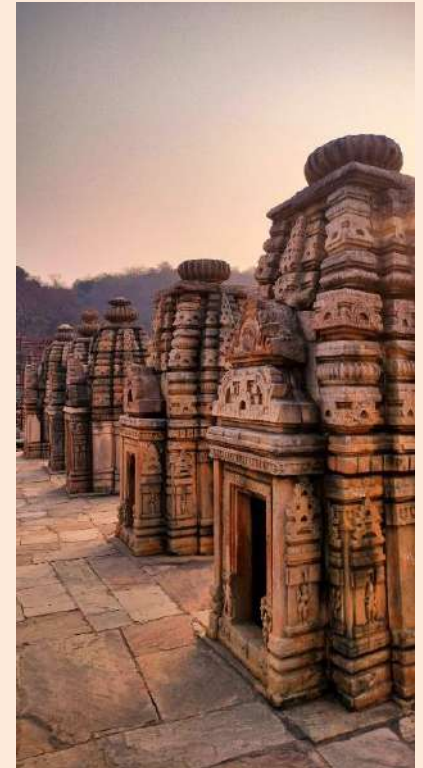


SINHGAD TECHNICAL EDUCATION SOCIETY'S  
**SINHGAD COLLEGE OF ARCHITECTURE, PUNE**

**STUDY TOUR REPORT**  
**2022-23**  
**(B. Arch. II to IV Year)**



**Architectural Study tours:** Every year, study tours are conducted for all students of the First year to Fourth Year B. Arch. These study tours are linked with Architectural Design Projects, as students design in context progressively, from smaller settlements in the First year to high-order urban areas in the fourth year. All study tours are divided into four parts:

1. Pre-study of the area and context.
2. Survey and study during visit,
3. Post-study tour report & documentation,
4. Architectural Design project with context. Study Tour of 2022-23 schedule

Published by:

**SINHGAD COLLEGE OF ARCHITECTURE.**

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Website: [www.sinhgad.edu](http://www.sinhgad.edu)

Coordinated by the Faculty: Avani Topkar, Harshada Akolkar, Avanti Kale



## CONTENTS

Year & Division	Places for tour	Design Faculty coordinators
<b>SECOND YEAR B. ARCH. STUDY TOURS</b>		
II A	Panjim, Goa	Priyanka Purohit, Manasi Khope
II B	Mitaoli	Sajan Mehta
II C	Maheshwar	Mrinalini Anekar ,Ankoor Sakhare
II D	Chandigarh	Dr.Priyamvada Chitale, Mukta Pandit, Shantanu Gaikwad
<b>THIRD YEAR B. ARCH. STUDY TOURS</b>		
III A	Panjim, Goa	Kalpana Hadap, Avani Topkar, Namrata Khatod
III B	Udaipur	Niketa Patil, Kavita Patil
III C	Bhopal	Preeti Dhanwat, Vaishnavi Gaikwad,
III D	Chandigarh	Priyanka Chavan, Asmita Murkute, Rupali Borhade
<b>FOURTH YEAR B. ARCH. STUDY TOURS</b>		
IV A	Panjim, Goa	Ashwini Shitole, Sangeeta Joshi
IV B	Gwalior	Indrayani Dasare
IV C	Indore	Anuja Inamdar, Natasha Senapati
IV D	Chandigarh	Harshada Akolkar, Sejal Desarda, Kirti Bajare

SINHGAD TECHNICAL EDUCATION SOCIETY'S  
**SINHGAD COLLEGE OF ARCHITECTURE, PUNE**

**Study TOUR**

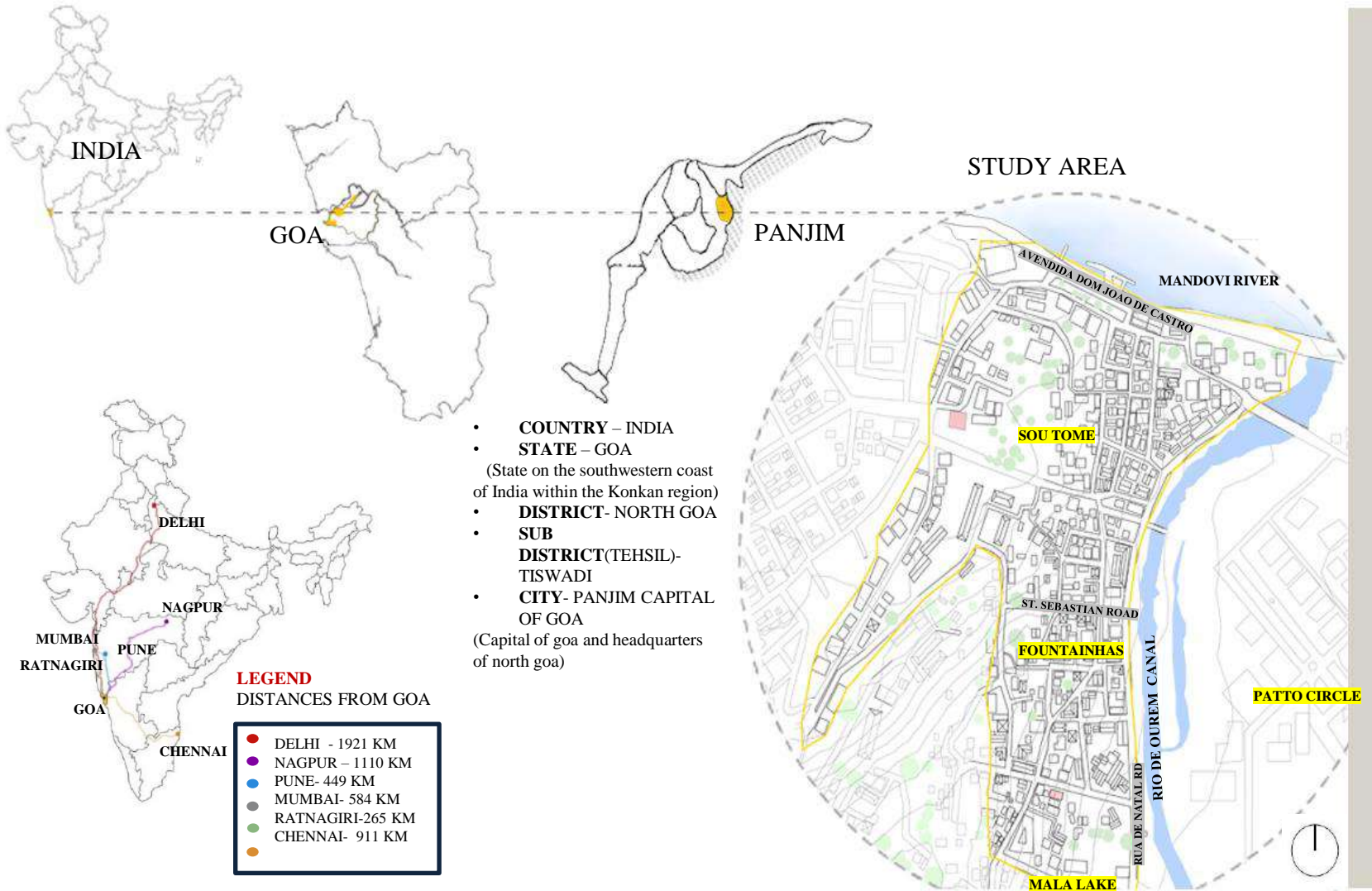
**GOA**

BY

**II YR B. Arch.**

**Division: A**

# LOCATION



<https://goatourism.gov.in/accessibility-features/>

## SETTLEMENT STUDY OF PANJIM, GOA

S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE

## GEOGRAPHY AND TOPOGRAPHY

Area of goa - 3,702 km<sup>2</sup>

Area of Panjim- 0.2% of Goa  
(8.27km<sup>2</sup>)

Area of study- 0.192 km<sup>2</sup>

- It lies between the latitudes 14°53'54" N and 15°40'00" N and longitudes 73°40'33" E and 74°20'13" E
- Goa has a coastline of 160 km .
- The highest point is the Sonsogor Peak, with an altitude of 1,026 m (3,366 ft).

### TOPOGRAPHY OF PANAJI

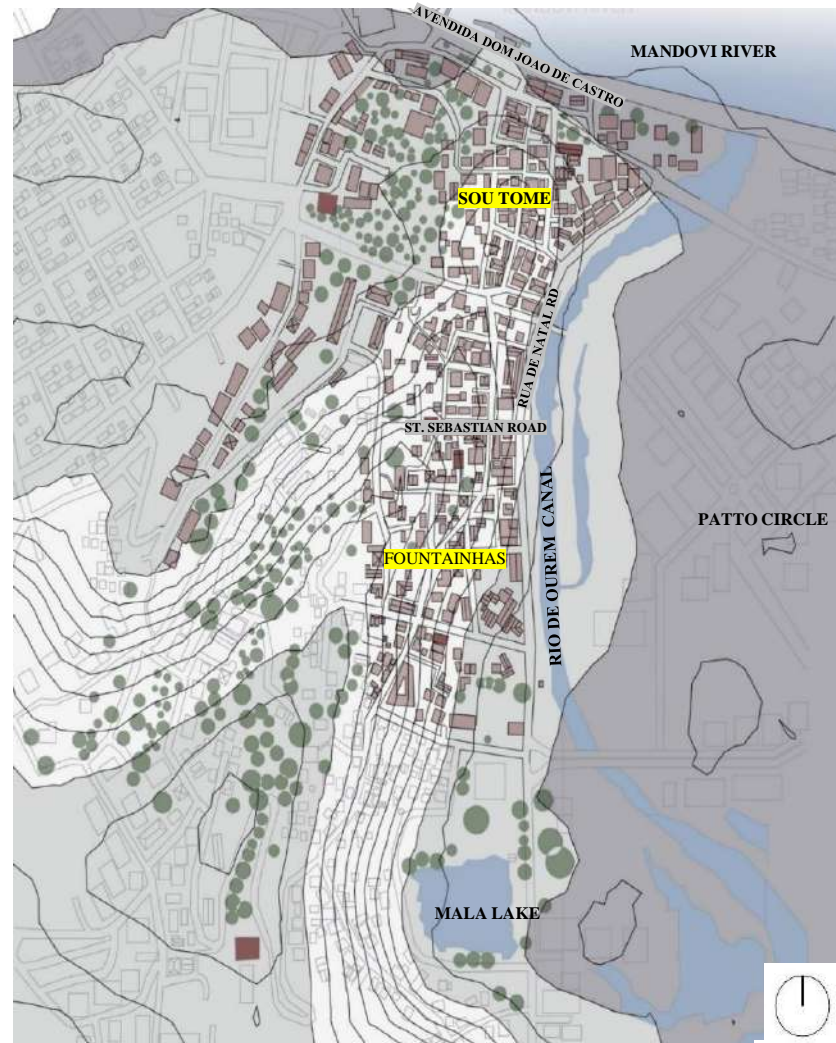


- LOW LANDS
- MOUNTAINOUS REGION
- PLATEAU LANDS

Geographically Goa has mainly three natural divisions

- **Low Lands** : Low land area is mainly coastal lines. It is about 110 km long.
- **Plateau Lands** : Found between the mountain region in the east and the lowlands in the west.
- **Mountainous region**: In South Goa, the peaks are Chandranath at Paroda, Dudhsagar in Sanguem taluka and Cormolghant in Canacona taluka.

### TOPOGRAPHY OF STUDY AREA



<https://www.britannica.com/place/Goa>

### SETTLEMENT STUDY OF PANJIM, GOA

S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE



## CLIMATE

### TEMPERATURE GRAPH OF GOA



- Goa experiences warm and humid tropical climate. The summer temperature range - 24° C to 36° C.
- Winter temperature range 21°C and 30°C.

### RAINFALL GRAPH OF GOA



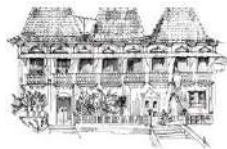
- Goa receives rain from the South - West monsoons. The average rainfall is 2800 mm.
- Rainy season is from June to September.

**Hottest Month: May 34- degrees C•**

**Coldest Month: January- 20 degrees C**

**Wettest Month: July,- 1187 mm**

During excessive rain Sloping roofs are seen as a solution . as the water does not collect anywhere on the roof and flows down freely.



TYPICAL HOUSE WITH SLOPING ROOF

<https://www.mapsofindia.com/maps/goa/geography-and-history/climate-of-go.html>

## SOIL TYPES FOUND IN GOA



LATERITE SOIL



ALLUVIAL SOIL



SALINE SOIL



MARSHY SOIL

### 1. LATERITE SOIL-

- It is the major type of soil in the district
- It is highly porous and permeable slightly acidic with low pH values low in organic matter calcium and phosphorus

### 2. SALINE SOIL

- It in the district occurs in the flood plains of zuari and mandovi rivers in tiswadi bardez and ponda talukas
- It also occurs in pernem taluka
- The soil is deep poorly drained and less permeable

### 3. ALLUVIAL SOIL

- It occurs as very thin strip along the coastline towards western part of the district
- It is reddish brown to yellowish coarse grained and confined to narrow valleys of rivers
- It is well drained acidic with low pH and organic content

### 4. MARSHY SOIL ( South goa )

- it occurs to the last extent in salcete taluka and towards the western part of canacona
- It also occurs in marmugao
- This type of soil occurs in low lying area and water logged tidal affected areas

**OUT OF THESE LATERITE AND ALLUVIAL SOIL IS FOUND IN PANJIM**

## SETTLEMENT STUDY OF PANJIM, GOA

S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE

## VEGETATION AND MAIN WATERBODIES IN GOA :



NUTMEG



COCONUT



MANGO



BLACK PEPPER



JASMINE



GROUND NUT



PINEAPPLE

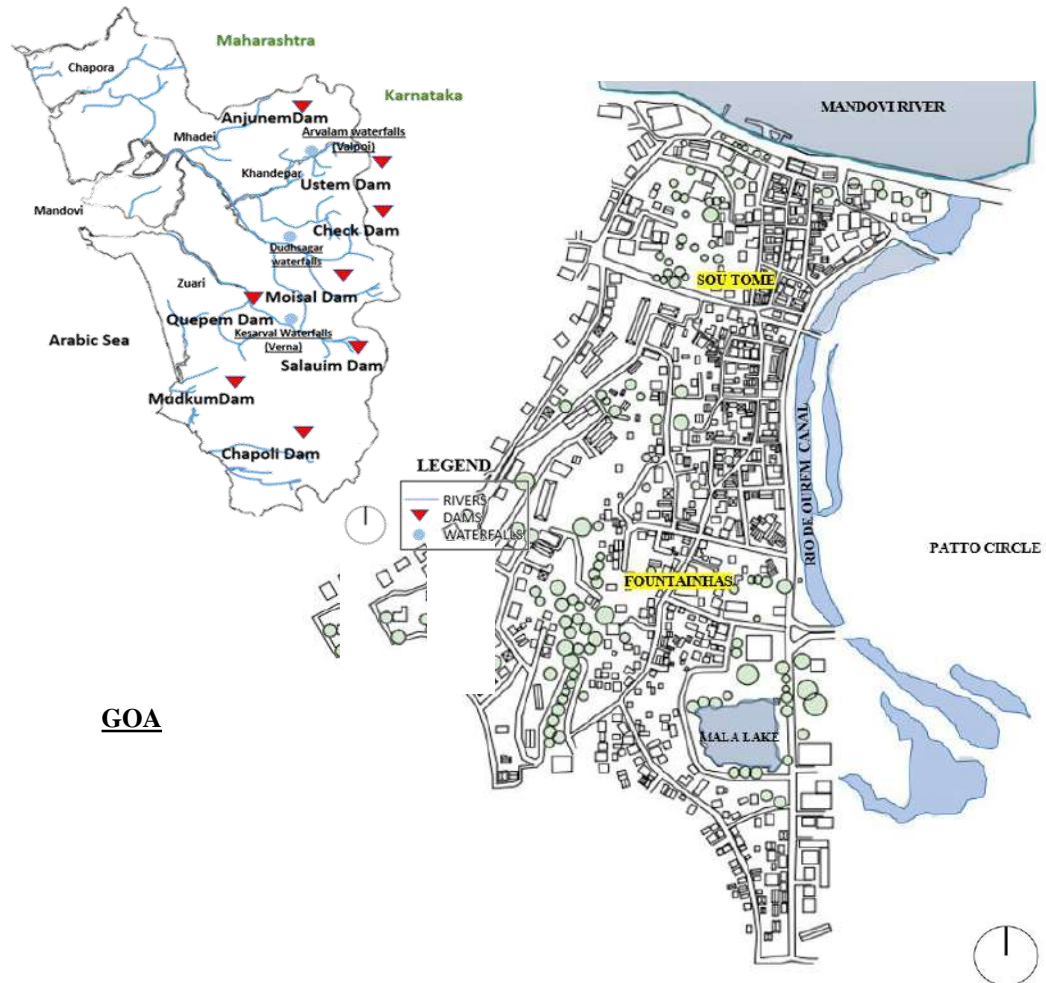


CASHEW NUT



PAPAYA

- **Fruits:** Mango, Cashew, Coconut, Banana, Pineapple, Jackfruit, Arecanut etc.
- **Field crops:** Paddy, Ragi, Sugarcane, Groundnut, Cowpea etc.
- **Vegetables:** Brinjal, Bhendi, Chillies, Cucumber, Pumpkin, Gourds, Musk Melons, Red amaranthus, Raddish, Knol-Khol, Cabbage, Bottle gourd, Long beans, Cluster beans etc.
- **Flowers:** Jasmine, Crossandra, Dahlia, Hibiscus, Marigold, Orchids, Gerbera, Anthuriums, Gladiolus, etc.
- **Spices:** Black Pepper, Nutmeg, Kokum, Turmeric, Cinnamon, etc.
- **Tubers:** Colocasia, Yam, Elephant foot, Dioscorea, Sweet Potato, etc



GOA

SETTLEMENT STUDY OF PANJIM, GOA






S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE

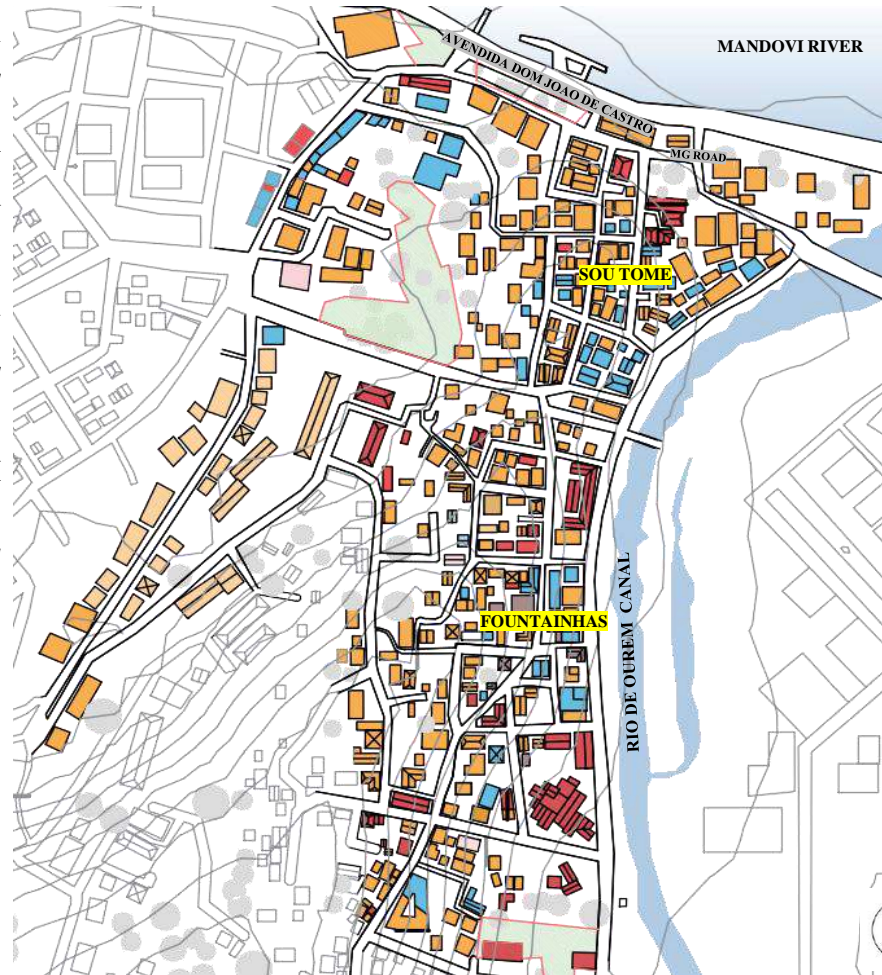


## LAND USE PATTERN ( ACCORDING TO STUDY)

- THE MAJOR LAND IS USED FOR RESIDENTIAL AND COMMERCIAL PURPOSE.
- APPROX. 50 % LAND IS GIVEN FOR RESIDENTIAL ,
- APPROX 30% LAND OF IS GIVEN FOR COMMERCIAL PURPOSE.
- AND REST 10 % FOR PUBLIC SPACES
- RESIDENTIAL PART IS EQUALLY OBSERVED THROUGHOUT THE STUDY AREA
- MOST OF THE COMMERCIAL PART IS SEEN IN THE NORTH AND NORTH EASTERN SIDE BECAUSE IT LIES ADJACENT TO THE SUB-ARTERIAL ROAD WHICH IS RIO DE OUREM .

### LEGEND

- |   |  |
|---|--|
|    | RESIDENTIAL - 50%                      |
|  | COMMERCIAL – 30%                       |
|  | PUBLIC – 15%                           |
|  | MIXED ( residential + commercial) – 2% |
|  | GREEN SPACES - 3%                      |

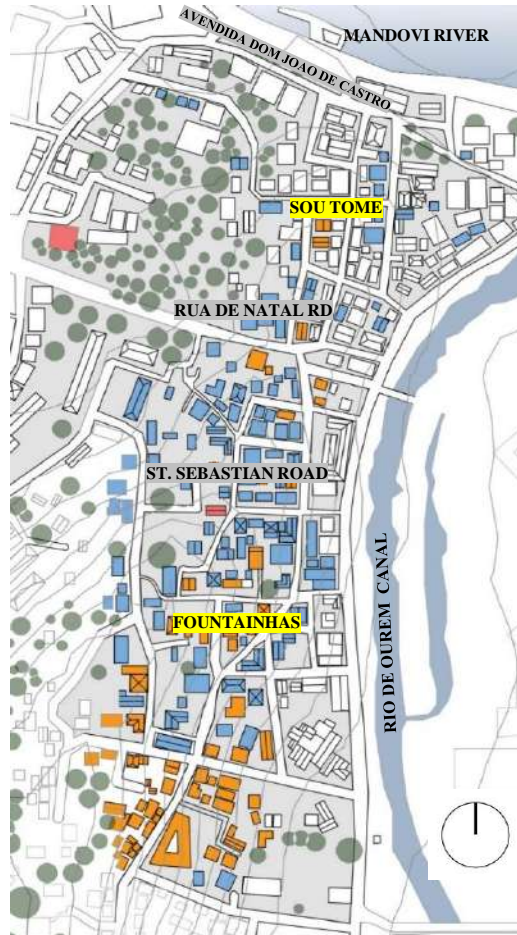


## SETTLEMENT STUDY OF PANJIM, GOA

S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE



## COMMUNITY PROFILE



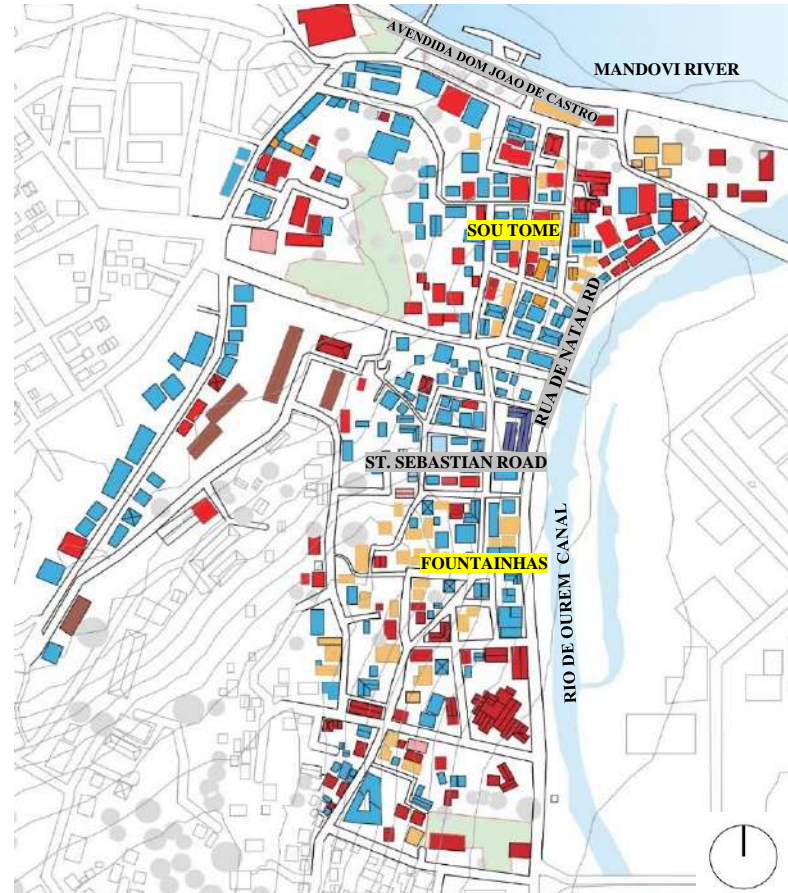
### Community-

- Around 40 percent are hindus 50 percent are catholiocs and rest 10 percent are others .
- Catholics are majorly found in northern side in fountainhas and hindus towards southern side
- Muslims were observed on the outer side of the study area.

### LEGEND

	CATHOLIC - 50%
	HINDU COMMUNITY - 40%
	CHURCH - 40%
	G
	G+1
	G+2
	G+3

## BUILDING HEIGHTS





## SERVICES LAYOUT MAP

### OVERHEAD WATER TANK :

- THE CAPACITY OF WATER TANK IS 64 KILOLITERS.
- THIS IS SUFFICIENT FOR 80 FAMILIES IN THE COLONY FOR 4 DAYS.

### SEWAGE TREATMENT PLANT :

**LOCATION – PANJIM**

### DESIGNED CAPACITY OF STP –

12.5 MLD (DESIGN) 9-10 MLD








(ACTUAL DEPENDENT ON SEASON)

SCALE – ZONAL

STP – OPERATIONAL SINCE – 2005

- THE STP IS BASED ON CYCLING ACTIVATED SLUDGE TECHNOLOGY FOR CO-TREATMENT.

### LEGEND

	ELECTRIC POLE
	WELLS
	DUSTBIN
	WATER TREATMENT PLANT
	WATER TANK
	SEWER LINE
	WATER LINE



## SETTLEMENT STUDY OF PANJIM, GOA

S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE

# HISTORIC CONTEXT

SETTLEMENT STUDY OF PANJIM, GOA

S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE



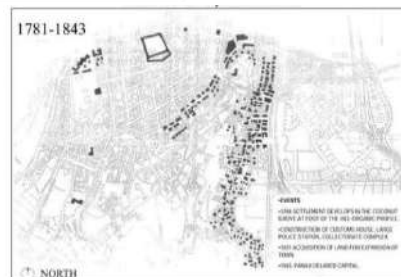
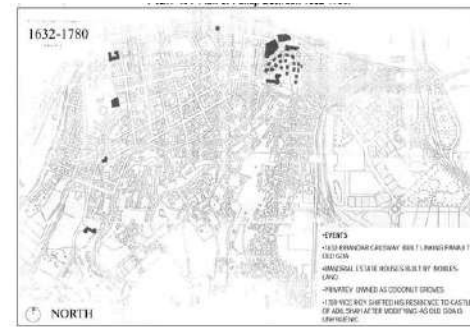
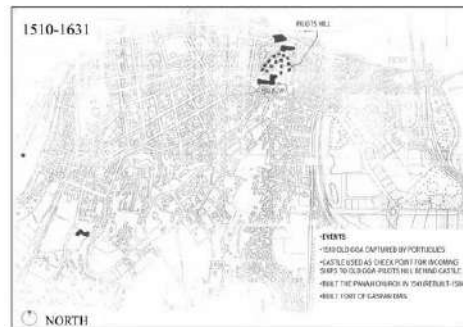
# HISTORY : UNDERSTANDING POLITICAL BACKGROUND



**Goa** – The Name – In the later Vedic period (c. 1000-500 BC) when the Hindu epic “Mahabharata” was written, Goa has been referred to with the Sanskrit name “Gomantak”, a word with many meanings , signifying mostly a fertile land; but however, it is the Portuguese who gave Goa its name.

The origin of the city name "**Goa**" is unclear. In ancient literature, Goa was known by many names, such as Gomanchala, Gopakapattana, Gopakapattam, Gopakapuri, Govapuri, Govem, and Gomantak. Other historical names for Goa are Sindapur, Sandabur, and Mahassapatnam.

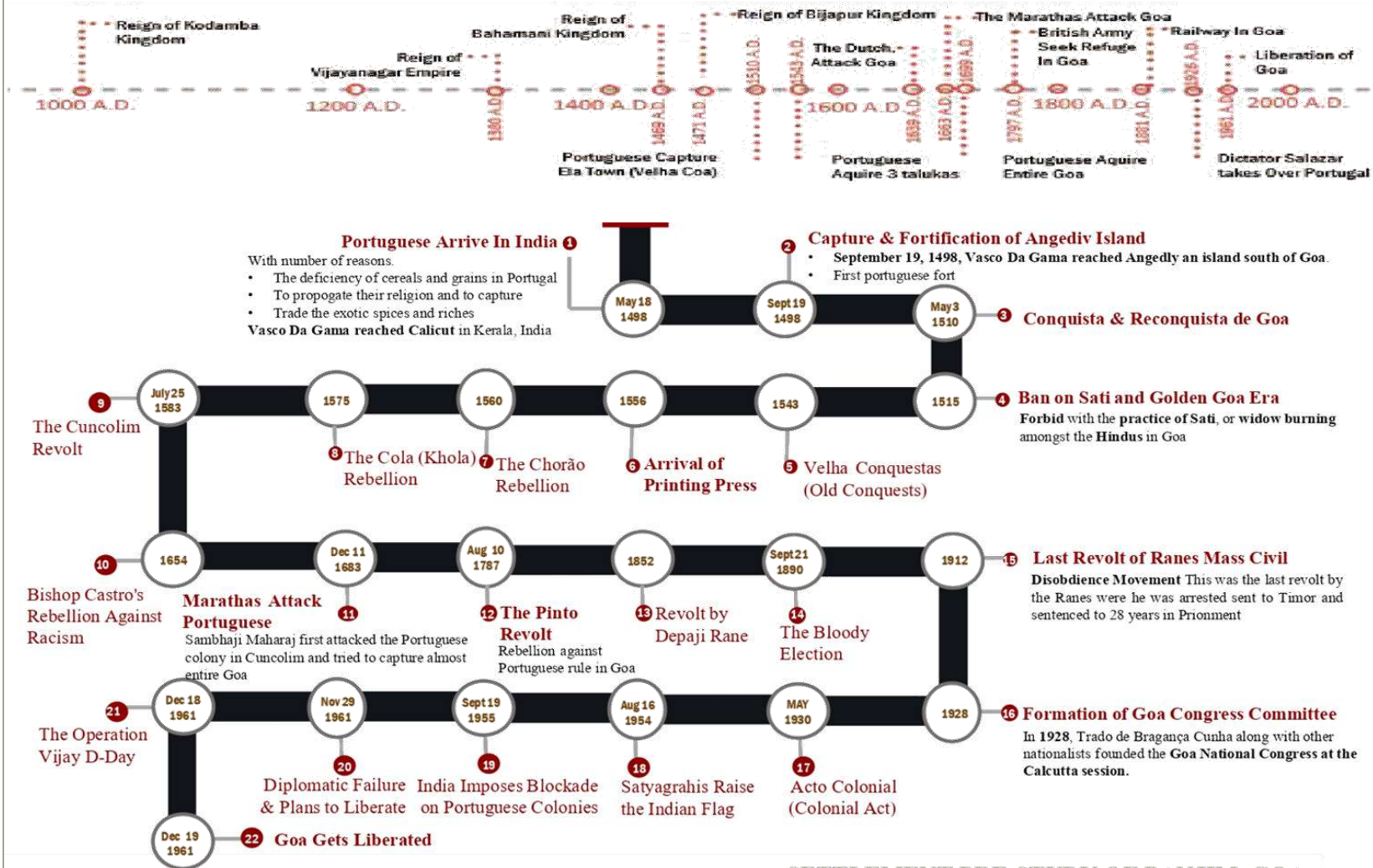
## EVOLUTION OF PANJIM



## SETTLEMENT STUDY OF PANJIM, GOA

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# HISTORY



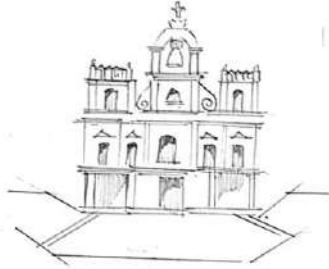
## SETTLEMENT PRE-STUDY OF PANJIM, GOA

## SETTLEMENT STUDY OF PANJIM, GOA

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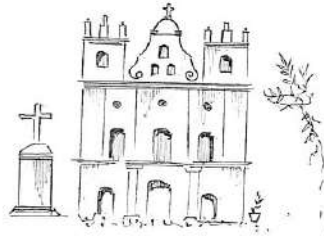


# HISTORY: UNDERSTANDING MONUMENTS



## IMMACULATE CONCEPTION CHURCH

LOCATION:- PANJIM. N. GOA  
 CONCECRATED :- 1689  
 CONSTRUCTION MATERIAL:- BRICK, GRANITE  
 BUILT BY :- PORTUGUESE  
 ARCH STATUS:- CHURCH  
 ARCH STYLE :- NEO-CLASSICAL  
 DEDICATED TO:- MOTHER OF JESUS



## CHURCH OF ST.FRANCIS OF ASSISSI

LOCATION:- OLD GOA  
 CONCECRATED IN : 16<sup>TH</sup> CENTURY  
 CONSTRUCTION MATERIAL:- LATERITE, LIME  
 ARCH. STATUS :- CHURCH  
 STYLE :- MANULINE, BOROQUE  
 DEDICATED TO :-HOLY GHOST



## SE CATHEDRAL DE SANTA CATARINA

LOCATION:- OLD GOA  
 CONCECRATED :- 1640  
 CONSTRUCTION MATERIAL:- LATERITE LIME PLASTER  
 BUILT BY :- ROMAN CATHEDRAL  
 ARCH STATUS:- CATHEDRAL  
 ARCH STYLE :- PORTUGUESE - GOTHIC  
 DEDICATED TO:- ALEXANDRIA



## AUGUSTINE CHURCH

LOCATION:- OLD GOA  
 CONCECRATED :- 1602  
 MATERIAL:- LATERITE  
 BUILT BY :- AUGUSTINIAN FRIAS  
 ARCH STATUS:- RUINS  
 ARCH STYLE :- PORTUGUESE COLONIAL  
 DEDICATED TO:- OUR LADY OF GRACE



## BASILICA OF BOM JESUS

LOCATION:- OLD GOA  
 CONCECRATED :- 1594  
 CONSTRUCTION MATERIAL:- BASALT, BLACK GRANITE  
 BUILT BY :- ROMAN CATHOLIC  
 ARCH STATUS:- MINOR BASILICA  
 ARCH STYLE :- BOROQUE ARCHITECTURE  
 DEDICATED TO:- ST. FRANCIS XAVIER



## MAE DEDEUS CHURCH,GOA

LOCATION:- SALIGO, GOA  
 CONCECRATED :- 1873  
 BUILT BY :- FRANCISCO SALVODOR ZEFERINO PINTO  
 ARCH STATUS:- NEO- GOTHIC  
 ARCH STYLE :- CHURCH  
 DEDICATED TO:-THE MOTHER OF GOD



## THREE KINGS CHURCH

LOCATION:- CANSALIM GOA  
 CONCECRATED :- 1599  
 CONSTRUCTION MATERIAL:- LIME PLASTER  
 BUILT BY :- FR. GONZALO CARVALHO  
 ARCH STATUS:- HAUNTED CHURCH  
 ARCH STYLE :- PORTUGUESE  
 DEDICATED TO:- ST. JEROME



## OUR LADY OF ROSARY

LOCATION:- CURCA, GOA  
 CONCECRATED IN : 1547  
 CONSTRUCTION MATERIAL:-LIME PLASTER  
 ARCH. STATUS :- CHURCH  
 STYLE :- MANUEUNE AND GOTHIC  
 DEDICATED TO :- LADY OF ROSARY

## SETTLEMENT STUDY OF PANJIM, GOA

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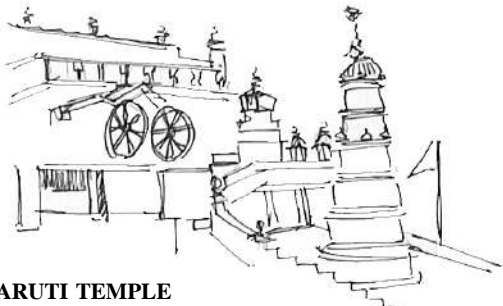


# HISTORY: UNDERSTANDING MONUMENTS TEMPLES OF GOA



## MAHALAXMI TEMPLE

LOCATION : ALTINHO HILL, MALA, NORTH GOA  
 BUILT IN : 1918  
 CONCECRATED IN : 1918 RENOVATED IN 1983  
 CONSTRUCTION MATERIAL : BRICK, STONE  
 ARCH STYLE : KONKANI STYLE  
 ARCH STATUS : HINDU TEMPLE  
 DEDICATED TO : GODDESS LAXMI



## MARUTI TEMPLE

LOCATION : ALTINO HILLS, MALA, NORTH GOA  
 BUILT IN : 1931  
 CONCECRATED IN : 1934  
 CONSTRUCTION STYLE : -----  
 ARCH STYLE : GOAN ARCHITECTURE  
 ARCH STATUS : HINDU TEMPLE  
 DEDICATED TO : LORD HANUMAN



## MANGUESHI TEMPLE

LOCATION : MANGOSHI VILLAGE, NORTH GOA  
 BUILT IN : 450 YEARS AGO  
 CONCECRATED IN : 1560  
 ARCH STYLE :- GOAN- HINDU  
 ARCH STATUS : HINDU TEMPLE  
 DEDICATED TO : LORD SHIVA



## LAXMI NARSIMHA TEMPLE

LOCATION : MANGOSHI VILLAGE, PRIOL, NORTH GOA  
 BUILT IN : 18 CENTURY  
 CONCECRATED IN : 1567  
 CONSTRUCTION MATERIAL : BRICK, LIME  
 ARCH STYLE : PESHWA ARCHITECTURAL STYLE  
 ARCH STATUS : HINDU TEMPLE  
 DEDICATED TO : LORD VISHNU AND GODDESS LAXMI



## MHALSA NARAYANI TEMPLE

LOCATION : OLD MARDOL / VERNA, SACETTE PONDA, GOA  
 BUILT IN : -----  
 CONCECRATED IN : 17 CENTURY  
 CONSTRUCTION MATERIAL : COPPER , STONE, MASONRY WORK  
 ARCH STYLE :HINDU TEMPLE STYLE  
 ARCH STATUS : HINDU TEMPLE  
 DEDICATED TO : GODDESS MAHALASA

## SETTLEMENT STUDY OF PANJIM, GOA

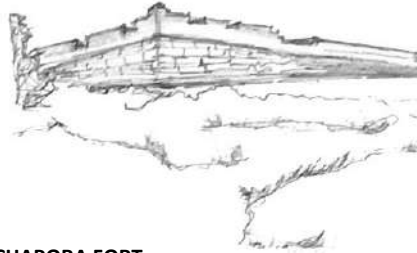
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# HISTORY: UNDERSTANDING MONUMENTS FORTS OF GOA



## **TIRACOL FORT**

LOCATION : PERNEM, TIRACOL, GOA  
 BUILT IN : 17 CENTURY (1717)  
 BUILT BY : MAHARAJA KHEM  
 SAWANT BHONSLE  
 MATERIAL : GRANITE, STONE, LIME  
 ARCH STATUS : LUX HOTEL & CHURCH  
 ARCH STYLE : BRITISH



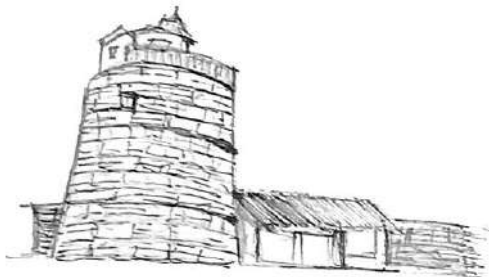
## **CHAPORA FORT**

LOCATION : VAGATOR, GOA  
 BUILT IN : 17 CENTURY (1717)  
 BUILT BY : ADILSHAHA  
 MATERIAL : STONES, RED LATERITE  
 ROCK  
 ARCH STATUS : FORT  
 ARCH STYLE : PORTUGUESE



## **ALORNA FORT**

LOCATION : ALORNA, NORTH GOA  
 BUILT IN : 17 CENTURY  
 BUILT BY : BHONSALE OF SAWANTWADI  
 MATERIAL : LATERITE STONE  
 ARCH STATUS : DEFENSE FORT  
 ARCH STYLE : TRADITIONAL STYLE



## **AGUADA FORT**

LOCATION : CANDOLIM, GOA  
 BUILT IN : 1609 - 1612  
 BUILT BY : PORTUGUESE  
 MATERIAL : LATERITE STONE  
 ARCH STYLE : PORTUGUESE MILITARY  
 ARCH STATUS : FORT



## **CABO DE RAMA FORT**

LOCATION : CANACONA, SOUTH GOA  
 BUILT IN : 1763  
 BUILT BY : SOONDA RULERS  
 MATERIAL : LATERITE STONE  
 ARCH STYLE : INDIAN FORT  
 ARCH STATUS : HILL FORT



## **NANAZ FORT**

LOCATION : VALPOI, SATTARI, NORTH GOA  
 BUILT IN : 17 CENTURY  
 BUILT BY : MARATHA RULER  
 MATERIAL : -----  
 ARCH STYLE : INDO - PORTUGUESE  
 ARCH STATUS : -----

## SETTLEMENT STUDY OF PANJIM, GOA

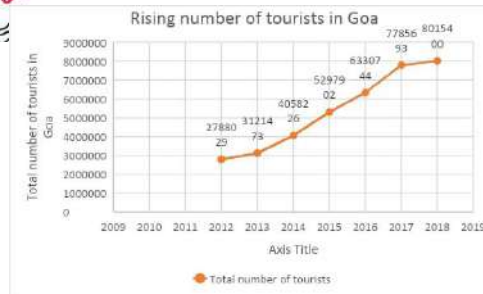
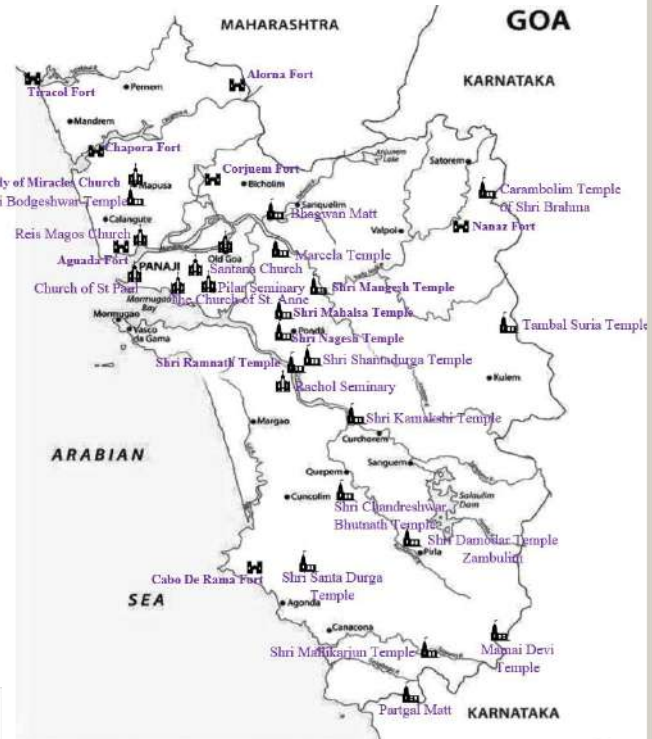
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# TOURISM AND MONUMENTS IN GOA



## IMPACT OF TOURISM ON GOA

- Tourism forms the backbone of Goa's economy.
  - 14 percent of the total foreign exchange earned in the country.
- In terms of income, output, employment, and foreign exchange generation, the tourism sector has contributed to the growth of the service sector-driven economy.
- Major tourist attractions include Bom Jesus Basilica, Fort Aguada, Se cheralatd, Shree Mangesh temple, Immaculate Conception Church, Baga Beach, a wax museum on Indian culture, and a heritage museum.



<https://images.app.goo.gl/h7jqAsT5SVEjc3UNA>

## SETTLEMENT STUDY OF PANJIM, GOA

S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE



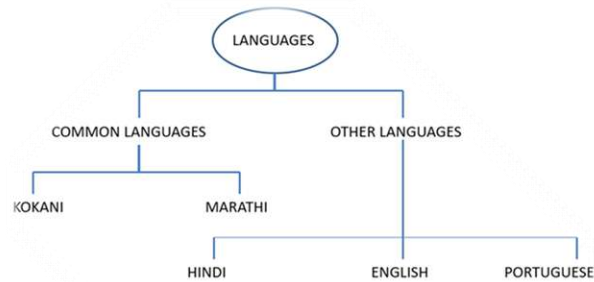
# **SOCIO ECONOMIC STRUCTURE**

**SETTLEMENT STUDY OF PANJIM, GOA**

**S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE**

# SOCIO – ECONOMIC STRUCTURE

- GOAN FOOD TODAY IS FUSION OF MANY CUISINES



Description	2011	2001
Sex Ratio	973	961
Literacy ratio		



## STYLES OF COOKING : HINDU ,PORTUGUESE, ISLAMIC

1. HINDU : Fish , rice
2. ISLAMIC : Pilaf
3. PORTUGUESE : Olive oil , beef, sea food , pork



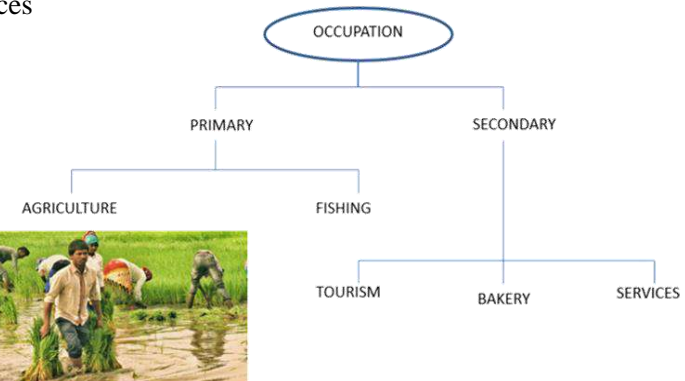
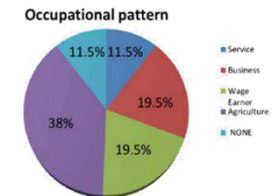
## INGREDIENTS USED IN GOAN FOOD

- Coconut oil , coconut milk , vinegar , fish , rice , spices of goa



## SPECIAL DISHES OF GOA

- Dishes prepared during festivals  
Khatkhate a vegetable stew , pork preparation, bebinca
- Sweet dishes / deserts of goa  
Kidiyo or kulkul, patoleo, bolo de rulao
- Alcoholic beverages of goa  
Cashew feni, coconut feni, palm feni



# SOCIO- ECONOMIC STRUCTURE

## GOAN CULTURE

### FOOD CULTURE



SEAFOOD



### VEGETARIAN MEALS

- Goan cuisine is characterized by use of rice, coconuts, fish, kokum, cashews, spices, and vinegar.
- Fish and rice are the staples.**

<https://www.ibef.org/states/goa-presentation>

### HANDICRAFTS ETC



- Reuse shells and coconut skins found from the beach to make jewellery.
- Hand-made hats, knotted mats, masks and hard ropes, which are made from the coconut husk.

### DANCE AND MUSIC CULTURE



- Goan dances include Fugdi, Dhalo, and the Kunbi.
- Mando** is the folk music of Goa.
- Usually performed in wedding celebrations.

### TRADITIONAL SPORTS OR GAMES



TABLAM, A TRADITIONAL GAME



### LAGORI

- Lagori is the oldest and the popular game played in Goa.
- Tablam An indoor scoreboard, dealing game with four bamboo sticks / bars of 6-8 inch long. Made from Bamboo.

### CLOTHING



- Goan tribes:- String of beads and leafy clothes as loin clothes .
- Women there wear traditional sarees called Pano- Bhaju and Nauwari.

## SETTLEMENT STUDY OF PANJIM, GOA

S.Y. B-ARCH SEM I SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE

# FESTIVALS AND CUSTOMS (TRADITION) OF GOA

## GOA CARNIVAL



- Celebrated in : February
- Location: Panjim, Ponda, Mapusa
- The parade begins in Panaji and travels throughout the state

## CHRISTMAS



- Celebrated in : December
- Location: basilica of Bom Jesus
- Decorated with beautiful lights and poinsettia flowers.

## FEAST OF SAINT XAVIER



- Celebrated in : December
- To honour the death of Saint Xavier. (Lord of Goa)

## THREE KINGS FEAST



- Celebrated in : January for nine days
- Location: north and south goa in Nossa Senhora dos Remedios
- Dedicated to Virgin Mother Mary (Goddess of fertility) with infant Jesus in her lap

## SHIGMO



- Celebrated in : Phalguna (lunar calendar)
- Location: konkan region of goa
- Festival of Hindus

## CUSTOMS AND TRADITIONS OF GOA



**OFFERING CUCUMBERS FOR BLESSINGS**  
At Touxechem Feast, Goa



**ADULTS WRESTLING IN WET MUD AT CHIKAL KALO, GOA**



**BATHING IN EGGS AND COCONUT MILK :**  
Roce ceremony in goa



**GOA'S CHILLI AND SALT VOODOO**



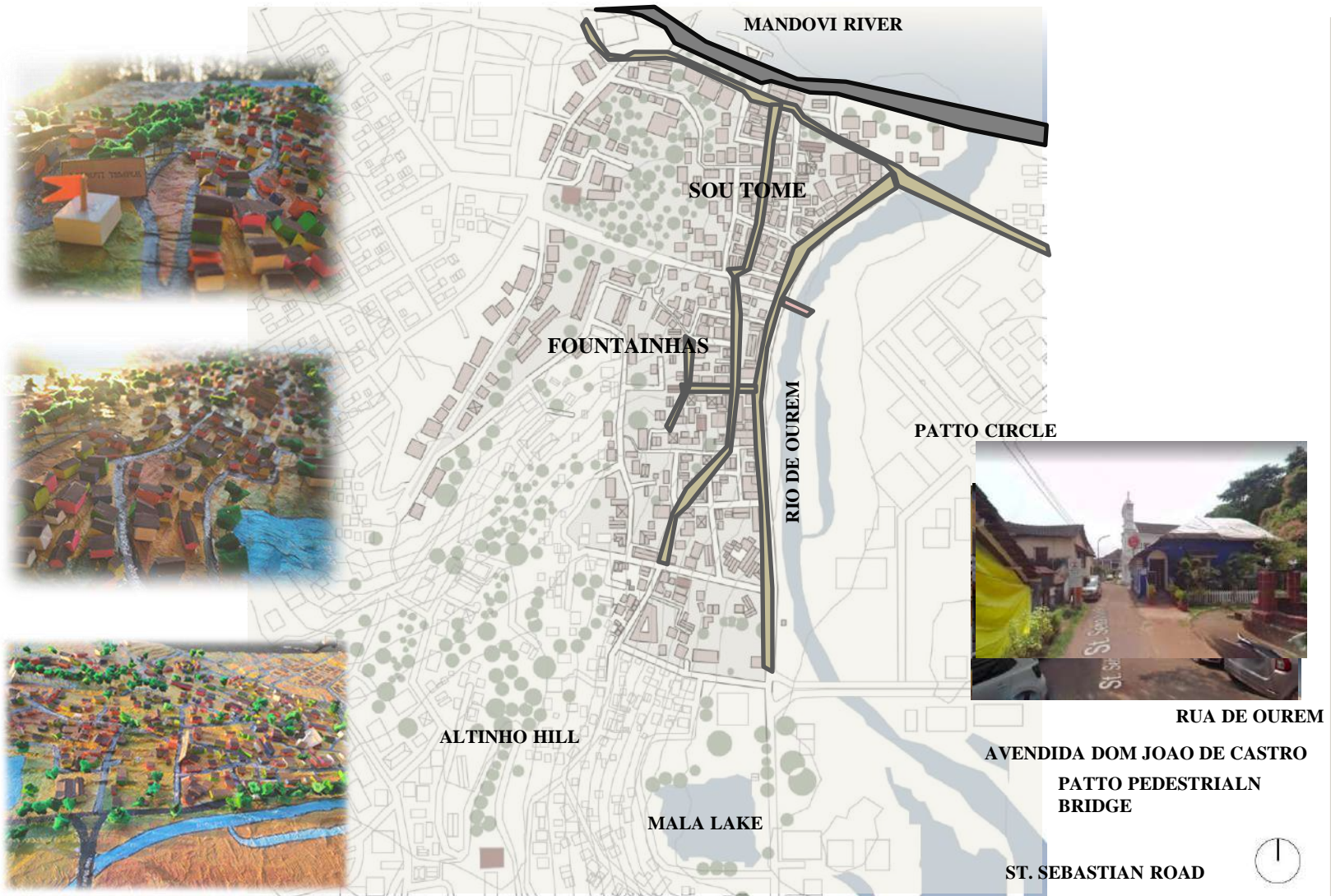
# DOCUMENTATION

**SETTLEMENT STUDY OF PANJIM, GOA**  
S.Y. B-ARCH SEM IV **SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE**





## DOCUMENTATION: MAJOR LOCATION OF STUDY AREA [SOU TOME & FOUNTAINHAS]



### SETTLEMENT STUDY OF PANJIM, GOA

S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE

## DOUMENTATION : MAJOR LOCATION OF STUDY AREA [SOU TOME & FOUNTAINHAS]



### SETTLEMENT STUDY OF PANJIM, GOA

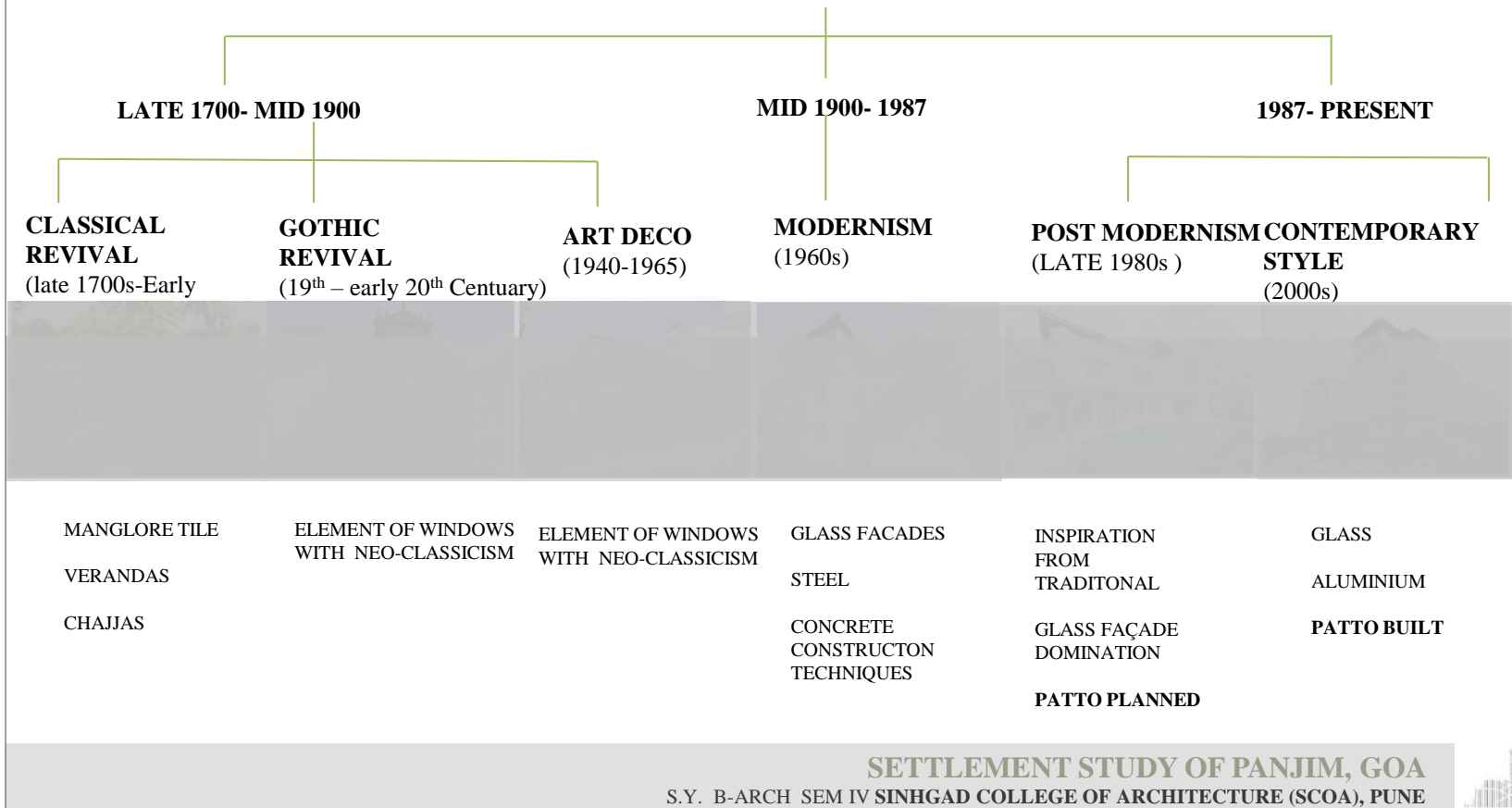
S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE



## DOUMENTATION : EVOLUTION OF ARCHITECTURAL STYLES

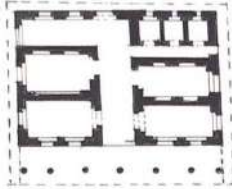
Panjim flourished from a small settlement, to an area of multi-storeyed buildings. During this time, **the city witnessed the evolution of various architectural styles – that evolved due to the materials and technologies that influenced the aesthetics and visual features of the structures.** Over the three major phases that gripped the state, namely, **the Colonial rule, the Union Territory phase and Statehood**, various styles set their roots and defined the features of the buildings that stitched up the urban tapestry of the city.

### GOAN ARCHITECTURE EVOLUTION

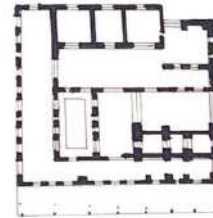


## TYPES OF TRADITIONAL GOAN HOUSES

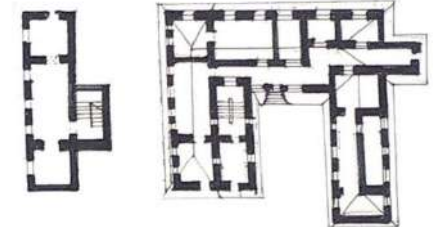
THE OUTWARD LOOKING HOUSE



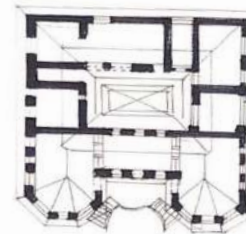
THE COURTYARD HOUSE



THE DOUBLE STORIED HOUSE



THE INWARD LOOKING HOUSE  
WITH VERTICAL COURTYARD



THE INWARD LOOKING HOUSE  
WITH HORIZONTAL COURTYARD

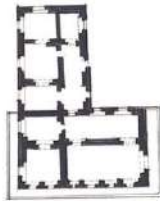


Althar in Catholic Houses

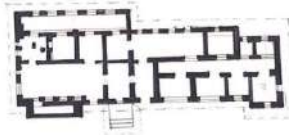
LINEAR HOUSE



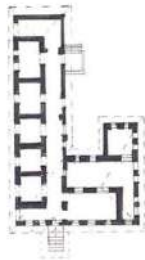
L-SHAPED HOUSE



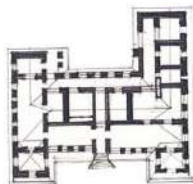
HORIZONTAL HOUSE



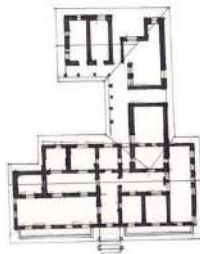
U-SHAPED HOUSE



H-SHAPED HOUSE



I-SHAPED HOUSE



The Goan catholic was a metamorphosis of concepts derived from traditional Hindu house and the house built by Portuguese. The final product is defined as **The Goan House**.



## DOUMENTATION : HOUSES OF GOA [ARCHITECTURAL TERMINOLOGIES]

### RESIDENTIAL STRUCTURE

Many large ornamental windows with distinct designs to identify the house, Architrave, Trifoil-Arched Fanlight

Hipped Roof, Ridge, lean-to-roof, Country Tiles cornice moulding, Mangalore Tiles, Cornice, Eaves Board, Roof Rooster Pinnacle

Use of dramatic colors. White was forbidden for private houses. Only churches and government buildings could be painted white

Balconies or covered Porches, facing the street with seating.

Use of ornamental  
decorative  
closed p

Face of Venice on Door

Sandwich Shell Windows

Roof Rooster Pinnacle

Portugues Soilder Statue Roof Pinnacle

SETTLEMENT STUDY OF PANJIM, GOA

S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE

## DOUMENTATION : HOUSES OF GOA [ARCHITECTURAL TERMINOLOGIES]

### COMMERCIAL



S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE

# DOCUMENTED STRUCTURES



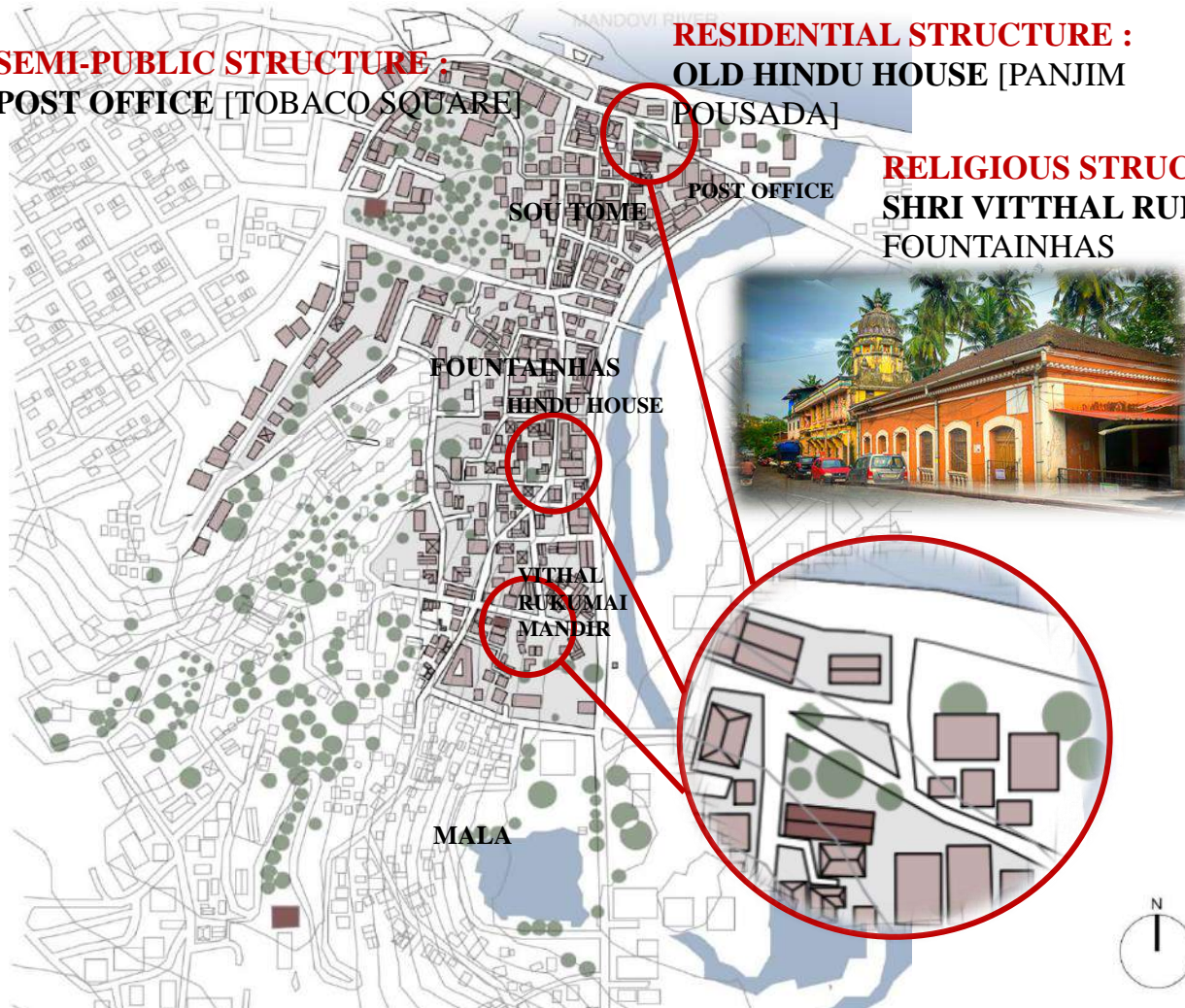


## DOCUMENTATION : LOCATION DOCUMENTED STRUCTURES

**SEMI-PUBLIC STRUCTURE :**  
**POST OFFICE [TOBACCO SQUARE]**

**RESIDENTIAL STRUCTURE :**  
**OLD HINDU HOUSE [PANJIM  
POUSADA]**

**RELIGIOUS STRUCTURE :**  
**SHRI VITTHAL RUKUMAI MANDIR  
FOUNTAINHAS**



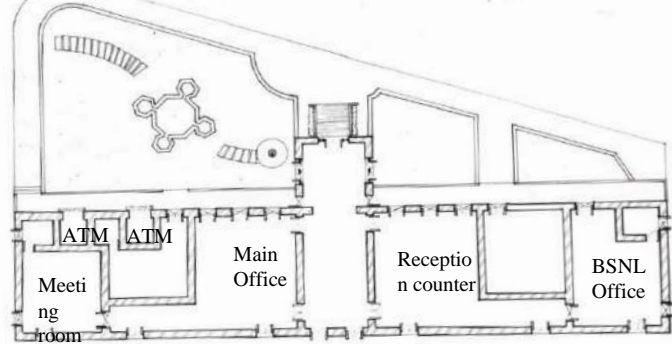
SETTLEMENT STUDY OF PANJIM, GOA

S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE

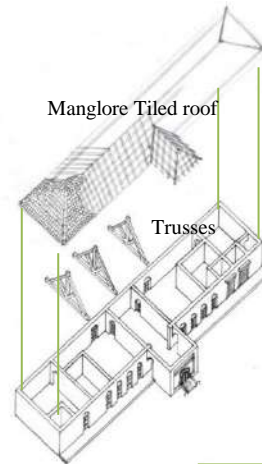


# DOCUMENTATION : DOCUMENTED STRUCTURES

## SEMI-PUBLIC STRUCTURE : POST OFFICE, TOBACCO SQUARE, SOUTHE



PLAN



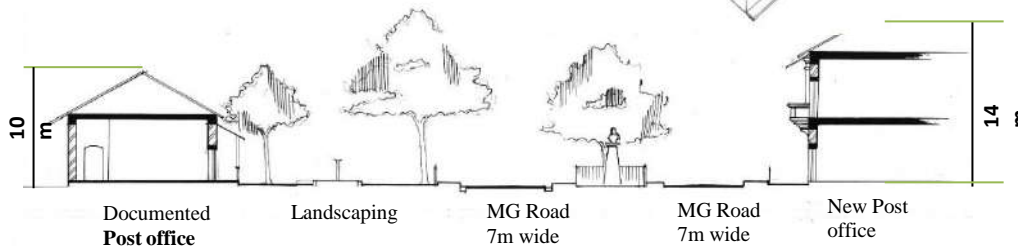
**About:**

**Currently:** Post Office of Panjim

**Previously:** Tobacco Trading Hub/Storage



KEY PLAN



STREET CROSS SECTION

Street cross section through Post Office and New Post Office



FRONT ELEVATION

Typical Goan details like Architrave, Moulding door and windows, Manglore Tiled Sloping Roof

## SETTLEMENT STUDY OF PANJIM, GOA

S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE

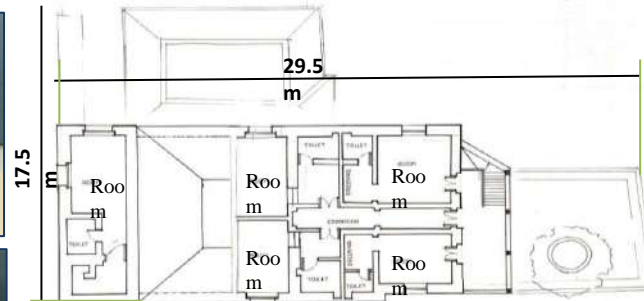
## DOUMENTATION : DOCUMENTED STRUCTURES

### RESIDENTIAL STRUCTURE : OLD HINDU HOUSE [PANJIM POUSADA]

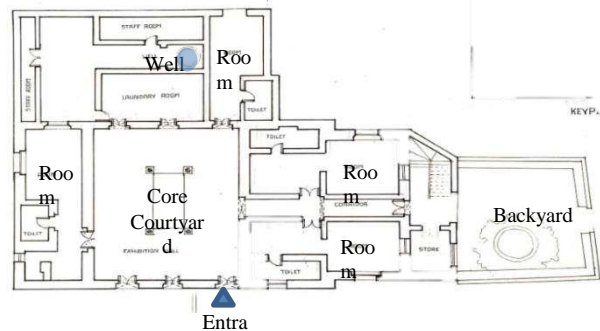


**ELEVATION**

**SECTION**



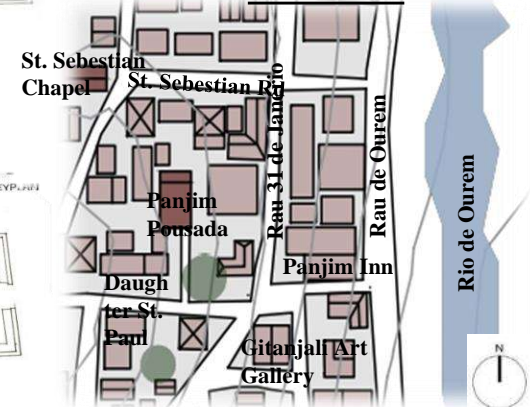
**FIRST FLOOR PLAN**



**GROUND FLOOR PLAN**



**KEY PLAN**



## SETTLEMENT STUDY OF PANJIM, GOA

S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE

## DOUMENTATION : DOCUMENTED STRUCTURES

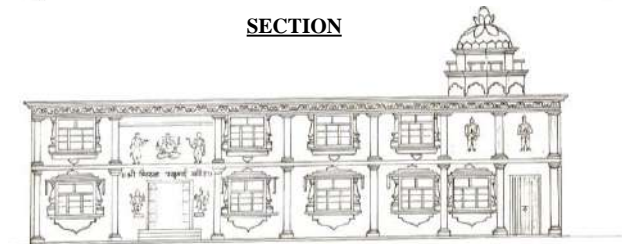
### RELIGIOUS STRUCTURE : SHRI VITHAL RUKUMAI MANDIR, FOUNTAINHAS



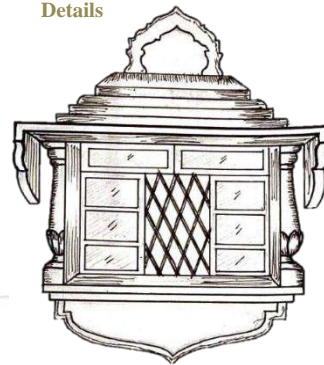
**SECTION**



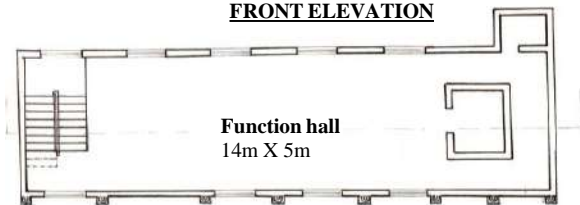
**Column Details**



**FRONT ELEVATION**

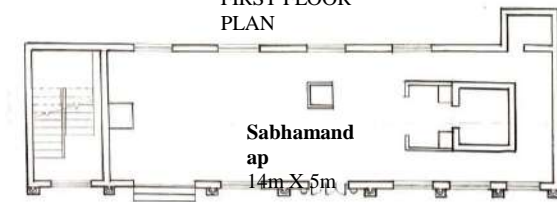


**Window Details**



**Function hall**  
14m X 5m

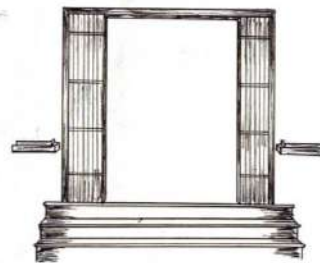
**FIRST FLOOR PLAN**



**Sabhamandap**  
14m X 5m

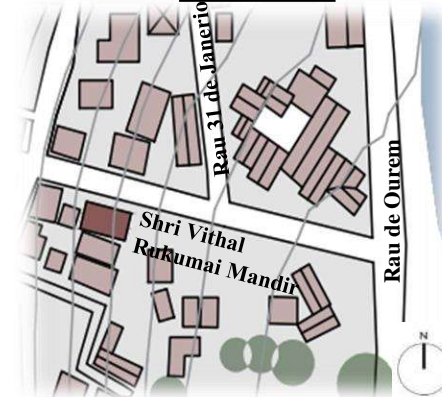
**GROUND FLOOR PLAN**

श्री विठ्ठल रघुमाई मंदिर ॥



**Entrance Door**

**KEY PLAN**



**SETTLEMENT STUDY OF PANJIM, GOA**

S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE



## DOUMENTATION : STREET SCAPES

### TOBACO SQUARE, SOU TOME



The **Tobacco Square** is bounded by the General Post Office, the São Tomé chapel. What is now the General Post Office originally started out as a depot for trading tobacco whence the name of the Square. The premises then went on to serve as the Police Headquarters for some time. Finally it became the centre of operations of the city's postal services. It was here that the Portuguese executed the plotters of the Pinto Conspiracy..

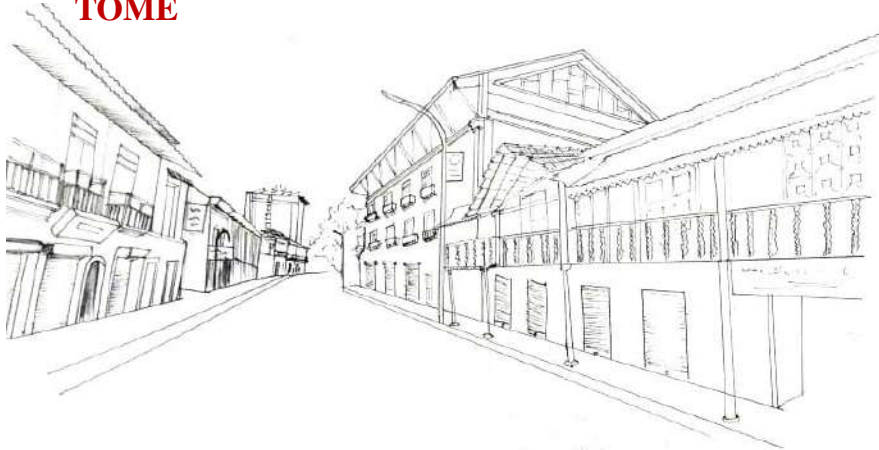
SETTLEMENT STUDY OF PANJIM, GOA

S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE

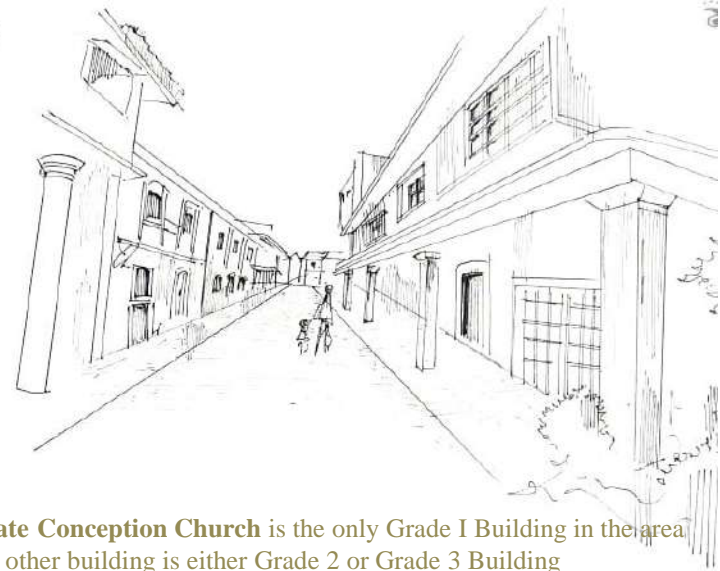


## DOUMENTATION : STREET SCAPES

**MG ROAD, SOU TOME  
TOME**



**LUIS DE MENEZES ROAD, SOU**



**IMMACULATE CONCEPTION CHURCH**

**Immaculate Conception Church** is the only Grade I Building in the area and every other building is either Grade 2 or Grade 3 Building

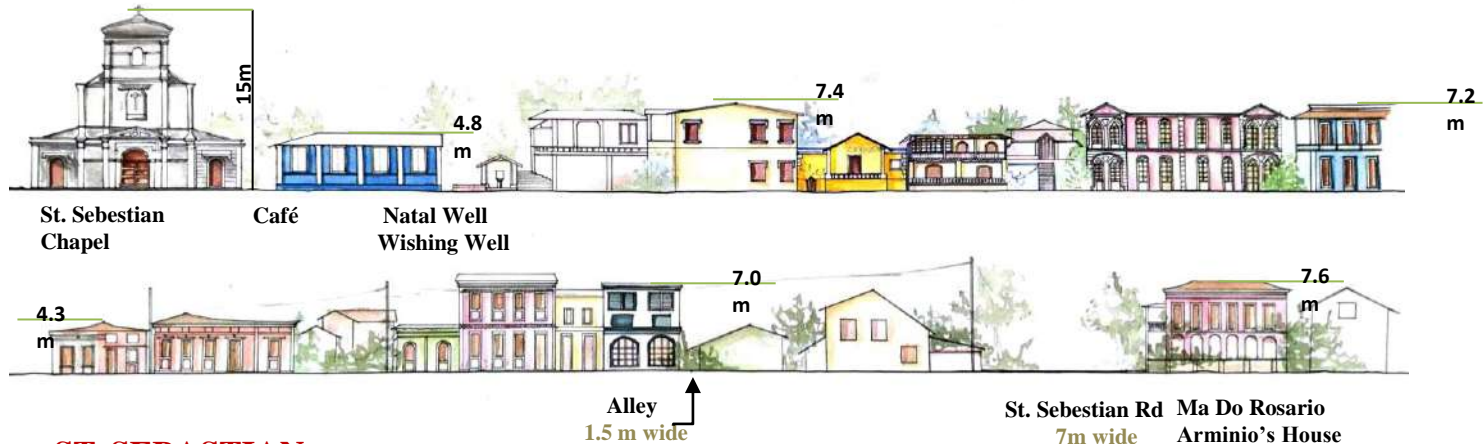


**SETTLEMENT PRE-STUDY OF PANJIM, GOA**

S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE

## DOUMENTATION : STREET ELEVATIONS

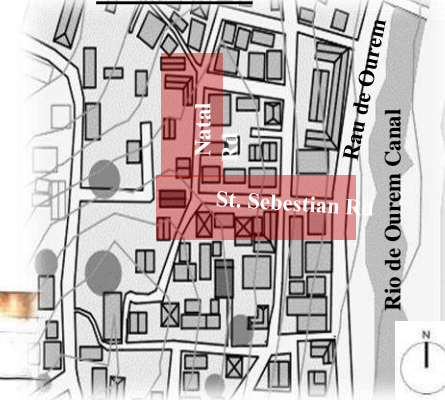
### RUA DE NATAL ROAD



### ST. SEBASTIAN ROAD



### KEY PLAN



### SETTLEMENT STUDY OF PANJIM, GOA

S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE



# MODEL



SETTLEMENT OF PANJIM, GOA  
S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE



## ANALYSIS

- Typical goan architectural details like Architrave moulding in doors and windows, with Traifoil arched fan light. Manglore tiled sloping roof, wooden and cast iron railings, shell windows, rooster, azilio tiles are few of the architectural details observed in the heritage area.
- Important religious structures that we observed in the study area were St. Thomas, St. Sebastian, Mary Immaculate Conception Church, Jamma Masjid and 2 hindu temples- Shri Vitthal Rukamai temple and Maruti mandir.
- **Narrow roads** were observed which leads **to less/ no area for interaction for the locals** on daily basis.
- That's why lack of Recreational and gathering spaces.
- Houses in the area (Fountainhas) are **negatively affected with water seepage** through the floor and into the walls during the high tides among others which further destroy the walls and granted access to bandicoots (rats) that reside in creek.
- The architecture in fountainhas evolved from high rise contemporary buildings. With the changes that occurred the reconstruction in the area leaned towards the newer modern style.
- **The lack of modern amenities in fountainhas**- like proper toilet facilities, solar power and air conditioning among others.
- **Change in the Function or Usage**- Cafes, Bars and other commercial outlets turned into such establishments.
- Need to **maintain** the heritage area.
- Actions of **preservation, rehabilitation, restoration, reconstruction and adaption** are taken under consideration by the constitutional commission.



NARROW STREETS OF FOUNTAINHAS



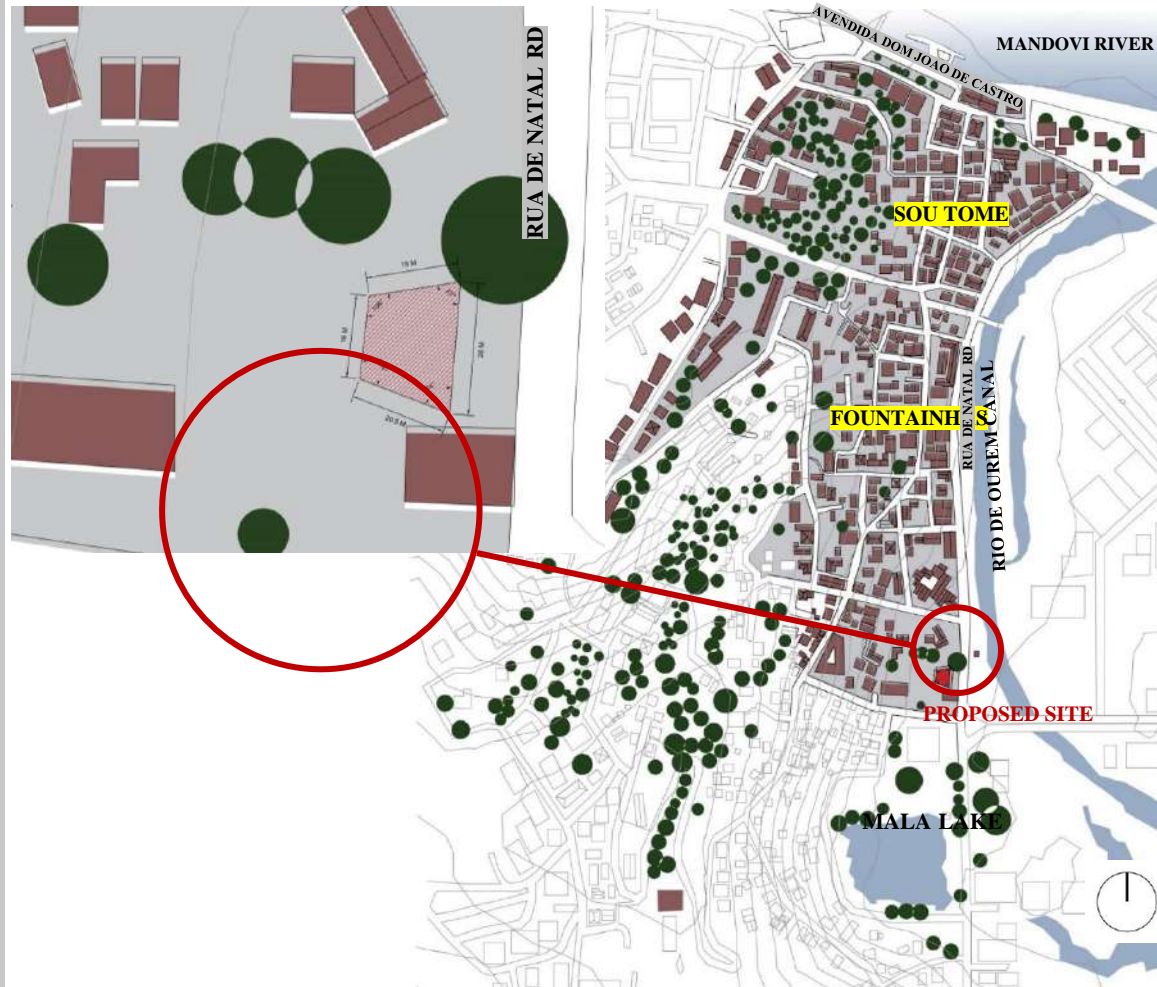
RESIDENCES CONVERTED INTO CAFÉ AND BARS





# CONCLUSION

- Barrio of Fountainhas is nestled along the Ourem Creek at the foot of Altinho Hill.
- Fountainhas grew with the shift of power from Old Goa to Panaji and houses that weave this fabric of this area have **undergone constant change with heights.**
- Settlement developed during the **reign of the Portuguese in goa** along many heritage structures.
- **Old local houses converted into new multistoried blocks** disrupting the character of the area.
- **Narrow roads** were observed which leads **to less/ no area for interaction for the locals** on daily basis. That's why lack of Recreational and gathering spaces.
- Considering the Socio-geographic characteristics of the study area we concluded the need for recreational space and space for gathering for the community we decided on designing a **(Community Centre)** as our project.



## SETTLEMENT OF PANJIM, GOA

S.Y. B-ARCH SEM IV SINHGAD COLLEGE OF ARCHITECTURE (SCOA), PUNE



SINHGAD TECHNICAL EDUCATION SOCIETY'S  
**SINHGAD COLLEGE OF ARCHITECTURE, PUNE**

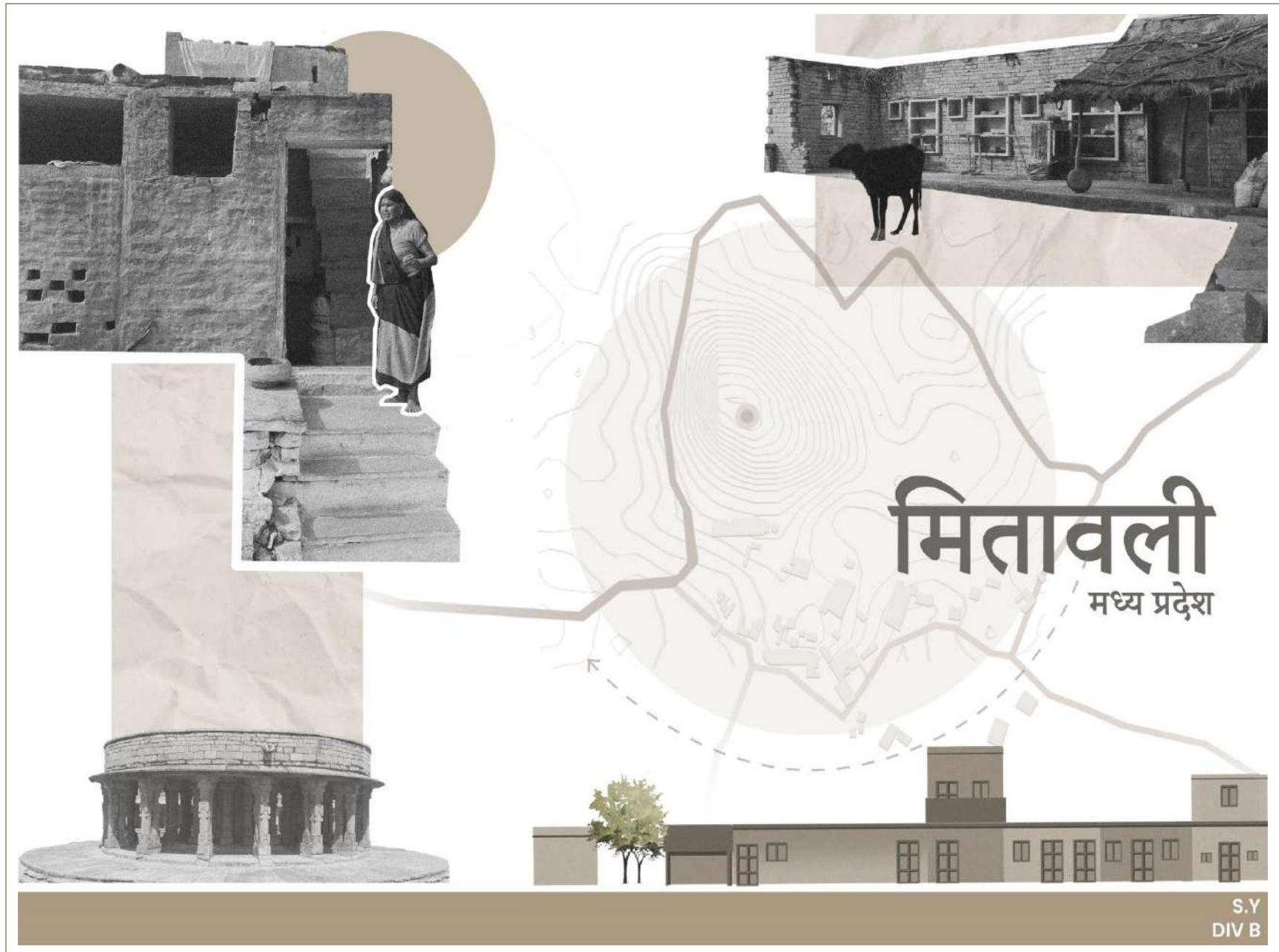
**Study TOUR**

**MITAOLI**

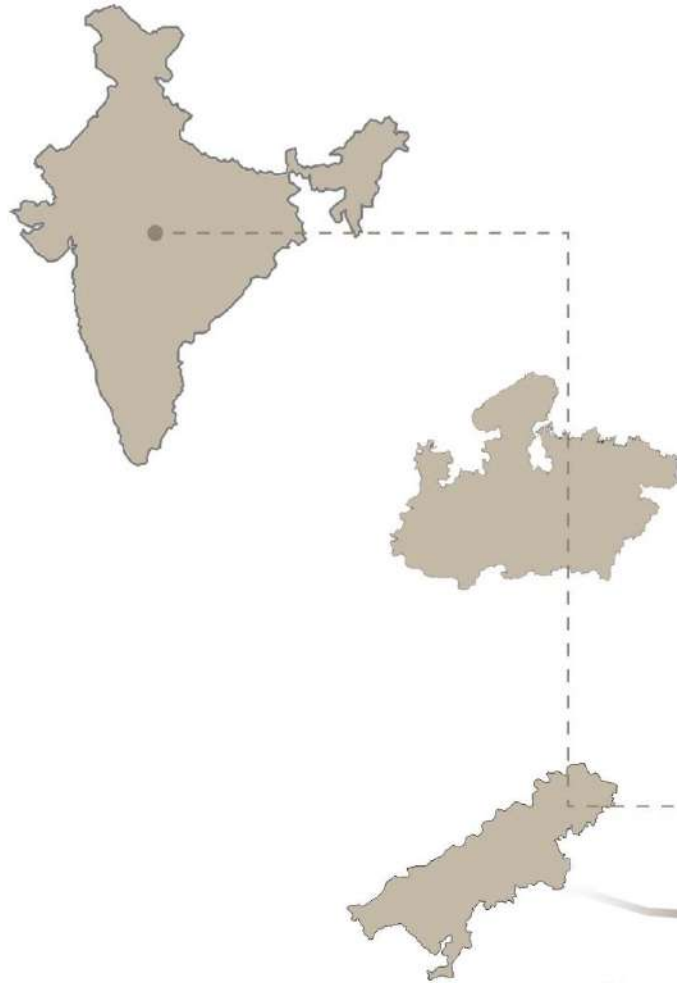
BY  
**II YR B. Arch.**

**Division: B**









THE REPORT COMPRISES DOCUMENTATION AND ANALYSIS OF SETTLEMENTS OF THE VILLAGE MITAOLI DISTRICT MORENA, MADHYA PRADESH. WE THE STUDENTS OF II YEAR STUDIED THE SETTLEMENT OF MITAOLI TO UNDERSTAND THE COMPLEXITIES OF VILLAGE HISTORY, CULTURE, TOPOGRAPHY AT RURAL SCALE.

THE DETAILED DOCUMENTATION OF SETTLEMENT HAS HELP US TO UNDERSTAND THE SOCIAL AND ECONOMICAL ASPECTS OTHER THAN PHYSICAL BUILT AND INFRASTRUCTURE TOPOGRAPHY SOCIAL ECONOMICAL GROUPS, HISTORY ACTIVITIES, POPULATION AND DENSITY HAS HELPED US TO DEVELOP INFERENCE OF ABOVE MENTIONED ASPECTS ON EACH OTHER. OUR CLASS STUDIED VARIOUS ASPECTS BY DIVIDING OURSELVES IN GROUPS WE DOCUMENTED HAVELI AND STUDIED THE SETTLEMENT.

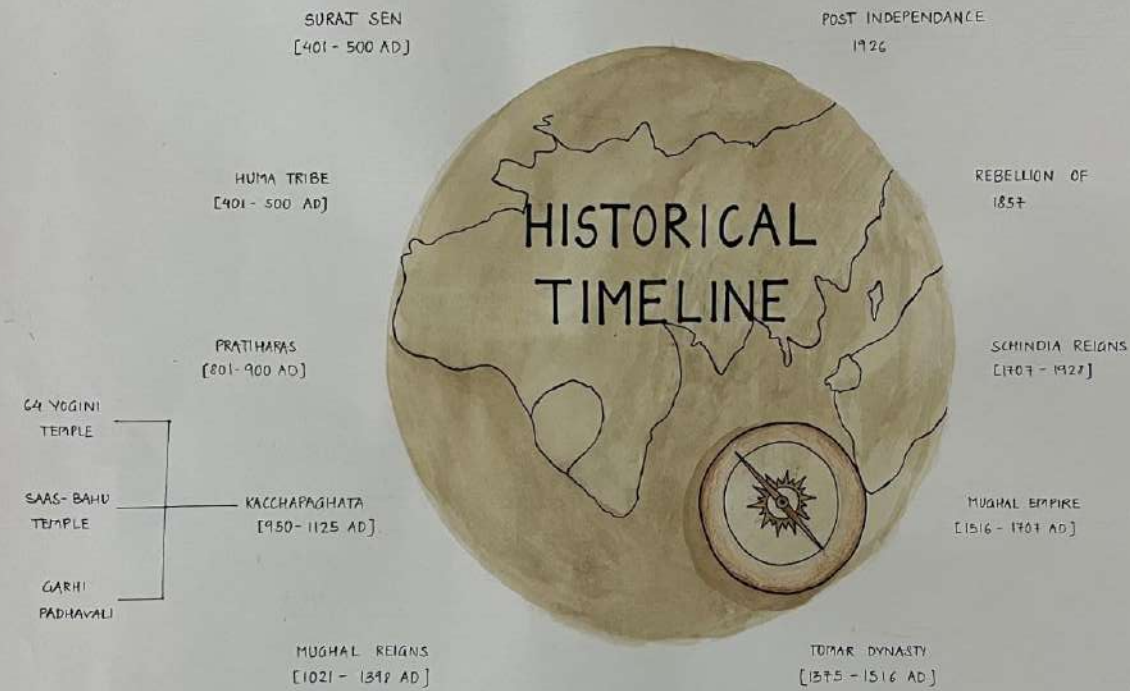


MADHYA PRADESH

MITAOLI

SCOA  
DIV B  
YEAR II

## INTRODUCTION



**HISTORY - HISTORICAL TIMELINE**



# KACCHAPAGHATA DYNASTY

THE KACCHAPAGHATAS WERE A RAJPUT DYNASTY THAT RULED BETWEEN 10<sup>TH</sup> AND 12<sup>TH</sup> CENTURIES. THEIR TERRITORY INCLUDED NORTH-WESTERN PARTS OF CENTRAL INDIA [PRESENT DAY M.P]. THE KACHHAWA RAJPUTS OF AMBER WERE FROM THE SAME FAMILY.

## HISTORY

THE SANSKRIT WORD KACHHADA - GHATA LITERALLY MEANS "TORTOISE" KILLER". THE KACCHAPAGHATAS WERE ORIGINALLY THE VASSALS OF THE PRATHARAS AND CHANDELS AFTER DEATH OF CHANDELA KING VIDYAHARAS THE CHANDELA KINGDOM WAS WEAKENED BY REPEATED MUSLIM [YAMINI] INVASIONS TAKING ADVANTAGE OF THIS SITUATION THE KACCHAPAGHATA GAVE UP THEIR ALLEGIANCE TO THE CHANDELS THEY BECAME POWERFUL TOWARD THE END OF THE 10<sup>TH</sup> CENTURY. THE DYNASTY WAS DIVIDED INTO THREE BRANCHES, WHICH RULED FROM GWALIOR [GOPADRI GIRI], DUBKUNDA [CHANDHODA] AND NARWAR [NALAPUR]. VIRASIMHA A KACCHAPAGHATA RULERS OF NALAPURA ISSUED A COPPER PLATE GRANT IN 1120-21. THIS RECORD DESCRIBES HIM USING THE HIGH-STATUS ROYAL TITLE MAHARAJADHIRAJ.

### • GWALIOR

- LAKSHMANA [RC. 950-975]
- VADRAJMAN [RC. 975-1000]
- MANGALARAJA [RC. 1015-1035]
- KIRTIRAJA [RC. 1015-1035]
- MULADEVA [RC. 1035-1055]
- DEVPALA [RC. 1055-1085]
- PADMAPALA [RC. 1085-1090]
- MAHIPALA [RC. 1090-1105]
- RATNAPALA [RC. 1105-1120]
- AJAYAPALA [RC. 1112-1114]
- SULAKSHANAPALA [RC. 1116]

### • DUBKUND

- YUVARAJA [RC. 1000]
- ARJUNA [RC. 1015-1035]
- ABHIMANYU [RC. 1035-1045]
- VITAYAPALA [RC. 1040-1070]

### • NALAPURA

- GANGASIMHA [RC. 1075-1090]
- SHARADASIMHA [RC. 1095-1105]
- VIKASIMHA [RC. 1105-1125]
- TEJASKARANA

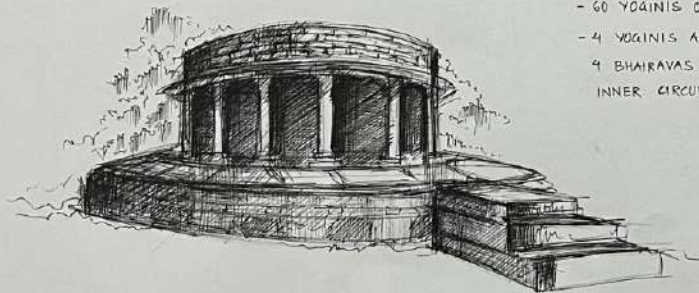
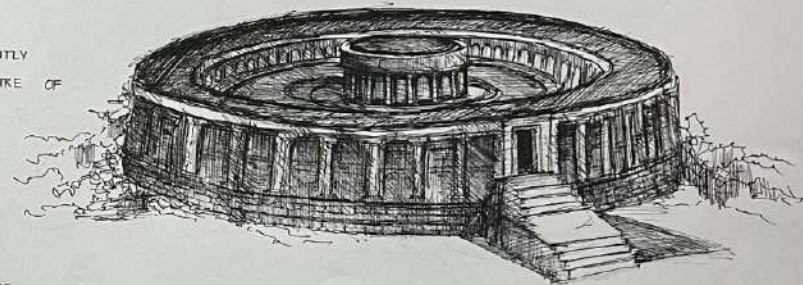
## HISTORY - DYNASTY



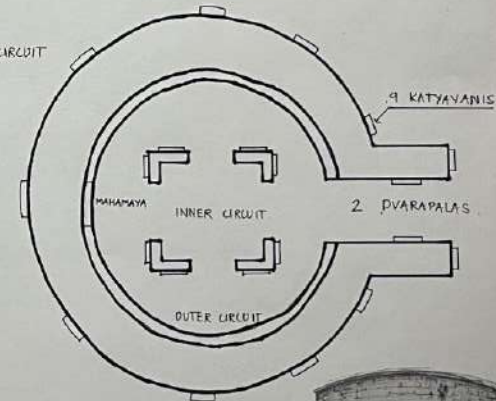


# CHAUSATH YOGINI TEMPLE

- THE CHAUSATH YOGINI TEMPLE IN MITAOLI ALSO KNOWN AS EKKATERAD MAHADEV TEMPLE , IS AN 11TH CENTURY TEMPLE IN MORENA DISTRICT .
- IT WAS BUILT DURING THE KACHHAPAGHATA REIGN .
- ACCORDING TO AN INSCRIPTION DATED TO 1323 AD; THE TEMPLE WAS BUILT BY MAHARAJA , DEVPALA IN 11TH CENTURY .
- THIS MAHARAJA DEVPALA BELONGS TO THE KACHHAPAGHATA DYNASTY .
- THE TEMPLE IS FORMED BY A CIRCULAR WALL WITH 63 CHAMBERS, APPARENTLY FOR 64 YOGINIS AND THE GODDESS DEVI AND OPEN MANDAPA IN THE CENTRE OF CIRCULAR COURTYARD , SACRED TO SHIVA .
- IT IS SAID THAT THE TEMPLE WAS THE VENUE OF PROVIDING EDUCATION IN ASTROLOGY AND MATHEMATICS BASED ON THE TRANSIT OF THE SUN .
- THERE IS ALSO A CIRCULAR SHRINE FACING EAST IN THE CENTRE OF THE COURTYARD .EACH CELLA AND THE CENTRAL SHRINE PRESENTLY ACCOMMODATE A SHIVALINGA .
- EACH CELLA ORIGINALLY HAD SHIKARA BUT DURING THE CONSERVATION, THESE SMALLER SHRINES WERE MADE FLAT-ROOFED



- 60 YOGINIS OF OUTER CIRCUIT
- 4 YOGINIS AND 9 BHAIKAVAS AROUND INNER CIRCUIT



PLAN



## HISTORY - CHAUSATH YOGINI TEMPLE



# GARHI PADHAVALI TEMPLE



CARVING DETAIL



FRONT VIEW



CEILING DETAIL



- THE NOTABLE PDAVALI FORTRESS WAS BUILT IN THE 18TH CENTURY BY THE JAT RANAS RULERS OF DHAULPUR.
- GRACIOUSLY GUARDED BY A LION A LIONESS, THE FORT ALSO HAS A TEMPLE THAT ONCE SERVED AS A DIVINE PLACE TO WORSHIP LORD SHIVA.
- EVERY STONE USED IN THE FORTIFICATION AND IN THE MAKING OF THE TEMPLE HAS SOMETHING TO CONVEY ABOUT THE ANCIENT ERA THROUGH ITS INSCRIPTION AND DETAILING.
- THE TEMPLE OF GARHI PADHAVALI WAS ORIGINALLY CONSISTED OF SANCTUM SANCTORUM AND MANDAPA, WHICH IS MOSTLY OBLITERED EXCEPT ORNATELY DESIGNED MUKHAMANDAPA, STANDS ON THE ENTRANCE OF THE TEMPLE, BUILT OVER A CONSIDERABLY RAISED ADHISTANA.

## HISTORY - GARHI PADHAVALI TEMPLE

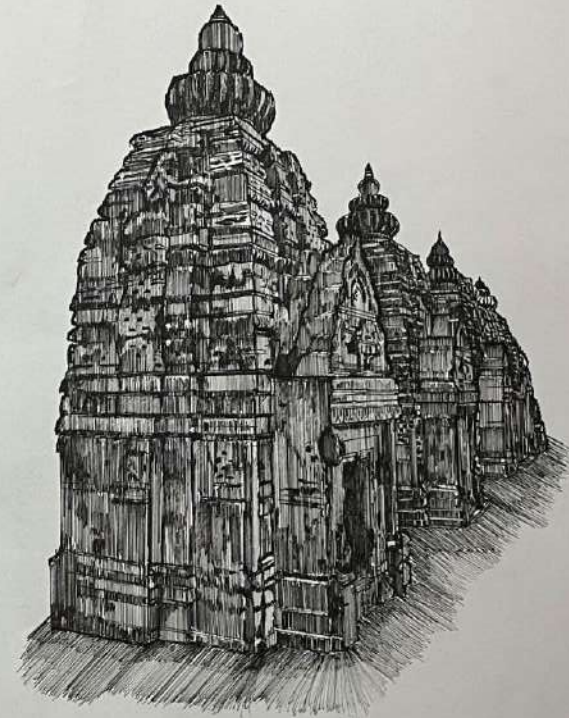
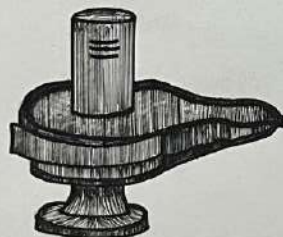


MITAOLI  
MADHYA PRADESH

SCOA  
DIV B  
YEAR II

# BATESHWAR HINDU TEMPLE

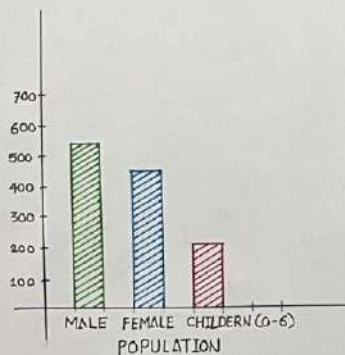
- BATESHWAR HINDU TEMPLE IS LOCATED ABOUT 35 KMS NORTH OF GWALIOR AND ABOUT 30 KMS EAST OF MORENA TOWN.
- THE SITE IS WITHIN THE CHAMBAL RIVER VALLEY RAVINES, ON THE NORTH-WESTERN SLOPE OF A HILL NEAR PADHAVAU KNOWN FOR ITS MAJOR MEDIEVAL ERA VISHNU TEMPLE.
- BATESHWAR TEMPLE ARE GROUP OF NEARLY 200 SANDSTONE HINDU TEMPLES
- THE TEMPLES ARE DEDICATED TO SHIVA, VISHNU, AND SHAKTI REPRESENTING THE THREE MAJOR TRADITIONS WITHIN HINDUISM.
- THE TEMPLES WERE BUILT BETWEEN THE 8TH AND 10TH CENTURY.
- THIS GROUP OF 200 TEMPLES WERE BUILT DURING THE REGION OF GUJARA - PRATHARA DYNASTY
- ALL THE TEMPLES ARE MOSTLY SPREAD AND ARE SPREAD OVER 25 ACRES OF LAND
- BATESHWAR TEMPLES WERE DESTROYED AFTER THE 13TH CENTURY, BUT IT IS NOT CLEAR IF THIS WAS BY AN EARTHQUAKE OR MUSLIM FORCES
- THIS SITE IS LIKELY NAMED AFTER THE BHUTESHWAR TEMPLE, THE LARGEST SHIVA TEMPLE AT THE SITE.
- THE ARCHITECTURE OF THIS TEMPLE IS OF NAGARA STYLE, AND AFFILIATES HINDUISM.



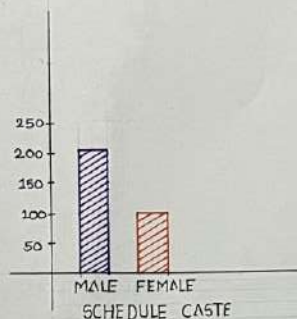
## HISTORY - BATESHWAR HINDU TEMPLE







TOTAL POPULATION = 1213



SCHEDULE CASTE = 401



TOTAL LITERACY = 64.49%

TOTAL NO OF HOUSES = 42

TOTAL NO OF WORKERS	MALE	FEMALE
361	326	35
MAIN WORKERS		
347	318	29
MARGINAL WORKERS		
14	8	6

SCHEDULE CASTE (SC)	33.06%
OBC	66.94%
SCHEDULE TRIBE (ST)	00.00%



SOCIO - CULTURE - DEMOGRAPHY.

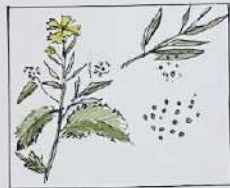


MADHYA PRADESH

MITAOLI

SCOA  
DIV B  
YEAR II

THE VILLAGE MITAOLI IS UNDER TAHASHIL OF-  
KITHORA, DISTRICT-MORENA (MADHYA PRADESH)  
VILLAGE IS MAINLY HAVING WHITE COTTON SOIL  
AND FARMING OF WHEAT, MUSTARD AND ROUGHAGE CROPS.



MUSTARD.



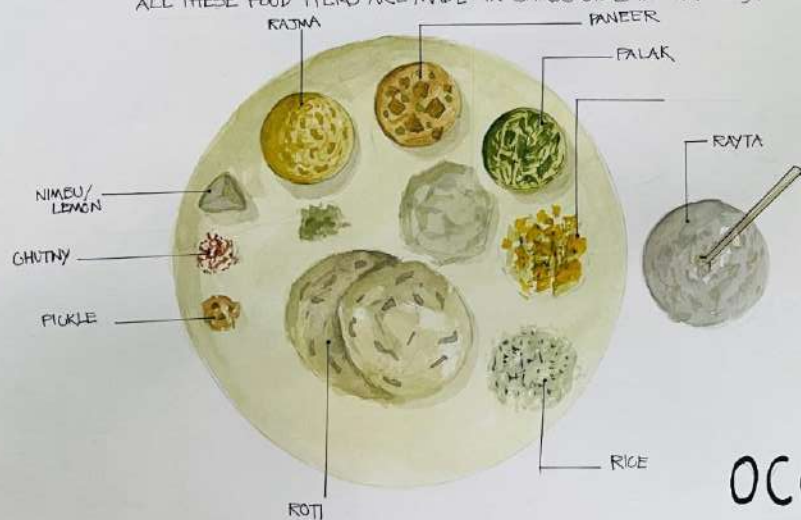
WHEAT



PEAS, KIDNEY BEANS.

## CUISINE-

PEOPLE OF MITAOLI AND THESE AREA MAINLY HAVE-  
FOOD ITEMS LIKE DAL, PANEER, CHACH, ROTI, PICKLE, ETC.  
ALL THESE FOOD ITEMS ARE MADE IN SARSO OIL (MUSTARD OIL).



## OCCUPATION



THE VILLAGERS OF MITAOLI ARE PRIMARY INVOLVED  
IN FARMING. THEIR DAY STARTS AT 7AM MORNING AND  
ENDS AT 5PM. THEY ONLY DEPEND ON FARMING FOR  
THEIR EXPENDITURE, THEY SELL THEIR SEASONAL CROPS  
FOR INCOME.



WITH FARMING, THEY ALSO DO PASTORAL FARMING AND ANIMAL HUSBANDRY.  
THEY HAVE CATTLE LIKE COWS, BUFFALOES, GOATS, HENS, ETC.  
THE PURPOSE OF PETTING CATTLE IS FOR ONLY OWN HOUSEHOLD.



WITH DAILY ROUTINE WORK, THEY ALSO ENJOY THEIR DAILY LIFE BY  
COMMUNICATING WITH EACH OTHER, THEY GATHER AT ONE PLACE  
AND COMMUNICATE, DISCUSS THEIR DAILY WORK AND TAKE  
ADVICE FROM ELDERS, ALSO THEY SEEK BLESSINGS AND TAKE  
RELIGIOUS KNOWLEDGE FROM THEIR MONK.





## MYTH

- VILLAGES OF MITAOLI BELIEVE THAT THE TEMPLE CHAUSATH YOGINI WAS BUILT IN 12TH CENTURY.
- THEY SAY, THE TEMPLE WAS BUILT IN ONE NIGHT BY JINDH PEOPLE FOR WORSHIPPING LORD "SHIVA".
- PEOPLE OF THE VILLAGE BELIEVED IN THE LEGEND THAT, AFTER 6:00 PM THEY DO NOT ENTER IN THE TEMPLE AFTER 6:00 PM.
- BLACK MAGIC PRACTICES ARE DONE IN THE VILLAGE.



## RELIGION

- HINDU
- MOST OF THE VILLAGERS FOLLOW HINDU RELIGION. THEY CELEBRATE FESTIVALS AND RITUALS WITH HINDU CULTURE.

# SOCIO - CULTURE

## FESTIVALS

AS WE ALL KNOW INDIA HAS WIDE RANGE OF FESTIVALS CELEBRATED BY VARIETY OF RELIGIONS. GANESH CHATURTHI, DIWALI, NAVRATRI, MAKAR - SANKRANTI, HOLI, DUSSEHRA, RAKSHABANDHAN ARE THE COMMON FESTIVALS CELEBRATED IN MITAOLI.



## TANSEN FESTIVAL

- TANSEN SAMAROH OR TANSEN SANGEET SAMAROH IS CELEBRATED EVERY YEAR IN MONTH OF DECEMBER.
- IT IS 4 DAY MUSICAL EXTRAVAGANZA.
- ARTISTS AND MUSIC LOVERS FROM ALL OVER WORLD GATHER TO PAY TRIBUTE TO THE GREAT INDIAN MUSICAL MAESTRO TANSEN.
- IT IS WORTH MENTIONING THAT THE TANSEN CEREMONY WAS STARTED IN THE YEAR 1924.

## BAREDI FESTIVAL

- POPULAR FESTIVAL CELEBRATED AFTER DIWALI.
- PERFORMED BY MALE DANCES OF AHIR COMMUNITY.
- ORIGINATED BY LORD KRISHNA.
- THE DANCERS WEAR COLOURFUL COSTUMES AND DECORATE THEMSELVES WITH ORNAMENTS MADE OF COWRIES.



## ART AND CRAFT

ALONG WITH THE FORTS AND MONUMENTS, MADHYA PRADESH HAS WIDE RANGE OF ARTS AND CRAFTS. EX - CARPET WEAVING, FOLK PAINTING, STONE CARVING, WOOD CRAFT.

## BAMBOO AND CANE WEAVING

- THE ARTISANS USUALLY CHOOSE THE RIGHT BAMBOO MATERIAL FOR THE ARTWORK. THEY SCRAPE THE KNOTS, SCRAPE THE GREEN, BREAK BAMBOO, OPEN THE PIECES, SPLIT THE STRIPS, TREAT BAMBOO WITH 3 ANTI TREATMENT AND DYE TO MAKE IT READY FOR WEAVING.
- PRODUCTS MADE :- MATS, SHADES, SUIT-CASES, FANS, BASKETS.



## OVERGLAZE PAINTING

- EXECUTED ON A FIRED CLAY BODY COVERED WITH FIRED GLAZE, UNDERGLAZE PAINTING ON A FIRED, UNGLAZED BODY. EARTHENWARE AND STONEWARE ARE USUALLY DECORATED WITH UNDER-GLAZE COLOURS.

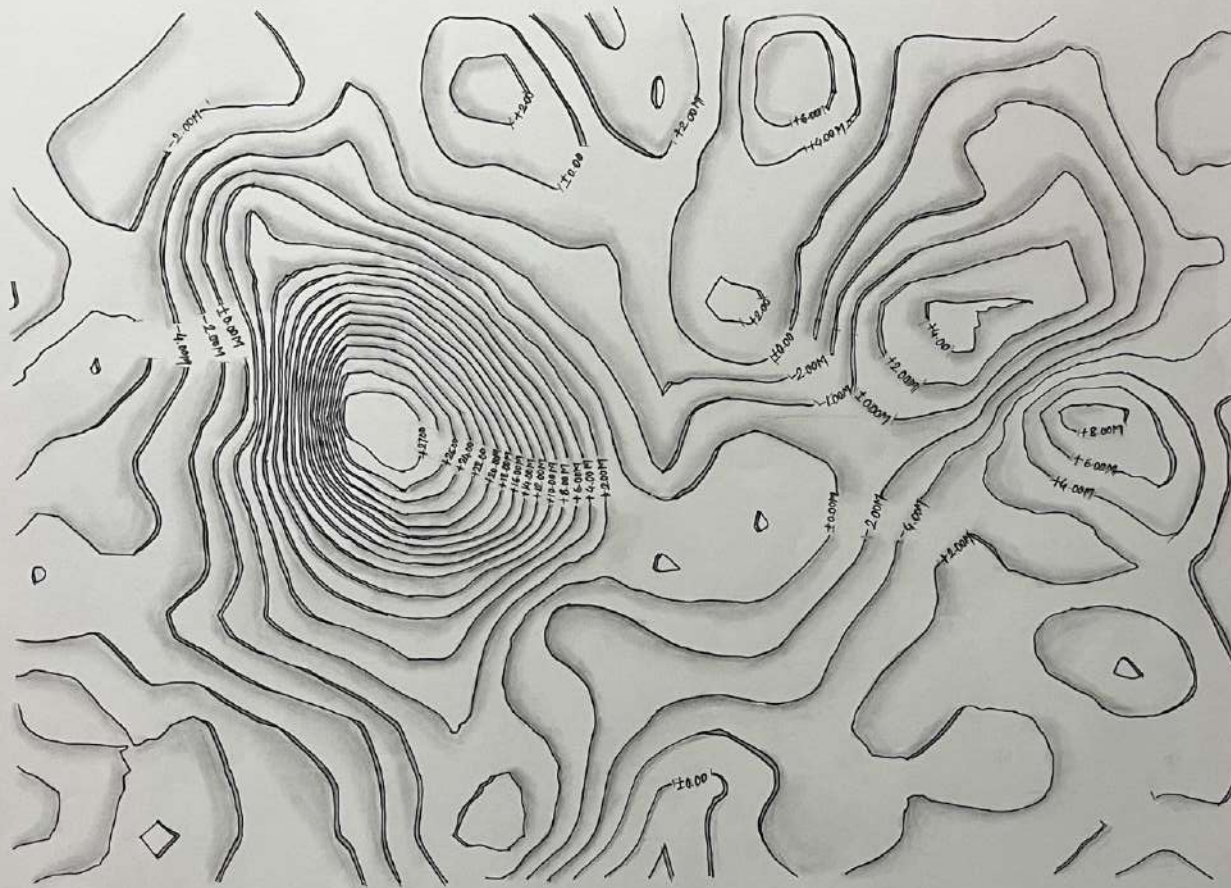


## POT CARVING ART

- CARVING IS DONE ON EARTHEN POTS TO MAKE THEM DECORATIVE.



# TOPOGRAPHY



LOCATION : MITAOLI,  
MORENA , MADHYA  
PRADESH

GEOGRAPHIC CO-ORDIN-  
ATES :  
26° 26' 12" N  
78° 14' 01" E

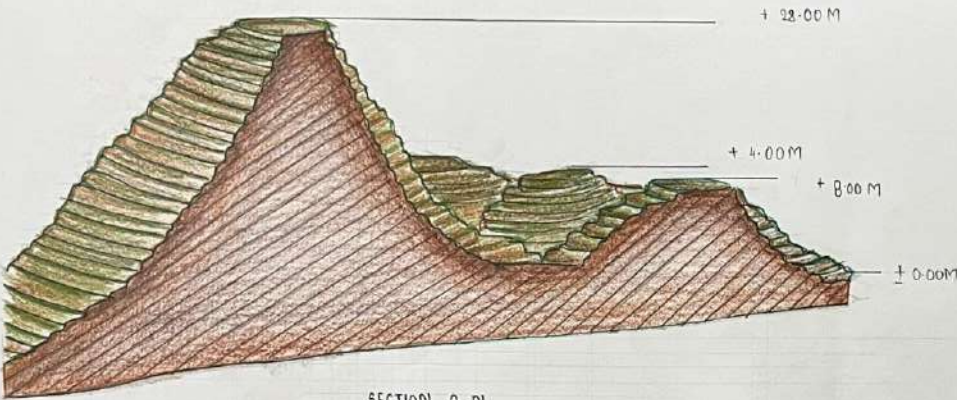
MITAOLI MADHYA PRADESH

THE HILL IN THE SETTLEMENT IS ABOUT 30 M  
IN HEIGHT.  
IN MITAOLI SETTLEMENT THE CONTOUR IS OF  
INDEX TYPE.



SCOA  
DIV B  
YEAR II





SECTION A-A'

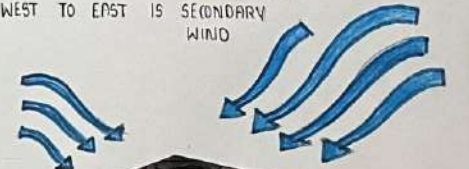


PLAN OF CONTOUR

# GEO AND TOPOGRAPHY

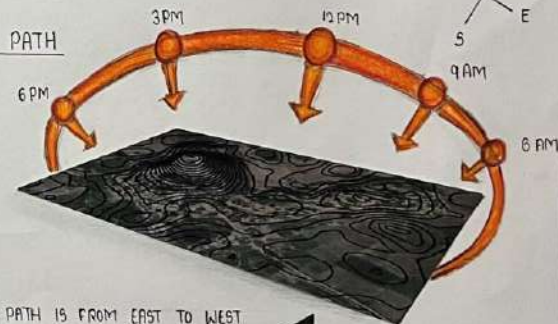
## WIND DIRECTION

NORTH TO SOUTH IS PRIMARY WIND  
WEST TO EAST IS SECONDARY WIND



MOST OF THE COLD WIND IS FROM NOVEMBER TO JANUARY AND THE TEMPERATURE IS LOW.

## SUN PATH



SUN PATH IS FROM EAST TO WEST VIA SOUTH  
HARSH SUNRAYS IS FROM 12 PM TO 3 PM  
SUN RISES AT 6 AM AND SETS AT 5 OR 6 PM THERE.



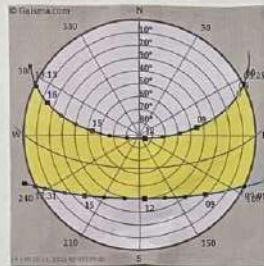
MADHYA PRADESH

MITAOLI

SCOA  
DIV B  
YEAR II

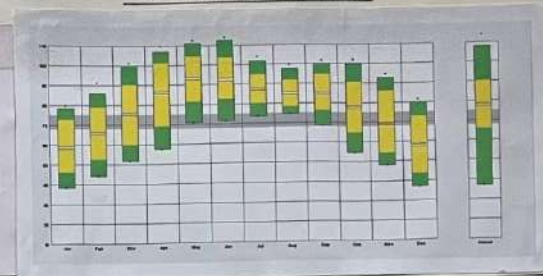


## SUN PATH



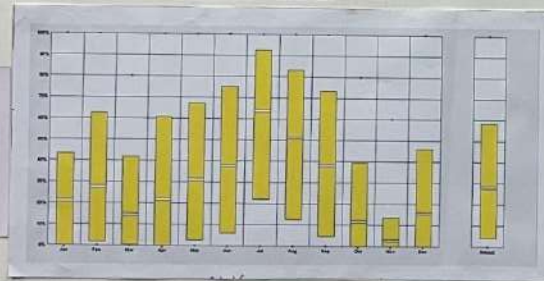
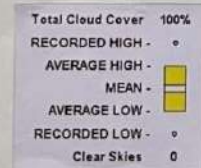
SINCE WE ARE IN NORTHERN HEMISPHERE, SUN PATH GOES FROM EAST TO WEST VIA SOUTH. IMPACT DURING SUMMER OF SUN IS FROM 4 AM TO 7 PM. DURING WINTER IT REDUCES 1 AM TO 5.30 PM.

## TEMPERATURE RANGE



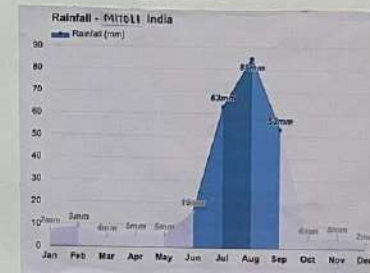
DURING THE SUMMER MONTHS, FROM APR TO JUN OF THE MONTH OF APR MITAOLI GETS 45 TO 47 DEGREE CENTIGRADE TEMPERATURE. THE CLIMATE OF MITAOLI IS PARTICULARLY HUMID IN THE YEAR IN WINTER. THE TEMPERATURE GOES UP TO 2°C. THE AVERAGE MIN TEMPERATURE IN WINTER IS 18.500 CENTIGRADE IN MITAOLI.

## SKY COVER



ON ANNUAL BASIS SKY COVER IS MIN 5% TO 10% AND MAX 50 TO 60%. IN SUMMER MONTHS FROM JAN TO APR CLEAR SKIES. FROM MAY TO AUG MIN SKY COVER IS 10 TO 30% AND MAX IS 60% TO 90%. THE CLOUDIEST MONTH OF THE YEAR IS AUGUST.

## RAINFALL



MITAOLI RECEIVES 900 MM OF RAIN ON AVERAGE PER YEAR MOST OF WHICH IS CONCENTRATED IN THE MONSOON MONTH FROM LATE JUNE TO EARLY OCT. AUGUST IS THE WETTEST MONTH WITH ABOUT 85 MM TO 310 MM OF RAIN

# CLIMATE





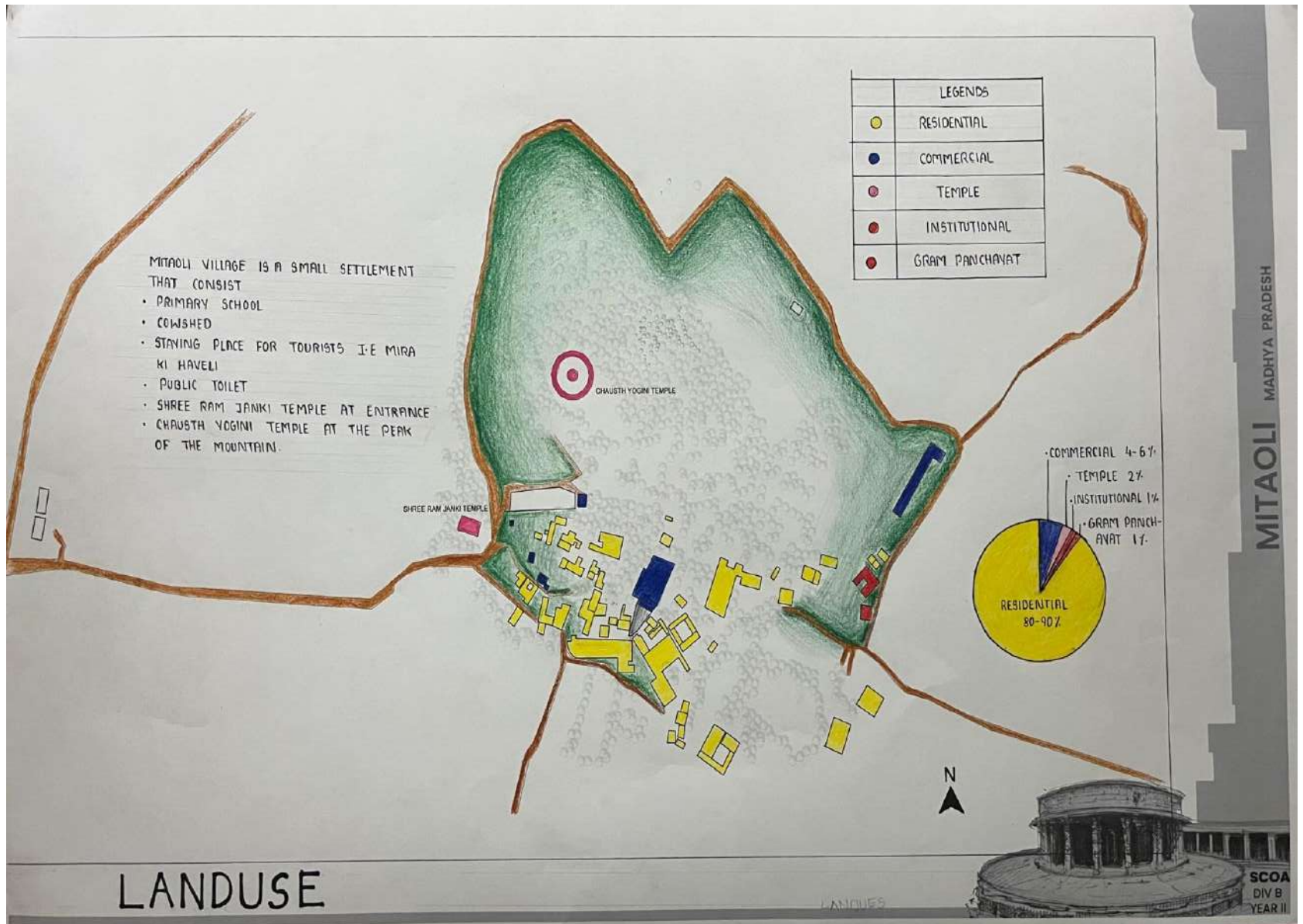


MITAOLI MADHYA PRADESH

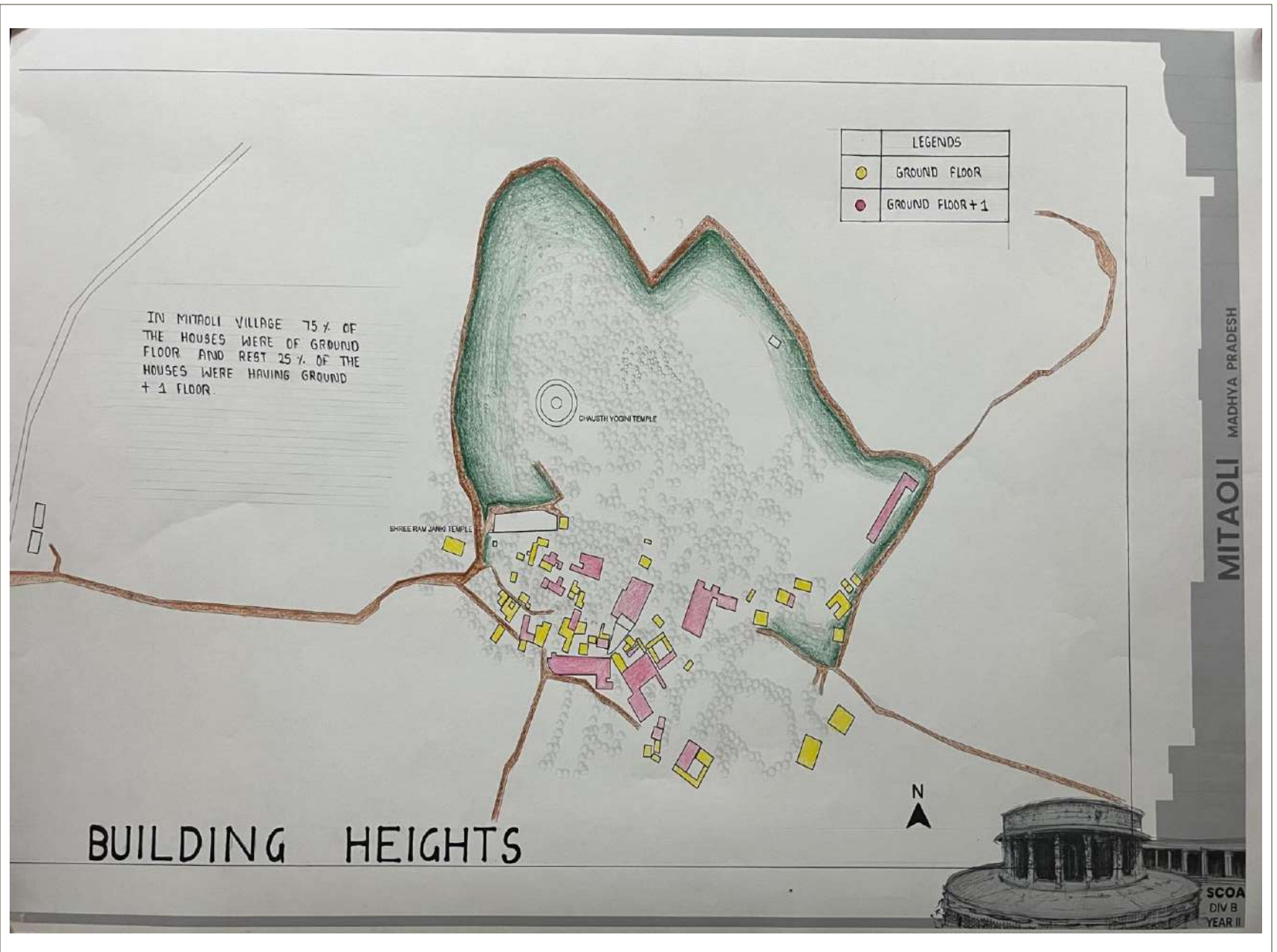


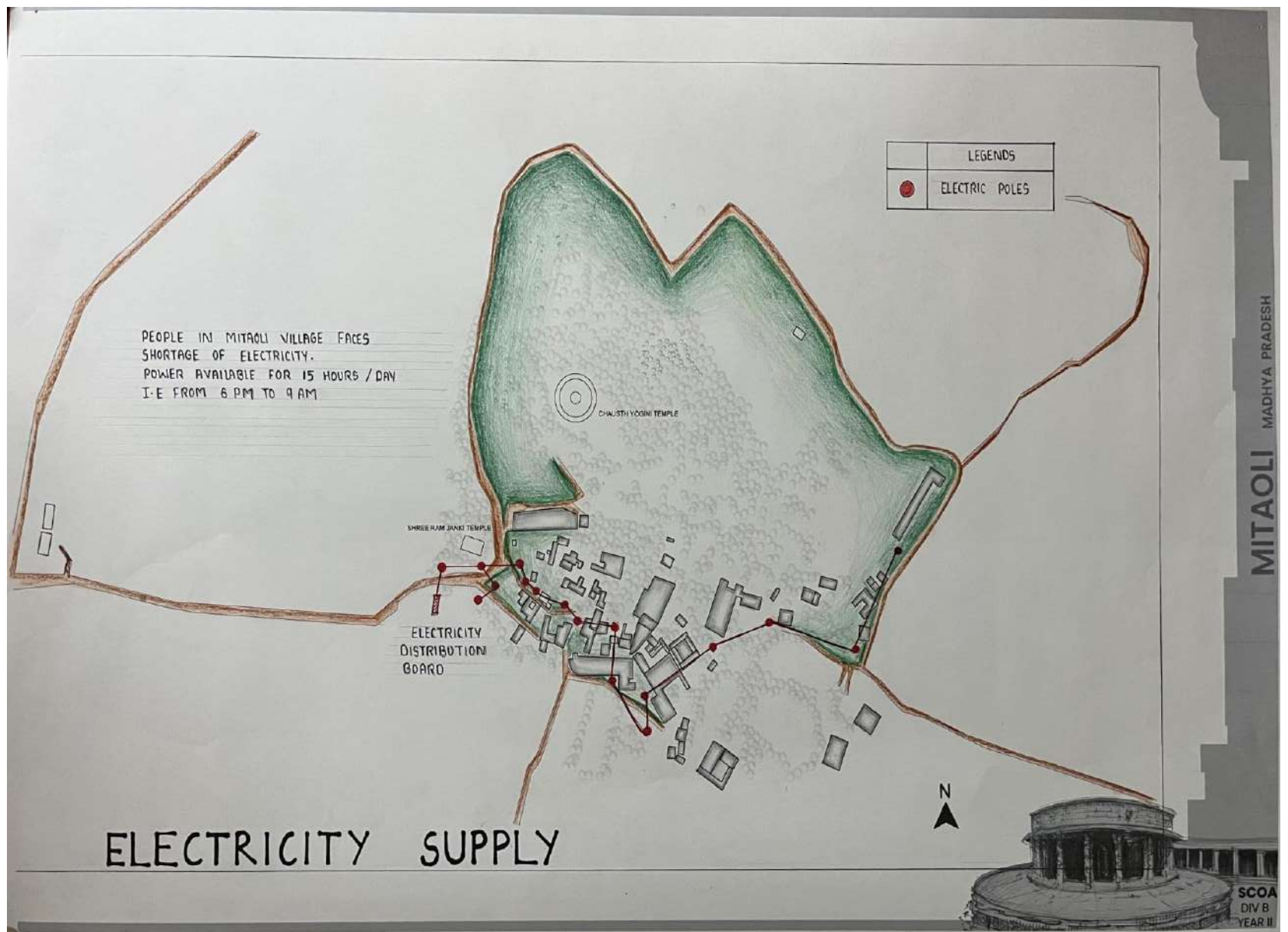
SCOA  
DIV B  
YEAR II

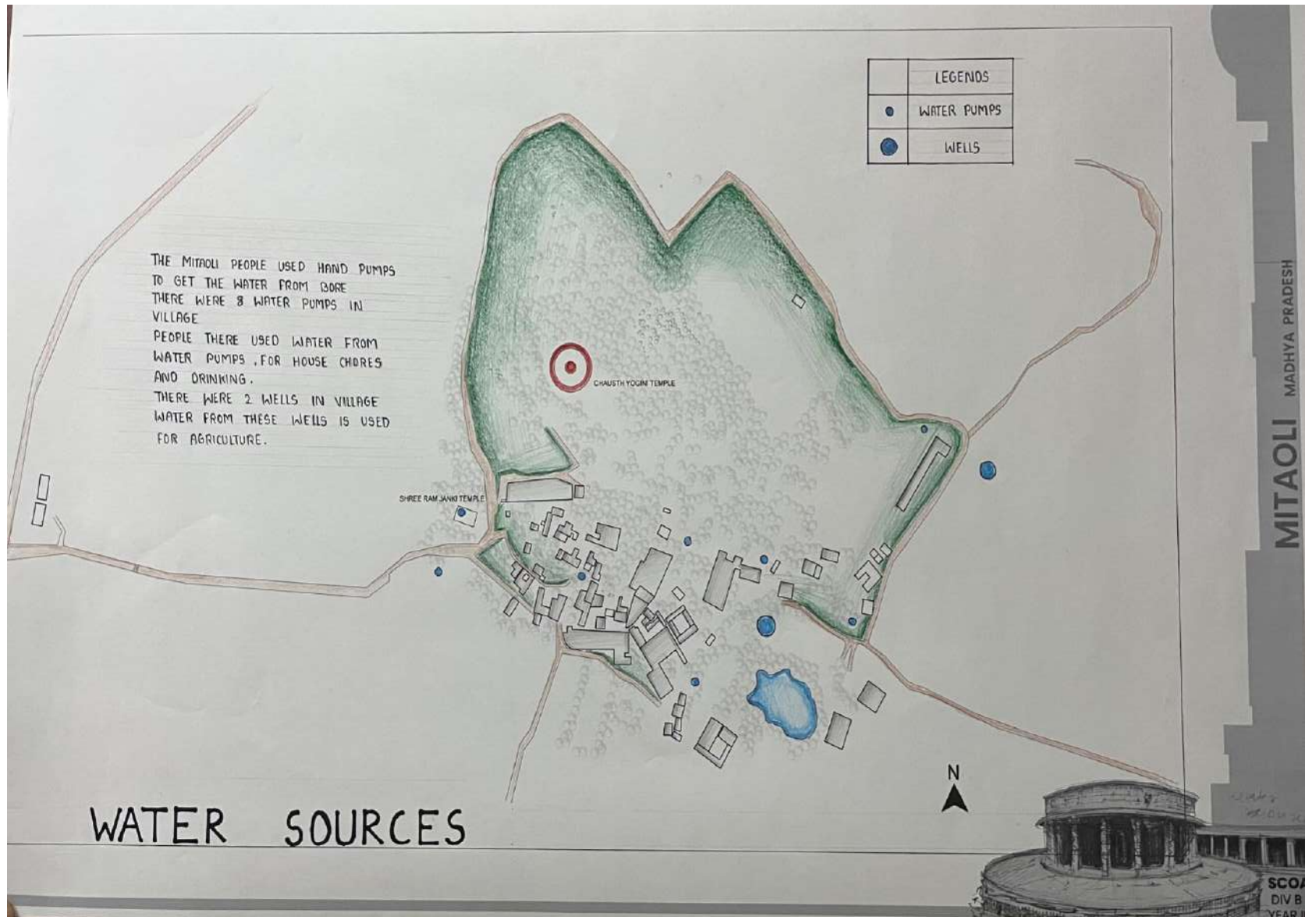






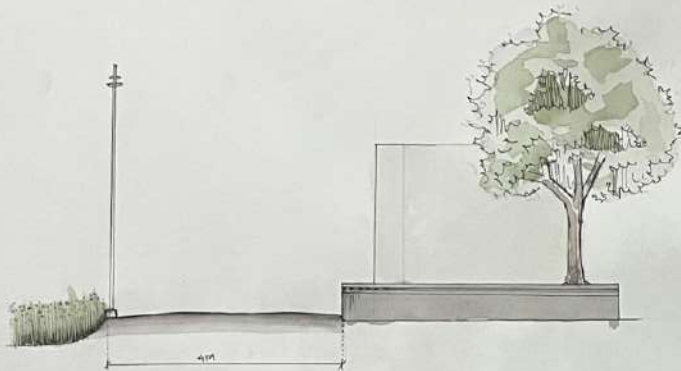




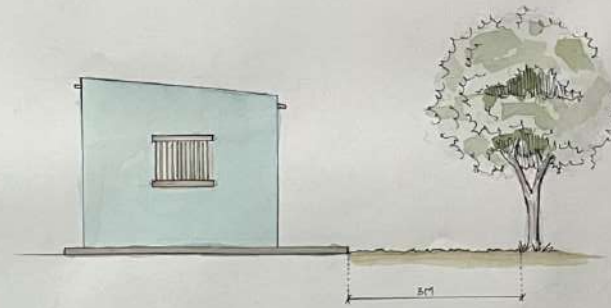




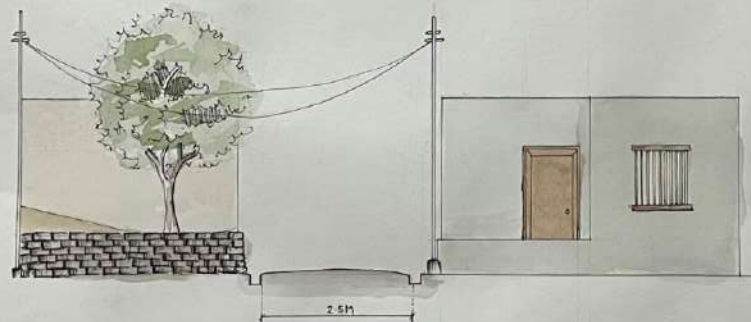




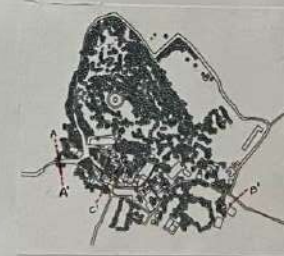
PRIMARY ROAD SECTION A A'  
TAR ROAD



TERTIARY ROAD SECTION B B'  
KACCHA ROAD



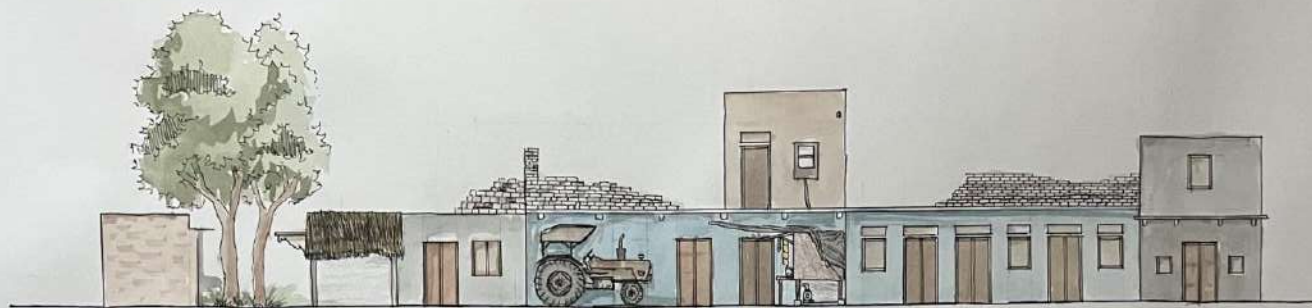
SECONDARY ROAD SECTION C C'  
CONCRETE ROAD.



# STREETSCAPE - STREET SECTIONS.



SCOA  
DIV B  
YEAR II



BRICKS



THATCH



TIMBER



# STREETSCAPE - ELEVATIONS-1



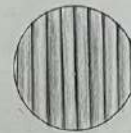




SANDSTONE



STONE



GALVANIZED IRON SHEET



**MITAOLI** MADHYA PRADESH



# STREETSCAPE - ELEVATIONS-2



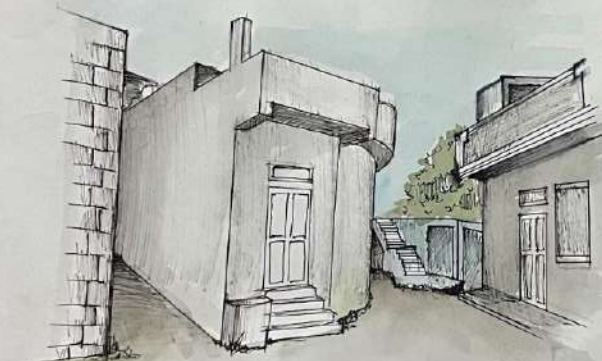
SCOA  
DIV B  
YEAR II



VIEW A



VIEW B



VIEW C

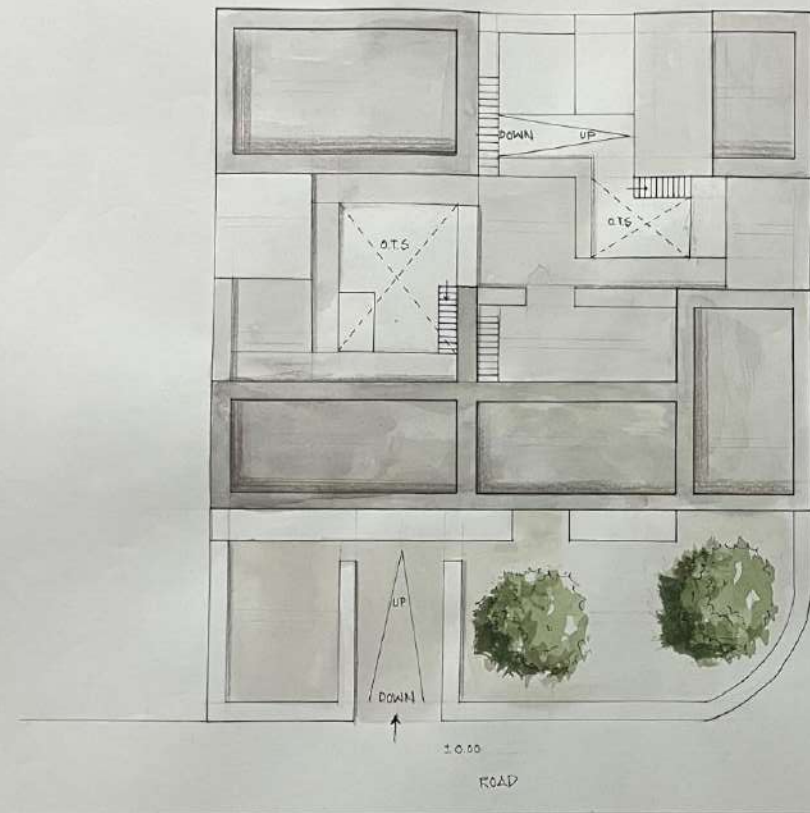


VIEW D

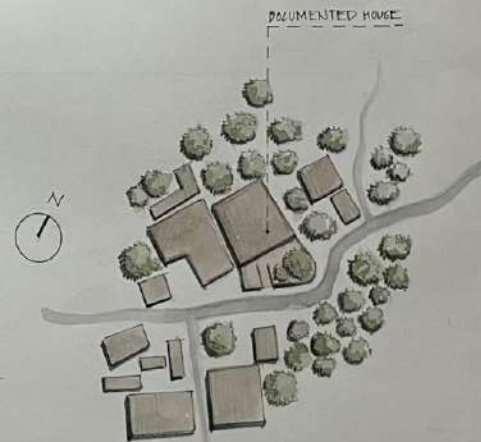
# STREETSCAPE - VIEWS



# SITE PLAN



- WE HAVE DOCUMENTED A HOUSE WHICH IS NAMED AS MEERA KI HAVELI HOME STAY IS AFFILIATED TO MADHYA PRADESH TOURISM BOARD.
- THIS HOUSE WAS BUILT AROUND 150 YEARS AGO.
- IT IS LOCATED AT MITAOLI.
- MEERA KAURAV AND SULTAN SINGH KAURAV ARE THE OWNER OF THE HOUSE.



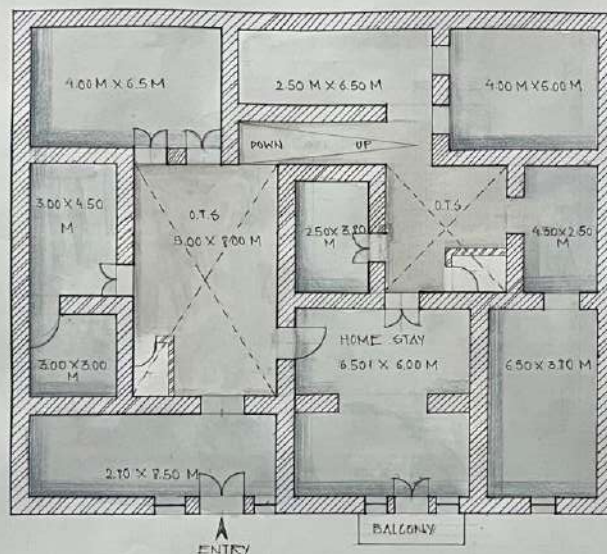
1:100 0 2 4 6 8 10 M



MITAOLI  
MADHYA PRADESH

SCOA  
DIV B  
YEAR II

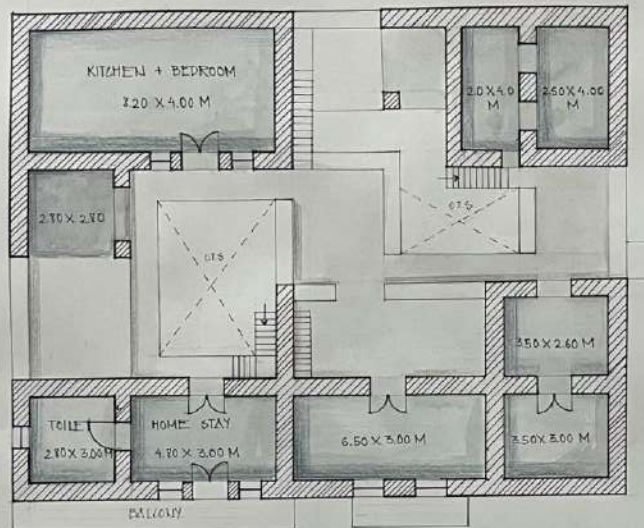




1:100 0 2 4 6 8 10 M

# GROUND FLOOR PLAN





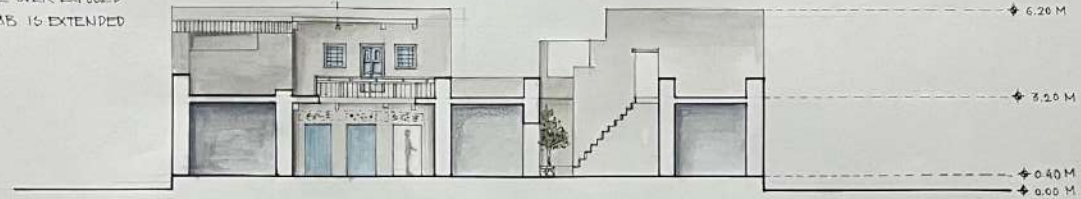
# FIRST FLOOR PLAN



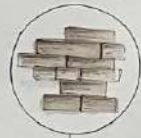
# SECTIONS



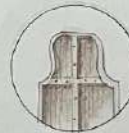
- JOISTS**
- THE JOISTS WERE OVER EXPOSED WHERE THE GLAB IS EXTENDED OVER PASSAGE.



SECTION AA'



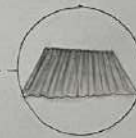
- SANDSTONE**
- SANDSTONE WAS THE MAIN MATERIAL WHICH WAS USED FOR THE CONSTRUCTION OF HOUSE.
  - THE SANDSTONE WERE USED INSTEAD OF BRICK.



- TIMBER**
- ALL THE DOORS, WINDOWS AND BRACKETS WERE MADE OUT OF TIMBER.
  - TEAKWOOD



SECTION BB'



- GALVANIZED IRON SHEET**
- THEY WERE USED AS A SHEDS IN SOME AREAS.

Draw Section: [unclear]



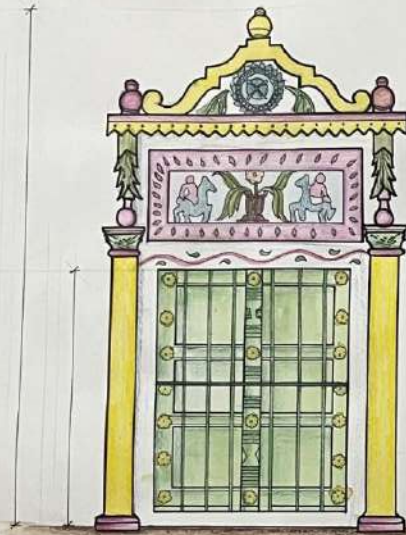
SCOA  
DIV B  
YEAR II



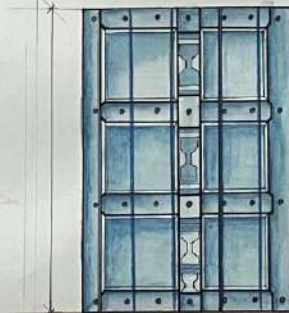
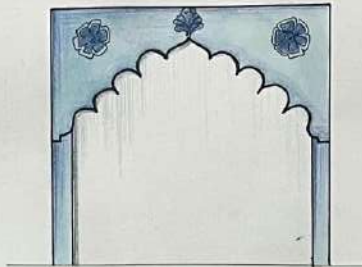


ELEVATIONS





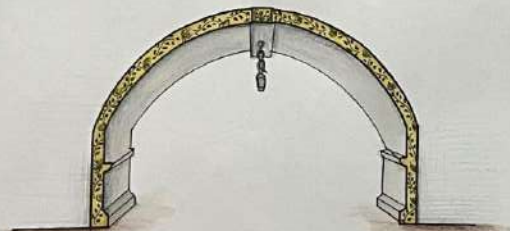
TRADITIONAL WINDOW



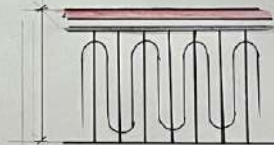
WINDOW



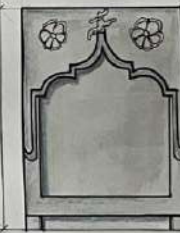
TRADITIONAL TEAKWOOD DOOR



INTERNAL ARCH



RAILING



# ARCHITECTURAL DETAILS

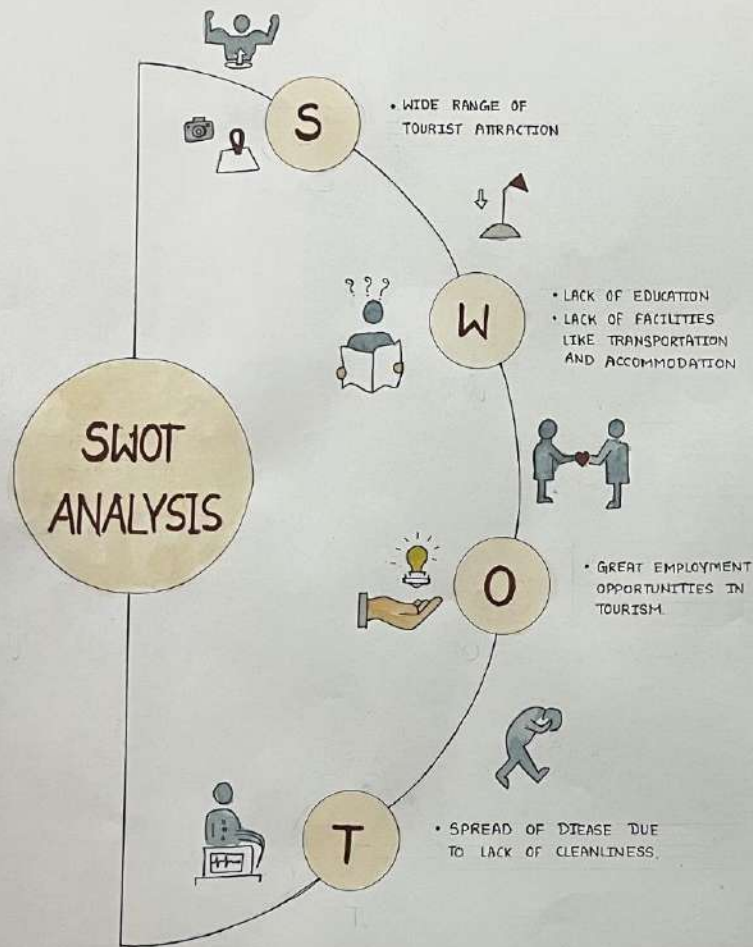


SCOA  
DIV B  
YEAR II









## CONCLUSION

WE ALL HAD A GREAT EXPERIENCE FROM THIS SETTLEMENT STUDY TOUR. WE TRIED TO UNDERSTAND THE HISTORICAL FACTS OF THE VILLAGE AFTER DISCUSSIONS WITH THE VILLAGERS. WE STUDIED LAYOUTS OF THE SETTLEMENT, STREETSCAPES, THE SERVICES ALONG WITH THE CULTURE AND TRADITIONS OF THE VILLAGE. WE TRIED TO STUDY THE LIFESTYLE OF THE PEOPLE. WITH THE STUDY WE SOUGHTED OUT THE NECESSITIES NEEDED THERE.

AFTER ANALYSING, WE FOUND OUT THAT THE VILLAGE SHOULD FIRST OF ALL HAVE, A PRIMARY HEALTH CLINIC, PRIMARY SCHOOL, ATM, SHOPS FOR BASICALLY REQUIRED ITEMS. THE VILLAGES HAS TOURIST ATTRACTIONS, THE PLACE SHOULD HAVE A TOURIST CENTER THAT WILL COMPRISE OF STAY PLACE FOR TOURIST, A HOTEL AND INFORMATION CENTER. THIS WILL CREATE A SOURCE OF INCOME AND HELP IN ECONOMICAL GROWTH OF VILLAGE AND ALSO PROVIDE EMPLOYMENT.

TAKING INTO CONSIDERATIONS,

1) WE HAVE DECIDED TO DESIGN TO A TOURIST FACILITATION CENTER THAT WILL CONSISTS OF STAY FOR TOURIST, SHOPS, HOTEL AND CAN PROVIDE OTHER FACILITIES FOR TOURISTS AS OUR MAJOR PROJECT.

2) IN CASE OF EMERGENCY, THERE WERE NO FACILITIES OF MEDICAL TREATMENT, HENCE WE HAVE DECIDED TO DESIGN ON PRIMARY HEALTH CLINIC IN THE VILLAGE

SELECTED SITE  
( MAJOR PROJECT )



SELECTED SITE  
( MINOR PROJECT )



## SWOT ANALYSIS AND CONCLUSION

SINHGAD TECHNICAL EDUCATION SOCIETY'S  
**SINHGAD COLLEGE OF ARCHITECTURE, PUNE**

**Study TOUR**

**Maheshwar**

By

**II YR B. Arch.**

**Division: C**

## Introduction

Geographical location –

State – Madhya Pradesh

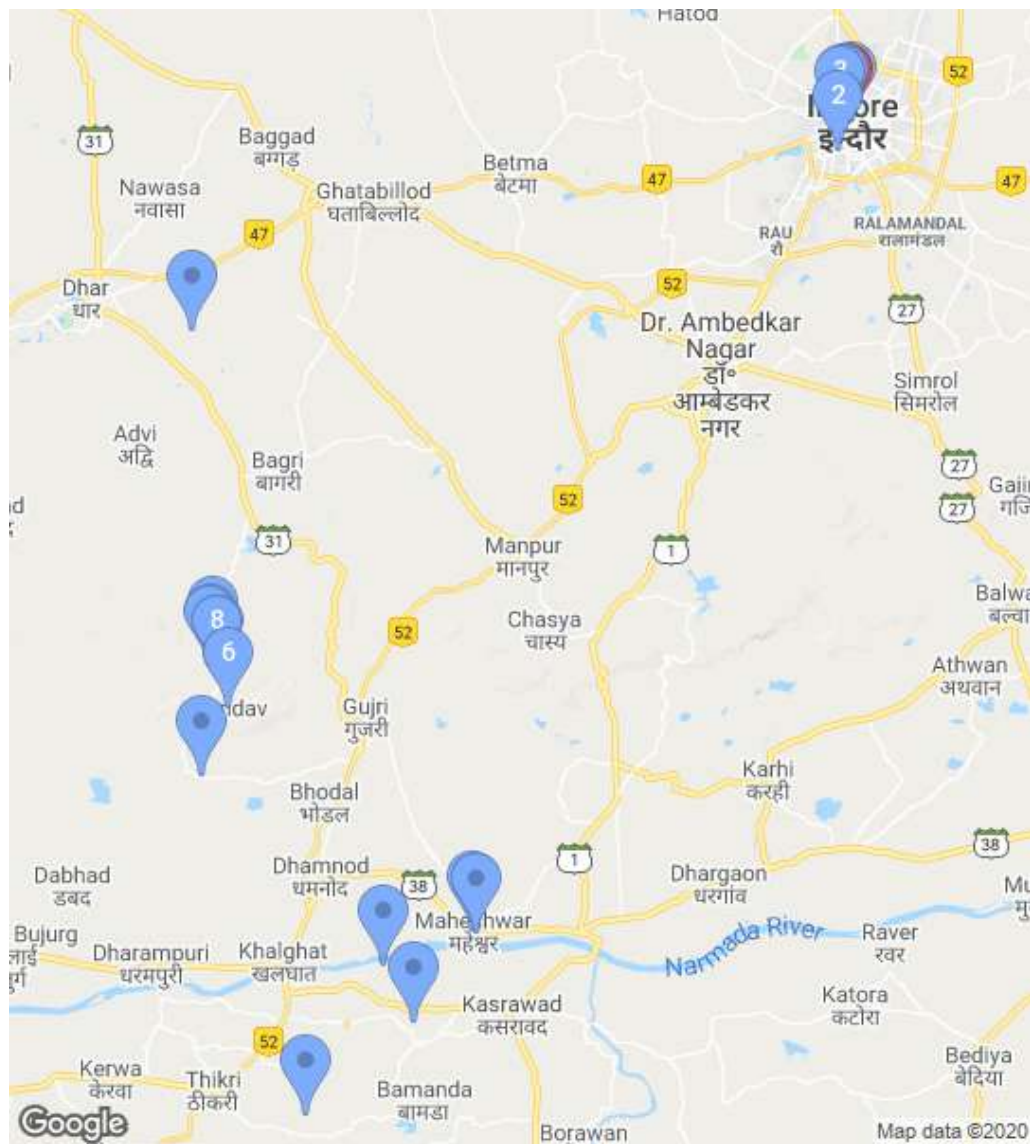
City - Maheshwar

Latitude-22.1773°N

Longitude- 75.5830°E

Mode of transport

By road.

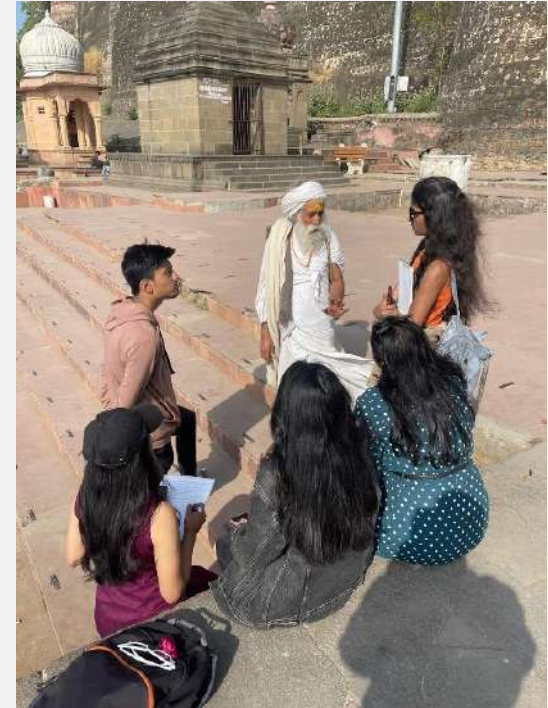


Route map of tour



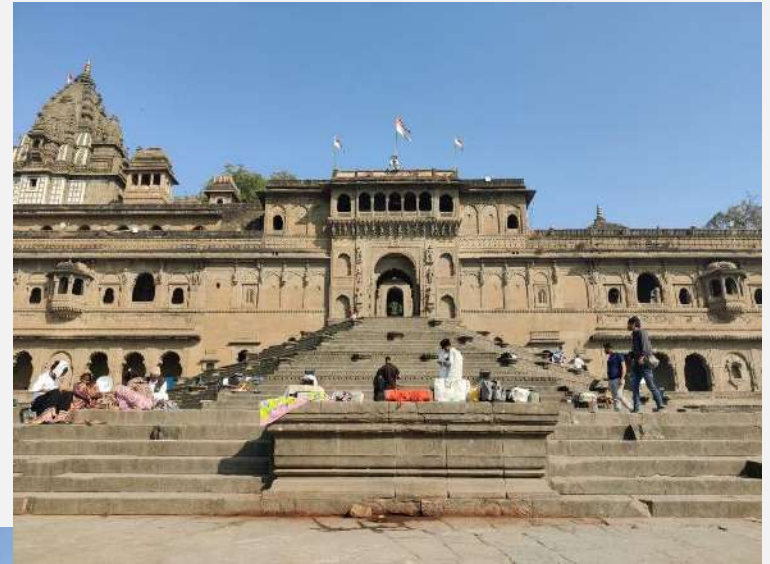
## On Field Study

- We visited this place the ghats of maheshwar which play an important role for the people living there .
- We also observed the planning of the settlement which was compact planning ( narrow roads, no setbacks between house ,drainage system) and topography.
- By interviewing people living there we got to know about their lifestyle, occupation ,architectural history and the needed facilities their.
- The next we did is selection of site:
  1. location
  2. Topography
  3. area required.
- After measuring two sites we shortlisted one of them considering all the basic factors.



## Places visited

- Maheshwar ghat
- Ahilyabai fort
- Ahilyeshwar temple
- Rehwa society
- Sahastradhara
- Kaleshwar temple.
- Vithoji chatri



Ahilyabai fort

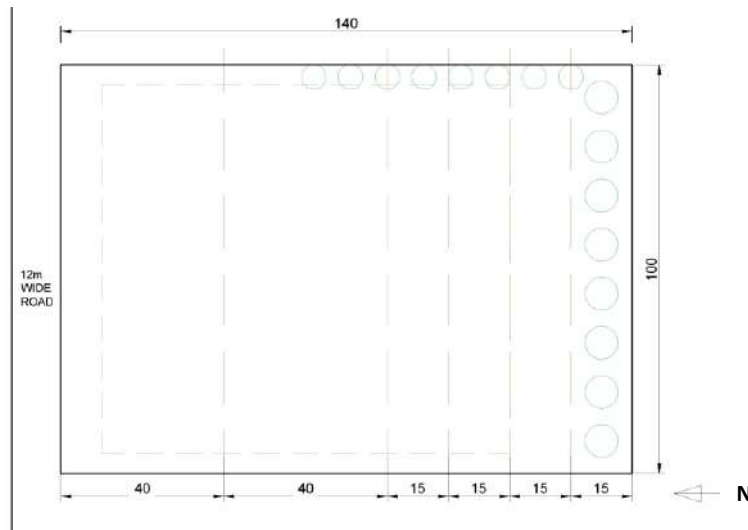


Vithoba chatri

## Site selected:



Location of site



Site measurements

Site area = 14000 sq. mt





## Design program

Art and crafts centre ,Maheshwar. Madhya Pradesh.

### 1.Admin Block

A. Ent .Lobby , Reception ,Waiting Area,info.Centre. 120 Sq.Mt.

B. Office Area (Managers Cabin ,Meeting Room ,Account  
Staff Room. 80 Sq.Mt

2 Workshops 240 Sq.Mt

3. Exhibition/ Display/ Sale 280 Sq.Mt

### 4. Accommodation

A. Double Occupancy 240 Sq.Mt

B. Dormitories 300 Sq.Mt

5.Cafeteria ( Ent. Lobby ,Reception ,Waiting ,Kitchen  
Pantry ,Storage. Wash/Dry Area ,Loading/Unloading  
Platform)

6.Library 40 Sq.Mt

7.Open Amphitheatre 500 Sq.Mt

Parking And Toilets As Per Laws

Total Built Up Area - 1360 Sqmt.

## **Design requirements**

- 1 . Site data and analysis
- 2 . Site sections ( scale - 1:250)
- 3 . Concept
- 4 .site plan ( scale – 1:250 )
- 5 . Roof plan (scale- 1:250 )
6. Floor plans all levels (scale – 1:100 )
- 7.Section for all units cut from staircases and toilets  
(scale- 1:100)
- 8 . Elevations (all four sides) (scale -1:100)
- 9 . Views (site and units)
- 10 . Construction details (scale -1:5/1:10)
- 11 . Landscape (including herbarium and construction details as per design.
- 12 . Design considerations.

## II Year Division C class 2022-23

### Group Photographs of students



### List of students

1. Konge Priyanka
2. Kolhe Shreya.
3. Kuntewar Shreya.
4. Kadav Rachana.
5. Kamble Siddhi.
6. Kulkarni Omkar.
7. Kachare Avirat.
8. Kekan Rutuja.
9. Kalbhor Chaitanya.
10. Narkhede Madhura
11. Mirashi Tanuja.
12. Nirmal Atrikesh.
13. Nimhan Ruchita.
14. Nehere Siddhi.
15. Pardeshi Rupali.
16. Pawar Miles.
17. Pawar Prathamesh.
18. Prajapati Vaishnavi.
19. Raut Pratik.
20. Patil Pawar Ankita.
21. Patil Jayant.

**List of faculties:** Ar.Mrunalini Anekar.  
Ar. Ankoor Sakhare.



SINHGAD TECHNICAL EDUCATION SOCIETY'S  
**SINHGAD COLLEGE OF ARCHITECTURE, PUNE**

**Study TOUR**

**CHANDIGARH**

BY  
**II YR B. Arch.**

**Division: D**

## INTRODUCTION

- Chandigarh is a city that serves as the capital of the states of Punjab and Haryana.
- Chandigarh is the first planned city in post-independence India.
- Master plan by Architect **Le Corbusier**, which built upon earlier plans created by the Polish architect **Maciej Nowicki** and the American planner **Albert Mayer**.

## Location

- Chandigarh is located near the foothill of **Shivalik range of the Himalayas** in northwest India.
- It covers an area of approximately 114sq.km.

## Climate

- The city experiences extreme climate and uneven distribution of rainfall. Chandigarh has a humid subtropical climate
- The average annual rainfall is 1110.7 mm



Image-1



Aerial view-2,3

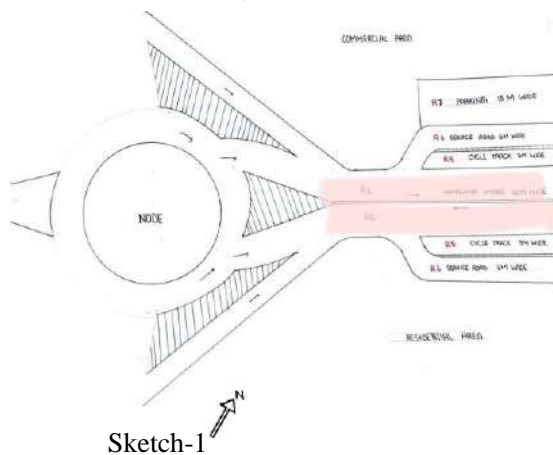


Ar.Le Corbusier With Nehru Ji-4

## ROADS AND NODES (STUDY AREA)



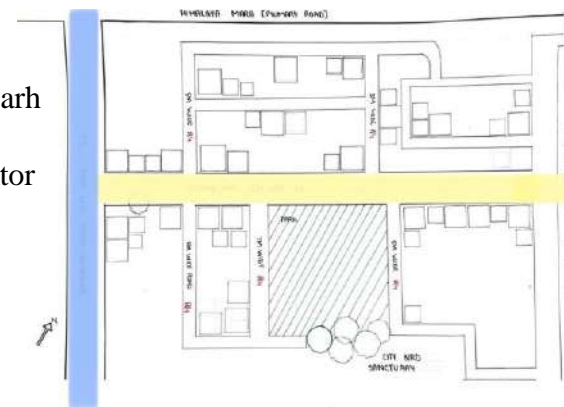
Image-5



Sketch-1

### ROAD HIERARCHY

- R1-Fast roads connecting Chandigarh to other towns
- R2-Roads connecting sector to sector
- R3-Sector circulation roads
- R4-Access roads to houses
- R5-Cycle track & Footpath
- R6-Service road
- R7-Parking for commercial area

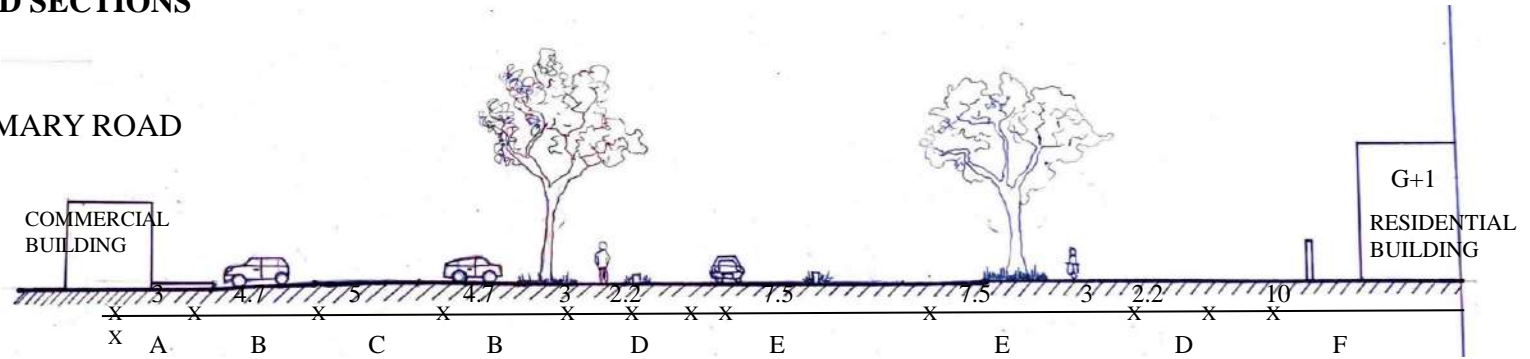


Sketch-2



## ROAD SECTIONS

### PRIMARY ROAD



### SECONDARY ROAD

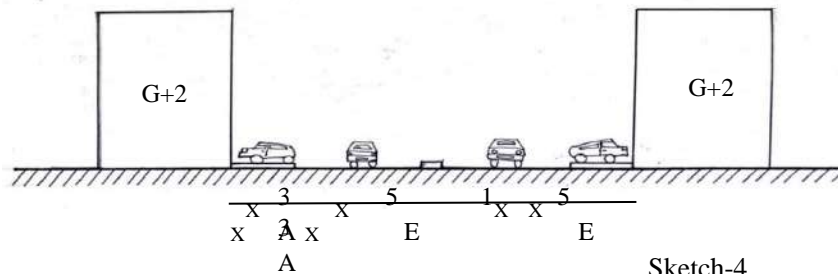
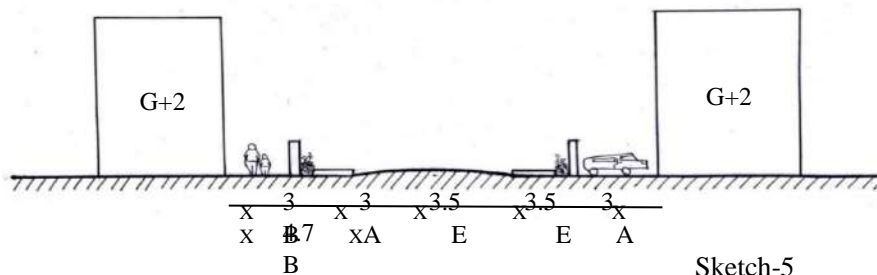


Image-6

### TERTIARY ROAD



- A. FOOTPATH
- B. PARKING
- C. ROAD
- D. CYCLE TRACK
- E. MAIN ROAD
- F. OPEN SPACE



Image-7

NOTE: ALL DIMENSIONS ARE IN METRE (SCALE:-1:200)

## STREETSCAPE- SECONDARY ROAD, SECTOR-21



Image-8

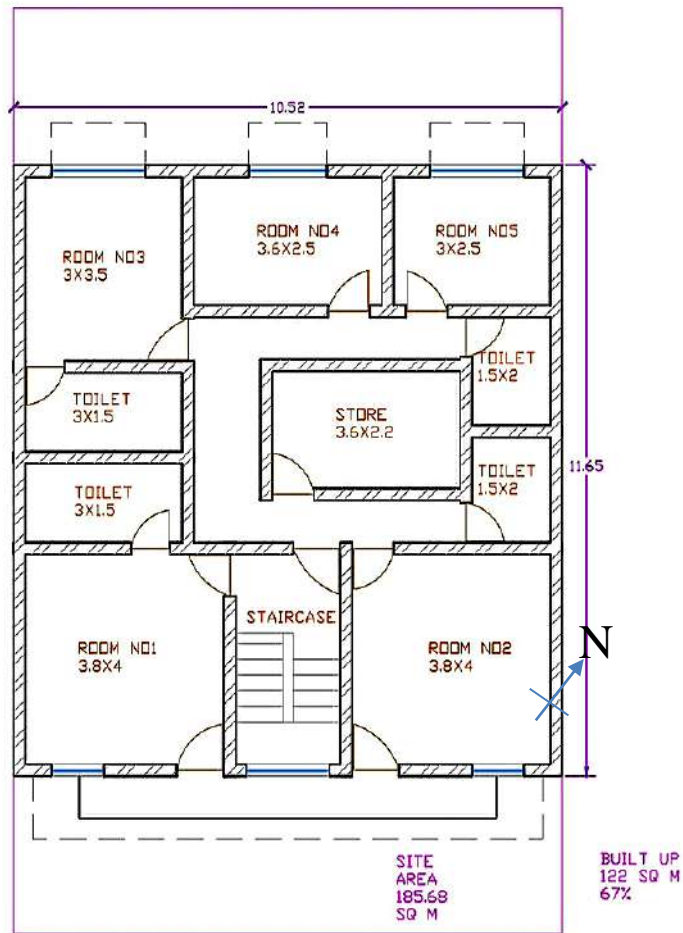


Sketch-6

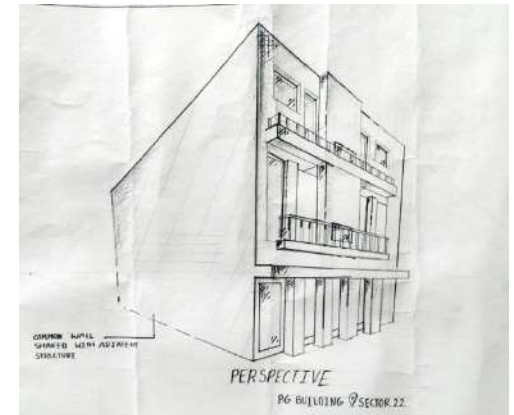
The residential building along the streets had seen floor plan, road side elevation, size of openings. This gave a harmonized streetscapes. The incrementality in the housing can be observed now as residents have changed the elements as per their needs but buildings weight maintain thoughts a typical floor plan attached denotes the internal spaces.

## DETAIL OF STRUCTURE

The structures are planned using passive design strategies for gaining heat.



Elevation-10



Sketch- 7



Image-11



Image-12

- Location: sector 22 Type :G+1 Residential,2 Hostel
- Site Area:185sq.m Built Up Area :122sq.m
- Built Up Percentage :66%



## ACTIVITY MAPPING



Sketch- 9

There are many day to day activities which were seen along the edges of road which are day to day neighbourhood needs some allocation of space.

## VEGETATION IN CHANDIGARH



Blackboard Tree-  
13



Dwarf Umbrella  
Tree-14

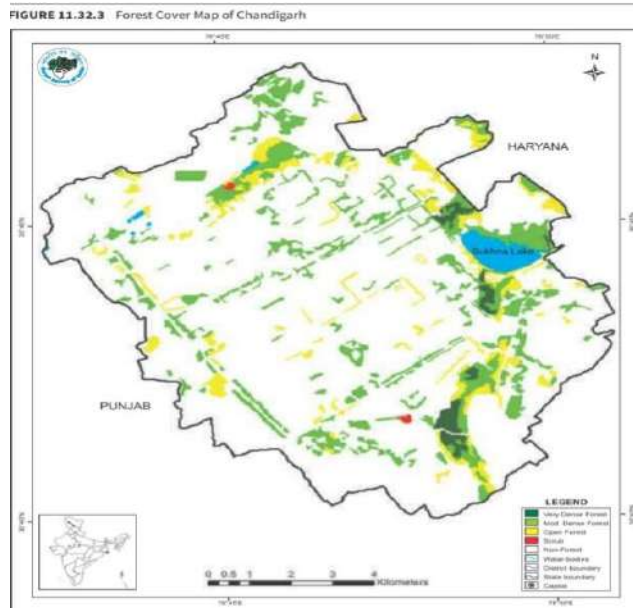


Chukrasia Tabularis  
(Modern Neem)-15

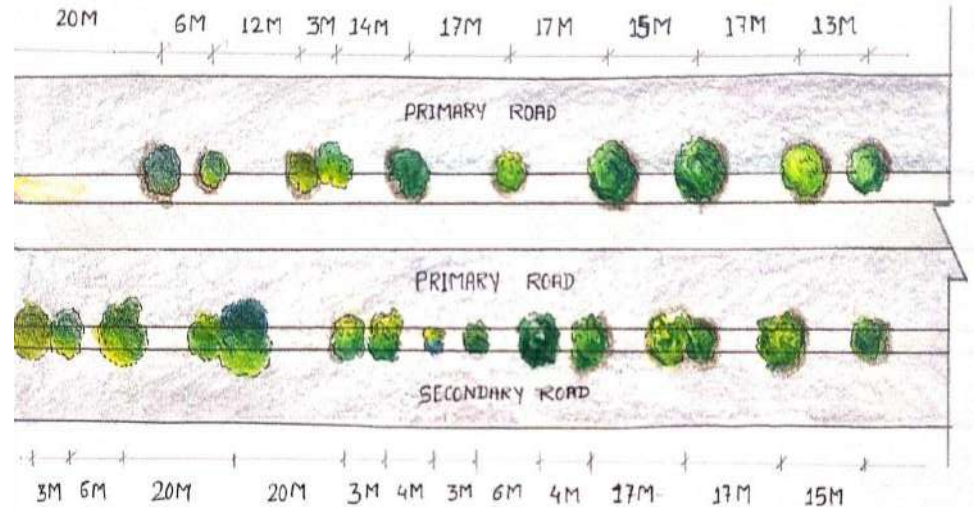


Swietenia Macrophylla  
(Mahogani)-16

- It is mostly focused on the shapes, colors and textures of trees which include trees that are structurally big, have tall strong trunks and spreading crowns.
- Most of the important roads have been planted with single kind of tree species in a well-planned manner.
- Le Corbusier and Dr. Randhawa constituted a landscape committee



Forest cover map of Chandigarh  
(Source: Internet)-17



Sector 22 street plan (Showing vegetation)  
Source : Sketch 10



## CAPITOL COMPLEX



Site Plan-18



Image-19



Image-20

## INTRODUCTION

- Chandigarh Capitol Complex, located in the sector-1 of Chandigarh city in India, is a government compound designed by the architect Le Corbusier and is a UNESCO World Heritage Site.
- It is spread over an area of around 100 acres.
- The complex consists of 3 building and 4 monuments.

### THE HIGH COURT

- Established : 1966
- The building has three entrances each of different colour blue, yellow and red.
- There are sun breakers to eliminate direct sunlight.
- The roof has wave concept to eliminate heat.
- Reinforced concrete is used for construction
- The building has eight double height courtrooms and a triple height high court on the ground floor with offices above each court .

### THE ASSEMBLY HALL

- Year of construction: Started in 1951, completed in 1962.
- Le Corbusier wanted to include an assembly door. He consulted with Prime Minister Nehru for symbols that could be depicted on the door to represent the new India and its modern vision.
- Reinforced concrete columns are utilized in a grid throughout the Palace of the Assembly and are slightly altered to raise a large swooping concrete form high above the entrance.



## CAPITOL COMPLEX



Image: 26



Image: 27



Image: 28

### THE SECRETARIAT BUILDING

- The Secretariat building is 254 m long and 42 m high which makes it the largest and tallest of the three structures.
- It functions as the headquarters of the Punjab and Haryana municipal government.
- The building is composed of 6 eight storey blocks divided by expansion joints.

### TOWER OF SHADOWS

- This monument was built to test the sunbreakers before implying the idea on the building.
- Height – 12 M.
- The entrance of the monument is facing the north.
- The material used is exposed concrete.

### GEOMETRIC HILL

- Corbusier made this hill with construction waste.
- He created a mound that would hide the assembly hall from the road.
- It also has art work on it.
- It is a **UNESCO World Heritage Site** spread over an area of around 100 acres.

## OPEN HAND MONUMENT



Image: 29

- It denotes “open to give and open to take”.
- It symbolizes Peace.
- Height – 26 M
- Rotated by wind
- The shape is of a dove.
- The open space is used for government meetings frequently.
- Surface is covered with polished steel grey metal.

## PEDA COMPLEX AT CHANDIGARH

**Site Area:** 1.49 acre (268ft. x 243 ft.)

**Total covered area:** 68,224 Sq.Ft. including 23,200 Sq.Ft.

Basement

**Location:** Solar Passive Complex sector33D, Chandigarh

(Latitude 30°N)

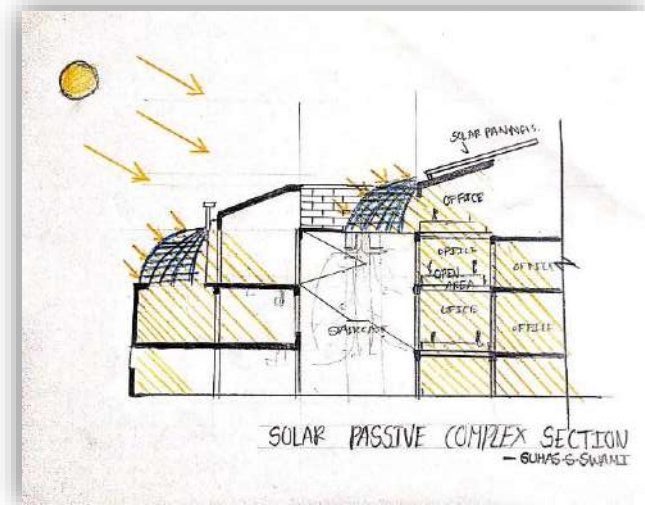
This structure is designed with great passive design strategies.

1 the convex sky light which allows heat and light to penetrate in the structure

2 there is a wind tower in centre which works as a HVAC system

There are vent through out the structure

Ground Floor Plan-21



Section sketch-11



coffer slab -22



Floating slab system-23



Light vaults-24



(Wind tower)  
Wind tower helps in ventilation-25

## CHANDIGARH COLLEGE OF ARCHITECTURE

- The planning is introvert in nature. The studio and classrooms have been grouped together around a Rectangular courtyard.
- A complex networks of corridors shows well planned internal connectivity.
- Bricks are used as primary building material for entire complex walls, columns.
- Use of concrete is restricted to foundations and floor slabs.
- The corridor of entrance has a glass façade which lightens the corridor during day time which is very well used for display purposes.
- Curvilinear roof is used for light and ventilation.
- Effect of the day light entering from the northern façade.

- **Project** - CCA, Chandigarh
- **Architect** - Le Corbusier
- **Location** - Sector- 12 Chandigarh



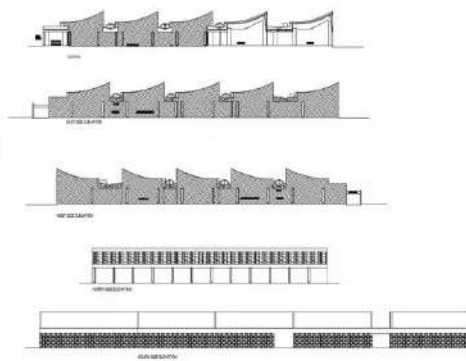
Concret Curvilinear Roof-32



Concret Curvilinear Beam-33



Plan-30



Elevations and Section-31

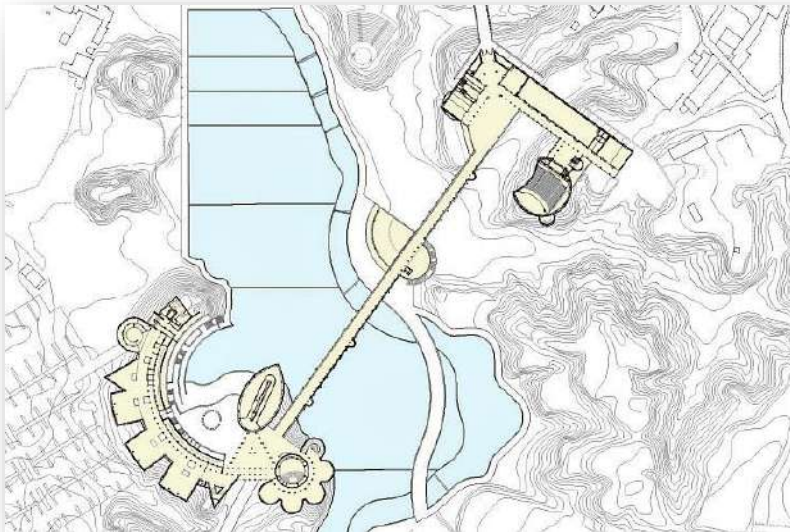


Front Elevation-34



## VIRASAT-E-KHALSA

- **LOCATION**: ANANDPUR SAHIB, PUNJAB, INDIA.
- **ARCHITECT**: Moshe Safdie
- **AREA** : Spread across 6500 sq . m
- **MATERIALS USED** : Concrete bearing walls and trusses , walls clad with weather resistant sandstone.
- There are two complexes at each side of a ravine, connected by a ceremonial bridge.
- The premises of this place also has many exhibition galleries along with a huge auditorium wherein 400 people can accommodate themselves easily.



site plan source: internet-35



Ar. Moshe Safdie-36



Interior-37,38



Image-39



65 m long bridge connected to both sides of the cpmplexes-40

## 1. PIERRE JEANNERET MUSEUM

- The first ever house built in Chandigarh was of Pierre Jeanneret. sector 5,no.57
- For honoring his contribution and keeping his memory alive, his house was converted into a museum.
- The museum is two storied building with ample outdoor space and expansive broad balconies with latticed brick screens.
- Materials used are river-stone pebbles, latticed bricks in red and white plastered surfaces.



Image-41



Image-42



Image-43



Image-44



Image-45

## 2. LE CORBUSIER CENTRE

- This was one of the first buildings to have been constructed in Chandigarh in Sector 19.
- The structure of the office itself gives an insight into the aesthetic values of Corbusier and his team.
- The main building of the Centre has one main gallery and nine small rooms, all displaying exhibits on the evolution of the city.
- One of the buildings houses the Open Hand Art Studios, a venture by the Chandigarh Lalit Kala Akademi.



Image-46



Image-46



Image-47



## VARIOUS PLACES VISITED IN CHANDIGARH, AMRITSAR



Image-48



Image-49

### Golden Temple , Amritsar

- Golden Temple , Amritsar is known for the mixture of mixture of the Hindu- Rajput and Indo=Islamic architecture .
- The temple is 67 feet high and has been built as a two storey structure and is almost square in shape and has a gold leaf dome .



Wagah Border

Image-55



Image-50

### Khalsa

Khalsa college was designed by Bhai Ram Singh, a famous architect. Its architectural features are a mix of British Mughal and Sikh architect

### Rock Garden

- The Rock Garden is a sculpture garden for rock enthusiasts.
- It is also known as Nek Chand Saini's Rock Garden of Nathupur.



Image-51

### University



Image-52

### Jallianwala Baug



Image-53



Image-54



**PROPOSED /  
IDENTIFIED SITE**

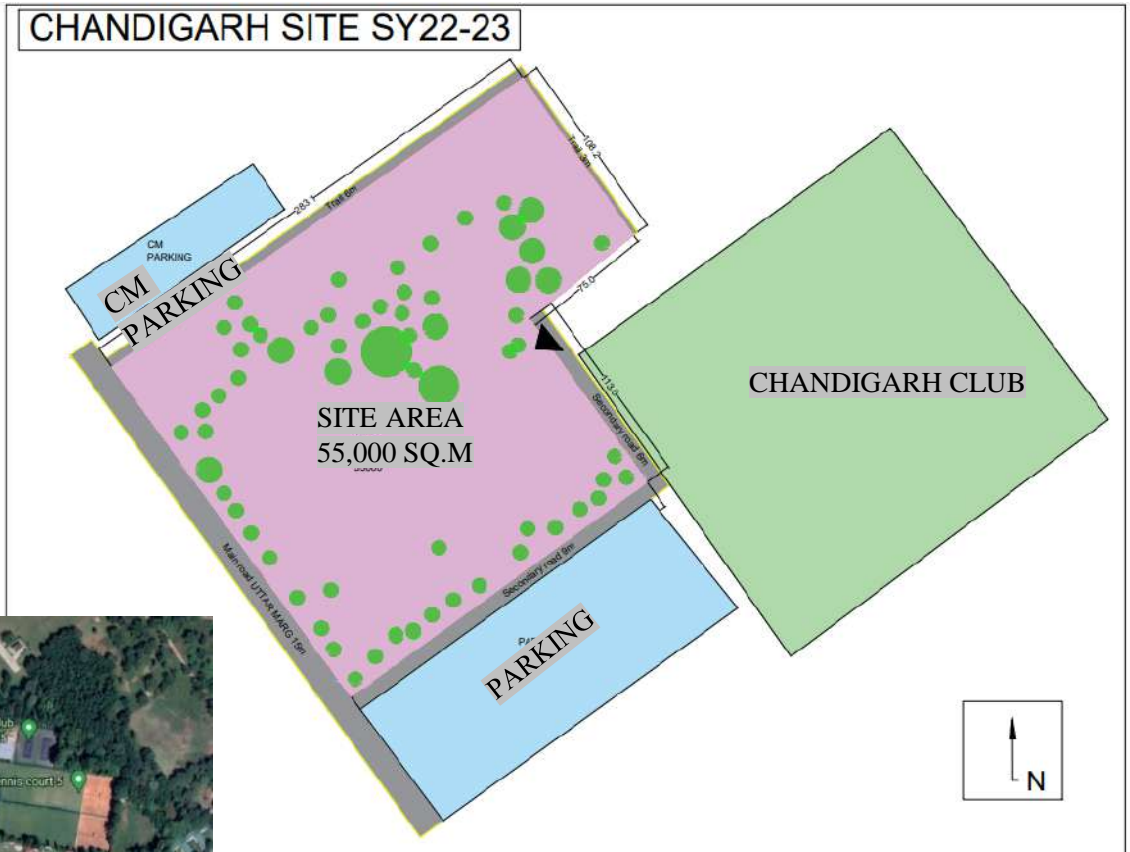


Image-56

Autocad Drawing-57

## II Year - D



Image-58

### **LIST OF STUDENTS :**

Priyanka Purandare  
Kundan Rale  
Sahil Raykar  
Sayali Renuse  
Shruti Ranalkar  
Sanjana Raut  
Shreya Salekar  
Suhas Swami  
Sujal Shilimkar  
Kamaksha Soni  
Arya Shinde  
Mansi Shinde  
Deepak Thorat  
Yash Gaikwad  
Mansi Vaidya  
Vaishnavi Bhusare  
Aditya Wadkar  
Mrudula Waghmare  
Akash Awate

### **LIST OF DESIGN FACULTIES :**

DR. PRIYAMVADA CHITALE  
AR. MUKTA PANDIT  
AR. SHANTANU GAIKWAD

**SINHGAD TECHNICAL EDUCATION SOCIETY'S  
SINHGAD COLLEGE OF ARCHITECTURE, PUNE**

**Study TOUR**

**NAVI MUMBAI**

BY  
**II YR B. Arch.**

**Division: D**



# INTRODUCTION

## GEOGRAPHICAL, REGIONAL CONTEXT:

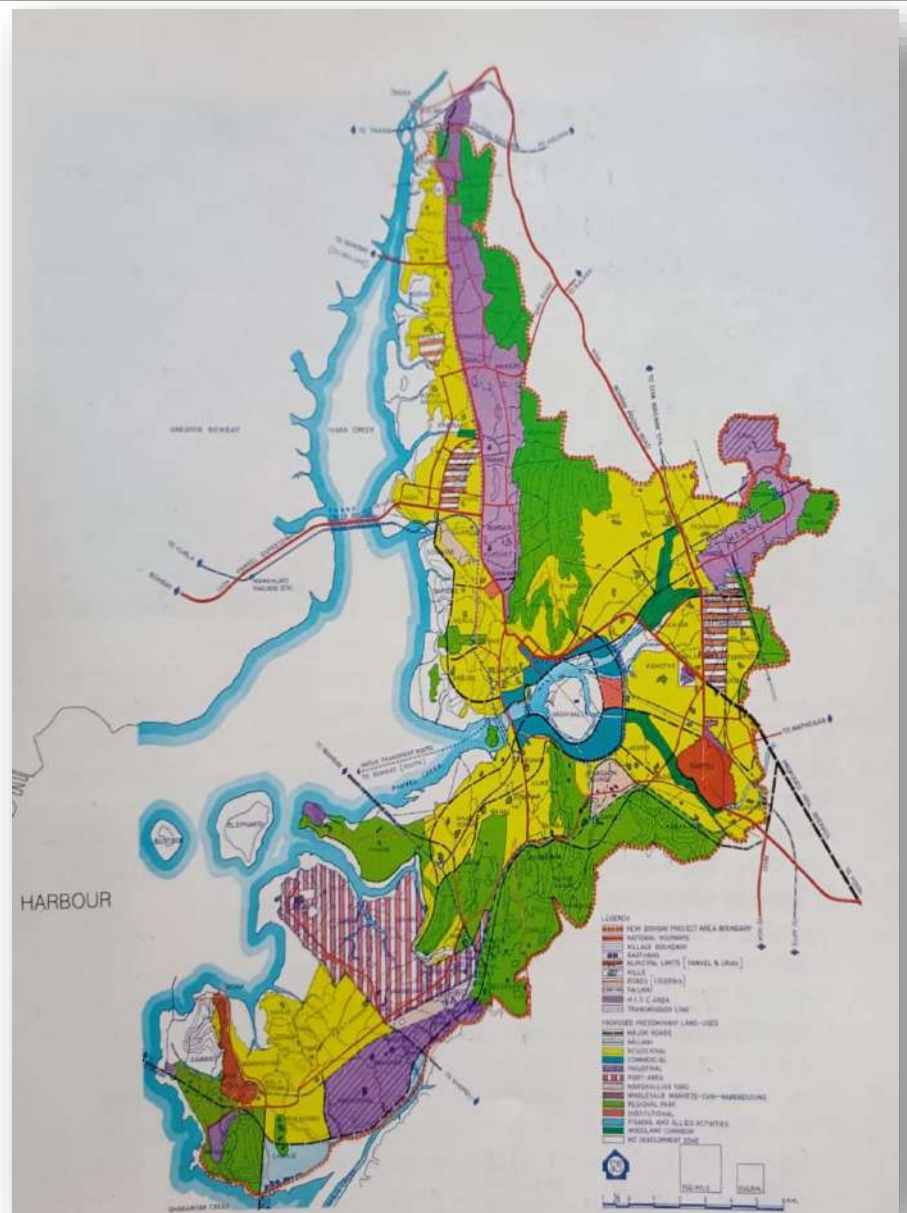
- Panned city situated on the west coast of the Indian subcontinent, located in the Konkan division Maharashtra.
- Population of 1,119,477 as per the 2011 provisional.

## HISTORICAL CONTEXT EVOLUTION:

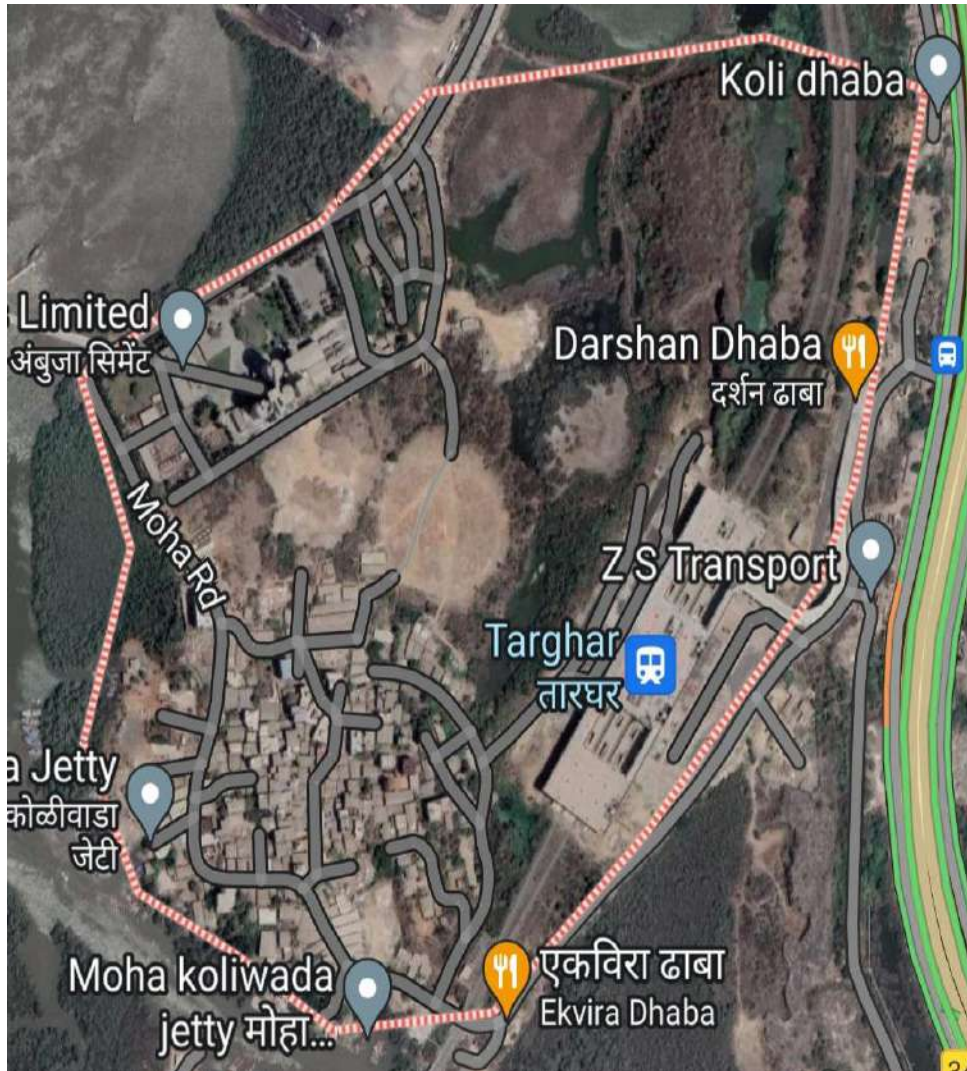
- It was built as a twin city of Mumbai so that its population could be managed, composed of seven islands.
- CIDCO planned and constructed all the railway stations, roads and public spaces in Navi Mumbai and developed nearby areas commercially.

## CULTURE:

- Banganga, Kalidas, Ellora are organised by Maharashtra Tourism Development Corporation

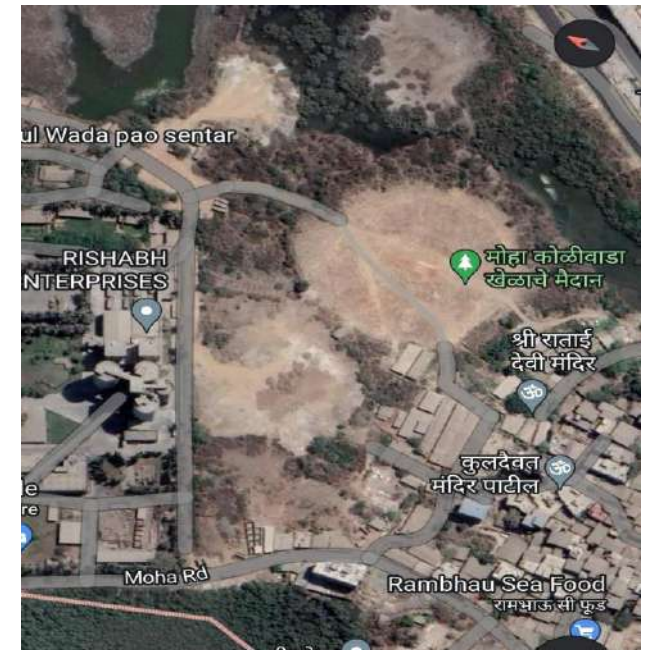


Development plan adopted by CIDCO New Bombay-59



Plan of moha vilage-60

VILLAGE NAME: MOHA  
 CITY NAME: NAVI MUMBAI  
 DISTRICT: NAVI MUMBAI  
 STATE: MAHARASHTRA  
 LANGUAGE : MARATHI



Site-61

Source:  
 Google Maps



# KOLI WADA SETTLEMENT

- Population : 1500 approximately
- 650 voters are present in village
- Occupation : Fisheries
- There are around 250 boats in the village, and there are 3 seaports (bandars)
- 2 village were shifted in panvel and only moha was only left
- Transport of vegetables from Vashi and Panvel.
- 2 schools
- Contrast to village ambuja cement factory is built adjacent to the village



Jetty -62



Jetty-68,69



Street view-63



School-65



Street view-64



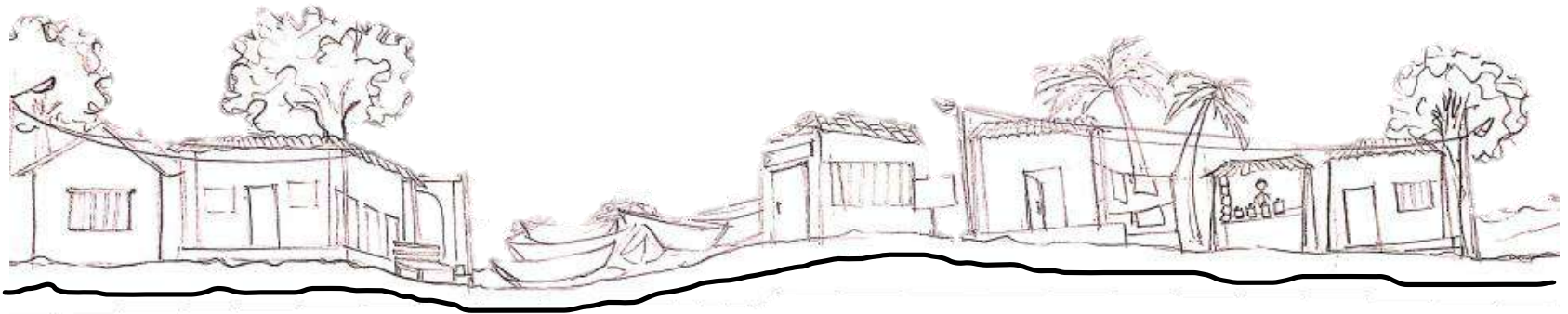
Dressing style -66



Image-67

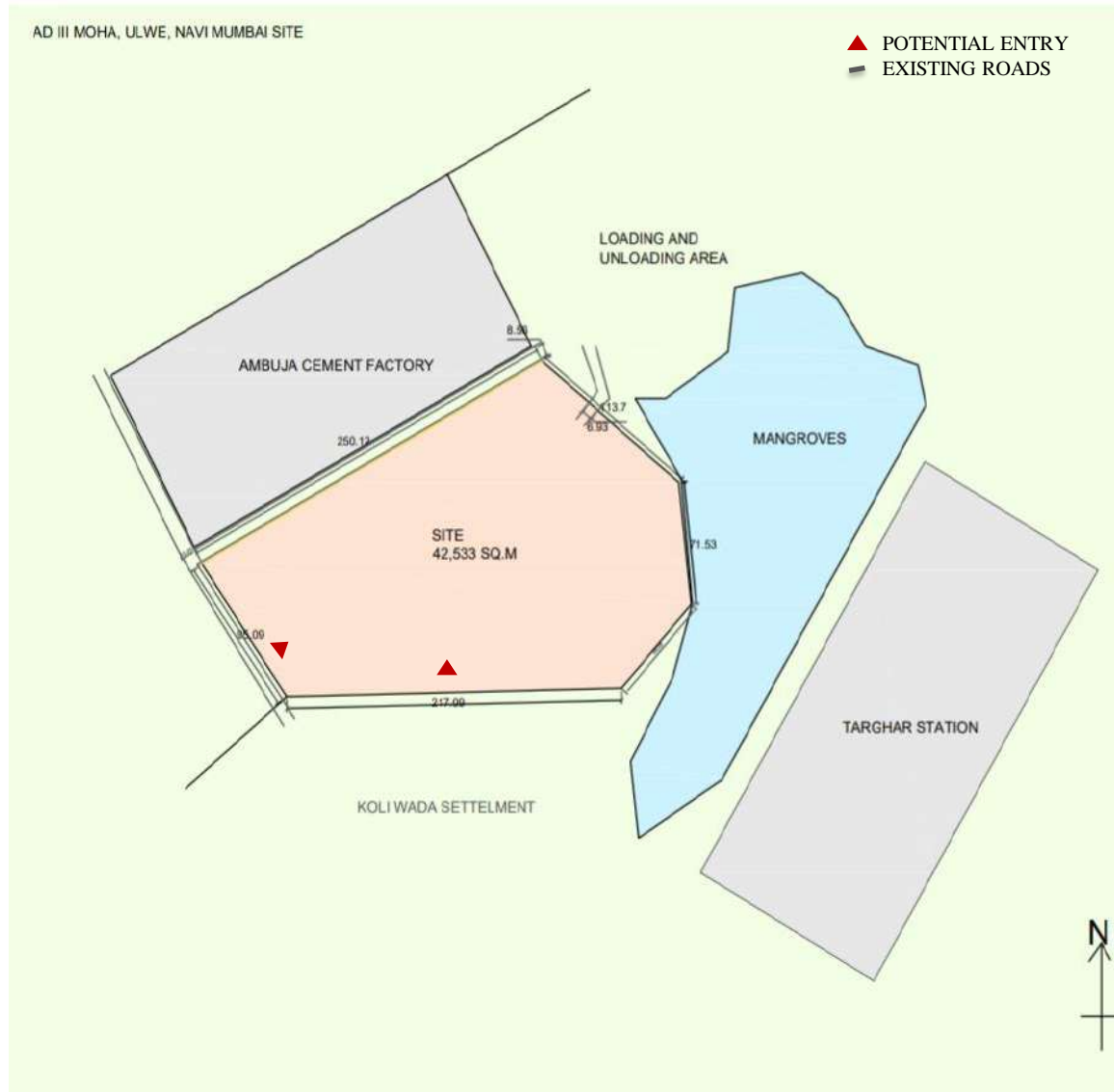


## STREETSCAPE:



Sketch-12,13

## SITE SELECTION



Source: Google Maps-69

- AREA: 42,533SQ. M
- The cricket ground here belongs to CIDCO.
- This cricket field is five to six years old.
- Cricket matches are normally held on the ground.

Autocad Drawing-68

## PRO'S

- Present ground is in working condition and cricket matches are played.
- Tharghar Station behind the ground.

## CON'S

- Lack of Transportation Facilities.
- No Emergency Services Available.
- No Police Station in village.
- No Fish Market even main occupation is fishing.

## SITE SURROUNDINGS

- Tharghar Station
- Jetty
- Ambuja Cement Factory
- Back Waters
- Koli wada settlement
- On site Temporary Structures
- Loading Unloading Area of Factory



Image-70



Roads-71



Tharghar station-72



Site-73



Seaports-74



## PHOTOS



Roads-74



Image-75



While Intrrogating Locals-76



Loading and Uunloading Aera77



Image-78



Image-79



Image-80

SINHGAD TECHNICAL EDUCATION SOCIETY'S  
**SINHGAD COLLEGE OF ARCHITECTURE, PUNE**

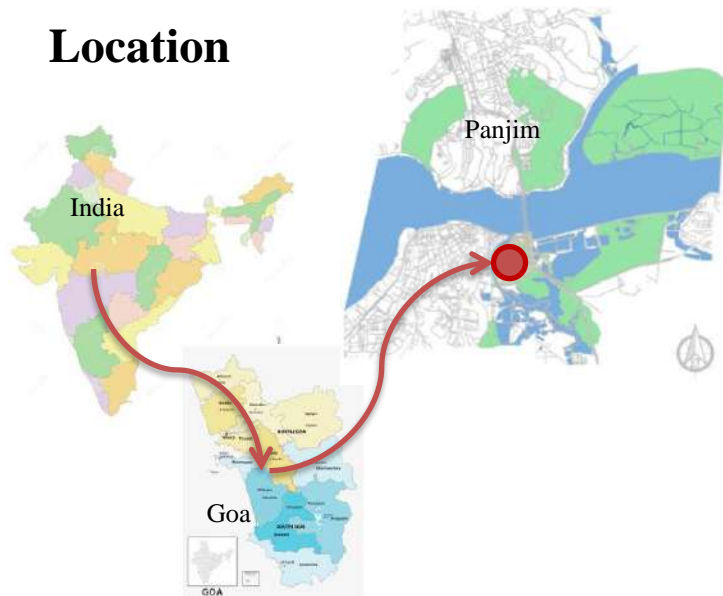
**Study TOUR**

**GOA**

BY  
**III YR B. Arch.**

**Division: A**

## Location



- The city is spread across a small area of 36 square kilometer.
- It lies on the estuary of the Mandavi River at the river's mouth on the Arabian Sea.
- The city is marked by the backwater and the creeks that form the predominant topographical feature of Panjim.
- It rise to an elevation of 7meters, above sea level.
- Panjim has terraced hills , concrete building with balconies and red tiled roofs, churches and a riverside .

## Vegetation and Soil



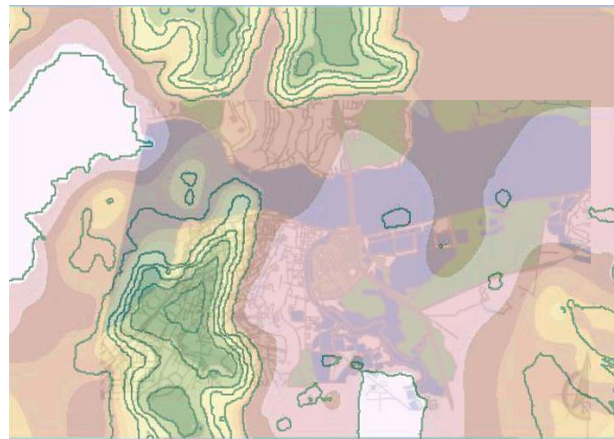
**Red laterite soil**



**Coconut tree**

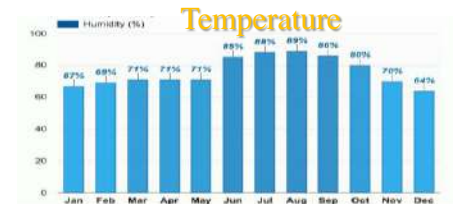
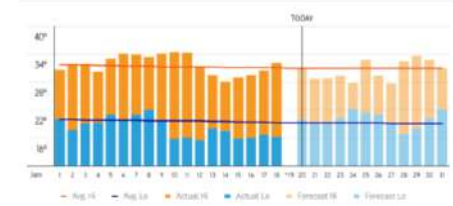
- Type of Soil of Panjim predominantly includes Laterite soil(73.4%).
- The forests is under large tract of cashew, mango, coconut, palm tree, plumeria, etc.

## Topography



**Panjim**

## Climate



**Humidity**

- The city of Panjim is drained by 350 centimeters of rainfall every year.
- The annual average rainfall is 2,932mm(115.43in.).
- High humidity through out the year.



- Panjim features as warm and humid climate.
- Typically low wind velocity.



## Connectivity To Goa



### By Airways

- Dabolim Airport is located in the village of Dabolim in Goa. It is the only airport in the state









### By Railways

- Madgao Railway Station
- Vasco-Da-Gama Station
- Pernem Station
- Cansaulim Station
- Verna Station
- Balli station
- Curchorem Station
- Majorda Station
- Sankoval Station
- Survali station



### By National Highways

- NH66  Panvel  Kanyakumari
- NH17  North Goa  Western Coast
- NH17A  Cortalim  Murmugao



### By Waterways

- You can sail through Mumbai to Goa coastline on Angriya Cruise



## • CONNECTIVITY TO PANJIM



### By Bus

- Panjim Depot, Near KTC Bus Terminus Panjim



### By Railway

- Kurnali railway station- 10 km to the east side of panjim.
- More important Railhead is Madgaon Junction. 45km to the south of Panjim



### By Waterways

- Betim to Panjim



### Legends



Primary roadway



Bridges



Port

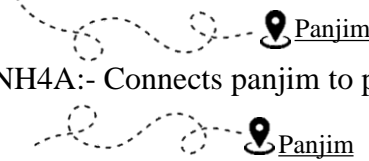


Highways

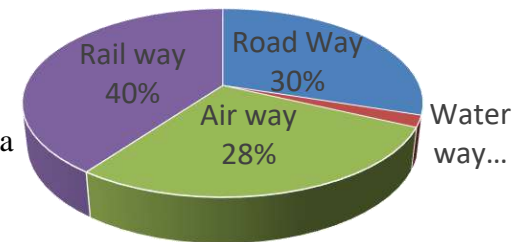


### By National Highways

- NH66:- connects mapusa to panjim and panjim to the margaon.
- NH4A:- Connects panjim to ponda



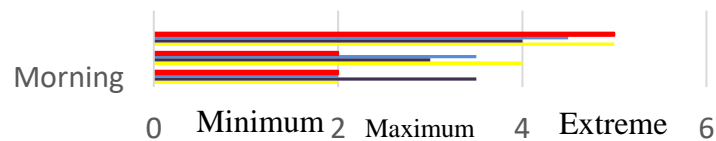
### Tourist access to Panjim



■ Road Way ■ Water way ■ Air way ■ Rail way



### Panjim Average Daily Traffic Analysis



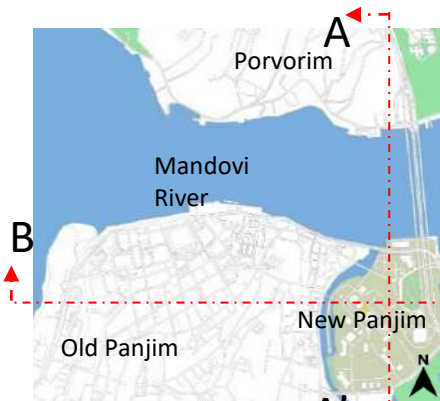
- Panvel Kochi highway
- Ponda Panjim road
- Dr. Jack de Sequeira road
- Dayanand Bandodkar marg

- Dayanand Bandodkar Marg, MG Road
- Rio De Ourem
- Ponda Panjim Road
- Panvel Kochi Highway
- Dr. Jack De Sequeira Road

- 🚌 Local Bus Stop
- 📍 Bus Terminal
- Bridges
- Port

- Dayanand Bandodkar Marg and MG Road are the major and Primary road
- Panvel Kochi Highway is NH66 which connects Mapusa To Panjim





KEY PLAN

- Mandovi river also known as Mahadayi.
- The river has a total length of 81 kilometers (50 miles); 35 kilometers (22 miles) in Karnataka, 1 kilometer (0.62 miles) in Maharashtra and 45 kilometers (28 miles) in Goa.



Section A-

A'

Porvorim

Atal Setu

Mandovi River

Patto Pedestrian Bridge

Gyan Setu

Old Panjim

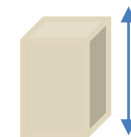
New Panjim

Section B-

B'

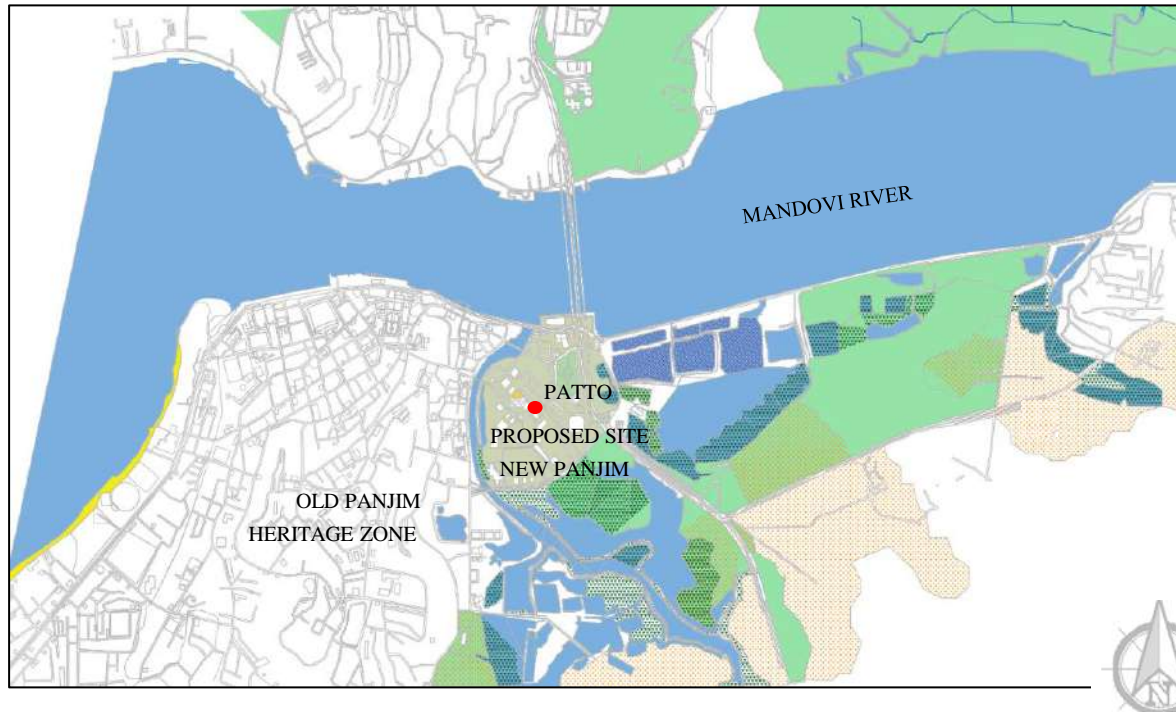


10-12 mts



28-32 mts

## ECOLOGY : TYPES OF LAND FORMS



-  Beaches
-  Mangroves
-  Salt Pans
-  Waterbody
-  Forest
-  Wetland Cultivation



- **Salt pans** – Salt pans, wetlands are the saline flood plains along Goa's estuaries anchored by mangrove forests.



- **Mangrove forests** - provides habitat and refuge to a wide array of wildlife such as birds and plants.



- **Aquatic ecosystems** - The coastal stretch with the associated sandy beaches, rocky beaches and sand dunes



- **Wetland-** Wetland is a distinct ecosystem that is flooded or saturated by , either permanently

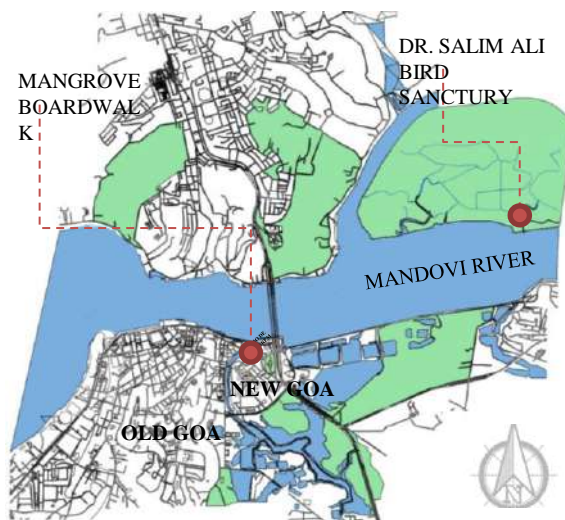


- **Forest Ecosystem-**The forests of Goa are typical of the Western Ghats..



## MANGROVE BOARDWALK

- Boardwalk architect: **Gerard da Cunha**
- Material : Wood
- The boardwalk holds an importance as the walkway has been constructed in and around the **mangroves didn't require deforestation** and was keeping in mind the ecosystem surrounding it.
- Importance of mangroves protects coastal ecosystem from heavy floods.
- **14** Different types of mangroves are found. A mangrove is a shrub or tree that grows in **coastal saline or brackish water**



## SPECIES OF MANGROVES



## DR. SALIM ALI BIRD SANCTUARY

- This is Goa's only bird sanctuary, spread over a vast acreage of 1.8sq-km on the **western tip of Chorao Island along the River Mandovi.**
- This island is surrounded by a thick cover of **mangrove swamps** and is a paradise for bird-watchers.
- The sanctuary gets its name after India's best-known ornithologist, Dr. Salim Ali. In the sanctuary, you will find a variety of local and migratory birds, who have made this island their home.





# History of Goa

- Ruled by the Kadamba dynasty from the 2nd century CE to 1312
- Muslims of the Deccan from 1312 to 1367
- Hindu kingdom of Vijayanagar and was later conquered by the Bahmanī sultanate, which founded Old Goa on the island in 1440
- Vasco Da Gama invaded Goa in 1510, defeating the Bijapur Sultanate..



Vasco da Gama

## Evolution of Goa :

Vegetation Area
  Residential Area
  Port/ Commercial
  Mix Use
  Institution

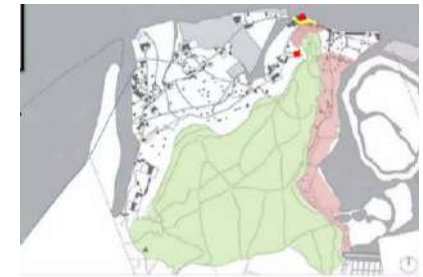


1500

Portuguese invaded Goa in 1510



1600



1700



2000



1900



1800

In 1961, India liberated Goa after a 36-hour battle and integrated it with the Indian Territory.

# Architectural Activities of Portuguese After Their Arrival in Goa :

Early building activities of Portuguese focused on construction of forts and drew inspiration from Italian mannerist style. Years of warfare enhanced the Portuguese military technical and nautical skills and impressed upon the people an austerity which got reflected in their buildings. Buildings of this period were characterized by solidity and somber appearance. This architectural style was the primary source of inspiration for the aesthetics of building from 16th C till beginning of 18th C.

1600 - 1700



Church of Our Lady of the Immaculate Conception



Basilica of Bom Jesus



Se Cathedral



Fort Aguada



Church of St. Francis Of Assisi

1700 - 1800



Fontainhas Quarter



Church of St. Cajetan



Cabo De Rama Fort



Corjuem Fort



Silva House

1800 - 1900



Chapel of St. Sebastian



Casa da Moeda



Fontainhas and Sao Tome



Institute Menezes Braganza



Gitanjali Gallery

1900 - 2000



Nisha play school



Vidhan Bhavan Building



Houses of Goa Museum



Kala Academy



Shiksha Niketan School

2000- 2023



Blue Dart Building



SBI Bank



HDFC Bank



Central Library



Panjab National Bank



Dempo Tower



## The Identity And Elements Of Goan Houses:

- The late phase Goan houses differs from the Portuguese secular architecture in the form of the porch or balcoe and the details of its ornamentation.
- The ornamentation of 18th C Goan house combined the Mannerist and Rococo styles. Later 19th C house were termed as Goan eclectic style which was a mix of Neo-Classicism and Neo-Gothic.



Porch



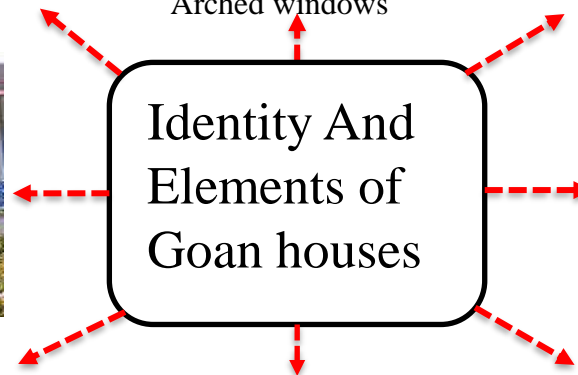
Arched windows



Balcoe



Central entrance with veranda



Tulsi Vrindavan



rooms around a courtyard



Single storey



Rajangan

### Features of Goan Catholic Houses :



### Color grade system:

Before the introduction of chemical dyes, natural dyes were used. This limited color to red (from red oxide), burnt red (from clay), yellow and blue (from indigo). As chemical dyes came, a variety of pastels got added.

#### • Zone- A1



Government Service Building



Residential Building



Government Building

#### • Zone- B



Religious Building



## Places Visited During Study Tour



Houses Of Goa Museum



Shiksha Niketan



Nisha Play School



Immaculate Church



Miramar Beach



Patto Circle



St. Sebastian Chapel



Fontainhas



Kala Academy



St. Cathedral



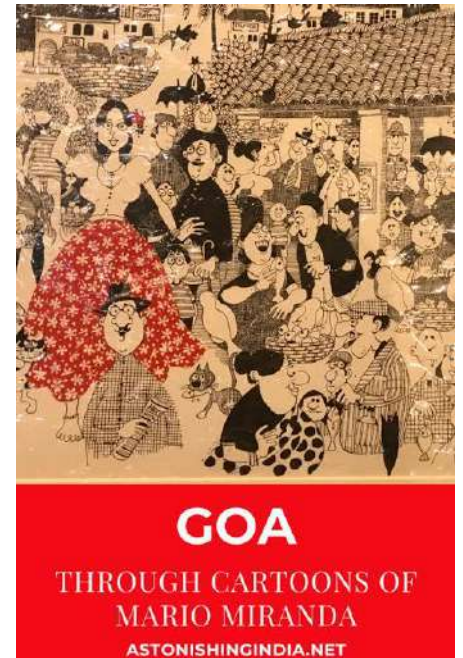
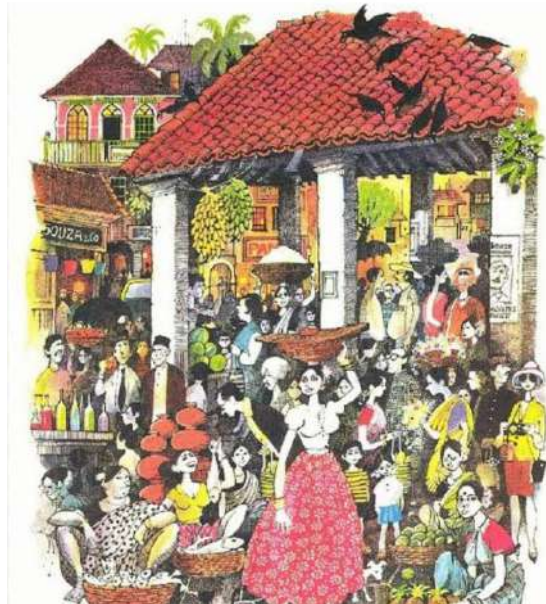
The Basilica Of Bom Jesus



## Mario Miranda



- Mario Miranda or Mario de Miranda, was an Indian cartoonist and painter based in Loutolim in the Indian state of Goa.
- Miranda's most popular style of cartooning was "very flat with criss-crossing interactions".
- He would observe people everywhere (like eateries, taverns, weddings, the bus stop, the post office) and document their social life. However, he always stayed away from drawing political cartoons.
- his tales were told through cubism and the nature of the contours of his work, stating that his "geometric jiggles" coupled with subtle colours helped convey the emotions of the characters
- His works would include people from all walks of life interacting with one another. Additionally, he would capture the essence of Goan life.



## CONTEMPORARY ARCHITECTURE



**Ar. Charles Correa**

- His styles Deeply rooted in local cultures, all the while providing modern structural solutions under his creative designs.



**Ar. Gerard de Cunha**

- He mostly uses local site materials and **unique, natural traditional construction.**
- Where the interiors enjoyed plentiful **natural daylight and ventilation.**
- While the structure temperature inside was naturally cool, was equally strong.



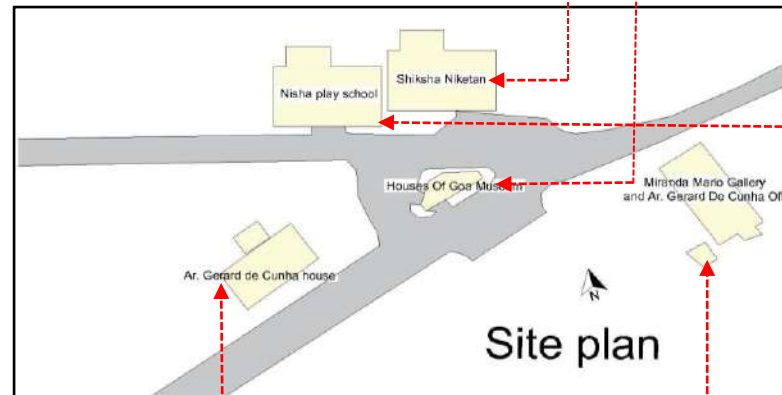
**Kala Academy, 1983**  
**Ar. Charles Correa**



**Shiksha Niketan, (2011)**



**Houses Of Goa Museum, (1997)**



**Nisha Play School, 1997**



**Ar. Gerard De Cunha House**



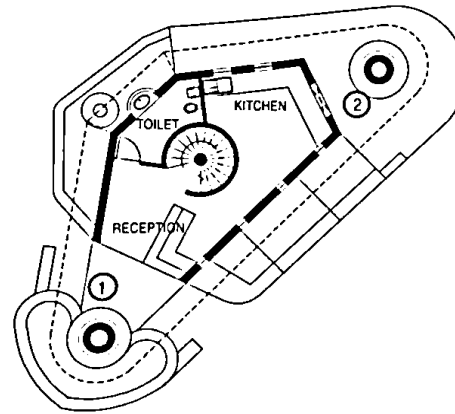
**Mario Miranda Gallery**





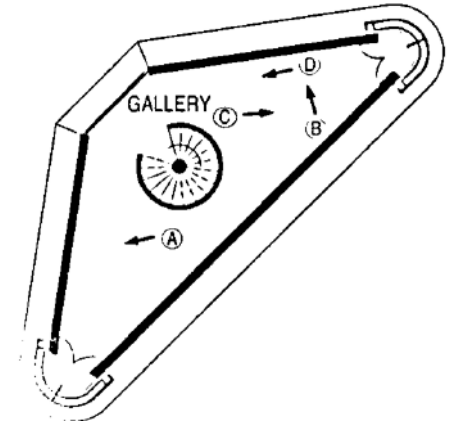
## Houses of Goa Museum, (1997)

- Houses Of Goa Museum is a unique building by a famous architect **Gerard De Cunha**.
- Building is 'Boat' shaped and serves as road partition.
- Its style is Indo-Portuguese.



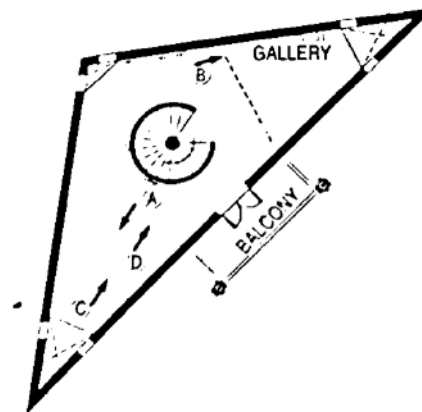
**Ground Floor plan**

- The ground floor is combined of toilet, reception and cafe



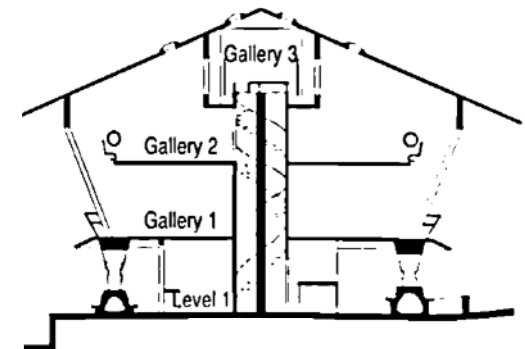
**First floor plan**

- The spiral staircase leads to the first floor showing examples of Goan houses .



**Second floor plan**

- Then we lead to second floor showing details of materials, interior, furniture and climate



**Section**

- Third floor consists of theatre for goan house information



## Nisha Play School, (1997)



- Entrance level plan is the highest level of the structure.
- Sliding entrance for kids
- Slide assisted with the circular staircase with chute.
- Building elements in different shapes and colors become teaching aids to convey ideas of form and color.
- Furniture is designed especially for the age group using the space.
- Thermocol and glass bottles are added to slab during casting making it filler slab and also adds as insulation.



**Doll house alongside the classroom for kids**



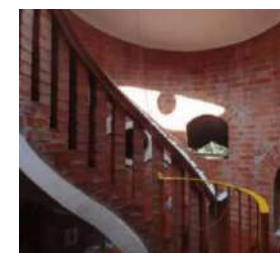
**Entrance level plan**



**Kids size classroom**



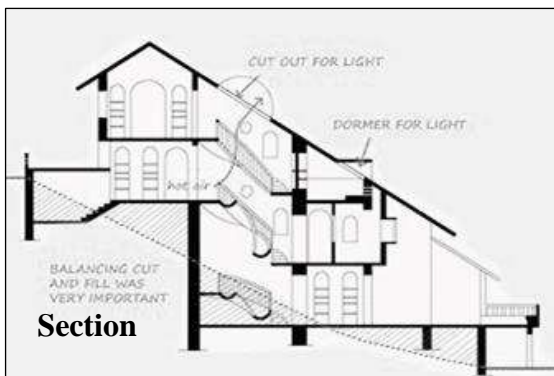
**Classroom**



**Circular Staircase**



**Universal Entrance**

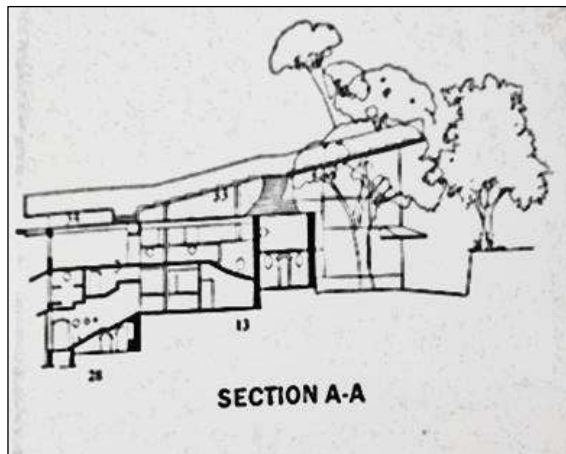
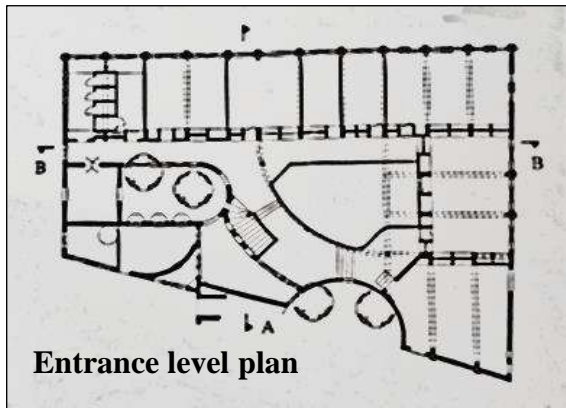


**Section**



- The building design and form evolved from the need to optimize day lighting and enhance natural ventilation.
- Light shelves , windows and small opening in brickwork provide plentiful light for daytime activities on all storeys of building.

## Shiksha Niketan, (2011)



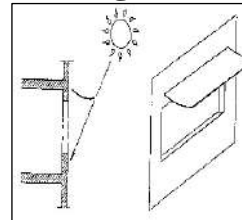
- The school has Pucca boundary wall. The school has have electric connection.
- The school does not need ramp for disabled children to access classrooms.
- Exposed brick work(Jali work)
- Entrance level plan is the highest level of the structure

## Climate responsive architecture



- Green cover on balconies and roofs.

## Semi-open spaces Shading devices



- Maximizing the use of **natural light**, westerly breeze and space.
- Overhangs and louvers are used for shading in monsoon seasons.

## Amphitheatre



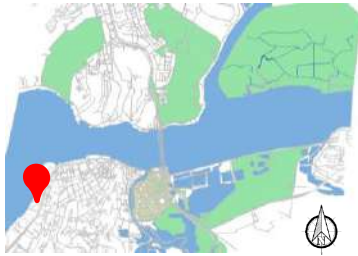
- Amphitheatre is located on top of the structure to reduce the weight of masonry wall around amphitheater the walls are made out of **alcohol, soda, sauce and medicine bottles**.
- Around **25000** bottles were used in construction.
- Wall over cantilever slabs are light weight , where supporting walls are two and half meter away from plinth.



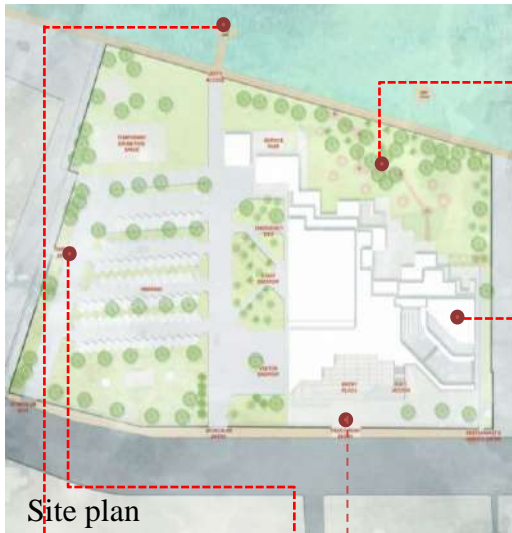
## Window



## Kala Academy, (1983)



- Architect: **Charles Correa**
- Founded by: Ministry of Art & Culture of the Government of Goa
- Started in: 1970
- Completed at: 1983
- Location: Campal, Panaji. Along the banks of Mandovi river



Mukhtangan or Open space



Amphitheatre



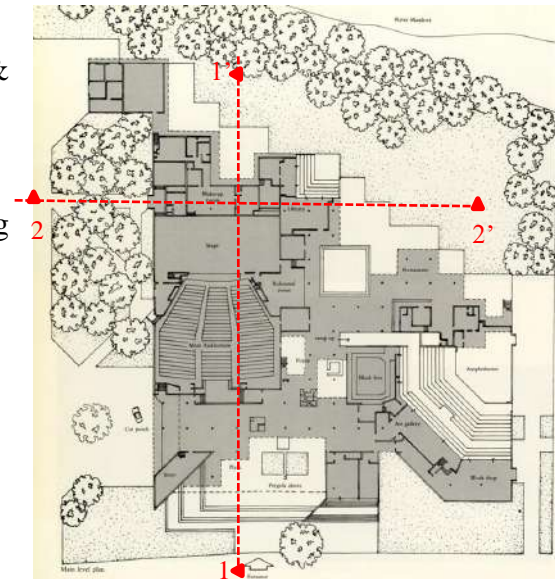
Light House



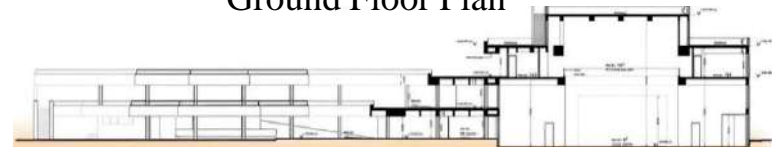
Main Entrance



Parking Entrance



Ground Floor Plan



Section 1-1'

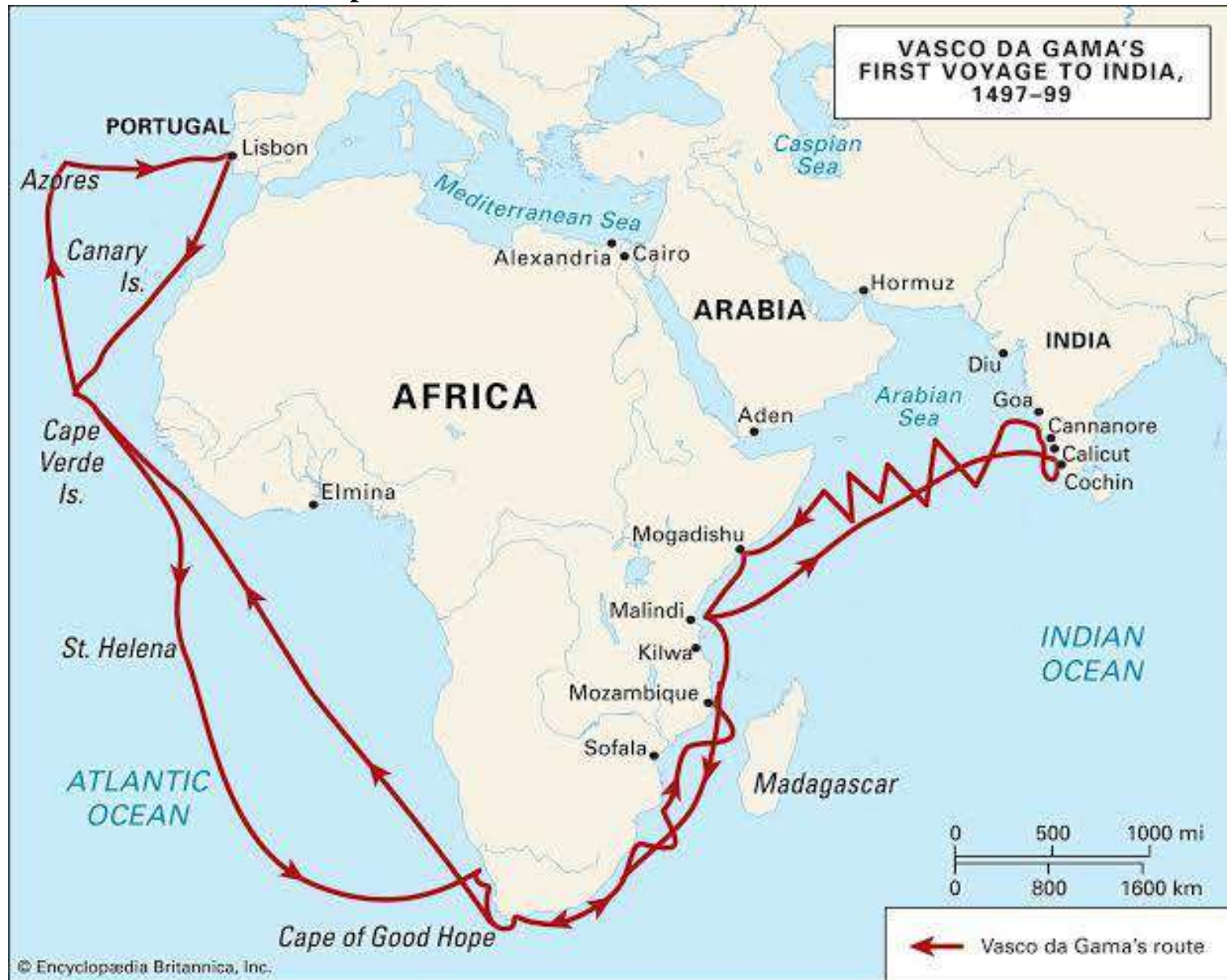


Section 2-2

- Site Area: 6.3 Acres
- Building built in the concept of unbuilding
- spacious Public Spaces
- Attractive views
- Creates great landscape using river
- Good built open relationship



## Spices Route in context with Goa



## 16<sup>TH</sup> CENTURY

- Goa was a flourishing commercial for the import of Persian horses and export of timber, jaggery, betel leaves and nuts, coconut oil, copra, coconuts, mangoes, vinegar, salted fish, toddy and spices.
- It was since **1864** that the Portuguese were pleading with Britain regarding the building of a railway line that would link Goa to British-India with a harbour to deepen their maritime trade links.

1864

1900

- In **1878** started with the construction of a railway line from Mormugao harbour to Goa borders, installed the telegraphic line and made Mormugao Bay a secure harbour.
- At the beginning of **1900**, Portuguese-Goa's trade with British-India was mainly confined to salt and agricultural products including fish, chillies and canned foods.

1930

- Post **1910**, Portuguese-Goa imported rice, cloth, wheat, sugar, wines, vegetables, coke, textiles, soap, tobacco, tea, livestock and manufactured goods from British-India and other parts of the world

- 1930s** that the first consignment of cashew kernels was exported from Goa.

1950



**TREAD BREAK MARK**  
• AFTER 1980

- 1950-1960** periods, the export of processed cashew nuts from Portuguese-Goa to India and Europe gained momentum while the import of raw nuts from African nations met the needs of the domestic industry.

## Evolution of Trade



Panjim Main Trade Market



Spice Trade

## TRADE BEFORE 16<sup>th</sup> Century



Trade of Persian horse



Export of Timber



Salted Fish

## TRADE (1600 – 1900)



Trade of Fish



Tobacco

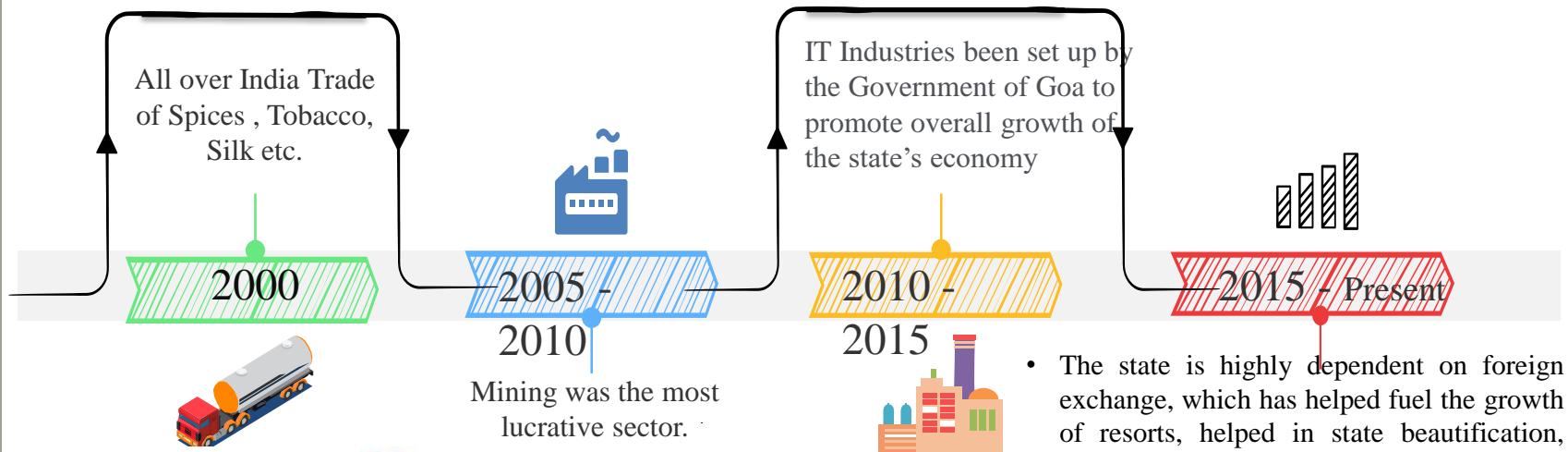
## TRADE (1900 – 1950)



Agricultural Products



## Evolution of Trade to Economy (After 2000 till Present)



- The state is highly dependent on foreign exchange, which has helped fuel the growth of resorts, helped in state beautification, hotels and other tourism-related businesses.
- Important revenue sources come from the export of manganese and iron ore.



## Tourism Industry

- Tourism is the back bone of Goan economy, with 40% of the population directly or indirectly dependent on it.
- The sector has shown strong growth with total tourist arrivals increasing from 2.3 million in 2005 to 7.8 million in 2017, an annual growth of nearly 11%.





## Map Indicating Site Surroundings.



SBI



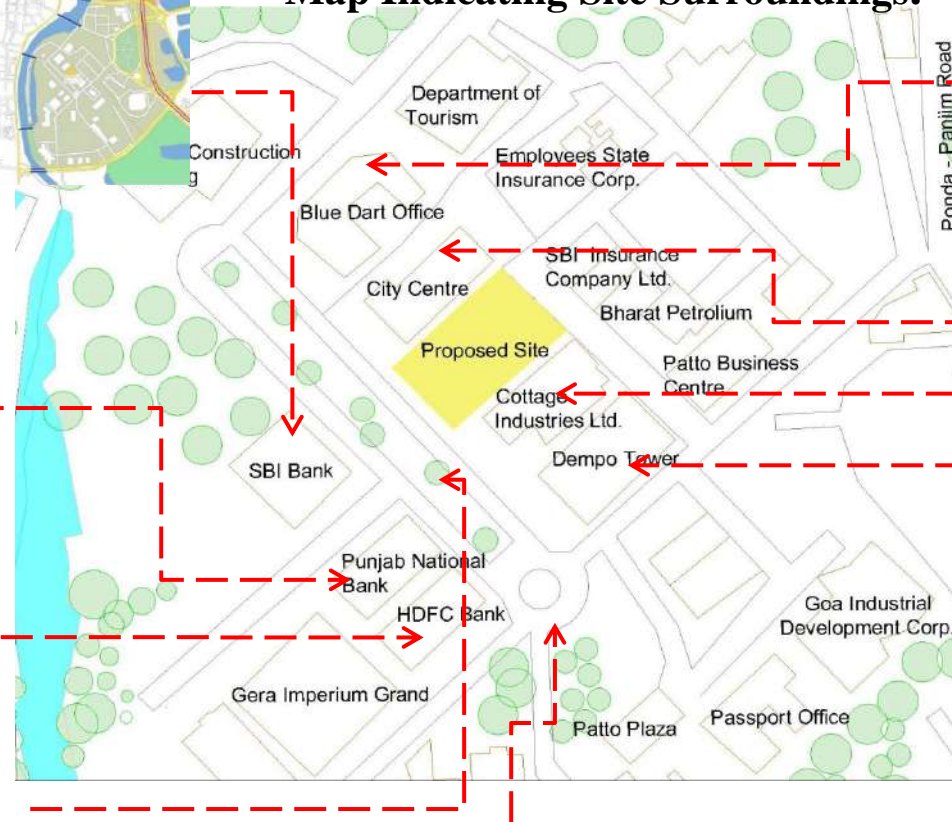
Punjab National Bank



HDFC Bank



EDC Patto Pay Parking Lot



Blue Dart Office



City Centre



Cottage Industries Ltd



Dempo Tower



Patto Circle

## Map Indicating Site Surroundings.



Department of Tourism



Under Construction



Central library



Ginger Hotel



Tapal Bhavan



GST Bhavan



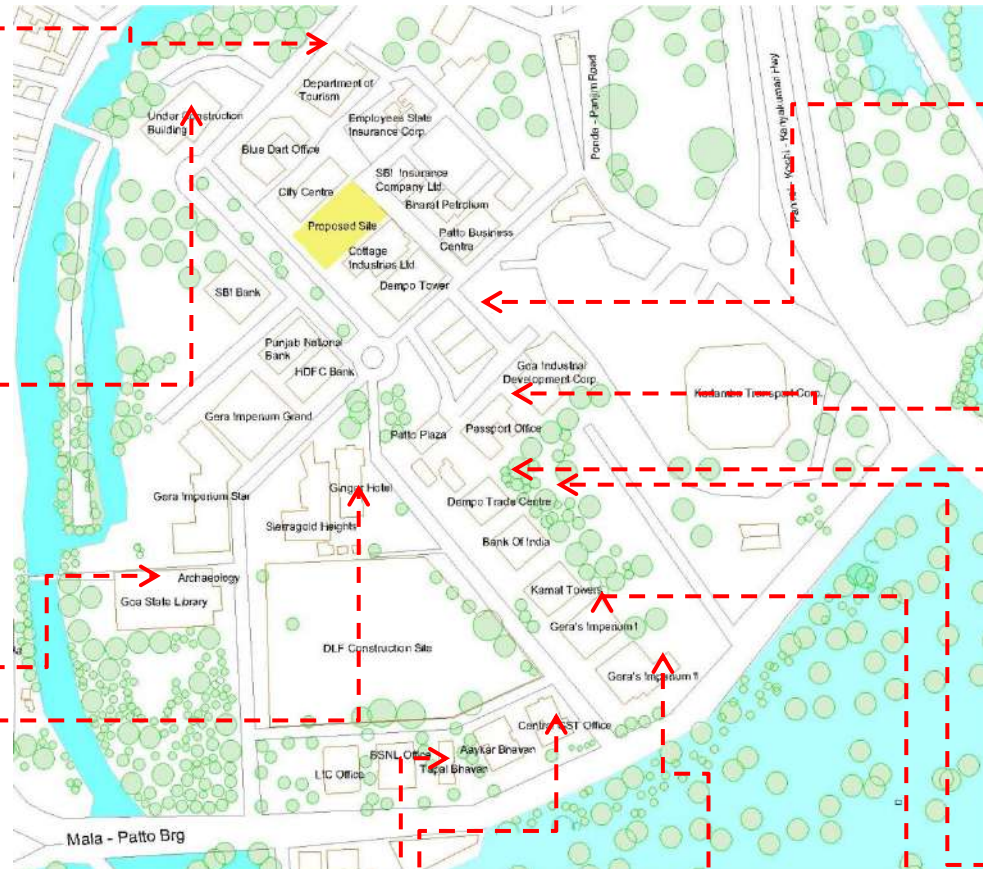
Gera's Imperium 2



Gera's Imperium



Bank Of India



Shiv Tower

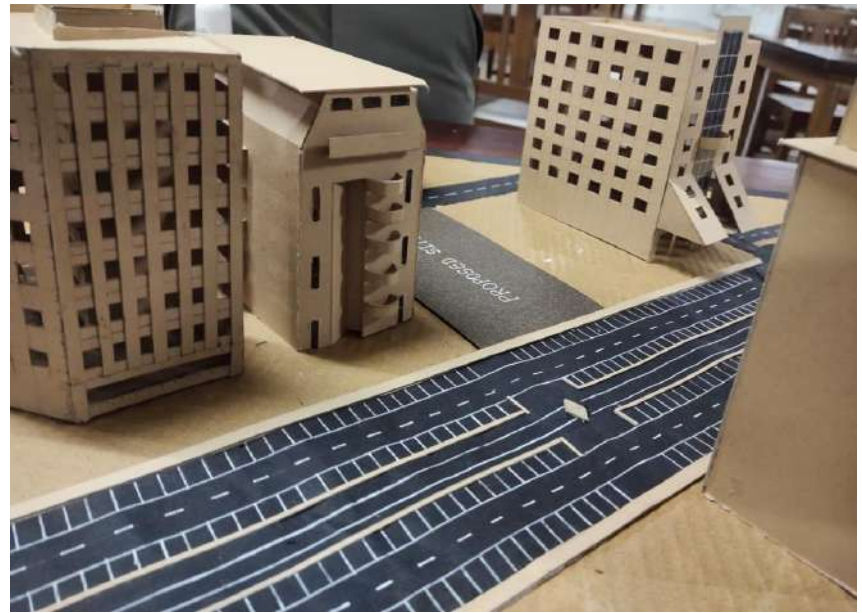
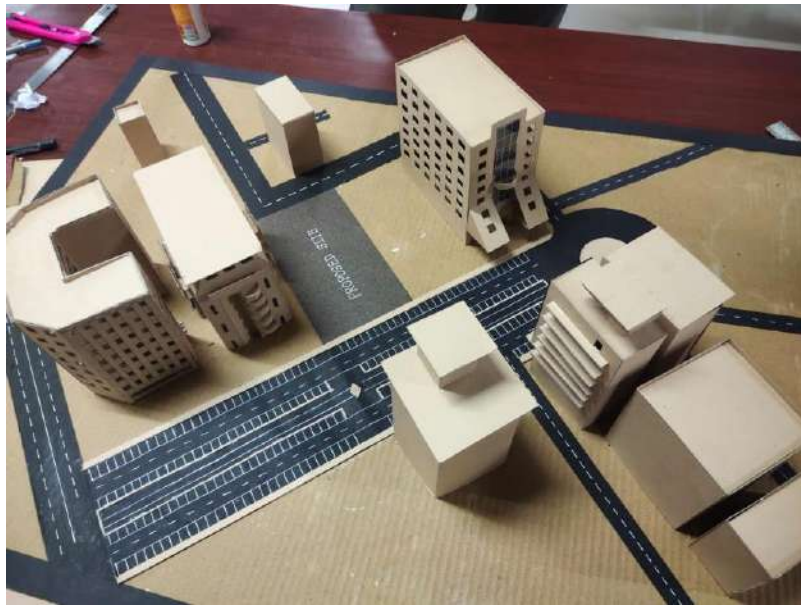


Passport Office



Dempo Trade Center









**SINHGAD TECHNICAL EDUCATION SOCIETY'S  
SINHGAD COLLEGE OF ARCHITECTURE, PUNE**

**STUDY TOUR**

**AHEMDABAD & UDAIPUR**

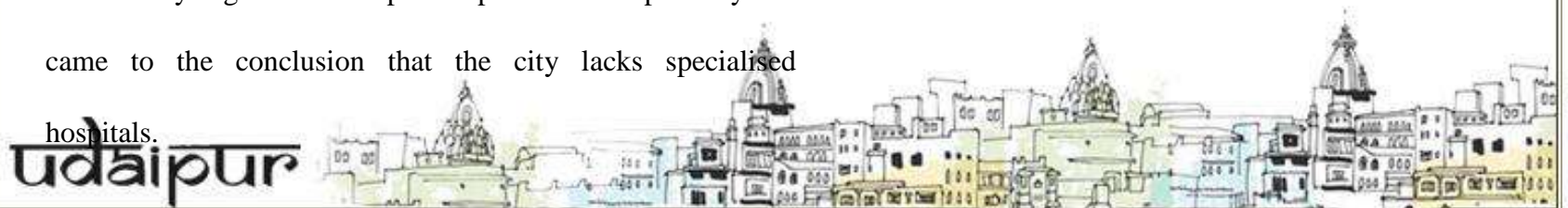
by

**III YR B. Arch.**

**Division: B**

## INTRODUCTION

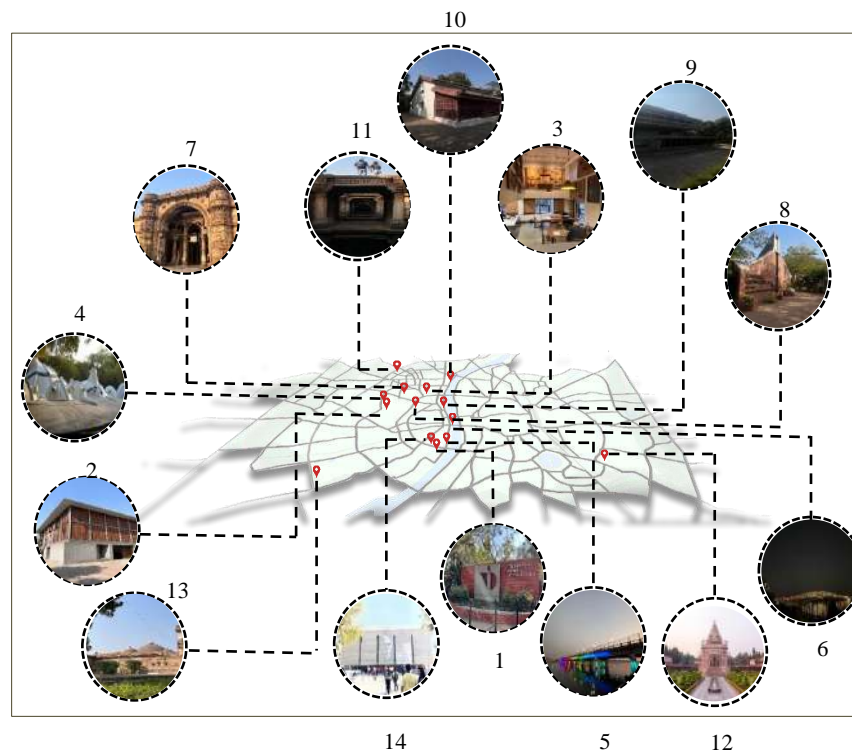
- This was part of our syllabus of an architectural design study to understand different socio-cultural aspects ,aesthetics, climate, building material and construction technologies of different regions.
- Study tour was planned to Ahmedabad and Udaipur from 19<sup>th</sup> January to 26<sup>th</sup> January for the students of 3<sup>rd</sup> year div B
- We travelled to Ahmedabad by train it was a 12 hr long journey and had a tour of Ahmedabad city from 19<sup>th</sup> to 22<sup>nd</sup> January then we headed to Udaipur by bus.
- We had planned our study tour focusing on Udaipur city.
- We selected Udaipur because it has a strong cultural base.
- After analysing the development plan of Udaipur city we came to the conclusion that the city lacks specialised hospitals.





## Geographical Locations Of Places Visited In AHMEDABAD

No,	Names Of Places
1	National Institute Of Design
2	CPT University
3	HCP Planning And Management Pvt. Lmt
4	Hussain Doshi Gufa
5	Sabarmati Riverfront
6	Atal Foot Bridge
7	Heritage Walk
8	Kanoriya Art Gallery
9	L D Institute Of Indology
10	Sabarmati Ashram
11	Adlaj Stepwell
12	Akshardham
13	Sarkhej Roza
14	Tagore Hall

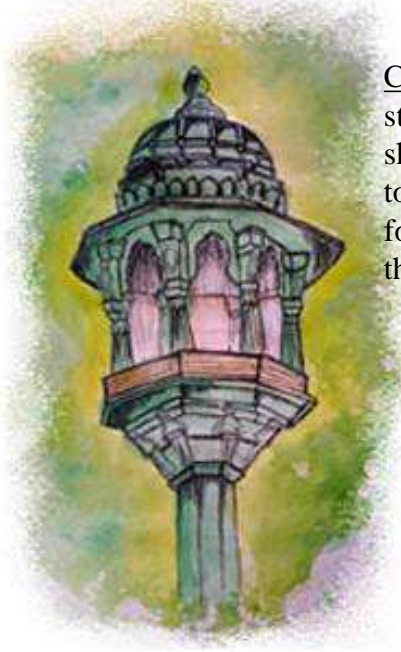


### LEGENDS

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## ARCHITECTURAL FEATURES OF AHMEDABAD



Chabutara : a tower like structure with pentagonal shaped enclosures at the top. There were several holes for birds so they can make their nests or to feed them.

A column detail that we saw in a haveli ram mandir

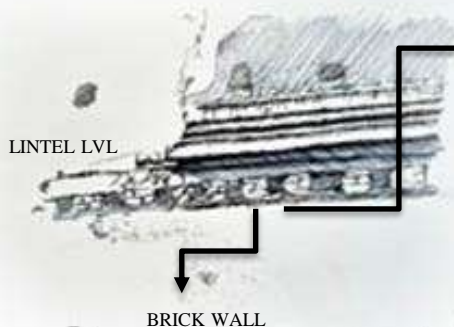
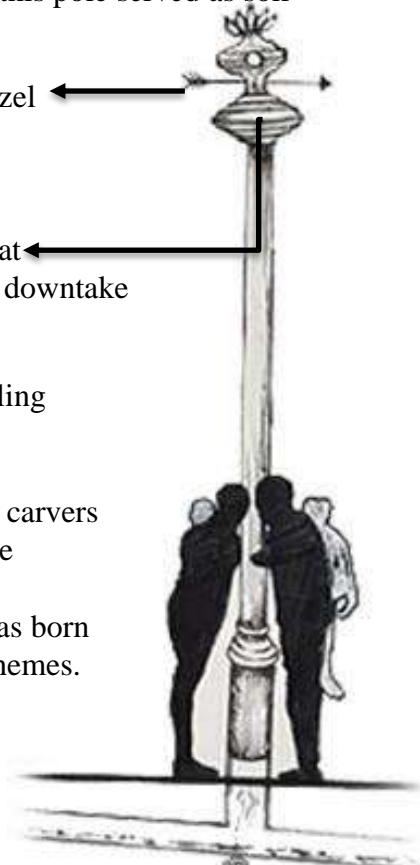


Kalpavriksha is a wish fulfilling Divine indian tree in hinduism, jainism, etc. The local artisans and stone carvers incorporated the tree into the mosques they built. Indo-islamic architecture was born of this fusion of ideas and themes.

The city had underground drainage system, which led to foul smell problems so to remove this foul smell from the area this pole served as soil pipe.

Nozzel

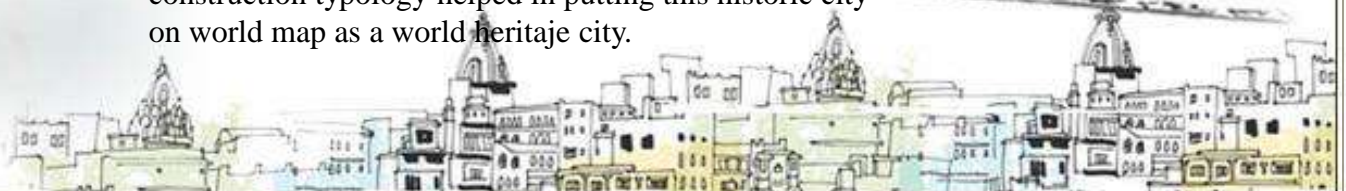
Arrow that indicates downtake



WOODEN BEAM

Wooden beams were inserted in between bricks in walls at the lintel level. This made the structure earthquake resistant. This houses with unique timber and masonry construction typology helped in putting this historic city on world map as a world heritage city.

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## National Institute of Design

We visited National Institute Of Design on the first day of our tour, where we visited all the studios and workshops of the institute.

There was a work gallery in the central courtyard of the institute.

Further we visited their workshop area where they were taught about the joinery and model making of wooden products, also they had a 3d printing workshop.

We were shown some of the examples of wooden joinery made by students.



## Hasmukh C. Patel Design ,Planning & Management Pvt.ltd

Their communication head and Archive head guided us throughout the visit.

We went through their gallery of Kashi Vishwanath project, where progressive conceptual drawings were exhibited.

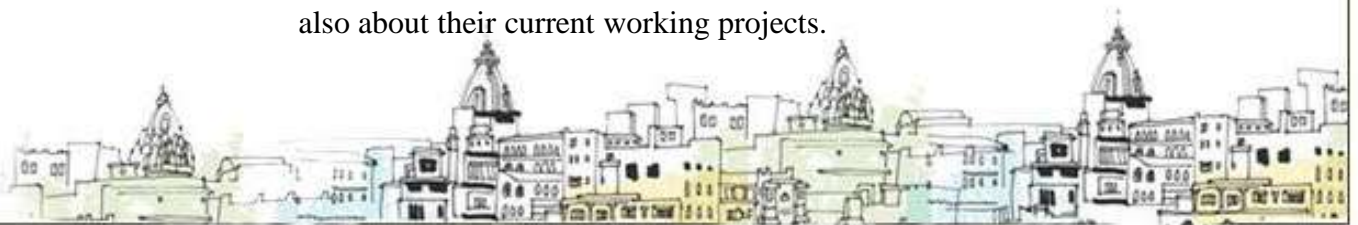
Also the 3d printed models of the project were shown.

Afterwards we moved forward to their head office where we visited their design, graphics and animation, project management departments.

The communication head explained us about their working environment and also about their current working projects.



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## Heritage Walk

Our heritage walk started at 7am. It started with the introduction of poet Dalpat Rai who was a pioneer in spreading awareness about the importance of girl education.

We went through different pols (entrances) of different communities. Every pol had a bird feeder known as 'chabutara'.

Then we visited a 150yrs old Ram mandir which was situated in a Haveli.

The tour guide explained the spaces given in the Haveli.

He told the history of Ahmedabad and how the nature of people is.

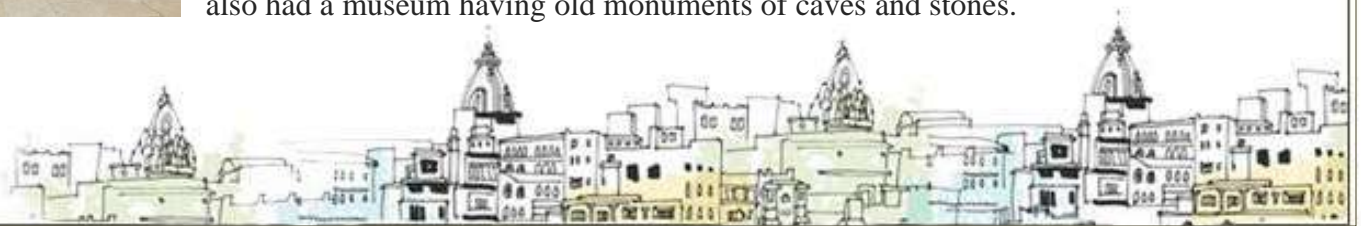
After, we visited the Jumma Masjid. Here the tour guide explained influence and history of Hindu architecture on the Masjid.



## LD Institute of Indology

The structure was shaped as a "steamer". A structure designed by Late Ar. B. V. Doshi. It also has a collection of more than 18 languages other books related of different languages and books related to architecture. The structure had the library at the basement. It had water body running surrounding the building boundaries for inlet of natural cool air through cross ventilation through windows at sill levels. The structure is made up of exposed concrete and glass. It also had a museum having old monuments of caves and stones.

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# Udaipur

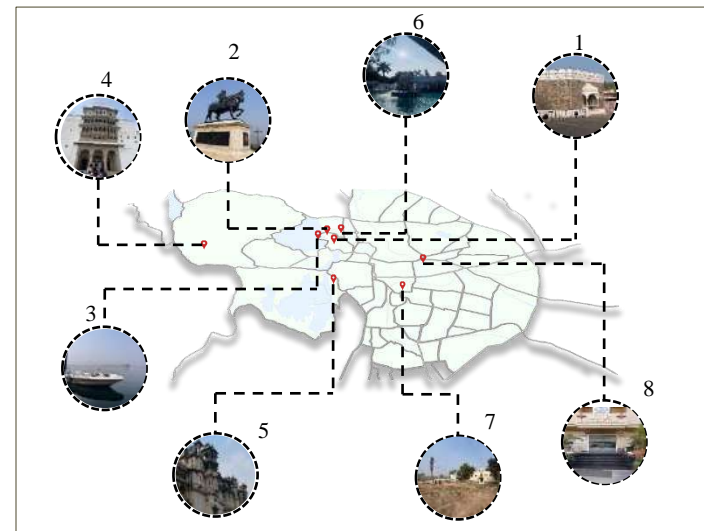


Khamma  
Ghani Sa



## Geographical Locations Of Places Visited In UDAIPUR

No,	Names Of Places
1	Moti Magri
2	Maharana Pratap Smarak
3	Fateh Sagar Lake
4	Sajjangarh
5	City Palace
6	Sahelliyo Ki Bari
7	Site Visit
8	Case Study





## PLACES VISITED IN UDAIPUR

### MOTI MAGRI

- Moti Magri is a museum dedicated to the Rajput hero Maharana Pratap and the warriors who were
- martyred in the battle of Haldi Ghati while fighting against the Mughals.
- The museum also has preserved the armours and weapons used by Maharana Pratap and the warriors at the battle.
- While getting down hills, there was moti mahal which was used to hide Maharana Uday Singh when he was child because his uncle wanted to kill him to get the position of the king as the next king was Uday Singh.
- The mahal was built from different types of stones which were joined by the mixture of lime, mud and jaggery paste with wall thickness of 240mm which are earthquake resistance and are cool even in summers due to the materials used.



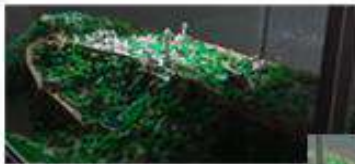
The armour of Maharana Pratap weighs 16.295 Kg.



Mud and jaggery mortar

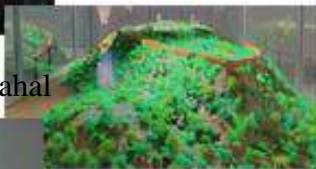


Maharana Pratap's horse Chetak had his left leg lifted in the air to give his master salute as he died before Maharana Pratap in the battle of Haldi Ghati.



Model of Chittorgarh

Janana Mahal

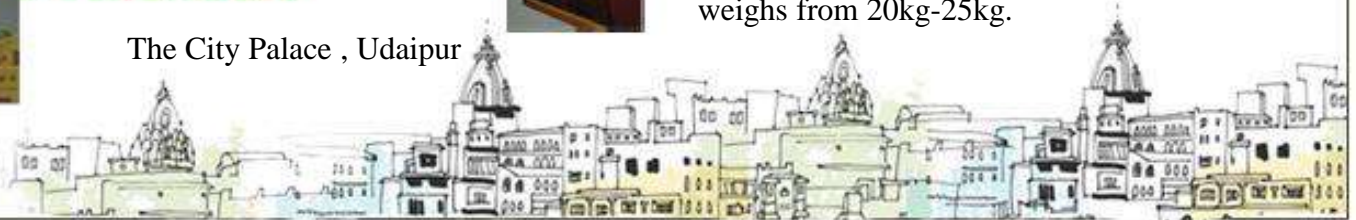


The City Palace , Udaipur



Sword of Maharana Pratap weighs from 20kg-25kg.

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Jharokha

## SAJJANGARH PALACE

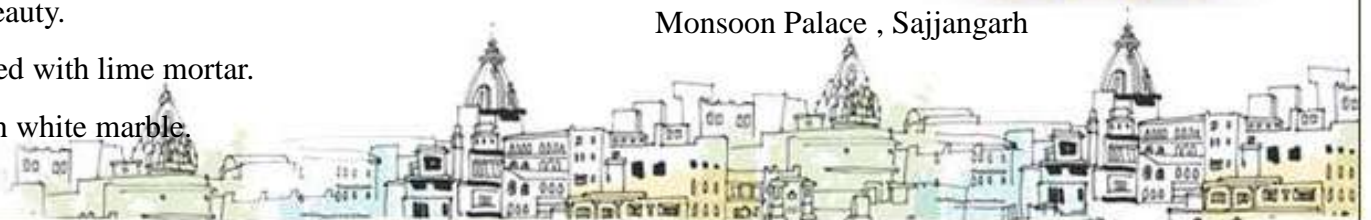
- The Monsoon Palace, also known as the Sajjan Garh Palace, is a hilltop palatial residence in the city of Udaipur, Rajasthan in India, overlooking the Fateh Sagar Lake.
- It is named Sajjangarh after Maharana Sajjan Singh (1874–1884) of the Mewar dynasty, whom it was built for in 1884.
- The intention of the original planner, Maharana Sajjan Singh, was to build a nine-storey complex, basically as an astronomical centre and to keep track of the movement of monsoon clouds in the area surrounding the palace, and also to provide employment to people.

- The white marble palace had high turrets and guards regulating each of the towers.
- The palace had a grand central court with a staircase and many rooms and quarters.
- The palace is built on marble pillars, which are carved with exquisite motifs of leaves and flowers.
- At night, the illuminated palace with the Rajasthani architecture comprising domes, fountains and jharokas gives it a fairy tale beauty.
- The walls are plastered with lime mortar.
- The palace, built with white marble.



Monsoon Palace , Sajjangarh

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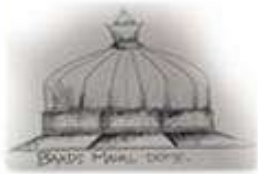




Tripolia Dome



Zenana Mahal Dome



Amar Mahal Dome



Baadi Mahal Dome

- Our guide Mr. Lalit Vyas guided us through the visit of City Palace.
- The Udaipur City Palace is one of the architectural marvels of Rajasthan, located on the banks of Lake Pichola, the largest lake of Udaipur.
- The City Palace was built in a flamboyant style (gothic architecture) in 15<sup>th</sup> century.
- Maharana Udai Singh started the construction in 1553, but the present form of the Palace is the result of subsequent additions by his successors.

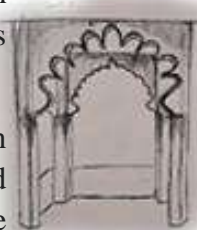
## CITY PALACE

- Mor Chowk is integral to the inner courts of the palace. The elaborate design of this court consists of three peacocks representing the three seasons of summer, winter, and monsoon and faced with colour glass mosaic.

- The palace complex has been built entirely in granite and marble. The interiors of the palace with its balconies, towers and cupolas exhibit delicate mirror-work, marble-work, murals, wall paintings, silver-work, inlay-work and tinted glass.
- Domes, balconies, towers, chhatris, multifoil arches, jali pattern on windows, courtyards.



City Palace



Door detail



Chhatri



Jali pattern

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## SAHELIYON KI BARI



LOTUS



ALLEGHENY  
SERVICEBERRY



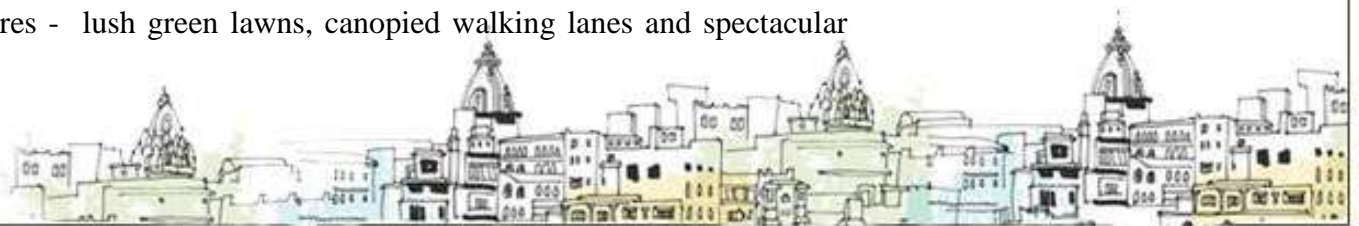
SURFINIA



BONSAI (PAPER  
FLOWER)

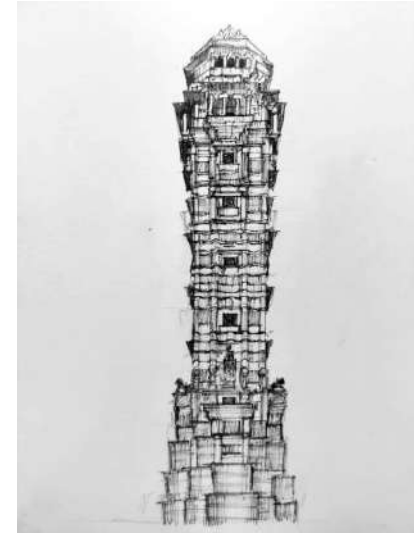
- It was made for the maidens who accompanied the Princess after her marriage to Maharana Sangram Singh.
- Saheliyon Ki Bari is particularly renowned for the white marble pavilions that mesmerize with their ornate carvings, like the pavilion of rain fountains.
- This garden is below the level of Fateh Sagar lake as the water can flow easily on the slope formed and can be supplied to the garden for the landscape purpose.
- From the flowers to the fountains, Saheliyon Ki Bari combines the best of natural and man-made marvels.
- The lotus-shaped pools are another celebrated feature of Saheliyon Ki Bari.
- There are 3 fountains in sequence of welcome fountain , bin mausam barsaat , kalingan a lotus pool
- Materials – Marble , granite , blue mosaic tiles.
- Architectural features - lush green lawns, canopied walking lanes and spectacular fountains.

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## CHITTORGARH

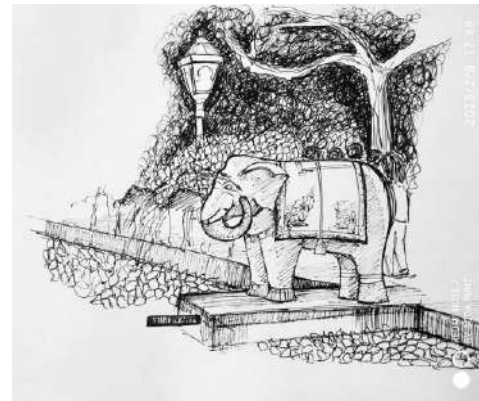
- The fort was called as Chitrakut and was built by the local ruler Chitragada Maurya.
- The height of popularity of the fort was in 14<sup>th</sup> century when Alauddin Khalji led a large army to capture the fort.
- Unfortunately, when Alauddin entered into the fort after capturing it, all the women inside the fort along with Queen Padmini jumped into fire and committed “Johar”.
- The fort flourished during this reign. 84 structures were built inside the fort for its defense
- Chittorgarh fort is spread in an area of 700 acres. It has been made in the shape of a large fish and its circumference is 13km.
- The fort is built on the banks of **Gambhri River** and a limestone bridge has to be crossed in order to enter the fort. The fort was built on the basis of Hindu architecture though ideas like vaulted substructures belong to Muslim architecture.
- The fort is having 7 entrances also the whole fort is built in limestone and redsand stone



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- It was made for the maidens who accompanied the Princess after her marriage to Maharana Sangram Singh.
- Saheliyon Ki Bari is particularly renowned for the white marble pavilions that mesmerize with their ornate carvings, like the pavilion of rain fountains.
- This garden is below the level of Fateh Sagar lake as the water can flow easily on the slope formed and can be supplied to the garden for the landscape purpose.
- From the flowers to the fountains, Saheliyon Ki Bari combines the best of natural and man-made marvels.
- The lotus-shaped pools are another celebrated feature of Saheliyon Ki Bari.
- There are 3 fountains in sequence of welcome fountain , bin mausam barsaat , kalingan a lotus pool
- Materials – Marble , granite , blue mosaic tiles.
- Architectural features - lush green lawns, canopied walking lanes and spectacular fountains.



udaipur





## AREA STUDY

Hathipole is a popular market located in the Udaipur city which is well known for handcrafted articles, fabrics, footwear etc amongst the tourists. The hathipole Chauraha is a focal point of the area which connects four main roads i.e. Hathipole road, Ashwin bazar road, chota chetak road, pannadhay marg; having the hathipole police station centrally.

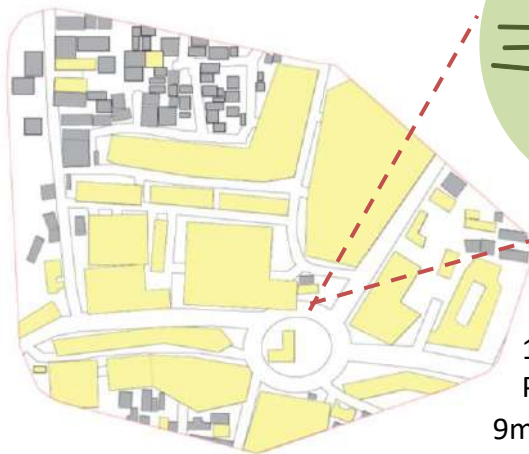
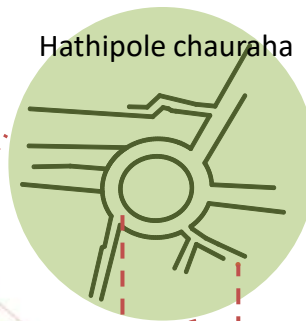
Further road of the area spills over the footpath with the street vendors. It is crowded at evenings in between 5pm to 8pm



HATHIPOLE, UDAIPUR



Hathipole chauraha



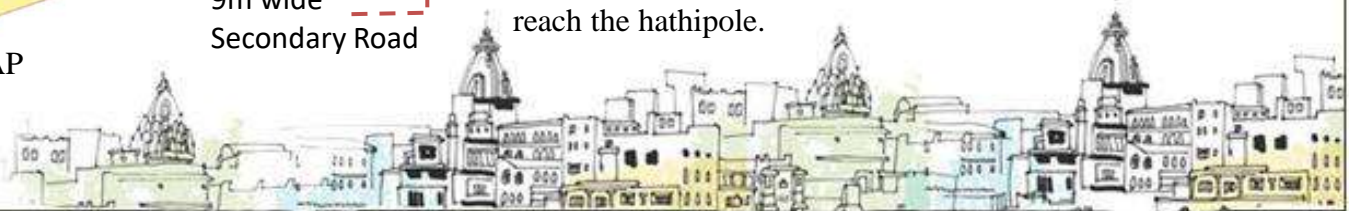
15m wide  
Primary Road  
9m wide  
Secondary Road

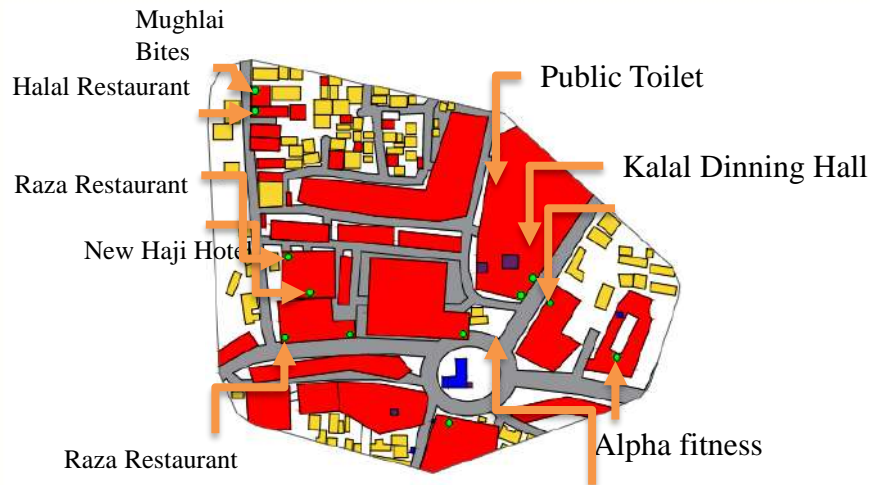
BASE MAP

### Roads and connectivity:

Along the periphery of pannadhay marg; there is commercial area majorly having Textile and Handmade fabric shops. Jhariya marg and Chamanpura road connect with each other with three parallel roads having the Hardware and suppliers shops mainly. Hathipole chauraha is connected with the chetak circle by the chetak circle bus stop which is majorly used by local people to reach the hathipole.

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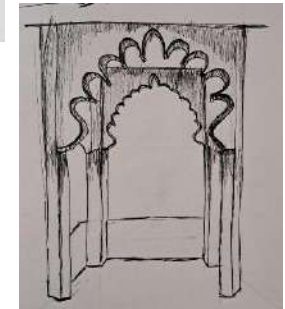
Commercial  
Public Services  
Religious  
Residential  
Roads  
Amenities

Film Production Company

After studying the land use of Hathipole, we concluded that the market area is segregated by the typology of business. There are three parallel colonies which respectively consists Fabric and textile shops, Furniture shops and Hardware shops



Amenities Survey

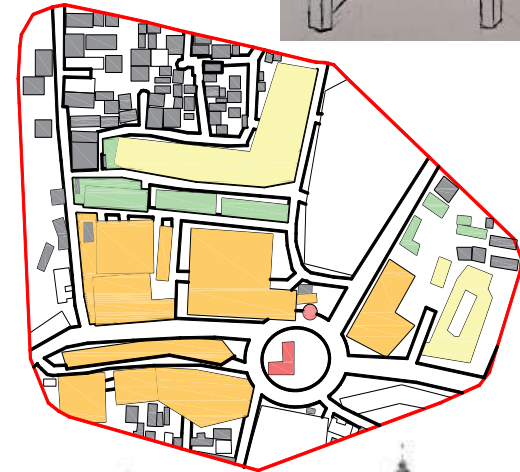


#### Amenities Survey

1. Taxi Service (1)
2. Atm (2)
3. Hotels (4)
4. Café (2)
5. Fitness Club (1)
6. Restaurants (6)
7. Film Production Company (1)

#### Legends

- Fabric And Handicraft
- Furniture
- Hardware And Suppliers
- Residential
- Public services



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## ACTIVITY MAPPING AND ANALYSIS

### Morning

7am to 9am:

Most of the Shop owners buy goods for their sell and load their materials.

### Evening

5pm to 8pm :

Street Vendors start impeding with their stalls and selling materials. Evenings are mostly crowded with the tourists and local people in the market.

### Afternoon

11am to 3pm :

Moderately populated with tourists and locals. Food stalls and restaurants are majorly populated during this time.



North-west part of the hathipole is majorly consists the residential zone. Percentage of Residential area is less; compared to the commercial spaces

The area is differentiated according to the business and retail shops which makes the user movements easier.

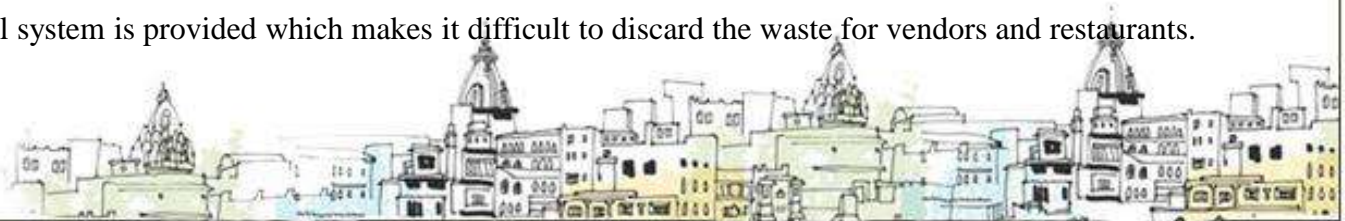
There is no specific designated area for the loading/unloading of the material for the retail shops which gets stacked along the footpaths causing the traffic issues.

Lots of shops have encroached to roads to sell their goods, making the pedestrian movements difficult.

Unattended open spaces with undefined boundaries making it difficult for parking.

No proper waste disposal system is provided which makes it difficult to discard the waste for vendors and restaurants.

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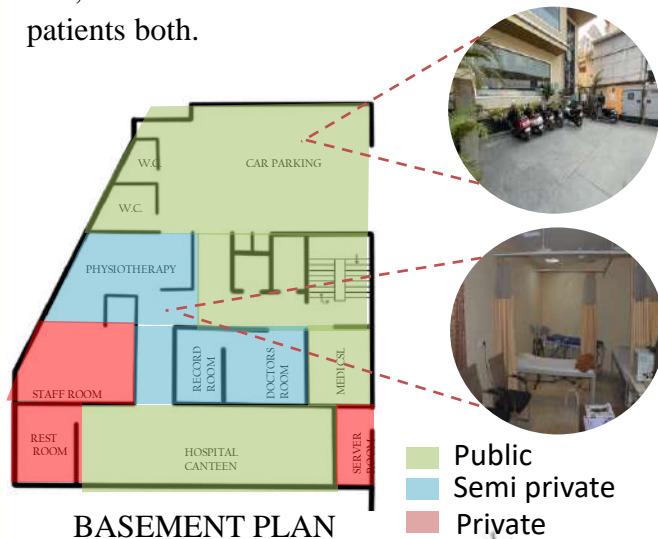


## ON FIELD STUDY

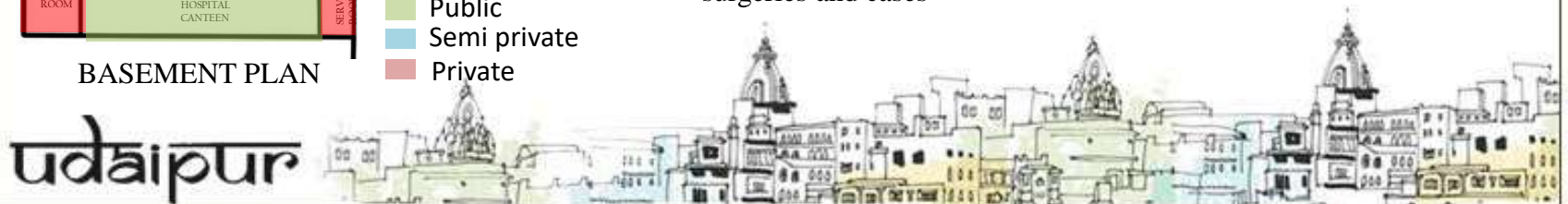
### J.P Orthopedic Hospital, Udaipur

- Location : MB college Rd, Central Area, Udaipur, Rajasthan
- Plot Area : 5321 sqft
- Architect: Asia Associate

Basement: we started the visit with the basement which had medical shop centrally located. there was a pathology lab and physiotherapy room located. behind the lab; the admin area was located , where the record room of the patients was located; along with the server room. Besides that, canteen and rest room was located for staff and patients both.

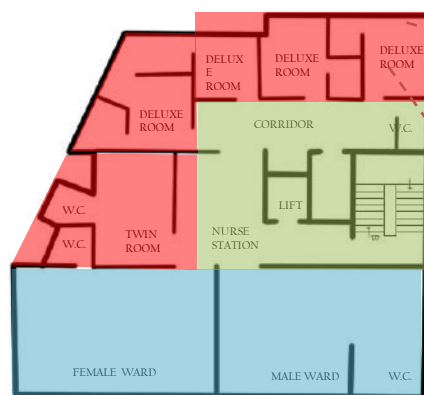


Ground floor- Afterwards we went to ground floor which had the entry from main gate along with the ramp. Centrally, the reception and waiting area was located for the convenience of the patients. Two lifts were provided in the hospital, one for the patients and other was a stretcher lift. Plaster room and casualty rooms were located near the ambulance entry for the emergency cases. Besides that doctor's cabin, O.P.D. and x-ray rooms were located. Minor operation theatre and observation ward was also located on the ground floor for the minor surgeries and cases.





FIRST FLOOR PLAN

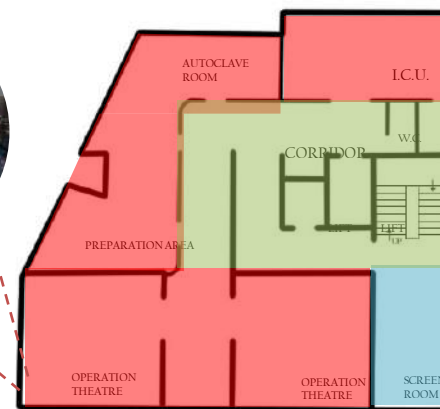


SECOND FLOOR PLAN

Public  
Semi private  
Private

First floor- On the first floor, Nursing station was located centrally with the emergency alarms for the convenience of the patients. There were total four O.P.D located on the first floor along with the common wards. Also the conference room for the doctors and staff was located on the floor.

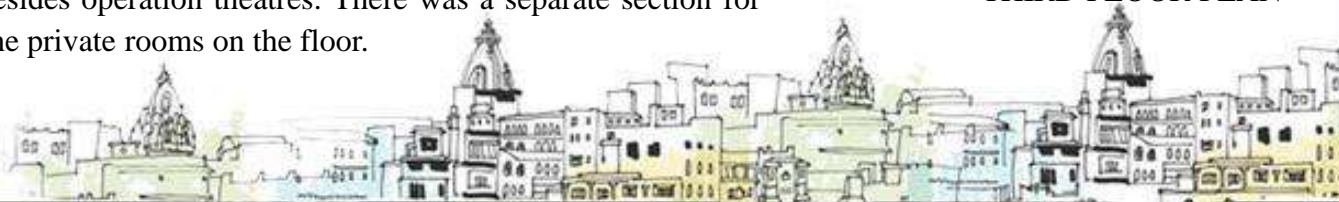
Second floor: The entire floor was given for the private rooms ,which was categorized by twin sharing rooms and deluxe rooms. Two general wards were provided on the floor whereas one of them was for female patients and another for male patients.



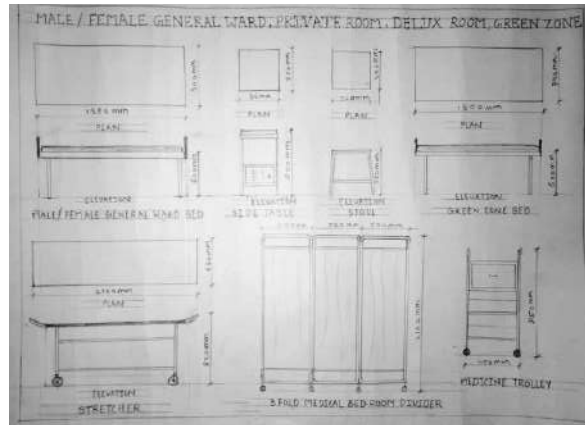
THIRD FLOOR PLAN

Third floor- On the third floor, two major operation theatres were provided for the surgeries. Also the autoclave room and preparation rooms were located besides operation theatres. There was a separate section for the I.C.U and the private rooms on the floor.

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## ANTHROPOMETRY DATA AND ANALYSIS



## General ward and private rooms dimensions



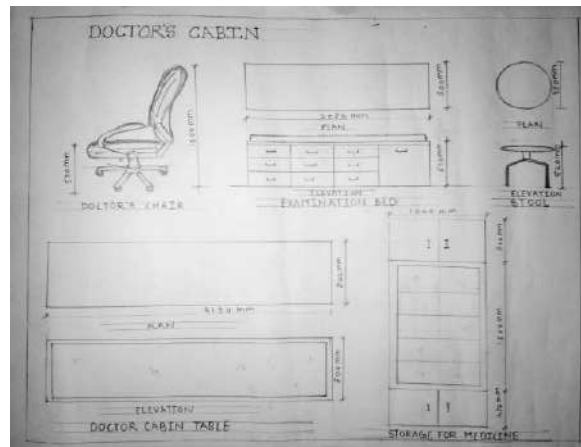
I.C.U. ward



## Reception

## ANALYSIS

- Doctor's cabin has a connectivity with each O.P.D and also with Casualty zones
- Each floor has individual waiting area for patients and their relatives
- Individual Oxygen room is provided along with lamina system
- Two operation theatres were provided; a separate septic operation theatre was provided
- No separate lift for patients and staff; stretcher lift is used as patients lift also
- No separate driveway for ambulance entry and exit
- Toilets were planned in acute angles which creates inconvenience for patients



### Doctor's cabin dimensions





### Space requirements: As per 35 bed hospital

Spaces	No.	Area (Sq.m.)
Reception and waiting	1	45
Casualty (4 bed)	1	As per requirement (Anthropometry)
Doctors Cabin (Orthopaedic) with attached toilet	1	20
Doctors Cabin (Physiotherapy) with attached toilet	1	20
Doctors Cabin (Paediatric) with attached toilet	1	20
X-ray room	1	20
MRI room	1	40
Laboratory	1	30
Medical Store	1	20
O. P. D.	3	15
Common Toilet		As per requirement
General ward (Male) with common toilet (6 bed)	1	As per requirement (Anthropometry)
General ward (Female) with common toilet(6 bed)	1	As per requirement (Anthropometry)
Deluxe room with attached toilet	10	30

Spaces	No.	Area (Sq.m.)
I.C.U.	1	40
Major Operation Theatre (O.T).	1	30
Minor Operation Theatre (O.T).	1	20
Store Room		10
Anaesthesia Room	1	20
Accounts Department	1	20
Canteen	1	100
Oxygen Supply Handling Unit	1	10
Parking		As per requirement
Waiting Area for Relatives		25
Waiting Rooms for Relatives with attached toilet (Male)	1	25
Waiting Rooms for Relatives with attached toilet (Female)	1	25
Staff Changing room with attached toilet(Male)	1	20
Staff Changing room with attached toilet(Female)	1	20

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## Site Selection And Analysis

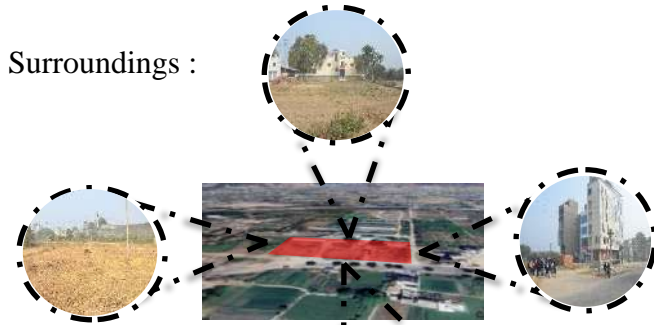
### Site Parameters :

Latitude : 24.5854° N      Longituded : 73.7125° E  
Elevation : 423 M (1,388 Ft)      Climate: Hot Semi-arid  
State: Rajasthan

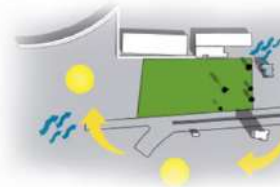
### Site justification :

- After studying the core city and undrstanding the needs and aspects of udaipur
- We selected this site keeping in mind the requirments.
- As the core city is highly dense residential area.It is not appropriate to propose a hospital as it will create a lot of disturbance .
- Population density is also assosiated with air quality which acts to increase risk in respiratory system.
- And crowded areas affect the circulation of ambulance.
- The site was selected because it is connected to state highway 32.
- And is near to accident prone zone.
- The site is easily accessible to everyone .
- The site is connected to the new sectors planned according to development plan.
- The site comes under the public/semi public zone according to the proposed development plan

### Site Surroundings :



### Sun Path & Wind Direction



### Strength:

The site is connected  
To state highway.

### Weakness :

### Threats :

Opportunities :  
Future construction  
Will increase human  
flow on site.

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SINHGAD TECHNICAL EDUCATION SOCIETY'S  
**SINHGAD COLLEGE OF ARCHITECTURE, PUNE**

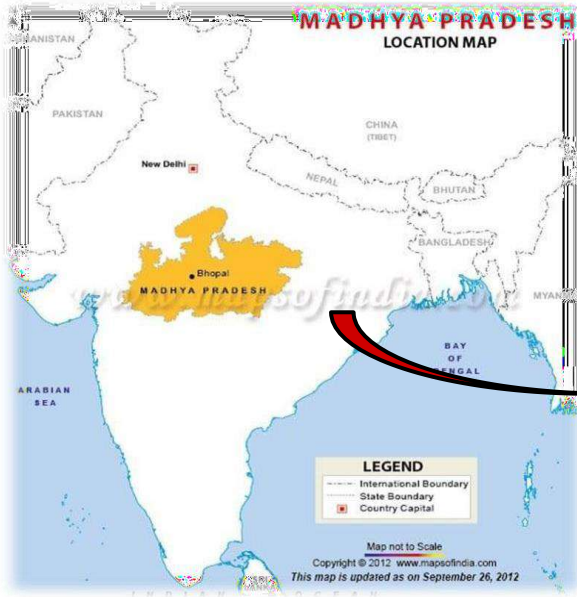
**STUDY TOUR**

**BHOPAL**

by

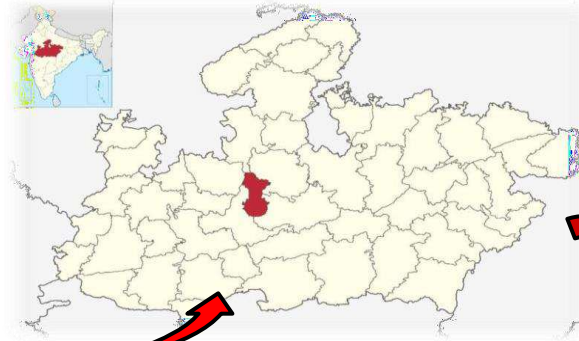
**III YR B. Arch.**

**Division: C**



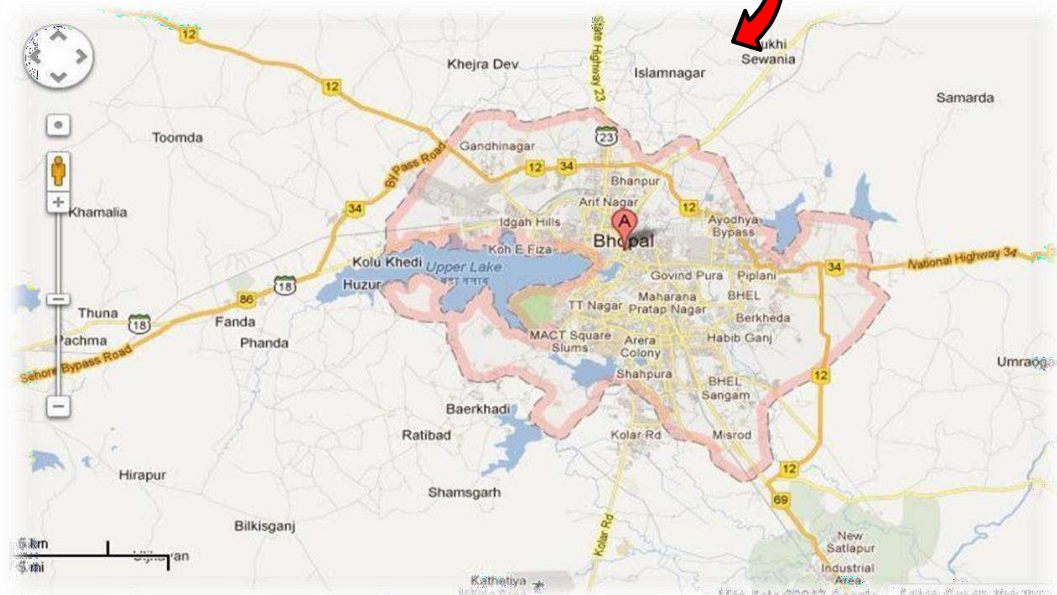
INDIA

- ❖ IT IS 744km SOUTH OF NEW DELHI
- ❖ 799km NORTHWEST OF MUMBAI.



MADHYAPRADESH

## LOCATION



BHOPAL CITY

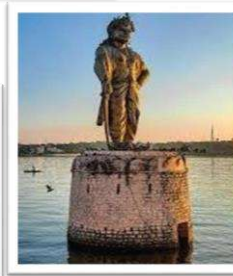
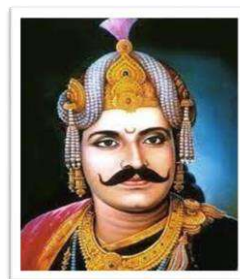


## **HISTORY OF BHOPAL**

- LATER THE MUGHALS RULED HERE TILL THE 18TH CENTURY DOST MOHAMMAD KHAN ESTABLISHED THE PRINCELY STATE OF BHOPAL IN 1723.
- THE FEMALES OF THE ROYAL FAMILY, THE BEGUMS RULED HERE FOR ABOUT A HUNDRED YEARS. BHOPAL WAS RULED BY FOUR BRAVE WOMEN OVER THE PRINCELY STATE OF BHOPAL FROM 1819 – 1926. BEGUM SULTAN JAHAN WAS ONE OF THEM. BASED ON SIKANDER BEGUM'S LOYALTY TO THE BRITISH DURING THE MUTINY AND AFTER THE RESTORATION OF ORDER, SHE URGES THAT SHE BE REGARDED AS THE RULER OF BHOPAL.
- HER SON HAMIDULLAH INHERITED THE THRONE IN 1926. UNDER HIM, BHOPAL WAS ACCEDDED TO THE INDIAN GOVERNMENT IN 1949. IN 1956, BHOPAL WAS MADE THE CAPITAL OF THE NEWLY FORMED STATE OF MADHYA PRADESH.

## **BHOPAL GAS TRAGEDY**

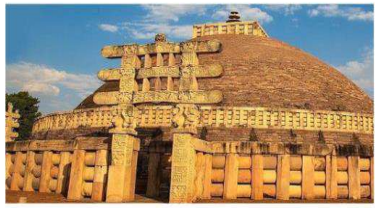
- ON DECEMBER 3, 1984, ABOUT 45 TONS OF THE DANGEROUS GAS METHYL ISOCYANATE ESCAPED FROM AN [INSECTICIDE](#) PLANT THAT WAS OWNED BY THE INDIAN SUBSIDIARY OF THE AMERICAN FIRM [UNION CARBIDE CORPORATION](#)
- THE BHOPAL DISASTER WAS AN INDUSTRIAL DISASTER THAT OCCURRED IN THE CITY OF BHOPAL, RESULTING IN THE IMMEDIATE DEATHS OF MORE THAN 3,000 PEOPLE. A MORE PROBABLE FIGURE IS THAT 8,000 DIED WITHIN TWO WEEKS, AND IT IS ESTIMATED THAT AN ADDITIONAL 8,000 HAVE SINCE DIED FROM GAS RELATED DISEASES.
- THE INCIDENT TOOK PLACE IN THE EARLY HOURS OF THE MORNING OF DECEMBER 3, 1984, IN THE HEART OF BHOPAL. A UNION CARBIDE SUBSIDIARY PESTICIDE PLANT RELEASED 42 TONNES OF METHYL ISOCYANATE (MIC) GAS.
- SOIL AND WATER CONTAMINATION IN THE AREA WAS BLAMED FOR CHRONIC HEALTH PROBLEMS AND HIGH INSTANCES OF BIRTH DEFECTS IN THE AREA'S INHABITANTS.





## PRE INDEPENDENT STRUCTURES

Historic Monuments Seems To Be Following Typical Architecture Showcasing Their Religion And Their Cultural Importance. Due To Different Ruler Like Maratha, Nawabs, Mughals And Gond Have The Bhopal Mixed Architectural Culture. Materials Used In Historical Buildings Are Mostly Stones, Bricks, Wood Etc. And Load Bearing Type Buildings Are Seen. Architectural After Independence And 21st Century Also Some How Influenced By Historic Architecture Of Bhopal. Mostly RCC Structures Are There But Also Locally Available Materials Are Being Used



SANCHI STUPA (3<sup>RD</sup> CENTURY BC)

- **BUDDHIST AND MAURYAN**
- MATERIALS- BURNT BRICKS, THICK PLASTER, LOCAL SANDSTONE
- FORM- HEMISPHERICAL MOUND
- (STUPA)

TYPOLOGY- RELIGIOUS BUDDHIST MONUMENT



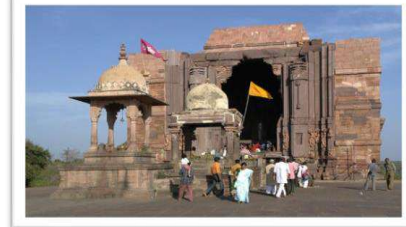
GOHAR MAHAL (1821)

- **INDO-MUGHAL ARCHITECTURE**
- MATERIALS- ADOBE BRICKS, WOODEN TRUSS, SLATE ROOF, LATH AND PLASTER FINISHING
- TYPOLOGY- PALACE



KAMLAPATI MAHAL (1772)

- **CONTEMPORARY SECULAR ARCHITECTURE**
- BUILD BY- RAJA BHOJ
- MATERIALS- LACQUERED BRICKS
- TYPOLOGY- PALACE



BHOJESHWAR TEMPLE  
(11 -12<sup>TH</sup> AD)

- **TEMPLE ARCHITECTURE**
- MATERIALS- LIMESTONE & SANDSTONE
- TYPOLOGY- HINDU TEMPLE



SADAR MANZIL (1830)

### **POST RENAISSANCES AND GOTHIC ARCHITECTURE**

MATERIALS- RED BRICK TYPOLOGY- MUNICIPAL CORPORATION BUILDING & HALL OF PUBLIC AUDIENCE



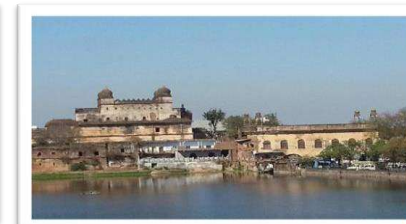
MOTI MASJID (1854-1860)

- **ISLAMIC ARCHITECTURE**
- MATERIALS- WHITE MARBLE & A RED BRICK
- TYPOLOGY- MOSQUE



BENAZIR PALACE (1872)

- **EUROPEAN AND MUGHAL**
- BUILD BY- NAWAB SHAHJEHAN BEGUM
- MATERIAL- STEEL COLUMNS AND CARVED WOODEN PARTITIONS
- TYPOLOGY- SUMMER REST-HOUSE FOR BHOPAL'S RULER



TAJ MAHAL PALACE (1871-1884)

- **INDO SARACENIC ARCHITECTURE**
- BUILD BY- SULTAN SHAH JAHAN
- MATERIAL- MARBLE
- TYPOLOGY- PALACE

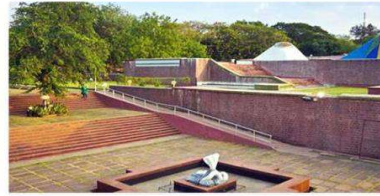


## POST INDEPENDENT STRUCTURES



LAXMI NARAYAN TEMPLE (1960)

- **HINDHU ARCHITECTURE**
- BUILD BY- BIRLA FAMILY
- MATERIALS- MARBLE
- TYPOLOGY- HINDU TEMPLE



BHARAT BHAVAN (1982)

- **INDIAN AND EUROPEAN MODERN ARCHITECTURE**
- MATERIALS- RED SANDSTONE, RCC, EXPOSED CONCRETE, ASHLAR STONE ON OUTER FAÇADE, MARBLE AND GRANITE IN INTERNAL SPACES
- TYPOLOGY- ART MUSEUM



IIFM BHOPAL(1989)

- **MODERN ARCHITECTURE**
- ARCHITECT: ANANT RAJE
- MATERIALS- BRICK MASONRY, LOAD BEARING WALLS, RCC
- TYPOLOGY- INSTITUTE CAMPUS



TAJ-UL-MASJID (1971-1985 )

- **MUGHAL ARCHITECTURE**
- BUILD BY- NAWAB SHAH JAHAN BEGUM
- MATERIAL- RED STONE & MARBLE
- TYPOLOGY- MOSQUE



VIDHAN SABHA (1993)

- **CONTEMPORARY ARCHITECTURE**
- MATERIALS- DHOLPUR SANDSTONE, BRICKS, CERAMIC TILES
- TYPOLOGY- LEGISLATIVE ASSEMBLY



MAULANA AZAD CENTRAL LAIBRARY

- **MUGHAL ARCHITECTURE**
- 1908
- POST INDEPENDENCE



ST. THOMAS MALANKARA CHURCH BHOPAL

- **GOTHIC REVIVAL ARCHITECTURE**
- 1985



## 21<sup>ST</sup> CENTURY STRUCTURES



SPA BHOPAL (2008)

- BUILD BY- GOVERNMENT OF INDIA
- MATERIALS- RCC STRUCTURES, RED STONE CLADDING
- TYPOLOGY- ARCHITECTURAL INSTITUTE CAMPUS



TRIBAL MUSEUM (2004)

- **INDIAN AND EUROPEAN MODERN ARCHITECTURE**
- MATERIALS- FABRICATED STEEL TRUSSES & RODS, LOCAL STONE, BRICK & STONE PLASTER OUTSIDE, MUD PLASTER INSIDE,
- GREEN ROOF TYPOLOGY- ART MUSEUM



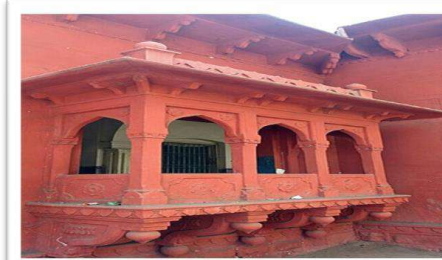
STATE MUSEUM , BHOPAL (2005)

- **MODERN ARCHITECTURE**
- MATERIALS - RCC, RED STONE CLADDING
- TYPOLOGY- MUSEUM
- PUBLIC SPACE



DILIP BUILDCON CENTRE , BHOPAL (2006)

- ARCHITECT: KUSHWAH AND KUSHWAH ARCHITECTS
- **MODERN ARCHITECTURE**
- TYPOLOGY- WORKPLACE BUILDING
- MATERIALS- STEEL, GLASS, RCC



HAMIDIA HOSPITAL ,BHOPAL

- **MUGHAL ARCHITECTURE**
- 2003
- 21<sup>ST</sup> CENTURY



INFANT JESUS CHURCH BHOPAL

- **GOthic REVIVAL ARCHITECTURAL STYLE**
- 2005
- 21<sup>ST</sup> CENTURY





## AKHIL BHARTIYA KALIDAS SAMAROH~ ART AND CRAFT OF BHOPAL



- LITERARY PRESENTATIONS ALONG WITH DRAMAS AND INDIAN CLASSICAL DANCE PROGRAMMES.
- WHERE: UJJAIN
- WHEN: JANUARY
- DURATION OF FESTIVAL: 7 DAYS
- SPECIAL ATTRACTIONS: POETRY RECITATION & STORY READING

- MALWA UTSAV IS ONE OF THE BIGGEST, LARGEST AND
- MOST SPECTACULAR EVENTS IN MADHYAPRADESH.
- DANCE AND MUSIC PERFORMANCES ARE THE MOST INTEGRAL PART OF THE FESTIVAL. PERFORMERS FROM DIFFERENT PARTS OF THE WORLD COME TO INDORE & UJJAIN TO BE PART OF THIS SPECTACULAR CELEBRATION OF ART, MUSIC, DANCE, DRAMA AND CULTURE WHEN: MAY
- WHERE: INDORE & UJJAIN
- DURATION OF THE FESTIVAL: 2 DAYS IN UJJAIN & 5 DAYS IN INDORE
- SPECIAL ATTRACTIONS: DANCE & MUSIC FESTIVAL



### ~UJJAIN KUMBH MELA~

- UJJAIN IS ONE OF THOSE PLACES IN INDIA WHERE KUMBH MELA TAKES PLACE.
- THE FESTIVAL IS ORGANIZED FOUR TIMES IN EVERY TWELVE YEARS IN THE FOUR CITIES OF INDIA- ALLAHABAD, HARIDWAR, UJJAIN OR NASIK. KUMBH MELA COMMEMORATES
- THE VICTORY OF GOOD IN THE BATTLE OF SUPREMACY AGAINST THE EVIL. ADIP IN THE HOLY SHIPRA RIVER WASHES AWAY ALL THE SINS AND ENDS THE CYCLE OF REBIRTH.
- WHEN: APRIL TO MAY; AFTER EVERY 12 YEARS. IN 2016, THE GRAND FESTIVALS WILL BE ORGANIZED IN UJJAIN
- WHERE: UJJAIN
- DURATION OF FESTIVAL: ONE MONTH



## FOOD IN BHOPAL

- ❖ FOOD HERE IS DISTINGUISHED BY THE BLEND OF HINDU AND MUSLIM CULINARY ETHNICITY AND IS BEST RECOGNIZED FOR ITS AFFLUENT GAMUT OF ZESTY MEAT DISHES.
- ❖ KEBABS AND CURRIES CRAFT THE MOST WELL ACKNOWLEDGED RECIPES FROM THE CUISINE OF THE CITY.
- ❖ IN SUMMERS, SERVING OF FOOD IN GENERAL CONCLUDE WITH FRUIT INCLUDING MANGOES, MELONS, CUSTARD APPLES, AND PAPAYAS.
- ❖ THE SPECIALTIES OF THIS PROVINCIAL CUISINE STAND UP AS A STURDY PERSUADE OF THE MOMENTOUS NAWABI CUISINE FROM THE MUGHAL EPOCH WHICH EMBRACE DISHES LIKE BIRIYANI, ROGAN JOSH, KEEMA, SEEKH KEBAB AND SHAMI KEBAB



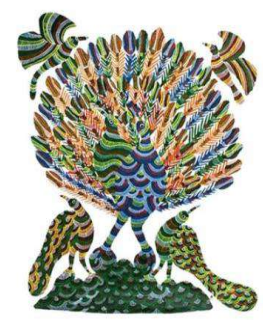
## ART AND CRAFT OF BHOPAL

THE BHAREWAS COMMUNITY OF BETUL, A SUB-TRIBE OF GONDS IS STILL PUTTING ALL THEIR EFFORTS TO IMPROVE AND ENRICH THIS CRAFT IN NEARBY VILLAGES NAMELY AMLA, TIGARIA, BARKHED, CHUNAHAZURI AND KAMLESHARA. INTERTWINED WITH THEIR CULTURE, THE ARTISTS TRADITIONALLY MADE CEREMONIAL ITEMS LIKE THE DAGGER WORN BY THE GROOM, OIL LAMPS GIFTED TO THE BRIDE BY HER PARENTS AND ACCESSORIES FOR THE TRIBAL GODS



## PATANGARH'S GOND PAINTINGS - UNIQUE STYLE, UNIQUE ART

GOND PAINTINGS ARE A FORM OF PAINTINGS MADE ON FOLK AND TRIBAL ART BY THE GOND COMMUNITY. THESE PAINTINGS ARE PREPARED ON THE THEME THAT MAJORLY HIGHLIGHT NATURE AS THE MAIN SUBJECT. OTHER THAN TAKING INSPIRATION FROM NATURE TO DRAW THESE PAINTINGS, MYTHS AND LEGENDS CAN ALSO BE ANOTHER SUBJECT ON WHICH THESE PAINTINGS ARE DRAWN.





## BAMBOO BASKETRY & WEAVING STYLES

THE BAMBOO CRAFT OF MADHYA PRADESH IS A REFLECTION OF ITS RAW TRIBAL LIFESTYLE, AND CONTINUES TO SERVE PURPOSES BOTH FUNCTIONAL AS WELL AS ORNAMENTAL. PROFUSELY AVAILABLE IN THE SOUTHERN REGIONS OF THE STATE - SHAHDOL, BALAGHAT, MANDLA AND SEONI, BAMBOO IS USED TO CRAFT PRODUCTS RANGING FROM HUNTING TOOLS TO A WIDE VARIETY OF BASKETS.



### DURRIE WEAVING

SIRONJ BECAME AN IMPORTANT CITY IN MEDIEVAL TIMES OWING TO FLOURISHING TRADE BETWEEN DELHI AND GUJARAT. A UNIQUE THREE-TIER MARKET SYSTEM WAS DESIGNED TO ENABLE EFFORTLESS BUYING FOR THE TRAVELERS, WHETHER THEY WERE ON FOOT, ON CAMEL OR A ROYAL CARAVAN.



### BATTO BAI DOLLS

HANDCRAFTED BY USING RAGS, PAPER, CLAY, COTTON, WIRES, SILVER PAINT, BAMBOOS AND BRIGHT TRADITIONAL FABRICS, BATTO BAI DOLLS HAVE AN EXOTIC TRIBAL FEEL TO THEM. ALSO, THESE ARE MADE OF ORGANIC COLOURS THAT ARE PERMANENT IN NATURE. THE EXPRESSIONS AND COSTUMES OF THESE TRADITIONAL DOLLS ARE ALL VERY TRADITIONAL, INSPIRED FROM REAL-LIFE INSTANCES. THESE DOLLS ARE ALWAYS MADE AND SOLD IN PAIRS



## ZARI ZARDOZI

ZARDOZI COMES FROM THE PERSIAN TERM WHICH MEANS 'EMBROIDERING WITH GOLD THREADS'. IN THIS EMBROIDERY, GOLD COILS AND BEADS ARE TUCKED ONTO FABRIC USING A NEEDLE AND THREAD. METALS LIKE GOLD AND SILVER ARE TRANSFORMED INTO A ZARI OR TAAR THAT IS USED TO ADORN MOTIFS ONTO RICH FABRICS LIKE SILK, VELVET, ORGANZA, CHIFFON, ETC



## BAGH PRINTING

CARRIED OUT BY A HUGE WORKFORCE IN THE TOWN OF BAGH IN MADHYA PRADESH, BAGH PRINTING IS ALL DONE MANUALLY, INVOLVING SEVERAL PAINSTAKING PROCESSES OF REPEATED WASHING, DYEING, AND PRINTING. IN THE FIRST STEP, THE FABRIC IS SOAKED OVERNIGHT IN WATER TO GET RID OF SHRINKAGE, THEN DRIED IN THE SUN FOR HOURS.





## **ENVIRONMENTAL REPORT OF BHOPAL**

### **BHOPAL LAKE WATER QUALITY :**

- UPPER LAKE IS A MULTIPLE USE WATER BODY AND BEING USED FOR VARIOUS PURPOSES LIKE DRINKING WATER SUPPLY, CULTIVATION, FISHERY, RECREATION AND TOURISM.
- THE WATER LIES IN C CATEGORY, WHICH IS FIT FOR DRINKING PURPOSE AFTER CONVENTIONAL TREATMENT AND FOR AQUATIC LIFE.

### **AIR ENVIRONMENT :**

- THE OVERALL TREND OF AIR QUALITY OF BHOPAL CITY (BASED ON AQI) SHOWS INCREASE IN POLLUTION LEVEL CONTINUOUSLY AND MOVING FROM SATISFACTORY TO MODERATE LEVEL.
- THE NATURAL DUST, CONSTRUCTION ACTIVITIES AND VEHICULAR MOVEMENT ARE MAJOR REASONS OF DUST POLLUTION. THE TRAFFIC PATTERN IS MIXED TYPE ALONG WITH GOOD PUBLIC TRANSPORT SYSTEM. THE FREE FLOW OF TRAFFIC AND REMOVAL OF OLD/OUTDATED VEHICLES FROM ROAD MAY HELP IN IMPROVEMENT OF AIR QUALITY UP TO CERTAIN EXTENT

### **INDUSTRIAL POLLUTION**

- BHOPAL DISTRICT HAVING ONLY ONE INDUSTRIAL AREA (GOVINDPURA) WHERE MODERATELY POLLUTING INDUSTRIES ARE EXISTING ALONG WITH BIG SET UP OF MAJOR INDUSTRY BHEL AND ITS ANCILLARIES UNITS IN THE VICINITY.
- IN GOVINDPURA INDUSTRIAL AREA MANY TINY UNITS ARE ALSO PARAMETERS MINIMUM MAXIMUM PH 7.97 8.10 CONDUCTIVITY 229 234 COD 06 08 BOD 2.4 2.9 TC/100ML 483 627 FC/100 ML 167 193 4 WORKING IN AND AROUND THE BHOPAL CITY.
- CONSTANT VIGIL IS BEING KEPT OVER INDUSTRIAL ACTIVITIES BY REGIONAL OFFICE

### **MUNICIPAL SOLID WASTE:**

- MANAGEMENT OF SOLID WASTE IS AN OBLIGATORY FUNCTION OF MUNICIPAL COUNCIL OF BHOPAL. HOWEVER, THIS SERVICE IS NOT PROPERLY PERFORMED, RESULTING IN PROBLEMS OF SOLID WASTE MANAGEMENT.
- LACK OF FINANCIAL RESOURCES, INSTITUTIONAL WEAKNESS, IMPROPER CHOICE OF TECHNOLOGY, IMPROPER SITE OF SOLID WASTE, LACK OF TRAINED MANPOWER, LACK OF LOCAL CAPACITY TO PLAN A PROPER SYSTEM AND POOR PUBLIC PARTICIPATION AND COOPERATION ARE THE MAJOR FACTORS AFFECTING THE EFFECTIVE MANAGEMENT OF MUNICIPAL SOLID WASTE.
- WITH THE GROWTH OF POPULATION AND HUGE INFLUX OF THE VARIOUS INSTITUTES IN THE TOWN, THE PROBLEM OF SOLID WASTE IS INCREASING DAY-BY-DAY.
- THE CITY ON AN AVERAGE GENERATES ABOUT 800 METRIC TONS OF SOLID WASTES DAILY WHICH IS BEING COLLECTED, TRANSPORTED AND DISPOSED BY MUNICIPAL CORPORATION AT BHANPUR DUMPING SITE IN INDISCRIMINATE MANNER AND CAUSING ENVIRONMENTAL PROBLEMS IN SURROUNDING AREA HENCE THERE IS A NEED OF PROPER ENGINEERED SITE FOR DISPOSAL OF MSW. BHOPAL MUNICIPAL CORPORATION IS IN PROCESS OF DEVELOPMENT OF NEW SITE NEAR ADAMPUR CHHAWNI

### **AIR QUALITY INDEX OF BHOPAL**



Bhopal	122	Mirganyami Emporiyam, Hamidia Road M.P.	Commercial	Good
	123	CETP, Govindpura AKVN Bhopal	Industrial	Moderate
	247	Paryawaran Parisar, MP PCB, Bhopal	Mixed	Moderate
	--	AKVN Mandideep Industrial Area	Industrial	Moderate
	--	Kolar Police station, Kolar Road	Residential	Moderate

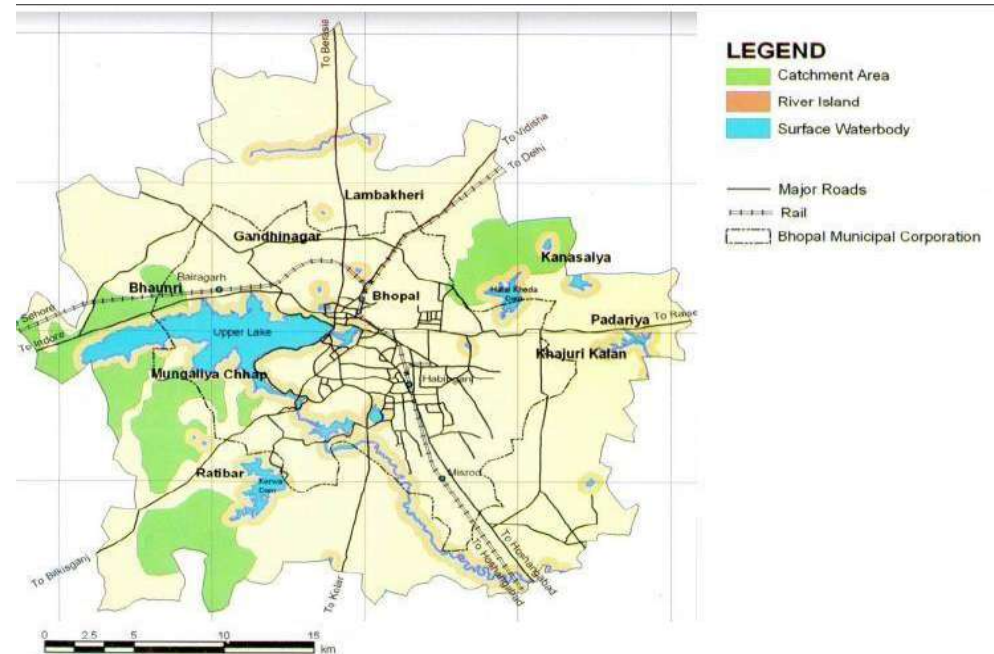
Parameters	Minimum	Maximum
pH	7.97	8.10
Conductivity	229	234
COD	06	08
BOD	2.4	2.9
TC/100ml	483	627
FC/100 ml	167	193

## GEOGRAPHY

- MUNICIPAL LAND AREA: 463 SU
- ARE M
- HEIGHT OF BHOPAL FROM SEA LEVEL – 527 M
- COORDINATES –  
23.2599° N, 77.4126° E
- IT IS LOCATED JUST NORTH OF THE UPPER LIMIT OF THE VINDHYA MOUNTAIN RANGES. LOCATED ON THE MALWAPLATEAU
- THE TROPIC OF CANCER IS NORTHERLY CIRCLE OF LATITUDE PASSING THROUGH THE BHOPAL VIDISHA HIGHWAY

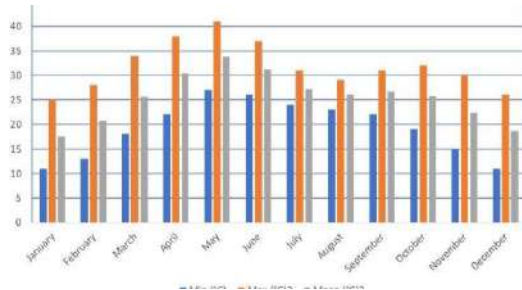
BHOPAL CITY IS DIVIDED INTO TWO PARTS-

- ❖ CITY'S GEOGRAPHY HAS IN IT TWO LAKES NAMELY UPPER LAKE AND LOWER LAKE.THE CATCHMENT AREA OF THE UPPER LAKE IS 361 KM<sup>2</sup> WHILE THAT OF THE LOWER LAKE IS 9.6 KM<sup>2</sup>.
- ❖ THE NORTH PART WHICH IS NEAR THE VIP LAKE IS OLD BHOPAL .
- ❖ THE SOUTH PART IS NEW BHOPAL .
- ❖ THE UPPER LAKE DRAINS INTO THE KOLAR RIVER.
- ❖ THE VAN VIHAR NATIONAL PARK IS SITUATED BESIDES THE UPPER LAKE AND IS JUST NORTH OF THE UPPER LIMIT OF THE VINDHYA MOUNTAIN RANGES. LOCATED ON THE MALWAPLATEAU.
- ❖ THE MAJOR HILLS IN BHOPAL COMPRISE OF IDGAH HILLS AND SHYAMALA HILLS IN THE NORTHERN REGION AND ARERA HILLS IN THE CENTRAL REGION.



## CLIMATE

### AVERAGE TEMPERATURE



- IN BHOPAL, THE AVERAGE TEMPERATURE OF THE COLDEST
- THE AVERAGE WARMEST MONTH (MAY) IS OF 33.8 °C (92.8 °F).

### AVERAGE HUMIDITY



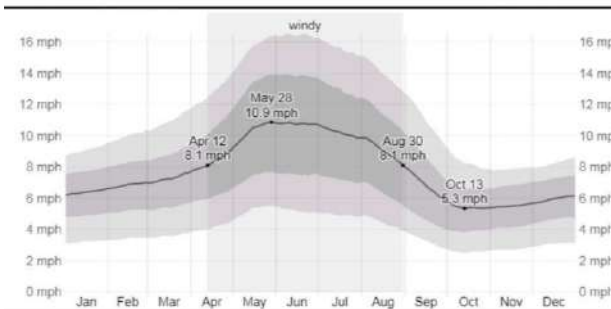
- ON AVERAGE, AUGUST IS WITH 76.0% THE MOST HUMID.
- ON AVERAGE, APRIL IS WITH 18.0% THE LEAST HUMID MONTH.
- THE AVERAGE ANNUAL PERCENTAGE OF HUMIDITY IS: 43%

### RAINFALL



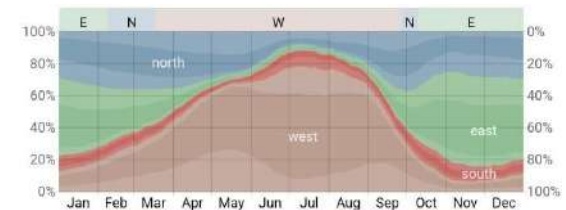
- APRIL (DRIEST MONTH) WITH 5 MM (0.2 INCH) OF PRECIPITATION.
- AUGUST (WETTEST MONTH) WITH 355 MM (1 INCH) OF PRECIPITATION.
- THE AVERAGE AMOUNT OF ANNUAL PRECIPITATION IS: 1115 MM (43.9 INCH)
- RAINY PERIOD: JUNE, JULY, AUGUST AND SEPTEMBER DRY PERIODS: JANUARY, FEBRUARY, MARCH, APRIL, MAY: NOVEMBER AND DECEMBER

### WIND DIRECTION



Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
Wind Speed (mph) 6.4 6.8 7.3 8.4 10.4 10.8 10.2 9.0 6.8 5.4 5.5 6.0

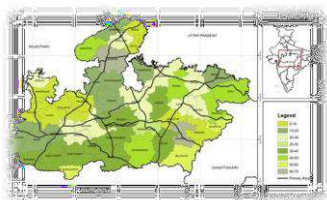
- THE AVERAGE HOURLY WIND SPEED IN BHOPAL EXPERIENCES SIGNIFICANT SEASONAL VARIATION OVER THE COURSE OF THE YEAR.
- THE WINDIER PART OF THE YEAR LASTS FOR 4.5 MONTHS, FROM APRIL 12 TO AUGUST 30, WITH AVERAGE WIND SPEEDS OF MORE THAN 8.1 MILES PER HOUR.
- THE WINDIEST MONTH OF THE YEAR IN BHOPAL IS JUNE, WITH AN AVERAGE HOURLY WIND SPEED OF 10.8 MILES PER HOUR





## ❖ FLORA

- THE FLORA OF MADHYA PRADESH PROVINCE IN INDIA, IS VERY RICH AND DIVERSE.
- CENTRAL, EASTERN AND SOUTHERN PARTS OF THE STATE ARE FORESTED. WHEREAS NORTHERN AND WESTERN PARTS ARE DEFICIENT IN FOREST.
- **MAIN ECOLOGICAL CLASSES ARE :**
  - 1) TEAK FOREST
  - 2) MIX FOREST
  - 3) GRASS RESERVES



- **SAL** - SAL OR SAKHU ("SHOREA ROBUSTA") IS ANOTHER MOST IMPORTANT TIMBER SPECIES IN MADHYA PRADESH
- SAL FORESTS ARE LOCATED IN THE EASTERN PART OF THE STATE WHILE TEAK FORESTS ARE LOCALISED IN THE WESTERN PART.

- **BAMBOO** - BAMBOO IS ALSO FOUND AT PLACES IN MADHYA PRADESH FORESTS. NORMALLY "DENDROCALAMUS STRICTUS" IS THE MAIN BAMBOO SPECIES FOUND OVERLAPPING WITH OTHER SPECIES.

### ❑ MAXIMUM

#### FOREST:

THE MAXIMUM FOREST COVER IN THE STATE IS THAT OF MIXED FORESTS, WHICH INCLUDES TEAK ("TECTONA GRANDIS") OR SAL ("SHOREA ROBUSTA") MIXED WITH OTHER SPECIES LIKE SAJA ("TERMINALIA TOMENTOSA"), BIJA ("PTEROCARPUS MARSUPIUM"), LENDIA ("LAGERSTROEMIA PARVIFLORA"), HALDU ("ADINA CARDIFOLIA"), DHAORA ("ANOGEISSUS LATIFOLIA"), SALAI ("BOSWELLIA SERRATA"), AONLA ("EMBLICA OFFICINALIS"), AMALTAS ("CASSIA FISTULA"), GAMHAR ("GMELINA ARBOREA")

- **KHAIR** - KHAIR (ACACIA CATECHU) TREES ARE FOUND IN JABALPUR, SAGAR, DAMOH, UMARIA, HOSHANGABAD, GUNA, SHIVPURI, SHEOPUR, MORENA, GWALIOR ETC. KHAR TREES ARE USED AS A RAW MATERIAL FOR PREPARATION OF CATECHU OR KATTHA.

### ❑ THE COMMON GRASSES FOUND ARE GUNHER

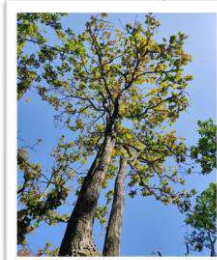
(THEMEDA QUADRIVALVIS), PHULI (APLUDA ARISTATA), PAONIA (SEHINA SULHATA), KUSUL (HETEROPOGAN CONTORTUS), KAIL AND MACHOL.

### ❖ FAUNA

MADHYA PRADESH IS ALSO KNOWN AS THE 'TIGER STATE' AS IT IS A HOME OF AROUND 20% OF INDIA'S TIGER POPULATION AND 10% OF THE WORLD'S TIGER POPULATION



TEAK



SAL



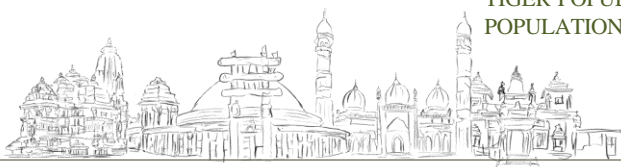
BAMBOO



COMMON GRASS FOREST

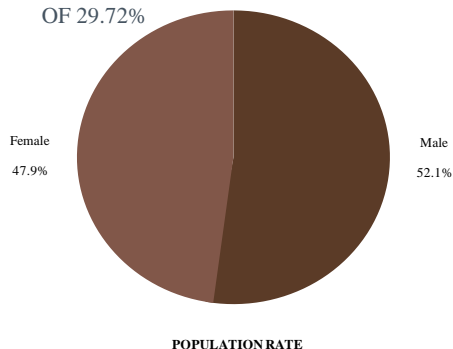


KHAIR TREES



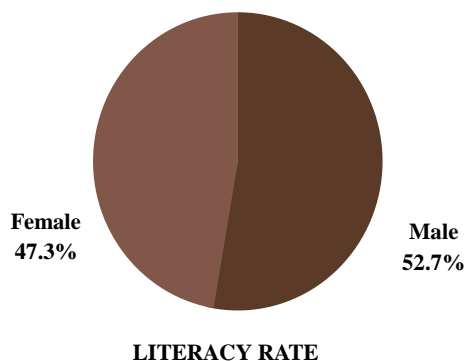
## ❖ POPULATION

- BHOPAL IS THE SECOND LARGEST CITY OF MADHYA PRADESH WITH POPULATION OF 18,86,100 AS PER CENSUS 2011.
- BHOPAL IS HIGHLY URBANIZED WITH ABOUT 90% OF ITS POPULATION LIVING IN URBAN AREAS.
- THE CITY HAS EXPERIENCED NATURAL GROWTH DUE TO WHICH THE MUNICIPAL LIMIT WAS EXPANDED.
- THE PRESENT DECADAL GROWTH RATE IS 29% AND AT THIS RATE IT IS ASSUMED THAT THE POPULATION WILL GROW ABOUT 36 LAKHS BY 2031
- BHOPAL PLANNING AREA HAS WITNESSED AN INCREASE IN POPULATION FROM 14.54 LAKHS TO 18.86 LAKHS AT A GROWTH RATE OF 29.72%



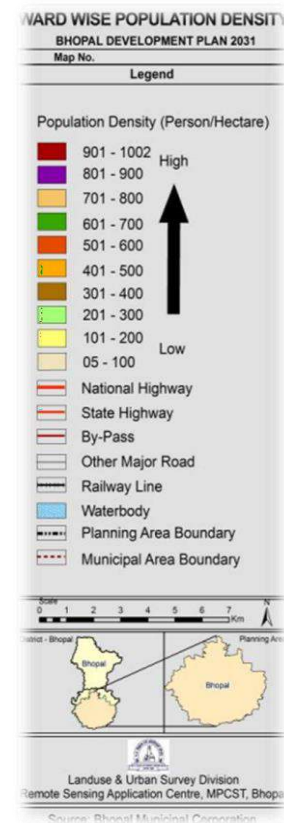
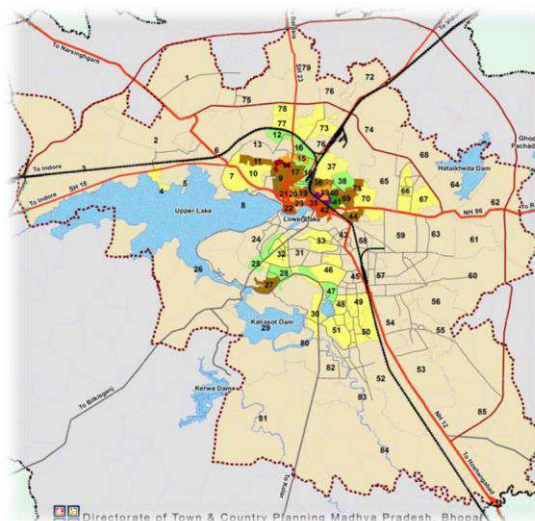
## ❖ LITERACY

- THE LITERACY RATE OF BHOPAL AS PER CENSUS 2011 IS 83.47%.



## ❖ SEX RATIO

- THE SEX RATIO OF BHOPAL IS 918 FEMALES PER 1000 MALES .
- CHILD SEX RATIO OF GIRLS IS 919 PER 1000 BOYS. AS PER CENSUS 2011.
- TOTAL CHILDREN (0-6) IN BHOPAL CITY ARE 216,088 FROM CENSUS INDIA REPORT ON 2011.
- THE CHILDREN FORM 12.02 % OF TOTAL POPULATION OF BHOPAL CITY.



AGE GROUP	2001 IN %	2011 IN %
0 - 14	34.7	29
15 - 59	58.9	63.2
ABOVE 60	6.2	7.4
N_A	0.3	0.4

- TOTAL NO. OF SLUMS IN BHOPAL CITY NUMBERS 102,803 IN WHICH POPULATION OF 479,699 RESIDES. THIS IS AROUND 26.68% OF TOTAL POPULATION OF BHOPAL CITY.

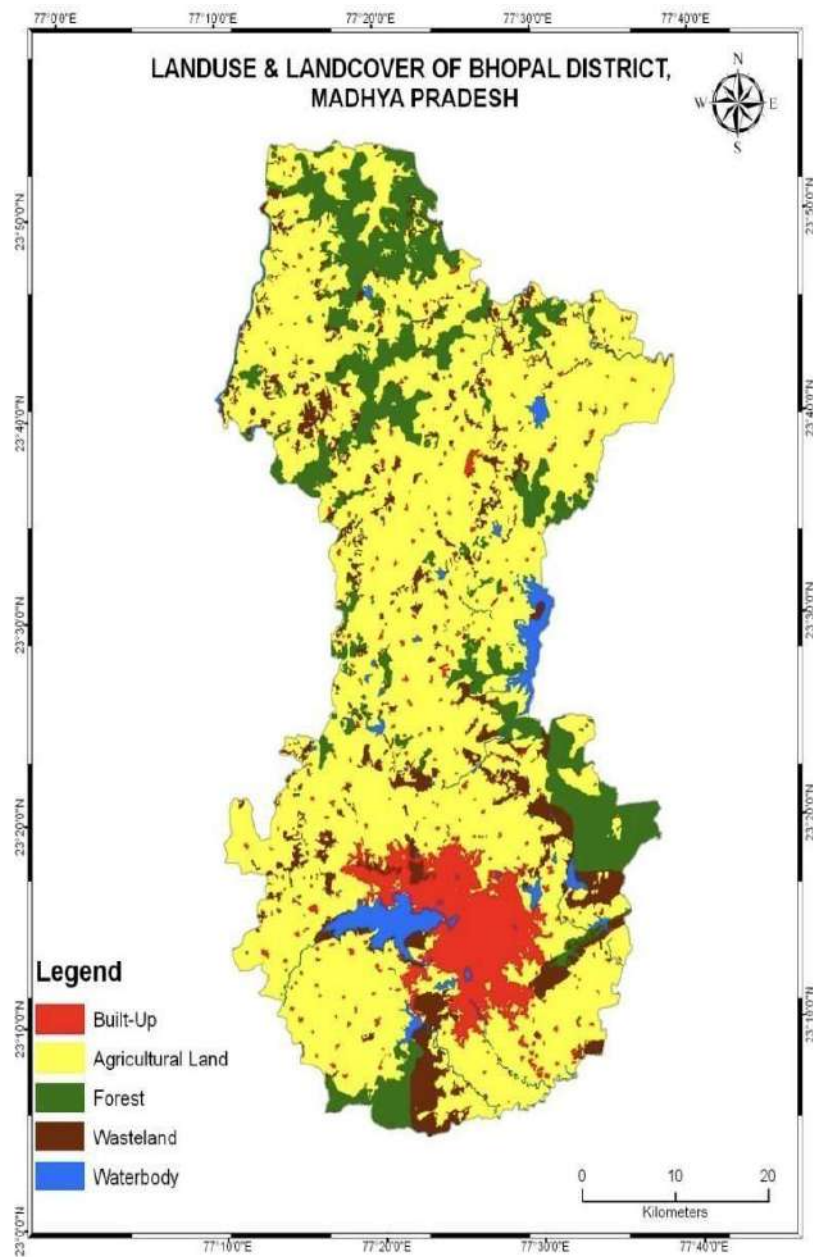
## ❖ RELIGION

DESCRIPTION	PERCENTAGE	TOTAL
HINDU	69.20 %	1,244,425
MUSLIMS	26.28 %	472,578
CHRISTIAN	1.12 %	20,205
SIKH	0.57 %	10,247
BUDDHIST	1.08 %	19,481
JAIN	1.35 %	24,267
OTHERS	0.02 %	296
NOT STATED	0.37 %	6,719

## LANDUSE OF BHOPAL DISTRICT, MADHYA PRADESH

- BUILT UP OF STUDY AREA COMPRISES 19254.24 HA AREA WHICH COVER 6.97 PERCENT OF TOTAL GEOGRAPHICAL AREA OF BHOPAL DISTRICT.
- WASTELAND IS DESCRIBED AS DEGRADED LAND, WHICH CAN BE BROUGHT UNDER VEGETATIVE COVER WITH REASONABLE EFFORTS.
- IN THIS CLASS INCLUDES LAND WITH SCRUB AND LAND WITHOUT SCRUB OCCUPIED TOTAL AREA 24 149.82 HA.
- WATERBODIES CATEGORY COMPRISES AREA WITH WATER EITHER IMPOUNDED IN THE FORM OF POND LAKES AND RIVERS RESERVOIRS ETC. IT OCCUPIED TOTAL AREA 8347.36 HA.

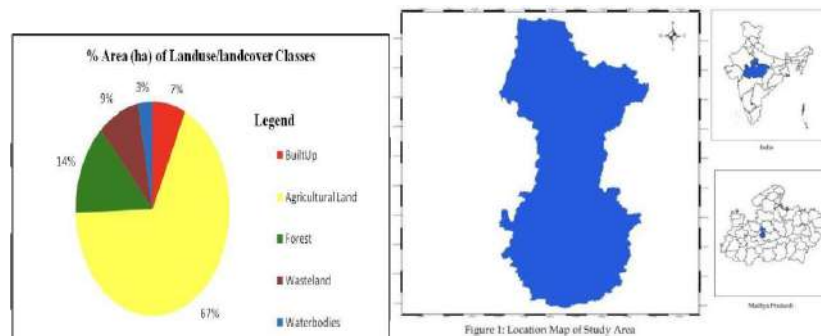
Sl.No.	Classes	Area (ha)	% Geographical area
1	BuiltUp	19254.24074	6.97
2	Agricultural Land	186569.9541	67.51
3	Forest	38051.38876	13.77
4	Wasteland	24149.82174	8.74
5	Waterbodies	8347.369333	3.02
Total Area		276372.7747	100.00





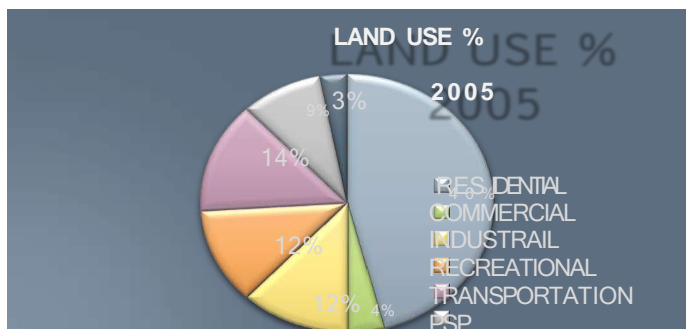
## LANDUSE OF BHOPAL DISTRICT, MADHYA PRADESH

- Land use is a product of interactions between a society's cultural background, state, and its physical needs. On the one hand, and the natural potential of land on the other.
- Land use and land cover mapping addresses agricultural land, greening of wastelands, surface water bodies, forest vegetation and other land use using satellite remote sensing data that can provide a reliable database.
- Madhya Pradesh Bhopal district was formed in 1972. Border engaged in state capital Bhopal Sehore, Rajgarh, Raisen and Vidisha districts.
- It is covered in the Survey of India Topographical Map Sheets No. 55E/1, 55E/2, 55E/3, 55E/4, 55E/5, 55E/6, 55E/7, 55E/8, 55E/9, 55E/10, 55E/11 and 55E/12.



## LANDUSE OF BHOPAL DISTRICT, MADHYA PRADESH

- Based on the broad landuse/Landcover categories five landuse classes which include agricultural and allied activities, built-up, forest, wasteland and water bodies were identified in the study area.
- Landuse Landcover classification of the Bhopal district shows that agricultural land has covered maximum area which is 1,86,569.95 ha and occupying 67.51 percent of total geographical area of the district.
- Bhopal district has good forest cover which is 38,051.39 ha which covers 13.77 percent of total geographical area of Indore district.
- Built up land is defined as an area of human habitation developed due to non-agriculture use and has a cover of buildings transport and other utilities.

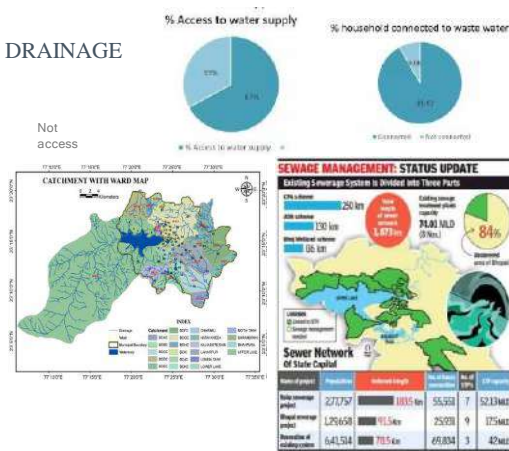


S r n o	Land use	Total allocated land - 2005		Exist ing land use 2019 (in Ha.)	% age (in to 4 & 5)	Land use Cla ssi ficat ion (in % age)
1	2	3a	4b	5c	6	7
1	Residential	8199	14799	9719.94	65.67	25%
2	Commercial	650	932.01	1263.95	135.6	2%
3	Industrial	1389	1031.02	1277.51	123.5	2%
4	Public/Semi-Public	1258	3341.4	4994.74	91	6%
5	Public Utilities	488	64.85	147.86	198	1%
6	Recreational	2995	6225	2769.04	73	8%
7	Transportation	2600	709.15	2199.41 1696.53	42	10%
8	Agriculture/ Water Bodies/Forest/ Special Area	—	—	—	—	46%
	total	25351	28323.8	19560.99		100%

## PRESENT LEVEL OF INFRASTRUCTURE – DRAINAGE & WATER SUPPLY

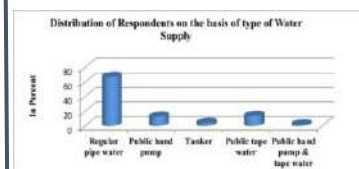
- TYPE OF SEWAGE SYSTEM – UNDERGROUND AND THE DOOR TO DOOR COLLECTION OF WASTE . THERE ARE THREE MAIN VALLEYS THAT PROVIDE NATURAL DRAINAGE .

### DRAINAGE



### WATER SUPPLY

WATER SUPPLY TO BHOPAL IS LARGELY DEPENDENT ON THE KOLAR DAM AND THE UPPER LAKE. BOTH ARE RAIN-FED SOURCES AND ARE THUS VULNERABLE TO SEASONAL FLUCTUATIONS. IN ADDITION, A SIGNIFICANT FRACTION OF WATER SUPPLIED IS SOURCED FROM GROUND WATER USING TUBE WELLS, HAND PUMPS, DUG WELLS, AND BORE WELL. 35- 40 PER CENT OF THE POPULATION OF BHOPAL USES ITS BOREWELLS TO MEET ITS DAILY WATER NEED . THERE ARE 35000 PRIVATE BOREWELLS WITHIN MUNICIPAL LIMITES . QUALITY OF WATER – MORE THAN 75 PER CENT OF THE SAMPLES HAD TOTAL DISSOLVED SOLIDS AND ALKALINITY LEVELS ABOVE THE DESIRABLE LIMITS , WHILE ABOUT 50 PER CENT HAD HIGHER HARDNESS VALUES THAN PRESCRIBES .



Sl. No.	Source	Distance From City (km)	Abstraction of Raw Water (MLD)	Remark
1	Upper Lake	Within City limit	85.5	Rain Dependent source Generally sustainable
2	Kolar dam	30	135	Rain fed sustainable Source
3	Local Ground water	Within the City limit	22.5	Over extraction -Not sustainable
4	Narmada River	80	-	River

Source: Bhopal Development Plan 2005, BMC 2011

THE MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED (MPRDC) IS AN UNDERTAKING OF GOVERNMENT OF THE STATE OF MADHYA PRADESH, INDIA, RESPONSIBLE FOR MANAGEMENT OF A NETWORK OF OVER 22,000 KM OF NATIONAL HIGHWAYS, STATE HIGHWAYS AND MAJOR DISTRICT ROADS IN MADHYA PRADESH

## BHOPAL RESOURCES

### NATURAL OCCURRING ELEMENTS -

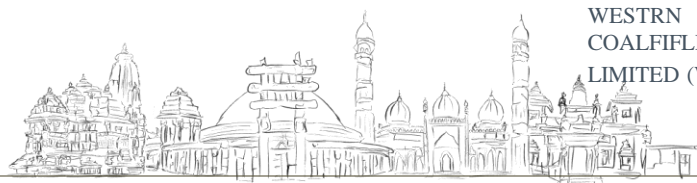
BHOPAL IS KNOWN AS THE CITY OF LAKES , HENCE IT MAIN SOURCE OF ELECTRICITY IS THROUGH HYDROELECTRIC PLANT. SOME NEAR BY DAMS ARE -KALIASOT DAM , BHADHADA DAM , KERWA DAM LAKE .TOTAL GEOGRAPHICAL AREA 2772 SQ. M , VERY DENSE FOREST . MODERATE DENSE FOREST 120.92 SQ. OPEN FOREST 207.75 SQ. M, PERCENTAGE OF GREEN AREA 11.86% .

### COAL –

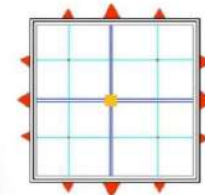
- MP IS FOURTH COAL PRODUCTION .IT HAS
- THE COAL EXPLORATION IN THE STATE IS PERFORMED BY WESTERN COALFIELD LIMITED (WCL)

### DIAMOND

- MP IS WELL KNOWN FOR DIAMOND MINES
- BUNDER DIAMOND BLOCK IS A GREENFIELD MINING PROJECT COVERING AN AREA OF 3.64 SQUARE KILOMETERS .



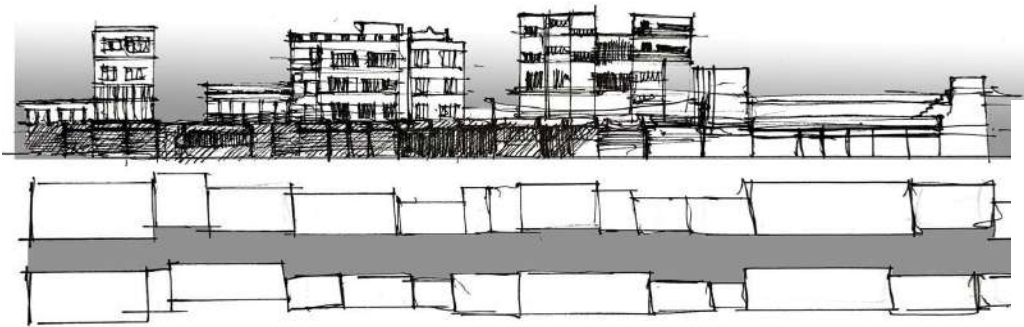
Mineral	District
Lead	Jabalpur Hoshangabad Shivpuri Datia
Feldspar	Jabalpur Chhindwara Shahdol
Soapstone	Bherdighat Jabalpur
Marble	Chhindwara Jabalpur Gwalior
Corundum	Natural ore of aluminium Sidhi - Peepra & Parkota(Mines).
Fluorite	Jabalpur
Uranium	Shahdol
Gold	Sidhi Katni Shahdol
Tin	Jhabua
Pyrite	Tikamgarh Dewas Jhabua Shivpuri
Slate	Mandsaur
Ochre	Satna Panna Gwalior Jabalpur
Gypsum	Shahdol
Antimony	Jabalpur



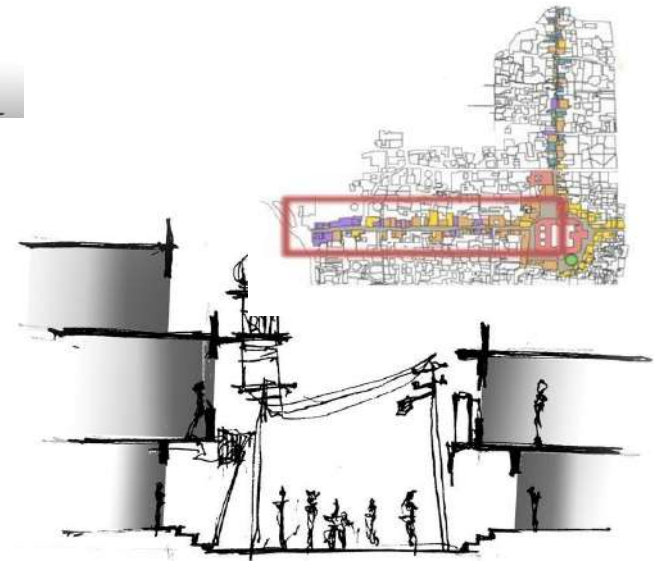
#### Legend

- PRACHIR
- GHANTA MARG
- RAJ MARG
- MAHARATHYA
- CHOURAHA
- BRAHMA STHAN
- GATES

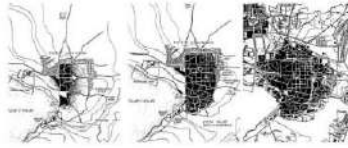
- The old city roads have an organic ,maze like character.
- It has walls from all four sides with 12 gates for access.



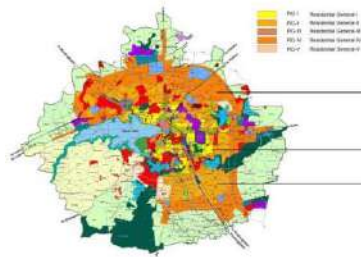
- Road widths : 3 to 6 meters.
- Ground floor : Commercial.
- First floor : Residential.
- Interaction spaces : balconies , dalaans , patias (seatings).
- A common similarity in designing of this place is the ground floor are shops of local people and the first floor is for residence .







- The city extended to the south first and started growing from Old city
- Expanded part consist of bungalows, apartments, colonies, and slum areas



Growing residential area



Slum area of Bhopal is on or close to nallah connected to lake and Railway line of city



Growing residential area



#### • INDUSTRIES OF BHOPAL :

- THE ECONOMY OF BHOPAL STALLED IN BHOPAL GAS TRAGEDY. INDUSTRY HAS GROWN CONSIDERABLY SINCE 1984 AS WELL. THE GAS LEAK HAS HAD MANY ADVERSE EFFECTS ON INCOME, TRANSPORTATION, AND OTHER NECESSITIES. . DUE TO THE PEOPLE NOT BEING ABLE TO WORK, THE ECONOMY HAS SUFFERED
- ITS ECONOMY IS MAINLY BASED ON INDUSTRIES LIKE ELECTRICAL GOODS, COTTON, CHEMICAL AND FLOUR MILLING ARE THE MAIN SOURCE OF ECONOMY
- LARGEST PART OF INDUSTRIAL AREA SITUATED ON NAGPUR BHOPAL HIGHWAY (MANDIDEEP INDUSTRIAL AREA)
- ONE OF THE MOST IMPORTANT INDUSTRIES OF BHOPAL IS THE ANANT SPINNING MILLS. LOCATED IN THE NEW INDUSTRIAL AREA OF BHOPAL THE INDUSTRY IS ENGAGED IN PRODUCING YARNS, ACRYLIC FIBER, SEWING THREADS, ETC. THIS IS A UNIT OF THE VARDHAMAN GROUP.
- MADHYA PRADESH HOUSES ONE OF THE LEADING AUTO CLUSTERS OF INDIA AT PITHAMPUR NEAR INDORE AND AT MANDIDEEP NEAR BHOPAL.
- BHEL (BHARAT HEAVY ELECTRICALS LIMITED) IS ENGAGED IN THE DESIGN, ENGINEERING, MANUFACTURING, CONSTRUCTION, TESTING, COMMISSIONING AND SERVICING OF A WIDE RANGE OF PRODUCTS, SYSTEMS AND SERVICES FOR THE CORE SECTORS OF THE ECONOMY, VIZ. POWER, TRANSMISSION, INDUSTRY, TRANSPORTATION, RENEWABLE ENERGY, OIL & GAS, AND DEFENCE.



AREA UNDER SMART CITY



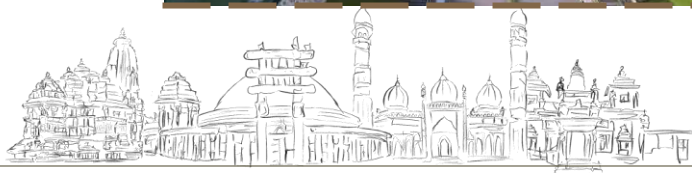
URBAN DESIGN CHARACTER ZONE



SMART CITY ZONING



METRO NODES (STATIONS)





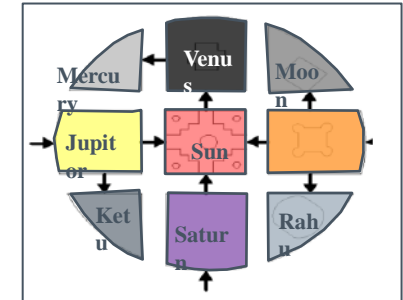
## VIDHAN BHAVAN

- **ARCHITECT** :- CHARLES CORREA
- **LOCATION** :- BHOPAL, INDIA
- **SITE AREA** :- 85000 m<sup>2</sup>
- **TOTAL BUILT UP AREA** :- 32000 m<sup>2</sup>
- **PROJECT YEAR** :-1983-1996.

❖ IT IS IN THE CENTER OF THE CAPITAL COMPLEX, AT THE HIGHEST POINT ON ARERA HILL.

❖ THE BUILDING USES 'NAVAGRAHA CONCEPT'.

❖ HISTORICAL REFERENCES IN THE ARCHITECTURE :



• BLUE RIBBON FROM GWALIOR FORT.

• DOME FROM SANCHI STUPA.



• COURTYARD PATTERN FROM ISLAMNAGAR.

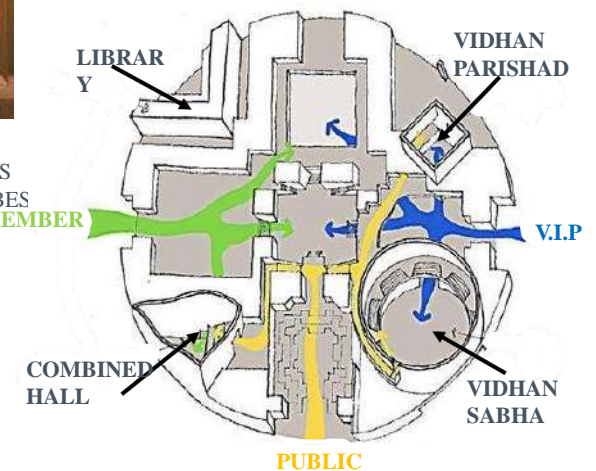


• BHIL PAINTINGS FROM THE TRIBES

### ❖ MATERIALS

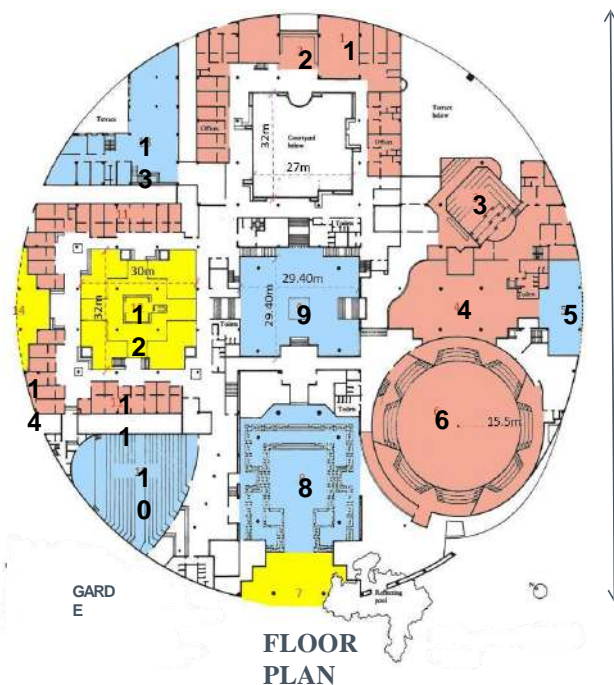
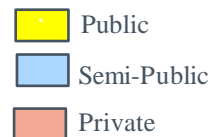
- **FAÇADE** - WHITE AND COLORED INDIAN MARBLE, GRANITE, RED SAND STONE AND LOCAL RED STONE
- **CLADDING** - DHOLPUR SANDSTONE.
- **ACOUSTICS AND INSULATION** - GYPSUM AND CEMENT.
- **SKYLIGHT** – FIBER GLASS.

### ❖ ZONING AND CIRCULATION

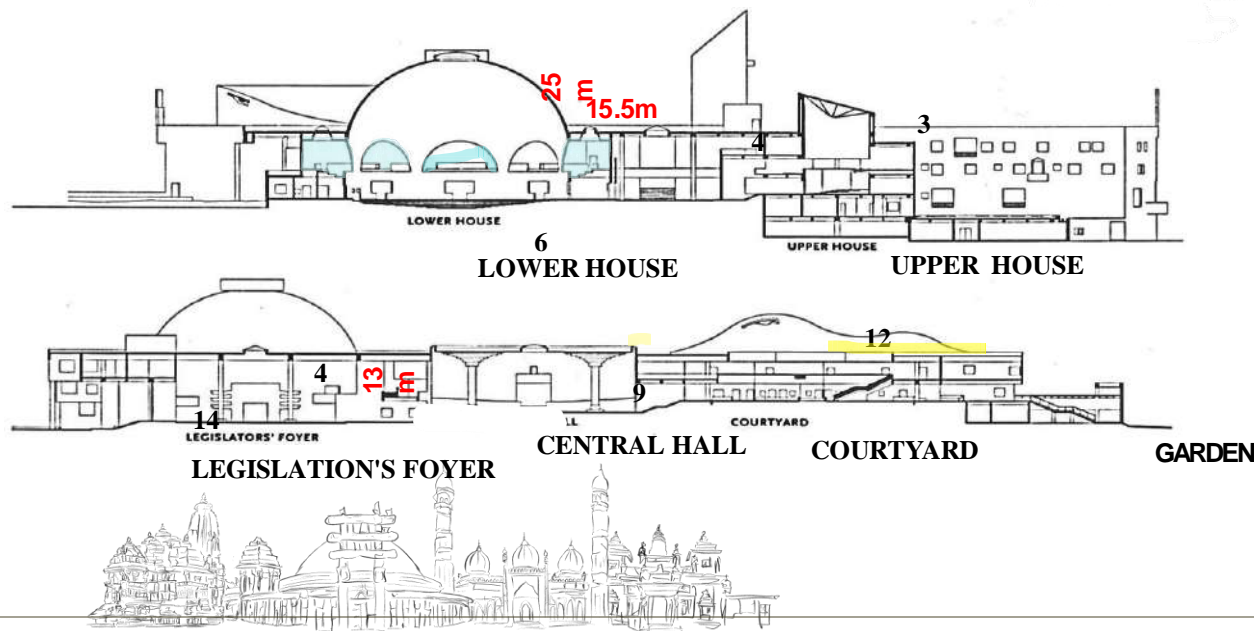




- BUILDING CONSIST OF A HALL FOR LEGISLATIVE COUNCIL AND LEGISLATIVE ASSEMBLY SITUATED IN SECTOR 1, HAVING SEATING CAPACITY OF 90 MEMBERS.
- IT HAS FACILITY OF GALLERIES. IT IS 20 M. HIGH, SQUARE IN PLAN HAVING ROOF OF TRUSS. IT HAS FACILITY OF NATURAL LIGHT.
- VIDHAN SABHA HALL IS LOCATED IN SECTOR 2. ITS MAIN ENTRANCE IS IN THE SHAPE OF 'TORAN' OF SANCHI STUPA. THE ROOF OF LOWER HOUSE IS DOMICAL IN SHAPE, WHICH IS 30M. IN DIAMETER AND 28M IN HEIGHT, PROVIDED WITH VOID FOR NATURAL LIGHT.
- THE OFFICIAL AND EXECUTIVE GALLERIES ARE ON THE GROUND FLOOR. A BEAUTIFUL LOBBY FOR MEMBERS OF ASSEMBLY IS ATTACHED TO THE LOWER HOUSE WITH FIVE ENTRANCES TO THE HOUSE AND A MINI CAFETERIA.
- ON THE ABOVE FLOOR EIGHT GALLERIES ARE PLACED. ALL THE GALLERIES ARE ENDOWED WITH NATURAL LIGHT. COMMON HALL HAS ADVANCED SOUND AND ELECTRONIC VOTING SYSTEM.



1. Chief Ministers Room.
2. Cabinet Room.
3. Vidhan Parishad.
4. Legislators Foyer.
5. VIP Entrance.
6. Vidhan Sabha.
7. Public Entrance.
8. Court of The People.
9. Central Hall.
10. Combined Hall.
11. Ministers Offices.
12. Courtyard.
13. Library.
14. Members Entrance.



## SPA, BHOPAL

❖ **LOCATION:** BHAURI, DISTRICT BHOPAL MADHYA PRADESH.

❖ **ESTABLISHED IN:** 2008 BY GOVERNMENT OF INDIA.

❖ **ARCHITECT:** A.K. VINODIA

❖ **NET SCHEME AREA:** 300309SQ.M

### ❖ ANALYSIS

- TOO MUCH CIRCULATION THROUGHOUT THE CAMPUS
- NO CLINIC OR MEDICAL FACILITIES
- INSPITE OF SPA BEING FAR FROM THE CITY, NO RECREATIONAL ACTIVITIES FOR THE STUDENTS STAYING IN THE CAMPUS
- LESS NUMBER OF BENCHES OR SHADES THROUGHOUT THE INSTITUTE



PROPOSED ACADEMIC  
BLOCK



❖ USE OF GOLDEN RATIO IN THE  
PLAN



## INDIAN INSTITUTE OF FOREST MANAGEMENT

- ARCHITECT - AANANT RAJE
- PLACE - BHOPAL
- YEAR - 1989
- BUILDING - INSTITUTIONAL
- AREA - 650000SQ M
- ARCHITECTURAL STYLE: MODERN



INSPIRED BY THE CONCEPT OF CONTINUITY.



- LOCATED IN NEHRU NAGAR, IN THE SOUTHERN WEST CORNER OF THE CITY OF BHOPAL.
- SITUATED ON A HILL THAT OVERLOOKS THE BHADHHADA BARRAGE THAT CONTROLS THE OVERFLOW OF THE UPPER LAKE OR BADA TALAB OF BHOPAL.
- THE SPILLWAY FOR BHADBHADA TAILS AROUND THE IIFM HILL, GIVING IT A SCENIC LOCATION IN SURROUNDING
- THE INSPIRATION FOR THE PROJECT CAME FROM THE HISTORICAL TOWN OF MANDU.
- THE NATURAL VEGETATION IS WILD GRASS, WHICH HAS BEEN ALLOWED TO GROW, AUGMENTED BY ROWS AND CLUMPS OF TREES.
- WALLS CLADDED WITH STONE IN SHADES OF GREEN AND YELLOW GREY.



RESSESSED  
WINDOWS ARE  
THERE TO  
PREVENT THE  
DIRECT  
SUNLIGHT



THE FAÇADE OF THE  
BUILDING IS MAINLY  
MADE OF STONE IN THE  
SHADE GREEN AND  
YELLOW GREY



### SPACES AND ACTIVITIES

#### ❑ ACADEMIC COMPLEX:

- › COURT SURROUNDED BY CLASSROOMS, A LIBRARY, AN AUDITORIUM, A SEMINAR ROOM.

- › LIBRARY BUILDING BEING FOUR STOREYED SERVES AS THE FOCAL POINT OF ACADEMIC COMPLEX.

#### ❑ OPENINGS:

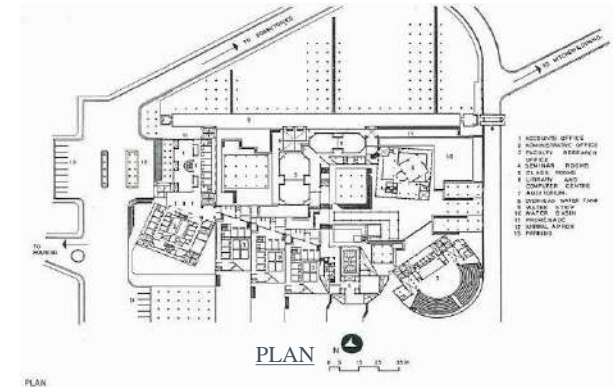
- › OPENINGS ARE RECESSED INTO SHADOW POCKETS WHICH BECOME THE DOMINANT FEATURE CONTROLLING AND DIRECTING SCALE AND PROPORTION THROUGHOUT THE BUILDING.





### MATERIALS:

THE ENTIRE CAMPUS IS CONSTRUCTED OF BRICK MASONRY, LOAD BEARING WALLS AS EXTERNAL ENCLOSURES OF SPACES AND REINFORCED CONCRETE FOR THE INTERNAL FRAME STRUCTURE TO SUPPORT ROOFS OVER LONG AND SHORT SPANS, OFFERING INNER FLEXIBILITY FOR THE ARRANGEMENT OF DESI RED LAYOUTS OF FURNITURE AND EQUIPMENT AND TO RELIEVE EXTERIOR WALLS OF HEAVY LOADS



### SPECIAL HIGHLIGHTS

THE MAIN FEATURES OF THE SITE ARE TWO HILLOCKS WITH OUTCROPS OF SLATE STONE. AS A COUNTERPOINT TO THE NATURAL FEATURES, DEEP BANDS OF TREES SELECTED FROM THE TYPES FOUND ON THE HILL ARE, WHEN FULLY GROWN, EXPECTED TO SHADE THE WALKWAYS AND CERTAIN AREAS OF THE COURTS.

THERE ARE WATER BODIES ALL OVER THE SITE. WATER IS CARRIED IN NARROW CHANNELS TO THE GREEN AREAS. A WATER RESERVOIR ON TOP OF ONE OF THE HILLOCKS GIVES A SHARP FOCUS TO THE LANDSCAPE.

- THE ENTIRE CAMPUS IS CONSTRUCTED OF BRICK MASONRY FOR WALLS. REINFORCED CONCRETE IS USED FOR THE INTERNAL FRAME STRUCTURE. LINTELS ARE STANDARDIZED AND ARE LEFT WITH EXPOSED CONCRETE SURFACES.
- THE AREAS AROUND THE OPENING ARE CLAD IN ROUGH KOTA STONE AND SLATE BLUISH- GREEN TO PURPLE HUES. THE REMAINING PART OF EXTERIOR MASONRY WALL SURFACES IS PLASTERED WITH STONE-WASHED GRIT. COARSE STONE-MASONRY RETAINING WALLS ARE USED FOR TERRACES AND STEPS ON VARIOUS LEVELS IN THE COURTS.



- ❖ **ESTABLISHED** : 2004
- ❖ **AREA** : 7 ACRES.
- ❖ **ARCHITECT**: KAMATH DESIGN STUDIO (AR. REVATHI KAMATH)
- ❖ **OWNER** : GOVERNMENT OF MADHYA PRADESH.
- ❖ **LOCATION** : MADHYA PRADESH TRIBAL MUSEUM  
SHYAMALA HILLS, BHOPAL, 462002, MADHYA PRADESH, INDIA

## TRIBAL MUSEUM, BHOPAL

### ▪ INTRODUCTION



#### ▪ BAIGA



#### ▪ KORKU



#### ▪ SAHARIYA



#### ▪ KOL



#### ▪ KORKU



#### ▪ BHILS



#### ▪ BHILS



#### ▪ BHILS





## ▪ **6 MAJOR GALLERIES**



### 1. **Jeevan Shaili** -

A GALLERY OF HOMES SHOWCASES THE HOMES OF THE GOND, KORKU, BHIL, AND SAHARIYA TRIBES.



UPPER LEVEL PLAN

**2. SANSKRITIK VAIDHYA** – CULTURAL DIVERSITY WELL PRESERVED EXHIBITS DIFFERENT TRADITIONS ASSOCIATED WITH WEDDINGS AND FESTIVALS OF THE TRIBAL COMMUNITIES.

**3. KALABODH** : THE EXPRESSION OF TRIBAL LIFESTYLE IN THE FORM OF ART.





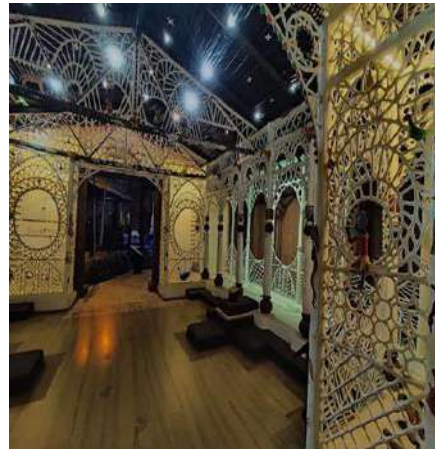
**4.DEVLOK : THE HOUSE OF GODS** EXHIBITS DIFFERENT MYTHS AND BELIEFS ASSOCIATED WITH THE CUSTOMS OF WORSHIPPING MOTHER EARTH, MOUNTAINS, RIVERS, ETC.



**4.RAKKU DIRGHA** THE STORY OF HOW GAMES ORIGINATED EXHIBITS TRADITIONAL GAMES, ESPECIALLY THE ONES PLAYED BY CHILDREN.

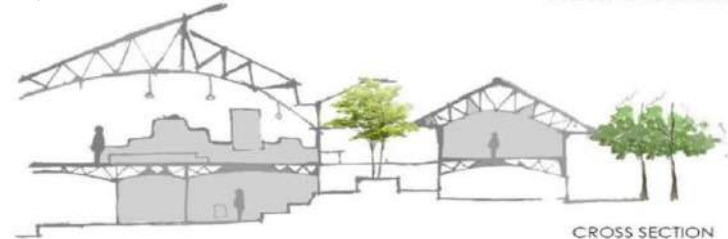


**3 CHHATTISGARH DIRGHA** - DEPICTS THE TRIBAL ART OF CHHATTISGARH



#### ❖ **MATERIALS**

- STEEL TUBES, CASTELLATED GIRDERS, AND STEEL RODS FABRICATED INTO INTRICATE TRUSSES.
- ROCKY TERRAIN,
- LOCAL STONE LEFT EXPOSED AND BRICK PLASTERED WITH CRUSHED STONE ON THE OUTSIDE AND MUD PLASTER ON THE INSIDE.
- HALF-ROUND TILES,
- GALVALUME SHEETS, AND
- CONCRETE WITH A TOPPING OF GRASS AND GROUND COVER.
- THE LANDSCAPE IS DESIGNED TO COLLECT AND STORE RAINWATER,
- GREEN ROOF, AND GARDENS.



The galleries are raised above the ground on columns, forming a continuous, multileveled veranda, following the contours of the sloping, rocky terrain.

## **PROPOSAL**

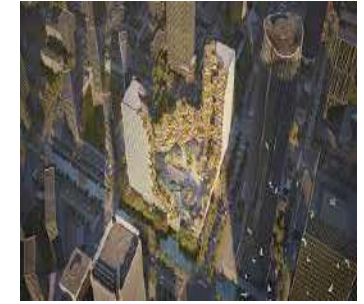
ENTERTAINMENT AND EVEN INDUSTRIAL USES INTO ONE SPACE. MIXED-USE BUILDINGS CAN BE AS SIMPLE AS A MOM-AND-POP RETAIL SHOP IN A STOREFRONT BUILDING WITH AN APARTMENT OR TWO UPSTAIRS. OR IT COULD BE A SINGLE-FAMILY HOME WITH A DOCTOR'S OFFICE ON THE GROUND FLOOR. ON A LARGER SCALE, IT MIGHT BE A BIG APARTMENT BUILDING WITH RETAIL OR OFFICE SPACE ON THE GROUND FLOOR AND PERHAPS AN UNDERGROUND PARKING GARAGE. OR PERHAPS THE BUILDING ALSO HAS OFFICE SPACE BLENDED INTO SOME OF THE UPPER FLOORS. OR IT COULD BE A HOTEL WITH STREET-LEVEL RETAIL STORES, GUEST ROOMS ON THE LOWER FLOORS AND HIGH-END CONDOS AT THE TOP OF THE BUILDING.

Q - WHY IS IT NEEDED ?

- IT INCULCATE RESIDENTIAL AREA , OFFICE SPACES , AND MARKET SPACE COVERING ALMOST ALL THE REQUIREMENT OF THE AREA.
- AS A DESIGNER WE WILL GET TO DESIGN DIFFERENT KIND OF SPACES IN ONE BUILDING .
- WE WILL HAVE AN ACTUAL UNDERSTANDING OF HIGH RISE BUILDING.
- IT CAN BE A PART OF SMART GROWTH STRATEGY
- IT FITS PERFECTLY WITH THE PURPOSE OF MAKING A SMART CITY .



DOWNTOWN ONE



OASIS TOWER

### 2)- INFORMATION TECHNOLOGY (IT PARK)

INFORMATION TECHNOLOGY PARK MEANS AN INTEGRATED TOWNSHIP, WHICH WOULD CONTAIN INFORMATION TECHNOLOGY BUILDINGS, AS WELL AS OTHER BUILDINGS.

THE INFORMATION TECHNOLOGY BUILDINGS IN THE INFORMATION TECHNOLOGY PARK SHALL BE CONSTRUCTED FOR THE PURPOSE OF CARRYING OUT THE ACTIVITIES SET OUT IN THE CLAUSE (BD) FOR INFORMATION TECHNOLOGY BUILDINGS AND THE REMAINING BUILDINGS IN THE INFORMATION TECHNOLOGY PARK ARE MEANT TO PLAY A COMPLEMENTARY ROLE, SUPPORTING THE ACTIVITIES IN THE INFORMATION TECHNOLOGY BUILDINGS.

IN THE INFORMATION TECHNOLOGY PARK, 70% OF THE LAND AREA IS TO BE SET ASIDE FOR THE CONSTRUCTION OF INFORMATION TECHNOLOGY BUILDINGS AND THE REMAINING LAND AREA MAY BE UTILISED FOR ALL THE SUPPORTING ACTIVITIES

THE BUILDINGS FOR THE SUPPORTING ACTIVITIES MAY INCLUDE RESIDENTIAL BUILDINGS, RECREATIONAL FACILITIES, EDUCATIONAL FACILITIES, CONVENTION CENTRES, HOSPITALS, HOTELS AND OTHER SOCIAL INFRASTRUCTURE MEANT TO SUPPORT THE ACTIVITIES IN THE INFORMATION TECHNOLOGY BUILDINGS AND INFORMATION TECHNOLOGY PARKS





## BHOPAL SITE 01

**LOCATION :-** TULASI NAGAR ,  
BHOPAL , MADHYA PRADESH (

SMART CITY )

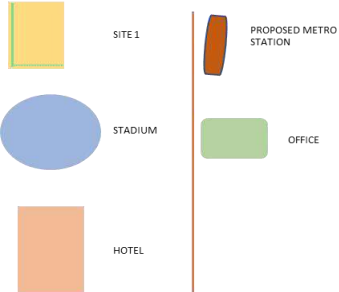
**AREA :-**

**TYPE :-** COMMERCIAL

**MAX PERMISSIBLE** :- 75 M HEIGHT

**AREA** – 21219 SQ M

### SURROUNDING -



### STRENGTH :-

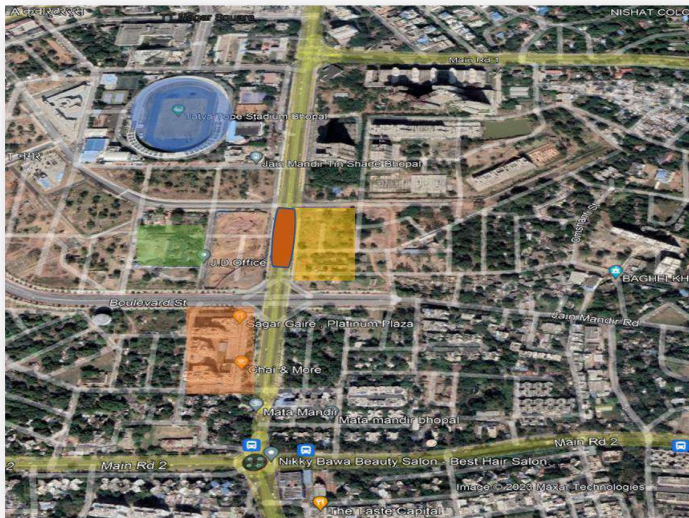
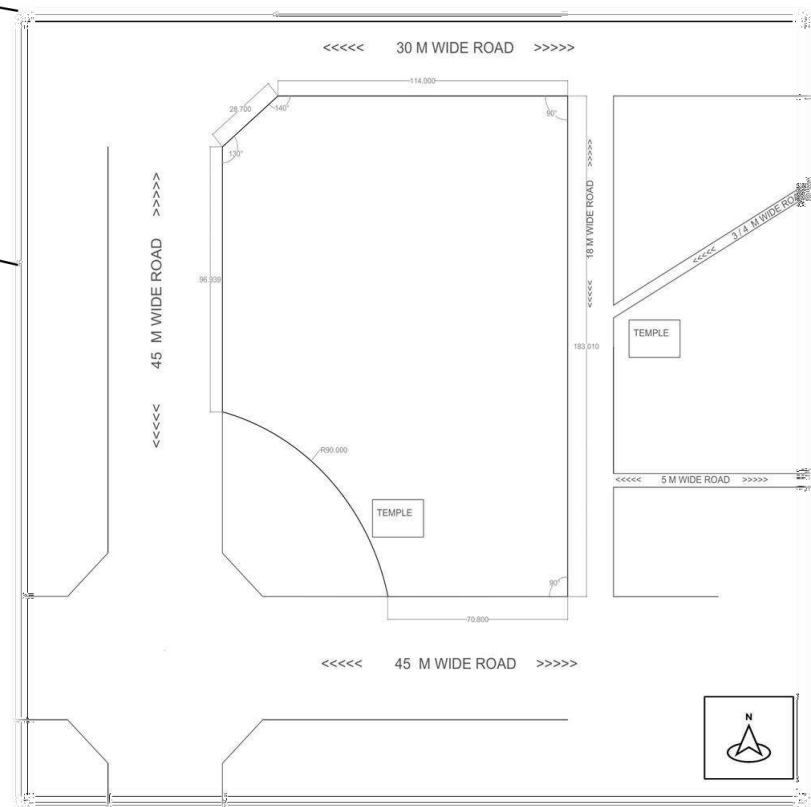
- GOOD ROAD NETWORK
- ATTACHED ROAD
- GOOD PEDESTRIAN
- WELL PLANNED DRAINAGE , WATER SUPPLY , ELECTRICITY DISTRIBUTION CENTER

### OPPORTUNITY :-

- SCRAP CAN BE UTILIZED
- DUE TO SMART CITY BUSSINESS OPPORTUNITY AND ECONOMICAL GROWTH CAN BE ENHANCE OF THE CITY

### WEAKNESS :-

- LAND HAVE SLOPE TOWARDS SOUTH BAD FOR DRAINAGE
- PRE EXISTING TEMPLE
- SLUMP AREA SURROUNDING
- CANE BE A BIT NOISY DUE TO CHAAURAH





## HOUSES IN MAHESHWAR –

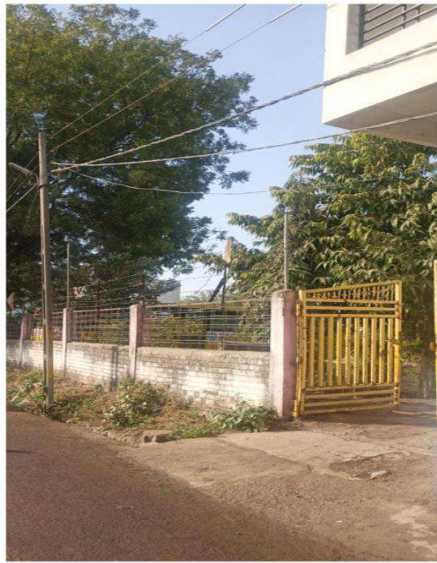
THE DESIGN ON HOUSES IN MAHESHWAR ARE INTRICATE AND VERNACULAR. SOME HOUSES ARE BUILD NEWLY BUT THEY STILL CARRY THOSE INTRICATE PATTERNS ON THEIR STRUCTURE.



NARMADA GHAT

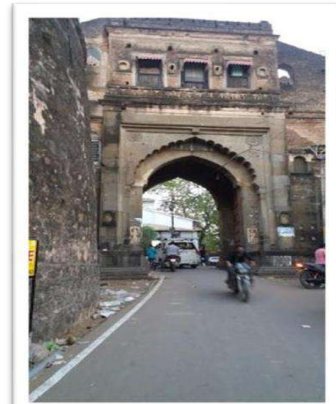


PRESENT HOUSE STRUCTURE



ELECTRIC POLES PROVIDED

ROADS IN MAHESHWAR



## ISSUES - FUTURE OF MAHESHWAR

AS AN ARCHITECTUREAL STUDENT, THE PROBLEM WE NOTICED IN MAHESHWAR IS THAT THE STRUCTURES BUILD ARE WAY TOO OLD, WHICH NEEDED TO BE RENOVATED BY FOLLOWING THE SAME INTRICATE PATTERNS.

THE SCHOOL IN MAHESHWAR IS NOT SUFFICIENT FOR THE AREA. THERE IS NO PRIORITIZED CARE TAKEN ABOUT THE NARMADA GHAT

THE ROADS ARE TEMPORARAY, SO SINCE THEY COME IN REGULAR USE THERE SHOULD BE ACTIONS TAKEN TO IMPROVE THEM. FROM LOCAL HOUSES TO AHILYABAI GHAT, WHICH IS A WORKPLACE FOR MANY PEOPLE NO TRAVELLING SERVICE IS PROVIDED.

## MALL PROPOSAL

A LARGE RETAIL COMPLEX CONTAINING A VARIETY OF STORES AND OFTEN RESTAURANTS AND OTHER BUSINESS ESTABLISHMENTS HOUSED IN A SERIES OF CONNECTED OR ADJACENT BUILDINGS OR IN A SINGLE LARGE BUILDING.

### ❑ NEED OF SHOPPING MALL

SHOPPING MALLS HAVE A WIDE VARIETY OF PRODUCTS AVAILABLE IN ONE SPACE.

SHOPPING MALLS HAVE PRODUCTS FROM COMPETING PRODUCERS AVAILABLE UNDER ONE ROOF. SO, MAKING IT SHOPPING CENTRE HOROSHO EASIER TO COMPARE AND MAKE PURCHASES.

MALLS ALSO HAVE THEIR OWN PARKING FACILITY.

SHOPPING MALLS HAVE A VARIETY OF FOOD COURTS WITH A WIDE VARIETY OF CUISINE. SHOPPING MALLS TEND TO HAVE MOVIE THEATRES.

MALL HAVE GAMING ZONES.



PHOENIX MALL

### TRANSIT HUB

TRANSIT HUB IS DEFINED AS A RAIL, LIGHT RAIL, OR COMMUTER RAIL STATION, FERRY TERMINAL, OR BUS TRANSFER STATION SERVED BY THREE OR MORE BUS ROUTES (I.E., A BUS STOP WITH NO SUPPORTING SERVICES DOES NOT QUALIFY).

### TO BE BUILT –

- COMMERCIAL SHOPS
- BUS STOP
- RECREATIONAL ACTIVITY

### NEED OD TRANSIT HUB

- ECONOMICAL GROWTH
- COMPLIMENTS THE METRO STATION
- CAN BE USED BY MANY PEOPLE





## BHOPAL SITE 2

### STRENGTH-

- ACCESS TO SITE FROM 4 SIDES.
- NATURAL VEGETATION ON SITE.
- SITE FACE TO NORTH SIDE AND MAIN ROAD 45 M HIDE ON NORTH.
- SITE IS LOCATED AT CENTRE OF CITY.
- METRO STATION PROPOSED NEAR THE SITE.
- SITE IS UNDER SMART CITY DEVELOPMENT AREA.
- SITE SURROUNDING IS WELL PLANNED BY THE BSCD.

### CONNECTIVITY



BUS STAND : 7KM .



RANI KAMLAVATI RAILWAY STATION: 4KM.



VIDHAN SABHA : 3KM.



### SERVICES

- WATER : FROM TANK (MORNING 6 AM TO 8 AM.)
- ELECTRICITY : 24 HRS.



### WEAKNESS-

- NO DEVELOPMENT AS OF NOW NEAR THE SITE.

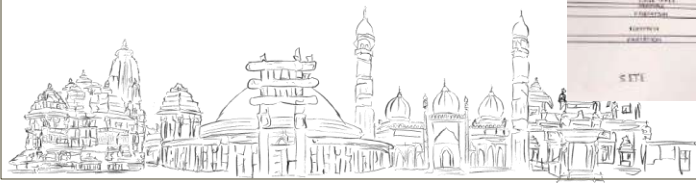
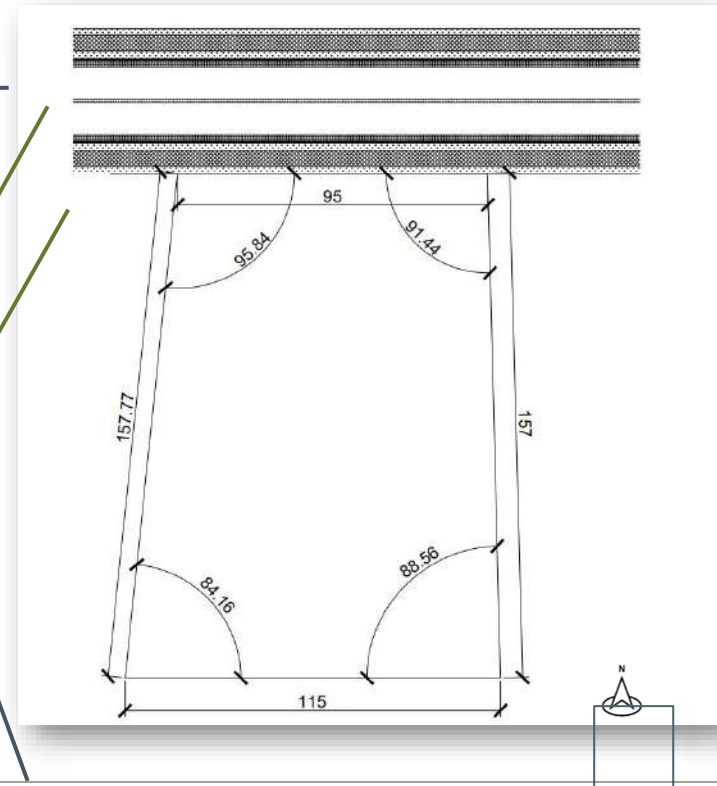
### OPPORTUNITIES -

- SITE IS FLEXIBLE TO DESIGN ANY COMMERCIALSPACE.

### THREATS-

- NO DEVELOPMENTS NEAR AS OF NON SO COMMERCIALY IT IS RISKY CONSIDERING THE REVENUE GENERATION.

### AREA - 16600 M







SANCHI STUPA



VIDHAN SABHA

### GROUP PHOTOGRAPHS



IIFM



SPA

### FACULTIES ACCOMPANIED

AR.JASHMEET KAUR  
AR.VAISHNAVI GAWANDE  
AR. MRUNALINI ANEKAR  
AR.TEJAS JOSHI  
AR.NATASHA PAAVAM  
AR. MAYURI MORE

### LIST OF STUDENTS

SARTHAK JORVEKAR  
SHRUTI LAD  
YOJANA LODHE  
SHRUTI MAHAJAN  
SIDDHI MAHALE  
VIRAJ MAHALE  
SIDDHI MAHESHWARI  
ABHISHEK MALAVE  
PRATHAMESH MANE  
MANVI MAYANK  
RIYA MISHRA  
MOHAMMAD ALI

MOHAMMAD HUMAM  
SURAJ MORE  
ASHRAF MUJAWAR  
HARSHIKA MUTHA  
TRUSHNA NANDEDKAR  
VAISHNAVI PACHGADE  
ANUSHKA PAREKH  
SAMRUDDHHI PATANKAR  
ARCHI PATEL  
SAUMYA PATEL  
NAKUL PATIL  
OMKAR PATIL

YASH PATIL  
NITIN PATTEBAHADUR  
ABHIJEET PHALAKE  
OM PHAWADE  
PRADNYESH DARVATKAR  
PRATHAM GAIKWAD  
SANKARSHAN RAUT  
LEKHA VYAS



SINHGAD TECHNICAL EDUCATION SOCIETY'S  
**SINHGAD COLLEGE OF ARCHITECTURE, PUNE**

**Study TOUR**

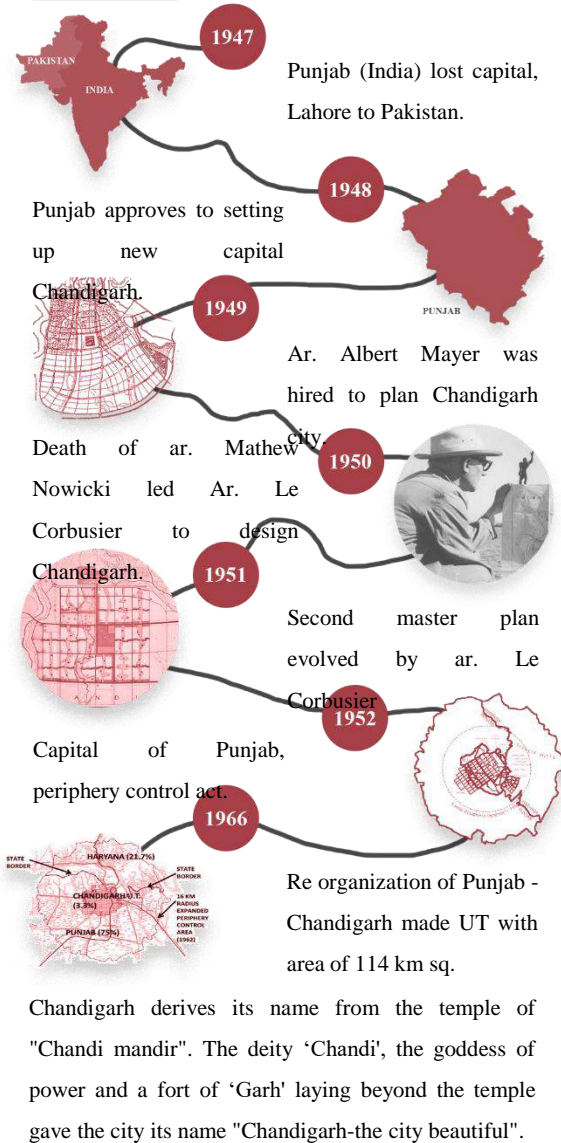
**CHANDIGARH- AMRITSAR**

BY  
**III YR B. Arch.**

**Division: D**

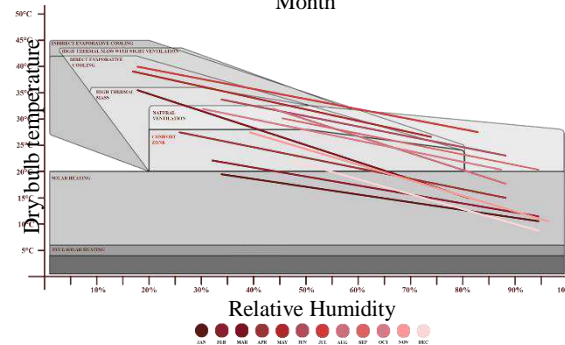
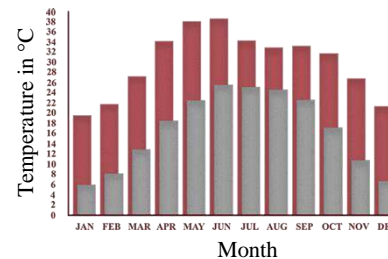
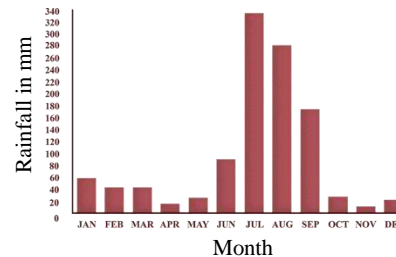
# STUDY TOUR REPORT

## Introduction



## Climate

Chandigarh has a humid subtropical climate (köppen: cwa) characterized by a seasonal rhythm: very hot summers, mild winters, unreliable rainfall and great temperature variation (−1 to 45 °C or 30.2 to 113.0 °f). The average annual rainfall is 1,110.7 millimeters or 43.73 inches.



## Le Corbusier's vision

The master plan prepared by Le Corbusier was similar to Albert Mayer and Mathew Nowicki except that the shape of the city plan was modified from with a curving road network to rectangular shape with a grid iron pattern.

### Head

Admin Area  
(Capitol Complex)

### Heart

(Sector 17)

### Lungs

(Leisure Valley)

### Intestine

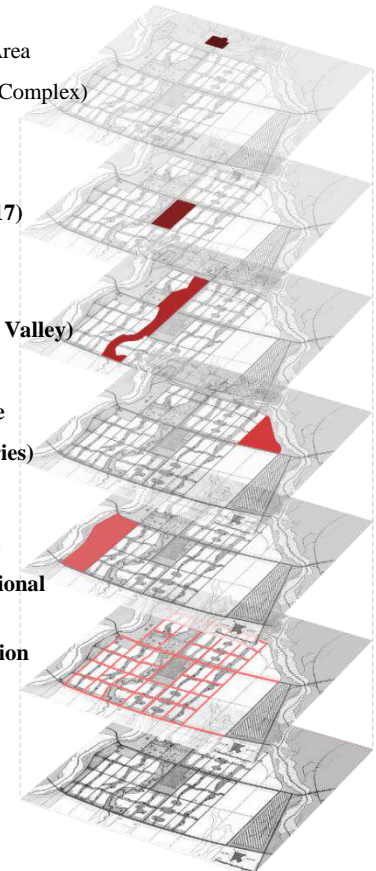
(Industries)

### Intellect

(Educational Area)

Circulation

(V 7'S)

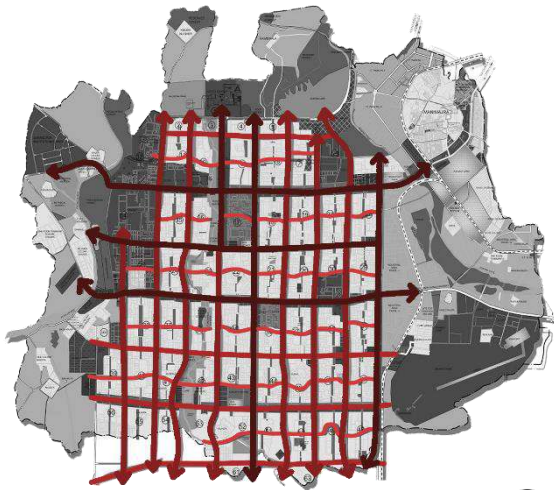




## STUDY TOUR REPORT

### Hierarchy of circulation

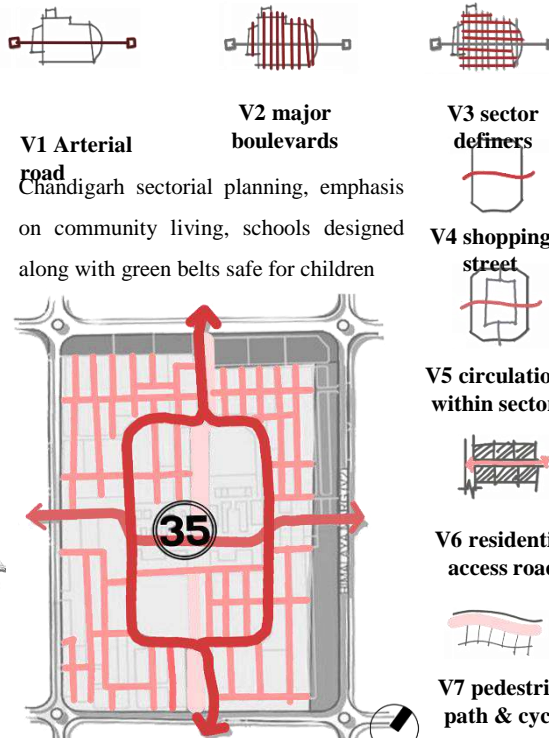
Circulation based on le Corbusier's V7s road-system designed to lead traffic into the city and to distribute it right up till the dwelling unit.



### Vision of Nehru

Chacha Nehru dreamed of a modern city to which le Corbusier breathed life.

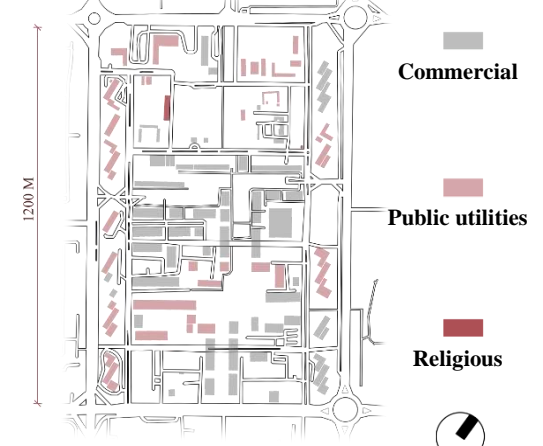
Chacha Nehru wanted to give a new life to the people, a new hope something new to look forward to let people forget the trauma of the past years & felt the new capital will be the symbol of new hopes



### Central business district

Sector 17 located at the center congregate people with major shopping complexes and sports facilities.

Chandigarh is designed as a module of sector size 800 x 1200 meters.



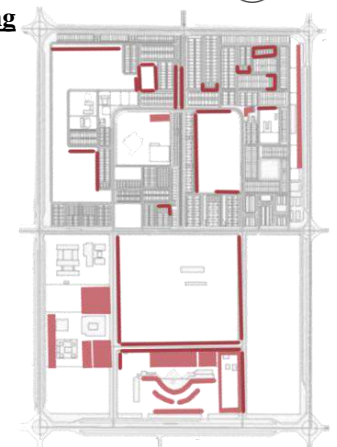
### Criticism in Chandigarh planning

Parking problem:

It has been simply reiterated that the underground community parking and common parking in the residential areas should be adopted.

Unemployment:

Despite being a well-developed city, there is a high rate of unemployment, especially among the educated youth.



## STUDY TOUR REPORT

### Itinerary

#### DAY 1 – 15 JAN 2023

Journey start from Pune to the first destination Chhatrapati Maharaj Terminus Mumbai. Boarded the train at 11:30 pm for long stretch of day 1 and half day of journey to Ambala junction.

#### DAY 2– 16 JAN 2023

In Train

#### DAY 3 – 17 JAN 2023

Reached Ambala junction at 10 am . checked in at red velvet Clark

Hotel at 11am.

Visited Chandigarh college of architecture .

#### DAY 4 – 18 JAN 2023

Reached PEDA (Punjab energy development agency) office at 9.00 am post breakfast interacted with ar. Arvind Kumar (mechanical engineer) who explained the need of energy efficient buildings and their work .

Ar. Jaswinder Lal gave the tour and explained the design of the PEDA office building till 11 00 am . post PEDA visit went for site study till 4.30 pm including lunch

Visited rock garden at 4.45 pm to 6.00 pm.



#### DAY 5 – 19 JAN 2023

Visited to capital complex from 9.30 – 11.15 am . had a opportunity to visit legislative council building from Inside and see the assembly hall other two building (high court secretariat) and four monuments (open Hand museum , geometric hill , tower of shadows And the martyrs monument) were observed from The open pavilion . Visited Pierre Jeanerette house museum 11.30 – 12,15 Visited le Corbusier centre from 12.30 – 1.00 pm .

#### DAY 6 – 20 –JAN-2023

Visited to the museums from 10.00 – 12.00 pm .

- 1] natural history museum
- 2] Chandigarh architecture museum
- 3] government museum and art gallery .

Visited Virast-e-Khalsa a 4.00 pm .

#### DAY 7 – 21 JAN 2023

Left Chandigarh at 8,30 am .

Reached hotel – humble, Amritsar.

Visited Jallianwala Bagh and golden temple

#### DAY 8 - 22 JAN 2023

Visited Khalsa university at 12.30 pm .

travelled 2 hours and reached Wagah border at 2.30 pm

Reached Jalandhar railway station at

1.30 am .Board train at 3.00 am .

Reached Pune station at 11.00 am



## **SECTOR 17**

Sector 17 located at the Centre congregate people with major shopping complexes and sports facilities A well defined hierarchy of circulation based on le Corbusier v7s road system designed to lead traffic into the city and distribute it right up till the dwelling unit.

Mixed-use development works against the trend to create inclusive, connection communities.

City level public green space with artificial water body .



**CHANDIGARH PLAN**



**NEELAM CINEMA**



**PARKING**

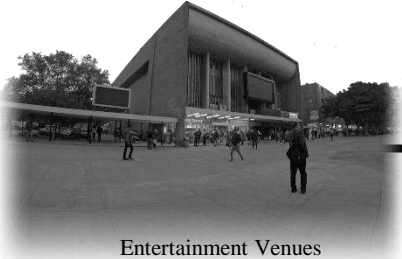


**SHOPPING STREET**



## STUDY TOUR REPORT

### Building typology



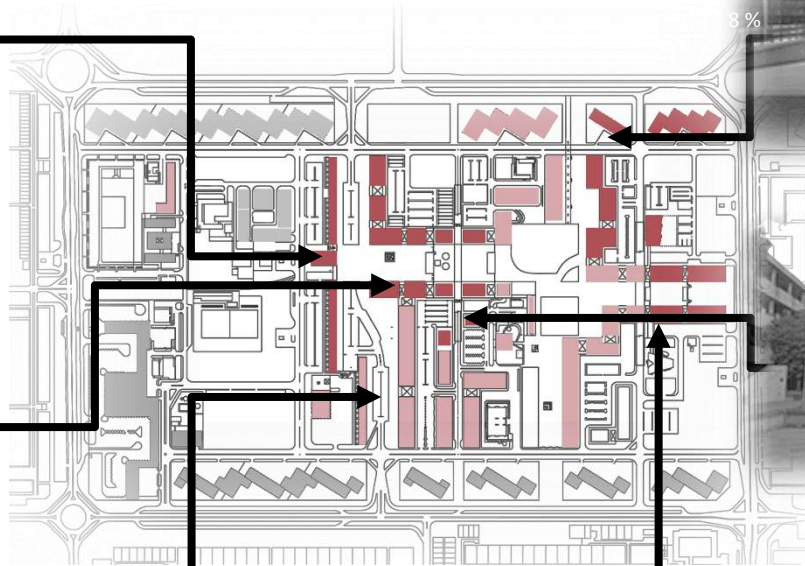
Entertainment Venues



Restaurants and Cafes



Shopping Street Building



Plan of Sector 17



Skate park



Community area

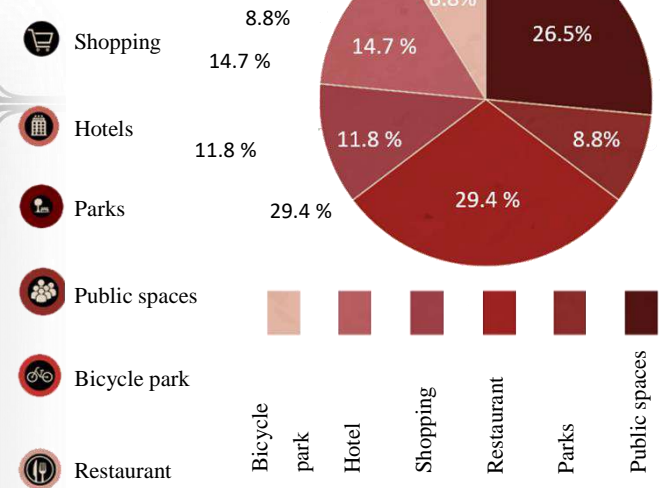
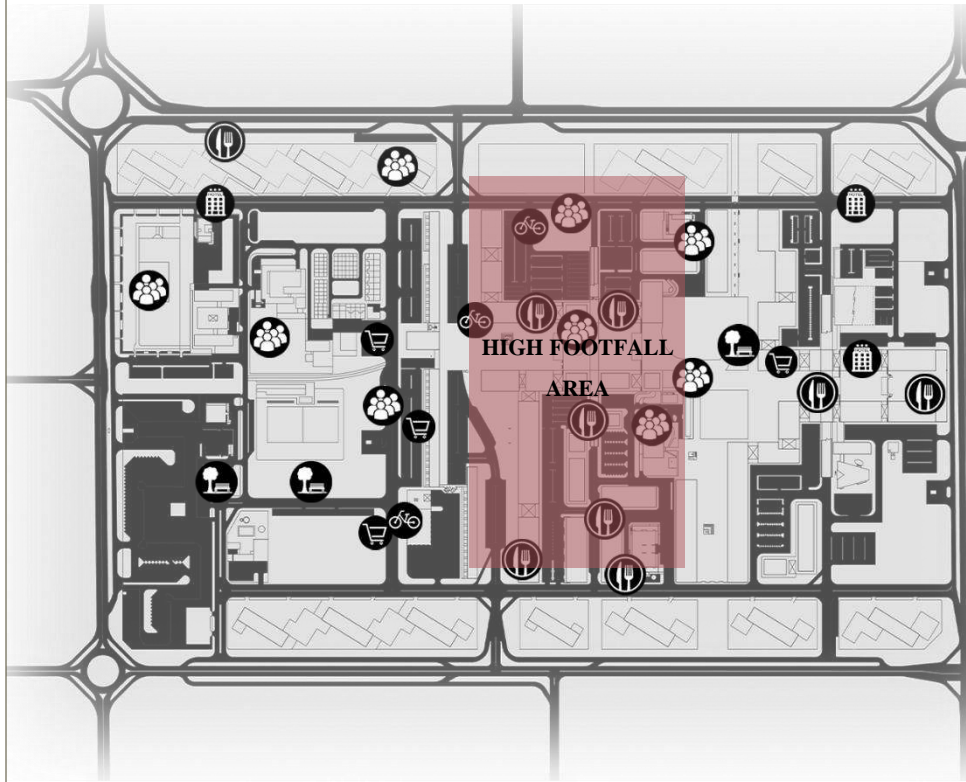
Sector 17 is a well-known commercial and shopping district in the city of Chandigarh, India. It is known for its modern architecture and bustling shopping scene, with a variety of shops, restaurants, and cafes.



Shopping street building

## STUDY TOUR REPORT

### Street hierarchy and footfall



Events happening in the city. During peak hours, popular tourist destinations and shopping areas can get crowded, while other parts of the city may be less busy. On weekends and holidays, there can also be an increase in the number of visitors to tourist attractions and other popular destinations.



Morning



Evening



Night

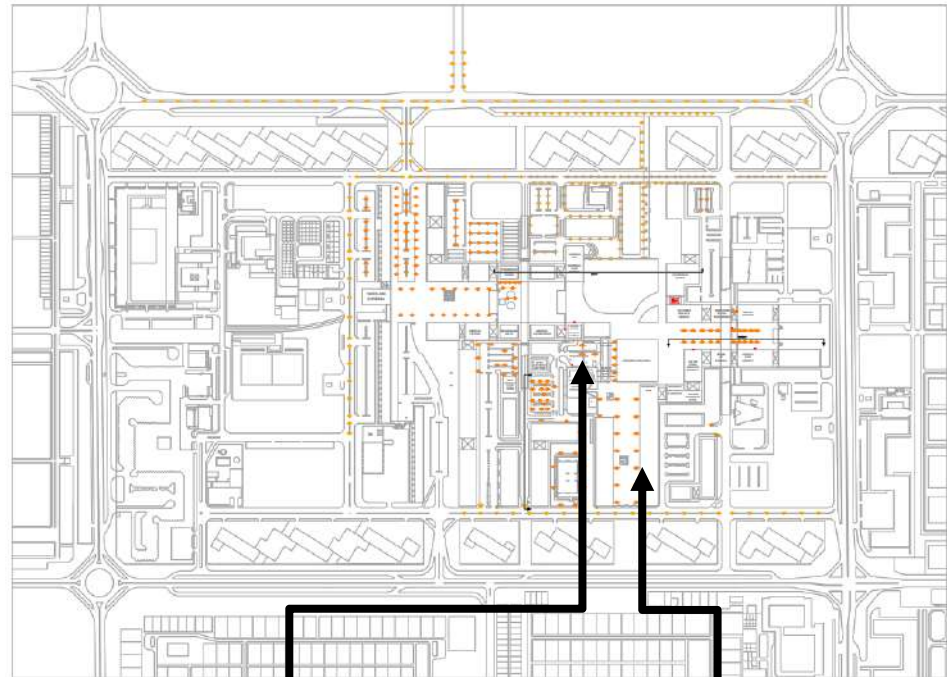
## STUDY TOUR REPORT

### Street elements in public spaces

Sector 17 is a bustling area for shopping and entertainment that is home to Sector 17 Market. A tree-lined pedestrian plaza with fountains and shops selling sportswear, gifts, and clothing from across the world.

International eateries, ice cream stores, and traditional sweet shops may be found on the nearby streets.

There are theatres and clubs for entertainment and Shanti Kunj Park adjacent includes a rose garden and meadows for picnics.



Plan of street elements in public spaces

#### Legend

- Street lights
- Fire hydrants



Buyout elements in a landscape



Open spaces and streetscapes are covered by dense foliage to get shaded circulation area at day time.

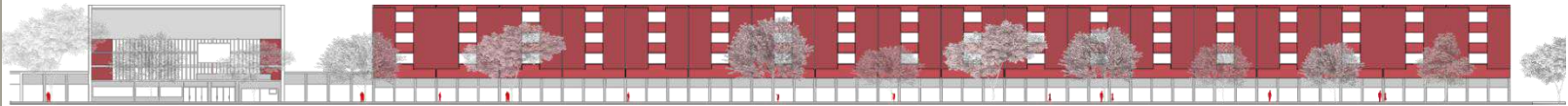


The pathways are illuminated with good distribution of hardscape & softscape

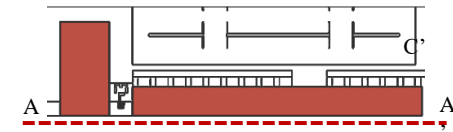


## STUDY TOUR REPORT

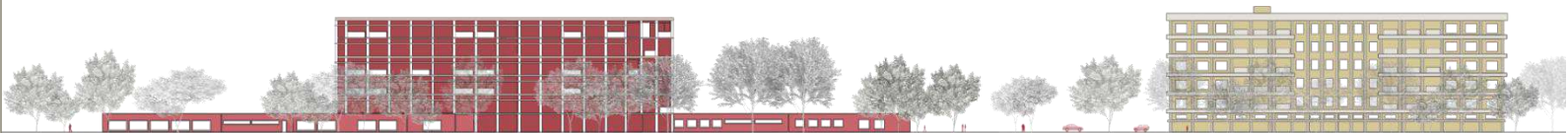
### Streetscape



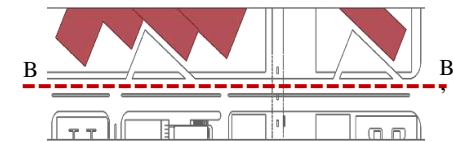
ELEVATION AA'



PLAN



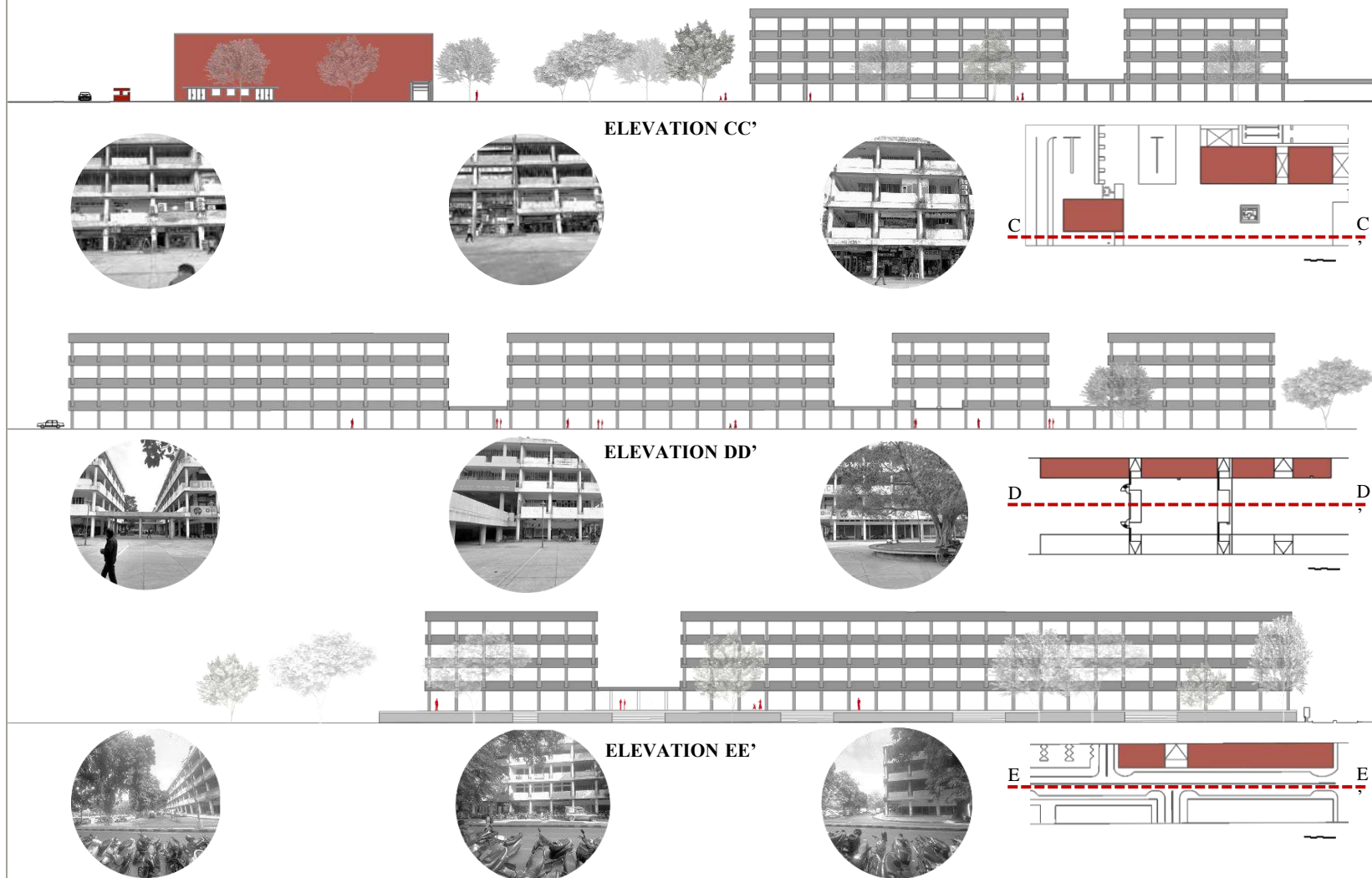
ELEVATION BB'



PLAN

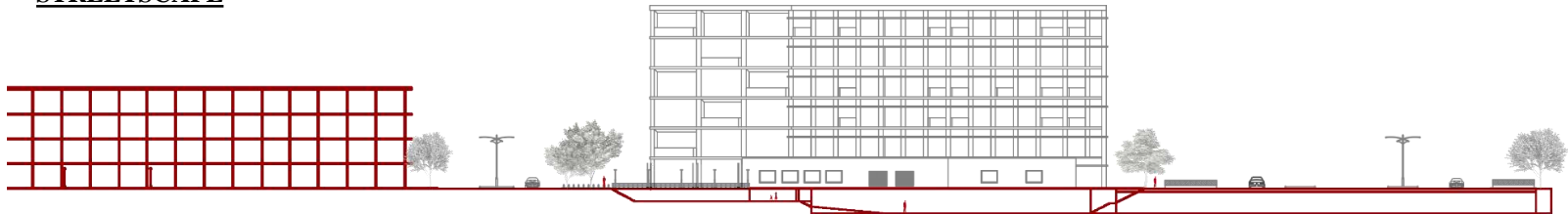
# STUDY TOUR REPORT

## Streetscape



# STUDY TOUR REPORT

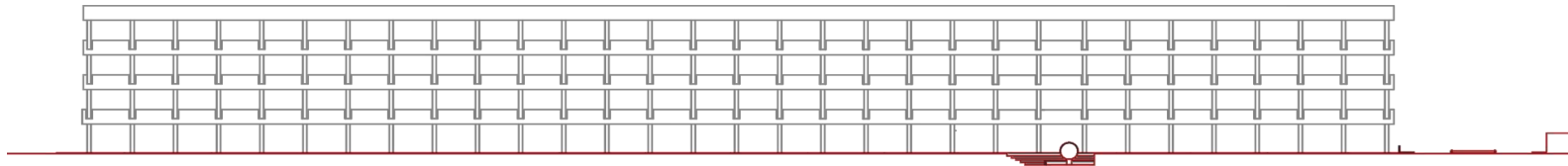
## STREETSCAPE



SECTIONAL ELEVATION AA'



PLAN

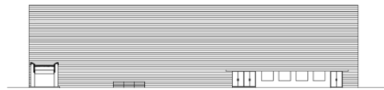


SECTIONAL ELEVATION BB'

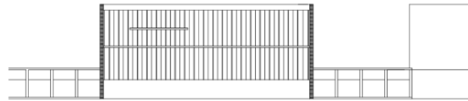


## STUDY TOUR REPORT

### Neelam cinema



North West Elevation



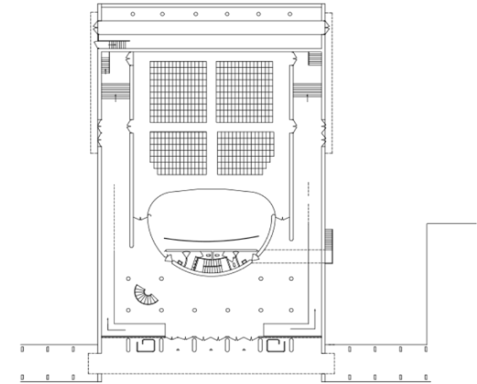
South West Elevation



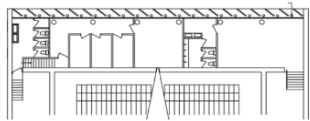
South East Elevation



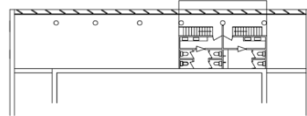
North East Elevation



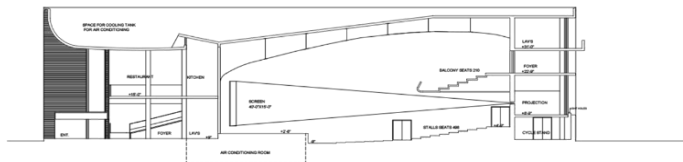
Plan



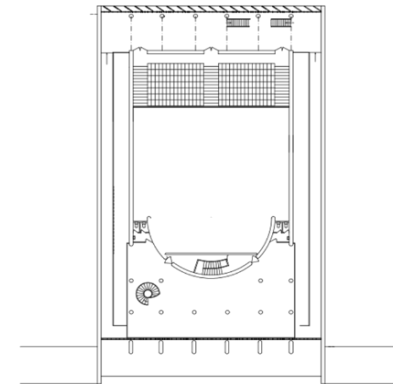
Plan at X



Plan at Y



Longitudinal Section

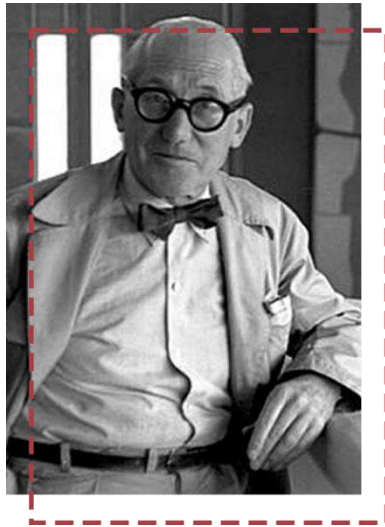


Plan at balcony LVL

## Chandigarh college of architecture

Architect - Le Corbusier  
Completion year -1961.

It is one of the first architecture colleges in India and is recognized as a center of excellence in the field of architecture education. The college offers a five-year Bachelor of Architecture (B.Arch.) program, which is affiliated with Panjab University, Chandigarh.



### Openings

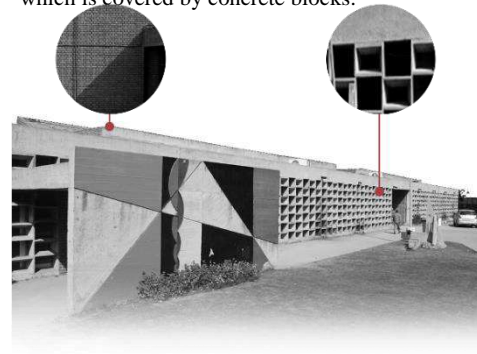
Chandigarh College of Architecture experiences plenty of natural light through clerestory windows present all around the structure.



The buildings benefits from being 1 story high as the passages are surrounded by rooms on both sides and thus the passage can be lit from above.

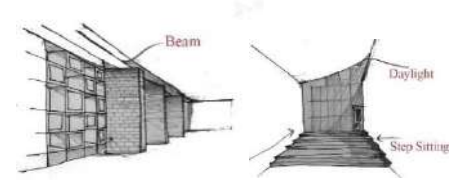
### Material

For main entrance and facade brick is used while for partition of spaces and roof concrete is used and the entrance facade is made-up of glass which is covered by concrete blocks.



### Light & Ventilation

Large windows and skylights provide opportunities for natural ventilation.



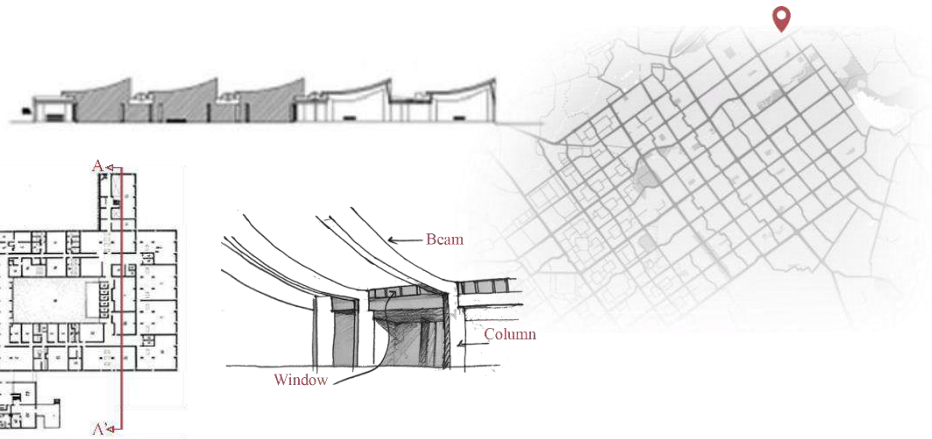
Concrete hollow blocks

Clerestory windows

Light shelves and other passive solar design elements are used to maximize the amount of light entering the building.

### Construction details

Chandigarh College of Architecture developed a space for students to experience a open environment which was felt throughout the structure with tons of natural light. The front facade installed after the construction added extra dynamics to the experience of the structure.

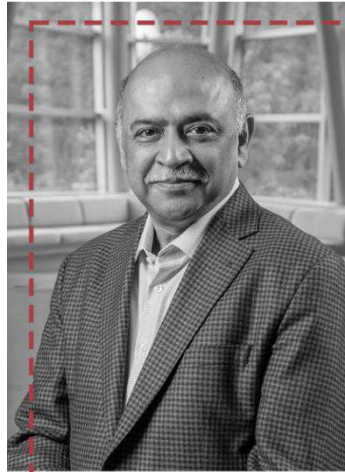


## P.E.D.A.

Architect - Dr. Arvind  
Krishn

Completion year -1991

Punjab Energy  
Development Agency was  
formed as a state nodal  
agency for promotion and  
development of Renewable  
Energy Projects and energy  
conservation programme in  
the state of Punjab.



## Openings

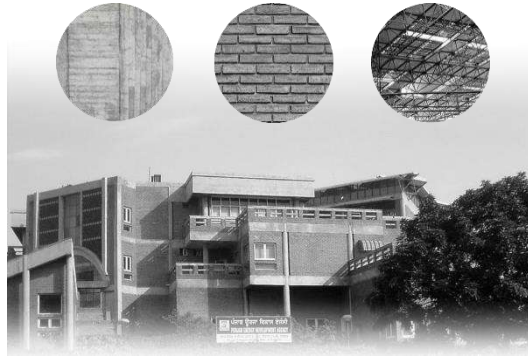
Light vaults are provided  
at places and solar  
complex has been  
developed in response to  
solar geometry.



Shell roofing is used to  
stop direct sunlight.

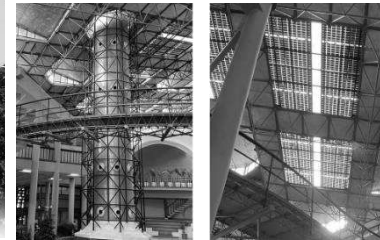
## Material

Exposed brick and boulder stone masonry,  
unfinished concrete surfaces, latticed  
brickwork, in contrast with plastered surfaces  
and stone walls are some features of Punjab  
Energy Development Agency.



## Light & Ventilation

on the south western facade, dome  
shaped concrete structure have  
horizontal and vertical interesting  
fins with glass fixed in the void to  
allow natural light with reduced  
glare. Wind tower is also given.

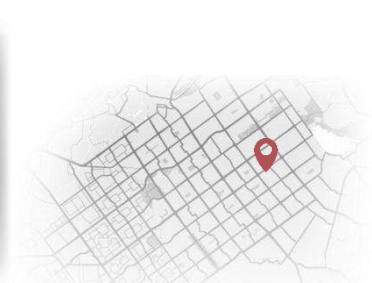
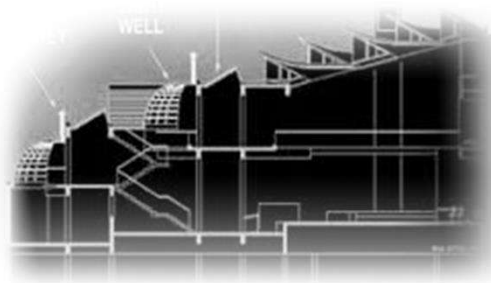


Wind tower

Skylight

## Climate responsive design

This building has a 3 Dimensional form responding to solar geometry i.e.  
minimizing solar heat gain in hot dry period maximizing solar heat gain in  
cold period.



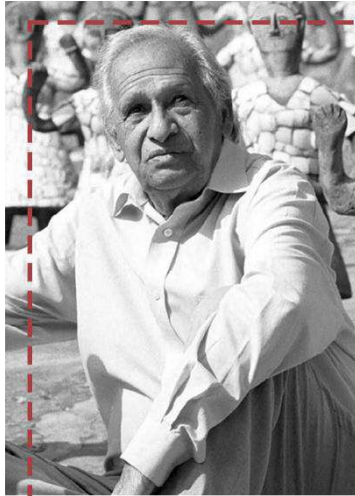


## Rock garden

Architect - Nek Chand Saini

Completion year -1976

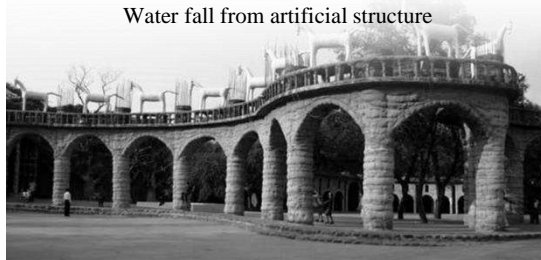
The Rock Garden of Chandigarh is a sculpture garden in Chandigarh, India. Today it is spread over an area of 40 acres. It is completely built of industrial and home waste and thrown-away items. The garden is known for its sculptures made from recycled ceramic.



## Openings



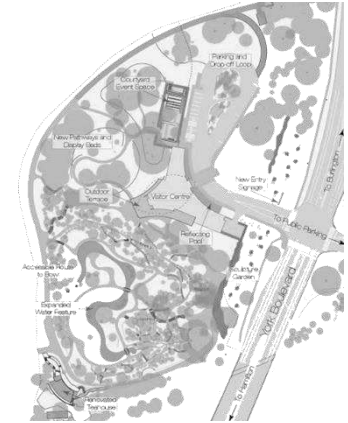
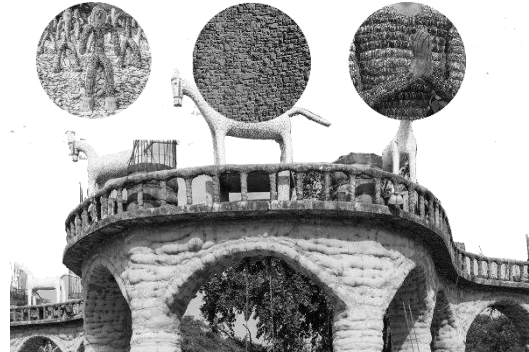
Water fall from artificial structure



Courtyard

## Material

Various combinations of porcelain, concrete, and stone different waste materials like frames, mudguards, forks, handle bars, metal wires, play marbles, porcelain, auto parts, broken bangles etc.



Plan

## Climate responsive design

Nek Chand's Rock Garden expresses the delicateness of the environment, the need for conservation of the earth's natural resources, the importance of balancing industrial development and sound environmental practices.



Amphitheatre is design in such a way that it does not disturb the audience.



## STUDY TOUR REPORT

### Pierre Jeanneret House Museum

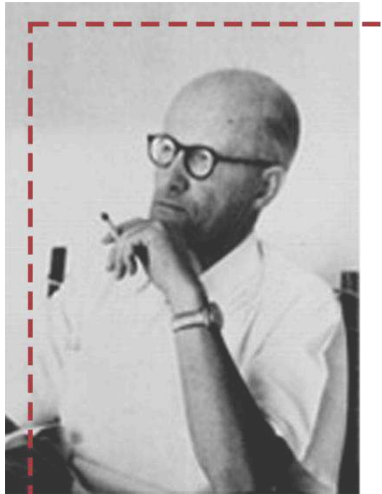
Architect - Pierre Jeanneret

Completion year -1954

The first ever house built in Chandigarh was that of Pierre Jeanneret. The home of the city's first chief architect is located in Sector 5 right opposite the famous Sukhna Lake. Today, this home serves as a museum and tells the story of Jeanneret's creative genius.

#### Openings

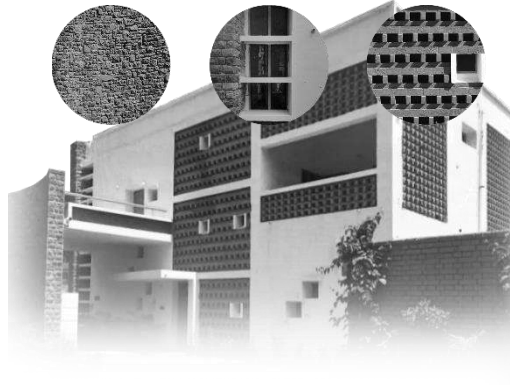
Each of the rooms offer views of the sprawling garden and allow for ample natural light.



Each room on the first floor, opens to a shaded balcony.

#### Material

Exposed brick and boulder stone masonry, unfinished concrete surfaces, latticed brickwork, in contrast with plastered surfaces and stone walls are some features of Pierre Jeanneret Museum.



#### Light & Ventilation

Quirky-designed and huge windows make excellent use of natural light.

Each room on the first floor, opens to a shaded balcony.



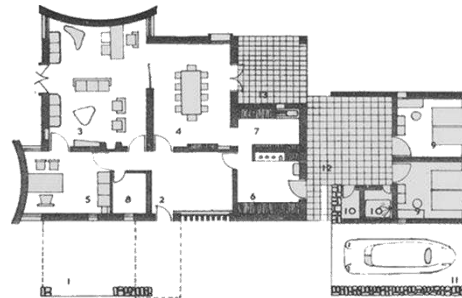
Glass window



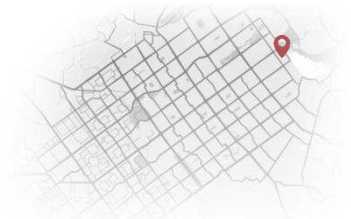
Brick jali

#### Climate responsive design

Keeping in mind the hot weather and other conditions of building in India, he created simple, but effective designs. The house remains cool owing to its high ceiling and stone-wall exteriors



Plan

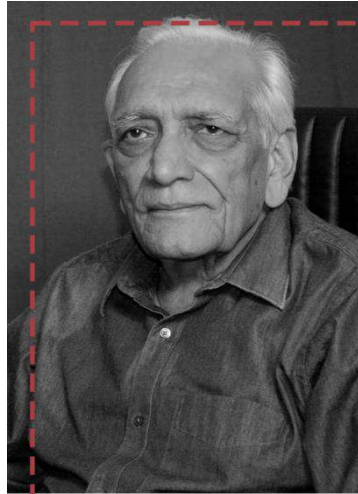


## Chandigarh architecture museum

Architect- Shiv Datta Sharma

Completion year -1954

The Chandigarh Architecture Museum which was set up in 1997 to document, preserve and showcase rare documents, drawings, sketches and archives etc. pertaining to the making of Chandigarh. The sculptural building designed by Ar. S.D. Sharma



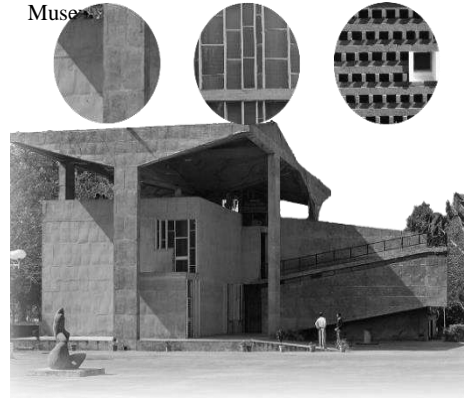
### Openings

The façade and the fenestration comprise of glazing for natural lighting and ventilators for ventilation to the building along with the basement.



### Material

Exposed brick and boulder stone masonry, unfinished concrete surfaces, latticed brickwork, in contrast with plastered surfaces and stone walls are some features of Pierre Jeanneret Museum.



### Light & Ventilation

The unique roof is set at two levels and the space between the two is left open to facilitate air and light ventilation. This was in line with Chandigarh's mandate for cost-effective and climate-responsive structures.



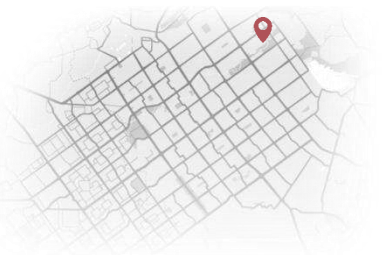
Large glass windows

### Massing

The main cuboid block of the Chandigarh Architecture museum is simple, elegant 14 meters by 14 meters structure derived from two squares. The double roof over the terrace of the main structure is in the form of two pyramids-one upright and the other inverted-over each square resembling the shape of a parasol.



View





## STUDY TOUR REPORT

### Natural history museum

Architect - Le Corbusier

Completion year -1968

After the partition the division of collections took place on April 10. 60% of objects were retained by Pakistan and 40% collection fell in the share of India. The museum was Inaugurated by Chief Commissioner of Chandigarh by DR.M.S. Randhawa.



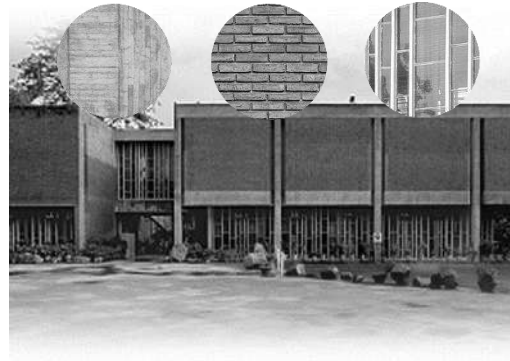
### Openings

Large opening with windows and louvers on northern side.



### Material

The museum is built in composite masonry and exposed concrete pilots, with brick tile cladding. Its facades are calibrated through undulatory glazing and slim aerator that bring in diffused light and facilitate



### Light & Ventilation

Fenestration is provided with undulatory glazing for natural light, along with aerators for ventilation. Light for basement streams in via sunken courts.



Glass windows

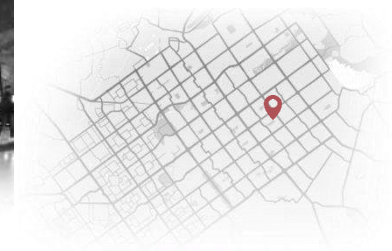
Louvers

### Climate responsive design

Cross ventilation, shading, and natural lighting. The roof of the building is covered in greenery, which helps to insulate the building and reduce the urban heat island effect. Large windows and skylights provide ample natural light, reducing the need for artificial lightening and saving energy.



View



## Khalsa university

Architect - Bhai Ram Singh

Completion year -1911-12

The architecture of the Khalsa college is considered as one of the best examples of the Indo - Saracenic style. The college was designed by Bhai Ram Singh, principal of the Mayo School of Arts, Lahore, with the help of engineer Dharam Singh Gharjakhia.



## Openings

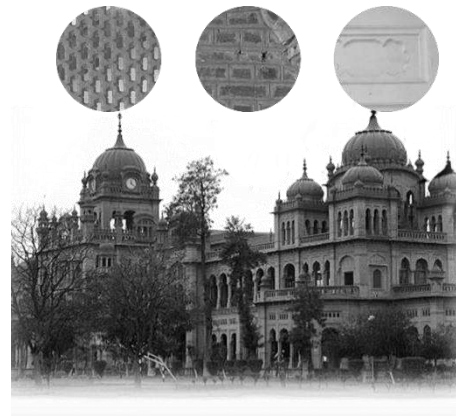
The less than successful attempts to incorporate Eastern architecture in the City Hall with its horseshoe arches and disproportionate massing of the building also brings into limelight the unconditioned spontaneity of Bhai Ram Singh's genius



Arches

## Material

Bricks sealed with an organic mix of Surkhi (red powder made of bricks), lime powder, jaggery , lentil powder and fine himp.



## Light & Ventilation

Corridors has large windows in arches form for light and ventilation.



Arches

Jali

## Climate responsive design

The less than successful attempts to incorporate Eastern architecture in the City Hall with its horseshoe arches and disproportionate massing of the building also brings into limelight the unconditioned spontaneity of Bhai Ram Singh's genius



Sketch



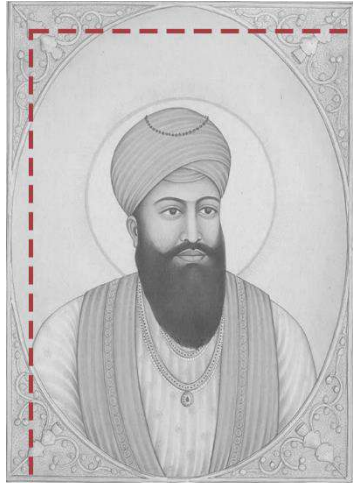
## STUDY TOUR REPORT

### Golden temple , Amritsar.

Architect - Guru Arjan

Completion year -1589

The Golden Temple is spiritually the most significant shrine in Sikhism. The Temple is an open house of worship for all people. Over 150,000 people visit the holy shrine everyday for worship. The Gurdwara complex has been nominated as a UNESCO World Heritage Site.



### Openings

Sikh shrines offers interesting varieties in respect of the types and forms of the arches . The most common perhaps the foremost popular type of arch is represented by foliations or cusps.



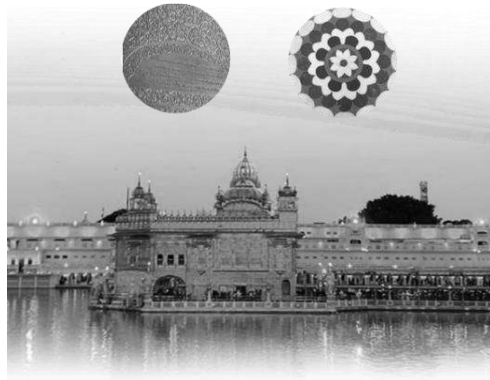
Balcony windows



Arches

### Material

Ninety-five foils are made of gold weighting 15 grams each who oversees the work of gold plating. Jaratkari marbles are used and it is made from natural stone brought from various areas of Rajasthan.



### Light & Ventilation

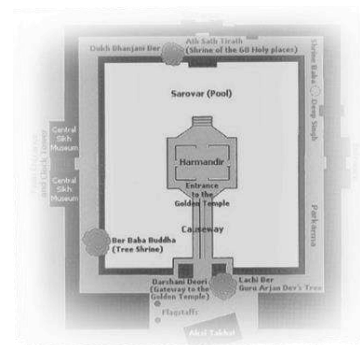
All interior spaces will have optimum day lighting. The windows provided on every side give a direct entry to the day light. And for the beauty of Temple remains attractive artificial lighting is done in night time.



Natural ventilation      Daylight in temple

### Climate responsive design

The less than successful attempts to incorporate Eastern architecture in the City Hall with its horseshoe arches and disproportionate massing of the building also brings into limelight the unconditioned spontaneity of Bhai Ram Singh's genius



Plan





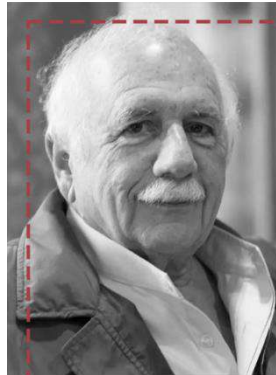
## Virasat- e- Khalsa museum

Architect - Moshe Safie

Opened - 25 November 2011

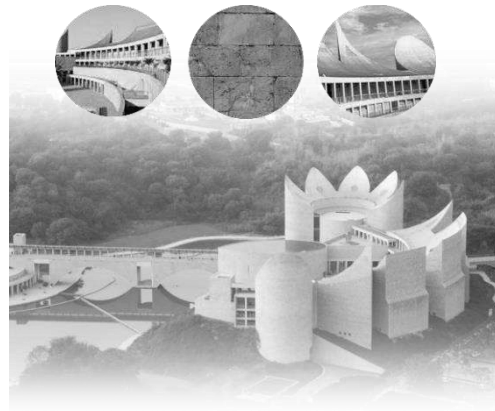
type - Museum

Spread across a vast area of 6500 ac of land, Virasat-e-Khalsa (or Virasat e Khalsa) Museum narrates the story of Sikhism and Punjab using the most advanced technology and hand-crafted artifacts.



## Material

Sandstone bricks and concrete use inside the building. Stainless steel roofs are used as roofing material for curved roof are used in entire heritage complex of Anandpur sahib .



## Light & Ventilation

Mechanical ventilation is used inside the building.

Different room has different light and mechanical ventilation.

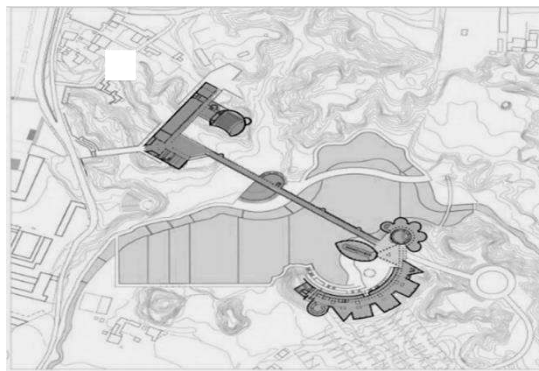


Mechanical Ventilation

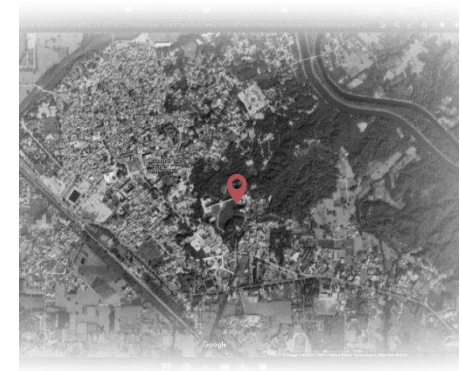
## Openings



Balcony windows



Plan



## STUDY TOUR REPORT

### In talk with Ar. Sangeet Sharma

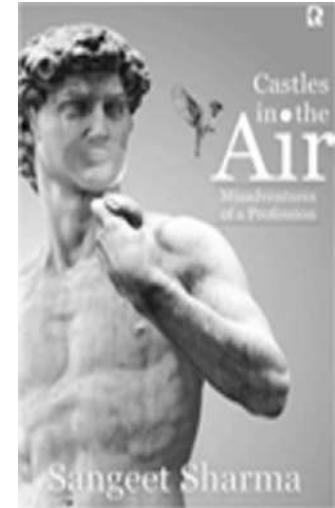
On the 17th of January we got the opportunity to have an interactive session with Ar. Sangeet Sharma, an Indian architect and writer from Chandigarh. He has authored six books on architecture, including Architecture, Life, and Me (2008), The Corb's Capitol (2009) and Castles in the Air (2017).

The session started with him introducing himself and his father, who also was an architect and has worked with Le Corbusier himself, which justifies his deep knowledge and understanding about Chandigarh. Then he acquainted us with the planning and design of Chandigarh city through some chapters from his book. This was followed by a Q&A round where we asked questions on the structures we visited during the tour.



### Few of the points he mentioned –

- Chandigarh was planned as a settlement for the refugees of India Pakistan partition.
- Pandit Nehru gave full freedom to le Corbusier to design Chandigarh as he want.
- Chandigarh was planned in such a way that there is no traffic even in present day.
- The placement and height of buildings are such that it does not obstruct the view of the mountain ranges.
- The entrance gate to the assembly hall is painted by Corbusier himself.
- Use of golden ratio in planning and designing.
- The scale of capitol complex is larger compared to other buildings in Chandigarh, to show the grandeur and importance of the building.
- 
- The trees planted alongside of the road are specifically chosen and placed based on the shadow they provide.



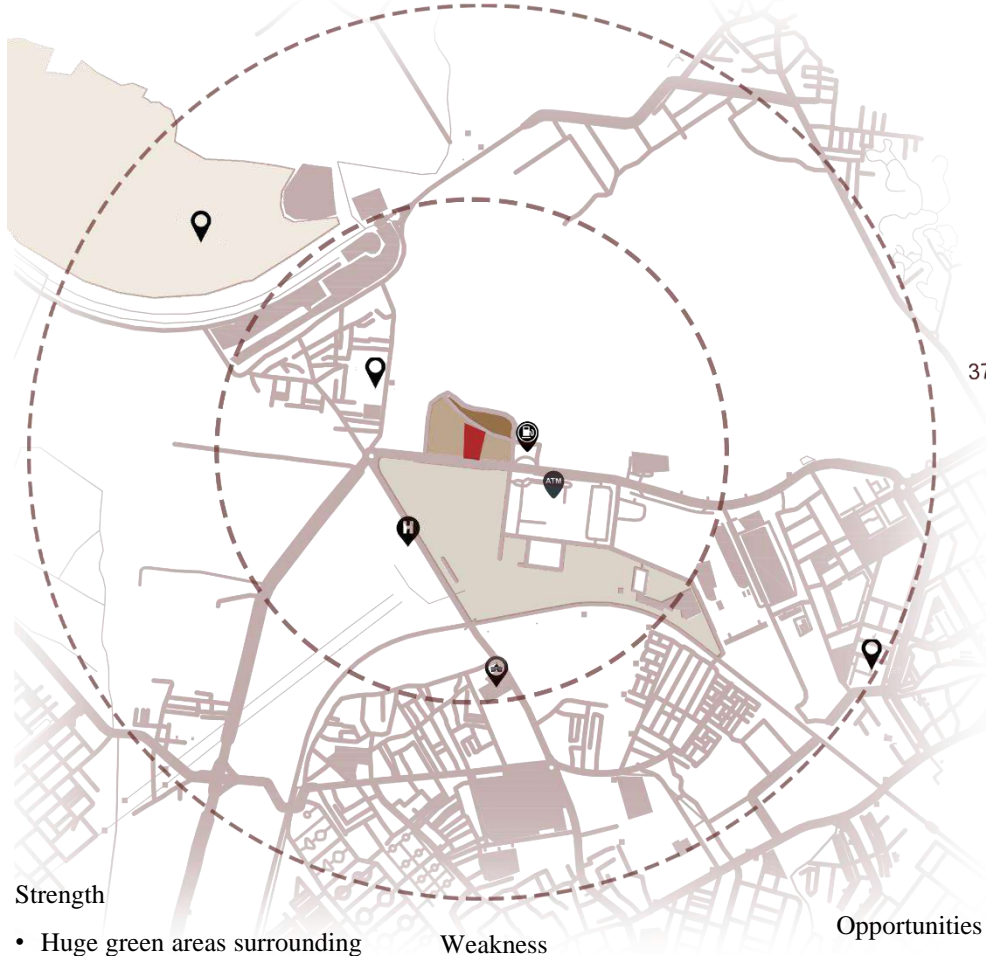
Castle in the air



The Corb's capitol

# STUDY TOUR REPORT

## Site and Program



### Strength

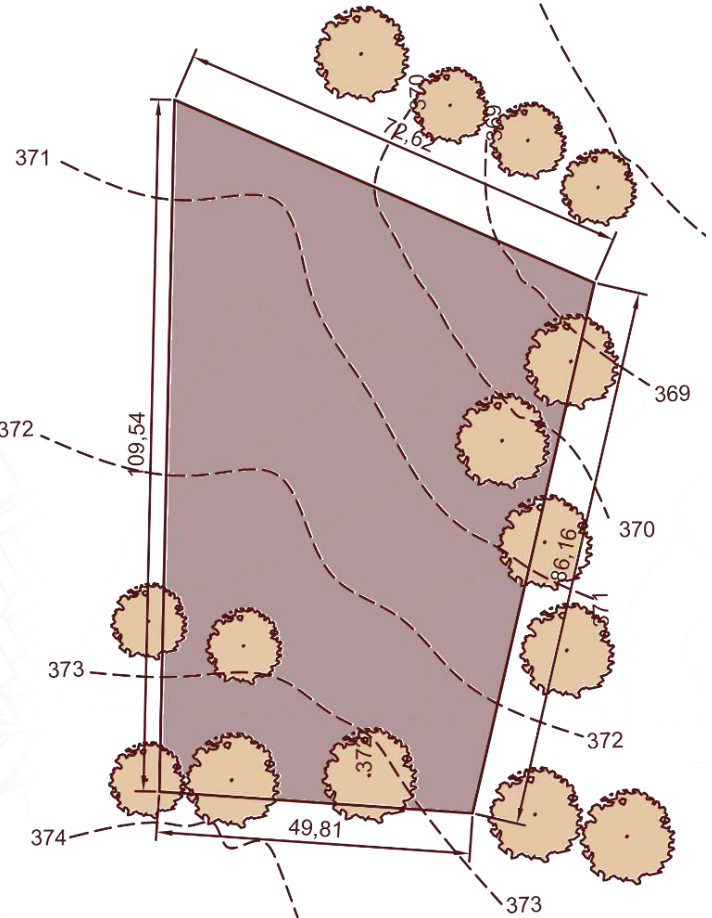
- Huge green areas surrounding
- Close proximity of sukhna lake
- Presence of loamy soil good for construction

### Weakness

- Site present of outskirts of Chandigarh's already developed sectors

### Opportunities

- Present around developing IT park road areas and technology sector.



### Threats

- Located in seismic zone 4 which is highly prone to earthquake
- Site is surrounded by roads, only one of them being the main IT park road





SINHGAD TECHNICAL EDUCATION SOCIETY'S  
**SINHGAD COLLEGE OF ARCHITECTURE, PUNE**

**Study TOUR**

**GOA**

BY

**IV YR B. Arch.**

**Division: A**

## INTRODUCTION

**Aim**-To study Urban context of Panaji, Goa.

### Objectives-

1. To understand problems in urban areas.
2. To come up with a masterplan through design interventions at urban scale.
3. To identify an architectural design project as an insert into the urban context.

### Methodology-

1. Primary data collection through on site :photos, videos, interviews, sketches, maps
2. Secondary data collection through authentic source-Tourism department website and booklet



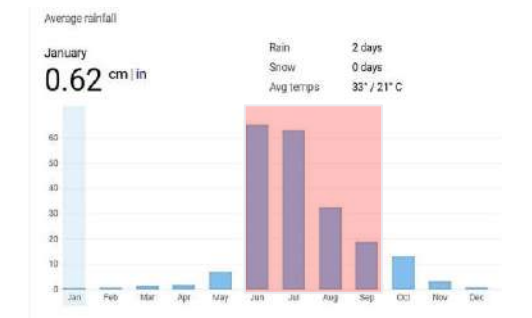
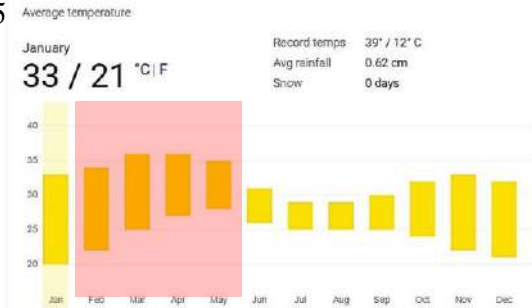
GLIMPSES OF GOA

**Location** - between latitude 1548'00" N & 1453'54 "N and longitudes 7420'13 "E & 7340'33"E



Study area=5,82,740 SQ. M

- Area(Goa) -3,702sq. Km
- Area (Panaji)-0.2% of Goa(8.27sq, kms)
- Population(Goa)-14,57,723(20 15 census)
- Mean sea level- 100m
- Location-between latitude 1548'00" N & 1453'54 "N and longitudes 7420'13 "E & 7340'33"E
- Rainfall-maximum 130 to 140 inches
- Clothing-light woolen can be worn during winter. And cotton in summer.
- Languages-konkani, Marathi, Hindi, English
- Tourists season-throughout the year
- Peak seasons-November to March

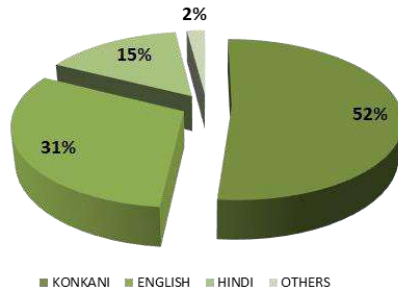


[Source-<https://en.climate-data.org/asia/india/goa/panaji-6394/>]

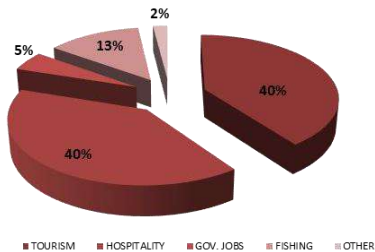


## SOCIO ECONOMIC BACKGROUND

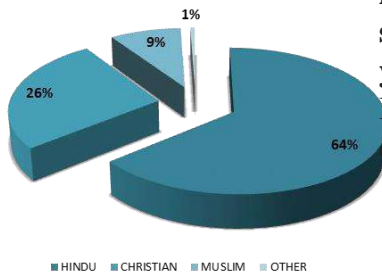
### Language



### Source Of Income

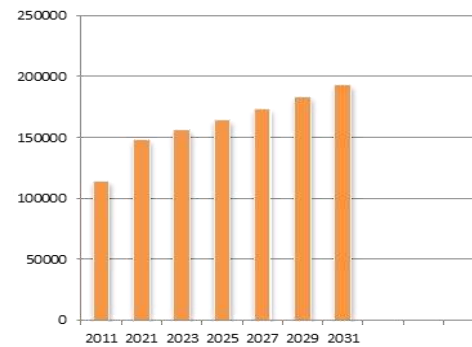


### Religion Wise Population



**SITE SURVEY CONDUCTED**

### Population Graph From 2011-31



Source- Rajya Aavas Yojana



The three-day festival is **believed to have been started by the Portuguese settlers who ruled Goa for about 500 years.**

Initially celebrated by the Catholic community, currently all the

communities of Goa participate in this all-encompassing festival.

A unique tradition of the Carnival is Assoltes.

**Goan Carnival** is about drinking, eating and having fun – ‘Kha, piye, and majja kar’ as the **Carnival King Momo** says.



**Goan crafts-**  
bamboo ,  
woodcarving,  
shell craft



Shigmo folk  
dance



**Cuisine-**Mostly  
seafood-based



## FESTIVALS OF GOA



## WATER SPORTS

[Source-<https://www.holidify.com/pages/festivals-in-go-a457.html>]

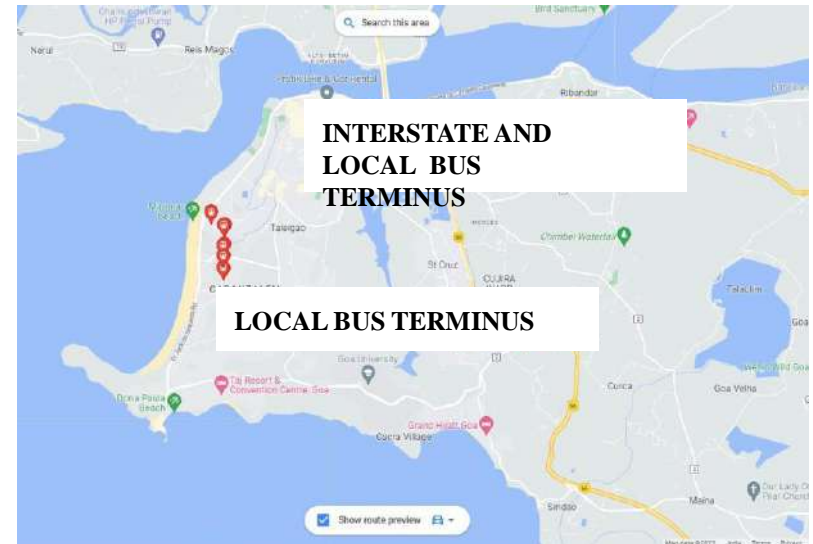




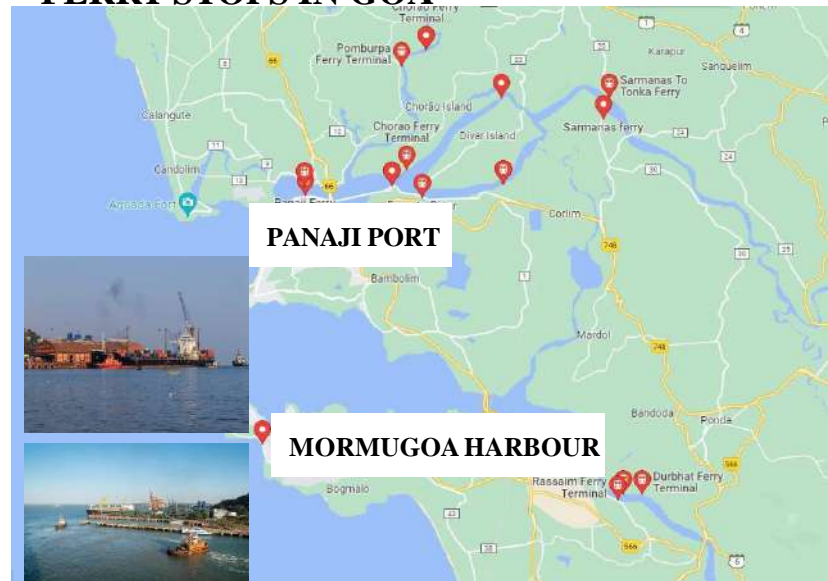
## Goa has 2 major Airports

1. Dabolim Airport- old and functional
2. Mopa Airport- New but far from major cities

## BUS STOPS AROUND PANAJI



## FERRY STOPS IN GOA





## DISASTER/GEOGRAPHICALLY HAZARDOUS AREA

### • Disaster Proneness Assessment of the City

#### 1. Earthquakes

the state of Goa falls under the **moderate seismic zone** in the country, viz. **Zone IV**

Sr No.	Type of disaster	Year	Damage caused
1	The tremors of the devastating earthquakes with magnitude 5.0 or more that hit "Koyana" Maharashtra, that affected life of people in Goa	1967	Residential as well as public structures, infrastructures were damaged severely, although no casualties were taken place
2	The tremors of the devastating earthquakes with magnitude 5.0 or more that "Latur" in Maharashtra, that affected life of people in Goa	1993	Residential as well as public structures, infrastructures were damaged severely, although no casualties were taken place



[Source: times Of India]

Flooding area at the miramar circle, 18th june road, patto complex.



#### 4. Floods

- The River Mandovi has 10 tributaries viz. Madei, Surla, Kotrachi, Ragda, Khandepar, Kudnem, Valvanta,

Bicholim, Assonora and Sinker.

- Of the annual rainfall, **75% is received during four months of monsoon** (June – September) and as a result, **almost all the rivers carry heavy discharge during this period.**
- The flood hazard is compounded by the problems of sediment deposition,



#### 2. Tsunami

- The Tsunami of **26th December, 2006 in the Bay of Bengal** had caused after effects in the sea and rivers.
- No loss of lives or damages to the properties was reported.

#### 3. Cyclone

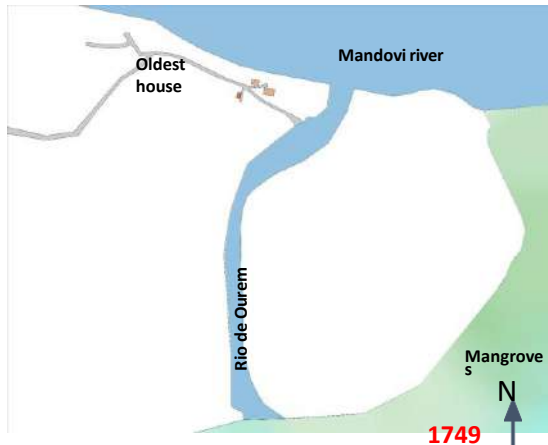
Type of Disaster	Date of occurrence	Loss of Life	Damage Caused
Cyclone Phyan hit coast of Maharashtra ,Goa and Gujarat.	November 9-12, 2009	7 persons dead and 44 missing	The cyclone 'phyan' caused damage to crops and properties in goa

**ANALYSIS**-So while designing any structure in Panaji these natural calamities should be considered.

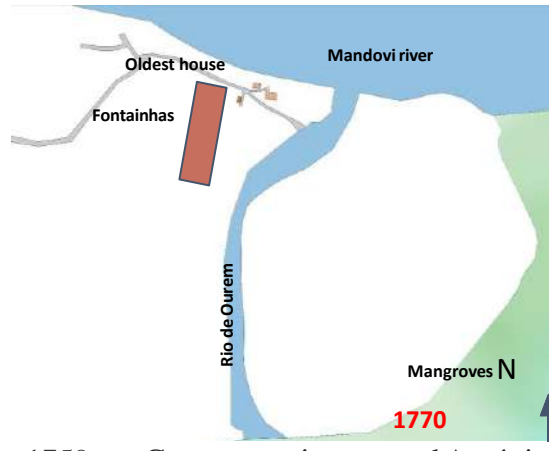
[Source-

<https://timesofindia.indiatimes.com/city/goa/worst-flood-in-40-yrs-destroys-rural-go-a-woman-feared-dead/articleshow/84692593.cms>]

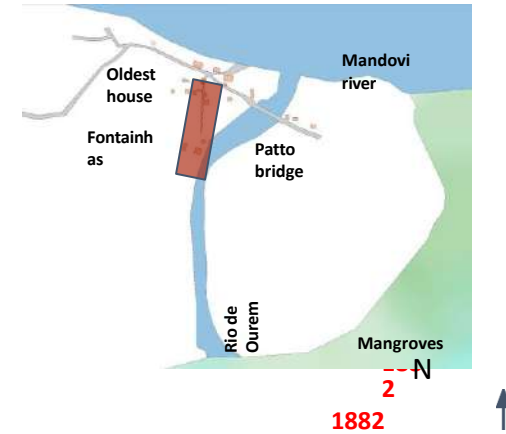
## EVOLUTION OF STUDY AREA



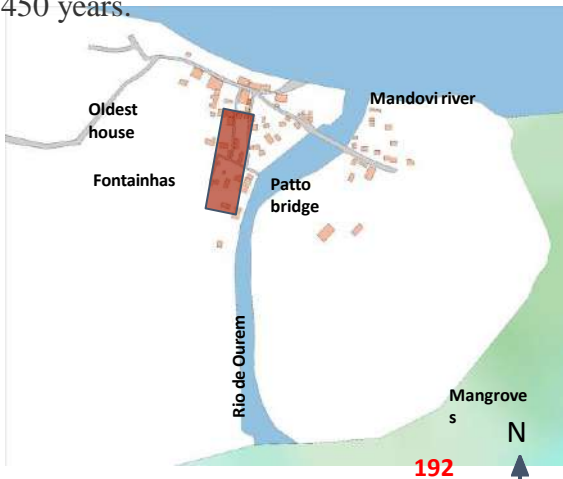
1749 – Oldest house of the panaji.  
Goa was under Portuguese rule for 450 years.



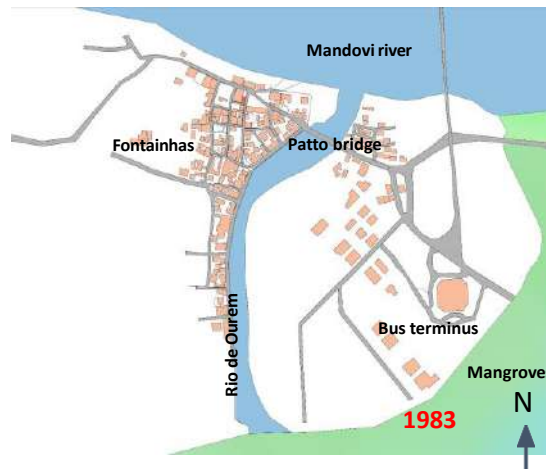
1759 – a Goan expatriate named António João de Sequeira, who had made his wealth while working in [Mozambique](#), established Fontainhas.



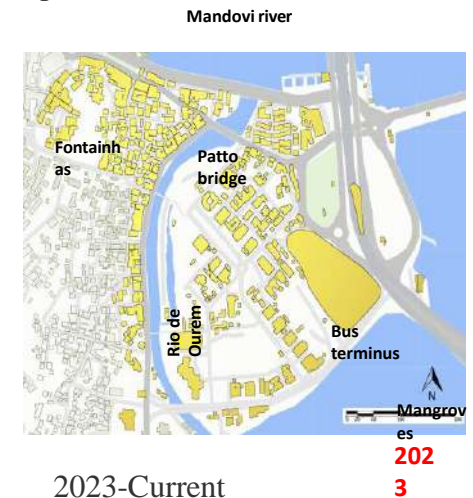
1821 – Goa represented in Portuguese parliament.  
1843 – Panjim declared the capital of Goa.



1923-Growth of the city



1961 – Goa incorporated into the Indian Union, as Union Territory.  
1983-Bus terminus was built.  
1987 – Goa became the 25th state of the Indian Union.



2023-Current scenario



- STUDYAREA, PANJIM
- Main 4 Linkages joining both the areas.
- The typology of the structure represents the culture and architectural aspects of the surrounding.
- Width of road, Building heights, Human scale are important factors.



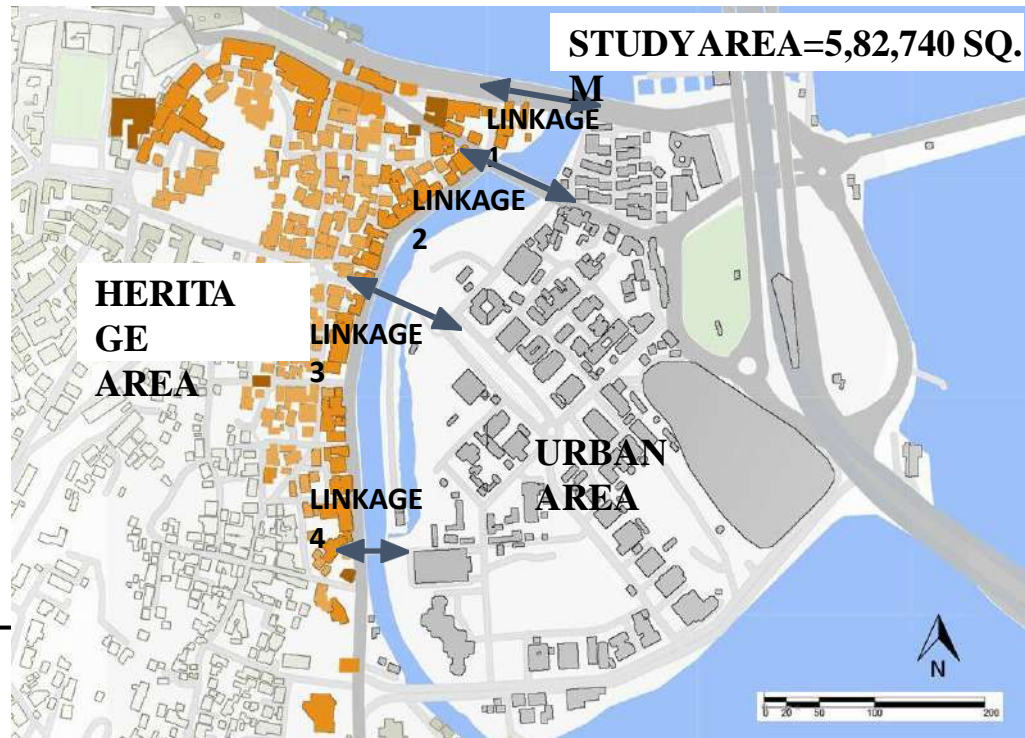
Commercial building



Hotel



Residential structures



Linkage-Bridge



Mall



- 1 : GOA STATE MUSEUM
- 2: INDIA POST PANAJI HEAD POST OFFICE
- 3: GOA DEPARTMENT OF TOURISM
- 4 : PEOPLE'S HIGH SCHOOL
- 5: GOA STATE ARCHEOLOGY OFFICE
- 6: KRISHNADAS SHAMA STATE CENTRAL LIBRARY
- 7: GOA TOURISM HELPLINE PVT LTD



**INDIA POST PANJIM HEAD POST OFFICE**



**IMMACULATE CONCEPTION CHURCH**



**MARRY IMMACULATE GIRL'S HIGH SCHOOL**



**KRISHNADAS SHAMA STATE CENTRAL LIBRARY**



**PARYATAN BHAVAN**

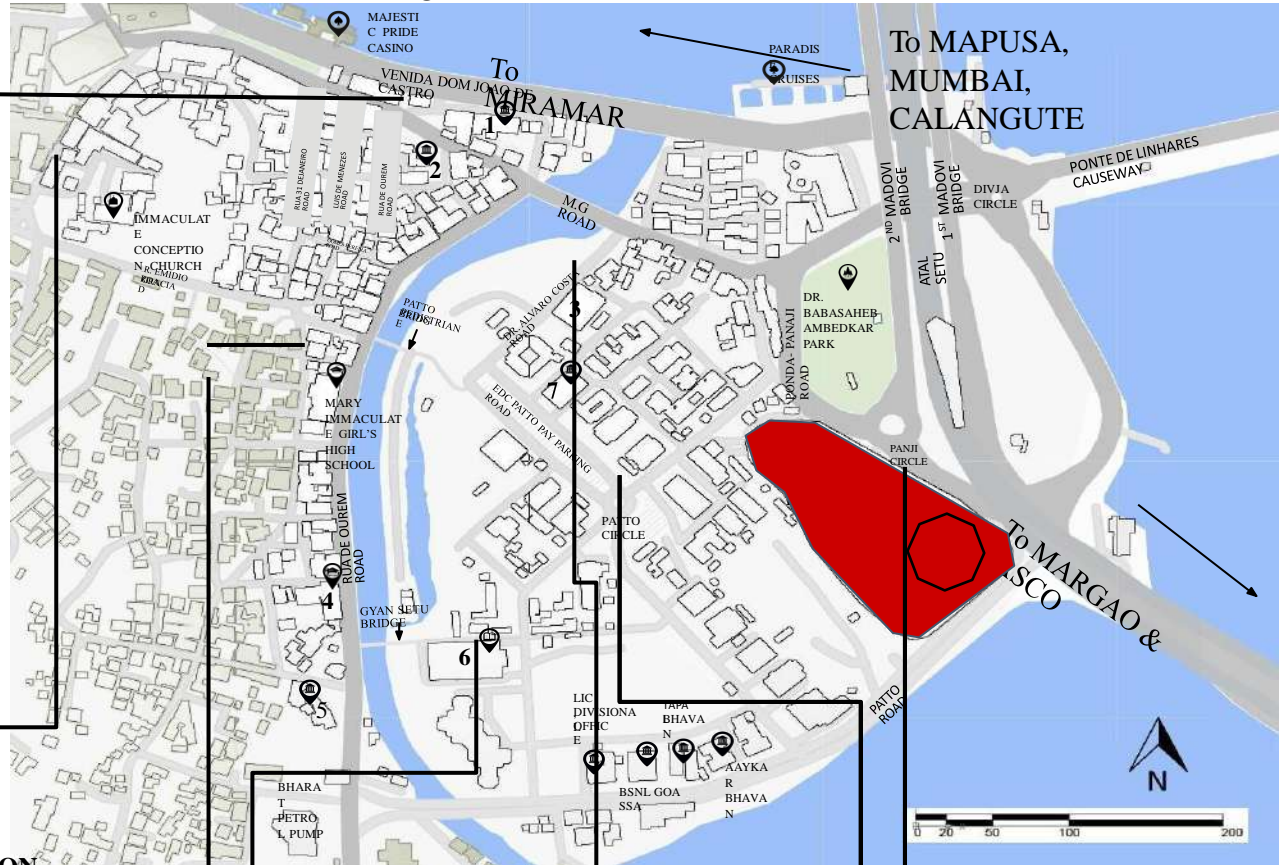


**PATTO CIRCLE**



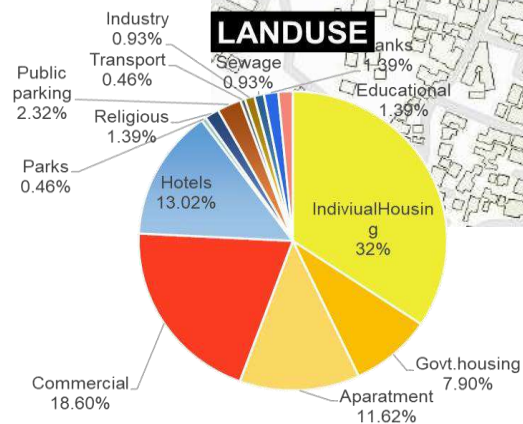
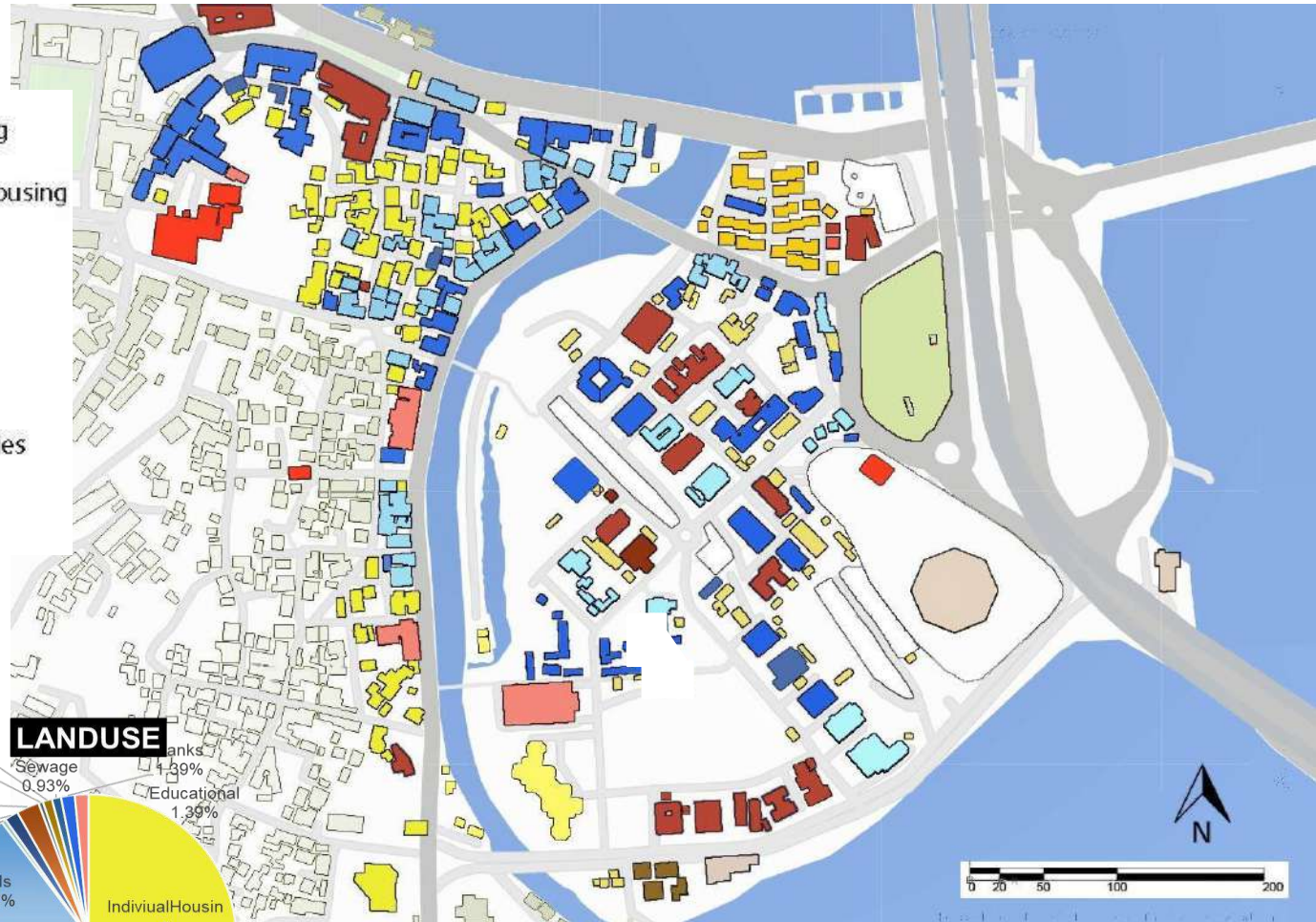
**PANJIM KTC BUS STAND**

## MASTER PLAN



## LAND USE MAP

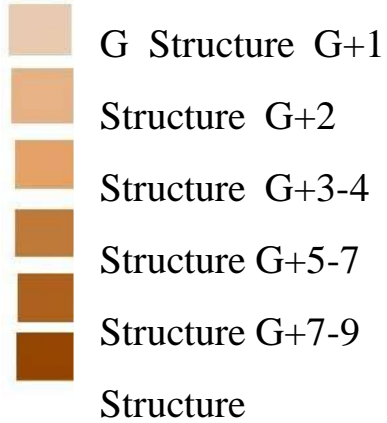
- Individual Housing
- Apartments
- Govt./Quarters/Housing
- Educational
- Commercial
- Hotels
- Parks
- Religious
- Government
- Public Parking
- Transport Amenities
- Industry
- Sewage
- Banks



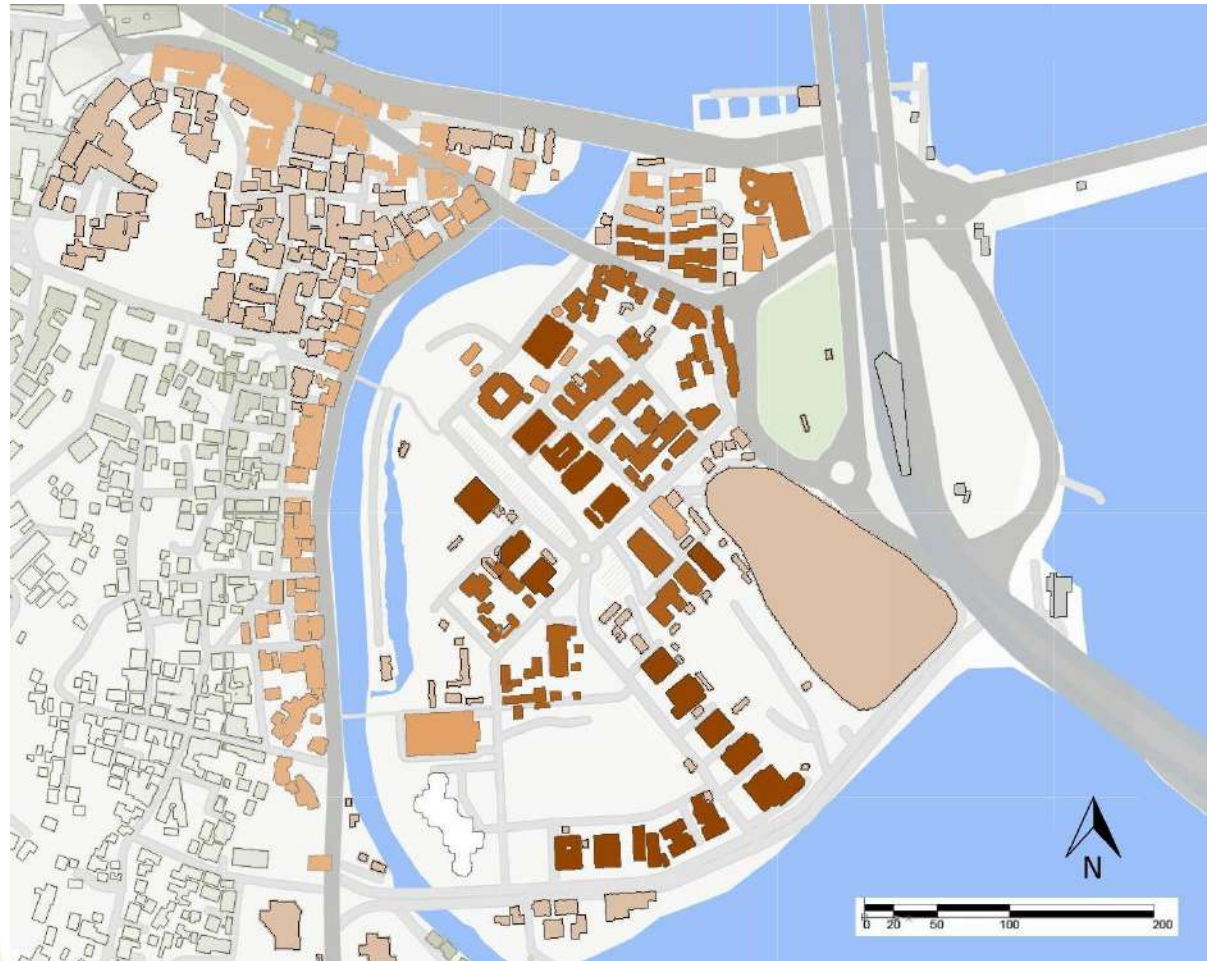
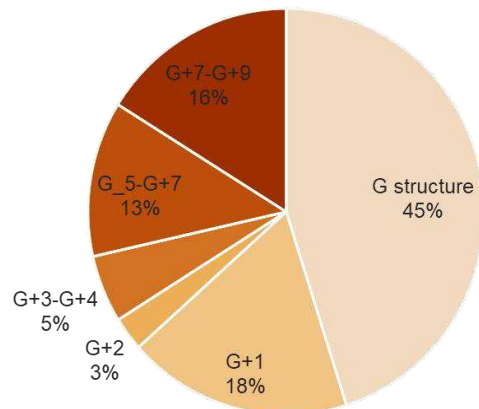


# HEIGHT VARIATION MAP

## LEGEND



## HEIGHT





## VEGETATION MAP



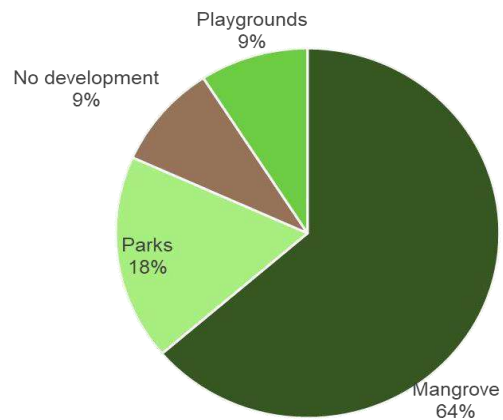
PALM TREES



MANGROVES  
TREES



### VEGETATION



## COMMERCIAL AREA AND GATHERING SPACES



**CHURCH SQUARE**



**ST SEBASTIAN CHURCH**



**LIBRARY AND SETU BRIDGE**



**PATTO CIRCLE**



**AAYAKAR BHAVAN**



**GERA'S IMPERIUM BUSINESS HUB**



**BUS STOP**



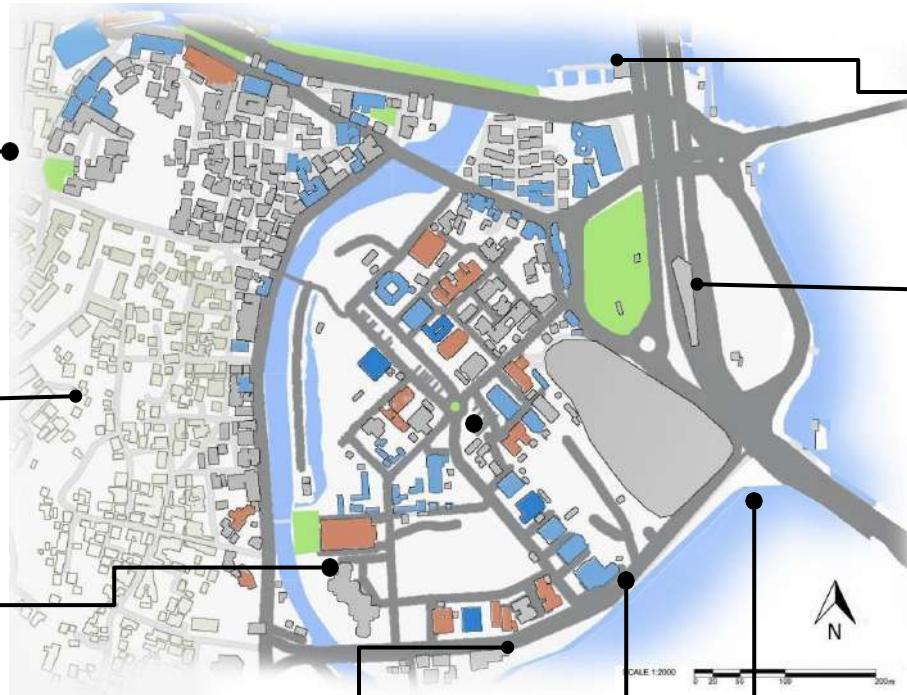
**19 AVENIDA DOM JOÃO DE CASTRO RIVER SIDE ROADS**



**DR. BABASAHEB AMBEDKAR GARDEN**



**PAULO BUS TERMINAL**



### LEGEND

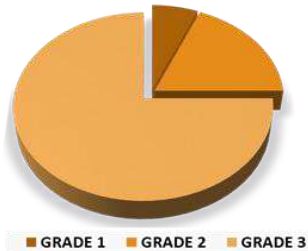
- BANK
- COMMERCIAL
- SOCIAL GATHERING SPACES
- GOVERNMENT OFFICES



## HERITAGE AREA, PANAJI

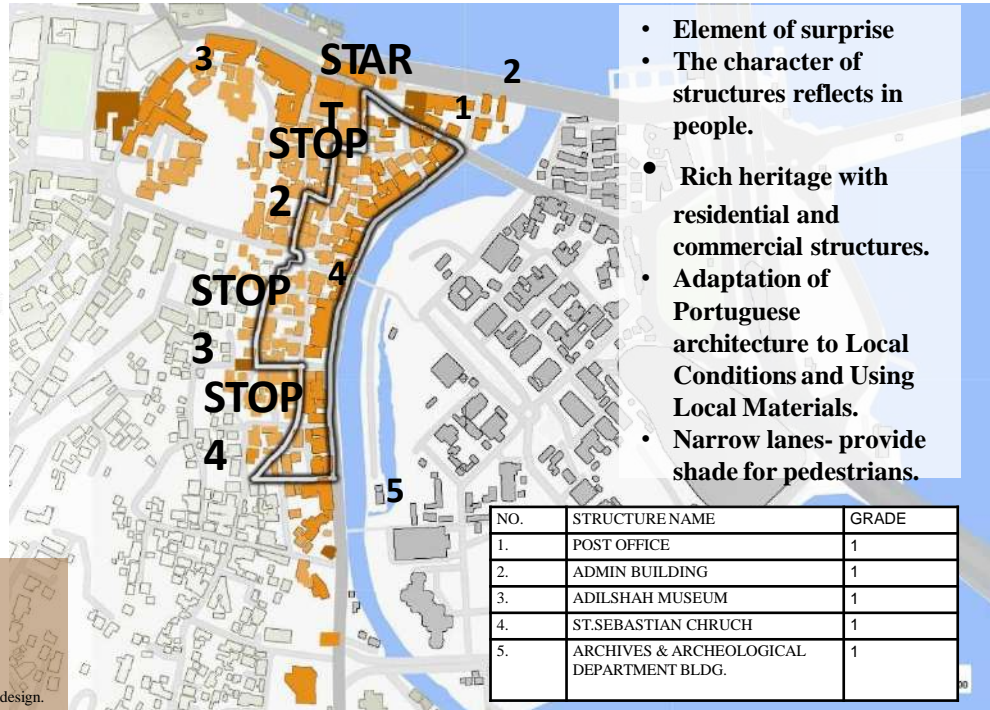


STRUCTURAL GRADING



### CHURCHES

Saint Sebastian's Chapel  
Immaculate Conception



- Element of surprise
- The character of structures reflects in people.
- Rich heritage with residential and commercial structures.
- Adaptation of Portuguese architecture to Local Conditions and Using Local Materials.
- Narrow lanes- provide shade for pedestrians.



#### GRADE 1:

- National importance or historic importance.
- Related to the historic event.
- Related to any personality.
- Primary landmark.
- Excellence in architectural style and design.



#### GRADE 2:

- Prescient of regional and local level importance.
- Cultural of historic significance.
- Work of master craftsman and designed to suit a particular climate.



#### GRADE 3:

- Building and Prescient important to the townscape.
- architectural, aesthetic, or sociological interests.
- Contributes to determining the character of the locality.
- Represents the lifestyle of a particular community or region.



Nameplates

## BUILDING TYPOLOGY In HERITAGE AREA



## HERITAGE STRUCTURES





### 1. Paryatan Bhavan

Combination of laterite stone and cement mortar



### 2. Sanskruti Bhavan

Library

Sloping roof

Fixed windows used in the library

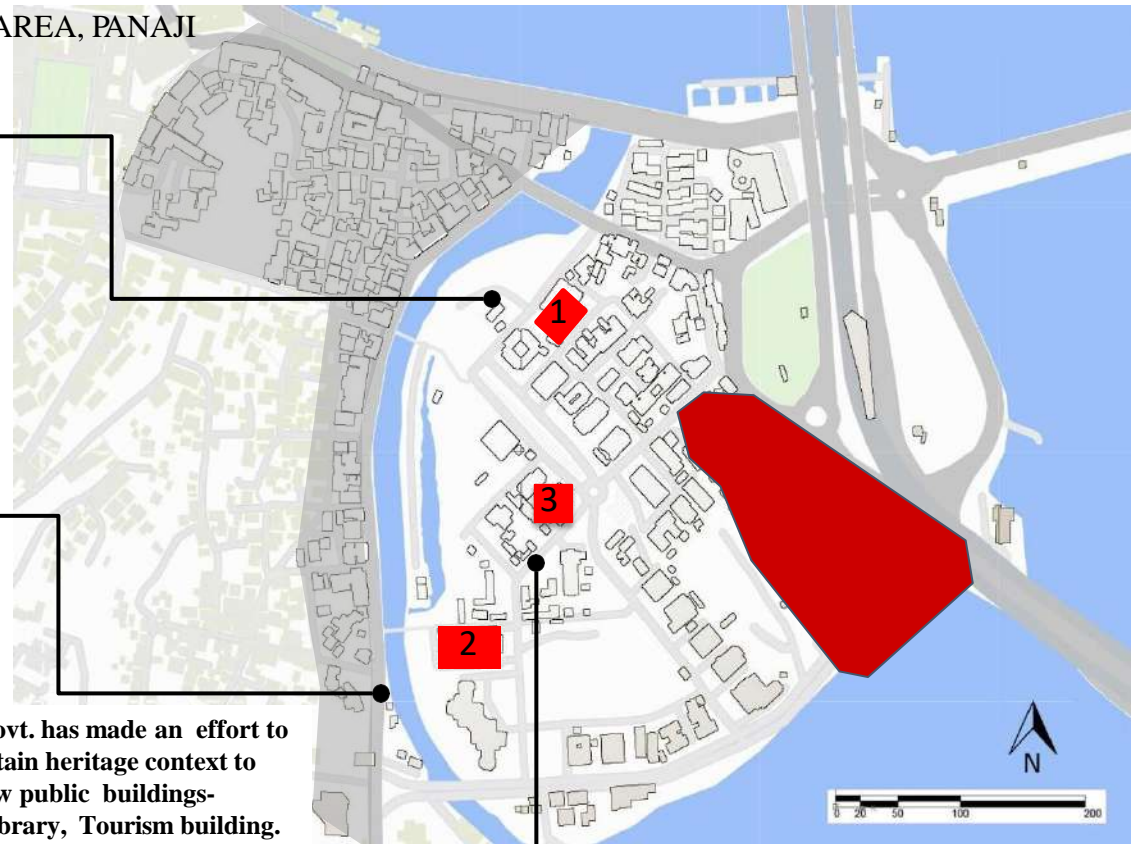


### 3. Shopping mall

Glass facades are used for external treatment.

**In the Commercial area there are several bank head offices eg: GST Bhavan, Tapal Bhavan, The Passport Office**

URBAN AREA, PANAJI



- Govt. has made an effort to retain heritage context to few public buildings- Library, Tourism building.
- Road width is larger.

**BUILDING TYPOLOGY IN URBAN AREA**



## STREET SECTIONS

### AVENIDA DOM JOAO DE CASTRO ROAD (PRIMARY ROAD) :

- Heavy traffic.
- Inadequate landscaping.
- Lack of shade.
- Too much sun glare.



### PRIMARY ROAD 21 M WIDE ROAD

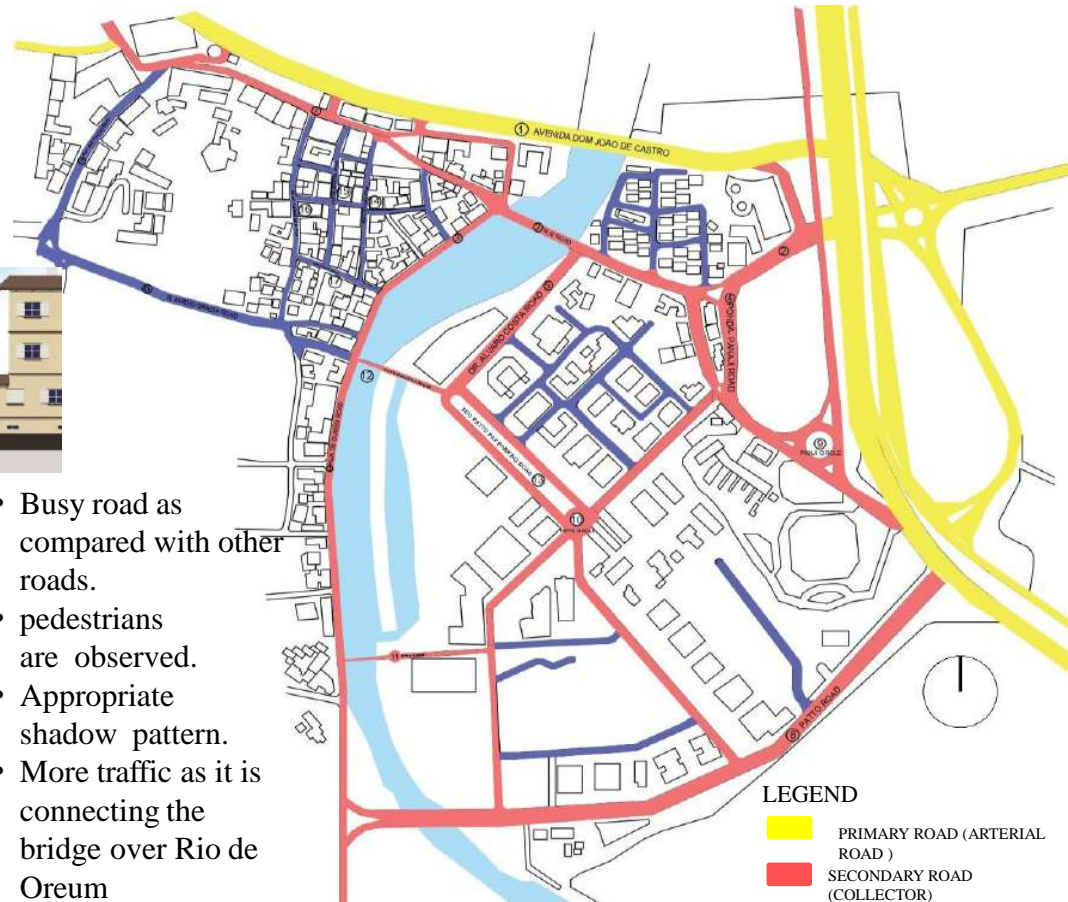


### MG ROAD (SECONDARY ROAD) 12 M WIDE ROAD



### RUA SAO TOME (TERTIARY ROAD) 6 M WIDE ROAD :

- Busy road as compared with other roads.
- pedestrians are observed.
- Appropriate shadow pattern.
- More traffic as it is connecting the bridge over Rio de Oreum
- Congested road
- No traffic as compared to other roads.
- Only useful for pedestrian
- Appropriate shadow
- Heritage Area



### LEGEND

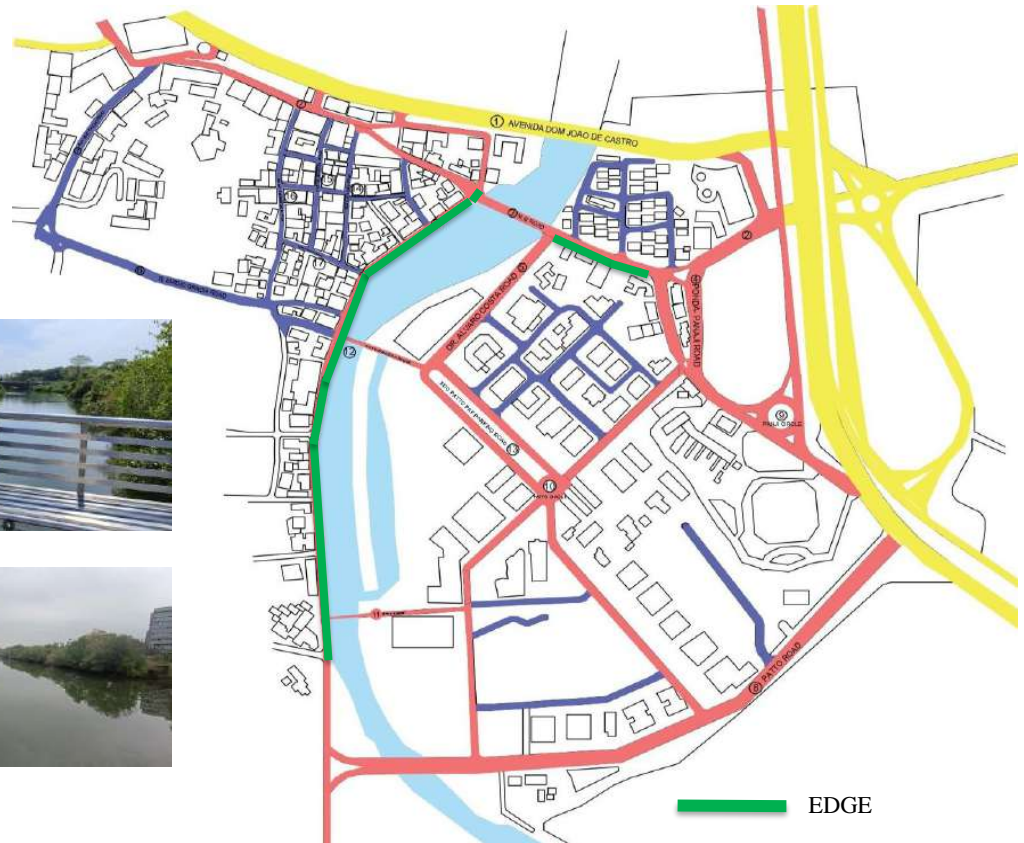
- PRIMARY ROAD (ARTERIAL ROAD)
- SECONDARY ROAD (COLLECTOR)
- TERTIARY ROAD (LOCAL ROAD)

- PATTO CIRCLE
- GYAN SETU
- BRIDGE
- PATTO PEDISTRIAN BRIDGE
- EDC PATTO PAY PARKING
- ROAD RUA SAO TOME ROAD
- LUIS DE MENEZES
- ROAD RUSA 31
- DEJANEIRO ROAD ATAL
- BRIDGE
- GOMES PEREIRA ROAD

1. AVENIDA DOM JOAO DE CASTRO
2. CASTRO
3. M.G ROAD
4. RUA DE OUREM
5. ROAD PONDA-
6. PANAJI ROAD
7. DR. ALVARO COSTA
8. ROAD R.EMIDIO
9. GRACIA ROAD RUA JOSE FALCAO ROAD



**GRAPH OF MOTORIZED AND NON – MOTORIZED  
TRAFFIC**





## NODES



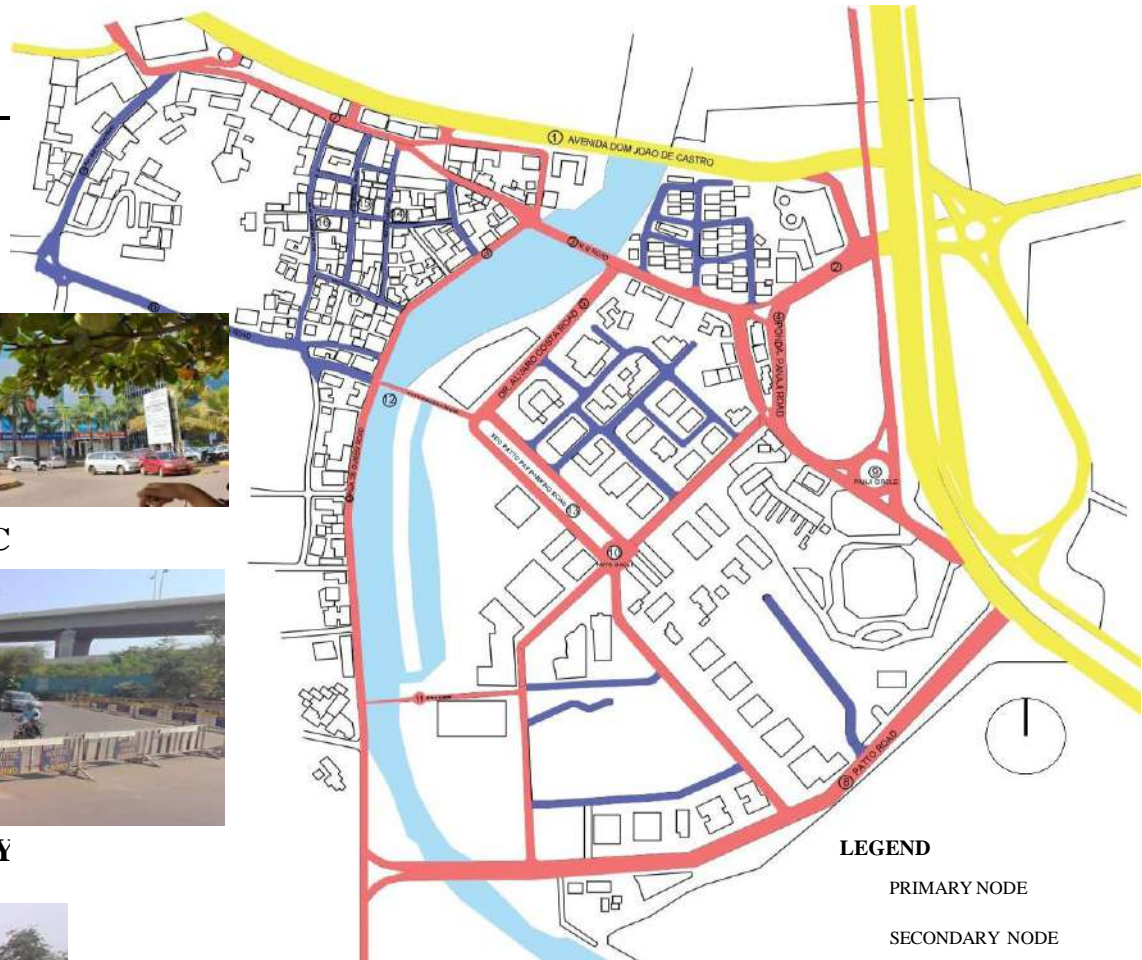
**PATTO CIRCLE (MAIN JUNC)**



**PANAJI CIRCLE(SECONDARY**



**PATTO ROAD (SECONDARY JUNCTION)**



## ELECTRICITY AND WATER SUPPLY LAYOUT



**ELECTRIC POLE AT  
PRIMARY ROAD**



**SOLAR-POWERED ELEC  
AT MG  
ROAD**



**ELECTRICITY  
TRANSFORMER AND  
DP BOX**



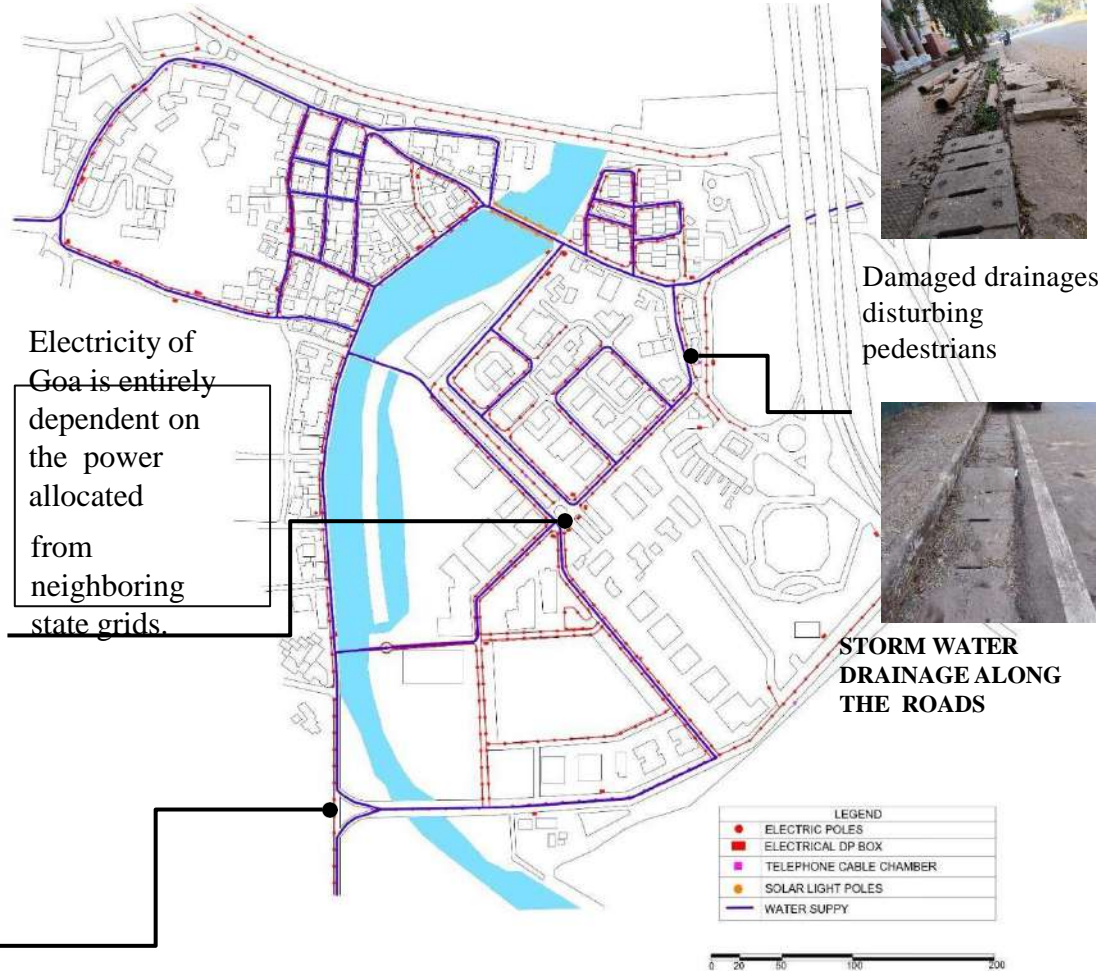
**MANHOLES AT PATTO  
CIRCLE**



**POORLY MAINTAINED  
TELEPHONE CABLE  
CHAMBER**



**WATER TREATMENT  
PLANT**



Goa state electricity board (GSEB) is the implementing agency for the projects

-The residential areas towards the tail end of the distribution network and areas located at higher elevations get water supply for a shorter duration.

-The distribution system of Panaji is more than 40 years old consisting of asbestos cement (AC) pipes in few sections.



## OTHER SERVICES



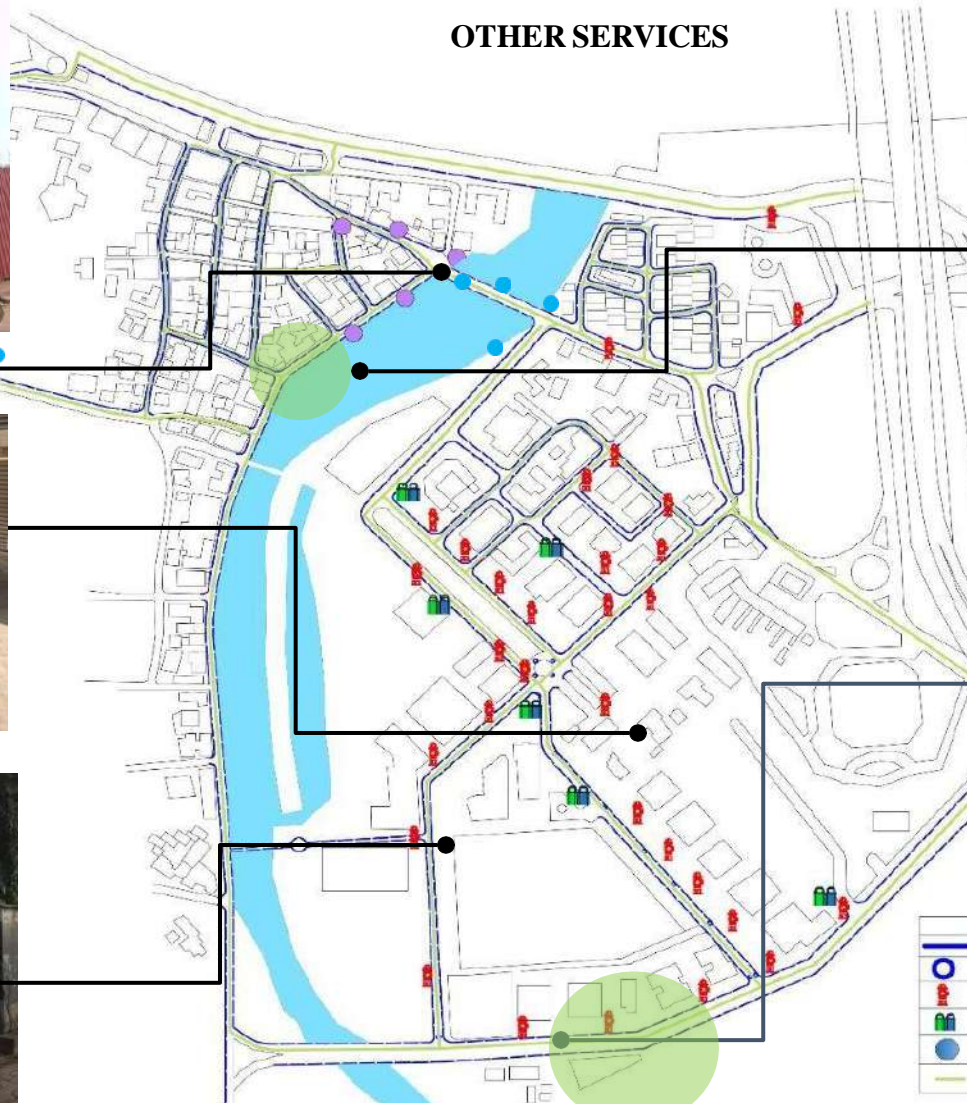
**CCTV CAMERAS**



**FIRE HYDRANT**



**DRY WASTE**



**SEWAGE TREATMENT PLANT (OLD)**



**SEWAGE TREATMENT PLANT (NEW)**

LEGEND	
	DRAINAGE LINE
	MANHOLE
	FIRE HYDRANT
	DUSTBIN
	CCTV
	SEWAGE LINE



-Direct discharge of excreta/sewage into the Mandovi River.

-During monsoons, the increase in the water flow volume often results in backflow or surcharge in the incoming sewers causing the problem of choking and overflowing from manholes on to roads.



## About Imagine Panaji Smart City Development Limited (IPSCDL)

The Government of Goa has designated Imagine Panaji Smart City Development Limited (IPSCDL), a wholly owned Government Company and Special Purpose Vehicle (SPV) of the Government of Goa as the State Mission Directorate for AMRUT and State Level Nodal Agency and the State Mission Management Unit for Smart Cities Mission. IPSCDL has been formed to bring about the development of smart urban infrastructural facilities/projects for Panaji City.

The Mission focuses on the following Thrust Areas:

- i. water supply,
- ii. sewerage facilities and septage management,
- iii. storm water drains to reduce flooding,
- iv. pedestrian, non-motorized and public transport facilities, parking spaces, and v. enhancing amenity value of cities by creating and upgrading green spaces, parks and recreation centres, especially for children.



## PROBLEMS IDENTIFIED



**POOR MAINTENANCE**



**TEMPORARY STRUCTURE  
FOR TRAFFIC POLICE**



**NO PROPER PARKING SPACES**



**SINGLE ENTRY AND EXIT  
FOR LOCAL AND  
INTERSTATE  
BUSES, TAXI, AUTO,  
RENTAL BIKES**

### OTHER ISSUES:

1. Difficult to navigate for a tourist-  
lack of signage
2. NO proper segregation of areas
3. Improper paving areas, hence  
chances of stamping.



## Suggested Proposals

1. Comprehensive Mobility Plan for Panaji
2. Public Bicycle Sharing
3. Traffic Decongestion Model for Panaji city center

### Proposed Project

**Traffic Decongestion Model for Panaji city center-  
REDESIGNING BUS TERMINUS OF PANAJI CITY**

## ANALYSIS:

- With such a unique culture and friendly ambience, Goa is a wondrous destination for all. The diverse and intriguing events that this place has to offer give us the chance to have a peek at the past.
- The architecture of goa varies from old heritage building to urbanized structures. the govt. has taken some initiatives to retain few public structures with their goan features, yet it's getting lost in this urbanized world.
- Overall services in panaji needs to be more maintained and updated.
- In monsoon there is lots of water blockage at patto circle so drainage system there needs to be updated too.
- Sewage treatment plants mix the chlorine with waste water and directly discharge it in mandovi river which harms river's ecosystem.
- Improper management of bus terminal.
- Technology was good but there was scope for improvement.
- As mining has stopped many people were unemployed.
- No private transportation companies like Ola, Uber
- Provision of traffic signals should be implemented on major junction.
- There are no hospitals available in whole study area except for some small clinics.
- Most of commercial areas are located in city area while most of residential area is located in urban area.
- Walking distance is very less which makes it easily accessible for people to walk in city.
- Vehicles are not allowed in heritage areas to protect the privacy of the property owners and also the roads are too narrow .

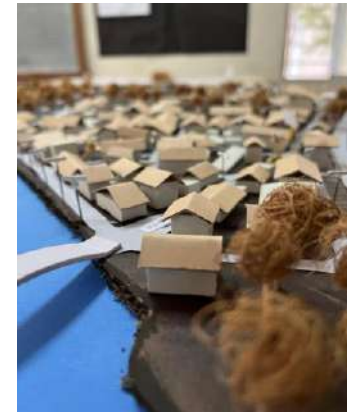




## MODEL PHOTOS



## PHYSICAL MODEL







#### 4TH YEAR DIVISION A

1. ABHISHEK.S.KUMAR
2. ABHISHEK.V.KUMAR
3. ANJALI.ANGADI
4. ANKIT.SHARMA
5. PRATIKSHA.BAGAL
6. RAHUL.BANDGAR
7. PRANJAL.BARAVKAR
8. SHWETA.BELAPURKAR
9. ADITI.BHALEKAR
10. AASHISH.BHALERAO
11. PRAJALIKA.BHALERAO
12. ANIKET.BHOLE

13. NIKHIL.BORUDE
14. DAKSHAYANI.CHANNA
15. JANHAVI.CHAVAN
16. ANWAYA.DESLE
17. SAKSHI.GAIKWAD
18. AMISHA.GANVIR
19. RITIKA.GHOGARE
20. HARSHAL.HAGAWANE
21. ARIHANT.LODHA
22. AISHWARYA.MANE
23. ANUSHKA.RAHUDE
24. APURVA.SATHE

#### ACCOMPANYING FACULTY:

AR.KALPANA.HADAP

AR.AVANI.TOPKAR

AR.ASHISH.SAKAT

AR.MANASI.KHOPE

AR.PRIYANKA.PUROHIT

ER.ROHIT.LABHSHETWAR



SINHGAD TECHNICAL EDUCATION SOCIETY'S  
**SINHGAD COLLEGE OF ARCHITECTURE, PUNE**

**STUDY TOUR**

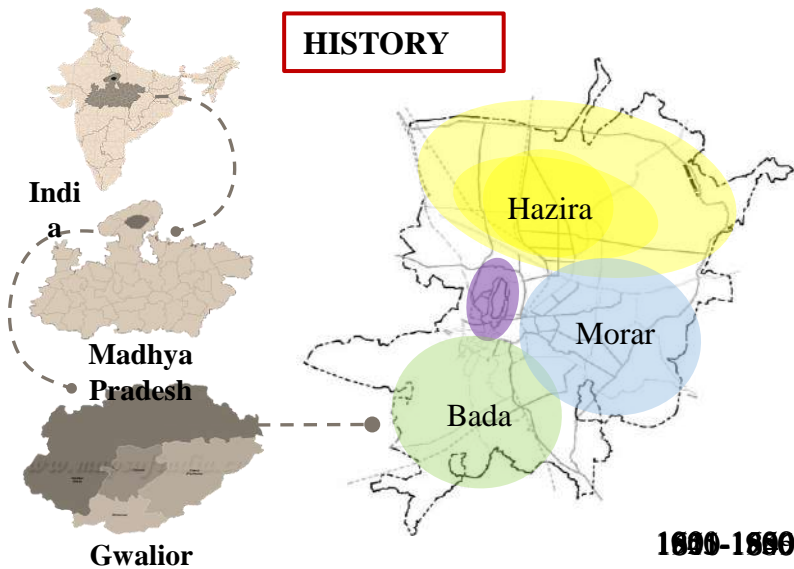
**GWALIOR**

by

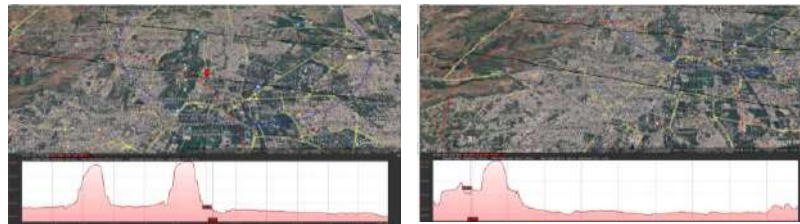
**IV YR B. Arch.**

**Division: B**

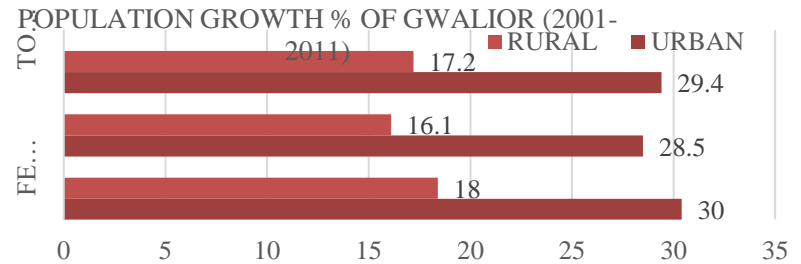
## HISTORY



## TOPOGRAPHY- section



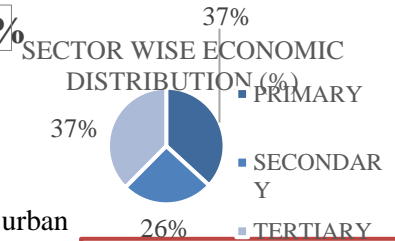
## DEMOGRAPHICS



## POPULATION GROWTH 24.5%

Causes of Urban population growth:

1. Migration
2. Natural increase
3. Inclusion of new areas under urban centre.



## BYE- LAWS OF .....

- The **Minimum width of the abutting road** shall **not be less than 18M** for redevelopment parcels.
- Development of **Redevelopment parcels shall be permissible only if, minimum Plot width is 30 m** on the abutting road.
- Minimum **distance between two buildings shall be 1/3 the height of taller building.**
- **UDR-9-**
  - a. buildings with distinct architecture style should be preserved as it is with some modification in colour
  - b. Colour and design elements on building façade along with signage colour should be inspired by local heritage building in vicinity.
  - c. Design and colour of all the street and urban elements like railing, street light poles, urban signage, benches, etc. should be inspired from local heritage.
  - d. Building colour and paving on the road should respond to each other.

## HAZIRA CHOWK



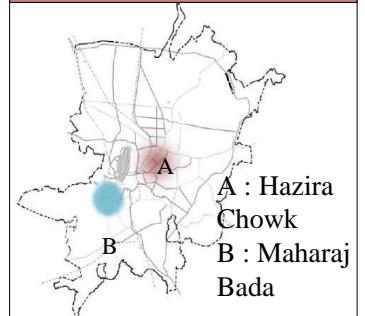
## MAHARAJ BADA



## GWALIOR

### STUDY TOUR REPORT

### INTRODUCTION



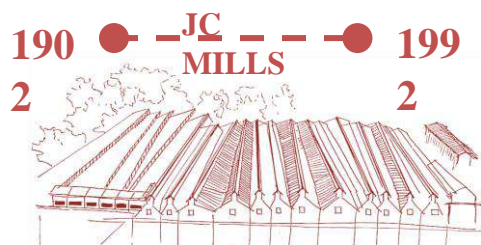
DP Plan of Gwalior 

**Hazira** -Hazira is the region where the growth of the Gwalior city began. The region gained importance when the Tomb of Tansen was made and became the center of growth of this region. The area has a lot of historical significance but after the shutting down of JC mill degradation of this area began and presently stands as a lowly developed areas of Gwalior.

**Maharaj Bada** -The region started with idea of Jiwaji Scindia's dream to make structures representing all the major architectural styles known around the world then with town hall being the first region. Though the area still holds a lot of importance but requires redevelopment of its infrastructure to make to more functional



JC Mill plays an important role in the economic development of Hazira, as a locality. Soon, it became an employment for the people of Hazira. Closure of this textile mill creates an economic downfall especially of the Old Gwalior and Hazira area.



Key Plan of Hazira Chowk

- Tomb of Mohd. Ghaus
- Hazira Chowk
- Intak Market
- Proposed commercial
- Proposed parking space



Tomb of Mohd. Ghaus



Hazira Chowk



Intak Market –  
'Mandai of Gwalior'

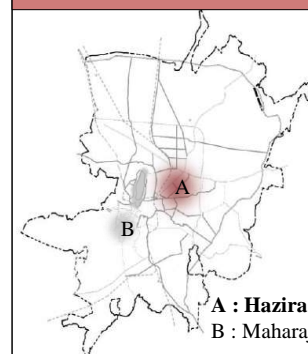


Existing Chudi Market

## Study Area A : HAZIRA CHOWK

Day 2: 11/01/2023 , Wednesday

### INTRODUCTION

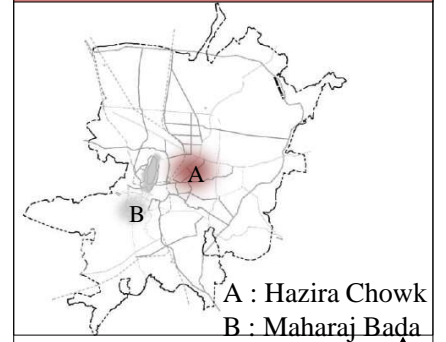


DP Plan of Gwalior

**Inferences** : Hazira is one of the most prominent areas in the center of Gwalior. Even though on the surface layer the locality seems it is economically backward but it holds a lot of importance in terms of the growth of Gwalior. In simpler terms, it is the inner old core of Gwalior city where the expansion of the city originally started. Post-independence the area caught limelight when the first industry of Gwalior was opened and created a huge number of jobs. Even though the area started flourishing economically but couldn't hold itself up to the expectations and turned into a lowly developed region with improper services, and an unhygienic and unsafe environment. Now the govt has decided to redevelop this region under Gwalior smart city proposal.

## Study Area A : HAZIRA CHOWK

### IMPORTANT MAPS



### DP Plan of Gwalior



### Key Plan of Hazira Chowk

### Inferences :

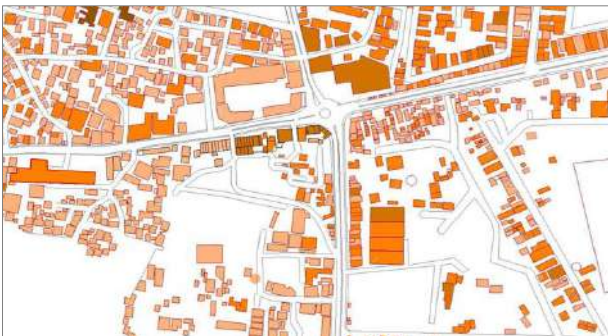
The maps show collectively that the Hazira area is densely built and this will pose as one of the major problems while redevelopment of this space under smart city proposal, as relocating these buildings is difficult



**Built / Unbuilt**

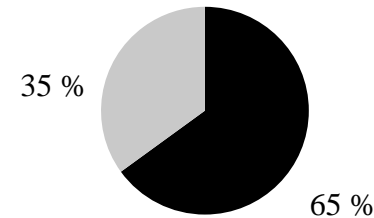


**Land Use Map**



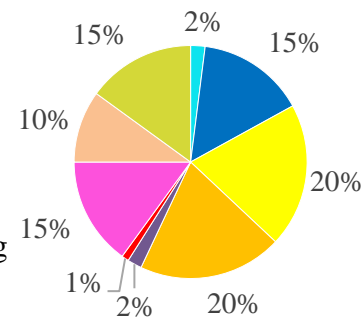
**Ground Cover Map**

- Built
- Unbuilt

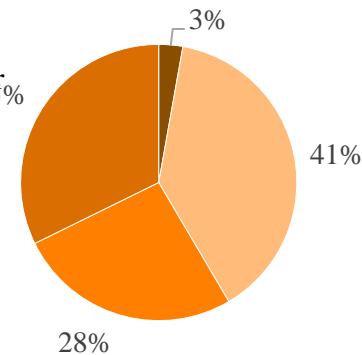


- Commercial
- Residential
- Mix – Use
- Institutional
- Heritage
- Religious
- Govt. Building

- Open Space
- Public Toilets



- Ground Floor Structure
- G + 1
- G + 2
- G + 3







- Tansen Rd
- JC Mill Rd
- 4 Shahar Ka Naka Rd
- Fort Rd
- Secondary roads
- Footpath
- Encroachment on Footpath
- Car Parking areas provided
- Auto parking in the chowk

Key Plan of Hazira Chowk



Images showing Encroachment on Footpath



Car Parking on Fort Rd



Fort Rd Car Parking 1



Fort Rd Car Parking 2

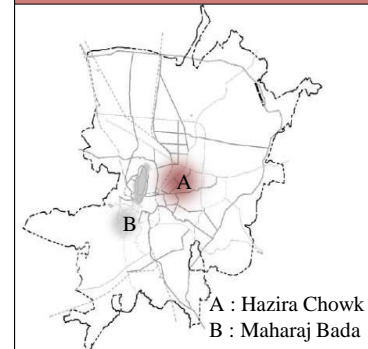


Tansen road Auto Stand

## Study Area A : HAZIRA CHOWK

Day 2: 11/01/2023 , Wednesday

### TRANSPORTATION



DP Plan of Gwalior

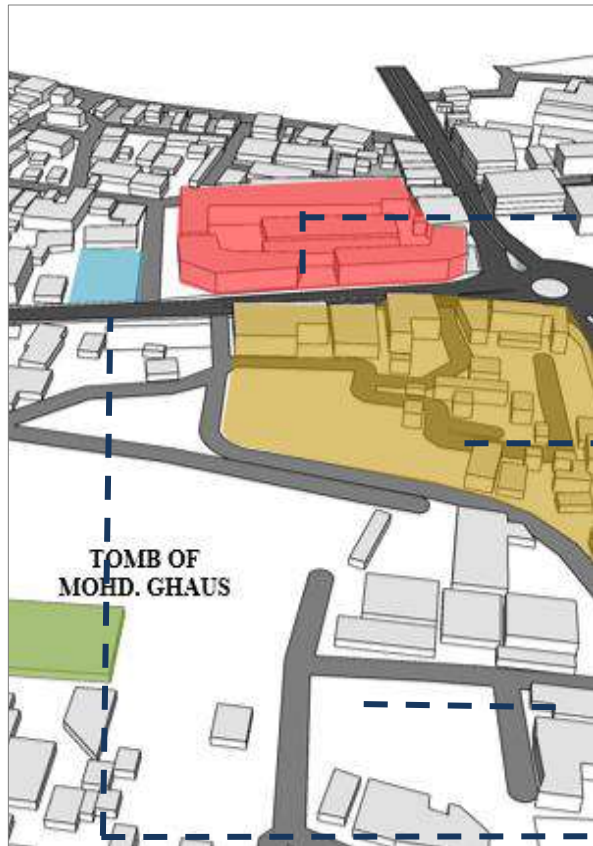


Key Plan of Hazira Chowk

### Inferences :

Location of rickshaw stand creates a lot of problem as it is located at the round about and becomes a point of congestion as vehicles pedestrian crowd and auto stand all gather there making it a busy junction with poor traffic management





View of Hazira Chowk

- - Proposed Commercial Complex Project By GMC (Currently used for parking)
- - Parking Provided By Govt.
- - Proposed Parking Area For Tomb Of Mohammad Ghaus (Currently Chudi Market)
- - Tomb of Mohd. Ghaus



Top View Of Present Condition Of Area Used For Car Parking At The Times Of Tansen Samaroh.



**CHUDI MARKET** Inside View Of Chudi Market is basically an encroached area long ago which eventually turned out to be a commercial space. Highly congested area in the evenings.

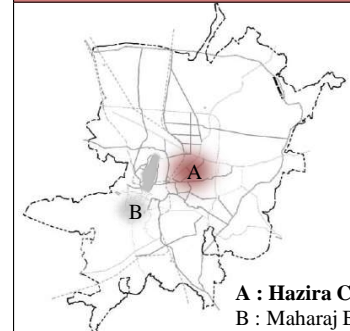


Parking Area Provided By Govt.

## Study Area A : HAZIRA CHOWK

Day 2: 11/01/2023 , Wednesday

### TRANSPORTATION



A : Hazira Chowk  
B : Maharaj Bada

DP Plan of Gwalior

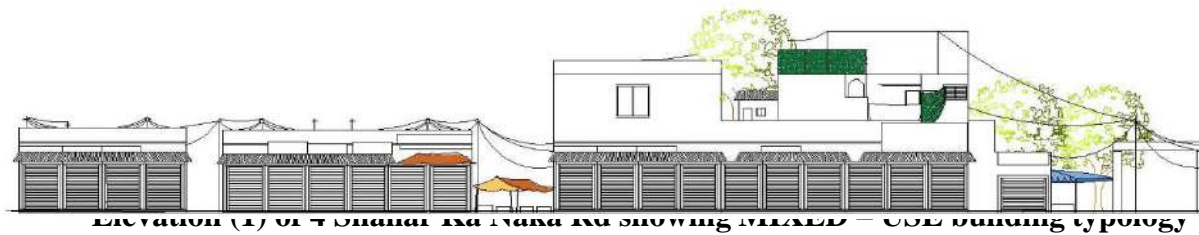


Key Plan of Hazira Chowk



### Inferences :

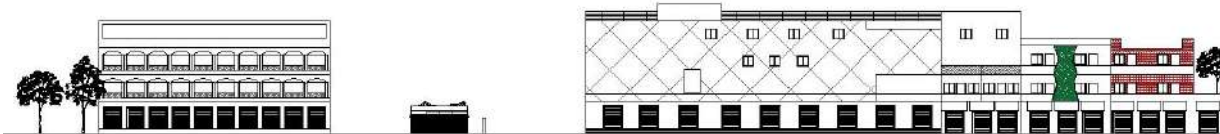
Hazira as an area has sentimental value and due to bad connectivity of interior roads it becomes difficult to approach spaces through vehicular access which makes the primary roads more congested.



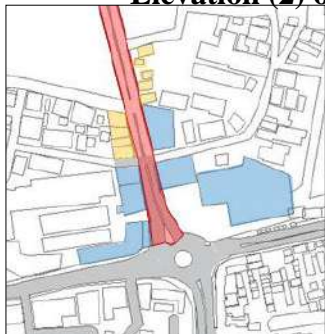
Elevation (1) of 4 Shahar Ka Naka Rd showing MIXED - USE building typology



Street View of 4 Shahar Ka Naka Rd



Elevation (2) of 4 Shahar Ka Naka Rd showing G+2 storeyed buildings



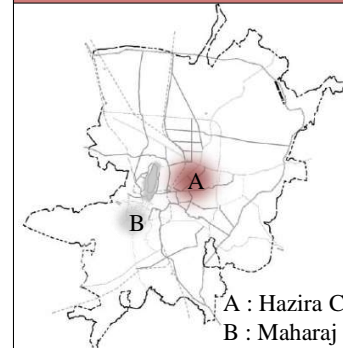
- - 4 Shahar Ka Naka Rd
- - Commercial
- - Residential

- S** • Height of buildings are higher than the other roads
- W** • Maximum commercial infrastructure
- O** • Encroachment
- T** • Potential Of A Good Streetscape
- Hazardous Encroachment
- Advertisement Banners disturbing the aesthetics of the road
- Electric Wires
- Drainage pipes blocking the footpaths

## Study Area A : HAZIRA CHOWK

Day 2: 11/01/2023 , Wednesday

### STREETSCAPE



A : Hazira Chowk  
B : Maharaj Bada

DP Plan of Gwalior



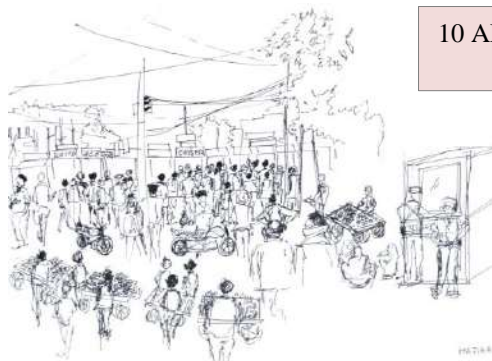
Key Plan of Hazira Chowk



### Inferences :

A lot of architectural value is diminished because of the banners being put on buildings wall and less to no amount of landscape makes it an even monotonous streetscape diminishing the value of important structures around.





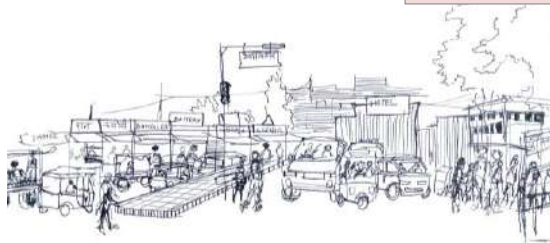
VIEW OF FIG.1

10 AM IN THE MORNING

Daily wage workers gathering at the chowk every morning, causing traffic congestion.



FIG:1



VIEW OF FIG:1.2

2 PM IN THE AFTERNOON

Afternoon are comparatively lesser congested time throughout the day.



FIG:1.2



VIEW OF FIG: 2

6 PM IN THE EVENING

Evenings are the busiest time for Hawkers and Vendors as people come to mosque for prayers and thus shops also tend to have customers.

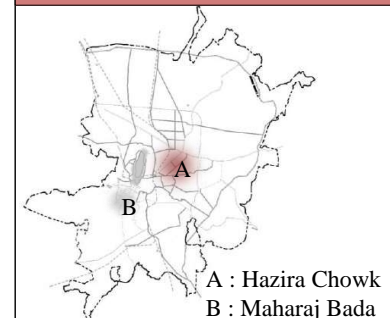


FIG:2

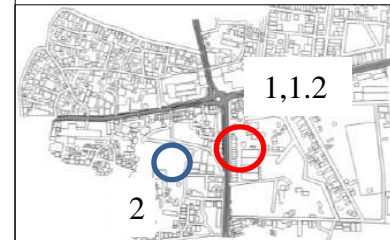
## Study Area A : HAZIRA CHOWK

Day 2: 11/01/2023 , Wednesday

### ACTIVITY MAPPING



DP Plan of Gwalior

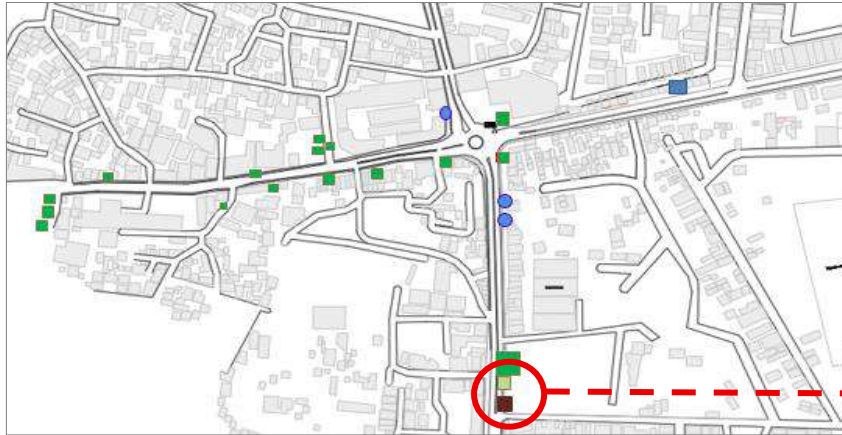


Key Plan of Hazira Chowk

### Inferences :

During different times of the day, pedestrian crowd poses a threat due to numerous particular activities due to which vehicular traffic increases and makes traffic congestion a daily problem.





- - Transformers
- - Water Leakages
- - Public Toilet

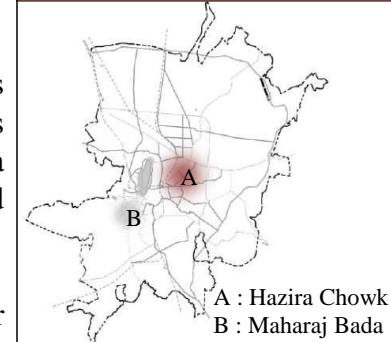


Max. Toilets are for males that too in a very bad condition. Insufficient facilities for ladies.

## Study Area A : HAZIRA CHOWK

Day 2: 11/01/2023 , Wednesday

### SERVICES



### DP Plan of Gwalior



### Key Plan of Hazira Chowk



### Inferences :

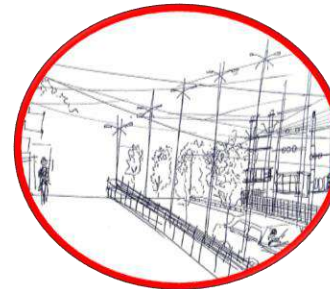
Hazira holds sentimental value in terms of Gwalior's local festivities and religious aspects. A better service layout will result into improving the aura of these important spaces and also increasing the commercial value of this market.



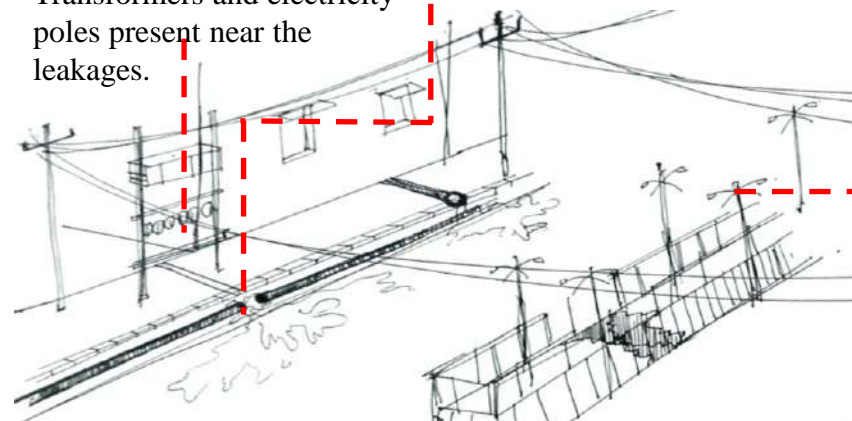
Transformers and electricity poles present near the leakages.



Broken pipelines coming from households meets into drainage and causing leakages at the J.C. Mill Rd.



Wires from electrical poles degrade the aesthetics of road thus a proper pattern should be followed.



Trees are blocking the footpaths resulting in uneven pathways



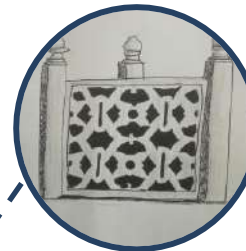
Gulmohar tree in dividers



Improper maintenance of divider railing on Tansen Road  
Dimensions :  
Road width -6m



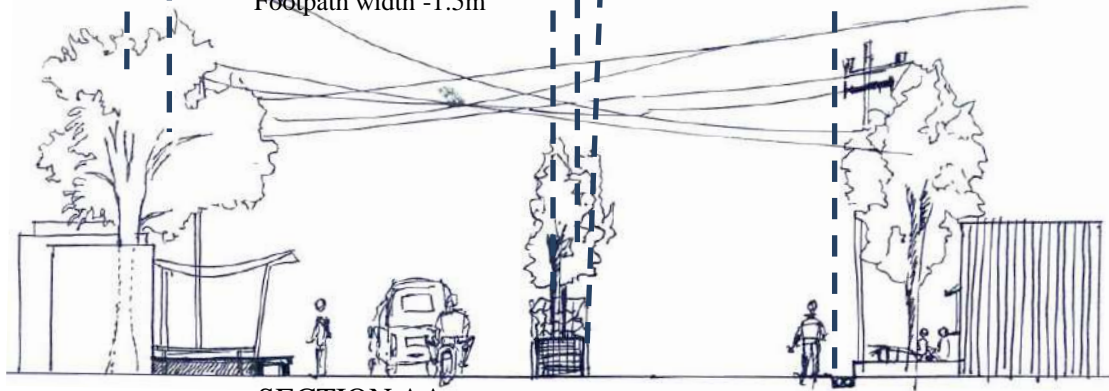
Trees located on the footpath on Tansen Road  
Dimensions:  
Footpath width -1.5m



Material : concrete  
Dimensions :  
Width – 0.8m  
Height – 0.9m

Sketch of divider jali

Gutter dimensions:  
Depth -0.3m

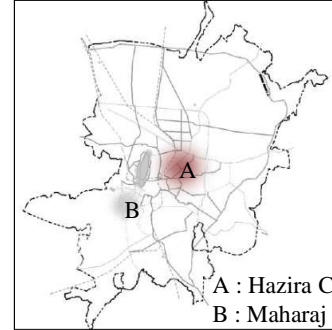


SECTION AA

## Study Area A : HAZIRA CHOWK

Day 2: 11/01/2023 , Wednesday

### LANDSCAPE



A : Hazira Chowk  
B : Maharaj Bada

DP Plan of Gwalior



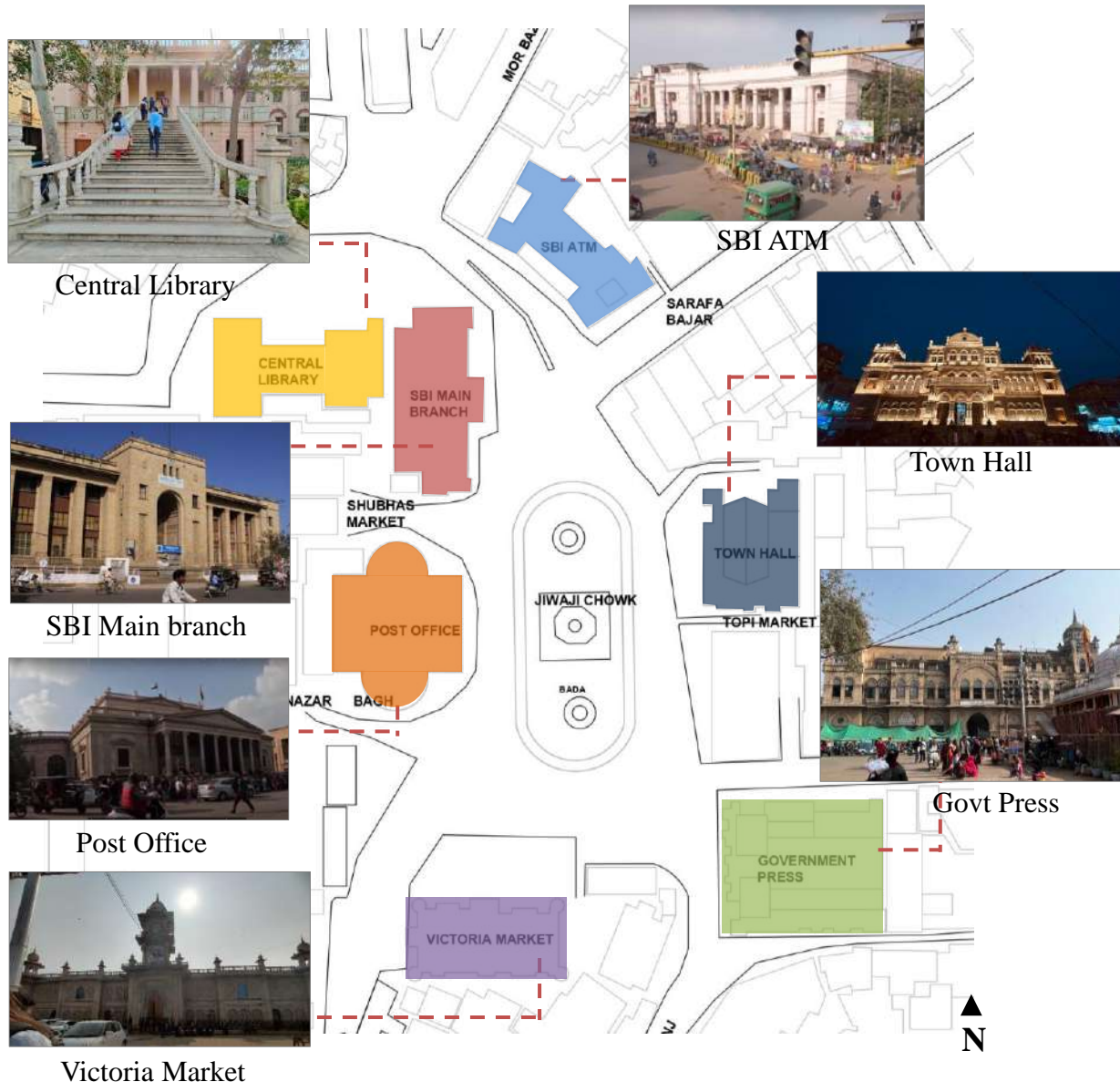
Key Plan of Hazira Chowk



### Inferences :

Landscape as an architectural element is missing from this region and if present is in a degraded condition. The region requires a proper amalgamation of softscape and hardscape.



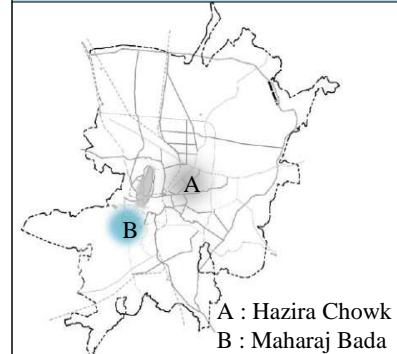


Key Plan of Maharaj Bada

## Study Area B : MAHARAJ BADA

Day 2: 11/01/2023 , Wednesday

### INTRODUCTION



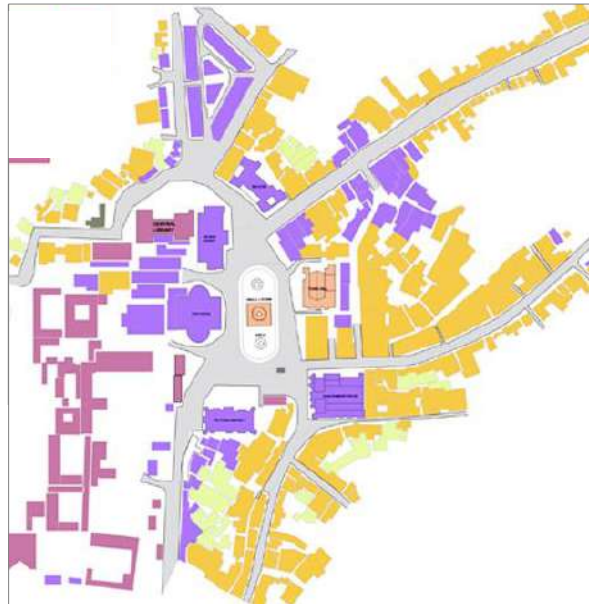
DP Plan of Gwalior



### Inferences :

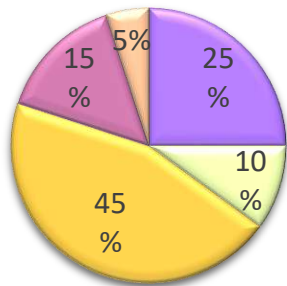
Maharaj Bada is considered as an architectural marvel of India with 7 buildings representing different architectural styles from across the globe. Though it used to be associated with the activities of the royal family now the place has turned into a commercial sector for the public. The place is considered to be the worst crowded zones of Gwalior. The commercial sector has flourished but the value of these buildings as an architectural marvels has reduced drastically. Another reason being unplanned expansion. The area holds lot of opportunities to be turned into a well developed trade center along with the restoration of its original values.





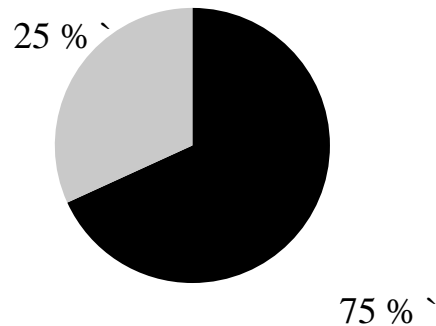
**Land Use Map**

- Commercial
- Residential
- Mix – Use
- Institutional
- Recreational



**Built / Unbuilt Map**

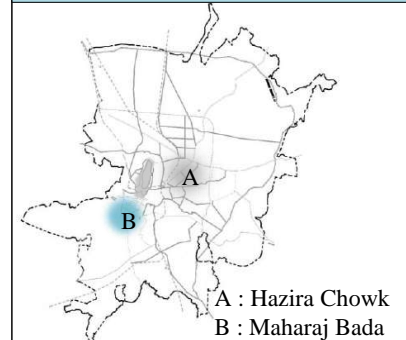
- Built
- Unbuilt



**Study Area B : MAHARAJ BADA**

Day 2: 11/01/2023 , Wednesday

**IMPORTANT MAPS**



**DP Plan of Gwalior**

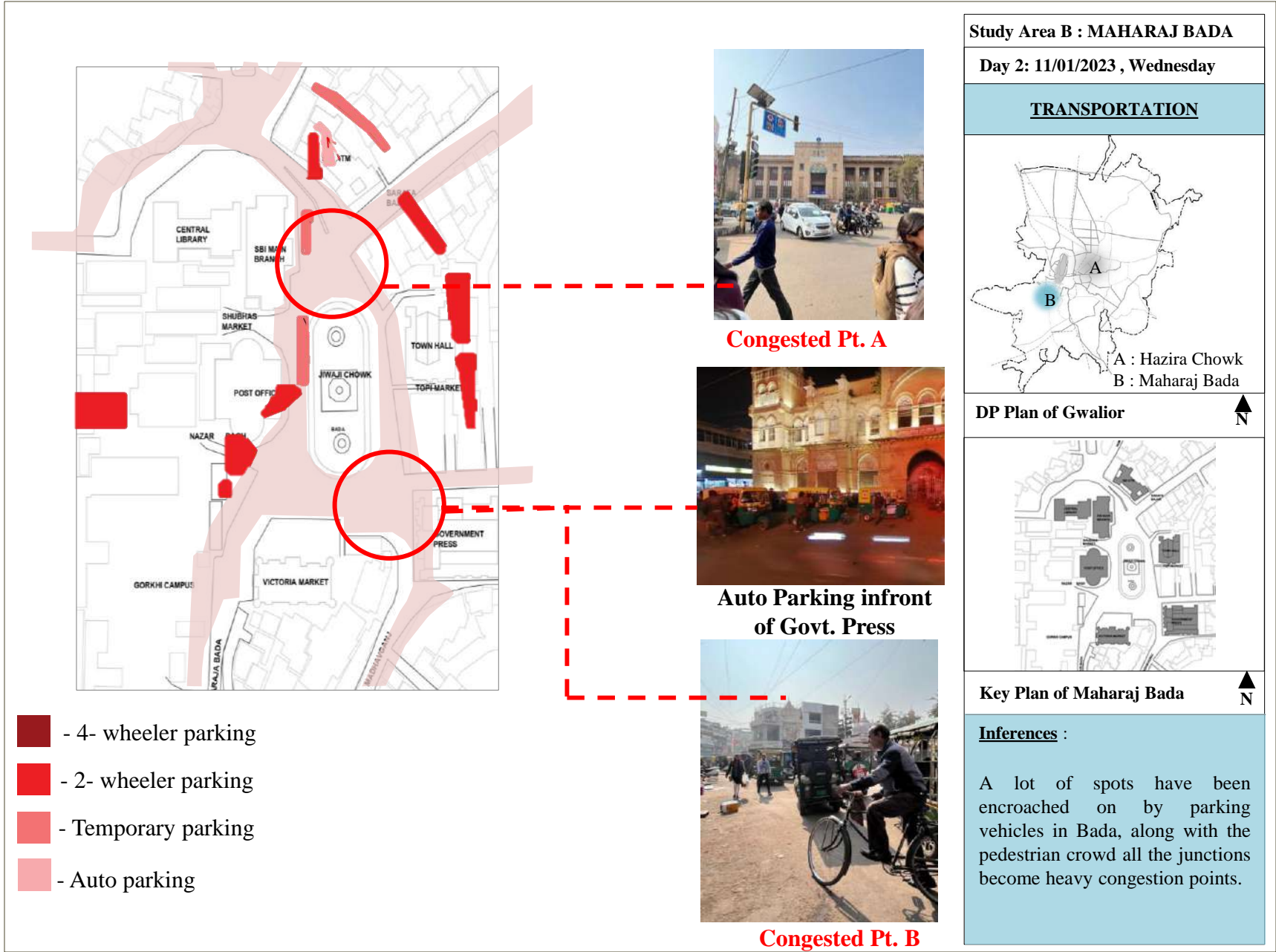


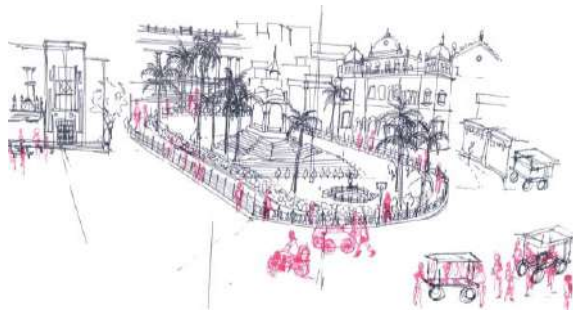
**Key Plan of Maharaj Bada**



**Inferences :**

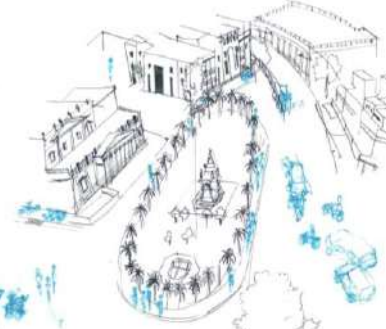
Maharaj Bada still serves its primary purpose but on a larger scale i.e. acting as a trade center of Gwalior but now with a higher density of buildings and crowd



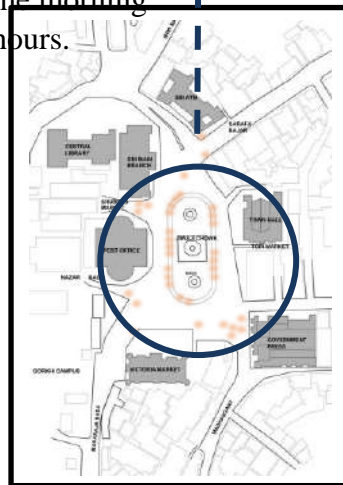


People use the jiwaji chowk garden space for walking or exercise purposes in the morning hours.

This is the most active time in the Bada region as both govt buildings and commercial shops are open



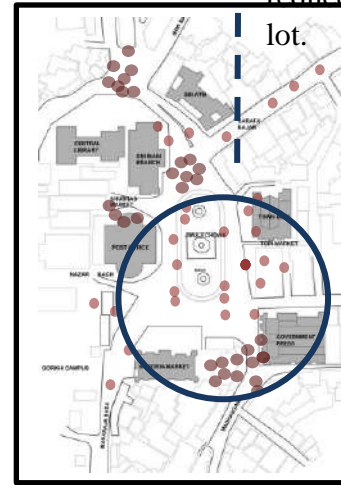
As all the govt buildings are closed by this time crowd percentage reduces a lot.



10 AM IN THE MORNING



2 PM IN THE AFTERNOON

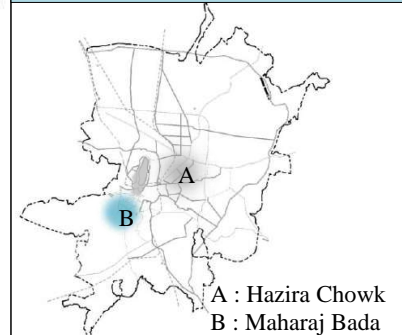


6 PM IN THE EVENING

Study Area B : MAHARAJ BADA

Day 2: 11/01/2023 , Wednesday

### ACTIVIY MAPPING



DP Plan of Gwalior



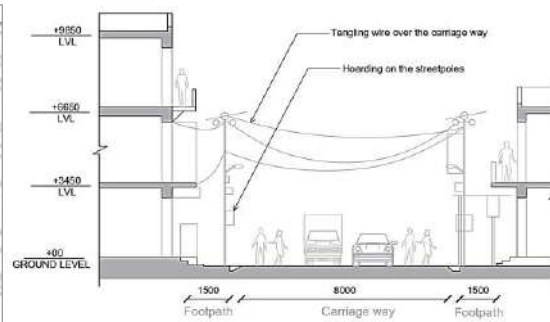
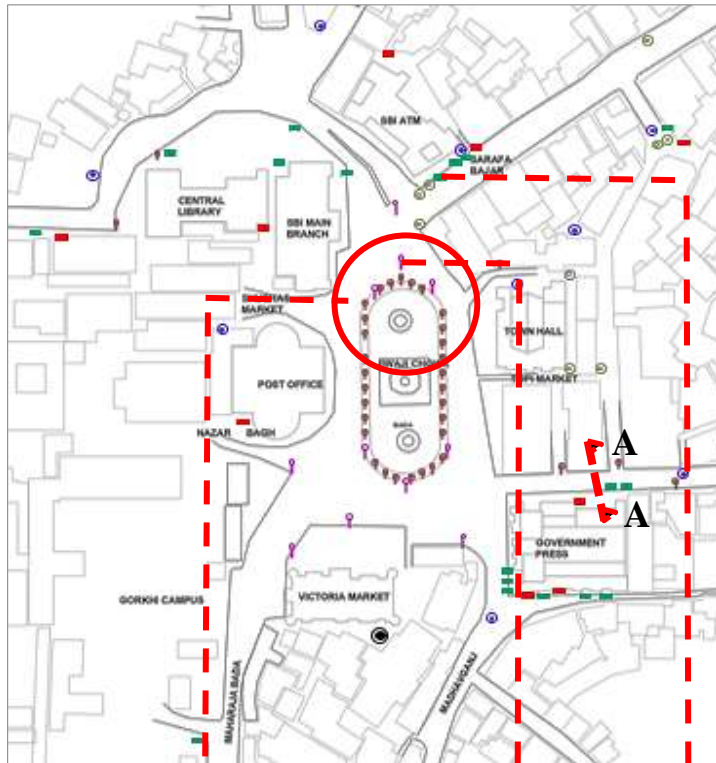
Key Plan of Maharaj Bada



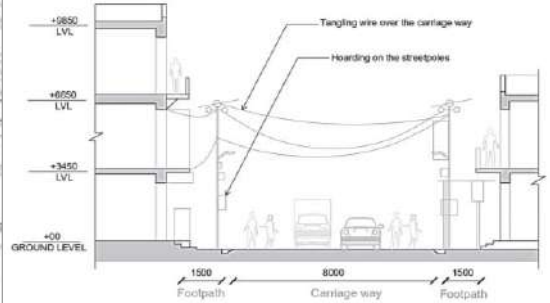
### Inferences :

Irregular movement of traffic along with pedestrian movement in between creates havoc at Bada creating traffic congestion at every junction













SECTION AA



SECTION BB

### LEGEND

-  - Public Toilets
-  - Street Lights
-  - Decorative Light
-  poles
-  - Transformers
-  - Dustbins
-  - Water Lines
-  - Dumpsters



Decorative Light Poles



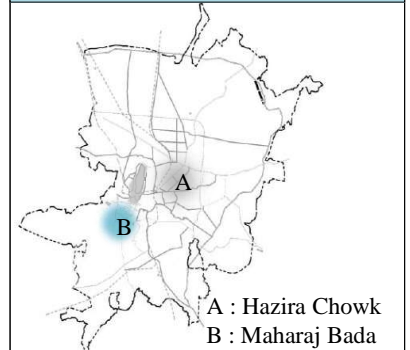
Transformers



### Study Area B : MAHARAJ BADA

Day 2: 11/01/2023 , Wednesday

### SERVICES



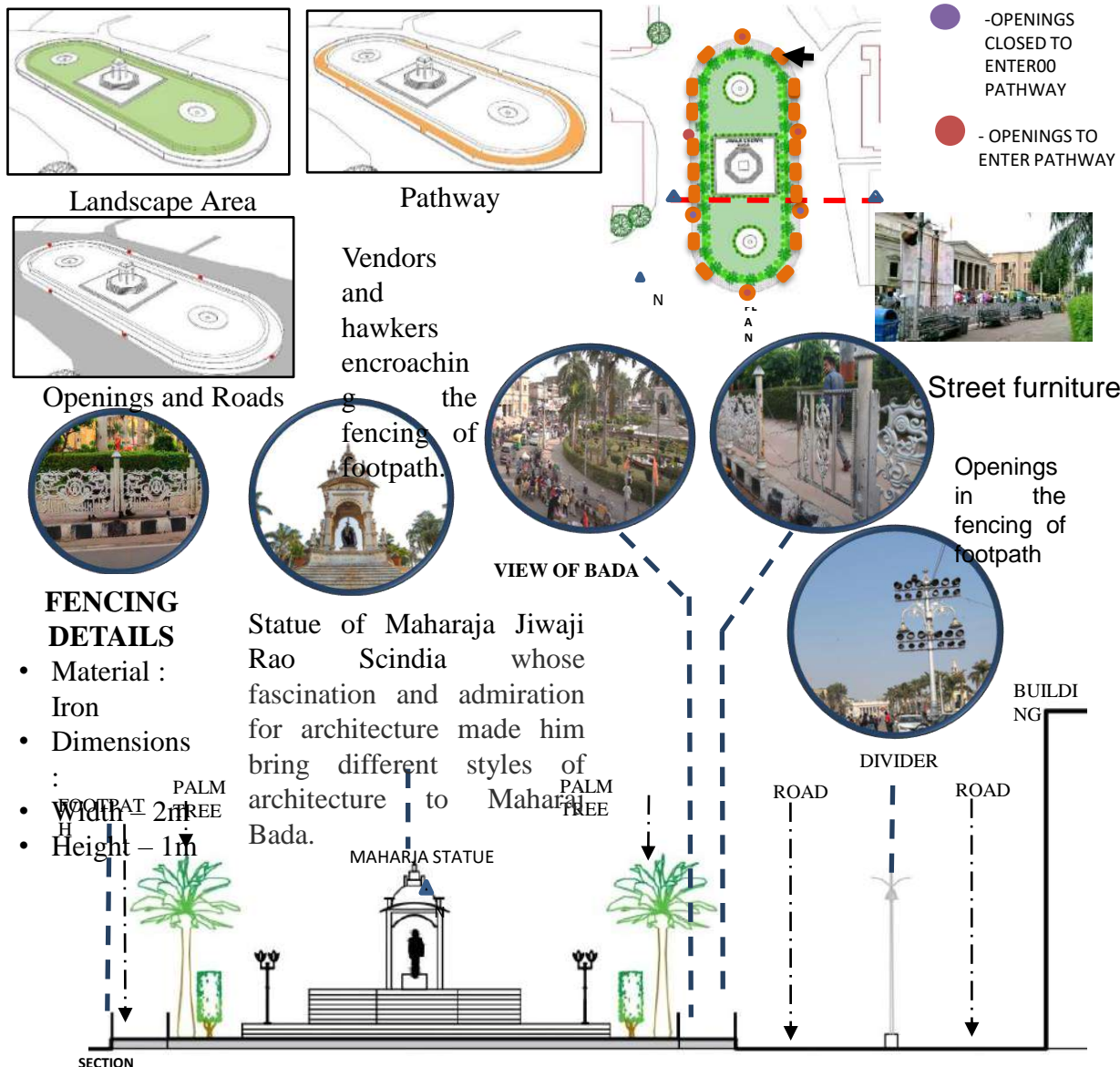
DP Plan of Gwalior



Key Plan of Maharaj Bada

### Inferences :

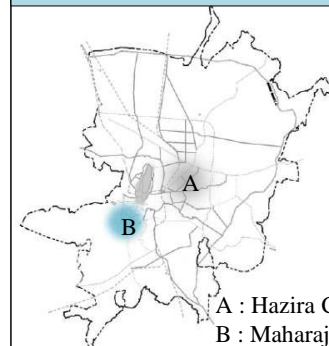
Bada is considered to be an architectural marvel and the present conditions of services are degrading its value and making it a hazard-prone region.



## Study Area B : MAHARAJ BADA

Day 2: 11/01/2023 , Wednesday

### LANDSCAPE



### DP Plan of Gwalior




### Key Plan of Maharaj Bada

#### Inferences :

Even though Bada has a larger portion of the landscape but it is unplanned and not maintained. Except for the jiwaji chowk rest of Bada needs proper maintenance to make it more tourist-friendly.



## EXPERT LECTURE INSIGHTS


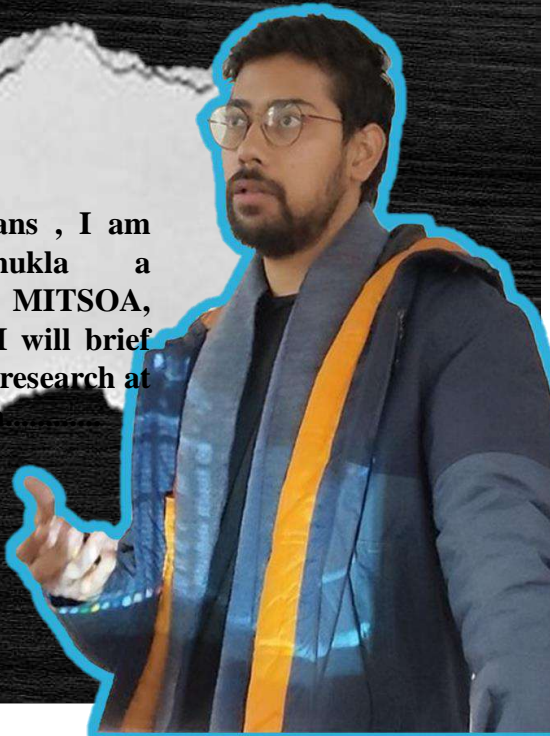


**GUEST LECTURE BY :**  
**AR. SATYAM SHUKLA SIR**

**MITSOA**  
**Gwalior**


“

Hello SCOAIans , I am Satyam Shukla a professor at MITSOA, Gwalior and I will brief you about my research at Maharaj Bad...




**10 JAN, 2023 @**  
**MITSOA**

**SCOA ,**  
**PUNE**



The MIT School of Architecture, Gwalior conducted an interactive session with the students of 4th B of our college in which they presented their documentation study of different regions of Gwalior.





## Design program

We will be submitting individual design proposal out of which few are listed down below -

### MAHARAJ BADA

1. Retail store, shopping centers, mall shops
2. Tourism Information Centre
3. Cultural center
4. convention center
5. corporate office

### HAZIRA

1. Tourist Information center
2. Community Centre
3. Art gallery
4. Commercial complex / Police station
5. Corporate Office / Sports Hub
6. Women's Empowerment Centre
7. Business hub
8. Wholesale market

## Group Photographs of students

## 4<sup>th</sup> Year Division B class 2022-23



### List of students

- Anand Bora
- Isha Bora
- Ghawate Ankita
- Gore Kanchan
- Holkar Sakshi
- Hosakhande Bhakti
- Sahil Ingale
- Shreyas Jadhav
- Jagtap Prathamesh
- Jagtap Shweta
- Kalaskar Sameer
- Rashmi Karhade
- Kasar Rucha
- Nupur Khote
- Kunal Patni
- Akanksha Lonkar
- Bharat Mahajan
- Bhushan Mahajan
- Kshitija Mahale
- Mayuri Deshmukh
- Dipti More
- Aishwarya Patil
- Perna Chaudhari
- Om Wanjale
- Omkar Mathapati
- Pranav Jadhav
- Sakshi Kadam

**List of faculties:** Ar. Kavita Patil, Ar. Indrayani Dasare, Ar. Leena Jain

SINHGAD TECHNICAL EDUCATION SOCIETY'S  
**SINHGAD COLLEGE OF ARCHITECTURE, PUNE**  
**STUDY TOUR**

**INDORE**

by

**IV YR B. Arch.**

**Division: C**

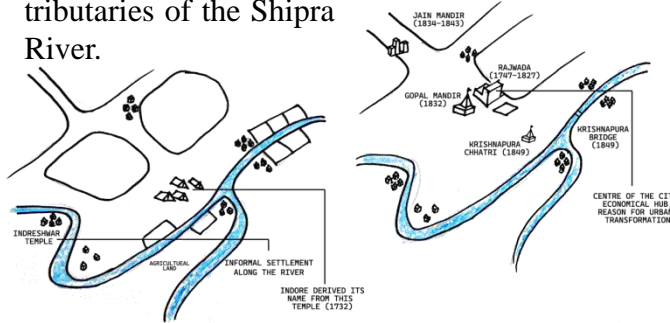


## Geography & Topography

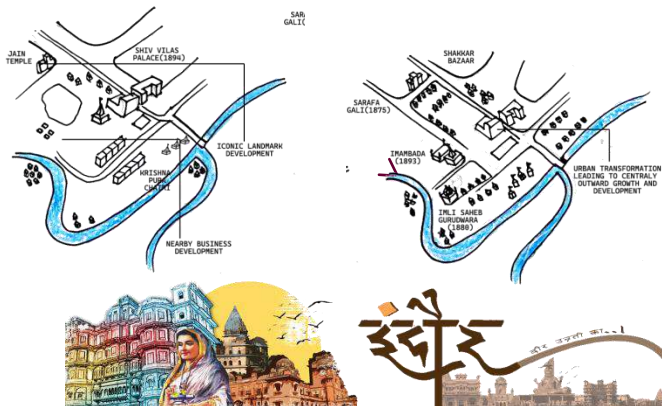
Indore is located in the western region of Madhya Pradesh (approx. 76° E, 23° N), on the southern edge of the Malwa plateau, on the Saraswati and Khan rivers, which are tributaries of the Shipra River.



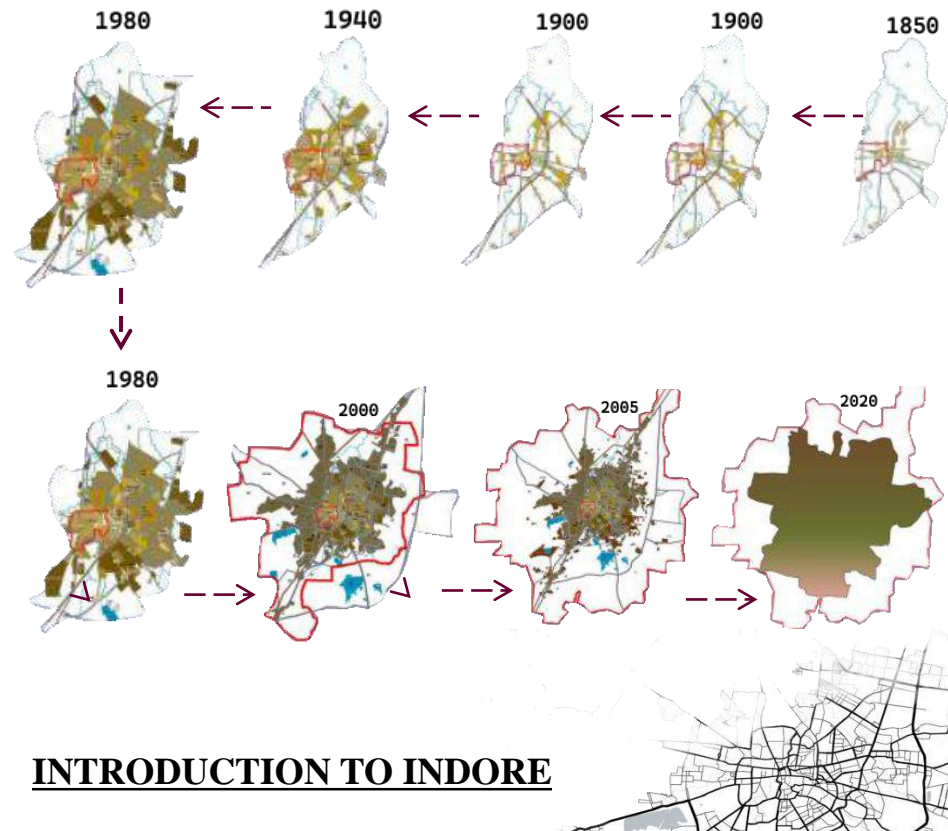
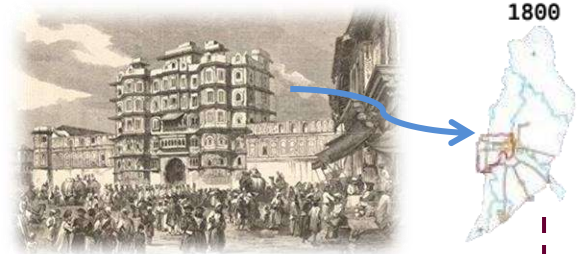
Indore has an average elevation of 553 meter above mean sea level. It is located on an elevated plain, with the Vindhyas range to the south.



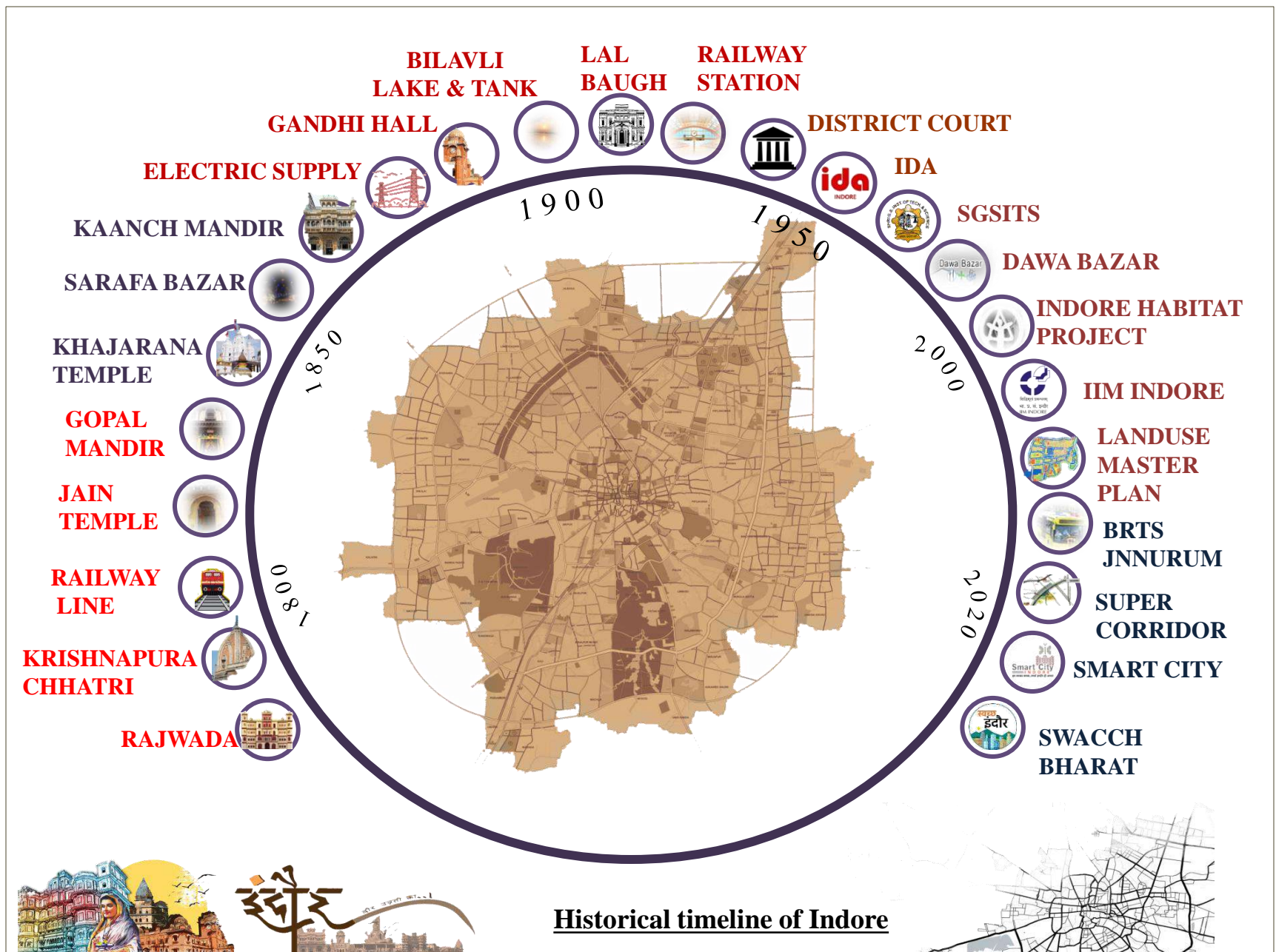
Growth of the ever growing city. Transformation of a riverside village, from central business district to smart city indore



## Urban transformation of Indore



## INTRODUCTION TO INDORE



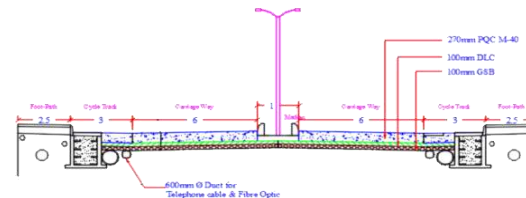








**CENTRAL DIVIDER WITH SMART STREET LIGHTING**



**TYPICAL SECTION OF ROAD SHOWING ALL UTILITIES**



**RCC DUCTS FOR UNDERGROUND CABLING**



The smart pole is fitted with a CCTV camera, pollution monitoring sensors, digital display board, Wi-Fi router and an electrical vehicle charging point.



Smart poles will be automatically operated and LED lights will be programmed with day and night timings so that street lights can automatically go on and off without any involvement of manual process.



**RESTORATION OF LAL BAUG PALACE**



**BEFORE AND AFTER RESTORATION OF RAJWADA**



**RESTORATION OF GOPAL MANDIR**



**SARAFI BAZAR NOW**



**SARAFI BAZAR PROPOSED STREET**



- LEGEND**
- Vehicular Road
  - Pedestrian-only street
  - E-rickshaw route (Two-way)
  - E-rickshaw route (One-way)
  - Public parking



## Key features of Indore city



## 7 Habits That Changed Indore

1 Everyday garbage disposal



2 Garbage To Compost



3 Discouraging Use of Polythene



4 Dustbin On The Wheels



5 Awareness Among Children



6 Public And Social Functions



7 The Eighth Pledge



### How Indore became the cleanest city in India

- The processing of 1,900 tons of urban waste every day which earns it crores of rupees and also fuels its buses has helped Indore bag 'India's cleanest city' award for the sixth straight time.
- Indore is also India's first seven-star garbage-free city, which is one of the key objectives of the second iteration of the Swachh Bharat Mission launched last year.

### In Short

- Indore removed garbage bins and adopted door-to-door waste collection
- Residents carry dustbins in their cars to avoid littering at public places
- Indore made children brand ambassadors for keeping city clean

06



TWIN LITTER BINS



TIPPERS (WASTE COLLECTION VEHICLES) WITH GPS INSTALLED



TRANSFER STATION



BIO-METHANATION PLANT



PORTABLE COMPACTOR



WASTE PROCESSING PLANT



WASTE COLLECTOR



TRENCHING GROUND

PROCEDURE FOR WASTE COLLECTION FROM COMMERCIAL

AIM :To improve the existing standards of public health and environmental quality by establishing efficient mechanism for collection And transportation of Municipal Solid Waste.

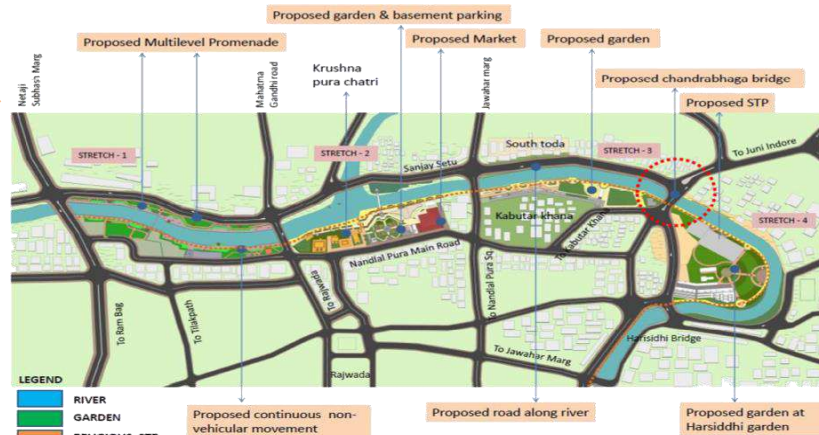


### Key features of Indore city





S.N	Design Components:
1	Harsiddhi Garden - 5.16 Acres
2	STP-10 MLD (3600 sqm)
3	Promenade ( 500 m)
4	DP road -24 m wide (220 m)
5	Parking
6	Children's play area



**WORK IN PROGRESS**



super corridor is a scheme of upcoming IT industries (ie : TCS , Infosys, Wipro etc) and residential properties . it's going to be a remarkable breakthrough in I.T sector which will be resourceful for the people for financial growth

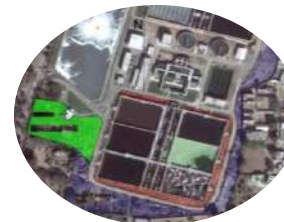


### PROPOSED SUPER CORRIDOR PROPOSED PROJECTS

business parks, educational institutions, hospitals, industrial hubs , entertainment zones, They are proposed to transform Indore into a Hitech city of Madhya Pradesh



### SOLAR POWER



2 MW Solar Power Plant at Sewerage Treatment Plant, Indore

- ISCDL has identified land areas and roof-tops over government schools, offices and parking buildings for solar panel installations.

- Following sites installation is completed.

- Devdharam Filtration Plant
- Regional Park
- 13 Govt Schools



Installation in devdharam



panel on school roof



### Key features of Indore city





## TRANSPORTATION

- Proper road signage
- no traffic police was there in core city
- Government initiative of 4 lane road
- Poor condition of road near slum area
- Roadside commercial shops2 wheeler parking on footpath
- Garbage tin at 3m distance
- Airport is small compared to Indore population
- Proper street light at every 6-8 m distance



## RESIDENTIAL & SLUM

- Poor electricity supply and management.
- Pakka houses in slums but in poor condition
- demolished houses due to road widening
- residential colony in balawali and near by areas
- no setbacks , no place for garbage dumping and water supply is after every 4 days



## ECOLOGY

- Restoration of sirpur lake in recent 15 days.
- Provision of jogging track and paved area has provided in sirpur lake
- .Holkar meuseum in ralamandal sanctuary where the hunting accessories and weapons are displayed.



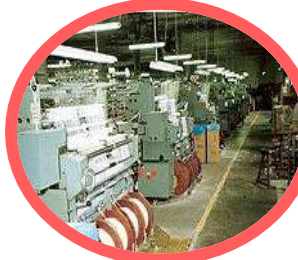
## Observations of Indore city





## INGENERAL OBSERVATIONS

- industries of textile , food and agricultural medical and IT proposals in super corridor
- separate watertank for every locality
- public toilets in heritage areas are maintained by ngo's.
- Darga and shiv mandir sharing wall. (Khajrana mandir ) (no religious disputes between people.)
- Citizens are open to tourist interaction with helpful and welcoming nature.



## KEY INFORMANT INTERVIEW



*Mr. Rajesh goswami ( shop owner of temple accessories)*

- *Bijasen temple has most of the visitors in navratri and it is crowded on Thursday , Friday.*
- *Only temple having 9 goddesses there in*



*Person – worker*

- *Neighbourhood of Luv Kush square and isbt have kaccha houses and workers families living SINCE 30 YEARS.*



*Security guard at Gandhi hall*

- *Post construction of flyover and round about the footfall and traffic has reduced drastically*



*Worker at Rajwada*

- *No availability of authentic tourist guide*
- *Lack of awareness among citizens about their own heritage*



*Tourist at khajarana*

- *Lack of accomodation near by the temple*
- *Sometimes the crowd go's to 12 to 15 lakhs*



*Worker at Ralamandal*

- *No construction was permitted under the vicinity of 1km but still encroachment is seen*



*localite at bazaar*

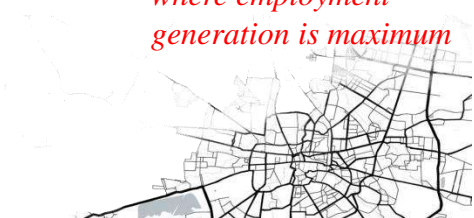
- *Due to road widening services are going through the houses*
- *The staring point of each market in the locality is from rajwada palace*



*Dweller near super corridor*

- *Travelling time is getting reduced due to road and metro connectivity*
- *Proposed in a region where employment generation is maximum*

## Survey of Indore city



KEY ISSUES AND POTENTIAL DERIVED FROM  
KEY INFORMANT INFORMATION  
SECONDARY DATA  
ON SITE OBSERVATION



KEY ISSUES:

- Lack of parking facilities
- Lack of public accommodation around temple premise
- there is a lack of communication and exposure about social aspects and cultural heritage to the people of Indore and tourists.
- Major institutional hub i.e. IIM is situated in the outskirts of Indore
- Except IIM campus the neighborhood is underdeveloped.
- Since Super corridor is an industrial and some proposed commercial area ,there are no recreational , open ,cultural spaces present.
- Even being the workers of those industries they don't have permanent employment option.

KEY POTENTIALS:

- Indore is famous for its handloom and textile industry which closed in 2001,hence there is a need of textile hub
- Ralamandal is smallest sanctuary situated on the hill away from the city noise, It has good footfall of tourists from all over state but it is underdeveloped area
- The Industrial growth in this region has been phenomenal and international companies have, solely because of the infrastructure at Indore, chosen to set up their industries here.
- Dawa Bazar is the biggest commercial complex at Indore and biggest pharma marketplace in India.

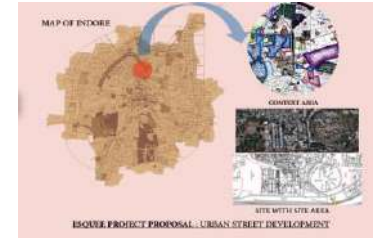


Survey of Indore city





## Site selected:



### PROPOSAL 1 : VEDIC SCHOOL

TO ENDOCK AND CREATE AWARENESS ABOUT THE TRADITIONAL VEDIC EDUCATION AND CULTURE.



#### CITY LEVEL BENEFITS :

- FIRST TIME SCHOOL IN INDIA
- IT WILL BE ESTABLISHED FOR THE STUDENTS OF THE CITY AND MAINTAIN VEDIC EDUCATION
- GROUND EARTH TRANSPORTATION IN INDIA CITY OF 10 LAKHS EDUCATION IN VEDIC SCHOOL COULD BEHIND CITY TRANSPORTATION DEVELOPMENT

### PROPOSAL 1 : CONVENTION CENTRE

A LARGE BUILDING THAT IS DESIGNED TO HOLD A CONVENTION, WHERE INDIVIDUALS AND GROUPS GATHER TO PROMOTE AND SHARE COMMON INTERESTS



#### CITY LEVEL BENEFITS :

1. BENEFITS TO THE INDUSTRY TO LAUNCH IN PRODUCTS
2. DUE TO CONVENTION CENTRE CITY BUSY SQUARE WILL GET WELL KNOWN AND WELL POPULATED AREA
3. AREA WILL GET MORE VALUE

### PROPOSAL 1 : TRADE CENTRE

THE TRADE AND COMMERCE PLAY AN IMPORTANT ROLE IN MAKING A COUNTRY A MAJOR PLAYER IN THE ECONOMIC WORLD. A PROGRESSIVE ECONOMIC COUNTRY SHOULD BE CREATED IN INDIA WHICH EMULATES THE IMPORTANCE OF THE ECONOMIC WORLD.



#### CITY LEVEL BENEFITS :

- PROJECT SITE IS IN NEAR CORNER OF INDIA WHICH IS INITIATIVE BY GOVERNMENT FOR COMMERCIAL, FINANCIAL AND TRADE CENTRE IN THIS AREA WILL GET COMMERCIAL AND TRADE VALUE
- THE NEW TRADE CENTRE IN INDIA WILL PROVIDE A CHANCE TO LOCAL BUSINESS OF THE AREA AND PROMOTE LOCAL INDUSTRY AT AN ADVANCED PLACE
- IT WILL GIVE A CHANCE TO ENTERPRENEURS BY ESTABLISHING THE INDUSTRY IN THE COMMUNITY BY HAVING A LARGE IN A BRAND NEW BUILDING

### PROPOSAL 1 : MUSEUM

TO CREATE AWARENESS AND SHOWCASE THE SOCIAL ASPECTS OF INDIA CITY



#### CITY LEVEL BENEFITS :

- IT PROVIDES BENEFITS TO MANY COMMUNITIES
- A SOURCE OF CIVIC PRIDE IN FRONT OF CIVILIANS, TOURISTS ETC.
- AN OPPORTUNITY TO THE CITY LOCAL PEOPLE TO KNOW ABOUT THE HISTORICAL IMPORTANCE, ABOUT COMMUNITIES, CULTURE ETC.
- IT CAN HELP PRESERVE THAT HISTORY AND CULTURE AND MAKES IT AVAILABLE AT PRESENT AND FOR FUTURE GENERATIONS.

### PROPOSAL 2 : REJUVENATION CENTRE

NO CITY TYPE OF INDIA IN INDIA AREA, SO INDIA SHOULD BE A MAJOR PLAYER IN THE ECONOMIC WORLD. TO ENDOCK AND CREATE AWARENESS ABOUT THE TRADITIONAL VEDIC EDUCATION AND CULTURE.



#### CITY LEVEL BENEFITS :

- A MAJOR PLAYER IN THE ECONOMIC WORLD
- TO ENDOCK AND CREATE AWARENESS ABOUT THE TRADITIONAL VEDIC EDUCATION AND CULTURE
- TO ENDOCK AND CREATE AWARENESS ABOUT THE TRADITIONAL VEDIC EDUCATION AND CULTURE

### PROPOSAL 2 : COMMERCIAL COMPLEX

The site is located in the industrial area, so there is a need of commercial complex in this area, which is a major player in the economic world. The main purpose of this project is to create a major player in the economic world.



#### CITY LEVEL BENEFITS :

- TO ENDOCK AND CREATE AWARENESS ABOUT THE TRADITIONAL VEDIC EDUCATION AND CULTURE
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### PROPOSAL 2 : INDORE HAAT

INDORE HAAT IS A MAJOR PLAYER IN THE ECONOMIC WORLD. TO ENDOCK AND CREATE AWARENESS ABOUT THE TRADITIONAL VEDIC EDUCATION AND CULTURE.



#### CITY LEVEL BENEFITS :

- TO ENDOCK AND CREATE AWARENESS ABOUT THE TRADITIONAL VEDIC EDUCATION AND CULTURE
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- TO ENDOCK AND CREATE AWARENESS ABOUT THE TRADITIONAL VEDIC EDUCATION AND CULTURE

### PROPOSAL 2 : INTERPRETATION CENTRE

INTERPRETATION CENTRE IS A MAJOR PLAYER IN THE ECONOMIC WORLD. TO ENDOCK AND CREATE AWARENESS ABOUT THE TRADITIONAL VEDIC EDUCATION AND CULTURE.



#### CITY LEVEL BENEFITS OF YOUR PROJECT :

- IT WILL HELP CITY'S TOURIST TO MAP CULTURAL, ECONOMIC AND ARCHITECTURAL LOCATION OF CITY
- IT WILL HELP THE CITY'S SUMMARY FOR THE TOURISM OF INDIA
- IT WILL BE EFFECTIVE COMMUNICATION OF HERITAGE INFORMATION OF CITY
- CULTURAL HERITAGE WILL GIVE THE PEOPLE INDIA SOCIETY

### PROPOSAL 3 : PILGRIMAGE CENTER

AT THE AREA IS NEAR REASAM MAHA MANDIR, THE PURPOSE IS TO BUILD A PLACE FOR THE DEVOTIONS WHERE THEY CAN GET COMFORTABLE AND APPROACHABLE THAT WHO CAME THERE TO VISIT THE TEMPLE



#### CITY LEVEL BENEFITS :

- REVENUE GENERATION THROUGH DAKSHINARAJA
- TEMPLE HAS STRONG HISTORICAL AND CULTURAL BENEFITS AND HENCE INVITES DEVOTEES FROM ALL OVER INDIA

### PROPOSAL 3 : BUSINESS HOTEL

Site is located in the industrial area. In radius of around 4 km any hotel is not there. The main purpose is that super corridor passes near the site



#### CITY LEVEL BENEFITS :

1. BENEFITS TO THE INDUSTRY TO LAUNCH IN PRODUCTS
2. DUE TO CONVENTION CENTRE CITY BUSY SQUARE WILL GET WELL KNOWN AND WELL POPULATED AREA
3. AREA WILL GET MORE VALUE

### PROPOSAL 3 : SCHOOL OF BUSINESS MANAGEMENT

THE SCHOOL OF BUSINESS MANAGEMENT WILL BE A MAJOR PLAYER IN THE ECONOMIC WORLD. TO ENDOCK AND CREATE AWARENESS ABOUT THE TRADITIONAL VEDIC EDUCATION AND CULTURE.



#### CITY LEVEL DEVELOPMENT :

- PROJECT SITE IS IN NEAR CORNER OF INDIA WHICH IS INITIATIVE BY GOVERNMENT FOR COMMERCIAL, FINANCIAL AND TRADE CENTRE IN THIS AREA WILL GET COMMERCIAL AND TRADE VALUE
- THE NEW TRADE CENTRE IN INDIA WILL PROVIDE A CHANCE TO LOCAL BUSINESS OF THE AREA AND PROMOTE LOCAL INDUSTRY AT AN ADVANCED PLACE
- IT WILL GIVE A CHANCE TO ENTERPRENEURS BY ESTABLISHING THE INDUSTRY IN THE COMMUNITY BY HAVING A LARGE IN A BRAND NEW BUILDING

### PROPOSAL 3 : TEXTILE HUB

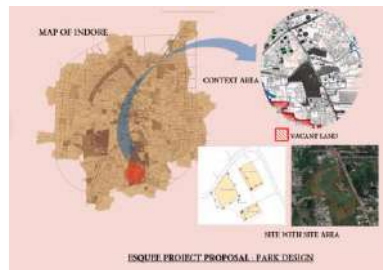
INDORE HAAT IS A MAJOR PLAYER IN THE ECONOMIC WORLD. TO ENDOCK AND CREATE AWARENESS ABOUT THE TRADITIONAL VEDIC EDUCATION AND CULTURE.



#### CITY LEVEL BENEFITS OF THE PROJECT :

- INDORE HAAT IS A MAJOR PLAYER IN THE ECONOMIC WORLD. TO ENDOCK AND CREATE AWARENESS ABOUT THE TRADITIONAL VEDIC EDUCATION AND CULTURE
- TO ENDOCK AND CREATE AWARENESS ABOUT THE TRADITIONAL VEDIC EDUCATION AND CULTURE
- TO ENDOCK AND CREATE AWARENESS ABOUT THE TRADITIONAL VEDIC EDUCATION AND CULTURE

# Design program



## PROPOSAL 1 : PRIMARY SCHOOL

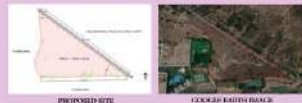
ENVIRONMENT IS AN IMPORTANT FACTOR, AS IT AFFECTS THE INDIVIDUAL THROUGH MESSAGES BEHIND IT, AND PROVIDES THE WAY OF THE ENVIRONMENT UNDERSTANDING. AVOIDING EDUCATIONAL SPACE OR ESPECIALLY SCHOOLS, INCLUDE AREA THAT ARE IN DIRECT CONTACT WITH NATURE AND YOU NEED TO GIVE IT THE NATURE OF OBJECT A TIME IT BRINGS, GAME EDUCATION, CULTURE AND EDUCATION.



- CITY LEVEL BENEFITS**
- GIVE GOOD EDUCATION FACILITY NEAR LOCALITY.
  - INCREASED ACCESS TO OPPORTUNITIES.
  - GIVE CHANCES ON SERVICE TO THE PEOPLE.

## PROPOSAL 1: ECO RESORT

IN ORDER TO ENJOY THE NATURE, THE PROPOSAL IS TO BUILD AN ECO RESORT NEAR THE WILDERNESS, GIVE IT A NATURE, RESORTS, FORESTED WITH TREES AND WILDERNESS, THE BEST WAY TO LAUNCH THE WILDERNESS.



- CITY LEVEL BENEFITS**
- AREA OF BALAMANDAL CANTONMENT IS NEARBY AND WILDERNESS.
  - THE AREA NOT UNDER CONSTRUCTION, CITY DEVELOPMENT.
  - AT THERE IS NO DEVELOPMENT AROUND THE AREA, NOT A PROBLEM FOR THE CITY, NATURE, CULTURE AND WILDERNESS.
  - WILL BE USED TO ATTRACT TOURIST AND LOCAL PEOPLE AND BRING OFFSHORE AT BALAMANDAL CANTONMENT.
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## PROPOSAL 1 : FILM INSTITUTE

THE AREA NEARBY IS AN EDUCATIONAL INSTITUTION, THEREFORE IT WILL BE BENEFICIAL FOR THE CITY.



- CITY LEVEL DEVELOPMENT**
- FILM INSTITUTE WILL BE BENEFICIAL TO ECONOMIC GROWTH OF THE CITY.
  - INSTALLATION OF FILM CITY WILL BE USED TO ATTRACT TOURIST AND LOCAL PEOPLE.
  - IT WILL BE USED TO ATTRACT TOURIST AND LOCAL PEOPLE AND BRING OFFSHORE AT BALAMANDAL CANTONMENT.
  - INSTALLATION OF FILM CITY WILL BE USED TO ATTRACT TOURIST AND LOCAL PEOPLE AND BRING OFFSHORE AT BALAMANDAL CANTONMENT.
  - IT WILL BE USED TO ATTRACT TOURIST AND LOCAL PEOPLE AND BRING OFFSHORE AT BALAMANDAL CANTONMENT.

## PROPOSAL 1 : FOREST RESEARCH INSTITUTE ( FRI )

TO ENJOY THE NATURE, THE PROPOSAL IS TO BUILD AN ECO RESORT NEAR THE WILDERNESS, GIVE IT A NATURE, RESORTS, FORESTED WITH TREES AND WILDERNESS, THE BEST WAY TO LAUNCH THE WILDERNESS.



- CITY LEVEL BENEFITS**
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  - IT WILL BE USED TO ATTRACT TOURIST AND LOCAL PEOPLE AND BRING OFFSHORE AT BALAMANDAL CANTONMENT.

## PROPOSED 2 : COMMERCIAL COMPLEX

AN COMMERCIAL COMPLEX CENTER IS AN INTEGRATED CENTER COMPRISING SPACES AND RECREATIONAL AREAS WHICH SERVE AS A SOCIAL GATHERING SPACE FOR THE SOCIETY OF VARIOUS AGE GROUPS, IT CREATES A SPACE FOR PEOPLE TO GET OFF WORK, MEET AND ENJOY, BRINGING PHYSICALLY.



- CITY LEVEL DEVELOPMENT**
- THE PROPOSED COMPLEX IS AN INTEGRATED CENTER COMPRISING SPACES AND RECREATIONAL AREAS WHICH SERVE AS A SOCIAL GATHERING SPACE FOR THE SOCIETY OF VARIOUS AGE GROUPS, IT CREATES A SPACE FOR PEOPLE TO GET OFF WORK, MEET AND ENJOY, BRINGING PHYSICALLY.
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## PROPOSAL 2 : NATUROPATHY CENTRE

AS MANY AS GIVEN NEW MEDICAL TREATMENT AND THERAPY, THE PROPOSAL IS TO BUILD AN ECO RESORT NEAR THE WILDERNESS, GIVE IT A NATURE, RESORTS, FORESTED WITH TREES AND WILDERNESS, THE BEST WAY TO LAUNCH THE WILDERNESS.



- CITY LEVEL BENEFITS**
- IT IS AN OUTPOST OF THE CITY, BALAMANDAL CANTONMENT OF THE AREA IS NEARBY.
  - THE AREA NEARBY IS NOT UNDER CONSTRUCTION, CITY DEVELOPMENT.
  - IT WILL BE USED TO ATTRACT TOURIST AND LOCAL PEOPLE AND BRING OFFSHORE AT BALAMANDAL CANTONMENT.
  - IT WILL BE USED TO ATTRACT TOURIST AND LOCAL PEOPLE AND BRING OFFSHORE AT BALAMANDAL CANTONMENT.
  - IT WILL BE USED TO ATTRACT TOURIST AND LOCAL PEOPLE AND BRING OFFSHORE AT BALAMANDAL CANTONMENT.

## PROPOSAL 2 : INCUBATION CENTER

INCUBATION CENTERS ARE AN IMPORTANT ROLE IN THE CITY AND GROWTH OF NEW BUSINESSES. THE PROPOSAL IS TO BUILD AN ECO RESORT NEAR THE WILDERNESS, GIVE IT A NATURE, RESORTS, FORESTED WITH TREES AND WILDERNESS, THE BEST WAY TO LAUNCH THE WILDERNESS.



- CITY LEVEL DEVELOPMENT**
- THEY PROVIDE THE CONCEPT OF GROWTH, INNOVATION, APPLICATION OF TECHNOLOGY.
  - GROWTH OF NEW BUSINESSES, INNOVATION, APPLICATION OF TECHNOLOGY.
  - GROWTH OF NEW BUSINESSES, INNOVATION, APPLICATION OF TECHNOLOGY.
  - GROWTH OF NEW BUSINESSES, INNOVATION, APPLICATION OF TECHNOLOGY.
  - GROWTH OF NEW BUSINESSES, INNOVATION, APPLICATION OF TECHNOLOGY.

## PROPOSAL 2 : SPORTS COMPLEX

SPORTS COMPLEXES ARE AN IMPORTANT ROLE IN THE CITY AND GROWTH OF NEW BUSINESSES. THE PROPOSAL IS TO BUILD AN ECO RESORT NEAR THE WILDERNESS, GIVE IT A NATURE, RESORTS, FORESTED WITH TREES AND WILDERNESS, THE BEST WAY TO LAUNCH THE WILDERNESS.



- CITY LEVEL BENEFITS**
- ATTRACTS TOURIST AND LOCAL PEOPLE TO PLAY AND ENJOY, BRINGING PHYSICALLY.
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  - ATTRACTS TOURIST AND LOCAL PEOPLE TO PLAY AND ENJOY, BRINGING PHYSICALLY.

## PROPOSAL 3 : HOSPITAL



- CITY LEVEL BENEFITS**
- THE AREA NOT UNDER CONSTRUCTION, CITY DEVELOPMENT.
  - AT THERE IS NO DEVELOPMENT AROUND THE AREA, NOT A PROBLEM FOR THE CITY, NATURE, CULTURE AND WILDERNESS.
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  - IT WILL BE USED TO ATTRACT TOURIST AND LOCAL PEOPLE AND BRING OFFSHORE AT BALAMANDAL CANTONMENT.

## PROPOSAL 3 : COLLEGE OF PHARMACEUTICAL SCIENCES

DANDA BAGH IS THE BEST COMMERCIAL COMPLEX AT INDORE AND BRINGING PHYSICALLY. THE PROPOSAL IS TO BUILD AN ECO RESORT NEAR THE WILDERNESS, GIVE IT A NATURE, RESORTS, FORESTED WITH TREES AND WILDERNESS, THE BEST WAY TO LAUNCH THE WILDERNESS.



- CITY LEVEL BENEFITS**
- CONTRIBUTE TO THE EDUCATIONAL FACILITIES, AS INDORE IS ALSO KNOWN AS EDUCATIONAL CITY OF MADHIA PRADESH.
  - LOCATED NEAR THE CITY AND BRINGING PHYSICALLY, BRINGING PHYSICALLY.
  - NATUROPATHY CENTRE, PROPOSED NEARBY CITY FOR OPPORTUNITIES, EDUCATIONAL OPPORTUNITIES TO LOCALS AS WELL.

## PROPOSAL 3 : SCHOOL OF DESIGN

THE DESIGN INSTITUTE CONSIDERS THE WAY TO THE GROWTH OF THE CITY AND GROWTH OF NEW BUSINESSES. THE PROPOSAL IS TO BUILD AN ECO RESORT NEAR THE WILDERNESS, GIVE IT A NATURE, RESORTS, FORESTED WITH TREES AND WILDERNESS, THE BEST WAY TO LAUNCH THE WILDERNESS.



- CITY LEVEL BENEFITS**
- 1. OPPORTUNITIES FOR STUDENTS.
  - 2. THE INSTITUTE BECOME A TANGIBLE PLACE FOR THE SOCIETY.
  - 3. THE INSTITUTE BECOME A TANGIBLE PLACE FOR THE SOCIETY.
  - 4. ECONOMIC GROWTH.

## PROPOSAL 3 : PUBLIC LIBRARY

A PUBLIC LIBRARY IS AN IMPORTANT ROLE IN THE CITY AND GROWTH OF NEW BUSINESSES. THE PROPOSAL IS TO BUILD AN ECO RESORT NEAR THE WILDERNESS, GIVE IT A NATURE, RESORTS, FORESTED WITH TREES AND WILDERNESS, THE BEST WAY TO LAUNCH THE WILDERNESS.



- CITY LEVEL BENEFITS**
- ATTRACTS TOURIST AND LOCAL PEOPLE TO PLAY AND ENJOY, BRINGING PHYSICALLY.
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  - ATTRACTS TOURIST AND LOCAL PEOPLE TO PLAY AND ENJOY, BRINGING PHYSICALLY.



## \_\_4th\_\_ Year Division \_\_c\_\_ class 2022-23

### Group Photographs of students



### List of students

BOBADE <b>ROHIT</b> SANJAY
RAJPURE <b>RUSHIKESH</b> ARJUNRAO
RAKH <b>MAHESH</b> DEVIDAS
DEORE <b>AKANKSHA</b> VILAS
RATHOD <b>ANUP</b> PANDIT
RAYKAR <b>ABHISHEK</b> SANDEEP
GODSE <b>OMKAR</b> PRAKASH
JAIN <b>TANYA</b> SAURABH
PATIL <b>SHRINIVAS</b> YASHWANT
HINGWE <b>PRANJAL</b> BHAURAO
PARGAONKAR <b>PRACHITI</b> PRAMOD
POTDAR <b>SHRADDHA</b> KALPESH
MALI <b>KIRAN</b> ANIL
MUSMADE <b>PURUSHOTTAM</b> D.
WAGH <b>POOJA</b> SANJAY
PATIL <b>RASHMI</b> SHARAD
SAWANT <b>SALONI</b>
SINGH <b>RAJSHREE</b>
PAWAR <b>VAIBHAVI</b> VIJAY
REWATKAR <b>MRUNAL</b> RAJABHAU
TAKAWALE <b>SAKSHI</b> SANTOSH
<b>POOJA</b> MISKAR
<b>YASH</b> KOLHATKAR
KSHIRSAGAR <b>DIPALI</b> KASHINATH

**List of faculties: Ar. ANUJA INAMDAR**  
**Ar. NATASHA SENAPATI**



SINHGAD TECHNICAL EDUCATION SOCIETY'S  
**SINHGAD COLLEGE OF ARCHITECTURE, PUNE**

**Study TOUR**

**(Ulwe- Navi Mumbai)**

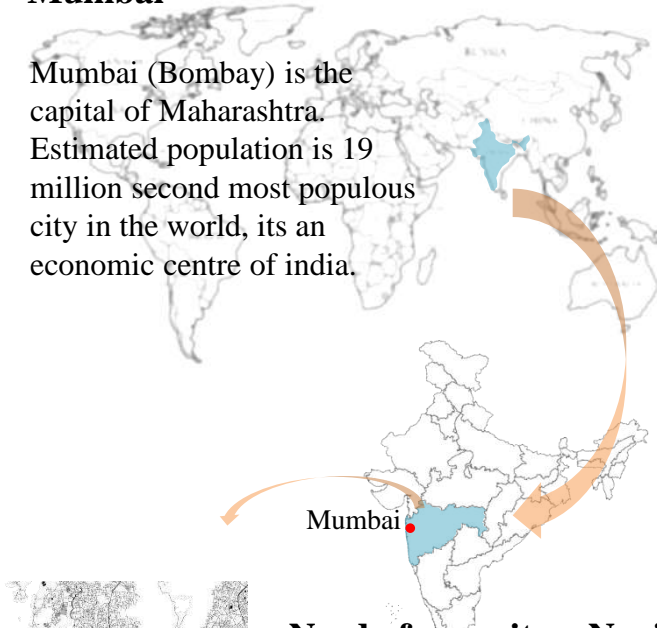
by

**IV YR B. Arch.**

**Division: D**

## Mumbai

Mumbai (Bombay) is the capital of Maharashtra. Estimated population is 19 million second most populous city in the world, its an economic centre of india.



## Why was there the need for Navi Mumbai?



Population growth in Mumbai

## Need of new city – Navi Mumbai

To reduce the growth of population in Mumbai city creating another urban centre.

To provide physical and social services to rise the living standards

To support industrial location policy which will eventually lead to balanced urban development.



## Mumbai

Mumbai (Bombay) is the capital of Maharashtra. Estimated population is 19 million second most populous city in the world, its an economic centre of india.

### Need of new city – Navi Mumbai

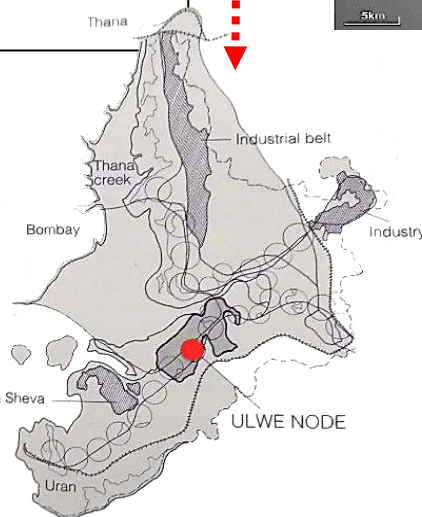
To reduce the growth of population in Mumbai city creating another urban centre.

To provide physical and social services to rise the living standards

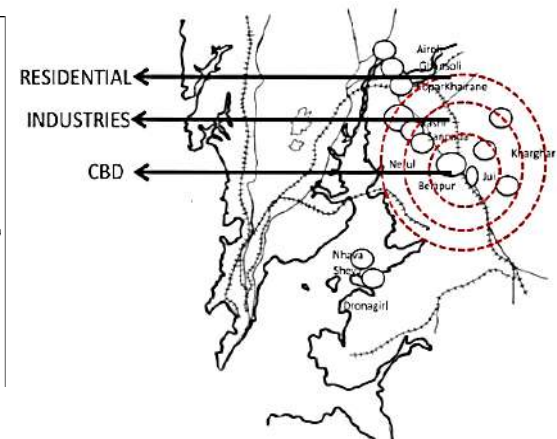
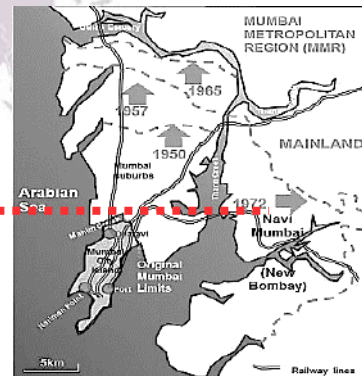
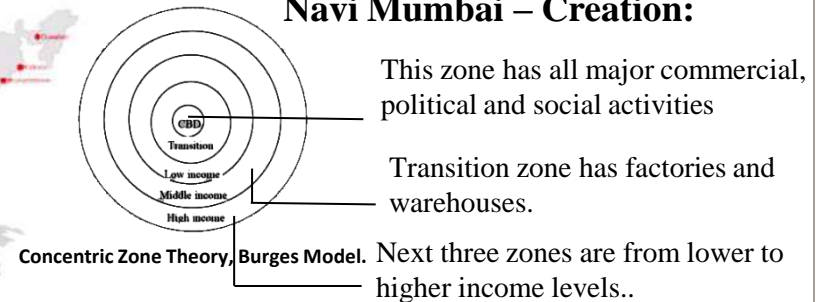
To support industrial location policy which will eventually lead to balanced urban development.

### Ulwe :

- Ulwe node is located on south of CBD Belapur across the creek.
- Development of this node was started in 1975-76.
- Part of Navi Mumbai main economic zone.
- Is adjacent to proposed Navi Mumbai International Airport.



### Navi Mumbai – Creation:

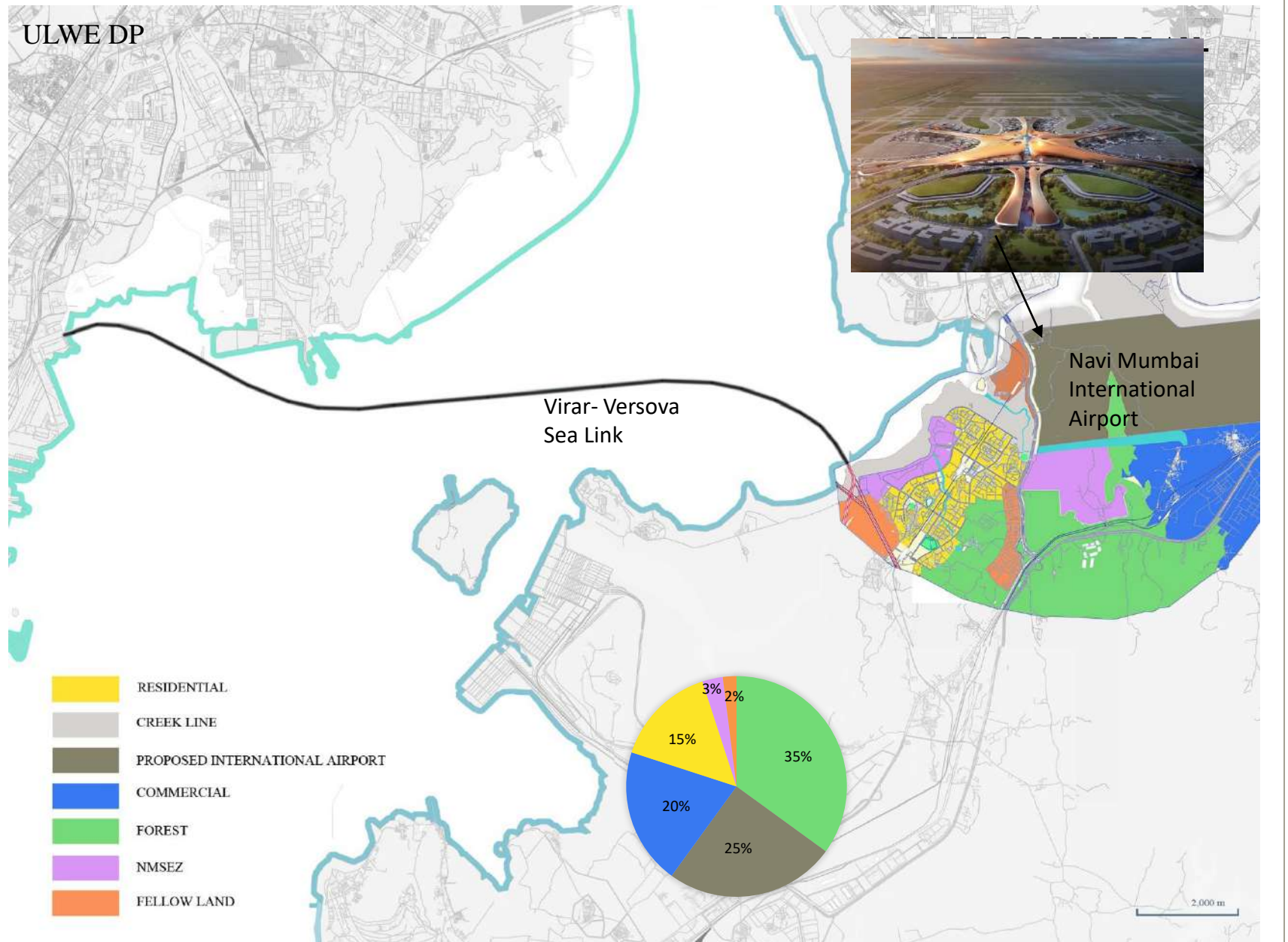


In 1971, the planning of the city began. Ar. Charles Correa, Ar. Shirish patel, Ar. Praveena mehta, Ar. R. K. Jha were appointed who formed the CIDCO under Companies act.



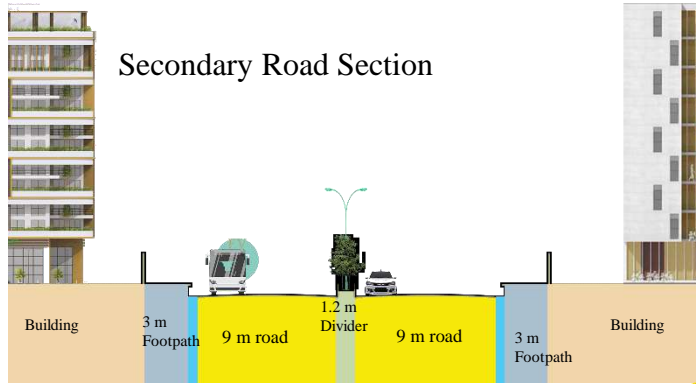


ULWE DP



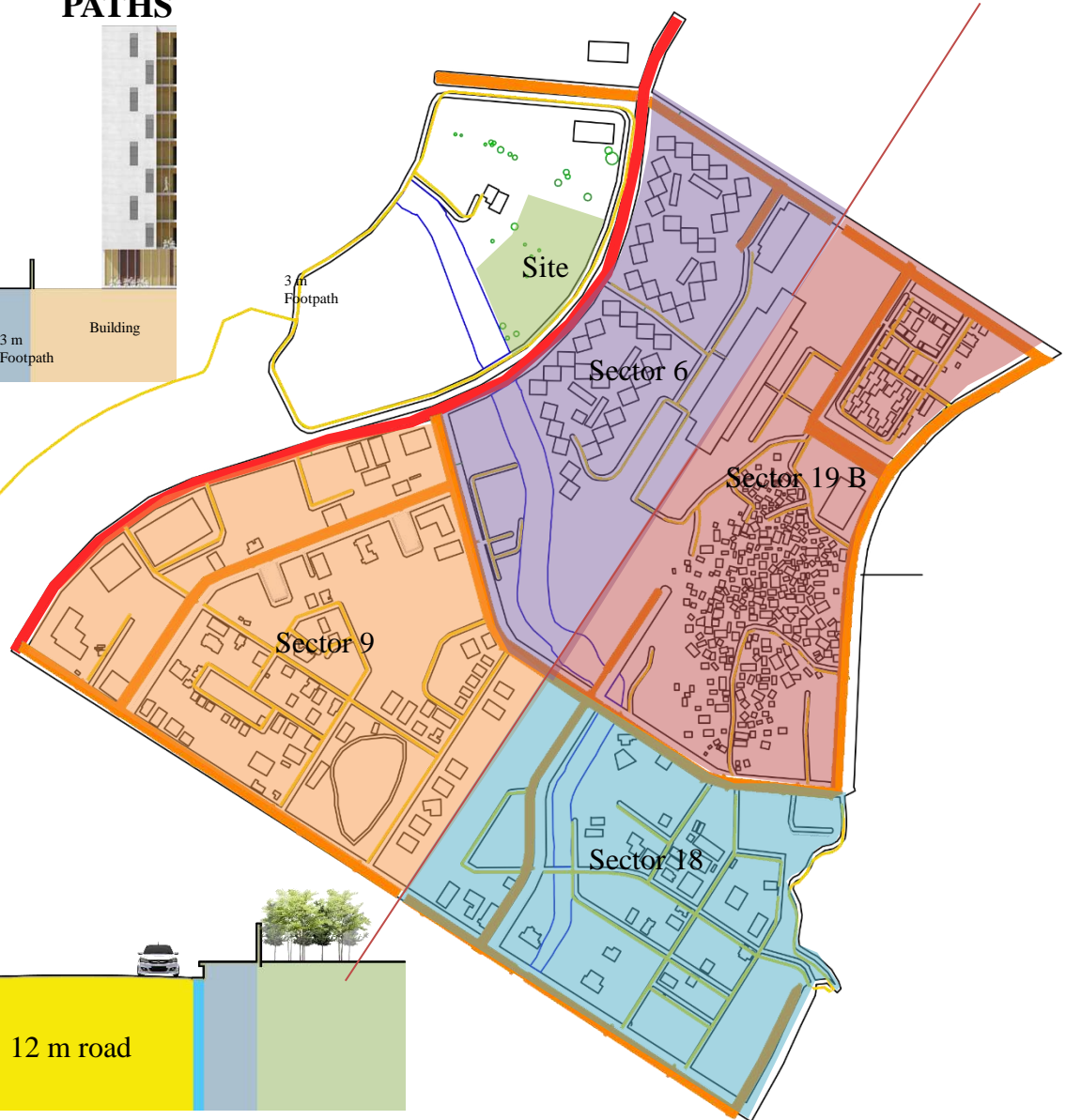
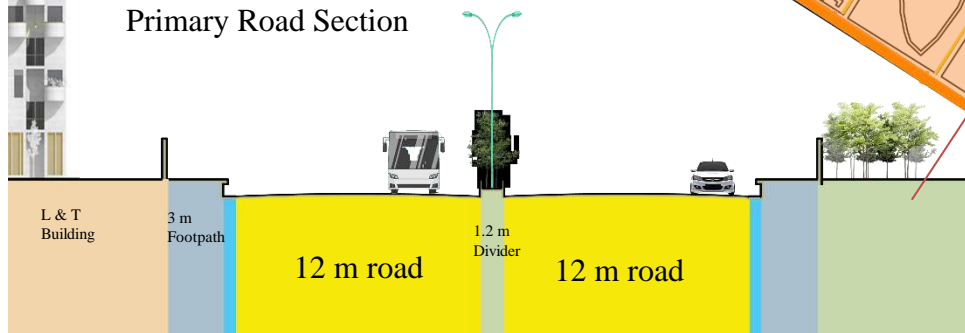
# PATHS

Secondary Road Section

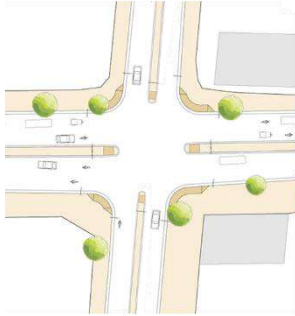


- Primary road
- Secondary road
- Tertiary road

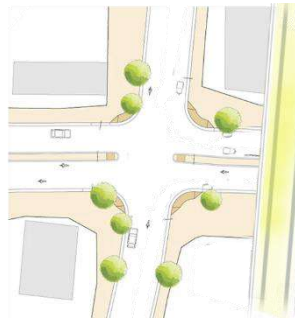
Primary Road Section



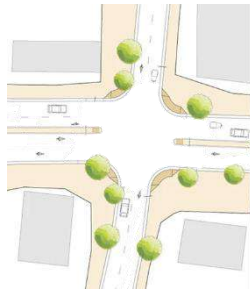
## NODES



Primary to Secondary node



Secondary to Secondary node



Secondary to Tertiary node





## LANDMARKS



1. Bamandongri station



2. Jio Institute



3. Radcliffe group Of schools



4. Shagun realty



5. Bhoomiputra Bhavan



6. Satyam Majestic



7. Mahavir Mannat



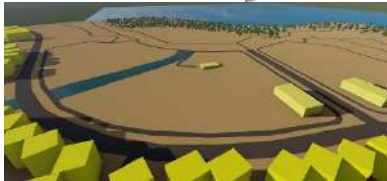
8. Kopar Lake



9. Delta Tower II



## EDGES



1. Sea Edge



2. Creek Edge



3. Road Edge



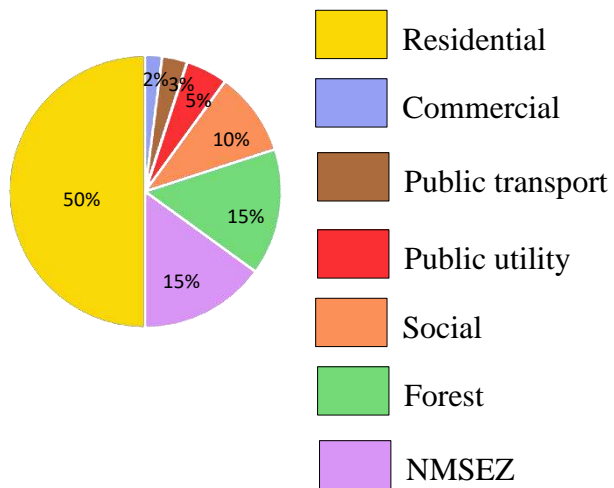
4. Railway Edge





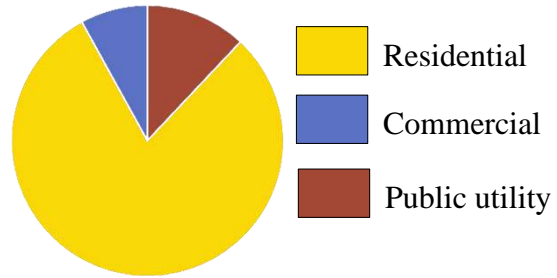
## DISTRICT

- Railway station in the centre which is accessible from all sides.
- 50% Residential Under-development projects; with consideration of future.
- Slow development.

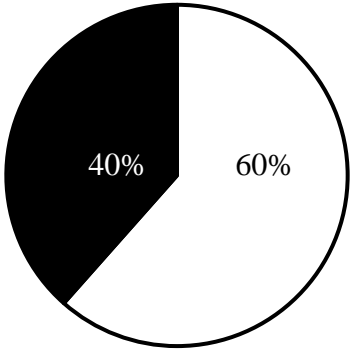




## BUILDING USE MAP



**BUILT VS UNBUILT**



## OPEN SPACES



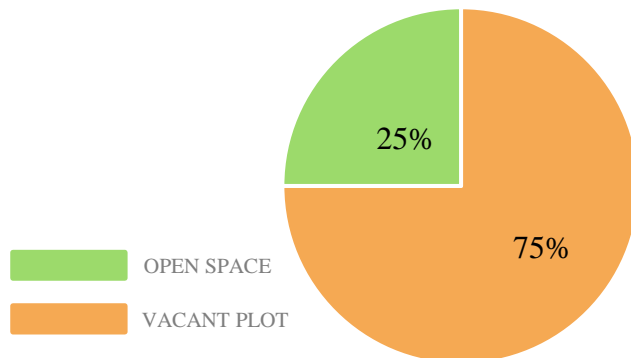
Rock garden



Devbhoomi garden

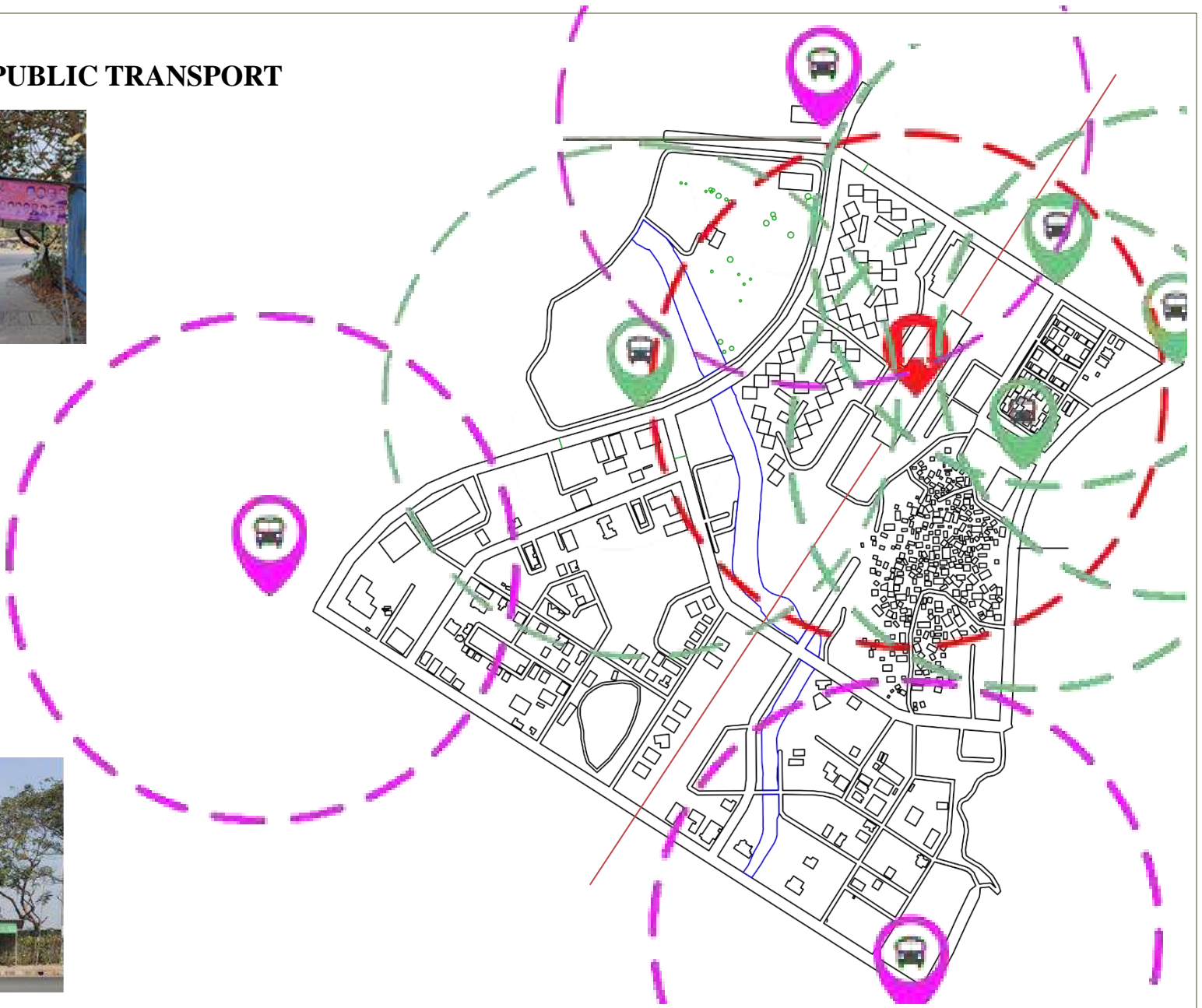


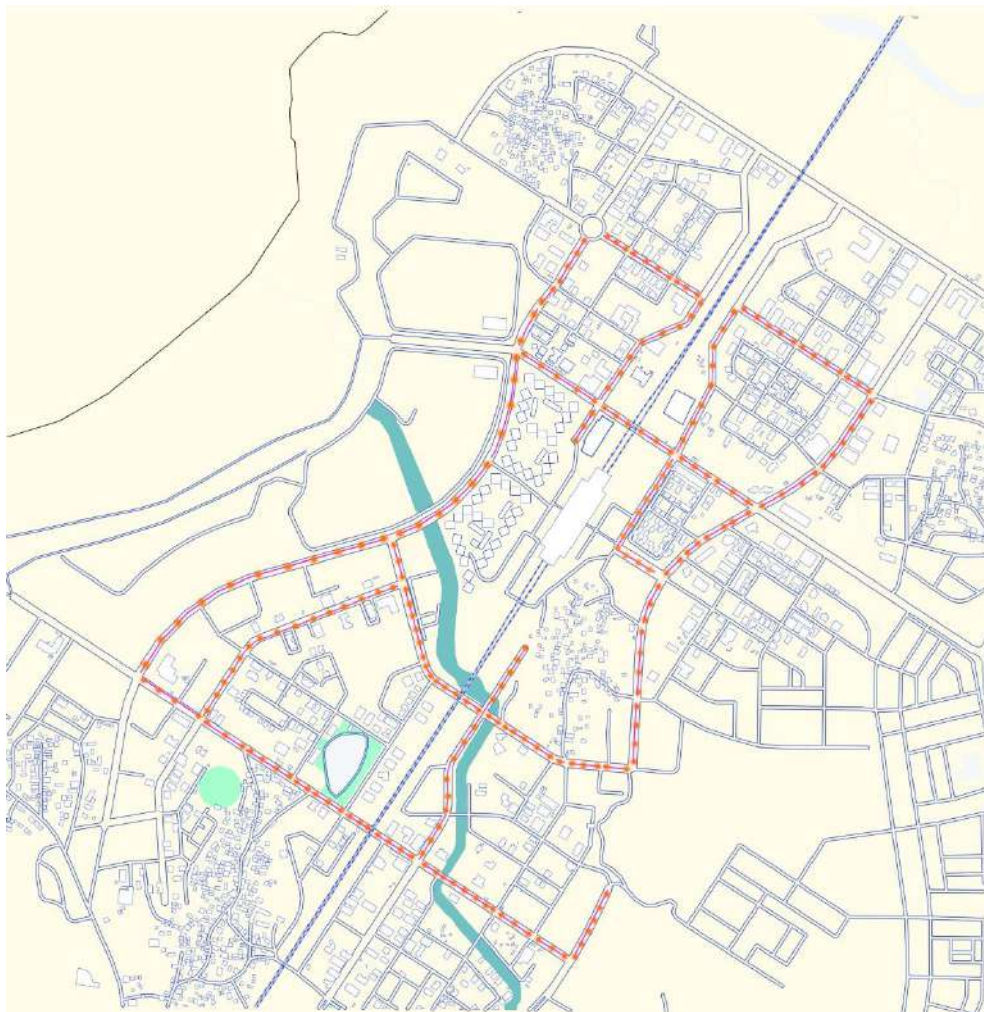
CIDCO pond garden



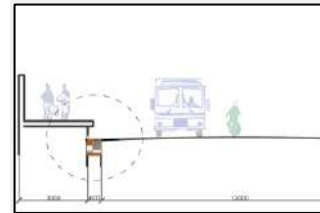
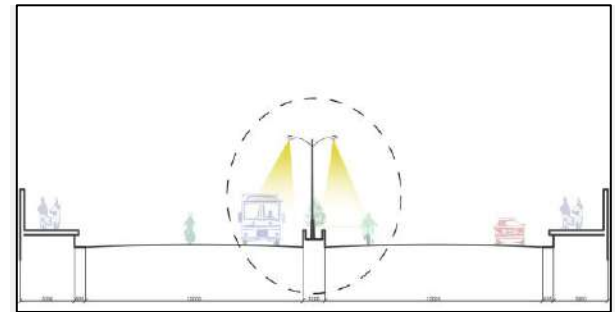


## PUBLIC TRANSPORT

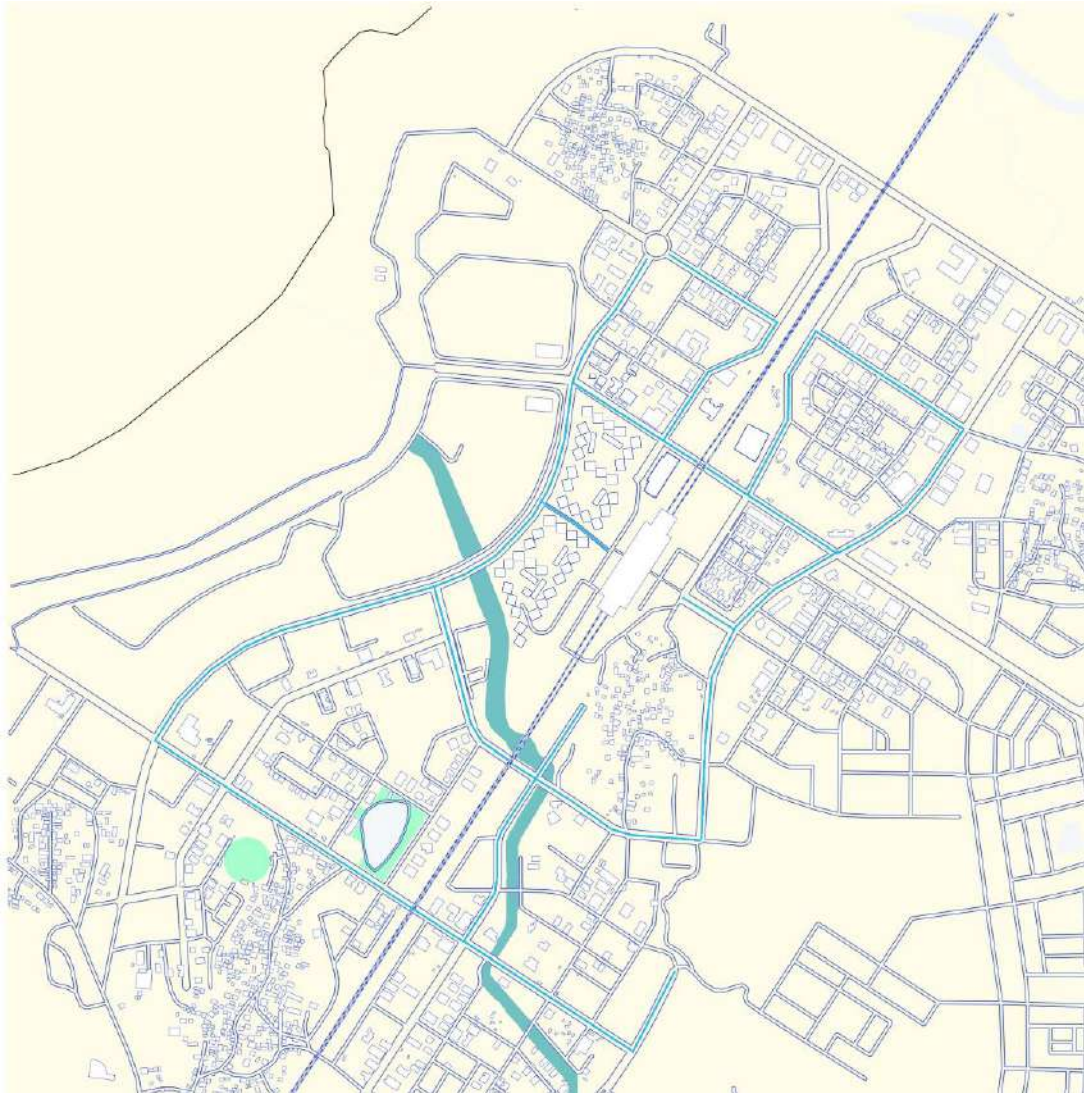




LIGHTING LAYOUT 







WATER SUPPLY LAYOUT



Morbe dam, owned by Navi Mumbai Municipal Corporation (NMMC), the only civic body to purchase a dam of its own post-independence.

It's a main source of water supply needs.

NMMC supplied around 389 MLD of treated water to Navi Mumbai city from the Bhokarpada treatment plant.



## ISSUES IDENTIFIED-

### Paths:

- Footpaths are not covered
- There were no dustbins on footpaths
- Open gutters
- Vegetation
- Street furniture

### Nodes:

- No traffic lights
- No pedestrian crossing designed

### Edges:

- Security
- Weather, hightide
- One side residential other side traffic
- Noise



## MMRDA –Mumbai Metropolitan Region Development Authority

- MMRDA was established in accordance with the Mumbai Metropolitan Development Act, 1974, on 26th January, 1975.
- It prepares plans, formulates policies and programs, implements projects and helps in directing investments in the Region.
- It is responsible for the balanced development of the MMR.

## Smart City Projects :

### NAINA (Navi Mumbai airport influenced notified area.) Smart City :

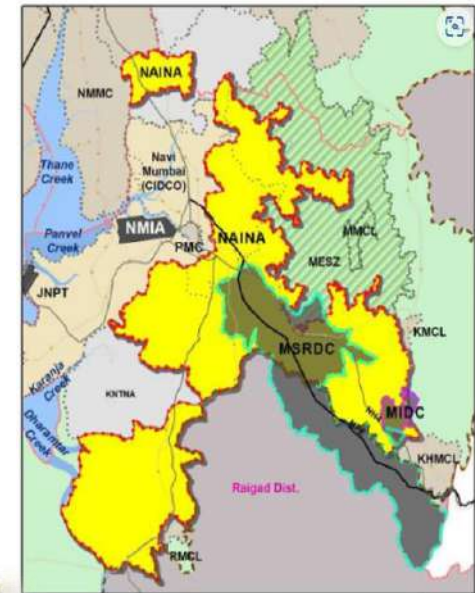
- NAINA is the biggest and most developed smart city project in India.
- It is developing near international airport of Navi Mumbai.
- Area occupied by smart city is 561 sq. km.

### Navi Mumbai Metro :

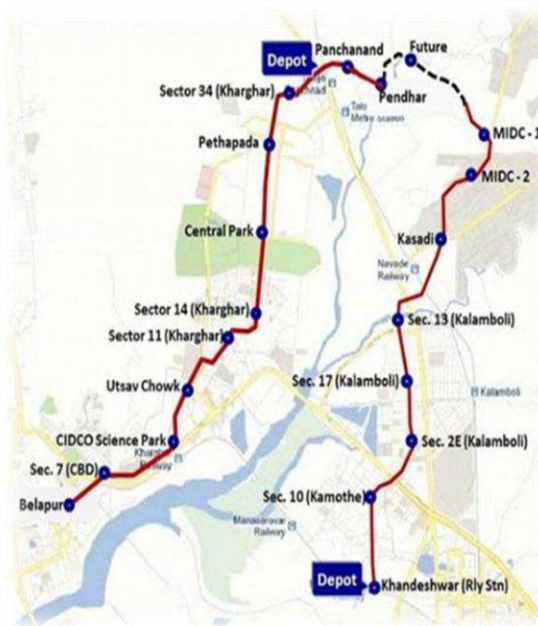
- Navi Mumbai Construction work was started in November 2011 and is expected to be completed by 2023 owing to delays.
- It covers total distance of 230km out of it 11km completed and final approved.

### Water Taxi :

- Water taxi project was under construction since 2018.
- Service is started from 7 February 2023.
- It has capacity of 200 passengers and travel from Navi Mumbai to Mumbai in 60 minutes



map of NAINA, reduced to 474 sq km, September 2017. source:CIDCO



Navi Mumbai Metro Route.



Water Taxi



**As per NMSEZ,  
what shall be  
allowed on the site?**

Industrial, commercial,  
public building, health  
care, anything except  
residential





Student names-

1. Sanjana Ubale
2. Chelsea Silvera
3. Siddhant Jaiswal
4. Saurabh Tanvade
5. Sakshi Swami
6. Akshay Sontake
7. Rushikesh Salunkhe
8. Aniket Sutar
9. Jayesh Patil
10. Pratiksha Wankar

Guided by faculty-

Ar. Harshada Akolkar

Ar. Sejal Desarda

Ar. Kirti Bajare

## TIMELINE OF THE TOUR (17<sup>th</sup> January -22<sup>nd</sup> January 2023):



### DAY-1 CHANDIGARH



### DAY-2



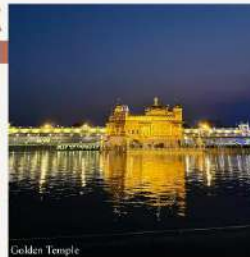
### DAY-3



### DAY-6



### AMRITSAR



### DAY-5



### DAY-4



## LE CORBUSIER'S CHANDIGARH.

Nehru's Vision for Chandigarh:

"Let this be a new town symbolic of the freedom of India, unfettered by the traditions of the past...An expression of the nation's faith in the future."

Albert Mayer and his planning:



ALBERT MAYER LAID OUT A PLAN ON IDEAS SUCH AS - LOCATING A CITY BETWEEN 2 BOUNDARY RIVERS; A FAN SHAPED PLAN HAVING 3 SUPER-BLOCKS TO MAKE A DISTRICT.

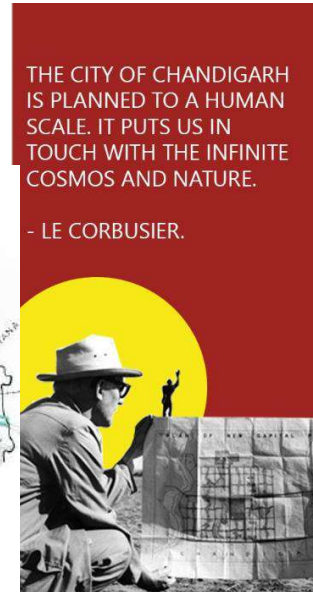


Albert Mayer, the first appointed architect for Chandigarh

A fan-shaped proposal for the planning of Chandigarh, having 3 superblocks.



Le Corbusier's Analogy.



THE CITY OF CHANDIGARH IS PLANNED TO A HUMAN SCALE. IT PUTS US IN TOUCH WITH THE INFINITE COSMOS AND NATURE.

- LE CORBUSIER.

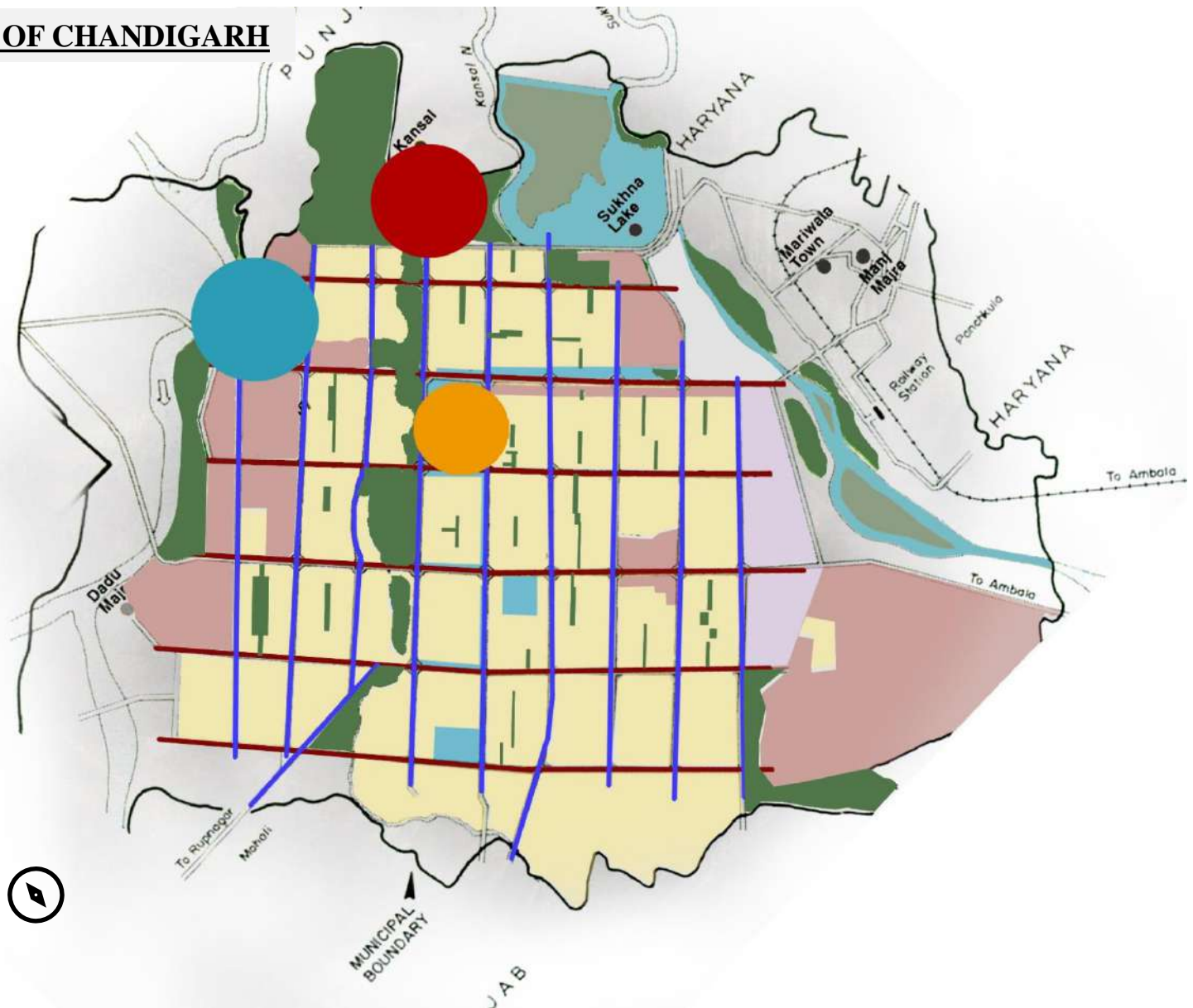
Pandit Jawaharlal Nehru  
Hindustan Times, New Delhi(1950)

Evolution of Chandigarh:

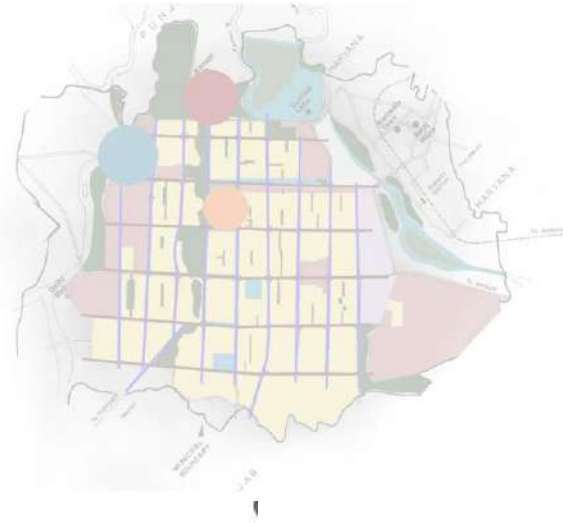


## CITY PLAN OF CHANDIGARH

1. Head
2. Heart
3. Intellect
4. Lungs
5. Circulatory system



## **STUDY AREA CHANDIGARH**



### **AREAS :**

SECTOR 3,4 : 430 X 800

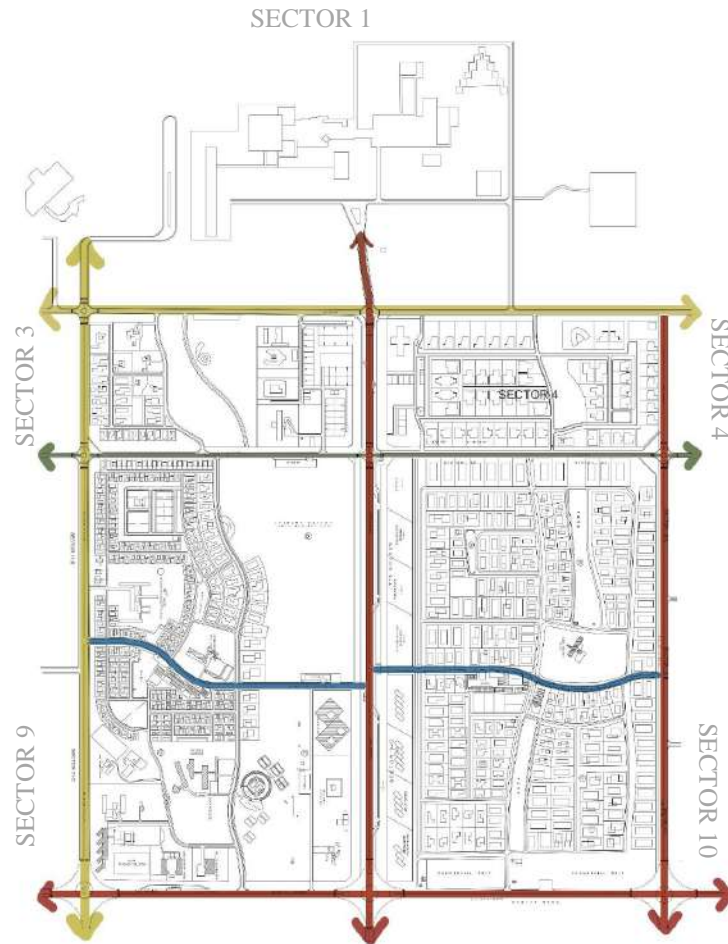
SECTOR 9,10 : 800 X 1200

### **SECTOR 1,3,4,9,10**

**DOES INDIA'S FIRST PLANNED CITY RESPOND TO THE 21<sup>ST</sup> CENTURY'S URBAN NEEDS?**

## **PRINCIPLES OF KEVIN LYNCH :**

### **PATHS:**



- This type of bifurcation allows easy transit for everyone.
- Different sections for each typology of the road are designed keeping in mind the activity pattern and density.



V1 : Roads connecting Chandigarh to other major cities.



V2: Roads connecting major avenues within Chandigarh.



V3

V4: Roads within sectors having commercial zones along the southern side.



V5



V6



V7

Road sections



## PRINCIPLES OF KEVIN LYNCH :

### NODES:



- Nodes play an important function in the smooth flow of traffic without the need for traffic lights.
- The hierarchy of the intersecting paths varies with differing node designs.



Circulation



Junction 09.



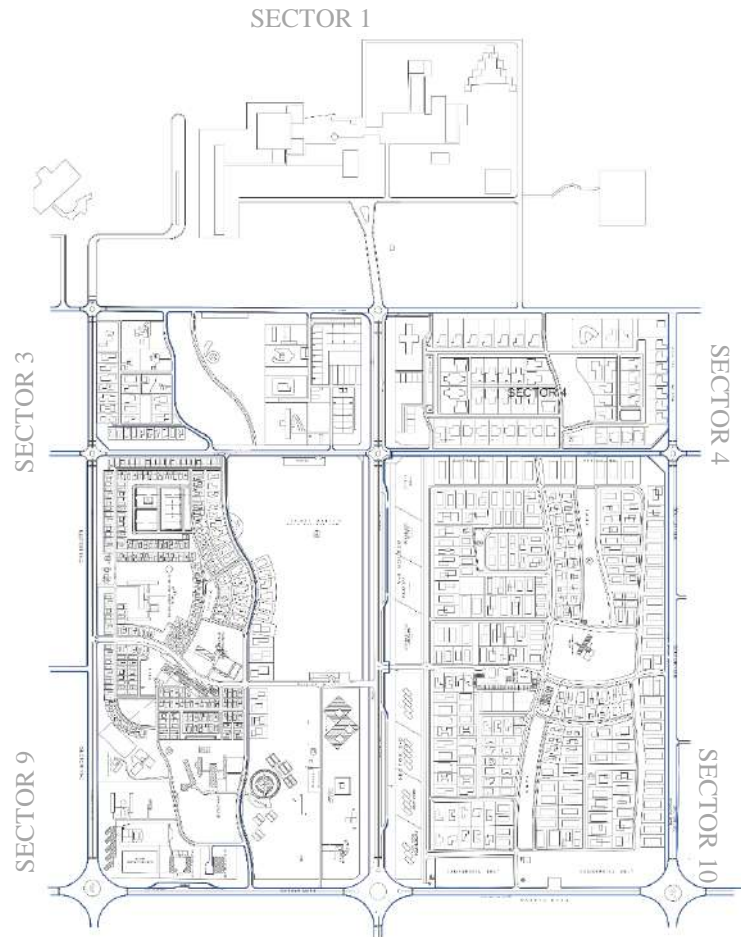
Matka Chowk.



Sector 3 & 4 round-about.

## PRINCIPLES OF KEVIN LYNCH :

### EDGES:



- The concept of edges is seen distinctly in the form of bicycle paths, pedestrian walkways, and plantations along the periphery of the walkways.
- These elements are sensitively designed for all user groups.



Walking/Cycling track.



Walking/Cycling track.



Bus Stop in Sector 9.

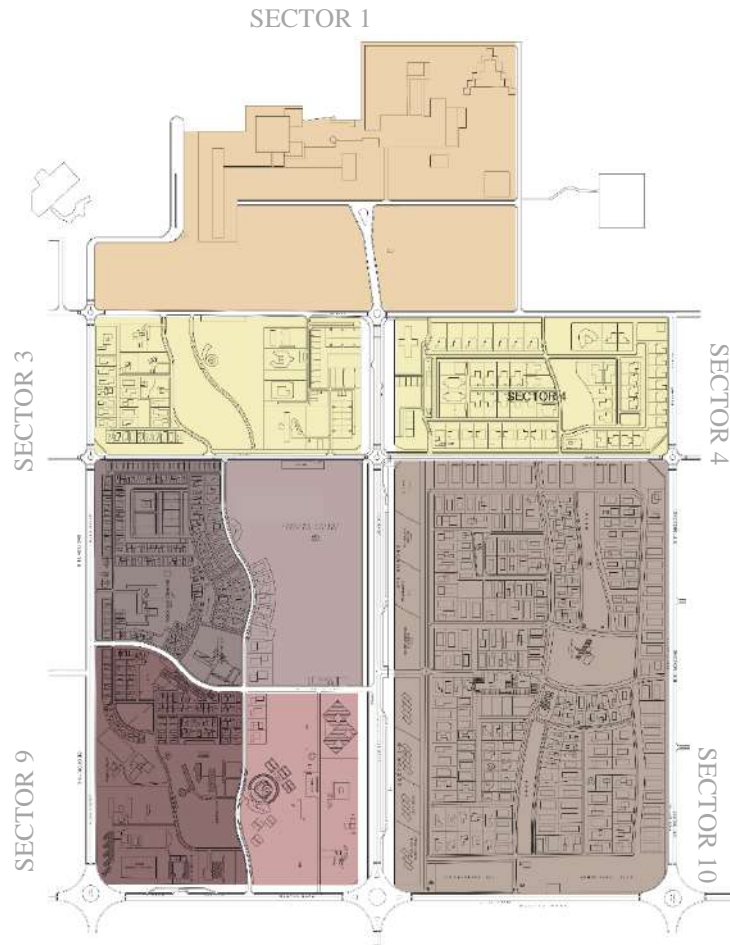


Cycling Track in Sector 9.



## PRINCIPLES OF KEVIN LYNCH :

### DISTRICTS:



Aerial view of district



Brick façade in sector 3



College of arts in sector 10

- A district is defined by elevational forms, the material used, and in some cases the typology of sectors.
- A clear division according to building typology and activity is observed within the study area.



## PRINCIPLES OF KEVIN LYNCH :

### LANDMARKS:



- There are city-level landmarks evenly distributed throughout the city.
- Sector-level landmarks are identifying characters of the particular sector.



Capitol Complex



War Memorial



Carmel Convent School



Museum Complex



Leisure Valley

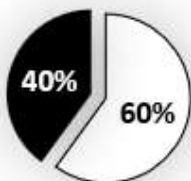
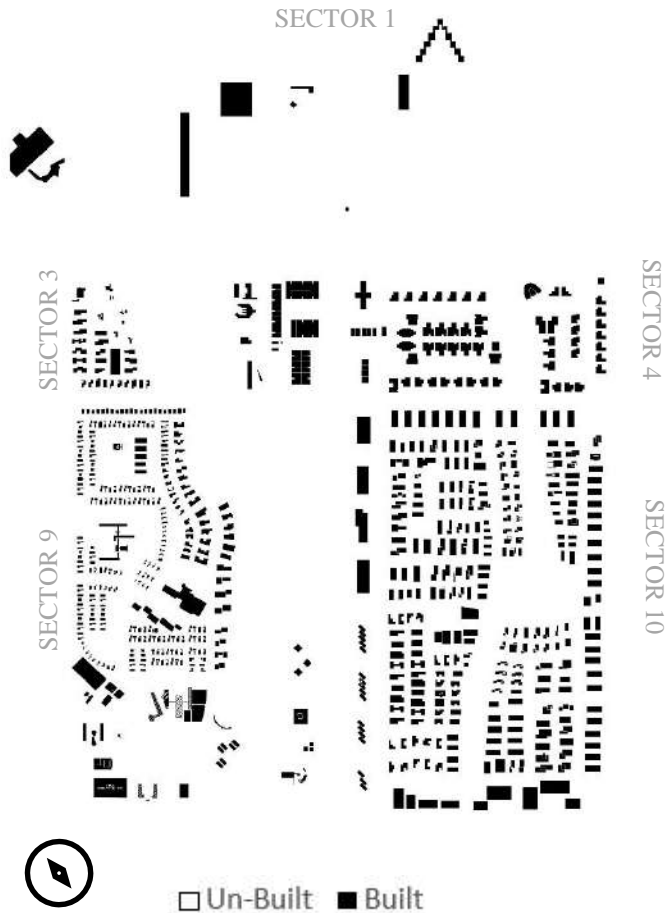


Tennis Stadium



Rock Garden

## BUILT UNBUILT (FIGURE GROUND):



### Analysis-

- The building footprints vary as per the profession of the residents and a distinct variation in the footprint can be seen.



### Issues-

- The density of built spaces in residential areas is higher leading to a Mohalla-like character within the sector.
- The built masses' footprint is either large or smaller footprints in residential areas.

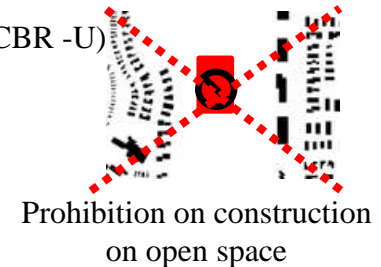


Dense residency

### Rules & Regulation

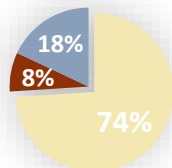
- No further construction of community facilities in the planned open spaces is permitted which interferes with pedestrian movement, availability of green spaces, and natural drainage

(as per CBR -U)



	Residential	Administrative	Institutional	Commercial
Ground Coverage max.	50	40	40	40
FSI max.	2	1.25	1.50	0.75

## BUILDING USE-



Institutional  
 Commercial  
 Residential

## Analysis-

- Due to the pre-existing regulations, identification could be done based on the materials used.
- The segregation of zones could be more effectively executed for the commercial zones.

## Issues-

- As these sectors have dense residential zones, the need for general stores in the near vicinity is felt.



Residential building.  
(No restriction on material)



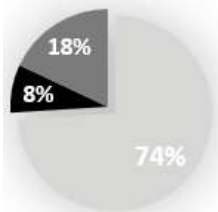
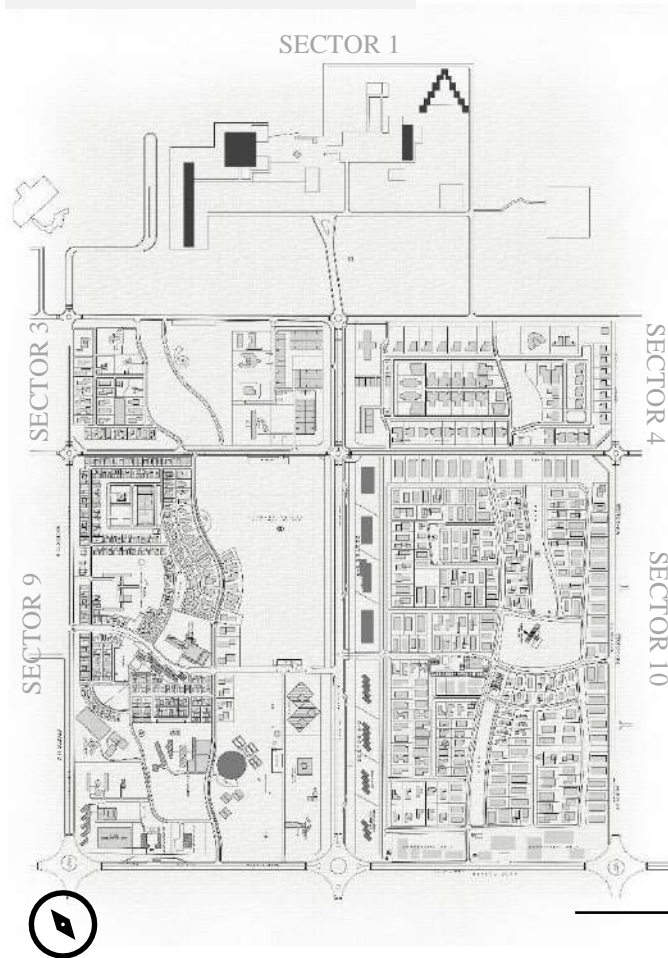
Institutional building Art museum  
(restricted to brick & concrete)



Commercial building sector 9  
(restricted to brick & concrete)



## **BUILDING HEIGHT:**



- G+5 & <
- G+3 to G+5
- G to G+2

### **Analysis-**

- Due to the height restrictions, there is a lack of climate barriers.

### **Issues-**

- As these sectors come under the executed works of Ar. Le Corbusier, they are not permitted to exceed the height limit leading to insufficient space for the growing urban population.

### **Rules & Regulation** (as per CBR -U)

- Architectural controls restricted only the footprint, volume, and height of the house.
- The height of these houses was restricted to the double story in most cases providing an unhindered view of the distant Shivalik hills from the northern sectors, where most of the architectural controls houses are located



Residential



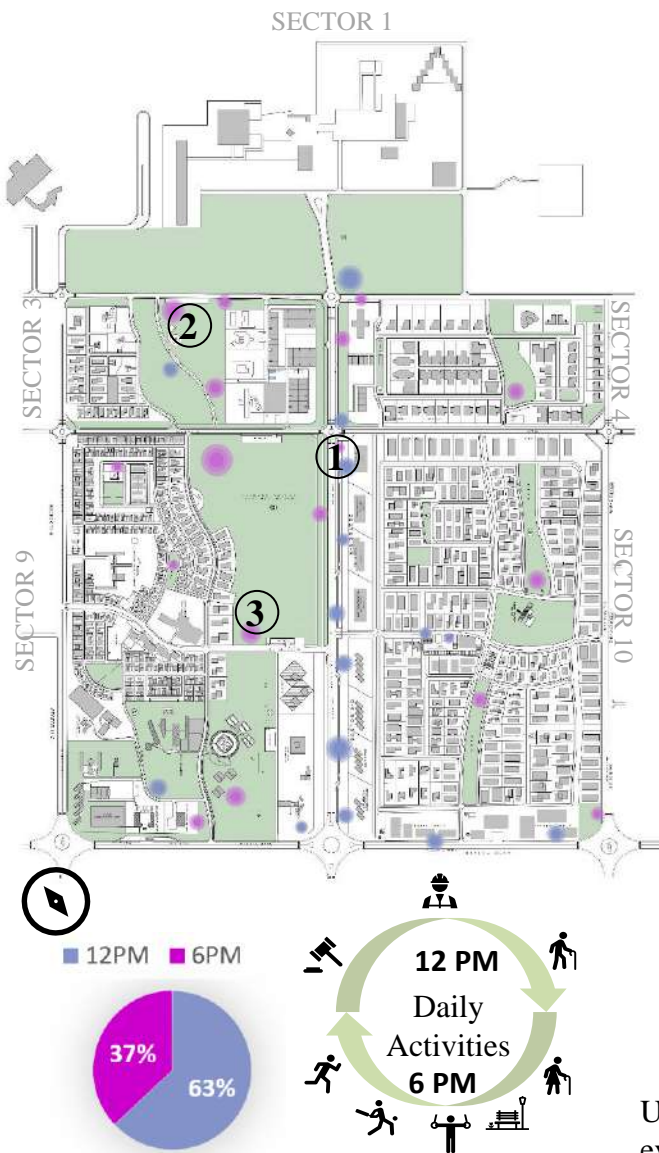
Commercial



Administrative

	Residential	Admin.	Institutional	Commercial
Set back	As per zoning / frame control			
FSI max.	2	1.25	1.50	0.75
Plinth max.	Min. 0.3m to Max. 1.2m			

## ACTIVITY MAPPING:



### Analysis-

- The purpose of designing organized green spaces has been fulfilled as the people are seen engaging in those spaces.

### Issues-

- The hawker's and other users' movement along V4 was not defined leading to inconvenience to the users.

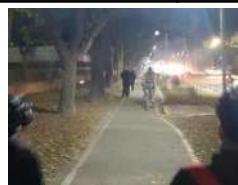


1.Cycle

2.War memorial visit

3.Relaxation & playing in the Boganvilla garden

	12 pm	6 pm
Age Group	Senior citizens Adults (workers)	Senior citizens, Adults, Teenage, Kids
Activities	Relaxation, Gathering, Maintenance	Walking, jogging Fencing classes Football



Use of Cycle tracks in the evening.



Elderly people at the War Memorial.



People in the Leisure Valley.

## INTERVIEWS & INTERACTION:



Interaction with **Ar. Sangit Sharma**

- The city of Chandigarh is based on a strong philosophy of garden city and stands strong even today.
- Even the smallest of details are carefully planned and user-oriented Is monotony an issue?
- I think the monotony brings a sense of discipline for the users after a certain point.



Army officer Rajat Bhatia

- Oh so are you studying about the architecture of the city?
- You are visiting the elite area of the city but we the working class live in the outskirts which are nothing like this We have to travel large distances for work.
- This city is not the same for everyone.



Constable Sukhvinder Singh

Oh! So you all are architecture students. Do you know the city of Chandigarh is planned by the famous architect Le Corbusier?

What do you like about living in the city?

Yes, it is nice living in such a clean and disciplined area. The services are well planned like the drainage system.



### SMART CITY COMPLETED PROJECTS:

- Re-modification of intersections
- E Charging Points
- City Surveillance-Installation of CCTV
- Street Lighting (Installation of LED streetlighting)
- Dedicated Cycle Tracks shared with Footpath (PART-1)

### WORK ORDER PROJECTS:

- Revitalization of proposed Urban park
- Smart Class Room (total 150 Classrooms per school in 5 schools)Underground power cabling



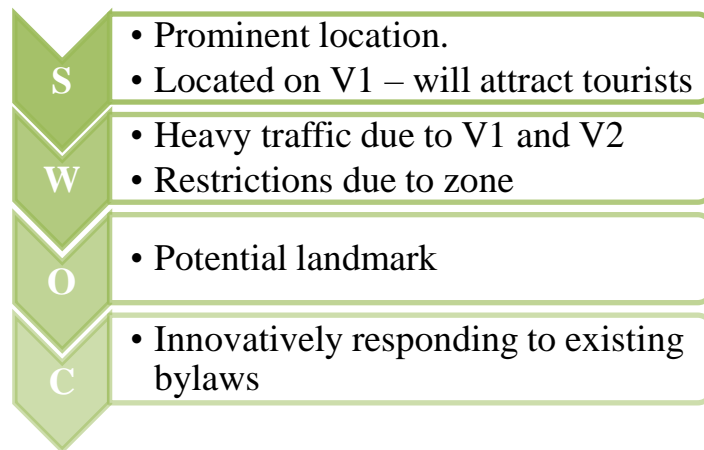
## Policy Guidelines For Study Area:

Street structure on the interior of sectors for senior citizens or other users.

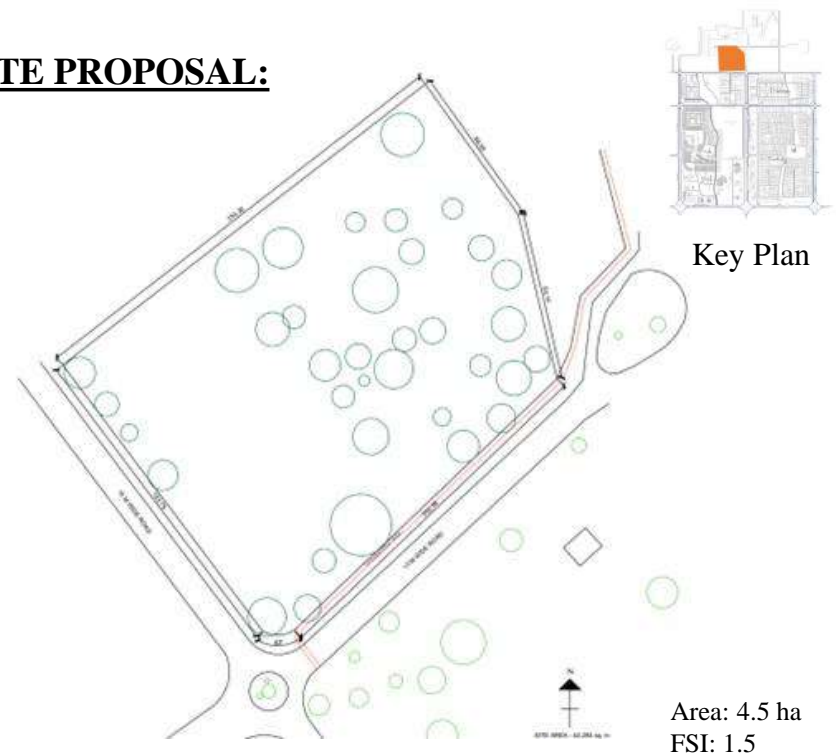
Provision of garbage bins, more cycle stands as compared to cyclist.

Pedestrian walkways adjacent to bungalows are used for parking or personal landscape. Clear path should be provided.

On v2 one street lamp does not suffice the stretch of green cover and footpath. Proper lighting on roads should be provided for security purpose.



## SITE PROPOSAL:



### Proposals listed based on sector study:

- Cultural center
- City Library
- Knowledge Center
- Museum
- Community Complex

## **4<sup>th</sup> Year Division D class 2022-23**

**Group Photographs of students visited CHANDIGARH-**

**List of students**

1. Tanushri Kundu
2. Apurva Patil
3. Shivam Patil
4. Nirantari Shinde
5. Mrunal Shirke
6. Abhishek Shirsat
7. Pranav Shivade
8. Shivansh Agrawal
9. Shruti Pandey
10. Prajakta Surate
11. Manaswi Topale
12. Janhavi Yerawar
13. Soham Varat
14. Advait Sonune



**List of faculties: Ar. Kirti Bajare  
Ar. Sejal Desarda  
Ar. Harshada Akolkar**





*Students  
on field*



