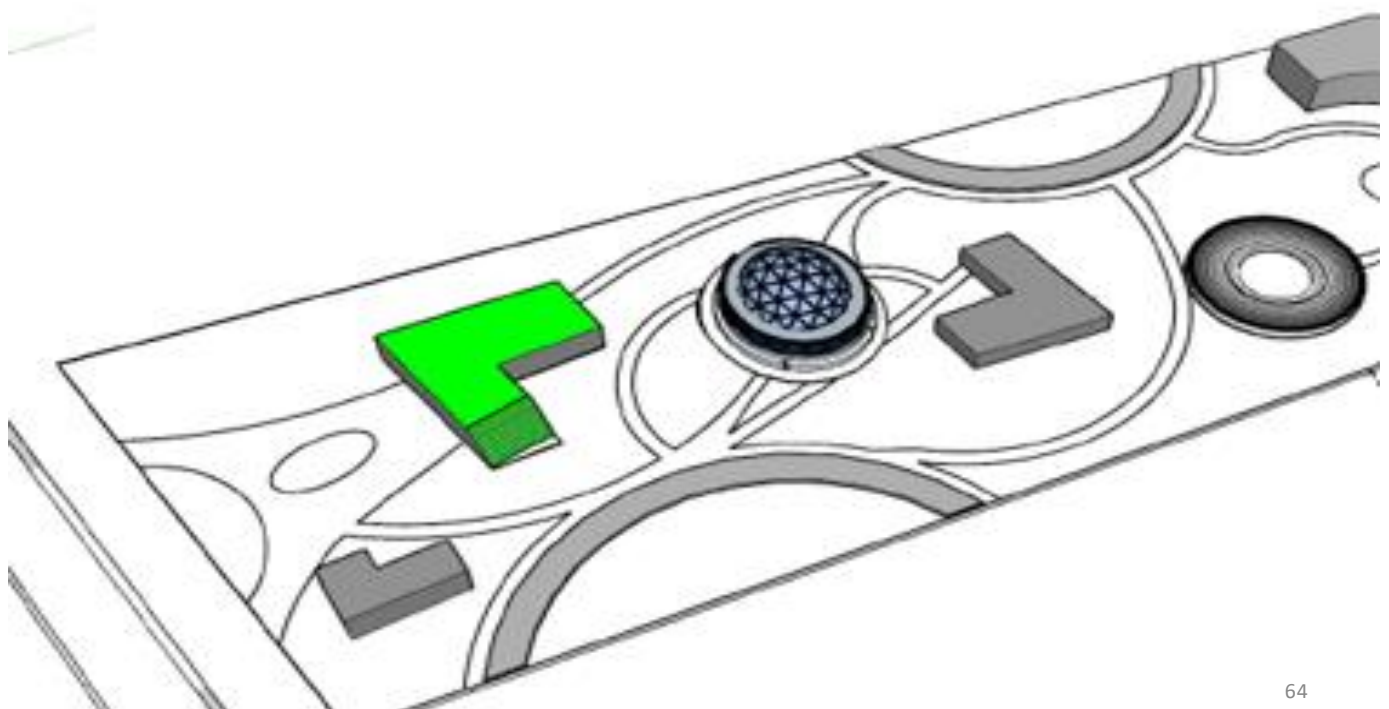


CREATING VISUAL CONNECTIONS BETWEEN DIFFERENT FLOORS THROUGH ATRIUMS AND STAGEERING OF FLOORS.



## HORIZONTAL ZONING

**S  
T  
A  
C  
K  
I  
N  
G**











# FLOOR PLANS

















# **SECCION AND ELEVATIONS**





# 3D VIEWS









# **ELECTIVE**











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