

THESIS REPORT ON  
**“RECREATIONAL HUB**  
DWARKA SECTOR 18, NEW DELHI

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

**BACHELOR OF ARCHITECTURE**

BY  
**MOHAMMAD SADIQUE ANSARI**  
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UNDER THE GUIDANCE OF  
**AR. SHAILESH KUMAR YADAV**

SESSION  
2021-22

TO THE  
**SCHOOL OF ARCHITECTURE AND PLANNING**  
**BABU BANARASI DAS UNIVERSITY**  
**LUCKNOW.**

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

**CERTIFICATE**

I hereby recommend that the thesis entitled **RECREATIONAL HUB,  
DWARKA SECTOR 18, NEW DELHI**“ 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  
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Recommendation      Accepted  
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External Examiner

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10. All the sources used have been cited appropriately Yes / No

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Name:

.....  
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# ACKNOWLEDGEMENT

Time demands that I express my gratitude to those who have been a part of my stay in B.B.D.U. It's been great, all these years, but life moves on.. and so do we..

I express my deepest gratitude to my thesis guide **AR. SHAILESH YADAV** for his valuable passionate guidance, critical discussions, suggestions and continuous support all through my B.Arch thesis.

I express my gratitude to **DEAN, AR. MOHIT AGARWAL**, Department of Architecture, B.B.D.U., Lucknow, for being there to solve our problems.

I am grateful to thesis coordinators **AR. AANSHUL SINGH** and **AR. SHAILESH YADAV** for providing their useful comments at the various stage submissions.

**My all teachers**, specially **AR. URVASHI TIWARI** your support, encouragement and guidance have given us the strength to embark on this rigorous journey.

**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 juniors specially, AAMIR SUHAIL AND IBRAHEEM

MY FRIEND- **ADITI TRIPATHI**

MY SENIORS- **AR. RISHABH GUPTA AND AR. KAUSHLENDRA SINGH**  
Though words hardly express the true emotions, still I would like to thank all my near and dear ones who helped and guided me.

-MOHAMMAD SADIQUE ANSARI

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# INTRODUCTION



## **BASIC THOUGHT BEHIND SUCH A PROJECT**

- A multipurpose center for play and culture offers theater, music, and Leisure activities like Yoga, Meditation Acrobics Etc
- The club provides a platform for interaction, relaxation and amusement.
- A teen/Leisure center provides a safe and fun place to hang out.
- Outdoor spaces can be used aesthetically as well as amusement , pathways(circulation) and peace of mind.
- An appropriate designed centre or a Hub would result in more revenue generation for the government as well.

## **POSITIVE ANALYSIS:**

- Good sports resource for tourism
- Good natural landscape for tourism.
- Presence of many investments.
- Many attraction points.
- International sports events and competitions.



RECREATIONAL HUB

## TYPE OF LEISURE

- **Active leisure** activities involve the exertion of physical or mental energy. Low-impact physical activities include walking and yoga, which expend little energy and have little contact or competition.
- High-impact activities such as kick-boxing and football consume much energy and are competitive. Some active leisure activities involve almost no physical activity, but do require a substantial mental effort, such as playing chess or painting a picture.
- Active leisure and recreation overlap significantly.
- **Passive leisure** activities are those in which a person does not exert any significant physical or mental energy, such as going to the cinema, watching television, or gambling on slot machines.
- Some leisure experts discourage these types of leisure activity,
- For example, acting in a community drama (an active leisure activity) could build a person's skills or self-confidence. Nevertheless, passive leisure activities are a good way of relaxing for many people.

## AIMS AND OBJECTIVES

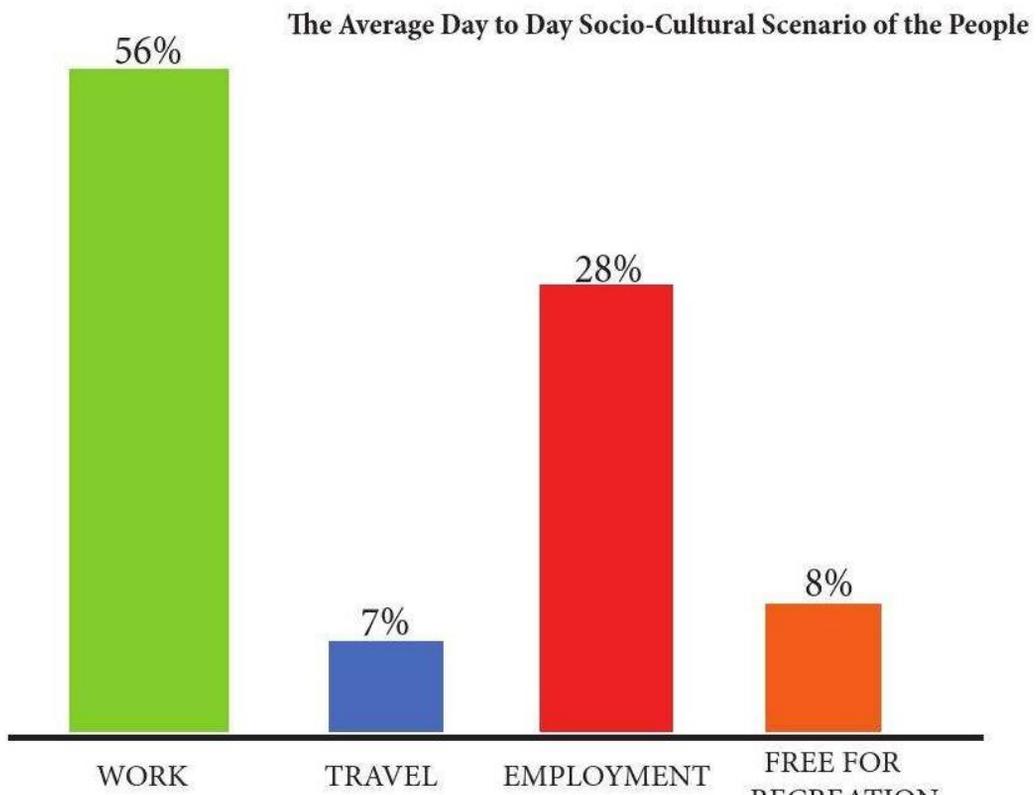
- To understand the behavior pattern of users.
- To find out the aspiration and desires of users.
- To chalk out requirements considering the behavioral aspects along with functional aspects.
- To identify the appropriate environment for individual activities.
- To design a recreational club having all necessary requirements and to create an appropriate user movement.

## SCOPE

- The HUB is to be developed as a fun club comprising recreational along with the leisure facilities. The art and craft emporium with exhibition and workshops will be the one of the major attractions of the club. The catchment area of complex will include harmony in overall development.
- It includes both outer spaces and indoor spaces, ie spaces under built masses.
- (a) Require special facilities to cater for widespread public demand; and
- (b) Require land areas to be allocated in town plans.

## METHODOLOGY

- First – **Data** from literature regarding behavioral aspect of the buildings was collected. This data was synthesized to select the aspects which could govern inter-relationship of various activities in a club building.
- **Case studies were analyzed** in the light of **behavioral** 'aspects', by means of observation and users survey.
- **Inferences** were drawn from the case-studies about behavioral pattern of users and their **expectations** from the space were analyzed. Such inferences were used to chalk-out 'requirements' which incorporated behavioral aspects along with functional aspects.
- Various techniques were explored from literature for producing the desired psychology effect in a space.
- **Climatological** data were gathered and analyzed.
- Recreation club is a club, developed with a commitment to fun, relax, peace and fitness for the entire family and offers an immense range of activities. It can also be further explained as:-
- A centre as a social expression, community need, concentrates activities, meaningful spaces, a neighborhood focus and urban excitement.-
- The club provides a platform for interaction, relaxation and amusement.-
- It offers a junction for tourism, sports and cultural development.



# IDEOLOGY



## **BUILT MASSES AND FUNCTIONAL COMPONENTS**

### **(a) SPORTS CENTRE :**

A sports centre is a group of sports facilities. For example, there are track and field stadiums, baseball stadiums, swimming pools, and Indoor arenas. This area is a sports complex, for fitness. Olympic Park is also a kind of Entertainment centre.

### **(b) LEISURE CENTRE:**

Leisure Centre are intended as venues for family leisure. It is a facility proposed for development in the urban areas and the New Towns as an alternative to Sports Centre. It should not, however, replace the additional Sports Centre which is required for provision in the employment districts. A wider range of recreation activities beyond core activities such as bowling green, children's playroom, indoor golf, leisure pools, coffee corners and restaurants are provided.

### **(c) RESTAURANT :**

A place where people pay to sit and eat meals that are cooked and served on the premises. A diner is a prefabricated fast food restaurant building.

Diners are characterized by offering a wide range of foods ,a distinct exterior structure, a casual atmosphere, a counter, and late operating hour.

### **(d) SOCIAL GATHERING :**

Social gathering is defined as interactions among a diversity of individuals of all abilities in small, medium and large groups for social and community purposes. Street life used to be an integral part of the social life of people. Friends met and hung out on the street, children played there, neighbors caught up with each other, and people watched people.



**SPORTS**



**LEISURE**



**RESTAURANT**



**SOCIAL GATHERING**

### **(a) Preferences for games**

1. Table tennis.
2. Cards.
3. Badminton.
4. Chess.
5. Lawn tennis.
6. Billiards.
7. Bowling
8. Gymnasium
9. Aerobics and yoga-hall.

### **(c) Preferences for individual activities**

1. Swimming
2. Jogging.
3. Cycling

### **(b) Preferences for recreational activities**

1. Reading books and magazines.
2. Going to the restaurant watching tv.
3. Watching dance and music recital.
4. Disco theque.
5. Strolling in the garden.
6. Watching movies.
7. Watching theatrical performances and listening music

### **(d) Preferences in seating arrangement-**

1. Garden.
2. Semi covered space
3. Indoor

### **(e) Preferences in seating arrangement while eating**

1. Near the play area.
2. Lounge,
3. Restaurant.
4. Lawn(Landscaping)

### **(f) Preference for Peaceful activities**

1. Art and Craft Emporium
2. Workshops
3. Exhibitions

## **ADVANTAGES**

Some of the advantages of Movement oriented design are :

- Free flow functioning of all activities,
- Well organized spaces,
- Put off overcrowding,
- Energy saving
- Orderly parking

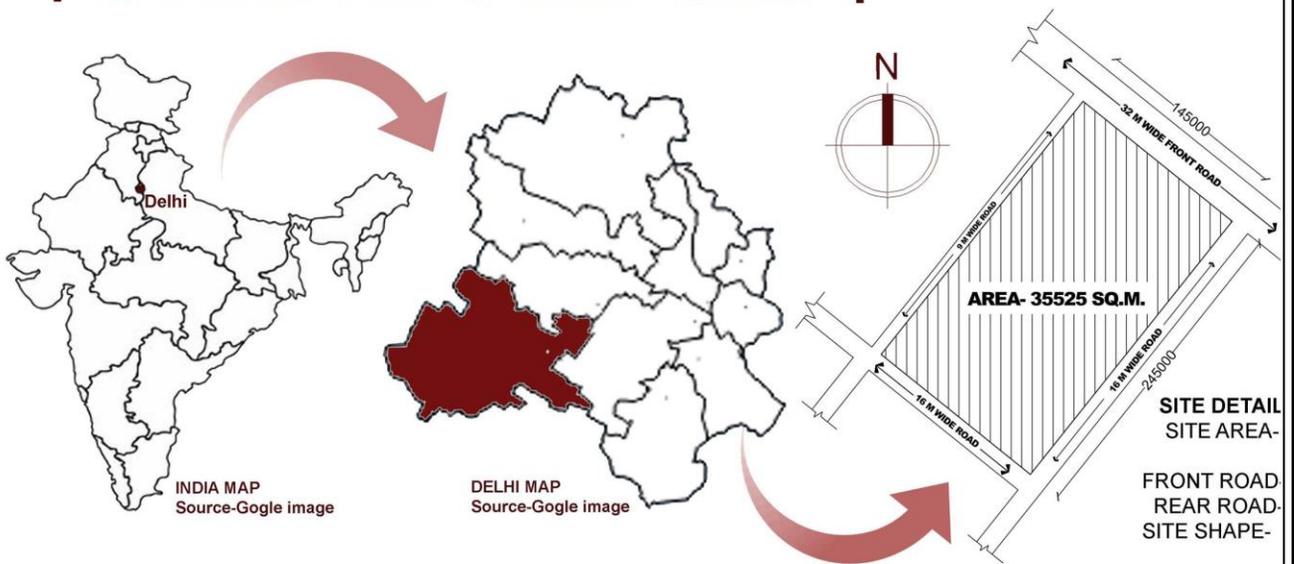
## **SPACE RELATIONSHIP:**

1. Functional Space - Activity and administrative areas.
2. Circulation Space - Lobbies and corridors.
- 3.Landscape Spaces - Sit outs, gardens, lawn.
- 4.Service Space - Horizontal and vertical ducts

# SITE ANALYSIS

RECREATIONAL HUB

# | SITE ANALYSIS |



## DELHI, INDIA

Delhi officially the National Capital Territory (NCT), is a city and a union territory of India containing New Delhi, the capital of India. Delhi shares its border with the States of Uttar Pradesh and Haryana. Delhi has an area of 1483 sq km, out of which urban area is 925 sq km. Its maximum length is 51.90 km and greatest width is 48.48 km.

Delhi is highly urbanized with 93.18% of its population living in urban areas as against the national average of 27.81%. While it may not be possible to make an accurate forecast, the expectation is that the population of Delhi may range between 22 to 23 million in the year 2021.

The locality Dwarka Sector 18 falls in South West Delhi district situated in NCT of Delhi state, with a population 16332. The male and female populations are 8726 and 7606 respectively. The size of the area is about 0.97 square kilometer

### AMENITIES



#### MARKET

SMALL CSG MARKET (1.5KM)  
WEEKLY MARKET SECTOR 12(5KM)



#### MEDICAL

VENKATESHWAR HOSPITAL (100M)  
ARTEMIS HOSPITAL (2KM)



#### EDUCATIONAL

VENKATESHWAR SCHOOL (150M).  
SACHDEVA G. SCHOOL (50 M)



#### OTHERS

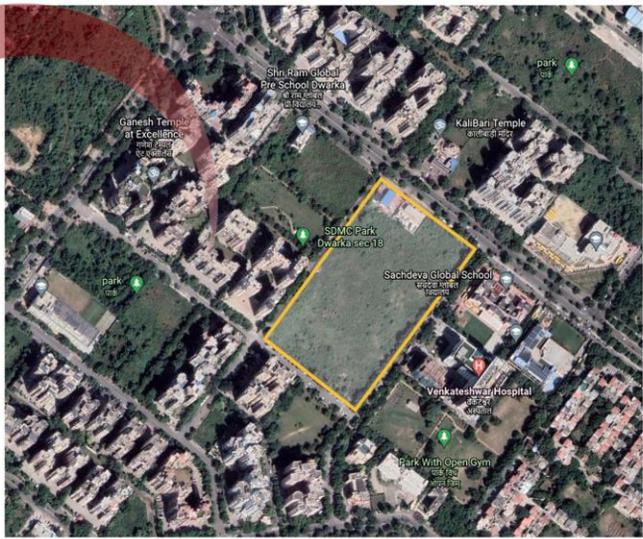
KALIBARI TEMPLE (100M)  
YES BANK ATM (850)

### NATURAL VEGETATION

The vegetation belongs to category, "Northern Tropical Thorn Forest Type" and most common trees found Nilotica, Leucophlea, catechu, modesta, butea monosperma, commonly known as dhak, salvadora persica, cassia fistula etc. santhemums, phlox, violas, and verbenas and many more were also seen near the site.



**SITE LOCATION-** community centre, Sector 18, Sector 18A Dwarka, Kakrola, Delhi, 110075  
**CO-ORDINATES:** Latitude: 28°35'22"N, Longitude: 77°2'11"E  
**OWNERSHIP AND LANDUSE-** Delhi Development Authority



**35525 SQ.M  
 (8.7 ACRE)  
 32M WIDE  
 16M WIDE  
 RECTANGU-  
 LAR**

**Site originally proposed under community recreational center according to 2041 master plan.**

**ROADWAYS**

SITE IS WELL CONNECTED TO  
**SECTOR 12 ROADV**

**RAILWAYS**

**NEW DELHI RAILWAY STATION**  
 (25.4 KM )

**AIRPORT**

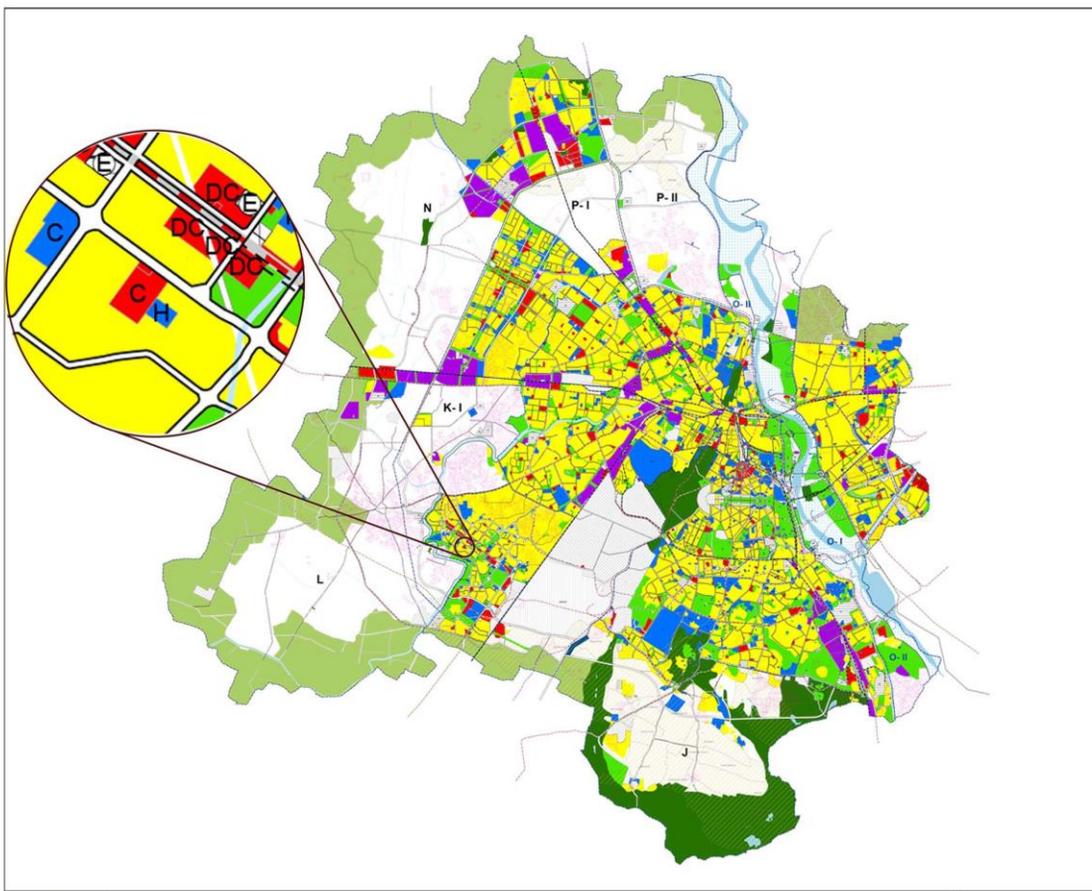
**INDIRA GANDHI INTERNA-  
 TIONAL AIRPORT (13.2 KM)**

**BUSWAY**

**MANGALPURI BUS TERMINAL**  
 (7.1 KM )  
**INTER STATE BUS TERMINAL**  
 (27 KM )

**METRO STATION**

**DWARKA SECTOR-12 METRO  
 STATION (900 M)**



LEGEND	
<span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	RESIDENTIAL
<span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	R0 RESIDENTIAL AREA
<span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	R1 FOREIGN RESIDEN
<span style="background-color: red; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	COMMERCIAL
<span style="background-color: red; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	C1 DETAIL SHOPPING, GENERAL BUSINESS AND COMMERCE
<span style="background-color: red; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	C2 DISTRICT CENTRE
<span style="background-color: red; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	C3 COMMUNITY CENTRE
<span style="background-color: red; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	C4 NON-RESIDENTIAL COMMERCIAL CENTRE
<span style="background-color: red; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	C5 WHOLESALE & WAREHOUSING
<span style="background-color: red; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	C6 COLD STORAGE AND OIL DEPOT
<span style="background-color: red; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	C7 HOTELS
<span style="background-color: purple; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	INDUSTRIAL
<span style="background-color: purple; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	I1 MANUFACTURING, SERVICE INDUSTRY AND REPAIR INDUSTRY
<span style="background-color: green; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	RECREATIONAL
<span style="background-color: green; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	R1 RECREATIONAL PARK
<span style="background-color: green; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	R2 CITY PARK, DISTRICT PARK, COMMUNITY PARK, MULTI-PURPOSE RECREATION
<span style="background-color: green; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	R3 HISTORICAL MONUMENT / ARCHAEOLOGICAL PARK
<span style="background-color: green; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	R4 GREEN BUFFERS
<span style="background-color: green; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	R5 SPORTS FACILITIES (COMPLEX / STADIUM / SPORTS CENTRE)
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	TRANSPORTATION
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	T1 AIRPORT
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	T2 TERMINAL, DEPOT / ROAD, RAIL, METRO, BUS / TRUCK
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	T3 REGULATORY - RAIL, METRO, ROAD
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	T4 METRO - HIGH SPEED RAIL
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	UTILITY
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	U1 WATER (TREATMENT PLANT ETC)
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	U2 SEWERAGE (TREATMENT PLANT ETC)
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<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	U4 SOLID WASTE (SANITARY LANDFILL, ETC)
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<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	U6 OTHER UTILITIES
<span style="background-color: grey; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	GOVERNMENT
<span style="background-color: grey; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	G1 PRESIDENT OFFICE AND PARLIAMENT HOUSE
<span style="background-color: grey; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	G2 GOVERNMENT OFFICE COMPLEX / COURTS / PSU
<span style="background-color: grey; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	G3 GOVERNMENT LAND USE UNDETERMINED
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	PUBLIC & SEMI PUBLIC FACILITIES
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	P1 HOSPITAL
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	P2 EDUCATION AND RESEARCH (UNIVERSITY / COLLEGE CENTRE, CULTURAL, SOCIO-CULTURAL COMPLEX)
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	P3 POLICE HEADQUARTERS / POLICE LINES, FIRE STATION, DISASTER MANAGEMENT CENTRE
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	P4 RELIGIOUS
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	P5 BURIAL GROUND / CREMATION GROUND / CEMETERY
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<span style="background-color: green; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	GREEN BELT AND WATER BODY
<span style="background-color: green; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	A1 GREEN BELT
<span style="background-color: green; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	A2 RIVER / FLOODPLAIN AND WATER BODY
<span style="background-color: green; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	A3 L.B.R.A. VILLAGES
<span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	LAND POOLING AREA
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	OTHERS
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	FACILITY CORRIDOR
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	PLANNING ZONE BOUNDARY
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	UNAUTHORIZED COLONIES



**DRAFT LAND USE PLAN FOR DELHI 2041**

DELHI DEVELOPMENT AUTHORITY

**RECREATIONAL HUB**

# SITE ANALYSIS

## DELHI: TOPOGRAPHY

The topography of Delhi can be divided into 3 parts, **the plains, the Yamuna flood plain, and the ridge.**

It is located on western fringes of the Gangetic Plains.

The Ridge reaches the height of **1043ft above sea level.**

There are 3 canals crossing it, the Yamuna Canal, the Agra Canal, and the Hindu Canal.

The terrain of Delhi is **flat in general.**

## SITE INFRASTRUCTURE

**ELECTRIC: LINES: 11 KV. (BSES RAJDHANI PVT. LMT.)V**

The poles are present at 32 M wide road, and so the electricity will be tapped off from these points.

**PLUMBING: Delhi jal board is providing water facilities to the Dwarka Sector 18.**

**SEWAGE: The sewage pipelines are well laid by Delhi Municipal Boards.**

**GWL: The ground water level of the area is 20 mbgl.**

## SOIL TYPOLOGY

**ALLUVIAL SOIL: RAFT FOUNDATION.**

**SOIL BEARING CAPACITY: 75 KN/ MSQ.**

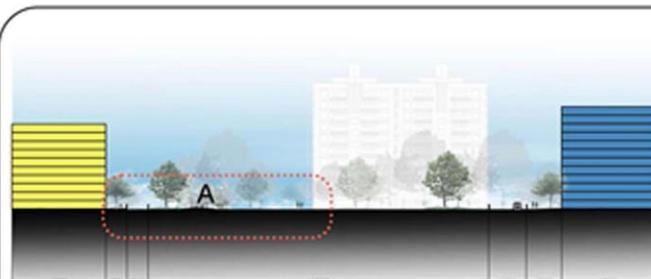
## BUILDING BYELAWS

**SITE SET BACK:**

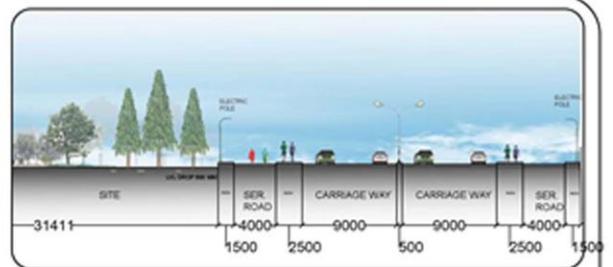
Front:	15 M.
Back:	08 M.
Side 1:	08 M.
Side 2:	08 M.
Ground Coverage:	25%
Front Road:	32M.
FAR:	1.20.
Maximum Height:	26 M
Parking:	2 ECS per 100 SQ M.

**SITE DETAIL**

SITE AREA-	<b>35525 SQ.M (8.7 ACRE)</b>
FRONT ROAD-	<b>32M WIDE</b>
REAR ROAD-	<b>16M WIDE</b>



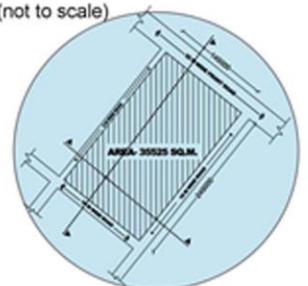
TRANSVERSE SECTION (not to scale)



SECTION DETAIL A (not to scale)



LONGITUDINAL SECTION (not to scale)



KEY PLAN OF SECTION

# SITE SURROUNDING



4 SACHDEVA GLOBAL SCHOOL



3 VENKATESHWAR HOSPITAL



5 MANOKAMNA APARTMENT



2 VENKATESHWAR INTERNATIONAL SCHOOL



6 DELHI INTERNATIONAL SCHOOL



7 SAM INTERNATIONAL SCHOOL



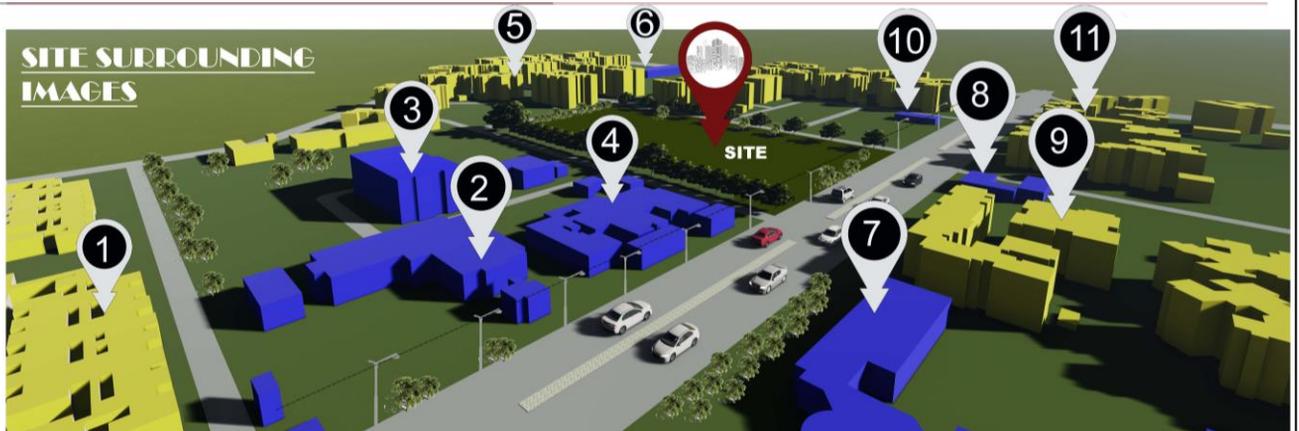
1 KARGIL APARTMENT



8 KALIBARI TEMPLE



9 NEW RAJPOOT V APARTMENT



SITE SURROUNDING IMAGES

SITE

RECREATIONAL HUB

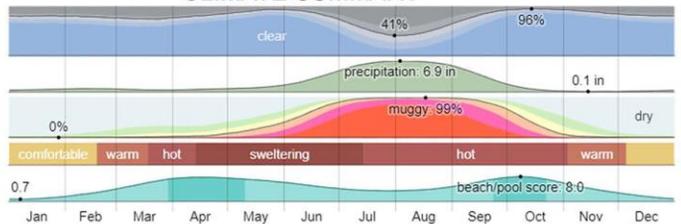
# CLIMATE ANALYSIS

# CLIMATE ANALYSIS I

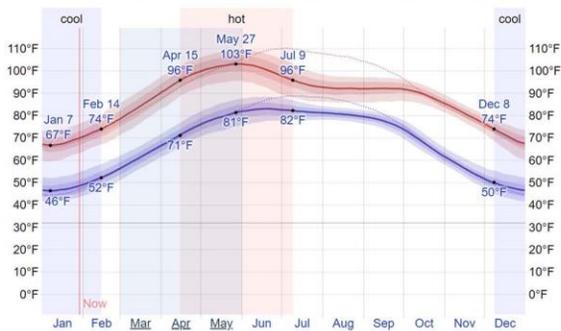
New Delhi - the capital of India - is a land locked city. The distance from the sea gives Delhi an extreme type of continental climate with the prevalence of continental air during major parts of the year. Only during the three monsoon months of July, August and September does the air of oceanic origin penetrate to this region and causes increased humidity, cloudiness and rain. The year can be broadly divided into four seasons. The cold season starts from December and extends up to end of February. This is followed by the hot weather season which lasts till about end of June when monsoon arrives over the region. The monsoon continues till the third week of September. The two post monsoon months of October and November constitute a transition season from monsoon to winter conditions.

The precipitation varies 203 mm | 8 inch between the driest month and the wettest month. The average temperatures vary during the year by 19.5 °C | 35.0 °F. The month with the highest relative humidity is August (76.88 %). The month with the lowest relative humidity is April (28.55%). The month with the highest number of rainy days is August (19.93 days). The month with the lowest number of rainy days is December (1.10 days).

## CLIMATE SUMMARY



## AVERAGE HIGH AND LOW TEMPERATURE



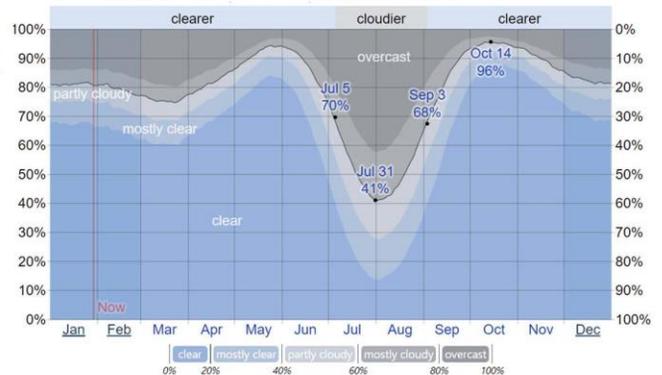
The daily average high (red line) and low (blue line) temperature, with 25th to 75th and 10th to 90th percentile bands. The thin dotted lines are the corresponding average perceived temperatures.

## AVERAGE HOURLY TEMPERATURE



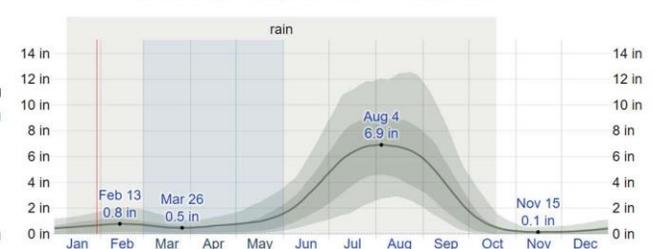
The average hourly temperature, color coded into bands. The shaded overlays indicate night and civil twilight.

## CLOUD COVER CATEGORIES



The percentage of time spent in each cloud cover band, categorized by the percentage of the sky covered by clouds.

## AVERAGE MONTHLY RAINFALL



The average rainfall (solid line) accumulated over the course of a sliding 31-day period centered on the day in question, with 25th to 75th and 10th to 90th percentile bands. The thin dotted line is the corresponding average snowfall.

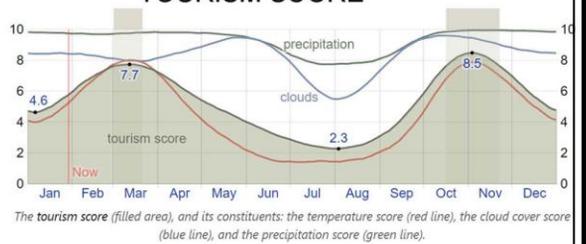
# WEATHER BY MONTH // WEATHER AVERAGE

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	13.4 °C (56.1) °F	16.8 °C (62.2) °F	22.4 °C (72.4) °F	29.1 °C (84.3) °F	32.7 °C (90.8) °F	32.9 °C (91.3) °F	29.9 °C (85.8) °F	28.8 °C (83.9) °F	27.9 °C (82.3) °F	25.5 °C (77.9) °F	20.5 °C (68.9) °F	15.3 °C (59.5) °F
Min. Temperature °C (°F)	7.5 °C (45.6) °F	10.4 °C (50.7) °F	15.1 °C (59.1) °F	20.8 °C (69.5) °F	25.2 °C (77.4) °F	27.5 °C (81.5) °F	26.7 °C (80) °F	25.9 °C (78.6) °F	24 °C (75.2) °F	19.2 °C (66.6) °F	14.1 °C (57.4) °F	9.1 °C (48.4) °F
Max. Temperature °C (°F)	19.8 °C (67.7) °F	23.4 °C (74.2) °F	29.7 °C (85.4) °F	36.6 °C (97.9) °F	39.5 °C (103.1) °F	38.1 °C (100.7) °F	33.6 °C (92.5) °F	32.4 °C (90.3) °F	32.3 °C (90.2) °F	31.9 °C (89.4) °F	27.3 °C (81.2) °F	22.1 °C (71.8) °F
Precipitation / Rainfall	25	37	22	15	19	74	205	182	105	14	5	8
mm (in)	(1)	(1.5)	(0.9)	(0.6)	(0.7)	(2.9)	(8.1)	(7.2)	(4.1)	(0.6)	(0.2)	(0.3)
Humidity(%)	68%	62%	48%	29%	32%	47%	72%	77%	72%	55%	54%	62%

## HOURS OF DAYLIGHT AND TWILIGHT



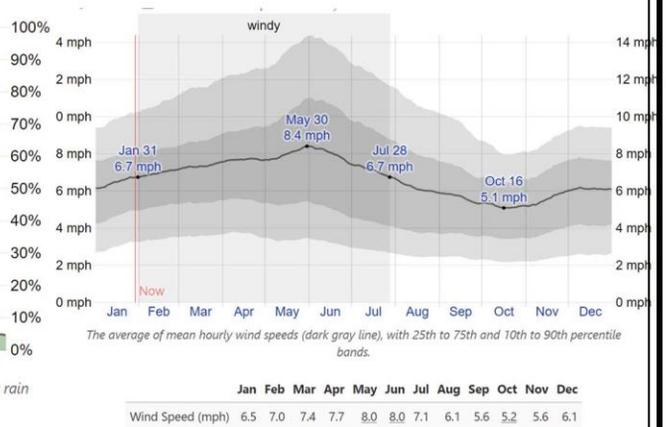
## TOURISM SCORE



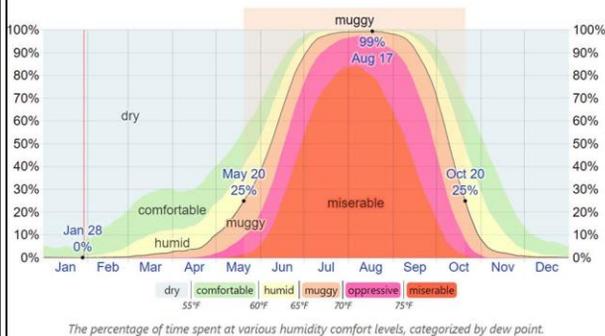
## DAILY CHANCE OF PRECIPITATION



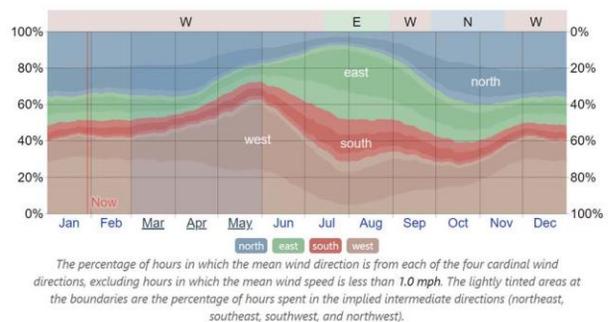
## AVERAGE WIND SPEED



## HUMIDITY COMFORT LEVELS



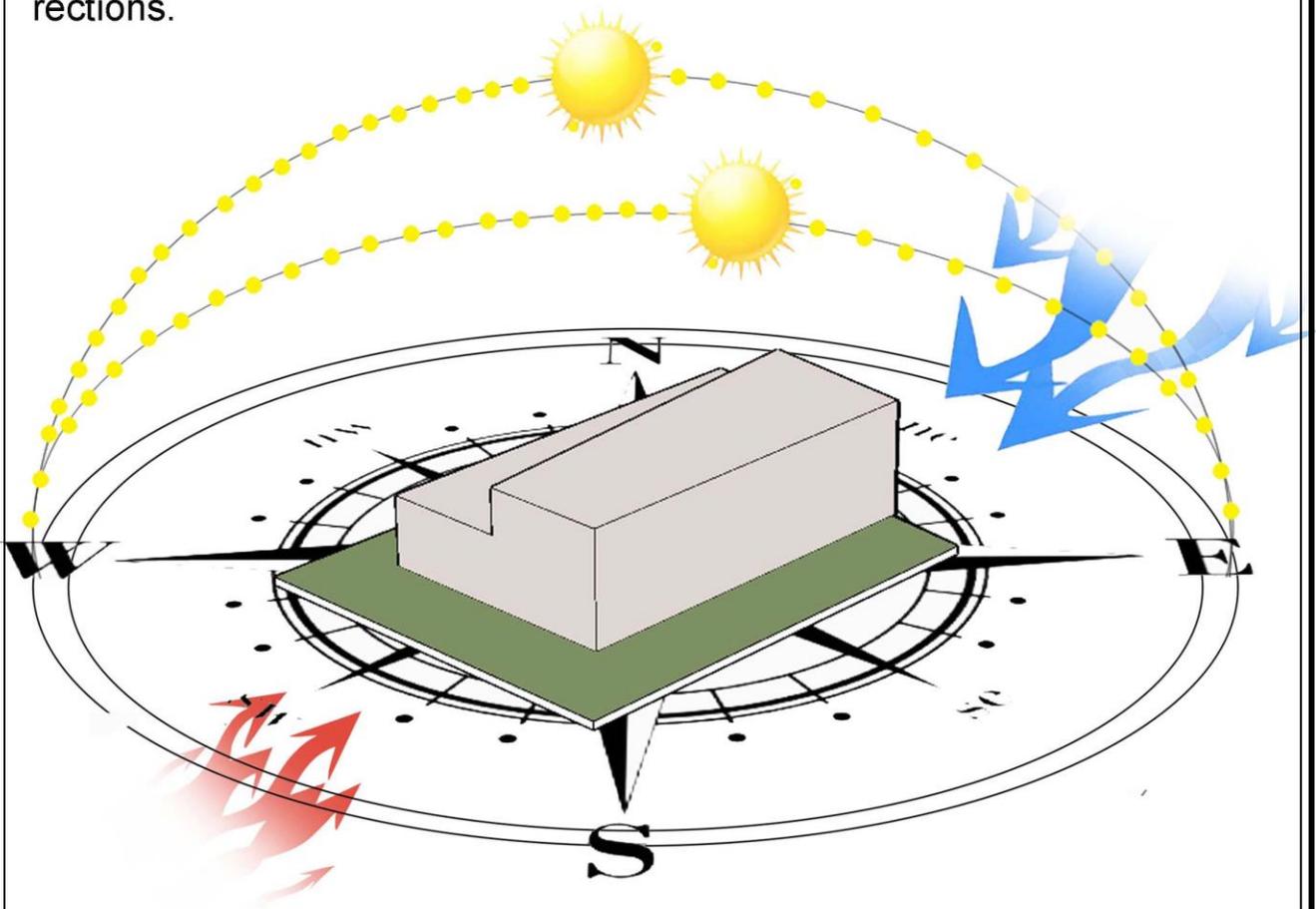
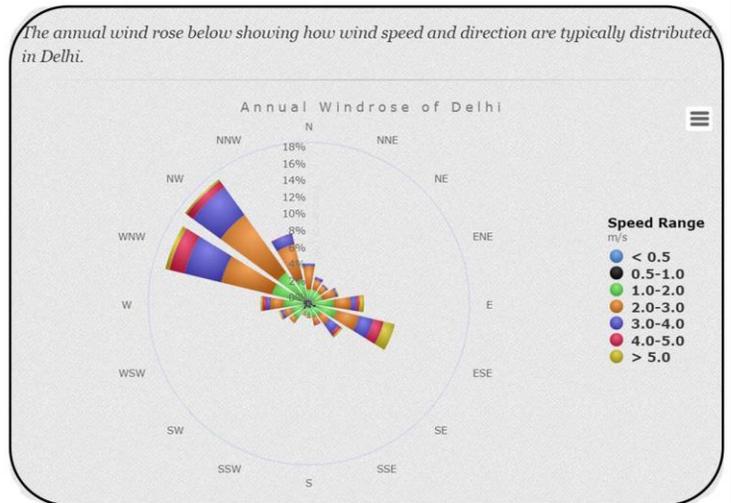
## WIND DIRECTION



# WIND MOVEMENT DIAGRAM

The average wind speed in Delhi is 2.4 m/s with the maximum wind speed of around 8 m/s. The average ambient temperature remains 24.7°C, varies from 5.5°C to 42.7°C. The average relative humidity remains around 66.5%, varies from 14.9% to 100%. The station pressure varies from 984 hPa to 965 hPa, averaged around 1000 hPa. Windrose of Delhi shows that predominantly wind blow from the NW - about 18.35% of all wind directions.

The annual wind rose below showing how wind speed and direction are typically distributed in Delhi.



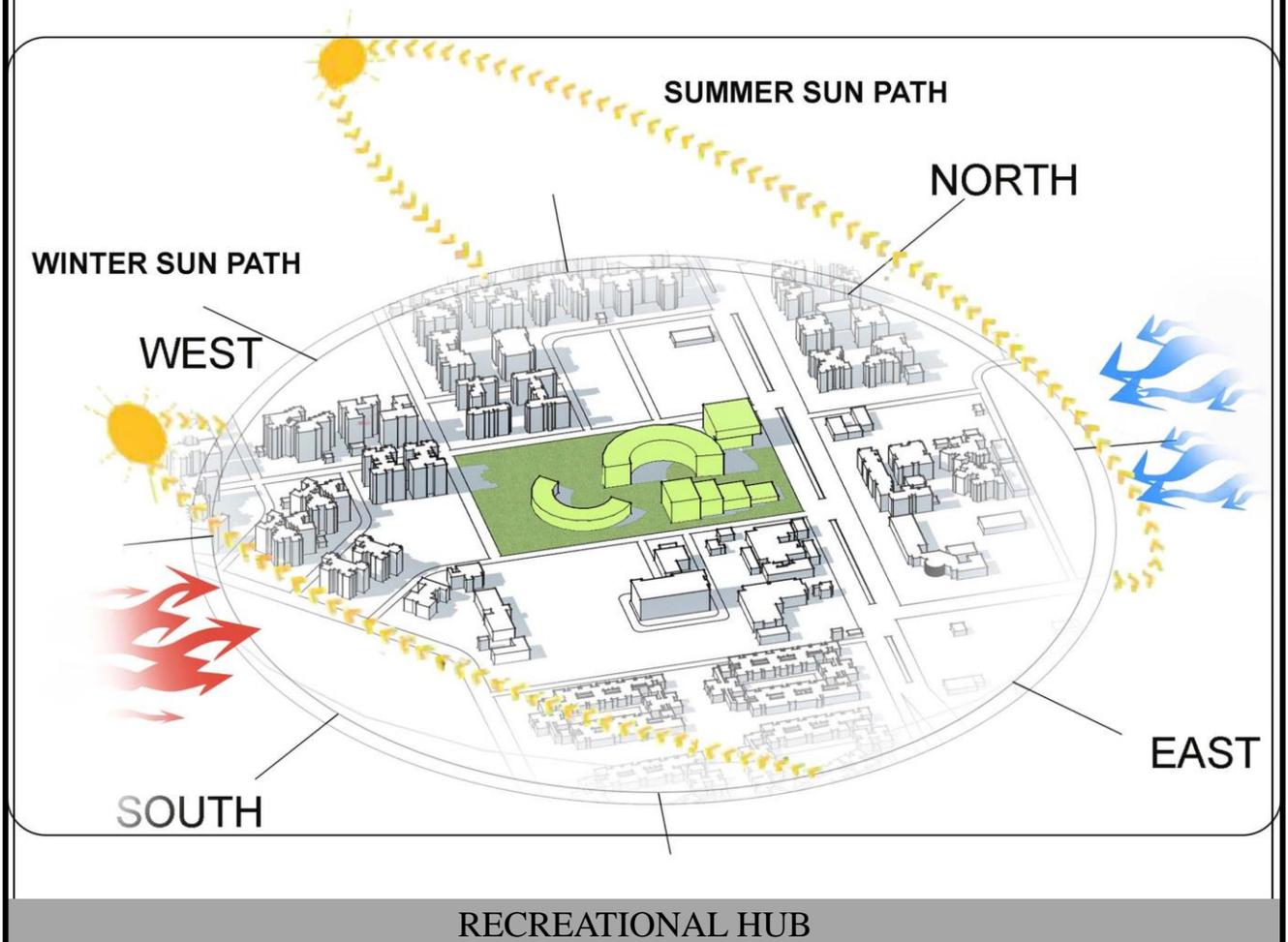
# SUN PATH DIAGRAM

## SUMMER SUN

1. Sun path at a high angle sun, north to E-Waxis
2. Clear free daylight is most easily available on north facade as minimal solar radiation will fall at high angle.
3. Easy shading of south facade from high angle sun.

## WINTER SUN

1. Sun path at a low angle, south to E-W axis
2. Solar radiation will penetrate south facing facades at a low angle during winter.
3. East and west facades continue to receive uniform, strong solar radiation at a low angle through the year.

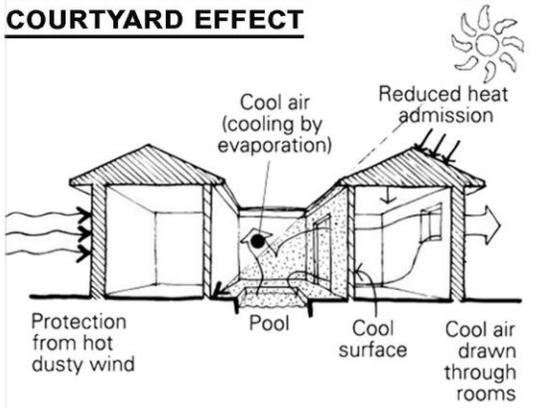


# PASSIVE DESIGN STRATEGIES

Passive strategies utilize what nature provides for free to keep buildings comfortable without the need for purchased energy.

Passive strategies are integrated into the design of a building to work with natural elements on a site (including sun and wind patterns) to provide natural heating and cooling of spaces through different seasons.

## COURTYARD EFFECT



## SOLAR-ELECTRICAL

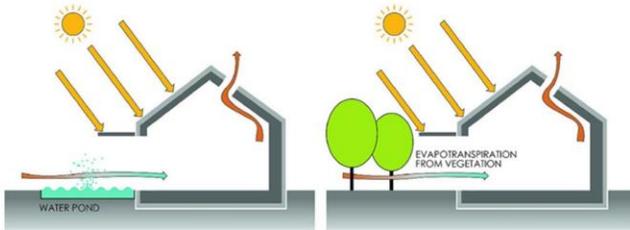
Solar Electrical Power is generated by photovoltaic (PV) modules that harvest energy from the sun and convert it into electrical energy. For use in buildings, solar modules can be integrated into the design as cladding components or as sun-shades, mounted on the roof, or mounted on land adjacent to the building. Tracking devices can follow the

## GREYWATER

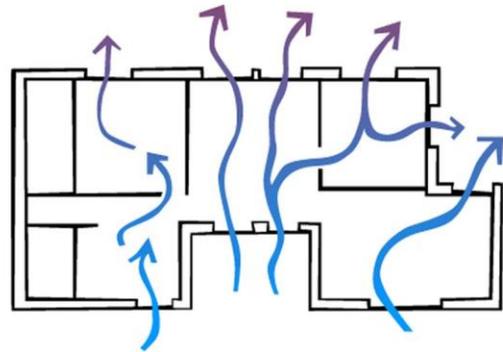
Greywater is a term used to describe water that has been used for showering, bathing, and hand-washing. It sometimes includes wastewater from kitchen sinks and laundry, depending on local by-laws. Greywater Reuse involves the collection and treatment of this water for use in toilet-flushing, outdoor irrigation and constructed wetlands, reducing the overall demand for potable (drinkable) water.

## EVAPORATION COOLING

EVAPORATIVE HEAT EXCHANGE: DIRECT EVAPORATIVE COOLING



## NATURAL VENTILATION



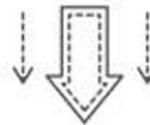
## STRENGTH

1. The site is well connected with road network along all the site.
2. Location of the site facilitates very well for the transportation facilities.
3. The site has a flat terrain, supporting the easy of construction.



## WEAKNESS

The project majorly depends upon the economy of the city.



## THREATS

1. The rapid population Growth.



## OPPORTUNITIES

The amenities by which the site is surrounding place the good role of the foot fall of the site.



## RECREATIONAL HUB



**CASE STUDY &  
LITERATURE STUDY**

# CASE STUDY-1 AVADH SHILPGRAM LUCKNOW

## INTRODUCTION

Typically like Indian urban Bazaars, Awadh Shilpgram is a visual and experiential melange, facilitating leisure/recreational activities, indulgence in food, socio-cultural celebrations, providing a platform for all sections of society to interface and encouraging shopping that supports livelihoods; thus keeping alive the legacy of arts and crafts of the entire region of Awadh.

## PHILOSOPHY OF THE SPACE

Lucknow, often known as the city of Nawabs, is known for its sweet-mannered inhabitants and royal background. The Nawabi city welcomes tourists all year round. Awadh Shilpgram, a sort of urban bazaar, by Archohm can be described as the confluence of tourists and residents in the city. Rooted in tradition and inspired by the people's needs, the project is a massive, spiral building that does a whole lot to engage its users. A blend of the then and now, Awadh Shilpgram has been proudly standing in Lucknow since 2016.

The building forms a collage of shapes and materials that references the chaotic composition of the bazaar found throughout the region. From an entrance courtyard, a spiralling structure lined with craft shops leads gradually towards an open plaza at the curving building. The open area at the centre of the complex contains a stepped amphitheatre. The campus has an arc-shaped exhibition hall and a food court that look onto a circular lawn with a fountain at its centre.

Awadh Shilpgram project is designed from inspiration of cultural, political, commercial and entertainment activities of people. This is built with a motive to keep the warmth of lakknavi markets and culture alive and to keep the memories of streets of the city alive. It is inspired from Rumi Gate and Imambara.



## PROJECT DETAILS

**Location** : Near Awadh Vihar, Yojna, Amar Shaheed Path, Lucknow, Uttar Pradesh

**Site area** : **20.1 Acres**

**Built up area** : **29784 Sq.m.**

**Year of Completion**: 2016

**Name of Client** : Avas evam vikas parishad

**Climate** : Composite Climate

**Architect** : Mr. Sourabh Gupta, Archohm consultant

**Typology** : Commercial

**Construction Cost** : 207 Crores



**COORDINATES-**  
28°37'19.19" N - 77°05'48.37" E

## SITE ACCESSIBILITY

**ROADWAYS**  
SITE IS WELL CONNECTED TO SHAHEED PATH NH27

**RAILWAYS**  
CHARBAGH RAILWAY STATION (13.3 KM)

**AIRPORT**  
CHAUDHARY CHARAN SINGH INTERNATIONAL AIRPORT 19.6 KM via NH27

**BUSWAY**  
NEW AWADH BUS STATION 13.1 KM via NH27



## LANDMARKS & SITE SURROUNDINGS



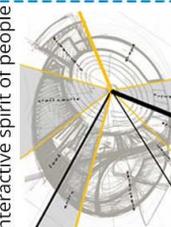
AVADH VIHAR YOJNA

LU LU MALL LUCKNOW

MEDANTA HOSPITAL

GOLF CITY LUCKNOW

Awadh Shilpgram is an elliptical form evolving organically from the interactive spirit of people enables a smooth corner circulation; while spiraling in narrowing down ward. Elliptical form of this heat is designed outside in, which helps in smooth running of premises. **CONCEPT DIAGRAM**



**GROUND FLOOR PLAN**

**FIRST FLOOR PLAN**

**Legend:**

- Craft Shops : 24 Nos. Anchor Shop
- AC Craft Shops : 24 Nos. Anchor Shop
- Food Court Stalls : 18 Nos. 01 Nos. Anchor Hall
- Exhibition Hall : 1 Nos. 01 Nos. Anchor Hall
- Public Toilets : 1 Nos. 01 Nos. Anchor Hall
- Public Toilets (Ladies) : 1 Nos. 01 Nos. Anchor Hall
- Public Toilets (Men) : 1 Nos. 01 Nos. Anchor Hall
- Craft Courts : 24 Nos. Craft Courts
- Barquet halls : 1 Nos. 01 Nos. Anchor Shop
- Kids Play Area : 1 Nos. 01 Nos. Anchor Shop
- Admin. Area : 1 Nos. 01 Nos. Anchor Shop
- Administration : 1 Nos. 01 Nos. Anchor Shop
- Other Services : 1 Nos. 01 Nos. Anchor Shop

**Percentage Breakdown:**

- Food Court : 12%
- Exhibition Hall : 12%
- Dormitory : 8%
- Craft Shops : 26%
- AC Shops : 14%
- Craft Court : 2%
- Admin. Kids Area, Services : 10%
- Banquet hall : 16%

## ARCHITECTURAL CHARACTER

### ARCHES

The arch, being an important architectural element of the architecture of the city of Lucknow, is introduced as a skin to the inner face of the buildings, but given a 'make-over' in a contemporary style with continuous access beneath it. Each arch allows entry into the corridor at the ground-floor level.



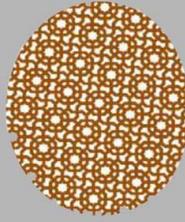
### CRAFT COURT

The craft court at shilpgram is completely eco-friendly with no use of chemical paints. Moreover, a green cover on the roof of the shops acts as a natural air conditioner. The stone masonry and agra red stone used in the construction act as cooling agents.



### JALI

The zigzag form of jaali arches is derived by modifying the basic lines of traditional mughal arches from which one can pass through in the corridors.



## UTILITIES OF AVADH SHILPGRAM

**Lifts and Escalators** : The ASG has 2 lifts (capacity of 8 passengers each) and 2 escalators at area near the AC shops for rapid mass vertical transportation.

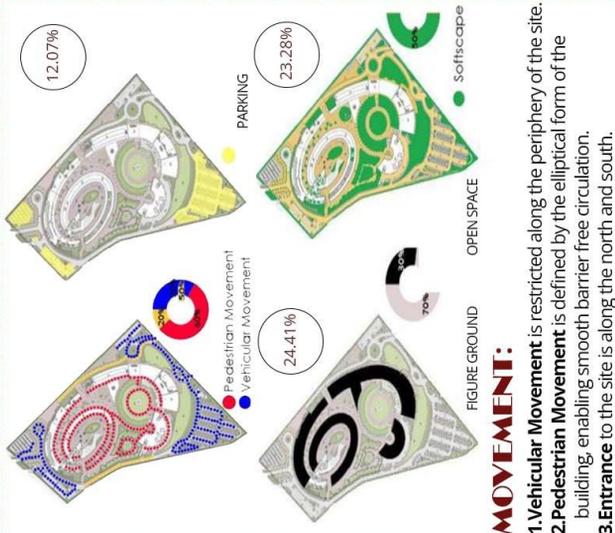
**HVAC System** : The ASG has a variable refrigerant volume/flow system (VRV/VRF) heating ventilation and air conditioning system in place.

**Power/ DG sets** : The ASG has 4 nos. of DG sets with 500 KVA capacity each and 2 nos. of DG sets with 630 KVA capacities each

**CCTV Surveillance** : The ASG has a non-intrusive security system in place.

**Fire Fighting** : The ASG has sprinklers, FHC and fire extinguishers in all the buildings excluding craft courts.  
**Garbage Dump** : There is one large garbage dump at ASG.  
**Rain Water Harvesting** : The ASG has 9 nos. of desilting chambers in place for adequate rainwater harvesting.

**UG Tanks** : The ASG has the following UG tanks:  
 2 nos. of Fire Tanks with 200 cum capacity  
 1 Raw Water Tank with 110 cum capacity  
 1 Treated Water tank with 50 cum capacity  
 1 RO Water Tank with 50 cum capacity



### MOVEMENT:

- 1. Vehicular Movement** is restricted along the periphery of the site.
- 2. Pedestrian Movement** is defined by the elliptical form of the building, enabling smooth barrier free circulation.
- 3. Entrance** to the site is along the north and south.



### SITE PLAN

- Total Site Area : **81347.17** Sq.M.  
 Permissible G.C. (45%) : 32538 Sq.M.  
 Total G.C. : **19862** Sq.M.  
 Builtup Area : **29784** Sq.M.
- ### LEGEND
1. Entrance Court
  2. Admin. / Indoor Kids
  3. A.C. Shops
  4. Craft Shops
  5. Platform Shops
  6. Dormitory & Amphitheatre
  7. Sitting
  8. Food Street
  9. Craft Courts
  10. Food Court
  11. Water Body
  12. Exhibition Hall
  13. Outdoor Dining
  14. Service Courtyard
  15. Sunken Plaza
  16. Outdoor Kids Zone
  17. Parking
  18. Service Block
  19. Open Banquet
  20. Green Area
  21. Space for DG and Transformer
  22. Banquet
  23. Garbage Dump & Common W.
  24. Handicap Parking

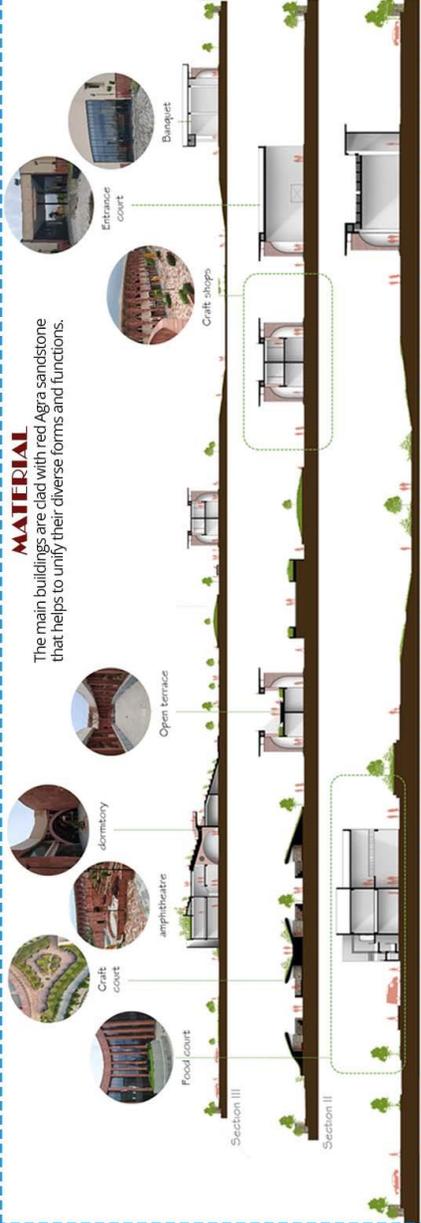
## AREA STATEMENTS

**Total Open Area**  
 Road Area - **7216.56** (8.87%) Sq.M.  
 Green Area - **18938** (23.28%) Sq.M.  
 Open Parking Ar. - **9821** (12.07%) Sq.M.  
 Hardcape ar. - **24891.53** (30.59%) Sq.M.  
 Grud. Coverage - **19862** (24.41%) Sq.M.

Facility	G.C. %	Total Area
Food Court	2.42 %	3938 Sq.M.
Exhibition Hall	3.07 %	2498 Sq.M.
Amphitheatre and dormitories	2.24 %	2685 Sq.M.
Craft Shops	6.14 %	8245 Sq.M.
AC Shops	2.88 %	4690 Sq.M.
Admin Kids Zone & Service Block	2.58 %	2995 Sq.M.
Craft Court	0.66 %	537 Sq.M.
Banquet hall	4.39 %	3578 Sq.M.

### MATERIAL

The main buildings are clad with red Agra sandstone that helps to unify their diverse forms and functions.



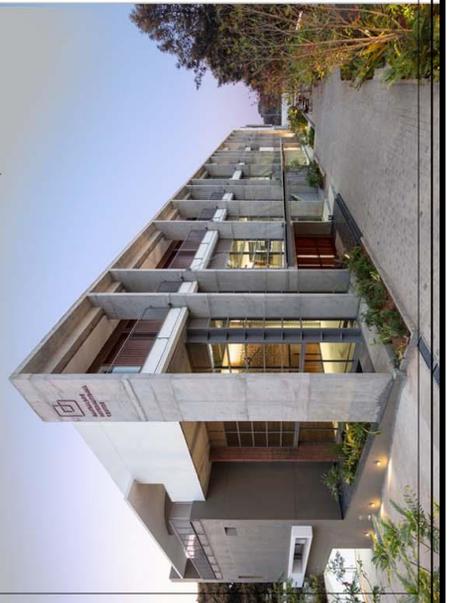
# CASE STUDY-2 INTERNATIONAL CENTER BANGALORE

## INTRODUCTION

The Bangalore international centre is a public space. BIC is a nonprofit organization hosting activities and events that foster conversations and ideas across various cultures, societies, religions, regions. The program exposes the citizens to new fields and makes them **conscious of the cultural activities**. The centre serves as a **cultural hub** which is open to all. It shares a narrow site area with neighbourhood having park on one side and residential houses on another. The building perfectly manages to accommodate **multiple functions with harmony to the space in a holistic way**. The centre hosts cross cultural events from varying fields of **literature, art, theatre, architecture, music, politics, and technology**. These diverse types of functions staged at one place make the centre open for intellectuals from various fields. Along with the **multiplicity of functions, the space offers contemporary aesthetics** which represents the **dynamic valves** of Bangalore city. The building serving as a community centre offers **multiple recreational activities**. These activities are spread out amongst different functions throughout the space.

## ORDERING OF SPACE

The fundamental idea of the proposed design was to provide **public interaction and participation** which was achieved by **elevating common area** to the upper floor which gave visibility even from the streets. This plays an **important role** in making a **strong visual connection** to outside and even the people passing by can become aware of the activities happening inside, and this increases their inclination to visit the place.



## PROJECT DETAILS

**Location**  
: 4th Main Rd, Stage 2, Domlur, Bengaluru, Karnataka 560071

**Site area**  
: **4420 Sq.M.**

**Year of Completion**: 2019

**Name of client**  
: Bangalore International Center Trust

**Climate**  
: Moderate

**Architect**  
: **Bijoy Ramchandran**  
Hundred Hands, Bangalore

**Typology**  
: Cultural, Public Space

**Construction Cost**  
: 207 Crores



**COORDINATES-**  
12.9668 N, 77.6353 E

## SITE ACCESSIBILITY

**ROADWAYS**  
SITE IS WELL CONNECTED TO 4TH MAIN ROAD

**RAILWAYS**  
BANGLORE EAST RAILWAY STATION (6.8 KM)

**AIRPORT**  
KEMPEGOWDA INTERNATIONAL AIRPORT BENGALURU (39.7 KM) VIA BELLARY ROAD

**BUSWAY**  
MANGAMMANAPALYA, 27TH CROSS RD, BENGALURU (10 KM) VIA RING ROAD

**METRO STATION**  
HALASURU METRO STATION (2.7 KM)  
TRINITY METRO STATION (2.9 KM)



## LANDMARKS & SITE SURROUNDINGS



**Varahi Temple**



**Satsanga Dhyan Kendra**



**Fortis Health World**



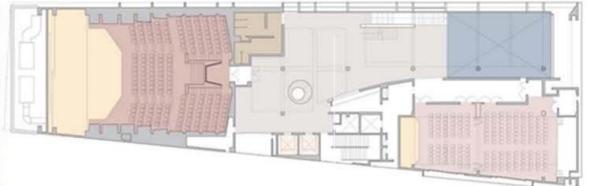
**St. Sebastian Church**



The functions are placed in hierarchy with correspondence to the public use. Restaurant is placed near entrance on ground floor and auditorium with multi-purpose hall and public lounge area is placed on the first floor. And other functions like seminar rooms, library, art gallery are placed on upper floors. Terrace is being utilized by placing amphitheatre and a small café on top.



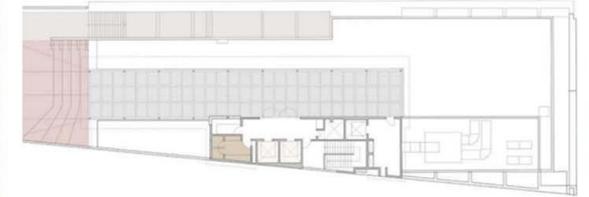
GROUND FLOOR PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN



TERRACE FLOOR PLAN



■ ENTRANCE FOYER  
■ RESTAURANT  
■ PUBLIC OPEN SPACE  
■ TOILET  
■ AUDITORIUM  
■ SERVICES



■ MULTIPURPOSE  
■ PUBLIC OPEN SPACE  
■ TOILET  
■ SERVICES



■ LIBRARY  
■ OFFICE  
■ TOILET  
■ SERVICES  
■ EXHIBITION  
■ CONFERENCE ROOM  
■ DOORMITORY



■ AMPHITHEATRE  
■ PUBLIC SPACE USP  
■ SERVICES  
■ TOILET  
■ PAINTRY  
■ TERRACE

Different situation is found in the ceilings of library, seminar room, and restaurant. The ceiling of these areas is **cladded with fabric board panels** which adds to the softness and adds character to the space as all three places have **different muted patterns** and colours of the **fabric boards**. They also help in cutting down the high sounds at these places. The sound should not reflect or pass from the seminar room to the outside to maintain the level of privacy over the conversations. And library should provide a quiet atmosphere in which a person can read peacefully.

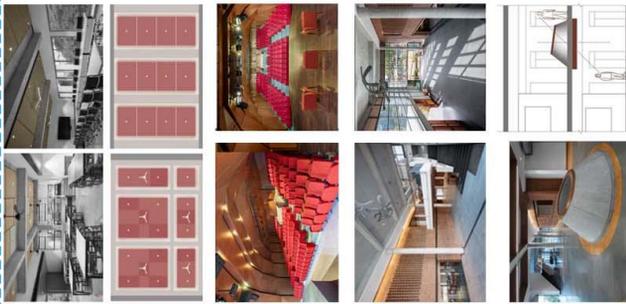
A complete modern approach is used in design of the main auditorium, where undulated planes wrap the whole space. They also serve the acoustic purpose as these planes tend to cut down the extra noise. The **bright colored** seats mark a bold statement in a subtle way that blends with the undulating planes. Hence, aesthetics of auditorium stands out while all other spaces follow the similar language throughout the centre.

The aesthetics of public space are kept minimal with material palette of **exposed concrete structure, wooden furniture, kota stone flooring, and exposed brick feature wall**. The muted colours and earthy material palette are supported by using art in a minimalistic way which complements the building. The rigidity of the building is broken by use of art in an **organic form** as a sculpture accentuating the double height in a minimal way.

Another such element used to mark the **connection between the floors** is the use of **'oculus'** as named by the designers. The **exposed concrete domed shape oculus** connects two floors in the cultural centre and adds to the design element. The open lounge spaces on the first floor make the visitor spend more time after or before the events at the centre.

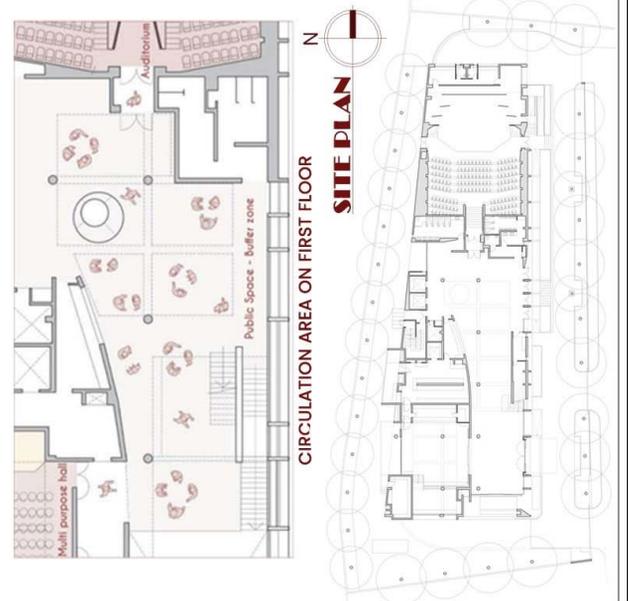
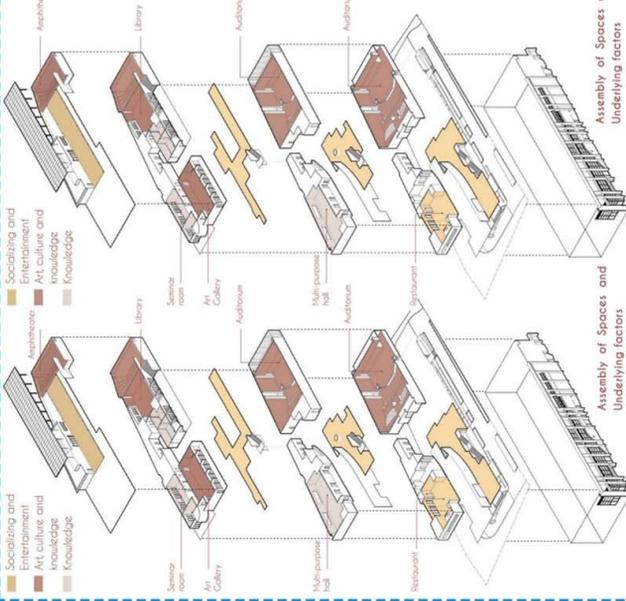
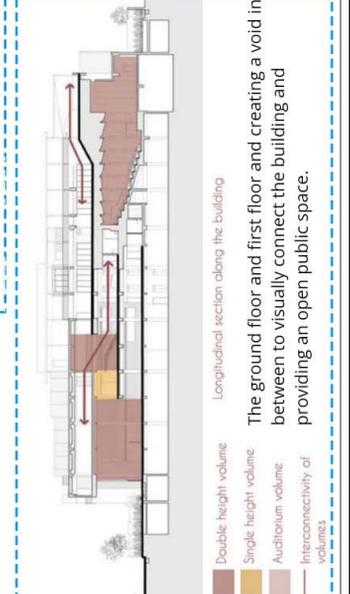
The **inside-outside connection** is quite **dominant** in the centre which informs the design language. The inclusion of **huge openings through-out** the building in the form of **windows and doors** creates a strong **visual connection to the outside**. The framed views through the windows connect the outside people to inside as the buildings in neighbourhood are also of the similar height.

The architecture of the building caters to the public use by splitting the volumes which opens possibilities for more interaction within the space. The double height entrance foyer opens up the view to different areas from first and the second floor. The intervention of double height at the entrance enlightens the grandeur of the space and makes the public gathering space look massive.



The spill out of spaces in the restaurant happen by adding some buffer spaces around the main functions. These buffer spaces form the place for public gatherings and acts as an extended recreation place where people spend their time before and after going to the restaurant. The buffer space for both the auditoriums on the first floor is the central public space which also the part of main circulation area. This becomes the place for people to 'socialize' before and after the event. It also becomes the place to share "knowledge as intellectuals exchange their thoughts at such break points. The huge open area at the entrance foyer and the connecting free space on ground floor acts as a canvas to host various small activities. Taking the advantage of this place, it provides a space for displays of various art exhibitions that take place in this area to make the people sub consciously glaze the exhibit and have its impact.

The scale of functional spaces versus public space is depicted here and public space gets its significance as it becomes the space for 'extended recreation. The public space proportionally provides more area for activities and group gatherings before and post events, so often the exhibitions find its way to this public space.



# RECREATIONAL HUB

# LITERATURE STUDY -1

## KU.BE HOUSE OF CULTURE IN MOVEMENT DENMARK

### INTRODUCTION

Ku.Be House of culture in movement is a new typology of project that is designed as a 'focal point' for the people of Frederiksberg and Copenhagen. The building serves as a **community space** that explores the themes of culture, movement, and health (Stevens, 2016). The specific needs and wants of the users are considered at programmatic level that help in community building and improving the quality of life by bringing people together. Architects, ADEPT and MVRDV state that the building **blends sports, learning, and theatre into one space for enhancement of body and mind** which encourages a healthy life for people irrespective of their age, interests and helps in connecting people. Since its completion, it has become a community destination where people are encouraged to involve in various recreational activities. The bright colors of the building elements with dynamic and playful architecture encourages user participation in many ways.

The part to whole strategy is employed in laying out the spaces. **Six volumes of each unique program are harmoniously arranged in the periphery of the site** which are distinguished by its colors and shape. **Smaller volumes** are organized inside the **main volume** of the building and the common spaces formed between the volumes are left open for users interpretation. Each individual element possesses its own **geometry** that offers **multiplicity of uses** in various forms.



### PROJECT DETAILS

Location : Frederiksberg, Denmark  
 Site area : **4000 Sq.M.**  
 Year of completion : 2016  
 Architects : **ADEPT, MVRDV**  
 Name of client : Winy Maas, Jacob van Rijs and Nathalie de Vries.  
 Building Type : Municipality of Frederiksberg, Danish Foundation for Culture and Sports Facilities  
 Programs : Recreational / Cultural, Educational, Offices, Retail, Cultural, Auditorium, Sports  
 Construction Cost : \$130 Mt



**COORDINATES:**  
 55°40'58"N 12°30'19"E



### SITE ACCESSIBILITY

**ROADWAYS**  
 SITE IS WILL CONNECTED TO DIRCH  
 PASSERS ALLE ROAD

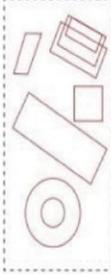
**RAILWAYS**  
 VESTERPORT RAILWAY STATION (4.4 KM)

**AIRPORT**  
 COPENHAGEN AIRPORT (15.3 KM)

**BUSWAY**  
 UDENB BUS STOP (4.3 KM)

**METRO STATION**  
 ENGHAVE SQUARE METRO ST. (4.2 KM)

### ORDERING OF SPACE



The common areas left as **voids** between these volumes acts as a **play zone** and are open for interpretation. The **diversity of program** requirements gives **complexity to the volumes**, yet adds to the dynamic and playful character.

Each volume contained within a space combines to form a **clustered spatial organization**. The **composition of volumes** and their **physical proximity** opens up various **possibilities for interaction** within the space. Each of the volumes holding different recreational activity defines its character. The **larger volumes** hold **public gatherings** or performances, while smaller volumes are for exhibitions.

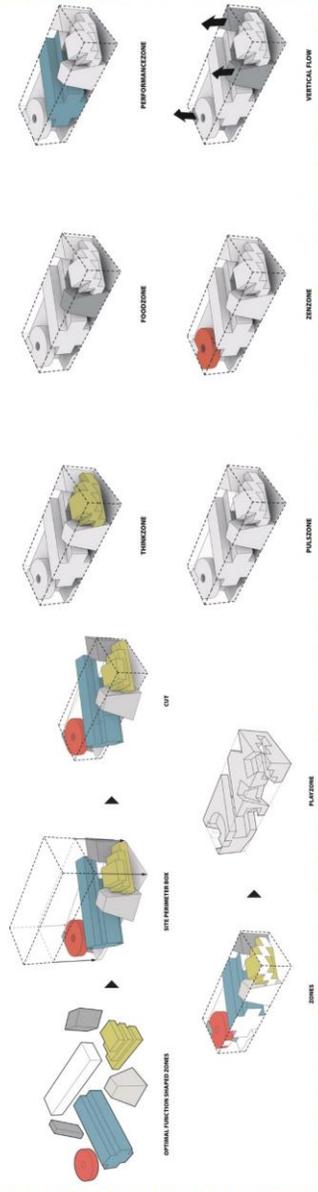
Different areas for food, performance, think and Zen zones together forms the activities of the building. Separate Zen rooms for yoga, meditation and dance are provided to improve the mental and physical health. While, play zone and performance zone helps in making the place more interactive for recreational activities. The sequencing of each zones gives character but also forms certain areas for connection and movement.

The **configuration of each shapes** creates a sequence of events that adds **diversity of experiences**. At all the three levels different size, height, and shape of the elements form a different floor plate for **interactive recreational activities**.



SECTION-AA

### SEQUENCING OF SPACES



## OUTER VOLUME

At first glance, building looking apparently simple from the outside holds unexpected interior spaces. The playful geometry of the shapes and the manner in which they are ordered brings dynamism to the building from the inside. The framed views from the facade makes the recreational activities visible from the exterior.



## INNER VOLUME

The placement of volumes in the building creates multiple double height areas that increase the visual connectivity within the space that overlooks the happening activities.



## MOVEMENT BETWEEN THE FLOORS

Instead of movement being along the defined pathways, it is left open to explore and discover and has gained various alternate forms. For an instance, the maze of different cubes between second and third floors, a net that spans across several levels, and a vertical maze, allows users to climb from one floor to another, or use the slides and poles to get back down quicker. Diverse ways of movement throughout the space makes it playful, and encourages people of all age use to interact within the space and provides an extra layer of physical recreation.

## ZONES:

The following descriptions are selected from the competition program, where the Zones were sketched out conceptually with examples of various activities that might take place.



**Performance Zone:** Example Activities Concerts, Plays, Performances, Lectures, Films, Dance, Poetry Readings, Exhibitions, Installations. The proposed space is designed to be flexible and accommodate various type so of performance forms. The outside wall of the space can both be shaded for an indoor-outdoor arrangement.



**Zen Zone:** Example Activities -- Meditation, Yoga, Pilates, Tai Chi.



**Play Zone:** Example Activities -- Digital Interactive Art, Interactive Playground, Nintendo Wii, Climbing. In the MVRDV/ADEPT proposal, this spaces is a complex space that ties all of the overall program elements together and allows for circulation between them.



**Pulse Zone:** Example Activities -- Martial Arts, Aerobics, Dance, Cross Fitness, Trampoline, Running, Biking.



**Think Zone:** Example Activities -- Information Searching, Periodicals, Multimedia Art Installations / Exhibitions, Lectures, Computer Stations.



**Food Zone:** Cafe, Kitchen, Herb Garden, Cooking Classes, Take Away, Reception.

Diagonal placement of elements in plan gives the space dynamism and adds to the playful character of the space

It also provides dynamic open public space at the entrance which hosts various recreational activities and increases social interaction

Open social areas in form of play zone left open for user interpretation for recreational activities

Physical activity area have space for spectators to engage more people

Multiple double height areas and courtyards are formed at various places due to playful arrangement of elements, they increase connectivity throughout the space

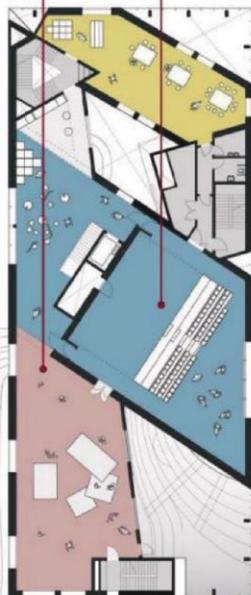
Flexibility in spatial organization due to various types of furniture used

Movable partitions gives the required privacy for the mediation area

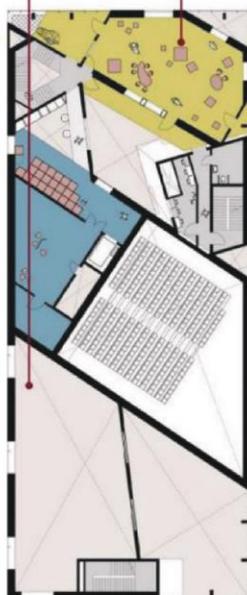
Donut shape yoga and exercise area gives unity by its circular form



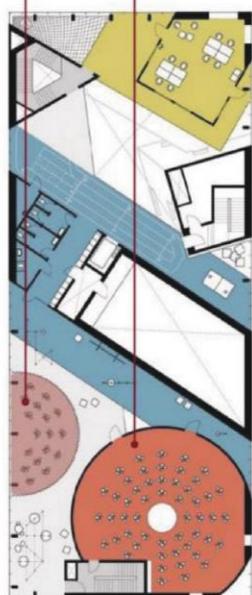
Ground Floor Plan



First Floor Plan



Second Floor Plan



Third Floor Plan

# LITERATURE STUDY -2 FEDERATION SQUARE MELBOURNE, AUSTRALIA

## INTRODUCTION

In 1996, the **Federation Square Management Pty Ltd, the State Government of Victoria**, and the City of Melbourne held an **international design competition** for a new civic square capable of accommodating up to **20,000 people** in an open-air amphitheater on a **38,000 m2 (9.4 acre)** block to be built **above the Jolimont rail-yards**. The site was to support a broad range of **civic, cultural and commercial activities**, responding to the vitality and openness of daily life.

The project is located on the **northern bank of the river Yarra**, at the intersection of the two major thoroughfares of the city, close to the heart of the centre of Melbourne. It serves as a gateway to the city.

## SITE CONTEXT

Federation Square occupies a site roughly the size of an entire city block, bounded by the busy arterial streets Swanston, Flinders, and Russell to the west, north, and east respectively and by the **Yarra River** to the south. The site as a connector Link between the city's historical central district and surrounding landscapes.

Located adjacent to **Flinders Street Station**, the 'Hub' of Melbourne's metropolitan train service loop. All trains begin and end their journey here: "**New civic gateway**", transition into the city. **First large public square** or gathering place in Melbourne, bringing people together



## PROJECT DETAILS

- Location : Swanston Street, Melbourne, Australia
- Site area : **3.2 ha (7.9 acres)**
- Year of completion : **26 October 2002**
- Name of client : Fed Square Pty Ltd (State Trustees Ltd for State of Victoria)
- Architects : **Lab Architecture Studio**  
**Donald L. Bates and Peter Davidson**
- Building type : Recreational/Cultural
- Programs : Educational, Offices, Retail, Cultural, Auditorium, Sports
- Visitors : 9.7 million per annum
- Cost : \$440 M



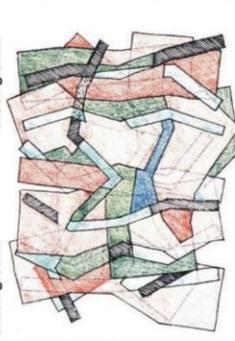
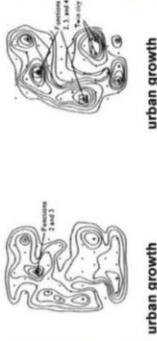
**COORDINATES-**  
37.817798°S 144.968714°E

## SITE ACCESSIBILITY

- ROADWAYS**  
SITE IS WELL CONNECTED TO SWANSTON STREET
- RAILWAYS**  
FLINDERS STREET RAILWAY STATION (200 M)
- AIRPORT**  
MELBOURNE AIRPORT (21.3 KM)
- BUSWAY**  
SKYBUS COACH TERMINAL (2.0 KM)
- METRO STATION**  
PARLIAMENT METRO STATION (2.5 KM)



## DESIGN DEVELOPMENT



## SITE SURROUNDING AND LANDMARKS



- St Paul's Cathedral, Melbourne
- Melbourne Town Hall
- Flinders Street Railway Station
- Athenaeum Theatre
- Melbourne River Cruises

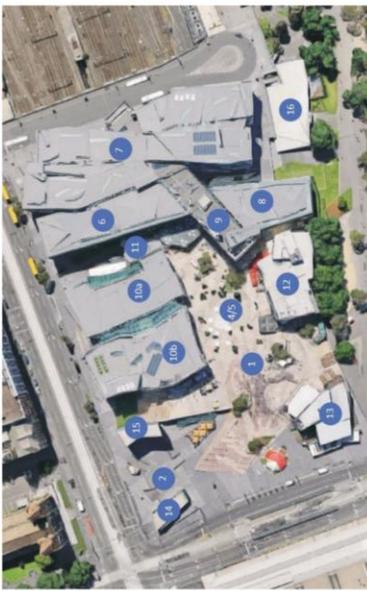
## LAND USE PATTERN

Federation Square is familiar as a public building because it under-invests in floor area and over-invests in building quality. A grand square joins seamlessly to the surrounding streetscape at Swanston Street. It is a purely cultural and commercial facility with a complete absence of residential land use. The federation square conforms to the reputation of Melbourne as a culturally vital city.



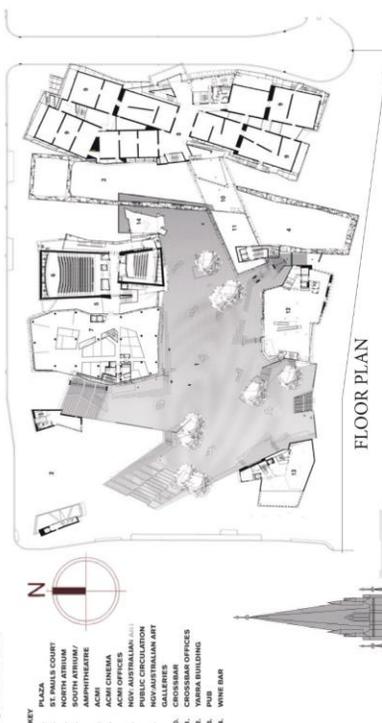
## PHYSICAL DESCRIPTION

Federation Square is composed of a series of large interconnected buildings and spaces on the northern and eastern edges and dispersed smaller buildings around the southern and western edges, all arranged around an irregular-shaped public square. Between and within the buildings are external steps and covered walkways.



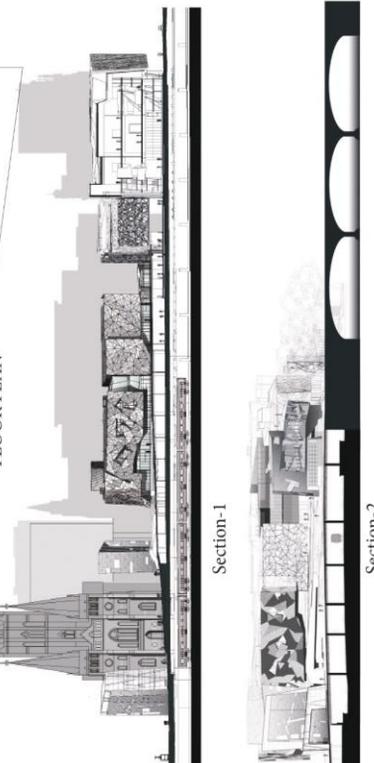
1. The Square, or public plaza
2. St Paul's Court
3. Landscape features
4. The Deck (below the Square)
5. The Labyrinth
6. The Atrium
7. Lan Potter Centre: NGV Aust
8. Deakin Edge auditorium
9. Crossbar
10. Alfred Deakin Building (ACM)
11. Alfred Deakin Building (SBS)
12. Building (Beer Deluxe)
13. Yarra Building
14. Transport Hotel Building
15. Western Shard
16. Eastern Shard
17. Zinc Building

SITE PLAN



- KEY
1. PLAZA
  2. ST PAUL'S COURT
  3. NORTH ATRIUM
  4. SOUTH ATRIUM / LANDSCAPE
  5. ATRIUM
  6. ACM CINEMA
  7. ACM OFFICES
  8. PUBLIC CIRCULATION
  9. NGV AUSTRALIAN ART
  10. CROSSBAR
  11. CROSSBAR OFFICES
  12. YARRA BUILDING
  13. WESTERN SHARD
  14. EASTERN SHARD
  15. ZINC BAR

FLOOR PLAN



Section-1

Section-2

## BUILDING FACADES

The building represents the need for a common man to address public space as something, which generates variety and breaks out of the familiar.

Sandstone, zinc and glass have been used as cladding, structured within a triangular grid.

The modular system uses 5 single triangles to make up a self-similar larger triangular panel. Five panels following the same geometrical logic are joined together to create a mega panel that is mounted onto a structural frame.

The fractal façade system allows for individual buildings of the square to be differentiated from each other while simultaneously maintaining an overall coherence.

## PASSIVE TECHNIQUES

Cool air is pumped through the labyrinth's cells at night, which in turn cools the concrete walls. By day, air is again pumped through the cells, this time being cooled by the concrete. In winter the labyrinth's thermal mass maintains an inherent warming potential, which will be supplemented as required.

The system directs air to the atrium, introduced at floor level, dispersed by use of a low-velocity displacement system. Equivalent to conventional air conditioning but using one tenth of the energy consumption.

## LABYRINTH

Maze of zig-zag corrugated concrete walls is a unique passive climate control system for the glazed atrium's north and south sections. Zig-zag profile doubles the cooling capacity.

Spread over an area of 40x40 metres, the labyrinth is positioned beneath the civic plaza and above the deck over the railway, using a space that would have otherwise been unoccupiable. It simultaneously provides support for the plaza deck slab.

## THE PLAZA

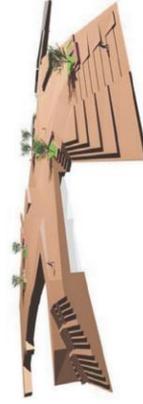
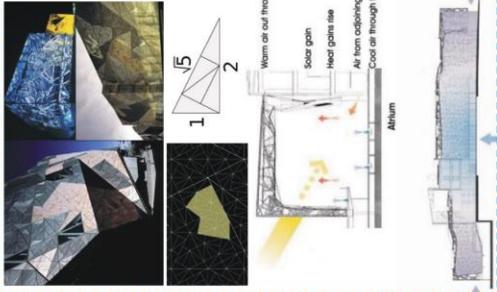
- 470,000 cobblestones of variegated colored Kimberley sandstone blocks from Western Australia.
- Design's geometry allows for a vast array of configurations and arrangements, from the largest scale public gathering of up to 15,000 people to intimate sites of relaxation and contemplation.

## SITE DESIGN

The deck over the railways is supported by over 3,000 tonnes of steel beams, 1.4 km of concrete 'crash walls' and over 4,000 vibration-absorbing spring coils and rubber padding. It was designed to support sensitive uses, such as galleries, cinemas, and radio and television studios, which needed to be isolated from vibration and noise.

## WATER CONSERVATION

Fed Square Pty Ltd has implemented water saving initiatives including rainwater harvesting projects and installation of a system to filter and recycle water into cooling towers. These measures have reduced Fed Square's Water Consumption by 14% in 12 months (Feb 07 - Jan 08) equating to 13-14 million litres. Specifically, water measures implemented and completed during 2006 and 2007 include:



# CASE STUDY

## BHAIKHANDE AUDITORIUM

### LUCKNOW

#### INTRODUCTION

An auditorium is a room built to enable an audience to hear and watch performances. For movie theatres, the number of auditoria (or auditoriums) is expressed as the number of screens. Auditoria can be found in entertainment venues, community halls, and theaters, and may be used for rehearsal, presentation, performing arts productions, or as a learning space. An enclosure covered or open where people can assemble for watching a performance given on the stage. An auditorium is a room built to enable audience to hear and watch performances at venues such as theatres. An auditorium is a large space that is move of a multipurpose facility. A theatre is usually a large space that is built to the needs and specifications of the entertainment.

#### AUDITORIUM PLANNING

- The Theatre has rectangular shaped form.
- It has 3 aisle each of varying width from 1.5 TO 1.8m
- It has totally 21 rows
- Each row contains 30 seats.
- Slope Angle : 10 DEG.
- Balcony : Nil
- False ceiling height : 0.85M.
- It has two entry and two exit.
- Aisle Width : 1.5 M at first Row
- 1.8 M at mid Row

#### SERVICES

THE BUILDING IS ALSO INSTALLED FIRE ESCAPE DOORS TO AVOID THE DISCREPANCY IN THE FIRE ACCIDENTS. EMERGENCY FIRE ALARM ALSO INSTALLED THERE. FIRE EXTINGUISHERS IN SUFFICIENT AMOUNT WERE PLACED BOTH INSIDE AND OUTSIDE THE AUDITORIUM.



THIS SYSTEM IS RESPONSIBLE FOR HEATING AND COOLING IN THIS AUDITORIUM. THE HALL USES CENTRAL AIR CONDITIONING PLANT. WITH A CAPACITY OF ABOUT 60 TONS. AUDITORIUM VENTILATION AND AIR-CONDITIONING REQUIRES A HIGH RATE OF AIR EXCHANGE. AIR-CONDITIONING AND VENTILATION SHOULD ENSURE THAT IT DOES NOT CONSUME TOO MUCH ENERGY FOR ITS OPERATION.



IN THE LEVEL OF FIRE DETECTOR SERVICES BHAIKHANDE AUDITORIUM INSTALLED THE SMOKE DETECTORS ON THE FALSE CEILING OF BACK SEATING. THE ACCESSORIES OF THE FIRE DETECTION IS INSTALLED MAIN LOBBY BY AUDITORIUM. GREEN ROOM, SERVICE AREAS ETC.



#### PROJECT DETAILS

- TOTAL AREA : 9570 SQ. FT.
- CAPACITY : 600 PERSONS.
- STAGE TYPE : PROCENIUM
- CLIMATE : COMPOSITE
- PURPOSE : INSTITUTIONAL

#### MATERIALS

WALLS WERE COVERED WITH GYPSUM BOARD PANELS. FLOORS WERE EQUIPPED WITH MATS HELPING IN ACOUSTICAL ASPECTS. STAGE FLOOR IS MADE UP OF HARD WOOD AND VINYL SHEETS WITH WOODEN TEXTURE IS PROVIDED IN THE HOUSE OTHER AREAS IS FINISHED WITH GRANITE. THE CEILING IS AN IMPORTANT FACTOR FOR SOUND ISOLATION. GYPSUM CEILING PANELS ARE USED AS THEY HAVE SMOOTH SURFACES THAT AID SOUND REFLECTION. THEY ALSO PROVIDE FOR ACOUSTICAL INTIMACY, CLARITY, AND STRENGTH OF THE OVERALL ROOM'S SOUND. SUSPENDED FROM THE CEILING TO PROVIDE SHORT DELAYED, REFLECTIVE SOUND ENERGY. THE REFLECTOR PANELS CAN PROVIDE THE CORRECT "CEILING SHAPE" FOR EARLY REFLECTIONS THAT HELP AVOID REVERBERATION. STAGE FLOOR IS MADE UP OF HARD WOOD AND VINYL SHEETS WITH WOODEN TEXTURE.

#### GREEN ROOM:

1. SIZE: 12 FEET X 15 FEET.
2. HEIGHT: 10 FEET 6 INCH.
3. WITH OF DRESSING 1 FEET.
4. HGT. OF DRESSING SLAB: 1.5 FT.
5. TWO GREEN ROOMS PROVIDED WITH ATTACHED WASHROOM.
6. WALL FINISHING DONE WITH WOODEN PANELS.

#### DETAILS OF THE STAGE:

1. STAGE HEIGHT: 3 FEET.
2. BACKSIDE STAGE: 6 FEET WIDE.
3. FLOORING: WOODEN.
4. AREA: 2200 SQ. FT.
5. ENTRY: 2 SIDE ENTRIES.

#### LEGENDS:

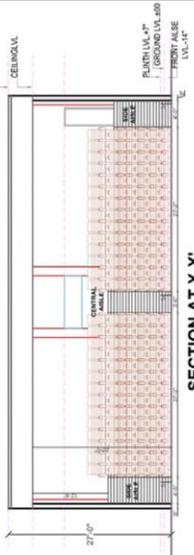
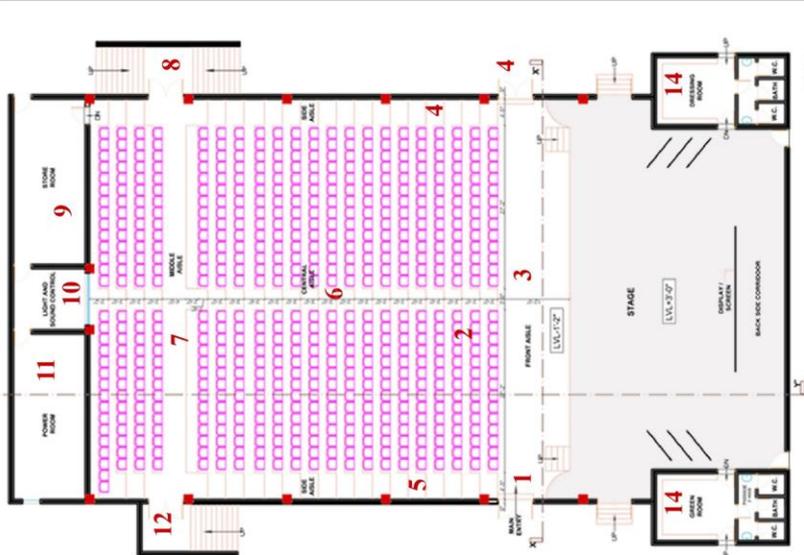
1. ENTRY.
2. SEATING AREA.
3. FRONT AISLE.
4. RIGHT SIDE AISLE.
5. LEFT SIDE AISLE.
6. CENTRAL AISLE.
7. MIDDLE AISLE.
8. EXIT TOWARDS CANTEEN.
9. STORE ROOM.
10. LIGHT & SOUND CONTROL ROOM.
11. POWER ROOM.
12. EXIT.
13. STAGE.
14. GREEN ROOM WITH TOILET.

#### PROSCENIUM.

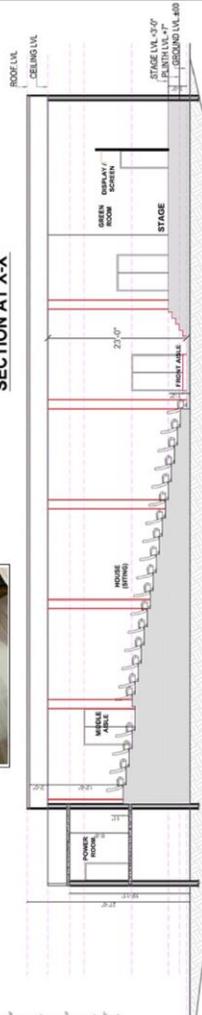
Control room is provided at the back of the house. Area: 8'3" x 25'. Floors and walls are covered with carpet. Used for lighting and sound control Dr. BR Ambedkar Auditorium. Control room is provided at the balcony level. Walls are made up of wooden panels. Used for lighting and sound control.



#### ELECTRICAL



SECTION AT X-X'



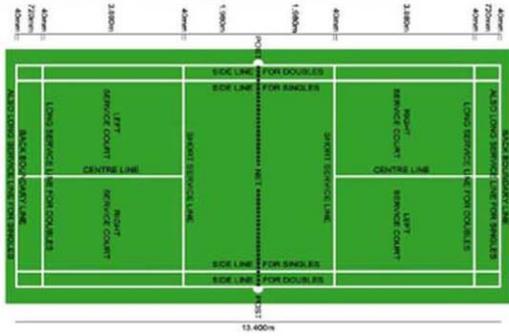
SECTION AT Y-Y'

# DATA PRESENTATION(ANTHROPOMETRIC DATA)

## Data from Literature Study

### 1. BADMINTON COURT-

All requirements for court marking are to the outside of lines except for those involving the centre service line which is equally divided between right and left service courts.  
All courts marking to be 40mm. wide and preferably white or in color minimum distance between sides of parallel courts to be 1.5m.  
Recommended area : Ground space is 150.5sqm.  
Minimum to edge of pavement.  
Size and dimension : Singles court is 13.4 x 6.1m.  
With a 1.5m minimum unobstructed area on all sides.  
Orientation : Preferred orientation is for the long axis to be north-south



## Data from Literature Study

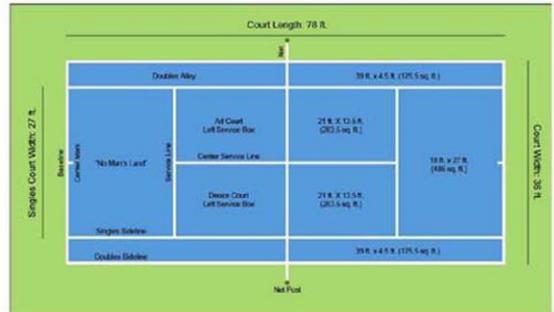
### 2. TABLE TENNIS -

Table tennis is 0.76m. high and normally requires a space 1.4 x 1.6\*0.5m. for storage.  
When in use each table requires individual lighting.  
Size and dimension : Size of playing space 7.6 x 4.6m.  
Ceiling height is 4.2m. minimum  
Clearheight below light is 2.7m.



### 3. LAWN TENNIS –

Recommended area : Ground space is 643 sqm (minimum) to edge of pavement.  
Size and dimension : Court size is 10.97\*23.77m with to 6.4m.  
Clearance on shorter side to 3.66m. on longer side of court.  
Height of court for recreational purpose is 0.8m.  
Orientation : Preferred orientation is for long axis to be North-south.



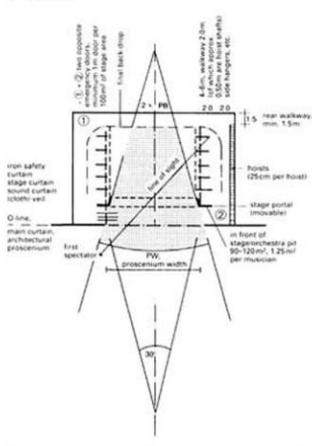
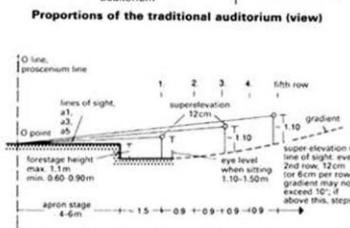
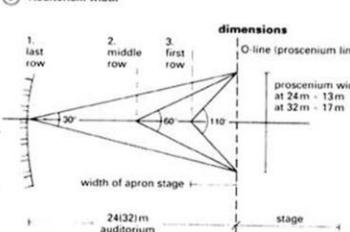
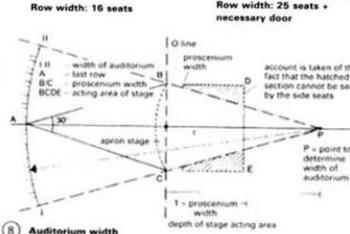
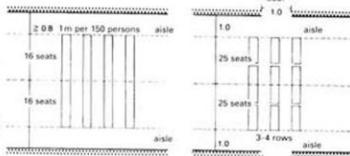
## AUDITORIUM STANDARD

### Size of auditorium

- An area of at least 0.5 m2 per spectator is to be used for sitting spectators.
- This number is derived from a seat width x row spacing of at least 0.45m2 per seat, plus an additional minimum of 0.5mx 0.9m approximately 0.05m2 per seat.
- Maximum perception angle without head movement is about 110°, in this field everything which takes place between the corners of the eyes' is perceived. There is uncertainty beyond this field because something may be missed from the field of vision.

### Length of rows

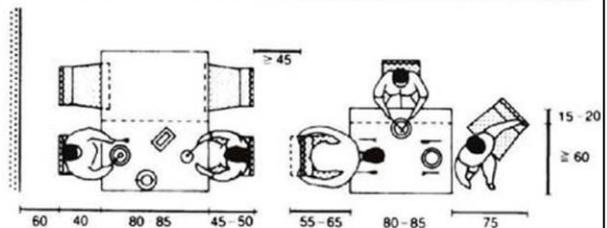
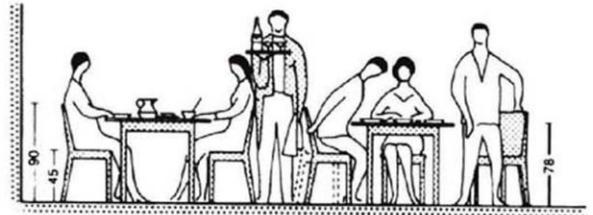
- A maximum of 16 seats per aisle.
- 25 seats per aisle is permissible if one side exit door of 1 m width is provided per 3-4 rows.



## Data from Literature Study

### 4. RESTAURANT/CONCESSIONS -

Restaurant should be planned so that variety of seating arrangements can be achieved. Table size will be influenced by patron comfort and efficient utilization of space. The present standard height of table is mostly about 760mm with chair seat height of 455 to 460mm.  
General thumb rule for deciding the area of restaurant per seat in sq. feet- Tableservice club restaurant (15 to 18 sq.ft./person)  
In table service dining room has been estimated as 20% of total capacity, cafeterias from 12 to 18%.



**Data from Literature Study**

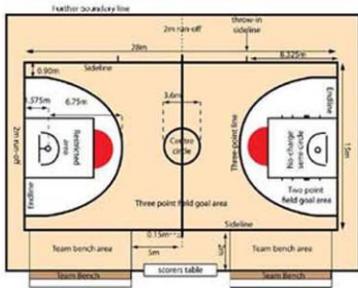
**4. BILLIARDS -**

The billiards control council has introduced with world wide agreement 3.50\*1.75m. standard table, which specify for the first time the actual playing area within the cushion face. The present table specified over the frame remain acceptable.  
 Size and dimension : Size of playing space 5.3\*7.1m.  
 For singles table and for doubles, table hall size is 7.5\*8.7m. when in use each table requires individual Lighting.

		Room Size		
Table Size		A 57" Cues	B 52" Cues	C 48" Cues
7'	Playing Area: 30" x 78"	12'0" x 16'	11'11" x 16'2"	11'3" x 14'8"
8'	Playing Area: 44" x 88"	13'2" x 16'10"	12'4" x 16'	11'8" x 15'4"
9'	Playing Area: 50" x 100"	13'8" x 17'10"	12'10" x 17'	12'2" x 16'4"

**5. BASKETBALL COURT -**

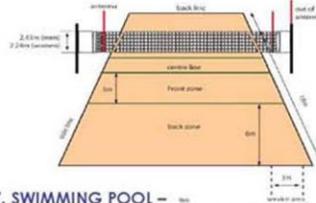
In basketball, the basketball court is the playing surface, consisting of a rectangular floor with tiles at either end.  
 In professional or organized basketball, especially when played indoors, it is usually made out of a wood, often maple, and highly polished.  
 The baskets are always 10 feet (3.0 m) above the floor (except possibly in youth competition). Basketball courts have a three-point arc at both baskets.  
 In general a basketball court should have a minimum clearance of 25 feet (7.7m), although a ceiling height of at least 27 feet (8.23m) is recommended.



**Data from Literature Study**

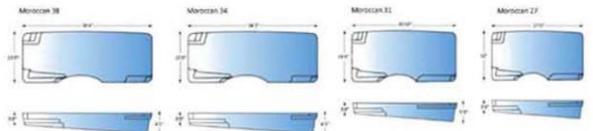
**6. VOLLEYBALL COURT-**

A volleyball court is 18 m (59 ft) long and 9 m (29.5 ft) wide, divided into 9 m x 9 m halves by a one-meter (40-inch) wide net. The top of the net is 2.43 m (8 ft 0 in) above the center of the court for men's competition, and 2.24 m (7 ft 4 in) for women's competition, varied for veterans and junior competitions. The minimum height clearance for indoor volleyball courts is 7 m (23 ft), although a clearance of 8 m (26 ft) is recommended.  
 A line 3 m (9.84 ft) from and parallel to the net is considered the "attack line".  
 This "3 meter" (or "10-foot") line divides the court into "back row" and "front row" areas (also back court and front court). These are in turn divided into 3 areas each: these are numbered as follows, starting from area "1", which is the position of the serving player.



**7. SWIMMING POOL -**

In basketball, the basketball court is the playing surface, consisting of a rectangular floor with tiles at either end.  
 In professional or organized basketball, especially when played indoors, it is usually made out of a wood, often maple, and highly polished.  
 The baskets are always 10 feet (3.0 m) above the floor (except possibly in youth competition). Basketball courts have a three-point arc at both baskets.  
 In general a basketball court should have a minimum clearance of 25 feet (7.7m), although a ceiling height of at least 27 feet (8.23m) is recommended.



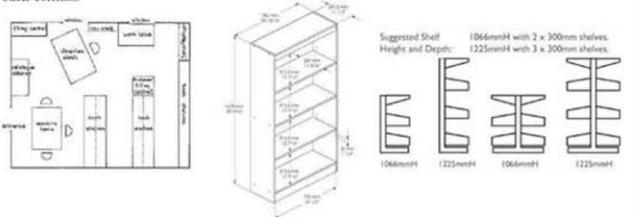
MOROCCAN STYLE POOL DIMENSIONS

	Length	Width	Deep End	Shallow End	Gallons
Moroccan 38	38'4"	15'	6'2"	3'8"	19,800
Moroccan 34	34'2"	15'	5'11"	3'8"	17,100
Moroccan 31	30'10"	15'	5'8"	3'8"	15,000
Moroccan 27	27'	13'	5'3"	3'8"	11,600

**Data from Literature Study**

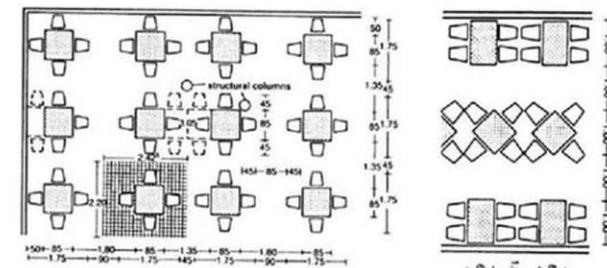
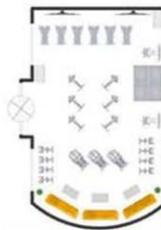
**4. LIBRARY-**

A library is a collection of sources of information and similar resources, made accessible to a defined community for reference or borrowing.  
 It provides physical or digital access to material, and may be a physical building or room, or a virtual space, or both.  
 A library's collection can include books, periodicals, newspapers, manuscripts, films, maps, prints, documents, microform, CDs, cassettes, videotapes, DVDs, Blu-ray Discs, e-books, audiobooks, databases, and other formats

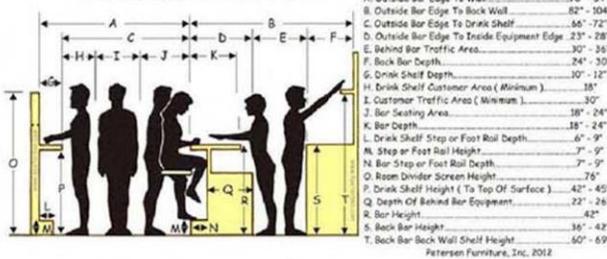


**5. GYMNASIUM -**

A gym, short for gymnasium, is an open air or covered location for gymnastics and athletics and gymnastic services such as in schools and colleges, from the ancient Greek gymnasium.



Customary, Suggested Bar Layout Dimensions



- A. Outside Bar Edge To Wall..... 76" - 84"
- B. Outside Bar Edge To Back Wall..... 82" - 104"
- C. Outside Bar Edge To Drink Shelf..... 66" - 72"
- D. Outside Bar Edge To Inside Equipment Edge..... 23" - 28"
- E. Behind Bar Traffic Area..... 30" - 36"
- F. Back Bar Depth..... 24" - 30"
- G. Drink Shelf Depth..... 10" - 12"
- H. Drink Shelf Customer Area (Minimum)..... 38"
- I. Customer Traffic Area (Minimum)..... 30"
- J. Bar Seating Area..... 18" - 24"
- K. Bar Depth..... 18" - 24"
- L. Drink Shelf Step or Foot Rail Depth..... 6" - 9"
- M. Step or Foot Rail Height..... 7" - 9"
- N. Bar Step or Foot Rail Depth..... 7" - 9"
- O. Room Divider Screen Height..... 76"
- P. Drink Shelf Height ( To Top Of Surface)..... 42" - 45"
- Q. Depth Of Behind Bar Equipment..... 22" - 26"
- R. Bar Height..... 42"
- S. Back Bar Height..... 36" - 42"
- T. Back Bar Back Wall Shelf Height..... 60" - 69"

Petersen Furniture, Inc. 2012



MOHAMMA SADIQUE ANSARI  
 1170101020 ( X<sup>TH</sup> SEM )

THISIS GUIDE-  
 AR. SHAILESH YADAV

# COMPARATIVE CHART OF AREA ANALYSIS

TOPIC	CASE STUDY-1 AVADH SHILPGRAM	CASE STUDY-2 INTERNATION- AL CENTER	LITERA- TURE ST.-1 KUBE HOUSE	LITERA- TURE ST.-2 FEDERATION SQUARE	STANDARDS AREA	REQUIRED AREA
ADMINISTRATION	500 Sq.M.	100 Sq.M.		600 Sq.M.		
DIRECTOR OFFICE	30 Sq.M.					20 Sq.M.
STAFF AREA	50 Sq.M.				8.5 Sq.M/P	80 Sq.M.
STORAGE	40 Sq.M.	15 Sq.M.				25 Sq.M.
RESTAURANT	1938 Sq.M.	350 Sq.M.		1197 Sq.M.	1.3-1.9 Sq.m/P	250 Sq.M. (120 People)
SEATING AREA	1205 Sq.M.	190 Sq.M.		750 Sq.M.	1.32 Sq.M./P	160 Sq.M.
KITCHEN	495 Sq.M.	100 Sq.M.		310 Sq.M.	40% OF DINNING	50 Sq.M.
STORAGE	75 Sq.M.	20 Sq.M.		40 Sq.M.		30 Sq.M.
LOUNGE					1.8-2 Sq.M./P	100 Sq.M.
LOCKER ROOM					1-1.5 Sq.M./P	30 Sq.M.
TOILET	40 Sq.M.	12 Sq.M.				25 Sq.M.
BANQUET HALL	3578 Sq.M.	-		-	0.9-1.2 Sq.M/P	750 Sq.M (700 People)
PLAZA	3468 Sq.M.	-		11185 Sq.M.		7105 Sq.M.
EXHIBITION HALL	2498 Sq.M.	205 Sq.M.		6741 Sq.M.	1.1-2 Sq.M/Person	400 Sq.M.(200 People)
AUDITORIUM	-	395 Sq.M.	600 Sq.M	972 Sq.M.	1.2 Sq.M./Person	1050 Sq.M.(500 People)
ENTRANCE FOYER	-	-	-	120 Sq.M.		120 Sq.M.
SEATING AREA	-	180 P		420 Sq.M.	0.75 Sq.M/Person	375 Sq.M.(500People)
STAGE	-	116 Sq.M.		180 Sq.M.	0.42 Sq.M./Person	200 Sq.M.(500 People)
BACK STAGE						50 Sq.M.
GREEN ROOM		30 Sq.M.		50 Sq.M.		25 Sq.M.
REHARSHAL ROOM	-					30 Sq.M.
TOILET FOR GREEN R		15 Sq.M.		25 Sq.M.		20 Sq.M.
AMPHITHEATURE	975 Sq.M.	30 Sq.M.		445 Sq.M.	1.2 Sq.M./Person	220vv Sq.M.(180 People)
LIBRARY	-	185 Sq.M.		-	(70 Books/sq.m)- (3.3sq.m /person)	2150 Sq.M (500 People)
STACK AREA		50 Sq.M.			70 Book/ Sq.M.	140 Sq.M.
READING AREA		100 q.M.			1.2 Sq.M./Person	600 Sq.M.
AUDIO VISUAL					2.5 Sq.M./P	250 Sq.M.
STAFF AREA		12 Sq.M.			5.8 Sq.M./P	20 Sq.M.
ISSUE COUNTER					1.5-2 Sq.M./P	15 Sq.M.
M TOILET						20 Sq.M.
F TOILET						20 Sq.M.
STORE						30 Sq.M.
MULTIPURPOSE HALL	-	215 Sq.M.		550 Sq.M.	1.2 sq.m/Person	360 Sq.M. (300 People)
CONFRENCE ROOM	210 Sq.M.	90 Sq.M.		-	2 Sq.M./Person	120 Sq.M (60 People)
DORMITORY	1710 Sq.M.	50 Sq.M.		-	2.5 Sq.M./Person	500 Sq.m. (200 People)
OUTDOOR GAME AREA	1213 Sq.M.	-		-		8856 Sq.M
INDOOR GAME AREA	-	-	350 Sq.M.	-		532 Sq.M
GREEN AREA	18938 Sq.M.	1215 Sq.M.		-		8881 Sq.M
PARKING AREA	9821 Sq.M.	1421 SQ.M.			23 Sq.M./Car	2842 Sq.M.
SITE AREA	81347 SQ.M.	4420 SQ.M.	4000 Sq.M.	31963 SQ.M.		35525 Sq.M.
BUILTUP AREA	29784 SQ.M.	5200 SQ.M.				42630 Sq.M. (max)
GROUND COVERAGE	19862 SQ.M.	1541 SQ.M				10657 Sq.M.
ROAD AREA	7216 SQ.M.	663 SQ.M.				3552 SQ.M.
LANDSCAPE AREA	18938 SQ.M.	795 SQ.M				5328 Sq.M.
FLOOR AREA RATIO	0.3	1.20				1.20

# COMPARITIVE ANALYSIS

TOPIC	CASE STUDY-1 AVADH SHILPGRAM	CASE STUDY-2 INTERNATIONAL CEN- TER	LITERATURE ST.-1 KUBE HOUSE	LITERATURE ST.-2 FEDRATION SQUARE
LOCATION	Lucknow	Banglore	Denmark	Melbourne
ARCHITECT	Ar.Saurabh Gupta	Bijoy Ramchandaran	ADEPT,MVRDV	Bates And Peter Davidson
YEAR OF COMPLETION	2016	2019	2016	2002
CONSTRUCTION COST	207 Crores	140 Crores	\$130 M	\$440 M
CLIMATE	Composite	Moderate		
PROGRAM	Arts &Exhibition	Cultural & public space	Recreational Cultural	Recreational Cultural
MATERIALS	Red Agra sandstoe	Concrete, Exposed brick & Natural wood	Concrete,Glass	Glass, Steel, Concrete, Rubber pad,
PROJECT COMPONENT	food area, children area, shops, exhibition halls, Banquet hall	Auditorium, Restaurant, Muktipurpose hall, Li-brary, Exhibition Hall	Indoor games, Yoga, Au-ditorium	Auditorium, Multipurpose hall, restaurant, Exhibi-tion hall,
FACADE & FENESHTRA-TION TREATMENT	Stone Clad & Plaster	Exposed brick work with Exposed Concrete		Glass Facade with Steel
CONNECTIVITY	Connected with to ma-jor,micro cities transpor-tation system.	through local bus road networking two 2km away from metro banglore	through local bus road networking 4km away from railway st. vesteport	Near by major transport facilities connected to flinders stree st.
PUBLIC SPACES	Great interconnected public spaces street core public plaza	Urban streets on periphery and balcony adjoining each other	Provide different zone to different activities also public spaces	central core plaza con-nected to public street
VEHICULAR MOVEMENT	Movement around the site restricted movements inside the center	Movement arround per-iphery of the site	Resticted movement in-side the site	Restricted movement in-side the site
PEDESTRAIN MOVE-MENTS	Organised movement through corridors connecting every stores and plaza	Movements inside the building	Random movement through streets	Random movement in-side the site and connect-ed to all facilities
PARKING	Surface parking	Periphral parking around the building		
PLANNING	Radial planning	linear planning	Cluster planning	Staggered Cluster plan-ning
<b>INFRENCES</b>				

CASE STUDY-1 AVADH SHILPGRAM	CASE STUDY-2 INTERNATIONAL CENTER	LITERATURE ST.-1 KUBE HOUSE	LITERATURE ST.-2 FEDRATION SQUARE
With more access gates, the crowd management is better. Over-lapping traffic should be avoided.	Forms a platform that reflects the evolving, aspirational, futuristic and dynamic cultural values of Bangalore city.	An interesting concept of elements of varied geometry placed inside the volume is complemented by variety of color and material palette Used.	Location of the project and good mode of transport encourage more public participation.
Planning should be done on the basis of requirments, sitecontext ,demands and concept and climatic analysis.	A public space well suited for hosting all types of events through inclusive programs.	The design strategies employed here defines the spatial character of the bulding and creates a place for interaction amidst different groups of people. The design is mix of the recreational activities and culture that gets a dynamic and playful fabric of the building.	The system exemplifies how "just-for-us" information and functionality can be tailored to the user's physical and social setting by indexing to information implicitly present in the user's surroundings, the user's existing knowledge and the user's current social setting.

# CONCEPT

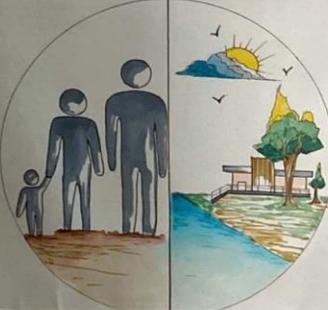
RECREATIONAL HUB

# INTRODUCTION

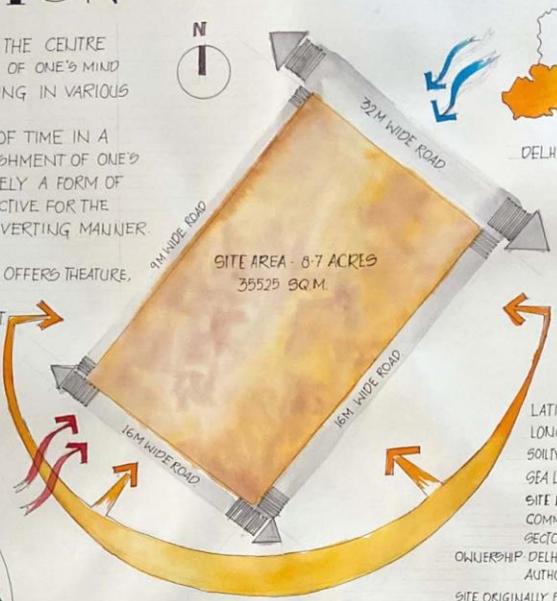
RECREATIONAL HUB IS A PLACE THAT FORMS THE CENTRE OF INTEREST OR ACTIVITY, WHERE REFRESHMENT OF ONE'S MIND OR BODY TAKES PLACE BY ACTIVELY PARTICIPATING IN VARIOUS ACTIVITIES.

RECREATION OR FUN IS THE EXPENDITURE OF TIME IN A MANNER DESIGNED FOR THERAPEUTIC REFRESHMENT OF ONE'S BODY OR MIND WHILE LEISURE IS MORE LIKELY A FORM OF ENTERTAINMENT OR SLEEP. RECREATION IS ACTIVE FOR THE PARTICIPANT BUT IN A REFRESHING AND DIVERTING MANNER. BASIC THOUGHT BEHIND THE PROJECT

A MULTIPURPOSE CENTRE FOR PLAY AND CULTURE OFFERS THEATRE, MUSIC AND LEISURE ACTIVITIES LIKE YOGA ETC. A TEEN/LEISURE CENTRE PROVIDE PLACE TO HANGOUT OUTDOOR SPACES, ESTHETICALLY WELL AND CAN BE USED AS CIRCULATION AND PEACE OF MIND. AN APPROPRIATE CENTRE WOULD RESULT IN MORE REVENUE GENERATIONS FOR THE GOVERNMENT TOO.



# SITE ANALYSIS



LATITUDE - 28°35'22" N  
 LONGITUDE - 77°21' E  
 SOILTYPE - ALLUVIAL  
 SEA LEVEL - 1043 FT.  
 SITE LOCATION  
 COMMUNITY CENTRE  
 SECTOR 10 DWARKA  
 OWNERSHIP - DELHI DEVELOPMENT AUTHORITY  
 SITE ORIGINALLY PROPOSED UNDER COMMUNITY RECREATIONAL CENTRE ACCORDING 2041 M.P.

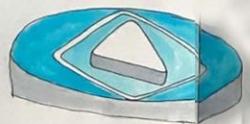
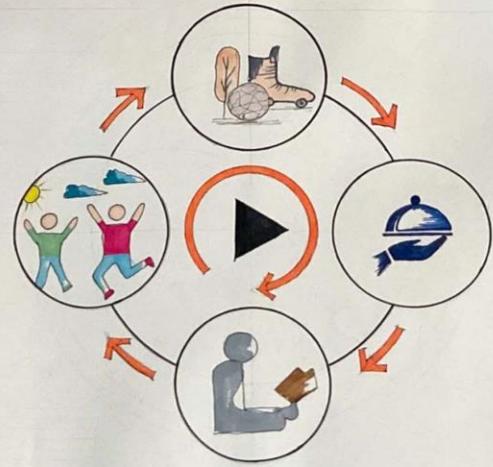
**APPROACH**  
 SITE IS WELL CONNECTED TO SECTOR 12 ROAD  
 NEW DELHI RAILWAY 25.4 KM  
 INDIRA GANDHI INTERNATIONAL AIRPORT (13.2 KM)  
 MANGAL PURI BUS T (71 KM)  
 INTER STATE BUS T. (27 KM)  
 DWARKA SECTOR 12 STATION (900M)  
 DWARKA SECTOR 13 STATION (1.6 KM)  
 METRO METRO



SPORTS LEISURE RESTAURANT SOCIAL GATHERING

# CONCEPT

RECREATIONAL ACTIVITIES REQUIRES SPECIAL FACILITIES TO CATER FOR WIDESPREAD PUBLIC DEMANDS BY CREATING SPACES WHERE ALL MEMBER OF THE COMMUNITY CAN MIX NATURALLY AND GET TO KNOW ONE ANOTHER AS HUMANS BEING. COMMUNITIES CAN BECOME COMMUNITIES IN THE TRUE MEANING OF THE WORD - PLACES WHERE PEOPLE DID NOT ONLY LIVE TOGETHER BUT CARE ABOUT ONE ANOTHER, AND SHARE COMMON HOPES FOR THEMSELVES AND THEIR CHILDREN. THE DIGITAL PLATFORM USES THE PLAY SYMBOL TO REPRESENT THE INITIATION OF ANY SORT OF ENTERTAINMENT: VIDEO GAMES, MUSIC, VIDEOS ETC. HERE THE GAME SYMBOL IS PICKED UP AS THE BASE OF THE PROJECT DESIGN.

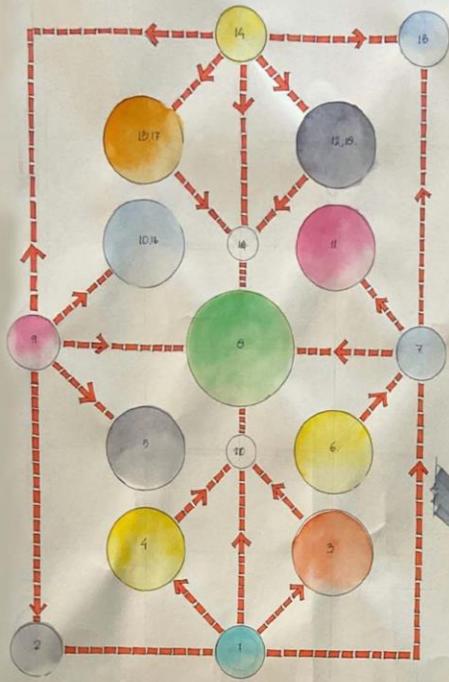


SYMBOL OF PLAY



# RECREATIONAL HUB

# SITE ZONING



## LEGEND

GRID	ZONE	GRID	ZONE
1	ENTRY/EXIT	16	FOOD ZONE
2	GUARD FACILITIES	17	MULTIPURPOSE
3	ADMIN BLOCK	18	BANQUET HALL
4	FORMAL FACILITIES	19	PARK
5	GYM AND FITNESS	20	WATER BODY
6	LIBRARY		
7	ELITRY		
8	CENTRAL PLAZA		
9	ENTRY/EXIT		
10	KID'S AREA		
11	YOGA		
12	EXHIBITION		
13	AUDITORIUM		
14	ENTRY		
15	SERVICES		



## LEGEND

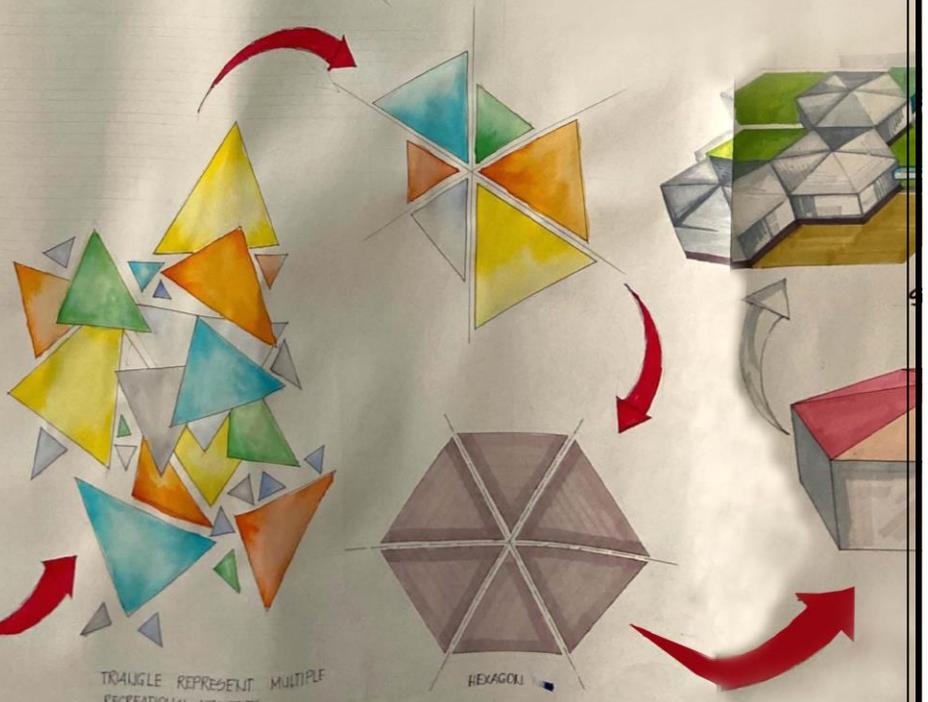
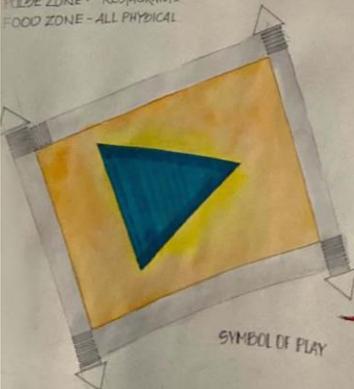
- 1 ENTRY/EXIT
- 2 PARKING
- 3 GUARD FACILITIES
- 4 GREEN SPACE
- 5 SERVICES
- 6 CENTRAL PLAZA
- OPEN AIR THEATRE
- 7 ENTRY/EXIT
- 8 PEDESTRIAN
- 9 VEHICULAR MOVEMENT
- 10 ADMIN BLOCK
- 11 FORMAL FACILITIES
- 12 GYM
- 13 KID'S PLAY AREA
- 14 RESTAURANT
- 15 AUDITORIUM
- 16 MULTIPURPOSE
- 17 EXHIBITION
- 18 BANQUET HALL
- 19 ACCOMMODATION
- 20 LIBRARY

# FORM EVOLUTION

THE TRIANGULAR PLAY SYMBOL i.e. THE TRIANGLE HERE IS TAKEN AS A SINGLE SORT OF ACTIVITY HAPPENING IN THE HUB. AFTER CATEGORIZING TOTAL SIX TYPES OF SEGREGATION ARE FORMED DEPICTING A TRIANGLE FOR EACH SEGREGATION THUS FORMING A HEXAGON WHEN COMBINED TOGETHER.

THE TRIANGLE IS USED AS THE CONNECTING BRIDGE BETWEEN THE THREE ZONES OF THE BUILT BLOCKS.

THE SEGREGATION OF THE SIX CATEGORIES:  
 PERFORMANCE ZONE - AUDITORIUM, EXHIBITION  
 ZEN ZONE - MEDITATION AND YOGA  
 PLAY ZONE - SPORT FACILITIES  
 THINK ZONE - LIBRARY, READING SPACE  
 REST ZONE - RESTAURANT  
 FOOD ZONE - ALL PHYSICAL



TRIANGLE REPRESENT MULTIPLE RECREATIONAL ACTIVITIES

HEXAGON

# RECREATIONAL HUB

# VERTICAL STACKING

## CONCEPTUAL SKETCHES



DANCE HALL	ACCOMO	YOGA
DANCE HALL	ACCOMODATION	LIBRARY
FACILITIES	ACCOMODATION	LIBRARY

### ZONE-1

EXHIBITION	MULTIPURPOSE	
EXHIBITION	CANTEEN	AUDITORIUM
FACILITIES	AUDI FACILITIES	

### ZONE2

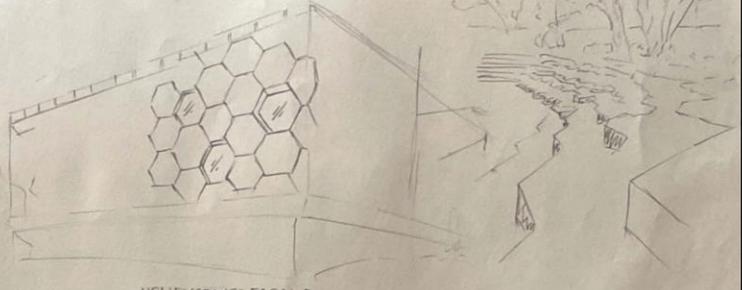
RESTAURANT	FOODZONE
RESTAURANTS	

	INDOOR GYM
GYM	RIDE AREA

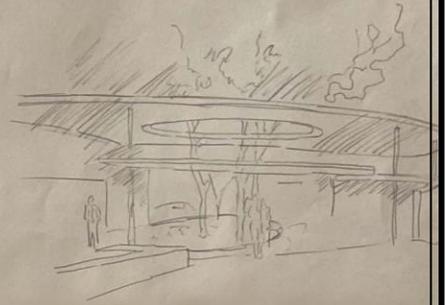
### PLAY & PULSE

SEMI-CIRC	
CONCRECE	
FACILITIES	ADMIN

### ZONE-3

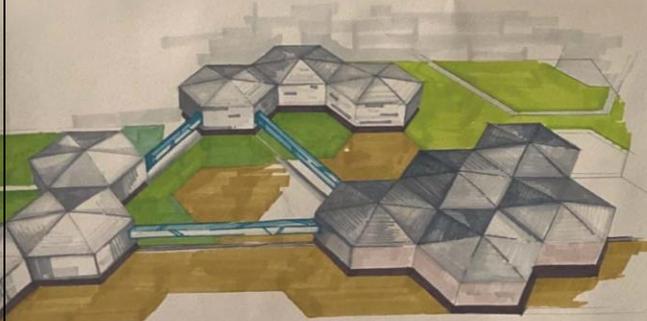


HONEYCOMB FACADE



## LEGEND.

- ENTRY/EXIT
- PARKING
- GUARD FACILITIES
- GREEN SPACE
- SERVICES
- CENTRAL PLAZA
- OPEN AIR THEATRE
- ENTRY/EXIT
- PEDESTRIAN
- VEHICULAR MOVEMENT
- ADMIN BLOCK
- FORMAL FACILITIES
- GYM
- KIDS & PLAY AREA



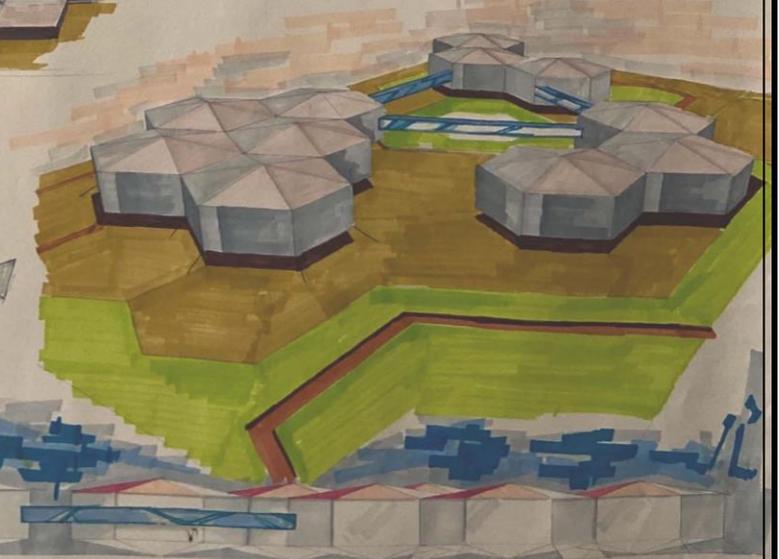
SIDE VIEW

THE HEXAGONAL SHAPES ARE EVOLVED IN THE FORM: HEXAGONAL PYRAMID OF MAKING ONE COMPLETE UNIT. HEXAGONAL PYRAMIDS ARE THEN ARRANGED IN CLUSTERS FORMING THE THREE MAIN CLUSTER ZONES ON THE SITE.

ALL THE THREE CLUSTERS ARE CONNECTED TO ONE ANOTHER BY A TRIANGULAR BRIDGE.



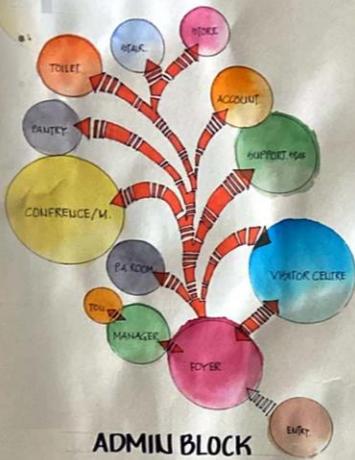
FRONT VIEW



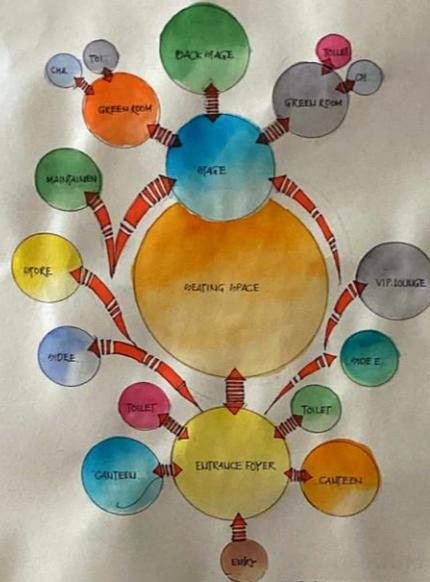
SIDE ELEVATION

# RECREATIONAL HUB

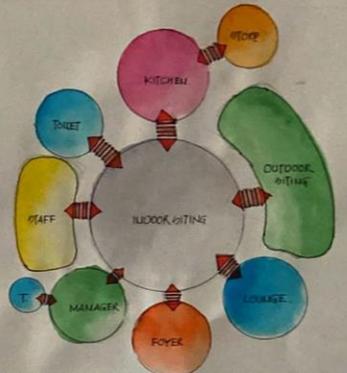
# BUBBLE DIAGRAM



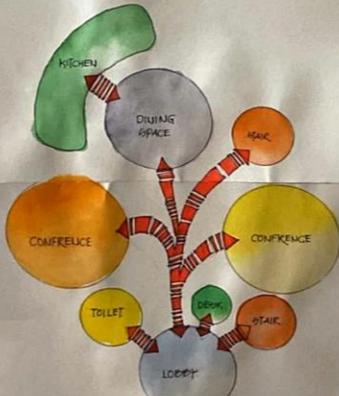
ADMIN BLOCK



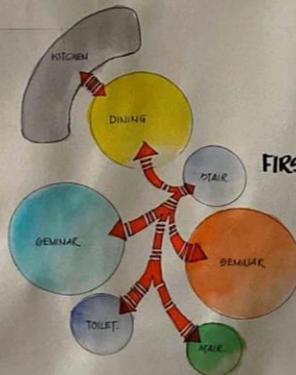
AUDITORIUM



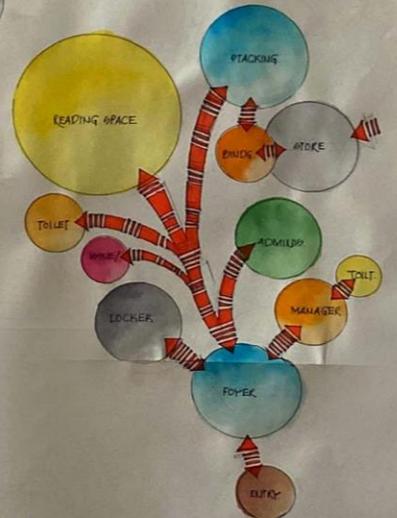
RESTAURANT



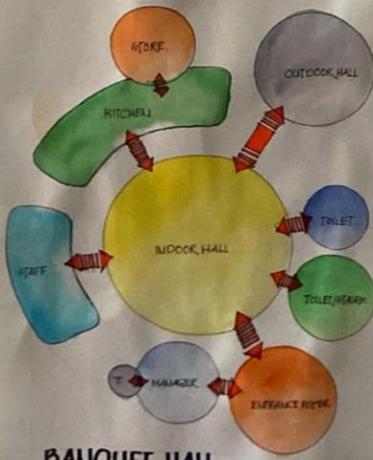
FORMAL FACILITIES



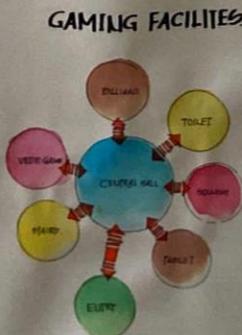
FIRST FLOOR



LIBRARY



BANQUET HALL



GAMING FACILITIES



EXHIBITION HALL

## RECREATIONAL HUB

# AREA ANALYSIS

RECREATIONAL HUB

## ADMINISTRATION BLOCK

REQUIREMENTS	QUANTITY	CAPACITY	AREA IN SQ.M.	TOTAL AREA
ENTRANCE FOYER	1	100	1.5 SQ.M/PER	150 SQ.M.
RECEPTION & WAITING	1	15	45	45 SQ.M
VISITOR CENTER	1	35	100	100 SQ.M.
MANAGER & ANTE ROOM	1	1	30	30 SQ.M
P.A ROOM WITH WAITING	1	10	25	25 SQ.M
CONFERENCE/ MEETING ROOM	1	25	2 SQ.M/PER	50 SQ.M
SUPPORTING STAFF OFFICE	1	15	50	50 SQ.M
ACCOUNTING SECTION	1	3	15	15 SQ.M
STORE	1		40	40 SQ.M
PANTRY	1		9	9 SQ.M
MAINTAINENCE ROOM	1		12	12 SQ.M
TOILET (MALE)	1	4 WC 4 WB 4U	25	25 SQ.M
TOILET (FEMALE)	1	7 WC 7 WB	25	25 SQ.M
TOILET (DISABLE)	1	1	3	3 SQ.M
				549 SQ.M.
CIRCULATION	25%			137 SQ.M
				<b>686 SQ.M.</b>

## AUDITORIUM

REQUIREMENTS	QUANTITY	CAPACITY	AREA IN SQ.M.	TOTAL AREA
ENTRANCE FOYER	1	150	1.5 SQ.M/PER	225 SQ.M.
WAITING/ SITTING	1	100	120	120 SQ.M.
CANTEEN	1	50	100	100 SQ.M.
AUDITORIUM	1	600	900	900 SQ.M.
GREEN ROOM	4		30 EACH	120 SQ.M.
VIP LOUNGE	2		30 EACH	60 SQ.M.
CONTROL ROOM	1	4	15	15 SQ.M.
PROJECTOR ROOM	1	4	20	20 SQ.M.
TOILET (MALE)	1	5 WC 5 WB 24U	50	50 SQ.M.
TOILET (FEMALE)	1	14 WC 14 WB	40	40 SQ.M.
TOILET (DISABEL)	1	1	3	3 SQ.M.
				1653 SQ.M.
CIRCULATION	25%			413 SQ.M.
				<b>2066 SQ.M.</b>

## LIBRARY

REQUIREMENTS	QUANTITY	CAPACITY	AREA IN SQ.M.	TOTAL AREA
ENTRANCE FOYER	1	100	1.5 SQ.M/PER	150 SQ.M.
MANAGER ROOM	1	1	30	30 SQ.M.
ADMINISTRATION	1	10	2.5 SQ.M/P	25 SQ.M.
LOCKER ROOM	1		50	50 SQ.M.
STORE	2		30 EACH	60 SQ.M.
BINDING SPACE	1		15	15 SQ.M.
UTILITY ROOM	1		15	15 SQ.M.
AUDIO VIDEO	1		30	30 SQ.M.
G.D ROOM	2		35 EACH	70 SQ.M.
ISSUE COUNTER	1	2	6	6 SQ.M.
STACKING AREA	2	10000 BOOKS	145 EACH	290 SQ.M.
READING SPACE	2	500	2.5 SQ.M/P	1250 SQ.M.
				1991 SQ.M.

## RECREATIONAL HUB

CIRCULATION 25% 497 SQ.M.  
**2588 SQ.M.**

**RESTAURANT**

REQUIREMENTS	QUANTITY	CAPACITY	AREA IN SQ.M.	TOTAL AREA
ENTRANCE FOYER	1	10	1.5 SQ.M/PER	15 SQ.M.
MANAGER ROOM	1	1	30	30 SQ.M.
SITTING SPACE	2	400	270 EACH	540 SQ.M.
KITCHEN		40% OF DINNING	220	220 SQ.M.
STORE	2		30 EACH	60 SQ.M.
RECEPTION	1			20 SQ.M.
LOUNGE	2	50	50 EACH	100 SQ.M.
STAFF LOCKER	1	25	50	50 SQ.M.
TOILET (MALE)	1	50/1WC 1WB 1U	40	40 SQ.M.
TOILET (FEMALE)	1	50/2WC 2 WB	40	40 SQ.M.
TOILET  (DISABLE)	1			3 SQ.M.
STAFF TOILET (MALE)	1	20/1 U 15/ 1WC	20	20 SQ.M.
STAFF TOILET (FEMALE)	1	12/ 1 WC	20	20 SQ.M.
				1158 SQ.M.
CIRCULATION	25%			347 SQ.M.
				<b>1505 SQ.M.</b>

**EXHIBITION**

REQUIREMENTS	QUANTITY	CAPACITY	AREA IN SQ.M.	TOTAL AREA
GALLERY	3		150 EACH	450 SQ.M.
WALL PROJECT GALLERY	2		50 EACH	100 SQ.M.
EXHIBITION SPACE	2		300 EACH	600 SQ.M.
MANAGER ROOM WITH ANTE	1	1	30	30 SQ.M.
GALLERY CO-ORDINATOR	3		120	120 SQ.M.
FLEXIBLE SPACES	2		450 EACH	900 SQ.M.
STORAGE	3		100 EACH	300 SQ.M.
WORKSHOPS	5	30	50 EACH	250 SQ.M.
MAINTAINENCE ROOM	1		15	15 SQ.M.
TOILET (MALE)	2	3WC 3WB 24U	35 EACH	70 SQ.M.
TOILET (FEMALE)	2	5WC 5WB	20 EACH	40 SQ.M.
TOILET (DISABLE)	2		3 EACH	6 SQ.M.
				2881 SQ.M.
CIRCULATION	25%			720 SQ.M.
				<b>3745 SQ.M.</b>

**FORMAL AREAS**

REQUIREMENTS	QUANTITY	CAPACITY	AREA IN SQ.M.	TOTAL AREA
ENTRANCE LOBBY	1	50	75	75 SQ.M.
INFORMAL DESK	1	1	9	9 SQ.M.
CONFRENCE ROOM	4	25-40	60-90	300 SQ.M.
SEMINAR HALLS	4	75-100	135-180	630 SQ.M.
PANTRY	1			9 SQ.M.
DINNING AREA	2	75-150	115-225	340 SQ.M.
KITCHEN	1		135	135 SQ.M.
UTILITIES	1		12	12 SQ.M.
STORGAE	1		50	50 SQ.M.
TOILET (MALE)	1	3WC 3WB 3U	25	25 SQ.M.
TOILET (FEMALE)	1	6WC 6WB	20	20 SQ.M.

TOILET (DISABLE)	1	1	3	3 SQ.M.
				1613 SQ.M.
CIRCULATION	25%			484 SQ.M.
				<b>2096 SQ.M.</b>

### ANCILIARY FACILITIES

REQUIREMENTS	QUANTITY	CAPACITY	AREA IN SQ.M.	TOTAL AREA
GUARD ROOM	1		9	9 SQ.M.
GENERATOR ROOM	1		60	60 SQ.M.
MAINTAINENCE ROOM	1		20	20 SQ.M.
CHANGING, LOCKER ROOM	2		25 EACH	50 SQ.M.
STORAGE	2		100	200 SQ.M.
TOILET (MALE)	1	4WC 4WB 4U	25	25 SQ.M.
TOILET (FEMALE)	1	7WC 7WB	25	25 SQ.M.
				<b>390 SQ.M.</b>

### BANQUET HALL

REQUIREMENTS	QUANTITY	CAPACITY	AREA IN SQ.M.	TOTAL AREA
ENTRANCE FOYER	1	50	75	75 SQ.M.
MANAGER ROOM	1	1	30	30 SQ.M.
STAFF AREA	1	40	80	80 SQ.M.
BANQUET HALL	2	1000	600 EACH	1200 SQ.M.
STORE	1		10% OF HALL	130 SQ.M.
KITCHEN	1		300	300 SQ.M.
TOILET (MALE)	1			40 SQ.M.
TOILET (FEMALE)	1			40 SQ.M.
TOILET (DISABLE)	1	4	12	12 SQ.M.
				1782 SQ.M.
CIRCULATION	25%			445 SQ.M.
				<b>2227 SQ.M.</b>
<b>MULTIPURPOSE HALL</b>	1	500	1.2 SQ.M/PER	<b>600 SQ.M.</b>
<b>YOGA SPACE</b>	1	100	2.5 SQ.M/PER	<b>250 SQ.M.</b>
<b>LODGE (GUEST ROOM)</b>	1	100	25 EACH	<b>2500 SQ.M.</b>

### GAMES AND KIDS AREA

REQUIREMENTS	QUANTITY	CAPACITY	AREA IN SQ.M.	TOTAL AREA
TABLE TENNIS	2		25 EACH	50 SQ.M.
BADMINTON COURT	2		100 EACH	200 SQ.M.
BILLIARD	2		25 EACH	50 SQ.M.
SQUASH ROOM	2		62.5 EACH	125 SQ.M.
VEDIO GAME	1		100	120 SQ.M.
BOWLING ALLEY	2		100 EACH	200 SQ.M.
DIGITAL CINEMA	1	50	2.2 SQ.M/PER	110 SQ.M.
KIDS AREA	1	100	3.3 SQ.M/PER	330 SQ.M.
GYM (MEN)	1	100	3.75 SQ.M/PER	375 SQ.M.
WOMEN	1	100	3.75 SQ.M/PER	375 SQ.M.
TOILET (MALE)	1		4WC 4WB 4U	40 SQ.M.
TOILET (FEMALE)	1		7WC 7WB	40 SQ.M.
				<b>2035 SQ.M.</b>
CIRCULATION	25%			508 SQ.M.
				<b>2543 SQ.M.</b>

<b>GRAND TOTAL</b>				<b>21278 SQ.M.</b>
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# DRAWINGS



**AREA ANALYSIS :-**

DELHI BYE LAWS	
TOTAL SITE AREA -	9.7 ACRES
SITE DIMENSION -	255 M X 155 M
PERMISSIBLE GROUND COVERAGE -	30%
PERMISSIBLE BUILT UP AREA -	47430 SQ.M.
F.A.R. -	1.20
FRONT SET BACK -	15 M
SIDE SET BACK -	08 M
PARKING -	2 ECS /100 SQ.M
<b>ACHIEVED AREA :-</b>	
F.A.R. -	
GROUND COVERAGE -	26.5 %
GROUND BUILT UP -	2080 SQ.M.
FIRST FLOOR BUILTUP -	10483 SQ.M.
SECOND FLOOR BUILTUP -	9013 SQ.M.
THIRD FLOOR BUILTUP -	6378 SQ.M.
FOURTH FLOOR BUILTUP -	910 SQ.M.
ACHIVED BUILTUP AREA -	29064 SQ.M.
HARDSCAPE AREA -	
DRIVEWAYS -	10369 SQ.M.
PATHWAYS -	14810 SQ.M.
SURFACE PARKING AREA -	1582 SQ.M.
SOFTSCAPE AREA -	9704 SQ.M.
<b>LEGEND :-</b>	
	PEDESTRIAN
	DRIVEWAY
	GUARD ROOM 3000X3000 MM
	SITTING CHAIR

**PROJECT:**  
**PROPOSED RECREATIONAL HUB**  
 SECTOR 18, DWARKA  
 DELHI

**THESIS BY:**  
 MOHD SADIQUE ANSARI  
 ROLL NO: 1170101020

**DRAWING TITLE:**  
 SCALE  
 1:500  
**SITE PLAN**

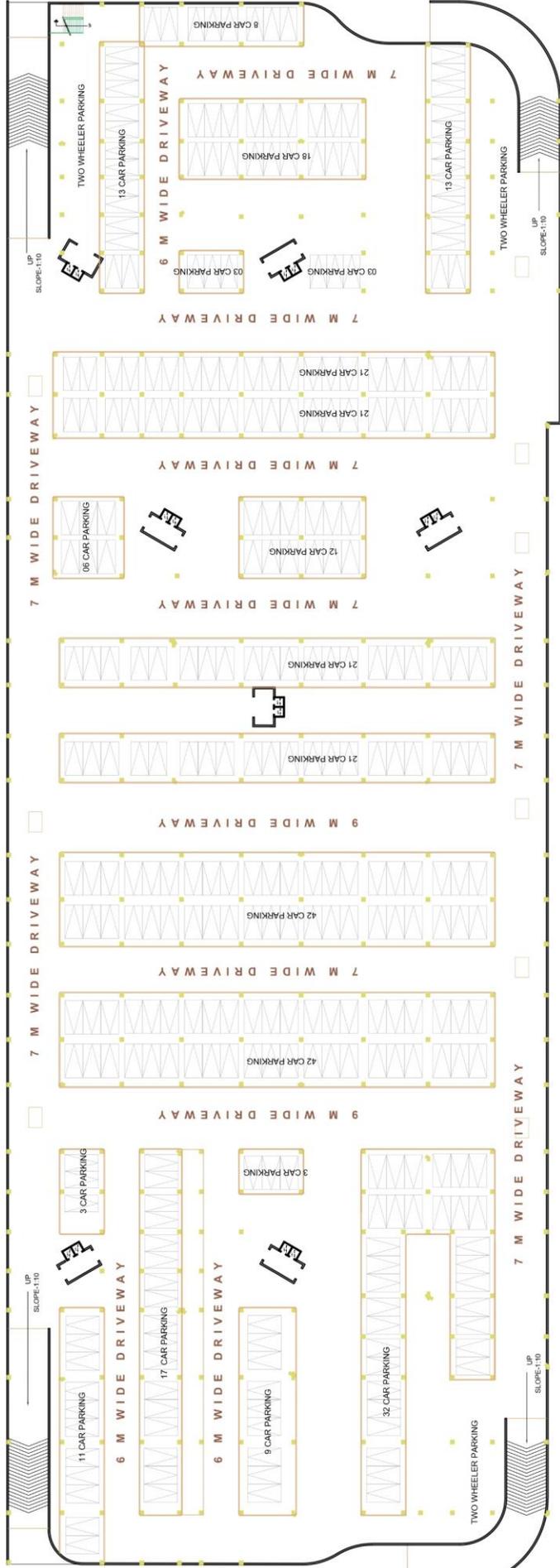
**GUIDED BY:**  
 AR. SHAILESH KUMAR YADAV  
 BABU BANARSI DAS UNIVERSITY  
 SCHOOL OF ARCHITECTURE AND PLANNING,  
 LUCKNOW

**DRG.NO.:**  
 01

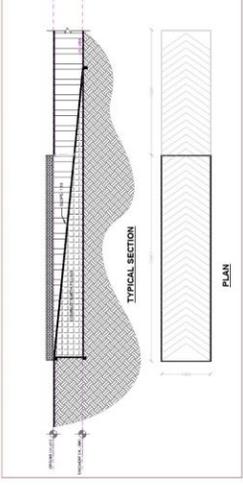
**DATE:**  
 29.06.22

**SESSION:**  
 2021-22





**PARKING:-**  
 TOTAL BUILTUP AREA:- 29064 SQ.M.  
 TOTAL CAR PARKING :- 580 CARS  
 SURFACE PARKING :- 180 CARS  
 BASEMENT PARKING :- 400 CARS



**PROJECT:**  
**PROPOSED RECREATIONAL HUB**  
 SECTOR 18, DWARKA  
 DELHI

**DRAWING TITLE:**  
**BASEMENT PLAN**

THESIS BY:  
**MOHD SADIQUE ANSARI**  
**ROLL NO: 1170101020**

**SESSION:**  
**2021-22**

GUIDED BY:  
**AR. SHAILESH KUMAR YADAV**

**DRG.NO:**  
**08**

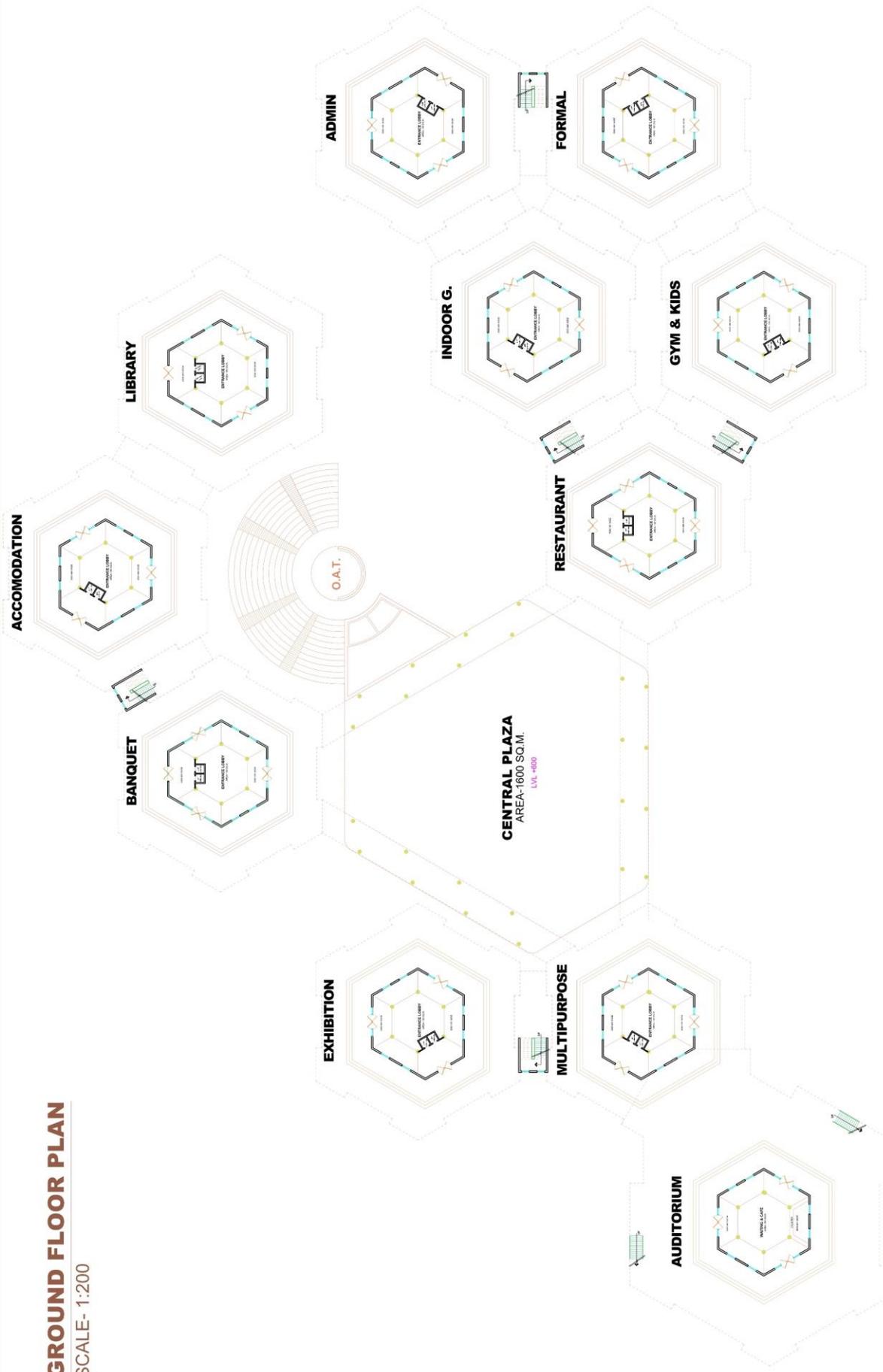
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**BABU BANARSI DAS UNIVERSITY**  
**SCHOOL OF ARCHITECTURE AND PLANNING**  
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# GROUND FLOOR PLAN

SCALE- 1:200



PROJECT:

**PROPOSED  
RECREATIONAL HUB**  
SECTOR 18, DWARKA  
, DELHI

THIS BY:

**MOHD SADIQUE ANSARI**  
ROLL NO: 1170101020

DRAWING TITLE:

**GROUND FLOOR PLAN**

SCALE

**1:200**

GUIDED BY:

**AR. SHAILESH KUMAR  
YADAV**

DRG.NO:

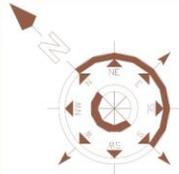
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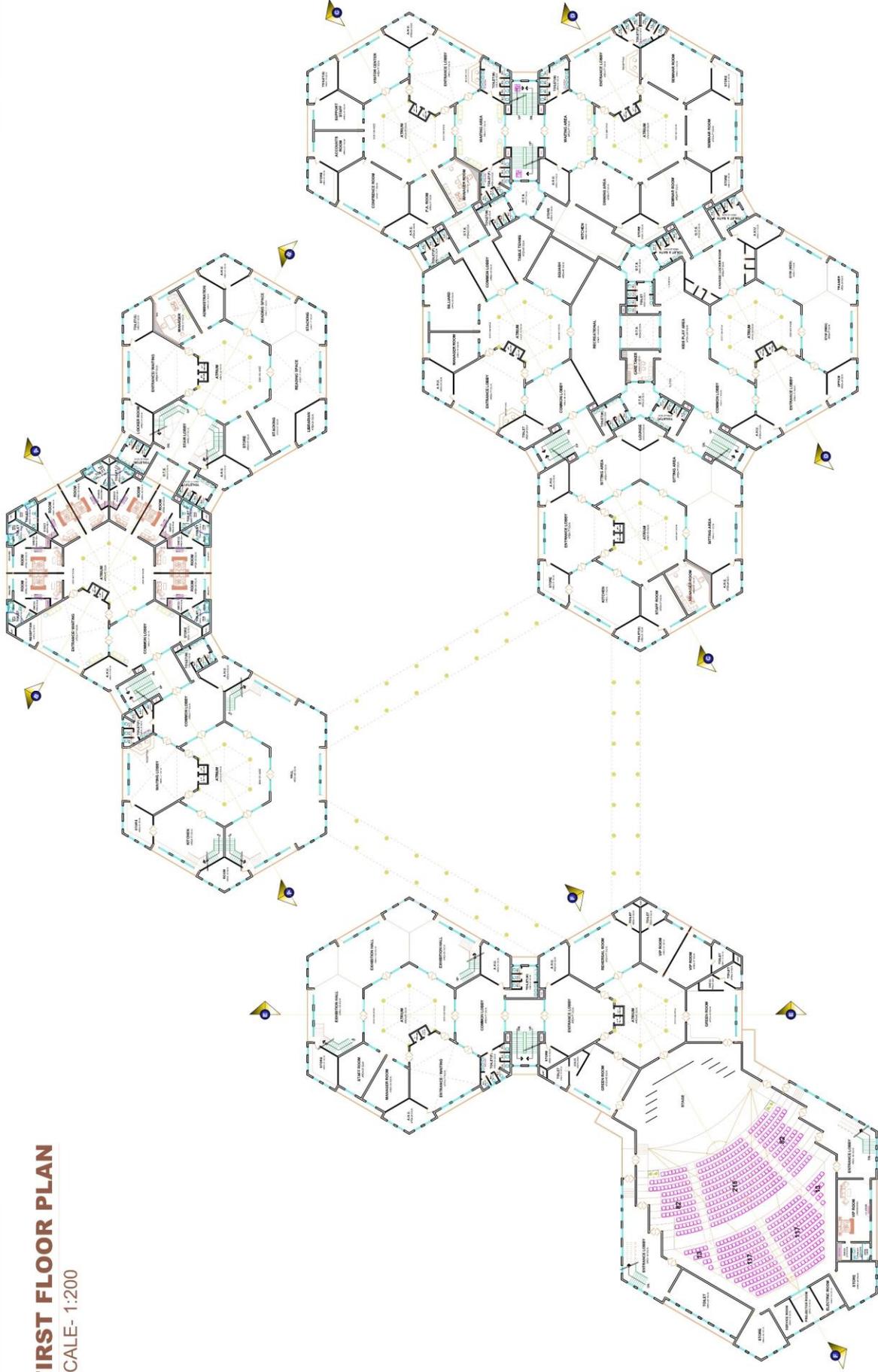
SESSION:

**2021-22**



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**FIRST FLOOR PLAN**  
SCALE- 1:200



**PROJECT:**

**PROPOSED  
RECREATIONAL HUB  
SECTOR 18, DWARKA  
, DELHI**

**THESIS BY:**

**MOHD SADIQUE ANSARI  
ROLL NO: 1170101020**

**DRAWING TITLE:**

**FIRST FLOOR PLAN**

**SCALE**

**1:200**

**GUIDED BY:**

**AR. SHAILESH KUMAR  
YADAV**

**DRG.NO:**

**03**

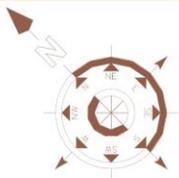
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**29.06.22**

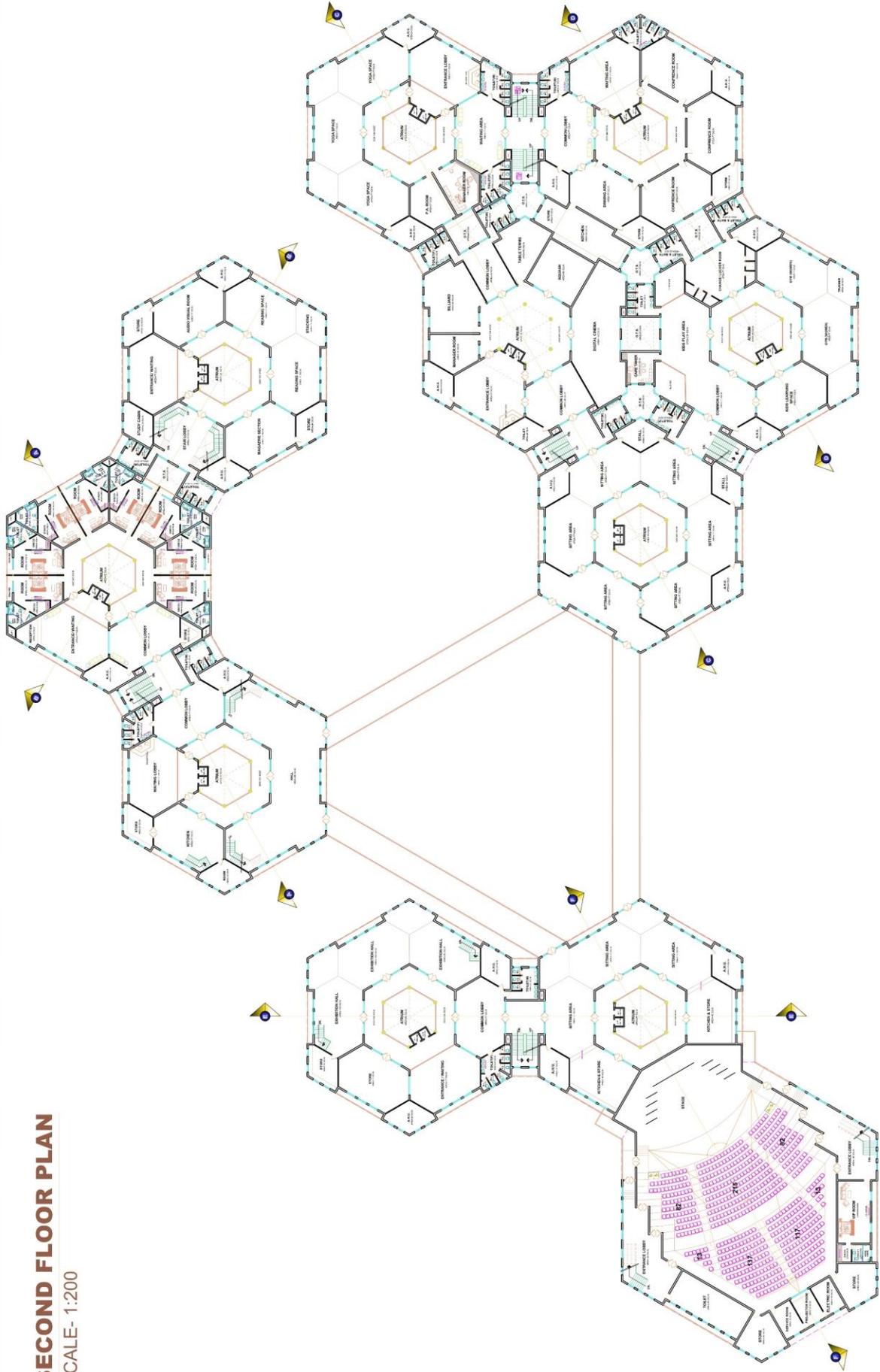
**SESSION:**

**2021-22**

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**SECOND FLOOR PLAN**  
SCALE- 1:200



PROJECT:

**PROPOSED  
RECREATIONAL HUB  
SECTOR 18, DWARKA  
, DELHI**

THIS BY:

**MOHD SADIQUE ANSARI  
ROLL NO: 1170101020**

GUIDED BY:

**AR. SHAILESH KUMAR  
YADAV**

DRG.NO:

**04**

DATE:

**29.06.22**

DRAWING TITLE:

**SECOND FLOOR PLAN**

SCALE

**1:200**

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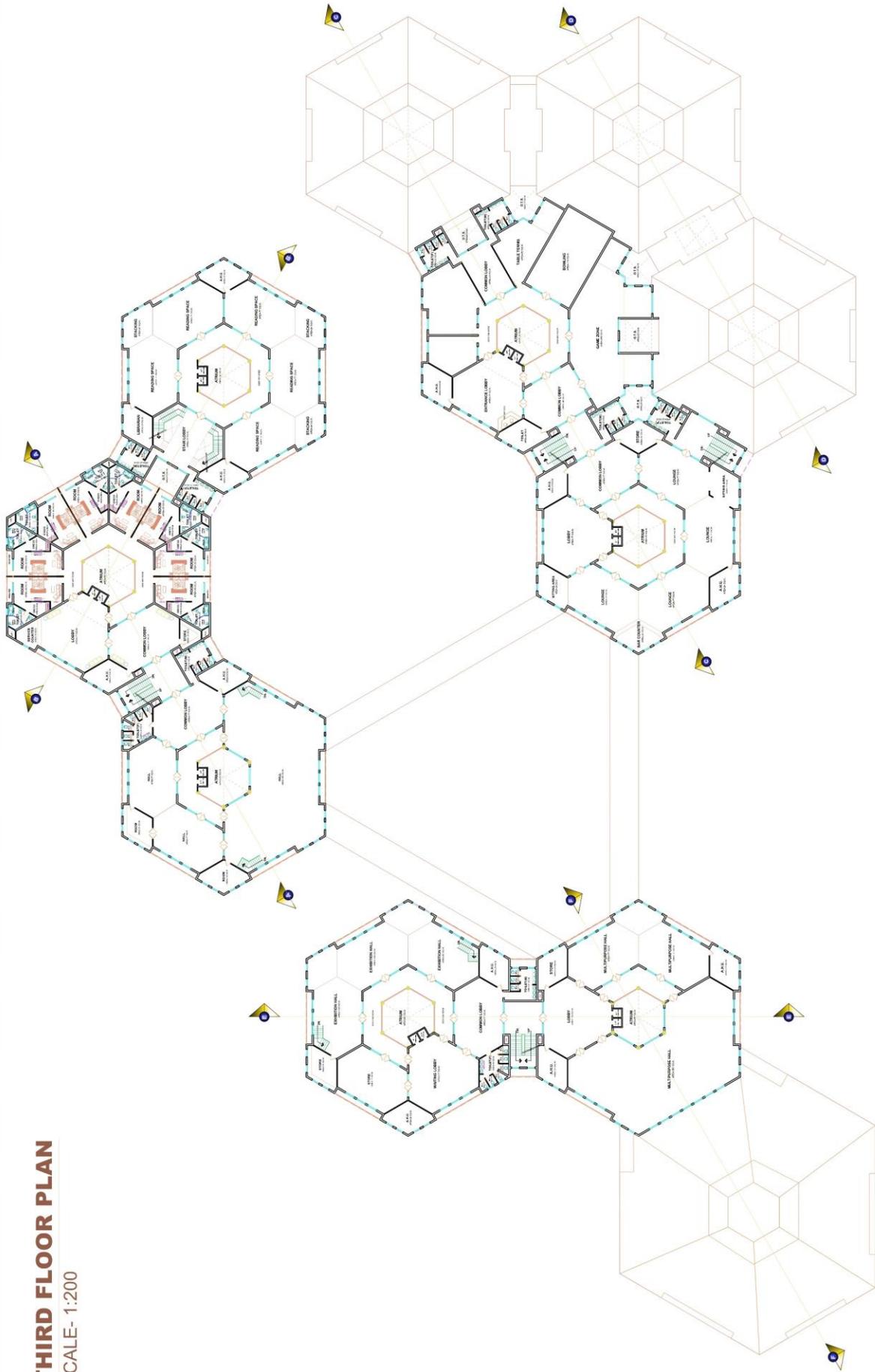
SESSION:

**2021-22**



# THIRD FLOOR PLAN

SCALE- 1:200



PROJECT:

**PROPOSED  
RECREATIONAL HUB  
SECTOR 18, DWARKA  
, DELHI**

THESIS BY:

**MOHD SADIQUE ANSARI  
ROLL NO: 1170101020**

DRAWING TITLE:

**THIRD FLOOR PLAN**

SCALE

**1:200**

GUIDED BY:

**AR. SHAILESH KUMAR  
YADAV**

DRG.NO:

**05**

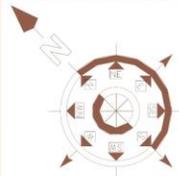
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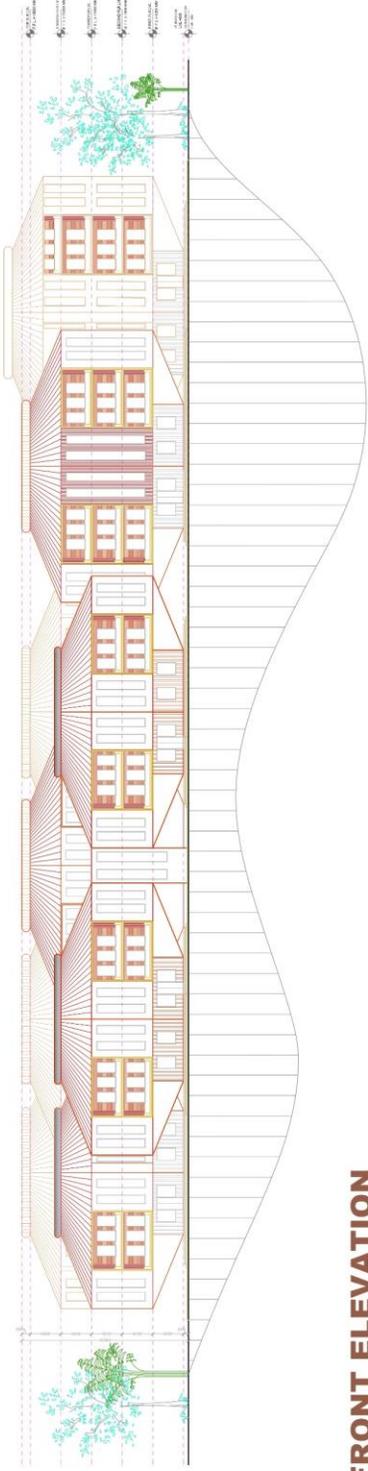
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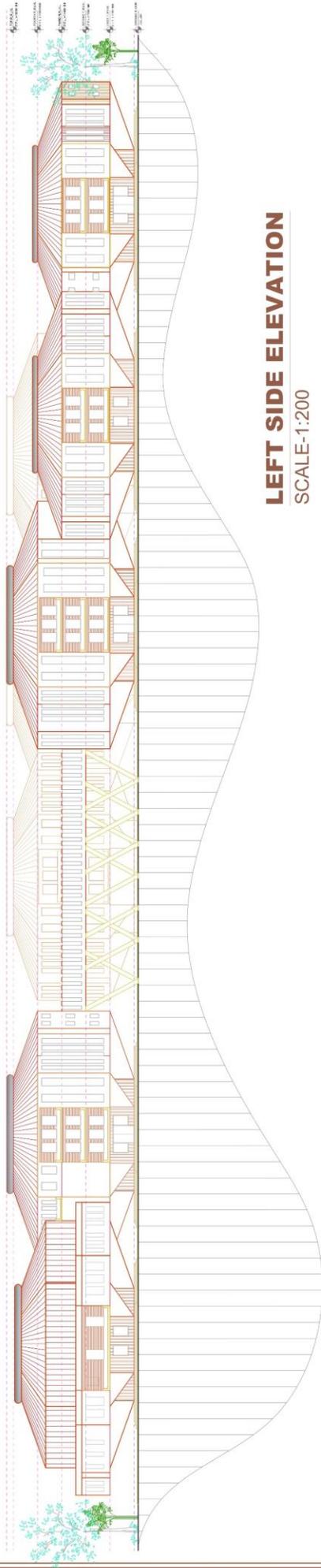
**2021-22**

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**FRONT ELEVATION**  
SCALE-1:200



**LEFT SIDE ELEVATION**  
SCALE-1:200

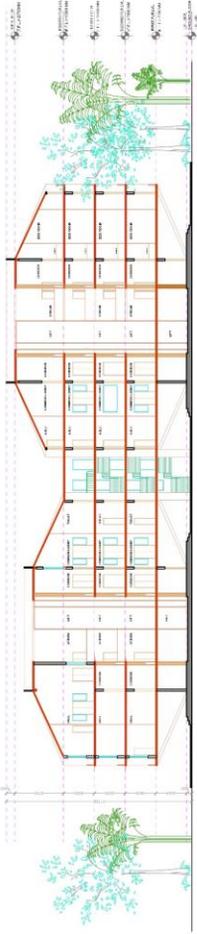


DATE: 29.06.22  
SESSION: 2021-22

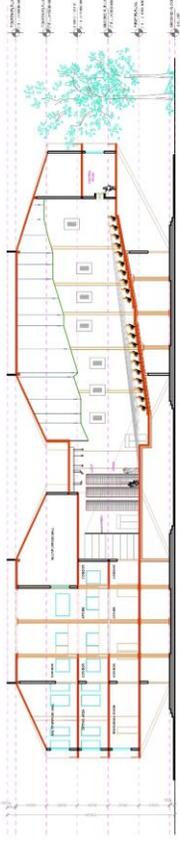
DRG.NO: 06  
GUIDED BY: AR. SHAILESH KUMAR YADAV  
BABU BANARSI DAS UNIVERSITY  
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LUCKNOW

THIS IS BY: MOHD SADIQUE ANSARI  
ROLL NO: 1170101020  
DRAWING TITLE: ELEVATION  
SCALE: 1:200

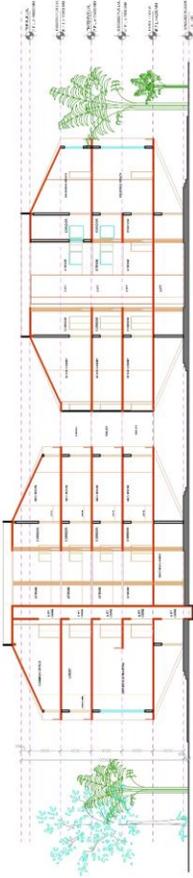
PROJECT: PROPOSED RECREATIONAL HUB  
SECTOR 18, DWARKA  
DELHI



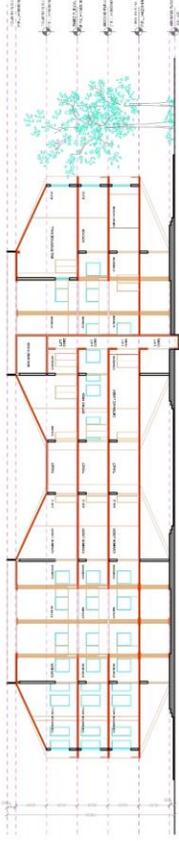
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SCALE-1:200



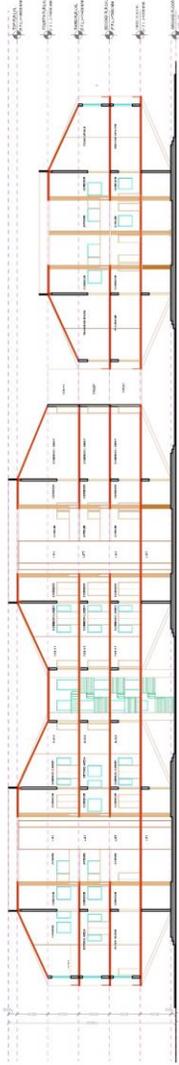
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SCALE-1:200



**SECTION-BB'**  
SCALE-1:200



**SECTION-EE'**  
SCALE-1:200



**SECTION-CC'**  
SCALE-1:200



**SECTION-DD'**  
SCALE-1:200

**PROJECT:**

**PROPOSED  
RECREATIONAL HUB  
SECTOR 18, DWARKA  
, DELHI**

**THESIS BY:**

**MOHD SADIQUE ANSARI  
ROLL NO: 1170101020**

**DRAWING TITLE:**

**SECTION**

**SCALE**

**1:200**

**GUIDED BY:**

**AR. SHAILESH KUMAR  
YADAV**

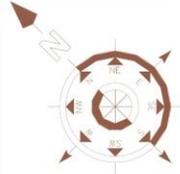
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**29.06.22**

**SESSION:**

**2021-22**



**LEGEND**

Trees	Botanical Name	Height & shape	Crown width
	<i>Azadirachta indica</i>	5 to 25 mt. Spherical	20 to 25 mt.
	<i>Dioscorea regia</i>	05 to 12 mt. Upright	5.5 to 05 mt.
	<i>Santalum album</i>	20 to 25 mt.	05 to 09 mt.
	<i>Ficus bengalensis</i>	up to 200 mt.	up to 30 mt.
	<i>Tectona grandis</i> Linn.	up to 40 mt.	up to 5 mt.
	<i>Royal palm</i>	15 to 24 mt.	4.5 to 7.5 mt.
	<i>Tamarindus indica</i>	24 to 30 mt.	7.5 to 12 mt.
	<i>Cassia fistula</i> L.	08 to 12 mt.	08 to 09 mt.
	<i>Mangifera indica</i>	20 to 30 mt.	08 to 12 mt.
	<i>Terminalia arjuna</i>	up to 35 mt.	15 to 20 mt.
	<i>Acacia arabica</i>	20 to 25 mt.	6 to 15 mt.
	<i>Ficus religiosa</i> L.	up to 200 mt.	30 to 40 mt.
	<i>Syzygium cumini</i>	25 to 30 mt. Oval	15 to 20 mt.

Hedges	Botanical Name	Height, shape	Width
	<i>Golden dewdrop</i>	0.6 to 1.2 mt. Cluster	up to 0.8 mt.
	<i>Duranta arrecta</i>	up to 5 mt. Irregular	up to 5 mt.
	<i>Crested boegoniella</i>	4 to 8 mt. Flat shaped leaves	up to 5 mt.

Shrubs	Botanical Name	Height, shape	Crown width
	<i>Queen of the night</i>	up to 5 mt. Tubular flowering	1.2 to 1.8 mt.
	<i>Gardenia</i>	up to 2 mt. Bushy growth	up to 2 mt.
	<i>Bash alomanda</i>	up to 2.8 mt. Trumpet	1 mt to 2 mt.
	<i>Gulab</i>	up to 3 mt. upright	up to 3 mt.

**Lamp-posts**

- Single Lamp-post
- Single Lamp-post for entrance
- Double Lamp-post
- Street Light

**Other Elements**

- Dustbin
- Benches
- Hanging plants



**PROJECT:** PROPOSED RECREATIONAL HUB  
SECTOR 18, DWARKA  
DELHI

**GUIDED BY:** AR. SHAILESH KUMAR  
**YADAV**

**DRAWING TITLE:** LANDSCAPE PLAN (ELECTIVE-1)

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LUCKNOW

**SESSION:** 2021-22

**DRG.NO:** 07

**DATE:** 29.06.22

**SCALE:** 1:500

# RECREATIONAL HUB AT DELHI

255000



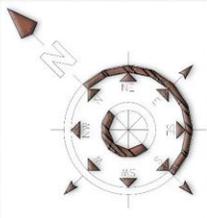
155000

**AREA ANALYSIS :-**

DELHI BYE LAWS	
TOTAL SITE AREA -	9.7 ACRES
SITE DIMENSION -	255 M X 155 M
PERMISSIBLE GROUND COVERAGE -	30%
PERMISSIBLE BUILT UP AREA -	47430 SQ.M.
F.A.R. -	1.20
FRONT SET BACK -	15 M
SIDE SET BACK -	08 M
PARKING -	2 ECS /100 SQ.M
<b>ACHIEVED AREA :-</b>	
F.A.R. -	
GROUND COVERAGE -	26.5 %
GROUND BUILT UP -	2080 SQ.M.
FIRST FLOOR BUILT UP -	10483 SQ.M.
SECOND FLOOR BUILT UP -	9013 SQ.M.
THIRD FLOOR BUILT UP -	6378 SQ.M.
FOURTH FLOOR BUILT UP -	910 SQ.M.
ACHIVED BUILT UP AREA -	29064 SQ.M.
HARDSCAPE AREA -	
DRIVEWAYS -	11369 SQ.M.
PATHWAYS -	23372 SQ.M.
SURFACE PARKING AREA -	1562 SQ.M.
SOFTSCAPE AREA -	9704 SQ.M.

**LEGEND :-**

- PEDESTRIAN
- DRIVEWAY
- GUARD ROOM 300X3000 MM
- SITTING CHAIR



**THIS IS BY**  
**MOHAMMAD SADIQUE ANSARI**  
**ROLL NO:- 1170101020**

**B.ARCH XTH SEM.**  
**SESSION :- 2021-22**  
**SCALE :- 1:500**

**THANK YOU**