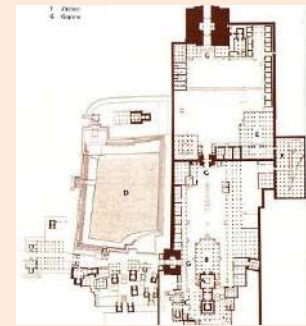


SINHGAD COLLEGE OF ARCHITECTURE, PUNE

VIRTUAL STUDY TOUR REPORT

2020-21

(B. Arch. II to IV Years)



Architectural Virtual Study tours: Every year study tours are conducted for all students from First year to Fourth Year B. Arch. This year, due to COVID 19 pandemic no tours were carried out, hence, virtual study tours are designed linking with Architectural Design Projects. Faculty and students of each class decided the place and studied based on secondary resources available in internet, so that the students get exposure of various places and would be equipped to design in varied physical and socio-cultural context. This Endeavour is conducted by Second, Third and Fourth year B. Arch. classes as admission to first year was delayed. This study comprises of following parts:

1. Study of the area and context.
2. Identification of site and finalization of Design project
3. Architectural Design project: site, preamble, requirement briefs
4. Virtual study tour report & documentation

Published by : IQAC

SINHGAD COLLEGE OF ARCHITECTURE.

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| II B | Hampi | Ar.Leena Jain, Ar.Anuja Gurjar, Ar.Ila Shende |
| II C | Bhutan | Ar.Manjusha Zalte, Ar.Trishna Mahadkar |
| II D | Goa | Ar.Tejaswini Jangale, Ar.Mukta Pandit |
| THIRD YEAR B. ARCH. STUDY TOURS | | |
| III A | Nagpur | Prof. Kalpana Hadap, Ar.Avani Topkar, Ar. Akshar Mendhe |
| III B | Chandigarh | Ar.Bijal Vakharia, Ar.Niketa Patil, Ar.Sarika Thakoor |
| III C | Chandigarh | Ar. Samvedna Jadhav, Ar. Kavita Patil, Ar. Ankoor Sakhare |
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| IV A | Nagpur | Ar.Pranoti Lad, Ar.Shreyas Paranjape, Ar.Aditi Mahajan |
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SINHGAD TECHNICAL EDUCATION SOCIETY'S
SINHGAD COLLEGE OF ARCHITECTURE, PUNE

VIRTUAL STUDY TOUR

NAGPUR

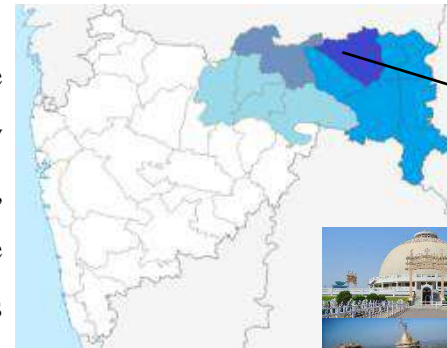
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Second Year B. Arch.

Division A

Introduction

Nagpur is the third largest city and the winter capital of the Indian state of Maharashtra. It is the 13th largest city in India by population and according to an Oxford Economics report, Nagpur is projected to be the fifth fastest growing city in the world from 2019 to 2035 with an average growth of 8.41%. It has been proposed as one of the Smart Cities in Maharashtra and is one of the top ten cities in India in Smart City Project execution.



Dark Blue : Nagpur District
Source : Wikipedia



Clockwise from top : [Deekshabhoomi](#), Dragon Temple, Ramtek Temple & Chitnavis wada

Geographical

- 1. Topography** : Nagpur is located at the exact center of the Indian Subcontinent, close to the geometric center of the quadrilateral connecting the four Major metros of India. The city has the Zero Mile Stone locating the geographical center of India, which was used by the British to measure all distances within the Indian subcontinent. The city lies on the Deccan Plateau of the Indian subcontinent and has a mean altitude of 310.5 meters above sea level. The underlying rock strata are covered with alluvial deposits resulting from the flood plain of the Kanhan river.
- 2. Climate** : Nagpur has composite type of climate i.e. hot & dry, warm & humid as well as cold climates. In summer, winds are hot and dusty. In monsoons, strong winds with presence of high humidity. It receives about 163 mm of rainfall in June. The amount of rainfall is increased in July to 294 mm. Gradual decrease of rainfall has been observed from July to August (278 mm) and September (160 mm)
- 3. Temperature** : Summers are extremely hot, lasting from March to June, with May being the hottest month. Winter lasts from November to February, during which temperatures drop below 10 °C (50 °F). The highest recorded temperature in the city was 47.9 °C on 29 May 2013, while the lowest was 3.5 °C on 29 December 2018.

Source: <https://en.wikipedia.org/wiki/Nagpur>

Regional Context :

Nagpur is the winter capital of the state of Maharashtra, a fast growing metropolis and third largest city in Maharashtra after Mumbai and Pune. With a population of 46,53,570 (2011) Nagpur Metropolitan Area is the 13th largest urban conglomeration in India. It has also recently been ranked as the cleanest city and the second greenest city of India . In addition to being the seat of annual winter session of Maharashtra state assembly “Vidhan Sabha”, Nagpur is also a major commercial and political center of the Vidarbha region of Maharashtra, and is also famous throughout the country as “Orange City” for being a major trade center of oranges that are cultivated in the region. In addition, the city also derives political importance from being the headquarters for the RSS and an important location for the Buddhist movement.



Central Provinces and Berar, 1903.
Princely states are shown in yellow.

Historical context :

- 18th century - the city was created by the leader of Gond Dynasty named Bakht Buland Shah in the first half of the century.
- 3rd century - King Vindhyaśakti is known to have ruled the Nagpur region.
- 4th century - The Vakataka Dynasty ruled.
- 11th century - The Paramaras of Malwa controlled the Nagpur region
- 1296 - In the 17th century, the Mughal Empire conquered the region.
- 18th, century - Bhonsles of the Maratha Empire established the Nagpur Kingdom based in the city.
- 1853 to 1861 - The British took control of Nagpur (Central Provinces and Berar of which Nagpur became the capital)
- After India gained independence in 1947, Central Provinces and Berar became a province of India.
- 1956, Nagpur and Berar regions were transferred to the state of Bombay, which was split into the states of Maharashtra and Gujarat in 1960.

Source: <https://en.wikipedia.org/wiki/Nagpur> & <https://nagpur.gov.in/history/>

Evolution of the place

The city was founded by the Gonds but later became part of the Maratha Empire under the Bhonsles. The British East India Company took over Nagpur in the 19th century and made it the capital of the Central Provinces and Berar. After the first reorganization of states, the city lost its capital status but according to the “Nagpur Pact” between political leaders it was made the second capital of Maharashtra. Nagpur is also called, “Tiger Capital of India ” as it connects many Tiger Reserves in India to the world. It is among the important cities for IT sector in Maharashtra after Pune. Nagpur lies precisely at the center of the country with the Zero Mile Marker indicating the geographical center of India.

The Nag River, a tributary of the Kanhan River, flows in a serpentine path and is therefore named “Nag”, the Marathi word for snake. And hence, the river and city is named as Nagpur.. While others says that the river flows through the old city of Nagpur and hence the city is named after this river. “Pur” is a common suffix given to cities, villages and towns across India, and is often simply translated “city” The seal of Nagpur Municipal Corporation depicts a cobra in the water of a river.

Cultural / traditional aspect :

Nagpur culture is an amalgamation of the various cultures prevalent within India. Nagpur culture is a cosmopolitan culture that projects the faiths and beliefs of different communities. The culture of Nagpur boasts of many different religions and beliefs. The territory of Nagpur presents an array of religion within Nagpur, to name them: **Hinduism, Islam, Jainism, Buddhism, Christianity, Sikhism, etc.**

Moreover, the culture of Nagpur has strong bearing upon the folk culture of Nagpur. The folk culture of Nagpur is comprised of the folk dances and folk songs, which were inherited by the people of Nagpur from their ancestors. Some of the folk dances and songs that play a significant role in the culture at Nagpur are as follows:

Source: <https://nagpur.gov.in/history/> & <https://www.mapsofindia.com/nagpur/people-culture-festivals/culture.html>



Ganesh Chaturthi

Dusshera



Pola

Muharram



Kala dance

Lavani dance



Povada dance

Bhaleri songs

These religious communities of Nagpur are known for their festivals and fairs that are celebrated throughout the year. Some of the fairs and festivals of Nagpur that form an indelible part of the Nagpur culture are as

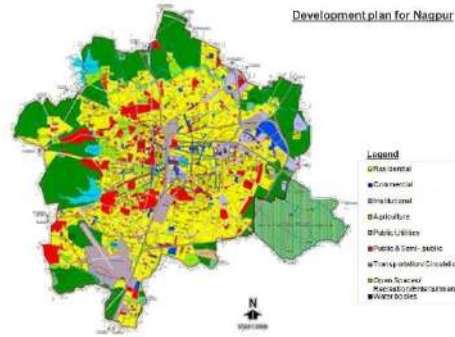
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Source: <https://nagpur.gov.in/history/> & <https://www.mapsofindia.com/nagpur/people-culture-festivals/culture.html>

II] Study of area : Nagpur Mahal Area

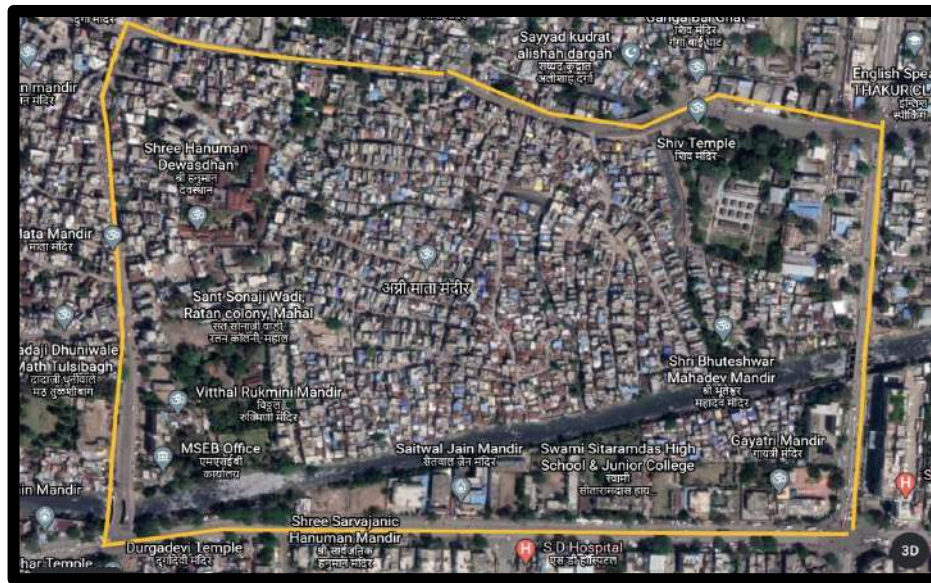


Source:
<https://en.wikipedia.org/wiki/Vidarbha>



Source: <https://affordablehousing.live/nagpur-master-plan-2041.html>

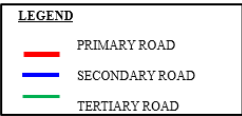
- Mahal is the oldest part of Nagpur, located on the banks of Nag river.
- Raja Bakht Buland Shah established Nagpur here in 17th century.



Mahal Area : Selected for virtual study
 Source : Google Earth

LAYOUT OF SETTLEMENT

Study of area : Layout of road



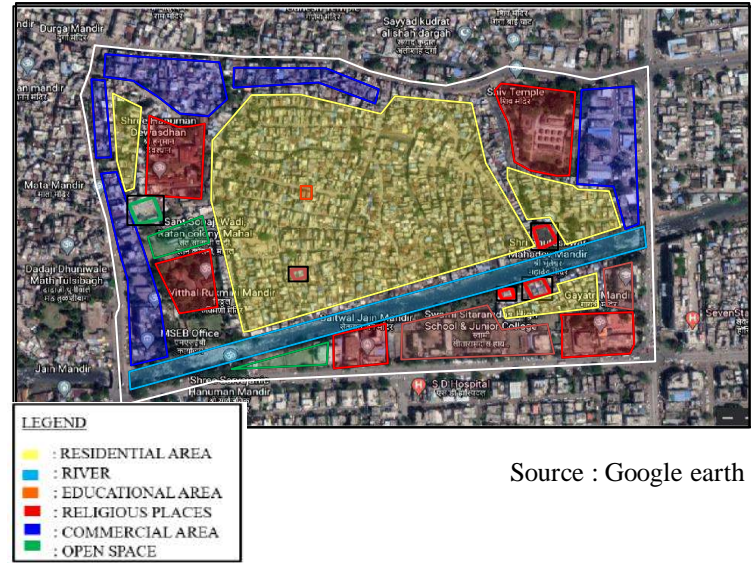
Source : Google earth

Study of area : Water Resource



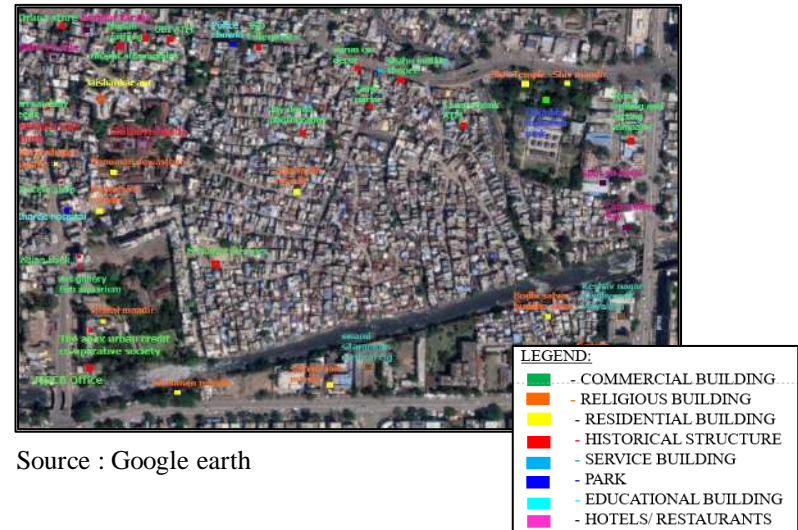
Source : Google earth

Study of area : Land Used Pattern



Source : Google earth

Study of area : Layout of public Amenities



Source : Google earth

Study of area : Identification of historic monuments (map) and Study - Understanding of period, style, characters of the monuments

- The Foundation year of NAGPUR is the year of 1702 . The history of Nagpur, in central India, spans over 5,000 years, including the Kingdom of Nagpur in the 18th and 19th century.
- The large number of structures built within the relatively short time span of the Bhosle rule for the purpose of religious activity of which temple-building was crucial to the creation and development of the city of Nagpur itself.
- Many monuments have been demolished or are owned privately



Legends:

- - Jain Temples
- - Hindu Temples
- - Wada

Source : Google earth

- The temples are an understudied but important part of Hindu architecture and sculpture in stone as all have a Marathi architectural style. i.e " Wada Architecture"List :- Chitnavis Wada, Sant Sonaji Wadi
- Many Jain Mandirs are also located.
- Political Background : The headquarters of the Rashtriya Swayamsevak Sangh are also located here.
- Based on the map (location and type of temples) we can conclude that Hindu and Jain communities are residing in this area

Study of area : Change observed over period of time



Past condition

Source : Google earth



Present condition

Source : Google earth

Development

- The large number of structures built within the relatively short time span of the Bhosle rule for the purpose of religious activity of which temple-building was crucial to the creation and development of the city of Nagpur itself.
- Many monuments have been demolished or are owned privately.
- Mahal is a very well known commercial area, the importance of historical temples and structures have faded.

Languages :

- Languages spoken in this are mostly Marathi as maximum Hindu and Jain community people reside in this area (Source : primary source student)

Study of area : Socio – Economic Structure

Marbat festival



Gudi Padva



Source : <https://www.nagpuronline.in/city-guide/festivals-in-nagpur>

Ganesh festival at chitnavis wada and Shivaji Chawk



<https://timesofindia.indiatimes.com/>

<https://www.nagpurtoday.in/amp/tag/ganesh-farewell>

Dance and traditional festivities in area



<https://timesofindia.indiatimes.com/>

- Marbat is the local festival of Nagpur celebrated with great fervor and likewise, Ganesh Utsav and Gudi Padva.
- Ramjanam in Nagpur is also celebrated with joy and zest.
- Ganesh ustav is celebrated on a large scale at Chitnavis wada.
- Nagpur is particularly acclaimed for the folk dances and folk songs they have inherited from their ancestors. Some of the most remarkable folk traditions still retained by Nagpur are; Kala Dance, Govinda Dance, Karma Dance, Lavani, Tamasha, Povada, Bhajan, Kirtan, Gondhal, Bharud, Lalita, Bhaleri Songs, Tumbadi, Bhondla, etc.

Study of area : Public Open Spaces - Character



Map Showing Road Hierarchy





Source : Google earth

Mahal Area Nagpur:

- Street network is in grid pattern.

Typology:

- Segregation of roads is done as follows:
primary, secondary and tertiary.

| | |
|---|--------------------------|
|  | Primary Road (24m) |
|  | Secondary Road (21m) |
|  | Tertiary Road (7.5m, 6m) |
|  | River (Nag Nadi Canal) |

Finish surface treatment for streets:



Secondary street



Great Nag Road (South)



Gangabai Ghat road



Inner gali(tertiary) streets

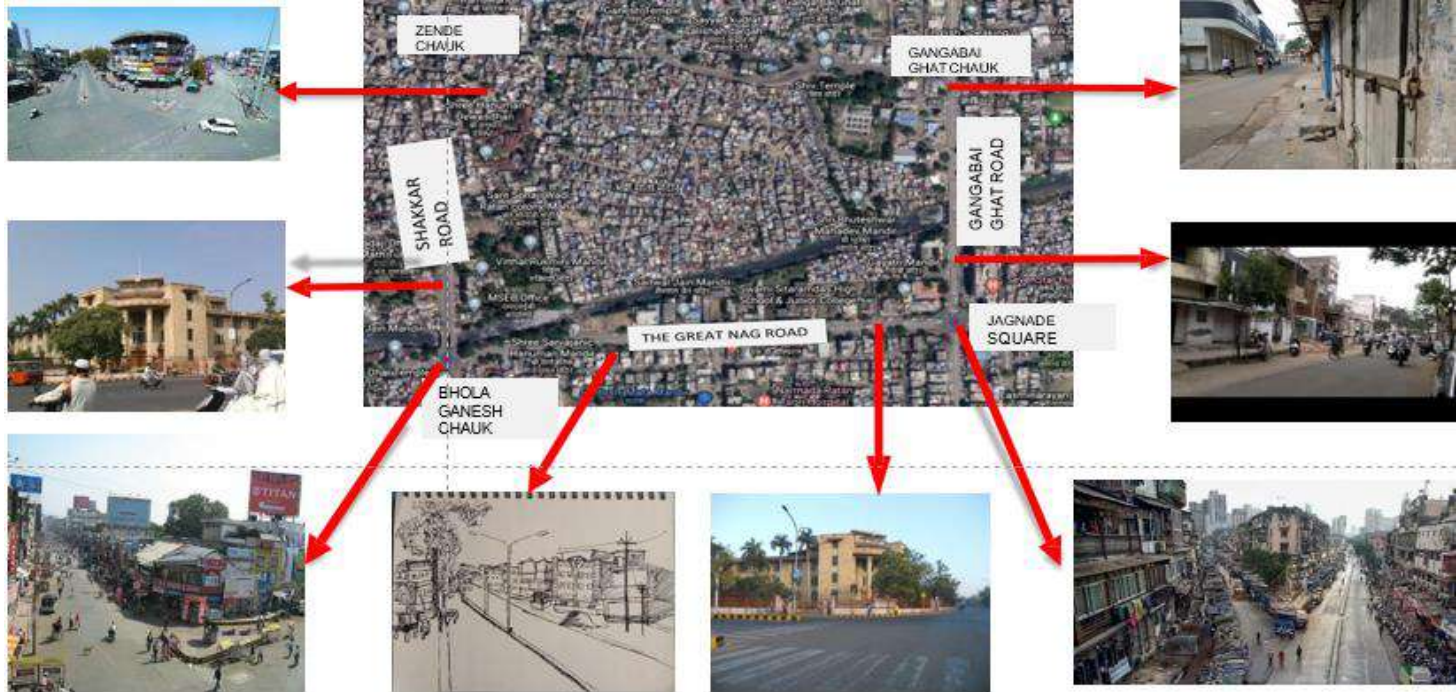
Primary Roads – Concrete material

Secondary Road – WBM road

Inner galli roads/pathways – Paver blocks

(source of images and info : Google Images)

Study of area : Public Open Spaces – Character



(source of images and info : Google Images)



Scale and proportion of street and surrounding structures:

Main roads such as great nag road, old badgadgani road are large enough and in proportionate to the structures around.

Inner gali (pathways) roads are small in size as compared to the buildings present around like gali no.3 and gali no.4.



(source of images and info : Google Images)

Mahal entrance gate

Structural Documentation: Understanding of period, style, characters of the monuments

Chitnavis Wada is a Maharashtrian style Wada

Location : Mahal Nagpur City

Year : 18TH Century

The area surrounding the **Chitnavis wada** is a residential area which is very clustered.

Construction materials : Wood, stone, mud and bricks.

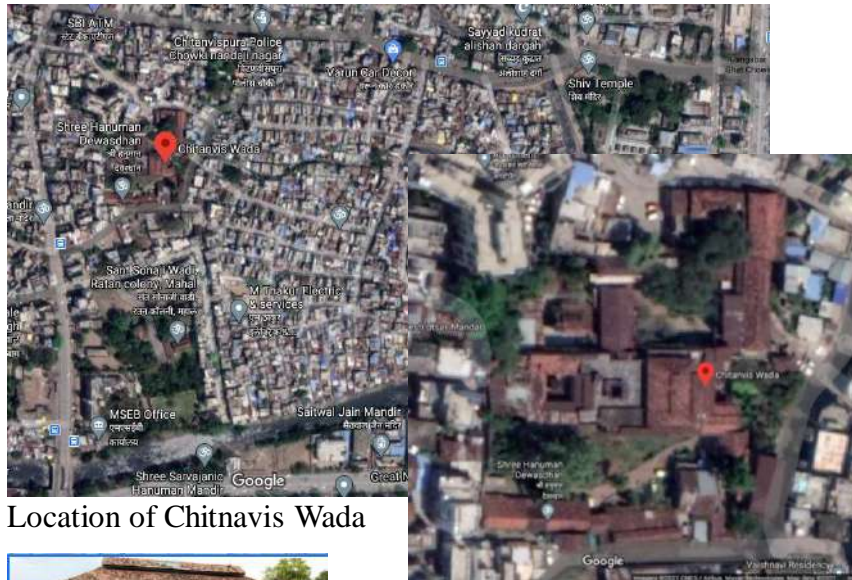
Orientation : **East-West**. Ground floor + 1 structure

Architectural aspects : The courtyard planning, receives abundant sunlight..

The ground floor construction: Brick and mud mortar and has mud floors with wooden ceiling , courtyards: stone paving and curved wooden columns.

The first courtyard has **Deoghar**, second courtyard has fountain and used for family gathering and third courtyard is used for serving and behind it is a cow shed.

Within Wada compound is **Murlidhar Temple** along with 2 small temples of Garuda and Hanuman.



Location of Chitnavis Wada



Third courtyard with cow shed behind



Murlidhar Temple



Entrance gate



Second courtyard



First courtyard



Courtyard wooden columns



Wooden staircase

Design program – Cultural Center at Nagpur

Nagpur City is an amalgamation of history, politics and cultural aspects. It is diversified in many ways but has its own unity character. Nagpur boasts many religious structures that hold importance for differing religious beliefs. As a result **A Cultural Center** as a design project topic has been chosen

A **Cultural Center** is an organization, building or complex that promotes culture and arts. Cultural centers can be neighborhood community arts organizations, private facilities, government-sponsored, or activist-run. A contemporary or traditional **building** enhancing the citizens connect with their own **culture** and allowing them to learn from others.

Aim :

To design a Cultural Centre in the city of Nagpur catering to all three vedic religions

Objectives:

- To be able to zone the activities, keeping in mind the religious and historical importance of the area catering multifunctional spaces.
- To be able to create appropriate circulation in multifunctional gathering place by planning spaces accordingly.
- To be able to understand the macro and micro climate for the site and respond to it.
- To be able to design an interesting built form which relates to the open and semi open spaces keeping in mind the vernacular building traditions.
- To comprehend design as interactive process at various scales and levels.
- To comprehend relationship between design, visual arts, building construction, climatology, building materials, structure etc. and evolve a design solution.

Scope : To design a Cultural Centre in the city of Nagpur catering to all Nagpur major religion.

Limitation : The Cultural Centre in the city of Nagpur will be catering to all three **Vedic Religions**

Design program

Site Location: Vayusena Nagar

Site Area : 2600sqm

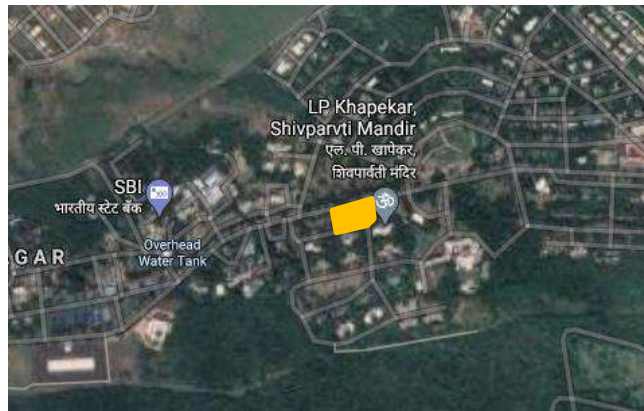
Topography: the site is plane flat land.

Vegetation: total existing trees-7 and ground cover

Access : 9m wide road from north west and 6m wide road on north east and south side.

Types of soil: black cotton soil , loamy alluvial soil and clayey red soil.

Wind direction: wind direction from south-west direction.

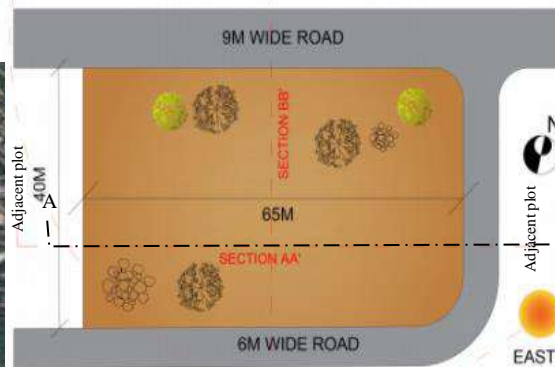


Location map of site – Vayusena nagar

Source for maps– Google Earth & images: Google photos

SWAT Analysis

| SITE STRENGTHS | SITE WEAKNESS | OPPORTUNITIES OF SITE DEVELOPMENT | THREATS TO ENVIRONMENT |
|---|---|---|---|
| Real estate development around site. | Due to road on 3 sides of site disturbance may occur. | Many awareness programs can be held for people. | Loss of trees and other vegetation can cause soil erosion. |
| Near from main city Nagpur. (9.1 KM) | | Religious center will give opportunities to local vendors and also artist. | During any event number of people may gather there and can cause disturbance to surrounding |
| Educational facilities are also near the site. | | People can exchange knowledge of each others belief at this place | |
| Religious places (mandir, masjid, churches) are within 1 km | | Many students will also have opportunity to research about respected religions. | |
| Road on 3 sides of site. | | This project will also serve as best example for future generation to respect each other and spread positivity. | |



Site plan



Site section

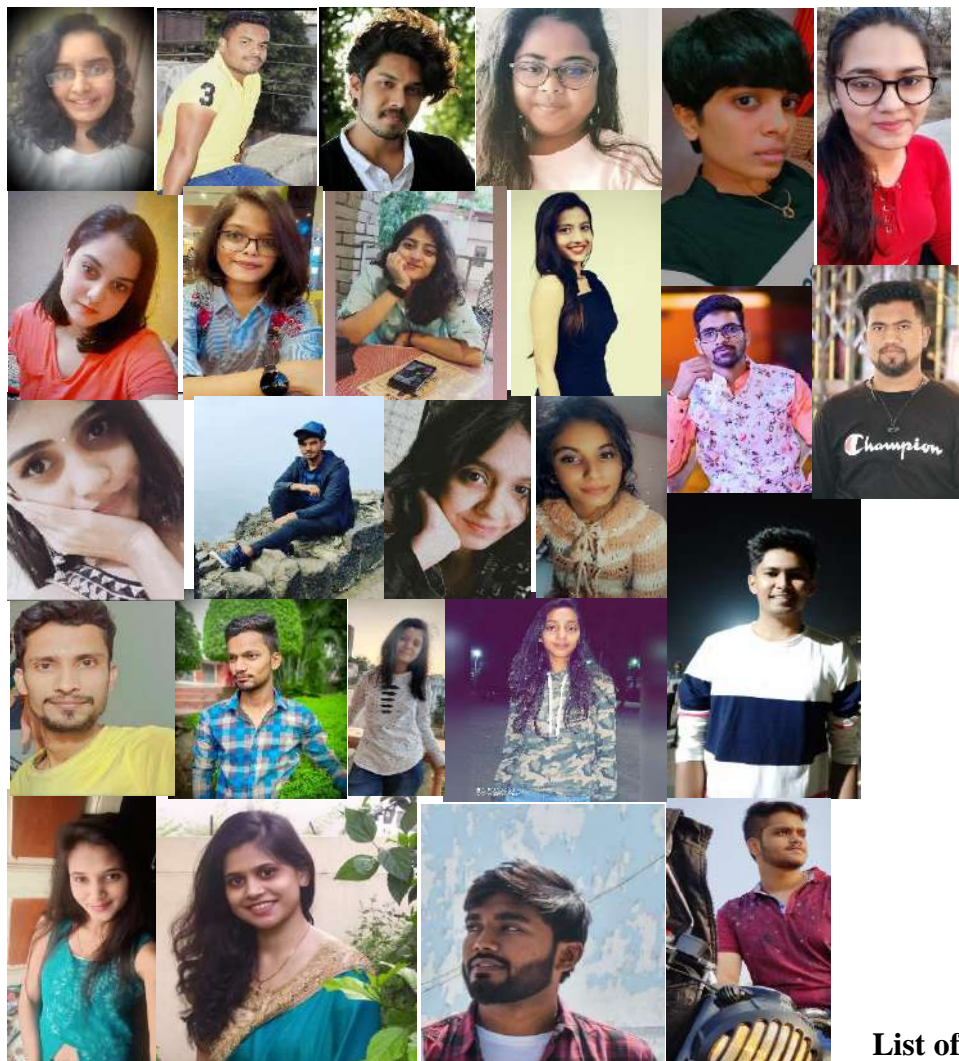


Site Surroundings

| DESIGN IV - TERM II - 2019-20 | | | |
|-------------------------------|---|--------------|----------------|
| SR.N O. | SPACE | UNIT /NO. | AREA (Sq.M) |
| 1 | ENTRANCE | | |
| | a) Entrance Lobby + Reception+Security cabin | 1 | 30 |
| 2 | VISITORS CENTRE | 1 | 25 |
| 3 | Administration area (with toilet and pantry) | | |
| | Directors cabin (with toilet) | 1 | 20 |
| | Managers cabin (with toilet) | 1 | 15 |
| | STAFF WORKSTATIONS for 10 ppl | 1 | 50 |
| | Locker room | 1 | 10 |
| | Conference room | 1 | 30 |
| | Pantry | 1 | 10 |
| | Dinning | 1 | 15 |
| | | TOTAL | 150 |
| 4 | Meditation hall | 1 | 100 |
| | Prayer hall | 3 | 150 |
| 5 | Audio video presentation | 1 | 100 |
| 6 | PERMANENT EXHIBITION AREAS (100 sqm each) | 3 | 300 |
| 7 | Temporary exhibition areas (semi-open) | 1 | 150 |
| 9 | Library | 1 | 80 |
| 11 | Cafe | 1 | 30 |
| 12 | Souvenir shop | 1 | 20 |
| 13 | Amphitheatre | 1 | 200 |
| | Parking space: 20 -cycles, 10- four wheelers, 30-two wheelers, 2-bus | | |
| | (Toilets to be designed as per requirements) | | |
| | 15 % circulation | | 150 |
| | 15 % built up area | | 150 |
| | TOTAL AREA | | 1300 |

Second Year Division A class 2020-21

Photographs of students



List of students

| Sr.No | Name |
|-------|--------------------|
| 1 | Kumar Abhishekh S |
| 2 | Kumar Abhishekh V |
| 3 | Angadi Anjali |
| 4 | Sharma Ankit |
| 5 | Bagal Pratiksha |
| 6 | Bandgar Rahul |
| 7 | Baravkar Pranjal |
| 8 | Belapurkar Shweta |
| 9 | Bhalerao Aditi |
| 10 | Bhalerao Aashish |
| 11 | Bhalerao Prajalika |
| 12 | Bole Aniket |
| 13 | Borude Nikhil |
| 14 | Channa Dakshayani |
| 15 | Chavan Janhavi |
| 16 | Desle Anvaya |
| 17 | Gaikwad Kuldeep |
| 18 | Gaikwad Sakshi |
| 19 | Ganvir Amisha |
| 20 | Ghogare Ritika |
| 21 | Hagwane Harshal |
| 22 | Lodha Arihant |
| 23 | Mane Aishwarya |
| 24 | Rahude Anushka |
| 25 | Sathe Apurva |

**List of design faculties: Ar. Priyanka Purohit
Ar. Tanmayee Panse**

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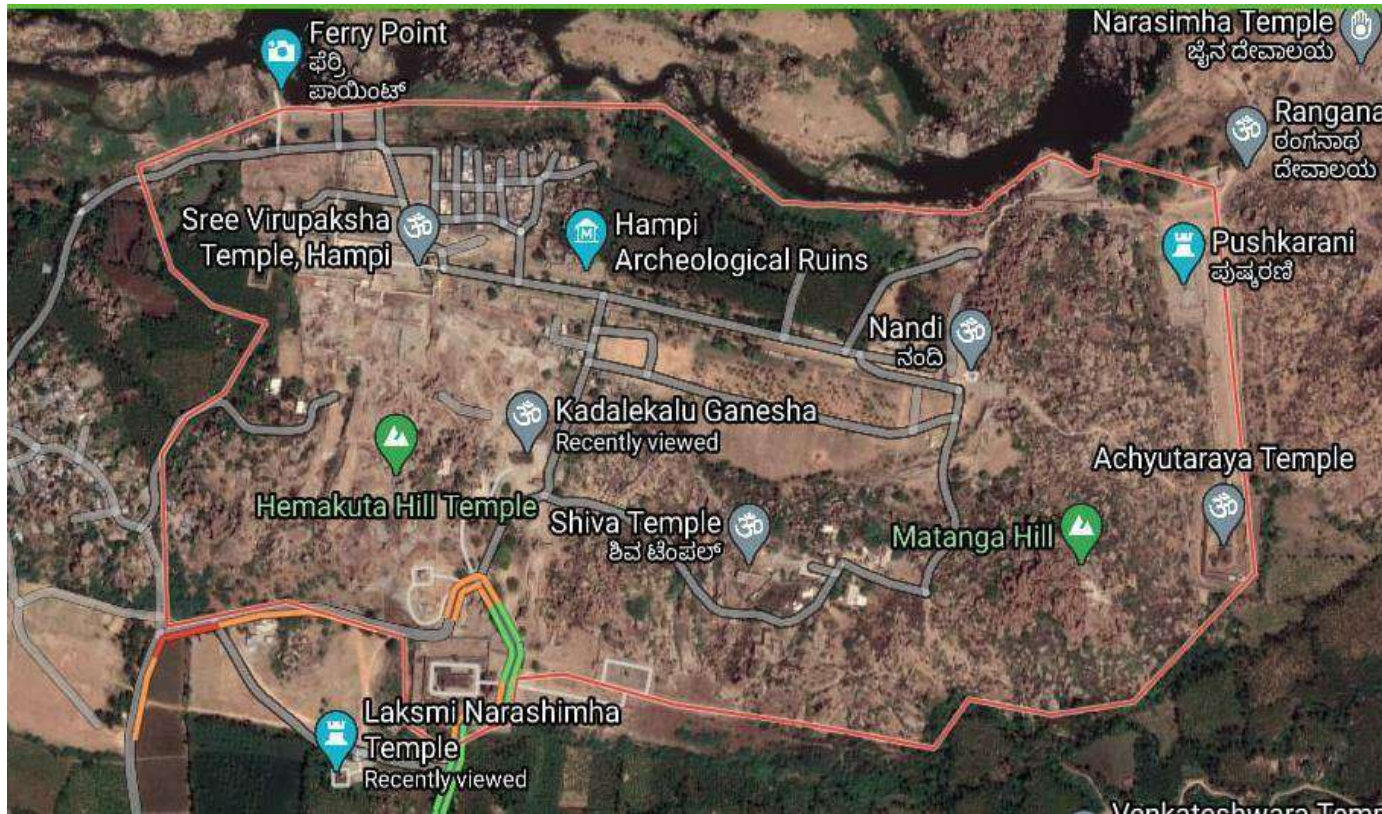
VIRTUAL STUDY TOUR

HAMPI

by

Second Year B. Arch.

Division B



MAP OF HAMPI

Source: Google Maps

Settlement Map



Image 1: Hampi Settlement Map
Source: Google Earth

Geography and Topography

- Hampi is a village situated in the south Indian state of Karnataka. It is located in the Bellary district, 353 km away from Bangalore.
- Hampi is situated on the banks of Tungabhadra river.
- The altitude of the place is 467.0 m above mean sea level.
- **Climate:** Hot and Dry.

POLITICAL HISTORY OF HAMPI

9th century AD to 14th century AD

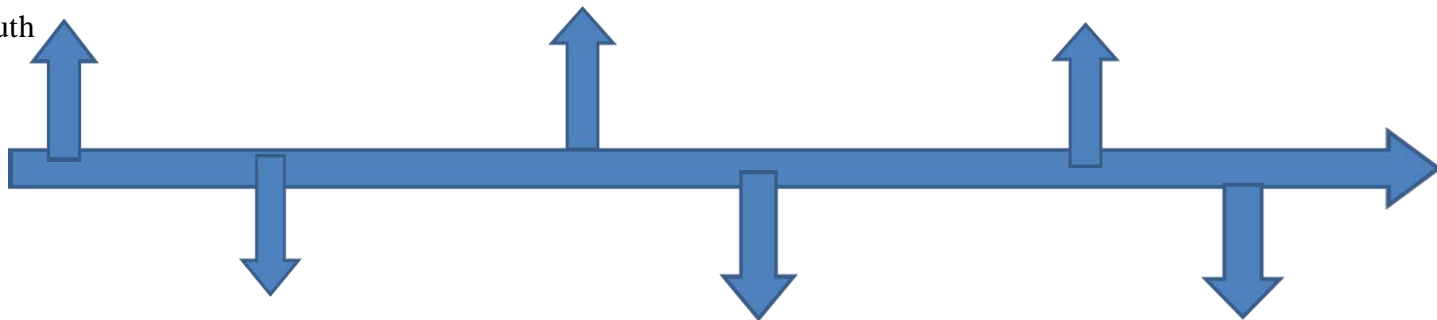
Hemakuta hill temple complex and Chandramouleshwa build during the period of 9th to 14th century. The Hoyasalas and Yaadvas , Pandyas, & Kakatiyas force to join the forces to form major rule group in south

Saluva dynasty AD-1491 AD

After Saluva dynasty rise after Sangama dynasty. They rule more than 15 years. The famous Yantrodhara hanuman temple was built during this time

Aravidu dynasty (1542 AD -1646 AD)

It was the last dynasty in vijaynagar empire 5 bhamani sultanates attack on vijaynagara (Hampi) in (battle of talikota) and looted hampi for 6 months. It cause lot of lose to wealth of hampi.



Rise of Vijaynagar empire 1336 AD:

The Sangama dynasty the first dynasty of Vijaynagar empire was founded in 1356 by Harihara & Bukkaraya. The Virupaksha temple, Vittala temple Parasanna Virupaksha & Saraswati temple are main attraction of this dynasty

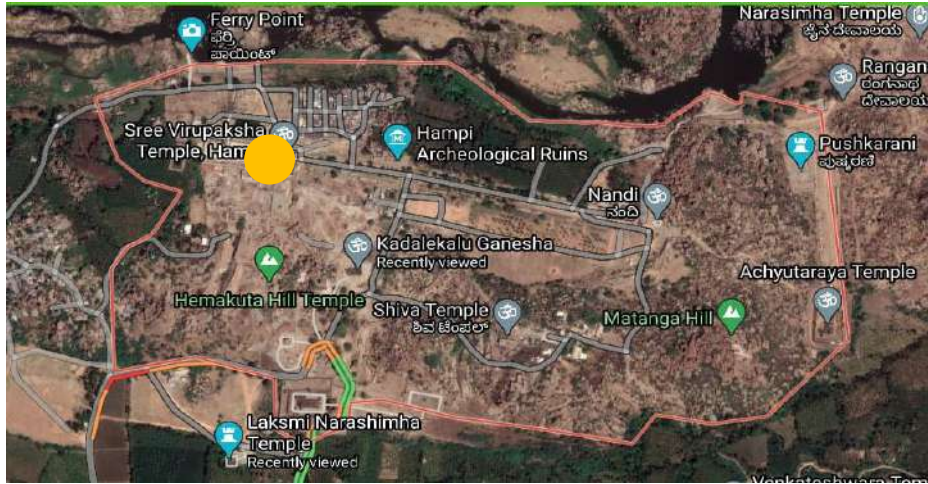
Tuluva dynasty(1491 AD-1570 AD):

Tulva dynasty rule over 80 years during this time the 5 bhamani sultanates of Bahamani empire were divided. Achutraya temple, Lakshmi Narshima , krishna temple are some of main attraction

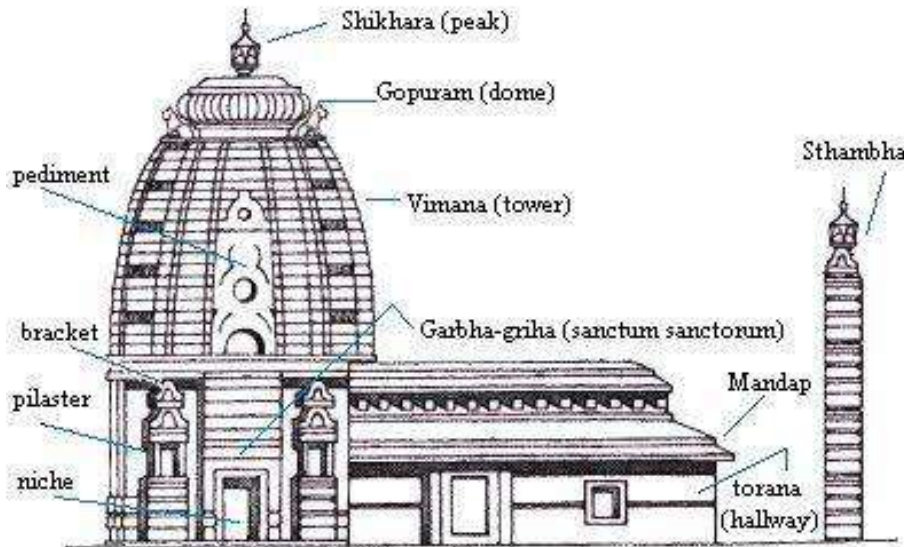
Hampi in 20th century

Many structure in Hampi are declared as UNESCO World Heritage sites





Location of Virupaksha Temple – part of sacred center



Typical temple style and section

Source :<https://images.app.goo.gl/UbfjH2VWEAgshxZv9>

History

Understanding the Period -

Almost all the monuments were built between 1336 and 1570 CE during the Vijayanagara rule.

The site has about 1600 monuments and over 41.5 sq km

STYLE- The monuments predominantly followed South Indian Hindu arts and architecture.

Characteristics of monuments-

- Square or Rectangular Sanctum.
- Square Sabhamandapa with 3 entrances.
- Spacious Pillared Halls.
- Kalyanamandapa.
- Smaller Temple have Plain outer walls.
- Bigger Temples have Decorations with Niches, Panjarasa, Pilasters, or Depicts Theme from Puranas, Epics and Mythology.

Culture & Traditions in Hampi



Women work on denim cloths in industry at bellary

Occupation:

- Bellary District is Endowed With Rich Mineral Resources.
- Mining Rich Deposits Of Iron-ore And Manganese Provides Work And Brings Money Into The Region .
- Denim industry is also growing up.

Cuisine :





- We can see typical south Indian food that includes idli and dosa for breakfast and thali meals for lunch .
- A Typical Kannada Meal Served In A Particular Order On A Banana Leaf .

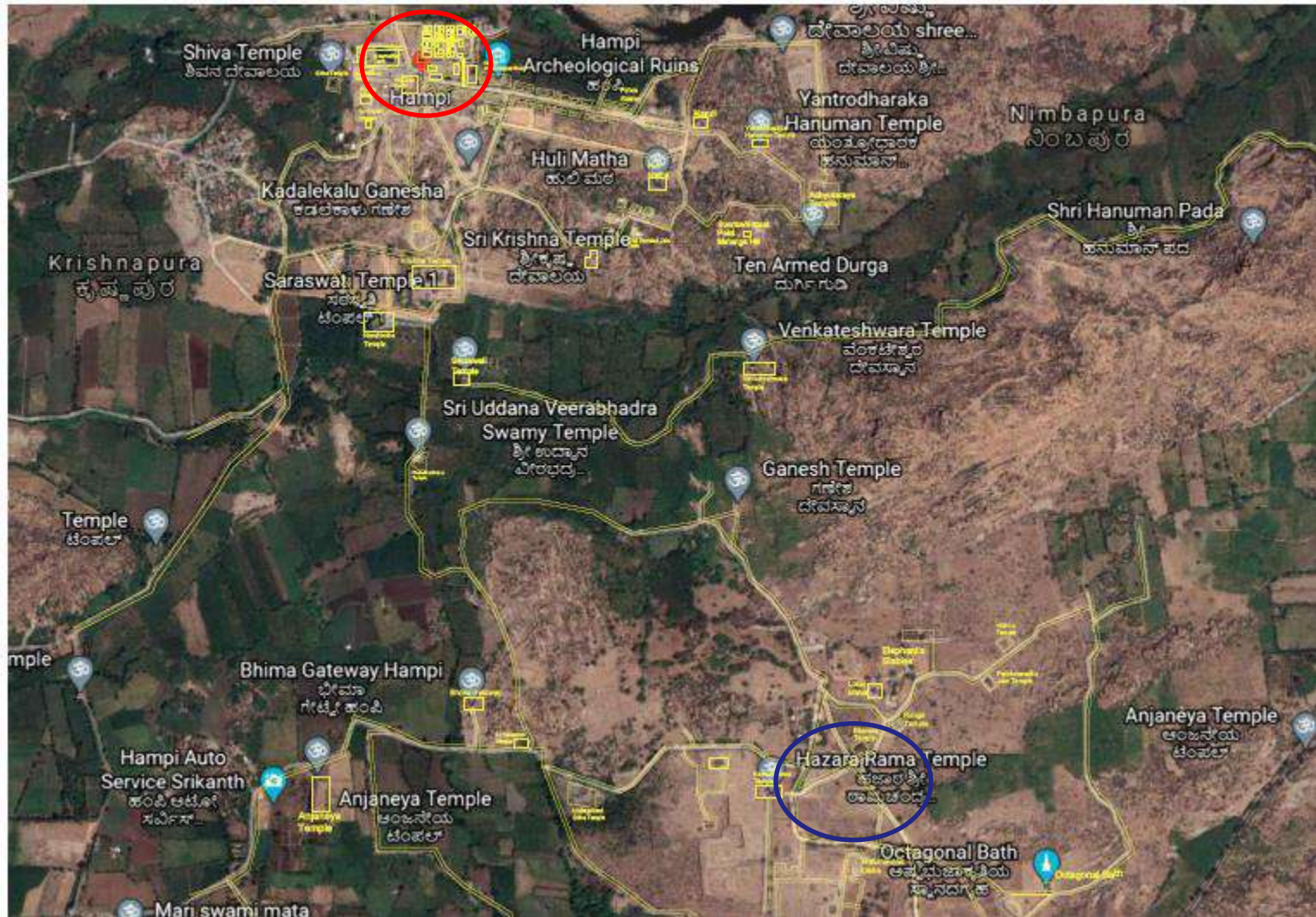
Languages :

- In Hampi region majority of the population speaks kannada .
- Telugu and urdu language also speak in some areas of Hampi .

| FESTIVALS AND FAIRS | IN WHICH MONTH IT CELEBRATES ? |
|-----------------------------|--------------------------------|
| Hampi Festival /Vijay Utsav | November |
| Purandaradasa Aradha | January /February |
| Virupaksha Car Festival | March /April |
| Phalapuja festival | December |
| Shivratri | October |
| Diwali | February / March |



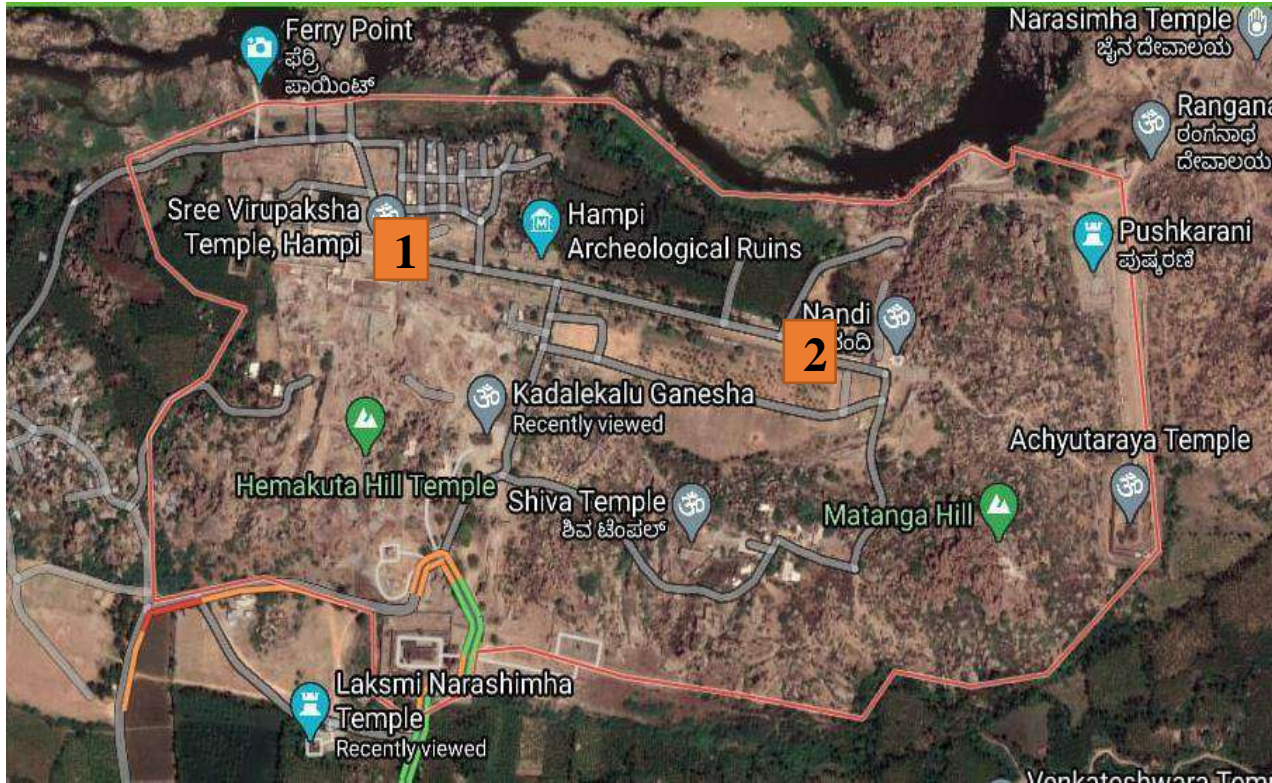
| TRADITIONAL SPORTS | | | |
|---|------------------------|---|-----------|
|  | MALLAKHA MB |  | KABADDI |
|  | WEIGHT LIFTING CONTEST |  | WRESTLING |



— Sacred Center

— Royal Center

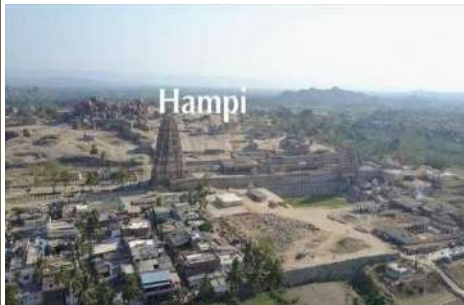
AREA OF STUDY – Including Sacred center and surroundings and Royal center



Street Network:

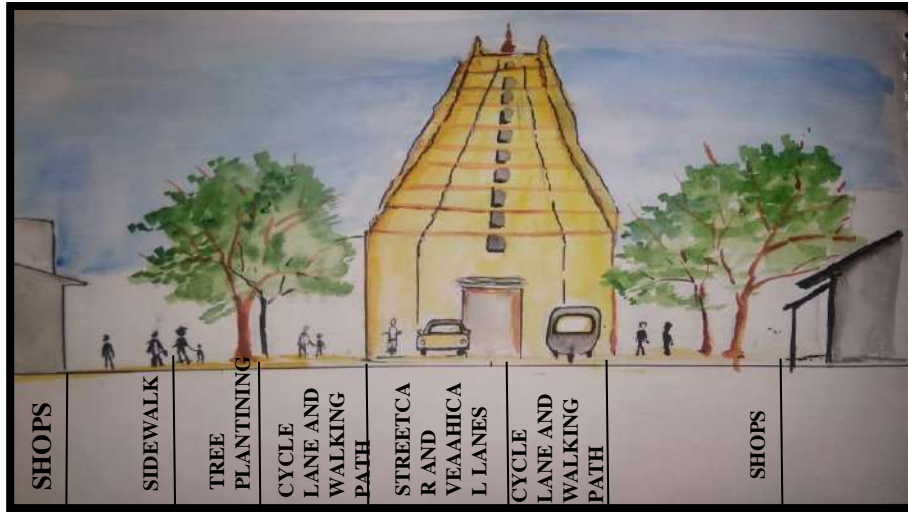
In housing area, roads are tertiary or secondary roads.

In bazaar area , there are exist main hampi bazaar road and parking area having secondary roads.



1 HOUSING AREA

2 BAZAAR AREA



STREET SECTION AT MAIN TEMPLE AREA

- The internal roads are narrow, barely wide enough for heavy vehicles, typically with characteristics that limit speed and capacity, such as soft shoulders, deficient drainage, and uneven or damaged surfaces, as well as narrow and precarious passages in villages
- Given the mix of slow and fast moving traffic on rural roads, most district roads can be said to be operating near their capacity. The same can be stated for some of the roads inside the World Heritage Site.



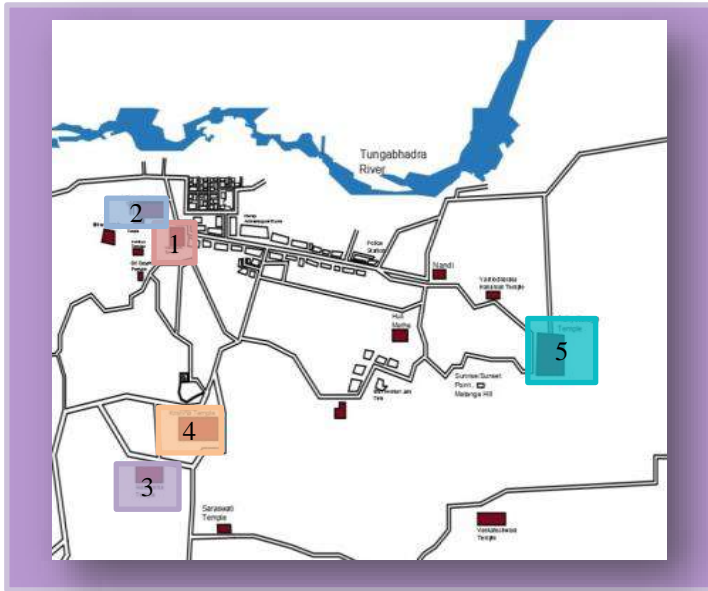
PRIMARY ROAD - Hampi bazaar road



SECONDARY ROAD - At market area.



TERTIARY ROAD – At residential areas



Sacred Centre



1. Virupaksha Temple



2. Manmatha Tank



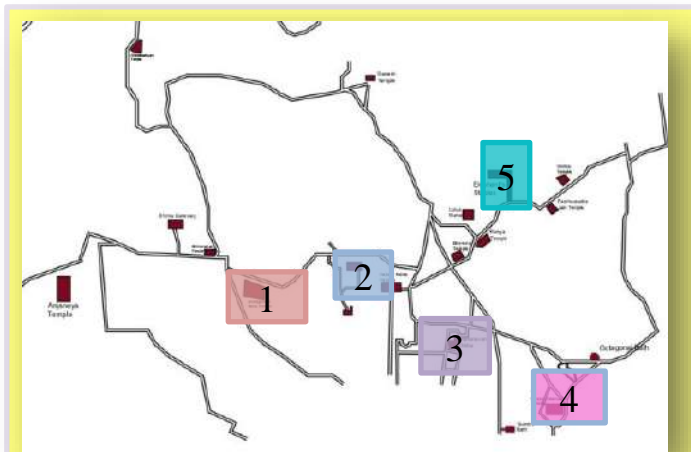
3. Monolithic Narasimha



4. Krishna Temple



5. Achyutaraya Temple



Royal Centre



1. Underground Temple



2. Hazara Rama Temple



3. Stepped Tank



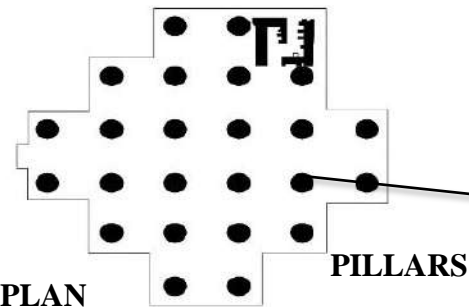
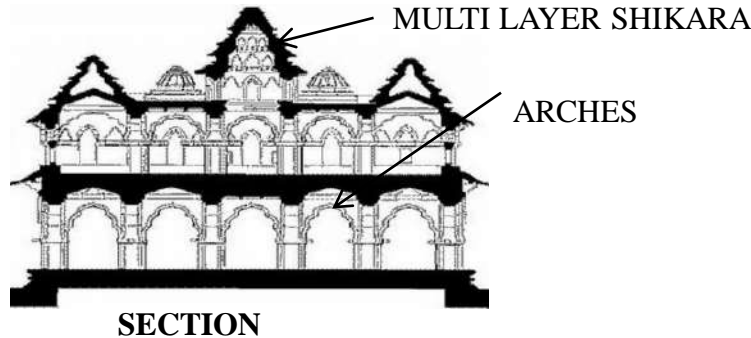
4. Shiva Temple



5. Lotus Temple

Images Source: <http://www.wikipedia.com>

LOTUS MAHAL



Source:

<https://upload.wikimedia.org/wikipedia/commons/0/05/LotusSection.gif>



- Lotus Mahal had a water tank on the top, water pipes through the beams and columns, facilitating flow of water through the structure and keeping it cool even in hot summer.

| SR NO. | DETAILS | DETAILS |
|--------|----------------------|------------------------------------|
| 1. | Designed for- | Royal family of Vijayanagar empire |
| 2. | Architectural style- | Indo-Islamic |
| 3. | Floor Count- | Two storey |
| 4. | Material- | Brick and mortar, rubble |
| 5. | Climate- | Hot and Dry |
| 6. | Founded by- | Vijayanagar empire |
| 7. | Named for- | Lotus bud structure |
| 8. | Location - | Ballari district, Karnataka |

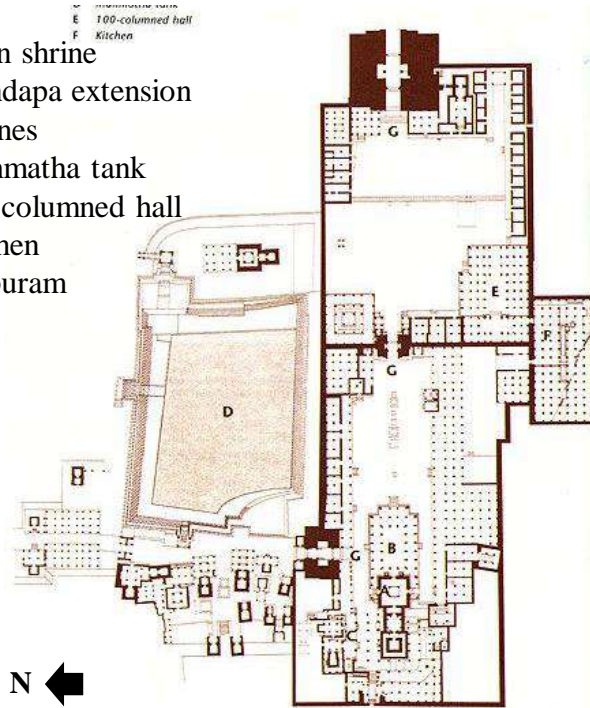
Form and Planning:

- The ground floor is not closed in any direction.
- It has cusped arches with fine decorations over which exists a sloping eave, surrounding the building.
- The 42 area has a pavilion or a spectator section, which was used by the royals for pastime and for congregation.

Images Source: <http://www.penn.museum/sites/VRP/images/LotusMahal.jpg>

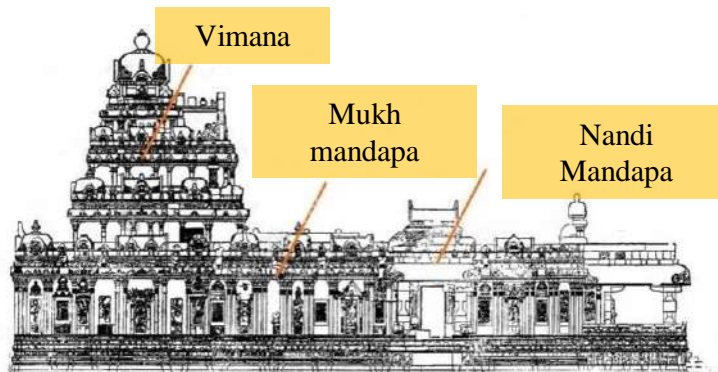
VIRUPAKSHA TEMPLE

- A- Main shrine
- B- Mandapa extension
- C- Shrines
- D- Manmatha tank
- E- 100-columned hall
- F- Kitchen
- G- Gopuram



Plan of Virupaksha Temple

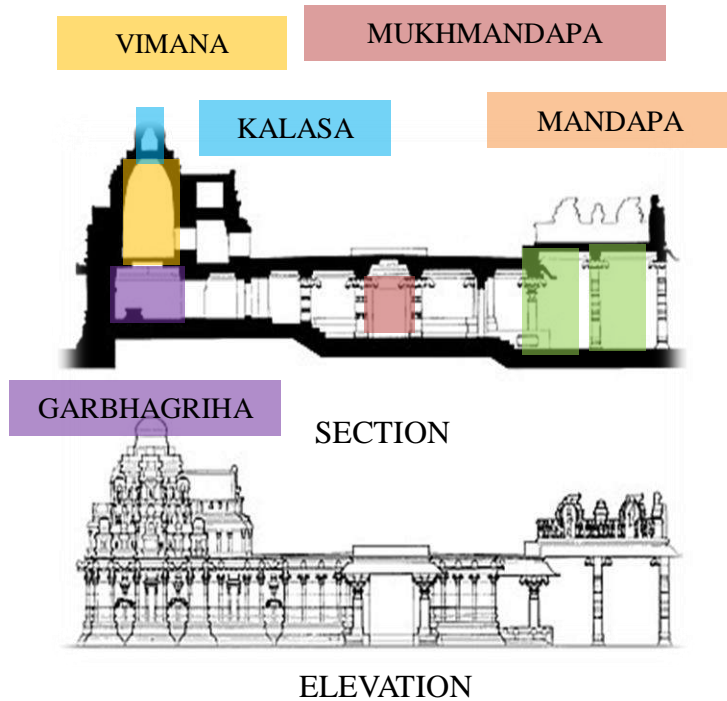
Source: <https://images.app.goo.gl/aNKjVmwgggXan9mc8>



- **Location:** On the south bank of the Tungabhadra.
- **Constructed by :** The temple was built by Lakkan Dandesha, a nayaka (chieftain) under the ruler Devaraya II of the Vijayanagara Empire.
- **Form and Planning:** The temple has a shrine or the holy place of worship, a hall with a number of pillars and 3 antechambers.
- There are courtyards, a pillared monastery, few small shrines; and entrance ways surrounding the temple.
- Among all the gateways, the eastern gateway is the greatest. It is nine-tiered and 50 meters in length.
- **Architectural Features:** The first courtyard has a pillared hall called **100 column hall** at the far left corner, kalyanmandapa at the right corner. Both sides of pillars stand **10-15 feet high** and appear to be **carved out of a single block of stone.**

Source: https://upload.wikimedia.org/wikipedia/commons/4/48/1915_sketch_of_the_south_elevation_of_Pattadakal_Virupaksha_temple%2C_a_UNESCO_world_heritage_site_monument.jpg

HAZARA RAMA TEMPLE



Source:<http://www.penn.museum/sites/VRP/images/HazaraDwg.jpg>



- Location: Center of the Royal Enclosure
- Dedicated to: Lord Rama, A Hindu Deity
- Construction Period: 16th Century
- Material For Construction : Granite



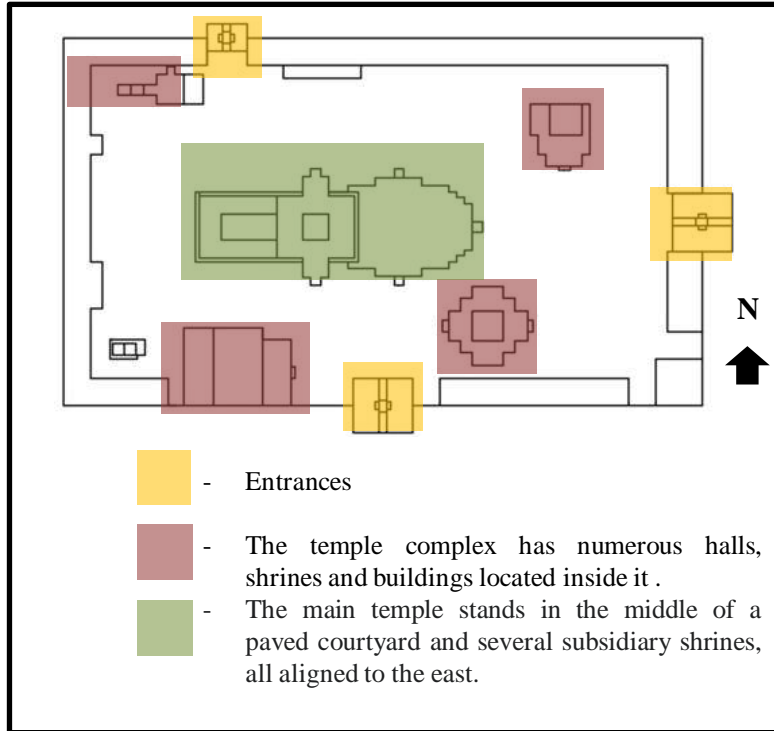
ARCHITECTURAL FEATURES

- The ceiling of this hall is designed with the purpose of ventilation.
- The roof ventilates fumes and smoke and makes the atmosphere fresh

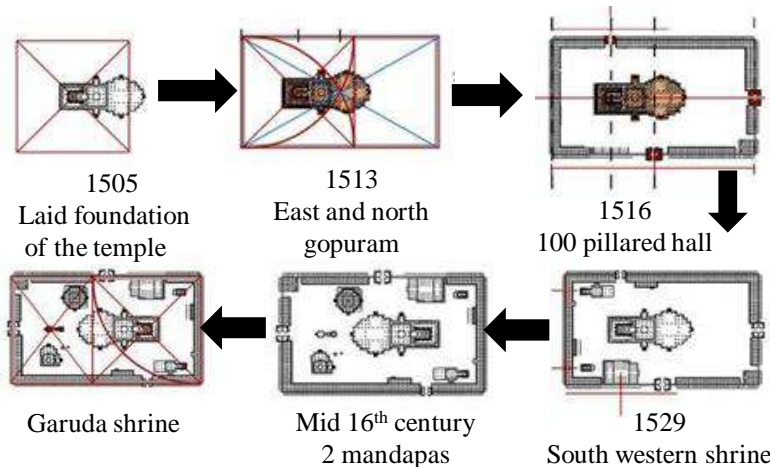
Images Source:

https://m.facebook.com/1889234661194059/photos/pcb.2290421224408732/2290420991075422/?type=3&source=48&__tn__=EH-R

VIJAYA VITTHALA TEMPLE

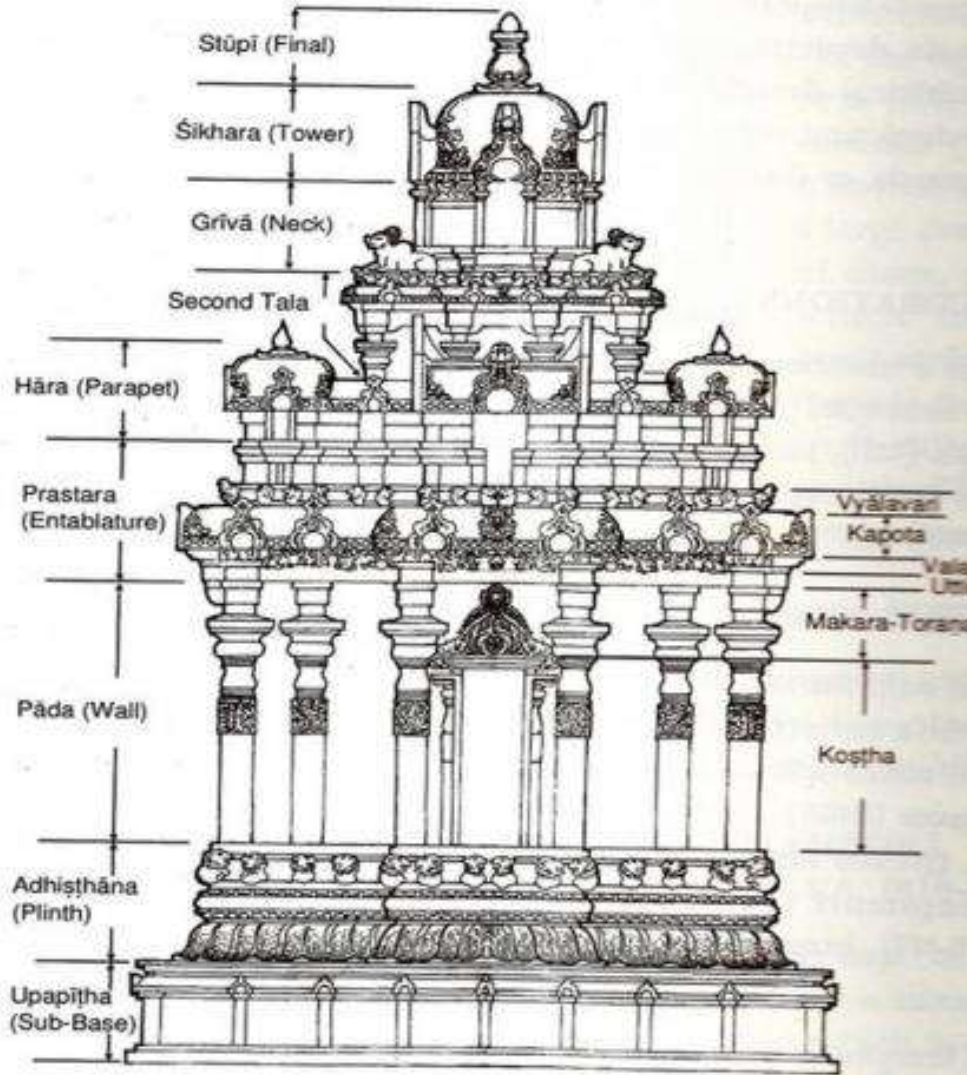


- **Location:** The Vijaya Vitthala Temple and Market Complex is over 3 kms NE of the Tungabhadra river.
- **Constructed by:** Its construction was started under the rule of KING DEVARAYA II and enhanced during the reign of KRISHNADEVARAYA II.
- **Form and Planning:** The temple is built in Dravidian style.
- The three lofty Vijayanagara towers on the east, north and south are now dilapidated.
- The entire complex houses several temples, enclosures, pavilions and halls.
- **Architectural Features:** The Ranga Mandapa is renowned for its 56 musical pillars. These musical pillars are also known as SAREGAMA pillars.



Evolution source: <https://images.app.goo.gl/qSXFawXogEy7Eesq8>

VIJAYA VITTHALA TEMPLE



Parts of the temple

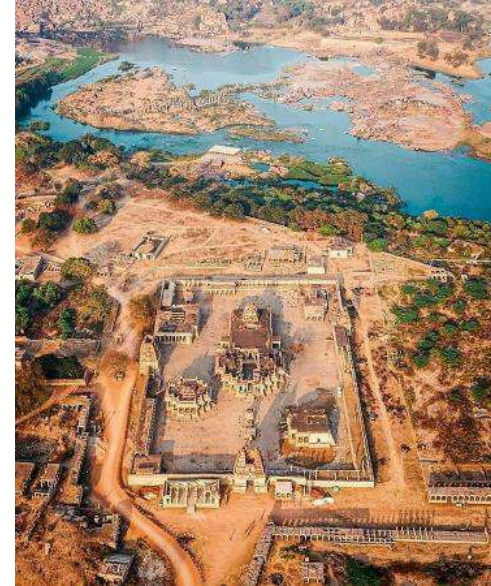
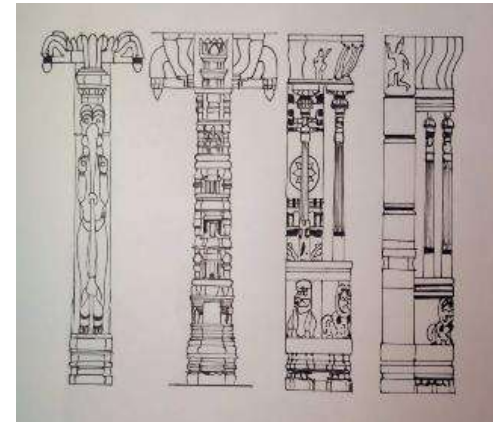


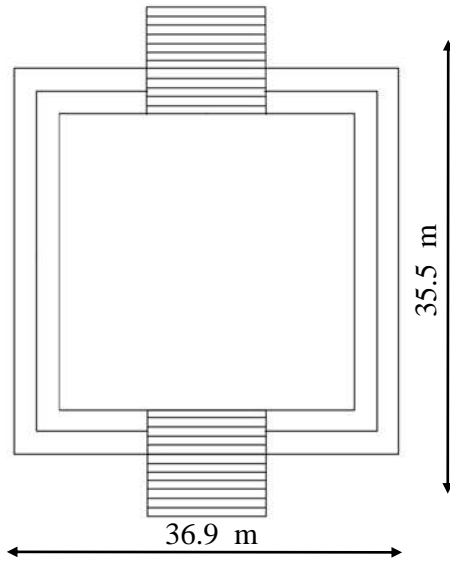
Image Source: facebook.com



Columns in the temple

Source: <https://i.pinimg.com/originals/e4/a8/e6/e4a8e6edd65903769df01842a43d7056.jpg>

MAHANAVAMI DIBBA



Plan of Mahanavami Dibba
(approx. dimensions: earth.google.com)

- Location: The Mahanavmi Dibba is located within the Royal Enclosure.
- Constructed by : King **Krishnadevaraya**.
- Form And Planning: Dasara Dibba consist of a massive square faced base in three diminishing tiers, the lowest being 40 sq.m. and the topmost 24 sq.m.
- There are two stairways to reach the top – one at the front and the other at the back.
- The platform has a **height of about 12 m**.
- There are beautiful engravings on all the 3 tiers of the platform. The carvings are an accurate description of the richness of the empire and its festivities.
- Material: The **greenish schist stone** additions in the front portions stands out from the rest and vouch this theory. It is a reflection of traditional Vijayanagara architecture



View of Mahanavmi Dibba

Image Source: hampionline.in



Plinth – with band of elephants at bottom

Image Source: karnataka.com

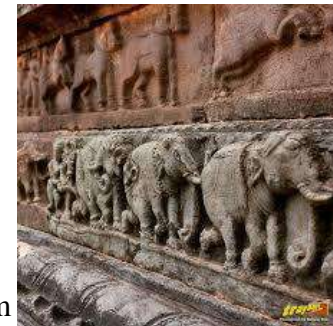


Image Source: pinterest.com

HOUSE 1:
Vaishnavi

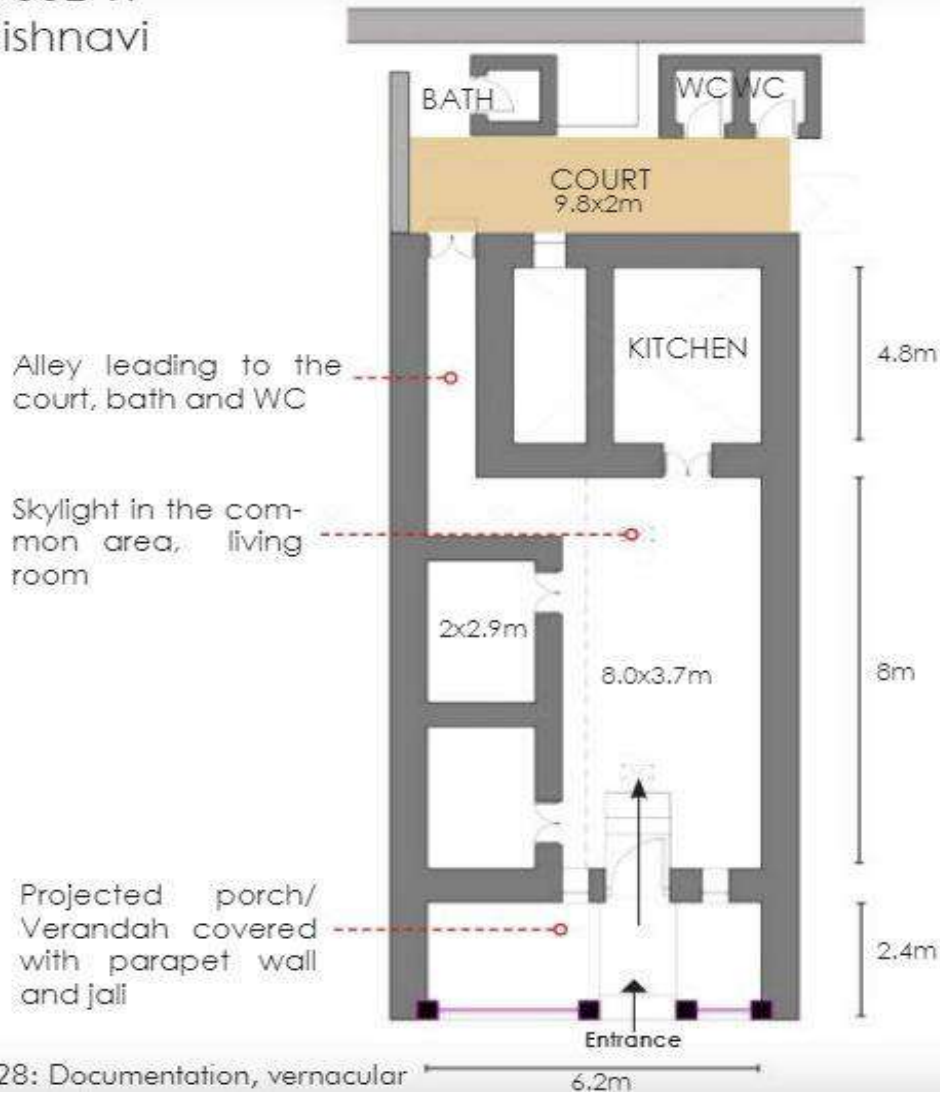


Fig. 28: Documentation, vernacular

Source: https://issuu.com/ishitaagrawal/docs/final_report_issuu

Residential Typology :
1.VAISHNVI HOUSE



Verandah facing the street



Living room and restored Ceiling



Back part of the house
Dilapidated

Every residential space has verandah which acts as a buffer space and recreational area.

HOUSE 2: Malik Arjun

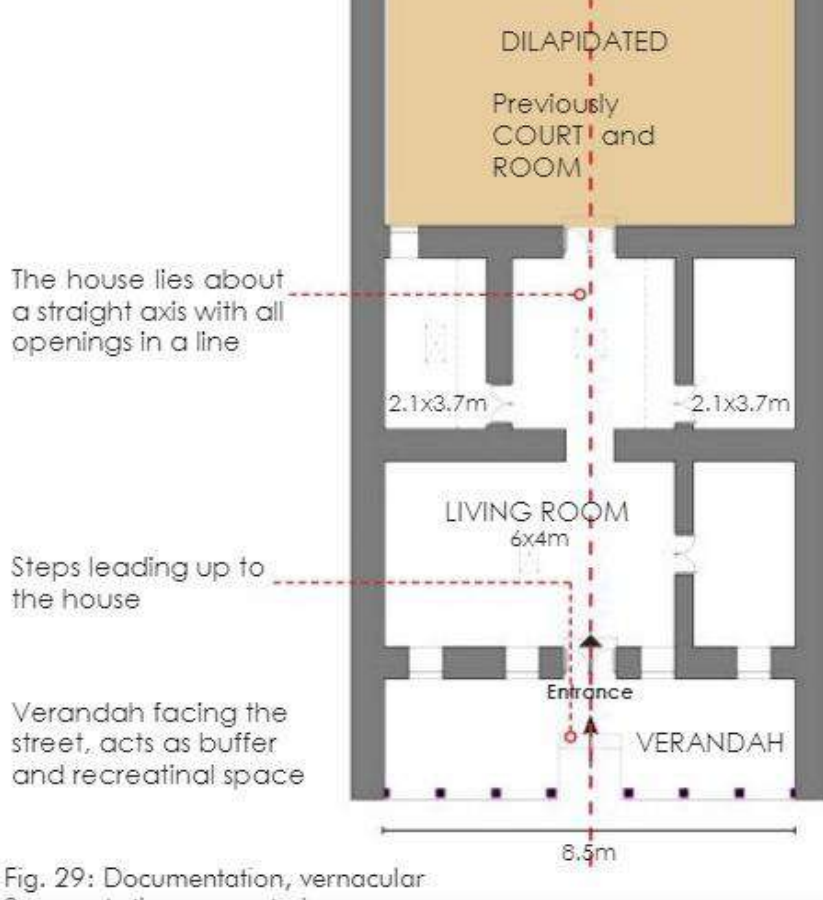


Fig. 29: Documentation, vernacular

2.MALIK ARJUN



Entrance covered with Jali



Living room and skylight



Loft used as storage space

Every house has courtyard where various activities are carried out.

III]Design program

ASSIGNMENT I: Proposed Resort at Hampi (Based on virtual study report)

1. Design preamble

Goal: To design a Resort resolving the functional and thematic issues in the design **Objectives:**

A) To understand the contextual issues in design in terms of:

Psychological/ Emotional needs of the client

Physical context of the neighborhood

Context of the climate- both regional and local

Temporal issues- designing for the present and future use

Issues related to form of the structure and image

B) To understand space requirement and zoning for various activities and overall circulation pattern C) To understand application of climatic consideration as strategies with respect to human comfort D) To understand basic structural systems and selection of appropriate materials

2. Design Brief

A Resort needs to be designed near Tungbhadra River and Sugriva's Cave on a site of – 5725.00 Sq.M at Hampi.

In addition to the brief areas, circulation spaces/ passages, transition spaces, staircases may be added as per requirement. Any other areas as per the client's requirement are to be considered and added to given in built up area.

Follow development control rules as per town planning Dept.

Program Brief: The requirement of the resort are as follows: -

| Sr.No | Space | Area Per Unit | Number | Area (Sq.m) (Min.) |
|-------|---|---------------|--------|--|
| 1 | Reception and waiting | | | 30 |
| 2 | Admin Office (Cabin, staff area, clerk, toilet) | | | 50 |
| 3 | Kitchen including store | | | 70 |
| 4 | Dining | | | 100 |
| 5 | Staff Quarters | 12 | 10 | 120 |
| 6 | Indoor games | | | 30 |
| 7 | Standard Rooms | 30 | 10 | 300 |
| 8 | Deluxe Rooms | 40 | 10 | 400 |
| 9 | Suits | 80 | 3 | 240 |
| 10 | Multipurpose Hall | | | 100 |
| 12 | Children's play area | | | As per design |
| 13 | Swimming pool | | | As per design |
| 14 | Parking | | | As per requirement (To be found out by students) |

Site Area: 5725.00 Sq.M Built Up area: 1500 Sq.M

Site options



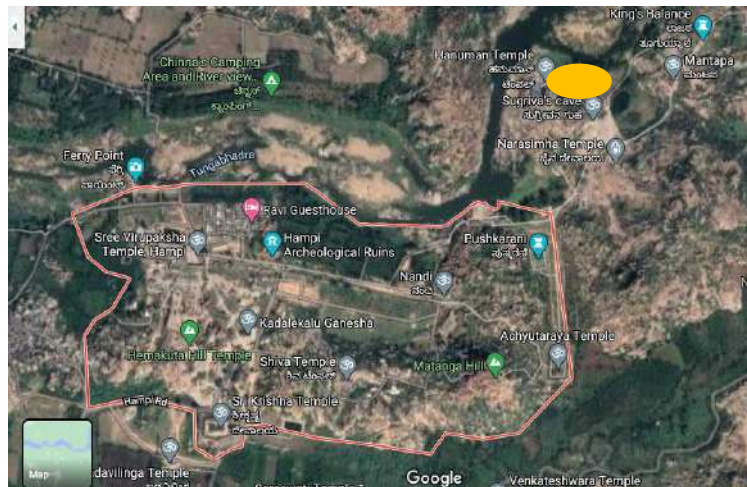
Option 1



Option 2



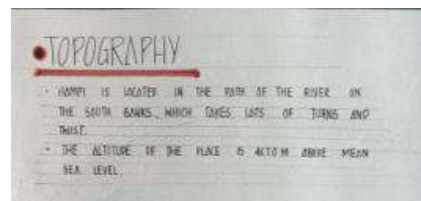
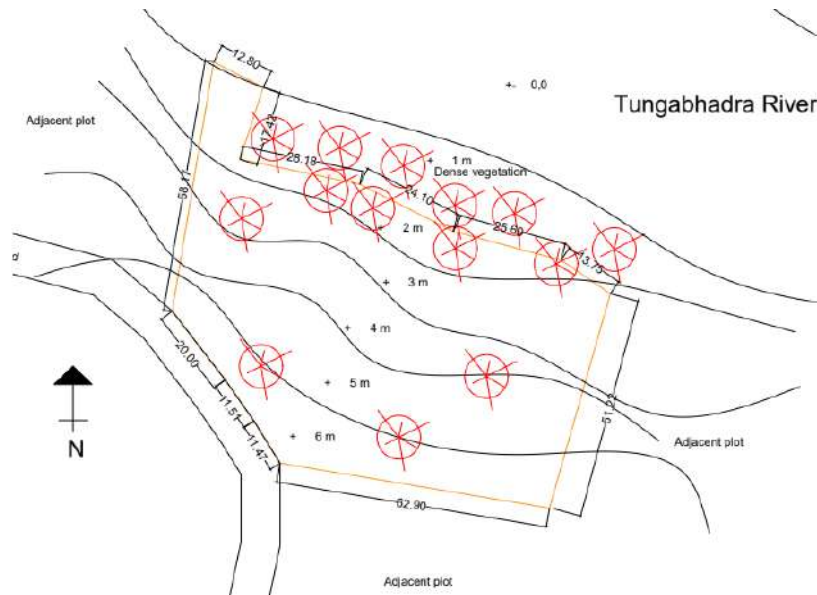
Option 3



Option 4 – Selected – as site surroundings for better concept developments for resort were seen.



4 . Site Analysis



SURROUNDING LAND USES AND BUILDINGS

- THE SITE IS LOCATED ON THE BANKS OF RIVER TUNGABHADRA.
- TO THE NORTH OF THE SITE TUNGABHADRA RIVER, FLOWS
- THERE ARE ADJACENT PLOTS TO THE EAST, WEST AND SOUTH OF THE SITE.
- A 5 M WIDE ROAD TO THE SOUTH WEST AND DENSE VEGETATION TO THE NORTH SIDE.

LOCATION

IS FROM WEST TO EAST SOUTH.

IS FROM NORTH WEST TO WEST TO EAST.

VEGETATION AND NATURAL FEATURES

- THE SITE IS LOCATED ON THE BANKS OF RIVER TUNGABHADRA.
- SITE MEETS A BEAUTIFUL VIEW OF RIVER TO THE NORTH.
- TO THE WEST SIDE OF SITE THERE ARE MOUNTAINS.
- THERE ARE ALMOST SEVEN EXISTING TREES ON THE SITE.
- TO THE NORTH SIDE THERE IS DENSE VEGETATION OF TREE.
- THERE ARE SIX CONTOURS ON THE SITE.



SOIL TYPE AND CONDITION

- THE HAMPY BEACH IS WELL KNOWN FOR ITS MINERAL CONTENT AND DEPOSITS, MAINLY IRON, SILICA AND MANGANESE.
- HAMPY HAS RED SOIL AND HENCE AGRICULTURE THRIVES.

PROMINENT VISUAL LINKAGES

- RIVER: THE TUNGABHADRA RIVER FLOWS BETWEEN THE HILLS, BUILDINGS AND SETTLEMENTS, ONE OF THE MAJOR ELEMENTS OF MATERIAL HERITAGE.
- MONUMENTS: THERE ARE MANY MONUMENTS IN HAMPY. HANUMAN TEMPLE IS LOCATED AT SOUTH - WEST SIDE OF THE SITE.
- DENSE VEGETATION: DENSE VEGETATION TO THE NORTH SIDE.
- POND: A BEAUTIFUL VIEW FROM SOUTH EAST SIDE.

Second Year Div. B

List of students



1. Bora Anand
2. Bora Isha
3. Chaudhary Prerna
4. Deshmukh Mayuri
5. Ghawate Ankita
6. Gore Kanchan
7. Holkar Sakshi
8. Hosakhande Bhakti
9. Ingale Sahil
10. Jadhav Pranav
11. Jadhav Shreyas
12. Jagtap Prathamesh
13. Jagtap Shweta
14. Kadam Sakshi
15. Kalaskar Sameer
16. Kare Nikhil
17. Karhade Rashmi
18. Kasar Rucha
19. Khote Nupur
20. Lonkar Akanksha
21. Mahajan Bharat
22. Mahajan Bhushan
23. Mahale Kshitija
24. Mathapati Omkar
25. More Dipti
26. Patil Aishwarya
27. Patni Kunal
28. Wanjale Om

List of design faculties:



Ar. Leena Mitesh Jain



Ar. Anuja Gurjar



Ar. Ila Shende

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

VIRTUAL STUDY TOUR

BHUTAN

by

Second Year B. Arch.

Division - C

II | Introduction



Thimphu, Bhutan, with Tashi Chho *dzong* in the foreground.

© Andrew Stranovsky Photography—Moment/Getty Images



Punakha dzong, Punakha (Source : -Wikipedia)

BHUTAN

Topography and Climate

The objective of a study tour is for the students to explore a different geographical and climatic zone and to understand Architectural response for the same.

Bhutan is a landlocked country in Eastern Himalaya, with a hilly terrain and winding rivers. This area has potential for students to explore an exotic location with a strong cultural context and architectural responses.

Paro Airport is the only international airport in Bhutan.

The Lateral Road is Bhutan's primary east–west corridor, connecting the towns of Phuentsholing in the southwest to Trashigang in the east.

Notable settlements that the Lateral Road runs through directly are Wangdue Phodrang and Trongsa.

The Lateral Road also has spurs connecting to the capital Thimphu and other population centers such as Paro and Punakha.

I] Geographical , Regional context



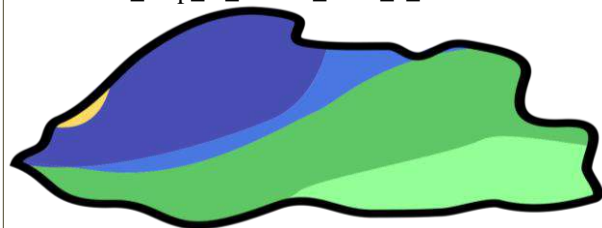
Map of Bhutan

<https://www.alamy.com/stock-photo/bhutan-map.html>



Terrain of Bhutan

https://www.reddit.com/r/MapPorn/comments/57kg1s/elevation_map_of_bhutan_1300_x_747/



Bhutan map of Köppen climate classification

Geography of Bhutan

Bhutan's northern and western boundary with the Tibet Autonomous Region (part of China), although undefined, generally follows the crest of the Great Himalayas.

- In the Duars Plain to the south of the Himalayan range lies Bhutan's boundary with the Indian states of West Bengal and Assam. Bhutan borders the Indian states of Arunachal Pradesh to the east and Sikkim to the southwest.

Terrain of Bhutan

- The northern part of **Bhutan** lies within the Great Himalayas; the snowcapped peaks in this region reach an elevation of more than 24,000 feet (7,300 metres). High valleys occur at elevations of 12,000 to 18,000 feet (3,700 to 5,500 metres), running down from the great northern glaciers.

- Cold semi-arid climate
- Cool continental climate
- Subtropical oceanic highland climate
- Humid subtropical climate
- Temperate continental climate



Do Chula Pass

<https://www.firefoxtours.com/blog/10-reasons-visit-bhutan-winter>

Historical context, Evolution of the place, Cultural / traditional aspect



Monarchy of Bhutan - Kings of Bhutan



Traditional Bhutanese Dressing Style

Political System of Bhutan

Bhutan is a constitutional monarchy with a parliamentary form of government.

- All the orders and policies are taken in the name of king.
- The policies and guidelines are made by the Prime Minister and the council of ministers which works under the three bodies of constitution. Legislative, executive, Judiciary
- The current ruler of Bhutan is Jigme Khesar Namgyel Wangchuck, the 5th Druk Gyalpo.

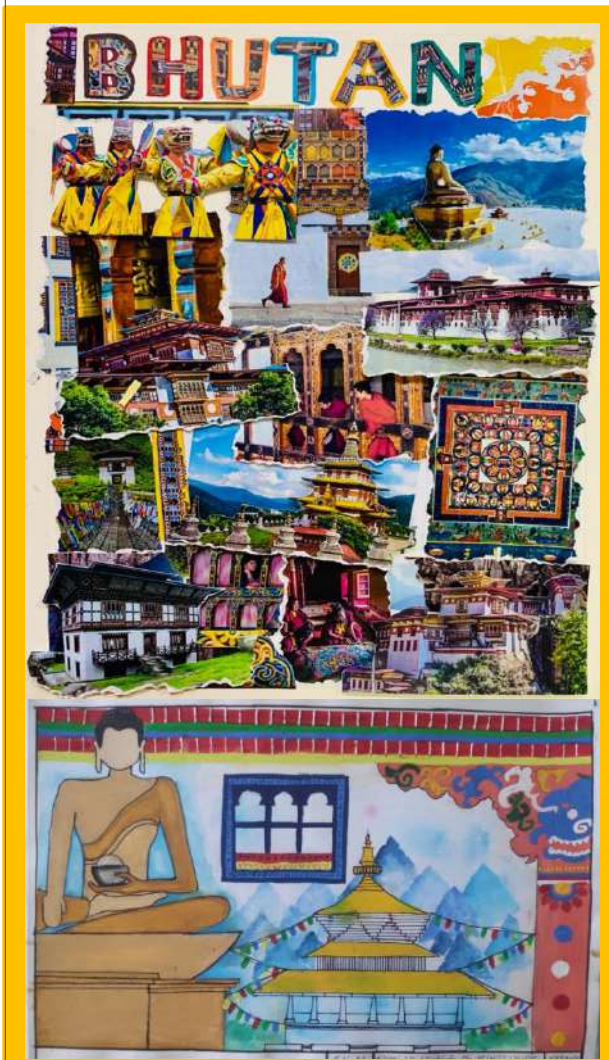
Tradition and Culture :

- Men wear the Gho, a knee-length robe somewhat resembling a kimono that is tied at the waist by a traditional belt known as Kera.
- women wear the Kira, a long, ankle-length dress accompanied by a light outer jacket known as a Tego with an inner layer known as a Wonju.

Language in BHUTAN:

The national language of Bhutan is Dzongkha and two other major languages are Tshanglakha and Lhotshamkha.

Cultural / traditional aspect



Exploring Bhutan _Creative exercise by students

Bhutan's culture is strongly based on its Tibetan form of Mahayana Buddhism, which contains a sprinkling of Tibet's ancient Bon shamanist religion.

The country's rich heritage, protected by Bhutan's isolation from the modern world until the 1960's, is still very much in evidence.

Festivals in Bhutan :

Gasa Tshechu



Thimphu Tshechu



Paro Tshechu and Drubchen



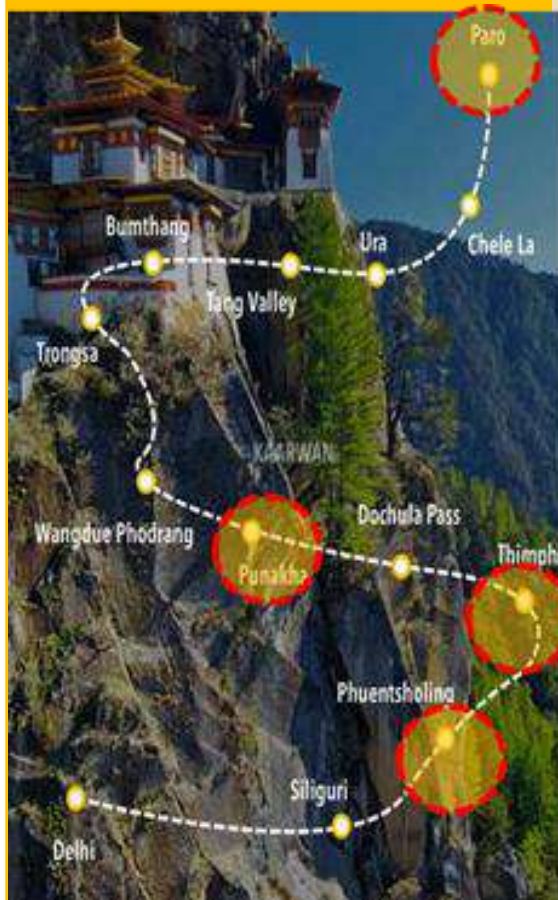
Punakha Tshechu



<https://www.tourmyindia.com/blog/bhutan-fairs-festivals-guide/>

II] Study of area :

Area selected for study



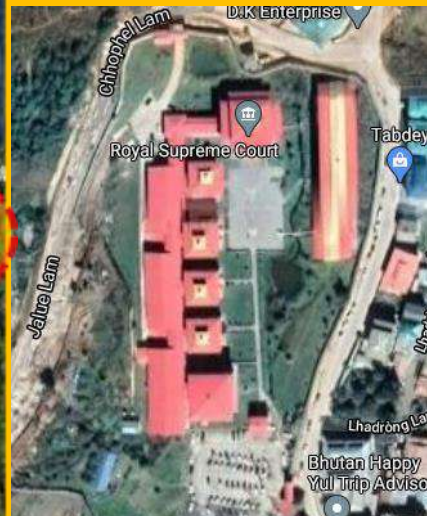
Tiger Nest, Paro
Source : Google images



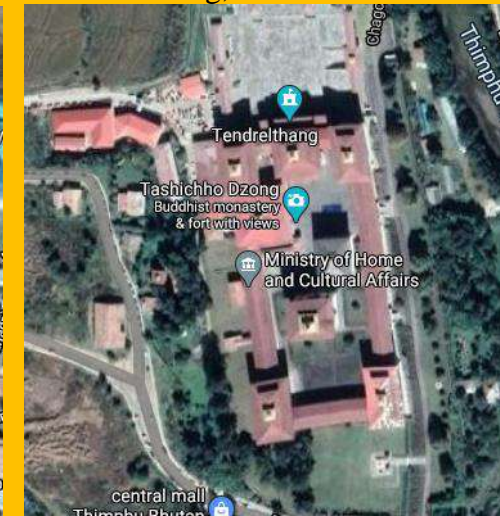
<https://www.google.com/maps/@27.4897724,89.6352394,425m/data=!3m1!1e3?hl=en>



Punakha Dzong, Punakha



Supreme court building,
Thimphu



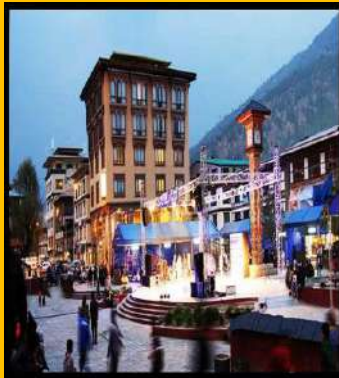
Tashichho Dzong, thimphu
Thimphu



Chimi Lhakhang, Bhutan



Six Chortens, Paro



Clock Tower Square ,City Park in Thimphu
<https://www.holidify.com/places/thimpu/clock-tower-square-sightseeing-122124.html>

Lakhangs(temples) and Goenpas (Monasteries)

- Almost two thousand lhakhangs and goenpas in bhutan.
- Can be found in almost all village and every mountaintop in country

Chortens

- Ten thousand chortens in bhutan.
- Located mainly on high mountain passes, on road, even on bridges.

Clock Tower Square ,City Park in Thimphu

- Situated in heart of town. Architecture marvel and pleasure to eye.
- Basically a Tower with four clock faces , which makes it different from any other building and structure in Bhutan.
- There are also many shops, hotels and restaurants surrounding the square.



Supreme Court Building, Thimphu



Tashichho Dzong, Thimphu



National Memorial Chorten, Thimphu



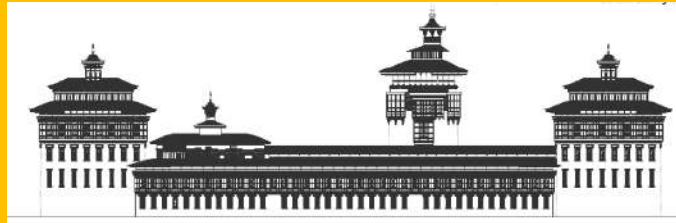
Punakha Dzong, Punakha

Tashichho Dzong, Thimphu, Bhutan

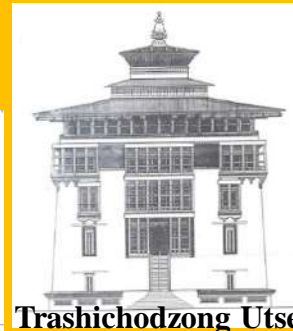
Tashichho dzong is a Buddhist monastery and fortress on the northern edge of the city of Thimphu in Bhutan, on the western bank of the Wang Chu.



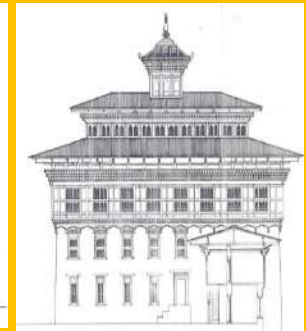
South East Tower



Elevation



Trashichodzong Utse



Kunrey Lhakhang

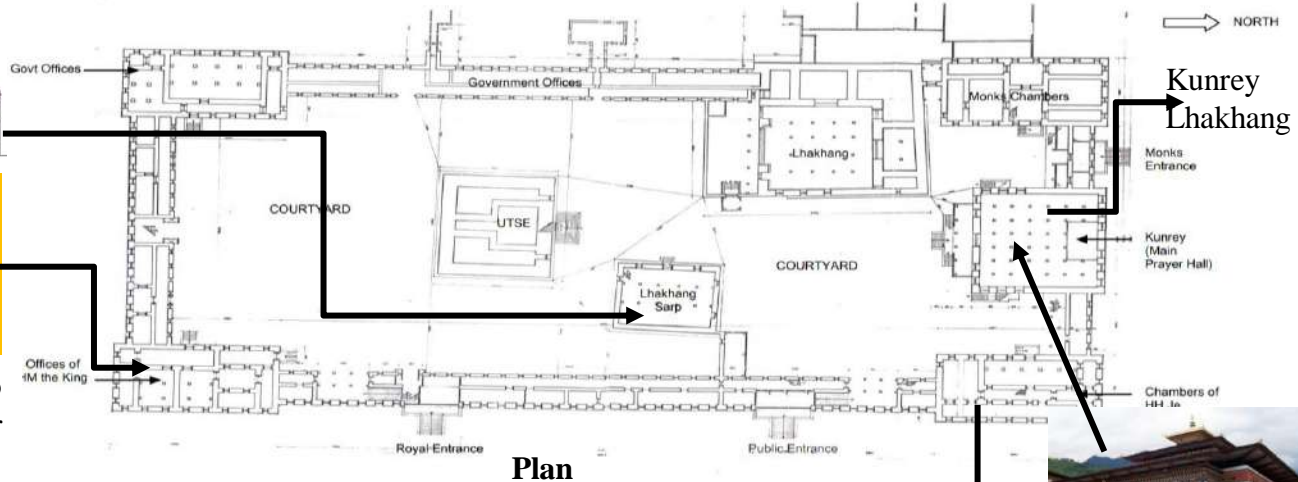


SIDE ELEVATION



The offices have no windows at the lower level.

Spot distinctive red and gold stripes on upper half of walls.



Plan

- The layout of a Dzong was typically designed as a simple square or a rectangle based on the terrain and space available on site.
- The central tower “Utse” are usually built up to three or more floor levels in the center of courtyards.
- Deviations from this pattern were generally due to differences in terrain



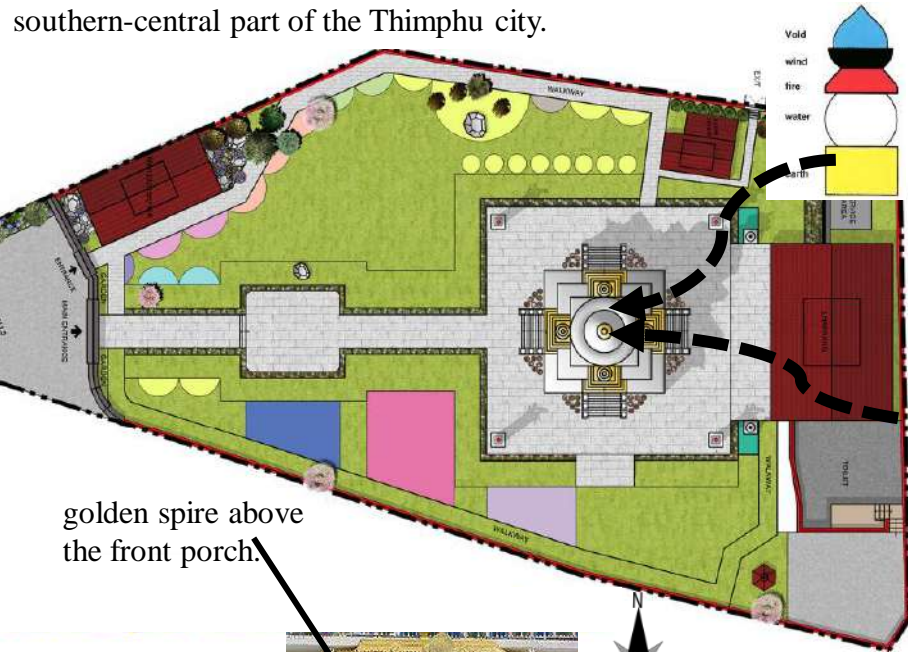
National Memorial of Chortan , Thimphu , Bhutan



The Memorial Stupa, Thimphu, also known as the Thimphu Chorten, is a stupa in Thimphu, Bhutan, located on Doeboom Lam in the southern-central part of the Thimphu city.



The Buddha's Body in the Chorten (Tibetan Style Stupa)



golden spire above the front porch.

Stupa

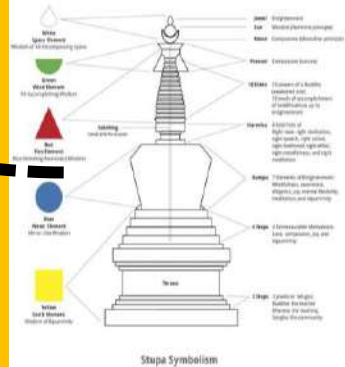
The shape of stupa represents the buddha, crowned and sitting in meditation posture on a lion throne. Crown is at the top of spire.



Plan

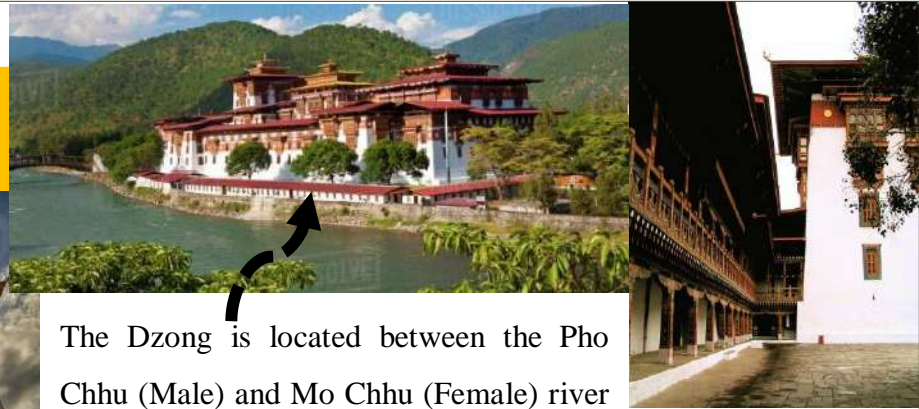
It is designed as a Tibetan style Chorten Patterned on the design of a classical stupa, with a pyramidal pillar crowned by a crescent moon and sun.

The architecture of the chorten has been designed to present it as “one of the most visible religious structures in Thimphu



Punakha Dzong, Punakha, Bhutan

The dzong is the administrative centre of Punakha District in Punakha, Bhutan. Constructed by Ngawang Namgyal.



The Dzong is located between the Pho Chhu (Male) and Mo Chhu (Female) river in the Punakha-valley



Interior Courtyard

Administrative offices of the dzong, a very large, white-washed stupa and a bodhi tree are located in the first courtyard. Also seen in the same courtyard, on the far left, are a mound of stones and a chapel dedicated to the queen of the nāgas

An ancient tradition of crafts in wood carving, masonry, metal work, painting, and several other skills are seen in interiors of dzong.



PUNAKHA DZONG FLOOR LAYOUT PLAN
(Drawing: DCAH, Dept of Culture, Picture: Dorji Yangki)

Side wall



The materials used in building the Dzong consisted of compacted earth, stones and timber in doors and windows.



<https://www.bhutan.travel/destinations/punakha>

National Ceremonial Plaza, Thimphu, Bhutan



Sectional Elevations through National Ceremonial Plaza



His majesty greeting to peoples of Bhutan.



Plan of National Ceremonial Plaza

https://worldarchitecture.org/architecture-projects/fggc/national_ceremonial_plaza_thimphu_bhutan-project-pages.html



pavilion



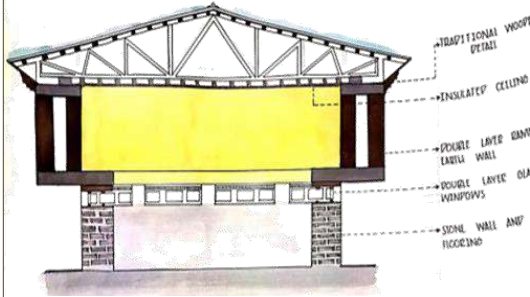
Interior view of Tea pavilion

The National Ceremonial Plaza is an extension of ancient fortress Monastery, the Trashi Chhoe Dzong.

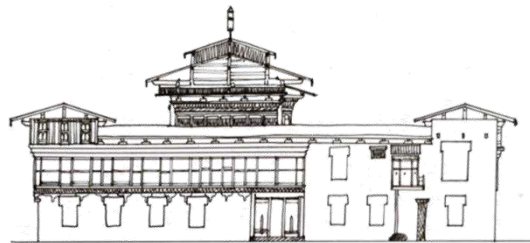
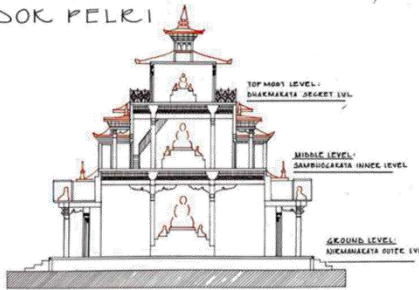
The Trashi Chhoe Dzong is iconic centre of bhutanese culture and institutions.

The National Ceremonial Plaza is an addition to the ancient 13th century fortress monastery. Locally known as the Tsechu Plaza, this national public space is composed of tiered wood carved balconies; a large stepped plaza with a capacity to seat 25,000 participants; Green Rooms and sanitary facilities for dancers and musicians; public sanitary facilities; pavilions for serving tea; and controlled entry points. A central dance and performance arena accommodates several hundred musicians and dancers. The Thimphu Tsechu is the largest and most spectacular valley festival in the Himalayas!

PHUENTSHOLING HAPPINESS CENTRE



SECTION OF ZANGDOK PELRI



Wangduecholing Palace

Need of the project

As a lot of students need to go abroad for education especially The study and analysis concludes that there is a requirement for technical institutes in Bhutan.

The College of Science and Technology (CST) located at Phuentsholing, is the first institute in the country to offer undergraduate degree programmes in engineering under the Royal University of Bhutan.

With a brainstorming session with the students we have concluded that an Architectural college is a requirement for this country.

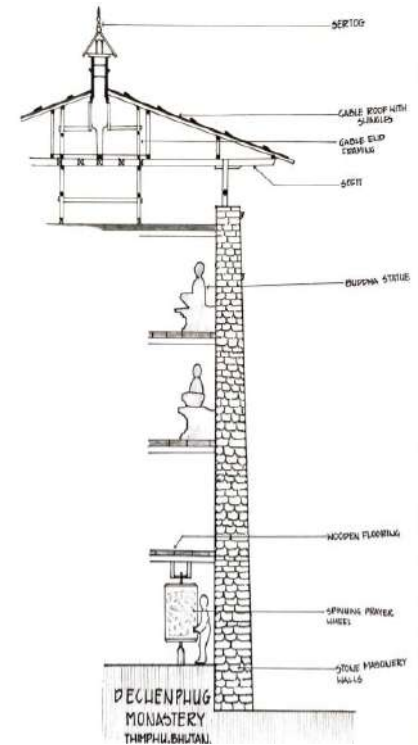
This Institute has an Architectural College but given the Strong cultural and Architectural context, We propose a Redesign of the same.

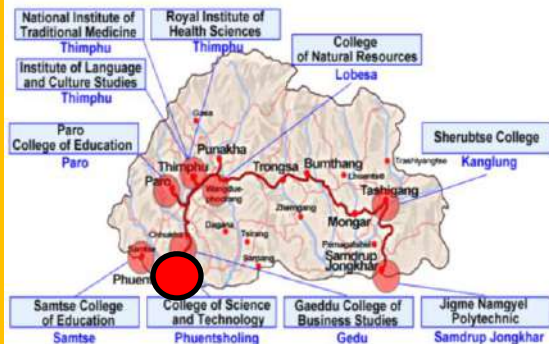
Name Of Project-

College of Architecture, Phutesholing,

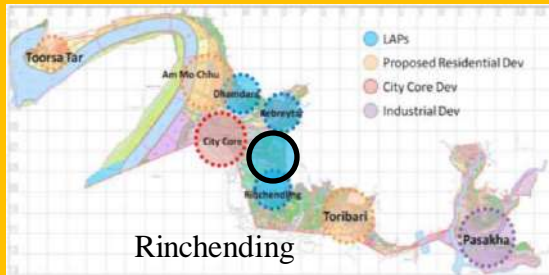


Gang Teng Monastery





Location of Colleges under Royal University, Bhutan (Source : raonline)



Local area plan division and proposed development area. (source: Phuentsholing Structural plan (2013- 2018).

DESIGN PREAMBLE

The National Technical Training Authority (NTIA) has been entrusted by the Royal Government set up an architecture and building construction study centre in Bhutan. Professionally trained architect is a new concept in Bhutan compared with other developing countries. Carpenters and masons were solely responsible for both design and construction in the traditional construction system. However, today with the increasing modern development the construction system is also getting increasingly modernized, with new materials, new technology and new skills. In addition, there is an increasing number of educated young people seeking appropriate training and specialisation in the field of building design and construction. In the current scenario of increasing the number of students each year obtaining higher education in architecture which brought need of balance between traditional knowledge and development of new learning techniques. The focus has turned on the architects, planners, and institutions to provide a better facilitated educational zone benefitting the learning in the best possible way. The institution or the campus plays a vital role in forming a platform for obtaining a better education. the idea of institution and campus gives a clear picture of how campus planning will impact the learning activity of an individual.

Design program Space Requirements



Council of Architecture

Guidelines for Physical Infrastructure



State of Tertiary Education in Bhutan 2017

**BHUTAN
INSTITUTE OF
ARCHITECTS (BIA)**

- Development Control Regulation 2016
- Final Building Regulation 2018
- Bhutanese Architecture Guidelines
- Traditional Architecture Guidelines

Ministry of Works and Human Settlement

འབྲེལ་ལུགས་དང་ལྷན་སྐྱོང་ལྷན་ཁང་།



Department of Adult and Higher Education
Ministry of Education



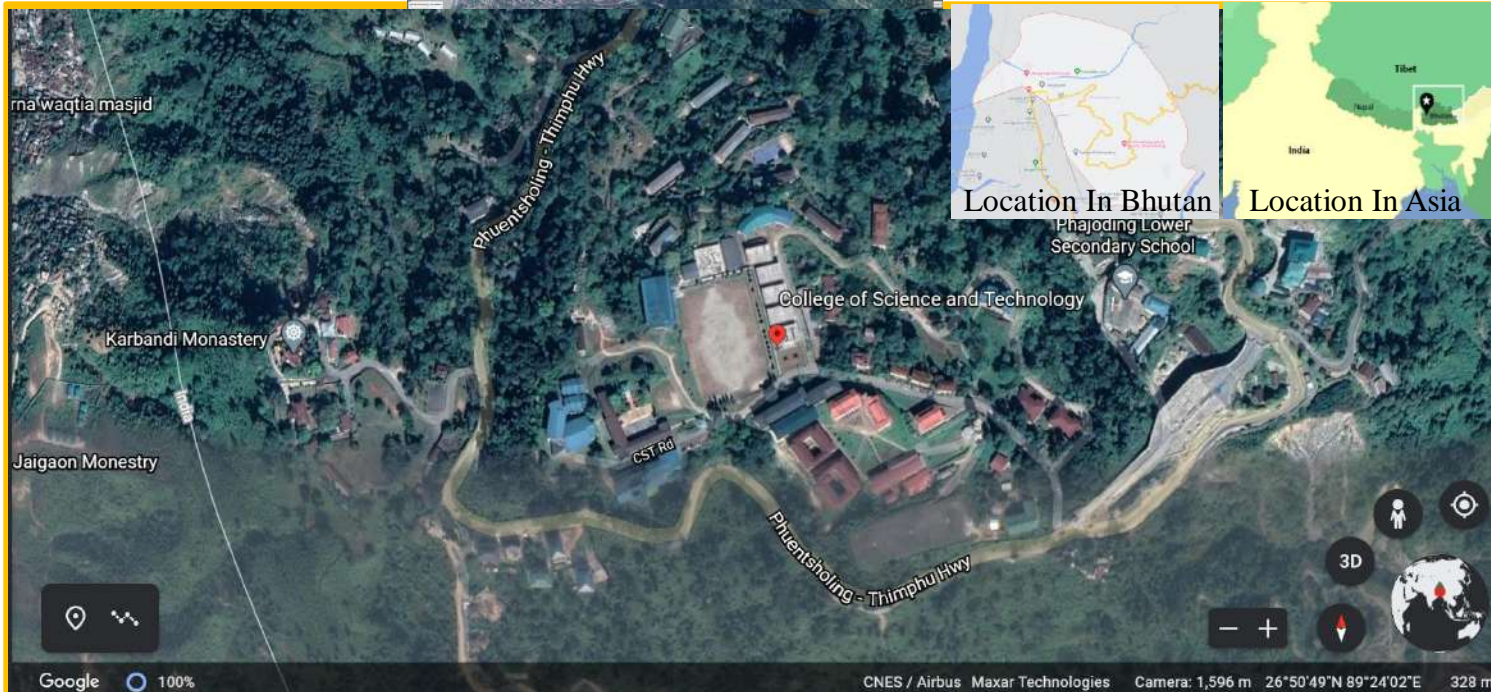
དཔལ་ལྷན་འབྲེལ་ལུགས་ཀྱི་འཕུལ་གྲུབ་ལྷན་ཁང་།
MINISTRY OF HOME & CULTURAL AFFAIRS
ROYAL GOVERNMENT OF BHUTAN, GASHI-PHOENIX

| SL No. | Space Designation | User | Quantity Required | Area/User (m ²) / Standard/Guidelines | Area (m ²) | Total Area(m ²) |
|--------|--|------|-------------------|---|------------------------|-----------------------------|
| 1 | Administration Block for Department of Architecture | | | | | |
| | Principal | 1 | 1 | 25 | 25 | 25 |
| | HOD | 1 | 1 | 15-20 | 15 | 15 |
| | Staff room | 7 | 2 | 12 to 14 to 16 | 15 | 30 |
| | Admin staff & Account office | 3 | 2 | 10-14 or 8-10 | 12 | 24 |
| | Toilet (Male/Female) | 10 | 5 | 2 per person | 20 | 100 |
| | Conference room | 15 | 1 | 1.5-2/person | 45 | 45 |
| | General Store | 1 | 2 | 4 | 4 | 8 |
| | Cafeteria | 20 | 1 | 0.9 to 1 | 20 | 20 |
| | Pantry | 1 | 1 | | 8 | 8 |
| | Kitchenette (with store) | 5 | 1 | | 15 | 15 |
| | Entry | 20 | 2 | 0.75/person | 15 | 30 |
| | waiting and storage space | 10 | 2 | 12 | 12 | 25 |
| 2 | Academic Block (Department of Architecture) | | | | | |
| | Theory Class room | 30 | 5 | 1.4/person | 42 | 210 |
| | Drawing studio | 30 | 5 | 2.2 to 2.8 per person | 84 | 420 |
| | Design studio | 30 | 2 | 2.8/person | 84 | 170 |
| | computer lab | 30 | 2 | 2.3/workstation | 69 | 138 |
| | store room | 1 | 2 | 15 | 15 | 30 |
| | Toilet (Male/Female) | 18 | 2 | 12 to 14 | 14 | 28 |
| | Rest room | 30 | 2 | 1.4/person | 42 | 84 |
| | seminar room/ AV rooms | 45 | 2 | 1.4/person | 63 | 126 |
| 3. | Labs, workshops for Model making, Environmental & Material, SL Lab, photography room | | | | | |
| | Department Library | | | | | 100 |
| | Total Built up area = | | | | | 1650 |
| | Temporary Exhibition area Amphitheatre, circulation spaces/ semi open passages, transition spaces (Not included in built up) | | | | | As req. |
| | Construction Yard {Not included in built up (open to sky)} | | | | | As req. |
| | Auditorium - Not included in built up, as it is common facility for all department at CST | | | | | As req. |

AREA COVERAGE: According to the DCR of Phuentsholing, the total allowed coverage is 30%.

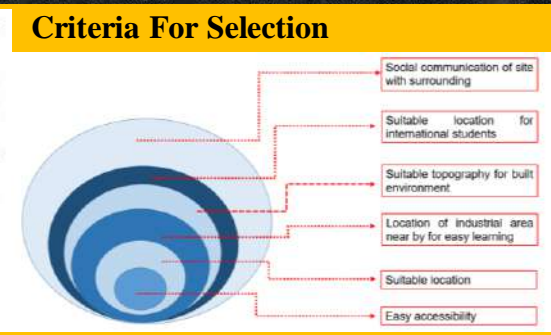
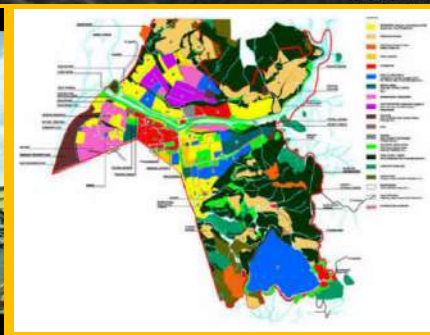
SITE SELECTION

Global Location



Location In Bhutan

Location In Asia

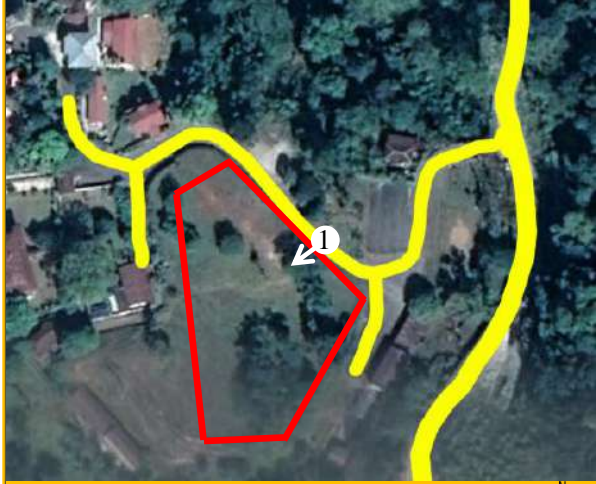


Map showing CST campus, Rinchending, Phuentsholing, Bhutan

Source: <https://earth.google.com/web/search/architecture+college+in+bhutan/@26.85026037,89.39350882,431.4903416a,1164.67807624d,35y,0h,0t,0r/data=CigiJgokCZXBZ8cfdjtAEcSwC5RAcTtAGQYwbLD8aVZAITKO7UZRaVZA>

8cfdjtAEcSwC5RAcTtAGQYwbLD8aVZAITKO7UZRaVZA

Site Option 1 : Co-ordinates: 26°50' 89°23'



Location: Phuntsholing, Bhutan
Area: 5105 sq mt



Access to site

Site 1

- Phuntsholing-Thimphu hwy - **200 mts.**
- Opposite College Of Science & Technology- **1.2kms.**
- Rinchending Helicopters Port- **1 km**

Site 2

- Phuntsholing-Thimphu hwy- **200 mts.**
- within CST campus
- Rinchending Helicopters Port-**500 mts.**



Street view point 1



Street view point 2

Site Option 2



Location: Phuntsholing, Bhutan
Area: 2500 sq mt



Site Section 1



Slope degree: 3 & road with 9M



Site Section 2



Thimphu-Phuntsholing Highway

Climate of Phuntsholing



Students of 2nd Year B.Arch Division C

- | | |
|------------------------|----------------------|
| 1.Rohit Bobade | 13.Vaibhavi pawar |
| 2.Akanksha Deore | 14.Shraddha Potdar |
| 3.Omkar Godse | 15.Rushikesh Rajpure |
| 4.Pranjal Hingwe | 16.Rajshree Singh |
| 5.Tanya Jain | 17.Mahesh Rakh |
| 6.Dipali Kshirsagar | 18.Anup Rathod |
| 7.Kiran Mali | 19.Tulsiran Raut |
| 8.Purushottam Musmade | 20.Abhishek Raykar |
| 9.Nishad Nimbale | 21.Mrunal Rewatkar |
| 10.Prachiti pargoankar | 22.Saloni Sawant |
| 11.Rashmi Patil | 23.Sakshi Takawale |
| 12.Shrinivas Patil | 24.Pooja Wagh |

Design Faculty



Ar. Manjusha Zalte



Ar. Trishna Mahadkar

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

VIRTUAL STUDY TOUR

GOA

by

Second Year B. Arch.

Division D

INTRODUCTION



India

Go

Sanguem

Site ,Sanguem

In the Virtual Study Tour of Goa the study analysis gave picture that the neighborhood of Sanguem needs Pre Primary and primary school, auditorium etc. so with reference to SDG NO.4 and ministry of education guidelines so also sarvashiksha abhiyan and with reference to second year syllabus a multifunctional space i.e. Primary and pre primary school is proposed as design exercise.

According to the school norms and SSA Requirements a site was selected, located in the Centre of neighborhood, easily accessible to all stockholders.

So it was decided to Design a Pre-Primary and Primary School in that region.

According to the requirements a site was chosen that would be in the Centre of the Neighborhood and would be easily accessible.



site

SITE

- The site is located in a SPARCE residential area on the banks of Sanguem river in the lush green surroundings of Sanguem city with Forest regions nearby. The flood line is marked and it is 15.0 m away from site boundary.
- Proposed site Area is 5580sq.mt. with an access from a 9.0 m wide to the south. and mention adjacent property.



Sustainable development goals(SDG) as per United Nations general assembly Focus on QUALITY EDUCATION.



Sources-Book(House form of goa.)



HISTORICAL CONTEXT

- The history of Goa dates back to prehistoric times, though the present-day state of Goa was only established as recently as 1987.
- In spite of being India's smallest state by area, Goa's history is both long and diverse.
- It shares a lot of similarities with Indian history, especially with regard to colonial influences and a multi-cultural aesthetic.

DIFFERENT REIGN IN GOA.



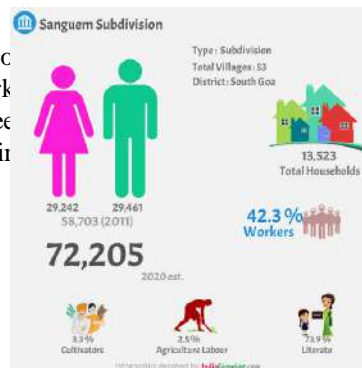
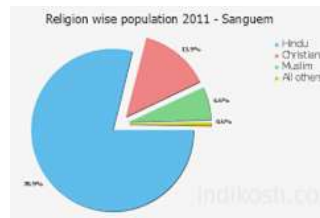
- **Shilaharas** : The Shilaharas of South Konkan ruled Goa from 755 until 1000 AD.
- **Kadambas** : The Kadambas ruled Goa between the 10th and 14th centuries. In the beginning, the Kadambas ruled only Sashti present day Salcette, a small part of Konkan.
- **Port of Goapakattana** : Later King Shashthadeva conquered the island of Goa, including the ports of Gopakattana and Kapardikadvipa, and annexed a large part of South Konkan to his kingdom.
- **Bahmani Sultanate** : From 1350 to 1370, Goa was ruled by the Bahmani Sultanate. In 1469 Goa was again conquered by the Bahmani Sultans of Gulbarga.
- **Vijayanagar Empire** : This Sultanate broke up in 1492. In 1370, the Vijayanagar Empire had reconquered Goa. Vijayanagar was a resurgent Hindu state controlling much of south India; its capital was located at modern day Hampi, in Karnataka.
- **Bijapur Sultanate** : In 1492, Goa became a part of Adil Shah's Bijapur sultanate, which established Goa Velha as its second capital. The former Secretariat building in Panaji is a former Adil Shahi palace.
- **The Portuguese Reign** : Portuguese autocratic ruled from 1510–1961.

REGIONAL CONTEXT OF SANGUEM,GOA

Sanguem is a city and a municipal council in South Goa district in the Indian state of Goa. Notable landmarks include the Sagameshwar Temple, Bhagwan Mahaveer Sanctuary and Mollem National Park and the Salaulim Dam.

Geography

Sanguem is located at 15.23°N 74.17°E. It has an average elevation of 22 meters (72 feet).



Demographics

- As of 2011 India census, Sanguem had a population of 6444 of which 3162 were males and 3282 females with female sex ratio of 1038 against state average of 973.
- Sanguem has a literacy rate of 88.39%, lower than the state average of 88.70%: male literacy is 92.41%, and female literacy is 84.49%.
- In Sanguem, 10.30% or 664 of the population is under 6 years of age. Konkani is the primary language spoken here.

Sources-Book(House form of goa.)

EVOLUTION OF THE PLACE –SANGUEM,GOA



Precinct conditions in 2006



Precinct conditions in 2017

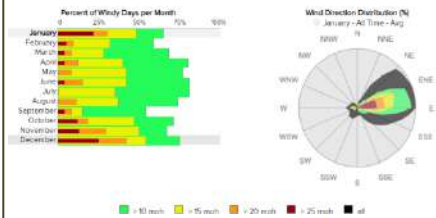


Precinct conditions in 2010



Precinct conditions in 2020

CLIMATE



The predominant average hourly wind direction in Goa varies throughout the year. The wind is most often from the north for 2.1 months, from January 2 to March 6, with a peak percentage of 45% on February 16.

The wind is most often from the north for 2.1 months, from January 2 to March 6, with a peak percentage of 45% on February 16. The wind is most often from the west for 7.5 months, from March 6 to October 22, with a peak percentage of 99% on July 30. The wind is most often from the east for 2.4 months, from October 22 to January 2, with a peak percentage of 34% on January 1.

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual |
|---------------------------------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-------------|-------------|
| Relative Humidity (%) | 67 | 69 | 71 | 71 | 71 | 85 | 88 | 89 | 86 | 80 | 70 | 64 | 75.9 |
| Average Dew Point Temperature °C (°F) | 19.4 (66.9) | 20.2 (68.3) | 22 (71.5) | 23.5 (74.3) | 24.2 (75.5) | 24.8 (76.7) | 24.5 (76.2) | 24.4 (76) | 24.4 (75.8) | 24.1 (75.4) | 21.6 (70.9) | 19.5 (67.1) | 22.7 (72.9) |
| Interpretation | Humid | Humid | Very humid | Very humid | Muggy | Muggy | Muggy | Muggy | Muggy | Muggy | Very humid | Humid | Very humid |

GEOGRAPHY, FLAURA & FAUNA



Goa is the home to almost 48 types of mammals, 276 types of birds and 60 types of reptiles.

Goa also has a high snake population, which keeps the rodent population in control.

Animals like foxes, wild boars and migratory birds are found in the jungles of goa. Crabs, lobsters, shrimps, jellyfish, oysters and catfish form important part of the water-life of the state.



State animal - gaur



State tree – matti crocodile bark tree

Goa is the home to almost 48 types of mammals, 276 types of birds and 60 types of reptiles.

Animals like foxes, wild boars and migratory birds are found in the jungles of goa. Crabs, lobsters, shrimps, jellyfish, oysters and catfish form important part of the water-life of the state.

The driest weather is in january and february when an average of 0 mm (0 in) of rainfall (precipitation) occurs.



Sources-Book and internet study

Religion:

There are three main religion in goa.

- Hindu
- Christian
- Muslim
- Other

Goa traditional costumes:

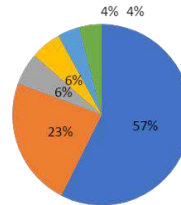


- Goa traditional costumes are the mixture of various traditional costumes.
- People wear the clad according to its tropical climate. Generally, people prefer to wear the cotton costumes.
- The weather conditions in goa make to choose the people to wear the costumes to apt the weather.
- During the winter season, most of the people wear woolen jackets.. The saris studded with precious stones and jewelry.



■ KONKANI LANGUAGE
■ MARATHI
■ HINDI
■ KANNADA
■ URDU
■ PORTUGUES & OTHERS

LANGUAGE CHART



Language

- **Konkani** is official language of goa state
- **Marathi** is second language of goa because the state Maharashtra is next to goa.
- **Portuguese** is used to be official language of goa in during the colonial
- Portuguese language in educational institutions as a 3rd language

Lifestyle/ food



- The people of **goa** are known as 'Goans'.
- They are peaceful, friendly and fun loving people who love rest.
- The **life style** in **goa** reflects a unique blend of east and west and the goans usually comprise of a predominantly Hindu and a Christian population and a small Muslim community.

The Goan Life and Culture

People living in Goa are referred to as Goans. A small state on India's western coast, Goa has always benefitted as a trade centre because of its easily accessible ports.

A beautiful harmonization of the East and West, Goans have taken the best of both worlds.

A civilization of warm, happy people, Goa sees a mix of different religions like Christians, Catholics, Muslims and Hindus that live together in consonance. Following their age-old traditions and customs, Goan's celebrate all major festivals with fervour without bringing any religious barriers within the society.

Sources-Book and internet study

STUDY AREA

The heritage history

- There are around 50 heritage sites in goa, among which, 7 of them are recognized by UNESCO as world heritage sites. They are-
 - Chapel of St. Catherine.
 - Church of St. Francis of Assisi.
 - Church of our lady of rosary.
 - Basilica of Bom Jesus.
 - Se- cathedral.
 - Church of St. Cajetan.
 - Church and convent of St. Augustine.

The House of Goa

- The houses of goa are mostly seen as bright and colorful.
- The front facade of the houses have A solid color including brick red, blue, Green, yellow, etc. The interior however is Paler or white with solid highlights.
- Houses seen in goa are mostly of indo-Portuguese style of architecture.



Vernacular house of goa



Basilica of Bom Jesus



Chapel of St. Catherine.



Church of St. Francis of Assisi.



Church of St. Francis of Assisi.

Churches

- Monuments of goa are a blend of Hindu, Mughal and Portugal styles of architecture.
- Several churches and convents were constructed from 15th to 17th century A.D.
- Displays a fusion of renaissance and baroque styles of architecture.
- Churches and chapels were mostly painted in white as it represents the purity of holy virgin Mary.
- Churches consist of- a nave with three chapels on both sides, two altars, a main altar and a choir.

Sources-Book and internet study

Temple Architecture

MAHADEVTEMPLE, KURDI

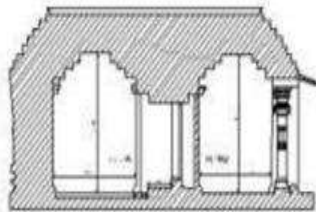
LOCATION:

Kurdi, South Goa District

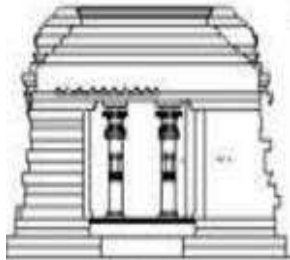


HISTORY OF THE TEMPLE:

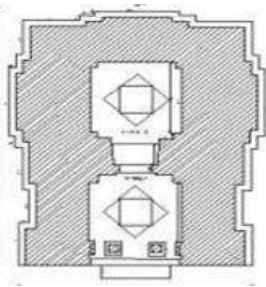
- Temple was built by the kadambas during 10th century
- Moved from its original location to the current one
- Temple was originally located about 17 km from its current position, in kurdi on the banks of river Salaullem.
- The temple has been translocated brick by brick and placed at its current place.



CROSS SECTION



FRONT ELEVATION



PLAN

CONSTRUCTION MATERIAL:

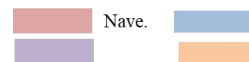
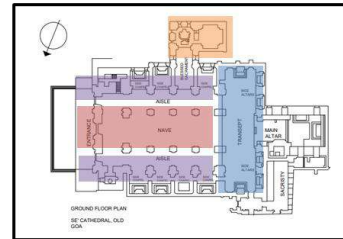
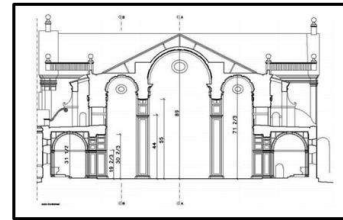
- The mahadev temple is built of laterite stone on hard laterite ground and has no foundation.
- The wall of the temple and shikhara are constructed out of laterite but schist is used in the Ceiling ,door jamb and the pillars.
- The laterite is brittle and has no tensile strength than schist

Church Architecture

THE SE CATHEDRAL, VELHA GOA

Name: Se Cathedral De Santa Catarina.

- Location: Old Goa. .
- Denomination: Roman Catholic.
- Architecture :Portuguese-Gothic.
- Massive pillars support the vault in the nave and the choir, while the chapels on either side are separated by internaldefences.
- On the right of the nave, is the other screened chapel, the Chapel of the Cross of Miracles.
- The main entrance in the façade has Corinthian columns on plinths supporting a pediment containing an inscription in Latin.

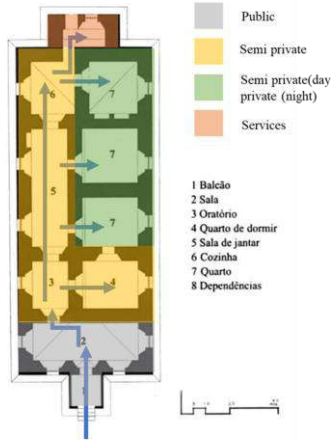


Sources-Book(House form of goa.)

TYPICAL GOAN HOUSES

The Outward-looking Linear House

- This is what one could call the basic Goan House. The house is characterized by a single gable roof spread over the entire house except for the balcony and the rear veranda.



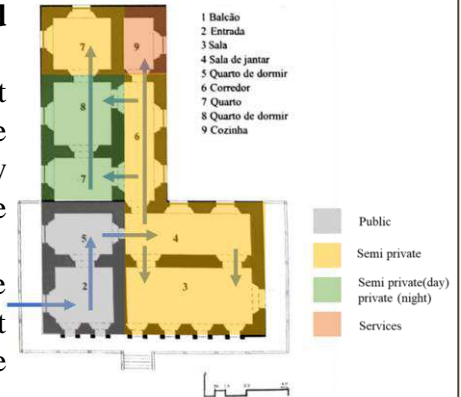
The Outward-looking Linear House



- Over the balcony and the rear veranda there is either the inevitable lean-to roof or a gable end roof at a lower level.
- Trusses are eliminated completely and the intermediate walls are tapered in the roof profile. This necessitates the requirement of a tiny post that supports the roof.

The Outward-looking L-shaped House

- The L-shaped house is the form that found favor when space requirements were marginally greater than what the Linear House could provide.
- The simplest of L-shaped houses are the ones with two rooms abreast right down the full length of the house
- One deviation in this house type is the introduction of the entrada. The entrada or entrance hall is the first room that the visitor has access to from the balcony or veranda
- The entrada often houses the family chapel or altar. A slightly more sophisticated version of the L-shaped house has at least three rooms in the front half of the house.
- The roof follows the form of the house and is either a single L-shaped roof hipped at both ends or a single horizontal hipped roof in the front with a gabled roof at the rear. This gabled roof at the rear intersects the main roof at a lower level.



Front view of L-shape house



Interior view of L-shape house

Sources-Book(House form of goa.)

TYPICAL GOAN HOUSES

The Outward-looking I-shaped House

- This house form was inspired by the sheer requirement for additional space. It probably evolved at a time when the need for light and air in every room was considered of paramount importance.

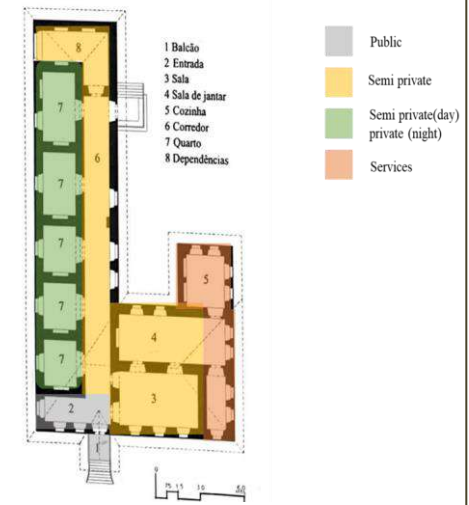


Front view of I-shape house

- In the I-shaped House the front section of the "I" is where all the primary spaces are located and the rear section of the "I" is where all the secondary spaces are located.
- The secondary spaces are the service areas.
- The middle section of the "I" then functions as a circulation link and a fruit garden often links the front section to the rear section from one end of the veranda to the other.

The Outward-looking U-shaped House

- A distinctive feature in this house form is the segregation of spaces within the house.
- The hall, the space that the visitors have access to, is located in the front of the house. The Oratorio and the Master's Bedroom or the inner sanctum of the house and the private family rooms are located in one wing of the "U".
- The other bedrooms and the service areas are located in the other wing of the "U". The dining room, a space that is common to both family members and guests and to the workers in the kitchen is located in the middle section or the bow of the "U".



Sources-Book(House form of goa.)

Building construction and materials:

The chief building materials involved in a typical Goan house is all about going vernacular. Laterite and stone are widely used and locally available. For ornamentation purposes, mother of pearl is used on window linings. Wood is one material you'll see in abundance. Staircases use both wood and metal. Floor tiles involve lots of patterns and varied styles.

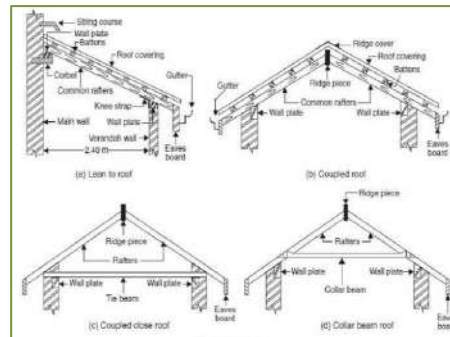


laterite tiles

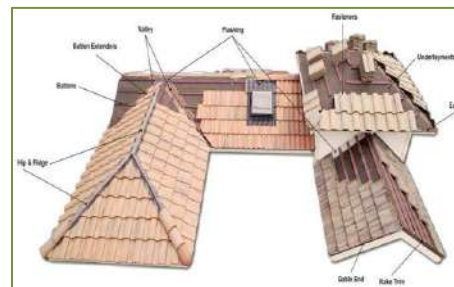
Wall constructed Using Laterite and stone

SLOPING ROOF:

- Goa receives an annual rainfall of 3000mm, & is the fewest state in the country to receive such heavy rainfall
- Sloping roof is the solution to this problem, as water does not collect anywhere anywhere on the roof and flows down freely
- Traditionally goan houses have roof made of tiles of baked clay.
- A sloping roof with manglore tile, with an angle of 20 degree to 30 degree shall be provided.
- However with cement emerging as cheaper & more permanent option, sloping roof made of cement are becoming popular.



Types of roofs



Details of sloping roof

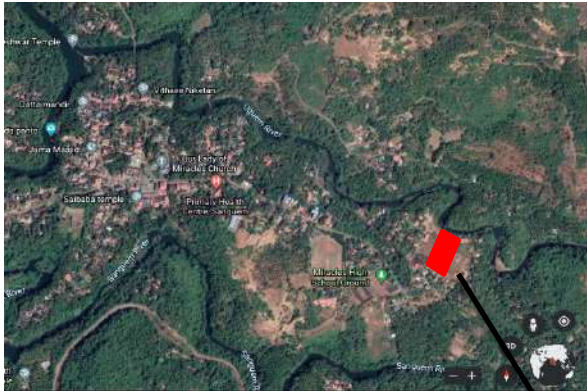
WOOD:

- For the long term durability of historical wooden buildings, constructors and users who deal with this subject have to know wood properties exactly.
- Wood is an organic, hygroscopic and anisotropic material. Its thermal, acoustic, electrical, mechanical, aesthetic, working, etc. properties are very suitable to use it is possible to build a comfortable house using only wooden products

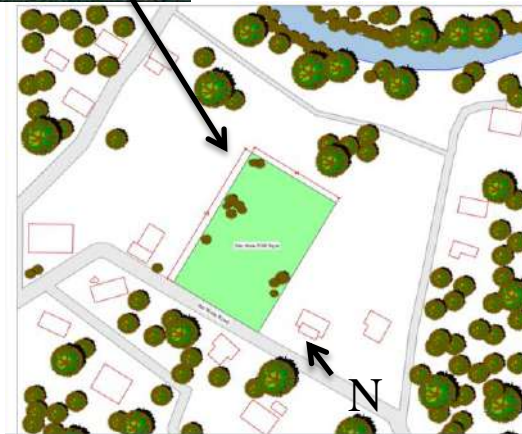
Sources-Book(House form of goa.)

The Site:

Goa is located on the west coast of India in the region known as the Konkan forest cover. The site for the proposed Pre-primary and Primary school is located in Sanquelim or Sankhali in North_Goa district in the Indian state. Sanquelim is situated in the Bicholim Taluka of North_Goa. It has an average elevation of 78 metres (256 feet). A site was chosen that would be in the Centre of the Neighborhood and would be easily accessible. Area of Site is 5580sq.mt. with an access from a 9m wide to the south. On the northern side of the site there's Ugeum river. Also there are trees and plants around the site. Ugeum river is to the NE of plot and it is around 80m from the site. There is road to the NE of plot which is around 40m.



Google map of sanguelim showing site.



Cad Drawing showing detail measurement of plot.

Exercise I – Settlement Study

The goal is to ensure inclusive and Equitable **Quality Education** and Promote Lifelong learning Opportunities for all. According to the analysis, it had been determined that there is high school in the vicinity but not the Pre-primary and primary school. It is possible to make Institutional building with comfortable environment with necessary analysis by means of simulations during the design phase. Hence, today and in the future, more healthy and sustainable environment will be created for users. Study area under the major headings of :

1. Study of (vernacular houses, churches, temples) in goa.
2. Relationship with the surrounding and architectural character of the institute
3. Zoning and circulation

Exercise II – Project Understanding Study

With reference to SDG NO.4 and ministry of education guidelines so also sarvashikshan abhiyan and with reference to second year syllabus a multifunctional space i.e. Primary and pre primary school is proposed as design exercise.

Exercise III - Site Study

1. Base drawings for site – plan and sections 1:100
2. Site Model 1:100
3. Site analysis, -Site and surrounding study,slope analysis, Visual study of site.– photographs, reasons for selection of site

DESIGN PROGRAMME

A site was chosen that would be in the Centre of the Neighborhood and would be easily accessible. The site is located in a residential area on the banks of Sanguem river in the lush green surroundings of Sanguem city with Forest regions nearby. Area of Site is 5580sq.mt. with an access from a 9m wide to the south. There is a lot of natural vegetation around the site and a river. Ugeum river is to the NE of plot and it is around 80m from the site. There is road to the NE of plot which is around 40m. There are around 7-8 trees on plot.

1. Administrative Block

2. Admin.Block
3. Reception
4. Record/ Store room
5. Conference room
6. Toilet blocks
7. Principal's cabin +waiting area+toilet
8. Vice-Principal's cabin
9. Staff room
10. Stationery shop

1. Academic Block

2. Pre-primary classrooms
3. Primary classrooms
4. Toilet blocks
5. Activity rooms
6. Laboratories
7. Digital and book library

1. Other facilities

2. Indoor play court
3. Auditorium/Assembly area
4. Music/Dance room
5. Kitchen/Pantry/Dining hall
6. Amphitheatre
7. Parking - Bus
8. Rickshaw
9. Cycle
10. Staff parking
11. Two wheelers
12. Watch man's cabin



List of Faculty

Ar. Tejaswini Jangale
Ar. Mukta Pandit

List of students

2nd year Div-D



2nd year Div-D Students

| | |
|----|------------------------------|
| 1 | CHANDEKAR SONIYA SOMESHWAR |
| 2 | KUNDU_TANUSHRI_SAMIR |
| 3 | PATIL APURVA SUNIL |
| 4 | PATIL JAYESH ARUN |
| 5 | PATIL SHIVAM KAILAS |
| 6 | SALUNKE RUSHIKESH RAJENDRA |
| 7 | SHINDE NIRANTARI SHASHIKANT |
| 8 | SHIRKE MRUNAL BHARAT |
| 9 | SHIRSAT ABHISHEK SANJAYKUMAR |
| 10 | SHIRSE POOJA MOHANRAO |
| 11 | SHIVADE PRANAV BHAIIDAS |
| 12 | SHIVANSH AGRAWAL |
| 13 | SHRUTI PANDEY |
| 14 | SIDDHANT JAISWAL |
| 15 | SOMANI NETAL RAHUL |
| 16 | SONTAKKE AKSHAY ANAND |
| 17 | SURATE PRAJAKTA RAJENDRA |
| 18 | SUTAR ANIKET MAHADEV |
| 19 | TANVADE SOURABH MALLINATH |
| 20 | TOPALE MANASWI RAHUL |
| 21 | UBALE SANJANA RAMESHWAR |
| 22 | VARAT SOHAM TUKARAM |
| 23 | WAKCHAURE TANISHKA SATISH |
| 24 | WANKAR PRATIKSHA PREMCHAND |
| 25 | YERAWAR JANHAVI UMESH |
| 26 | CHELSEA GABRIEL SILVERA |
| 28 | SAKSHI SWAMI |

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

VIRTUAL STUDY TOUR

NAGPUR

by

Third Year B. Arch.

Division A

I] Introduction

Known as the Orange City for being a major trade center of oranges cultivated in large part of the region. It is also called the Tiger Capital of India or the Tiger Gateway of India as many tiger reserves are located in and around the city and also hosts the regional office of National Tiger Conservation Authority .

1. Geographical , regional context

Nagpur city, located in Vidarbha region. It lies along the Nag River. It is situated almost at the geographic center of the country. Latitude - 21.1458° N Longitude - 79.0882° E Altitude – 310.5m . Above sea level . Area – 227.36 km² . Out of which 28% is covered by forest . The city has the Zero Mile Stone locating the geographical center of India, which was used by the British to measure all distances within the Indian subcontinent. The city was founded in 1703 by the Gond King Bakht Buland Shah of Deogarh.

2. Historical context

Gond kingdom The historical record of the Nagpur kingdom begins in the early 18th century, when it formed part of the Gond Kingdom of Deogarh, which is now Chhindwara District.

Bakht Buland Shah, the ruler of Deogarh, visited Delhi and afterwards was determined to encourage the development of his own kingdom.

To this end he invited Hindu and Muslim artisans and cultivators to settle in the plains country, and founded the city of Nagpur.

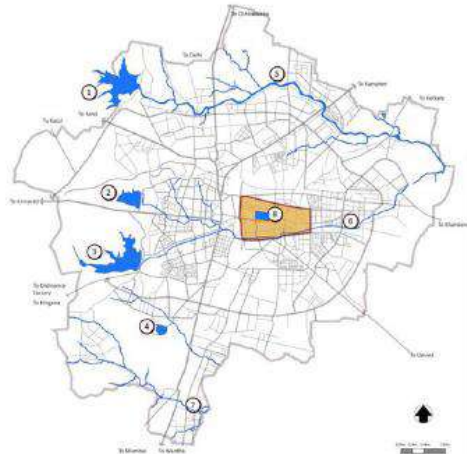
His successor, Chand Sultan, continued the development of the country, and moved his capital to Nagpur.

After the death of Chand Sultan, the Bhonsle's took over the control of the kingdom.

On Chand Sultan's **death in 1739, Wali Shah**, an illegitimate son of Bakht Buland, usurped the throne and Chand Sultan's widow invoked the aid of the **Maratha leader Raghuji Bhonsle** of Berar in the interest of her sons Akbar Shah and Burhan Shah.

3. Evolution of the place

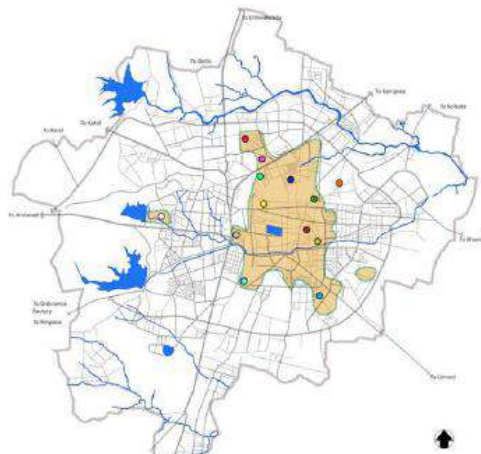
Expansion of Nagpur Under the Gond Rule



- 1) Gorewada Tank
- 2) Futala Tank
- 3) Ambajitari Tank
- 4) Sonegaon Tank
- 5) Plohi River
- 6) Nag River
- 7) Pora River

Expansion of Nagpur under the Gond Rule (1636-1743)

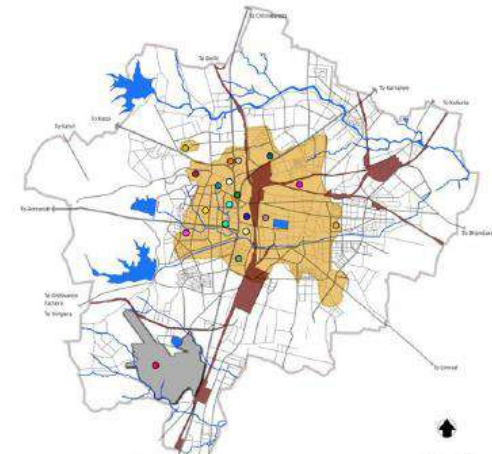
Expansion of Nagpur Under the Bhonsale Rule



- 1) Jaripatka Neighbourhood due to Indora Military Camp
- 2) Mominpura (Muslim Neighbourhood of weavers & petty industries)
- 3) Mangalwari, Somwari, Sakarwari, Neighbourhood of the Kumbhis (Cultivators)
- 4) Gosaiपुरा, Marwarपुरा Neighbourhood of Marwaris, Jains, Bohars, Banjaras (Retail & Wholesale Business)
- 5) Indora Military Camp of Bhonsale's
- 6) Mettbaug, Laskoharibaug (Royal Gardens)
- 7) Koshimpura (Neighbourhood of weavers)
- 8) New Royal Palace (East of Old Palace)
- 9) Telankhedhi, Royal garden & Recreation Place.
- 10) Chitrawapura, Rigvedi Brahmin Neighbourhood
- 11) Sakkarwara Military Camp
- 12) Sitabuldi Military Camp
- 13) Ajni Neighbourhood due to Sitabuldi Military Camp

Expansion of Nagpur under the Bhonsale Rule (1743-1854)

Expansion of Nagpur Under the Colonial Rule



- 1) Aerodrome - British Air Transport Service
- 2) Dharampeth - Commercial Area
- 3) Nagpur University Campus - 1923
- 4) Sitabuldi Fort - Administration Zone - 1861
- 5) Chitrawapur, Resettlement due to Plague- 1899
- 6) Pachpaul-Resettlement due to Plague- 1911
- 7) Empress Mill- 1877
- 8) Civil Lines-Residential Zone- 1875
- 9) Nagpur Improvement Trust- 1936
- 10) Bapsidgarj-Resettlement due to Plague- 1899
- 11) Seminary Hills - British Residence
- 12) Sadar - Commercial Area for the British
- 13) Takli - British Military Camp - 1851
- 14) Hishop College - 1861
- 15) Byramji Town - 1917
- 16) Nagpur Municipal Authority - 1854
- 17) Chhawni- Transit Camp due to Plague- 1899
- 18) Sitabuldi Saburb - British Army Personnel's - 1854
- 19) Dhanitli - Transit camp due to plague - 1920
- 20) Railway Line

Expansion of Nagpur under the Colonial Rule (1854-1947)

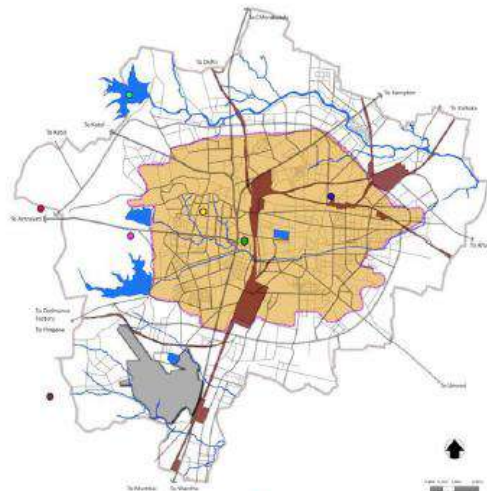
Fortified city with 6 major gates
Residential structure-
 1) Kings and nobles in the fort to the east
 2) Commoners to the west outside the fort
 Commercial area comprised of the Gachipaga open air market
 Surroundings of the Jumma Tank comprised the public space

The palace formed the centre for radial street pattern
 Residential structure-
 Community based neighbourhoods
 Hierarchy of neighbourhoods based on occupation and caste systems
 Concentration of the high caste near king's palace and low caste towards the fringes
 Itwari bazaar was the major commercial activity
 Chandani chowk was established for the durbar and temples, Ghats and Akshara's were established at the nag river bank for common people
 Military camps were the major growth centres
 Mixed land use of house+ shop+ cottage industry was the prominent building typology

The Civil station (Sitabuldi fort) formed the nucleus of the settlement
 Residential structure-
 New British settlement
 Well defined land- use pattern
 Housing development in the form of colonies for security reasons
 Sadar bazaar, Temple bazaar and Gora bazaar exclusively for the British
 Maharaja Baug was developed for recreation
 Street pattern was suitable for automobiles
 Empress mill, model mill and the printing industry was located in the east of the old city
 Railway line was the dividing edge between the new and old city in the west and east

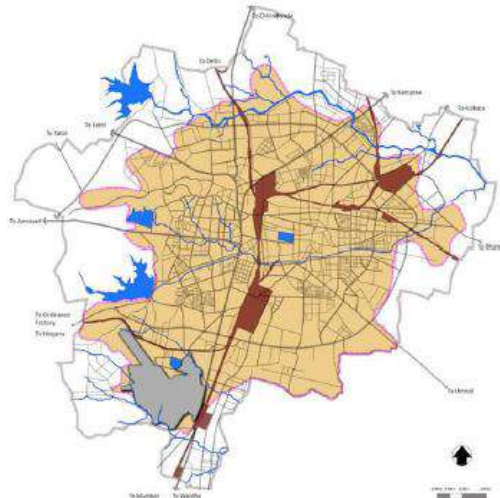
3. Evolution of the place

Expansion of Nagpur Post-Independence



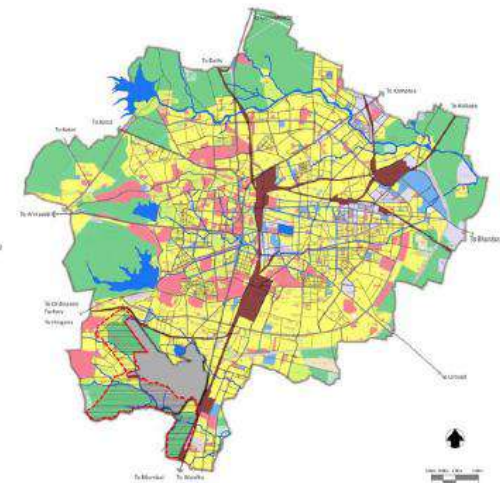
- Wadi - Informal Transport Terminal
 - New University Campus - 1960-70
 - Gornawada - Water Supply Reservoir for the city from Kanhan & Pench river
 - Major Wholesale Commercial Area serving the region
 - MIDC Hingana - First Planned Industrial Area
 - Civil Lines - Administrative zone & Major Public buildings
 - Sitabuldi - Major retail commercial area & New City Centre
- Post Independence Expansion of Nagpur City (1947 - 1976)

Expansion of Nagpur from 1976 - 2000



- Post Independence Expansion of Nagpur City (1976 - 2000)

Existing Development Plan of the City



- Residential, Abadi, Niftified Slums, Govt. Quarters
- Commercial, Godowns, Markets, Shopping Centre, Drive-In Theatre
- Public, Semi-Public, Govt. Offices, Educational Institutions, Hospitals, Auditorium, Museum, Community Centre, Library, Exhibition Hall, Marriage Hall, Town Hall, Art Gallery, Gymnasium, Gymkhana, Worship Places, Police Station, Police Establishment, M.S.E.B., Post & Telegraph, Fire Station
- Public Utility, Water Reservoir, Pump House
- Industrial, Workshops, Slaughter House, Brick Kilns
- Railways, State Transport Stand, Truck Terminal, Parking, Wireless Station, Aerodrome Area
- Garden, Park, Playground, Stadium, Sports Complex, Club
- Waterbodies
- No Development Zone, Agriculture
- Burial Ground, Cremation Ground, Cemetery, Kabrasthan
- Area under International Multi-Modal Air Cargo and Passenger Hub
- Cattle Stable and Dairy Farm
- Drainage and Sewage Disposal Work/Scheme
- Compost Depot

Source : Nagpur Master Plan 2032 Report (Draft), Nagpur Master Plan 2032 Maps (affordablehousing.live)

Administration-

Civil lines area continued to serve as the administration zone

Residential-

Low rise low density development

Commercial-

Sitabuldi emerges as a retail market

Itwari continues as a wholesale market

Industrial-

MIDC Hingana developed as a new industrial area

Institutional-

Large academic and medical institutes in the North-West and South-East were developed to serve the region.

In the period from 1976- 2000, the Nagpur Improvement Trust took up the initiative of building new transport connectivity and also implemented new layouts to promote residential development in the fringe areas.

Consequently, the Inner ring road was constructed for efficient traffic movement along the periphery of the city

4. Cultural / traditional aspect

The city hosts Southcentral zone festival every year for artists from around the country. Other such amazing festivals of dances, crafts, drama are Kalidas festival and orange city festival.

Kalidas Festival is organised in the honour of the great poet Kalidas. This festival is held at Ramtek, Nagpur in the month of November for two days. Ramgiri, or Ramtek is the place that inspired Kalidas, and the beauty of this place is mentioned predominantly in his literary work. The festival brings back memories of the golden period of the Vidarbha region.



Marbat festival ceremony on Nagpur streets

Source: [Kali Pili Marbat Festival Celebrated by Nagpurians | City News Nagpur \(thelivenagpur.com\)](http://www.thelivenagpur.com)

The Historical Marbat Festival of Central India also known as Kali Pili Marbat was celebrated with great zeal and high spirits on August 31 on the second day of Pola. Thousands of people took part in the celebration whereas many came to witness the festival.

The tradition of painting in Nagpur was patronised by the Royal House of the Bhonsales as well as common people. Illustrated manuscripts, including of the Bhagavat, Jnaaneshwari, Shakuntala, and Geeta, and the folk patachitras related to some festivals are available besides murals. The community of artists was called chitaris (painters), and this community has today turned to sculpt.



[Hindu Paintings & Artwork | Paintings of Hindu Gods & Goddesses \(exoticindiaart.com\)](http://www.exoticindiaart.com)

Textile was once an important industry in Nagpur. Good quality cotton was produced in abundant quantities thanks to a suitable soil and climate. With the introduction of the railways, cotton sales and goods transport flourished. Besides cotton textiles, silk and wool weaving was also practised in the district. Silk sarees and pagota, patka, dhoti, and borders were woven with the silk thread.

II] Study of area

The city has the Zero Mile Stone locating the geographical centre of India, which was used by the British to measure all distances within the Indian subcontinent. Nagpur is one of the greenest cities of India with 18 per cent of its area under forests and plantations, 17 per cent under cultivation and 2 per cent under water bodies. Gorewada is one of the tropical forest located in Nagpur. The present study showed that natural vegetation of the city is very well diversified. The cityscape of central Nagpur is dominated by the British fort built on the twin hills of Sitabuldi, which is a prominent landmark. Sadar in Nagpur is often considered to be the center of India.



Image source: Wikimapia

Vidhan Bhavan (State Legislative Assembly) Nagpur. The building in the Civil lines locality of Nagpur, the second capital of Maharashtra state of India. Criteria for Selection of Measurement The spatial structure/urban form of city are such that the north south railway line divides it into East and West parts. These parts hold distinct urban characteristics East Nagpur has higher built-up density than the western part of Nagpur. Approx. 70% of East Nagpur consists of mix of low rise and midrise buildings (having 1 to 6 stories) that are attached or very closely spaced with very small open spaces and vegetation in between. West Nagpur consists of about 50% open arrangement low-rise and midrise detached houses or apartments. Only 10 to 15% of buildings in West Nagpur are high rise, which are scattered area compared to Eastern part. The city does not show much of vertical growth, but is undergoing d in different areas. Percentage of open spaces and vegetation is more in Western part of Nagpur rapid horizontal and radial growth. City has moderate industrial activity and is dominated by presence of residential areas. It also has major retail commercial areas at its center.

III]Design program

COGNIZANT INFORMATION TECHNOLOGY OFFICE, NAGPUR

1. Design preamble

An office is as important as one's home as an individual spends most of his daytime / working hours in his office. Man works in an office not only for his individual monetary gains and contributes to the economic growth of the nation and society, but he also works in an office as it is a place where an individual can grow, develop, interact with other individuals and attain work satisfaction. With the technological advancement, software and the computer industry in India is now becoming an important country of highly skilled manpower at the global level. Apart from Bangalore and Hyderabad, Pune, Delhi, Nagpur too is gradually emerging as a software city whereas Mihan area has developed into the prime Software Park in Nagpur.

To achieve international standards the Software industry in Nagpur has developed good accessibility, good infrastructure, uninterrupted power supply and International hotels. Mihan Software Park, Nagpur consists of major important companies both Indian and Foreign like Infosys, Larsen and Turbo etc. Cognizant Technologies Solutions Ltd. is an American company having its offices in Pune, Bangalore and Calcutta now, proposes an office at Nagpur on a 10,400 Sqm plot at the junction of two major 9.00 m wide roads. As an American company on Indian soil it aims in keeping its "American ness" in terms of work culture, environment and image

In this high profile work environment, the efficiency of work is the most important factor. Each individual must benefit the company by contributing the maximum output within the stipulated time for which the company is ready to cater to his needs. Here architecture plays a very important role by providing efficient and comfortable workspaces. An environment for concentrated work and meeting areas is required. To balance this high stress work area a suitable canteen, relaxing areas and recreational areas are required. The individual must benefit the company by contributing the maximum output within the stipulated time for which the company is ready to cater to his needs. Here architecture plays a very important role by providing efficient and comfortable workspaces. An environment for concentrated work and meeting areas is required. To balance this high stress work area a suitable canteen, relaxing areas and recreational areas are required.

2. Design briefs

| (A) ADMINISTRATION | | | | | |
|--------------------|---------------------------|--------|---------------|------------|------------------|
| Sr.no | Requirement | Number | No.of persons | Area per | Total area (s.m) |
| 1 | Reception desk + Lounge | 1 | 25 | -- | 80 |
| 2 | Administrative management | 1 | 16 | -- | 60 |
| 3 | HRD Management | 1 | 16 | -- | 60 |
| 4 | Finance Management | 1 | 20 | -- | 80 |
| 5 | M.G. Management | 1 | 20 | -- | 80 |
| 6 | Meeting rooms | 4 | 6 | 12 | 48 |
| | | | | Total area | 408 |

| (B) EXECUTIVE AREA | | | | | |
|---------------------|------------------------------|--------|---------------|------------|------------------|
| Sr.no | Requirement | Number | No.of persons | Area per | Total area (s.m) |
| 1 | Director's Cabin | 1 | --- | --- | 40 |
| 2 | Visiting Director's cabin | 1 | --- | --- | 40 |
| 3 | HRD/Finance director's cabin | 2 | --- | 40 | 80 |
| 4 | Meeting room | 1 | | | 40 |
| 5 | P.A's office | 4 | 4 | 10 | 40 |
| 6 | Lobby and waiting | 1 | | | 40 |
| 7 | Pantry | 1 | | | 10 |
| 8 | Photocopy/ printing | | | | 6 |
| | | | | Total area | 296 |
| (C) OFFICE AREA | | | | | |
| Sr.no | Requirement | Number | No.of persons | Area per | Total area (s.m) |
| 1 | Project manager's cabin | 25 | 25 | 12 | 300 |
| 2 | Project manager's meeting | 12 | 6 | 12 | 144 |
| 3 | Workstations | 600 | 600 | 6 | 3600 |
| COMMON FACILITIES | | | | | |
| 4 | Meeting rooms | 6 | 6 | 12 | 72 |
| 5 | Meeting rooms with A. V | 2 | | 12 | 24 |
| 6 | Conference room with LCD | 1 | 24 | | 40 |
| | | | | Total area | 4180 |
| (D) TRAINING CENTRE | | | | | |
| Sr.no | Requirement | Number | No.of persons | Area per | Total area (s.m) |
| 1 | Training room with computers | 1 | 20 | 60 | 60 |
| 2 | Training room with computers | 1 | 40 | 80 | 80 |
| 3 | Lecture room | 1 | 60 | 60 | 60 |
| | | | | Total area | 200 |

| (E) LIBRARY | | | | | |
|-----------------------|------------------------------|--------|---------------|------------|------------------|
| Sr.no | Requirement | Number | No.of persons | Area per | Total area (s.m) |
| 1 | Reading hall with stack area | 1 | 32 | 200 | 200 |
| 2 | Multimedia room | 1 | 15 | 50 | 50 |
| | | | | Total area | 250 |
| (F) COMMON FACILITIES | | | | | |
| Sr.no | Requirement | Number | No.of persons | Area per | Total area (s.m) |
| | A | | | | |
| 1 | Pantry | | | | As per design |
| 2 | Xerox | | | | |
| 3 | Toilets | | | | |
| 4 | Store | | | | |
| 5 | Janitor's room | | | | |
| 6 | Staircase | | | | |
| 7 | Lift | | | | As per design |
| | B | | | | |
| 1 | AHU | | | | As per design |
| 2 | HUB | | | | |
| 3 | Fire fighting | | | | |
| 4 | Fire escape | | | | |
| 5 | Service lift | | | | |
| 6 | Distribution board | | | | As per design |
| | | | | | |

| (G) SERVICES | | | | | |
|----------------|---|--------|----------------------|----------|------------------|
| Sr.no | Requirement | Number | No.of persons | Area per | Total area (s.m) |
| 1 | Server room | | | | 180 |
| 2 | Security room: Surveillance and monitoring security on all floors | | | | 40 |
| 3 | A.C plant | | | | 100 |
| 4 | Generator room | | | | 50 |
| 5 | Electrical meter room | | | | 50 |
| 6 | Transformer and panel room | | | | 100 |
| 7 | Entrance lodge and security | | | | 20 |
| | | | | Total | 540 |
| (H) RECREATION | | | | | |
| Sr.no | Requirement | Number | No.of persons | Area per | Total area (s.m) |
| 1 | Canteens | 1 | 180 | 360 | 360 |
| 2 | Kitchen +pantry+store+O.S | 1 | | 180 | 180 |
| 3 | Multipurpose hall | 1 | | 120 | 120 |
| 4 | Store | 2 | | 10 | 20 |
| 5 | Yoga room | 1 | 60 | 60 | 60 |
| 6 | Rest rooms (M+F) | 12 | | 20 | 240 |
| 7 | Gymnasium +changeroom | 1 | 20 | 200 | 200 |
| | | | | Total | 1180 |
| (I) PARKING | | | | | |
| 1 | Four wheeler parking | 200 | Surface and basement | | As per design |
| 2 | Two wheeler parking | 100 | Surface and basement | | As per design |
| 3 | Bus parking | 4 | | | As per design |
| | | | | Total | |
| | | | A+B+C+D+E+G+H | | 7304 |
| | | | I | 40% | 2921.6 |
| | | | | TOTAL | 10225.6 |

3. Site with context

Location of site : MIHAN-SEZ

The **Multi-modal International Cargo Hub and Airport at Nagpur (MIHAN)** is an airport project for Dr. Babasaheb Ambedkar International Airport, Nagpur. It is the biggest economical development project currently underway in India in terms of investments. The project aims to exploit the central location of Nagpur and convert the present airport into a major cargo hub with integrated road and rail connectivity.

This project has two parts:

- An international airport to act as a cargo hub and
- A Special Economic Zone (SEZ) with residential zone covering a total area of 40.25 km² on the southern end of Nagpur.
- IT park spread over 500 hectares and including all necessary infrastructure for IT companies.
- Many tech companies like TCS, HCL, and Hexaware have started operations and are expanding. Infosys and Tech Mahindra are constructing campuses.

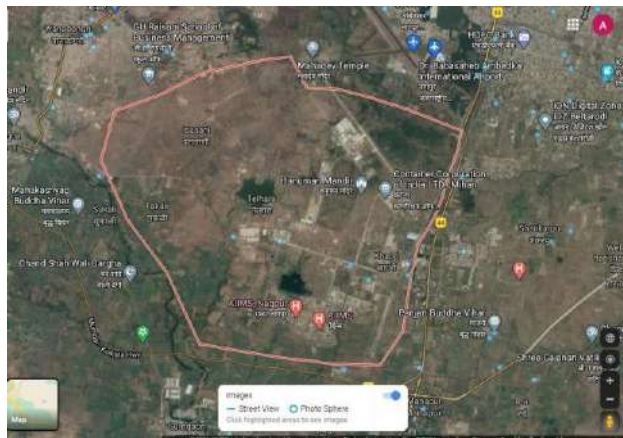


Image source: Google earth

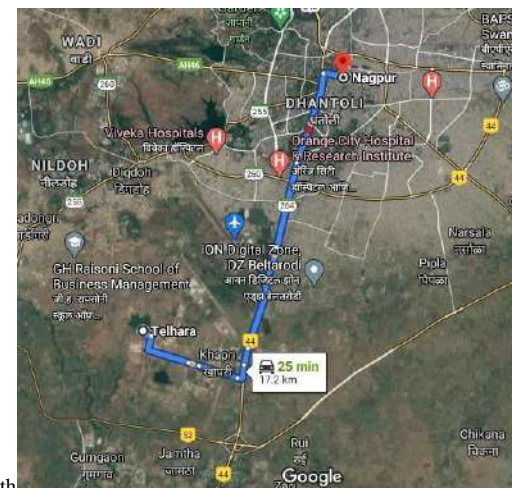


Image source: Google earth

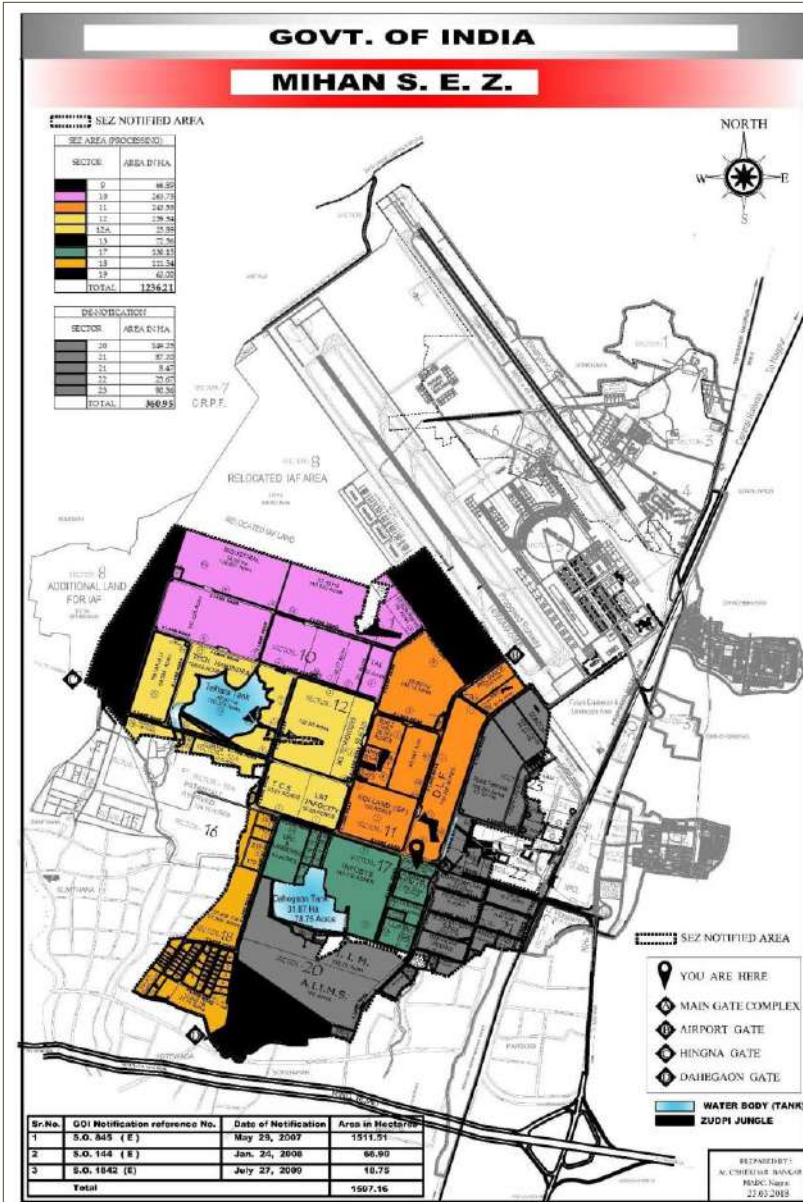


Image source: [MIHAN Project at a Glance \(mihansez.org\)](http://mihansez.org)

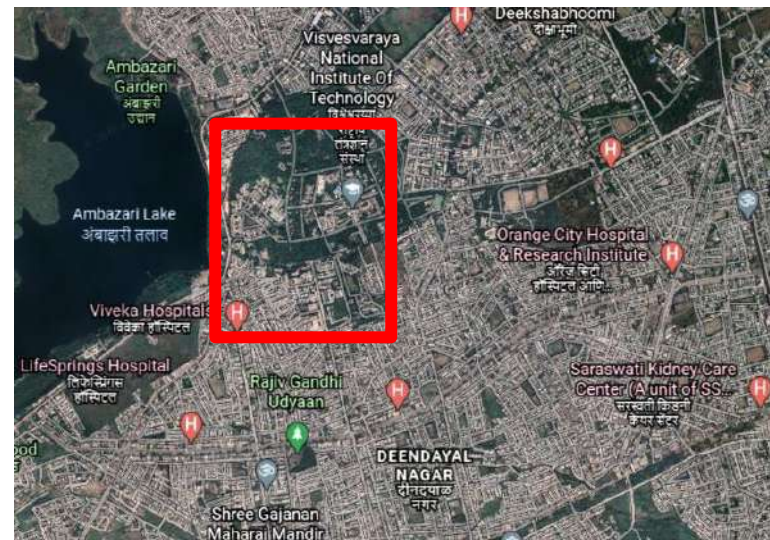


Image source: Google earth



Image source: [MIHAN Project at a Glance \(mihansez.org\)](http://mihansez.org)

SITE MIHAN SQUARE



Image source: Google earth

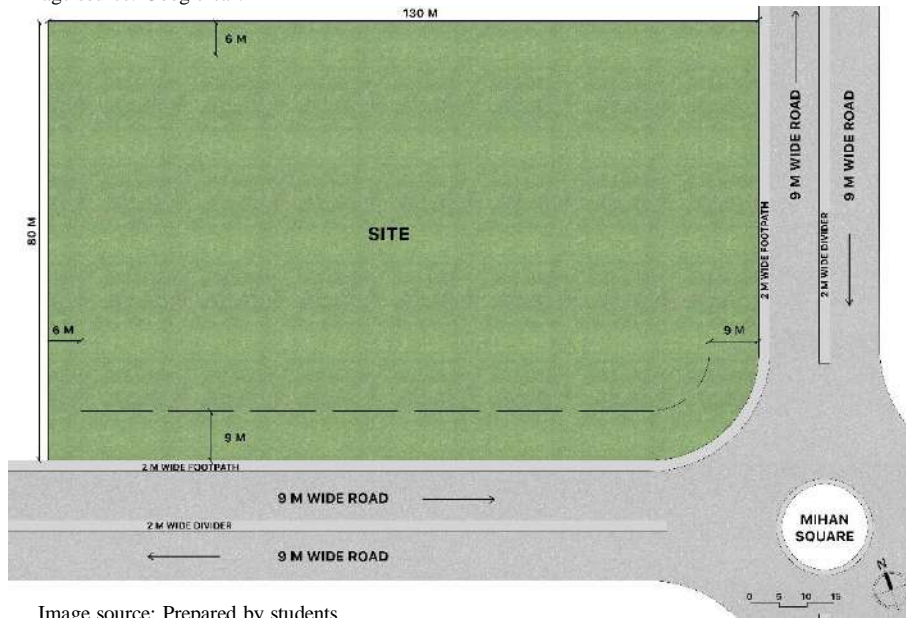


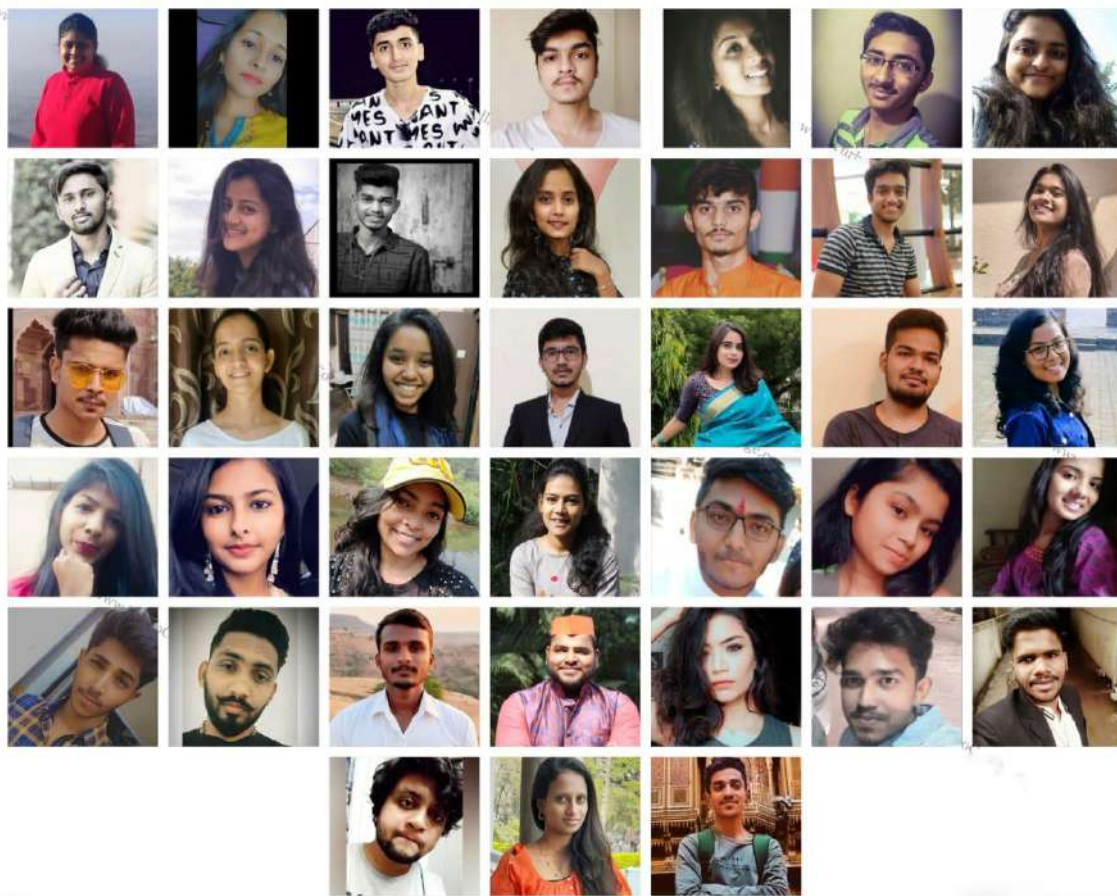
Image source: Prepared by students

SITE AREA = 10400 sq m
FSI – 1

References:

1. [Welcome to MADC \(madcindia.org\)](http://madcindia.org)
2. [Nagpur Master Plan 2032 Report \(Draft\), Nagpur Master Plan 2032 Maps \(affordablehousing.live\)](#)
3. [Final CDP Nagpur -Mar 15 of NMC.pdf \(metrorailnagpur.com\)](#)
4. [Kali Pili Marbat Festival Celebrated by Nagpurians | City News Nagpur \(thelivenagpur.com\)](#)
5. [:: Status of the MIHAN Project, Nagpur Municipal corporation | Nagpur Municipal Corporation \(nmcnagpur.gov.in\)](#)
6. [MIHAN | District Nagpur, Government of Maharashtra | India](#)

Group photograph



List of students

- 1 AGRAWAL SANSKRUTI ANIL
- 2 ALANGI RAKSHA RAVI
- 3 BAFNA HARSH SACHIN
- 4 BAHETI YASH MAHESH
- 5 BELDAR MANSI HARISHCHANDRA
- 6 BHAGWAT PARTH PRASHANT
- 7 BHANUSHALI HENIL AMIT
- 8 BHOSALE VIVEK VITTHAL
- 9 CHAPHEKAR UTKARSHA AJEY
- 10 CHAUHAN PUNIT RAJESH
- 11 CHAUKHANDE AKSHADA SUBHASH
- 12 CHEDE VAIBHAV VASANT
- 13 CHOTHAVE SARTHAK RAJESH
- 14 CHOUGULE APEKSHA PRAVIN
- 15 DAHALE ABHISHEK SHRIKANT
- 16 DEOKAR MRUNALI VASANT
- 17 DEOKAR SAURABHI JAYESH
- 18 DESHMUKH NINAD CHANDRABHAN
- 19 DESHMUKH SHIVANI VINAYAK
- 20 DESHPANDE SUYOG SUNIL
- 21 DEO MAYURI CHANDRAKANT
- 22 DHAIGUDE SHWETA RAVINDRA
- 23 DHAMDHERE JANHAVI KISHOR
- 24 DHOPE SHOURYA SAMBHAJI
- 25 GADHAVE DIVYA TANAJI
- 26 GAIKWAD ANIKET RAJENDRA
- 27 GAIKWAD KSHITEEJA DAYANAND
- 28 GAIKWAD VAISHNAVI RAMAKANT
- 29 GANDHI MUSTAFA SABBIRBHAI
- 30 GARUD KRUNAL HANUMANT
- 31 HANDE PRASANNA POPAT
- 32 UPASE SHUBHAM ANIL
- 33 VERMA SEJAL RAJESH
- 34 WANI PRANAV MOHANRAO
- 35 YEDEKAR SOHAM RAJARAM
- 36 BHAVE AMEYA
- 37 CHALMAL PRANITA
- 38 DEOKATE GIRISH

List of design faculties: Prof. Kalpana Hadap , Ar.Avani Topkar, Ar.Akshar Mendhe

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

VIRTUAL STUDY TOUR

CHANDIGARH,INDIA

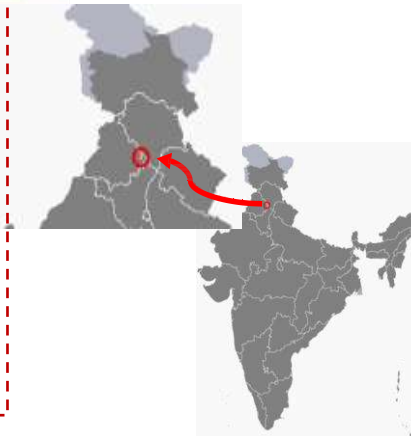
by

Third Year B. Arch.

Division B



- Annual Rainfall (2017)-974 mm
- Monsoon-July-September
- Temperature-inter Min. (Nov 2017 to Feb 2018) 7°C - 11°C
- Lowest Temp. (Jan 2018) 3°C
- Summer Max. (April 2017 to July 2017) 35°C - 39°C
- Highest Temp (June 17) 45°C
- Prevalent Winds-From the North West to South East in Winter and reverse in Summer



<http://chandigarh.gov.in/>



Sectors



Junction of sectors



Open Hand Monument



Typical round-abouts in the city

Chandigarh is located near the foothills of the Shivalik range of the Himalayas in northwest India. It covers an area of approximately 114 km². It borders Haryana and Punjab.

Source-<https://www.indiatoday.in/india/story/haryana-will-get-chandigarh-punjab-can-claim-lahore-or-shimla-says-peeved-hooda-171617-2013-07-25>

ABOUT CHANDIGARH

Chandigarh is the best planned city in India, with architecture which is world- renowned, and a quality of life. The face of modern India , Chandigarh, is the manifestation of a dream that pt. Jawaharlal Nehru envisaged and le Corbusier executed.

ABOUT THE PLANNER

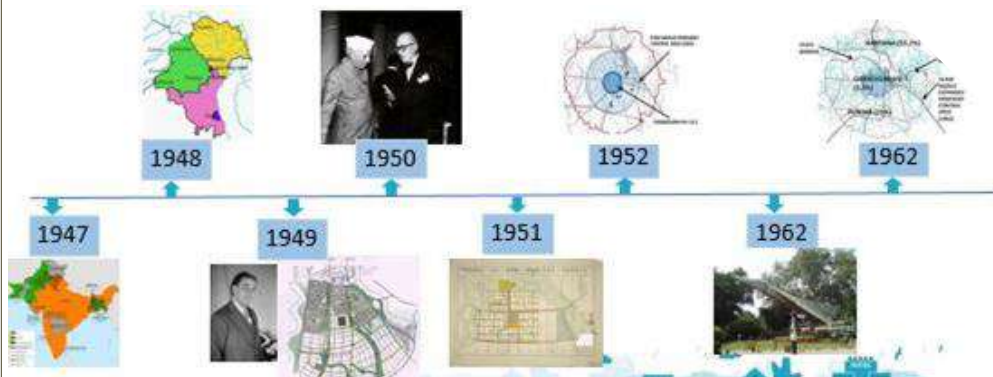


Charles Eduard Jeannerette Gris, who chose to be known as le Corbusier (Oct 6,1887- Aug27,1965) was a Swiss-born architect, designer, urbanist, writer and painter who is famous for his contributions to modern architecture. He was also an urban planner, sculptor, writer and a modern furniture designer.

TOPOGRAPHY

Minimum elevation: 839 ft
 Maximum elevation: 7,343 ft
 Average elevation: 1,529 ft

HISTORY OF CHANDIGARH



TIMELINE OF DEVELOPMENT OF



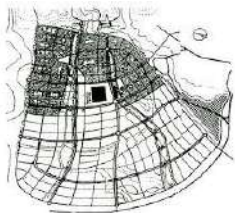
REORGANISATION OF PUNJAB



METROPOLITAN REGIONAL PLAN

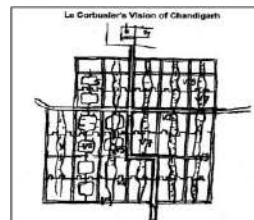
- **1947-** Capital city Lahore lost to Pakistan in partition
- **1948-** Punjab govt approves the setting up of a new capital
- **1948-** site for new capital city selected
- **1949-** first team: Albert Mayer hired to plan the city
- **1949-** first master plan prepared, details of superblocs finalised
- **1950-** death of Mathew and hiring of second team led by le Corbusier
- **1951-** second master plan evolved
- **1952-** : 8kms of periphery notified
- **1962-** army cantonment, air force stations and HMT established in periphery
- **1962-** periphery extended from 8kms to 16kms

ALBERT MAYER'S MASTER PLAN



Fan shaped master plan. Spreads between the two river beds. A curving network of main roads. It contains a central area of parkland Super Block – Accommodating some 1500 families. Industrial area planned in southern corner

LE CORBUSIER'S MASTER PLAN



- The grid of superblock increased in size to 1200 x 800mts (3900 x 27W feet)
- Accommodating up to 25000 inhabitants
- Each Sector with its own green space around which houses are designed
- V7 Road Concept

Source-http://chandigarh.gov.in/knowchd_general.htm#:~:text=The%20city%20has%20a%20pre,was%20supported%20by%20that%20environment.

THE IDEA BEHIND CHANDIGARH PLANNING



Capital Complex



City Center Sector 17



Leisure Valley



Cultural and educational institutions



Industrial



Roads



Each sector - self sufficient like a cell

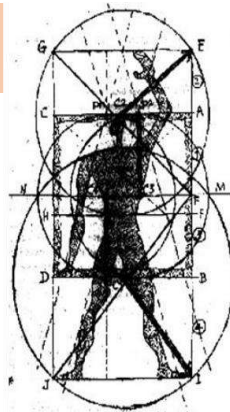
Le Corbusier liked to compare the city he planned to a biological entity: the head was the Capital, the City Centre was the heart and work area of the institutional area and the university was limbs.

THE THREE DISCIPLINE (Le- Corbusier)

The discipline of money

The discipline of technology

The discipline of climate



LAYOUT OF A TYPICAL RESIDENTIAL SECTOR



BUILT UP



NON BUILT UP

CONCEPT & IDEOLOGY

- The primary module of city's design is a Sector, a neighborhood unit of size 800 meters x 1200 meters.
- Each SECTOR is a self-sufficient unit having shops, school, health centers and places of recreations and worship.
- The Basic Building Typology is observed as extremely Rectilinear with similar proportions.
- In both the developments the smaller individual Residential Units are arranged around central common Green Spaces, although the shapes are different.

CULTURE AND TRADITION

- Chandigarh cannot be complete without understanding its rich heritage.
- The art and cultural activities in Chandigarh gives an insight into the city's history, traditions, and artwork.



1) Prachin Chandi Mata Mandir

- This is the temple on whose name the city of Chandigarh is established.
- It is considered one of the 12 Shakti Peethas for hindu.

2) Iskcon temple

- The temple offers seminars and distributes booklets on the teachings of Lord Krishna.
- It is community where people from all over the world takes part in preachings.



TOURISM

Public Transportation facilities:

Being

a tourist place, Chandigarh offers public transports like Auto-rickshaws, and Bus with safe traffic environment to its visitors and daily passengers.

- The best time to visit Chandigarh is from **October to February**.
- This period marks the **wintertime** in India..
- The summer season can get hot and humid and should be avoided for travel.

EVENTS WHICH ATTRACTS TOURISTS



Lohri Festival



Rose Festival



Chandigarh carnival

Source- <https://www.india.com/travel/chandigarh/festival/>

MUST VISIT TOURISTS SPOTS IN & AROUND CHANDIGARH



Rock Garden



Capitol Complex



Sukhna Lake



Pinjore Gardens



Leisure Valley



Le corbusier Center



DLF City Center



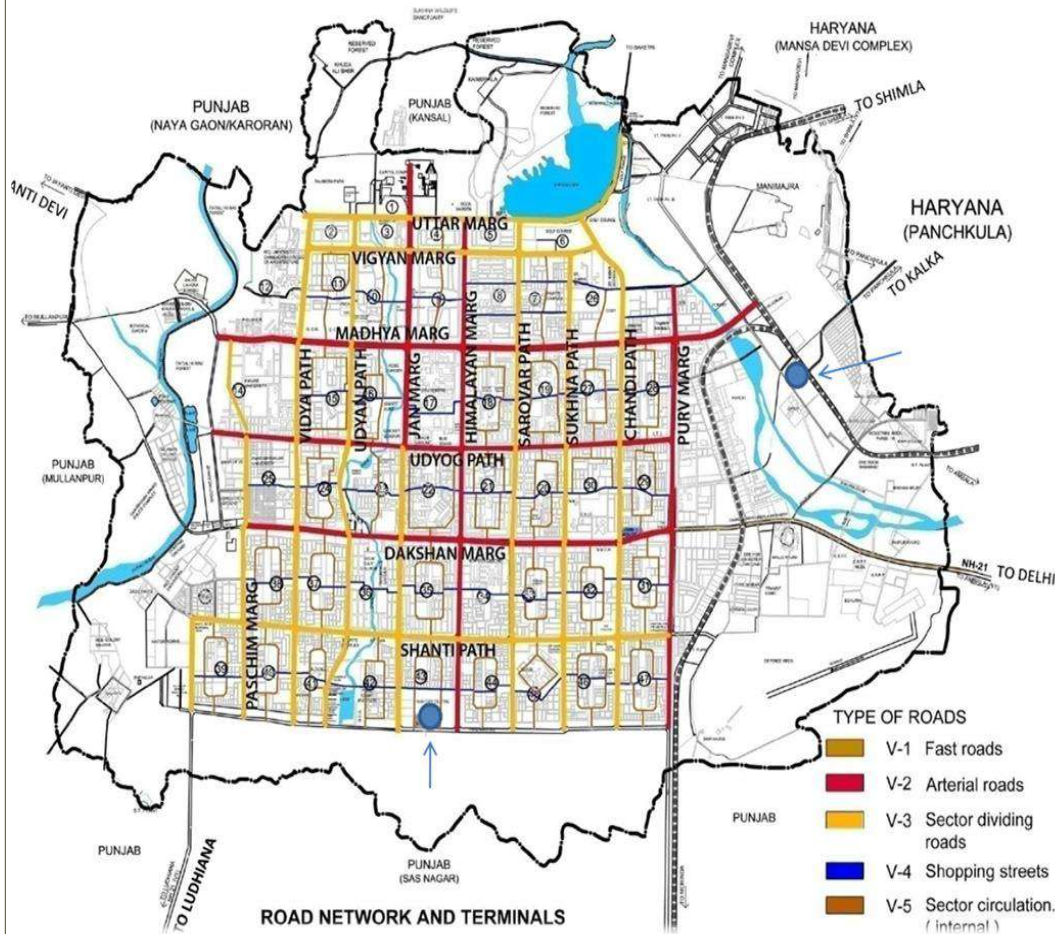
Government Museum & Art Gallery



Terraced Garden

Source- <https://www.holidify.com/places/chandigarh/sightseeing-and-things-to-do.html>

ROAD NETWORK & CONNECTIVITY



ORIGINAL CIRCULATION NETWORK AND TRANSPORTATION NODES



REGIONAL CONNECTIVITY

- The city has good connectivity with the other surrounding region by road, rail and air.
- Road connectivity Chandigarh is well connected with the national capital by NH-21 which passes through the city.
- The four laning of the highway and the construction of a number of flyover and bypasses has made it a fast travel corridor reducing travel time considerably.
- The city is also well connected to the major towns in Punjab, Haryana and Himachal Pradesh by road.

Source-<http://chandigarh.gov.in/cmp2031/traffic.pdf>

ROAD NETWORK OF 7Vs WITHIN THE CITY

| TYPE | FUNCTION |
|------|--|
| V1 | Roads connecting Chandigarh with other cities in the region. The Madhya Marg and Dakshin Marg merge with the V1s leading to Kalka and Ambala respectively. |
| V2 | The major avenues of Chandigarh, with important institutional and commercial buildings located on them. Madhya Marg, Dakshin Marg, Jan Marg, Himalaya Marg, Uttar Marg and Purv Marg are important examples of these |
| V3 | Roads between sectors for fast moving vehicular traffic. Each sector is surrounded either by a V2 or V3. |
| V4 | Shopping streets cutting through sectors with shops on their southern side. |
| V5 | Circulation roads within sectors. |
| V6 | Roads providing access to houses. |
| V7 | Footpaths through green belts enabling pedestrians to cross sectors without having to cross vehicular traffic and cycle tracks. |
| V8 | Cycle tracks through green spaces Buses were to ply only along V2,V3 and V4 roads. Each sector was to have only four entry points from V3s no direct entry to houses was permitted from these roads. |

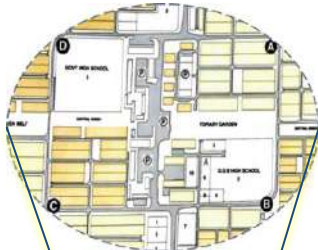
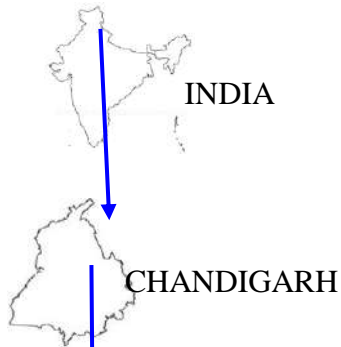


Wide roads with street lights throughout the city



A well designed road network

RESIDENTIAL AREA

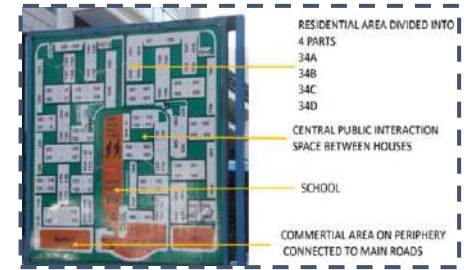


- The sector 35 is divided into 4 parts i.e A , B , C and D respectively .
- Maximum height of the building in sector 35 are upto 3 storey .
- Maximum G + 2 structures are in part ‘B’ and ‘D’ respectively .
- Maximum G + 1 structures are in part ‘A’ and ‘C’ .
- Residential building height differ along with the parts of the sector
- Plinth level are same of each individual bungalow.
- All government buildings exterior are red painted bricks.
- According to area wise bungalows are classified into three typologies
- 1 frontage and back area (open space) of all bungalows has same areas
- 2 each street has its own public amenities space.
- 3 rear side of bungalow is facing towards the main road.



LEGENDS:

- RESIDENTIAL (G+1)**
- RESIDENTIAL (G+2)**
- ROADS**



CHANDIGARH - SECTOR 35 ANALYSIS

- Height restriction** :- 2-3 storey building
- Material** - brick, stone, concrete.
- Facade treatment according to the owner.
- Minimum one wall common in all the buildings.
- Commercial area is placed on periphery of sector connected to the main roads.
- Central public interaction area between 4 buildings block.
- MATERIALS** -
- PATHWAYS** - Interlocking paving blocks
- EXTERIOR WALL** - Painted bricks
- ROAD** - Tra road

CHANDIGARH - SECTOR 35

Source- [gagantanwar58/Chandigarh-planning-and-its-transformation](https://www.gagantanwar58.com/Chandigarh-planning-and-its-transformation)

COMMERCIAL AREA



MASTER PLAN OF CHANDIGARH

LAND USE

- Commercial areas as per plan – wholesale trade – sector 7 & 26
- City level shopping centre – sector 17
- Sub city level shopping centre – sector – 34 & 43
- Commercial belts along major avenues -
- Madhya Marg stretched between sector 9 & 26 .
- Dakshin Marg stretched between sector 20 & 22
- Himalaya Marg stretched between sector 22 & 43
- Udyog path across sector 17/22.
- Vikas Marg (North side) stretch between sector 40 & 47.
- Proposal to set up an eleven-story building in Sector 17 is in the offering. **Sector 34** is another newly developed commercial sector.



PLAN OF SECTOR 17

SECTOR 17 is being designed as the **city centre of the entire city** . **The city center (Sector 17)** is the heart of Chandigarh's activities. It comprises the Inter-State Bus Terminus, Parade Ground, District Courts, etc. on one hand, and vast business and shopping center on the other.



DETAIL PLAN OF SECTOR 17

Source- <http://chandigarh.gov.in/cmp2031/commercial.pdf>

INDUSTRIAL AREA



- Located on the South - Eastern side Proximity to the railway station and the national highway..
- The area and was segregated from the rest of the city by a green belt of mango trees.
- Developed over an area of 1200 acres in two phases.
- The Phase I has an area of 776.14 acres.
- The Phase II has an area of 486.00 acres. .
- While Phase I & Phase II are nearly fully developed, Phase III is yet to be developed.

Industrial units :-

The industrial units are mainly ancillary in nature.

The industries provide employment to about 23340 persons.



LOCATION OF INDUSTRIAL PHASE- I, II, III

LOCAL MATERIALS / PRODUCT MANUFACTURED:

Sanitary fittings

Paper and paper products

Industrial fasteners

Auto and tractor parts

Steel fabrication

Wooden and steel furniture

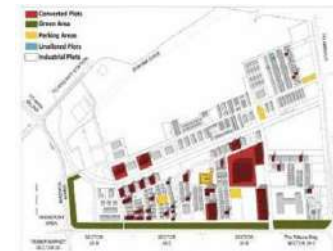
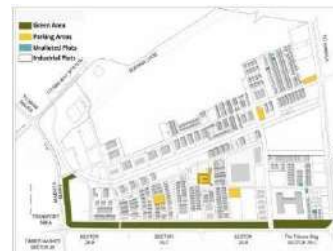
Electrical appliances

Industrial plots:-

A total of 1966 plots have been planned in Phase I & II ranging from 44 acres (Ordnance Cable Factory) to of 5 marlas.



Conversion of land use from industrial to commercial:-



PARKING AREA

CONVERTED PLOTS

Source- <http://chandigarh.gov.in/cmp2031/industrial-area.pdf>

AREA STUDY AND OBSERVATIONS

Sector 17 or the city center has architecturally controlled buildings, which cannot be changed much due to their unique structure, as per the UT Administration. Over the years, hardly any changes have been permitted in these buildings.

FOUR STOREYED SHOPS CUM OFFICE BUILDINGS



NO VERTICAL GROWTH

Even though the population has increased manifold and more structures need to come up in the plaza, the original design does not allow for any more vertical growth here.



A GREY FACADE

The sector, known for its lofty grey buildings, is beginning to look unkempt because of the discolored façade but the bylaws don't permit a coat of paint, even if it's grey in color. Even if some building owners dare to paint them, they are asked to remove it on the plea that paint does not gel with the uniform look of the façade.



PROBLEMS IN SECTOR 17



Unorganized street hawking



Visual pollution due to signage



Painting and plastering of façade and columns



Coverage of courtyards

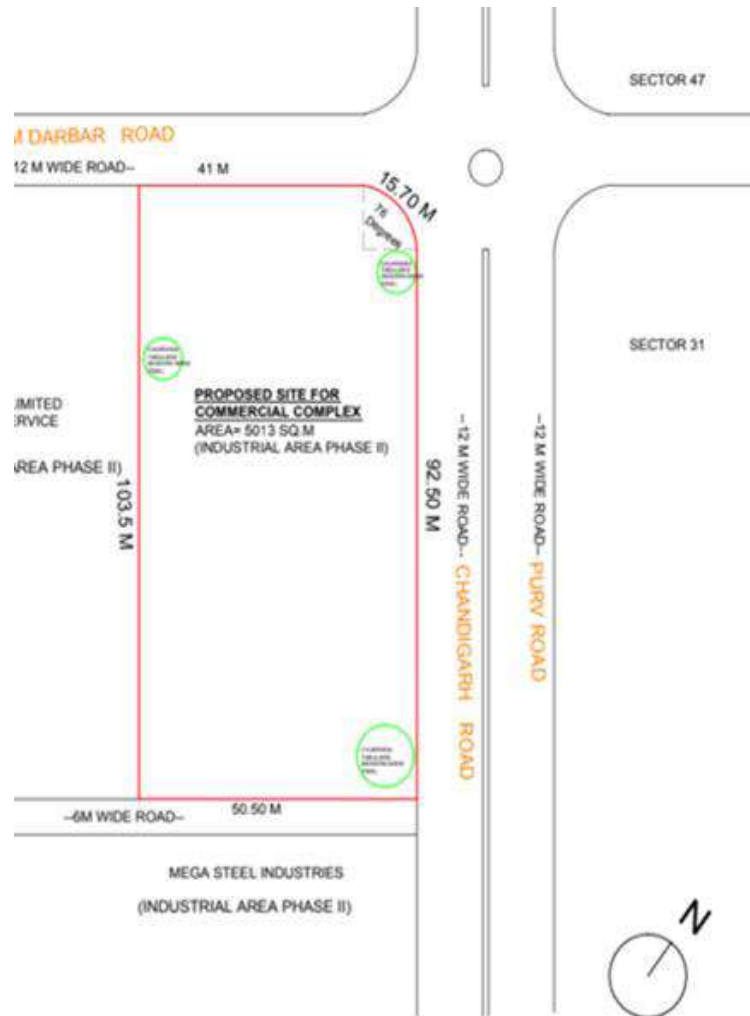


Violation of advertisement board



Unauthorized coverage of compulsory veranda

DESIGN BRIEF



To design a Commercial Complex of area around 3240 sqm. at proposed site in industrial area phase II, adjacent to sector 31, Chandigarh city as per the given design program. A complex should be well designed as per the given requirements of offices, shops, show rooms, services and public facilities. Site context should be considered while designing the complex. The commercial complex should follow the norms of Chandigarh city Building Rules and Regulation for commercial building.

DESIGN PROGRAM

| Sr. No. | Type of Space | No. of Units | Area of a unit | Area in Sq.m. |
|---------|--------------------|--------------------------------------|---------------------------|---------------|
| 1 | Entrance Lobby | 1 | 50 | 50 |
| 2 | Small Office | 10 | 30 | 300 |
| | Toilets | 10 (5 Male we and urinals, 5 Female) | 5 | 50 |
| 3 | Large Office | 5 | 100 | 500 |
| | Toilets | 10 (5 Male we and urinals, 5 Female) | 5 | 50 |
| 4 | Shops | 30 | 30 | 900 |
| 5 | Showrooms | 4 | 150 | 600 |
| | Toilets | 1 Male and 1 female for each | 5 | 10 |
| 6 | Restaurants/ cafes | 2 | 100 | 200 |
| | Kitchen | 2 | 20 | 40 |
| | | | | 2700 |
| 7 | Common Toilets | Male | As per requirement in DCR | |
| | | Female | As per requirement in DCR | |
| | | Disables | As per requirement in DCR | |
| | Janator's Rooms | | As per requirement in DCR | |
| 8 | Service core | | 20% of built up area | 540 |

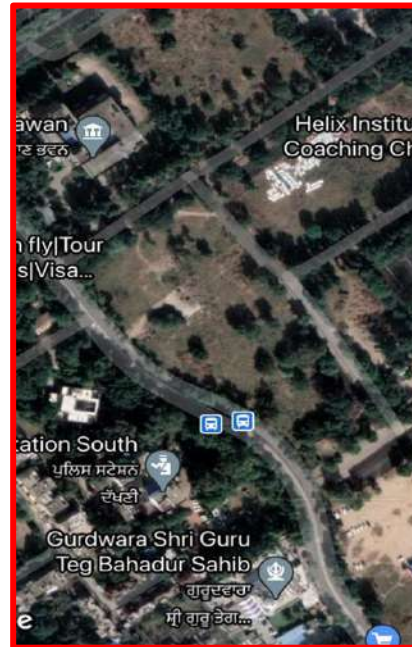
SELECTED SITE



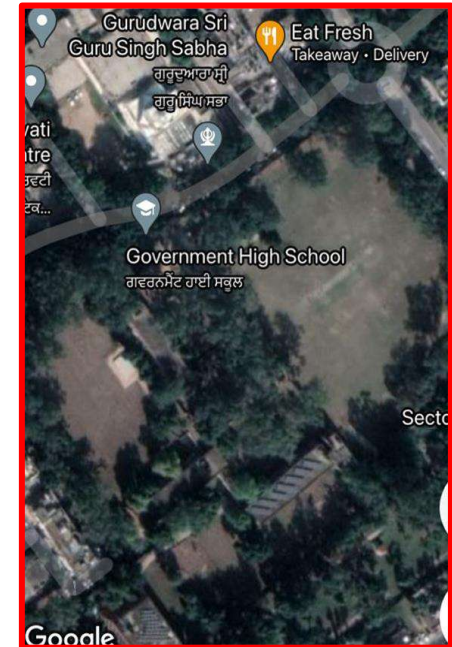
SITE LOCATION- INDUSTRIAL AREA ,PHASE 2
SITE AREA - 5013 SQ M
SITE DIMENSION - 50M X 100M

OTHER OPTIONS

OPTION 1



OPTION 2



Source- <https://www.google.co.in/maps>

THIRD YEAR DIVISION B



Number of students: 32

List of students:

1. GAWANDE AISHWARYA
2. GAWARI ONKAR
3. GHASIAS KETAKI
4. GHARGE DIVYA
5. GOBARE SAURABH
6. GORE SRUSHTI
7. GULHANE AASTHA
8. GUPTA AARTI
9. GUPTA KAUSHAL
10. HOLE ASMITA
11. HAVALDAR SAJVEEN
12. HOLE RUTUJA
13. JAIN ATUL
14. JAIN JAGRUTI
15. JAIN PRANAV
16. JAIN VIVEK
17. JAWALKAR VAISHNAVI
18. KANASE SAYALI
19. KATE GAURAV
20. KAWADKAR RUTIK
21. KEDAR AKASH
22. KESHAV SUTHAR
23. KHEDKAR TRUPTI
24. KHENGARE LAUKIK
25. KONDHALKAR SHIVANI
26. KORADE SHRYEYASH
27. PATIL PURVA
28. YASH PARIHAR
29. DOSHI KEVAL
30. BICHKAR VAIBHAV
31. AGTAP PRATHMESH
32. KALANTRE RAJESHREE

List of design faculties:



Ar. Bijal Vakharia



Ar. Niketa Patil



Ar. Sarika Thakoor

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

VIRTUAL STUDY TOUR

CHANDIGARH

by

Third Year B. Arch.

Division - C

INTRODUCTION TO CHANDIGARH

Why Chandigarh?

- The dream city of India's first Prime Minister, Sh. Jawahar Lal Nehru.
- A symbol of freedom & Modernism for post-independent India.
- Known as one of the best experiments in Urban Planning & Modern Architecture in the 20th century in India.
- Planned by the well known Swiss-French Architect Le Corbusier.
- It was a part of the Harappa Civilization 5000 years ago, located in the Indus Valley.

“Chandigarh is the safest, cleanest and well-planned city of India that provides a lot of opportunities to create architecture that emerges from a blend of History and Futuristic approach.”

How is the name ‘Chandigarh’ derived ?

- Chandigarh derives its name from the temple of "**Chandi Mandir**" located in the vicinity of the site selected for the city.
- The deity 'Chandi', the goddess of power and a fort of 'garh' laying beyond the temple gave the city its name "**Chandigarh - The City Beautiful**".

Formation of Chandigarh and Declaration of Union Territory

- The area was part of the large and prosperous Punjab Province which was divided into East & West Punjab during partition of the country in 1947.
- The larger part of Punjab capital of Lahore, went to Pakistan.
- The eastern part was granted to India, but it was without an administrative, commercial, or cultural center.
- In March, 1948, the Government of Punjab approved the area of the foothills of the Shivaliks as the site for the new capital.



Chandi-Mandir. Source: Open Internet



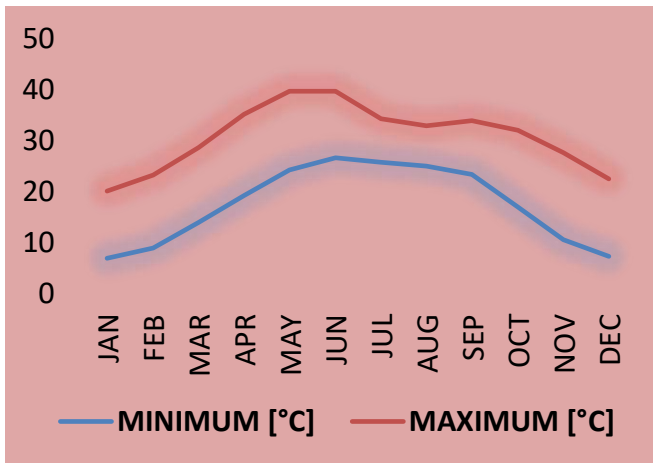
Harappan Civilisation site near Chandigarh. Source: Open Internet



Map showing Division of Punjab during Partition. Source: Open Internet

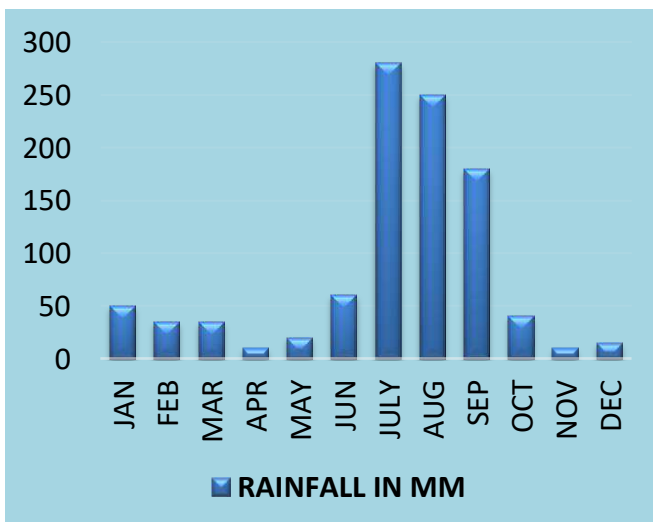
CLIMATE

TEMPERATURE



Graph showing Average Annual Range of Temperature

RAINFALL



Graph Showing Average Annual Rainfall Range

Seasons of Chandigarh:

SUMMER (April to July) -

- The temperature in summer (from mid- April to June-end) may rise to 44 °c.
- Temperatures generally vary between 38 and 42 °C.

WINTER (November to February) –

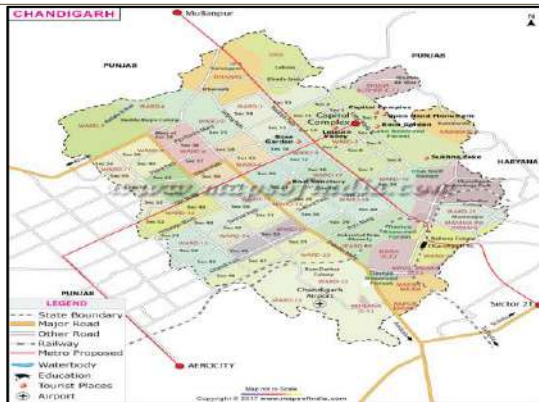
- The winter months are harsh with average night temperature during the season settling close to 7 ° c.
- Rain usually comes from the west during winters and it is usually a persistent rain for 2–3 days with sometimes hailstorms.

MONSOON (July to September) -

- The city during monsoon period observes moderate to heavy amounts of rain.
- The average rainfall amount is about 720 mm.

Climate Summary :

Chandigarh has a COMPOSITE Climate type.



Map showing segregation of wards. Source: maps of India website



Source: http://chandigarh.gov.in/knowchd_general.htm

Map showing geography of Chandigarh.



Source: <https://chandigarhdistrict.nic.in/tourist-place/sukhna-lake/>

Map showing Topographical features of Chandigarh

GEOGRAPHICAL AND REGIONAL CONTEXT

- Area : 114 km² (44 sq miles)
- Union territory
- Area rank : 35th in India
- Elevation : 321 m (1,053 ft)
- Coordinates: 30.55940 76.60466 30.87940 76.92466

Geography :-

- Chandigarh is located near the foothills of the Shivalik range of the Himalayas in northwest India.
- The city, lying in the northern plains, includes a vast area of flat, fertile land.
- The surrounding cities are Mohali, New Chandigarh, Patiala, Zirakpur and Rupnagar in Punjab, and Panchkula and Ambala in Haryana.

Topography :-

- It is occupied by Kandi (Bhabar) in the north east and Sirowal (Terai) and alluvial plains in the remaining part.
- Most of Chandigarh is a plain area with a few lower shivalik hills in the north.

River & forest :-

- There are five water streams running through the Chandigarh. In the east there is Ghaggar river that originates in Shivalik hills and flows north southwards close to the city.
- Chandigarh has 3245 hectares under forest mostly around sukhna lake.
- Reserve forest are in kansal and nepli.

ART AND CULTURE OF CHANDIGARH



Baisakhi Celebrations. Source: Open Internet



Rock Garden , Chandigarh. Source: Open Internet



Phulkari Work. Source: Open Internet

The vibrant culture of Chandigarh is influenced by the neighboring states mainly Haryana and Punjab followed by Himachal Pradesh, Uttar Pradesh, and Bihar.

- There are numerous **temples, mosques, shrines, and Bhawan** located throughout the city that one can easily participate in any type of religious activity.

“The blending of various cultural aspects is also reflected in the architectural styles and shrines of the city. ”

People –

The various sectors of the city are contributed for education, administration, leisure, residential purposes etc.

For instance, in the 10th sector of the city, there are Audio- Visual Training Institute, a Museum and an Art Gallery.

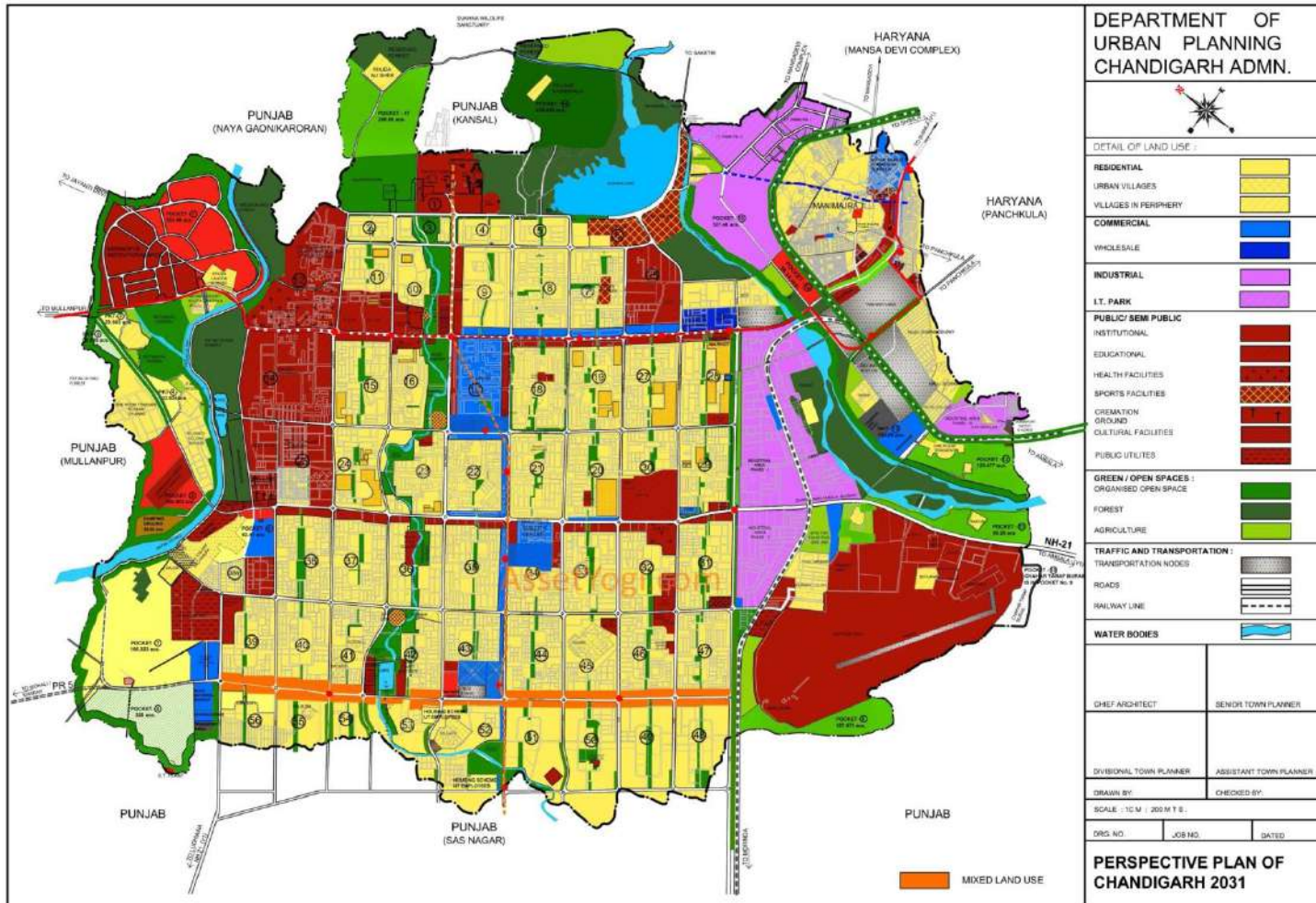
• Baisakhi Festival –

Baisakhi is one of the major festivals of Sikhs & and it is celebrated with lot of enthusiasm, happiness & love in the state of Punjab & all over the world especially where there is Sikh community major activities are celebrated in the Gurudwaras. Baisakhi is also popularly known as Vaishaki on this day people wear new clothe distribute sweets all over their friends and families to share love and happiness among them.

• Phulkari work –

Chandigarh folk artwork has beautiful Phulkaris which have colorful embroidery and knitting.

UNDERSTANDING THE CITY LAYOUT

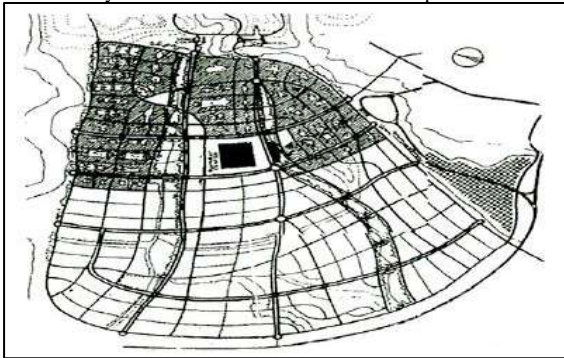


Map of Chandigarh showing the Planning. Source: Department of Urban Planning, Chandigarh

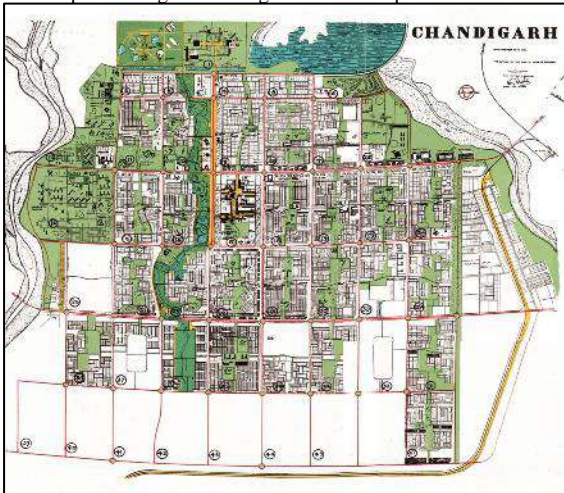
- **Location** - Chandigarh is located near the foothills of the Shivalik range of the Himalayas in northwest India.
- **Area** - : 114 km² (35th in India)
- **Population** – 10.6 lakhs



Albert Mayer and Matthew Nowicki. Source: Open Internet



Concept Planning of Chandigarh. Source: Open Internet



Chandigarh as visualised. Source: Open internet

PLANNING STAGES & WHO WERE INVOLVED

Albert Mayer and Matthew Nowicki

- Initially American architects Albert Mayer and Mathew Nowicki were appointed to design the capital city Chandigarh.
- They proposed a master plan that is “a culmination of the ideas which originated with Radburn and the Greenbelt Towns of the 1930s.

The revised plan by Albert Mayer (1950)

- In 1950 Albert Mayer proposed his revised plan of the city. The black square is the city center.

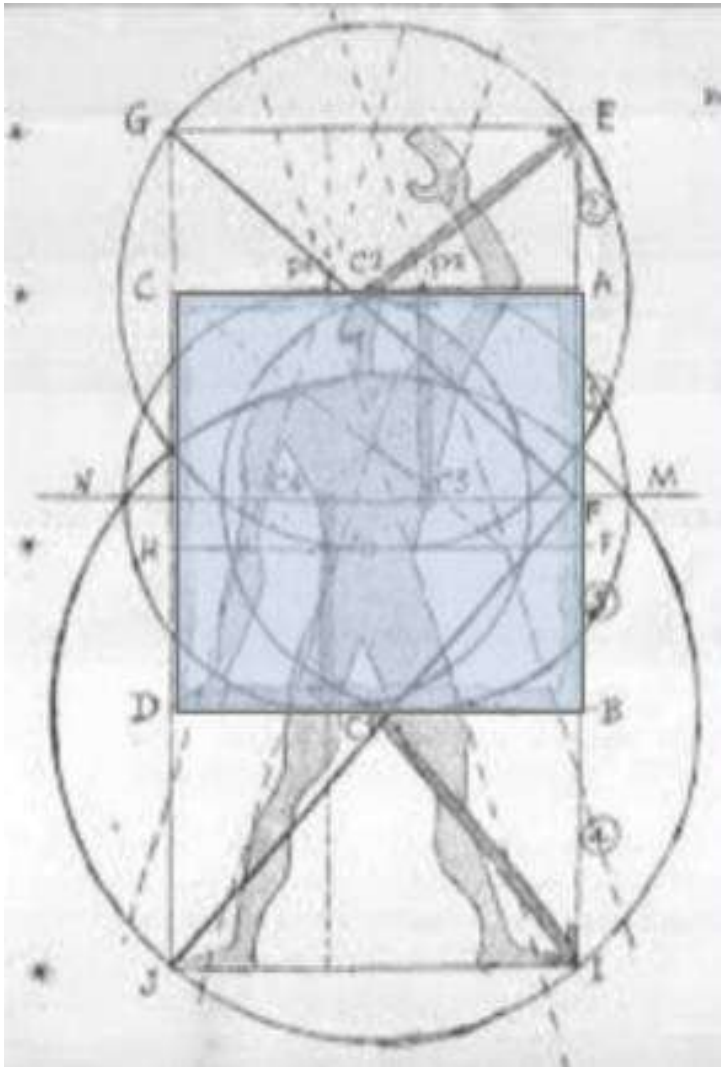
Appointing new architect

- Matthew Novicki was tragically killed in an air accident in august.
- His partner Albert Mayer decided to discontinue.
- The directors of the Chandigarh capital project journeyed to Europe to search for a replacement.

LE CORBUSIER'S MASTER PLAN

- Le Corbusier explicitly used the golden ratio in his modular system for the scale of architectural proportion.
- Le Corbusier based the system on human measurements, Fibonacci numbers, and the double unit.
- He took Leonardo's suggestion of the golden ratio in human proportions to an extreme: he sectioned his model human body's height at the navel with the two sections in golden ratio, then subdivided those sections in golden ratio at the knees and throat; he used these golden ratio proportions in the modular system.
- Le Corbusier placed systems of harmony and proportion at the center of his design philosophy, and his faith in the mathematical order of the universe was closely bound to the golden section and the Fibonacci series.

CONCEPT OF CHANDIGARH



Concept that led to the design of Chandigarh. Source: Open Internet



Layout Plan of a Sector as designed. Source: Open Internet

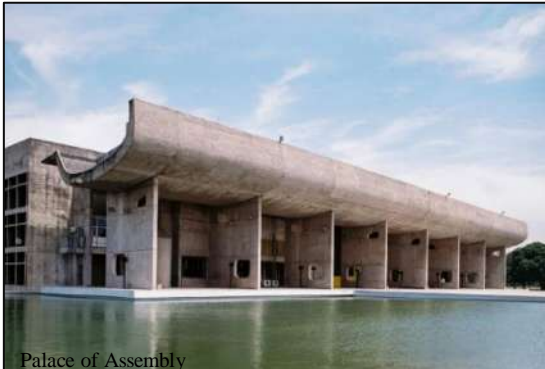
Le Corbusier conceived the master plan of Chandigarh as analogous to human body-

- **Head** - The Capitol Complex
- **Heart** - The City Centre
- **Lungs** - The leisure valley, open spaces and sector greens
- **Intellect** - The cultural and educational institutions
- **Stomach** - The commercial area
- **Arms** - University and industrial area
- **Circulatory system** - The network of roads
- **Viscera** - The Industrial Area

ARCHITECTURE BY LE CORBUSIER



Le Corbusier Center

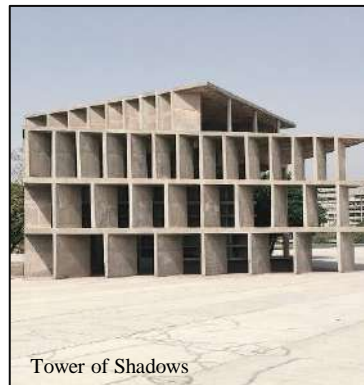


Palace of Assembly

- **Le Corbusier Center** : This landmark location, where Le Corbusier with his team conceived the designs, considered as apt location for museum.
- **Palace of Assembly** :Le Corbusier's five points of architecture can be found within the design from its open plan to the view of the Himalayan landscape.
- **High Court of Justice** : It is a linear block has a rhythmic arcade created by a parasol-like roof, which shades the entire building. The great entrance hall has symbolism of providing an "umbrella of shelter" of law to the ordinary citizen is most vividly manifested here.
- **Secretariat Building**: Completed in 1952,the secretariat building functions as the headquarters of the Punjab and Haryana municipal governments and is the largest of Corbusier's 3 completed administrative buildings. It was among the first building designed as a healthy building.
- **Tower of Shadows** : It is a symbolic structure which reflects Le Corbusier's interest in studying the penetration of sunlight inside a building. It traces the path of the sun through shadows. He constructed it in such a way that not a single ray of sun enters it from any angle.
- **Open Hand Sculpture** :It is the emblem and symbol of the Government of Chandigarh and symbolizes "the hand to give and the hand to take; peace and prosperity, and the unity of mankind".



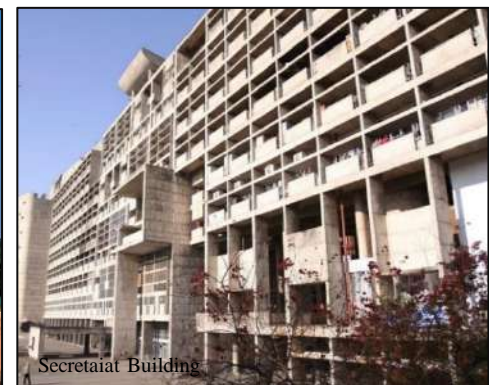
High Court of Justice



Tower of Shadows



Open Hand Sculpture



Secretariat Building



Gandhi Bhawan



Work by Pierre Jeaneret



The cultural complex

WORKS BY PIERRE JEANNERET

- Pierre Jeanneret (22 March 1896 – 4 December 1967) was a Swiss architect who collaborated with his cousin, Le Corbusier for about twenty years.
- His remarkable contribution has been the designing of the fourteen categories of mass-housings and **Gandhi Bhawan of Panjab University** which is an architectural centerpiece of the campus and a stunning example of modernist architecture in India.
- **Brick jalis, standardized facades**, row housing with common walls between adjoining houses, **exposed concrete** and brick facades are among common architectural elements of **low-cost mass housing**.
- He used innovative **cast concrete** to evoke an abstracted floating lotus flower, having angular lines with swelling **organic forms**, all fittingly set into a large reflecting pool for Gandhi Bhawan.

SOME IMPORTANT STRUCTURE IN CHANDIGARH:

- **PRACHEEN KALA KENDRA SECTOR 35:** This is a private institute teaching Hindustani vocal and instrumental music, kathak and Bharatanatyam among the Indian classical dance and folk dances and songs. Pracheen kala Kendra organises a weeklong festival of music and dance very year.
- **THE CULTURAL COMPLEX SECTOR 10:** Many artist and writers live in this city, the frequently held exhibition and performance held by singers and dancers have inculcated among city residents. Le Corbusier earmarked a position of sector 10 as the cultural complex.
- **LALIT KALA, SAHTIYA AND SANGEET NATAK:** These three bodies devoted to art, literature, music and dance/drama respectively function in co ordination with the UT administration and have their office in states library buildings.



ARCHITECTURE OF CHANDIGARH

- **Housing Typology:** The residential structures were ruled by a system known as 'frame control' which was created by the municipal administration to control their facades.
 - This had fixed the building lines, height and the use of building materials. Further, a few definite standard sizes of doors and windows were specified.
 - The idea was to ensure that the view from the street, which belonged to the community, was of the same visual order and discipline to maintain uniformity and ambiance.

- **Commercial Buildings:** All the buildings located in the City Centre including the commercial or institutional buildings which are located along V-2 roads were under the control of the Municipal administration.
 - The system of the City Centre was based on a grid system. A fixed 5.26 meters shuttering pattern on concrete and a system of glazing or screen walls behind the line of columns had to be constructed.

- **Way Forward:** In order to rationalize the urban growth, provide basic amenities of life to all the citizens, improve quality of life, decentralize planning and making development people centric, Government of India has launched the Smart City Mission.
 - Mission focuses initially on 100 selected cities in the country based on detailed selection criteria.
 - Chandigarh has been selected as one of the mission city.

DESIGN BRIEF

○ **AIM:**

- To design a multi-storied Commercial complex catering to facilities of shopping and a dedicated business office area.

○ **OBJECTIVE:**

- To study Chandigarh & its context.
- Understand the complexities involved in Vertical stacking & Spatial arrangements.
- Coordinate various building services like water supply, lifts, drainage, garbage disposal, lighting, air-conditioning etc.

○ **INTENT:**

- To understand service oriented designing considering the structural requirements of the design.

○ **PROJECT BRIEF:**

- To design a multi-storied Commercial complex catering to facilities of shopping and a dedicated business office area whilst keeping in mind the disaster management aspect of designing to introduce the concept of building design in an urban context from a different socio geographic context.

○ **METHODOLOGY:**

- Context Study of Selected Urban City.
- Study of existing buildings which have vertical arrangements. (2 case studies per student)
- Area of study selection leading up-to site selection.
- Conceptual level designing.
- Exploring Façade treatment / Design
- Detailed Planning

DESIGN PROGRAM

| STES's | | | | | | | | |
|---------------------------------|------------------------------|----------------------------------|-------------|--------------------|------------------|------------------|--------------------------|---------------------|
| Sinhgad College of Architecture | | | | | | | | |
| Third Year | | T/2 | 2020-21 | Subject: Design VI | | | | |
| Project : | Project 01 : Major | Commercial Complex at Chandigarh | | | | | | |
| Sr.No | Areas | No of units | No of users | Area Requirement | | | Total b/up area per unit | Total Built up area |
| | | | | Carpet Area | Area Under Walls | Circulation area | | |
| 1 | Entrance Lobby | 1 | 0 | 200 | 30 | 30 | 260 | 260 |
| 2 | Pick up & Drop off point | 1 | | | | | | |
| 3 | Luggage counter | 1 | | | | | | |
| 4 | Security Check point | 2 | 4 | 3 | 0.45 | 0.45 | 3.9 | 7.8 |
| | | | | 0 | 0 | 0 | 0 | 0 |
| | TOTAL | | | | | | | 268 |
| | SHOPS | 12 | 4 | 30 | 4.5 | 4.5 | 39 | 468 |
| 5 | Type -A | 24 | 10 | 60 | 9 | 9 | 78 | 1872 |
| 6 | Type -B | 9 | 35 | 120 | 18 | 18 | 156 | 1404 |
| 7 | Type- C | 1 | 200 | 250 | 37.5 | 37.5 | 325 | 325 |
| 8 | Hypermarket | | | 6 | | | | 0 |
| 9 | Pop-up Kiosks | | | | | | | 4069 |
| | TOTAL | | | | | | | |
| | RECREATIONAL | 1 | 100 | 250 | 37.5 | 37.5 | 325 | 325 |
| 10 | Theme based restaurant | 10 | | 45 | 6.75 | 6.75 | 58.5 | 585 |
| 11 | Food Court | 1 | 250 | 375 | 56.25 | 56.25 | 487.5 | 488 |
| 12 | Common Dining Area | 1 | | 25 | 3.75 | 3.75 | 32.5 | 32.5 |
| 13 | Kids Care Center | 1 | | 100 | 15 | 15 | 130 | 130 |
| 14 | Gaming Zone | | | | 0 | 0 | 0 | 0 |
| | | | | | 0 | 0 | 0 | 0 |
| | TOTAL | | | | | | | 1560 |
| | ADMIN | 1 | | | | | | |
| 15 | Staff entrance | 1 | 0 | 60 | 9 | 9 | 78 | 78 |
| 16 | Admin office area | 1 | 10 | 30 | 4.5 | 4.5 | 39 | 39 |
| 17 | Conference room/Meeting room | 1 | 1 | 12 | 1.8 | 1.8 | 15.6 | 15.6 |
| 18 | Manager's Cabin | 1 | 1 | 7 | 1.05 | 1.05 | 9.1 | 9.1 |
| 19 | Store Room | 1 | 0 | 30 | 4.5 | 4.5 | 39 | 39 |
| | Customer Service Department | 1 | 0 | 5 | 0.75 | 0.75 | 6.5 | 6.5 |
| 20 | Pantry | 1 | 0 | 10 | 1.5 | 1.5 | 13 | 13 |
| 21 | Toilet | | | | | | | |
| 22 | | | | | | | | |
| | TOTAL | | | | | | | 200 |
| | PARKING | | | | | | | |
| 34 | Four Wheelers- Staff | | | | | | | |
| 35 | Two Wheelers- Staff | | | | | | | |
| 36 | Cycles- Staff | | | | | | | |
| | Truck | | | | | | | |
| | Tempo | | | | | | | |
| | Basement Parking | | | | | | | |
| | COMMERCIAL FLOOR | 10 | 10 | 75 | 11.25 | 11.25 | 97.5 | 975 |
| 37 | Office area | 1 | 15 | 30 | 4.5 | 4.5 | 39 | 39 |
| 38 | Reception + Waiting | 2 | | 7 | 1.05 | 1.05 | 9.1 | 18.2 |
| 39 | Toilet | | | | 0 | 0 | 0 | 0 |
| | | | | | 0 | 0 | 0 | 0 |

| Date | Submission Schedule |
|------------|---|
| 15.01.2021 | Site Identification |
| 19.01.2021 | Context study of Chandigarh |
| 20.01.2021 | 2 case studies individually analysed |
| 22.01.2021 | Posted design Program for Commercial complex |
| 05.01.2021 | Design Process stage 1 –Concept , Zoning , Single line Plan |
| 09.02.2021 | Design Development Stage 2 – Interior Layout |
| 16.02.2021 | Pre-final submission of Major Project |
| 26.02.2021 | Final Portfolio Submission of Major project |

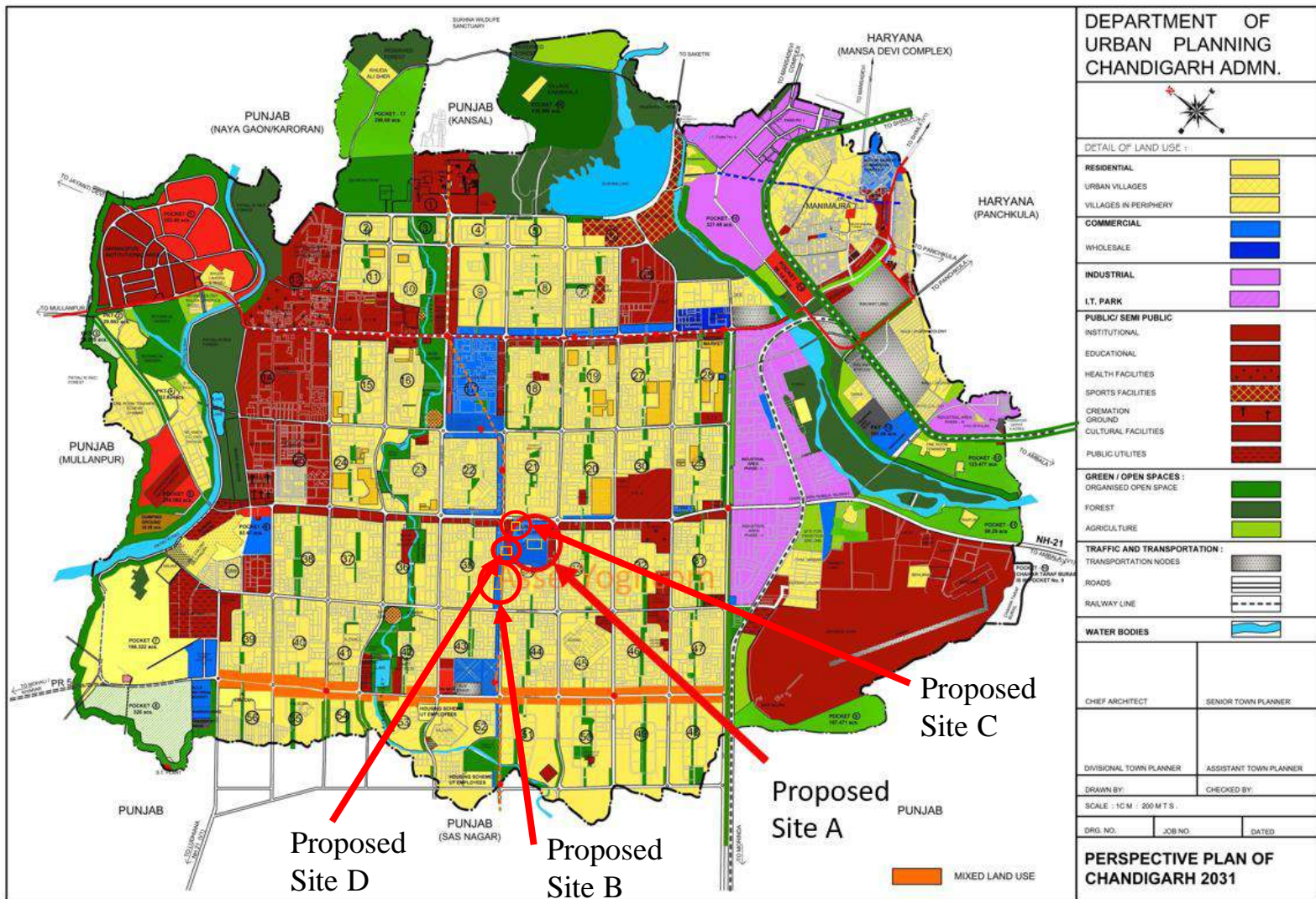
SERVICES

- Toilet Block- Male
- Toilet Block- Female
- Drinking Water Points
- HVAC Services
- AHU rooms
- Electrical Rooms
- CCTV Rooms
- Fire Fighting
- Generators
- Security Room
- Vertical Circulation

Requirements

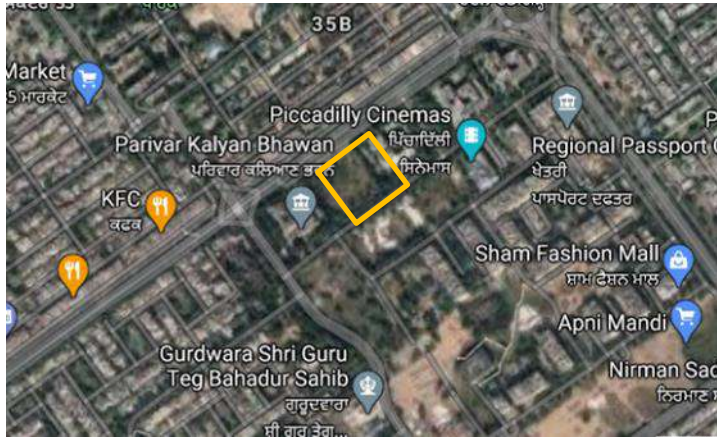
- Site plan
- All floor plans
- Sections (Min 2)
- Elevations (all 4 side)
- Furniture layout
- Parking layout
- 3 D basic

II] Area of Study: Sector 34 & Sector 35

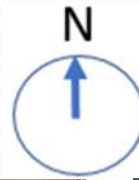
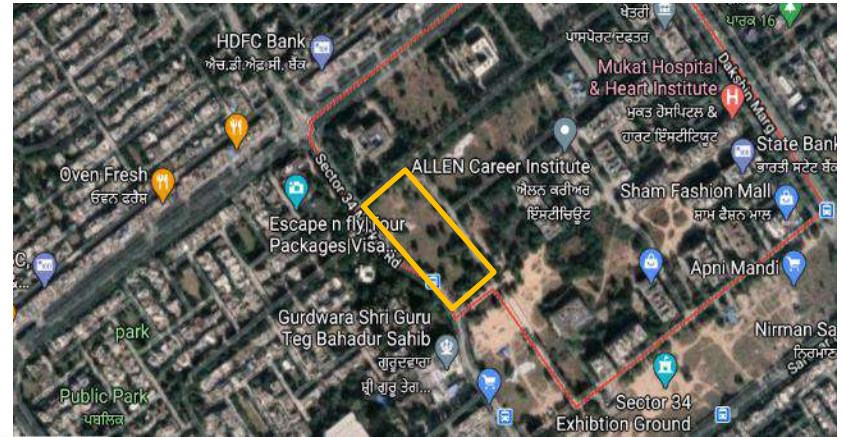


II] SITE SELECTION PROCESS:

Site A : Site Location - Sector 34, Chandigarh



Site B : Site Location - Sector 34, Chandigarh



Site C : Site Location - Sector 34, Chandigarh



Site D : Site Location - Sector 35, Chandigarh

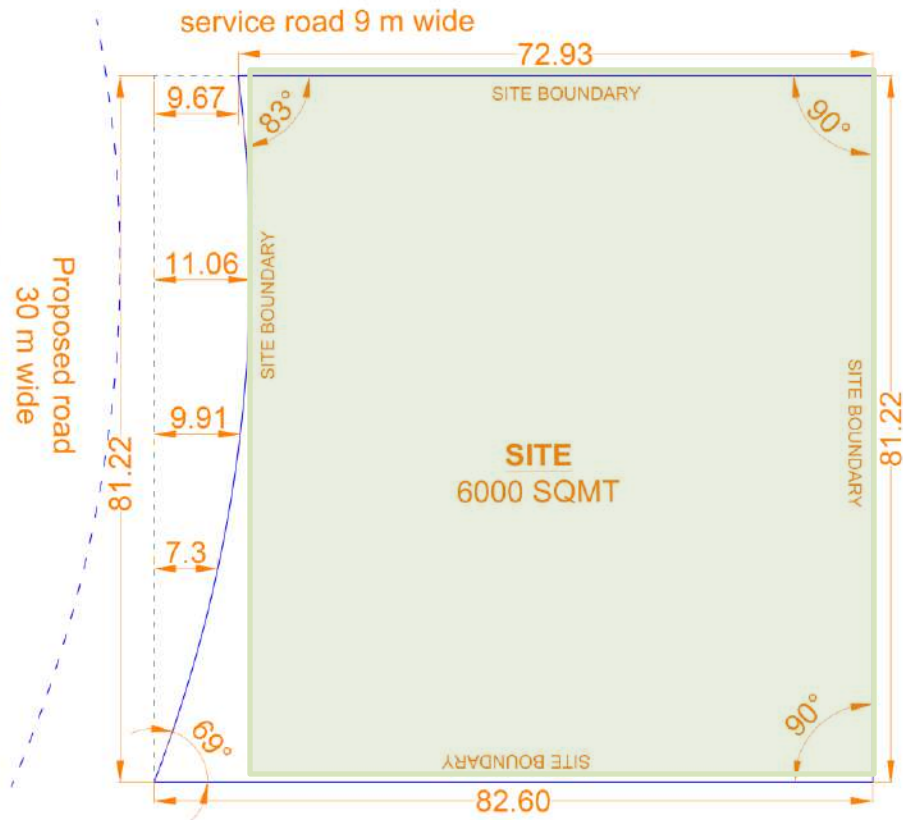


FINAL SITE WITH ITS CONTEXT

EXISTING COMMERCIAL COMPLEX



Key Plan



EXISTING COMMERCIAL COMPLEX

EXISTING COMMERCIAL COMPLEX

Site Details:

- Location : Sector 34, Chandigarh
- Landmark: Mukat Hospital & Heart Institute
- Area : 6000 Sq.mt.
- Approach Road : 30M
- Reserved : Commercial Zone
- Topography : Flat , no contours
- Existing Vegetation : nil except wild shrubs
- Adjacent Properties: Commercial Complexes



Third Year - C div – 2020-21



List of students

| Roll No | Name of the students | |
|---------|----------------------------|-----------------------------|
| | | 21 Panwar Arpit Alok |
| | | 22 Parande Swati Jagannath |
| | | 23 Patel Gaushal Hasmukh |
| 1 | Chaudhari Pratik Vitthal | 24 Patil Avishkar Vijay |
| 2 | Karpe Rohit Kundalik | 25 Patil Mayuri Vikas |
| 3 | Kothari Sakshi Satish | 26 Patil Prabhat Dilip |
| 4 | Kulkarni Rasika Ramesh | 27 Patil Simran Sampatrao |
| 5 | Kulkarni Savri Prashant | 28 Pawane Mayur Balanath |
| 6 | Kumbhakarna Gauri Sunil | 29 Pawar Neha Chandrakant |
| 7 | Kunapuli Lakshmi Vaishnavi | 30 Pawar Jahnvi Narayan |
| 8 | Mahajan Shubham Pramod | 31 Pawar Saloni Pravin |
| 9 | Malkhede Kunal Ramesh | 32 Pawar Shivani Nandkishor |
| 10 | Mandhare Prajwal Dilip | 33 Pilley Atharva Gajanan |
| 11 | Mankar Rutuja Suresh | 34 Pisal Amruta Ramchandra |
| 12 | Mate Sudhanshu Rajendra | 35 Potdar Amruta Arvind |
| 13 | Mhaske Pratik Madhukar | 36 Uke Rasika Sanjay |
| 14 | Mote Aniket Subhash | 37 Nirgude Vaishnavi Rajesh |
| 15 | Mundada Aniket Jagdish | 38 Payaghan Saurabh Shahaji |
| 16 | Murarka Nisha Rajkumar | 39 Patil Shruti Atul |
| 17 | Nagare Sourabh Gorakh | 40 Shreenidhi kulkarni |
| 18 | Nikalje Sumakar Rajendra | 41 Saloni Kulkarni |
| 19 | Paknikar Vedita Sanjay | 42 Akshta pote |
| 20 | Pampana Vamshi Krishna | 43 Yash Kolhtkar |
| | | 44 Mayur pawar |

List of design faculties:

Ar. Samvedna Jadhav
Ar. Kavita Patil
Ar. Ankoor Sakhare

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

VIRTUAL STUDY TOUR

(Goa)

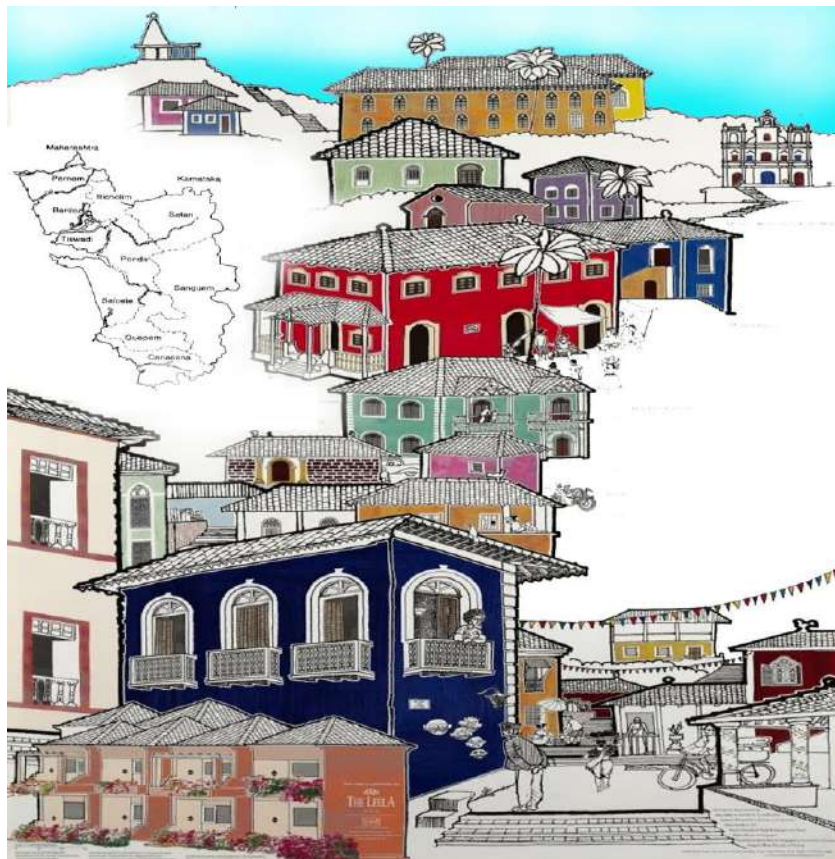
by

Third Year B. Arch.

Division D

I | INTRODUCTION

FONTAINHAS,
PANJIM,
NORTH GOA



LOCATION & GEOGRAPHICAL CONTEXT

- Fontainhas, Goa is located on **western coast** of India between Maharashtra and Karnataka, with **Arabian Sea** to its west.
- Located in Panjim, North Goa alongside river **Rua de Ourem**.
- Lies between co-ordinates **15.496°N 73.831°E, 15.496°N 73.831°E**.
- It is widely known for its rich bio-diversity, Portuguese influence and beautiful beaches.

HISTORICAL CONTEXT

- The architecture of Goa is **multi-faceted**. Buildings in Goa were an amalgamation of styles, technology and details that
- Emerged from the **confluence** of various cultures.
- The Portuguese played a considerable part in shaping the architectural identity of Goa.
- These structures simply ought to be called 'Goan' due to their heterogeneity.
- They are unique and can not be found anywhere else in the world.

Ref.- https://en.wikipedia.org/wiki/History_of_Goa

DIFFERENT ERA AND STORIES

MYTHS AND STORIES - MAHABHARATA



THE HISTORY OF GOA OR GOMANTAK HAS BEEN WOVEN INTO SEAMLESS STRINGS OF VARIOUS MYTHS AND STORIES THAT TAKE US BACK INTO THE TIME OF MAHABHARATA.

THE BRONZE & IRON AGE - AGE OF VILLAGE GOD & GODDESSES



IN 2200 B.C., THE FIRST WRITTEN REFERENCE TO GOA APPEARS TO HAVE BEEN IN CUNEIFORM, IN SUMERIAN TIMES WHEN THE KING JUDEA OF LAGASH CALLED IT GUBIO. SUMERIANS HAD ESTABLISHED TRADE CONTACTS WITH GOA AND MANY SUMERIANS SETTLED IN GOA AND ALONG THE KONKAN COAST.

ERA OF THE GREAT EMPEROR ASHOKA



GOA WAS A PART OF THE MAURYAN EMPIRE OF EMPEROR ASHOKA. IT HAS BEEN KNOWN TO OTHER CULTURES BY DIFFERENT NAMES. TWO HUNDRED YEARS BEFORE CHRIST, GOA BECAME THE SOUTHERN FRINGE OF THE EMPIRE OF ASHOKA.

ERA OF CONSECUTIVE HINDU DYNASTIES



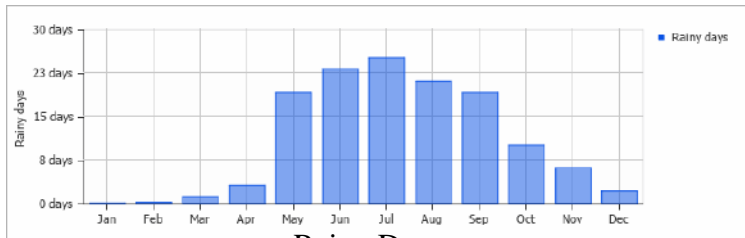
GOA WAS RULED BY SEVERAL DYNASTIES OF VARIOUS ORIGINS FROM THE 1ST CENTURY BC TO 1500 AD. FOR 700 YEARS, A LOT OF HINDU DYNASTIES RULED GOA. HISTORY OF GOA IS A TIMELINE RULE BY SEVERAL DYNASTIES FROM ORIGINS WITH A DIFFERENT TRADITIONAL AND CULTURAL BACKGROUND.

TIMELINE

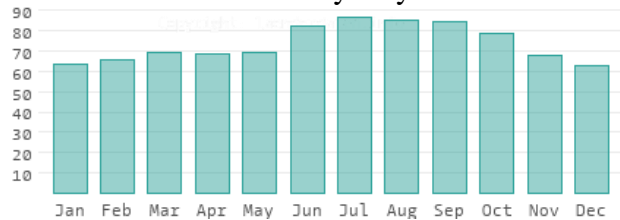


Ref.- https://en.wikipedia.org/wiki/History_of_Goa

CLIMATE & VEGETATION STUDY OF FONTAINHAS, GOA



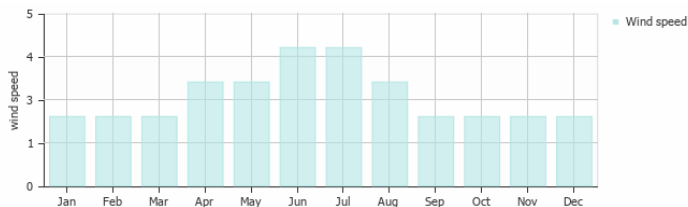
Rainy Days



Yearly Humidity



Yearly Sunshine Hours



Yearly Wind Speed

CLIMATE TYPE: TROPICAL MONSOON

(Hot all year)

Hottest month: May 35 °C (95 °F)

Three seasons are:

Southwest monsoon period (June – September),

Post-monsoon period (October – January)

Pre-monsoon period (February – May)

Average Rainfall: 2813 mm

Average Temperature- 33 degrees

Average Humidity:75.9%

Vegetation

- Coconut trees and deciduous vegetation of banyan, teak, sal, cashew, mango trees is abundant here.
- Fruits include jackfruits, mangos, pineapples and blackberries.
- Gaur, Foxes, wild boars prominent animals found here.
- Kingfishers, mynas, parrot, bulbul and migratory birds are common here

Goa, being in the tropical zone and near the Arabian Sea, has a hot and humid climate for most of the year. It also has rich flora and fauna because it lies on the Western Ghats range, a biodiversity hotspot.

Ref. <https://www.meteoblue.com/>

Culture & Festivals



The Goa Carnival



Christmas Celebration at the Church of Immaculate Conception



Traditional Attire

- People living in Goa are referred to as **Goans**.
- Goa sees a mix of different religions like **Christians, Catholics, Muslims** and **Hindus** that live together in consonance.
- Living off lavishly with what they earn through the **Peak Months Of Tourism**, goan's live life to the fullest.
- With a strong influence from the west, Goa has always had the more modern mindset as compared to other states of India.
- Celebrating livelihood and **religious festivals** with **scrumptious food** and **delightful music**, the locals are humble, warm and fun loving individuals.
- The Goa Carnival, São João (Feast of John the Baptist), Ganesh Chaturthi, Diwali, Christmas, Easter, Samvatsar Padvo or Sanvsar Padvo, Shigmo, The Feast of St. Francis Xavier (Goicho Saib), are the festivals celebrated here.

Food & Cuisine of goa

- Prawns, crabs, kingfish with their traditional spicy marination are a delectable delicacy for the locals. festive favourite for the Goans is their **Beef And Pork** roasts famous brew **Feni**, made with fermented cashews.
- **Coconuts, spices and fresh catch from the sea** are core ingredients one will find in any **Fish curry and rice**, a dish which is synonymous to the state of Goa, is prepared via using a host of ingredients like **coconut, chilli peppers, cashew and seasoning**.

A BRIEF EVOLUTION OF GOAN ARCHITECTURE FROM 16TH CENTURY



Government Medical College Built In 1691.



Our Lady Of Piety (Nossa Senhora Da Piedade),.



Groin vault (european technology) combined with ornamentation using local motifs in stucco.



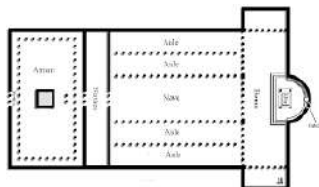
St. Catherine's Cathedral



The Church Of Our Lady Of The Rosary ,1543.



GOA TEMPLE PLAN



BASCILLICA PLAN

ARCHITECTURE IN GOA

- The architecture of goa is **multi-layered**, borrowing influences from **Hindu, Buddhist, Maratha, Chalukya, Jain Dynasties**.
- The portugese on arrival, began the mission of **‘Christianization’** by building **churches** at strategic locations, sometimes by usurping other **religious shrines**.
- The designs of these early churches were mainly imported from portugal.
- Built out of **local material** with **local skills** and with **multi layered connotations**,
- The beauty of goan architecture lies in its imperfections – **walls not to plumb**(inclined walls), **an askew roof**, **patchy lime plastering**, **unsymmetrical mouldings**.
- Early designs were imported from portugal, the first truly ‘Goan’ church would appear late into the 17th century and thereafter mostly in Ilhas in examples like the Nossa Senhora De Piedade, and Sant Anna De Talaulim.
- ‘These were churches that were built ‘by Goans, designed by Goan architects and masons, including goan catholic priests. The multi-cultural influence can be seen even in the temples of goa

Ref:

https://en.wikipedia.org/wiki/Architecture_of_Goan_Catholics#:~:text=The%20architecture%20of%20Goan%20Catholics,in%20the%20Portuguese%20Baroque%20style.

A BRIEF EVOLUTION OF GOAN ARCHITECTURE FROM 16TH CENTURY



The archiepiscopal palace, old goa- plain facades



Steep roofs,
Ornamented
Door windows,
Pilasters



- Early examples of secular buildings in goa were built as the ‘cha’ or plane style.
- This style reflects strict or disciplinary virtues through its facade.
- Most houses before the 1700s were not suited to the local climate of to local conditions.
- This is evident from the lack of shading or weathering devices in these structures, suggesting that the evolution process of coming up with an architecture that was best suited to goa’s climatic conditions.
- In 1769, minister in office in portugal, introduced a series of reforms for an administration and society in goa that was bogged down by corruption.
- For goa, this was a breakthrough moment as the cultural ambitions of goans rose and eventually improved their economical condition.
- Uptil then the traditional house was built around the indian model – a largely introverted and conservative one with a set of rooms wrapped a courtyard with the functions happening inwards and the exteriors only dotted with small windows.
- In 1878, the signing of the goa alliance treaty further influenced the architectural scenario.
- The facade treatment of the houses was extravagant – windows treatments became decorative, ornate and more importantly, expressive. These windows had wooden shutters with oyster panes that transmitted in diffused light.

Ref: <https://thebalcao.com/goan-architecture/>

II] STUDY OF AREA – FONTAINHAS, GOA: OVERVIEW



Court Of Goa



High Court Of Goa



Mermaid Garden



St Thomas Church



Indian Post



Bharat Lodge



Dr. Miguel Statue



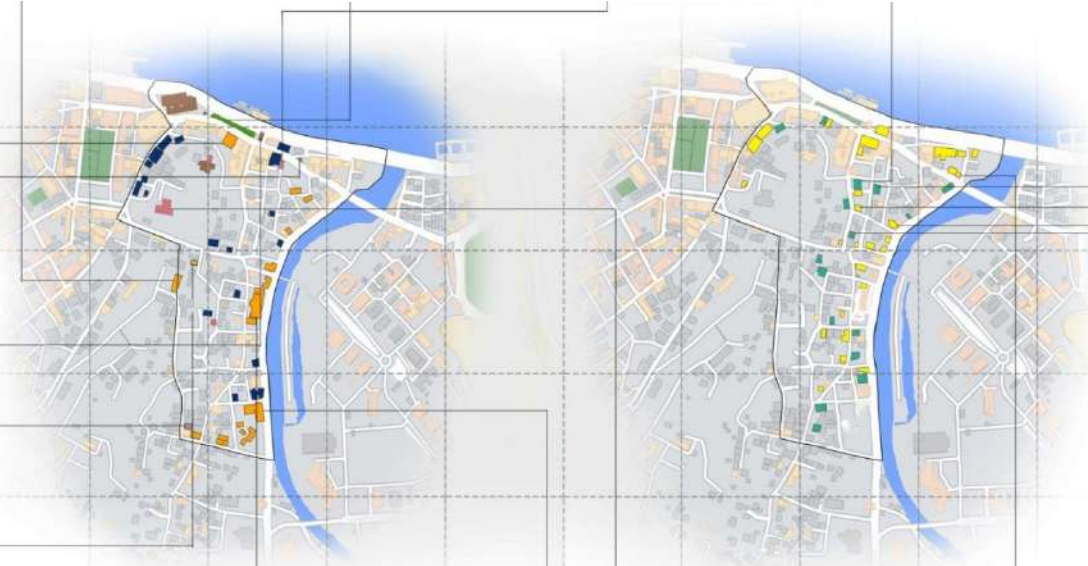
Bhausaheb Statue



Pwd Headquarters



Peacock Steps



Offices, Shops, Religious & Tourist Spaces

- GOVERNMENT BUILDINGS
- SHOPS
- RELIGIOUS BUILDING
- TOURIST PLACES

Restaurants & Hotels

- HOTEL BUILDINGS
- RESTAURANTS



St. Mary's School



People's School

PEOPLES HIGH SCHOOL



Church Of Immaculate Conception



Hotel Soho

SOHO GOA



Guest House



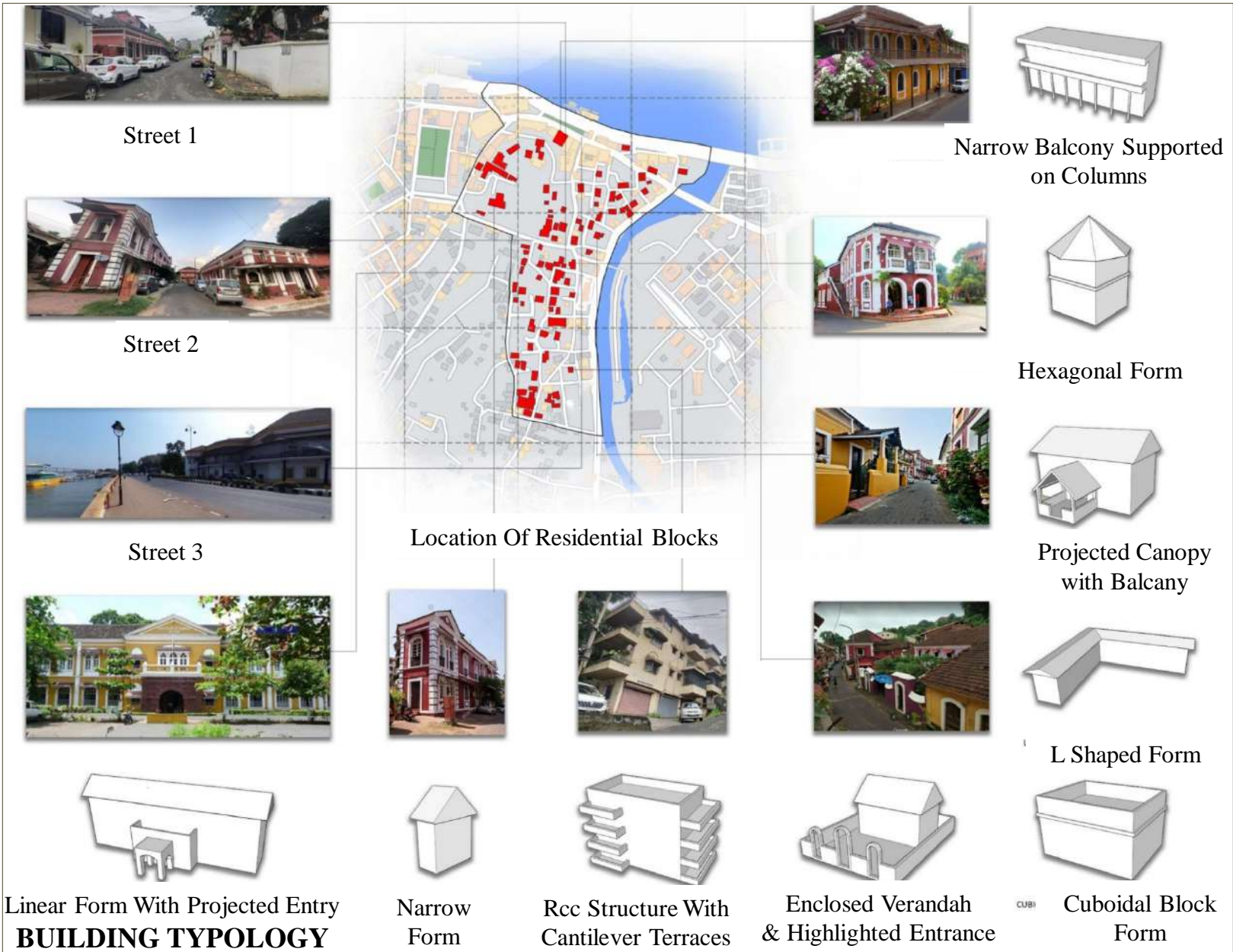
St Sebastian Church



Hotel Scan



Hotel Matus



Linear Form With Projected Entry
BUILDING TYPOLOGY

Narrow Form

Rcc Structure With Cantilever Terraces

Enclosed Verandah & Highlighted Entrance

CUBI Cuboidal Block Form

CONNECTIVITY AND SERVICES



The streets are colourful and complimenting the human scale , Few cul-de-sacs are observed

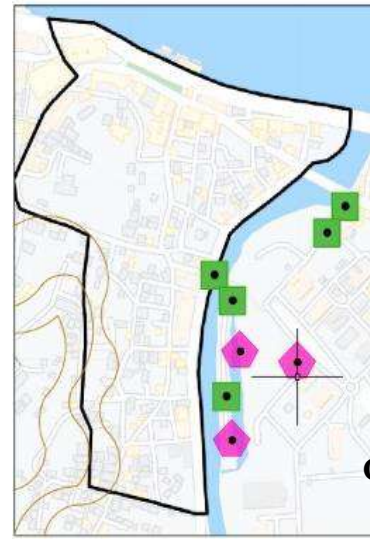
VEHICULAR ROUTE



- AIRPORT -29.2 KM ,1 HR Away
- BUS STATION – 4.2 KM , 15 min away
- MADGAON RAILWAY STATION - 52.4 KM , 1.5 hours away

ROAD NETWORK

WATER SUPPLY LAYOUT



SOLID WASTE COLLECTION NETWORK

BUILDING MATERIALS



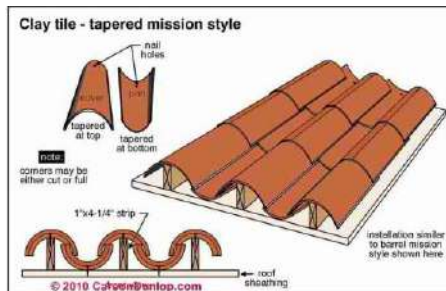
House With Exposed Laterite Stone Walls



Oyster Shell Windows And Colorful Facades



Balconies



Building Materials and Techniques

Wooden Roofs, Thick Mud & Laterite Walls, Cow Dung & Mud Plaster For Flooring & Clay Tiles are the most common building materials.

They absorb Heat & Cool The Space.

Materials And Their Use:-

- 1) **Wood** – For Roof, Doors, Windows, Furniture, False Ceiling.
- 2) **Mud** – For Walls, Floorings.
- 3) **Laterite Stones** – For Walls, Compound Walls, Flooring
- 4) **Clay Tiles** – Roofing
- 5) **Vegetable And Natural Dyes** – For Coloring, Walls
- 6) **Oyster Shells** (Mother Of Pearl Shell) – For Windows Shutters.
- 7) **Thick Grass, Bamboo And Palm Frond Mats** – For Window Shades
- 8) **Basalt & Granite Stone** – Flooring, Walls

- **Load Bearing construction** is mainly observed with thick laterite stone walls.
- Various types of **arches** are used for door window openings.
- **Balcaos** is a prominent feature here, that is a seating constructed in the entrance porch.

The facade treatment of the houses are extravagant – **windows treatments are decorative, ornate** and more importantly, **expressive**. These windows have wooden shutters with oyster panes that transmitted in diffused light.

Ref : <https://mitaroyhotels.com/2015/07/04/traditional-vs-modern-building-materials-in-go/>
<https://ounodesign.com/2012/02/14/goa-laterite-buildings-walls/>

OBSERVATIONS



- After study of all features or characteristics of goan houses, it is found that most of the natural materials used are relatively temporary nature and bio-degradable compared to basalt, granite and modern materials.
- The most prominent contemporary building techniques in goan houses incorporated the use of laterite stone, timber, bamboo, vegetable dyes, lime, coconut, palm and soil, etc. Which are eco-friendly materials.
- The contemporary architecture thus, explored building materials and energy efficient technologies close to the human comfort levels and transformed human requirements into built form. Thus, making houses perhaps the most environment friendly and climatically adopted houses in the region.
- The goan houses were built with local materials and local expertise. Rammed earth, laterite red stone, basalt, lime mortar, load bearing construction, arches, wood, mangalore or clay tiles, natural colors or lime wash, china mosaic were used to ensure the survival of traditional building skills and craftsmanship.



PORTUGESE HOUSES



HINDU HOUSE

MODERN
HOUSES

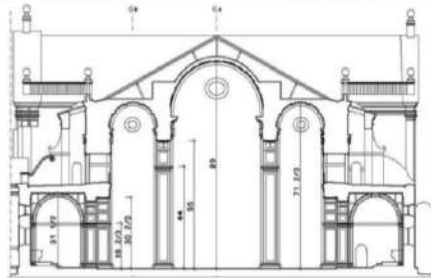


Ref: <https://ounodesign.com/2012/02/14/goa-laterite-buildings-walls/>

PORTUGUESE ARCHITECTURE IN GOA

Churches in Goa

The facade shows three bays in the first story and rectangular windows in the second.

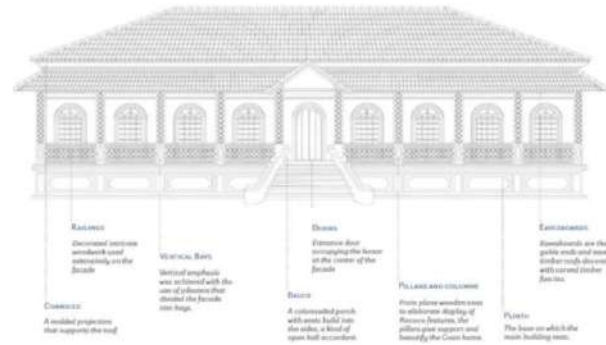


Architectural proportions in the SE Cathedral of Goa.



Houses of Goa

THE FOCAL POINT OF PORTUGUESE ARCHITECTURE IS ITS FACADE



Humberto Alencar



Quilombo 2 Casa Museum



Door

Houses of Goa are symmetrical, entrance door occupying the honor at the center of Facade

Windows

Windows exhibit Neo - Mannueline to Baroque and Rococo Design

Colors

Houses of Goa is famous for their bold, yet beautiful use of colours



<https://scroll.in/magazine/856585/portuguese-architecture-in-go-a-has-little-to-do-with-the-portuguese-and-everything-to-do-with-go-a>

SITE LOCATION



Satellite image of site



Proposed site



Connection of site with
Highways and Fontainhas UNESCO
World heritage site

Criteria for Project selection

According to the syllabus it is recommended that the minor project may be programmed to integrate knowledge of art-architecture history, contemporary art-architecture movements.

The area program includes

- Administration areas
- Exhibition areas
- Recreational areas.

Criteria for Site Selection

Fontainhas in Panaji has been declared a cultural quarter, showcasing the life, architecture and culture of Goa. The site is located in the vicinity of the rich cultural heritage of fountainhas. Taking benefit of lush green surroundings, water bodies, and unique location

LOCATION

In Patto Plaza, patto, near Fontainhas

World heritage site, Panjim, North Goa

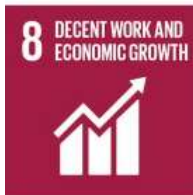
CONTEXT

- Connected to river rua de oreum on west,
- Adjacent structures include krishnadas shama library, directorate office, etc.
- Patch of dense vegetation of mangrove trees on the west.

PROPOSED DESIGN PROGRAM: MUSEUM by Portugal Embassy



Sustainable development goals as per United Nations general assembly Focus on **DECENT WORK and ECONOMIC GROWTH**



PROMOTE BENEFICIAL AND SUSTAINABLE TOURISM
By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products



PROMOTE BENEFICIAL AND SUSTAINABLE TOURISM
By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products.

Goa is a land of unique culture and interesting heritage. Goa is not just a travel destination; it is an experience that unfolds uniquely for every visitor. If you seek the spellbinding beauty of the sea, sun, and sand, the hypnotic beaches of Goa will enthrall you. However, beyond this fun-filled and frivolous face of Goa lies proud history that is reflected through its heritage sites. And here, we are not talking about your regular tourist attractions; we are talking about the UNESCO World Heritage Sites that place Goa among the best places in India for a glimpse into its colonial past.

Exhibits in museums in Goa should offer a glimpse of art, culture and archaeology. Portugal embassy in India with the aim of promoting importance of Portugal influence in Goa is proposing a Museum in Goa. In many parts of Goa, mansions constructed in the Indo-Portuguese style architecture still stand, though in some villages, most of them are in a dilapidated condition.

Students are encouraged to propose a rational solution which responds to the context.

According to the syllabus it is recommended that the minor project may be programmed to integrate knowledge of art-architecture history, contemporary art-architecture movements.

The area program includes Administration areas, Exhibition areas, Recreational areas.

Ref: <https://sdgs.un.org/goals>



List of design faculties:
 Ar. Priyanka Chavan
 Ar. Mukta Pandit
 Ar. Sejal Desarda

List of students



- | | |
|----------------------|-------------------|
| 1. ARYAN SHARMA | 21 SHENDKAR |
| 2. DESHPANDE SHIVANI | VARUN |
| 3 HUDDAR PRAJWAL | 22 SHINDE PRADNYA |
| 4 KARANJWANE | 23 SIDDIQUI MOHD. |
| SAURABH | 24 SINGH SATYAM |
| 5 KUMBHAR VAISHNAVI | 25 SONAWANE YASH |
| 6 PAWAR DHANASHREE | 26 SUPEKAR |
| 7 PINJARI NADEEM | GAUTAMI |
| 8 RANE RAVISH | 27 TANDALE ANKIT |
| 9 RAYKAR VEDANT | 28 TEKALE SHWETA |
| 10 RENAKE MAYUR | 29 TEMBALE OMKAR |
| 11 RISHIKA MAHANTA | 30 THORAT |
| 12 RUPANWAR | PRATHMESH |
| AISHWARYA | 31 TUPE ONKAR |
| 13 SAHU NIKHIL | 32 UDBATTE SIDDHI |
| 14 SANGLE ANIKET | 33 VASANTGADKAR |
| 15 SATHE SHARMISHTHA | APURVA |
| 16 SHAIKH GAUSUDDIN | 34 WAGH SHUBHAM |
| 17 SHAIKH YASMEEN | 35 WANKHEDE |
| 18 SHARMA ANKIT | APEKSHA |
| 19 SHEJWAL TEJAS | 36 TUSHAR RANGARI |
| 20 SHELKE PRATHMESH | 37 SHIVANI RATHOD |
| | 38 AKSHATA SINH |

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

VIRTUAL STUDY TOUR

Nagpur

by

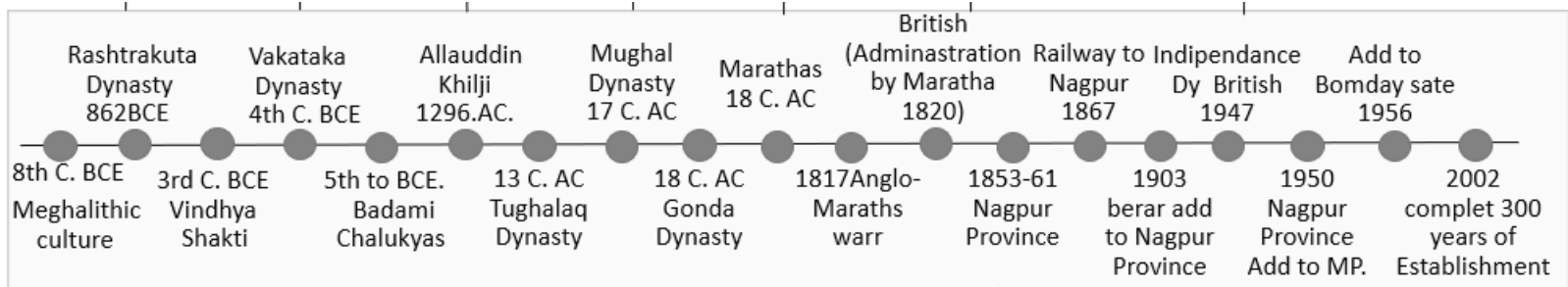
Fourth Year B. Arch.

Division A

Location

- Nagpur is located at center of the India .
- Nagpur is named after the river Nag which flows through the city.
- It is famous for Nagpur oranges and is sometimes known as the Orange City
- Tiger Capital of India or the Tiger Gateway of India as many tiger reserves are located in and around the city .

History Of Nagpur



The Kalidas Festival celebrates the works of famous poet, Kalidas.



The Kali Pili Marbat procession at Pili Marbat.

Topography

- Nagpur is geographical centre of India.
- All major geological formations are observed in Mahadagarh Hills, which are themselves extension of more prominent .
- Satpura Ranges, can be seen in the city in the form of Seminary Hills , Starky Point Hill , Ramnagar Hill , and Sitabuldi Hill.

Temperature

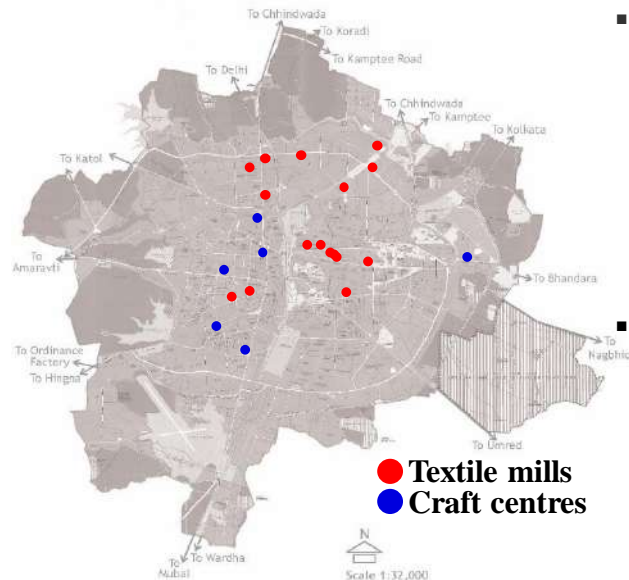
- Nagpur city has tropical wet and dry climatic conditions .
- The warmest month of the year is May, with an average temperature of 35.3 °C .
- In December, the average temperature is 20.1 °C .

Rainfall

- The driest month is November, with 7 mm of rainfall .
- Most precipitation falls in July, with an average of 317 mm .
- highest recorded daily rainfall was 304 mm on 14 July 1994 .

Cultural / traditional aspect

Art, craft and culture



- Nagpur is the largest hub of handloom weavers who produce supreme quality handwoven saris. Among them, the Karvat Kathi silk sarees are most famous and have earned a GI (Geographical Indication) tag.
- The tradition of painting in Nagpur was patronised by the Royal House of the Bhonsales as well as common people..

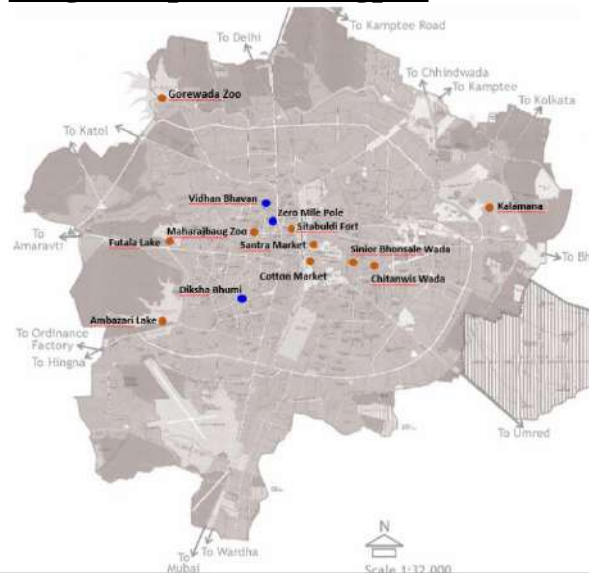


The Karvat Kathi Sarees



The Patachitra paintings

Magnetic points of nagpur



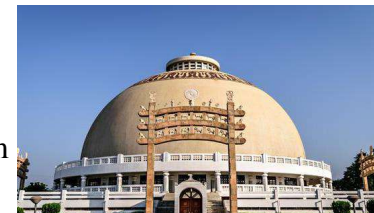
Zero Mile Stone

- Zero mile stone representing the GTS Standard Bench Mark.
- monument locating the geographical centre of India in the city of Nagpur

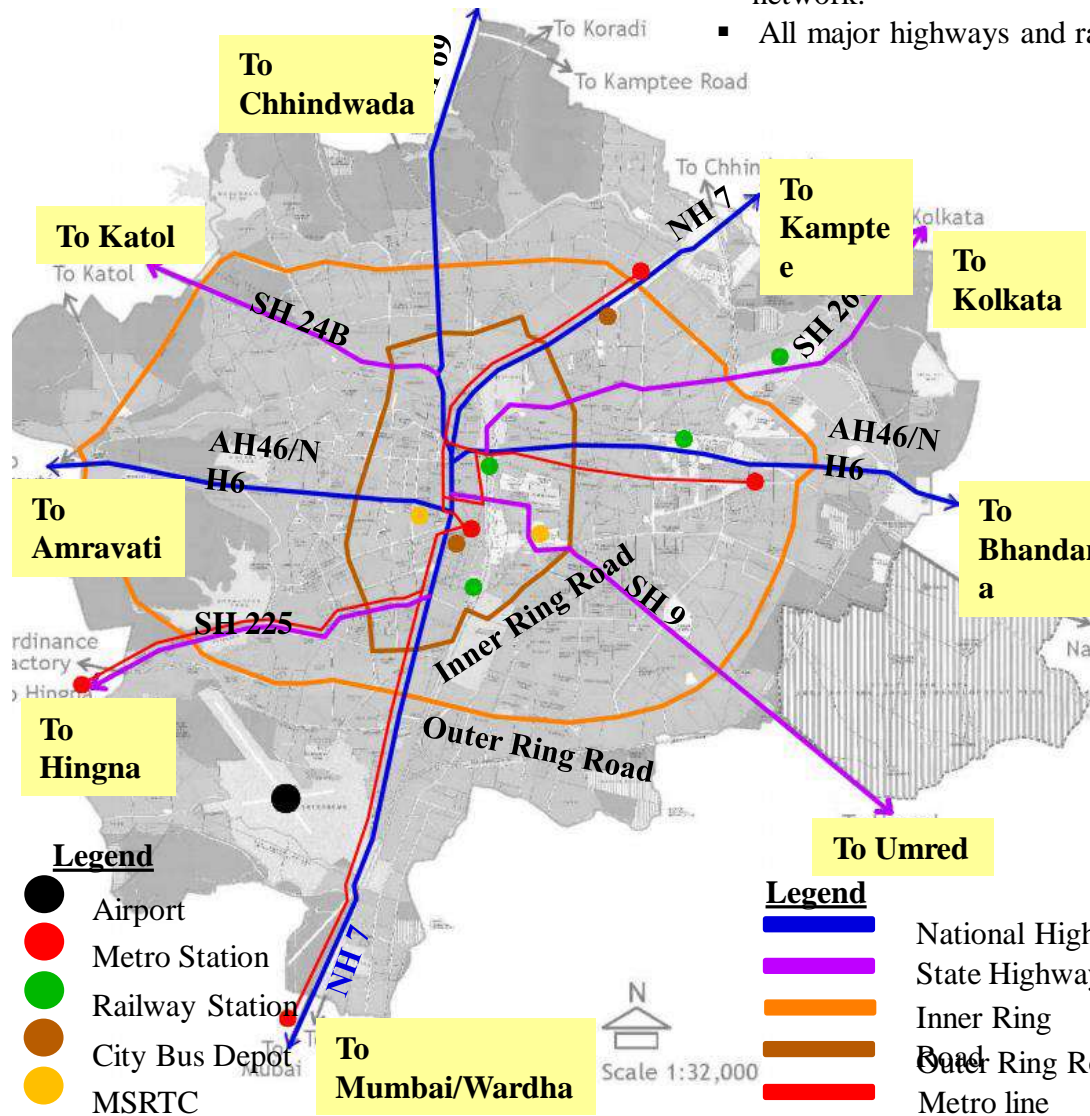


Deeksha Bhoomi

- Deeksha bhoomi is a sacred monument of Navayana Buddhism at Nagpur city.
- Dr.B. R. Ambedkar embraced Buddhism on Vijaya Dashami.



Road Network



- Legend**
- Airport
 - Metro Station
 - Railway Station
 - City Bus Depot
 - MSRTC Depot

- Legend**
- National Highway
 - State Highway
 - Inner Ring
 - Outer Ring Road
 - Metro line

- Nagpur city is well connected with all major cities by the road network.
- All major highways and railways pass through Nagpur.
- **NH 7:24-30m** Connecting Varanasi-Jabalpur-Nagpur-Hyderabad-Bangalore-Kanyakumari
- **NH 6:20-30m** Connecting Hajira, Gujarat-Surat-Dhule-Amravati-Nagpur-Raipur-Sambalpur-Kolkata
- **NH 69:18-24m** Connecting Nagpur-Betul-Obedullaganj near Bhopal
- **SH 9:18-20** Nagpur-Umred-Nagbhind-Chandrapur

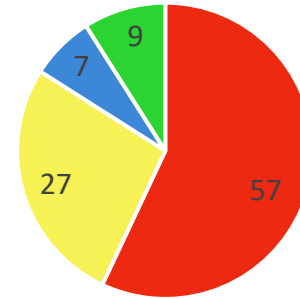
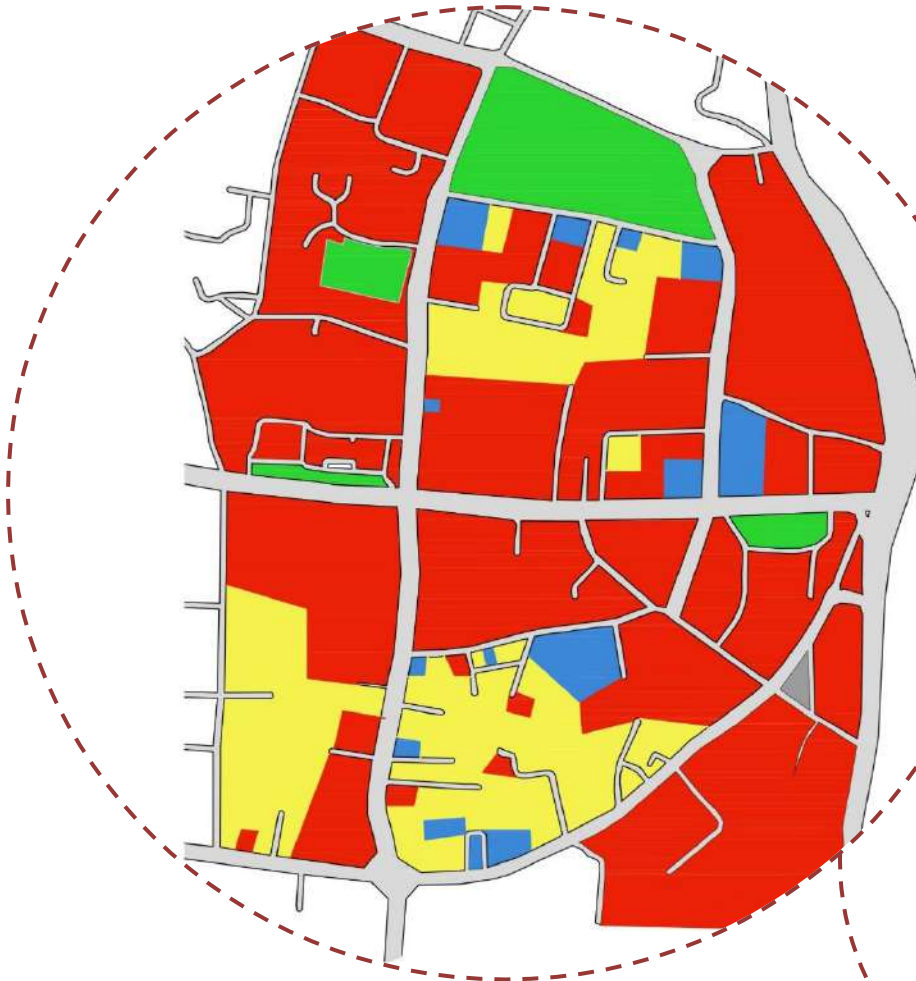


NH 7

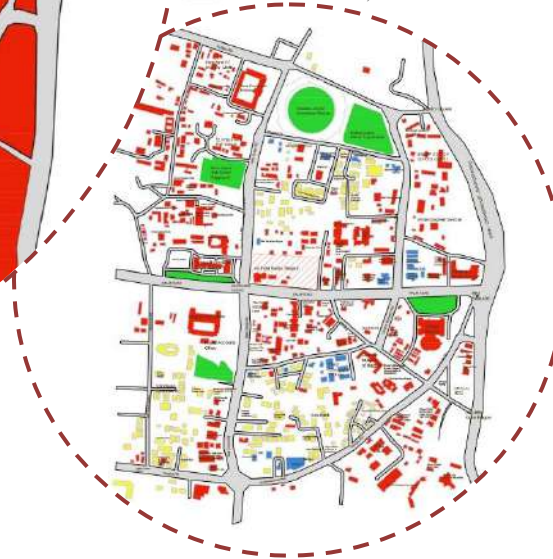


SH 9

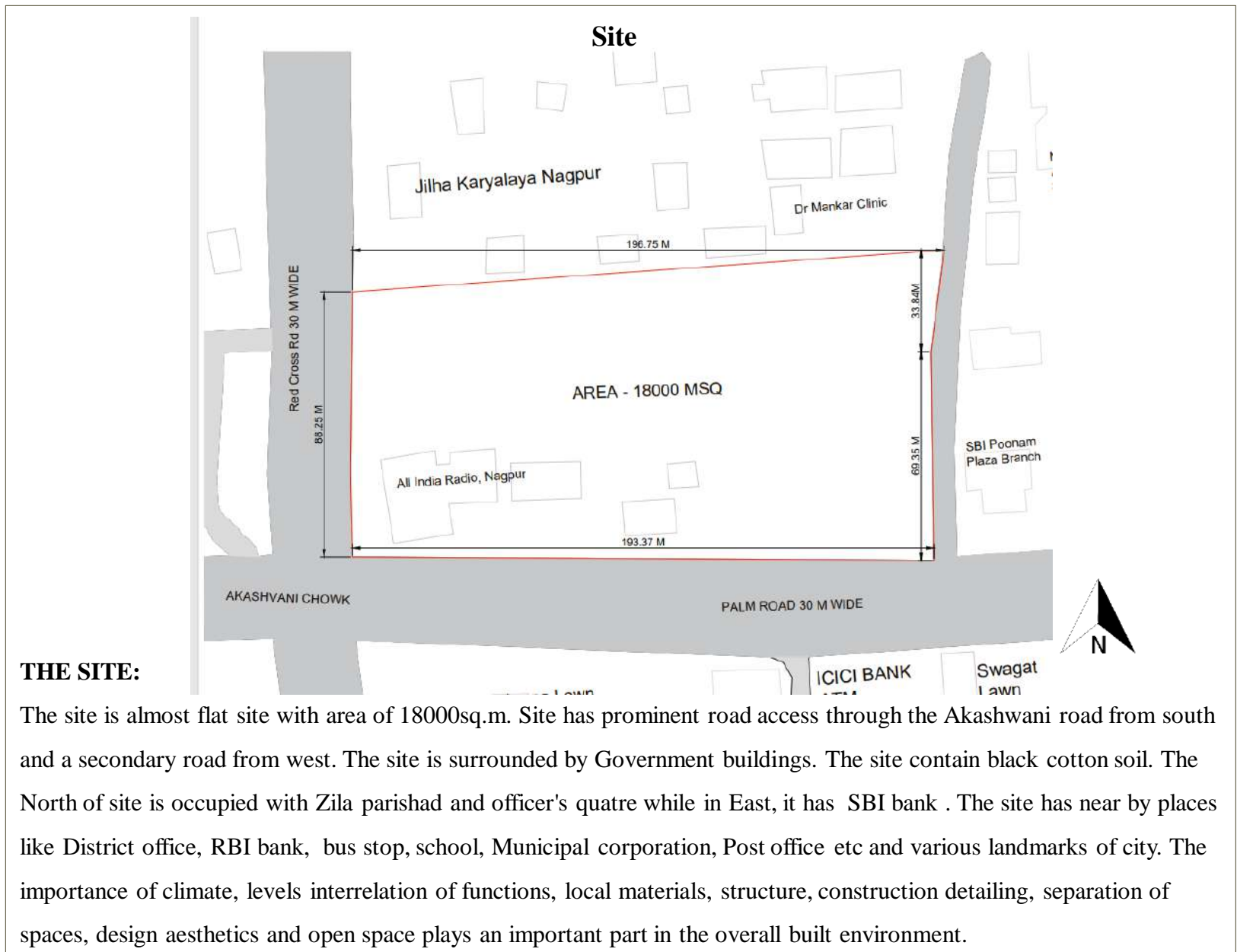
Group 1



- Residential, notified slums, gov.t quarters
- Public-sem- public, gov.t offices, educational institute, hospital, auditorium exhibition hall, etc.
- Commercial, godowns, market, shopping center
- Open spaces, garden park, playground, stadium, club, sports complex
- Parking, state transport stand, railways, wireless station, truck terminal



Representation of DP through virtual study



Proposed project:

Media institute and Centre, Civil lines, Nagpur

Aim:

The communication and media sector has grown several folds and is projected to continue growing in the coming decades. On the one hand, the industry has witnessed a virtual explosion in the process of creation and consumption of information and communication output and, on the other, an upsurge in the demand for intellectual and professional skills to face the challenges and the opportunities brought about by the transformative forces of communication revolution.

The Media Institute & Center is a response to these challenges and it provides a medium to study this ever expanding field, practice and train students for several exciting professional career opportunities emerging with the convergence of technologies and communication processes.

The aim of Media Institute and Centre is to provide a medium to study and practice the ever expanding field of mass media in a single campus

OBJECTIVES :

To increase employment as well as education in the field of mass media.

To study the functioning of mass media centre and design according to the rules and regulations.

To understand the maximum use of space in an institutional building.

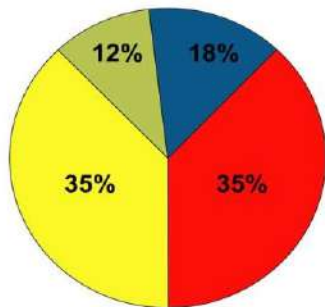
Group 2



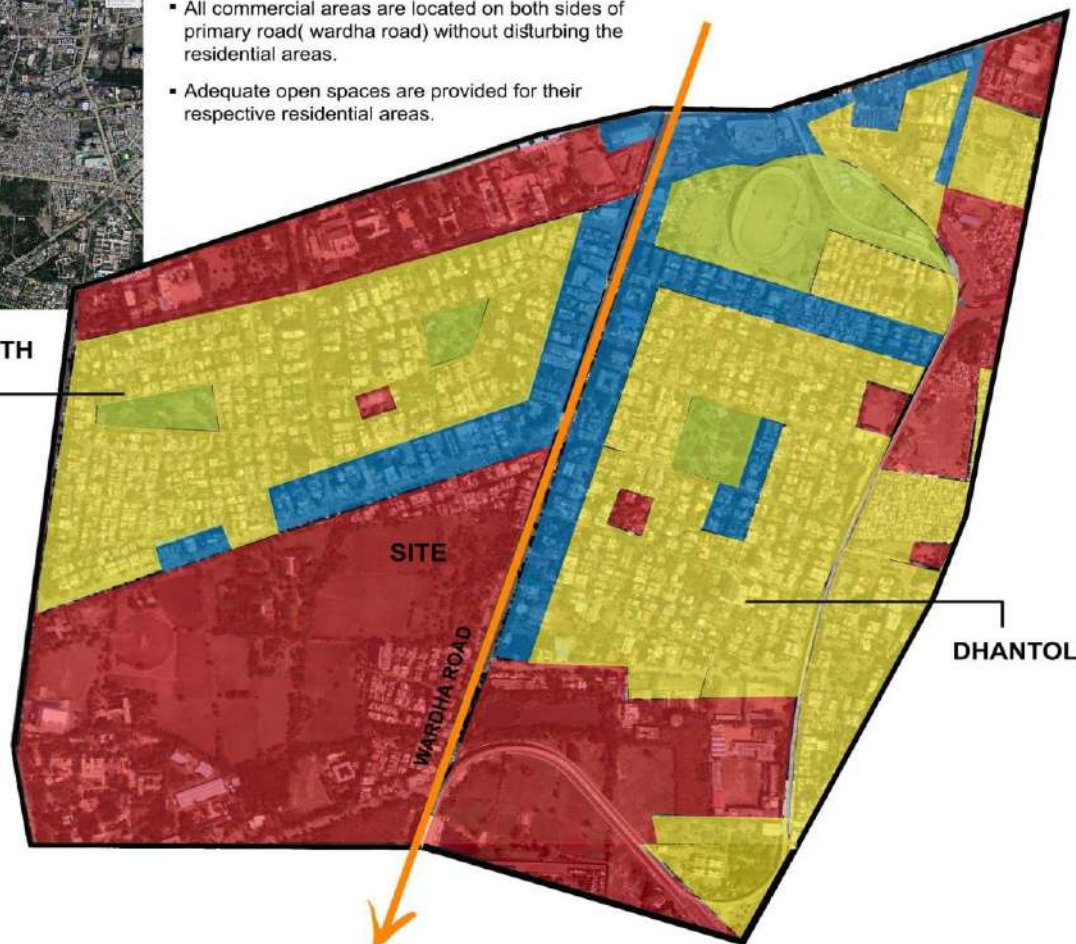
STUDY ZONE RAMDASPETH + DHANTOLI

- All commercial areas are located on both sides of primary road(wardha road) without disturbing the residential areas.
- Adequate open spaces are provided for their respective residential areas.

LANDUSE ANALYSIS



RAMDASPETH



LANDUSE PLAN



THE SITE:

The site is situated in Civil lines at the core of the Nagpur city. The site is almost flat site with area of 20000 sq.m. Site has prominent road access through Akashwani road from south and a secondary road from west. The site is surrounded by Government buildings. On the North side of site lays the Zila parishad and officer's quarter while in East, it has SBI bank. The site has nearby places like District office, RBI bank, bus stop, school, Municipal Corporation, Post office etc. The importance of climate, levels interrelation of functions, local materials, structure, construction detailing, separation of spaces, design aesthetics and open space plays an important part in the overall built environment.

Proposed project:

Farmers development and learning center, Nagpur

Preamble:

The communication and media sector has grown several folds and is projected to continue growing in the coming decades. On the one hand, the industry has witnessed a virtual explosion in the process of creation and consumption of information and communication output and, on the other, an upsurge in the demand for intellectual and professional skills to face the challenges and the opportunities brought about by the transformative forces of communication revolution. Media centers have historically served as a centrally-located hub of learning and activity, but today's media specialists, school leaders and designers are recognizing that as technology continues to evolve, designs need to incorporate flexible learning environments and offer skill-based learning opportunities that empower students. The Media Institute & Center is a response to these challenges and it provides a medium to study this ever expanding field, practice and train students for several exciting professional career opportunities emerging with the convergence of technologies and communication.

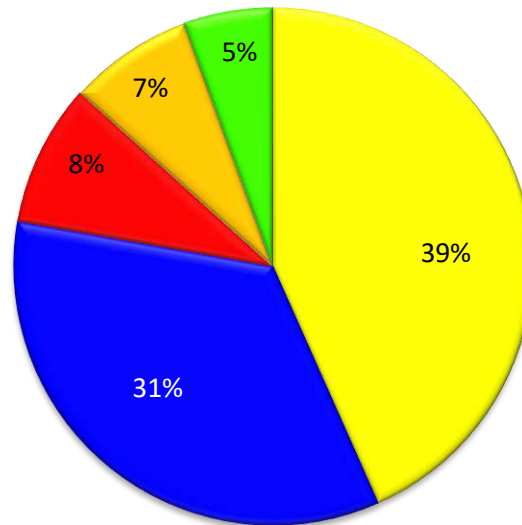
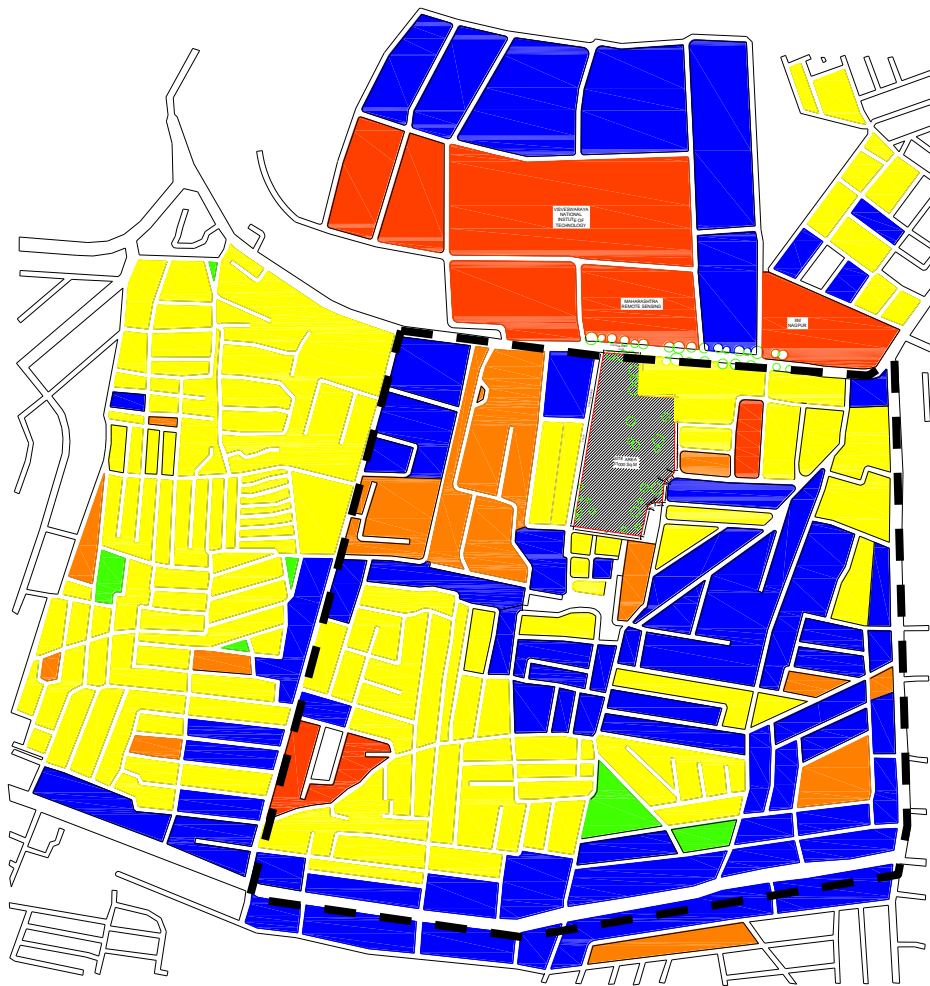
AIM:

The aim of Media Institute and Centre is to provide a medium to study and practice the ever expanding field of mass media in a single campus

OBJECTIVES:

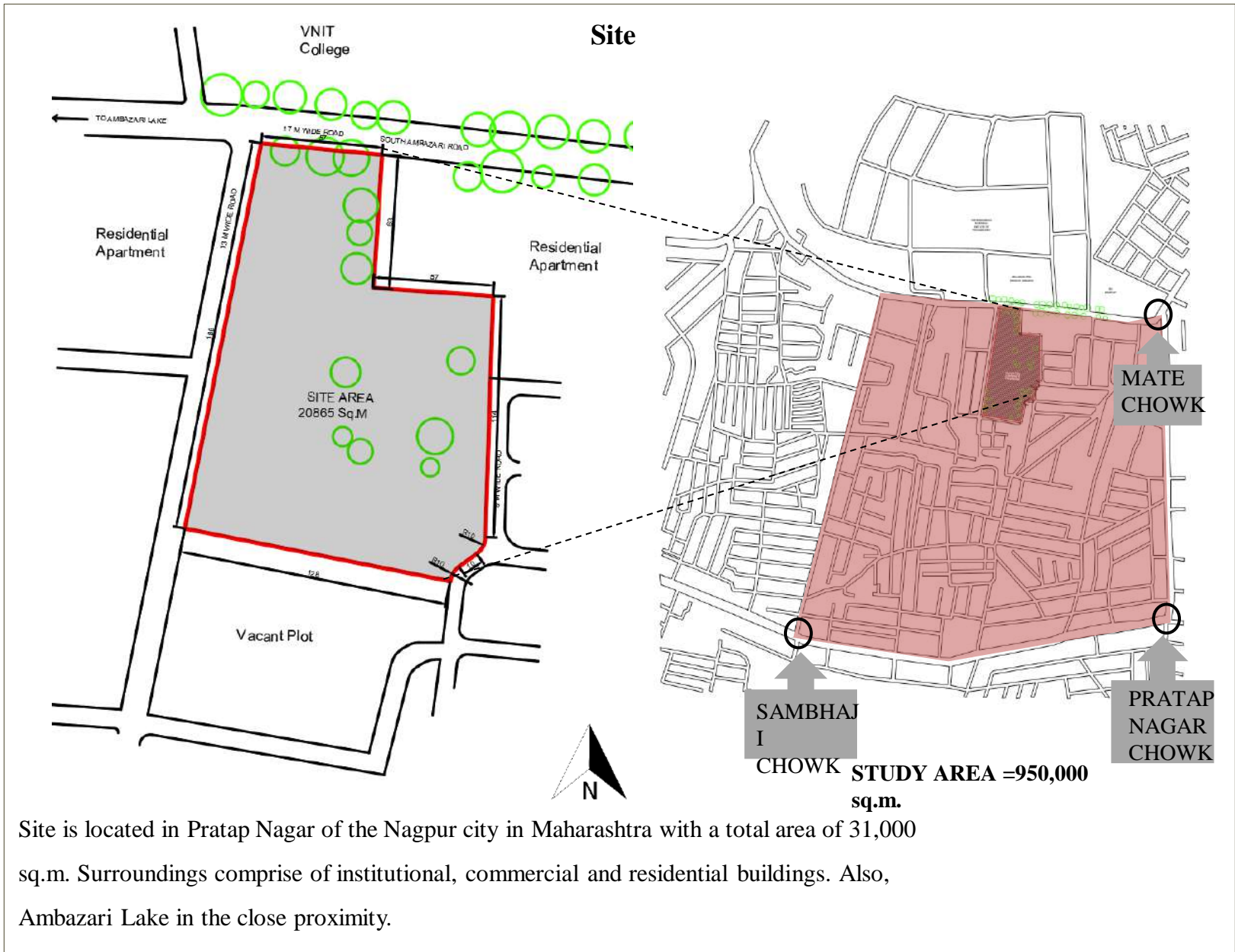
1. To understand the site context in terms of surrounding and zonal divisions.
2. To study the functioning of mass media center and design according to the rules and regulations.

Group 3



- Residential Area
- Commercial Area
- Institutional area
- public
- open space

Representation of DP through virtual study



Site is located in Pratap Nagar of the Nagpur city in Maharashtra with a total area of 31,000 sq.m. Surroundings comprise of institutional, commercial and residential buildings. Also, Ambazari Lake in the close proximity.

Proposed project:

Arts and Handicrafts centre, Nagpur

Preamble:

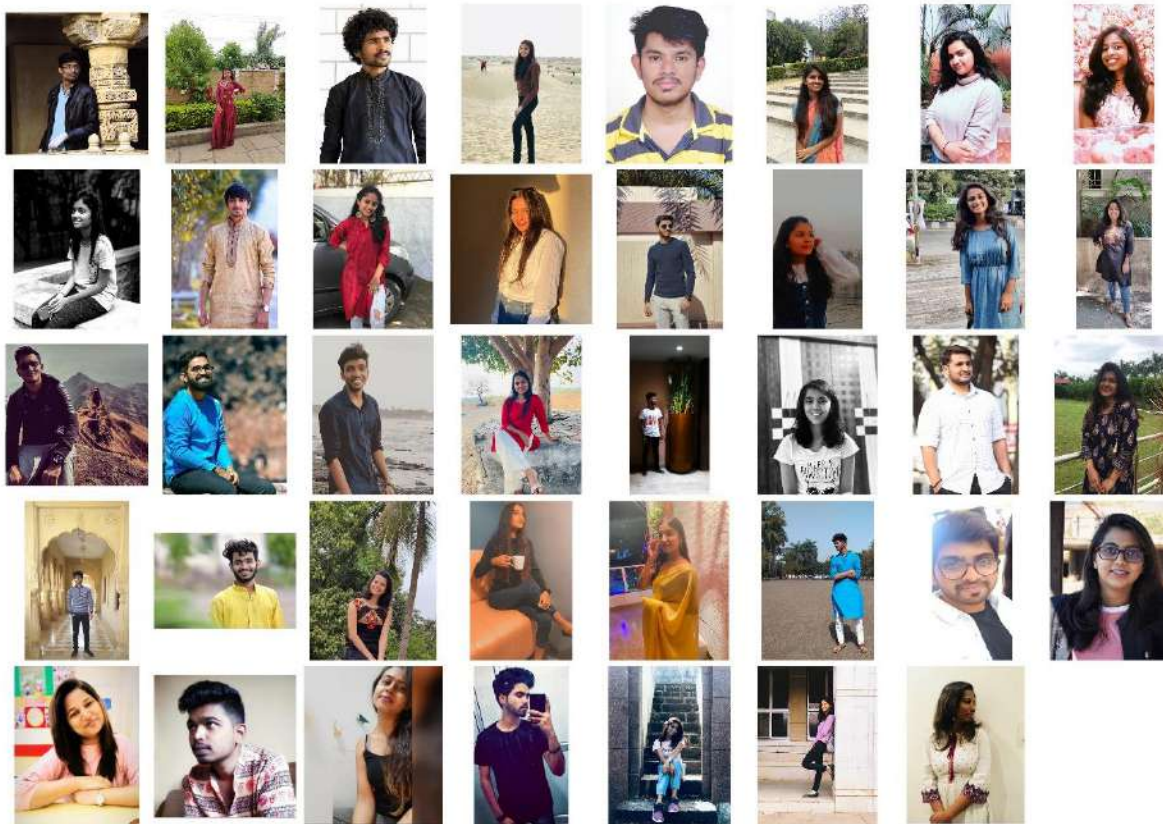
An art and handicraft centre is used to provide a basic platform for artists to showcase their artwork. The role of the Art and Handicraft centre will be to promote local artisans but also to provide a platform on a grand scale to accommodate various events and exhibitions.

Nagpur is rich in arts, there is a need for a place which can collectively conduct all the events and programs at one place.

Objectives:

- The main objective of this project would be to share crafts information through workshops, gallery and exhibitions.
- The project at end will be a place of amalgamation of various trade guilds distributed in Nagpur and provide a platform for creative learning for people interested in craft sector.
- This will also act as a community centre to promote tourism as there will be collection of Nagpur cultural traits.

Class photo collage



List of students

Yash, Ashwini, Priti, Aishwarya, Sourabh, Shruti, Shantanu, Bhagyashri, Pranjali, Vaishnavi, Gajanan, Supriya, Prerna, Vaishnavi, Sneha, Chandrakant, Rohit, Shreesha, Tejas, Lakhan, Hemant, Sonal, Anushka, Nikhil, Srushti, Anjana, Sneha, Omkar, Vaidehi, Saloni, Sharva, Ashay, Shantanu, Harshal, Shraddha, Akshata, Siddhivinayak

List of design faculties:

Ar. Pranoti Lad
Ar. Shreyas Paranjape
Ar. Aditi Mahajan

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

VIRTUAL STUDY TOUR

(Varanasi)

by

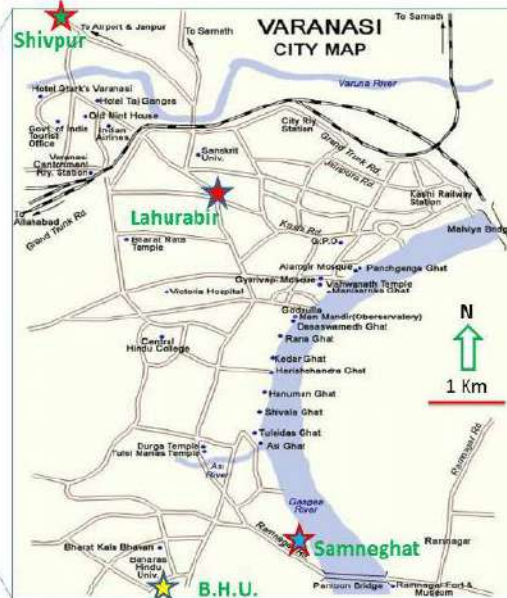
Fourth Year B. Arch.

Division B

CASE STUDY – HISTORY OF VARANASI



Reference : Google



- Varanasi is a city in the Indian state of Uttar Pradesh dating to the 11th century B.C.E. Regarded as the spiritual capital of India.
- The city draws pilgrims who bathe in the river Ganges scared waters and perform funeral rites.
- Along its winding streets are some 2000 temples, including kashi Vishwanath the golden temple , dedicated to the Hindu god shiva.

☐ Attractions of the city:

- Temples
- Sari
- Roads
- Gharana
- Pan
- Sadhu

☐ City of temples:

- Old kashi Vishwanath
- Sankat mochan temple
- Durga mata temple
- Manas temple
- Bharat mata temple

• LOCATION : VARANASI , UTTAR PRADESH

- Area: 1550 km²
- Weather: 17° C
- Wind :W at 10 km/h
- Humidity: 62 %



Reference : alamy.com



Reference : alamy.com

CLIMATE

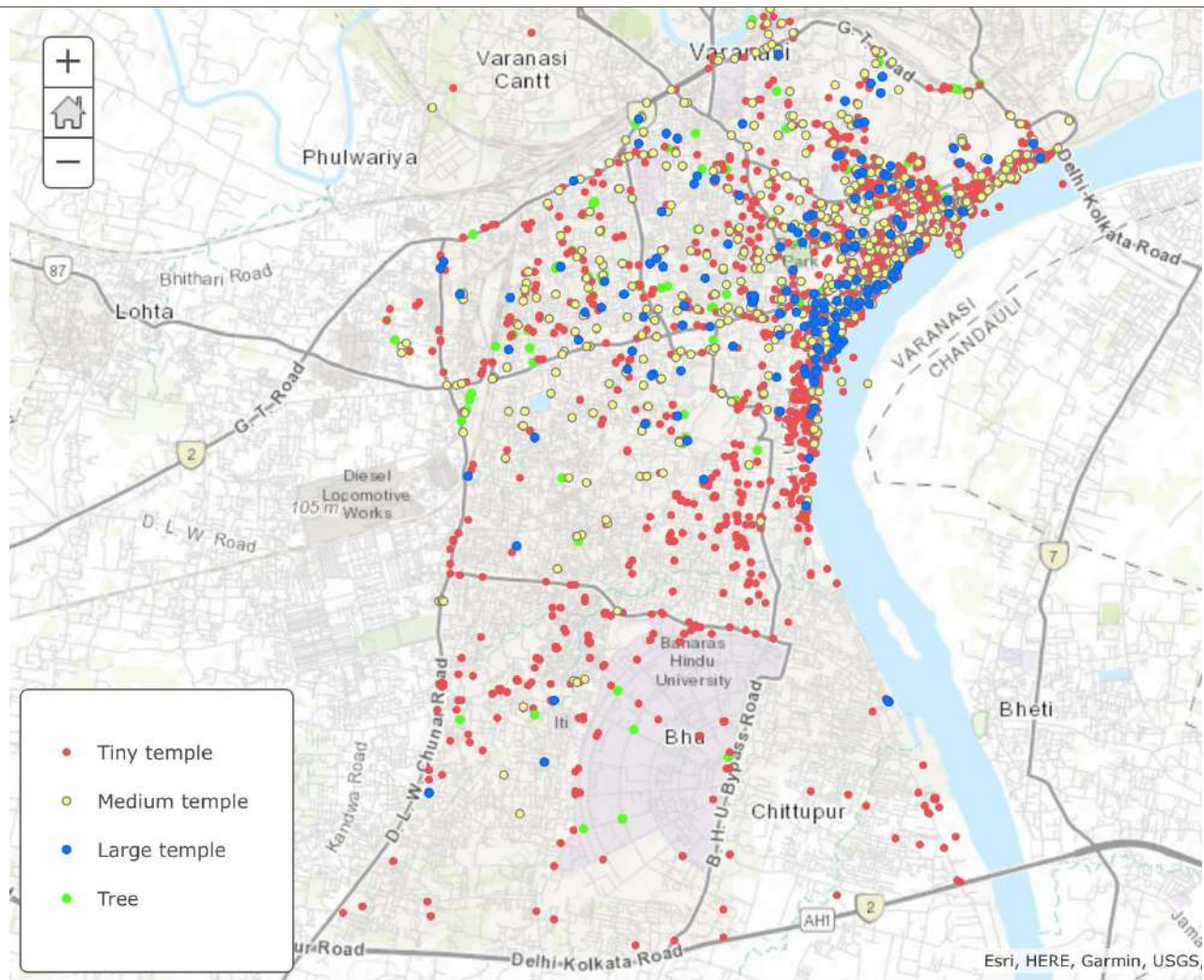
The Varanasi lies on 76m above sea level the climate here is mild, and generally warm and temperate. The rainfall in Varanasi is significant, with precipitation even during the driest month.

In Varanasi, the average annual temperature is 25.7 °c | 78.3 °f. The rainfall here is around 982 mm | 38.7 inch per year.

Precipitation is the lowest in April, with an average of 6 mm | 0.2 inch. In July, the precipitation reaches its peak, with an average of 305 mm | 12.0 inch.

At an average temperature of 33.4 °c | 92.2 °F, may is the hottest month of the year. At 16.0 °c | 60.8 °F on average, January is the coldest month of the year.

| | January | February | March | April | May | June | July | August | September | October | November | December |
|-------------------------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Avg. Temperature °C (°F) | 16 °C (60.8) °F | 19.8 °C (67.6) °F | 25.4 °C (77.7) °F | 31.1 °C (88.1) °F | 33.4 °C (92.2) °F | 32.6 °C (90.6) °F | 29 °C (84.2) °F | 28.4 °C (83.1) °F | 27.8 °C (82) °F | 25.7 °C (78.3) °F | 21.9 °C (71.4) °F | 17.5 °C (63.5) °F |
| Min. Temperature °C (°F) | 9.9 °C (49.8) °F | 13.1 °C (55.5) °F | 17.7 °C (63.8) °F | 23.1 °C (73.7) °F | 26.6 °C (79.9) °F | 28 °C (82.4) °F | 26.5 °C (79.7) °F | 26 °C (78.7) °F | 25 °C (77) °F | 21 °C (69.8) °F | 15.8 °C (60.5) °F | 11.3 °C (52.4) °F |
| Max. Temperature °C (°F) | 22.3 °C (72.1) °F | 26.4 °C (79.6) °F | 32.7 °C (90.9) °F | 38.6 °C (101.5) °F | 39.7 °C (103.5) °F | 37.3 °C (99.1) °F | 32.2 °C (89.9) °F | 31.5 °C (88.7) °F | 31.2 °C (88.2) °F | 30.7 °C (87.3) °F | 28 °C (82.5) °F | 23.8 °C (74.9) °F |
| Precipitation / Rainfall mm (in) | 16 (0.6) | 19 (0.7) | 9 (0.4) | 6 (0.2) | 10 (0.4) | 137 (5.4) | 305 (12) | 254 (10) | 173 (6.8) | 40 (1.6) | 6 (0.2) | 7 (0.3) |
| Humidity(%) | 66% | 58% | 41% | 30% | 38% | 53% | 78% | 82% | 82% | 71% | 61% | 64% |
| Rainy days (d) | 2 | 2 | 1 | 1 | 2 | 9 | 18 | 18 | 13 | 3 | 1 | 1 |



Reference : CPD varanasi, 2041

• Varanasi is a city of life and death. While the burning ghats situated at the edge of river Ganga remind people that life is mortal, it is paradoxically believed that dying in Varanasi guarantees a break from the cycle of life and death. Thus, Varanasi is considered the gateway to *moksha* or nirvana.

According to the puranic sources, there are some key ghats on the riverfront, important because of their association with a defining feature of the holy city of *kashi*: assi ghat, dashashwamedh ghat, Manikarnika ghat, Panchganga ghat, Rajendra prasad ghat, Adi Keshav ghat.



Reference :Google



Reference :Google

• ASSI GHAT

1. This ghat that used to lie at the merging of the ganga with the dry river *assi* marks the traditional southern boundary of the city.
2. This ghat is very popular because it is one of the very few ghats that is linked with the city through a wide street.
3. It is also the major ghat that is closest to Banaras Hindu university.
4. Assi ghat name is derived from the river *assi*.
5. The ghat in *kashi* is described as '*saimbeda tirtha*' which means that the person who takes a dip here even once in his life will get *punya* of all the *tirthas*.
6. Pilgrims usually take the holy dip here in from *magh to chaitya* (January - April) months as well as on some other significant events like the solar and lunar eclipses, *probodhoni Ekadashi* and *makara Sankranti*.
7. A huge shiva lingam is situated under a pipal tree at the ghat, where pilgrims worship and make offerings after taking a dip in the ganga.
8. This ghat is also mentioned in Matsya puran, Kurma puran, Padma puran and the Agni puran.
9. **After killing '*shumbh-nishumbh*, the two demons, *Durga*, threw her sword, in the *assi* river. The place of her meeting with the ganga forms the *assi* ghat.**
10. PM Modi launched water atm on 17th sept 2015 at *assi* ghat on the occasion of his birthday.



Reference : Google

• **Dashashwamedh ghat**

1. Dashashwamedh ghat is the heart of the action and the top attraction in Varanasi. One of the oldest and holiest Varanasi ghats.
2. Two Hindu mythologies are associated with it: according to one, lord brahma created it to welcome lord shiva. According to another, lord brahma sacrificed ten horses, during Dashashwamedh yagya performed here.
3. A group of priests daily perform in the evening at this ghat "Agni pooja" (worship to fire) wherein a dedication is made to lord shiva, river ganges, Surya (sun), Agni (fire), and the whole universe.
4. Especially the famous ganga aarti takes place every evening.

• **Manikarnika ghat**

1. Manikarnika ghat acts as the central cremation site in Varanasi and is one of the oldest and most sacred ghats in Varanasi.
2. According to Hindu mythology Manikarnika is one of the holiest among the Varanasi ghats & is believed that a soul finds *moksha*, when body is cremated here.
3. Manikarnika ghat lies at the center of the five major tirtha sthals and symbolizes both creation and destruction.
4. A legend is associated with Manikarnika ghat,
 - According to the legend, to keep lord shiva from moving around with his devotees, his consort goddess Parvati hid her earrings (Manikarnika) and asked him to find them, saying that they had been lost on the banks of the ganga.
 - Goddess Parvati's idea behind the trick was that lord shiva would then stay around, searching forever for the lost earrings. In this legend, whenever a body gets cremated at the Manikarnika ghat, lord shiva asks the soul whether it has seen the earrings.



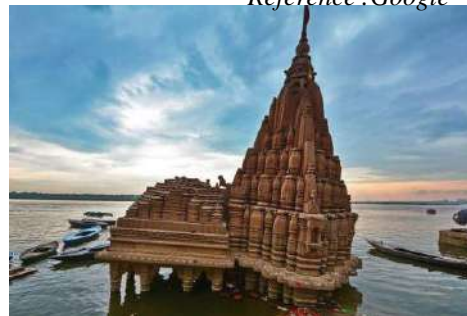
Reference :Google



Reference :Google



Reference :Google



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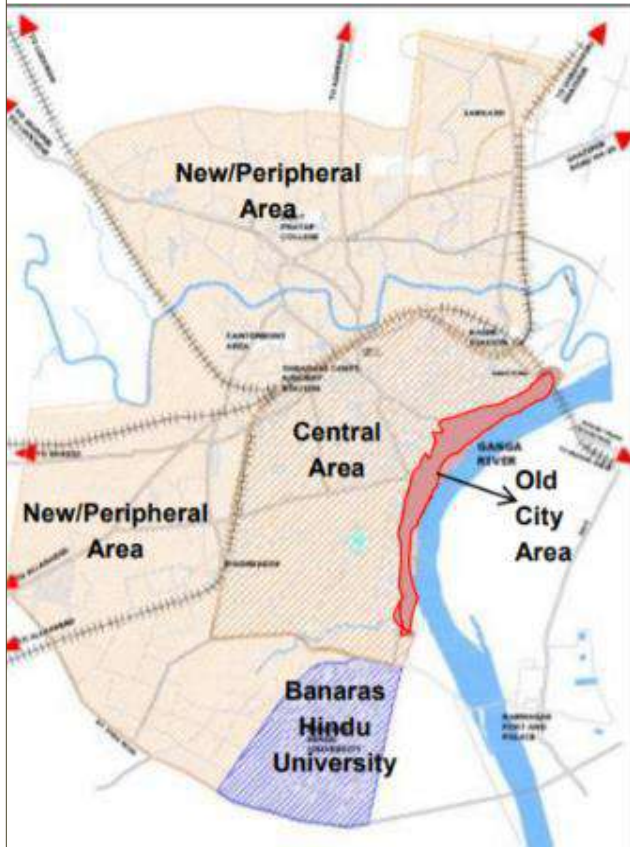
• **Man Mandir Ghat**

1. Man Mandir Ghat derives its name from the presence of the grand Man Mandir Palace, constructed by Maharaja Man Singh of Amer in 1600.
2. The palace features a magnificent façade with exquisite ornate window carvings.
3. King Sawai Jai Singh II installed an observatory on the roof of the palace in 1710.
4. The observatory features large instruments made of stone, which were used to study the movement of sun, moon, stars and other astrological bodies in historical times.
5. Jantar Mantar is the major attraction at the observatory which draws stark similarity the Jantar Mantar of Delhi, Jaipur, Ujjain and Mathura.

• **Scindia Ghat**

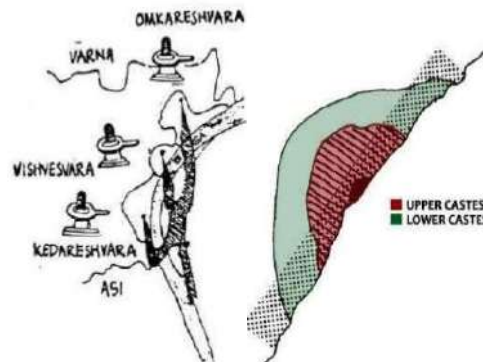
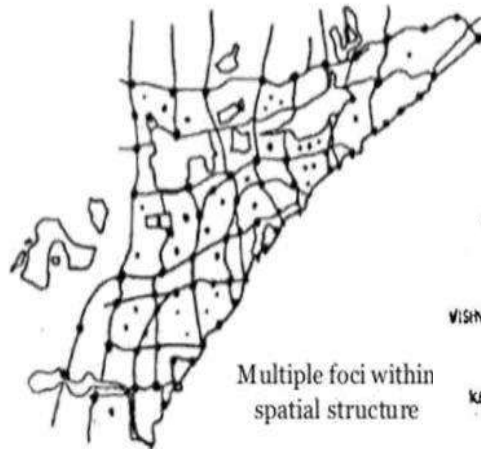
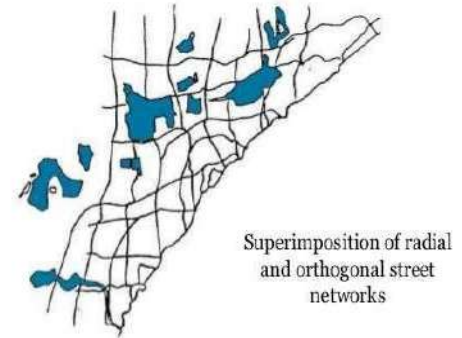
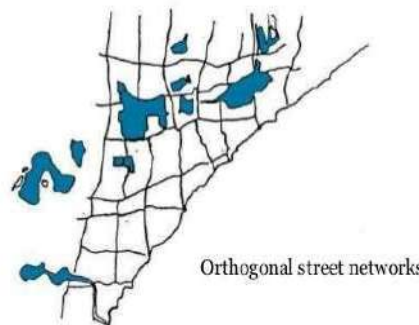
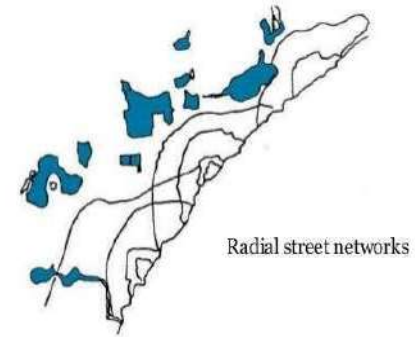
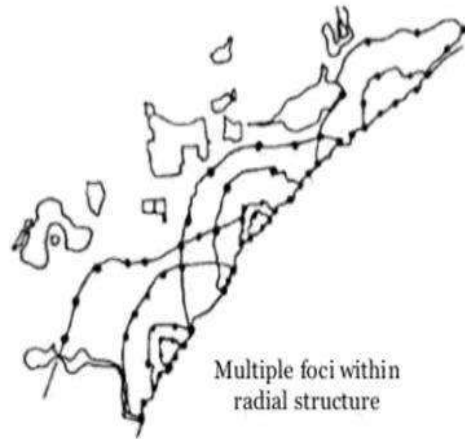
1. Scindia Ghat also known as Shinde Ghat. Scindia Ghat borders Manikarnika to the north and is governed by various myths and legends.
2. Hindu mythology considers the ghat to be the place of birth of Agni, the God of Fire.
3. A Shiva temple which was constructed 150 years ago stands here partially submerged in Ganga and is believed to be so heavy that it caused the ghat to collapse into the river.
4. It is believed that the temple is sinking continuously since then and it will soon be submerged in water.
5. Above the ghat, several of Kashi's most influential shrines are located within the tight maze of alleys of Siddha Kshetra
6. The ghat was built by a Scindia woman in 1850 and thus came to be known as Scindia Ghat.

CITY GROWTH



Reference :CPD varanasi,2041

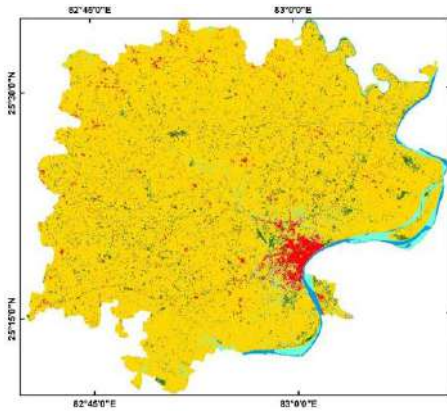
- **2nd CENTURY BC:** Traditional core of the city is established
- **10-11th CENTURY AD:** period of golden age.
- **12th CENTURY AD:** city is bought under rule of Muslim nawabs.
- **1585 AD:** the traditional core is brought under Akbar's Mughal empire.
- **1725 AD :** the kashiraj dynasty establishes ramnagar.
- **1775 AD:** British gain political control over the city.
- **1794 AD:** the cantonment is established.
- **1862 AD:** the first railway link between Calcutta and Banaras is established.
- **1916 AD:** Banaras Hindu University is established.
- **1950 AD :** the first master plan for the city was prepared.
- **1974 AD:** Varanasi Development Authority was formed.
- **1991 AD:** "Draft Master Plan 2001" was prepared.



SPATIAL CHARACTERISTICS OF THE TRADITIONAL CORE

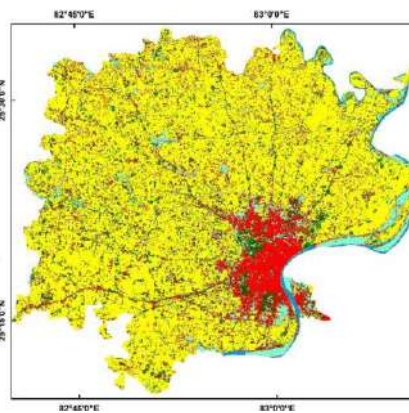
- The city's topography consists of three mounds resembling lord shiva's trishul.
- These are recognized as three sacred cores.
- Areas located in the proximity of the river assume greater social significance.

Reference : CPD varanasi, 2041



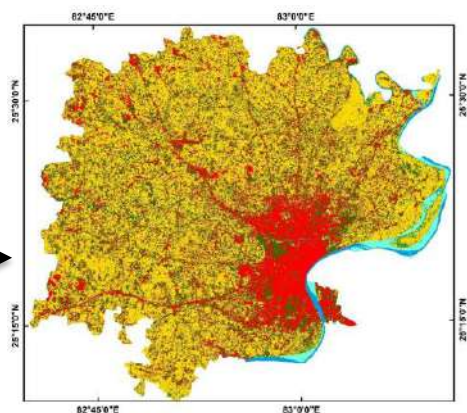
Reference :CPD varanasi,2041

**LAND USE LAND COVER
MAP, 2000**



Reference :CPD varanasi,2041

**LAND USE LAND COVER
MAP, 2010**



Reference :CPD varanasi,2041

**LAND USE LAND COVER
MAP, 2020**

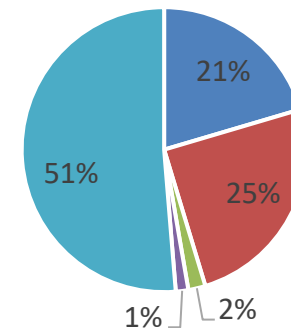


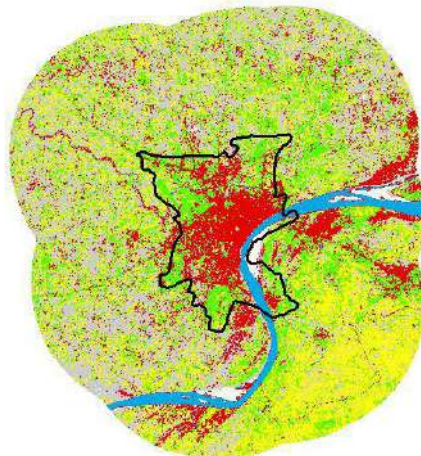
LAND USE LAND COVER OF VARANASI DISTRICT

| LULC Type | Area | | | | | | Land Use Change | |
|-------------------|----------|-------|----------|-------|----------|-------|-----------------|-----------|
| | 2000 | In % | 2010 | In % | 2020 | In % | 2000-2010 | 2010-2020 |
| Built-up | 4598.10 | 2.99 | 20301.8 | 13.23 | 31329.2 | 20.42 | 341.52 | 54.31 |
| Vegetation Cover | 8095.05 | 5.27 | 19330.7 | 12.60 | 38187.14 | 24.89 | 138.79 | 97.54 |
| Waste Land | 4102.65 | 2.67 | 10406.5 | 6.78 | 2993.17 | 1.95 | 153.65 | -71.23 |
| Water Body | 2153.34 | 1.40 | 1612.08 | 1.05 | 2192.78 | 1.42 | -25.13 | 36.02 |
| Agricultural Land | 134426.9 | 87.64 | 101725 | 66.32 | 78673.79 | 51.29 | -24.32 | -22.66 |
| Total | 153376.1 | 100 | 153376.1 | 100 | 153376.1 | 100 | - | - |

LAND USE LAND COVER, 2020

- BUILT UP
- VEGETATION
- WASTE LAND
- WASTE BODY





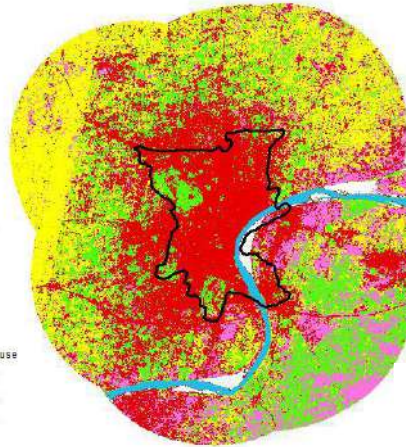
Reference :CPD varanasi,2041

**LAND USE LAND COVER
MAP, 1996**



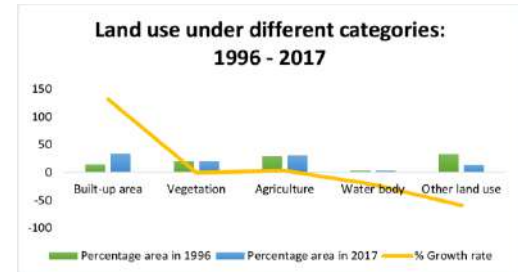
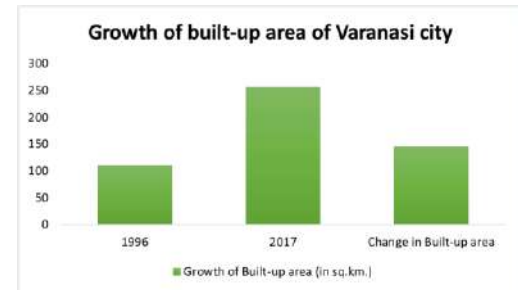
INDEX

- urban
- other land use
- waterbody
- vegetation
- agriculture
- sand



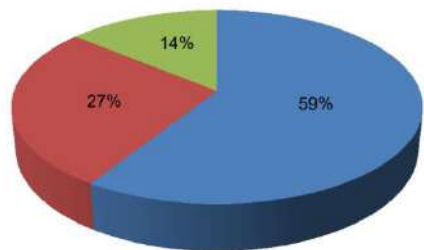
Reference :CPD varanasi,2041

**LAND USE LAND COVER
MAP, 2017**



LAND USE LAND COVER DETECTION FROM 1996 - 2017

| Land use type | Area 1996 (in sq. km) | Area 1996 (%) | Area 2017 (in sq. km) | Area 2017 (%) | Absolute change (in sq. km) | % Growth rate (1996-2017) |
|----------------|-----------------------|---------------|-----------------------|---------------|-----------------------------|---------------------------|
| Built-up | 110.745 | 14.62 | 256.1409 | 33.83 | 145.39 | 131.28 |
| Other land use | 247.366 | 32.67 | 101.097 | 13.35 | -146.26 | -59.13 |
| Vegetation | 153.011 | 20.21 | 152.0316 | 20.08 | -0.9794 | -0.64 |
| Agriculture | 223.263 | 29.49 | 230.0778 | 30.39 | 6.8148 | 3.05 |
| Waterbody | 22.8609 | 3.01 | 17.6527 | 2.35 | -5.2082 | -22.78 |
| Total | 757 | 100 | 757 | 100 | | |



■ Pucca Houses ■ Semi Pukka Houses ■ Katcha Houses



Reference : alarmy.com

Housing :-

- The increasing level of urbanization has created the stress on housing sector in Varanasi. It can be seen that there is a high increase of 20% population from 1981-1991 came down to 10% during 2001-2011, but the increase in housing cannot catch the pace of increasing population hence resulting in the housing gap.
- The average housing density is approximately 2391 households per square km.
- As per the draft Master Plan-2031, a total area of 9886.54 hectare has been allocated for housing purposes.
- Of this, 60% of the area has been developed and the balance 40% will be inhabited over the period of time.
- It has been noted that 85% population owns the house, 13% people live in rental accommodation. .
- Also, development in housing sector areas till 12.50 m height and 1.5 FSI has been proposed.
- There are a total of 4,07,036 people living in 78,253 households in these slums¹⁹, which comprise 30% of the city population.

Educational facilities :-

The city is the regional education hub and pioneer in higher education and graduate programmes in the state. There are several universities and colleges in and around the city

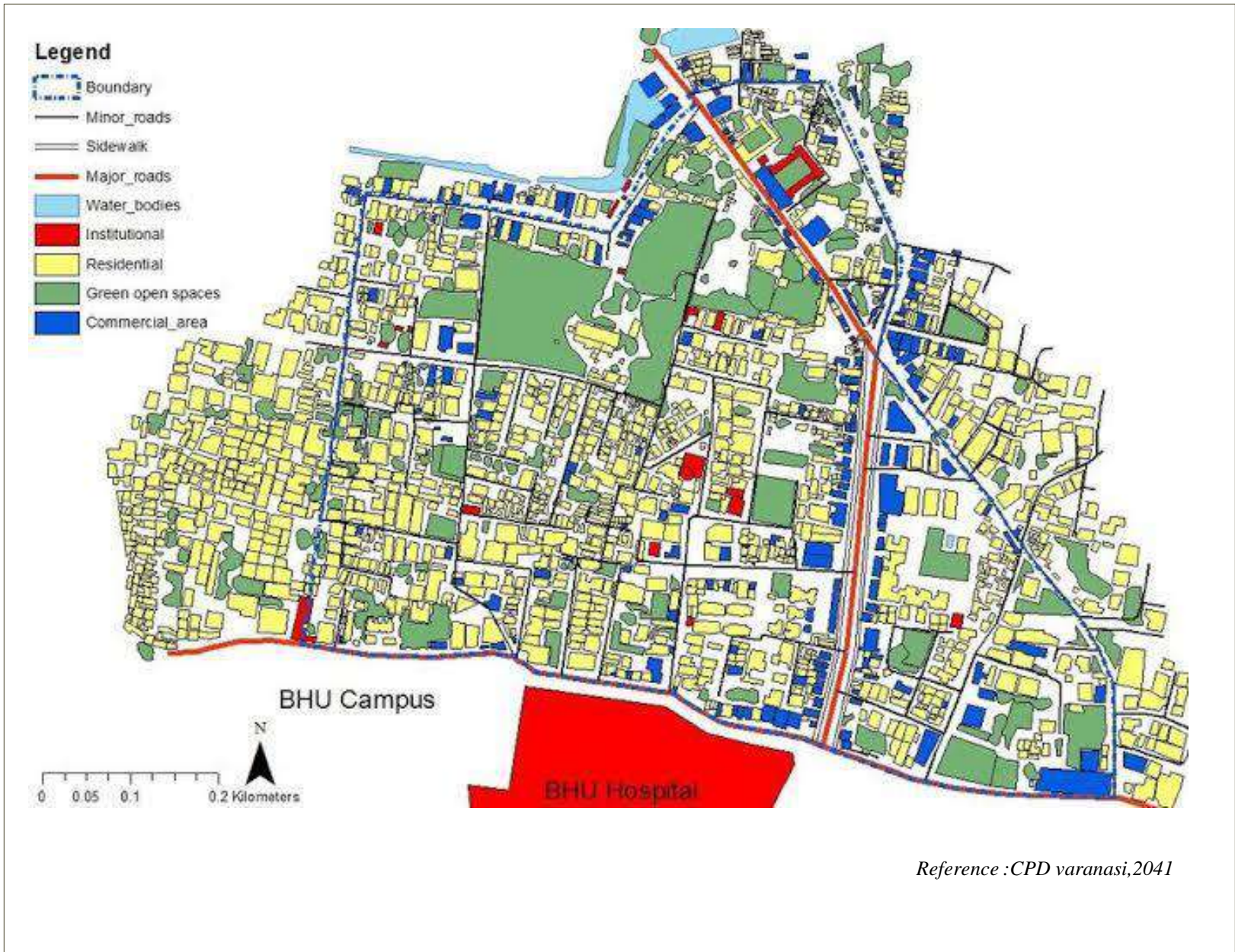
- Banaras Hindu University
- Sampurnanand Sanskrit University
- Mahatma Gandhi Kashi Vidyapeeth

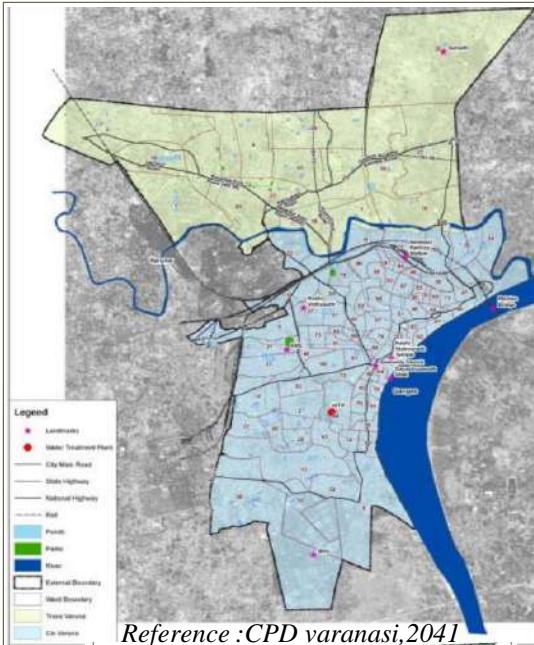
Historically, Varanasi has been an education centre in India, drawing students and scholars from across the country. Varanasi has an overall literacy rate of 79% (male literacy: 83%, female literacy: 75%). It has a number of colleges and universities.

Table 79: Distribution of households by size and number of dwelling rooms

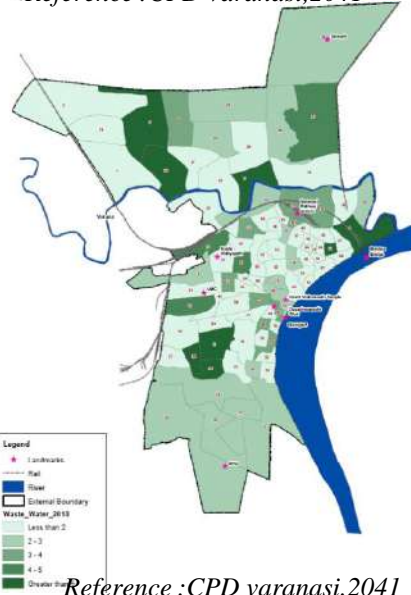
| Household size: | Total number of households | No exclusive room | Households having number of dwelling rooms | | | | | |
|-----------------|----------------------------|-------------------|--|-----------|-------------|------------|------------|---------------------|
| | | | One room | Two rooms | Three rooms | Four rooms | Five rooms | Six rooms and above |
| All Households | 190,835 | 3,617 | 40,108 | 48,144 | 30,727 | 26,344 | 11,261 | 20,604 |
| 1 | 3,200 | 173 | 1,350 | 782 | 358 | 241 | 92 | 204 |
| 2 | 8,918 | 264 | 2,969 | 2,488 | 1,282 | 965 | 381 | 569 |
| 3 | 15,535 | 315 | 4,589 | 4,661 | 2,549 | 1,763 | 630 | 1,028 |
| 4 | 29,862 | 561 | 7,288 | 8,917 | 5,361 | 4,070 | 1,457 | 2,208 |
| 5 | 31,684 | 594 | 7,503 | 9,150 | 5,548 | 4,424 | 1,754 | 2,711 |
| 6-8 | 60,720 | 1,133 | 12,700 | 16,406 | 10,644 | 9,347 | 3,866 | 6,624 |
| 9+ | 30,886 | 577 | 3,709 | 5,740 | 4,985 | 5,534 | 3,081 | 7,260 |

Source-Census of India, 2011





Reference : CPD varanasi, 2041



Reference : CPD varanasi, 2041

Water supply

The Water supply system for Varanasi is more than 100 years old when it was introduced in year 1892. It was designed for a population of 2 lakhs with a treatment plant of 33 MLD constructed at Belapur.

Solid waste management:-

The solid waste management system in Varanasi is now being managed by VMC.

Till recently, the waste management was being managed by A2Z Infrastructure Private Limited.

The concessionaire was responsible for door-to-door collection, transportation, treatment and disposal of solid waste from all wards.

Reference : city sanitation, CEPT university, 2011

Sewers and Sanitation

The existing city's sewerage system was designed exclusively to carry domestic sewage only, but owing to the traditional pattern of open drains laid in the core city area storm water also enters the trunk sewer directly or through manholes and branch sewers.

| <u>Sr. No.</u> | <u>Type of facility</u> | <u>Number</u> |
|----------------|-------------------------|---|
| 1 | Community toilets | 96 (Sulabh-72, Refrozen-6, ADS-6, NEDA-12) |
| 2 | Public toilets | 12 (Around Ghats) |
| 3 | Public Urinals | 75 |
| 4 | Open Defecation | 15% of the citys population |
| 5 | Mobile toilets | 3 |

Reference : city sanitation, CEPT university, 2011

Project 1 – Spiritual retreat center, Varanasi

- Built-up area requirements**

| Description | Quantity | Area (Sq.M) |
|-------------------------------------|-----------------------------------|-------------------|
| <u>Admin</u> | | <u>500.00</u> |
| Manager's cabin + w/c | 1 | 30 |
| Admin area | | 50 |
| Security manager's cabin + w/c | 1 | 25 |
| Surveillance room | | 25 |
| Storage | 2 | 10 |
| Foyer and reception | | 60 |
| Outlet for selling books & products | | 50 |
| Exhibition area with AV | | 50 |
| Toilet (ladies & Gents) | | 10x2=30 |
| <u>Yoga & Meditation</u> | | <u>2000.00</u> |
| Yoga hall | 1 big + 4 small | 200 + 50 x 4= 400 |
| Meditation hall | 200 capacity | 400 |
| Meditation room | 2 nos. - 30 capacity each | 75 X 2 = 150 |
| Meditation chambers | 10 nos. - for one person | 10 x5X = 200 |
| Changing rooms (L & G) | 3 changing cubicle, 1wc, 1wb each | 30 x 2= 60 |
| Toilet (L & G) + for handicapped | | 15x2=30+5 |
| store room | | |
| <u>Naturopathy & Ayurvedic</u> | | <u>400.00</u> |
| Therapy rooms | 20 | 15 x 20 = 300 |
| Hydro-therapy pool | 6 x 12 pool | |
| Toilet & Changing rooms (L & G) | 1 changing cubicle, 1wc, 1wb each | 15 x 2= 30 |
| Storage | | |

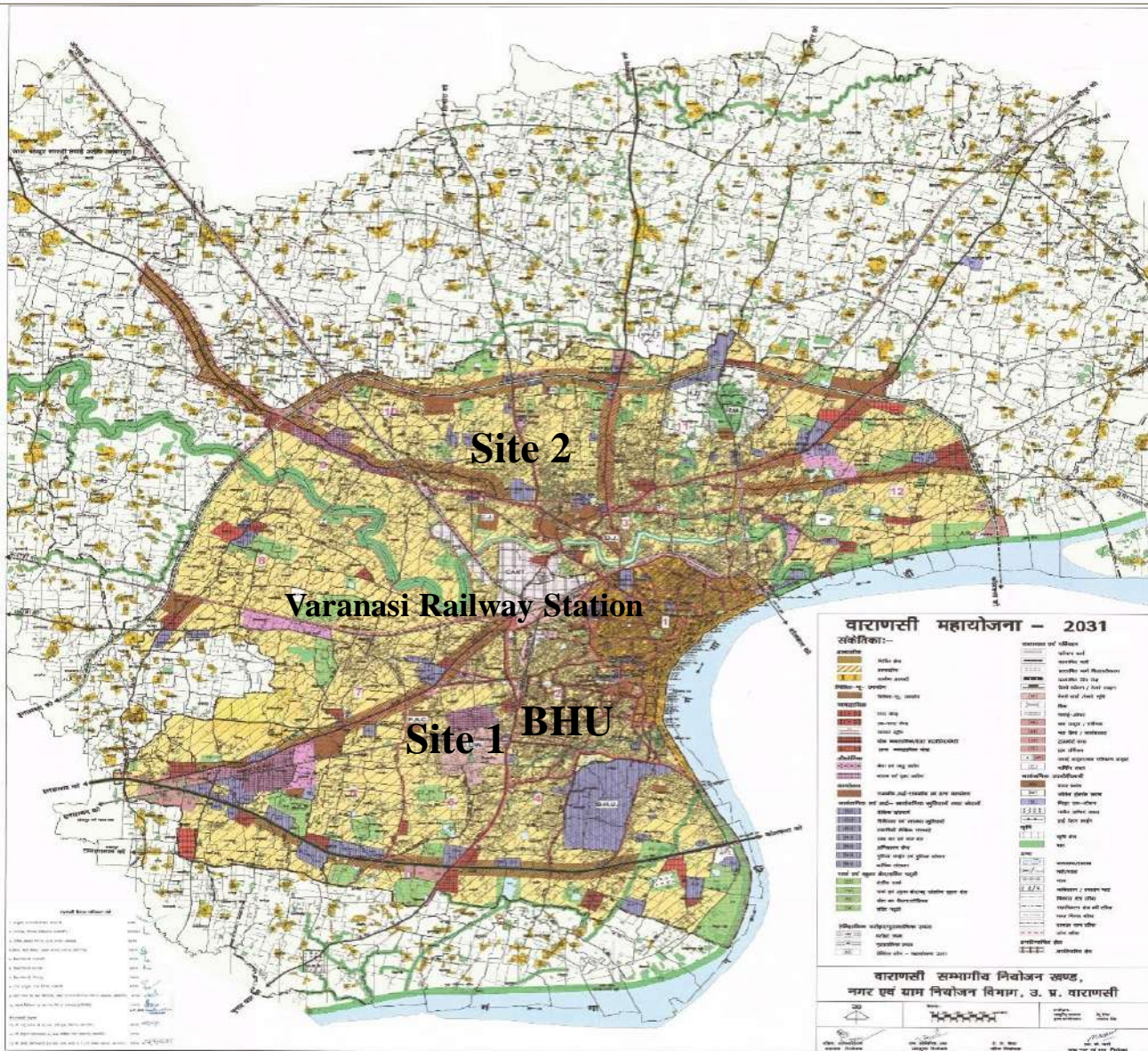
| | | |
|------------------------------------|--|------------------|
| <u>Training area:</u> | | <u>2500.00</u> |
| Class rooms | 4 | 30 x 4 |
| Library | | 100 |
| Auditorium | 500 capacity | 2000 |
| <u>Gymnasium</u> | | <u>300.00</u> |
| Gym | 1 | 225 |
| Changing rooms & Toilet (L + G) | 2 shower, 1wc 2wb each + 1 urinals (gents) | 2 X 25 = 50 |
| store room | | |
| <u>Restaurant</u> | | <u>500.00</u> |
| Kitchen, Preparation area, Pantry | | 50 |
| Dining area (indoor & outdoor) | 100 capacity | 200 |
| Toilet (L + G) | | 30 |
| Storage & Cold storage | | 40 |
| Service entry & lobby | | |
| Staff dinning + rest room | | 30 |
| <u>Residential</u> | | <u>2000.00</u> |
| Dormitories & Guest rooms | | |
| Reception | | |
| Dormitories (L+G)+ attached toilet | 4 nos. 6 capacity each | 50 X 4= 200 |
| Deluxe (L+G) + attached toilet | 4 nos. 4 capacity each | 40 X 4 = 160 |
| Twin rooms + toilet (hostel) | 20 | 15 x 20 = 300 |
| Guest rooms + toilet | 8 | 20 x8 = 160 |
| <u>Staff quarters</u> | | |
| Manager's bungalow | 1 | 200 |
| Staff rooms (grade 2) | 2 | 100 x 2 = 200 |
| Staff rooms (grade3) | 4 | 60 x 4 = 240 |
| Staff rooms (grade 4) | 4 | 40X 4 = 160 |
| <u>TOTAL</u> | | <u>8,000.00</u> |
| <u>GRAND TOTAL</u> | 20% CIRCULATION | <u>16,200.00</u> |

Project 2: Art and Craft Centre, Varanasi

Built-up area requirements

| Description | Quantity | Area (Sq.M) |
|---|--------------|----------------|
| Admin | | <u>500.00</u> |
| Manager's cabin + w/c | | 30 |
| Admin area | | 50 |
| Security manager's cabin + w/c | | 25 |
| Surveillance room | | 25 |
| Storage | | 10 |
| Foyer and reception | | 60 |
| Outlet for selling products | | 50 |
| Exhibition area with AV | | 50 |
| Toilet (ladies & Gents) | | 10x2=30 |
| Exhibition | | <u>500.00</u> |
| Permanent display gallery | | |
| Temporary gallery | | |
| Auditorium | 500 capacity | <u>2000.00</u> |
| Toilet (ladies & Gents) | | |
| Craft center | | <u>3000.00</u> |
| i. Textile workshop | | 500.00 |
| Working & Demonstration area | | |
| Raw material storage | | |
| Dying & Drying area | | |
| Display area | | |
| Visitors' watching area | | |
| i. Jewellery | | 500.00 |
| Working & Demonstration area | | |
| Raw material storage | | |
| Kiln | | |
| Display area | | |
| Visitors' watching area | | |
| i. Pottery | | 500.00 |
| Working & Demonstration area | | |
| Raw material & finished product storage | | |
| Kiln | | |
| Display area | | |
| Visitors' watching area | | |

| | | |
|---|------------------------|------------------|
| i. Wooden toy making | | 500.00 |
| Working & Demonstration area | | |
| Raw material & finished product storage | | |
| Kiln | | |
| Display area | | |
| Visitors' watching area | | |
| i. Sculpture: stonework | | 500.00 |
| Working & Demonstration area | | |
| Raw material & finished product storage | | |
| Display area | | |
| Visitors' watching area | | |
| i. Bangle making | | 500.00 |
| Working & Demonstration area | | |
| Raw material & finished product storage | | |
| Display area | | |
| Visitors' watching area | | |
| Working & Demonstration area | | |
| Toilet (L & G) | | |
| Restaurant | | 500.00 |
| Kitchen, Preparation area, Pantry | | 50 |
| Dining area (indoor & outdoor) | 100 capacity | 200 |
| Toilet (L + G) | | 30 |
| Storage & Cold storage | | 40 |
| Service entry & lobby | | |
| Staff dining + rest room | | 30 |
| Toilet (ladies & Gents) | | |
| Residential | | 1500.00 |
| Dormitories & Guest rooms | | |
| Reception | | |
| Dormitories (L+G)+ attached toilet | 4 nos. 6 capacity each | 50 X 4 = 200 |
| Twin rooms + toilet | 20 | 15 x 20 = 300 |
| Guest rooms + toilet | 8 | 20 x 8 = 160 |
| Staff quarters | | |
| Manager's bungalow | 1 | 200 |
| Staff rooms (grade 2) | 2 | 100 x 2 = 200 |
| Staff rooms (grade3) | 2 | 60 x 2 = 120 |
| Staff rooms (grade 4) | 4 | 40X 4 = 160 |
| TOTAL | | <u>8,000.00</u> |
| GRAND TOTAL | 20% CIRCULATION | <u>16,000.00</u> |



Varanasi Master plan 2031 & ZR

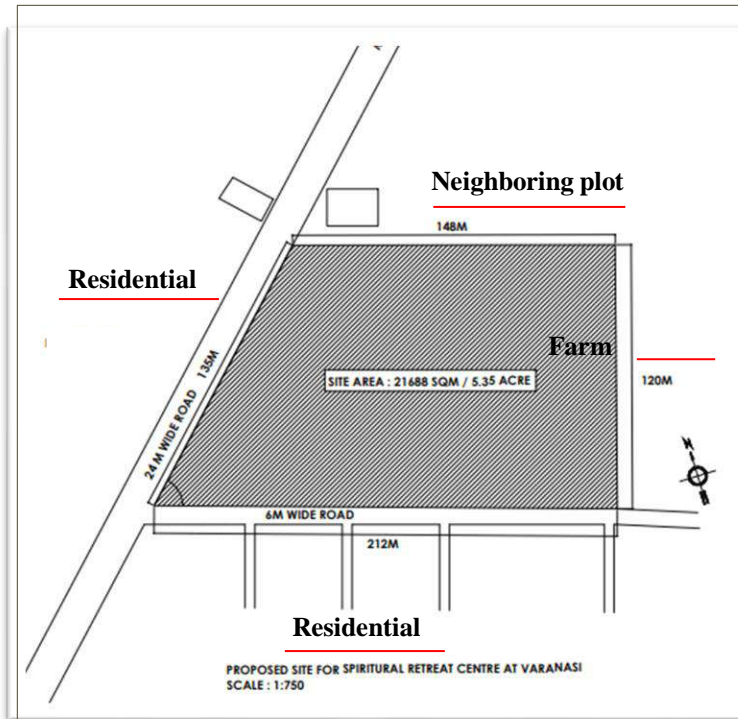
Reference : CPD varanasi, 2041

Preamble:

Benares, Banaras, Kashi, Varanasi, the city known by different names, has 3000 years legacy as the most sacred city of Hindu religion, the city of Lord Shiva, place of learning, pilgrimage center and the chosen place to die for the ultimate emancipation. Varanasi is also considered as the place of origin of Ayurveda of Patanjali.

Lord Buddha delivered his first sermon at Sarnath after attainment of enlightenment and outlined the basic doctrines of Buddhism in 6th Century BCE, just 8 Km. away from the city's core. Emperor Ashoka celebrated the place with construction of a stupa and the Lion Pillar, the capital of the column became the national emblem of India after independence. Varanasi is believed to be the birthplace of Parsvanath, the twenty-third Tirthankar, hence an important pilgrimage place for Jain also. Since 12th century CE, Muslims started settling down in the city, and their existence reflected in textile industry and greatly in the mahalas, alleys and edifices. During Islamic invasion, many Hindu temples were destroyed, the Marathas sponsored to re-built. Many ghats along the Ganga river, shrines, temples and palaces came up. During Colonial period, Varanasi became the princely state, Benaras Hindu University was established. In 1947, after independence, Varanasi state became part of the state of Uttar Pradesh.

The multi-religious and cultural characteristics, place of traditional knowledge and enlightenment, traditional art and craft as music, textile, wooden, stone, metal and ivory work, urban morphological and spatial characteristics of Varanasi are needed to be taken into consideration for the vision of future development. Hence, two sites are selected for two separate projects after study of the city's Development.



Project 1 – Spiritual retreat center, Varanasi

Site area – 2.0 Hectare

BUA - 12,000 sqm.

Site: Awaleshpur, west of BHU

The pilgrim paths and sacred places around them carry the essence of sacred landscape. Great centers of pilgrimage attract visitors from widely dispersed cultural backgrounds and geographic locations.

Varanasi situated on the banks of River Ganga being the holiest city attracts large number of pilgrims. Pilgrimage usually entails some separation from the everyday chores, and creates a physical and mental comfort healing ones soul. So The site is being chosen beside the river to keep the authenticity of the pilgrimage.

Project 2: Art and Craft Centre, Varanasi

Area: 2.0 Hectare

BUA – 12,000 sqm.

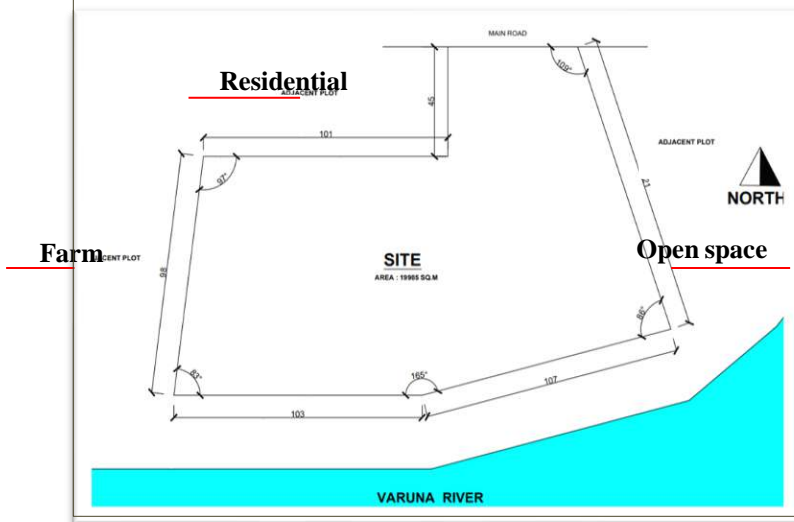
Site 2: Khajuri Colony, along Varuna river

Varanasi is the place where we find master craftsmen of traditional Banaras saree handloom weavers, brass utensils maker, goldsmiths, silversmiths, terracotta, metal work, ivory work, sculptures, carpet and durries weavers, musical instrument makers and wooden toy maker.

Crafts and arts are a part of inherited heritage for all people to express their social identity, after the technological advance that we have these days a lot of handicrafts disappeared with its makers.

A site location in Varanasi of the religious complex which is an important attraction point beside the traditional crafts centre.

An Art and crafts centre is facility from which product with artistic Value are sold along the range of product which emanate from local cultural groups.



THIRD YEAR DIVISION B

Number of students: 28

List of students:



| | |
|--------------------------|-------------------------------|
| Butala Sahil Sreekant | Jain Saloni Deepak |
| Dhimate Saish Dasharath | Jamdade Dipali Ramdas |
| Dubal Samruddhi Sitaram | Jangid Suraj Omprakash |
| Ekande Sushrut C. | Joshi Mihir Amol |
| Gaikwad Sakshi Sevak | Kachare Saurabh Khushal |
| Gawle Pranav Chandulal | Kale Tejas Ravindra |
| Ghogare Ameya Arun | Kambale Amar Achyut |
| Gholap Shraddha | Kambale Vishal Balasaheb |
| Ghule Manas Dilip | Karanjwane Kadambari Dashrath |
| Gore Nimisha | Kashyap Chinmay Raghunath |
| Gupta Shruti Kishor | Kasle Jagruti Chandrakant |
| Hikare Harshada Manoj | Kasture Chaitanya Rajendra |
| Honrao Aditya Mangesh | Kate Utkarsha Rajesh |
| Ingale Ranjeet Vasant | Nigade Dhanashree |
| Ingle Harshawardhan Anil | |
| Jadhav Abhishek Avinash | |
| Jadhav Rushikesh Anant | |
| Jagtap Omkar Mangesh | |
| Jaikhedkar Tejal Sanjeev | |
| Jain Aditi Pramodkumar | |

List of design faculties:



Dr. Banani
Banerjee



Ar. Indrayani
Dasare



Ar. Pushkaraj B

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

VIRTUAL STUDY TOUR

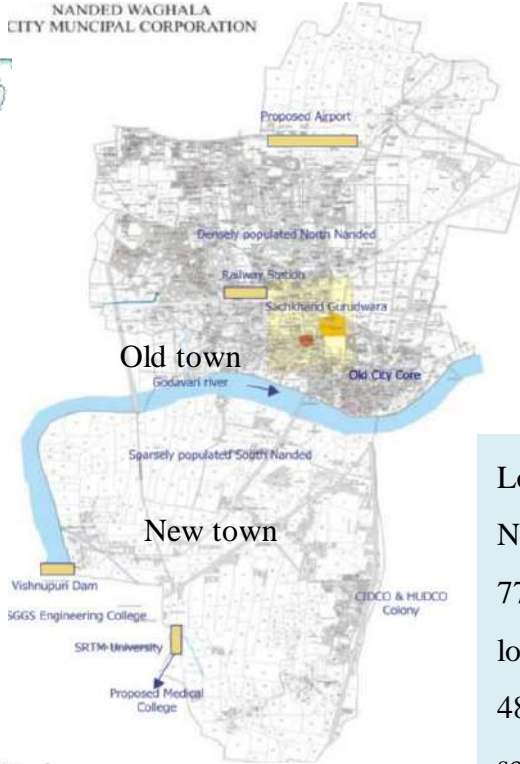
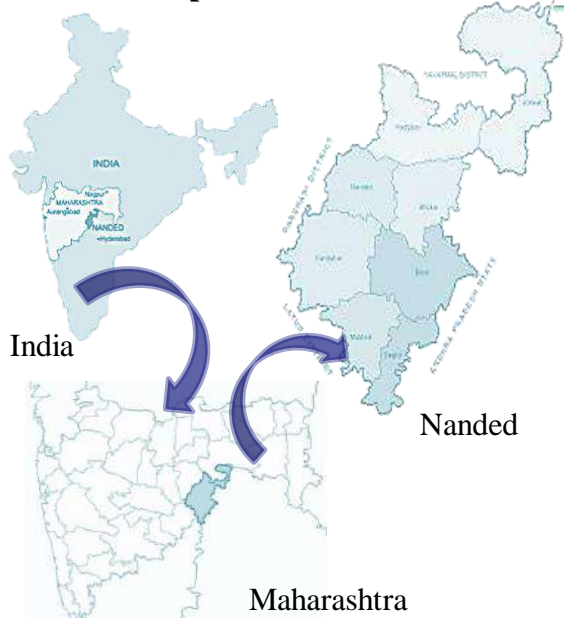
NANDED

by

Fourth Year B. Arch.

Division - C

Location map -



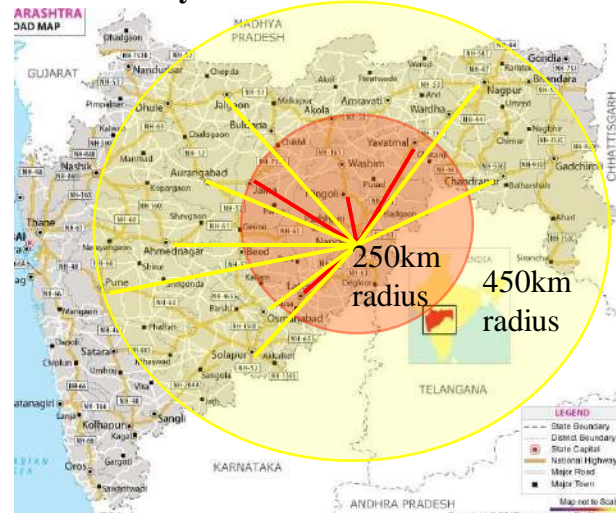
Location –

- Second largest city in the Marathwada
- Located on the banks of Godavari river in central west India.
- Old Nanded 20.62 sq.km.
- New Nanded 31.14 sq.km

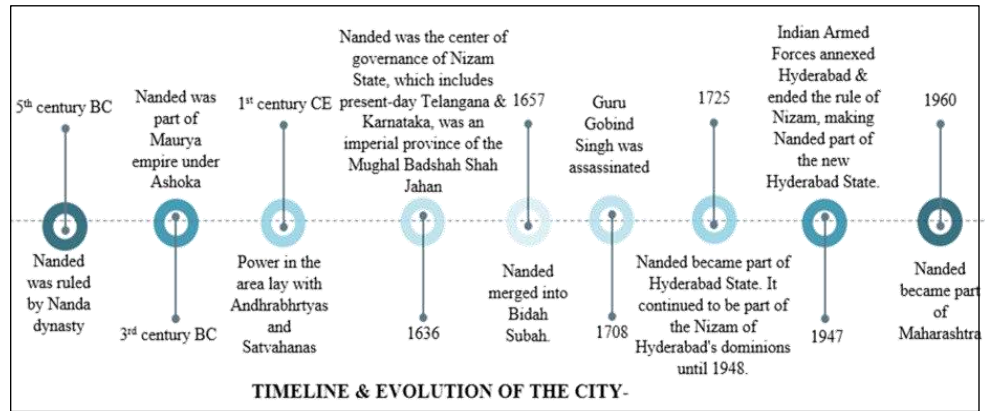
Located at 18°30' North latitude and 77°10' East longitude at about 489m above mean sea level.



Connectivity -



Evolution of Nanded



Road network –

- The transportation infrastructure includes a railway station and a bus terminal
- There is an airstrip, upgrading with the help of Maharashtra Industrial Development Corporation (MIDC) No designated or designed parking facilities in the city and a parking policy and facilitate provision of adequate parking facilities needs to be evolved.



Religious profession-

Priests, kirtankars, puraniks are the religious professional persons in the towns and villages. Priests undertake the worship of deities, in the temples or in many large individual homes and perform the ritual at marriages, thread ceremony, naming ceremony, etc.

Tourists attractions in Nanded

- Hazur Sahib
- Shrikshetra Mahurgadh
- Sahastrakund Waterfall
- Kaleshwar Temple
- Nanded Fort
- Isapur Dam
- Kandhar Fort
- Siddeshwara Temple
- Takhat Sachkhand Sri Hazur Abchalnagar Sahib
- Kandhar Falls



Sri Hazur Sahib



Mahur



Nanded fort

Legend

| | |
|---------------------------------------|---------|
| — | 30M ROW |
| — | 24M ROW |
| — | 18M ROW |
| — | 15M ROW |
| — | 22M ROW |

MIDC developed area in Nanded

| |
|------------------|
| Kushnur (Nanded) |
| Kushnur (SEZ) |
| Deglur |
| Kandhar |
| Kinwat |
| Bhokar |

Roads Infrastructure

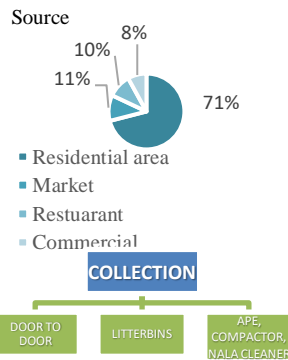
Road capacity and geometries getting altered resulting in unsafe traffic.

No pedestrian facilities and signages.

Inadequate street lighting.

During the pandemic, health care beds was not sufficient.

Solid Waste Management

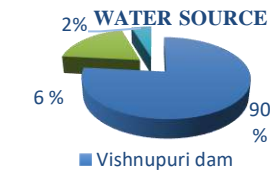


Disposal

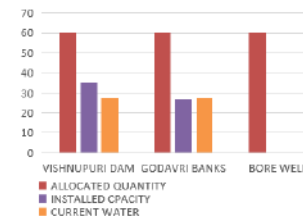
Dumping site is 2Km away from municipal limits

Area of 9.89 hec.

Water supply



WATER QUANTITIES

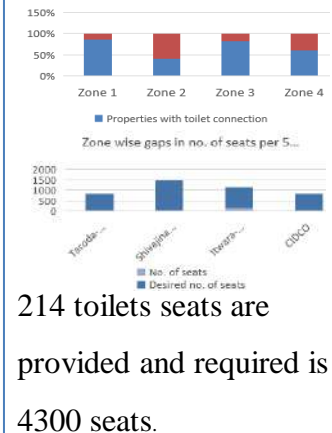


Major water supply – Godavari River

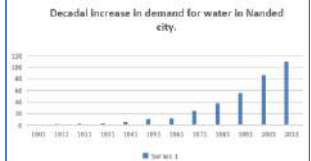
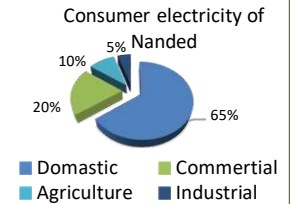
91 bore wells within the city.

Sewage and Sanitation

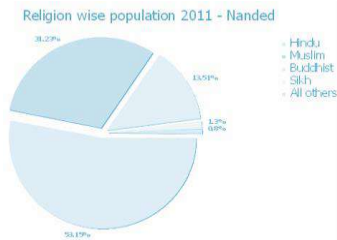
SEWAGE GENERATION



Electricity supply



Religion -



Language -

Language spoken are Marathi, Urdu, Punjabi and Hindi.

Art and Craft of Nanded -

Bidri- Items like cigar boxes, cigars, plates, studded bangles, hukkah bases, jewelry, vases, glass, trinket box, ash tray, bowls, etc.



Dance and drama culture in Nanded -



Lavani



Powada



Gondhal

Poetry and literary connections in Nanded -

City is the birthplace of many saintly poets such as Vishnupant Sesa, Raghunath Sesa, Vaman Pandit and more.

Festivals of Nanded -

Festivals like deep Mahotsav, Ganesh Utsav, Raksha Bandhan, Diwali, Baisakhi, Basant Panchami.

Land use -



North region of Nanded Demography & Population -

Population & Population density
According to 2011 census

Maharashtra's
population

112,374,333
population

365

density/km2

Nanded's
population

55,0439

population

8700

density/km2



Table 7: Proposed Landuse in North Nanded, 2015

| Sl. | CATEGORY OF USE | SECTOR WISE AREA IN Ha | | | | | | | % TO THE TOTAL AREA | TOTAL AREA (Ha) |
|-----|--------------------------------|------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------------|-----------------|
| | | A | B | C | D | E | F | G | | |
| 1 | Residential | 162.75 | 181.85 | 165.82 | 172.55 | 89.33 | 120.4 | 69.91 | 46.71 | 963.61 |
| 2 | Commercial | 3.21 | 12.96 | 11.62 | 5.83 | 4.47 | 12.31 | 3.82 | 2.63 | 54.22 |
| 3 | Industrial | 5.69 | 18.24 | NIL | 1.74 | 2.68 | NIL | 12.96 | 2.02 | 41.41 |
| 4 | Public-Semi Public | 58.12 | 121.1 | 11.82 | 12.67 | 10.66 | 27.91 | 29.99 | 13.20 | 272.27 |
| 5 | Recreational/Public Utility | 2.59 | 6.58 | 2.35 | 2.96 | 2.13 | 0.61 | 3.49 | 0.99 | 20.51 |
| 6 | Transportation & Communication | 45.28 | 136.73 | 66.22 | 35.17 | 14.39 | 32.66 | 29.60 | 17.46 | 360.15 |
| 7 | Open Space | 39.13 | 40.56 | 26.69 | 21.22 | 16.04 | 17.71 | 27.31 | 8.87 | 182.66 |
| | TOTAL DEVELOPED | 266.57 | 508.12 | 246.62 | 253.04 | 133.79 | 221.60 | 177.60 | 92.87 | 1094.83 |
| 8 | Water Bodies | 0.70 | NIL | NIL | NIL | NIL | NIL | 6.56 | 0.35 | 7.26 |
| 9 | Agricultural | NIL | 11.00 | 8.10 | 40.51 | 28.10 | 15.22 | 57.86 | 7.77 | 160.39 |
| | TOTAL UN-DEVELOPED | 0.70 | 11.00 | 8.10 | 40.51 | 28.10 | 15.22 | 64.02 | 8.12 | 167.67 |
| | TOTAL | 267.27 | 529.12 | 254.72 | 293.55 | 161.89 | 236.82 | 241.62 | 101.99 | 1262.50 |

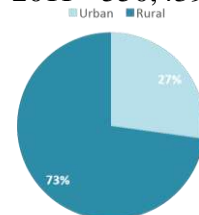
Proposed landuse of North region

Table 8: Existing Landuse of North Nanded, 1996

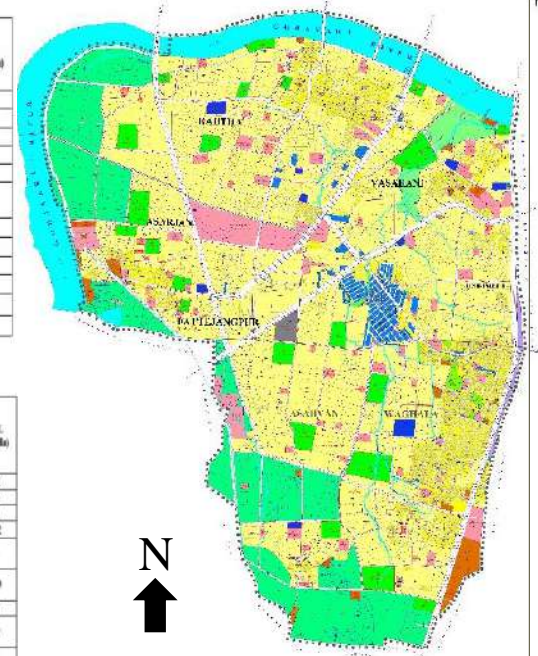
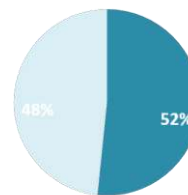
| Sl. | CATEGORY OF USE | SECTOR WISE AREA IN Ha | | | | | | | % DEVELOPED AREA (1996) | % TO THE TOTAL AREA | TOTAL AREA (Ha) |
|-----|--------------------------------|------------------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------------|---------------------|-----------------|
| | | A | B | C | D | E | F | G | | | |
| 1 | Residential | 75.14 | 107.22 | 45.43 | 27.96 | 67.94 | 62.14 | 30.11 | 42.14 | 20.14 | 415.51 |
| 2 | Commercial | 1.78 | 12.02 | 1.41 | 0.79 | 4.00 | 10.42 | 3.06 | 3.40 | 1.63 | 33.56 |
| 3 | Industrial | 6.09 | 19.35 | 0.46 | 1.74 | NIL | 11.84 | 19.26 | 5.96 | 2.85 | 58.74 |
| 4 | Public-Semi Public | 51.79 | 56.99 | 0.22 | 2.82 | 14.57 | 27.11 | 22.73 | 17.87 | 8.54 | 176.22 |
| 5 | Recreational/Public Utility | 1.02 | 3.40 | NIL | 3.32 | 0.87 | 0.36 | 0.17 | 0.93 | 0.45 | 9.21 |
| 6 | Transportation & Communication | 37.03 | 125.95 | 21.34 | 10.55 | 12.43 | 27.65 | 18.64 | 25.72 | 12.50 | 253.99 |
| 7 | Open Space | 11.31 | 19.65 | 4.43 | 0.48 | 2.13 | 6.80 | 1.07 | 3.98 | 1.90 | 79.27 |
| | TOTAL DEVELOPED | 184.87 | 348.87 | 75.29 | 47.66 | 101.57 | 146.32 | 95.84 | 100.00 | 47.81 | 986.32 |
| 8 | Water Bodies | 0.7 | 1.34 | 0.5 | NIL | NIL | NIL | 6.58 | 0.44 | 9.12 | |
| 9 | Agricultural | 38.08 | 15.13 | 166.88 | 140.53 | 21.81 | 38.69 | 49.9 | | 22.79 | 470.07 |
| 10 | Vacant & Barren Land | 94.38 | 168.58 | 52.05 | 105.41 | 18.42 | 47.81 | 90.58 | | 28.96 | 597.17 |
| | TOTAL UN-DEVELOPED | 133.06 | 185.05 | 219.43 | 245.99 | 40.23 | 86.5 | 146.80 | | 52.19 | 1074.56 |
| | TOTAL | 317.93 | 533.92 | 294.72 | 293.65 | 141.8 | 232.82 | 241.64 | | 100.00 | 2060.88 |

Existing landuse of North region

Population % of
Nanded city in
2011 - 550,439

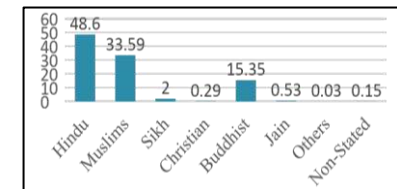


Sex ratio-
Male- 285,433.
Female -265,006



South region of Nanded

Religion in %



Population by age group



Child (0-6)
12.93 %

Adults and elderly- 87.07 %

<https://www.census2011.co.in/census/district/349-nanded.html>

Industrial situation in Nanded -

Table No.3 Nanded City: Occupational Structure (In Percentage) (1961 - 2011)

| Nanded City: Occupational Structure (In Percentage) (1961-2011) | | | | | | | |
|---|-----------|-------|------|-------|-------|-------|-------|
| Sr.No. | Category | 1961 | 1971 | 1981 | 1991 | 2001 | 2011 |
| 1 | Primary | 5.32 | 6.95 | 8.04 | 8.59 | 6.32 | 4.03 |
| 2 | Secondary | 38.31 | 32.6 | 32.84 | 31.02 | 30.19 | 30.70 |
| 3 | Tertiary | 56.36 | 60.3 | 59.12 | 60.39 | 63.49 | 65.00 |
| City | | 100 | 100 | 100 | 100 | 100 | 100 |

Table No. 2 Occupational Structure of Nanded City

| Year | % of male working population | % of female working population | % of working population |
|------|------------------------------|--------------------------------|-------------------------|
| 1961 | 85.11 | 14.88 | 24.36 |
| 1971 | 91.43 | 8.56 | 24.29 |
| 1981 | 90.03 | 9.97 | 26.27 |
| 1991 | 86.35 | 13.64 | 25.38 |
| 2001 | 86.73 | 13.26 | 25.83 |
| 2011 | 82 | 18 | 30.47 |

| Occupation | Urban | Total | Men | Women | |
|-------------------------------|-------|-------|-------|-------|---|
| | 1 | 2 | 3 | 4 | 5 |
| Tailors and Related workers | 945 | 3,074 | 2,459 | 615 | |
| Shoe-makers and Repairers | 364 | 1,479 | 1,366 | 113 | |
| Blacksmiths | 109 | 939 | 741 | 198 | |
| Watch-makers, Jewellers, etc. | 294 | 1,140 | 1,125 | 15 | |
| Carpenters | 809 | 3,816 | 3805 | 11 | |
| Stone-cutters and carvers | 138 | 1,234 | 720 | 514 | |
| Potters and clay framers | 341 | 3,249 | 1,899 | 1,350 | |
| Millers, Bakers, etc. | 79 | 305 | 270 | 35 | |
| Basket weavers | 195 | 1,605 | 772 | 833 | |
| Hotel workers | 305 | 307 | 306 | 1 | |
| Barbers | 243 | 1,495 | 1,475 | 20 | |
| Laundry men, Dhobis, etc. | 603 | 2,783 | 1,036 | 17,47 | |
| Photographers | 40 | 40 | 40 | .. | |
| Ordained Religious workers | 180 | 700 | 631 | 69 | |



Cotton industry



Automobile industry

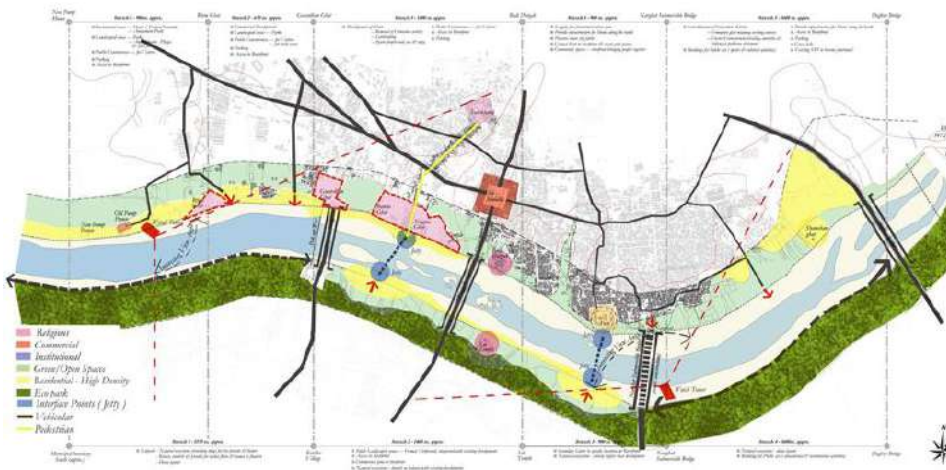


Rubber industry



Sugarcane industry

Godavari riverfront development



Key components of the project include:

Length: 5km

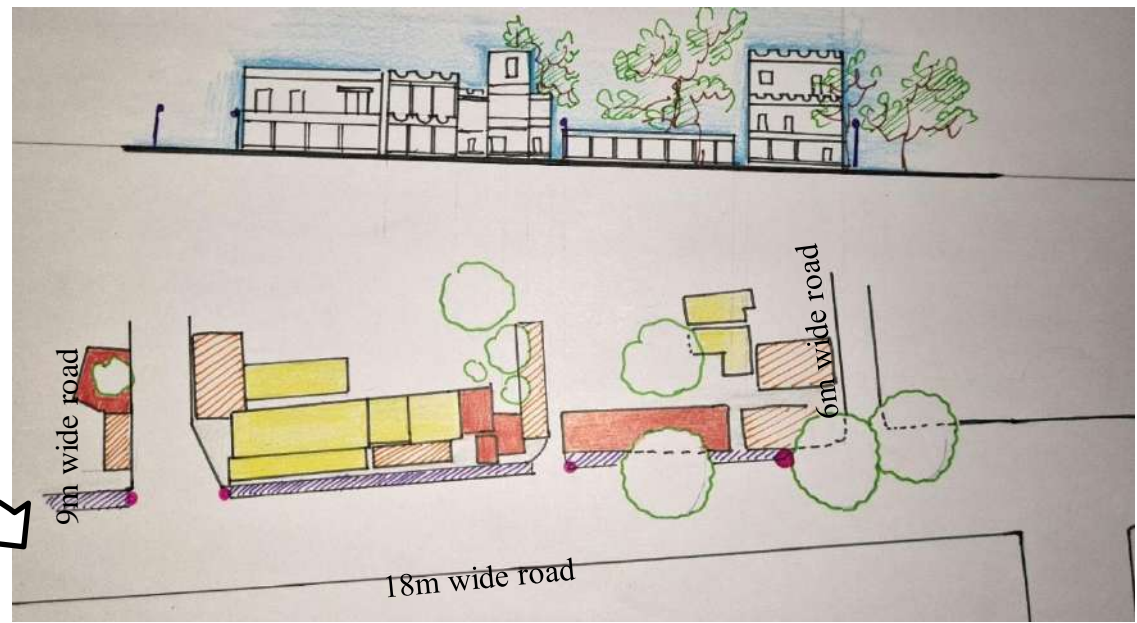
- Ghats, walking paths and promenades
- Buildings for social infrastructure
- Revival of natural drainage systems
- Revenue generation systems
- Parks, gardens, street planting and eco systems
- Reorganizing cremation activity

Streetscape 1

Street scape developed from google image and video

<https://youtu.be/juBMfwVkzil>

<https://earth.google.com/web/search/maharaja+electronics+gurudwara+road+nanded+district>



Reference photographs

The street is 18m wide is Gurudwara road and all 3 typologies i.e residential, commercial and mix use are seen on the street, the street has signages at every junction.

Legend -

- Commercial
- Residential
- Mix use
- Parking
- Street lights and signages



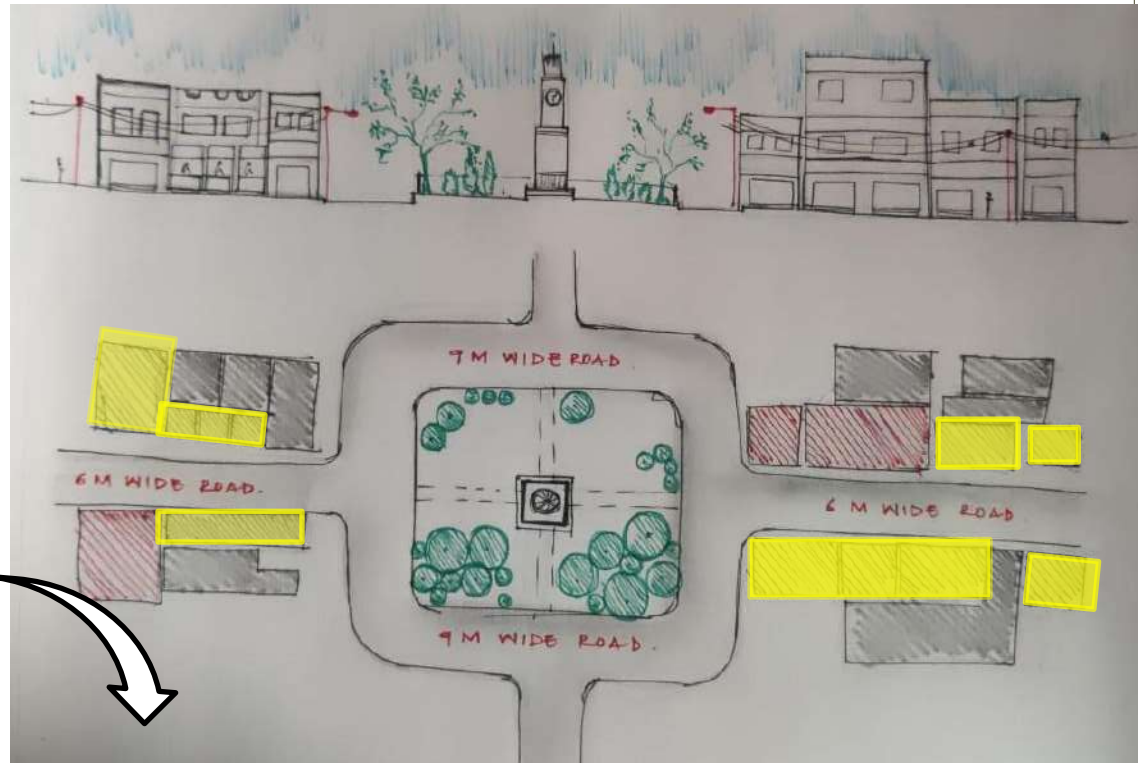
Streetscape 2

Street scape developed from

google image and video

<https://youtu.be/juBMfwVkziI>

<https://earth.google.com/web/search/maharaja+electronics+gurudwara+road+nanded+district>



Reference photographs



Legend -

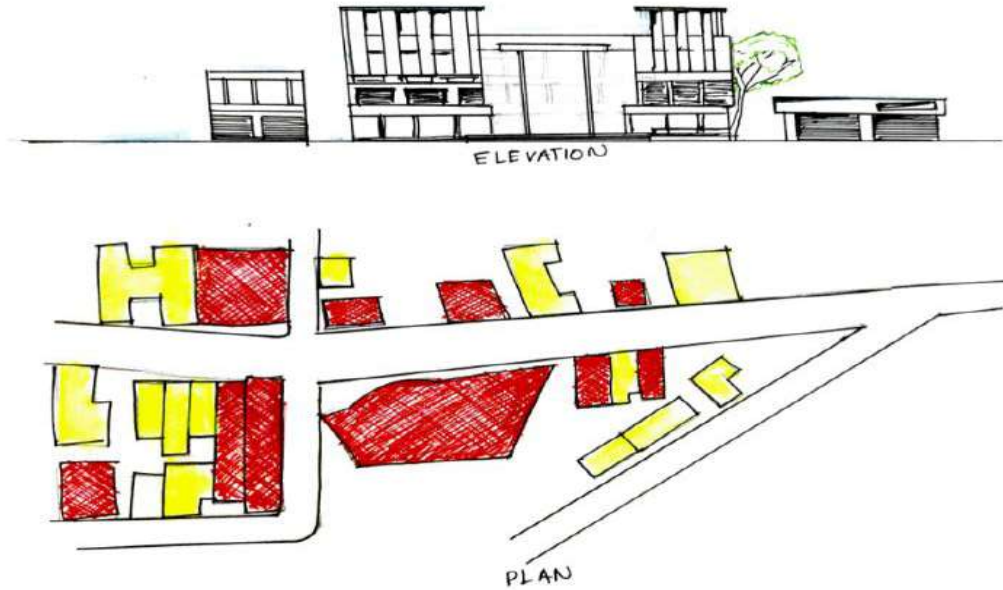
-  Commercial
-  Residential
-  Not identified

Streetscape 3

Street scape developed from google image and video

<https://youtu.be/juBMfwVkziI>

<https://earth.google.com/web/search/maharaja+electronics+gurudwara+road+nanded+district>



The street is 18 m wide in Vazirabad. It has commercial complexes, Police stations, Government health centres and shops with mix use of residential structures.



Legend -

-  Commercial
-  Residential

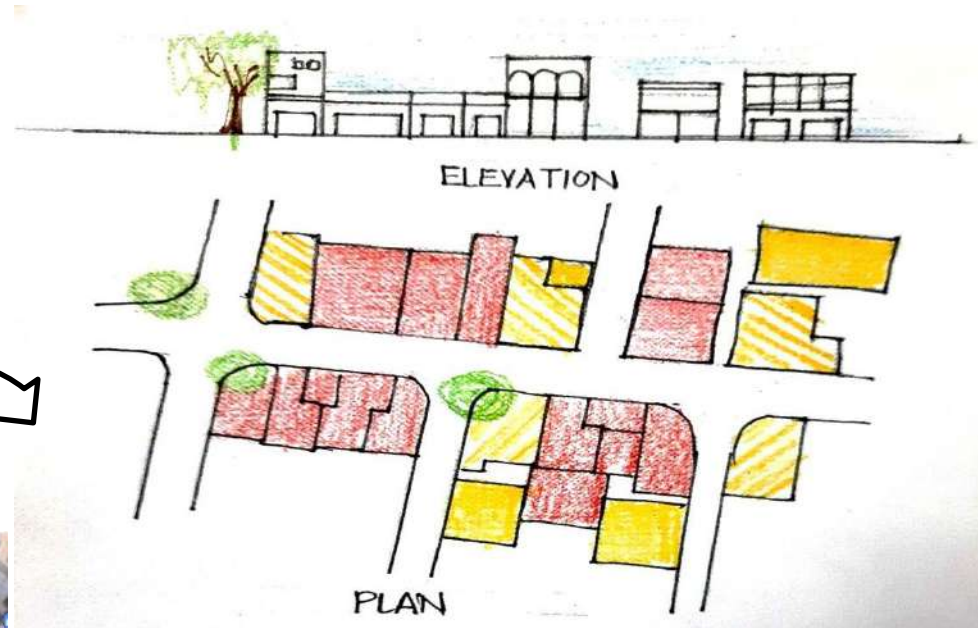
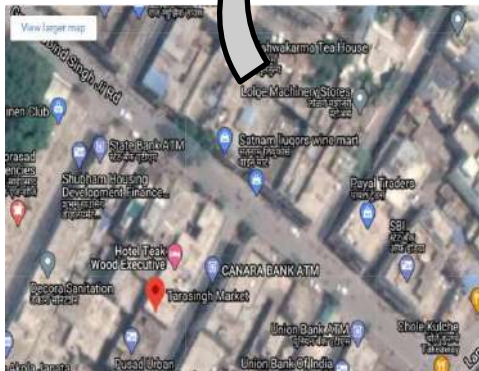
Reference photographs

Streetscape 4

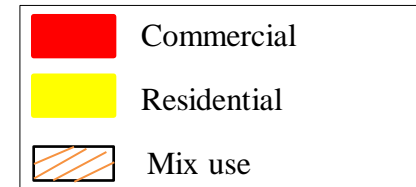
Street scape developed from google image and video

<https://youtu.be/juBMfwVkzil>

<https://earth.google.com/web/search/maharaja+electronics+gurudwara+road+nanded+district>



The street is 18 m wide in tarasingh market. It has commercial complexes and shops with mix use of residential structures. This street is Too much crowded with small roads traffic and **parking space** not available.



Reference photographs

Proposal – Community centre & study campus

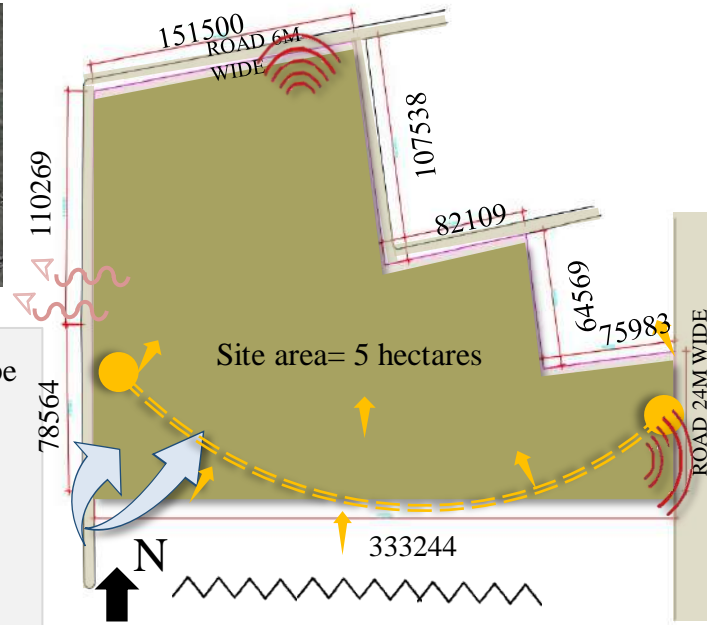


Location map

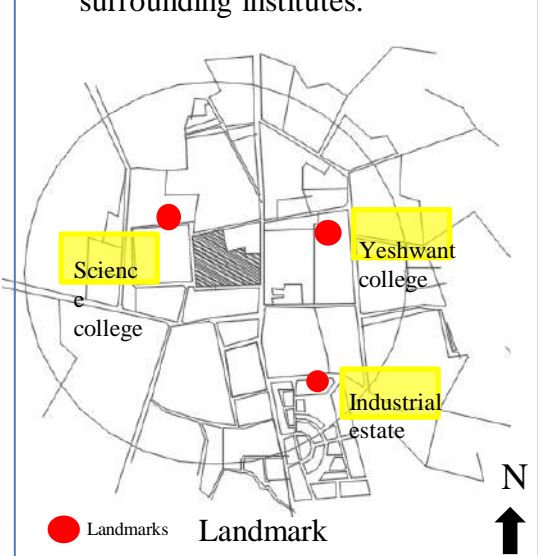
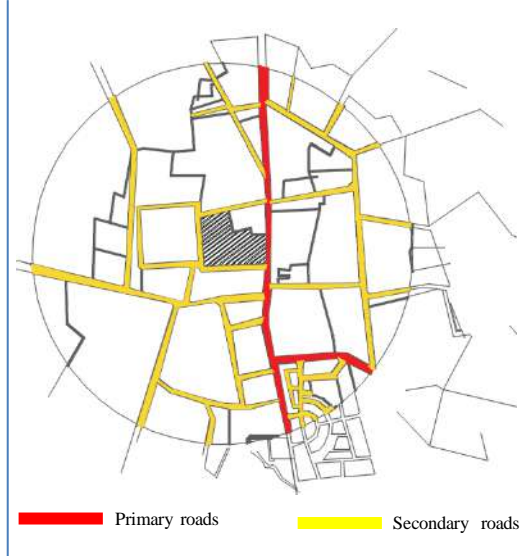
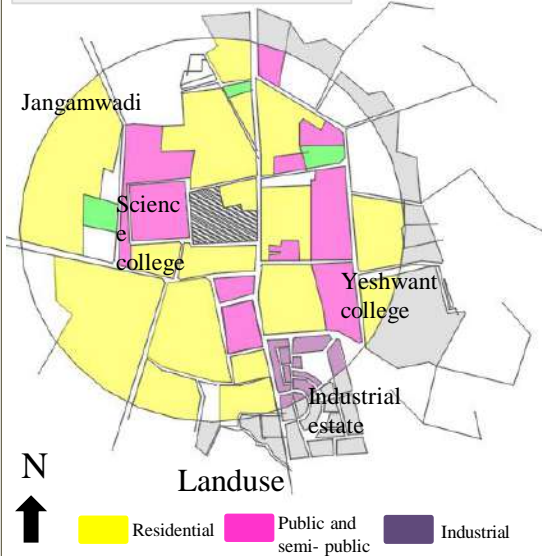
Climate – tropical type

Soil type –

Igneous rock and are black, medium black, shallow



- S**
 - Accessible from 3 sides.
 - Core city neighbourhood.
 - Proximity of public transports.
- W**
 - No scenic views
 - Institutes in immediate surrounding
 - Noise pollution
- O**
 - Location of site on major connectivity road will help invite tourist to the centre.
 - Landmark within the core area.
- T**
 - Can create a chaos to the surrounding institutes.



Brief for Community Centre -

Nanded enjoys a cosmopolitan culture as five main communities such as Hindus, Sikhs, Jain, Muslims and Buddhists residing here for many years. Aiming to bring people of all religions together, share their traditions and celebrate them, we have proposed a community centre which will bring a sense of unity within the people..

Justification at National level

- Creates an identity of the city in country.
- attraction point (magnet) for floating population.
- Increase the research on cultural level

Justification at Region level –

- Promotes small scale businesses.
- Develops the infrastructure of the city.
- Encourages all religion and community to come together.

Justification at Local level –

- Flourishment of area.
- Boost local transport.
- Increase in local economy

| SPACES | AREAS | JUSTIFICATION |
|---|---|--|
| Cultural space <ul style="list-style-type: none"> • Open amphitheatre • Meditation centre • Library • Toilets | 150 sq.m (250 persons) 60 sq.m (100 persons) 45 sq.m (75 persons) As per required | <ul style="list-style-type: none"> • Multi functional entertainment area. Income source for performing artists. • For hermits and visitors for relaxation purpose. • Spreading information about religions and communities which is not easily available. |
| Workshop <ul style="list-style-type: none"> • Handicraft • Handloom • Weapon making • Training centre • Toilets | 108 sq.m (180 persons) | Encouraging and promoting traditional artworks as well as generating income. |
| Exhibition <ul style="list-style-type: none"> • Retail shops • toilets | 60 sq.m (100 persons) As per required | Displaying the artworks and generating income. |
| Museum toilets | 60 sq.m (100 persons) As per required | Showcasing the history of Nanded, collective artifacts. |
| Langar hall <ul style="list-style-type: none"> • Dining • Kitchen • Storage • Unloading area • Toilets • Utility | 250 sq.m 180 sq.m (300 persons) As per required As per required As per required As per required As per required | Refreshments purpose having religious tradition. |
| Ashram <ul style="list-style-type: none"> • Workers • Tourists • toilets | 240 sq.m (400 persons) | Traditional Residence for workers and tourists separately. |
| Guest house (VIPs) | | Residences for VIPs. |
| Administration dep. <ul style="list-style-type: none"> • Admin office • Record room • Security room • Enquiry desk • Medical room • Toilets • Pantry. | 12sq.m 9 sq.m 9 sq.m 25 sq.m 9 sq.m | Management and maintenance purpose. |
| Common facilities <ul style="list-style-type: none"> • Toilets • Luggage room • Rest room | | |

Stakeholders –
 Volunteers
 Tourists
 Pilgrims maintenance staff
 Artists
 hermits

| | |
|---|--|
| <p>Brief Inclusive</p> <ul style="list-style-type: none"> • build structures including seminar halls, classrooms, stay rooms for students and teachers which could be hired • Commercial areas for food shops and essentials • Inclusive library and study areas • Open area like amphitheatres and study area • Interactive areas that promote student contact and communication | <p>Spaces</p> <p>classrooms capacity- 100 students quantity- 25 area- 120 sq.m total – 3000 sq.m</p> <p>seminar halls capacity- 200 students quantity- 10 area- 240 sq.m total – 2400 sq.m</p> <p>library capacity- 1500 students quantity- 1 area- 1000 sq.m total – 1000 sq.m</p> <p>staff quarters capacity- 80 teachers quantity- 50 area- (12sq.m * 20) & (18 sq.m. *30) total – 780 sq.m</p> <p>meeting room capacity- 80 teachers quantity- 1 area-80sq.m total area- 80 sq.m.</p> <p>hostel capacity- 6000 students quantity- 3000 area- 15sq.m total – 45,000 sq.m</p> <p>amphitheatre or auditorium capacity- 500 students</p> <p>dining area capacity- 500 students quantity-2 area- 6sq.m/person total – 6000 sq.m</p> <p>commercial shops capacity- 1 outlet quantity- 10 area- 25 sq.m. total – 250 sq.m</p> |
| <p>Stake holders</p> <ul style="list-style-type: none"> • Students who come to Nanded from distant places for courses related to technical and medical education • Teachers who find job opportunities to teach these students • Owners of Tutorial course providers who can have a better, private and productive place to teach and make students learn • Owners of private food chains | |
| <p>Justification at National level</p> <ul style="list-style-type: none"> • Staying facilities for teachers and students • Quality in education facility with enhanced ideas | <p>Justification at Regional level</p> <ul style="list-style-type: none"> • Absence of the typology proposed. • Introducing public space open to all. • Landscape equally important as built <p>Justification at Local level</p> <ul style="list-style-type: none"> • Crowd- presence of stakeholders locally 1541 villages, 17 towns, 16 sub-districts • Around 30,000 students stand as stake holders. |

Proposal – Urban Entertainment Centre



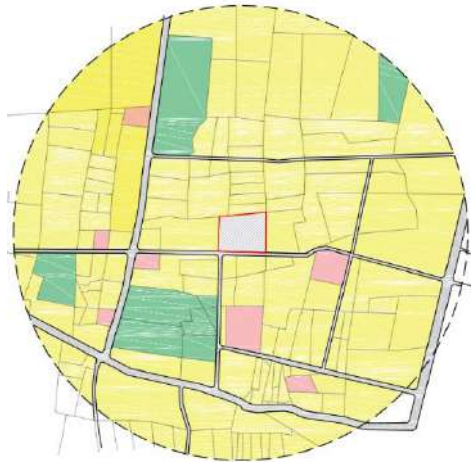
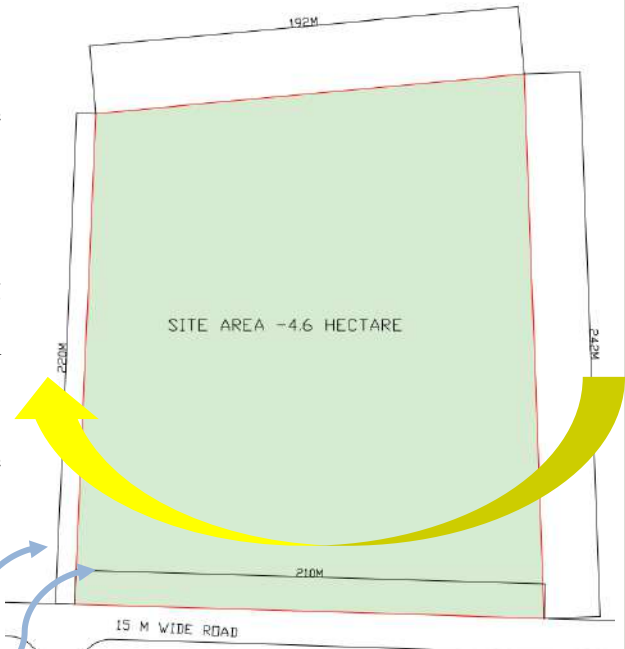
Location map

Location- Near Navayuvak Ganesh Mandal, Cidco Colony, Nanded.

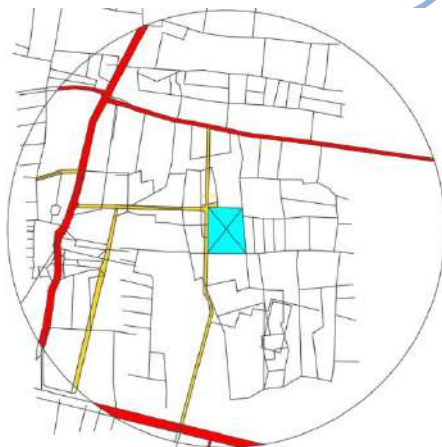
Temperature- Highest temperature is 40°C while lowest temperature is 14°C.

The site area is located in the vicinity of Cidco Colony, Waghala, Nanded.

It has been selected by referring the proposed development plan of south Nanded which has demarked this area in the commercial zone.



Land use



Transportation



Landmark

N ↑
 Residential Public and semi-public Agricultural land

Primary roads Secondary roads

Landmarks

N ↑

Preface: An Urban Entertainment Center is an integrated system of shopping spaces and recreational areas which serve as a social gathering space for the society of various age groups.

Stakeholders –

Primary users (Visitors):

Local residents

Regional level visitors Tourists

- Families
- Teens
- Adults
- Assisting users (staff)
- Retail shop owners and employees
- Restaurant owners and employees
- Maintenance workers
- Administrative staff

Justification at Local level

- Landmark
- Social hub
- Recreational space
- Add on spot for tourists

Justification at Region level

- Job opportunities
- Stronger connectivity
- Absence of typology
- Boost property values nearby

Justification at National level

- Identity established
- Stay facility

Mall (2500sqm)

- Porch
- Entrance lobby, reception
- Fire staircase
- Toilet
- Lifts
- AHU rooms
- Shops
- Indoor kids play area
- Administration area
- CCTV/control room
- Escalator
- Staff area
- Staff toilet

Multiplex (1000sqm)

- Administration
- Waiting area
- Ticket counter
- Theater
- Food court
- Vertical service
- Service staff room

Food court (1000sqm)

- Restaurants
- Dining area
- Kitchens
- Toilets
- Staff area,
- Staff toilet

Hotel (2500sqm)

- Parking
- Entrance Lobby
- Reception
- Waiting room
- Luggage room
- Toilets
- Rooms (1bed/2 bed/luxury)
- Administration area
- Meeting room
- Banquet hall
- Dining area

Aqua park (3500sqm)

- Entry
- Ticket counter
- Office
- Administration area
- Changing room
- Toilets, showers, and lockers
- Pump and filter buildings

Amusement park (3500sqm)

- Entrance and security
- Ticket
- Public utility
- Administration
- Toilets Services, maintenance
- Rides (Roller coaster, Carousel, Bumper car Ferris wheel)

Cotton Textile Park



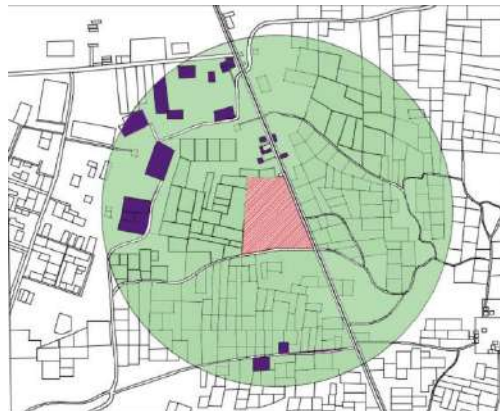
MIDC location at south region of Nanded

Preamble

Around 76% of total population of Maharashtra depends on agriculture for employment. This is due to multiple reasons like Godavari river being the major water source located in the heart of the city, good road connectivity, ease of availability of labour and vast lands dedicated to farming purposes.



Site area- 14.83 hectares



Land use

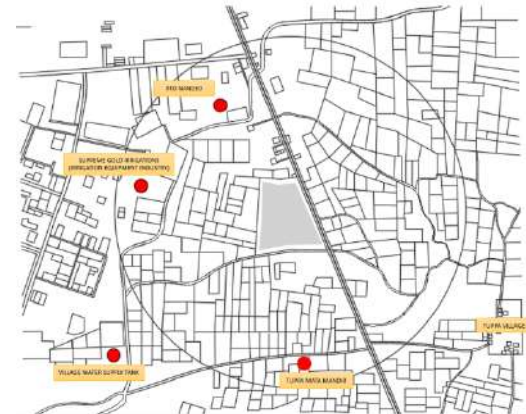


- Agricultural lands
- Industries



Transportation

- Primary road
- Secondary roads



Landmark

- Landmarks



Overview of cotton textile industry working –

Stage 1 – cultivating / harvesting

Stage 2 – spinning to produce yarn

Stage 3 – weaving to produce fabric

Stage 4 – finishing to produce textiles

Justification at National level –

- Textile industry is India's 2nd largest employment generating sector expected to reach 226\$ billion market cap by 2023
- Government granting upto 40% of total project cost of mega textile parks.
- Attracts foreign investors to the domestic textile sector- India as an export hub – self sufficient.

Justification at Region level –

- Maharashtra has the highest number of units sanctioned – 15.

Justification at Local level –

- 50 % subsidy in plant protection measures and 25 – 25 % subsidy or adoption of sprinkler's irrigation have been provided to the farmers.
- 76% population of Nanded depends on agriculture as employment source – economy.
- Improves trade sector, tourism sector, agriculture. Helps overall economy.

Spaces –

- Factory sheds –
 - Blowing room 185sq.m.
 - Carding room 105sq.m.
 - Spinning room 217sq.m.
 - Weaving shed 180sq.m.
 - Raw material depot 350sq.m.
 - Shops for factory outlets 150sq.m.
 - Testing labs for equipment 110sq.m.
 - Creche 50sq.m.
 - Canteen 100sq.m.
 - Workers hostel 170sq.m.
- Design center with equipment 110sq.m.
- Training center with equipment 110sq.m.
- Packaging unit 60sq.m.
- Trade/ display center 150sq.m.
- Labor rest and recreational facilities as per required
- Administration office 12sq.m.
- Management and marketing office 25sq.m.

Hazards to be taken into consideration -

- Exposure to cotton dust
- Dangerous chemicals
- High noise level
- Ergonomic issues

Stakeholders –

1. Buyers – local people, tourists
2. Visitors – local people, tourists
3. Investors – foreign investors for export hub
4. Workers – factory, canteen, administrative, management, marketing staff
5. Staff – technical and scientific staff for laboratory 6. Nursery nurse for creche
7. Manufacturers

Proposal – Transit Hub



Need for Transit Hub

- To reduce the traffic problems.
- Decline in public transport over a period of time

Site location: Nanded, Maharashtra



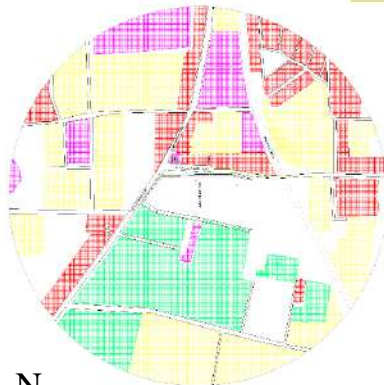
Weekends



Weekdays

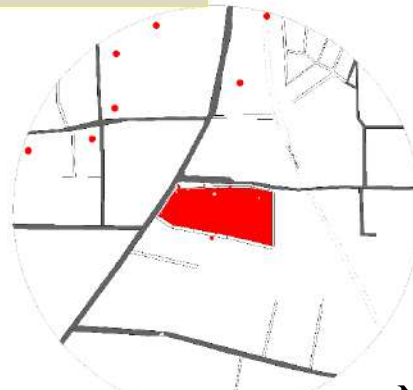
Fast █ █ █ Slow

Traffic movements

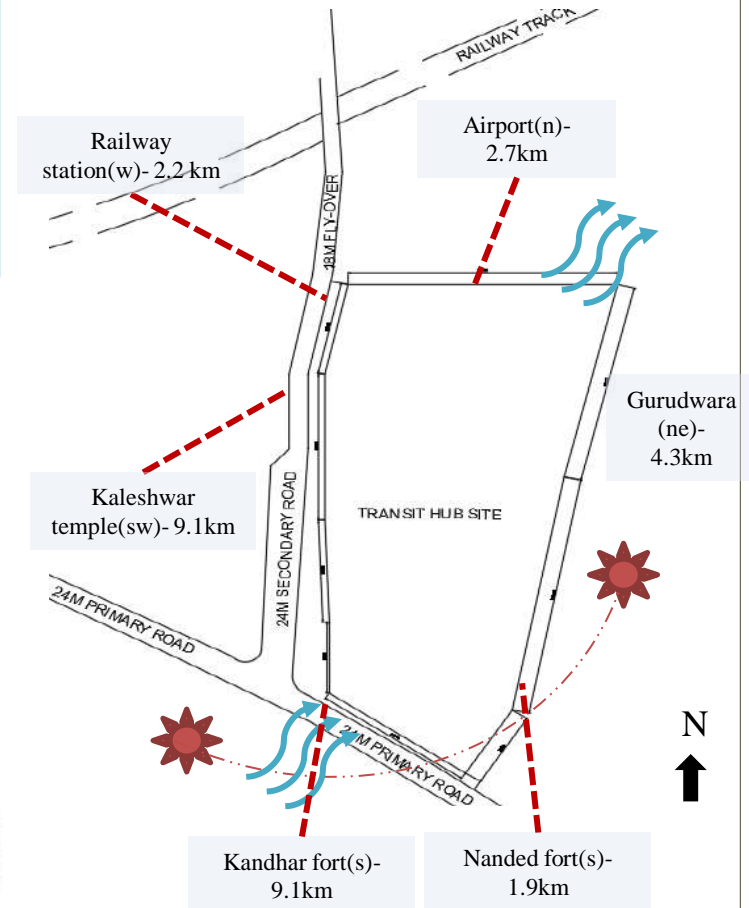


Land use

█ Residential
 █ Public and semi-public
 █ Agricultural land
 █ commercial



Landmark



Proximity to the site –
4-5 petrol pumps at close proximity to the site.

Brief-

The Transit Hub will be a multi-modal facility to accommodate local and regional traffic (pedestrians, cyclists, drivers, taxis, buses) as well as intra-regional traffic (buses and taxis).

The facilities in and around the hub make the area a destination itself and generates new revenue streams and boosts wider prosperity. Mobility enables people, goods and ideas to move in, out and within our cities.

Justification at National Level-

- NH-161 and MHS3 highways
- City Connectivity
- Highway connects entire city from N to S

Justification at Regional

Level-

- Faster and linear transportation
- Intercity Transportation
- Creates job opportunities

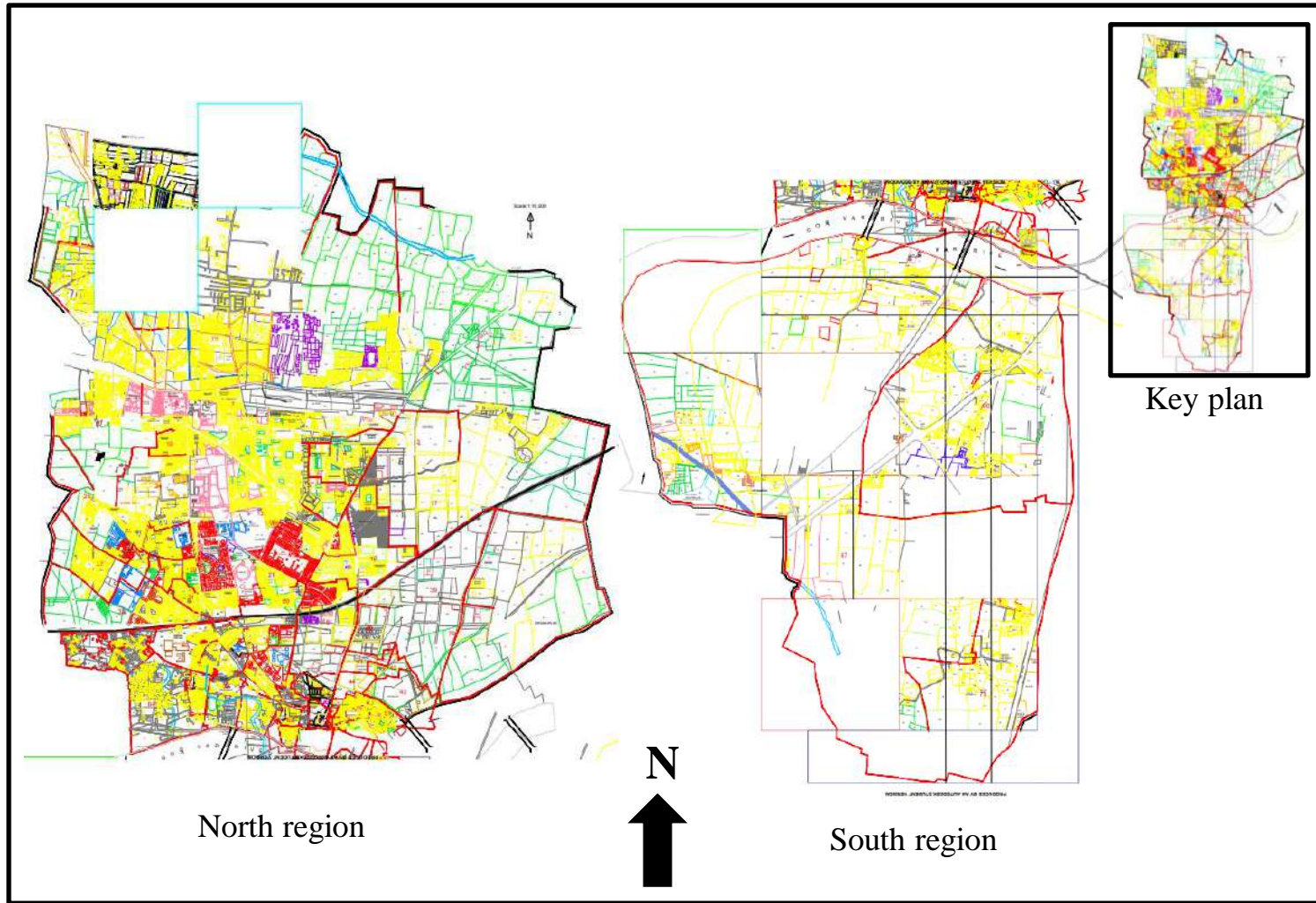
Justification at Local

Level-

- Tourist Management
- Increase in moving transport
- Area flourishing

| Sr. No. | Description | Area allotted | Justification |
|---------|----------------------------|---------------------------|---|
| A | Waiting area | 500sq m | Ac/non-ac as per ticket |
| B | Administration area | As per design requirement | Admin room, cloak room, ticket counters, inquiry station |
| C | Commercial zone | As per design requirement | Retail shops, food arena, banking |
| D | Bus stand/platform | As per design | Arrival/departure, waiting platform, bus drop-off/pickup, ticket verification (long haul route) |
| E | Taxi rentals/auto rickshaw | As per design | Rental cars, self-driven cars, taxi hub, drop-off/pickup, resting area with services, admin |
| F | Lounges | 500 sq.m. | Internal resto/bar, waiting area, washrooms, viewport, admin |
| G | Food court | As per pax | Restaurant, kitchen, eating area(standing/sitting), food chains, restroom |
| H | Accommodation | As per design | Deluxe ac/non-ac rooms, dormitory(ac/non-ac), cloak room, admin, restroom, bus driver/staff accommodation |
| I | Services | As per design | Ac plant, electrical room, plumbing, solar plant, server room, generator |
| J | Security | As per design | Police station, security, check post, luggage checking |
| K | Sanitation | 50 sq.M | Sanitation walk thru, sanitizer points, cleaning room |
| L | Workshop | 200sq.M | Bus service depot and workshop |
| M | Gas points | As per need | Lpg/cng, diesel |

Base-map - Nanded



<https://www.bing.com/search?q=tourism+in+nanded+district&q=HS&pq=tourism+in+&sc=6-11&cvid=33A4861BE9B84D3BBA7>

Fourth Yr B Arch Div C 2020-21

List of students



1. Khamkar Rutooja
2. Khondapure Amisha
4. Kirdat Manthan
5. Kshirsagar Srushti
6. Aman Deep Kumar
7. Labade Akash
8. Lale Pooja
9. Lohokare Rutwik
10. Lokhande Rutwik
11. Magar Rugveda
12. Mahajan Pradnya
13. Mandot Khushi
14. Mhatre Sayali
15. Moharir Shivangi
16. Mohod Suraj
17. More Sanskruti
18. More Siddhant
19. Musale Pragati
20. Nayak Pavitra
21. Nevase Venkatesh
22. Nimje Shaili
23. Ningune Shrutika
24. Paigude Vinaya
25. Panda Anurag
26. Pande Saundarya
27. Parate Prarthana
28. Parmar Sourabh
29. Pathan Roziya
30. Patil Akshata
31. Patil Krishna
32. Patil Piyush
33. Patil Snehal
34. Khaire Aditya
35. Padmalkar Jayesh
36. Mehta Rushabh
37. Khadke Piyush
38. Pawar Avani
39. Nachne Rushikesh
40. Padwal Akshada
41. Marade Shashank

FACULTY-



Prof. Priti Dhanwat



Ar. Sanika Kulkarni

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

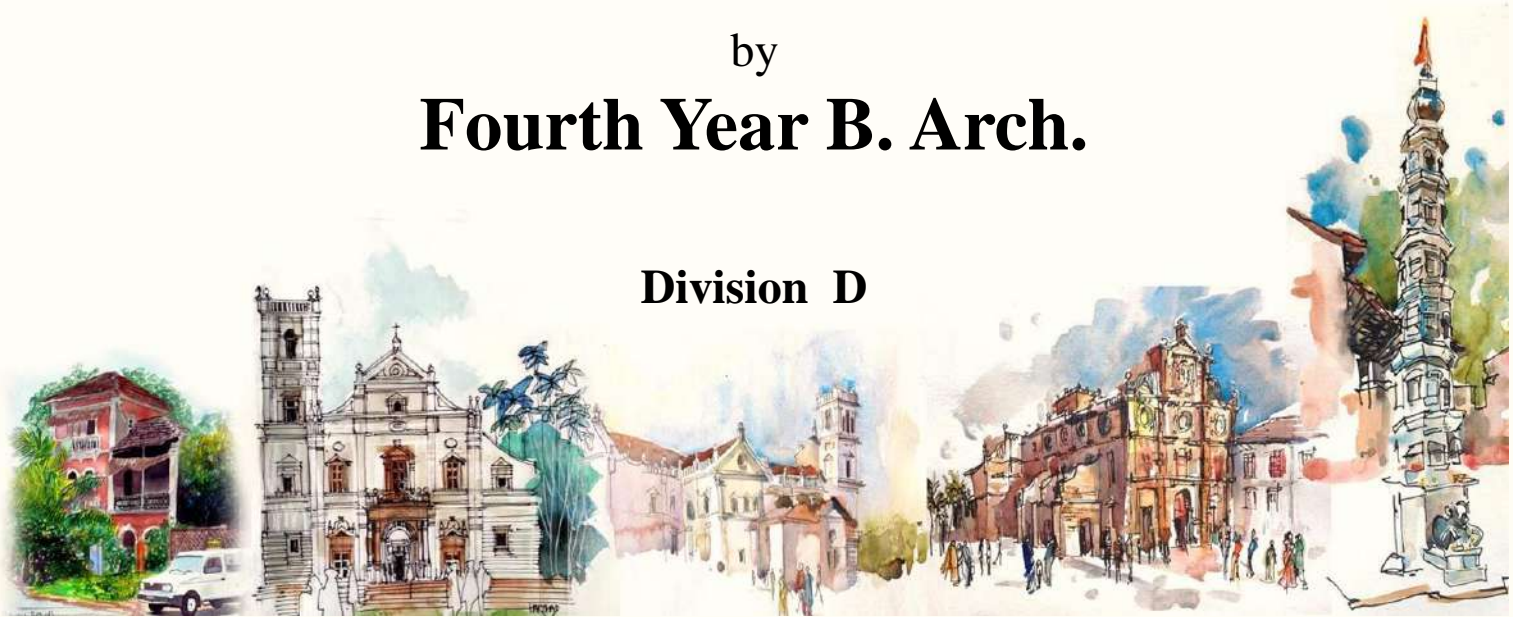
VIRTUAL STUDY TOUR

Goa - MARGAO

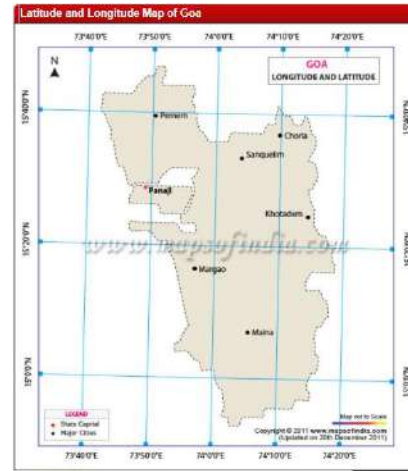
by

Fourth Year B. Arch.

Division D



I] INTRODUCTION - GOA



About Goa

Goa, state of India, comprising a mainland district on the country's south-western coast and an offshore island. It is located about 250 miles (400 km) south of Mumbai (Bombay).

One of India's smallest states, it is bounded by the states of Maharashtra on the north and Karnataka on the east and south and by the Arabian Sea on the west. The capital is Panaji (Panjim), on the north-central coast of the mainland district.

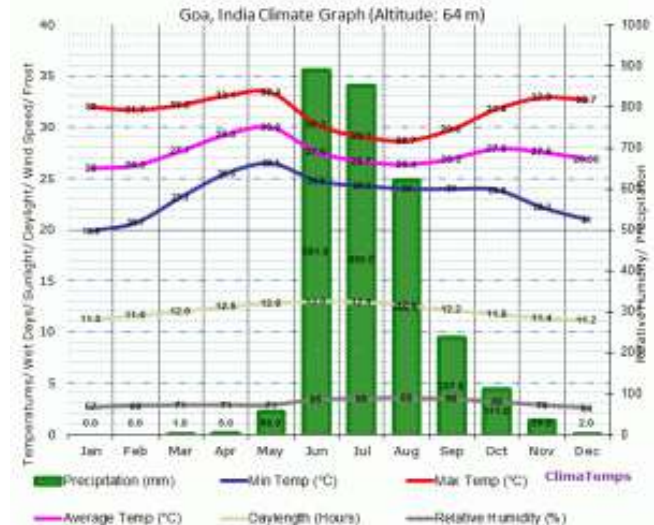
Formerly a Portuguese possession, it became a part of India in 1962 and attained statehood in 1987.

Area: 1,429 square miles (3,702 square km).

Pop.: (2011) 1,457,723.

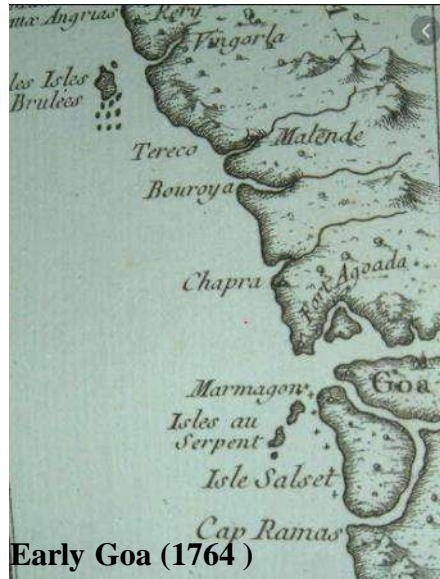
Sources: <https://www.britannica.com/place/Goa>. Google images

Geo location of Goa



Climate - Goa is predominantly a warm & humid region . The critical aspect of design is to provide natural ventilation & the structures should respond to the heavy rainfall.

I | INTRODUCTION - EVOLUTION OF GOA



1950

There were 4 parent cities.
Candolim, Panji, Vasco Da Gama, Mamourgao.



1990

Further 28 cities grew.
Increase in agriculture and fishery.



2011

Goa had **64 cities** in total.
Reasons:
Increase in tourism
Migration

Regional Planning Of Goa

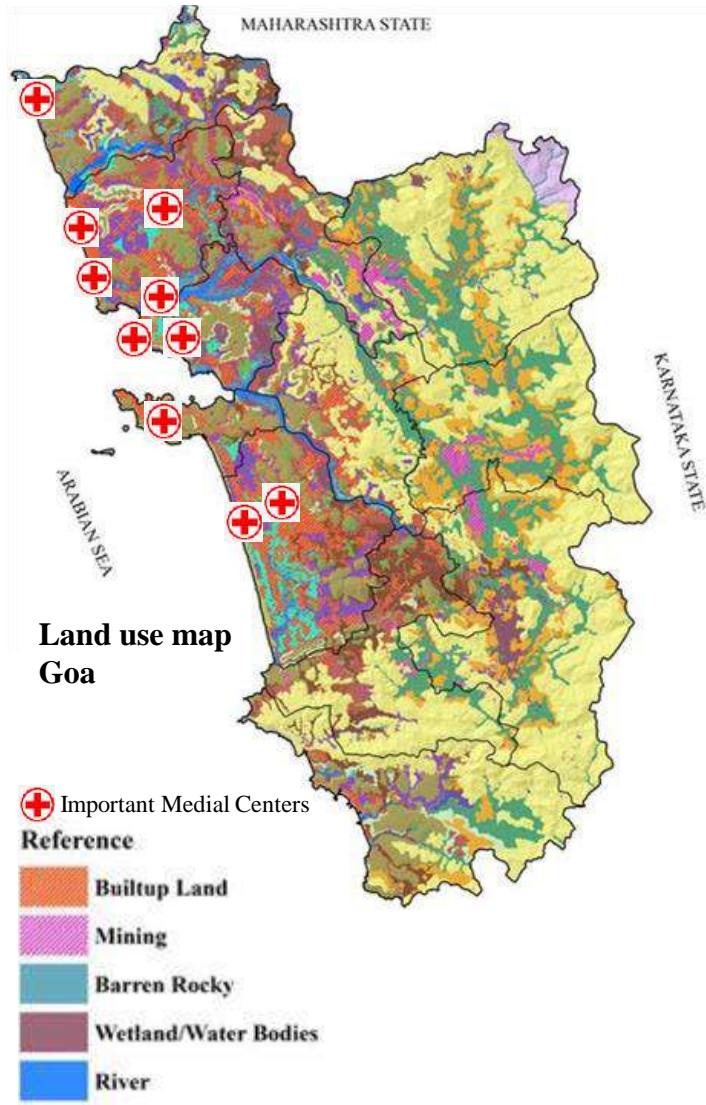
Regional planning strategies ensures

- Future balanced distribution of population and sustainable growth
- Creation of new growth centres in the midland talukas
- Enhanced public transportation networks
- Preserving goa’s fragile environment



Sources: <https://en.wikipedia.org/wiki/Goa>, Google images

I] INTRODUCTION - URBANIZATION - Vision for Healthcare Tourism



Goa has experienced rapid urbanization, which has been closely linked to their paralleled expansion in the **tourism industry** corresponding to the largest sector of the state's economy.

* The Goa government wants to promote the state as a **"Medical Tourism Destination"** as many foreign and domestic tourists come here looking for quality health care

STATE OF MEDICAL CARE

PLAN OUTLINE
Six facilitation centres to come up

Delhi
Kolkata
Hyderabad
Chennai
Bengaluru
Goa

₹10L Amount spent on an average by international medical tourists who come with an attendant

Sources: https://www.researchgate.net/figure/Suggested-land-use-plan-for-Goa-state_fig1_343851640, Google images

NATIONAL VISION FOR HEALTHCARE TOURISM



Sustainable development goals as per United Nations general assembly Focus on **DECENT WORK** and **ECONOMIC GROWTH**



ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES.



MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE.



The **National Urban Health Mission (NUHM)** as a sub-mission of National Health Mission (NHM) has been approved by the Cabinet on 1st May 2013.

NUHM envisages to meet **health care needs of the urban population** with the **focus on urban poor**, by making available to them essential primary health care services and reducing their out of pocket expenses for treatment.

This will be **achieved by strengthening the existing health care service delivery system, targeting the people living in slums and converging with various schemes** relating to wider determinants of health like drinking water, sanitation, school education, etc. implemented by the Ministries of Urban Development, Housing & Urban Poverty Alleviation, Human Resource Development and Women & Child Development.

Sources: <https://www.cdp.net/en/policy-and-public-affairs/sustainable-development-goals#8de481f5ee45169388c9cbf58051d7dd>, Google images

II] STUDY OF AREA - MARGAO, GOA.

By the year 2000, the Government of **Goa** had achieved the '**Health For All**' goal through its several **health** and medical care programs. Hence, **Goa** is considered as one of the best states in the country where **health** and medical care facilities are concerned. It has one of the most extensive **health** amenities in the country.

Directorate of Health Services (DHS) has an important role in the **provision and administration of health services** and in order to **raise the quality**, extend accountability and carry out the services fairly, effectively and courteously.

MARGAO



Sources: <http://dhsgoa.gov.in/aboutus.htm>, Google images

WHY MARGAO?

MARGAO - Commercial capital - Indian state - Goa.

Geography - Second largest city in goa.

Transportation - Air, rail, road

Climate - Tropical monsoon climate

Demographics - Population of 87,650

Potential

The epicentre of all the administration of south Goa.

Due to the **limited number of medical facilities** in the southern Goa, it would be beneficial in catering the medical needs of the people living in southern Goa.

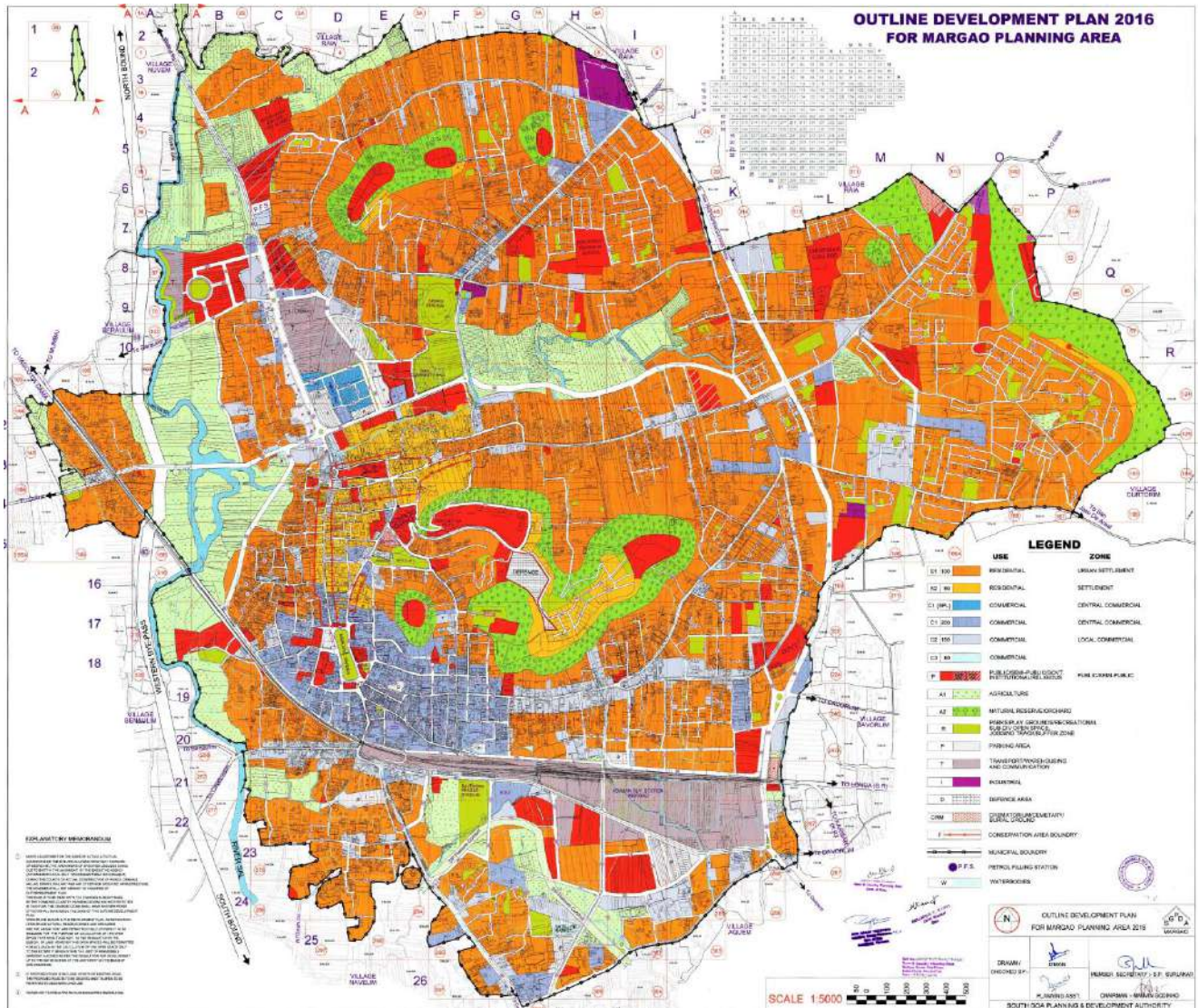
Infrastructure within Goa city will boost.

Urban areas in southern Goa will flourish.
We will have diverse floating population visiting the hospital.

II] STUDY OF AREA - MARGAO, GOA.



MARGAO DEVELOPMENT PLAN



Sources: <http://digitalgoa.com/margao-odp-will-be-reviewed/>

III] DESIGN PROGRAM

Majorly study the **Multi Functional And Multi Speciality Hospital** in an urban context with substantial complexity addressing issues of character, identity, built form, contextually, advanced services, green initiatives , landscape integration, traffic management with impact on immediate surroundings, structural resolution in detail.

Study of Urban Areas in terms of urban level issues like **mobility, movement network, Built form disposition, character, identity, activities, open space networks, walkability, Inclusiveness**, etc. and **impact on surrounds**, Community participation initiatives and analysis.

Identify issues related to above aspects at neighbourhood level and offer design solutions For improving the status of the neighbourhood Setting Up of guidelines to achieve the master plan objectives and broad implementation **Strategy To Achieve Sustainable Neighbourhoods.**

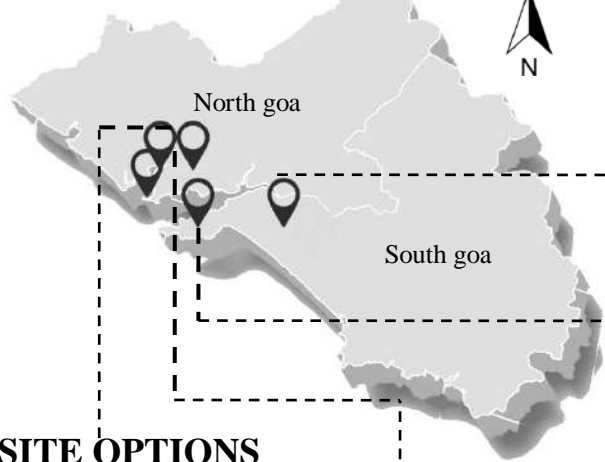
| Sr. No. | Department | Total Area |
|---------|-------------------|------------------|
| 1. | Entrance | 260 sq.m |
| 2. | Outpatients | 1410 sq.m |
| 3. | Emergency | 452 sq.m |
| 4. | Diagnostics | 690 sq.m |
| 5. | Administration | 540 sq.m |
| 6. | Inpatients | 2795 sq.m |
| 7. | Bed Areas | 2675 sq.m |
| 8. | Other Facilities | 510 sq.m |
| | TOTAL AREA | 7632 sq.m |

| | |
|--|--|
| Total no of beds | 100 |
| Number of Storeys (recommended as per norms) | 3 |
| Municipal regulations F. A. R 100 Ground coverage permitted Covered area per bed Total covered area 40 percent of covered area | 25 percent 92.5 sq.m 92.5 X100 = 9250 sq.m 3700 sq.m. |

Margao, Goa



III] DESIGN PROGRAM



Site 1(Margaon)



Site 2(Vasco da gama)



Site 3(Panji)



Site 5(Taleigaon)



Site 4(Panji)

SITE FEATURES

CONNECTIVITY :

Airport 26 km ,Railway Station 1.7 km , National Highway 9 km

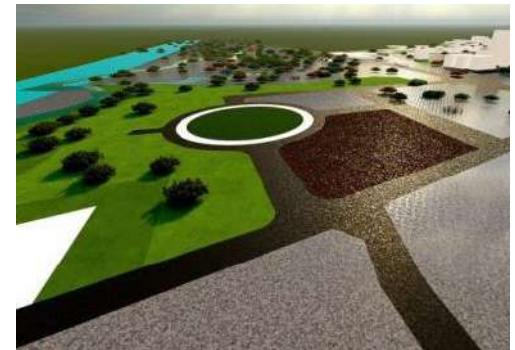
ACCESS & SURROUNDING :

Main road 12m ,Acess road 6m , Surrounding with green zones & mix use neighborhood.,Skyline 9-12 m high,

FEATURES: Evergreen mangroves on north & south ,helps to reduce noise ,impact on microclimate, no multi-speciality facility in vicinity of 1 km

DRAWBACKS :nearby fishmarket may cause overcrowding periodically & creates bad odour.

ANALYSIS : Good connectivity, Less vehicular movement, less noise & pollution ,gently sloped topography , easy accessibility of public transport



III] DESIGN PROGRAM



SAL CANAL



SITE



DISTRICT COLLECTOR OFFICE



WHOLESALE FISH MARKET



The proposed multispecialty hospital will include:

- Dermatology,**
- Orthopedic,**
- General medicine &**
- Cardiology specialties**

Site Surroundings:

The site located at margaon has an area of **16,592 sq.m** . It has road connecting from all the four sides. The site is contoured with drop of 1m.



Site analysis:

- Site scape : no hardscape on the site
- Site geometry : contoured site surrounded by road from 4 side.
- Macro climate : tropical – hot all year round
- Socio economic aspect : a hospital in this area will boost the economy of the city.

LAND USE SCENARIO AFTER PROPOSED HOSPITAL



Open fields



Market place



Collector's place



Vehicular traffic



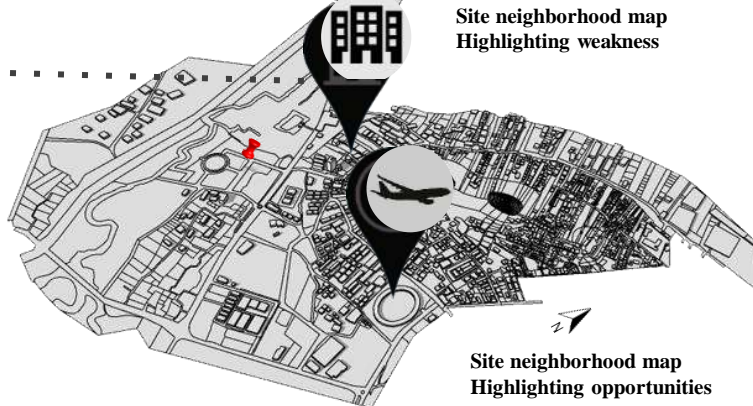
Residential area



Site neighborhood map
Highlighting strength



Site neighborhood map
Highlighting weakness



Site neighborhood map
Highlighting opportunities



Strengths :

1. Area for agriculture, open spaces & buffer zones : views , breathable ground are ensured.
2. Rise in commercial sectors (medical stores, canteens)
2. Selling point for the residential complexes.



Weakness :

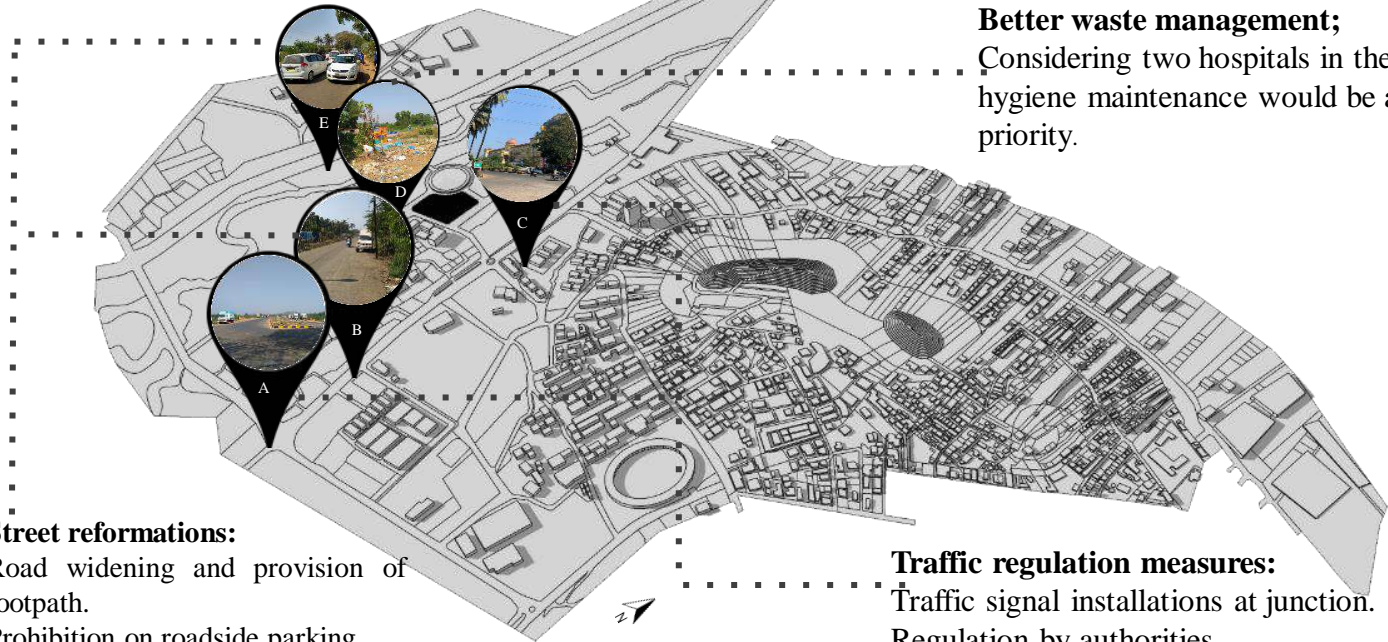
1. Restriction in commercial activities creating noise.
2. Poor traffic control on already existing and upcoming highway.
3. Existing fish markets and collector's office could be a hindrance to the desired peaceful environment.



Opportunities :

1. Rise in medical tourism leading to such more ventures.
2. The approach would be one of a kind, and add another user group to the tourist base in the state of Goa

LAND USE SCENARIO AFTER PROPOSED HOSPITAL



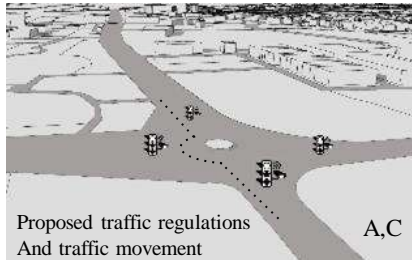
Better waste management;
Considering two hospitals in the area, hygiene maintenance would be a priority.

Street reformations:

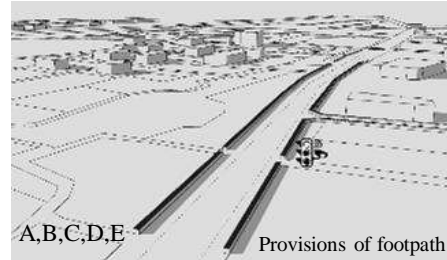
Road widening and provision of footpath.
Prohibition on roadside parking.

Traffic regulation measures:

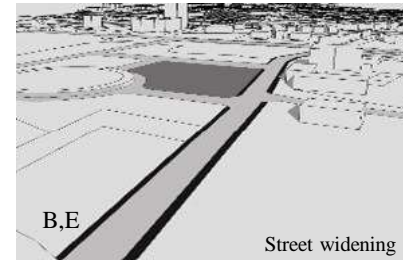
Traffic signal installations at junction.
Regulation by authorities.



Road access would be of utmost importance with two hospitals in the vicinity



Design should reduce vehicular congestion and be flexible in case of emergencies, in this case medical.



Resilience in urban design with major changes coming up in the built and transportation sector for a more sustainable approach.

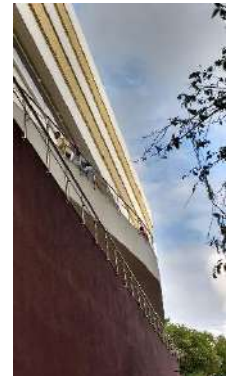
The insertion of an Institutional project in such a locality will not only encourage in regulating the traffic more efficiently and controlling the noise pollution but also improve the neighborhood's urban setting holistically.

- Multi-cultured neighbourhood
- Increase in amenities
- Accommodation facilities(eg. studio Apartments)
- Better hospitality.

HEALTH CARE FACILITIES IN GOA



VISION MULTISPECIALITY HOSPITAL, MAPUSA, GOA.



HEALTHWAY HOSPITAL PVT. LTD., PANJIM, GOA

DISTRICT HOSPITAL, MAPUSA, GOA





**Fourth Year B.Arch.
Div. D
Students**

- | | |
|--------------|--------------|
| Harshali P. | Saurabh P. |
| Rohan P. | Shweta P. |
| Vipul R. | Shanu R. |
| Tejas R. | Rahul R. |
| Riya S. | Nachiket S. |
| Vrushal S. | Vaibhav S. |
| Hiral S. | Tanmay S. |
| Shashank S. | Omkar S. |
| Manish S. | Phulwanti S. |
| Shreya S. | Madhura S. |
| Revati S. | Shivani S. |
| Yash T. | Digvijay U. |
| Sayali U. | Thomas V. |
| Prachi W. | Harsh S. |
| Rishikesh S. | Kartik K.* |
| Onkar T. | Mahima S.* |



Ar. Kirti Bajare



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