

MICE
(MEETING, INCENTIVE, CONVENTION AND EXHIBITION)

A THESIS

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

By

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DEPARTMENT OF ARCHITECTURE
SCHOOL OF BUILDING AND ENVIRONMENT

SATHYABAMA

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

With Grade “A” by NAAC

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BONAFIDE CERTIFICATE

This is to certify that Thesis Report is the bonafide work of **MOHAMMED JAVED RAHMAN (39210100)** who carried out the Thesis entitled "**MICE (MEETINGS, INCENTIVES, CONVENTION, EXPO)**" under our supervision from December 2023 to May 2024.

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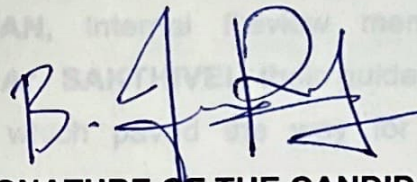
ACKNOWLEDGEMENT

I am pleased to acknowledge my sincere thanks to Board of Management of Sathyabama Institute of Science and Technology for their kind encouragement in doing this Thesis and for completing it successfully. I am grateful to them.

DECLARATION

I, **MOHAMMED JAVED RAMAN** hereby declare that the Thesis Report entitled "**MICE (MEETING, INCENTIVE, CONVENTION AND EXHIBITION)**" done by me under the guidance of **Ar. SHRUTHI NATARAJAN** (Internal Guide), **Ar. RAMESH KUMAR** (Internal Review Member) and **Ar.SAKTHIVEL** (External Guide) Sathyabama Institute of Science and Technology is submitted in partial fulfillment of the requirements for the award of Bachelor of Architecture Degree.

DATE: 23.05.24.



PLACE: Chennai

SIGNATURE OF THE CANDIDATE

I wish to express my thanks to all Teaching and Non-teaching staff members of the Department of Architecture, all my family members in many ways for the completion of the Thesis.

MOHAMMED JAVED RAMAN

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I wish to express my thanks to all Teaching and Non-teaching staff members of the **Department of Architecture**, all my family members in many ways for the completion of the Thesis.

MOHAMMED JAVED RAHMAN

THESIS SYNOPSIS

This thesis explores the evolving field of MICE (Meetings, Incentives, Conferences, and Exhibitions) architecture, emphasizing the need for connectivity, flexibility, and sustainability in modern design. As the global demand for versatile and multifunctional spaces grows, MICE venues must adapt to new technologies, changing user expectations, and environmental considerations. The research aims to propose innovative design strategies that enhance the functionality, user experience, and environmental performance of MICE facilities.

Overview of the MICE industry and its significance in the global economy. Examination of current trends and challenges in MICE architecture. The dining area and Playground are the spatial requirements planned.

Analysis of contemporary MICE facilities, design principles, case studies, and emerging technologies. Qualitative and quantitative methods, including case studies, surveys, and interviews with industry professionals.

Enhancing digital and physical connectivity within MICE venues. Integration of advanced communication technologies, wayfinding systems, and seamless indoor-outdoor transitions.

Reflection on the importance of innovative, flexible, and sustainable design in shaping the future of MICE architecture. Key takeaways from successful MICE projects and their applicability to future designs.

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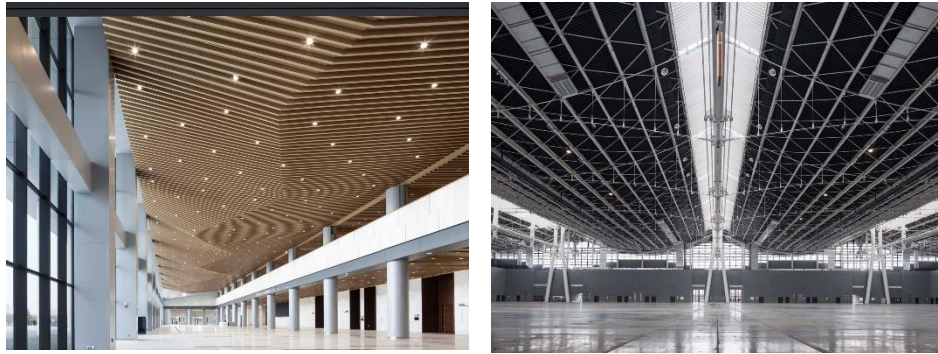


Fig 1.9 & 1.10 INTERIOR VIEWS

2. KONGU CONVENTION CENTRE

- Location - Erode, Tamil nadu.
- Architect - Creative group , new delhi.
- Year of construction - JULY 2010.
- Area - 16200 SQM builtup (23 ACRES)
- Construction Time - 7 weeks (January – March 2016)

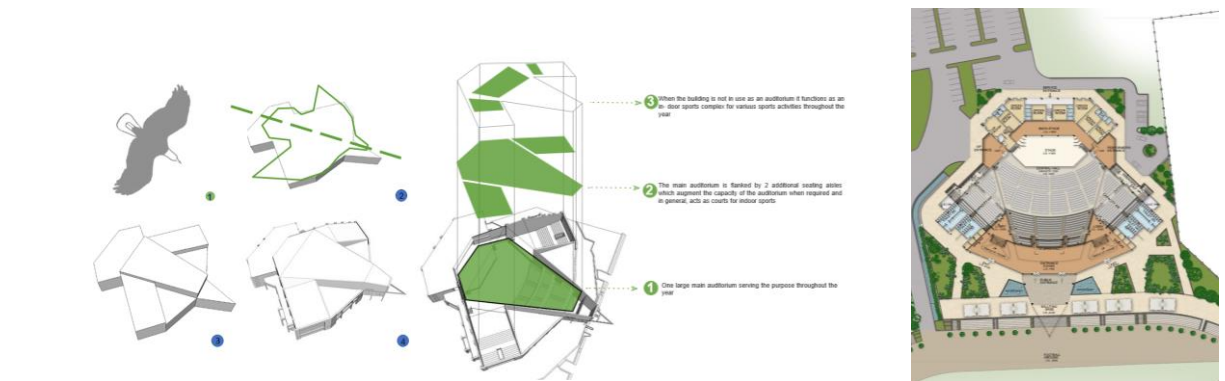


Fig 2.1 conceptual form and master plan

Inspired from a “**GARUDA IN FLIGHT**”, Architects create one of Asia's largest Indoor Arena with Multi-Purpose use of Spaces .” The design was optimized beyond the requirements into a multi-purpose convention hall and the client reciprocated this idea with positivity. Executing the project on the established funding, the architects created a facility which could be pertinent and functional for all institutional activities. Hence, multiple functionalities were then incorporated

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

In recent years, the terms "meetings industry" and "events industry" have been gaining popularity as alternatives to MICE. It makes up a big part of global business travel since every industry has regular events of some kind. The main gateways are to bring professionals together, foster connections, promote new ideas, and push growth. the textile industry is primarily concerned with the design, production and distribution of textiles, yarn, cloth, and clothing.

1.2 NEED OF THE PROJECT

India is among the world's largest producers of Textiles and Apparel. The domestic apparel & textile industry in India contributes approx. 2% of the country's GDP, and 7% of industry output in value terms. The share of textile, apparel, and handicrafts in India's total exports was 11.4% in 2020-21. India holds a 4% share of the global trade in textiles and apparel. India is one of the largest producers of cotton and jute in the world. India is also the 2nd largest producer of silk in the world and 95% of the world's hand-woven fabric comes from India. The Indian technical textiles segment is estimated at \$16 bn, approximately 6% of the global market. The textiles and apparel industry in India is the 2nd largest employer in the country providing direct employment to 45 mn people and 100 mn people in allied industries. NTTM – National Technical Textile Mission, has proposed 74 research proposals of Rs.232 crores. In which a proposal is allotted for Chennai. Which was announced by Chief Minister M K Stalin, to set up a 'Textile City' in Chennai. The state government will also establish a textile park at Virudhunagar district spread over 1,500 acres for which SIPCOT will acquire land, as Tamil Nadu tops third in the country in attracting foreign investments and exports in the textile sector. The state contributes 12% of total textile exports from India. Plans to set up a Handloom museum in Mahabalipuram, The museum would be set up at a cost of Rs 30 crore. Karur, Tiruppur, and Kancheepuram would be converted into textile export hubs. GOVNT. SCHEMES AND PROPOSALS

2.1 RCC FRAMED STRUCTURE WITH STEEL TRUSS

The truss network, primary, secondary and tertiary used in the structure aids to span large column free spaces upto 50 m. Double trusses have been used to span over the Central auditorium. The wings (left and right) are spanned/ supported on the intermediate truss to provide access to the Central spine without any hindrance. Primary member Secondary member Tertiary member Largest span (49.5 M) into the building. The design was prepared keeping in view, the collective use of a large gathering space, enabling it to double up as a sports arena as and when required.

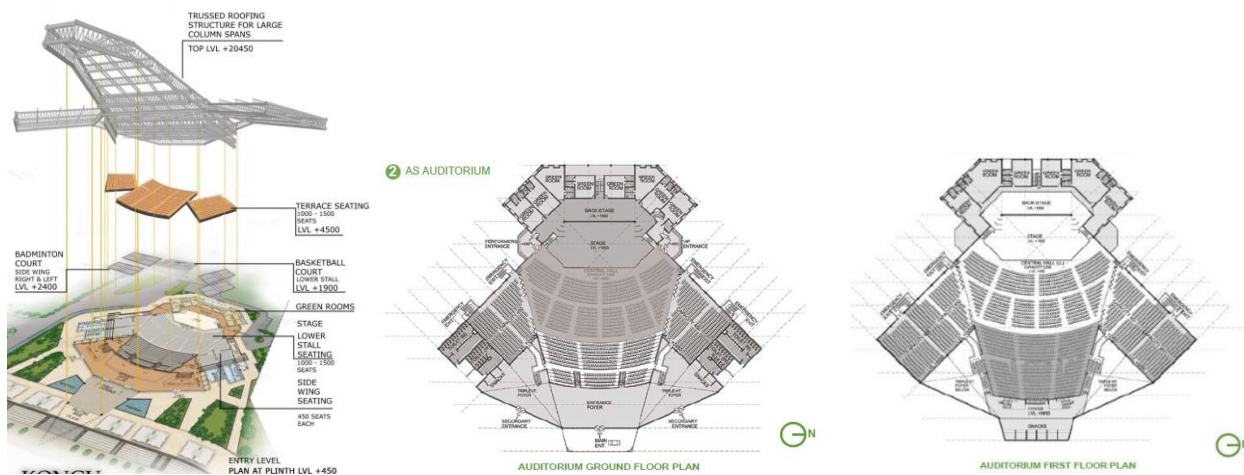


Fig 2.2 & 2.3 structural view and floor plan

SPORTS FACILITIES

- When the auditorium is used for sports activities and National Level competitions level 2 lighting as per International standards has been provided

LIGHTING

- Stage lights and spot lights also have been used for National level plays and performances

ACOUSTICS

- Cost effective cladding of perforated gypsum boards has been incorporated to cut reverberation.

2.2 SALIENT FEATURES

- Use of renewable energy sources.

28%
Expected sector CAGR
(2019-2021)

10.62%
Textile exports share
in overall exports

45 mn
Direct employment
generated

1.3 AIM AND OBJECTIVE

- (a) To design a building with meeting space, lecture halls, Conventional and expo hall. .
- (b) Incorporating passive design strategies.
- (c) to create a major landmark.
- (D) Overview of the MICE industry and its significance in the global economy.

Examination of current trends and challenges in MICE architecture.

CHAPTER 2

LITERATURE CASE STUDIES

1 SHIJIAZHUANG INTERNATIONAL CONVENTION & EXHIBITION CENTER

Location – Shijiazhuang, China.

Architect- THAD.

Area: 359000 m² (88.71 Acres)

completion – 2018

1.1 DESIGN STRATEGIES:

- The design changes the ground lane that runs through the green space in the east to an underground driveway, and the design also connects the garden in the north with

the **public green space** along the Hutuo River in the south to create a continuous and pleasant public space for **entertainment and leisure of the citizens**.

- **Combine functions in a flexible and efficient manner.** A **multi-elevation system** is built so that the paths for the freight and the people won't cross.
- The exhibition hall extends along the hub in the **shape of a fishbone**, with two or three exhibition halls in a group. In this way, it can serve coherently as a whole or operate independently in groups.
- A **relatively isolated multi-purpose exhibition hall** is set up, covering an area of 26,000 m², to serve the purposes for **exhibitions, conferences, artistic performances, and competitions**.
- The **large performance hall** is fitted with **no fixed seating**, with a few movable seats in the rear. If necessary, the performance hall can be divided into **two to four small ones** and the **grand banquet hall of about 3,000 m²** can be divided into **three parts** for independent operation.

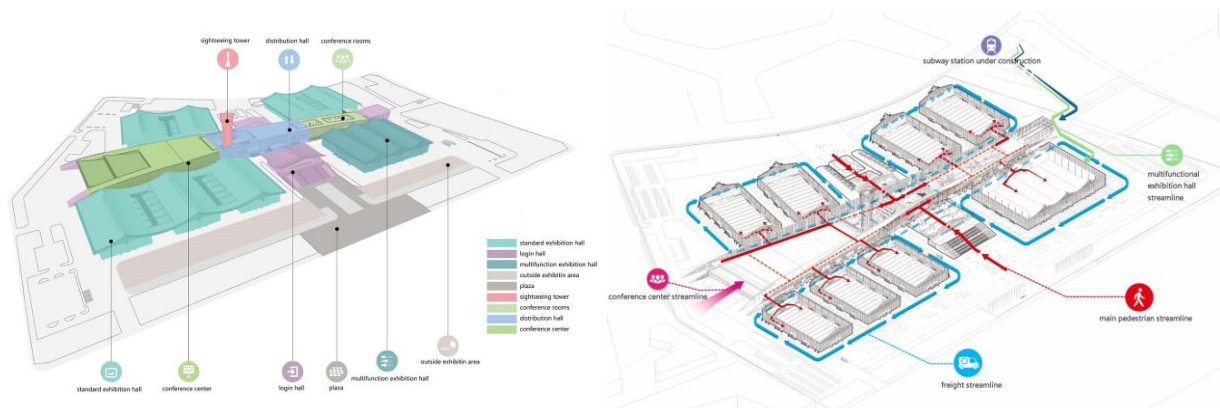


Fig 1.1: CIRCULATION ON DIFFERENT LEVELS



Fig 1.2: GROUND FLOOR PLAN

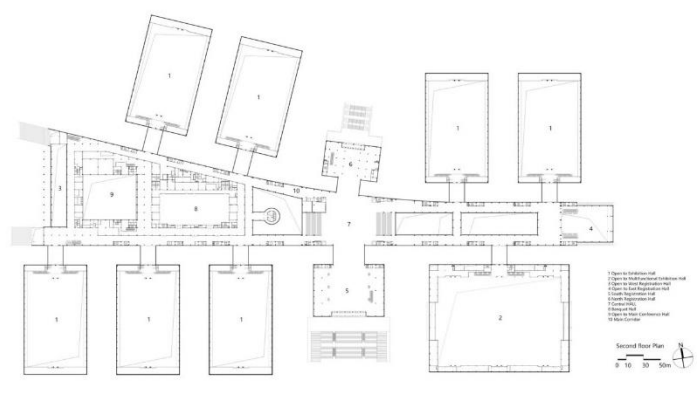


Fig 1.3: FIRST FLOOR PLAN

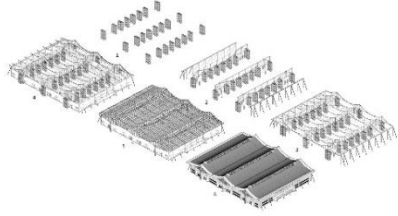


Fig 1.4: STRUCTURAL VIEW



Fig 1.5: ELEVATIONAL VIEW (SIGNAGE)

- All the seven standard exhibition halls in the Shijiazhuang International Convention & Exhibition Center adopt the globally rare **two-way cable-suspended structure**, halving the steel consumption compared with the truss structure. Undulating and well-proportioned, the roof of the exhibition halls in the cable-suspended structure covers a long span.

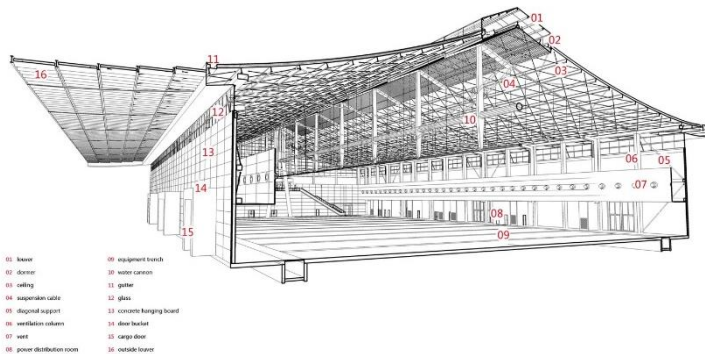


Fig 1.6: SECTIONAL 3D VIEW

SPACES : (CABLE SUSPENDED STRUCTURE)

1. 7 standard expo halls – 11,000 sq.m each
2. Multipurpose expo hall – 26,000 sq.m
3. Standard expo hall – approx. 9450 sq.m
4. Grand banquet hall – 3000 sq.m
5. West registration hall – approx. 5000 sq.m
6. East registration hall – approx. 3000 sq.m
7. Main conference hall – approx. 6000 sq.m
8. Conference room – approx. 9500 sq.m
9. Sightseeing tower – approx. 3600 sq.m
10. Catering center – approx. 7000 sq.m
11. Office area – approx. 8700 sq.m

1.2 DESIGN ELEMENTS

- The buildings are energy-consuming. **Glass curtain wall** has been mostly used in the enclosure structures of buildings.
- Some **central halls are too large and too high**, with staggering energy consumption. During the transition season, the exhibition halls are poor in cross-ventilation, without **intelligent power management system**.
- **Signage of halls** at the height of 10m approximately and at a height of 5 m. To address both the people nearby and far via vehicles

- By means of **new materials and latest technologies**, it integrates the beauty in **geometrical mechanics and architectural aesthetics**, while winning the visitors' acclaim in its localization.
- With a view to the **green and sustainable building**, the requirements for the Green Building Label have been applied to the planning, design and start-up phases for the combination of design strategies from the perspective of the building's life cycle.
- The **maximum span** of the main bearing structure extends **105 meters** and that of the **secondary bearing structure 108 meters**.
- The detailed design of the **gable wall of the exhibition hall** draws from the architectural design of Mani Hall of Longxing Temple in Zhengding Country.

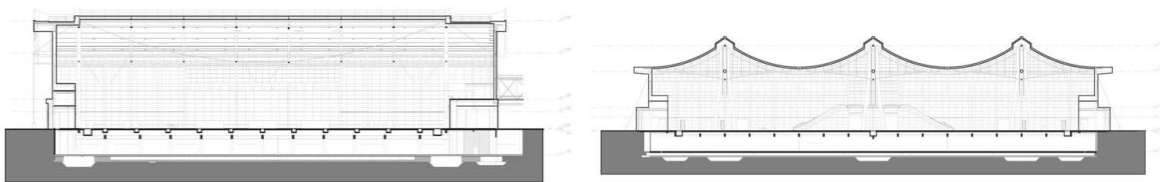


Fig 1.7:SECTIONAL VIEW

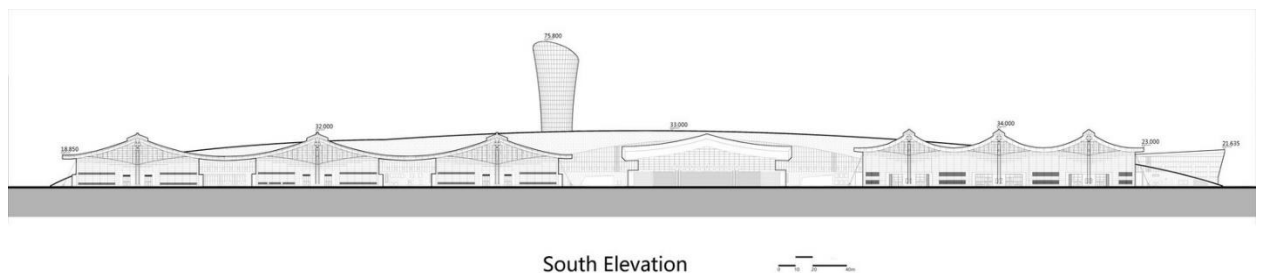


Fig 1.8 FRONT ELEVATIONAL VIEW

1.3 INFERENCE :

- Main pedestrian stream line connecting all the major entries of the building.
- Freight circulation all around each structures.
- Expo hall's circulation is in a closer proximity to the site entry point.
- Performance hall – no fixed seating, can be divided into 2/4 small ones;
- Grand Banquet hall – 3000 sqm can be divided into 3 parts.

Flexible spaces :

- Performance hall – no fixed seating, can be divided into 2/4 small ones;
- Grand Banquet hall – 3000 sqm can be divided into 3 parts.

- Use of fly ash content in for concrete works, plastering etc.
- Plantation of Evergreen trees and native trees for low maintenance.
- Solid waste segregation for Bio-degradable and non-Bio degradable waste.

FLUIDITY IN USAGE

- As the building functions as both an auditorium and indoor sports complex the plans also undergo a transformation according to usage. The respective plans in terms of use has been shown below.
- This becomes possible with the help of sitting that is not fixed to the floor in spaces allotted to sports activities.

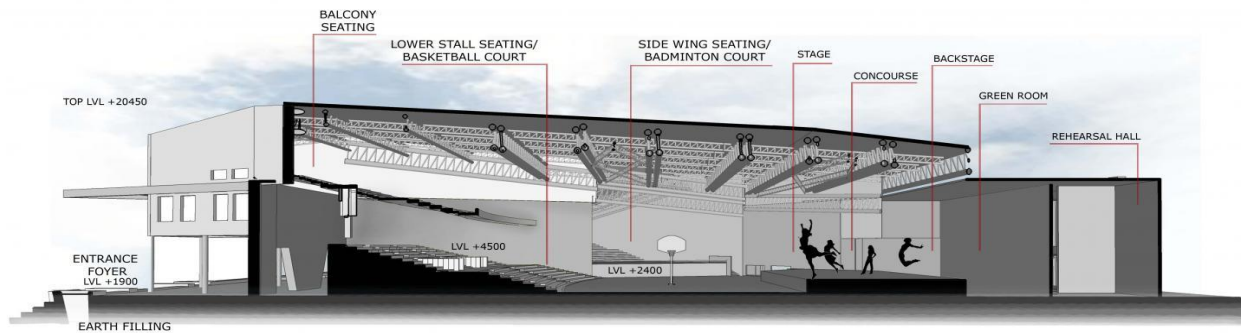
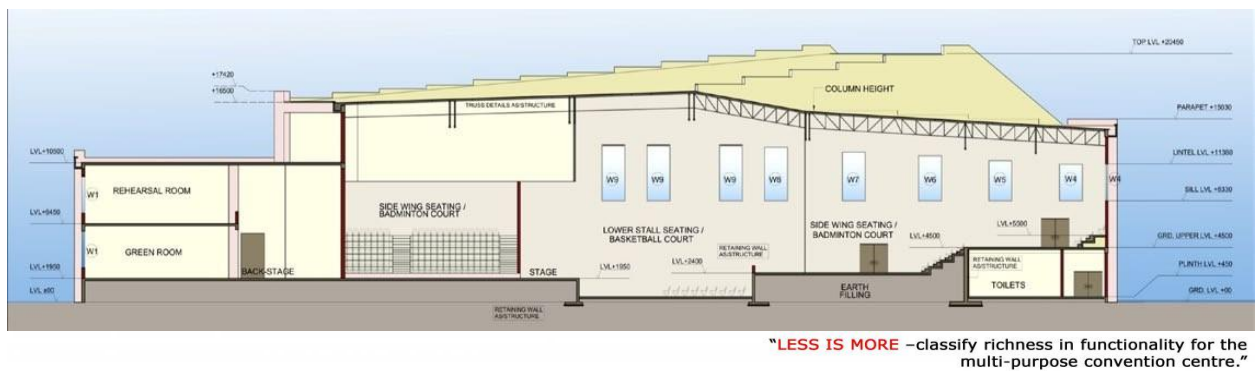


Fig 2.4 SECTIONAL VIEW

GREEN FEATURES AND MATERIAL APPLICATION

PASSIVE STRATEGIES

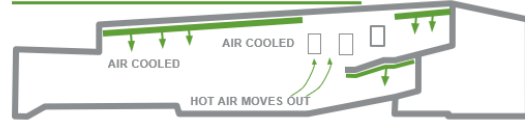
- Thermal mass; aerated blocks/ hollow blocks
- Insulated roofing.
- Sun shading.
- Trees for shade.
- Green parking-minimizing the hard surface.
- Hollow glass blocks.
- Minimizing heat gain & maximizing day light in common public areas and backstage & pre-functional areas.

ACTIVE STRATEGIES

- Recycling of water.
- Storm water retained on site to recharge groundwater.
- Adherence to ECBC code.



COOLING AND VENTILATION



- 1.As the air gets heated it moves up and escapes through the clerestory windows
- 2.Fresh cooled air is circulated from the ducted air cooled system
- 3.Use of sheets with thermal insulation cuts the heat gain



PAVING BLOCKS

As access to car parking slots and intermediate road network to cut heat island effect and minimise bi-tumen top

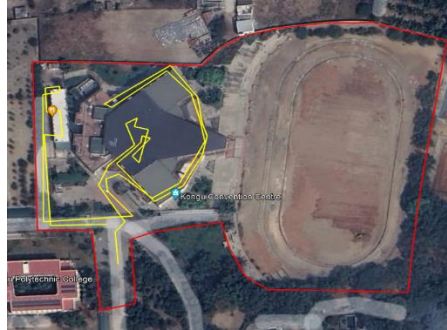


FIG 2.5 & 2.6 CIRCULATION PATH AND FRONT ELEVATION

3. CODISSIA CONVENTION CENTER

Location - G.V. Fair Grounds, Avinashi Rd, Coimbatore, Tamil Nadu.

Year of construction - 1999

Area - 20,000SQ.M (BUILT UP) 53 ACRES

Year of establishment – 1969

3.1 SITE AND CONSIDERATIONS:

- Coimbatore is a business-friendly investment center. A hub of hospitable Industry with well-net communication & and travel links. Health care centers and Educational hubs make it attractions, enhancing their strength facilities.
- Strategically located at the tri-junction of India's most dynamic growth region comprising the southern states of Tamil Nadu, Karnataka, and Kerala.

- Coimbatore serves as an important hub of business activities and also as the gateway to the business enterprises of this part of the Country. With an excellent business infrastructure, an international airport, efficient telecommunication links, an accessible distance to the nearest port city of Cochin, and a multilingual advantage.

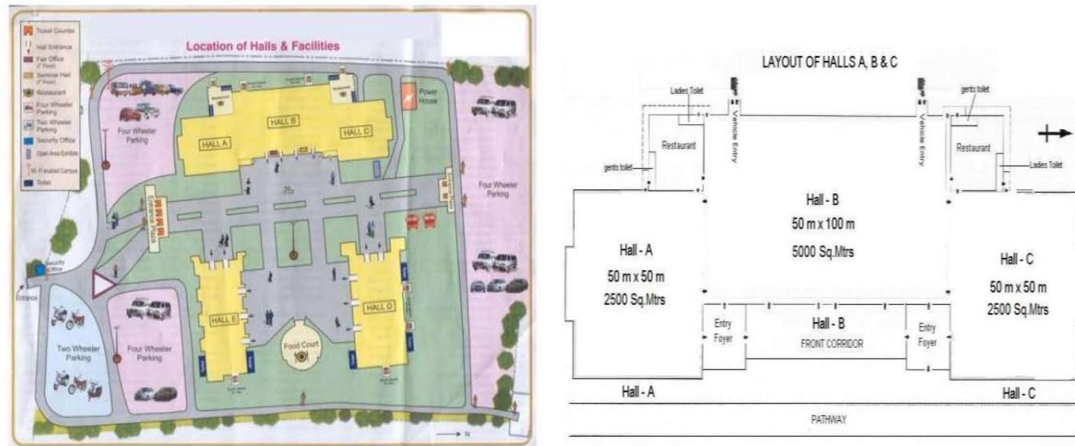


FIG 3.1 & 3.2 MASTER PLAN AND EXPO HALL FLOOR PLAN

The complex has 2 entries and 3 exits, of which one entry is for material entry. There are 5 Halls such as Hall A, Hall B, Hall C, Hall D, Hall E, Food court, and OAT. Each Hall has a separate parking facility. In front of Hall E and at the rear parking lot 3000+ cars and 5000+ two-wheelers parking facility is provided within the campus of the complex.

Facilities:

Head Room : 10.65 Mts. A veritable drive-in for cranes, hoists, and any vehicle using the vertical expanse

Hall entry for vehicles: 5.4 Mts. High x 4.6 Mts. Wide. Ample Car parking facilities

Service trenches for power, water supply and drain line, Telephones, and compressed air.
Power Supply : Genset of 125 KVA, 250 KVA, 365 KVA, 380 KVA & 600 KVA.

General lighting inside the halls. Water supply for general purposes.

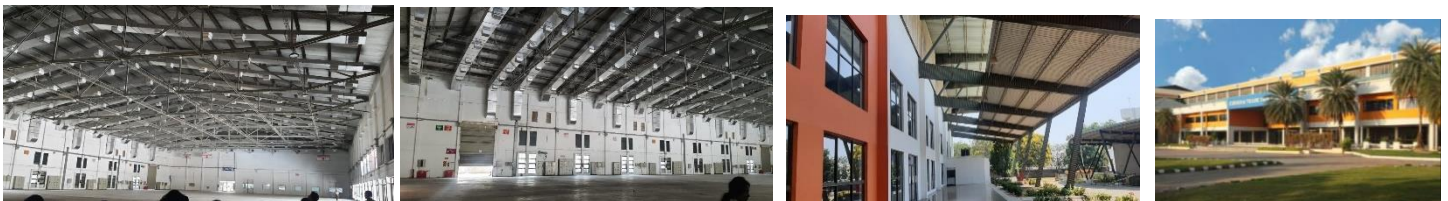


Fig 3.3 & 3.4 EXTERIOR VIEWS AND INTERIOR VIEWS

3.2 INFERENCE:

- socket problems and fire spread very quickly so fire extinguisher at every 30M of intervals in every halls and fire exits are provided .
- The complex has sewage treatment plant which is used for watering the landscapes
- The corridors are well spacious and has been certified as a world Recorder holder in the Limca book of Records as having Asia's largest pillar free hall.

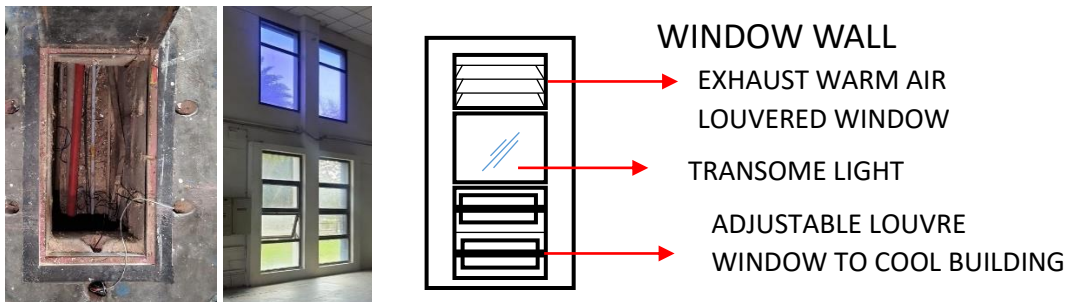


Fig 3.6 & 3.7 POWER SUPPLY LINE (UNDER FLOORING) & WINDOW WALL

3.3 SWOT ANALYSIS

STRENGTH:

- The design of CODISSIA that deals with the adaptability of spaces between interior and exterior and as well as spaces for multifunctional uses like marriage, events, exhibitions, etc. Having largest pillar free hall makes it more adaptive to multifunctional uses.
- The circulation of complex are easily enhances the visitors and signage that guides the people's way. It makes platform for direct marketing and promotion of the producers so that the consumers can available in the local, national and international markets. Pro explore and experience various new trends wided with multifunctional spaces makes the place engaged throughout the year in the idle time of fairs. Large paved area and lovely landscape for visitors to relax.

WEAKNESS:

- Natural ventilation and lighting was not given importance. More number of artificial lights are used in day time throughout the halls.
- Though it is located in centre of the city No seating space for visitors inside the expos to relax.
- No logistic storage area was given for the exhibitors. In OAT, for the projection of LED display no proper electric lines were given.

OPPURRTUNITIES:

- It makes an opportunity for small scale industries to engage, share ideas on increasing their productivity to their market needs and demand. CODISSIA encourages young entrepreneur for starting up new business by offering loans and makes platform for marketing their business.

THREATS:

- Fire accidents may occur due to consumption of unexpected high current in some products.

Facilities	Hall A	Hall B	Hall C	Hall D	Hall E	Food Court	OAT
Area	2500 Sq.m	5000 Sq.m	2500 Sq.m	5000 Sq.m	4000 Sq.m	2500 Sq.m	1500 Sq.m
Length & Width	50mx50m	50mx100m	50mx50m	100mx50m	40mx100m	56mx28m	38mx49m
Height	6m	10.65m	6m	10.65m	6m	5m(GF), 4m(FF)	N/A
Material Entry Gate	4.6mx5m	4.6mx5m	4.6mx5m	4.6mx5m	3mx3.6m	2mx0.9m	NIL
False Ceiling	Yes	No	Yes	No	Yes	Yes	N/A
Flooring	Heavy duty	Heavy duty	Heavy duty	Heavy duty	Heavy duty	FF-Wood GF-Tiles	Grass Lawn

Fig 3.8: SPECIFICATION OF HALLS

4. PRAGATI MAIDAN

Location: DELHI (PRAGATI MAIDANCITY) NEW DELHI, INDIA.

BUILDING TYPE: PERMANENT EXHIBITION HALL.

Year: 1972

Area : 625,000 m² (150 Acres)

ARCHITECT: RAJ REWAL

SPACES CONSTRUCTION SYSTEM: SPACE FRAME

YEAR OF CONSTRUCTION: 1971-72

DIMENTIONS: 73M X 73 MCLEAR HEIGHT: 31.05 M

4.1 CONCEPT:

- RAJ REWAL RE-INTERPRETED THE TRADITIONAL INDIAN ELEMENTS OF DESIGN WITH ULTRA-MODERN FORM AND TECHNIQUE.

- HE CREATED A POWERFUL IMAGE TO REPRESENT INDIA'S MODERNITY. THE HALLS OF THE NATION WERE INITIALLY CONCEIVED AS A FULL PYRAMID.
- THE TRUNCATED FORM WAS ADOPTED TO AVOID UNNECESSARY CONSTRUCTIONS. THE STRUCTURE WAS BASED ON TETRAHEDRON, TRIANGULATED FORMS & AND HEXAGONS, WHICH IS SEEN IN TRADITIONAL JAALIS IN INDIA
- THE GEOMETRIC PATTERN OF JAALI HAS TAKEN INTO CONSIDERATION IN ROOF & AND ELEVATION TO OBSTRUCT DIRECT RAYS OF HARSH SUN WHILE PERMITTING AIR CIRCULATION.
- THE PLAN IS SQUARE WITH CHAMFERED CORNERS, PROVIDING & ANCHORING POINTS, THIS CONCEPT HAS BEEN DERIVED FROM HUMAYUN'S TOMB. DIFFERENTIATING SINGULAR MAJOR SPACES FROM THE CLUSTER SUCH THAT THEIR ACCESS POINTS THAT ARE LINKED THROUGH PATHWAYS MAY ENVELOPE A COMMON SPACE FOR THE COMMUNITY.

4.2 ZONING:

- The layout of Pragati Maidan shows that the whole facility is planned in an informal grid pattern.
- From the layout, we can see that the state pavilions are separately zoned in a way that they are close to each other.
- The exhibition halls, convention facilities, restaurants, and ministries occupy the remaining space.
- The ministries are scattered rather than grouped.
- Parking is not properly zoned. It would be better if they were zoned at good intervals.
- The administration block is placed in a good manner such that it can be accessed through gate 3. There is no need to walk throughout the entire facility to reach the administration block.
- A good amount of green areas are situated at regular intervals which breaks the rigid concrete feel and offers the presence of nature.
- A 12700 square meter water body is provided at the center of the facility known as the Mansarovar Lake which forms the backdrop for the Hamsadwani open-air theatre, adds to the scenic beauty.
- Furniture for relaxation is also provided around the water body to enjoy the scene.

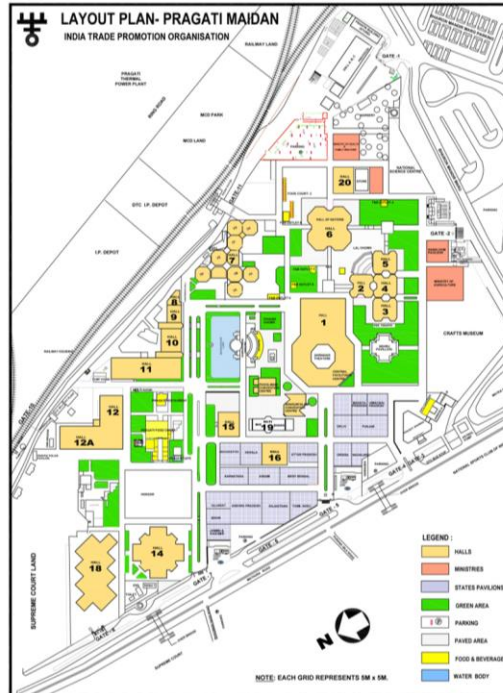


Fig 3.9:MASTER PLAN

4.3 DESIGN IDEA:

- Raj Rewal leaned on geometry and proposed four halls linked by ramps. The largest of these is the hall of nations.
- The hall of nations is a structure based on tetrahedrons , triangulated forms and hexagons, which is seen in jails' in India.
- Raj Rewal re-interpreted the traditional Indian element of design with ultra-modern form and techniques.He created a powerful image to represent India's modernity. He used space frames as both, roof and wall combined to diffuse the harsh sunlight in Delhi. Hence the structure itself becomes a sun breaker.

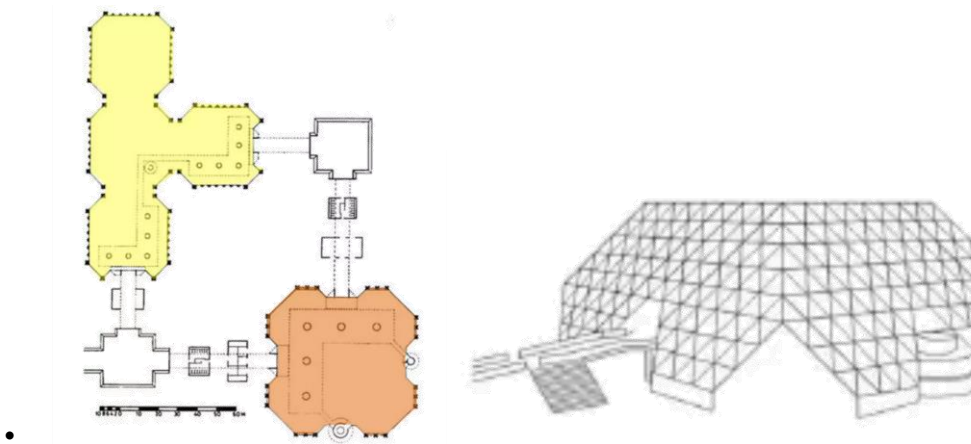


Fig 3.10:FLOOR PLAN AND 3D VIEW

4.4 Construction techniques:

The '**halls of nations**' are supported on pile foundations tied together with post tensioned plinth beams. The pragati maidan rests on spread footings tied together with high-tensile steel bars.

Each of the four 'halls of industries' is similar in design and is 44m x 44 m x 16m high. Free-standing coffered mezzanine floors cantilevering out of cylindrical shafts provide an additional exhibition area in each hall.

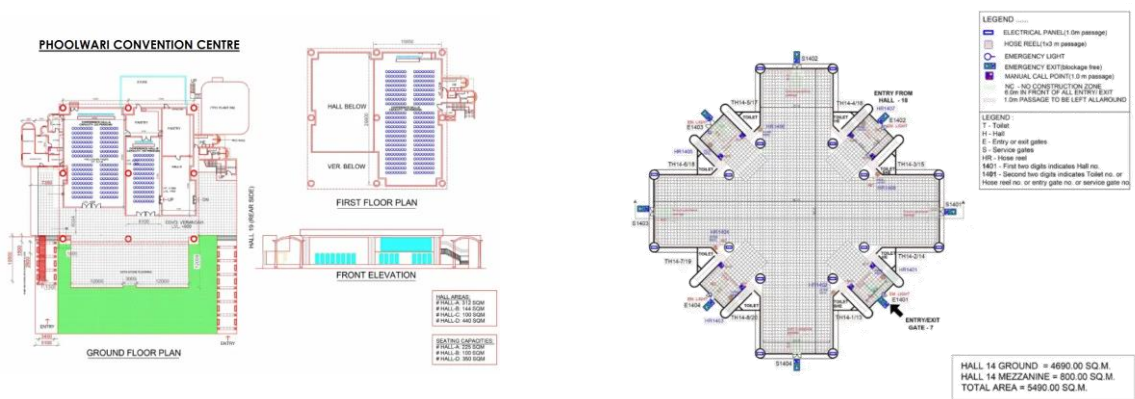
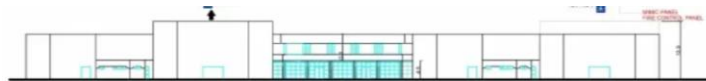


Fig 3.11:FLOOR PLAN



SIDE ELEVATION

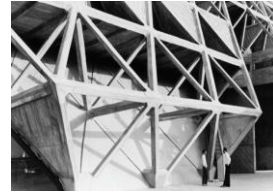


Fig 3..12: SECTION, ELEVATION AND VIEWS.

SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY					
THESIS - SEMESTER 10					
MICE - FASHION, TEXTILE & LEATHER					
S.NO	SPACES	AREA PER PERSON (IN SQM)	CAPACITY	NO. OF ROOMS	TOTAL AREA (IN SQM)
COMMON					
1	LONGUE	0.9	1000	1	900
2	VIP / PRESS LOUNGE	2.7	300	2	1620
3	RECEPTION (SMALL SEATS)	1.8	500	4	3600
4	ADMIN	5.5	50	1	275
5	HELPPDESK	5.5	5	4	110
6	MEETING HALL FOYER	0.5	1000	1	500
7	MEETING HALL - 1	2	50	1	100
	MEETING HALL - 2	1.9	100	1	190
	MEETING HALL - 3	1.9	150	1	285
8	BREAKOUT ROOM	2	10	2	40
9	CONFERENCE ROOMS	1.2	250	2	600
	CONFERENCE ROOMS	1.2	500	1	600
10	EQUIPMENT ROOM				200
11	EXPO				0
	MULTI PURPOSE EXPO HALL	2	1000	1	2000
	HALL 1	1.2	250	1	300
	HALL 2	1.2	2500	1	3000
	HALL 3	1.2	2500	1	3000
	HALL 4	1.2	5000	1	6000
	BANQUET HALL (COCKTAIL SEATING)	1	1000	1	1000
	BANQUET HALL (BANQUET SEATING)	1.6	500	1	800
12	AUDITORIUM	1.6	4500	1	7200
13	AUDITORIUM FOYER	0.3	4500	1	1350
14	AUDITORIUM TOILET		200	2	400
15	LECTURE HALLS (CLASSROOM STYLE SEATING)	1.4	250	1	350
16	ACCOMODATION	9.2	250	1	2300
	ACCOMODATION	9.2	100	1	920
	CHANGING ROOM	2.3	25	1	57.5
17	RESTAURANT 1	3	200	1	600
18	RESTAURANT 2	2	400	1	800
19	CAFETARIA	1.7	500	1.7	1445
20	CAFÉ KITCHEN	0.4	500	1	200

TOTAL AREA

40742.5

FIG 4.0: AREA STATEMENT

CHAPTER 4

SITE STUDY AND ANALYSIS

4.1 SITE STUDY:

SITE LOCATION: MAHABALIPURAM .

DISTRICT: Chengalpattu District.

ALTITUDE: 12 M.

POPULATION: 15,059 (2011)

CLIMATE: TROPICAL.

SUMMER: MAXIMUM – 39.1 DEGREE CELSIUS.

MINIMUM – 21.1 DEGREE CELSIUS.

WINTER: MAXIMUM – 31.5 DEGREE CELSIUS.

MINIMUM – 19.8 DEGREE CELSIUS.

RAINFALL: 1219 MM AVERAGE

WIND DIRECTION: NORTH EAST TO SOUTHWEST.

LANGAUGE SPOKEN: TAMIL AND ENGLISH.

TOURIST SEASON: THROUGHOUT THE YEAR



Fig 4.1 Site boundary and site image

4.2 SITE JUSTIFICATION AND FEASIBILITY:

- NTTM – National Technical Textile Mission, has proposed 74 research proposals of Rs.232 crores. In which a proposal is allotted for Chennai.
- Which was announced by Chief Minister M K Stalin, to set up a 'Textile City' in Chennai. The state government will also establish a textile park at Virudhunagar district spread over 1,500 acres for which SIPCOT will acquire land, as Tamil Nadu tops third in the country in attracting foreign investments and exports in the textile sector. The state contributes 12% of total textile exports from India.
- Plans to set up a Handloom museum in Mahabalipuram, The museum would be set up at a cost of Rs 30 crore.
- Karur, Tiruppur and Kancheepuram would be converted into textile export hubs.

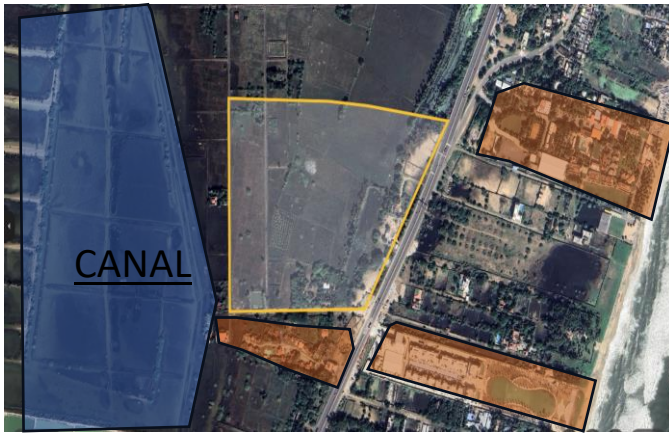
SWOT analysis:

STRENGTH	WEAKNESS	OPPURTUNITY	THREAT
- Site located in the tourism developments attracts lot of tourists. - Located on the high way so it's easily accessible. - Located amidst the low & mid-rise settlements to be away from the urban area.	- The site is accessible only from one side of the plot. - There are no existing trees at present in the site.	- Existing views which can be provided to the buildings created. - Very mild contour which can be shaped according to the design. - Future expansion is possible on either sides. - Many programs & volunteering aspects are expected due to the exposure towards foreigners.	- As the site is located in the highway, possibilities of noise pollution.

4.3.1 Neighborhood Context:

- THE SITE IS LOCATED IN SPARSELY DENSE WITH SURROUNDING COMMERCIAL BUILDINGS.
- THERE IS AN ARIVER WITHIN 7 KM OF THE SITE WHICH COULD BE A WATER SOURCE THE SITE.
- IT IS A PLAIN STRETCH OF LAND WITH MINIMAL CONTOUR RAISING 2M

4.3 SITE ANALYSIS:



SITE SURROUNDINGS:

BUCKINGHAM CANAL – BEHIND THE SITE. 

BEACH RESORTS – BESIDE AND OPPOSITE SIDES. 

RESTAURANT AND RESIDENCE – ADJACENT TO THE SITE. 

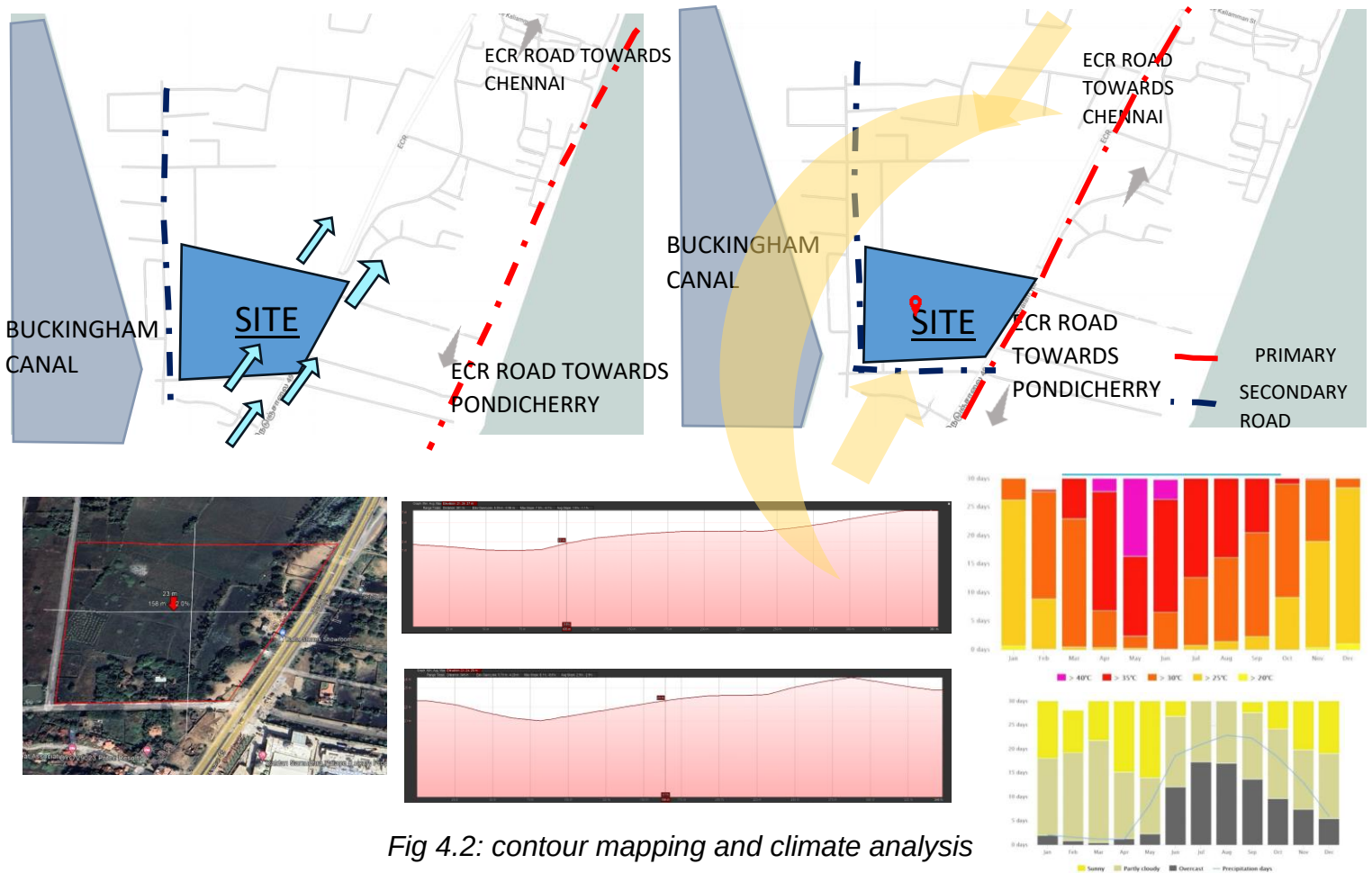


Fig 4.2: contour mapping and climate analysis

CONTOUR MAPPING: THERE IS A SLIGHT SLOPE INSIDE THE SITE WHICH CAN BE CONSIDERED AS FLAT LAND OR CAN BE CUT AND FILLED

CHAPTER 5

ARCHITECTURAL DESIGN

5.1 CONCEPT

5.1.1 Strategies can be followed at site level:

(a) Orientation -

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

(b) Built form -

More scattered open and closed volumes can be planned and more open courtyards and buffer spaces can be created. The organic and curved building forms of the building lead to reduced surface volume ratios towards the East and West directions and thereby reduce the solar heat gain

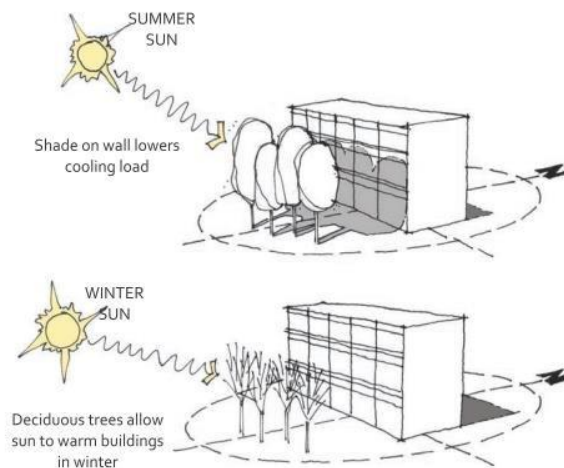


Fig 5.1: conceptual diagram

(c) Mutual shading -

Mutual shading by placing and planning the building such that they share each other from the sun can help in reducing the heat gain.

(d) Vegetation -

Vegetation and landscaping can play a major role in changing the microclimate of a site and can lower the temperature vegetation can also be used to prevent and protect INS the undesirable winds and solar radiation

(e) Wind channeling and buffer spaces -

Buffer spaces open gardens and courtyards can be provided to channel and bring in good Breeze and wind into the building

5.1.2 Passive Design Strategies:

(a) Courtyard effect –

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

(b) Passive air conditioning system –

Allowing natural ventilation and daylighting through proper implementation can help in achieving passive air conditioning. Techniques of stack ventilation can also be implemented to avoid the use and consumption of mechanical air conditioning system

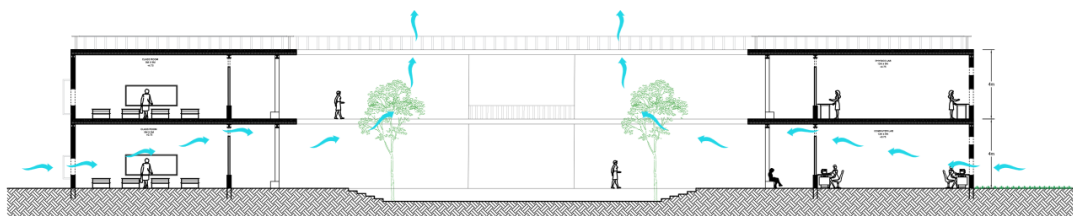


Fig 5.2: Passive air conditioning system

(d) Passive downdraft evaporative cooling –

These systems catch the wind present at higher levels and cool the air down using the evaporative devices and direct the cooler air into the space

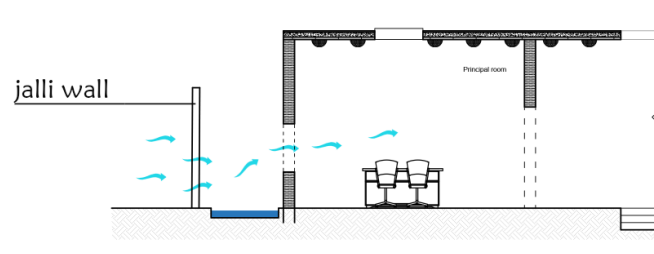


Fig 5.3: Passive down draft evaporative cooling

5.2.3 Concepts at site level:

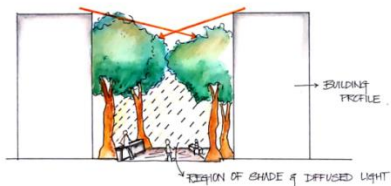


Fig 5.4(a): Mutual shading by trees

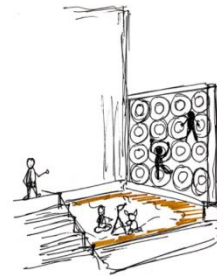


Fig 5.5 (b): Sand play area

At the dining area outdoor dinning is also designed in such a way that the people can have their lunch and watch the game from any direction and each and every block is connected with a common gathering space which

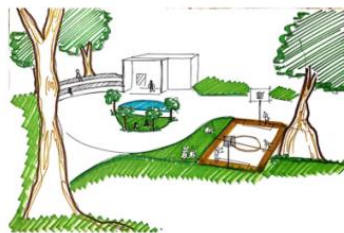


Fig 5.6(c): Outdoor sitting at the dining



Fig 5.7(d): Gathering spaces

(c) **Roof structure – Space frame**

1. Structural Efficiency:

Space frames achieve remarkable structural efficiency by distributing loads evenly across their members, leading to lighter structures compared to traditional systems. This efficiency allows for the creation of long-span structures without the need for extensive internal supports, maximizing usable space.

2. Long Span Capabilities:

One of the most notable advantages of space frames is their ability to span large distances without the need for intermediate supports. This makes them well-suited for creating vast, uninterrupted spaces in buildings such as exhibition halls, airports, and sports arenas, where flexibility in internal layout is crucial.

3. Modular and Prefabricated Construction:

Space frame structures are often modular and prefabricated off-site, facilitating rapid assembly and reducing construction time and costs. The modular nature also allows for flexibility in design, enabling architects to create unique and innovative shapes and configurations.

4. Aesthetic Versatility:

The geometric patterns of space frames lend themselves to striking architectural designs, offering architects and designers a wide range of aesthetic possibilities. From elegant curves to bold angles, space frame structures can be tailored to suit the visual identity and functional requirements of any project.

5. Durability and Sustainability:

Space frames are known for their durability and resilience, capable of withstanding extreme weather conditions, seismic activity, and other environmental factors. Additionally, the lightweight nature of space frame structures reduces the overall material usage, contributing to sustainability efforts in construction.

6. Functional Adaptability:

Beyond their use in static structures, space frames can also accommodate dynamic functions such as retractable roofs or movable partitions, enhancing the versatility of the spaces they enclose.

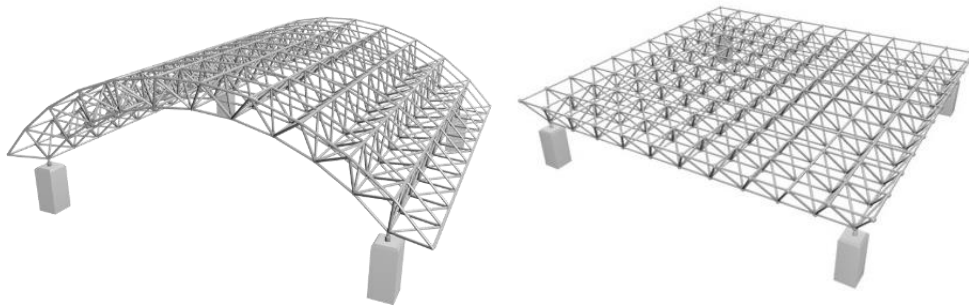


Fig – 5.8 Construction of roof system

6.3 DETAILED DRAWINGS

6.1 Site plan:

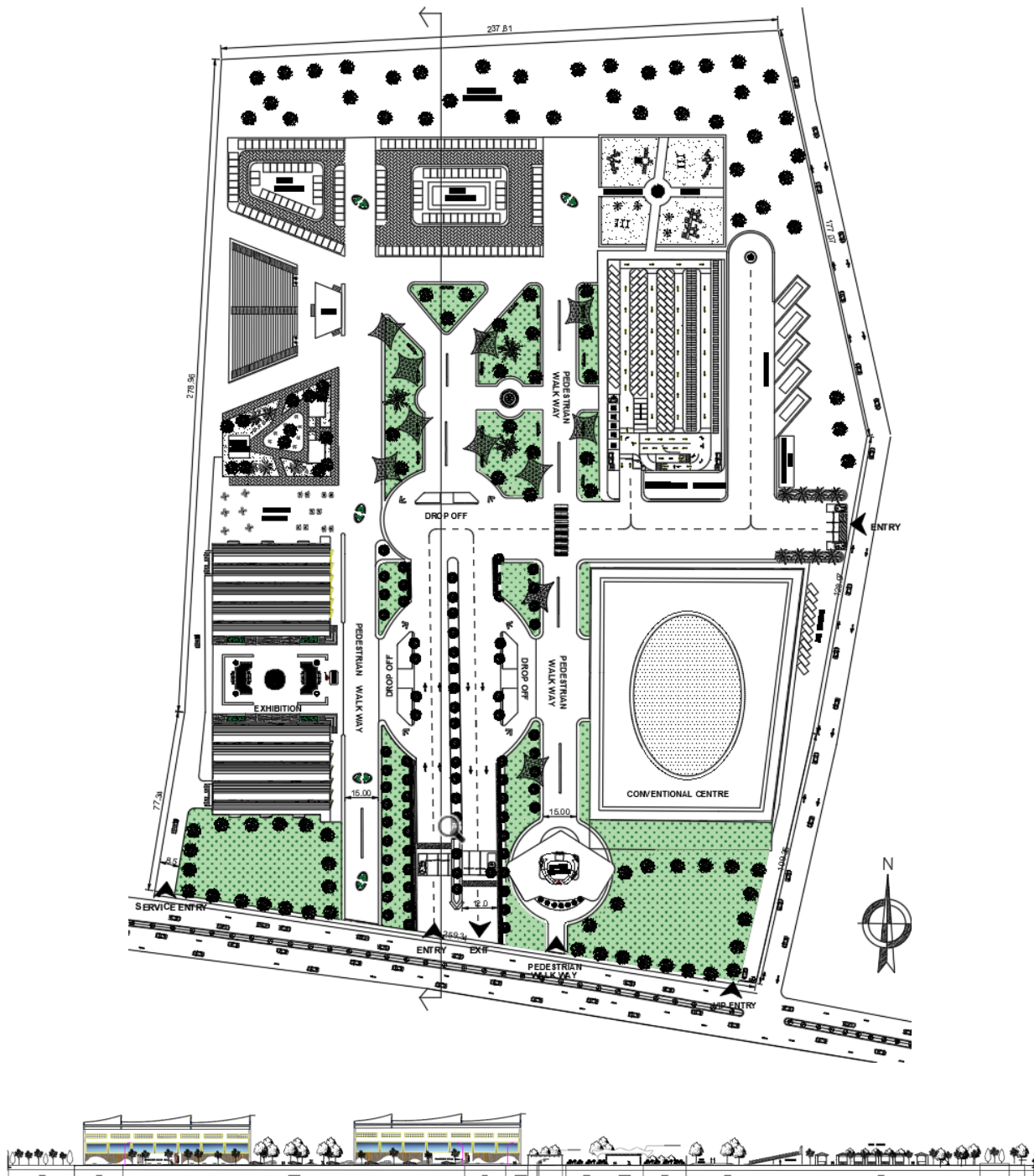


Fig 6.3.1: Site plan and site section

MICE - MASTER PLAN AND DETAIL

(MEETING, INCENTIVE, CONVENTION AND EXHIBITION)



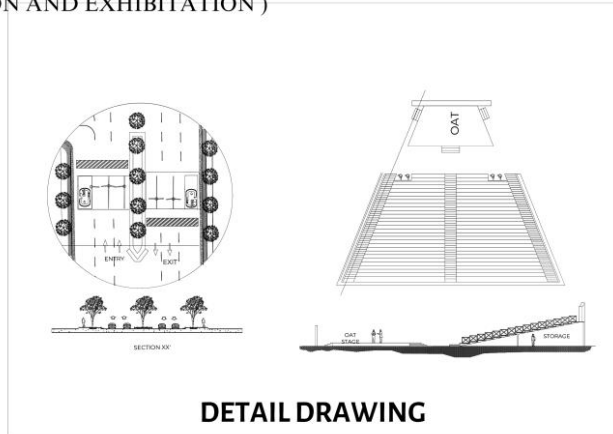
FLEA MARKET



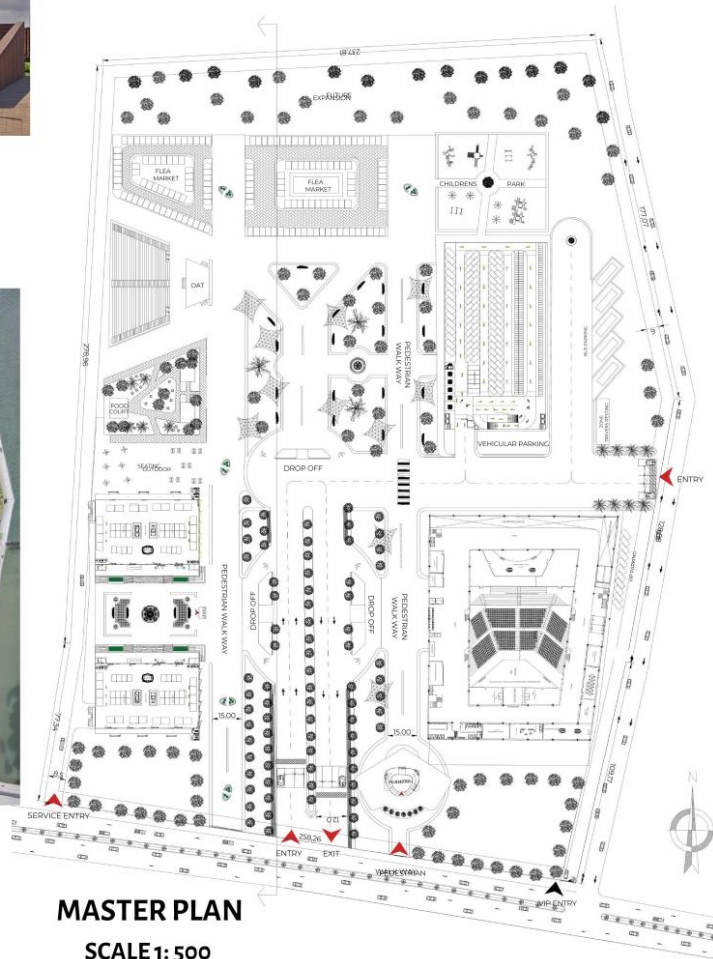
OAT THEATRE



SITE PLAN
RENDERED



DETAIL DRAWING



MASTER PLAN

SCALE 1: 500

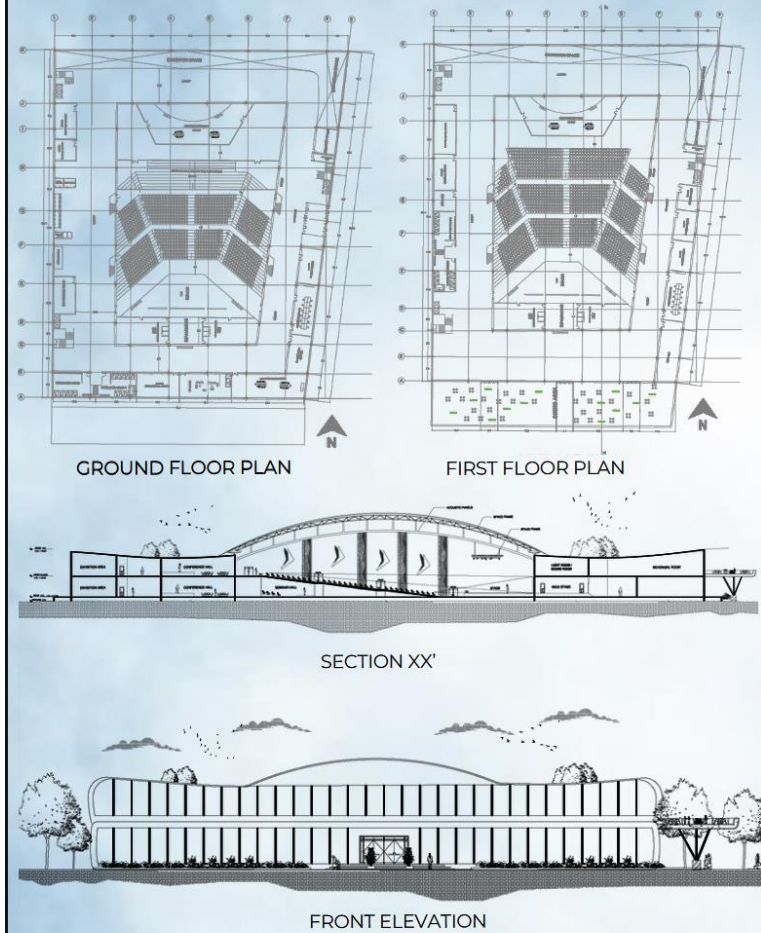
6.3.2: MASTER PLAN



6.3.3: EXPO DETAIL DRAWING

MICE - CONVENTIONAL CENTRE

(MEETING, INCENTIVE, CONVENTION AND EXHIBITION)



The convention center will be seamlessly integrated into serving as a catalyst for economic development, cultural enrichment, and community engagement. Public spaces, such as plazas, parks, and pedestrian walkways, will be incorporated into the design to encourage interaction and connectivity with the neighborhood. The convention center will feature collaborative workspaces, meeting lounges, and networking areas where attendees can connect, exchange ideas, and foster meaningful relationships beyond the confines of formal events.



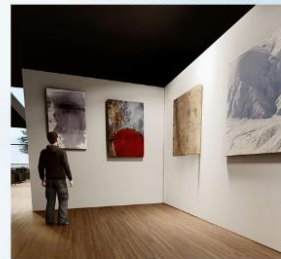
PROJECTED OUTDOOR DINING



DISPLAY AREA



CONVENTIONAL HALL



EXHIBITION SPACE



CONFERENCE ROOM



SATHYABAMA INSTITUTE OF TECHNOLOGY

MOHAMMED JAVED RAHMAN
39210100
2019 - 2024

Fig 6.3.4 CONVENTION DETAIL DRAWING

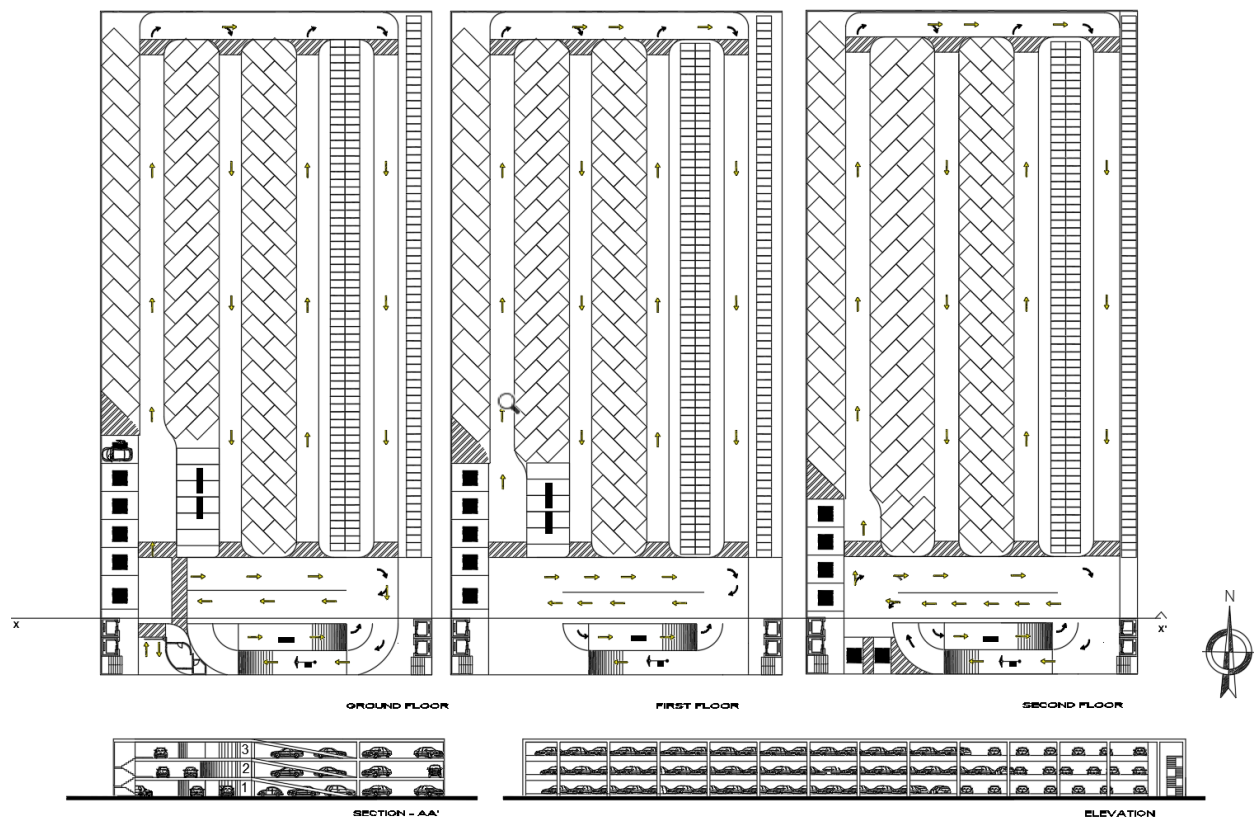


Fig 6.3.5 multi-level parking

CHAPTER 7

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