AR 3901

URBAN DESIGN

REGULATION 2021

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UNIT I URBANISM IN HISTORY

Outline of forces shaping urbanism. Urbanism of river valley civilisations. Morphology of pre-industrial European cities to include Greek and Roman cities, medieval European towns, Renaissance urbanism and ideal cities. Outline of historic cities of India. Temple town urbanism of Tamil Nadu. Mughal city form. Medieval cities of India. Colonial urbanism in India.

UNIT II MODERN URBANISM

Industrialisation and impact on urbanism. American grid iron planning. Theories, ideas and practice of good urban planning/cities/urbanism in early 20th century. Outline of modernist cities and urbanism across the world. Morphology of Indian modernist cities of Chandigarh, Bhuvaneshwar and Gandhi Nagar. Components of modern urbanism such as blocks, density, neighbourhood, streets etc., and their interdependencies. Evolution of urban design as a discipline, its scope and objectives.

UNIT III CITIES AND URBANISM THROUGH TEXTS AND THEORIES

Introduction to and discussion of key texts and theories of cities and urbanism - Imageability and Lynch, Townscape and Cullen, Genius Loci and Schulz, historic city and Rossi, social aspects of urbanism and the works of Jane Jacobs, William Whyte and Jan Gehl, Collage City and Colin Rowe, current theories and texts.

UNIT IV CONTEMPORARY URBANISM AND URBAN INTERVENTIONS

Understanding aspects, issues and solutions related to urbanism today through study of literature and best practices/case studies in urban design. Topics to include urban decay, change and renewal, place making, heritage, conservation, identity, suburban sprawl, gated communities, generic form, privatisation of public realm, role of real estate, transportation, zoning, globalisation, technology, digital age, sustainability, community participation, gender, class, power.

UNIT V URBAN STUDIES

Introduction to study and interpretation of cities (especially Indian) through understanding published studies / analysis. The focus will be on components/aspects as well as tools/ methods. Tools and methods to include different types of maps/mapping, drawings, sketches, photo documentations, Reading, data collection, analysis. Aspects to include topography, geology, hydrology, micro climate, vegetation, urban density, growth, city limits/boundaries, history, urban architecture, typologies, infrastructure, land parcels, public space, demographics, patterns of usage, land use.

TEXTBOOKS

1. A.E.J. Morris, 'History of Urban Form before the Industrial Revolution', Prentice Hall, 1996.
2. Edmund Bacon, 'Design of Cities', Penguin, 1976.
3. Gordon Cullen, 'The Concise Townscape', The Architectural Press, 1978.
4. Michelle Provoost et al., 'Dutchtown', NAI Publishers, Rotterdam, 1999.
5. 'Time Saver Standards for Urban Design', Donald Natson, McGraw Hill, 2003.
6. Kevin Lynch, 'The Image of the City' MIT Press, 1960.
7. Rithchie. A, 'Sustainable Urban Design: An Environmental Approach', Taylor & Francis, 2000.
8. Tridib Banerjee, Anastasia Loukaitou-Sideris, Editors, 'Companion to Urban Design', Routledge, 2014.

REFERENCES

1. Jonathan Barnett, 'An Introduction to Urban Design', Harper Row, 1982.
2. Lawrence Halprin, 'Cities', Reinhold Publishing Corporation, New York, 1964.
3. Gosling and Maitland, 'Concepts of Urban Design', St. Martin's Press, 1984.
4. Malcolm Moor, 'Urban Design Futures', Routledge, 2006.
5. Geoffrey Broadbent, 'Emerging Concepts in Urban Space Design', Taylor & Francis, 2003.
6. Anuradha Mathu, 'Deccan Traverses', Rupa, 2006.

Exercise 1

Identifying Spectacular Habitable spaces Around The World

LA PLATA

BRAZILIA

La palz,Bolivia

AMSTERDAM

BILBAO

Barcelona spain

Siene italy

Manhattan,

Exercise 1

Identifying Spectacular Habitable spaces Around The World

Yelanhanka, Bangalore

Poombarai, Tamilnadu

La palz,Bolivia

Ust kamo Russia

Chicago

Venice

MILAN, ITALY

PRAGUE

Any idea how these settlement formed ?

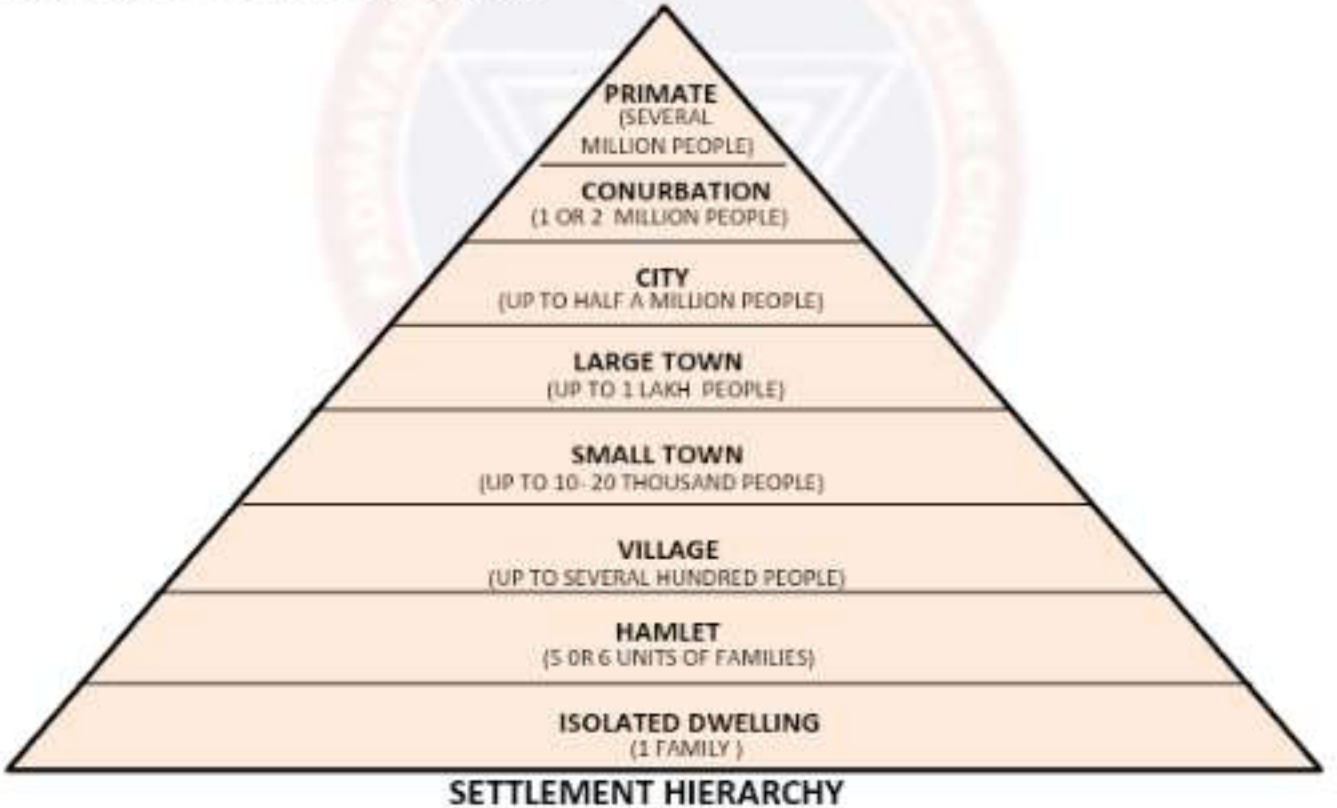
BRIEF INTRO ABOUT HUMAN SETTLEMENT

SETTLEMENT :

- Settlement is defined as a **process of grouping of people and acquiring of some territory** to build houses as well as for their economic support.
- It is defined as **any form of human habitation which ranges from a single dwelling to a large city.**
- **Its a process of opening up and settling of a previously uninhabited area by the people.**

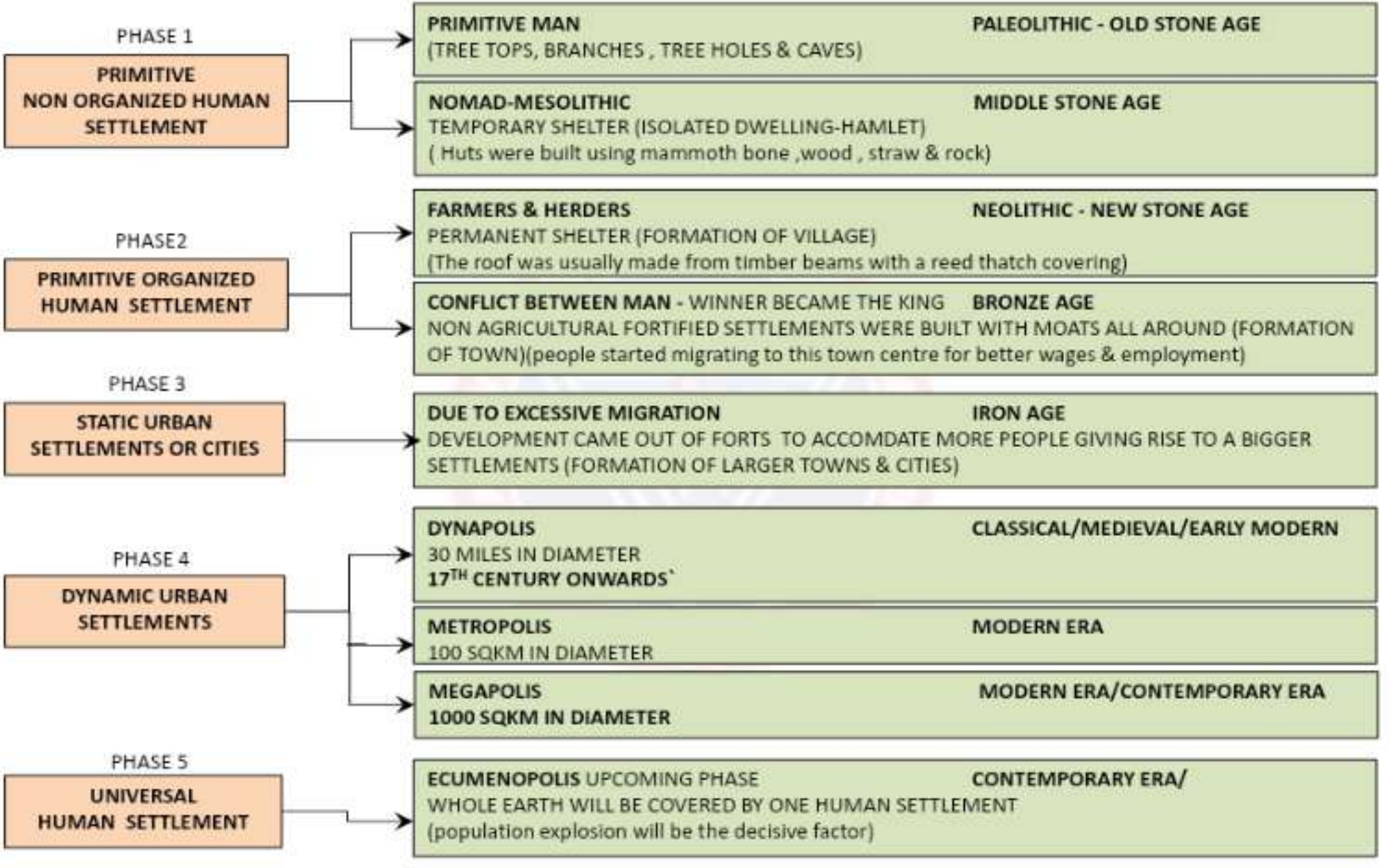
NEED FOR THE SETTLEMENT:

- To protect themselves from **predators & enemies**
- To protect themselves from **adverse weather conditions like extreme temperature ,stormy winds and rain**
- **To safeguard their food supplies & domestic animals**



SETTLEMENT HIERARCHY

DIFFERENT PHASES OF HUMAN SETTLEMENT



INTRODUCTION TO CITIES / URBAN

MEANING OF CITY

- **City** is **part of a human settlement with a large number of people live fairly close together.**
- Towns with **population of 1,00,000** and above are called cities.
- Cities generally have **extensive systems for housing , transportation, sanitation, utilities, services , production of goods and communication**.

URBAN AGGLOMERATION

An urban agglomeration (UA) is a **continuous urban spread** constituting a **town and its adjoining outgrowths** (OGs) which have come up near a statutory **town outside its statutory limits** but within the revenue limits of a village or villages contiguous to the town.

HIERARCHY OF HUMAN SETTLEMENT

The UAs/Towns /Cities are grouped into the following categories on the basis of their population in CENSUS:	
Class I UAs/Towns:	Population of at least **1,00,000 Lakh**
Million Plus UAs/Towns:	Population of **1 million (10 Lakh) or above**
Metro Cities:	Population of **4 million (40 Lakh) or above**
	(74th Constitutional Amendment Act, 1992 has inserted a definition of "**Metropolitan area**" as an area having a population of 10 Lakh or more, comprised in one or more districts and consisting of two or more Municipalities or Panchayats or other contiguous areas, specified by the Governor by public notification to be a Metropolitan area)
Mega Cities:	Population of **10 million (100 lakh) or above**
	Examples of mega cities: **Greater Mumbai UA (18.4 million)** Delhi UA (16.3 million) Kolkata UA (14.1million).

City	Approximate Population (Millions)
Delhi	33+
Mumbai	21+
Kolkata	15+
Bengaluru (Bangalore)	14+
Chennai	12+
Hyderabad	11+
Ahmedabad	8+
Surat	8+
Pune	7+

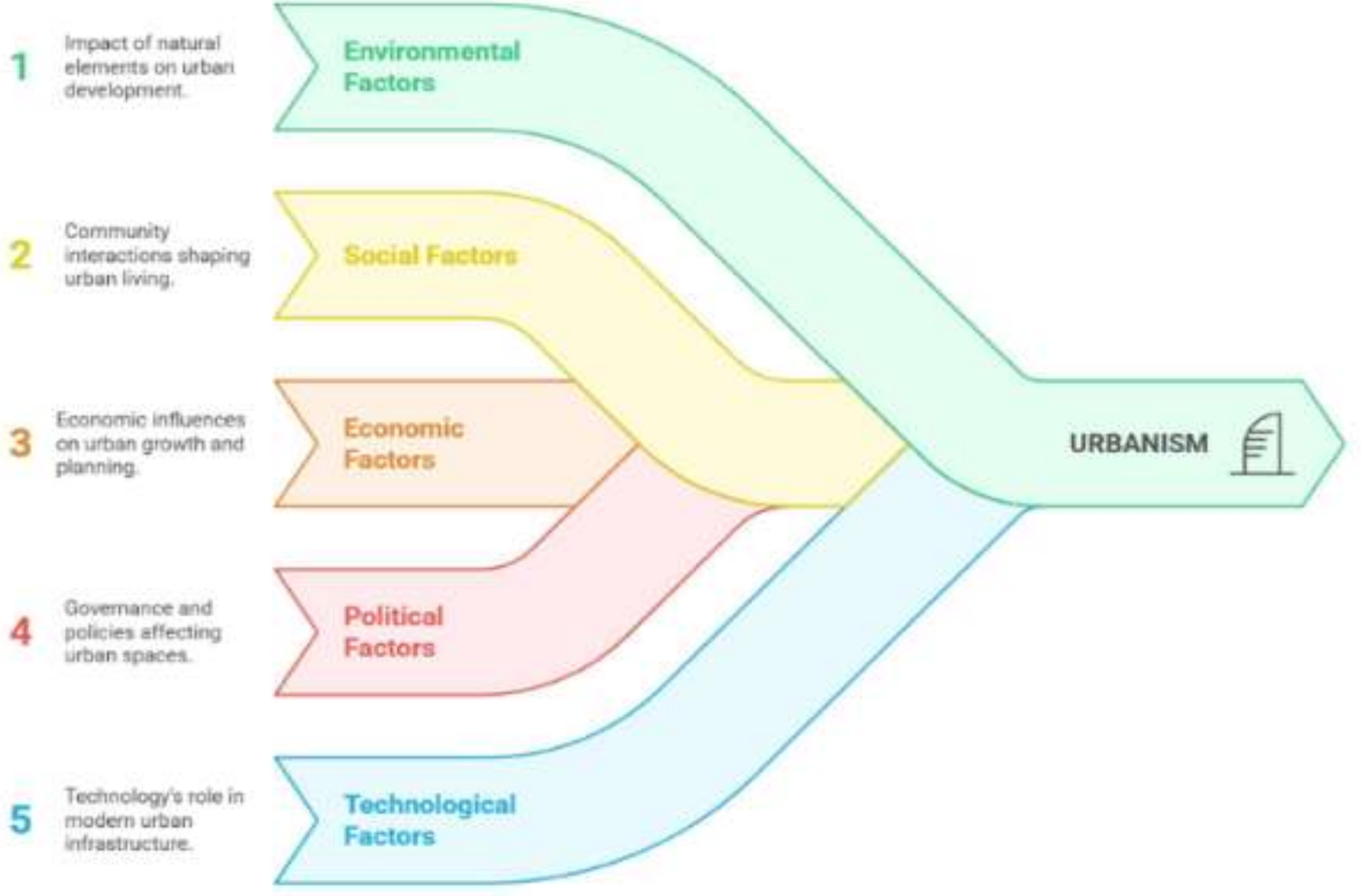
DEFINITION OF RURAL SETTLEMENT :

- According to the **Planning Commission of India (PCI)**, a town with a maximum population of 15,000 is considered rural in nature.
- The **National Sample Survey Organization (NSSO)** defines 'rural' as an area with a population density of up to 400 per square kilometer, Villages with clear surveyed boundaries but no municipal board and a minimum of 75% of male working population involved in agriculture and allied activities
- **RBI** defines rural areas as those areas with a population of less than 49,000 (tier -3 to tier-6 cities).
- As per the "**latest census** The "rural sector" means any place which a population of less than 5,000, Density of population less than 400 per sq km and More than "25 per cent of the male working population" is engaged in agricultural pursuits.

UNIT I
URBANISM IN HISTORY

URBANISM – The way of life in the city

1. It is the study of how inhabitants of urban areas, such as towns and cities, interact with the built environment.
2. It encompasses aspects of urban planning, sociology, architecture, and geography to understand and design urban spaces effectively.
3. Urbanism involves the creation of place identity and the organization of society within cities, reflecting a complex division of labor, high technology, mobility, and interdependence among residents.



OUTLINE OF FORCES SHAPING URBANISM

ECONOMICAL FACTOR

-Commercialization
-Availability of abundant goods and services

POLITICAL FACTOR

-Government Rules
-Regulations and Policies
-Principles

TECHNOLOGY FACTOR

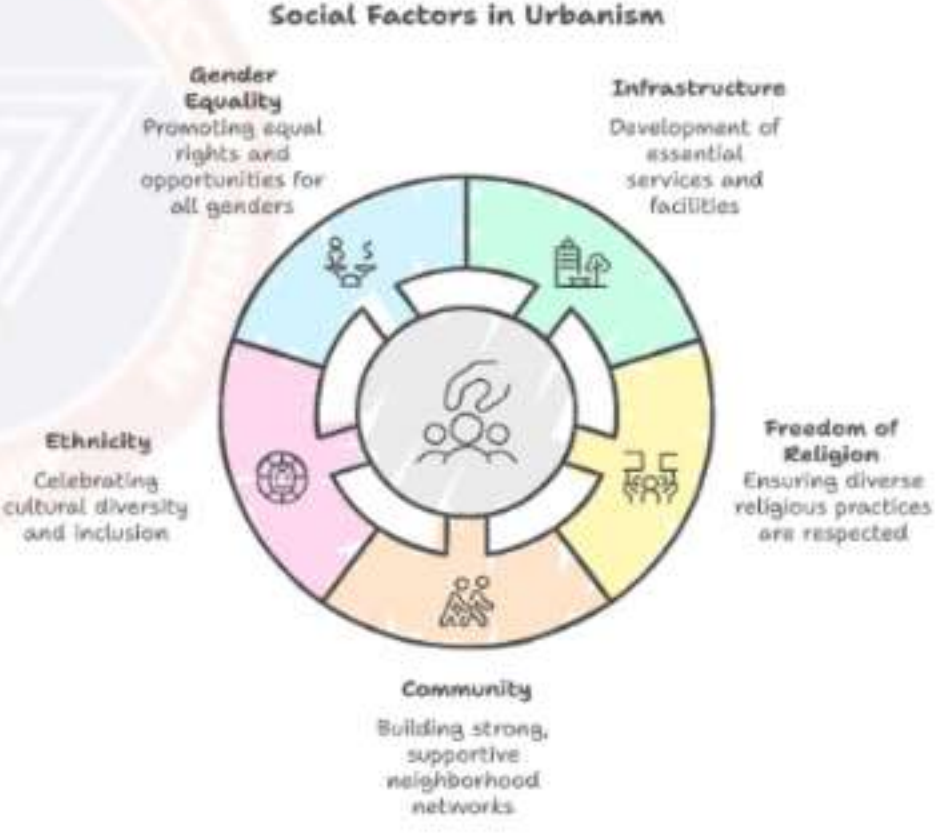
-Setting up of various industries/offices
-Proper transport facility(bus stations/railway stations)
-Highways/roads/street

ENVIRONMENTAL FACTOR:

-Topography(land forms like coastal region, river belt, desert, hilly terrain, forest region)
-Surplus resources
-Climate
-Land fertility
-Vegetation
-Water table level

SOCIAL FACTOR

-Infrastructure(educational institutions/health care/ recreation/housing facilities/services)
-Freedom of religion
-Community
-Ethnicity
-Gender equality



INTRODUCTION TO URBAN DESIGN

URBAN DESIGN

- It is **the art of creating and shaping cities and towns, streets and spaces**
- It is the **process of giving form, shape, and character** to groups of buildings, to whole neighborhoods, and the city.
- It is all about **making connections** between people and places, movement and urban form, nature and the built fabric.
- It draws together the many strands of **place-making, environmental stewardship, social equity and economic viability into the creation of places with distinct beauty and identity**.
- **It is the collaborative and multi-disciplinary process of shaping the physical setting for life**

ELEMENTS OF URBAN DESIGN

The goal of urban design is **to create functional, attractive, and sustainable urban environments.**

There are five essential elements of urban design that are crucial for creating successful urban spaces. These elements are:

1. **BUILDINGS**
2. **STREET/ROADS**
3. **LANDSCAPE**
4. **PUBLIC SPACE**
5. **TRANSPORT**

BUILDINGS

-Its are the **most pronounced elements** of urban design.

-They **shape and articulate space** by forming the **street walls of the city.**

-Well designed buildings and groups of buildings work together to **create a sense of place.**

STREET/ROADS

- They are **defined by their physical dimension** and character as well as the size, scale, and **character of the buildings that line them**. -
-They are **the connections between spaces and places**, as well as being spaces themselves.
- Streets **range from grand avenues to intimate pedestrian streets.**
- The **pattern of the street network** is part of what **defines a city** and what makes each city unique.

LANDSCAPE

-The landscape is the green part of the city that weaves throughout - in the form of **urban parks, street trees, plants, flowers, and water in many forms.**

-The landscape **helps define the character and beauty of a city** and creates soft, contrasting spaces and elements.

-Green spaces in cities range from **grand parks such as Central Park in New York City and the Washington DC Mall, to small intimate pocket parks**

PUBLIC SPACE

-Great public spaces are the **living room of the city** where people come together to enjoy the city and each other.

-Public spaces make **high quality life** in the city possible

-They **form the stage and backdrop to the drama of life.**

-Public spaces range from **grand central plazas and squares, to small, local neighborhood parks.**



TRANSPORT

-Transport systems **connect the parts of cities and help shape them, and enable movement throughout the city.**

-The balance of these various transport systems is what **helps define the quality and character of cities, and makes them either friendly or hostile to pedestrians.**

-The **best cities are the ones that elevate the experience of the pedestrian** while minimizing the dominance of the private automobile.



Exercise 2

Mapping the five elements of urban design for the below selected cities

LA PLATA

BRAZILIA

COPENHAGEN

AMSTERDAM

BILBAO

WASHINGTON

TOKYO

NEWYORK

CHRONOLOGY OF WORLD CIVILIZATION

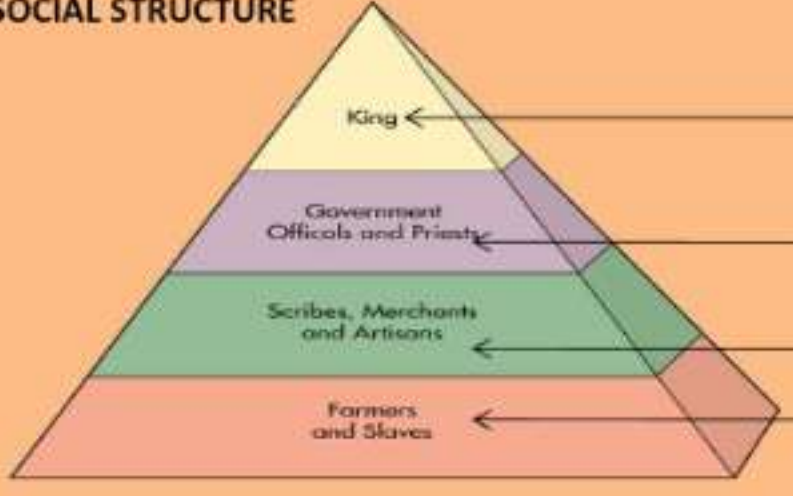
PRE HISTORIC ERA:	(2.5 Million years-600BCE)	
Stone age		2.5 million years to 3000 BCE
	Mesopotamian civilization	
	Egyptian civilization	
Bronze age		3000-1300 BCE
	Indus valley civilization	
	Chinese civilization	
Iron age		1300-600 BCE
	Chinese civilization	
CLASSICAL ERA:	(600BCE-476CE)	
	Ancient Greece	600BCE-600CE
	Ancient Rome	753BCE-476CE
	Persian Empire	550-330 BCE
	Byzantine Empire	285-1453 CE
MEDIEVAL ERA:	(476CE- 1450CE)	
RENAISSANCE:	(1450-1750CE)	
MODERN ERA:	(1750-1945CE)	
CONTEMPORARY ERA: (1945- to present)		

ANCIENT MESOPOTAMIAN CIVILIZATION

- its **one of the oldest settlement** of the world and famous for ziggurat
- Its **the land between the twin rivers Tigris & Euphrates**, situated on the foothills of ZAGROS was about 150 miles wide and 600 miles long and extended from the foothills of north western Iraq & Persian Gulf. Often known as **the cradle of civilization**.
- it was a **fertile land rich, alluvial soil** laid down by the twin rivers and was enormously productive the **river changed its course, settlement came to an end**
- Frequent flood leads to an elaborate system of canals, dams and flood gates was developed.
- **Ur** was an important **Sumerian city-state in ancient Mesopotamia-iraq.**
- **Sumerians** place their important temples on platforms or, in the case of ziggurats, on a stepped series of platforms.
- they are built out of a **core of mud-brick with an outer skin of fired bricks, set in bitumen mortar, to protect it against flood damage.**
- **good irrigation system gave abundant crops**, not everybody needed to work on farms.
- the chisel workers made sculptures, the gem cutters made gems, and the fuller stomped on woven wools to make them soft. the metal workers made weapons.

GREAT ZIGGURAT UR CITY ,IRAQ

SOCIAL STRUCTURE



SUPREME POWER

TOP LEVEL PEOPLE

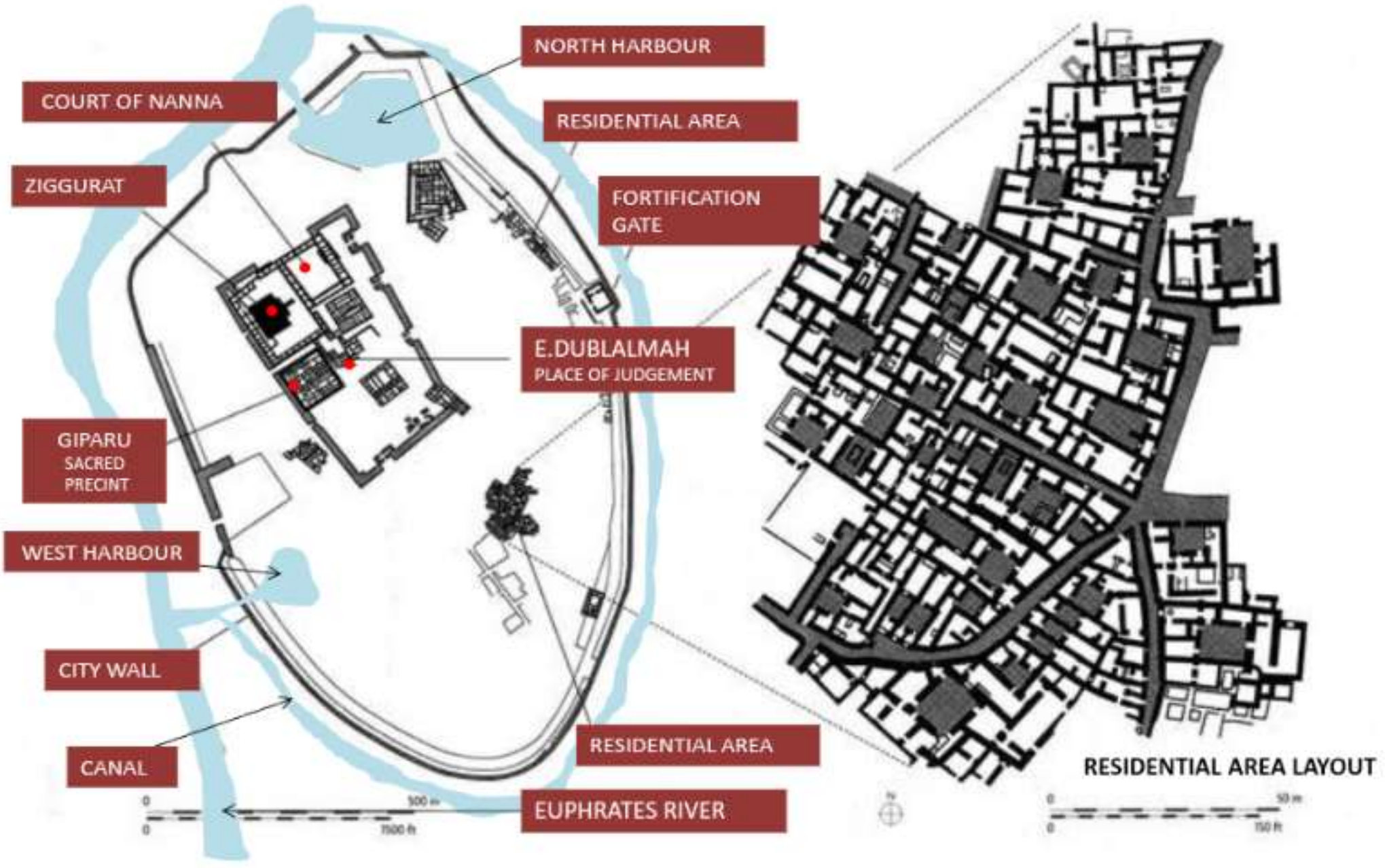
MIDDLE LEVEL PEOPLE

BOTTOM LEVEL PEOPLE

INVENTION:
The potters wheel, Sail boat, Maps, Chariot, Plough, Astronomy & Astrology, Mathematics , Time, Urban Civilization, First form of writing (Cunieform), Agriculture & Irrigation

CHARACTERISTIC FEATURES OF THE CITY:
CITADEL - Central precinct in the centre of the city dedicated to religious and political activities.
CITY WALL - Place for defense activities, built around the citadel complex

UR CITY LAYOUT



ANCIENT EGYPTIAN CIVILIZATION

- **Nile valley** was available for **agriculture throughout its length with no need for competition for water.**
- **Political stability removed the need for populations to cluster together in fortified cities.**
- Small provincial administrative towns existed and later political events stimulated the rise of additional capital.
- **Thebes, Tel el –Amarna, Alexandria** these were always **exceptions in the overall settlement pattern in terms of size and function.**
- Most Egyptians lived in **relatively small settlements.**

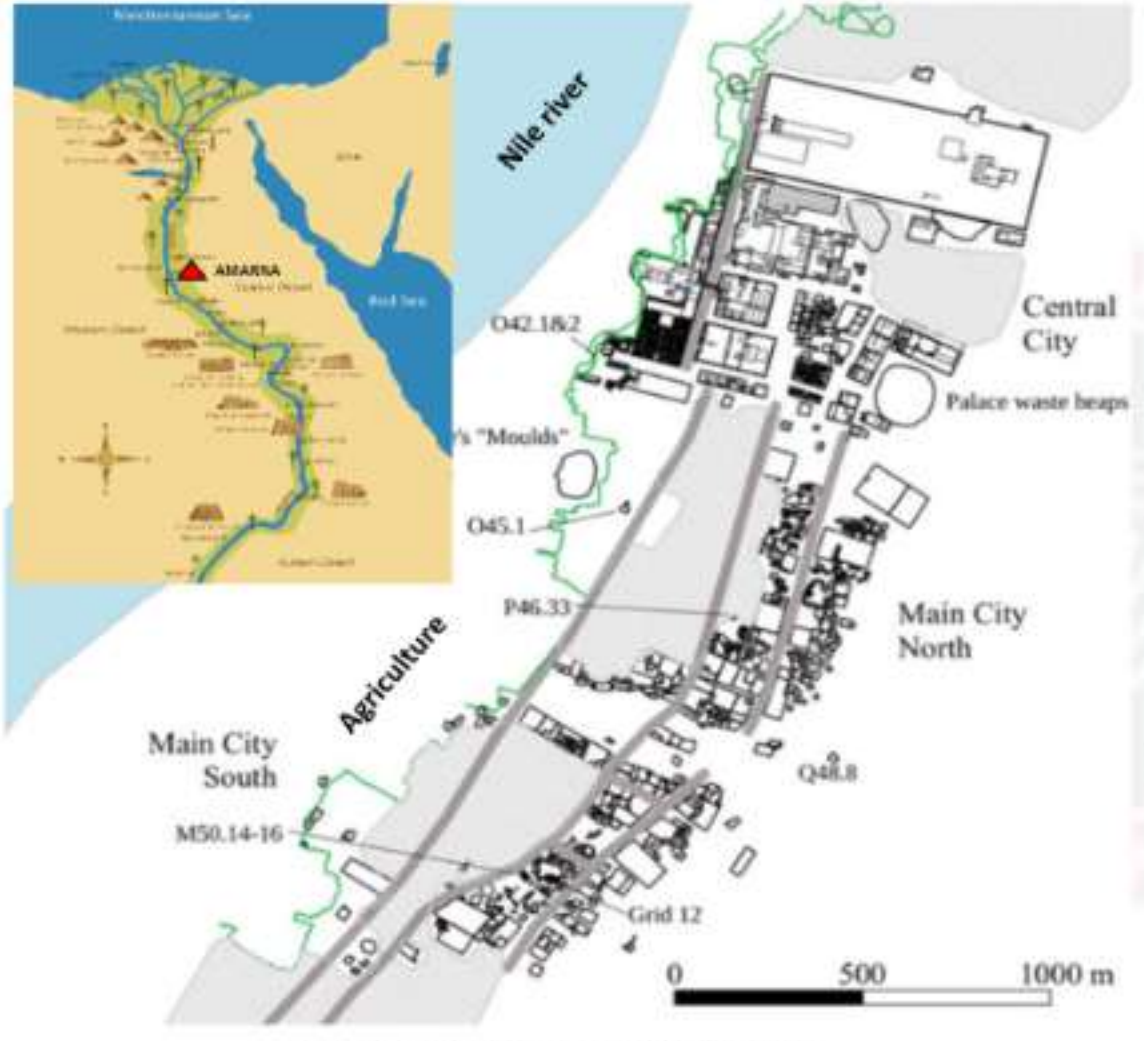
DESIGN CONSIDERATION:

The settlement of a town had to take two main considerations into mind

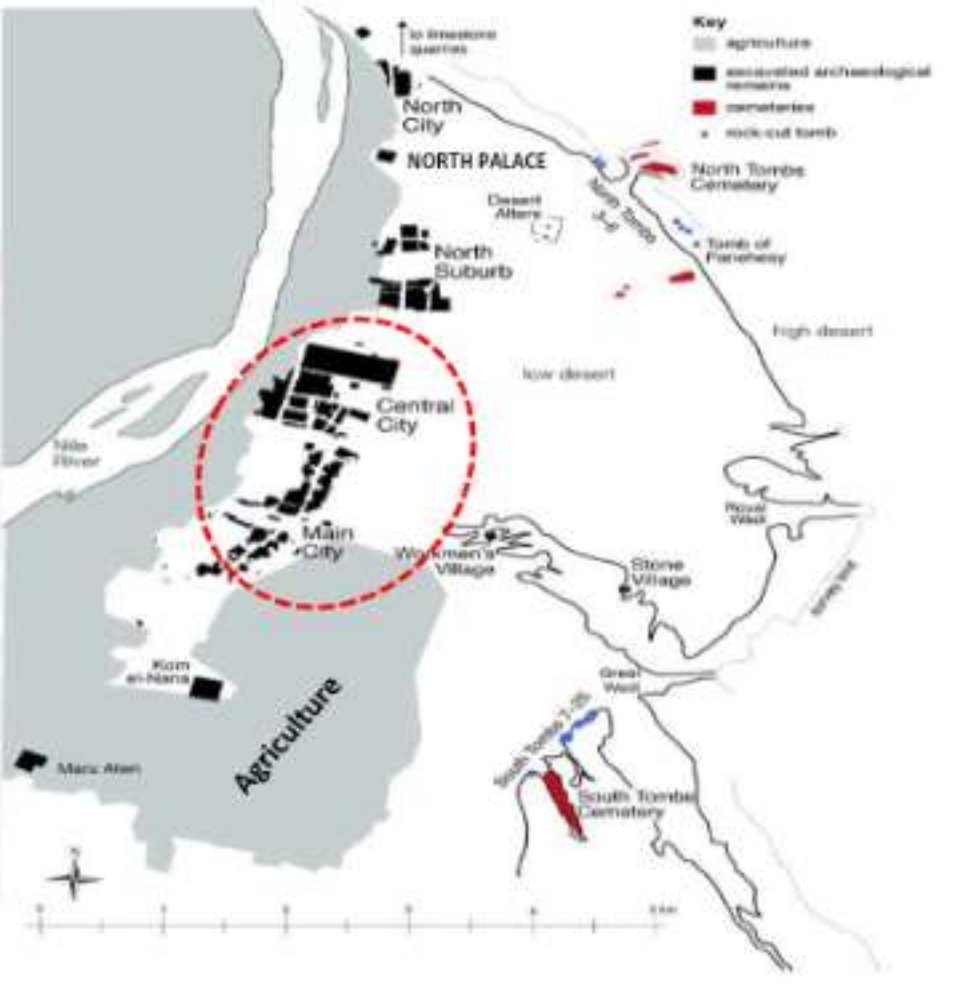
1. The proximity to a water source River Nile
2. Height it was built above the flooding of the Nile

TOWN PLANNING PRINCIPLES OF AKHETATEN (modern name is AMARNA)

- Urban area was a **Linear development Spread along the Nile river bank was the core city**.
- The Central City houses a **cluster of temples, palaces and civic buildings**.
- **Residential** areas extended to the **south and north**: Main City, North Suburb and North City.
- Akhetaten was hastily constructed and covered an area of **approximately 8miles** (13km) of territory on the east bank of the Nile River.
- The large exposures of **mud-brick houses** were seen
- when old houses crumbled, new ones were built on top of the debris
- **population** that was relatively **evenly graded in socio-economic status and** Residences of officials and administrators from those of workers and craftsmen has been segregated.
- **Smaller houses in turn, tend to cluster around larger estates** in a manner that suggests a **patron-provider model**, officials and artisans living in the latter acquiring goods and services from occupants of smaller houses.
- **Unfortified city, just symbolic walls enclosing the central temple and palace**
- Buildings were largely rectangular, there was **regularity in overall layout without planning**
- Residences of all types found in one quarter: **Wealthiest people selected own house sites along main streets**, less wealthier ones took plots behind these, poor ones squeezed in.



MAIN CITY AND CENTRAL CITY LAYOUT



AMARNA - CITY LAYOUT

NORTH CITY

- Located within the North City area is the Northern Palace, the main residence of the Royal Family.
- Northern Suburb was initially a prosperous area with large houses, but the house size decreased and became poorer as they move further from the road.

CENTRAL CITY

- Important ceremonial and administrative buildings were located in the central city (Great Temple of the Aten, Small Aten Temple, Great Royal Palace and Royal Residence.
- Located behind the Royal Residence was the Bureau of Correspondence of Pharaoh, where the Amarna Letters were found.
- This area was probably the first area to be completed, and had atleast two phases of construction.

WORKERS VILLAGE

- Workers' settlement was walled in and Whole space inside the walls was occupied by houses.
- The parallel streets were about two metres wide.
- Whole space inside the walls was occupied by houses.
- The temples, the palace and the royal residences, the barracks, the offices of the administration etc were not surrounded by any wall

SOUTHERN SUBURBS

- The **Southern Suburbs** contained the estates of many of the city's powerful nobles.
- On the southern side of the city it houses two temple Komel-Nana and Maru-Aten.
- In the cliffs to the north and south of the Royal Wadi, the nobles of the city constructed their Tombs.

WOKERS SETTLEMENT

URBAN PLANNING OF AMARNA CITY

INDUS VALLEY CIVILIZATION(3300-1300BC)

- Indus valley civilization or Harappan civilization, the **earliest known urban culture of the Indian subcontinent** and its the **largest among its contemporaries** (Mesopotamian, Egyptian and Chinese civilizations) and covered **1,260,000 sq km area (around 486,488.7 sq miles) and houses around 5 million people.**
- It includes **famous settlements like Mohenjadaro, Harappa, Kalibhangan, Lothal, Dholavira, Rupar, Surkotada etc.**
- Mohenjo-Daro and Harappa were **important trade centres** of Indus valley civilization.
- It has earliest **sanitation system** and the system was **very advanced compared to civilizations** of that time. **Every house had its own toilet.**
- **A planned city** based on a **street grid of rectilinear buildings, Spread around 300 hectare**
- essential structures of the town are the streets, **closed drainage system, the great bath, granaries and buildings.**
- City divided into **citadel and lower city**
- Citadel – mound of mud bricks of 12m height encloses great bath, granary residential area for 5000 citizens and two large assembly halls
- City has central market place and a public well
- **Large granary building of size is 150'x75'x15' in massive wooden super structure with air ducts to dry the grain and it indicates the high level of agricultural civilization**

RELIGIOUS BELIEFS

They had **religious beliefs** and an **appreciation for astronomy, which is reflected in the orientation of the city and the streets along the cardinal directions – east to west, north to south relating to the rising and setting of the sun.**

INVENTIONS

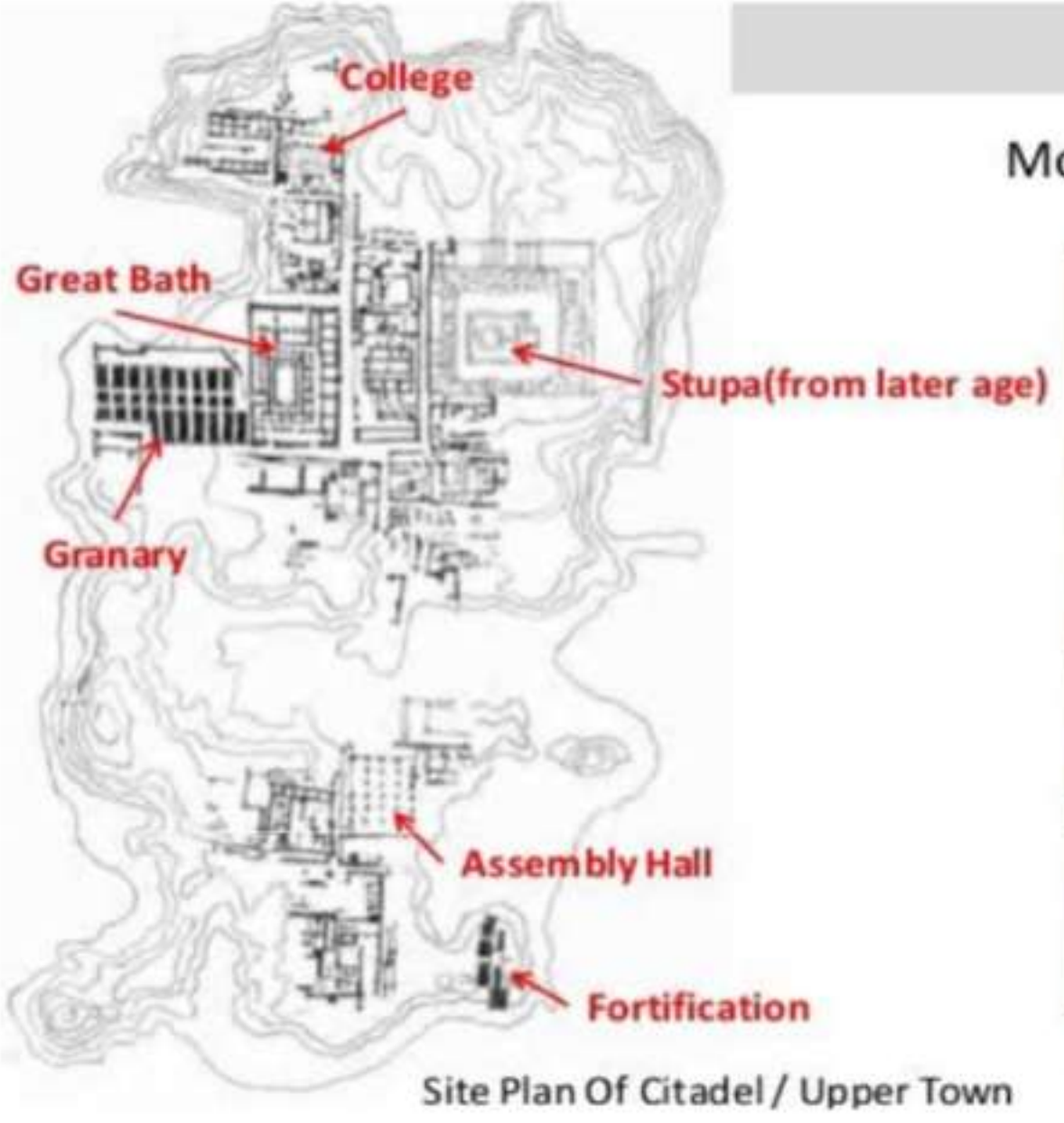
Bronze and terracotta Utensils, Stone tools, Plough, Metals and Metallurgy, Pottery, copper artefacts, rulers, terracotta figurines, wooden lattices, carvings & agricultural implements

STREET PATTERN

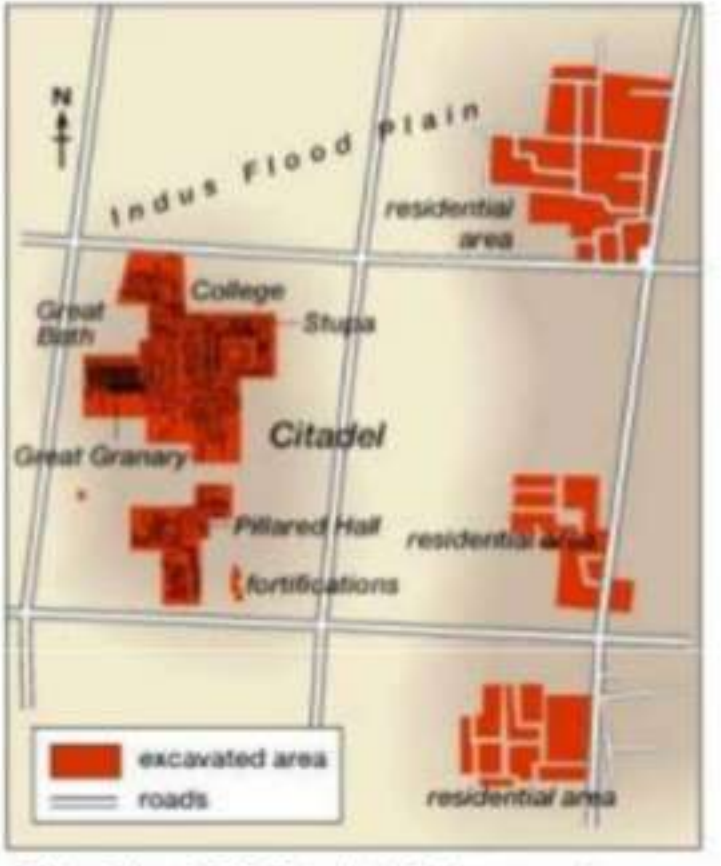
- The streets were **straight and 13 to 34 feet wide, were well lined** and cut each other at right angles.
- The roads were made to **divide the city into rectangular blocks and were made using burnt brick**.
- **Lamp posts** have been found at regular intervals that **the street lights** existed at that time.
- **Dustbins were found on the streets**, which meant an excellent municipal administration was also present

Indus Valley Civilization

Mohenjo-Daro Town Planning



Site Plan Of Citadel / Upper Town



Site Plan Of Citadel & Lower town

DRAINAGE SYSTEM

- Unique feature of this civilization was the **closed drainage system** and It has **both vertical and horizontal drains.**
- **kitchen and the toilet drains** were **connected to the gutters of the streets and** it was **connected to the underground drains on the road.**
- **Stone slabs were used to cover these drains** and **The wastewater travelling from flushing toilets went into one of several sewage pipes that carried out this water into the river or sea.**
- Most houses in **Kalibangan had wells**.

HOUSES

- The arrangement of the houses was in **grids with streets that cut across each other at right angles.**
- Every **house was home to a courtyard, a bathroom wells, and drains.**
- There was **minimal ventilation** in ordinary houses because the **doors and windows were hardly ever fixed on the outer walls.**
- The **rich lived in big houses with multiple rooms, while poor people had smaller homes.**
- **big houses and the public buildings were located on the streets.**
- The tiny houses had two rooms, while the significant dwellings had multiple rooms.
- **The priests and higher class used to live in citadels.**

BUILDING MATERIALS

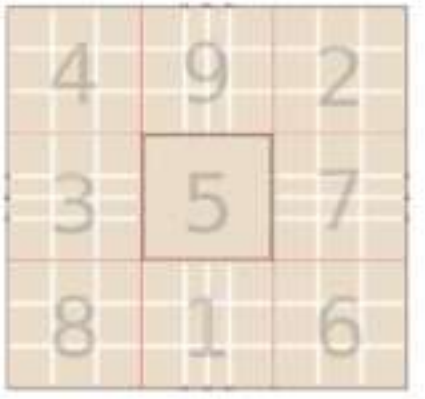
- The houses of the Indus Valley civilization were built **using burnt brick instead of stones and sunburned bricks were also used.**
- The **burnt bricks were used in the part of buildings where contamination because of water was a possibility. mud mortars and gypsum cement used.**
- The frames for the doors and windows were made of wood.

GREAT BATH

- The excavation indicates that the **great bath of size 12x7x2.4m was a large rectangular tank inside the city.**
- it was used for **special rituals and ceremonial baths**
- **Burnt bricks were used to make the floor of the great bath.**
- It was **coated with gypsum to prevent water leakage from the tank**.
- flight of steps seen on both sides of the tank. There was a considerable **drainage system to drain water from the bath.**
- There were rooms near the great bath that were used as **changing rooms**

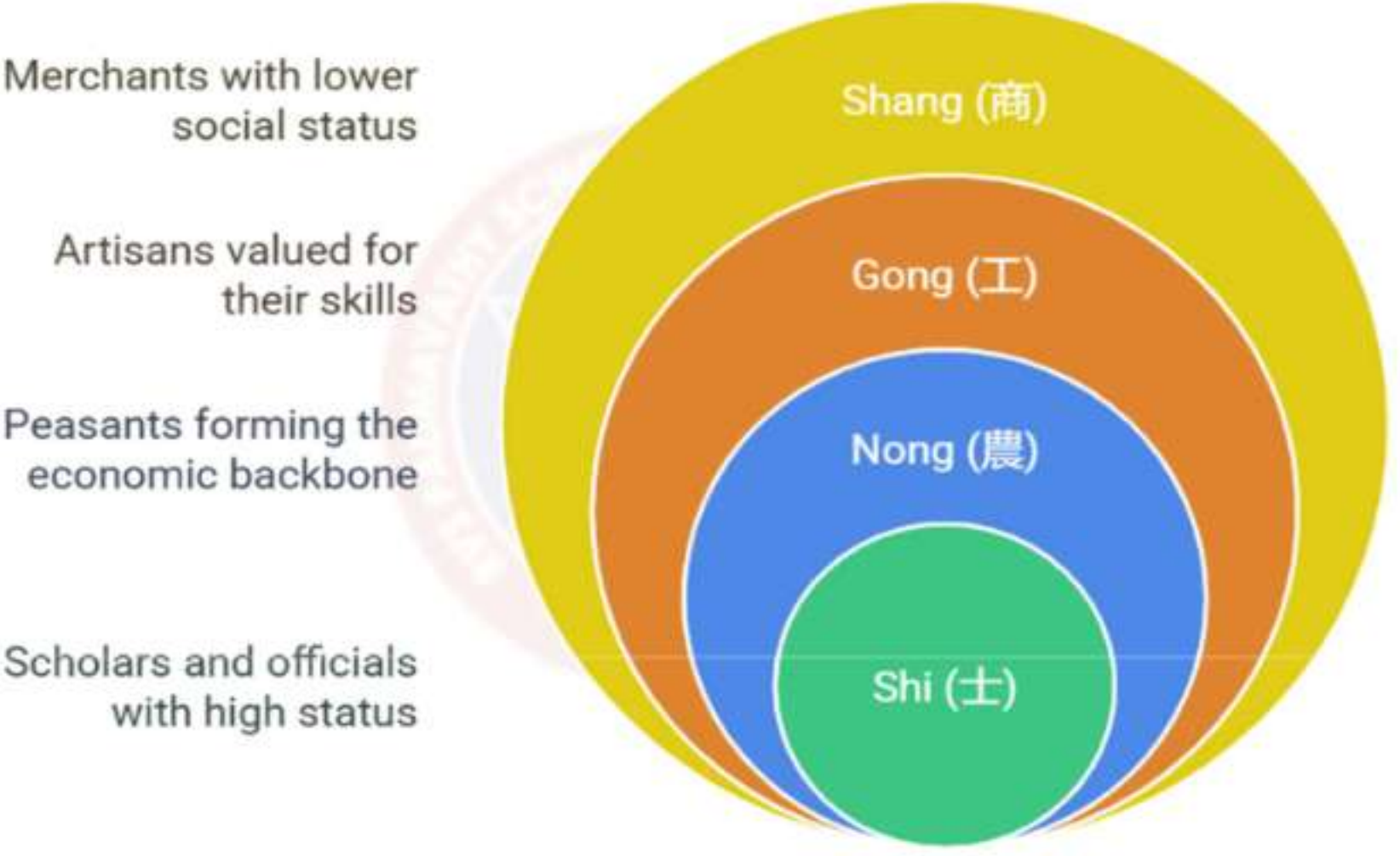
ANCIENT CHINESE CIVILIZATION 2100 BC – 221 BC

- **City planning in ancient china began** with the **urbanization of Huang he valley.**
- Ancient **china follows strict traditional rules of layout and** design based on specific religious and scientific ideas and principle's. **(Feng shui, Shang shui)**
- Aim was to **create favorable and auspicious conditions** that would bring **balance and harmony between man, government, heaven and earth.**
- **City of Changzhou** built during the rule of the Zhou dynasty represents an **ideal city layout**
- City was laid out in the **form of square, further subdivided into nine squares.**
- **Broad parallel roads, running north to south were intercepted at right angles by roads**
- **Square running east to west dividing the city into wards**
- Palaces, houses, temples, markets etc were built within these blocks each reserved for a specific group of buildings.
- **inner city with the central palace and government buildings was built in the center, outer city was built around it**
- In large cities **rectangular defensive walls with gates were built around the inner city as well as the outer city**, and some of the larger cities were surrounded by moats
- **Square 5 – central palace and government buildings**
- **Square 1– Audience hall**
- **Square 3 & 7 – temples**
- **Square 9 – market buildings**
- In ancient China, building a **Shan-Shui city was based on the Feng-Shui method.**
- Its an **ancient Chinese environment planning strategy** involving **careful analysis of local geography, water system, climate, soil condition, and transportation,** among many other considerations.

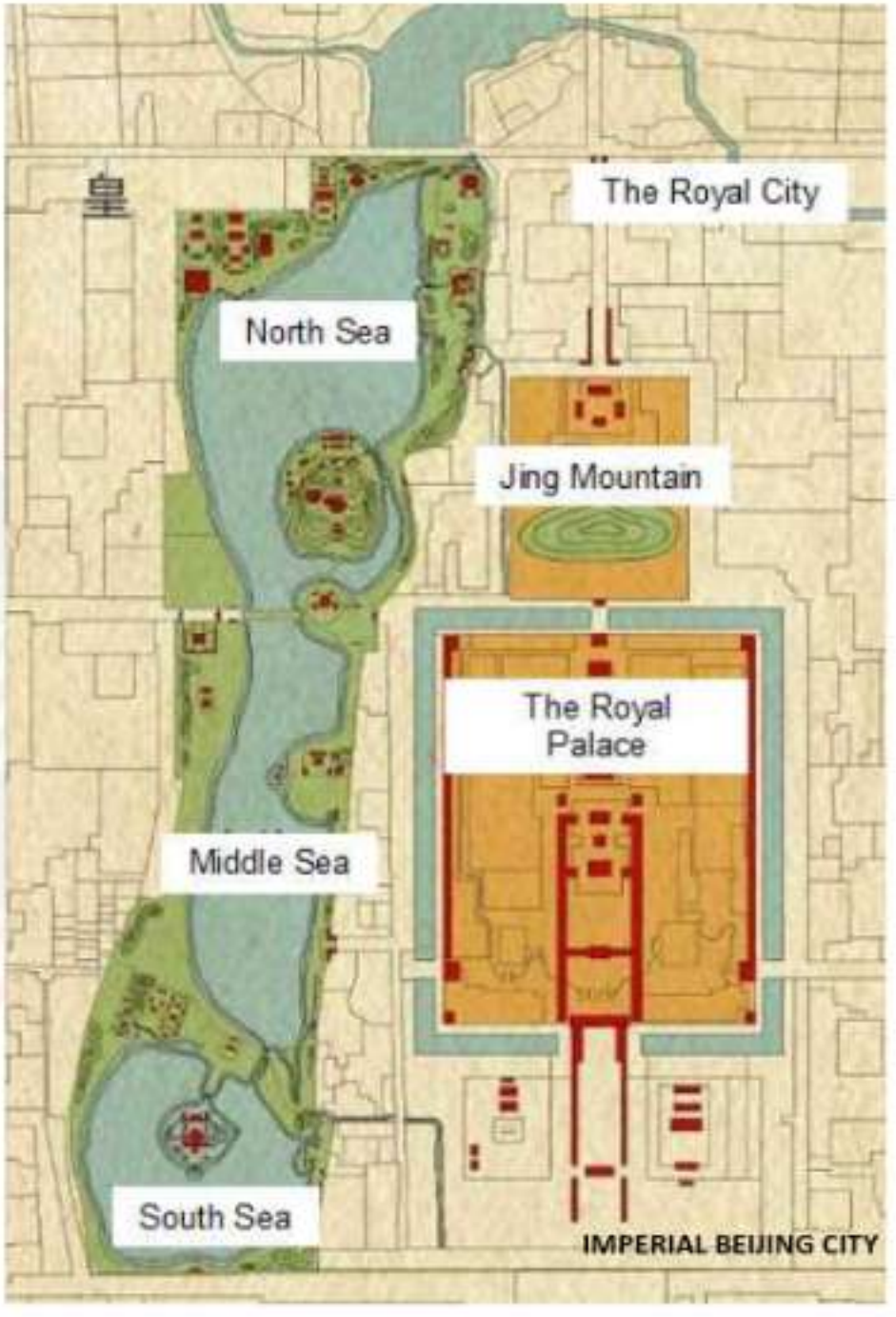


SHAN SHUI CONCEPT

Traditional Chinese Social Hierarchy



- Location choice or **siting of a city** followed a method that **prescribed locating a south-facing city (settlement)** on a site where **a river runs to the south of the city,** a **tall mountain located to the north**, and **lower lying hills on the east and west.**
- spatial relationships among the **mountain, water, and city** was **extremely important for people to maintain and nourish "Qi",** an **auspicious force crucial for a place's peace and prosperity**
- Siting a city in this way also minimizes human's impacts on the nature as it was believed that **working against the "Qi" is disobeying the "natural law"**. The result is a human settlement integrated, not isolated from nature nor dominating nature.
- **Good examples of classic Shan-Shui cities include the Imperial Beijing City and Hangzhou City.**
- These Shan-Shui cities were consciously built to conform to the mountain-water-city spatial structure.
- Hangzhou is a well-known Shan-Shui city where the city itself has an almost perfect spatial relationship with mountain and water.
- **Imperial Beijing City was originally located on a flat site where no obvious mountain or water existed.** Emperors from the three dynasties of Yuan, Ming and Qing **continuously built lakes and mountains to create Shan-Shui imagery**

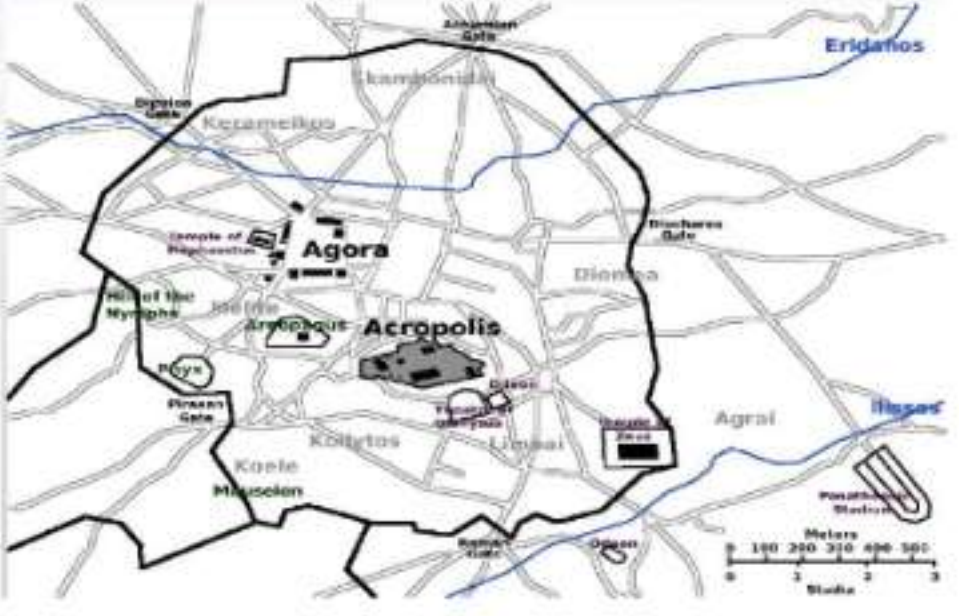


ANCIENT GREEEK CIVILIZATION 600BCE-600CE

- Located in southern Europe, **Greece is made up of the mainland and hundreds of small islands** spread throughout the **Ionian, Aegean, and Mediterranean Seas.**
- As **a peninsula**, the people of **Greece took advantage of living by the sea. They were fishermen, traders and sailors.**
- **mountains in Greece did not have fertile soil** good for growing crops, like in Mesopotamia, but the mild climate allowed for some farming and They **grew barley, wheat, olives, and grapes, they reared sheep's.**

PLANNING CONCEPTS OF GREEK TOWNS

- Old cities such reflecting their gradual organic development as Athens had irregular street plans and New cities, especially colonial cities established **during the Hellenistic period, had a grid-iron street plan.**
- common features among cities – cities divided into 3 parts - **acropolis, agora and the town, The fortification etc.**
- Towns had fixed boundaries protected by fortifications and devoted to public use.
- Site planning and design was centered on the appreciation of buildings from the outside. Location of buildings command a good view to it. They made use of the topography of the land to avail scenic views.
- In the **upper part of the city**, the **acropolis was located**, in the center of the city stood the temple of the local god, and at the **foot of the acropolis** citizens gathered to carry out **public affairs—the agora.**
- In the **lower section of the city there were houses and other buildings**.



ACROPOLIS:

- A **fortified city at the top of a hilly rocky outcrop**.
- Religious precinct offered **to glorify gods.**
- Acropolis combined **Doric orders and ionic orders** in perfect composition in four buildings; **the Propylea, the Parthenon, the Erechtheumn & the temple of Nike.**

AGORA:

- Public open space used for **assemblies and markets.**
- **Centre of athenian life** and Laid in NW of Acropolis.
- Square in shape lined with **public buildings which served commerce and politics.**

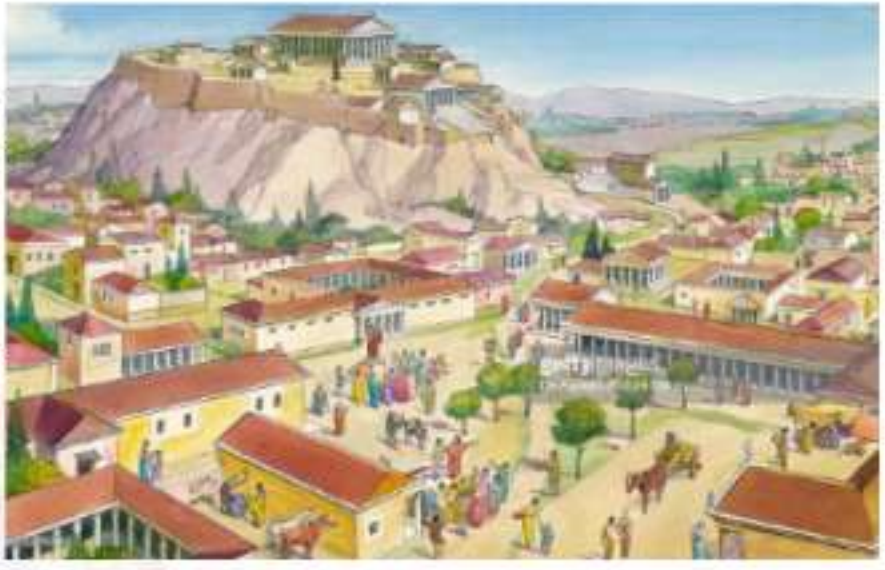
TOWN: Where the citizens had their living.. **Had only residences.**

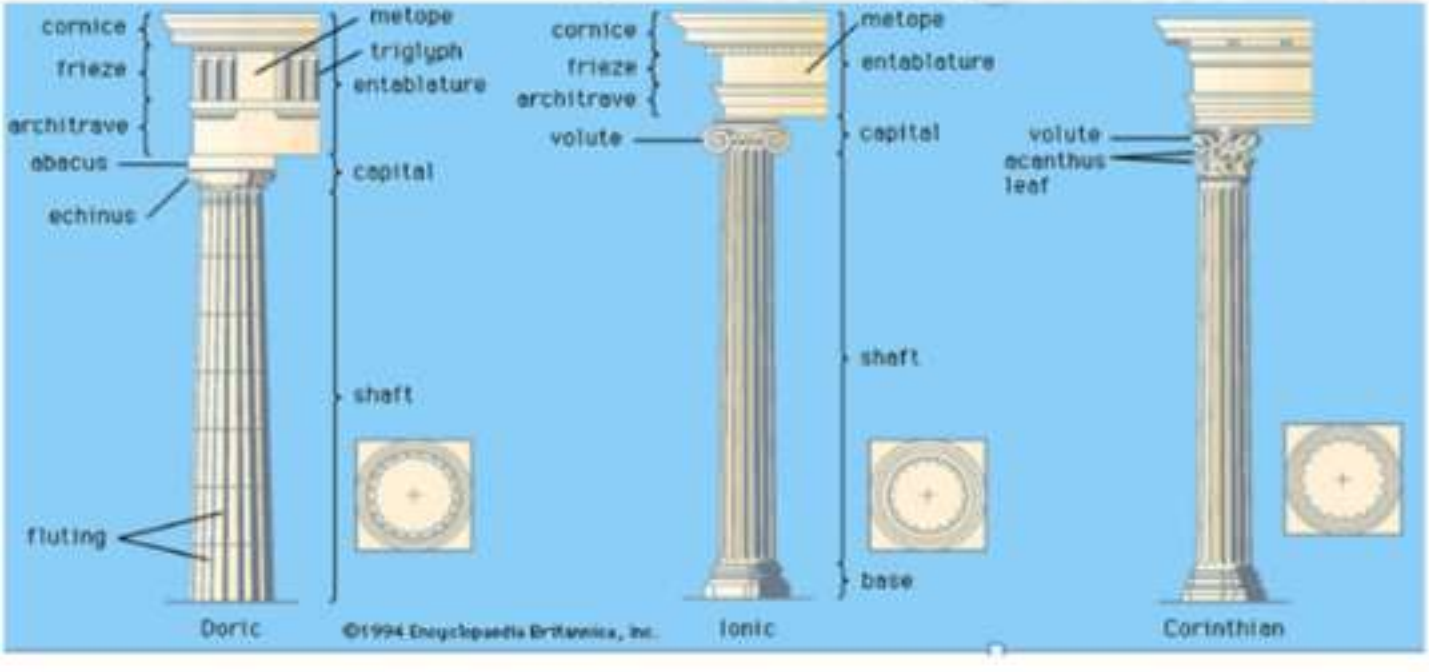
PROPYLEA: Main entrance gate of Athens

STREETS: Narrow, tortuous, unpaved, unlit, full of chaos of mud and sewage.

THEATRES: **Built on slope to provide a natural seating.**

STOAS: Lot like temples but with elongated facade, 2-3 storeys





GREEK ARCHITECTURE

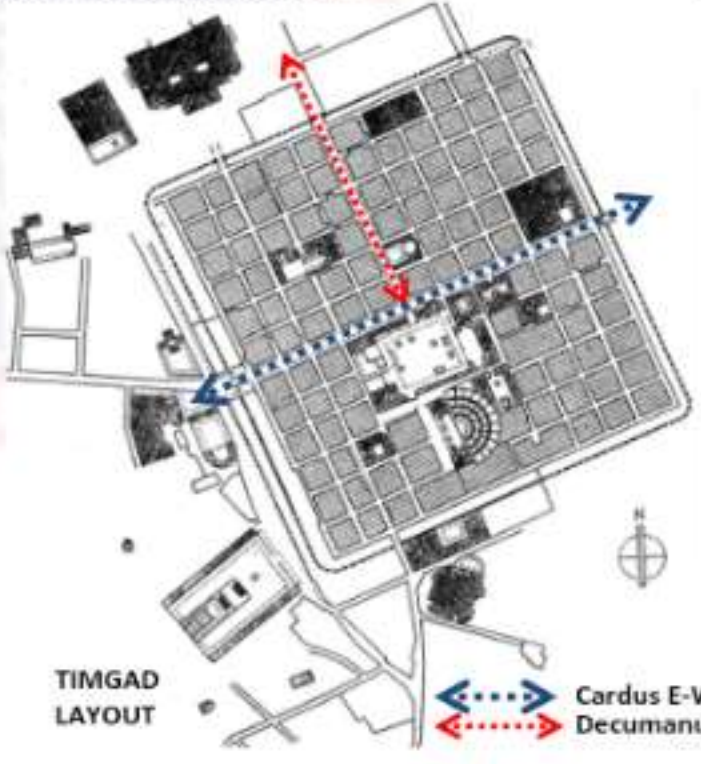
- Greeks invented the **classical orders of architecture.**
- The orders **embody a system of proportion** that determines how whole building looks.
- An order consist of a **column shaft with its base & capital, and an entablature**. All its dimensions were derived from the diameter of the column.
- **The entablature is further divided into architrave, frieze and cornice.**
- Three common materials of construction – **Stone, timber &clay**

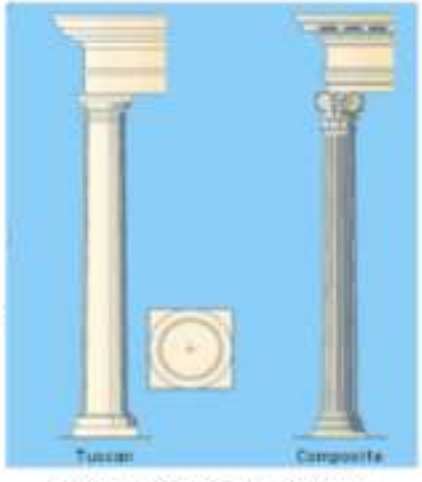
ANCIENT ROME CIVILIZATION 753BCE-476CE

- **Ancient capital Rome founded near river Tiber was protected by seven surrounding hills.**
- they did not depend on mere colonization but they conquered first by war and then ruled by law.
- Romans **adopted the technology and planning skills of the Greeks.** They were **more advanced than the Greeks** in terms of technological skills which they **used to develop better infrastructural facilities and construction techniques.**

TOWN PLANNING PRINCIPLES:

- They **employed regular orthogonal structures inspired by Greek and Hellenic examples**
- **the basic plan consisted of a central forum with city services, surrounded by a compact, rectilinear grid of streets.**
- **a river sometimes flowed near or through the city, providing water, transport, and sewage disposal.**
- they would lay out the **streets at right angles, in the form of a square grid** all roads were equal in width and length, except for two, which were **slightly wider than the others Cardus E-W, Decumanus N-S . Where the two converged was the forum**
- **Centred Forum comprises political, economic, administrative, social and religious activity.**
- **each square marked by four roads** was called an **insula** the roman equivalent of a modern city block, each insula was about **80 yards (73 m) square.**
- **the streets which divided these blocks were 15 to 16 ft. wide**
- the **two main streets, connect the principal gates**, all the streets had **well-built sewers beneath them**
- all **roads** were made of carefully **fitted flag stones and filled in with smaller, hard-packed rocks and pebbles.**



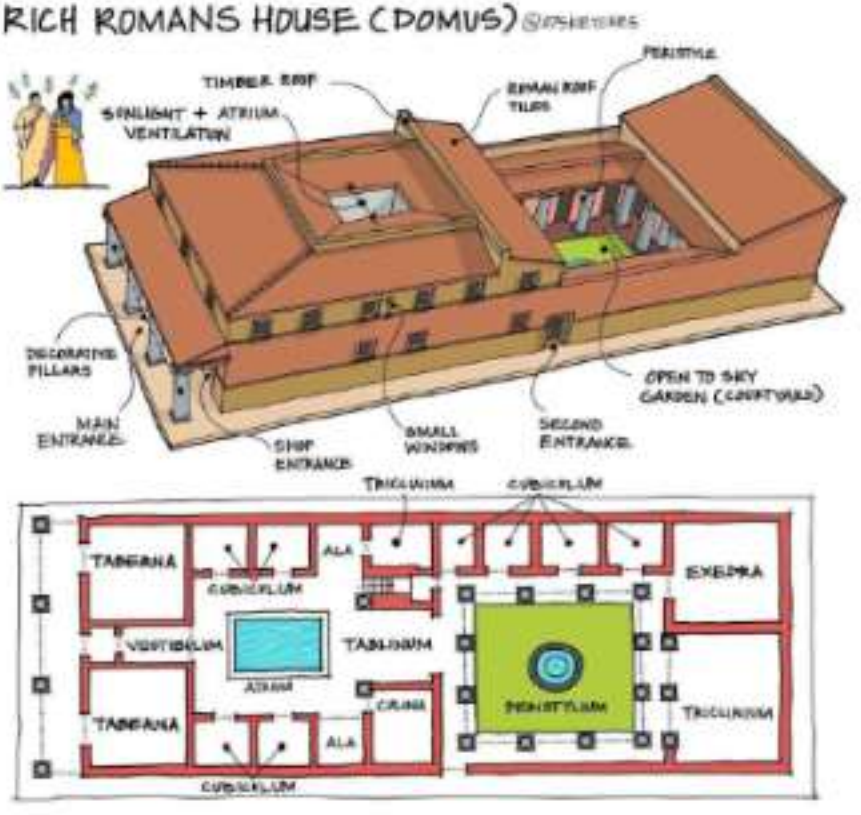


ROME CLASSICAL ORDER

- **bridges were constructed** where needed and areas **outside city limits were left open as farmland.**
- **Lime concrete was invented** and **Applied mechanics for moving heavy masses developed.**
- Advanced system of **water supply (Aqueducts &water reservoirs), sewage system and drainage system through ducts** and **underground sewers in semi-circular vaulted form were used.**
- All public **latrines were connected to underground sewerage system. People normally used the public latrines.**

CITY PLANNING INCLUDED THE FOLLOWING

- **Forum:** Centre of the city. Had the power and control. Political, administrative and religious centre.
- **Bascilicas:** Civic Buildings , To do businesses Temples /
- **Cella:** To honour the gods,
- **PANTHEON Aqueducts**: To provide water to the city's Cistern
- **Theatres:** To watch plays & dramas
- **Amphitheatres:** For sports and chariot races
- **Great Bath:** For entertainment, Place to exercise. People often meet friends and is a place of social gathering
- **Market place:** To buy things for livelyhood, an urban square.
- **City walls:** Fortified with bastions for self defence and protection
- **Spectacles:** Circus buildings. Where horse races are held.
- **HOUSES Insulae**: **urban houses, buildings with upto four floors were built near city centre**. The **ground floor was for shops -tabernae- and the others for apartments of different sizes.**
- **Domus: houses for important people** in the city. **Structure distributed through porticated patios. Had spaces for banquets and social meetings**
- Villa: **Houses far from city. Villa urbana – agricultural farm house. Villa Rustica – urban retreat house.**
- **Palaces:** There were the **residence of the emperor** They consisted of a **numerous series of rooms Their plan tended to be regular**



MEDIEVAL EUROPEAN TOWNS 476CE- 1450CE

- **Roman cities collapsed due to gradual disintegration and invasions. The medieval towns occupied, to some extent, the sites of previous Roman colonies, while new ones emerged in the vicinity of a castle or a monastery.**
- The Middle Ages are often called **the Dark Ages** is because, compared with other eras, **period of time has been lost to history.** The **cause of this "Dark Age"** was **the collapse of the Western Roman Empire and the waves of invasions.**

MEDIEVAL CITIES- CHARACTER:

- Three important features of medieval town/cities: **castle, wall, and cathedral.** Examples of medieval cities - **London, Germany, France etc**
- Medieval cities were **protected by high walls.**
- **the streets were narrow and unpaved.**
- There was usually a **square in the center of the city.**
- This **square had the most important public buildings: Cathedral, Town & Marketplace.**
- **Monarchs and nobles sometimes built urban palaces in these cities.**
- **Around the city center were houses**, also hospitals, schools, religious buildings, such as churches or convents

MEDIEVAL TOWN LAYOUT

- The medieval towns were surrounded by a **moat & walls made of stone or brick.**
- The **walls had towers, round or square, designed for defense & decoration.**
- **Access** in town was **permitted only through the vaulted access gates** which were closed at night.
- The medieval towns usually **grew** up **around a castle or monastery**, or followed the contour of a hillside, or a river-bank.
- As a result, they had **steep, meandering narrow streets, with irregular width,** As the **land available** within the walls of the medieval towns was **limited.**
- The main streets ran to the **city gates**, which were the **only points of access in and out of town**.
- **high ranking persons house could look like small fortresses**, while those of **ordinary people resembled the houses of the peasants, having a courtyard and granaries.**
- Due to the **increasing price of land within the city walls, houses several stories high** had each story extended beyond the one beneath.
- Many houses were **built of wood and the peaked roof was ornamented by a gable, or a turret.**

TOWN PLANNING PRINCIPLES OF CARCASSONNE, FRANCE

- Carcassonne was primarily designed as a **fortified city** to **withstand attacks** during the medieval period.
- Carcassonne is surrounded by **3 kilometers of double walls interspersed with 52 towers**, creating a formidable defensive system.
- Its **double-walled structure**, consisting of an **inner city and an outer city** demonstrates the importance of defense.
- The **outer** ramparts include **barbicans and moats.**
- The walls included **bastions, towers,** and strategically **placed gates.**
- The city has two main gates, the Porte Narbonnaise and Porte de l'Aude, designed for defense and controlled access
- **Citys layout adopted to the topography,** fortifications used the natural slope to **enhance defense**, and the **winding streets adapted to the uneven terrain.**
- City within the walls **developed organically with irregular street layout**
- **Narrow, winding streets hindered attackers' movement and offered ambush points.**
- The **walled environment restricted space**, leading to **dense construction, multi-story buildings, and efficient land use**
- Carcassonne included **public spaces like the central square for social and commercial activities.**

CASTLE- The Château Comtal

- The **castle** (Château) within the Cité was often a **central point of power and administration.**
- Situated on the **western side of the city**, the castle is integrated into the inner set of ramparts but also functions as a **self-contained fortress.**
- **Features:**

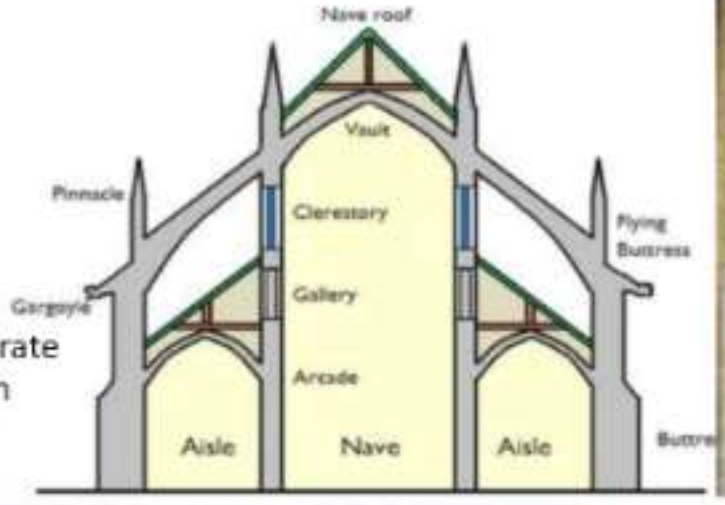
1. Dry Moats: The castle is surrounded by dry moats to prevent undermining.
2. Drawbridge: A drawbridge provides access, enhancing the castle's security.
3. Towers: The towers are strategically positioned to offer commanding views and defensive advantages.
4. Barbican: The barbican is an outer defensive structure designed to protect the entrance
5. Courtyard: The castle features a central courtyard that served as a gathering place and operational area.
6. Residential Quarters: Inside, there were residential quarters for the viscounts and their retinue.
7. Museum: Today, the castle houses a museum that displays artifacts and provides historical context, allowing visitors to learn about the castle's past. **on**

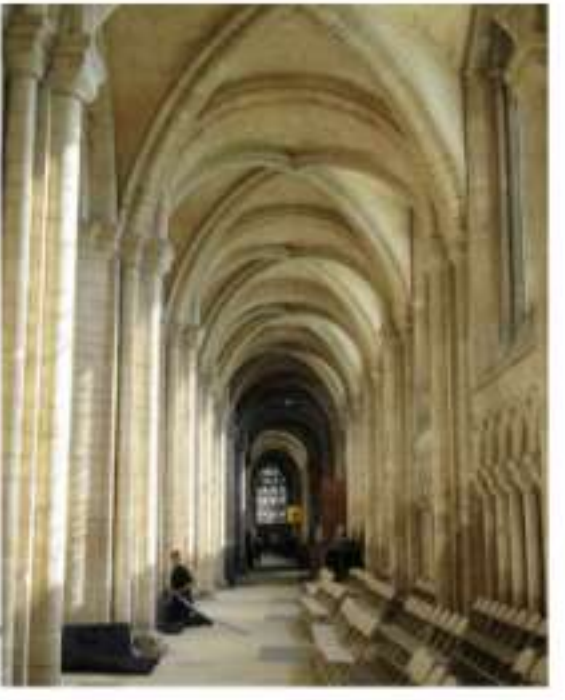
BASILICA OF SAINT-NAZAIRE

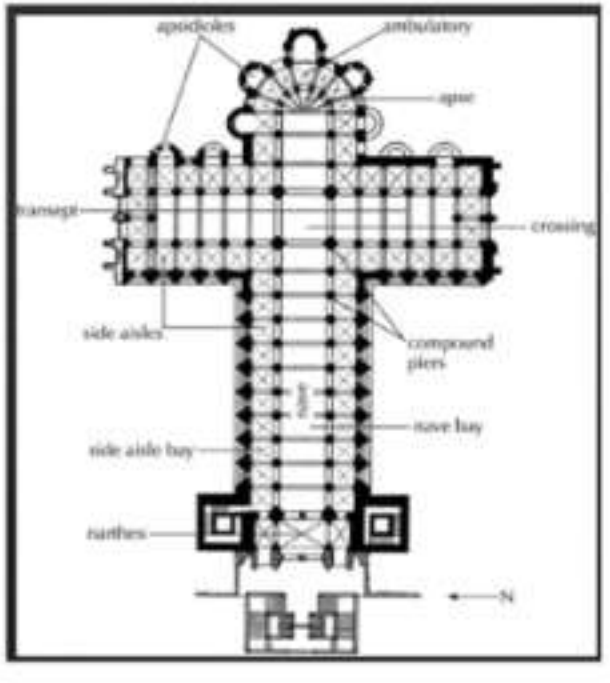
- The **Basilica of Saint-Nazaire** significantly contributes to **Carcassonne's cultural heritage** through its architectural beauty, historical importance, and ongoing role in the community.
- The basilica showcases a blend of **Gothic and Romanesque architectural styles,** making it a remarkable example of ecclesiastical architecture in southern France.
- Its intricate design features **soaring ceilings, ornate columns, and stunning stained glass windows** that narrate biblical stories, creating a captivating atmosphere for visitors
- The basilica **continues to serve as a place of worship** for local residents, hosting regular masses and special ceremonies.
- Its serene environment provides a space for **reflection and spiritual connection**

GOTHIC ART & ARCHITECTURE:

- Began in the **13th century** and many Gothic buildings began to be constructed, especially **cathedrals.**
- **Taller and lighter buildings** became popular.
- **Pointed arch**
- **Groin vault**
- **Big stained glass windows**
- **Flying buttresses** to reinforce the walls
- **High towers**
- **Rose windows**
- **Latin cross floor plan**
- Increased number of towers
- Gothic sculpture and painting were used to decorate churches and cathedrals - significant change from Romanesque Art.







RENAISSANCE URBANISM 1450-1750CE

- Renaissance is a period in European history, covering the span between the **14th and 17th centuries** and acts as a **bridge between Middle Ages and the Modern era**
- **It began in Florence (birthplace of the Renaissance)** Italy and began to spread **in Milan, Netherlands and to Europe**.
- **Major centers** were **Florence, Rome and northern Italian city-states** such as **Venice, Genoa, Milan, Bologna**.
- The most **significant changes** that emerged as a result of the Renaissance can be seen in **European architecture, art, literature, mathematics, music, philosophy, politics, religion and science**.
- **new idea** or worldview that developed during the time of the Renaissance was called **humanism.**
- **Renaissance Humanism** was the **study of ancient Greek and Roman texts** with the goal of **promoting new norms and values in society.**
- Humanist like Erasmus, Guillaume Budé, Michel de Montaigne and Petrarch **used ancient texts to promote a worldview based on logic and reason.**

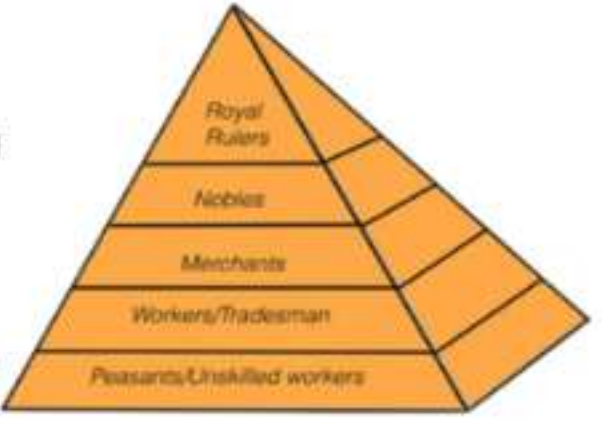
SOCIAL HIERARCHY:

People of Renaissance Florence were composed of **four social classes**:

1. **Nobles(Politicians, military commanders)**
2. **Merchants**
3. **Trade workers**
4. **Unskilled workers.**

- **Social classes became less distinct as the Renaissance progressed, and humanist ideas led to increased individual rights.**

(Nonetheless, the class system remained in place in Florence and throughout most of Europe long after the end of the Renaissance).



- The most prevalent **societal change** during the Renaissance was the **fall of feudalism and the rise of a capitalist market economy. Increased trade and the labor shortage** caused by the Black Death **gave rise to middle class.**
- **Workers could demand wages and good living conditions, and so serfdom ended.**

INVENTIONS:

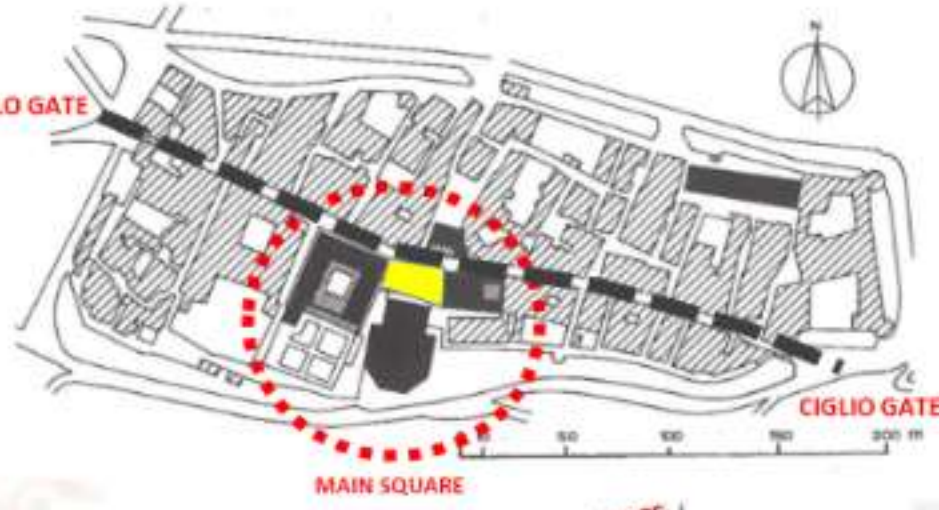
- The development and growth of the **printing press (Johannes Gutenberg)was important technical achievement of the Renaissance,** It allowed Bibles, secular books, printed music and more to be **made in larger quantities and reach more people.**
- developed it in 1440, although the technology was used in China centuries earlier.
- **Invention of compass and development of new techniques in ship building made it possible to extent the limits.**
- **Vitruvius' Ten Books of Architecture-** one of the first book to be printed and its impact was tremendous.
- **The Vitruvian man by Leonardo da vinci (demonstrating the human proportions reflecting divine ratios)**
- **Brunelleschi's Discovery of Perspective (representation of 3d object on a 2d surface)**

CHARACTERISTICS OF RENAISSANCE ARCHITECTURE

- It tends to feature **planar classicism and buildings are embellished with hemispherical domes, niches, aedicule's, columns, pediments, pilasters, string courses and blind arches.**
- They emphasis on **symmetry, proportion, geometry.**
- **Building plan will be square, symmetrical appearance in which proportion are usually based on the module.**
- **Symmetry**, creation of balanced axial compositions with central motifs.
- Placement of **monumental buildings, obelisks, and statues** at the ends of **long, straight streets.**
- On the basis of their **traffic functions** Renaissance urban spaces can be grouped under **three broad headings**:
  - **Traffic space**, forming part of the **main urban route system** and used by both pedestrians and horse drawn vehicles
  - **Residential space**, intended for local access traffic only and with a predominantly **pedestrian recreational purpose**
  - **Pedestrian space**, from which **wheeled traffic was normally excluded.**

PIENZA, TUSCANY- BIRTH OF RENAISSANCE URBAN PLANNING

- **UNESCO World Heritage Site**
- **An harmonious city plan**-The **ideal Renaissance town was a symmetric, harmonic** settlement built around a **central square**, similar to that depicted in the anonymous painting The Ideal City.
- **Bernardo Rossellino** applied the principles of his mentor Alberti to develop the **urban plan of Pienza**, the **basis for urban planning in Italy.**
- **The square at the heart of the city-** centre of the urban life main square: each side of the **square has seats** so that **people can see each other and spend time together. Here is where parents sit.**
- **An ideal model of life and government**
  From the **main square, the entire urban tissue developed,** making life easy and harmonious, conceived **to maximise the interactions and the happiness of its inhabitants.**
- **If Pienza would have expanded** into a town of some size, it almost certainly would have **acquired the grid-iron street pattern.**
- **The symbol of urban planning**
  It brought a **new way of seeing the world** along: the **"Umanesimo", a system that focused on humans and their values, capacities, and worth.**
- This small town, which counts less than **3000 inhabitants**, was strongly sought after by **Pope Pio II**, who put one of the **greatest Renaissance's architects in charge of building this universal prototype of the ideal city**.
- **Bernardo Rossellino, student of Leon Battista Alberti**, and other architects of the time teamed up with some 20,000 workers to complete the construction, which **took just three years, between 1459 and 1462.**



MAIN SQUARE

ALTERANTE APPROACH – RENAISSANCE URBAN PLANNING

- Renowned architect **Filarete**, suggested an **alternative approach to urban design** and set out the attributes of his **ideal city** which he called **Sforzinda.**
- This city would be based on an **eight-point, star-shaped plan within a circle.**
- shape is **iconographic** and probably ties to **Filarete's interest in magic and astrology**
- **It** contain three **central piazze** with a **cathedral and ruler's palace around the main piazza; a town hall in the centre of the second piazza with a treasury and prison around its edges; and a marketplace and headquarters for the chief of police in the third piazza.**
- his most innovative proposal was that, **instead of a gridiron pattern** of squares and streets, there would be **eight radial avenues** connecting the piazze with the gateways of the outer walls of the city.

PLAN OF SFORZINDA

FORTRESS TOWN OF PALMANOVA 1593 - IDEAL CITY

- The fortifications were included in **UNESCO's World Heritage Site**
- Its is **a town and commune in northeast Italy** and its an example of a **star fort of the late Renaissance**
- Built from scratch and based on the **study of a perfect model with radial symmetry and exemplifies the power that an urban design can have.**
- the city was planned to be a '**perfect fortress** with **threatening shape** was so that **nobody dared to attack it**
- It is **a concentric city with the form of a star**, with **three nine-sided ring roads intersecting in the main military radiating streets.**
- It is actually considered to be a **fort, or citadel**,
- it imposed **geometrical harmony** and followed the idea that **beauty reinforces the wellness of a society.**
- At the time of its construction, many other **urban theoreticians found the checkerboard was more useful, but it could not provide the protection that military architects desired**.
- The walls of a practical fort are **run at angles so that enemy soldiers could not approach it easily** because the **angles made it possible to establish overlapping fields of fire.**

PALMANOVA, ITALY

Outline the forces shaping urbanism

S NO		MESOPOTAMIAN CIVILIZATION	EGYPTIAN CIVILIZATION	INDUS VALLEY CIVILIZATION	CHINESE CIVILIZATION	GREEK CIVILIZATION	ROME CIVILIZATION	MEDIEVAL EUROPEAN TOWN	RENAISSANCE
1	ENVIRONMENTAL FACTOR • (Topography, fertility, vegetation)								
2	SOCIAL FACTOR • Hierarchy, Different class								
3	ECONOMIC FACTOR • Occupation and livelihood								
4	POLITICAL FACTOR • Power of control								
5	TECHNOLOGY FACTOR • Inventions								
6	SETTLEMENT TYPE • Pattern/shape								
7	ANCIENT TOWN								

OUTLINE OF HISTORIC CITIES IN INDIA

- Early civilizations sprung on banks of rivers or at any natural port.
- Physical Safety and communication links are the two prime factors which lead to the development of towns.
- Earliest civilizations were seen on the banks of rivers like Ganga & Sindhu.

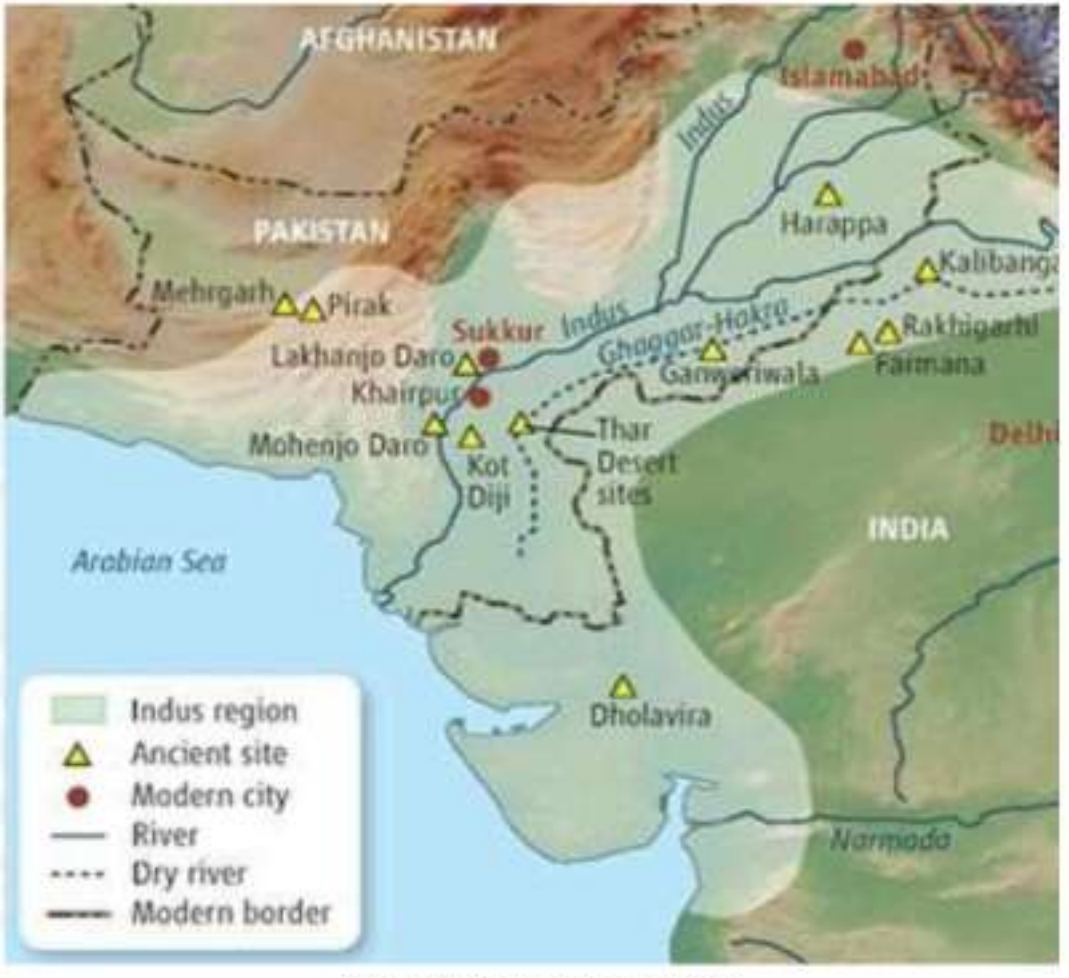
CLASSIFICATION OF INDIAN TOWNS:

Urban historians classify towns of India as:

- Ancient
- Vedic
- Medieval
- Modern- colonial

ANCIENT PERIOD: 3000-5000 BC

- many towns were created with unique features.
- Indus valley civilization: (3000 B.C) It was located on the bank of river Indus (presently in Pakistan) and Ravi.
- In 1920, British Archeologist found the remains of the so called Mohenjodaro (Hill of Deads) in Indo-Gangatic region.
- It was about 260 hectares with Harappa (on bed of river Ravi) now in Pakistan.
- Kalibangan in Rajasthan Lothal, Sukortada and Dholavira in Gujarat Rakhigadhi in Haryana.



ANCIENT INDIAN TOWN MAP

INDUS VALLEY CIVILIZATION(3300-1300BC)

- Indus valley civilization or Harappan civilization, the **earliest known urban culture of the Indian subcontinent** and its the **largest among its contemporaries** (Mesopotamian, Egyptian and Chinese civilizations) and covered **1,260,000 sq km area (around 486,488.7 sq miles) and houses around 5 million people.**
- It includes **famous settlements like Mohenjadaro, Harappa, Kalibhangan, Lothal, Dholavira, Rupar, Surkotada etc.**
- Mohenjo-Daro and Harappa were **important trade centres** of Indus valley civilization.
- It has earliest **sanitation system** and the system was **very advanced compared to civilizations** of that time. **Every house had its own toilet.**
- **A planned city** based on a **street grid of rectilinear buildings, Spread around 300 hectare**
- essential structures of the town are the streets, **closed drainage system, the great bath, granaries and buildings.**
- City divided into **citadel and lower city**
- Citadel – mound of mud bricks of 12m height encloses great bath, granary residential area for 5000 citizens and two large assembly halls
- City has central market place and a public well
- **Large granary building of size is 150'x75'x15' in massive wooden super structure with air ducts to dry the grain and it indicates the high level of agricultural civilization**

RELIGIOUS BELIEFS

They had **religious beliefs** and an **appreciation for astronomy, which is reflected in the orientation of the city and the streets along the cardinal directions – east to west, north to south relating to the rising and setting of the sun.**

INVENTIONS

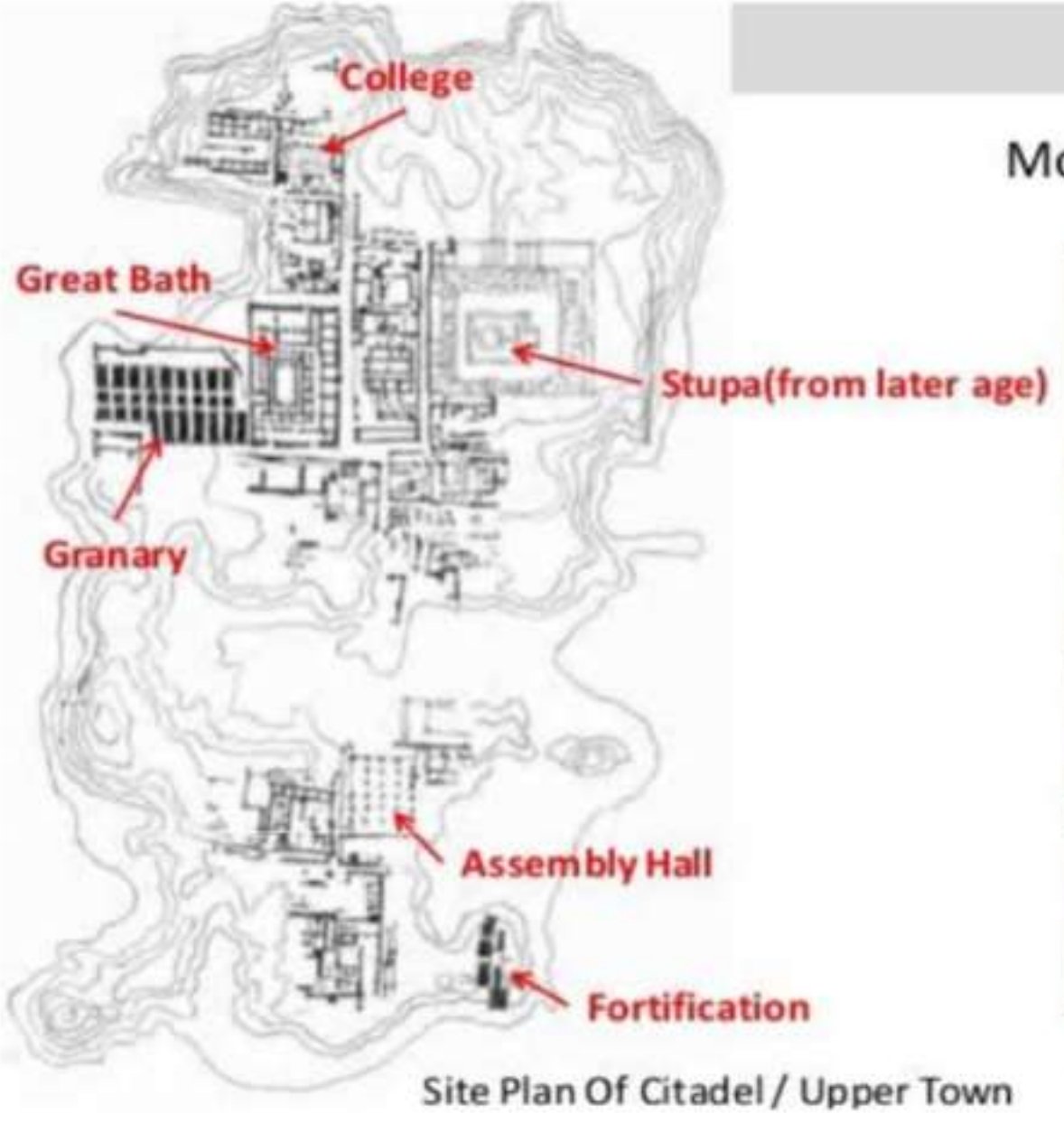
Bronze and terracotta Utensils, Stone tools, Plough, Metals and Metallurgy, Pottery, copper artefacts, rulers, terracotta figurines, wooden lattices, carvings & agricultural implements

STREET PATTERN

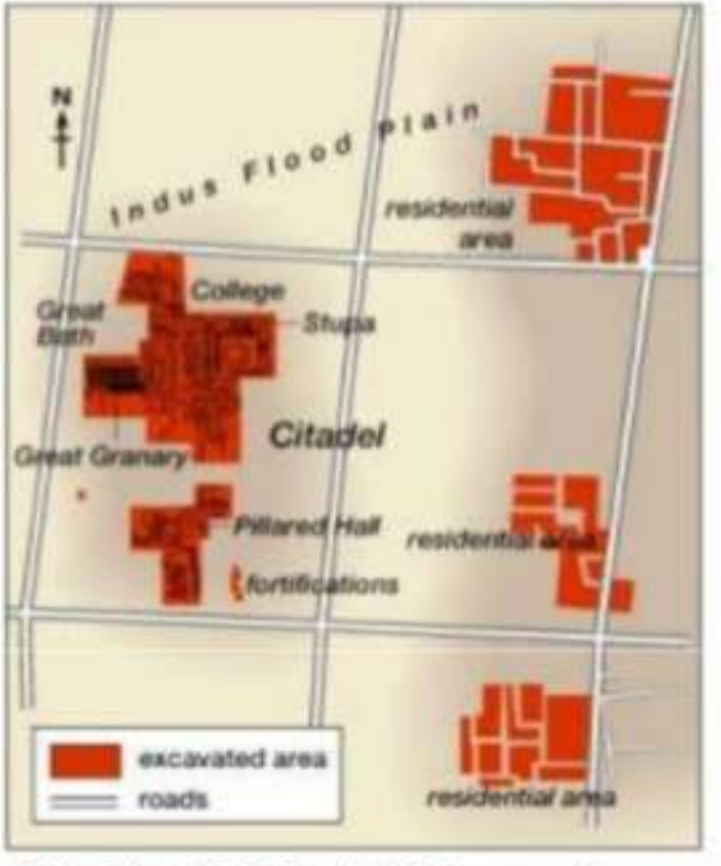
- The streets were **straight and 13 to 34 feet wide, were well lined** and cut each other at right angles.
- The roads were made to **divide the city into rectangular blocks and were made using burnt brick**.
- **Lamp posts** have been found at regular intervals that **the street lights** existed at that time.
- **Dustbins were found on the streets**, which meant an excellent municipal administration was also present

Indus Valley Civilization

Mohenjo-Daro Town Planning



Site Plan Of Citadel / Upper Town



Site Plan Of Citadel & Lower town

DRAINAGE SYSTEM

- Unique feature of this civilization was the **closed drainage system** and It has **both vertical and horizontal drains.**
- **kitchen and the toilet drains** were **connected to the gutters of the streets and** it was **connected to the underground drains on the road.**
- **Stone slabs were used to cover these drains** and **The wastewater travelling from flushing toilets went into one of several sewage pipes that carried out this water into the river or sea.**
- Most houses in **Kalibangan had wells**.

HOUSES

- The arrangement of the houses was in **grids with streets that cut across each other at right angles.**
- Every **house was home to a courtyard, a bathroom wells, and drains.**
- There was **minimal ventilation** in ordinary houses because the **doors and windows were hardly ever fixed on the outer walls.**
- The **rich lived in big houses with multiple rooms, while poor people had smaller homes.**
- **big houses and the public buildings were located on the streets.**
- The tiny houses had two rooms, while the significant dwellings had multiple rooms.
- **The priests and higher class used to live in citadels.**

BUILDING MATERIALS

- The houses of the Indus Valley civilization were built **using burnt brick instead of stones and sunburned bricks were also used.**
- The **burnt bricks were used in the part of buildings where contamination because of water was a possibility. mud mortars and gypsum cement used.**
- The frames for the doors and windows were made of wood.

GREAT BATH

- The excavation indicates that the **great bath of size 12x7x2.4m was a large rectangular tank inside the city.**
- it was used for **special rituals and ceremonial baths**
- **Burnt bricks were used to make the floor of the great bath.**
- It was **coated with gypsum to prevent water leakage from the tank**.
- flight of steps seen on both sides of the tank. There was a considerable **drainage system to drain water from the bath.**
- There were rooms near the great bath that were used as **changing rooms**

VEDIC PERIOD 1750-500 BCE

- The Vedic Period is named for the **Vedas, the oldest scriptures in Hinduism**, which were composed during this period.
- The period can be divided into the **Early Vedic (1750-1000 BCE) and Later Vedic (1000-500 BCE)**
- Its an **agro-pastoral community** living in small villages with **close harmony with nature.**
- Great epics like **Ramayana and Mahabharata** was written during this time.

SOCIAL HIERARCHY:

Society was divided into **four Varna's**

1. **Brahmins- Centre of knowledge**
2. **Kshatriyas- Controller of political power**
3. **Vaishyas- Tradesman and farmers**
4. **Kshudras- Artisans and craftsmen**

Dalit- Untouchables (do all the lower order work subordinate to all)

EVOLUTION OF HOUSES:

- **Circular huts were built in clusters around a central court.**
- **Circular huts** evolved into **rectangular huts**
- And these **latter evolved into courtyard houses**

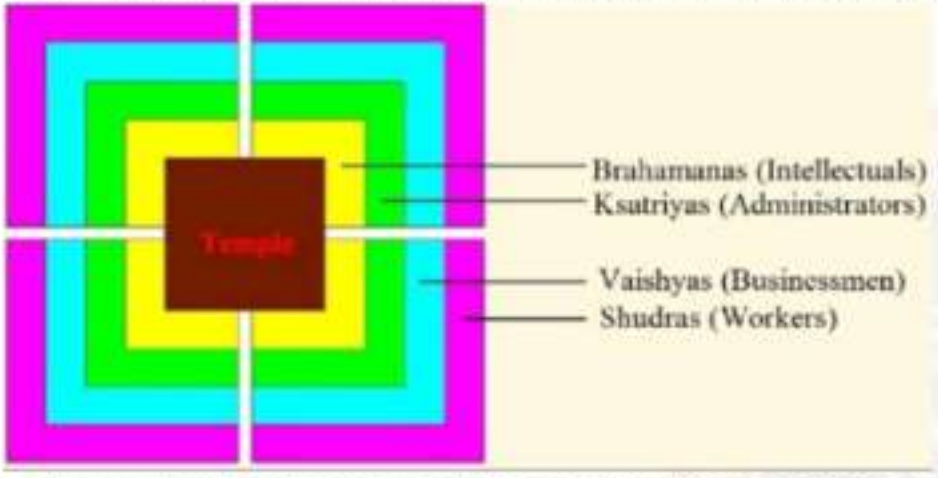
CIRCULAR HUTS

CIRCULAR HUTS WITH CENTRAL COURT

RECTANGULAR HUTS WITH CENTRAL COURT

CHARACTERISTICS OF VEDIC TOWNS:

- Few examples of **vedic towns**: **Kuru, panchala , kosala, gandhari, kashi**
- Cities were **rectangular in plan and divided into four quarters by two main thoroughfare intersecting at right angles each leading to a city gate.**
- City is divided into hypothetical rings based on the social hierarchy.



ANCIENT INDIA MAP –VEDIC PERIOD

- Town planning in ancient India is evident from various **ancient texts and puranas.**
- **Artha shastra of kautilya and sukra nitisara**, these text **illuminate the development of civic art.**
- According to these ancient text, towns are classified on the
  1) Basis of size,
  2) Basis of shape and purpose.

BASIS OF SIZE:	
RAJDHANI	-capital of the king
SAKHANAGRA	-all categories of towns besides pura (fortified city)
KARVATA	-smaller town
NIGMA	-smaller than karvata
GRAMA	-smaller than nigma

SPECIAL TOWN:	
PATTANA	- second residence of a town
PUTABHEDANA	- its similar to pattana, in addition to being a commercial centre.

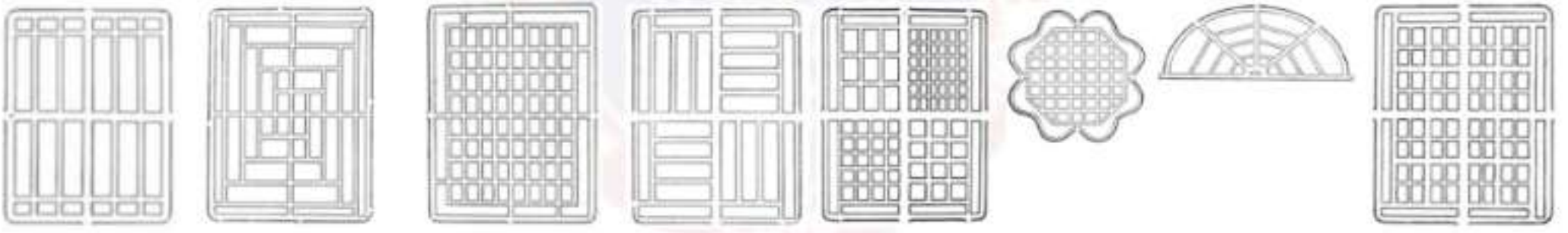
MANASARA SHILPA SASTRA

TOWNS

ACCORDING TO SHAPE AND PURPOSE

EIGHT TYPES

DANDAKA | NANDYAVARTA | SARVATOBHADRA | SWASTIKA | PRASTARA | PADMAKA | KARMUKHA | CHATURMUKHA



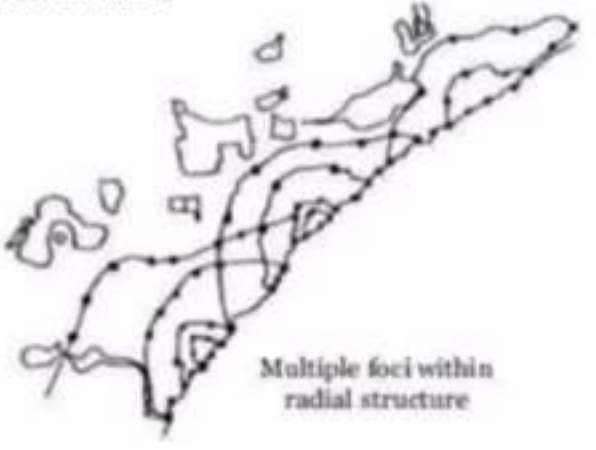
SWASTIKA -	Poompuhar – kaveripoompattinam
PADMAKA –	jodhpur fort
PRASTARA _	Jaipur fort
KARMUKA-	Shajahanabad
SARVATOBADRA –	Thanjavur, brihadeeswara

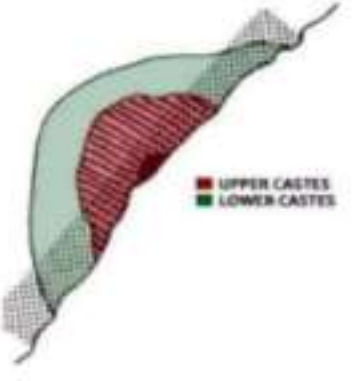
KASHI / VARANASI

4.23 Plan of Varanasi

- Varanasi is one of the **worlds oldest living city**
- City originated with the **creation of manikarinika ghat**
- City develop along the **concave wave but not along convex bank** inspite of fact that the concave bank is vulnerable to erosion
- City is built on a **natural berm located on the north western banks of the Ganges**.
- The high berm not only ensures the city **enjoys a dramatic prospect**, some 15 metres above the normal level and it **also ensures protection from the river flood**
- Because of its geography city was situated at the **same spot for more than 3000 years.**
- Behind the berm is a **semi circular arch** lies the **dense fabric of medieval city** with twisting narrow streets, temples, water tanks and street shrines.


Multiple foci within spatial structure

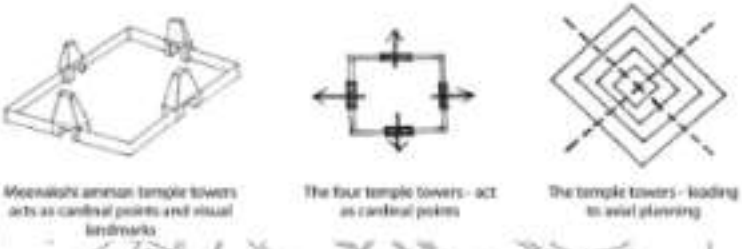

Multiple foci within radial structure



TEMPLE TOWN URBANISM OF TAMILNADU NADU

MADURAI – TEMPLE CITY

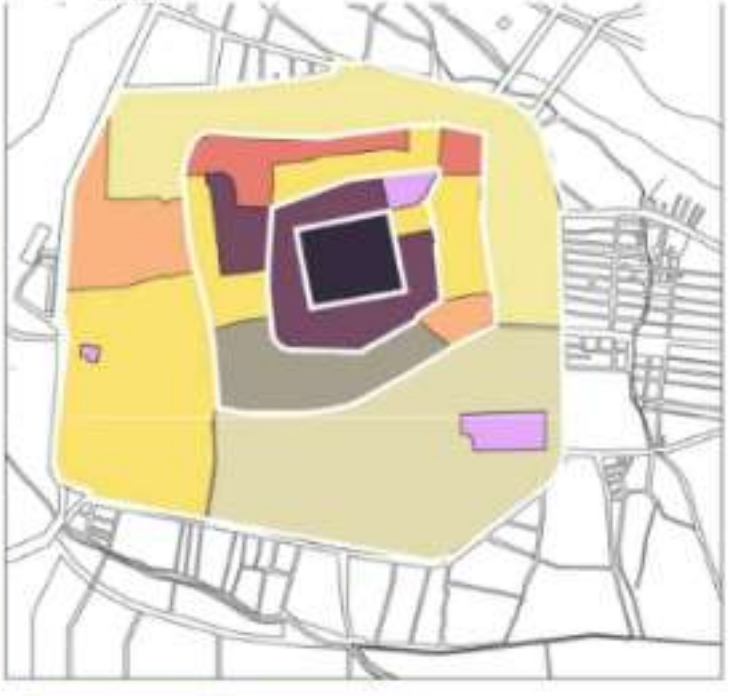
- Its a **cultural capital for two millennia** and It is also called as the Athens of the east, city that never sleeps, city of four junctions.
- **River Vaigai is the origin of settlement.**
- **Older core city was a fortified settlement** on the **southern banks of river** Vaigai, few scattered buildings and agricultural farm lands outside the fort area.
- **Northern part of the city provides administrative and civic services,** the **older South city provides commercial and socio-cultural activities.**



Meenakshi amman temple towers acts as cardinal points and visual landmarks

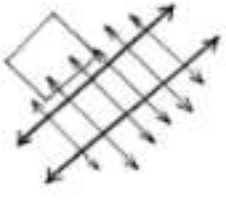
The four temple towers - act as cardinal points

The temple towers - leading to axial planning

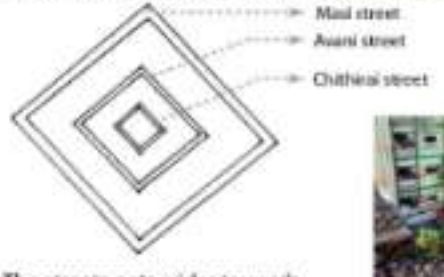


TRADITIONAL PLANNING STRATEGIES

- **The old city of Madurai** is considered to be **designed** according to the **Rajdhani plan,** described in **Manasara,** one of the **Shilpasastra.**
- It has the **five fold concentric rectangular formation** with **Meenakshi-Sundareshwara Temple at a central focal point.**
- **Well planned city** with **bazaars and many broad streets** with high and **luxurious mansions on both sides.**
- The **settlement pattern of Madurai** is planned **based on caste and occupational hierarchies.**
- **Royal Palaces, Brahmins and Priests** at the **first concentric rectangle. Traders, Kishatriyas and Vaishnavaites** on the **second rectangle.** The lower caste **Sudras and immigrants zoarashitrains** in the **third rectangle.**

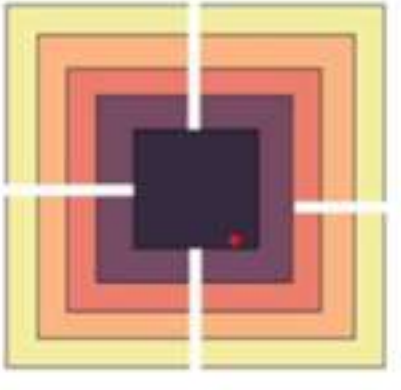


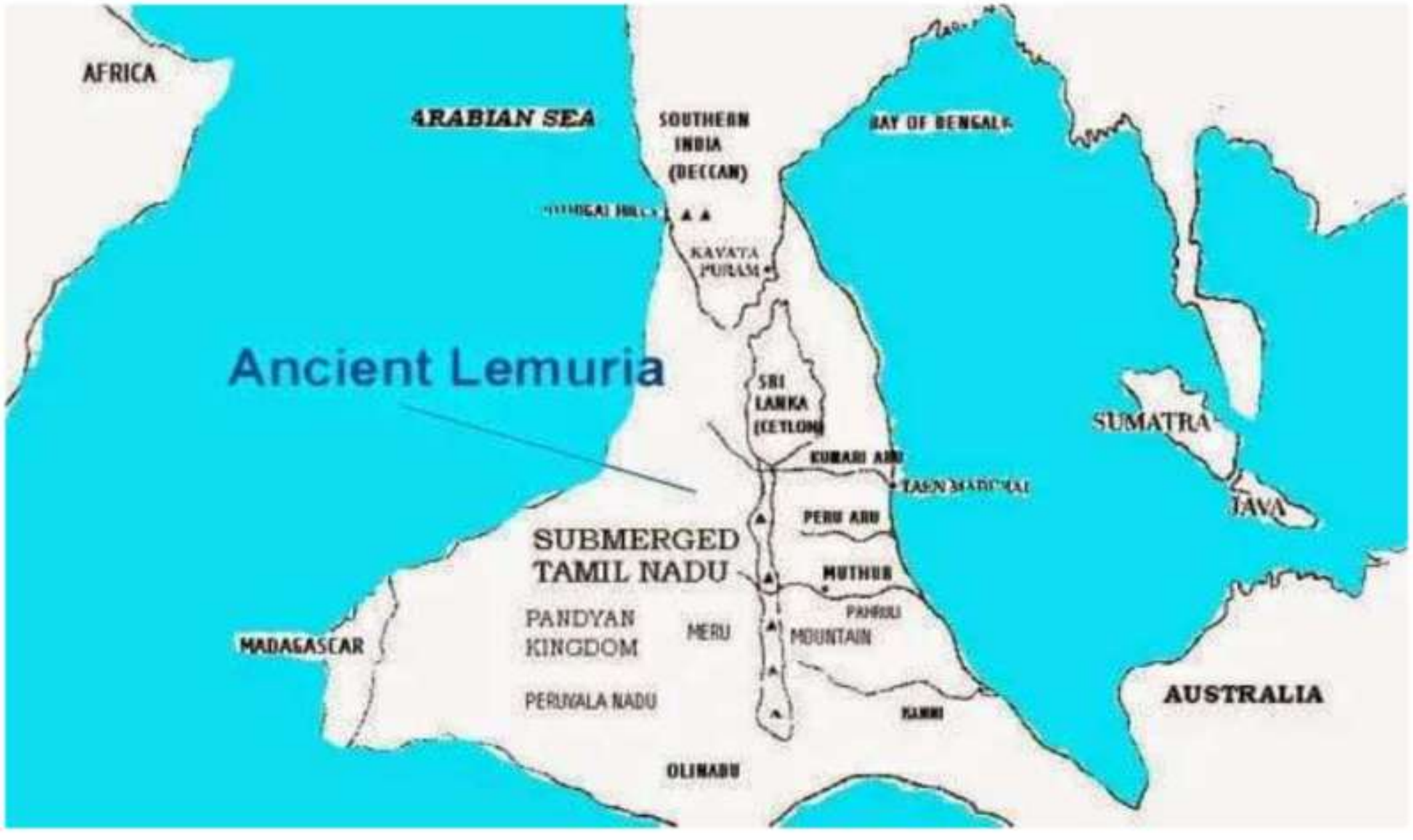
The inner streets form a perpendicular link to the concentric planning



The streets gets wider towards the periphery.
Masi street's width is based on the temple car dimensions.

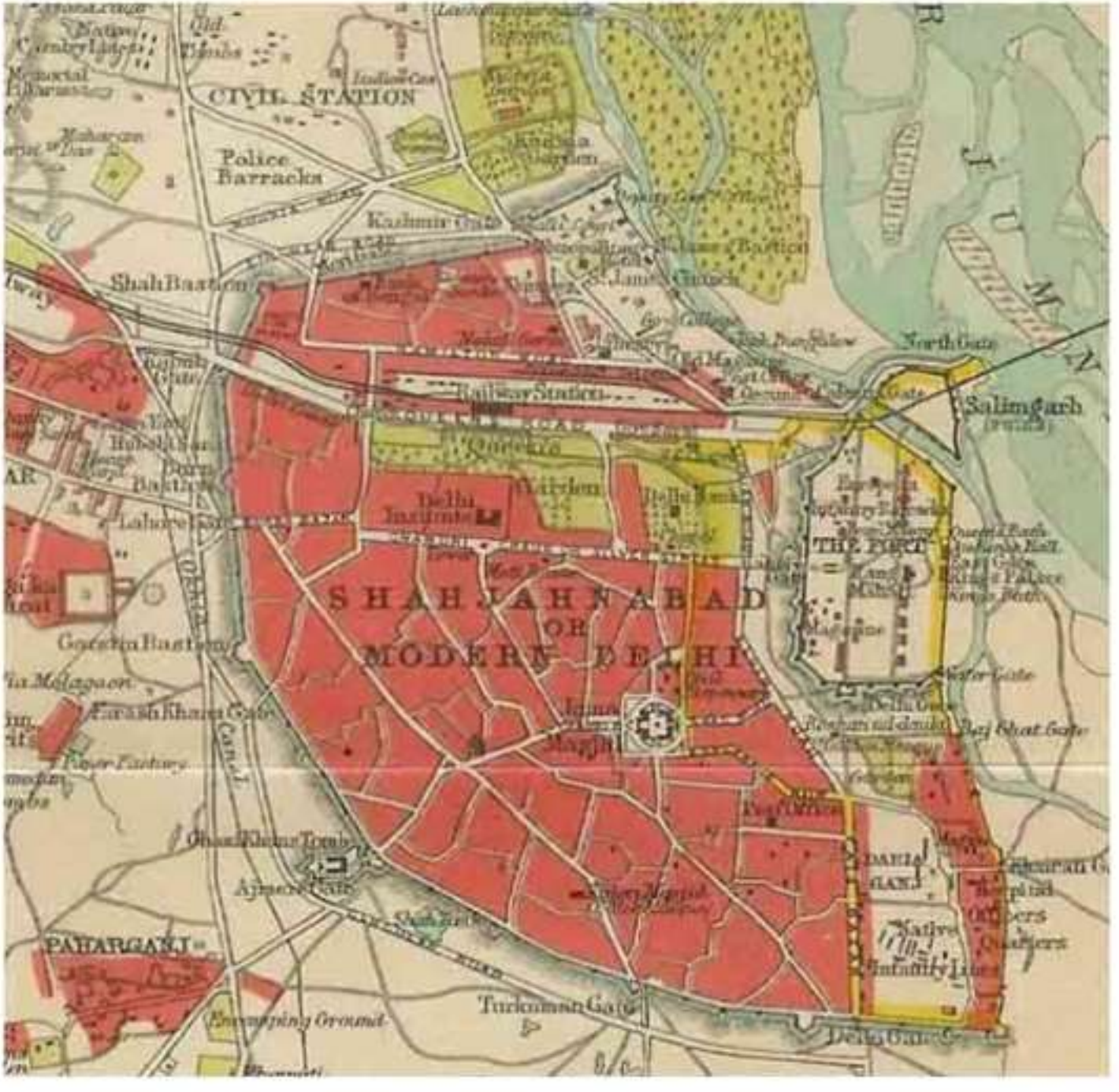
Chithirai festival




AFRICA
ARABIAN SEA
SOUTHERN INDIA (DECCAN)
BAY OF BENGAL
KAVATA PURAM
Ancient Lemuria
SRI LANKA (CEYLON)
SUMATRA
JAVA
SUBMERGED TAMIL NADU
PERU ARU
MUTHUR
PANDYAN KINGDOM
MERU
MOUNTAIN
MADAGASCAR
PERUVALA NADU
AUSTRALIA
OLINADU

MEDIEVAL CITY -SHAHJAHANABAD

- Walled Mughal capital city with several gates
- Built by Mughal Emperor Shah Jahan in 1648
- Architect Ustad Ahmad Lahori
- Currently facing challenges like overcrowding and commercialization.
- Shahjahanabad retains its historical charm and is a major commercial hub. Efforts are being made to preserve its heritage, including the restoration of some havelis.



Out of the original 14 gates, few have survived in relatively good condition:

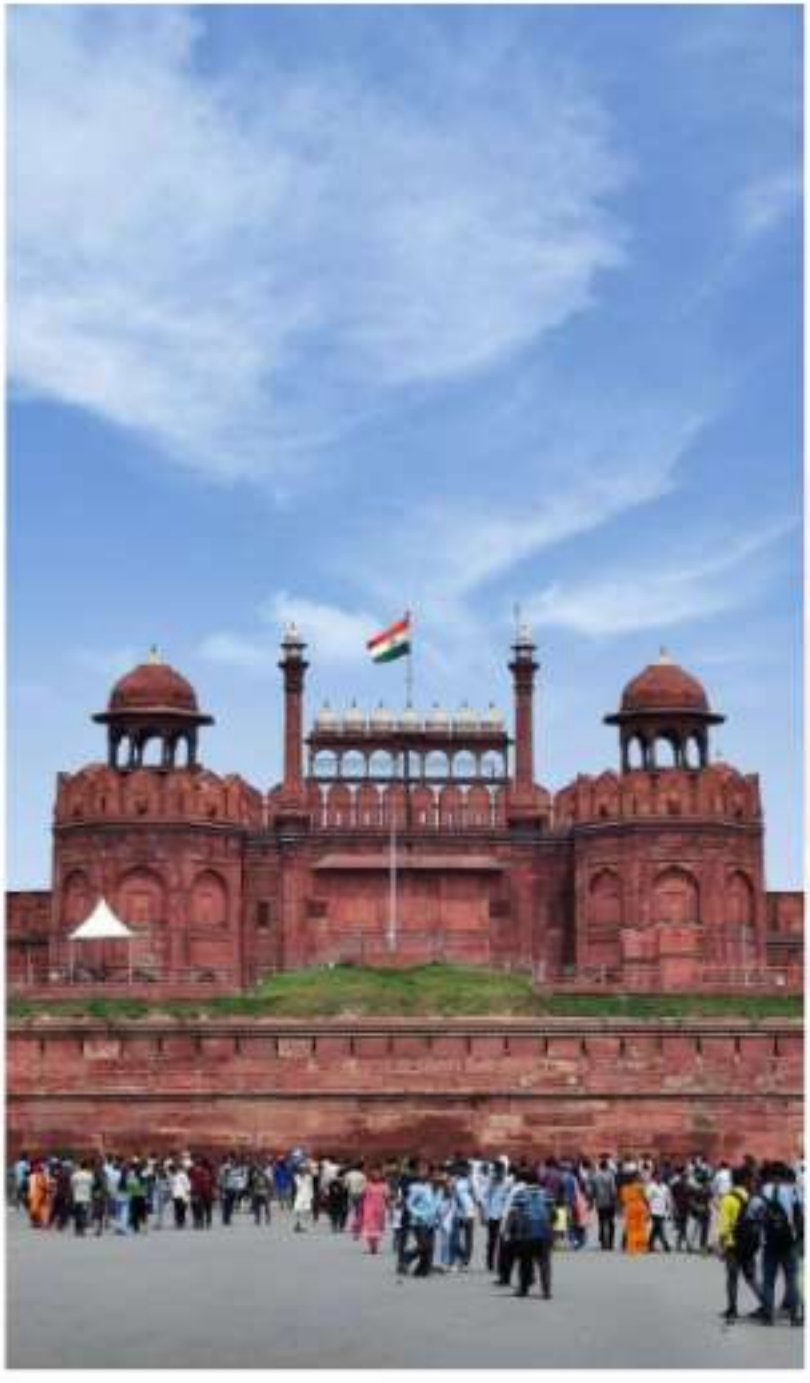
- **Kashmiri Gate**
- **Delhi Gate**
- **Ajmeri Gate**
- **Turkman Gate**

PLANNING FEATURES

- **Followed Geometric layout and** showed the traces of both **Persian and Hindu traditions** of town planning
- **City was planned** according to **hindu planning principle** of shilpa shastra from **vastu shastra, Site was placed on the high land** as in the shastra
- City pattern has based on geometric pattern **bow shaped kamukha for this ensured prosperity**
- **Arm of the archer was chandni chowk**
- **String was Yamuna river.**
- **Walled city:**
  The high city walls with their **14 gates** served **not only for defense** but also defined the boundaries of Shahjahanabad and **regulated entry and exit**.
- notable feature was the **network of canals drawn from the Yamuna River,** providing water for **drinking, irrigation, and aesthetic purposes.**
- This was a **hallmark of Mughal urban planning**, reflecting their engineering prowess and appreciation for water features.

AXIAL PLANNING

- structures and thoroughfares were often **aligned along specific axes.**
- The most **prominent and straight axis** connecting the **Lahore Gate of the Red Fort to the Fatehpuri Masjid, with Chandni Chowk** running along a significant portion of this axis.
- This created **visual hierarchy and facilitated royal processions**.



CENTRAL STRUCTURE

- **ROYAL CITADEL:**
  The **Red Fort (Lal Qila)** was the **undisputed center of power** and the **focal point of the city's design**
- location on the **Yamuna River** and its imposing structure **dominated the eastern edge of the city.**
- It has **two gates lahori darwaza on the west and delhi darwaza on the south**
- **PRINCIPAL MOSQUE:**
  The **Jama Masjid** was another crucial element, serving as the **main congregational mosque** and a significant **public space.**
- Located at the **central part of the city on a raised hill above 9ms** from the street level.

ORGANIZED STREETS AND BAZAARS

- **Major Thoroughfares:** Wide, straight avenues like Chandni Chowk and Faiz Bazaar were designed for royal processions, military parades, and efficient movement. These were the lifelines of the city
- **East west street called chandni chowk** connected the **lahori darwaza** of the fort, It's a **wide boulevard** with broad vista and 1.4 km in length and jogged right at the fathepuri begum mosque.
- **Faiz bazaar** is 1km in length running straight with **north south axis connecting delhi gate of fort**.
- A clear hierarchy existed, with broad royal avenues branching into narrower residential lanes (kuchas) and even smaller alleyways.
- Other Streets were usually **narrow and crooked**

RESIDENTIAL UNITS

- The city was divided into residential quarters known as **mohallahs or katras**. basic **building blocks of the city's social fabric**.
- Each mohallah often had its **own internal organization**, with its own **smaller mosques, local shops, and community spaces**.
- Overall **city plan was geometric**, the **internal layout of these mohallahs often developed more organically**
- **Havelis:** The **wealthy built grand mansions (havelis)** that often housed extended families and included courtyards, reflecting both privacy and community within the household.

MEDIEVAL CITY -JAIPUR

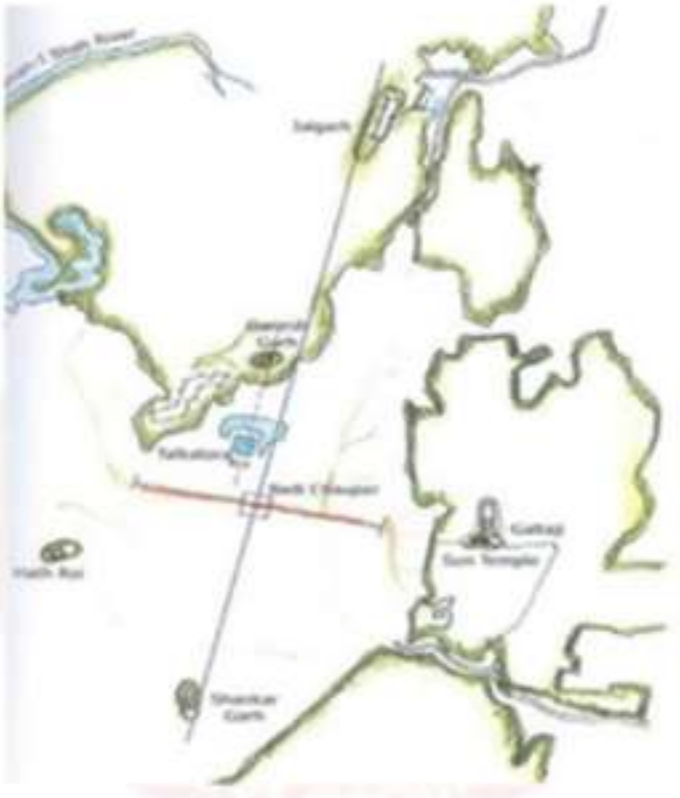
- It's a **first planned city in India**.
- Jaipur was founded in **1726 By Jai Singh II, The Raja Of Amer.**
- **Vidyadhar bhattacharya** chief architect of **jaipur .**
- City was **planned** based on the principles of **vastu shastra** and shilpa shastra and was **divided into nine blocks.**
- The city was primarily oriented along the **cardinal directions (North, South, East, West),** considered auspicious in Vastu Shastra. This ensured proper sunlight, ventilation, and a harmonious relationship with nature.
- **Rocky terrain of Amer restricted expansion**
- **Jaipur** has the **potentialities of developing into a city** with **adequate drinking water** due to the presence of a **perennial stream nearby**
- **Capital shifts from Amber** 11 km (7 miles) **to Jaipur to accommodate the growing population and increasing scarcity of water**
- To **facilitate water supply** to the new city, the **Darbhavati river in the north was dammed** to create the **Jai Sagar and Man Sagar** (that later housed the **Jal Mahal)** lakes.
- **Jhotwara River** in the **north west was diverted through the Amani Shah Nallah** and a number of **canals were channelised through Brahmapuri and Jai Niwas to supply water to the city.**

- **State buildings and palaces were occupied in two blocks** remaining **seven blocks allotted to the public**
- The **palace building covered two blocks, six blocks** were **occupied by towns** and the **remaining ninth block** was not usable on account of **steep hills**. So, this North-West ward was transferred to the South-East corner of the city, making the shape of the plan as a **whole asymmetrical rather than square plan**
- **Jaipur's road network** follows a **definite hierarchy**

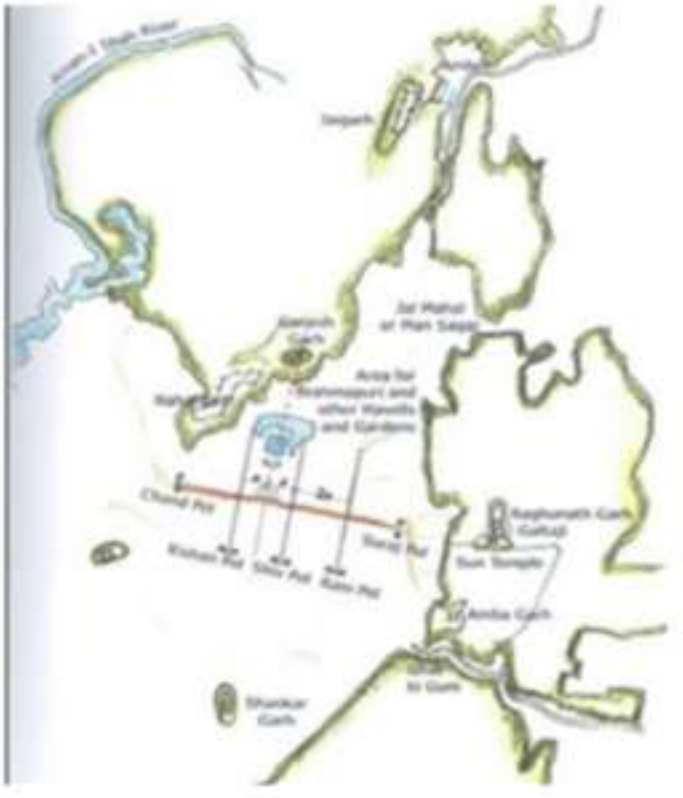
DESIGN EVOLUTION OF JAIPUR

The basic spatial planning of a traditional settlement was guided by natural forces and topographical features

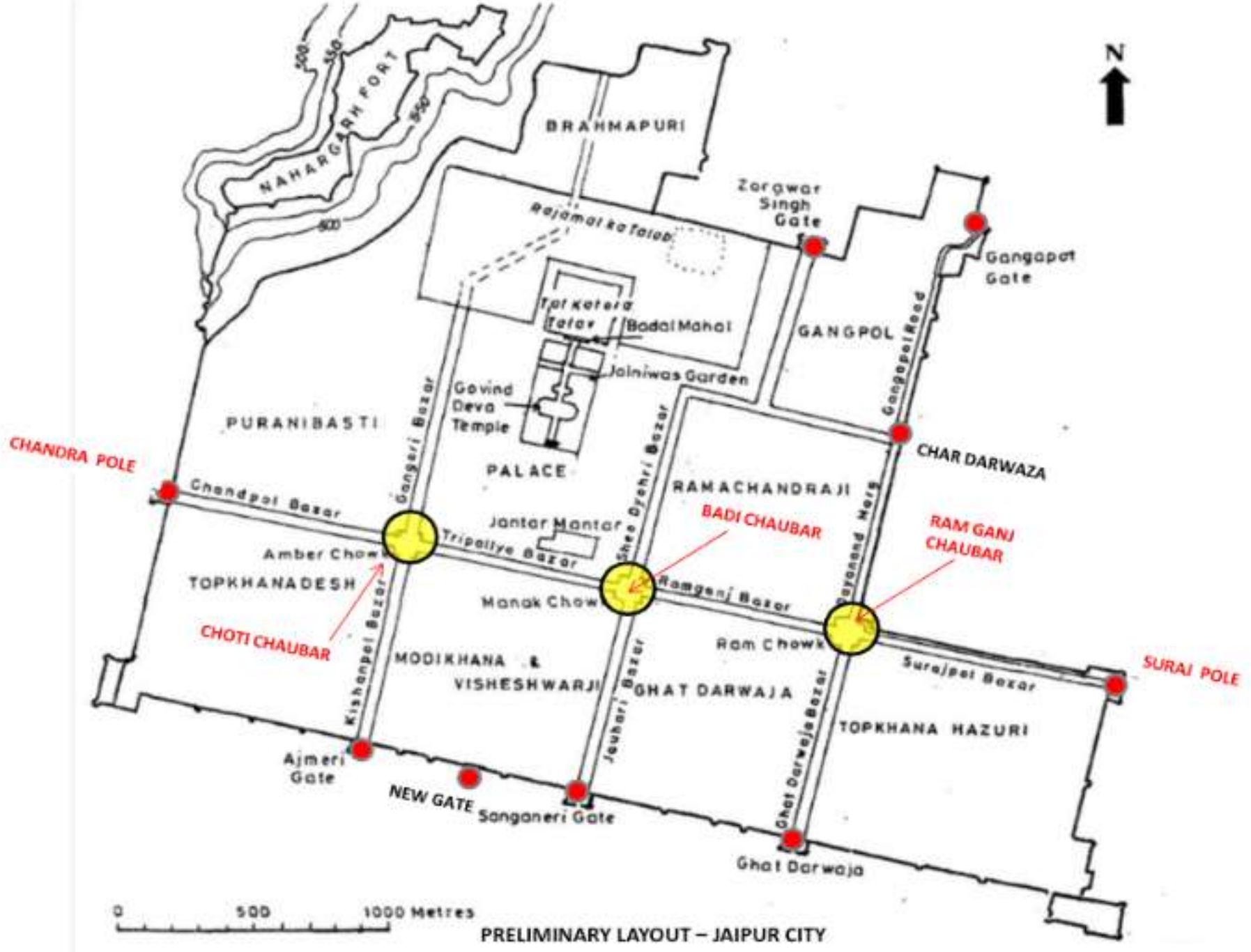
Marking the genius loci of the city on the terrain in alignment with the scared topography of **Ganesh garh in the north and Galtaji in the east**



Marking the **North south axis in alignment with Jaigarh** in the north and **shankargarh in the south** and defining Badi Chaupar as the central node of the city.



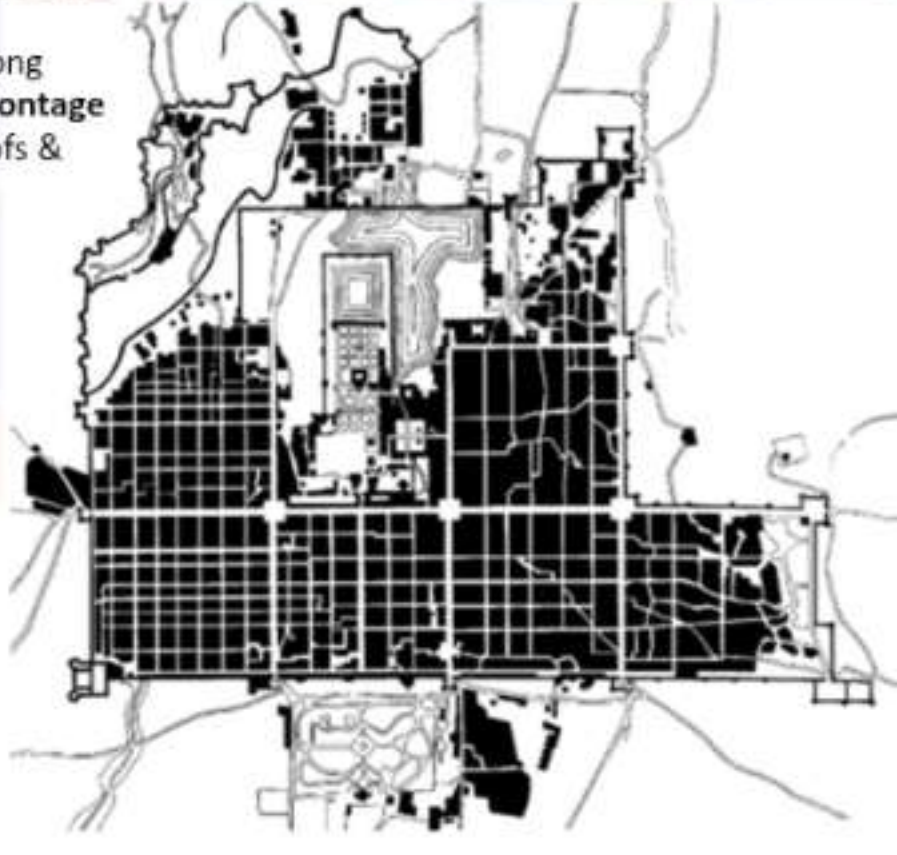
Defining **Govind Dev ji temple** and **palace as centre** and allocating city sectors with further sub division of the east west axis.



PRELIMINARY LAYOUT – JAIPUR CITY

Public spaces can be divided into:

- CHAUPAR
  -It's **a square** that occurs at the **intersection of east west roads with three north south roads.**
  -Each chaupar is around **100m x 100m** and used for **public gathering on festive occasions**.
  - The **distance** between two chaupars is about **700m** which is **ideal for pedestrian movement**.
  -It has controlled façade treatment enveloping it.
- BAZAARS
  -Originally only **four bazaars were planned for the city**.
  - These were later named as **Johri bazaar, Sireh Deori Bazaar, Kishan pole Bazaar & Gangori Bazaar.**
  - On the **main streets strict control was exercised on the street façade**, along which were located shops and arcades- one storey high, but **beyond the frontage the buildings could be of any height or any shape**, some built with flat roofs & others with traditional chattris
- STREETS
  -The major **east-west and north-south road**, form the sector boundaries and are called **Rajmarg** as they lead to the **city gates and measure 33m wide**.
  -Next there is a network of 16.5m wide which runs north-south in each sector linking the internal areas of the sectors to the major activity spine.
  - An **orthogonal grid** of **8.25mx4.00m** roads in the **prastara-chessboard pattern** further **divide sectors into Mohallas.**
- MOHALLAS
  - Mohalla streets are 13 feet wide.
- TEMPLES
  -Govind dev temple
  -Ganesh temple



COLONIAL URBANISM IN INDIA

COLONIALISM

- **Its the establishment, exploitation, maintenance, acquisition and expansion of colony in one territory by a political power from another territory.**
- It is defined as the **political control of a people and territory by a foreign state.**
- Colonialism began in of **15th century** by Portuguese and Spanish explorations of America, coasts of Africa, middle east , India etc.
- The **concept of colonialism started in 1492 when Columbus went in search of India**, but accidently discovered America.
- The **colonial rule impacted the whole world**, creating a new settlement - the creation of a new religion - the creation of a new country.
- **Colonial India** had contributed to the modern India & in the **growth of Mega cities like Mumbai, Chennai etc .**
- The Imperialism of the British over the entire world has resulted the **tremendous improvement in trade and commerce.**
- **There wouldn't have been a Megacity like Mumbai or Chennai if colonial rule hadn't existed.**

PORT CITIES:

-The **British** arrived in India for trading. **Madras, Calcutta and Bombay became the important ports .**
-These cities became the **prominent commercial areas with tall European – styled buildings.**
-**Fort St. George in Madras and Fort St. William in Calcutta** were the best examples.

CANTONMENT TOWNS:

The **British occupied the Indian territory** and political power by their **military force.** So they needed **strong military camps and established the cantonments** For e.g, **Kanpur, Lahore.**

HILL STATIONS:

Hill stations were **distinctive features of colonial urban development**. Although **Hill stations were not unknown, prior to their founding by the British in India**, they were few and had a small population and were often visited for specific purpose. For e.g. **Srinagar** was a Mughal recreational centre, **Kedamath and Badrinath** were Hindu religious Centres.

RAILWAY TOWNS:

Railway towns were also a **type of urban settlements** and were established in **1853 after the introduction of railways by the British.** By the nature of railway transport, all the towns were located on the plains.

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TYPES OF COLONIALISM:

SETTLER COLONIALISM:

- Involves **large-scale immigration of settlers** who aim to **replace the indigenous population** and establish a new society
  (e.g., the United States, Canada, **Australia**).

EXPLOITATION COLONIALISM:

- Focuses primarily on **extracting resources** and **utilizing local populations for labor** to benefit the colonizing power
  (e.g., **colonial rule in India** and parts of Africa).

SURROGATE COLONIALISM:

- A settlement project supported by a colonial power where **the settlers are not of the same ethnic group** as the ruling power.

INTERNAL COLONIALISM:

- Refers to uneven power structures and exploitation within a single state, where one region or group dominates others.
- A classic example of internal colonialism in India is the **historical and ongoing relationship between the central "Hindi Belt" states and the states of the Northeast and south**

IMPACT OF COLONIALISM:

IMPOSITION OF CONTROL:

Colonizers establish **political and administrative structures to govern the colonized people and territories.**

ECONOMIC EXPLOITATION:

Colonized regions are often used as **sources of raw materials, markets for goods** from the colonizing power, and **providers of cheap labor.**

CULTURAL IMPOSITION:

Colonizers may attempt to **impose their language, religion, laws, education systems, and other cultural practices on the indigenous population.**

DISPLACEMENT AND DISPOSSESSION:

Indigenous populations may be displaced from their lands, and their traditional ways of life disrupted.

SOCIAL HIERARCHY AND DISCRIMINATION:

Colonialism often creates **social hierarchies** based on race and origin, leading to **discrimination and inequality**.

MOST COLONALISED NATIONS BY EUROPEAN COLONIAL POWERS

- **INDIA**

Underwent a long period of British rule, with significant economic exploitation, political control, and social and cultural impact.

- **VIETNAM**

Experienced extended periods of Chinese influence, followed by French colonial rule and later American involvement.

- **PHILIPPINES**

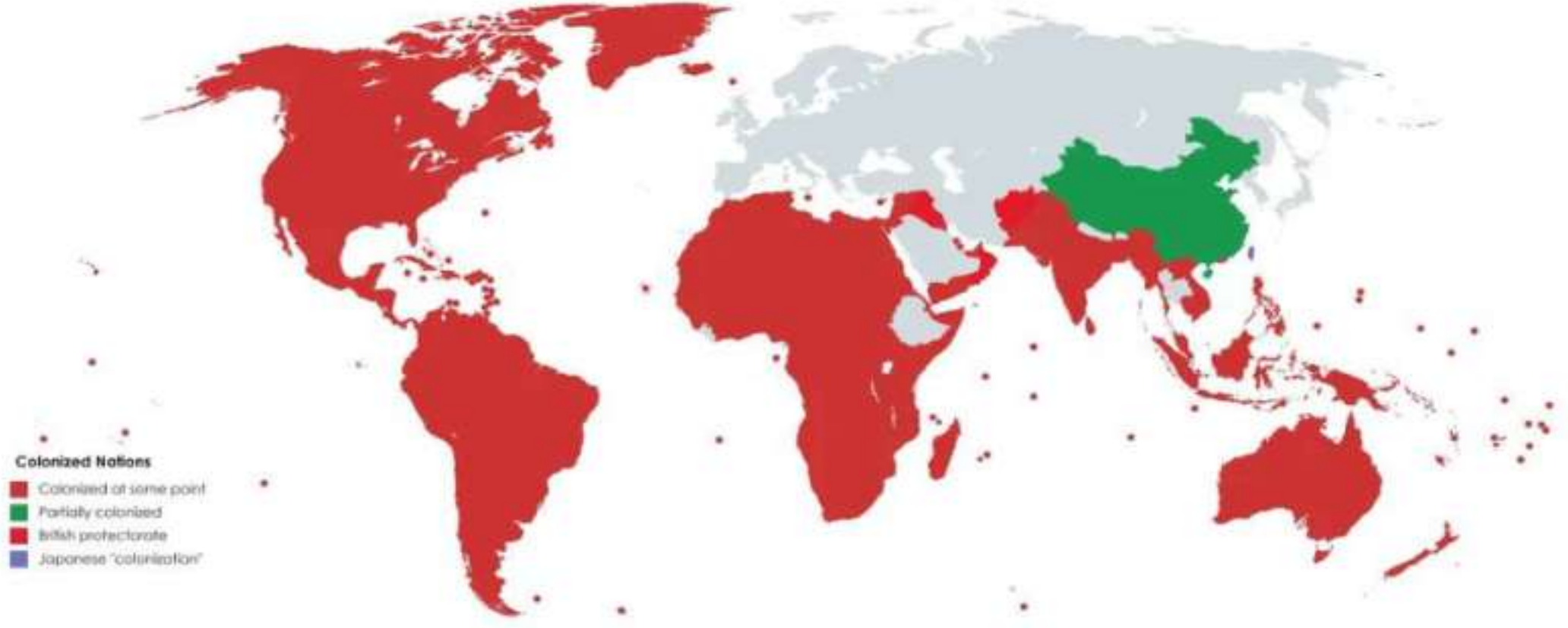
Colonized by Spain for over 300 years, followed by a period of American rule.

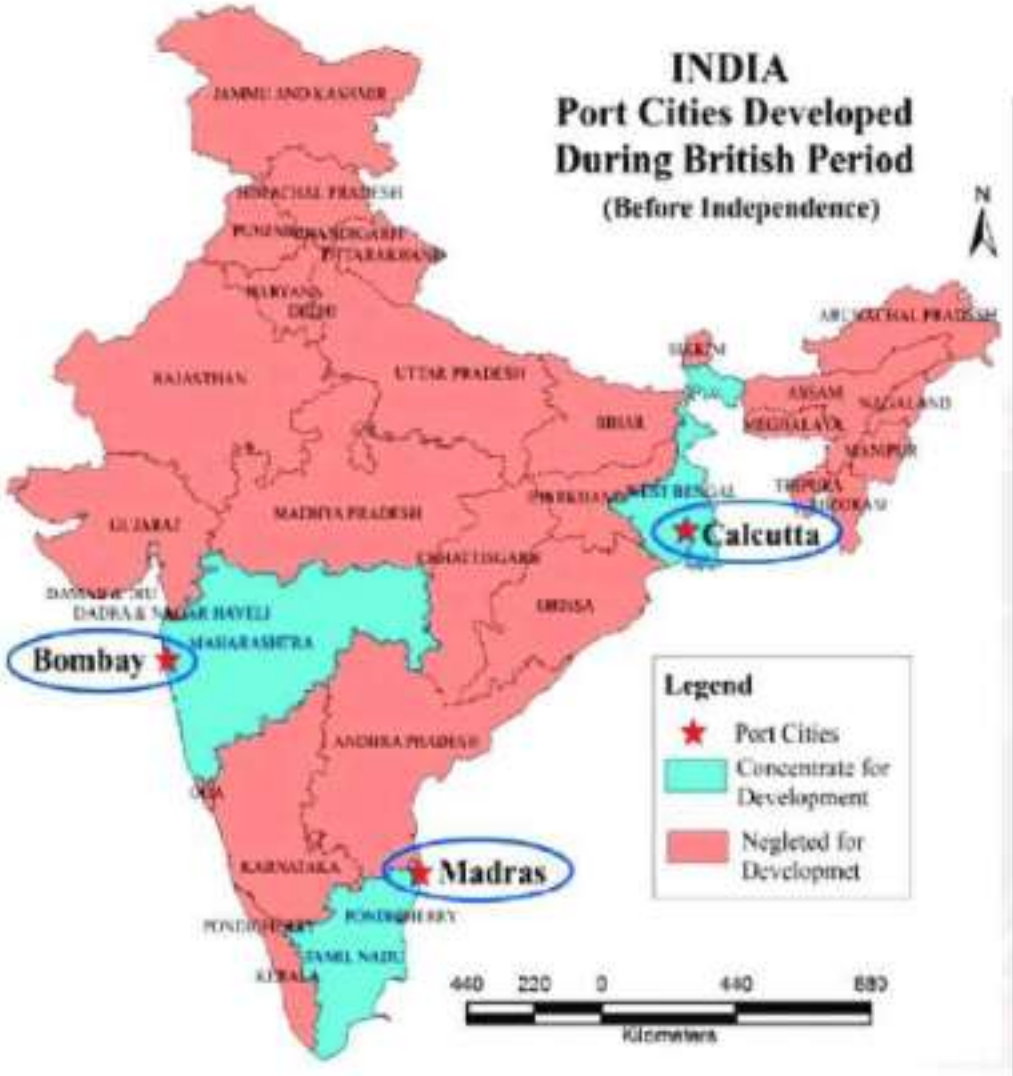
- **INDONESIA**

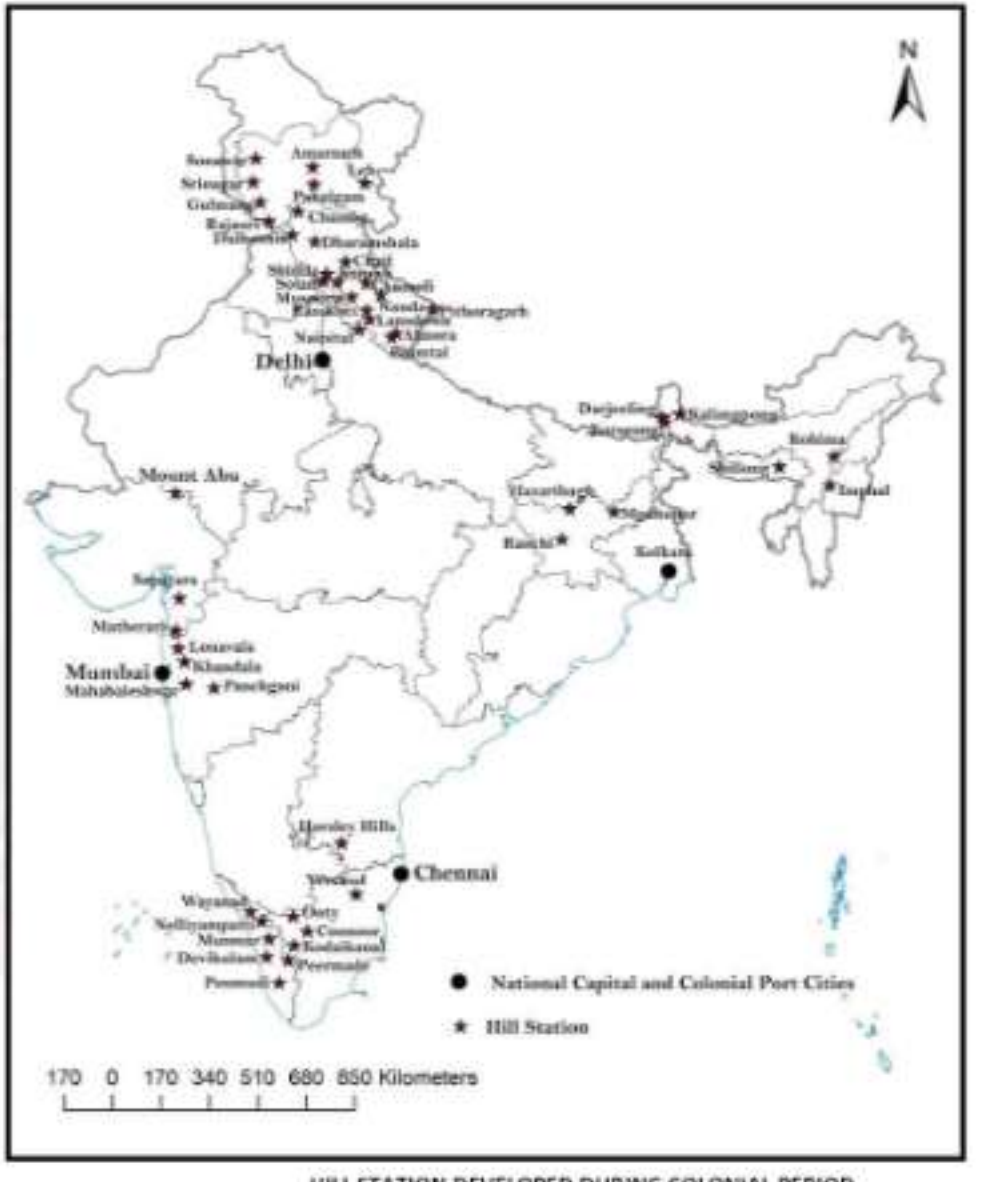
Subject to Dutch colonial rule for centuries, with significant economic extraction and social control.

- **MANY AFRICAN NATIONS**

The continent was extensively partitioned and ruled by various European powers during the "Scramble for Africa," leading to profound and lasting impacts.







HILL STATION DEVELOPED DURING COLONIAL PERIOD

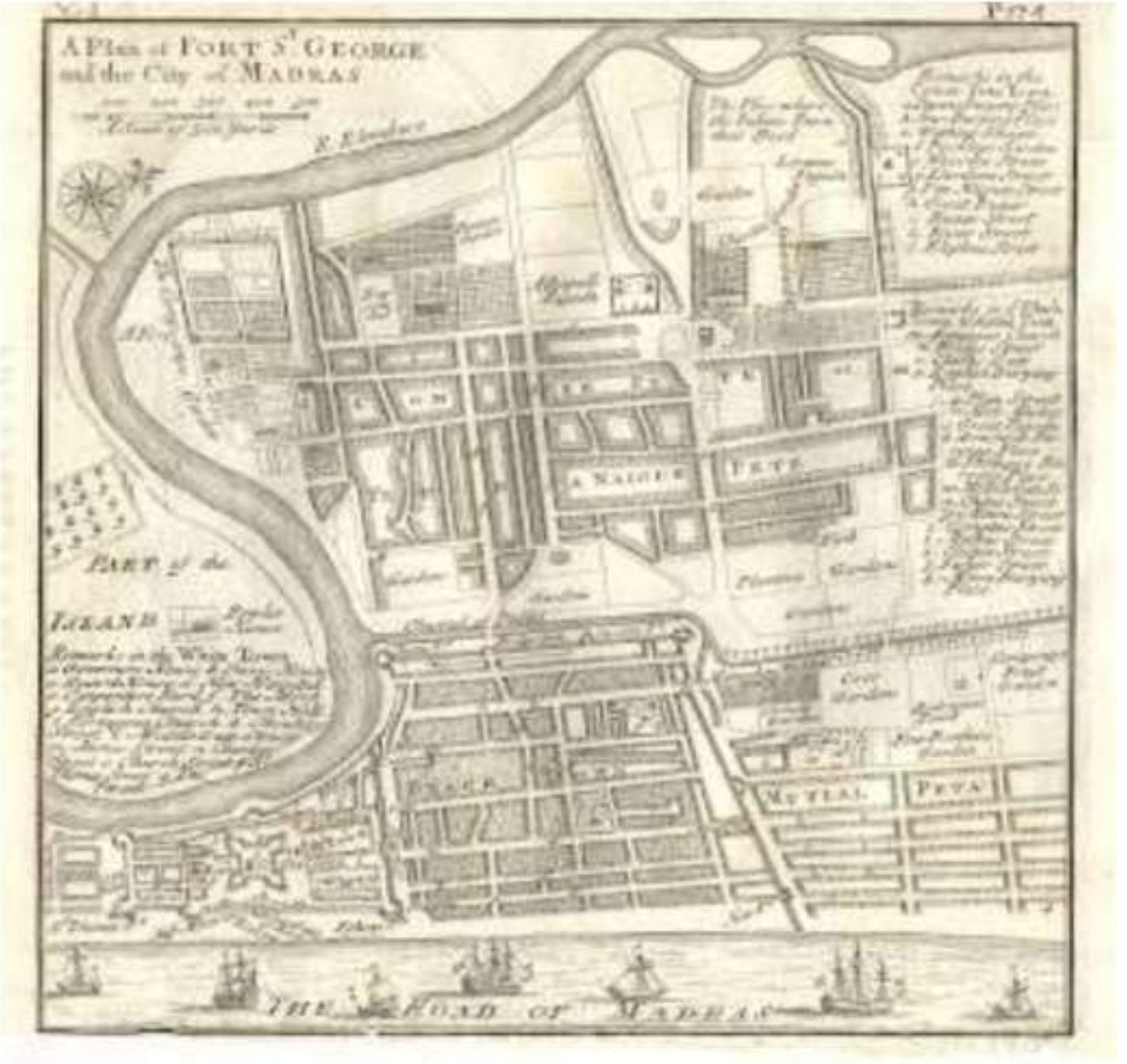
CITIES UNDER COLONIAL RULE:

1. Goa – portugal
2. Kochi – Portugal (first colony in india)
3. Delhi – britain
4. Calcutta- Britain
5. Madras – Portugese, Dutch, British
6. Bombay – Britain

COLONIAL POWER IN INDIA:

Portuguese- (1505-1961)
Dutch- (1605-1825)
Danish-(1620-1869)
British- (1612-1947)
French-(1759-1954)

Madras during COLONIAL British rule



COLONIAL URBANISM - CHENNAI

- Formerly known as **Madras, Capital of TN, India's fourth largest City.**
- Located in **coromandel coast of Bay of Bengal 400YRS old city.**
- **Modern city of Chennai** arose from **merging the native villages and European settlements around Fort St. George.** Collectively called as Madras.
- **colonial City, important artificial harbor, trading center.**
- **Founder – Francis Day, Andrew Cogan, Portuguese** . They established a **small fortified settlement**.
- It was **Invaded by the English**, who set up the **East India Company and had their settlement**.
- The Area came to be known as **Fort St. George settlement or the white town.**
- The **non European settlements were called as black town. White town and black town together were called as Madras.**
- During the **17th century,** Chennai found a **steady development**, thanks to East India Company During the **governorship of Ehilu Yale, Institution of Mayor & corporation of Chennai was formed .**

DEVELOPMENT OF TRADE:

- The **development of a harbor** in Madras led the city to become an **important center for trade between India and Europe in the 18th century.**
- **Spencer's started as a small business in 1864** and went on to become the **biggest department stores in Asia at the time**.
- The city's major **economic activity was entirely based on the sea and** other small scale industries inside the city.

DEVELOPMENT OF INSTITUTIONS AND PUBLIC AMENITIES:

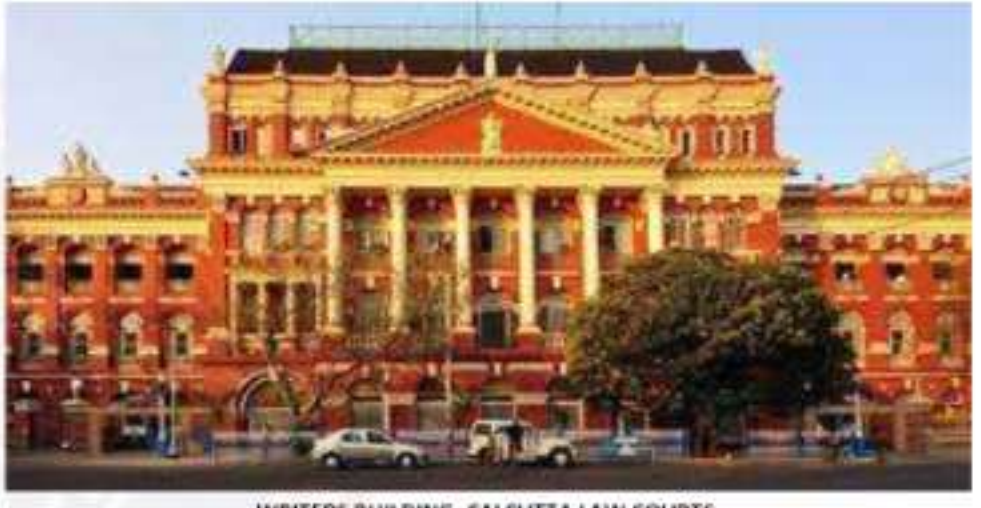
- Development of **Railway station, High Court, Educational Institution** and other **major administrative and commercial buildings** had taken **Chennai to its new heights.**
- In the **1900's Chennai acquired the status of a city** due to its increased population growth and advancements in terms of infrastructure and amenities.
- On the whole, the **colonial rule provoked the growth of Chennai** to a multi potential city which attracted people from all over Tamil Nadu for the past 40-50 years

COLONIAL URBANISM - CHENNAI

INDO SARASCENIC ARCHITECTURE:

- **Indo- Saracenic architecture- a synthesis of Muslim designs and Indian materials developed by British architects, during the late nineteenth and early twentieth centuries.**
- It **drew stylistic and decorative elements** from **native Indo-Islamic architecture,** especially Mughal architecture, which the British regarded as the classic Indian style, and, **less often, from Hindu temple architecture.**
- Found its way into **public buildings like railway stations, banks and insurance buildings, educational institutions, clubs and museums.**

VICTORIA TERMINUS – BOMBAY



WRITERS BUILDING- CALCUTTA LAW COURTS,

LUTEYENS BUILDINGS - DELHI

NAPIER MUSEUM – TRIVANDRUM

CHEPAUK PALACE- MADRAS

BUILDINGS WITH INDO SARASCENIC STYLE:

- Writers building- Calcutta Law Courts,
- Chepauk Palace- Madras
- Napier Museum – Trivandrum
- Prince of Wales Museum-Mumbai
- victoria terminus – bombay
- Luteyens buildings – Delhi

LEADING PRACTITIONERS:

Robert fellowes Chisholm, Henry Irwin, william Emerson, Fredrick Stevens

Principal Characteristics

1. Pinnacle or Spire
2. Bulbous (Onion-Shaped) Dome
3. Arches
- Pointed, cusped, or scalloped

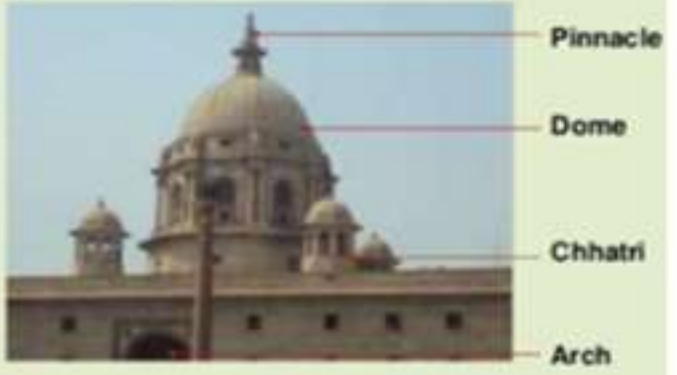
4. Delicate Ornamentation
- Nonfigurative
- Quranic script

5. Chhatri
- Pavillion with dome

6. Chajja
- overhanging eaves on large carved brackets.

7. Jali
- Perforated stone or latticed screen

8. Towers or minarets
9. Vaulted Roofs
10. Harem Windows
11. Pavilions
- Open
- Pierced Open Arcaded



UNIT II
MODERN URBANISM

Industrialization and impact on urbanism. American grid iron planning. Theories, ideas and practice of good urban planning/cities/urbanism in early 20th century.

INDUSTRIALISATION AND IMPACT ON URBANISM

INDUSTRIAL REVOLUTION

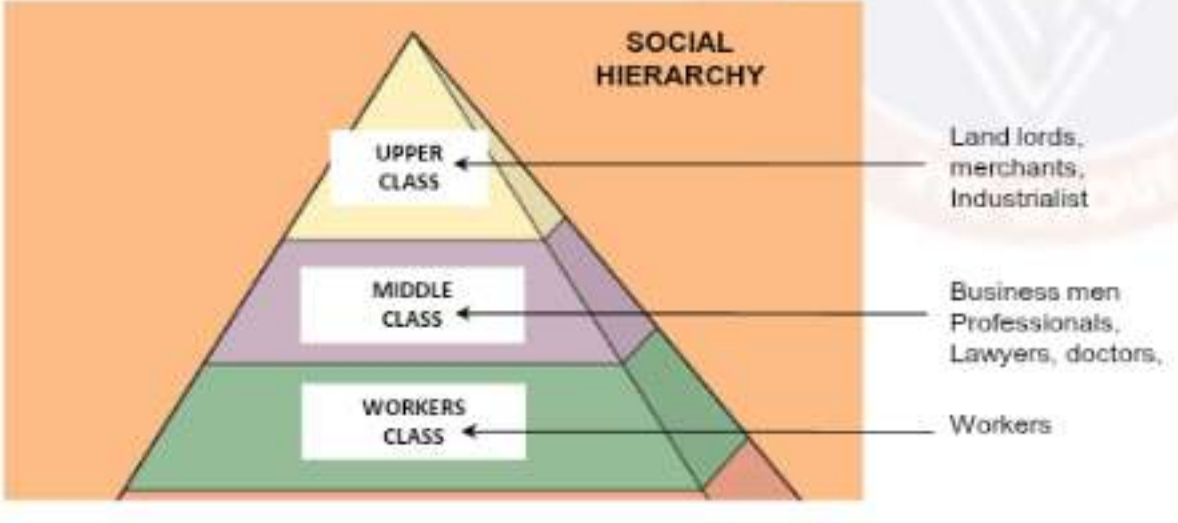
- The **first Industrial Revolution** began in **Great Britain in the 1700s and 1800s** and was a time of significant innovation.
- **Process of change** from an **agrarian and handicraft economy** to one dominated by **industry and machine manufacturing**.
- These technological changes introduced **novel ways of working and living and fundamentally transformed society**.

FOUR INDUSTRIAL REVOLUTION OF THE WORLD:

- Coal **1765**
- Gas **1870**
- Electronics and nuclear energy **1969**
- Internet and Renewable energy **2000**

INDUSTRAILIZATION

- **Shift** from an agricultural **(farming)** economy to one based on industry **(manufacturing)**
- **Industrialization leads to urbanization** by creating economic growth a nd job opportunities that draw people to cities.
- **Urbanization typically begins** when a factory or multiple factories are established within a region, thus creating a high demand for factory labor



PROSPECTS OF INDUSTRIALIZATION:

- Development of the **Working and Middle Classes**
- Significant increase in people's **standards of living**
- Technological Advances
- Goods in Mass Production
- Time management
- Control and limit massive human energy waste
- Creation of new modes of transportation
- Creates new job opportunities

CONS OF INDUSTRIALIZATION:

- Overcrowded cities
- Formation of slums ,inadequate housing
- congestion
- no proper ventilation , drainage
- Depletion of natural resources
- Pollution
- Health disorders
- Unhealthy working conditions
- Poor living conditions in the vicinity of factories
- Excessive use of fossil fuels
- unemployment
- Child labor
- Break down of traditional communities ,handicrafts and art form

WORKING CONDITIONS

- **Terrible working environment**
- **Factories** were built and **long line of people willing to work.**
- Employees set **low wages and People were willing to work** as long as they got paid.
- People worked **14 to 16 hours a day, six days a week.**
- Majority of workers were unskilled and **Skilled workers earned** more, but not significantly more.
- **Women received 1/3rd or ½ of the pay of men.**
- Factory has plethora of machines with not much safety precautions resulting in **many accidents.**
- Workers received a **break only for lunch and dinner.**
- **Children forced to work for even lesser wages**.
- **Children were to work** for **14hrs a day for only ten cents**, and were used for **simpler unskilled jobs.**
- Due to **lack of sunlight and exercise**, there were many **children with physical deformities.**
- Use of children for long hours work with **bad living conditions led to the formation of labor unions.**
- **Labour unions** formed because workers wanted to put a stop to long hours work with little pay, workers **demanded more pay and fairer treatment**
- **Labour unions organised strikes and protests**. More **immigrants** came in, who were willing to **work for lesser wages, so labor unions often were unsuccessful.**
- **Rich became richer. Poor became poorer**

LIVING CONDITIONS

- Business began to boom and **people began to move in searching for jobs.**
- Most **people lived in slums.**
- **Five to nine people lived in a single room**.
- Not only there was not enough space, but more **people got sick as well and Diseases spread rapidly**
- **Lack of medicine and medical care** resulted in deaths.
- At the same time **population was increasing rapidly** and apartments became crowded and were in **worse sanitary conditions**.
- People had to **fight for jobs and competed to live.**
- As industrialization occurred, **middle class emerged**.
- **Middle class were skilled workers, managers, clerks, accountants** and had the money they need to survive and enabled them to live with a **bit of comfort.**
- Most middle class moved away from cities, since they thought **" slum" was unhygienic and unpleasant.** This led to the **beginning of " suburbs" or socially segregated neighborhoods**.
- Majority of people living in industrialized areas, lived in **terrible harsh con ditions** because of the lack of money and overwhelming population.
- No proper sewage systems prevailed. **Diseases like TB, cholera and typhoid spread rapidly.**

HOUSING

- **Poor lived in crowded tiny rooms in tenements** (multistory buildings
- divided into apartments)Tenement = a substandard, multi-family dwelling, usually old and occupied by the poor.
- **Built cheaply with Multiple stories.**
- **No running water , No toilet , Sewer down the middle of street .**
- **Trash thrown out into street.**
- **Crowded** (5+ people living in one room).
- **Breeding grounds for diseases.**
- **Pollution from factory smoke**

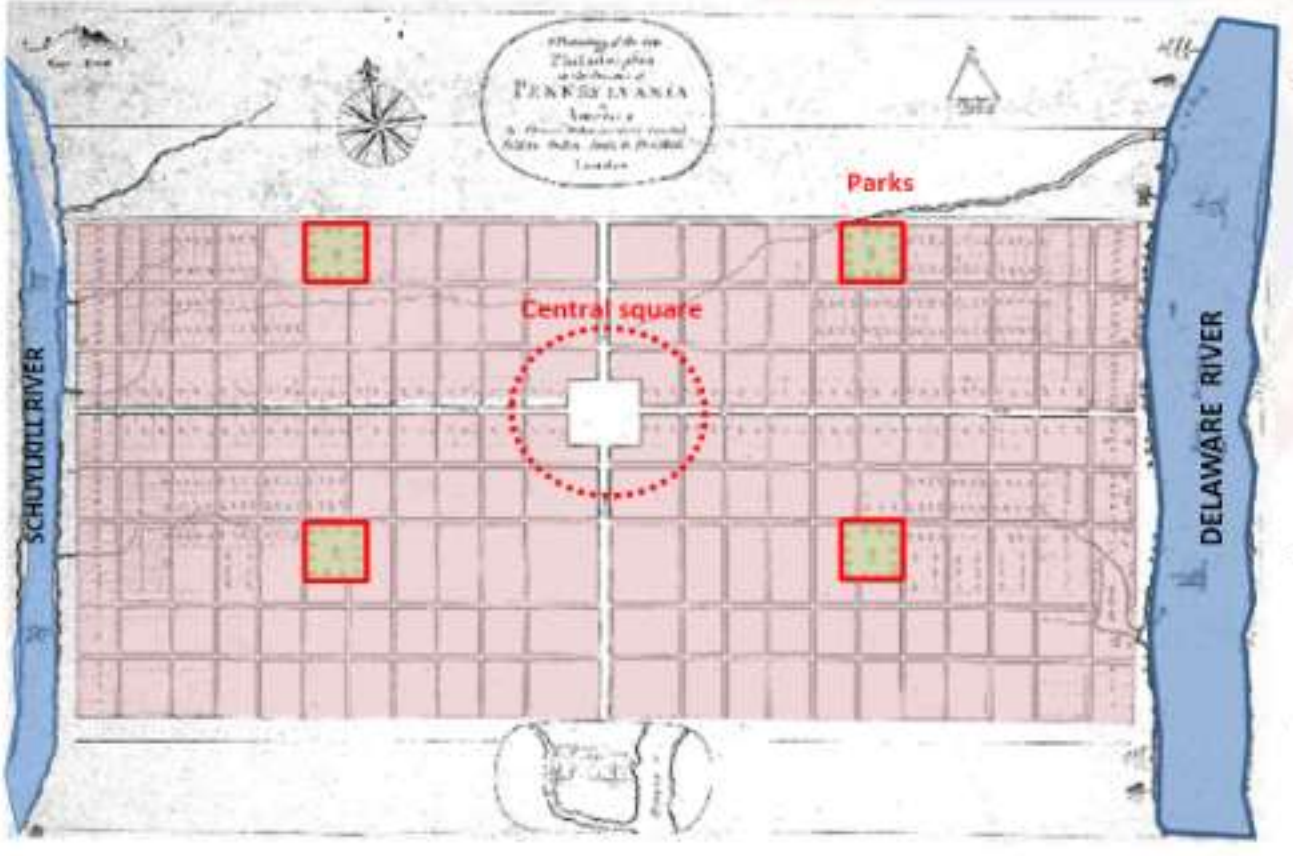
IMPACT OF INDUSTRIALISATION ON CITIES

OUTCOME OF INDUSTRIALISATION ON CITIES

- Regulation of zoning
- Regulatory law was imposed
- Housing and sanitary standards was set.
- Reformation of society disorders
- Need for a communal space

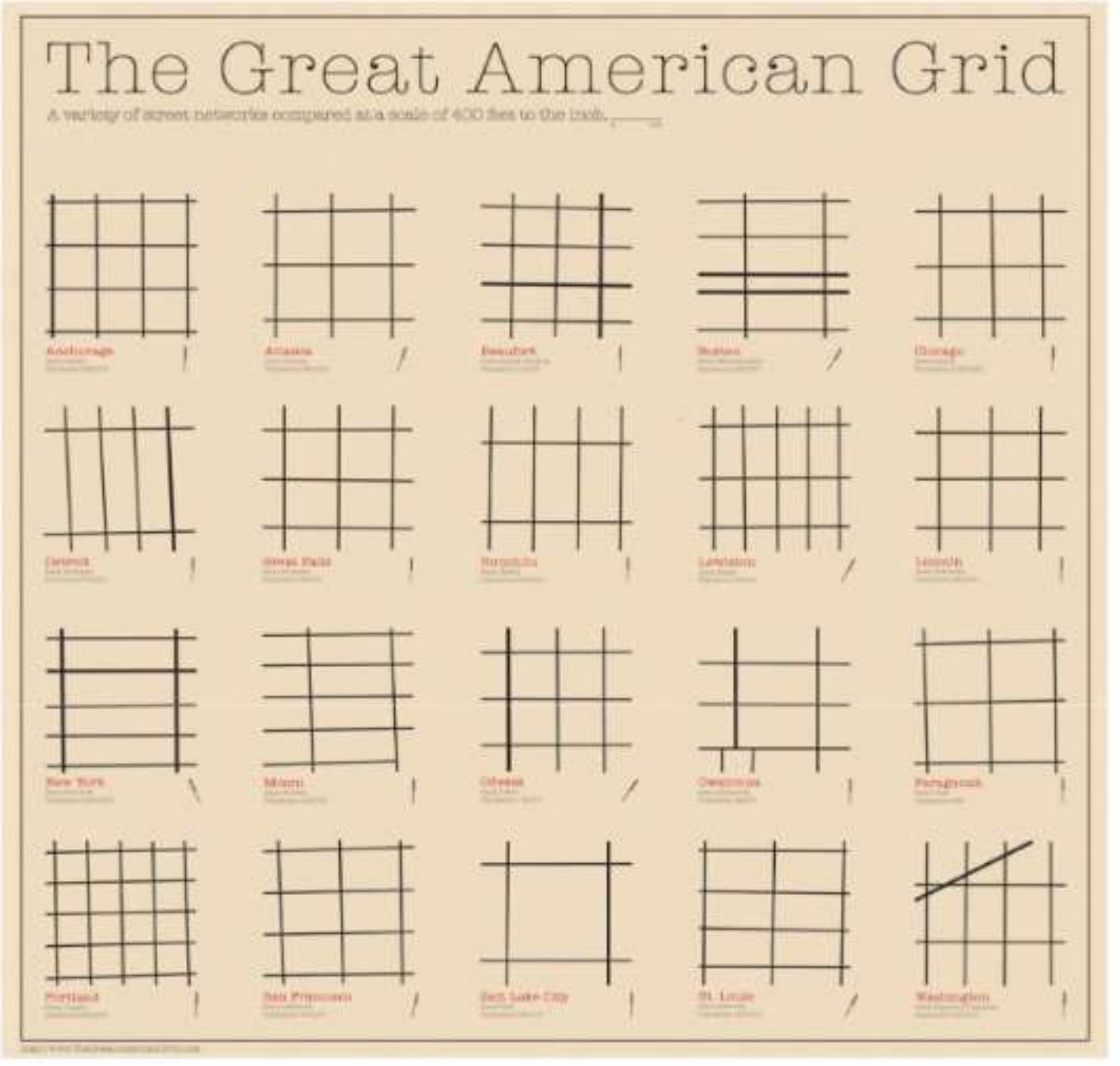
WILLIAM PENN - **AMERICAN GRID IRON PLANNING**

- **William Penn** (1644-1718) was an **English Quaker leader, philosopher, and the founder of the American colony of Pennsylvania.**
- He played a **significant role in the early history of the United States** and is **best known** for his contributions to religious freedom and his **establishment of Pennsylvania as a haven for religious and political tolerance.**
- He used **grid as the physical foundation for Philadelphia in 1682** and is one of the **earliest attempts at utopian city planning and** Its an **Extensively 'pre-planned' American city in its time.**



- His grid iron design was **organized around 100 feet wide Broad and High streets which** cross each other at **'centre square'** and **divide the city into four quadrants**
- Streets in Penn's Philadelphia plan were **"broader than any street in London** and This **revolutionary wide and open design has become the norm in many American cities today.**
- **First city to use the indexical system of numbers for north-south streets and tree names for east-west streets.**
- **Generous room for expansion, anticipating future growth.**

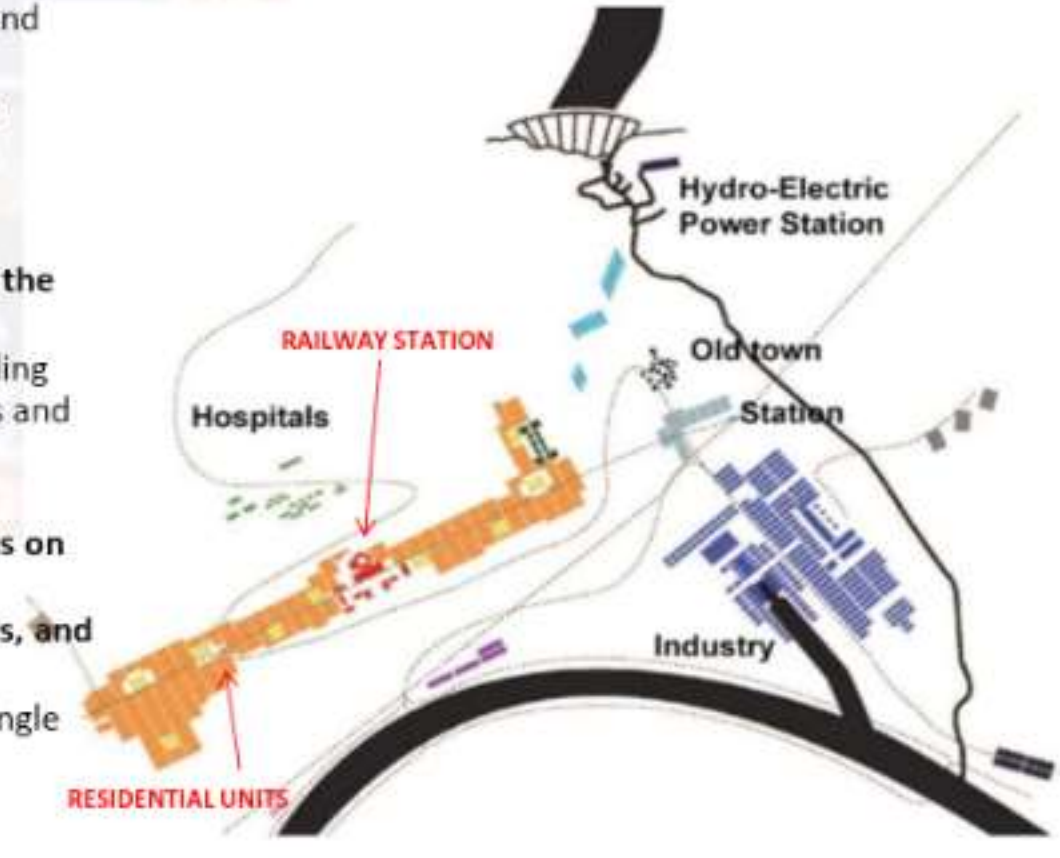
AMERICAN GRID IRON PLANNING



- Penn's plan included **80-acre gentleman's estates surrounding the commercial core of the city.**
- **Lots** were **evenly spread** across the width of the city, with **prime real estate facing both the Delaware and Schuylkill rivers.**
- Original vision **aimed to replicate a "green Country Town and he incorporated the concept of a greenbelt encircling the metropolis**, which was an **early precursor to the modern suburb**.
- **Lots** were either **one acre or half an acre in size**, leaving plenty of **room for residents to plant their own gardens**.
- The **design allowed city dwellers to enjoy a country lifestyle within the city which was the departure from the cramped cities of Europe.**
- Penn's plan assumed that **each house would have its own space for a garden**, which was a **plan laid the foundation for the city's development and has left a lasting legacy in the history of American urban planning.**
- **city's principal public buildings,** such as the meeting house, school, and state house, **to border Centre Square**.
- **Each quadrant** of the city also **contained additional green spaces in the form of small parks,** reflecting Penn's interest in parks and gardens.
- **Penn's emphasis on parks and gardens** was in part due to his **awareness of the health risks associated with 17th-century cities.** He had experienced events like the **bubonic plague of 1665 and the Great Fire of London in 1666**.
- He **envisioned his "green town"** as a place that **would be immune to fires and conducive to good health.**

CITY INDUSTRIALE / INDUSTRIAL CITY- TONY GARNIER

- **Tony Garnier** was a French architect, city planner and socialist who **planned modern cities** in detail according to requirements of an **Industrial City Model.**
- Industrial city was **visionary urban plan for a modern industrial city.** (1901 - 1917)
- His ideas and principles have a lasting influence on urban planning and architecture.
- Designed for approximately **35,000 inhabitants.**
- He proposed a **clear segregation of zones** (industrial, residential and agricultural) **based on the function** to minimize pollution and congestion.
- The **city** was divided into **four primary functions**: **work, housing, health, and leisure**, with each area serving its specific purpose.
- The **central region of the city is anchored by the train station** and serves as the **hub for public trade facilities and services.**
- **Public Area** is located at **the heart of the city,** there **were three sections: administrative services and assembly halls, museum collections, and sports facilities.**
- He incorporated **extensive green spaces, parks, and gardens** throughout the city to **provide recreational areas and improve the overall quality of life for residents.**
- Garnier's plan included **efficient transportation systems**, including roads, railways, and canals, to facilitate the movement of goods and people.
- The residential areas were designed to provide **modern and comfortable housing** for workers and their families, with a **focus on improving living conditions.**
- Designed the city with **modern amenities like schools, hospitals, and cultural institutions.**
- such as Garniers vision may not have been implemented as a single city, but his elements of his ideas can be seen in various urban planning and architectural projects over the years.



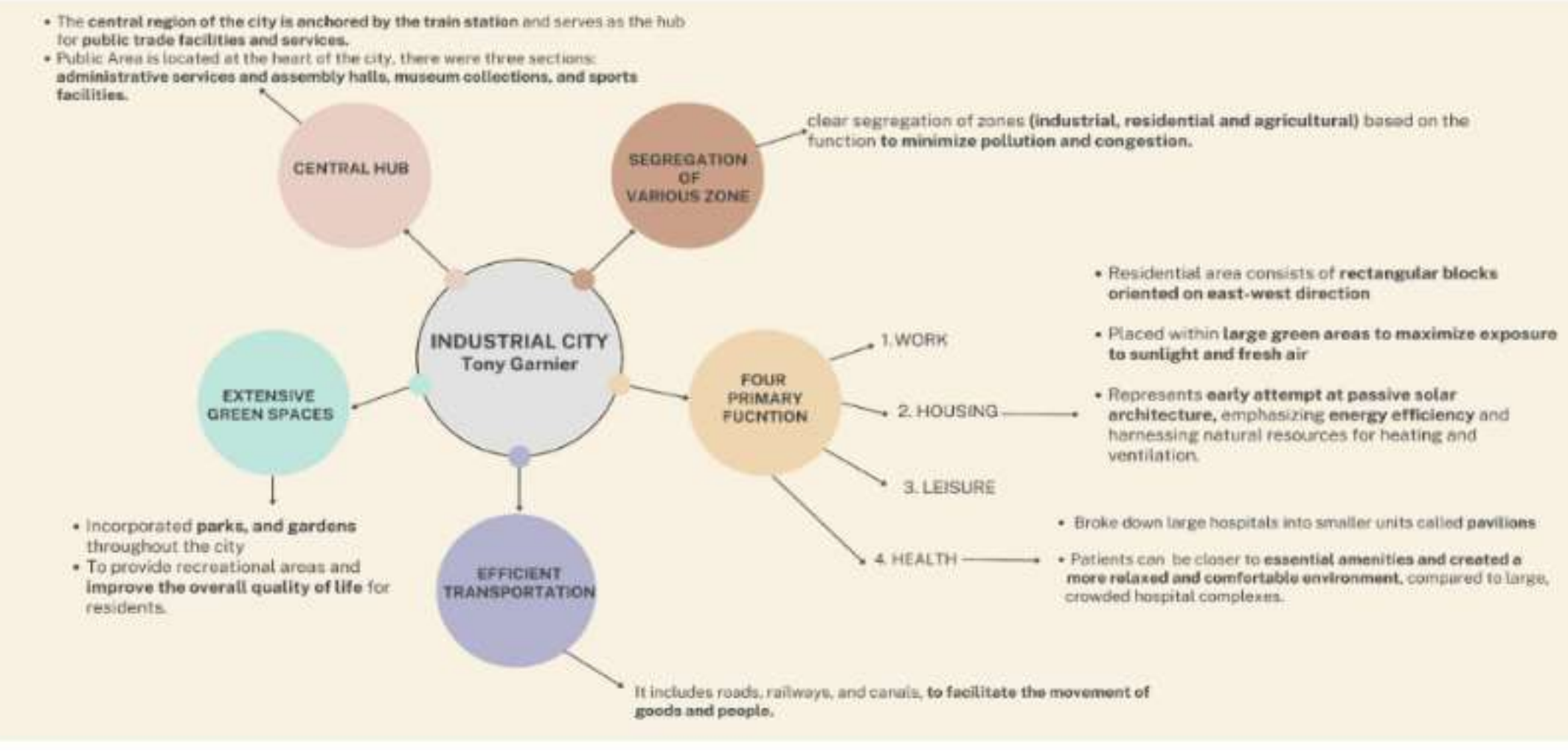
VIEW OF THE INDUSTRIAL CITY

- The **residential area consists of rectangular blocks oriented east-west**, giving the city its distinctive elongated shape.
- **Houses are strategically placed within large green areas to maximize exposure to sunlight and fresh air.**

- His **residential districts** represents an **early attempt at passive solar architecture**, emphasizing **energy efficiency and harnessing natural resources for heating and ventilation.**
- **City was planned** to be **powered by a hydroelectric station with a dam**. This station was located in the nearby mountains, contributing to a sustainable and efficient energy supply for the city.
- He broke down large hospitals into smaller units called pavilions by doing so allowing the patients to be closer to essential amenities and created a more relaxed and comfortable environment, compared to large, crowded hospital complexes.
- He stresses the importance of sunshine and fresh air in the healing process.
- Tony Garnier was the one of the **pioneer in using concrete.** The materials used are concrete for the foundations and walls, and rei nforced concrete for floors and ceilings.

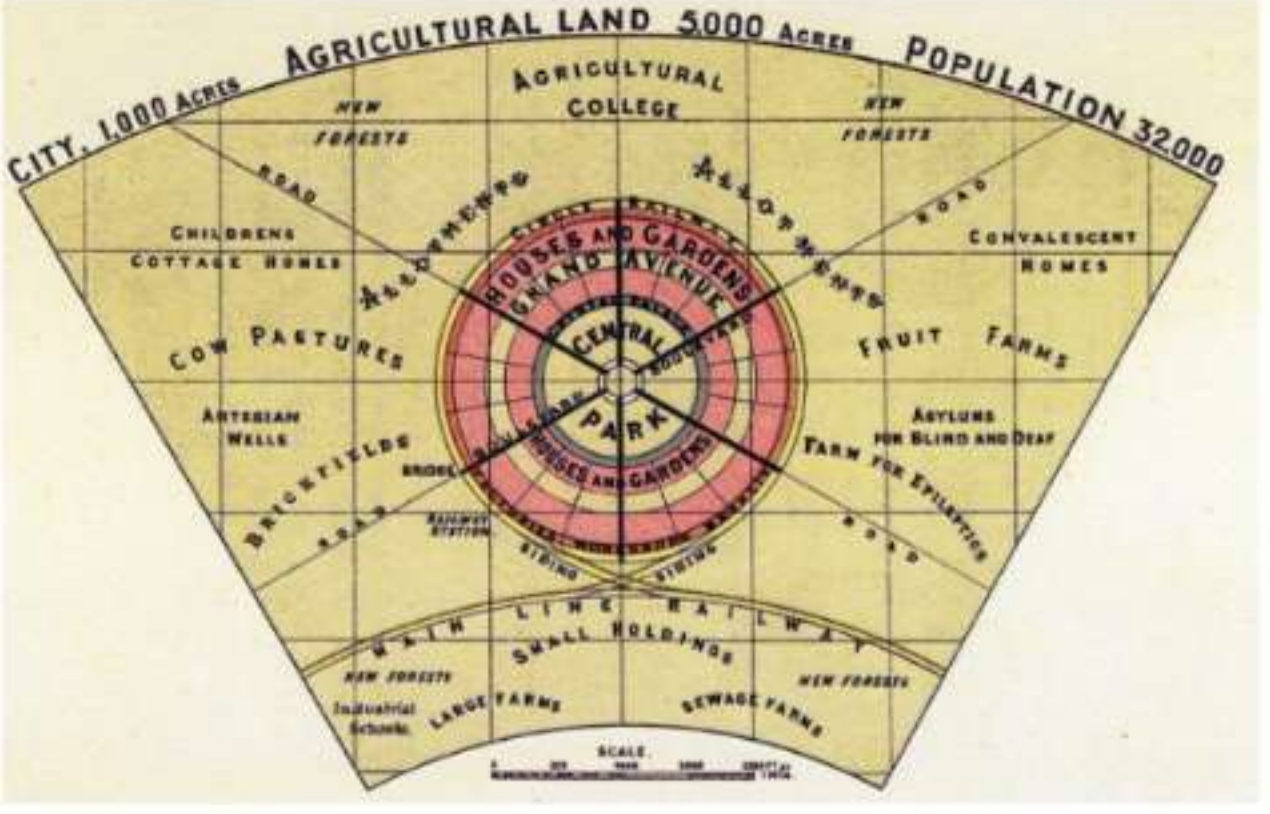
KEY PRINCIPLES IN DESIGNING AN INDUSTRIAL CITY

Tony Garnier



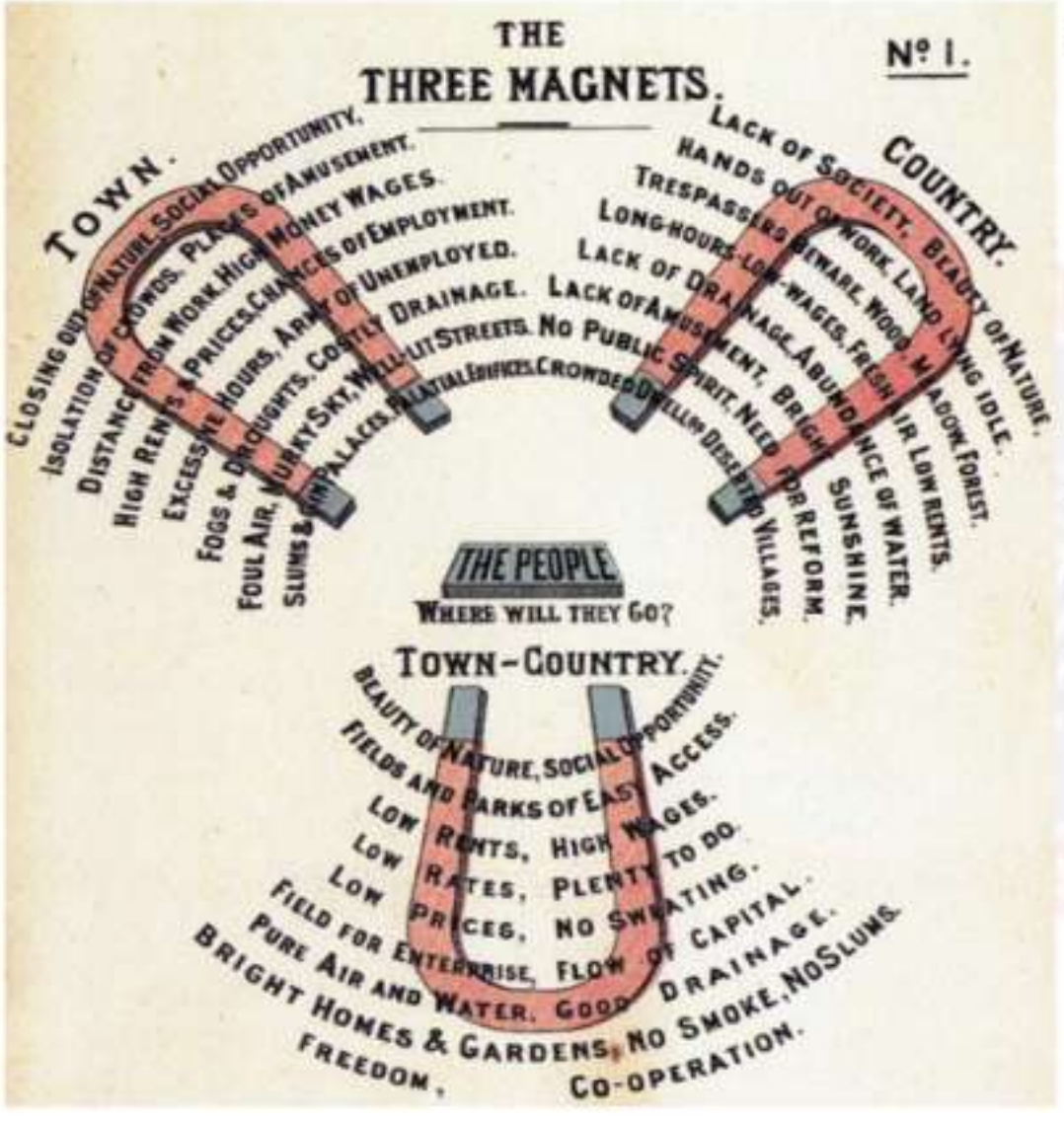
GARDEN CITY MOVEMENT - EBENEZER HOWARD

- **Ebenezer Howard**, sociologist, English founder of the garden city movement.
- Howard was heavily influenced by the utopian visions of **Edward Bellamy** and his publication **"Looking Backward"**(1888)
- He studied **the industrial evils in Britain and gave the concept "Garden city movement.**
- **Garden Cities were created to avoid** the downfalls of industrial cities of the time such as **urban poverty, overcrowding, low wages, dirty alleys with no drainage, poorly ventilated houses, toxic substances, dust, carbon gases, infectious disease and lack of interaction with nature**



THE OVERVIEW OF HOWARD'S PROTOYPICAL GARDEN CITY
(showing the entire city as well as the surrounding agricultural belt)

"THREE MAGNETS THEORY"

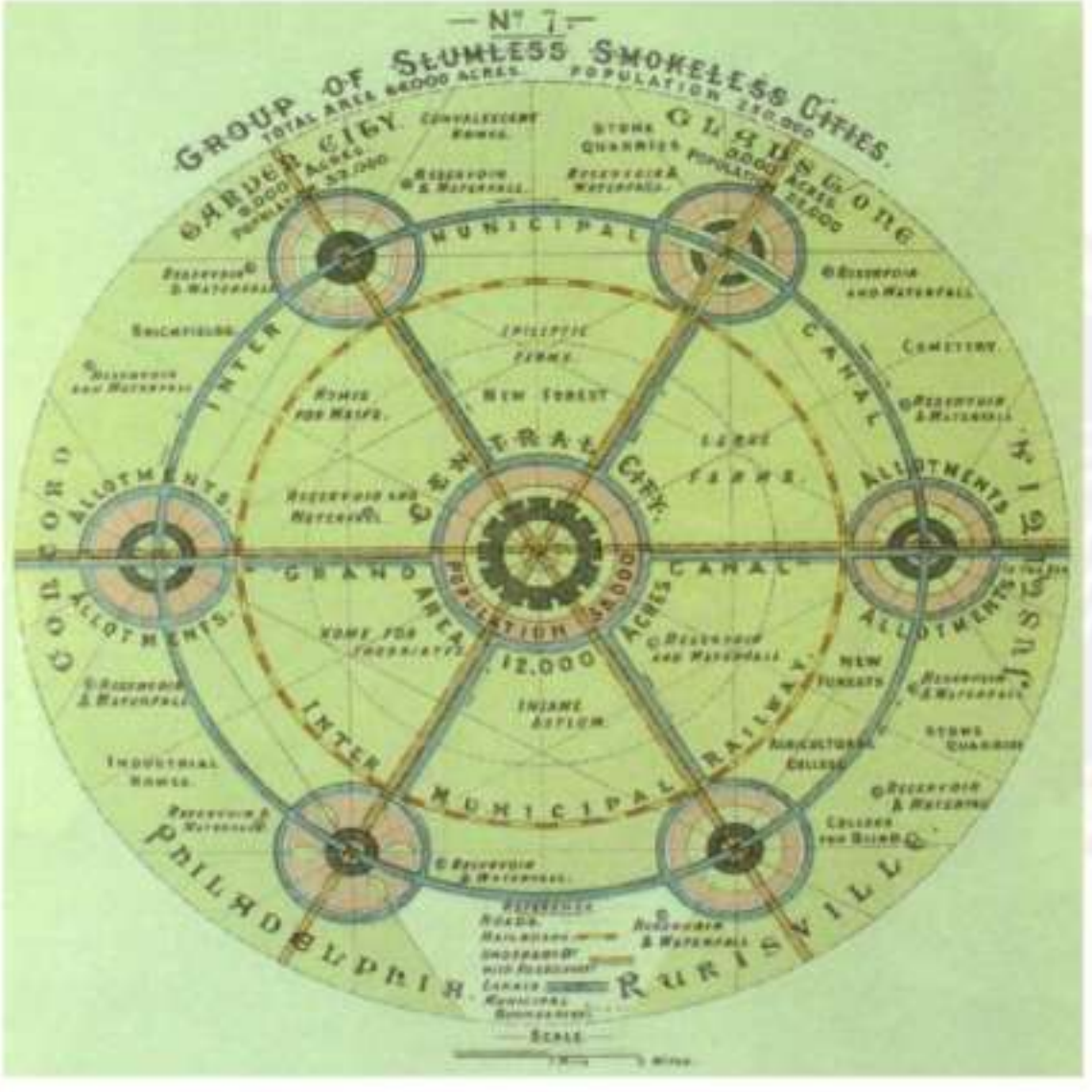


- He explained the garden city concept through **"Three magnets theory"**

  - **TOWN**
  (opportunity, amusement and good wages)
  - **COUNTRY**
  (fresh air, close to nature & low land value)
  - **TOWN & COUNTRY**
  (attractive feature of both town, country)

- His vision was to have **town free of slums** and **enjoying the benefits of both town** (such as opportunity, amusement and good wages) **and country** (such as beauty, fresh air and low rents)

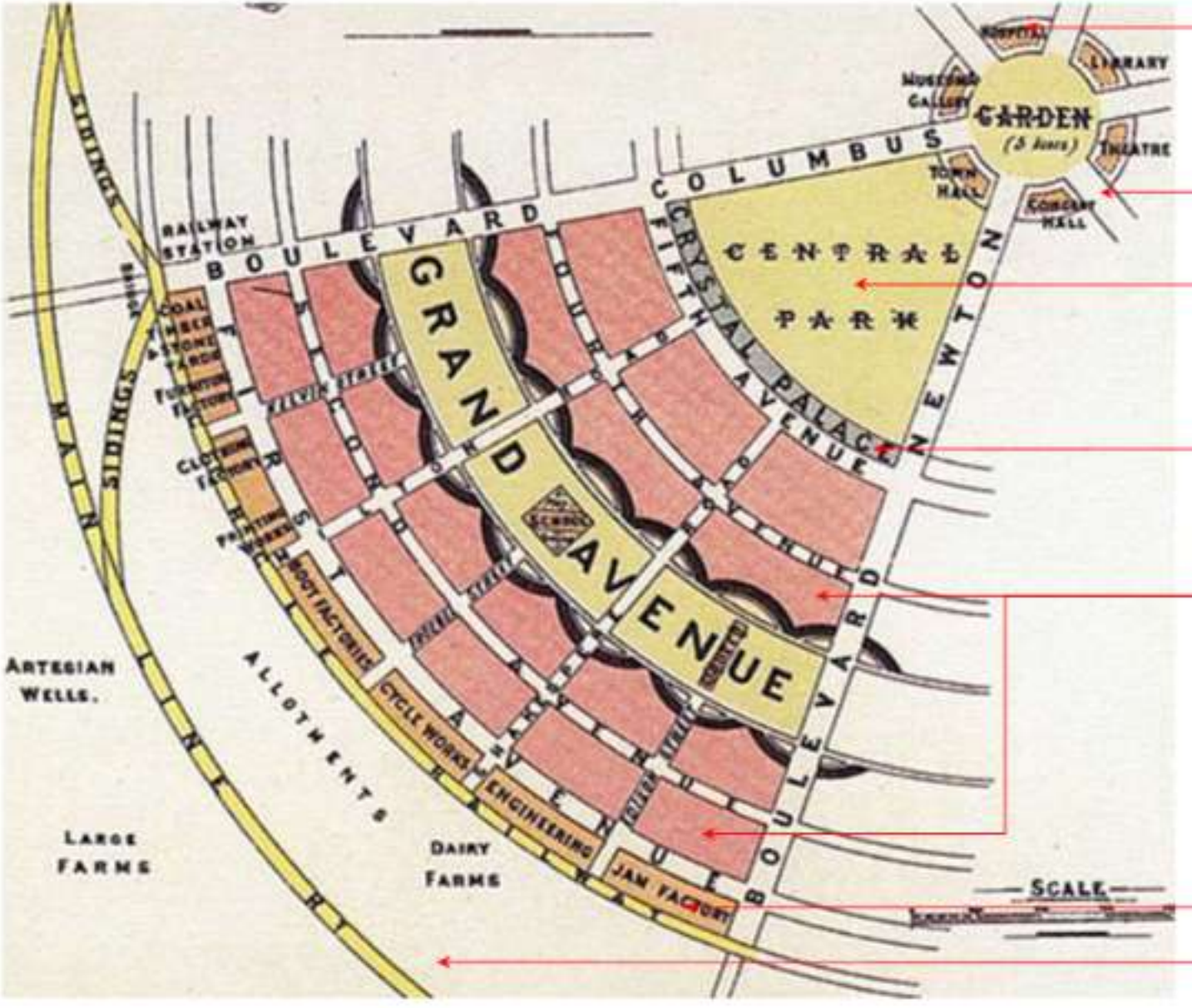
A VIEW OF EBENEZER HOWARD'S ULTIMATE GOAL, A "SOCIAL CITY"
(Made Up Of Interconnected Garden Cities)



- **Garden city was designed for healthy living** and industry land will remain in a single ownership of the community or held in trust for the community.
- **Town area is about of 5000 acres** and the population is for 32000
- **Circular city growing in a radial pattern, Divided into six equal wards, by six main Boulevards that radiated from the central park/garden.**
- **Outer circle is zoned for factories and industries**
- **Large central park containing public buildings** (Town Hall, Library, Hospital, Theatre, Museum etc.) are placed around the **central garden**.
- **central park surrounded by a shopping street** with indoor shops and winter gardens.
- **central park and shopping street are surrounded by dwellings** in all directions at a density of 12 families per acre.
- **The streets for houses are formed by a series of concentric ringed tree lined avenues.**
- **Distance between each ring vary between 3-5km**
- 420 feet wide , 3 mile long, **Grand avenue** which run in the center of concentric rings , **houses the schools and churches and acts as a continuous public park**.
- Notable examples of **Garden Cities include Letchworth Garden City and Welwyn Garden City** in the United Kingdom, both of which were among the first planned Garden Cities based on Ebenezer Howard's principles.

SINGLE WARD OF THE GARDEN CITY,

showing The Series Of Avenues And Gardens That Make Up The Rings Of The City)



PUBLIC BUILDINGS LIBRARY, THEATRE MUSEUM,HOSPITAL, CONCERT HALL

RADIATING BOULEYARDS

CENTRAL PARK CONTAINING PUBLIC BUILDINGS

SHOPPING STREET

DWELLINGS

FACTORIES AND INDUSTRIES

5000 ACRES OF GREEN BELT

NEIGHBOURHOOD UNIT- C A PERRY

- **Charles Arthur Perry, an architect and planner from New York,** was one of the first authors that defined the **concept of 'neighborhood unit'.**
- Neighborhood unit concept mainly evolved due to the advent of industrial revolution and degradation of the city environment caused due to
  - **-high congestion**
  - **-heavy traffic movement through the city**
  - **-Insecurity to school children**
  - **-distant location of shopping, recreational activity etc.**
- **This concept aimed to create self-contained, functional, and efficient neighborhoods** within the larger urban context.

SEVERAL KEY PRINCIPLES IN DESIGNING A NEIGHBOURHOOD:

- **WALKABILITY**:
  -Neighborhoods are designed to **be walkable, with a focus on pedestrian-friendly streets, sidewalks, and pathways**.
  -This encourages residents to walk to nearby destinations, **reducing the reliance on automobiles.**

- **MIXED LAND USES**:
  -The CA Perry Neighborhood Unit promotes **the integration of various land uses within the neighborhood.** This includes residential areas, schools, parks, local shops, and other amenities.
  -The **goal is to minimize the need for long commutes** and provide residents with easy access to essential services.

- **COMMUNITY FACILITIES**:
  The neighborhood unit typically includes community facilities such as **schools, libraries, and recreational centers to serve the needs of residents and promote a sense of community.**

- **GREEN SPACES**:
  Parks and green spaces are **integrated into the neighborhood** to provide recreational opportunities and **enhance the overall quality of life.**

- **GRID STREET LAYOUT**:
  -The streets in a CA Perry Neighborhood Unit are often laid out in a **grid pattern, making navigation straightforward and efficient. -Facilitates connectivity within the neighborhood.**

- **HIERARCHICAL STREET SYSTEM**:
  The concept incorporates a hierarchical street system, with **major thoroughfares connecting to the larger city** and **smaller, quieter streets within the neighborhood.**

- **RESIDENTIAL DIVERSITY**:
  Housing in the neighborhood is designed to **accommodate a range of housing types, from single-family homes to apartments**, to accommodate diverse household needs and income levels.

- **SENSE OF PLACE**:
  CA Perry's concept emphasizes the **creation of a distinct sense of place** within each neighborhood unit, **fostering a strong local identity and community spirit.**

- **EFFICIENT TRANSPORTATION**:
  Public transportation and infrastructure are designed to be efficient and accessible, reducing congestion and the environmental impact of commuting.

KEY PRINCIPLES IN DESIGNING A NEIGHBOURHOOD UNIT

CA Perry

1. Walkability

- Encouraging residents **to walk** and to **reduce the reliance on automobiles.**
- Focus on **pedestrian friendly streets**, pathways and sideways

2. Mixed land use

- Promotes the **integration of various land use zone** within the neighbourhood
- Goal is to **minimize the need for long commutes**
- Provide **easy access to essential services**

3. Green spaces

- **Parks and green spaces** are integrated into the neighborhood to provide **recreational opportunities**
- **To enhance the overall quality of life.**

4. Efficient transportation

- **Reducing congestion and the environmental impact of commuting.**

5. Sense of place

- **Emphasizes the creation of a distinct sense of place**
- Fostering a **strong local identity and community spirit.**

6. Grid street network

- Making **navigation straight forward and efficient.**
- **Facilitates connectivity** within the neighborhood.
- **Hierarchical street system** with **major thoroughfares** connecting to the **larger city**, Smaller, quieter **streets within the neighborhood.**

7. Communal facilities

- Includes community facilities such as **schools, libraries, and recreational centers**
- To serve the needs of residents and to **promotes a sense of community.**

8. Residential diversity

- To accommodate **various housing types**, from single-family homes to apartments based on **income level**

GEDDESSIAN TRIAD

- **Scottish Biologist, Sociologist, Geographer, Philanthropist And Pioneering Town Planner**
- He introduced the concept of **"region"** to and coined the term **"conurbation"**
- He was **the originator of the idea and technique** of **regional survey and city survey**
- He viewed the **family** as the **central "biological unit of human society"**
- According to Geddes, healthy homes providing the necessary conditions for mental and moral development resulting with beautiful and healthy children who are able to fully participate in life
- He explained that **house is an inseparable part** of the **neighborhood, the city** and the surrounding open **country and the region.**
- He describes the **relationship between people and cities and how they affect one another**
- **He also emphasized that people do not merely needed shelter, but also food and work, the recreation and social life.**

PATRICK GEDDES

INFLUENCED BY

FREDERIC LE PLAY

HERBERT SPENCER

CONCEPT OF BIOLOGICAL EVOLUTION

KEY UNITS OF SOCIETY (PLACE, WORK, FAMILY)

GEDESSIAN TRIAD

CONSTELLATION THEORY

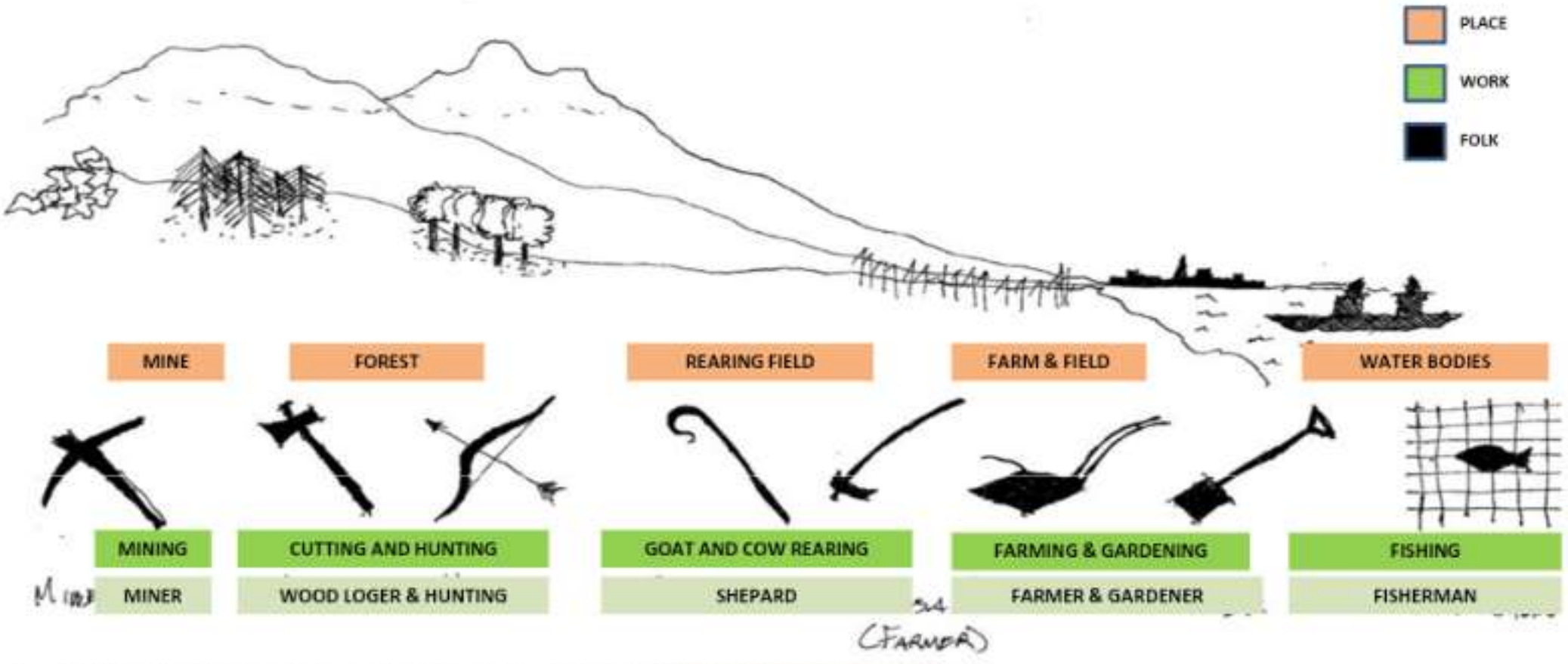
CONURBATION

GEDDES VALLEY SECTION - REGION

GEDDESSIAN TRIAD

- **Town planning primarily means establishing organic relationship** among **place, work and folk** which corresponds to triad (geddesian triad) of organism, function and environment.
- **Environment acts, through function, upon the organism and conversely the organism acts, through function, upon the environment**
- in human terms this can be understood as a **place acting through climatic and geographic processes upon people and thus shaping them. at the same time people act, through economic processes such as farming and construction, on a place and thus shape it, thus both place and folk are linked and through work are in constant transition.**

GEDDES VALLEY SECTION – "REGION"



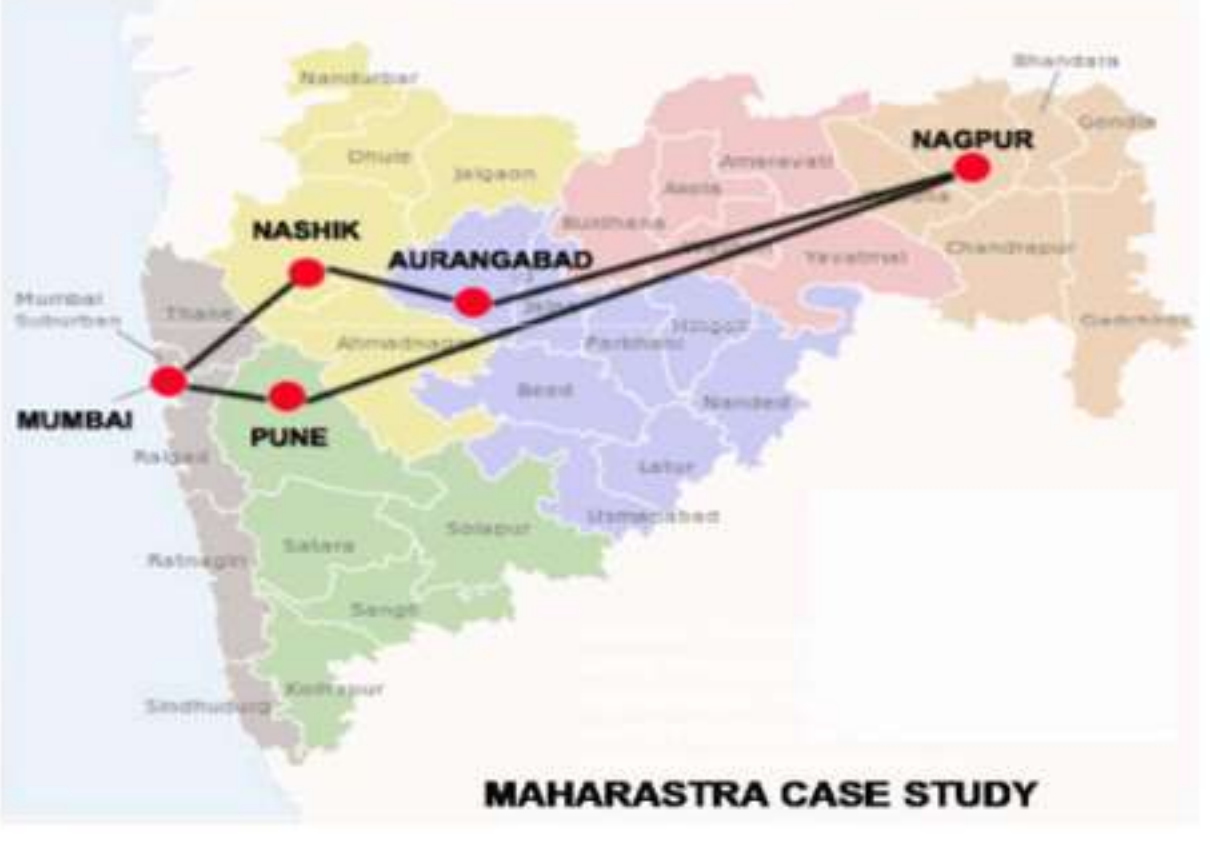
- **Geddes said that "it takes a whole region to make the city".**
- The **valley section is a complex model,** which combines **physical condition- geology and geomorphology and their biological associations** - with so-called natural or **basic occupations** such as miner, hunter, shepherd or fisher, and with the human settlements that arise from them
- **The valley section** illustrated the application of Geddes's **trilogy of 'folk/work/place' to analysis of the region**

CONSTELLATION THEORY

CONSTELLATION

- A group of stars linked together to form a recognizable pattern
- Four or more cities, which are not economically, politically, socially equal come together in developing a whole region.
- Prominent cities in Maharashtra are connected forming 'CONSTELLATION' shape.
- theory is most prominently used because planning cities in a particular shape pattern is not possible in Today's times.
- **MUMBAI**- Economic and Capital city, **NASIK-** Religious city, **AURANGABAD**- Administrative city, **NAGPUR-** Political city **PUNE-**Educational importance city

  Above five cities need to be developed for the development of the region
- The distance between the cities ranges mostly in 100km-300km making transportation, connectivity, inter-dependency prosper within the state.
- State has gained prime importance and formed in early 60's, contributing 15% to country's industrial output and 13.3% GDP.

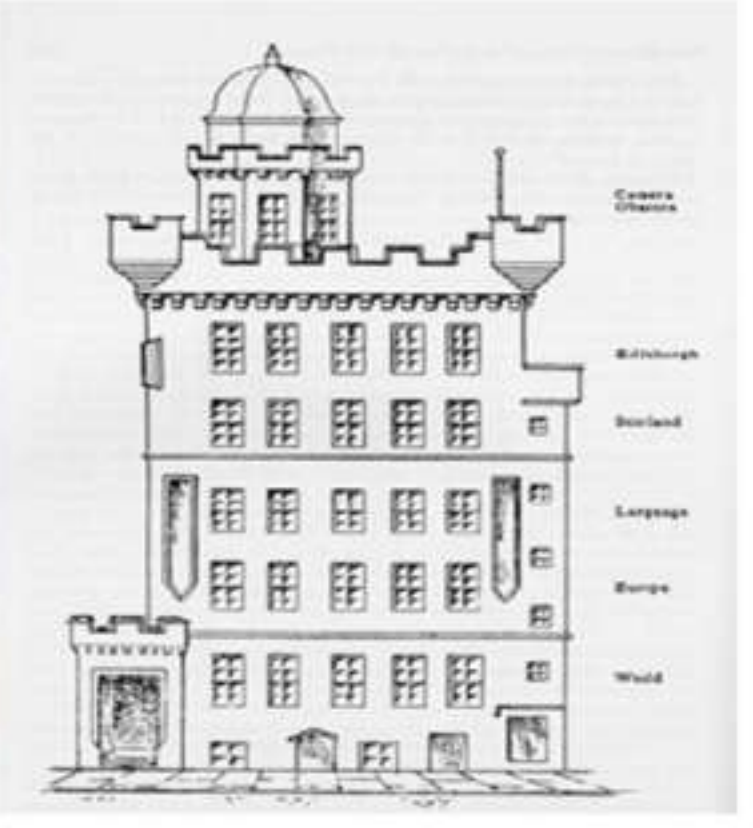


CONURBATION THEORY

- He was the **first person to coin the term "conurbation"**
- Conurbation is actually a **waves of population inflow to large cities, followed by overcrowding and slum formation** resulting in the merging of several cities
- **A conurbation is a region comprising a number of cities, large towns, and other urban areas that, through population growth and physical expansion, have merged to form one continuous urban and industrially developed area.**
- The term is used in North America, a metropolitan area can be defined by the Census Bureau or it may consist of a central city and its suburbs, while a conurbation consists of adjacent metropolitan areas that are connected with one another by urbanization.

THE OUTLOOK TOWER INTERPRETER'S HOUSE
(INDEX MUSEUM - SOCIOLOGICAL LAB)

- Roof of the outlook tower offers spectacular views across the firth of forth and the surrounding city region.
- Tower was conceived as a tool for **regional analysis, index-museum and the 'world's first sociological laboratory'.**
- **Museum represents the essence of Geddes's thought - his holism, visual thinking, and commitment** to understanding the city in the region.
- first contribution of this tower towards understanding life is purely visual, one can also grasp what a natural region actually is and how a great city is linked to such a region.
- Tower is home to the **patrick geddes centre for planning studies, where an archive and exhibition are housed.**



BROAD ACRE CITY

Each family's plot of land would include space for gardens and greenery, promoting a **harmonious relationship between humans and the natural environment.**

he aimed to reduce congestion by providing **efficient transportation options**

concept allowed for **architectural diversity**, encouraging **individual expression in building design**

approach contrasted with the homogenous architectural styles often seen in urban areas

this model would contribute to greater **social equality and personal fulfillment**

Conceived as a **decentralized** continuous urban area with a **low population density.**

Features a **futuristic highway system** and airfields to alleviate traffic congestion.

Various **services and amenities** were organized to be accessible within a **150mile radius** by road or air.

He emphasized on **individual freedom** and each **family** should have access to at least **one acre of land**, where they **could live, work, and express their individuality.**

emphasize on **easy movement, fresh air, and natural light.**

FL WRIGHT

RADIANT CITY

CHALLENGES AND CRITICISMS:

Le Corbusier's plans **faced criticism for their lack of consideration for local habits and desires,** as well as issues related to social challenges in high-rise housing projects.

TABULA RASA APPROACH:

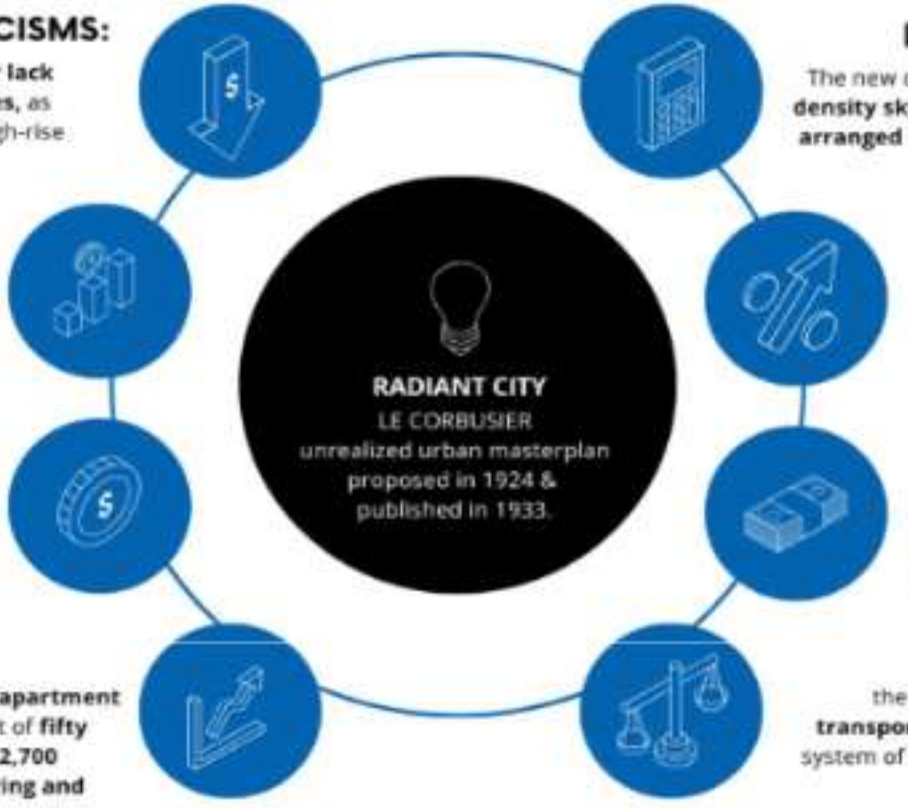
The concept often involved **demolishing existing vernacular European cities and starting anew** to implement Le Corbusier's vision.

PARKS

Parks would exist between the Unités, allowing residents with a **maximum of natural daylight, a minimum of noise and recreational facilities at their doorsteps.**

HOUSING

The housing districts would contain **pre-fabricated apartment buildings, known as "Unités."** Reaching a height of **fifty meters, a single Unité could accommodate 2,700 inhabitants.**function as a **vertical village**: **catering and laundry facilities would be on the ground floor, a kindergarden and a pool on the roof.**



NEW CITY DESIGN

The new city contains **prefabricated and identical high-density skyscrapers,** spread across a **vast green area and arranged in a Cartesian grid,** allowing the city to function as a "living machine."

STRICT ZONING

a strict division of the city into segregated commercial, business, entertainment and residential areas.

BUSINESS DISTRICT

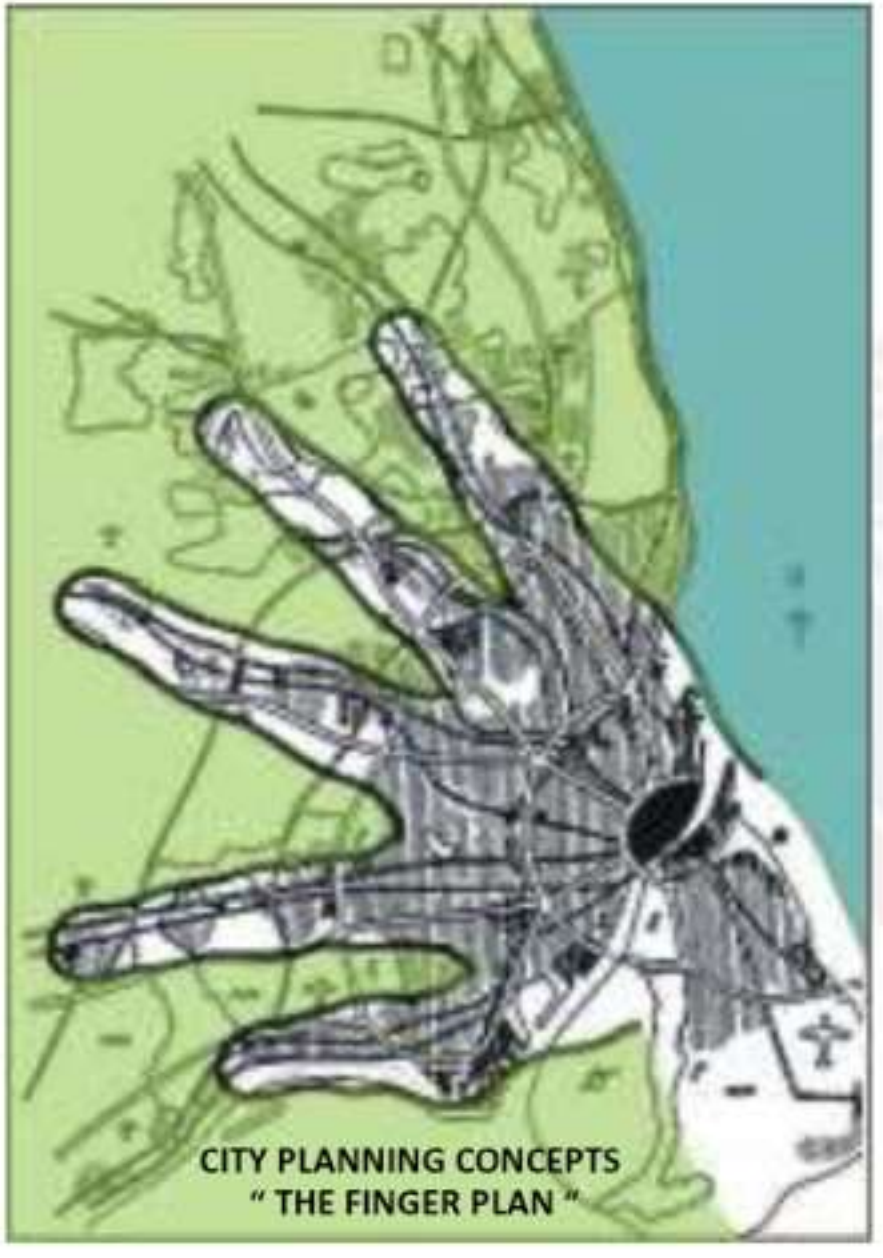
The business district was located in the center, and contained **monolithic mega-skyscrapers, each reaching a height of 200 meters** and accommodating **five to eight hundred thousand people.**

CENTRE

the center of this civic district was the **main transportation deck,** from which a vast underground system of trains would transport citizens to and from the **surrounding housing districts.**

OUTLINE OF MODERNIST CITIES AND URBANISM ACROSS THE WORLD

SUSTAINABLE CITY – COPENHAGEN, DENMARK ,EUROPE



The Five Finger Plan, developed in 1947 through Urban Planning Labratory in collaboration with **urban planners Steen Eiler Rasmussen and Christian Erhardt "Peter" Bredsdorff,** is an urban development plan that focuses on both metropolitan train lines and the green spaces in between.

City was designed to develop along the fingers ,which is centered on train commuter rail lines which extend from the palm (the dense urban fabric of central Copenhagen)

Space between the fingers are green wedges, supposed to provide land for agriculture and recreational purposes

- **LITTLE FINGER** - northern suburb - Whiskey belt,

Area is mixed with **mansion, large houses, garden citieS and mid sized houses,** Population was 2,70,000 inhabitants.

- **RING FINGER-** north western suburb

to a large extent occupied by **detached middle class dwellings with minimal upper class housings**,

population was 1,00,000 inhabitants.

- **MIDDLE FINGER-** north western suburb

mixed area of **both detached middle class housing ,garden cities, large low rise public dwellings and industrial areas,** Population 1,10,000 inhabitants

- **INDEX FINGER** -western suburb

people with **lowest income** per capita **high crime rate, variety of conventional and conservative lower middle class and low housing projects**

population 1,45,000 inhabitants with 20% immigrants

- **THUMB FINGER-** southwestern suburb

detached middle class houses

Population of 2,15,000 inhabitants with sizeable number of immigrants.

1) CYCLING AND PEDESTRAIN CULTURE

- Cycling has always been Danish tradition but Copenhagen has gone one step further and made **cycling integral to urban planning and design.**
- The city's **airport, rail and suburbs are all connected to the centre by the metro system.**
- Many **public squares and streets are pedestrianised.**
- **Reduced noise, air pollution and CO2 emissions.**
- **Short journey time**s and less congestion.
- **Green waves for cycling resulting in faster mode**

2) INTEGRATED TRANSPORT SYSTEM

- Easy transfer between transport modes **One ticket for metro, train and bus.**
- **Bicycles are allowed on metro and trains.**
- Online journey planner across different transport modes.
- **Fall in private car usage** finally resulting in **the reduction of carbon di oxide gas emissions.**
- Reduction of congestion and saves time and money

3) HIGH QUALITY TAP WATER

- Its one of the capital city in which one can drink **high quality water directly from the tap**.
- Citizens can enjoy clean swimming water tanks to municipalities waste water treatment plants to remove nutrient salts, minimize discharge of heavy metals and modernizing its sewer system.
- **Harbor is open to public bath due to modernization of sewer system**

4)RECYCLING

- **90% of construction waste has been recycled** & **75% of household garbage used for city's district heating network.**
- **Only 2% waste for send to landfill**.
- Generation of heat and power from residual waste is a core feature of incineration and **Incineration has a central role in waste management system**

5) USE OF RENEWABLE ENERGY

22% of Denmark's total electricity consumption is produced by wind turbines, the highest rate in the world

6) DISTRICT HEATING SYSTEM

- It is one of the most **carbon efficient and flexible ways** to produce and supply energy, by integrating renewable energy such as **bio mass, surplus wing energy and geo thermal energy.**
- Resulting in the **reduction of carbon emission**

7) KEEPING COOL UNDER CO 2 PRESSURE

- **Air conditioning results in high electricity consumption**
- District cooling network were based on free cooling from seawater abstraction along with surplus heat generated by district heating network
- Project is **estimated to save 14,000 tonnes of carbon di oxide per year**
- **80% of electricity consumption is reduced by district cooling system**
- **70% of carbon di oxide emission is reduced in district cooling system**

8) CARBON NEUTRAL – COPENHAGEN BY 2025

- **Install more renewable energy**
- **Encourage more cycling**
- Invest in **hybrid buses- consumes less fuel**
- **Retrofit old buildings** to conserve energy
- **Make all buildings Energy efficient**
- **Built green economy- adopt to changing climate change**

LE CORBUSIER'S CHANDIGARH

LE CORBUSIER CONCEIVED THE MASTER PLAN OF CHANDIGARH AS ANALOGOUS TO HUMAN BODY

cities also follows biological phenomena – cities also have brain, heart, lungs, limbs and arteries like human being.

- with a clearly defined head (the capital complex, sector 1)
- the heart (the city centre, sector 17)
- lungs (the leisure valley, innumerable open space, green spaces and their linkages)
- the circulatory system(the network of roads, the 7vs')
- and the viscera (the industrial area)

THE CONCEPT OF THE CITY IS BASED ON FOUR MAJOR FUNCTIONS

• LIVING	Residential sector
• WORKING	Capitol Complex, city centre, Educational Zone (Punjab Engineering College, Punjab University & Industrial Area
• CARE OF BODY	The Leisure Valley, Gardens, Sector Greens & Open Courtyards
• SPIRIT & CIRCULATION	7 different types of roads known as 7 Vs & V8

MASTER PLAN WAS REALIZED IN TWO PHASES

- **Phase-I** low density sector - 9000 acres (Sector 1 to 30) for 1,50,000 people
- **Phase-II** high density Sectors - 6000 acres (Sectors 31 to 47) for 3,50,000 people
- The primary module of city's design is a **Sector** of size **800 x 1200m**
- It is a self-sufficient unit having **shops, school, health centres, places of recreations and worship**
- The shopping street of each sector is linked to the shopping street of the adjoining sectors thus forming one long, **continuous ribbon like shopping street**
- The central green of each Sector also stretches to the green of the next sector
- well designed roads & streets with hierarchy

HEAD
CAPITAL COMPLEX,
SECTOR 1

HEART
CITY CENTRE,
SECTOR 17

VISCERA
INDUSTRIAL AREA

LUNGS
THE LEISURE VALLEY,
OPEN SPACE,
GREEN SPACES

CIRCULATORY SYSTEM
THE NETWORK OF ROADS,
THE 7VS'

CHANDIGARH CITY LAYOUT AT TODAYS CONTEXT

7 V'S ROAD AND ITS HIERARCHY

The 7vs establishes a hierarchy of traffic circulation ranging from

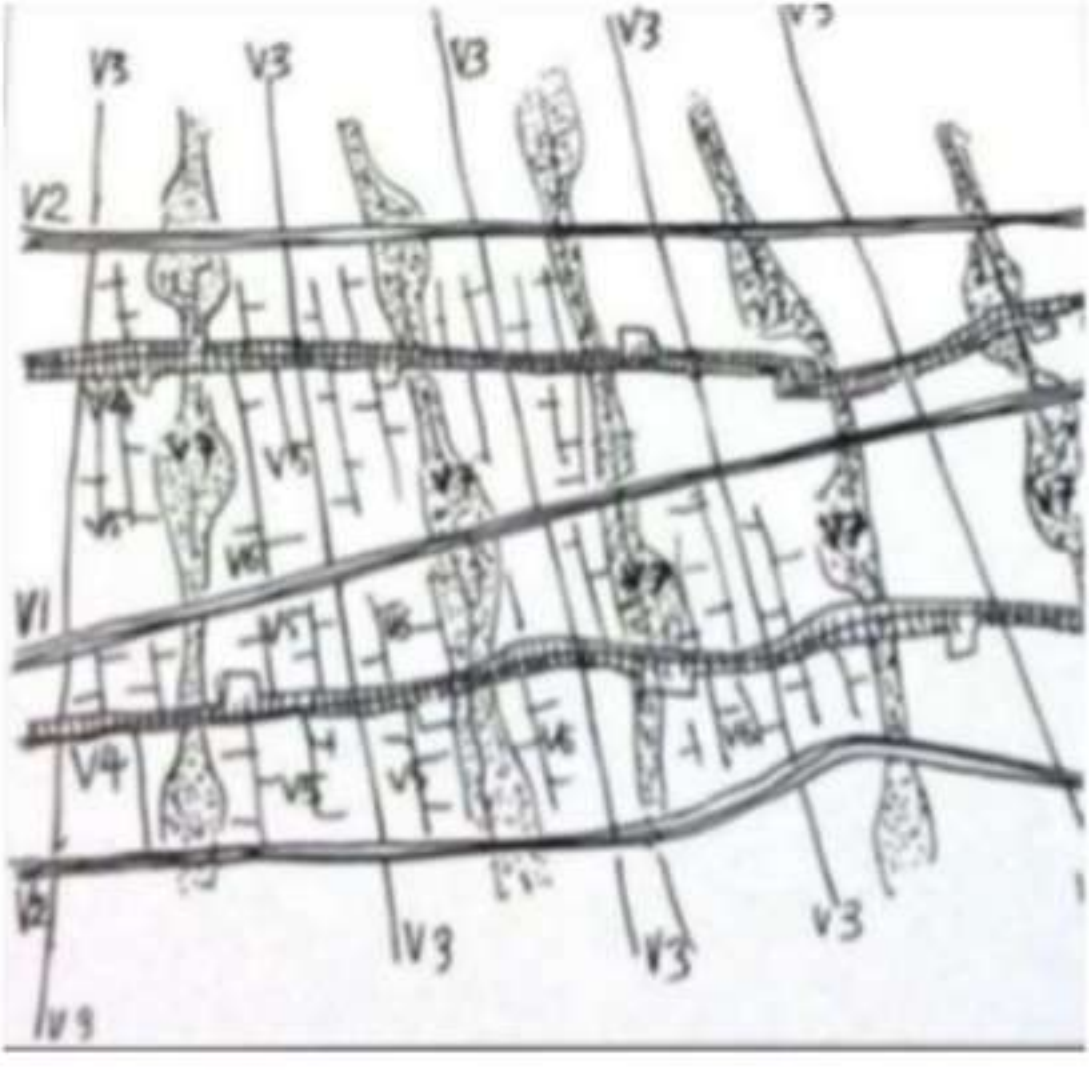
- Arterial Roads (V1)
- Major Boulevards (V2)
- Sector Definers (V3)
- Shopping Streets (V4)
- Neighborhood Streets(v5)
- Access Lanes (V6)
- Pedestrian Paths (V7)
- Cycle Tracks (V8)

V1 Connects Chandigarh To Other Cities

V2 Are The Major Avenues Of The City E.G Madhya Marg Etc

V3 Are The Corridors Streets For Vehicular Traffic Only

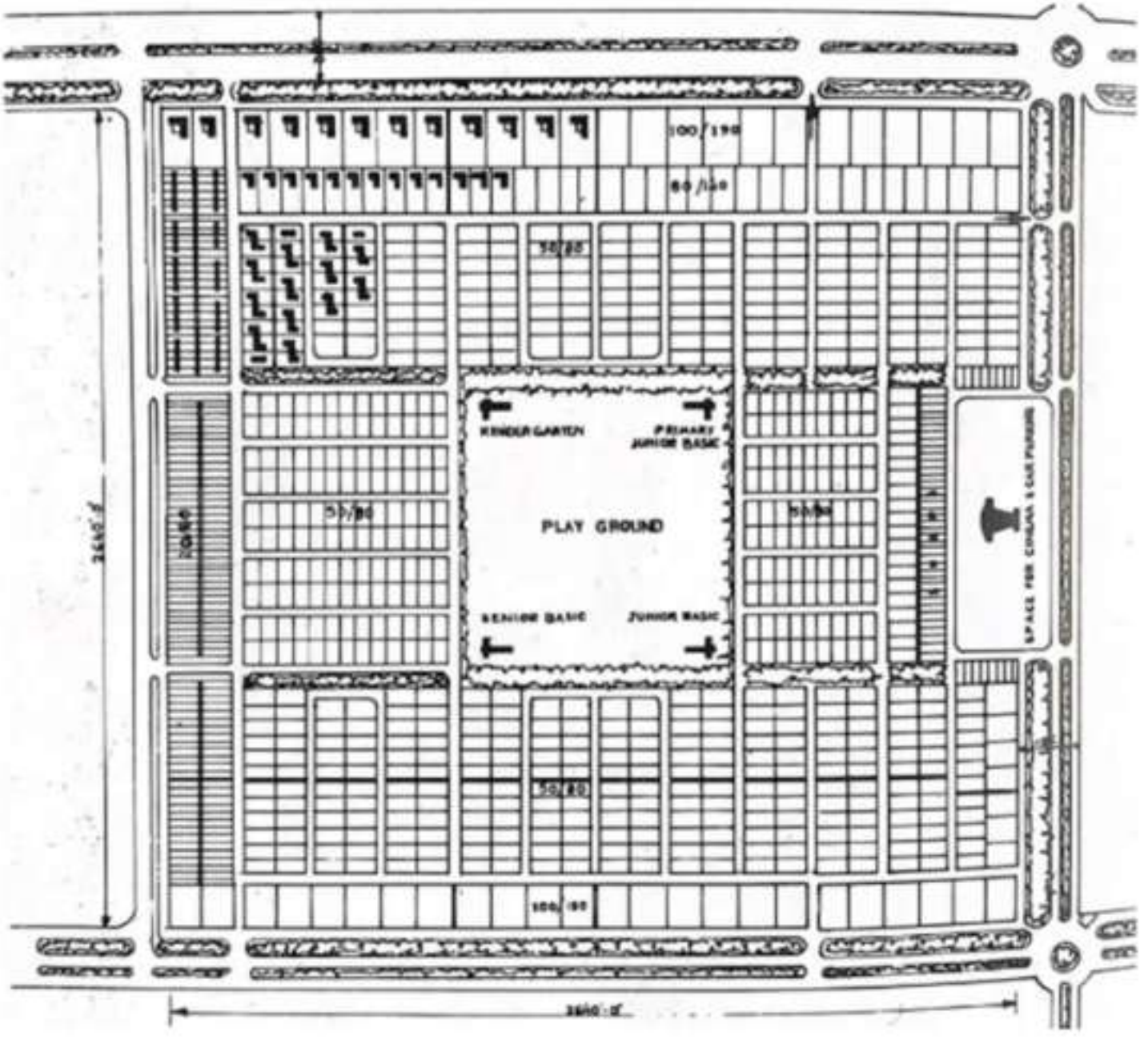
V4.....V7 Are The Roads Within The Sectors

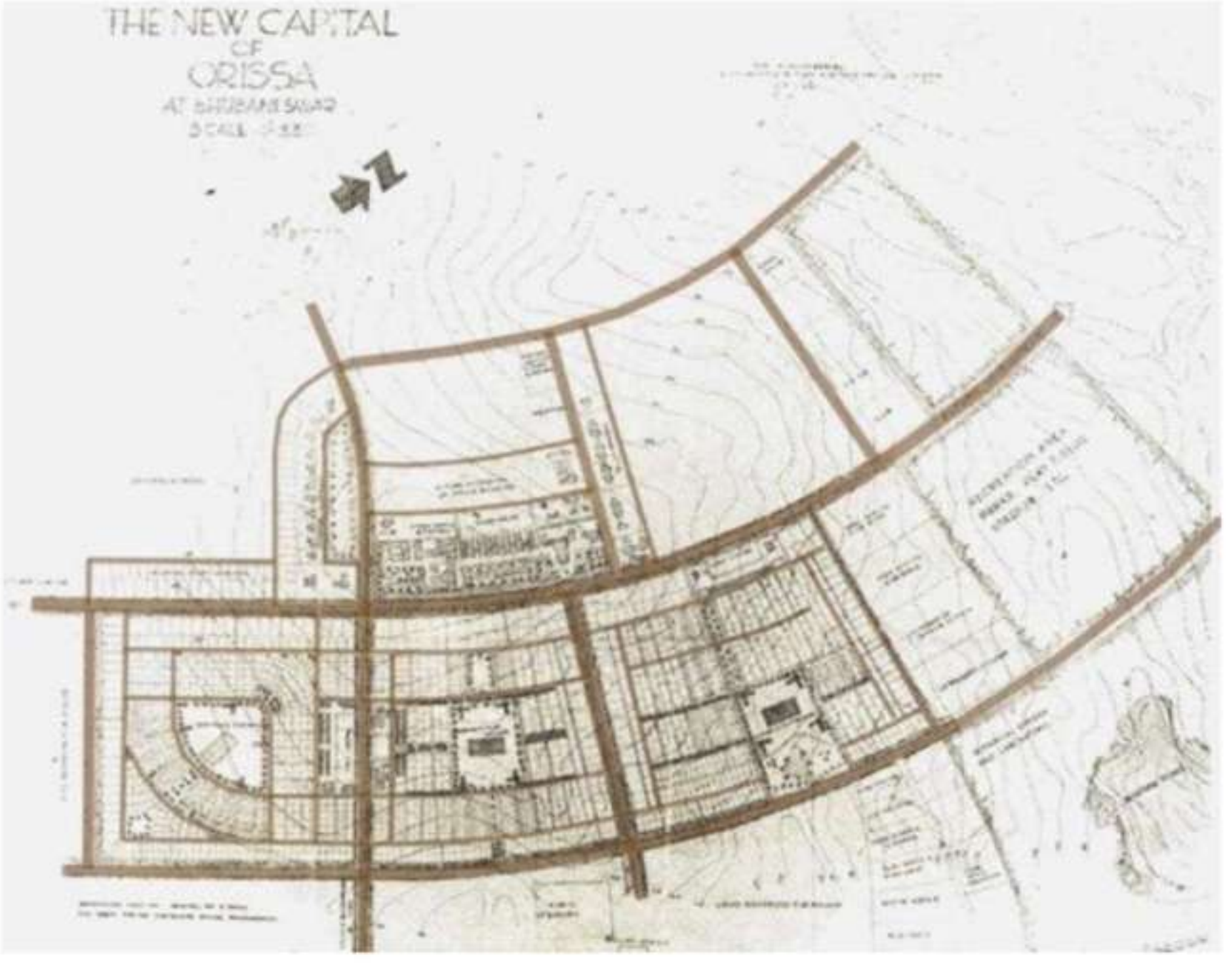


BHUBANESHWAR

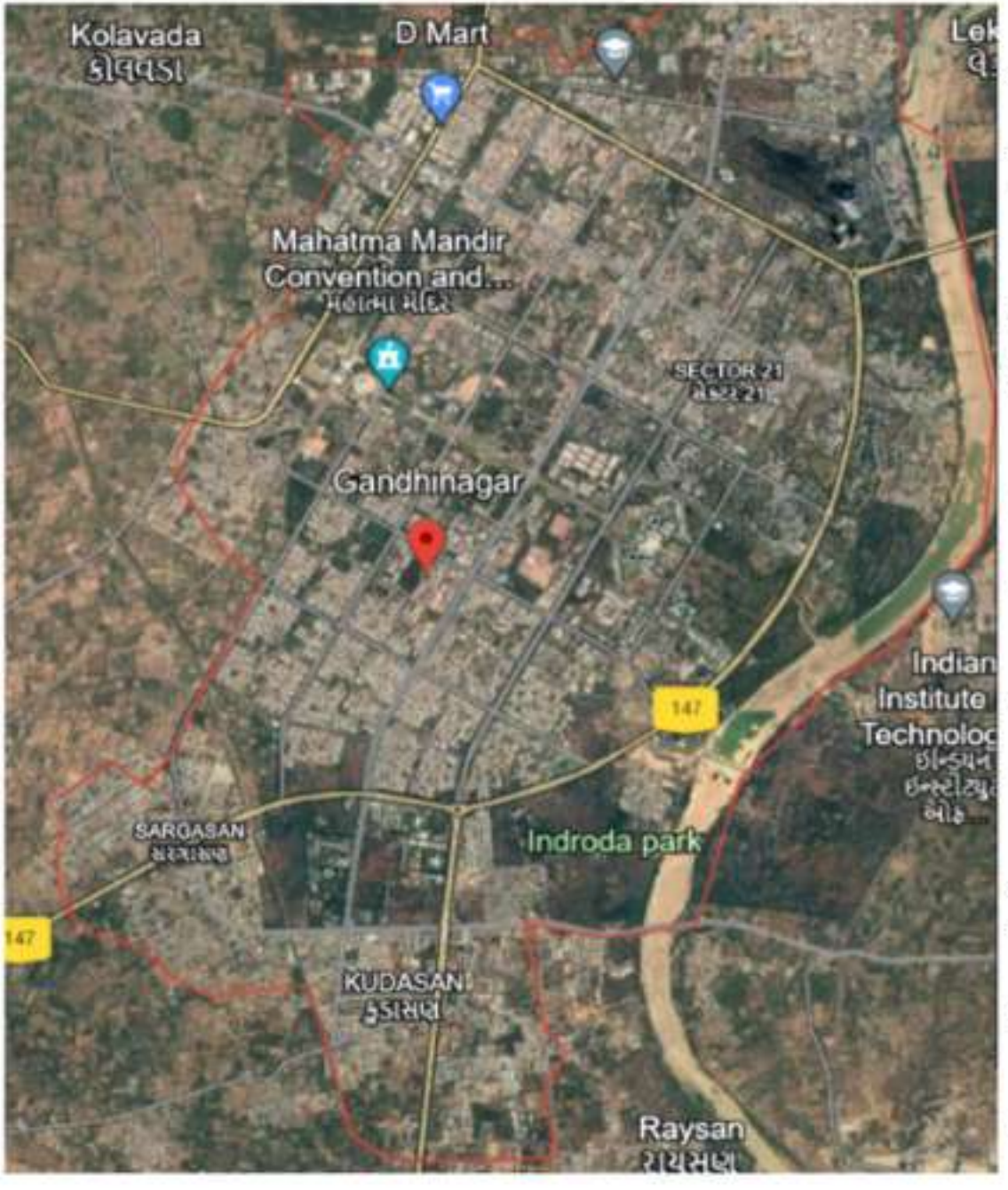
- It's the **capital city of Indian state Odisha**, old town was often depicted as temple town.
- **Modern city** was designed by **German architect Otto konigsberger in 1946**
- Its along with Chandigarh and Jamshedpur, its **one of the first planned cities of modern India .**
- Temple town of Bhubaneswar presents **a mixed land use pattern** with a congregation of residential, commercial, industrial and institutional uses in a single locality.
- **Old temple town faced many problems** like inadequate road network system, inadequate parking, various natural calamities, lack of drainage and sewerage system, deteriorated temples, very poor of tourist facilities and pressure of development all **lead to the formation of new capital city.**
- The planning concept adopted to design a city was **neighborhood planning.**
- A neighbourhood unit was an **average 150 acres square with 1.2 kilometres on each side.**
- **Konigsberger designed a linear pattern for the city, which had main administrative bodies in the main artery and neighborhood units were attached to it.**
- City was initially designed for population of 40,000 with 5000-6000 in a neighborhood.
- Konigsberger viewed the city as an autonomous body, having its own law and jurisdiction, political jurisdiction, right of self determination, and an organized sense of communal relationship along secular lines.
- He used **neighborhood units as the basic building blocks of the city** and they should be **self contained and close to nature.**
- **City was divided into small manageable neighborhood units to preserve the sense of community that existed in the old town.**
- Village like neighborhood was likely to make Indian feel more comfortable with their civic responsibilities than a large amorphous city.
- As an egalitarian approach mixed neighborhood of private citizen, government employees were suggested in the master plan.
- **Each neighborhood roughly of 150 acres had several open spaces evenly distributed with houses around them to form courts instead of one central large open space.**
- **Most of the neighborhoods are compact with low rise housing and small pockets of open spaces(.5 – 5 acres) left apart for parks and playgrounds.**

NEIGHBORHOOD PLAN



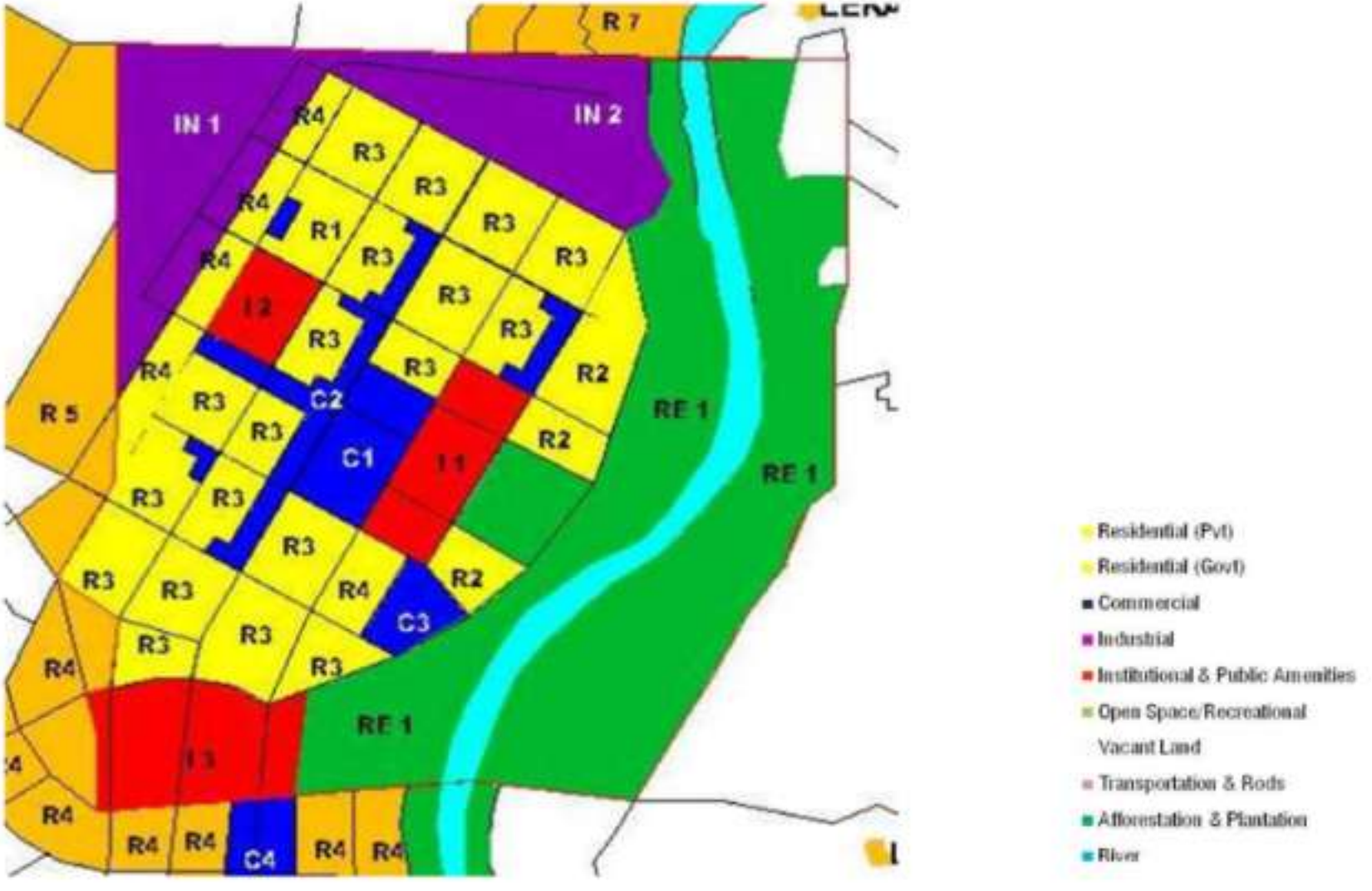

THE NEW CAPITAL
OF
ORISSA


Bhubaneswar
SAHEED NAGAR
LAXMISAGAR
ASHOK NAGAR
BAPUJI NAGAR



GANDHI NAGAR

- It's the **administrative capital city of Gujarat** and located **approximately 23 km north of Ahmedabad.**
- Lies on the west bank of the Sabarmati River
- Government determined to make **Gandhinagar a purely Indian enterprise, Indian town planners: Prakash M Apte and H. K. Mewada were appointed.**
- Planned and implemented between **1965-1970**
- Planned according to the **neighborhood concept**.
- The city is well **organized and is structured into grids. The grid is made of blocks and streets**, similar to US avenues and streets.
- **each sector** has a **school, dispensary and a shopping center** like the Bhubaneswar master plan.
- **City is Divided into 30 residential sectors** around the state assembly secretariat complex , each sector can accommodate about 50 % of population .
- It was intended to house the **half of the population employed by the government**.
- Plots on the **periphery of each sector are meant for private and supporting population** that constitutes the remaining population
- **Each sector is of size 1km x 0.75**
- **Streets are numbered and cross streets were named with Gujarati alphabets**
- All **streets are aligned at 30 degree NW and 60 degree NE to avoid glare of morning and evening sun while driving**
- Assembly building is at the center of the city to make it close to all the residents.



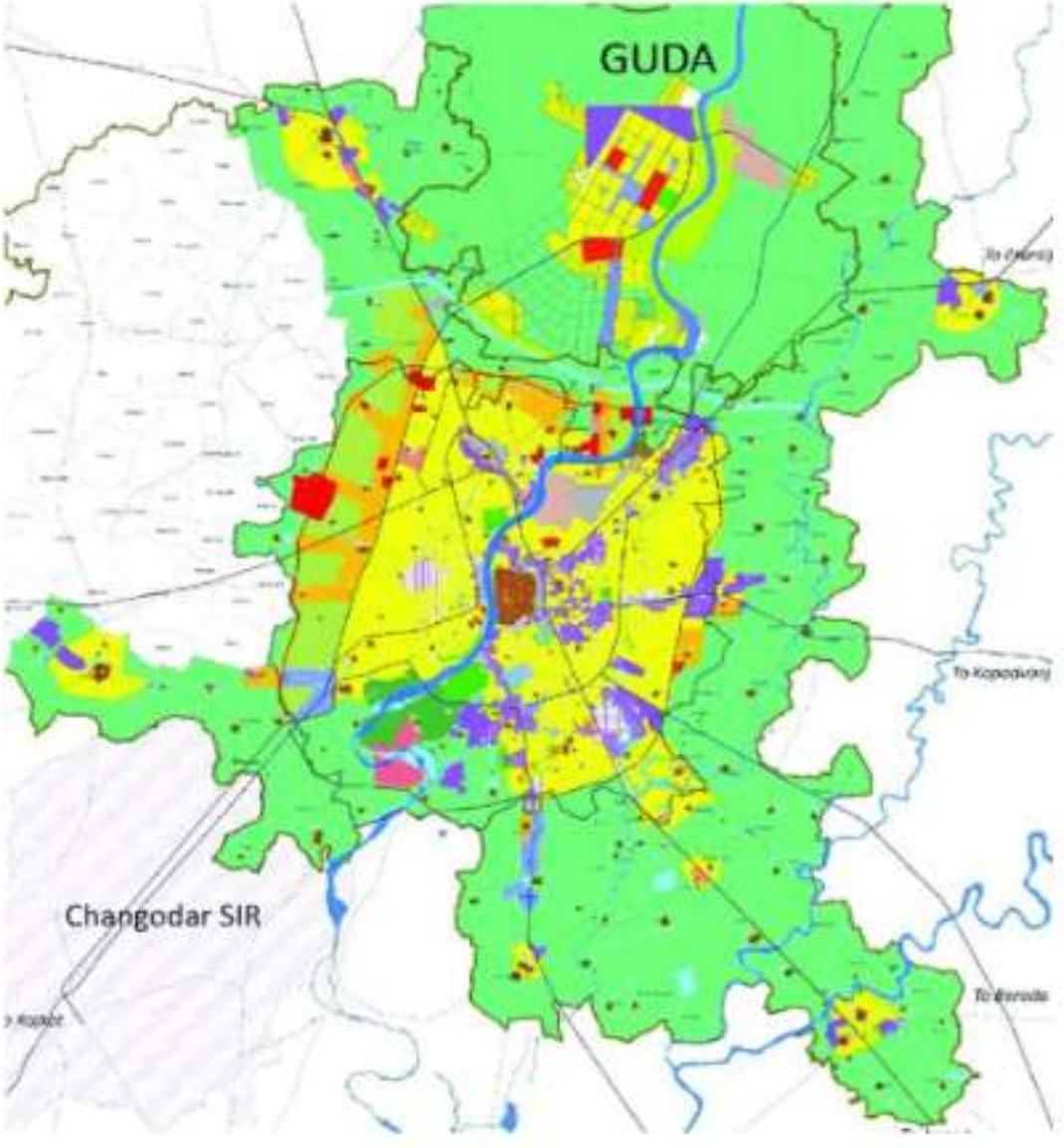
LANDUSE PLAN OF GANDHI NAGAR

- Consciously designed and planned axially based on egalitarian and Gandhian ethos, but replanning of Gandhinagar by the consultants of Gandhinagar urban development authority has obliterated its identity as a capital city
- Unbridled capitalism has led to its debasement and inorganic extension resulting in Gandhinagar becoming just an another urban suburb of Ahmedabad
- GUDA consultants ignored the history and want the expansion of the city to take place to the south

Original concept for future expansion & physical extension maintaining the Axis and Urban design

Consultant's redesign of Gandhinagar extending south

- consultants have dismantled major Area for cultural facilities, in the city square in sector 17 of the city centre is proposed to be converted to commercial use, killing Gujarat's traditional concept of a 'city square' & destroying a major element of 'urban design' of the new capital city.
- An area along J road (along the river Sabarmati) across sector 9 covered by ravines, was proposed for conservation as an adventure park. It is now designated by the consultants for residential taking away a unique recreational facility.
- The open spaces at the junctions of all main roads of the city, left open in the original plan to improve road geometrics in future, ornamental landscaping, road signage, guide maps etc. are proposed to be filled up with roadside petty shops & hutments for the immigrants giving the city a slum like look. So, the "original" city may look like a slum and the "NEW" a jewel!



- Over 6000acres of green cover to the SW of the city has been designated for residential use in an attempt to join with Ahmedabad
- Thus consultants destroyed the identity of new capital city and made it a suburb of Ahmedabad.

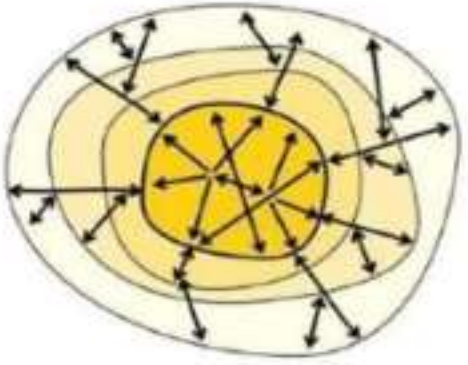
- Southward extension has completely destroyed central vista concept it focuses on the capital complex and was naturally to be extended to the NW maintaining the axis

The Central vista sought to be destroyed by Consultant's proposals

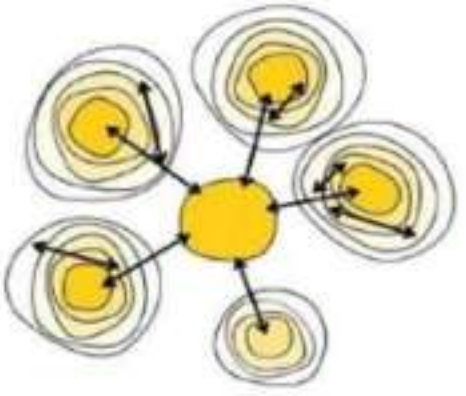
Capital complex view from central vista-Axis destroyed

URBAN STRUCTURE

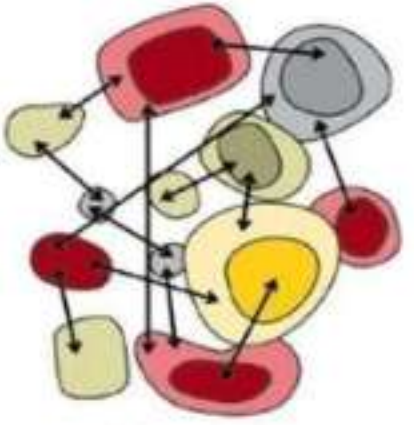
- It is defined as the functional organizational arrangement of a city or town, encompassing the spatial distribution of its key components like land use, transportation networks, and population distribution
- It emphasizes function and relationships, so its highly intangible



Monocentric city

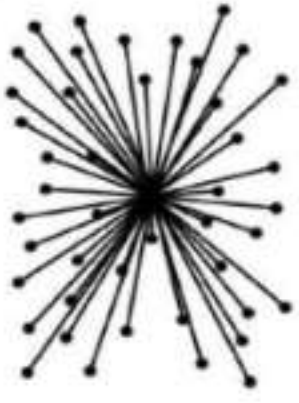


Polycentric city cluster with "satellite centres"

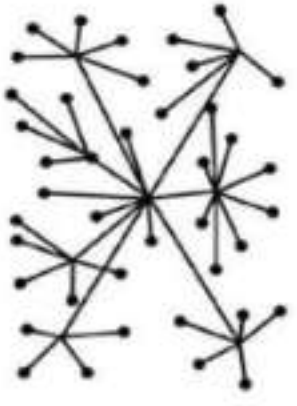


Network city

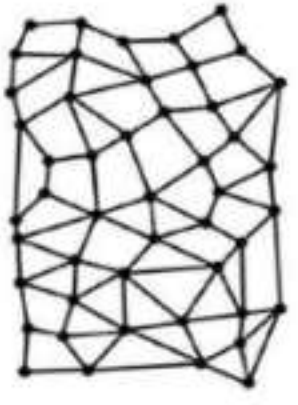
Sectoral model



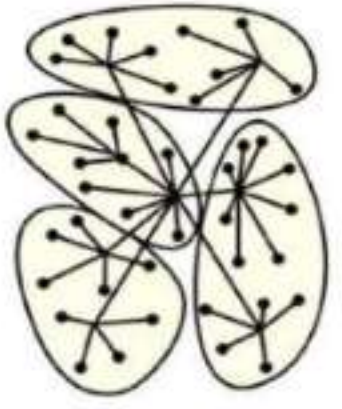
Centralized structure



De-centralized structure



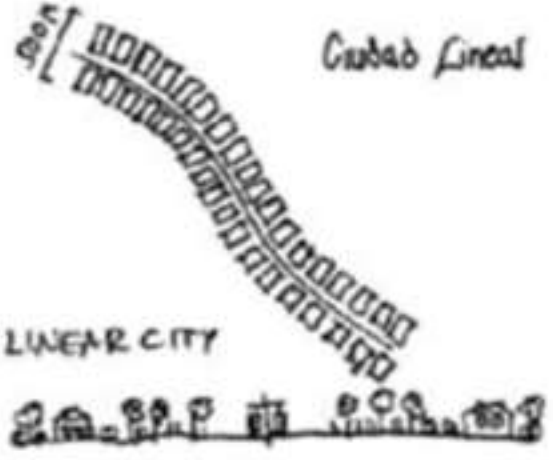
Distributed structure

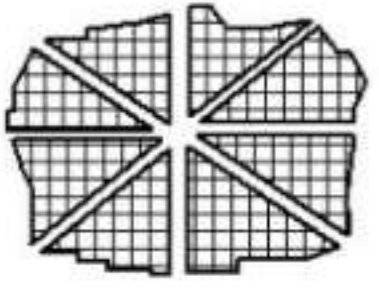


Hybrid structure

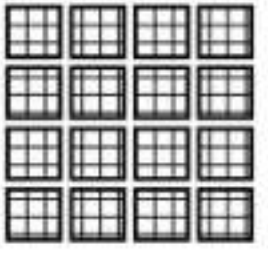
URBAN FORM

- It is the **physical manifestation or arrangement** of the city's structure, including its shape, density, street patterns, and built/natural elements.
- Urban Form is the visible outcome of The pattern of streets (Linear, grid, radial, organic), the density, height of buildings and the size

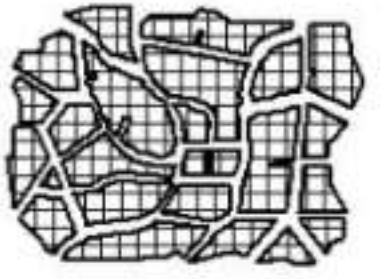




Radial



Grid



Irregular

URBAN FABRIC

- It describes **the physical characteristics of urban areas.**
- This includes the **streetscapes, buildings, soft and hard landscaping, signage, lighting, roads and other infrastructure.**
- It's a **physical texture of an urban area**
- It includes **transport infrastructure, such as road or rail technology, building setbacks, road patterns and widths**

URBAN TISSUE

- Urban tissue refers to the coherent physical and functional structure of neighborhoods within a city
- It encompasses the arrangement and relationship of buildings, open spaces, streets, and the human activities
- Urban tissue can be categorized in several ways, such as:

1. STATIC TISSUE: Consistent, small lot patterns.
2. ELASTIC TISSUE: Disordered lot sizes and irregular street networks.
3. CAMPUS TISSUE: Large tracts owned by a single entity with multiple buildings

URBAN TEXTURE

- The **surface quality and visual character** of the urban fabric. It encompasses the **diversity and mixture of elements** within a given area.
- Street level up to neighborhood level.
- The variety of **building heights, architectural styles, materials, setbacks, the presence of vegetation, the rhythm of facades, and the mix of land uses.**

URBAN GRAIN

- It is defined as the **pattern of plots in an urban block** and the **balance of open space to built form.**
- It is the **nature and extent of subdividing an area into smaller parcels or blocks.**
- Two types of urban grain – **fine grain and coarse grain**
- **Fine grained** areas have a **large number of different buildings and closely spaces streets.**
  - -It constitute a **network of small or detailed streetscapes.**
- **Course grained** areas have **large blocks and building with little architectural variety**
- **Four types** of **urban grain**:
  - -coarse-grain with large units
  - -coarse-grain with mid-size unit monotony
  - -fine-grain with small-size units
  - -'Lynchian fine grain' with unitary diversity

COARSE-GRAIN
WITH LARGE UNITS

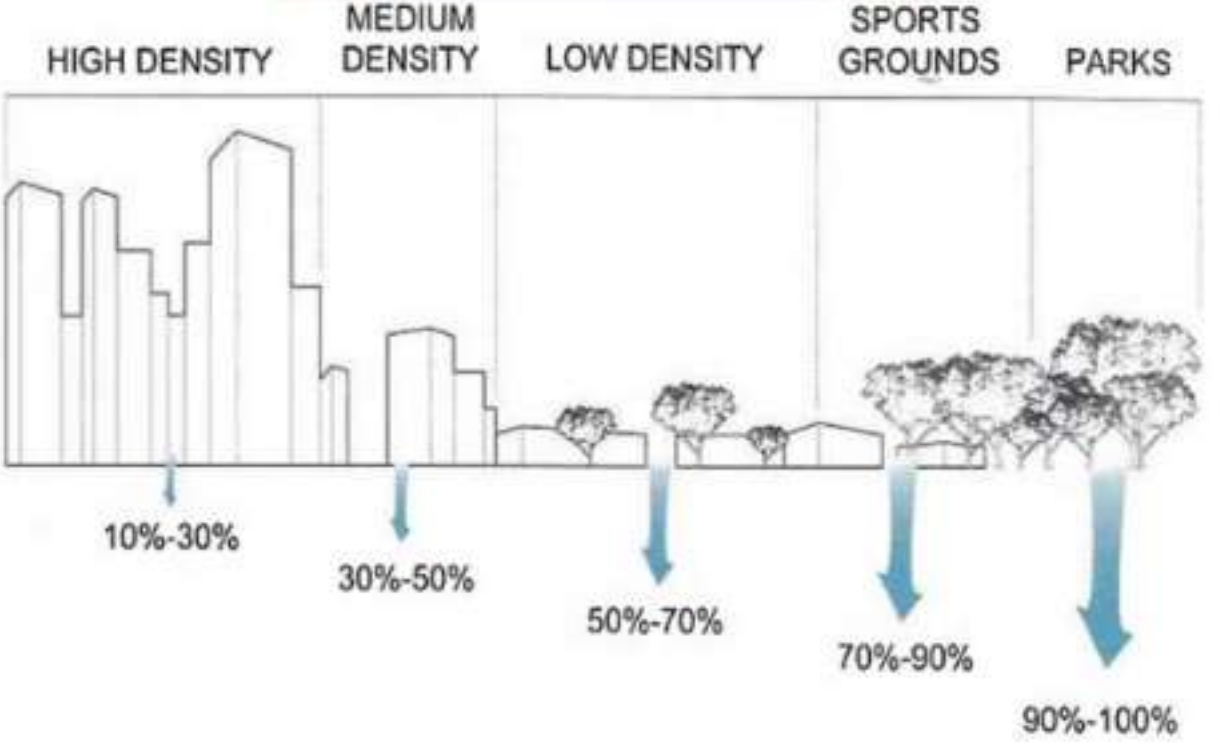
COARSE-GRAIN WITH
MID-SIZE UNIT

FINE-GRAIN WITH
SMALL-SIZE UNITS

'LYNCHIAN FINE GRAIN'
WITH UNITARY DIVERSITY

URBAN DENSITY

- Urban density refers to the **number of people living in an urbanized area.**
- It is defined as the **ratio of the total population of a city and its total area.**
- This is the **most appropriate single metric for measuring progress in densification in cities**
- **It primarily helps** urban designers understand **how a city or urban area functions.**
- **Higher urban density** indicates the **proper functioning of cities** because residents live in denser urban areas.
- Cities with a higher urban density **provide greater transportation options to the residents.**



URBAN FAÇADE

- Urban facade refers to the **relation a building has with the site, street and neighboring buildings.**
- It primarily focuses on alignment, projections and boundary treatments.
- The facade of a building is visible from a street and plays an essential role in the ensuring attractiveness and aesthetic appeal of an area.

URBAN SCALE

Urban design operates at three scale

- The region — city and town
- The neighborhood — district and corridor
- The block — street and building

Road hierarchy in the new Superblock model

CURRENT SITUATION

SUPERBLOCK MODEL

EVOLUTION OF URBAN DESIGN

- **Ancient Civilizations (Pre-5th Century BCE):**
  - Early urban design emerged in Mesopotamia, the Indus Valley, and Egypt, featuring grid-like layouts, fortified walls, and centralized public spaces (e.g., ziggurats, citadels).
  - Greek and Roman cities emphasized agora/forum spaces, orthogonal grids, and infrastructure (aqueducts, roads), blending functionality with civic symbolism.
- **Medieval Period (5th–15th Century):**
  - Organic, irregular street patterns developed around castles and churches, prioritizing defense and communal identity.
  - Market squares and cathedral plazas became focal points.
- **Renaissance and Baroque Eras (15th–18th Century):**
  - Revival of classical principles with geometric symmetry, grand boulevards, and monumental plazas (e.g., Rome's Piazza del Popolo).
  - Emphasis on aesthetics, power, and religious expression.
- **Industrial Revolution (19th Century):**
  - Rapid urbanization led to overcrowding, pollution, and slums.
  - Reforms like Haussmann's Parisian boulevards improved sanitation and mobility.
  - Ebenezer Howard's *Garden City Movement* (1898) proposed self-contained, greenbelt-surrounded communities.
- **Modernism (Early–Mid 20th Century):**
  - CIAM's *Athens Charter* (1933) advocated zoning, high-rise towers, and car-centric planning (e.g., Le Corbusier's "Radiant City").
  - Post-WWII reconstruction prioritized efficiency but often neglected human scale and social equity.
- **Critiques and Postmodernism (1960s–1980s):**
  - Jane Jacobs' *The Death and Life of Great American Cities* (1961) championed mixed-use, walkable neighborhoods.
  - Postmodernism reintroduced historical references and diversity in design (e.g., Charles Moore's Piazza d'Italia).
- **Sustainability and New Urbanism (1990s–2000s):**
  - Movements like *New Urbanism* promoted transit-oriented, community-focused design.
  - Sustainability gained traction with green infrastructure and LEED certification.
- **Contemporary Trends (21st Century):**
  - **Smart Cities:** Integration of IoT, data analytics, and BIM for efficient urban management.
  - **Resilience and Equity:** Climate adaptation, inclusive design, and participatory planning.
  - **Tactical Urbanism:** Temporary, low-cost interventions to test public space improvements

SCOPE OF URBAN DESIGN

1. **Strategic Frameworks and Master Plans:** Developing long-term visions and guidelines for the growth and development of cities, regions, or specific districts.
2. **Physical Layout:** Arrangement of buildings, streets, and public spaces to create cohesive environments.
3. **Public Realm:** Design of parks, plazas, and streetscapes to foster social interaction.
4. **Urban Regeneration and Retrofit:** Reimagining and revitalizing underutilized or declining urban areas through strategic interventions
5. **Transport Systems:** Pedestrian, cycling, and transit networks that reduce car dependency.
6. **Sustainability:** Green infrastructure, energy-efficient buildings, and circular economy principles to enhance environmental performance and quality of life.
7. **Heritage and Identity:** Balancing preservation with modernization.
8. **Interdisciplinary Collaboration:** Integrating architecture, planning, ecology, and social sciences.

OBJECTIVES OF URBAN DESIGN

1.Functionality: Ensure efficient movement, Safety, security, accessibility, and infrastructure resilience.

2.Aesthetic Quality: Create visually appealing, context-sensitive landscapes.

3.Social Equity: Promote inclusive spaces that cater to diverse demographics.

4.Environmental Sustainability: Minimize ecological footprints and enhance biodiversity.

5.Economic Vitality: Support local businesses and mixed-use development.

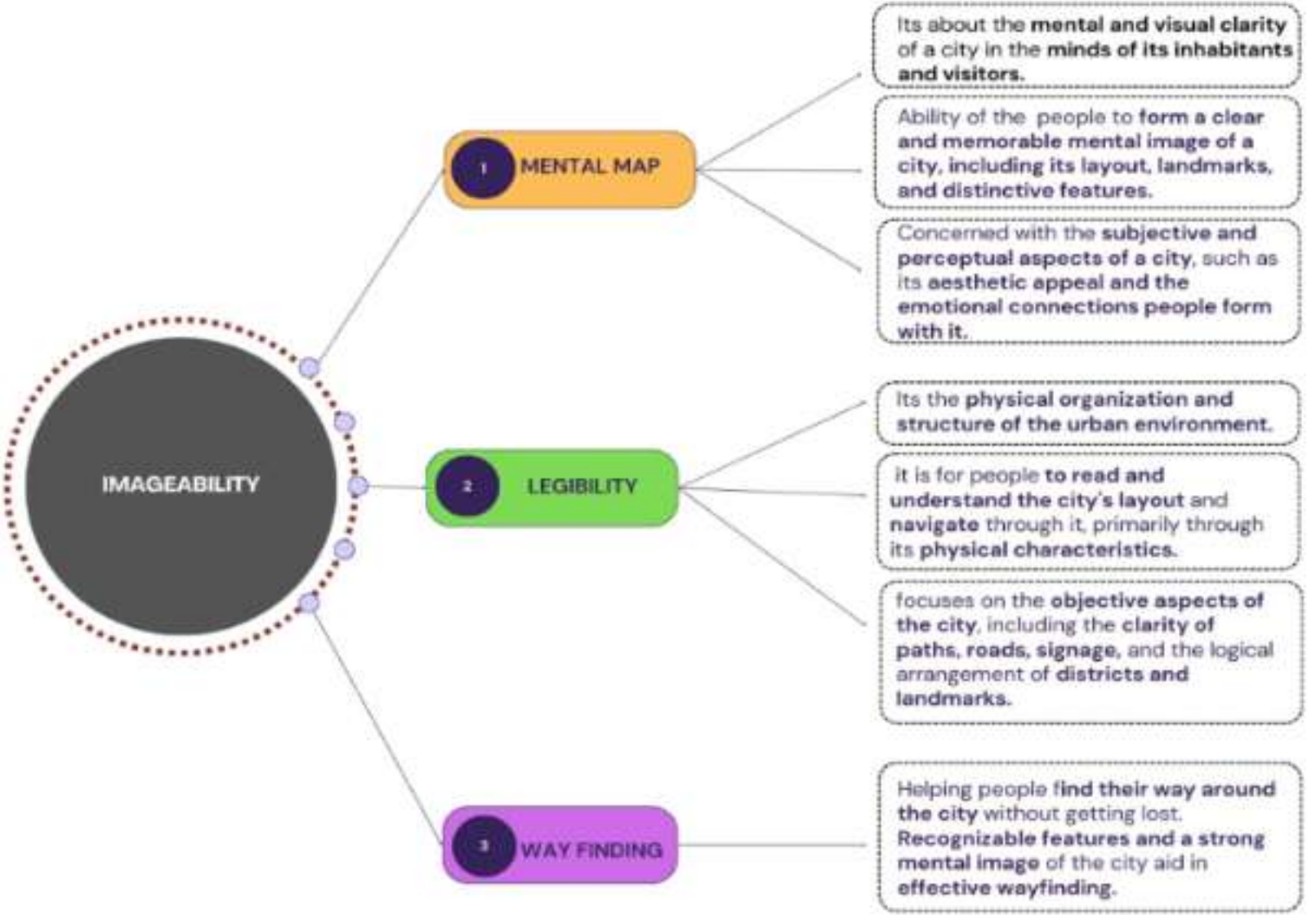
6.Cultural Preservation: Honor historical layers and community identity.

7.Health and Well-being: Prioritize walkability, clean air, and recreational spaces, encourage interaction and provide a strong sense of place

8.Adaptability: Design flexible frameworks to accommodate future changes.

UNIT III
CITIES AND URBANISM THROUGH TEXTS AND THEORIES


AMERICAN PLANNER & AUTHOR
EARLY PROPONENT OF MENTAL MAPPING
COINED THE WORDS IMAGEBILITY LEGIBILITY IDENTITY WAY FINDING
INFLUENTIAL BOOKS THE IMAGE OF THE CITY GOOD CITY FORM SITE PLANNING
KNOW FOR THE WORK ON PERCEPTUAL FORM OF URBAN ENVIRONMENT
FIVE ELEMENTS OF THE CITY
KEVIN LYNCH


IMAGEABILITY
1
MENTAL MAP
Its about the mental and visual clarity of a city in the minds of its inhabitants and visitors.
Ability of the people to form a clear and memorable mental image of a city, including its layout, landmarks, and distinctive features.
Concerned with the subjective and perceptual aspects of a city, such as its aesthetic appeal and the emotional connections people form with it.
2
LEGIBILITY
Its the physical organization and structure of the urban environment.
it is for people to read and understand the city's layout and navigate through it, primarily through its physical characteristics.
focuses on the objective aspects of the city, including the clarity of paths, roads, signage, and the logical arrangement of districts and landmarks.
3
WAY FINDING
Helping people find their way around the city without getting lost. Recognizable features and a strong mental image of the city aid in effective wayfinding.

FIVE ELEMENTS OF CITY IMAGEABILITY

PATH

- Channel of movement
- Streets, sidewalks, hallways
- strong directional quality
- concentration of activity

NODE

- centre/hub of activity
- intersection of path
- high degree of imageability
- place of break in transportation, crossing or convergence of path
- moment of shift from one structure to another

LANDMARK

- reference point
- simply defined as physical object (building, structure, store or mountain)
- help people to orient themselves
- seen from many angles and distances

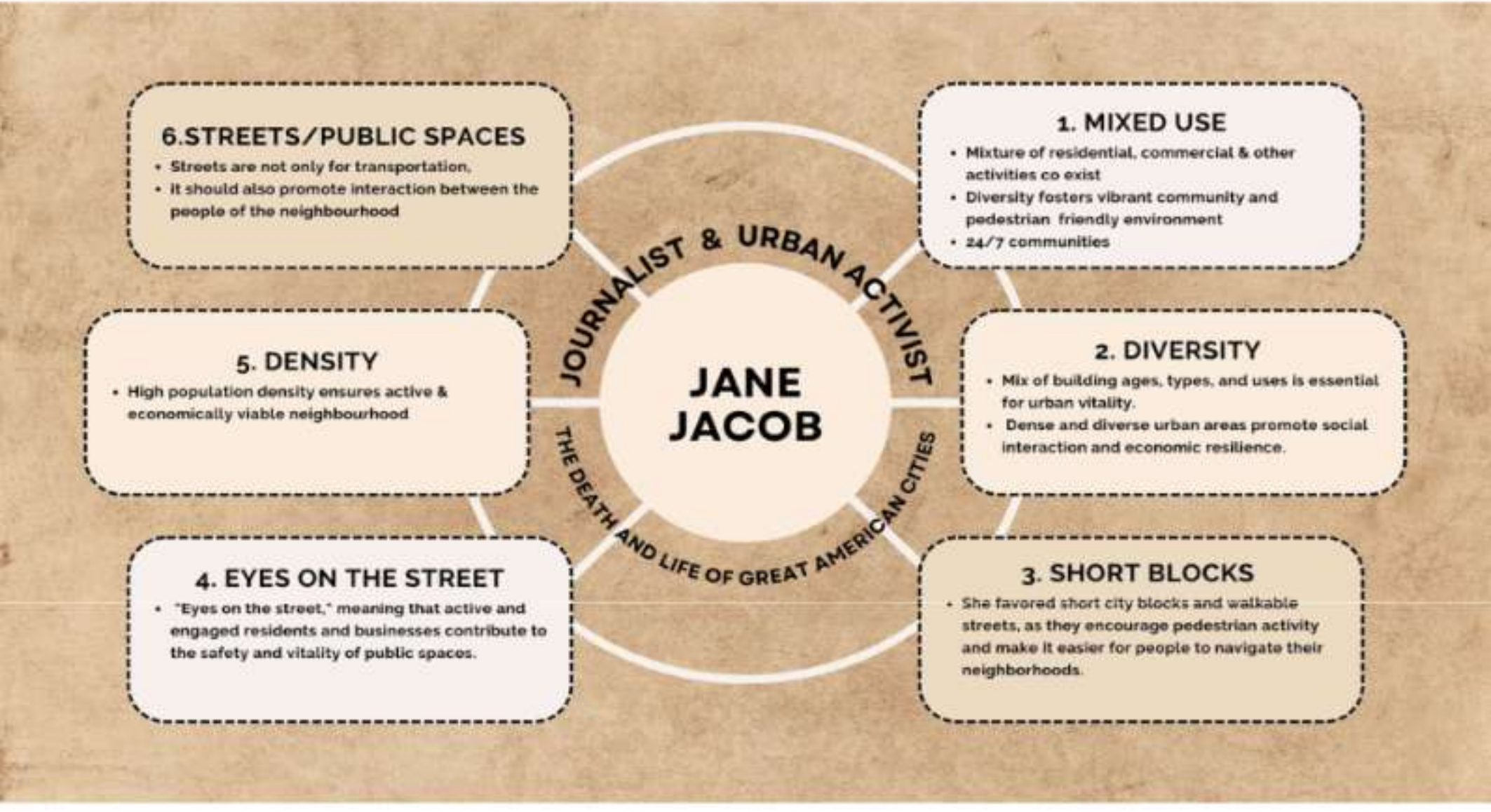
EDGE

- considered as the linear elements not used or considered as paths
- perceived boundaries between two phases such as walls, buildings and shorelines
- prominent and impenetrable
- determination of individual spaces

DISTRICT

- observer manually enter the inside off which area recognized of having some common identifying character.
- The physical characteristics that determine districts are; texture, space, form, detail, symbol, building type, use, activity, inhabitants, degree of maintenance, topography.


to pool
to campus
to Stony
to 280
PATH (BIKE)
PATH (CAR)
EDGE
DISTRICT
NODE
LANDMARK


JANE JACOB
JOURNALIST & URBAN ACTIVIST
THE DEATH AND LIFE OF GREAT AMERICAN CITIES
1. MIXED USE
• Mixture of residential, commercial & other activities co exist
• Diversity fosters vibrant community and pedestrian friendly environment
• 24/7 communities
2. DIVERSITY
• Mix of building ages, types, and uses is essential for urban vitality.
• Dense and diverse urban areas promote social interaction and economic resilience.
3. SHORT BLOCKS
• She favored short city blocks and walkable streets, as they encourage pedestrian activity and make it easier for people to navigate their neighborhoods.
4. EYES ON THE STREET
• "Eyes on the street," meaning that active and engaged residents and businesses contribute to the safety and vitality of public spaces.
5. DENSITY
• High population density ensures active & economically viable neighbourhood
6.STREETS/PUBLIC SPACES
• Streets are not only for transportation,
• It should also promote interaction between the people of the neighbourhood

GORDON CULLEN

British architect and urban designer, Author, key motivator in the Townscape movement
He coined the word **"serial vision"**

TOWNSCAPE IS AN **ART** OF GIVING **VISUAL COHERENCE** AND O**RGANIZATION TO JUMBLE OF BUILDINGS, STREETS AND SPACES** THAT MAKEUP THE URBAN ENVIRONMENT

SERIAL VISION REFERS TO THE **CHANGING PERSPECTIVES AND SEQUENTIAL VIEWS** EXPERIENCED AS YOU MOVE THROUGH SPACE. IT IS OFTEN EXPLAINED AS THE **UNFOLDING VISUAL EXPERIENCE.**
Its the way our **perception alters and morphs as we journey across a landscape.**
A street may turn and reveal new geometries; a sudden vista may open up; a scenic landmark might appear over the horizon; emerging views and visual stimuli are revealed and concealed.
serial vision **was more than just a visual experience; it encompassed the emotional and psychological journey undertaken when moving through space**

Possession:

a **sense of ownership** or belonging towards a space
urban environments should be **human-centred, aligned with human perception and needs,** making them more inviting and comfortable

Enclosure and exposure

Enclosure refers to **partial or complete containment of space** by **walls, gateways, and other structures or landscaping elements**
helps to **segment a journey, providing a sense** that you are **transitioning between spaces**

Irregularity, pattern, and coherence

Humans are attuned to regularities, patterns and rhythms seeking spatial coherence and linking elements to make sense of the world
A balance of pattern and spontaneity is required to capture visual interest

Punctuation

Distinct moments or pauses can be achieved in an urban environment through the **careful placement of buildings, landmarks, open spaces, or other features.**
It can be achieved through **contrast and comparison, juxtaposing differing element**

Place:

When buildings come together, the **spaces between the buildings** can take on a life of their own.
Place relates to our **constant awareness of our position in the urban environment.**
It involves **distinct, identifiable areas within the city** that have their **own unique character and atmosphere**

Here and There

creating a **sense of depth and layering in the urban environment**
clear distinction between **foreground, middle-ground, and background elements.**

This and That

its the **content** within an urban environment, including the **meaning or significance of a place**, often **rooted in its history, function, or the cultural values of its inhabitants.**

Now and Then

cities are **dynamic and change over time**, but also **need a degree of consistency to provide a sense of coherence.**

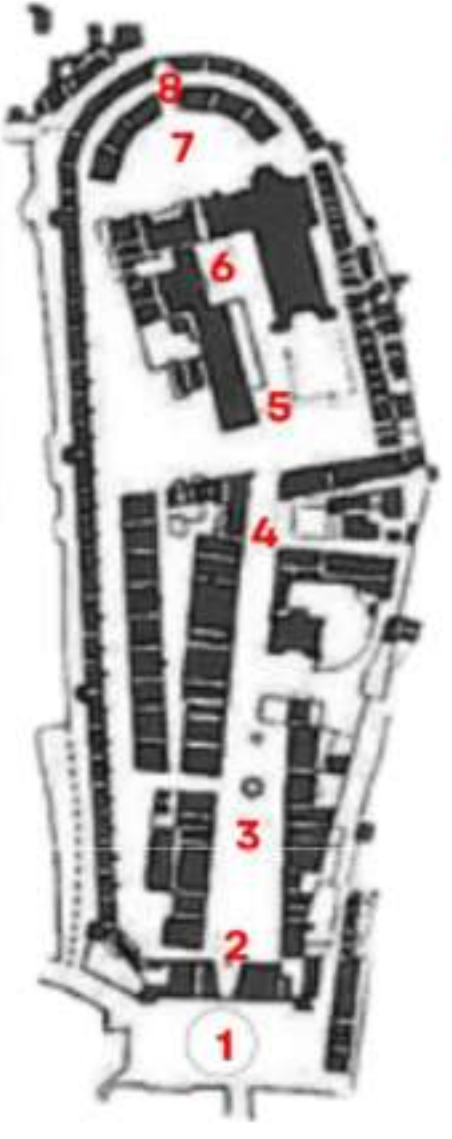
Mystery, surprise, and concealment

People are often **drawn to scenes** that evoke a **sense of mystery**
This **intrigue can be sparked** by **navigating through twisting turns, enclosed or defined spaces, or following deviations from the expected path.**

GORDON CULLEN - SERIAL VISION

SERIAL VISION 1

SERIAL VISION 2



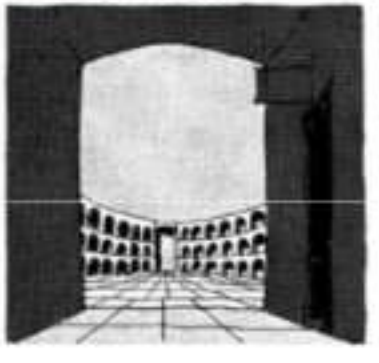
SERIAL VISION 3

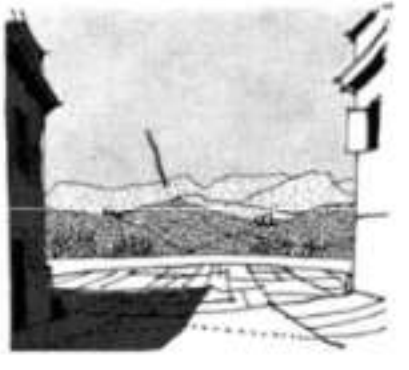
SERIAL VISION 4

SERIAL VISION 5

SERIAL VISION 6

SERIAL VISION 7





SERIAL VISION 8

WILLIAM H WHYTE

AMERICAN , SOCIOLOGIST, ORGANISATIONAL ANALYST, JOURNALIST, PEOPLE WATCHER , URBANIST & WRITER

A Pioneer in research, explores design influence on human behaviour
notable works : Renovation Of Bryant Park In New York City
From his research on "The Social Life Of Small Urban spaces" Following are his recommendations

CATALYSTS

an **external stimulus - the 'spark'** - that **gets people talking to each other** - the street performer, 'character', physical object (e.g. sculpture), sight /view, etc.

NDOOR SPACES

connectivity to the street and reason to use the space (food and/or retail) are **even more important** than for outside spaces;
Doors need to be open

CONNECTIVITY TO THE STREET

it has to be easy to both see and get into the space, with a subtle transition from street to plaza/park
Slight rise in level can be inviting, but no more than a metre, and never (or rarely) sunken

FOOD

food outlets will draw people to a space
compressing food outlets and any related seating into a small area.
People are encouraged (forced) into unplanned meetings and conversations

CIRCULATING AND GATHERING

- **People prefers to stop, talk and sit either on or as close as possible to active circulation route**

SEATING

- **People want places to sit**, so provide as much seating as possible (walls, edges of planters or water features, steps (in fact, whyte's view is that it is **generally more difficult to make them 'unsittable'**)
- **Chairs (with backs) are better than benches**
- **Choice is important** so make **seating movable if possible.**
- Specifics - length/quantity: **min. 300mm length for every 2.75m2 of plaza area;**
- width: **(single-sided) min. 400mm, (double-sided) min. 760mm;**
- height: **300-900mm**

SUN, WIND, TREES, AND WATER

- **Provide choice of SUNNY OR SHADY AREAS** (weather permitting)
- **Try to 'borrow' light** (using reflective surfaces) if the space is north facing or **overshadowed**
- **wind and drafts are usually unwelcome**, so small parks **enclosed on 3 sides work well,** Tall buildings can often **cause drafts and turbulence**
- **Trees - at least 6, of good size, for a space of 450m2** or 1 PER 7.5M OF PAVEMENT (SIDEWALK), ideally CLOSE TO SEATING - to moderate climate, **provide sense of enclosure, shade (in appealing patterns), etc**
- **water - should be accessible and not just for looking at; moving water can help to create a quiet and restful feel by masking the worst aspects of street noise.**

BRYANT PARK IN THE PAST BEFORE RESTORATION

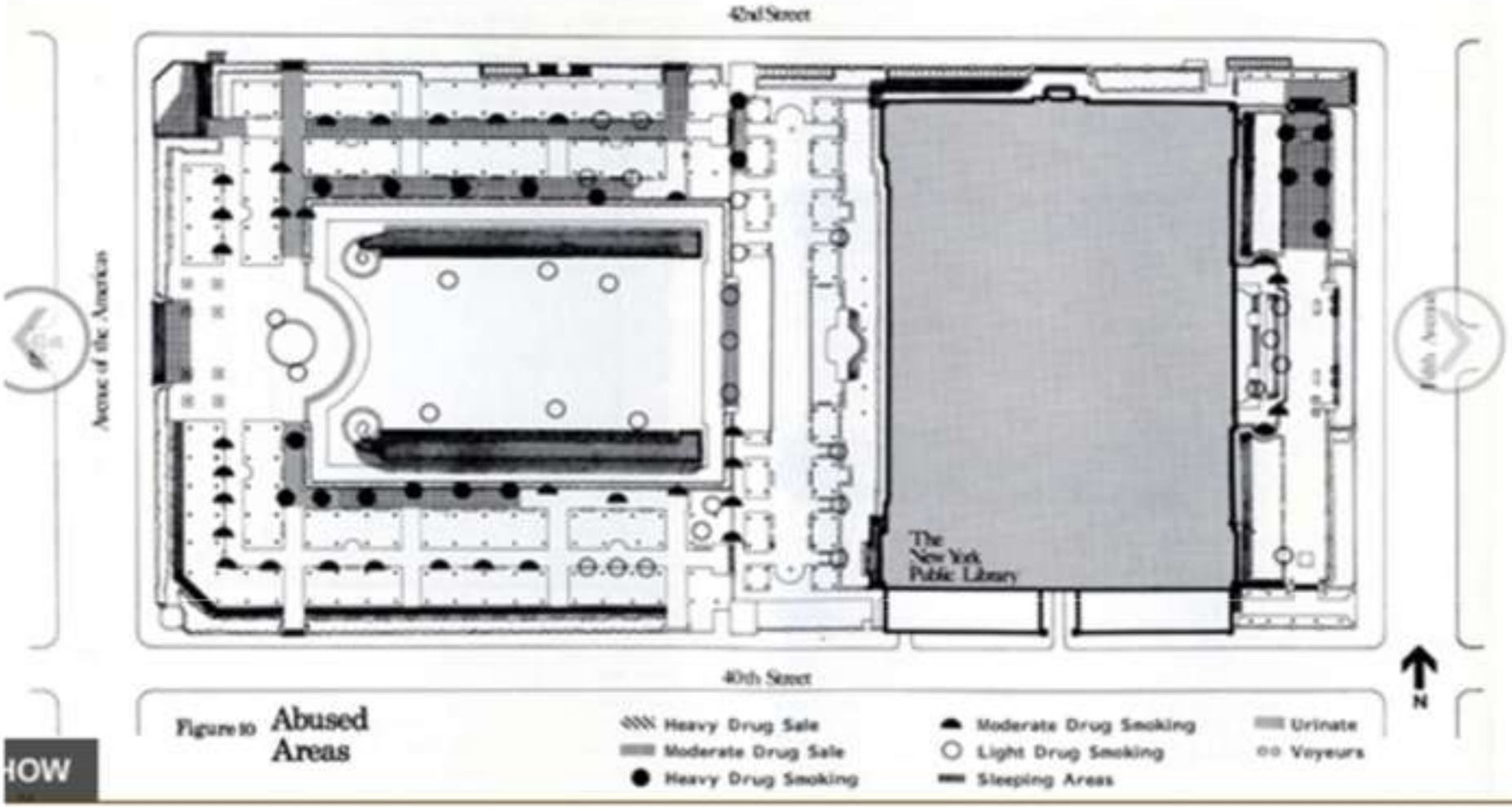


Figure 10 Abused Areas

HOW

In an article published in May 1992, The New York Times cited, **"Where once the park was the home of derelicts, drug dealers and drug users, it is now AWASH WITH OFFICE WORKERS, SHOPPERS, STROLLERS AND READERS FROM THE NEW YORK PUBLIC LIBRARY NEXT DOOR."**

BRYANT PARK

SUCCESS STORY

SOLUTION

The project was a **landmark experiment** in design and social programming created in response to **sociology and behavioral research.**

Removing Iron Fences And Shrubbery and To Make The Space More **Physically And Visually Accessible.**

The PARK IS ACTIVE year-round with concerts, performances, movie screenings, and ice skating

JAN GEHL AND URBANISM

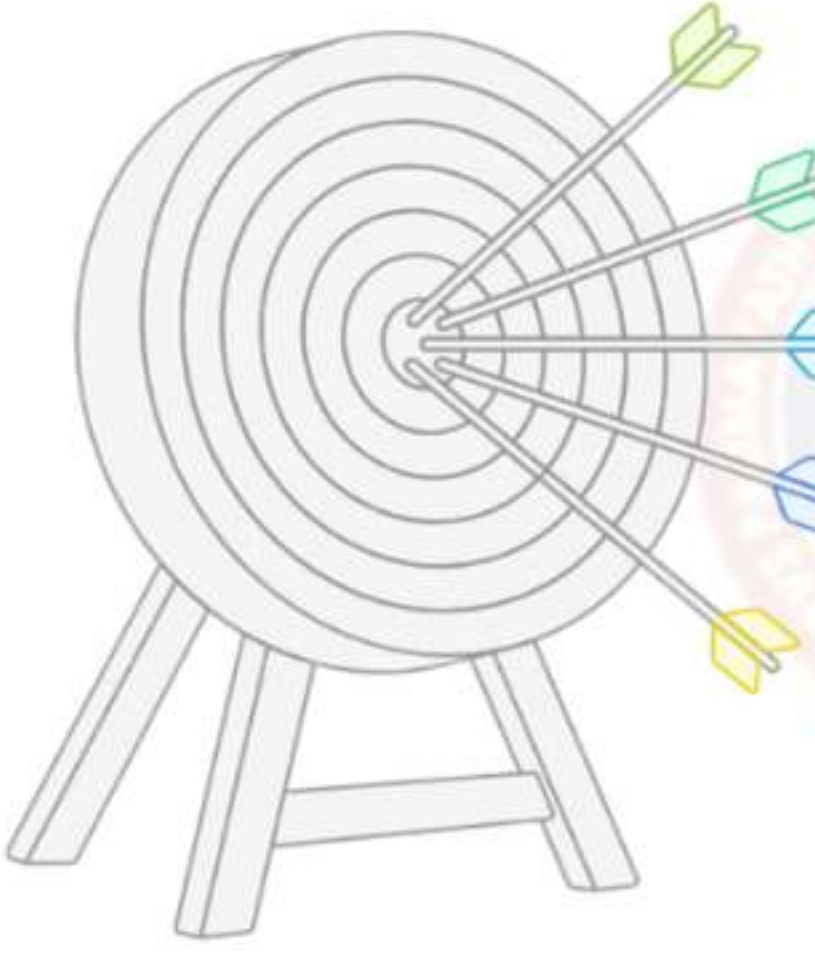
Danish architect and urban design consultant , Author- Life between Buildings

WORK METHODOLOGY ACCORDING TO THE PRINCIPLES OF JAN GEHL

- **people are the most important priority of public space** in the process of planning cities.
- **Public space** should be a **place for everyone** that includes **unique qualities and benefits of a particular urban environment, open to a variety of activities and opportunities.**
- **He** emphasizes creating cities and public spaces that **prioritize the well-being and quality of life of their residents and users.**

- The **usual methodology** of planning, which **focuses on traffic and buildings, must be turned back** so that **people and users become more visible in the planning process.**
- In most cases, the **beginning of the creation is a vision of beautiful objects,** which creates the **"overshadowing factor",** around which is free space. There remains hope that the rest of the space will come to life.
- This approach leaves to **chance the most important aspects that make the city dynamic, safe and attractive.** By applying the Gehl methodology, team works to establish a different path of thinking: humans first, then the environment tailored to their needs.
- The **strategic guidelines of Gehl Architects were selected and applied** in the context of studies, workshops, public consultations, lectures and conferences.
- **"The road to creating successful spaces begins with putting people first".**
- following data collection has been used To ensure that the reconstructed park has a dynamic public life and in order to avoid the most common mistakes of modern urban planning,

JAN GEHL'S IDEOLOGY



People First

Urban planning should prioritize the needs and experiences of people over cars and abstract architectural concepts.

Quality Public Spaces

safe, comfortable, attractive, and offer a variety of activities will naturally lead to more vibrant and active public life.

Outdoor Activities

They are fostered by the presence of optional activities and comfortable public spaces.
Necessary Activities: commuting, shopping, etc will happen regardless of the environment's quality.
Optional Activities: leisure activities like sitting, strolling, playing
Social Activities: interactions, conversations, and simply seeing others

Life Between Buildings

spaces between buildings – streets, squares, parks – as crucial for social interaction, recreation, and the overall experience of city life.
Building design should support and enhance this "life between buildings."

Sensory Experiences, walkability & mixed use

Cities should engage all human senses – sight, sound, smell, touch – to create richer and more enjoyable environments.
Prioritizing pedestrian and bicycle infrastructure is crucial for creating healthy, sustainable, and people-friendly cities.
Integrating different functions (residential, commercial, recreational) creates more vibrant and lively urban areas, reducing the need for travel.

JAN GEHL RESEARCH METHODOLOGY

OBSERVATIONAL APPROACH

TEST WALKS

Taking a walk while observing the surrounding life can be more or less systematic, but the aim is that the **observer has a chance to notice problems and potentials for city life on a given route.**

KEEPING A DIARY

Keeping a **diary can register details** and nuances **about the interaction between public life and space**, noting observations that can later be categorized and/or quantified.

PHOTOGRAPHING

Photographing is an essential part of public life studies **to document situation**s where **urban life and form either interact or fail to interact after initiatives have been taken**

LOOKING FOR TRACES

Human activity often leaves traces such as litter in the streets, dirt patches on grass etc, which **provides the observer with information about the city life.**
These traces can be registered through counting, photographing or mapping.

COUNTING

- Its is a **widely used tool** in public life studies.
- In principle, **everything can be counted, which provides numbers for making comparisons before and after,** between different geographic areas or over time.

MAPPING

- **Activities, people, places** for staying and much more can **be plotted in,** that is, **drawn as symbols** on a plan of an area being **studied to mark the number and type of activities** and **where they take place.** This is also **called behavioral mapping.**

TRACING

- **People's movements** inside or crossing a limited space can be **drawn as lines** of movements on a plan of the area being studied.

TRACKING

- To **observe people's movements** over a large area or for a longer time, **observers can discreetly follow people without their knowing it or follow someone who knows and agrees to be followed and observed.** This is also **called shadowing.**

ALDO ROSSI

Italian Architect, Theorist, Product Designer, Author

international recognition in four distinct areas: architectural theory, drawing and design and also product design.

leading proponents of the postmodern movement.

first Italian to receive the **Pritzker Prize for architecture**

Famous Books : **The Architecture of the City**

ARTEFACTS:

Buildings that evolve over time are key to the **collective memory of a city**: they are **shared memories that shape a city's identity.**

Rossi called these **buildings urban artifacts**, and linked them to **works of art** because **they help shape and are shaped by the public's unconsciousness.**

These **urban artifacts evolve over time: they change their functions, they grow, they shrink, but the core stays the same.**

The **artifacts are considered as origin for the locus**

FUNCTION:

Function should be disregarded and should not be by means of only classification

PERMANENCE:

Permanent buildings of the past are an experience for ever.

TYPOLOGY:

Typology presents itself as the **study of types of elements that cannot be further reduced,** elements of a city as well as of architecture. Typology of Rossi's **urban artefacts cannot be reduced further**

URBAN SEQUENCE:

The relationship between the urban sequence and the artifact is dual.

The city is made by its parts. **Artefacts are reminiscence of the past**. The uniqueness of each city lies in its parts (artifacts) that consist **mainly of monuments, public buildings and historical content.**

LOCUS:

Rossi distinguishes **Locus (the relationship between a specific location and the buildings that are in it)** from "context". **Locus or Genius Loci is the spirit of the place.**

COLLAGE CITY

TWO HAD WRITTEN AND PUBLISHED THE EVER-RELEVANT ESSAY COLLAGE CITY .

Colin Rowe

British-born, American-naturalised architectural historian critic, theoretician and teacher.

Fred Koetter

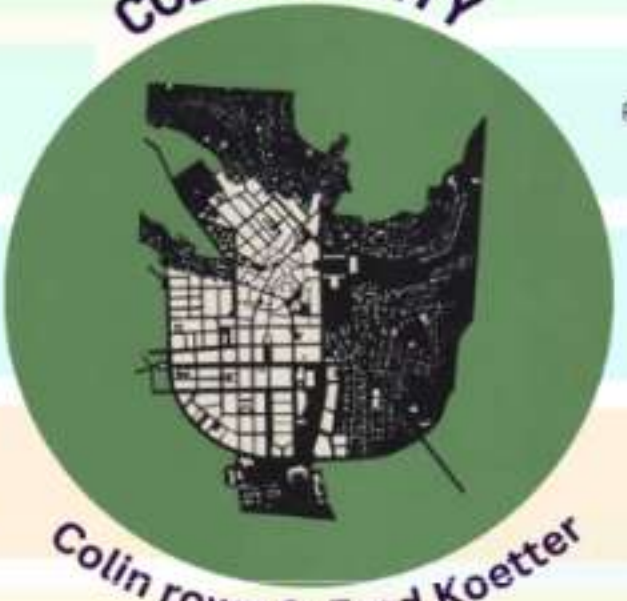
globally-renowned American architect, architectural historian and urbanist

- critical influence in the second half of the twentieth century on world architecture and urbanism.
- Awarded the Gold Medal by the Royal Institute of British Architects
- He was also awarded the Athena Medal from the Congress for the New Urbanism posthumously
- "The Mathematics of the Ideal Villa" - Colin Rowe's seminal essay went through five printings in four years

Rowe asserted the basis of a direct comparison of a villa by Le Corbusier and a villa by Andrea Palladio from the 16th century.

- His famous works
  -The Architecture of Good Intentions (1994)
  - As I Was Saying: Recollections and Miscellaneous Essays, Collected essays, letters, and papers collected in 3 volumes by MIT Press from his lifetime
- Collage City (1978) with Fred Koetter
- Italian Architecture of the 16th Century, with Leon Satkowski

COLLAGE CITY



Colin rowe & Fred Koetter

HETEROGENEITY:
Embraces **diversity and variety** in architectural styles, building types, and urban elements within a city.

ECLECTICISM:
An eclectic approach to architecture and urban design, where **diverse elements are combined to create a richer urban fabric.**

HISTORICAL LAYERING:
Encourages the **preservation of historical architecture** and the **integration of older structures** into new developments.

URBAN PATTERNS:
It explores the creation of urban patterns through the **juxtaposition of different architectural forms and functions.**

ORGANIC GROWTH:
Promotes an organic and adaptive approach to urban development, allowing **cities to evolve based on their unique cultural and social contexts**.

CONTEXTUALISM:
It stresses the importance of designing in context, taking into account the **existing urban environment and adapting to it.**

EVOLUTION OVER REVOLUTION:
Prefers **incremental changes and additions to the cityscape** rather than wholesale demolitions and reconstructions.

HUMAN-SCALE DESIGN:
Focuses on creating spaces and buildings that are **comfortable and relatable for people**, rather than grandiose and imposing structures.

NEIGHBORHOODS:
Advocates for the **creation of distinct neighborhoods** or districts with their own identities and characters.

VISUAL COMPLEXITY:
Favors a **visually rich and layered urban environment**, where the eye is drawn to a variety of architectural details.

NEW URBANISM

GOALS OF NEW URBANISM

- New Urbanism is an international movement **focused on human scaled urban design.**
- It promotes the **creation and restoration of diverse, walkable, compact, vibrant, mixed-use communities** composed of the same components as **conventional development**, but assembled in a **more integrated fashion,** in the form of complete communities.
- These contain **housing, work places, shops, entertainment, schools, parks, and civic facilities** essential to the daily lives of the residents, all within easy **walking distance of each other.**
- It **promotes** the increased **use of trains and light rail,** instead of more highways and roads.
- New Urbanism is the **revival of our lost art of place-making,** and is essentially a **re-ordering of the built environment** into the form of **complete cities,** towns, villages, and neighborhoods. the way communities have been built for centuries around the world.
- New Urbanism involves **fixing and infilling cities,** as well as the **creation of compact new towns and villages.**

- **To reduce dependence on the car**
- **To create livable and walkable, neighborhoods with a densely packed array of housing, jobs, and commercial sites.**

PRINCIPLES OF NEW URBANISM

01

WALKABILITY

- Most things within a **10-minute walk of home and work**
- **Pedestrian friendly street** design
- **Pedestrian streets free of cars** in special cases

02

CONNECTIVITY

- **Interconnected street grid network** disperses traffic & eases walking
- A **hierarchy** of narrow streets, boulevards, and alleys
- **High quality pedestrian network** and public realm makes **walking pleasurable**

03

MIXED-USE & DIVERSITY

- A **mix of shops, offices, apartments**, and homes on site.
- **Mixed-use within neighborhoods, within blocks, and within buildings.**
- Diversity of people of **ages, income levels, cultures, and races**

04

MIXED HOUSING

- A **range of types, sizes and prices in closer proximity**

05

QUALITY ARCHITECTURE & URBAN DESIGN

- Emphasis on **beauty, aesthetics, human comfort**, and creating a **sense of place;**
- **Special placement of civic uses** and sites within community.
- Human scale architecture & beautiful surroundings **nourish the human spirit**

06

TRADITIONAL NEIGHBORHOOD STRUCTURE

- **Discernable center and edge**
- **Public space at center**
- Importance of **quality public realm**;
- **Public open space** designed as **civic art**
- Contains a range of uses and densities **within 10-minute walk**
- **Transect planning**: Highest densities at town center; progressively less dense towards the edge

07

INCREASED DENSITY

- More buildings, residences, shops, and services closer together for **ease of walking**, to enable a more **efficient use of services and resources,** and to create a more **convenient, enjoyable place to live.**
- New Urbanism design principles are applied at the **full range of densities from small towns, to large cities**

08

SMART TRANSPORTATION

- A **network of high-quality trains** connecting cities, towns, and neighborhoods together.
- **Pedestrian-friendly design** that encourages a greater use of bicycles, rollerblades, scooters, and **walking as daily transportation**

09

SUSTAINABILITY

- **Minimal environmental impact** of development and its operations.
- Eco-friendly technologies, **respect for ecology and value of natural systems**
- **Energy efficiency**
- **Less use of finite fuels**
- **More local production**
- **More walking, less driving**

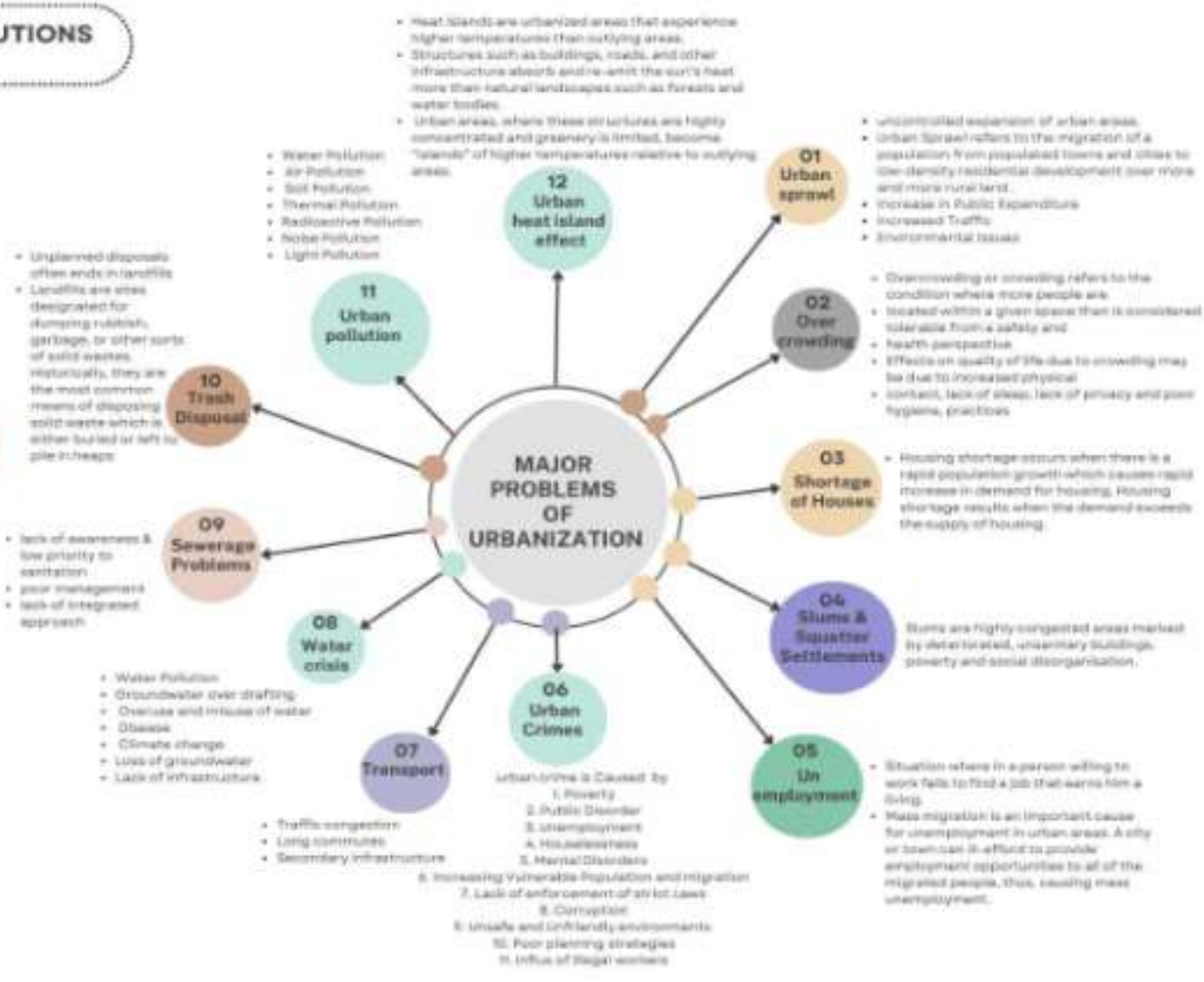
10

QUALITY OF LIFE

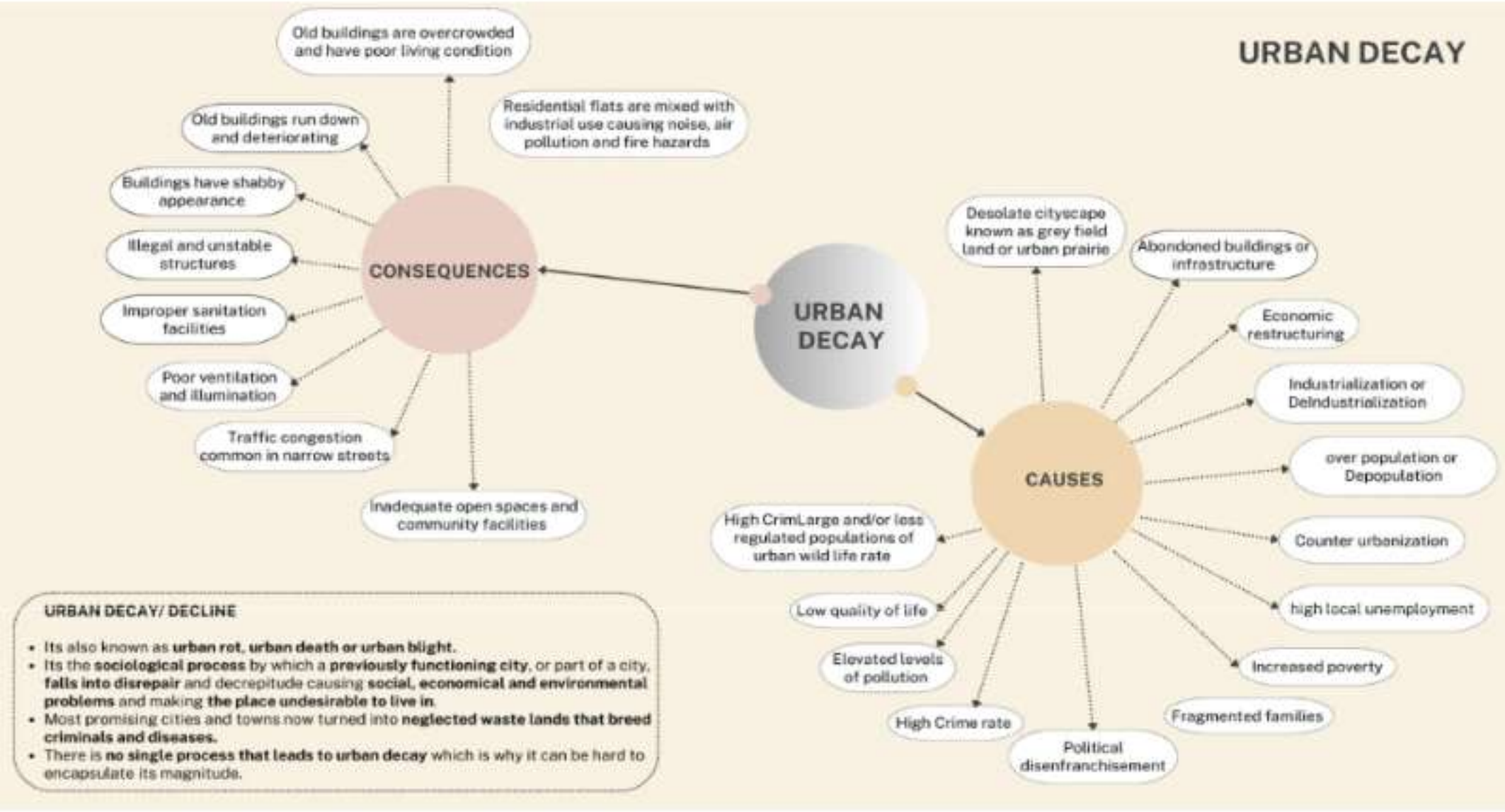
- Taken together these add up to a **high quality of life well worth living**, and create places that enrich, uplift, and **inspire the human spirit.**

UNIT IV
CONTEMPORARY URBANISM AND URBAN INTERVENTIONS

UNDERSTANDING ASPECTS, ISSUES AND SOLUTIONS RELATED TO URBANISM



URBAN DECAY



URBAN DECAY/ DECLINE

- Its also known as **urban rot, urban death or urban blight.**
- Its the **sociological process** by which a **previously functioning city**, or part of a city, **falls into disrepair** and decrepitude causing **social, economical and environmental problems** and making **the place undesirable to live in**.
- Most promising cities and towns now turned into **neglected waste lands that breed criminals and diseases.**
- There is **no single process that leads to urban decay** which is why it can be hard to encapsulate its magnitude.

URBAN RENEWAL

- Its a program of **land redevelopment** often used to **address urban decay in cities.**
- It involves **clearing out of blighted areas** in inner cities **to clear out slums and create opportunities** for higher class housing, businesses, and other developments.
- Primary purpose of urban renewal is **to restore economic viability** to a given area by attracting external private and public investment and **by encouraging business start-ups and survival.**
- Its essential **to remove the congestion of traffic, to demolish the useless building** or buildings which cannot be used for any purpose, such as commercial or residential etc.
- It **permits us to demolish them and also enables us to rebuild the same area** with all the facilities and to make a planned environment.
- It may result in **urban sprawl and decongestion or less congestion of traffic.**
- It **improves cultural and social amenity.**
- **It improves opportunities for safety and surveillance**

CONDITIONS LEADING TO URBAN RENEWAL

01

BLIGHT

It is a phenomenon by which a building or an area as well as its **activity deteriorate because of age, poor structural quality and inadequate facilities with less or no maintenance.** Once blight is caused it **spreads rapidly** to neighboring areas.

02

OBSOLESCENCE

A structure or a space that is **rendered unwanted or non-functional** is said to be an obsolete structure. This is an area which is **unfit for the present use** either due to the change in the pattern of living or due to cultural or economic change.

Types of obsolescence

a)STRUCTURAL – Where the building has reached a point of being **unable to offer shelter.**

b)FUNCTIONAL – Where the interior and sanitation has **deteriorated** to a point of being difficult to use.

C)LOCATIONAL/ENVIRONMENTAL –Where the **surrounding areas make the building unsuitable for use**

03

SLUM

An area with advanced condition of blight causing bad environment- physically and socially by lack of basic amenities and maintenance with structural quality of the building materials used being poor.

04

SOCIAL IMBALANCE

05

ECONOMIC LOSS

ASPECTS/ TYPES OF URBAN RENEWAL

Three aspects constitute the urban renewal.

01 REDEVELOPMENT (DEMOLITION, CLEARING AND REUSE OF LAND)

- It is applicable to areas where the **arrangement of the building and general character** of obsolescence and deterioration make it **worth less to live** and thus **liable the area to be redeveloped.**
- Main aims of redevelopment policy are:
  -Removal of existing building
  -Reuse of cleared land
- **Use of any open land** that was interspersed among the **improved buildings and possibly adjacent land also.** This latter may be required for street widening, commercial uses etc.

02 REHABILITATION (REPAIRING OR REMODELING)

- It is an area where building may be **good structurally**, but **may not be proper for human habitation purpose and some repairing or re modeling may make them fit for habitation purpose.** modernizing and repairing so as to enable them to be at satisfactory standards of living can restore some neighborhood.
- This policy is **not applicable to those city zones** in which there is a **high degree of loss of efficiency in original function** which there are condition appearing which are **likely to cause deterioration in the sound economic activity**
- Administrative measures of controlling the use of reuse of land and the buildings are:
  -Either restore the area to its original conditions
  -To bring about a **new and appropriate functions in accordance with the general city development proposals**

03 CONSERVATION (PRESERVING, RESTORING & PROTECTION)

- It is most applicable to zones of city which are now generally **suited to their function,** zones in which **buildings are kept in good condition**, zones containing **buildings and areas of historical, cultural or architectural value.**
- conservation policy would have as its objectives The **protection of such areas by preventing their Falling into a condition requiring redevelopment .**
- The following measures are important in such zones:
  -Owners must maintain buildings to **legally prescribed standards.**
  -Over crowding and of rooms and dwellings are not to be permitted.

Advantages of urban conservation:

- It **restores the culture and heritage** of an urban area
- It **promotes economy of a particular place with the help of tourism**
- It **improves the citys self image and identity** through recognition of heritage assets
- It **increases the civic pride and energize community**

URBAN RENEWAL CASESTUDY:
BHENDI BAZAAR REDEVELOPMENT PROJECT

- The **Bhendi Bazaar a market in south Mumbai,** bazaar is famous for antique items, hardware's etc and it's a **neighborhood of Mumbai** started as one of the **integrated residential, commercial, social, and religious hubs** at the heart of Mumbai. **Mosques, bazaars, apartments, and organic street patterns all coalesced to create a tight knit vibrant urban fabric.**
- **Overcrowding, lack of maintenance, negligible investment in the infrastructure** have led to a **steady erosion of the fabric of Bhendi Bazaar.** Today, residents and shoppers inhabit **dilapidated buildings and conduct their daily lives on streets that lack even the most basic urban amenities such as ventilation, sidewalks, drainage, benches, trees and lighting.**
- **In the past three years more than 170 people died in 11 incident of building collapse**
- The area is said to be **redeveloped** with the project being undertaken by **saifee burhani upliftment trust** led by the Dawoodi Bohra community.
- **Bhendi bazaar is 125 years old, made up of 16.5 acres which is divided into 280 plots & comprises over 250 existing buildings, housing over 3,200 families and 1,250 shops.** This is the **largest cluster redevelopment project in the country's commercial capital.**
- **Project was approved by maharastra housing and area development authority and Bombay municipal corporation.**
- **Tvsdesign** was selected via an **international competition** to **design a master plan to redevelop the neighborhood**, providing modern residential units and shops for all existing residents and businesses as close as possible to their current location; and utilizing 20% of the neighborhood's developable land for income generating residential and commercial properties that would subsidize the redevelopment effort.
- With stewardship of the **people, place and planet as its central theme,** the tvsdesign team translated the vision into a sustainable new neighborhood composed of "people places" that maintain the spirit of the original.
- As part of the redevelopment project, **Bhendi Bazaar** is being built future-ready **with modern amenities, wider roads, sustainable practices, and improved infrastructure with a surplus of a high street shopping experience.**
- **"The project aimed at positively impacting the lives and livelihoods of people and upgrading the dilapidated infrastructures of Bhendi Bazaar.**
- This project is providing a **blueprint for the Urban Renewal projects** in Maharashtra **and rejuvenating congested areas of Mumbai like Dharavi**
- **The project is divided into nine sub-clusters or sectors** for better **management and functionality**. In **2020,** SBUT completed **the first phase** sub clusters 1 & 3 completed, tenants have been shifted and **rehabilitation of over 610 families and 128 businesses.** The trust has also provided retail establishments within the planned constructions for roadside vendors.
- The **second phase** of the redevelopment project also includes **sector 6 Al-Ezz**, the construction work for the same **began in 2021 and expected to completed by 2025.**
- The **foundation stone laying ceremony for sector 4** of the project. And **sector 4 covers around 1.5 acres** of the overall 16.5 acres of land undertaken for redevelopment.it **house nearly 1,400 residential units and over 375 businesses.** Around **74 dilapidated buildings will make way for two new towers of 53 and 54 storeys each.**

- The entire development is **eco friendly**, building rise progressively in height from south to north thus ensuring that every flat catches the breeze coming from the sea.
- Project was certified by **IGBC- pre certified gold green homes**
- Out of 17 tower , **13** will be used to rehabilitate the current residents and remaining **4 towers will be put on sale for 1200 -1600 residence.**
- Well spaced and aligned buildings **providing better natural light and ventilation for the residents.**

1200 Rehab Apartments & 1900 Sale Apartments

- Pedestrian friendly neighbourhood with tree lined foot path and recreational area.
- **Well planned garbage handling and disposal system, sewage treatment plant and recycling water.**
- **Rainwater harvesting, solar panels and energy efficient fittings**
- Modern technology for better security
- Ground floor will be commercial with under ground parking and residential parking will be on the top.
- According to **2012 MRTP regulation act, residential tenants are supposed to get 35% more area on their existing total carpet area and commercial tenants are eligible for additional 20%** .

COMMUNITY PARTICIPATION

Community

Community is a **set of people living together with common interest"** with the following characteristics:

- Live in the **same geographical area**
- Share **common goals or problems**
- Share **similar development aspirations**
- Have similar interests/ **social network/relationship at local level**
- Are **sociologically and psychologically linked.**

Aim of community Participation

- The community develops **self-reliance**
- The community develops **critical awareness**
- The community develops **problem solving skills**
- **Inclusive communities**
- **Health and wellbeing** of the community.

Types of Participation

- **Passive** – (Manipulation)
- **Active** – (consultation)
- **Involvement** – (Community control)

PASSIVE:

- Individuals or families are mere **spectators**

ACTIVE:

- They may be carrying out **some tasks** in a programme

INVOLVEMNT :

- They are involved in **all aspect** of a programme.
- It is important for a community to participate in every stage of the programme for it to have long lasting results i.e., thinking, planning, acting and evaluating.
- It enables the community to make informed decisions in matters affecting their development.

TYPES OF COMMUNITY GROUPS

1. SELF HELP GROUPS

Run by people for their own benefits e.g. co- operatives, church saccos etc

2. PRESSURE GROUPS

A group of self-appointed citizens taking action on what they see to be the interests of the whole community putting on pressure to improve the school, get garbage collected, do something about a dangerous road etc.

3. TRADITIONAL ORGANIZATIONS

E.g Njuri Njeke in (Meru), these are **well established groups,** usually meeting the needs of a particular section of the community, others rotary, club, mothers union parent teacher associations, and church groups

4. WELFARE GROUPS

Exist to **improve the welfare of a group**; merry go round, feeding programmes etc.

ADVANTAGE

- open forum for the community **to discuss its problems and find indigenous solutions** which may be efficient and economical.
- Making people **aware of their needs.**
- Results in **better decisions**
- People are more likely **to implement the decisions that they made themselves** rather than the decisions imposed on them.
- **Motivation is frequently enhanced** by setting up of goals during the participatory decision making process.
- Participation **improves communication and cooperation**
- **Identification and development of the local resources** thereby **generating self reliance** among the community.
- **To develop local leaders** who can further educate and mobilise the people in the area.
- People may **learn new skills** through participation; leadership potential may be identified and developed.
- **Higher achievement at a lower cost.**

DISADVANTAGE

- Participation does not occur automatically. It is a process. **It involves time.** Hence it may lead to **delayed start of a project.**

- Gated community (or walled community) is a form of **residential community or housing estate** containing **strictly controlled entrances for pedestrians, bicycles, and automobiles**, and often **characterized by a closed perimeter of walls and fences.**
- These communities are often designed to provide an **enhanced level of security, privacy, and exclusivity for their residents.**
- Gated communities usually consist of **small residential streets and include various shared amenities.**

BENEFITS

1. Higher Property Value
2. Safety & Security
3. Lifestyle Changes
4. Eco-Friendly Living
5. Safe Play for Children
6. Green Environment
7. Higher Home Standards

GATED COMMUNITY

AMENITIES OFFERED

- Swimming pools
- Bowling alleys
- Tennis courts
- Community centres or clubhouses
- Golf courses
- Marina
- On-site dining
- Playgrounds
- Exercise rooms including workout machines
- Spa

CASESTUDIES

- Metropolis, Maraimalai nagar, chennai

TOTAL NUMBER OF HOUSES:	436
NUMBER OF TOWERS:	15 (A to O)
NUMBER OF FLOORS:	G + 9 (10 floors) + BASEMENT PARKING
NUMBER OF ROYAL APARTMENTS:	4 UNITS / FLOOR – **BLOCKS A to D** = 160 UNITS + 2 UNITS / FLOOR – **BLOCK E** = 20 UNITS => 180 UNITS *(WOODEN FLOORING IN BEDROOM, VITRIFIED TILES IN OTHER ROOMS – NO COMMON WALLS – SERVANT ROOM + TOILET)*
NUMBER OF PREMIUM APARTMENTS:	4 UNITS / FLOOR – **BLOCKS F to I** = 160 UNITS + 2 UNITS / FLOOR – **BLOCK K & J** = 40 UNITS => 200 UNITS. *(BLOCK G ALONE HAS SERVANT ROOM)*
NUMBER OF 2BHK APARTMENTS:	40 UNITS
NUMBER OF SERVICE APARTMENTS:	42 APARTMENTS ABOVE CLUB HOUSE (5 FLOORS)
NUMBER OF VILLAS:	16 VILLAS (G+3 FLOORS)

AMENITIES OFFERED

- club house
- gym
- grocery
- pool
- cafe coffee day outlet
- indoor games court
- outdoor games court
- SPA
- Parlour
- office area
- business centre
- conference rooms
- walkways
- Jacuzzi
- sauna
- parks
- AV room
- changing rooms & restrooms
- servant room & toilets
- rain water harvesting
- STP
- Zen garden
- access controlled entry
- car wash facilities & corner guards to protect cars
- aerobics centre
- yoga/ meditation hall
- 24 hour power back up

CLUB HOUSE EXTERIOR VIEW

CLUB HOUSE ENTRANCE – KEY MAP - SIGNA

GYMNASIUM

CLUB HOUSE RECEPTION

EMERGING NEW FORMS OF DEVELOPMENTS:

- Emerging **new form of developments** gives **solutions to the problems** such as
  - **Waste management**
  - **Scarce resources**
  - **Air pollution**
  - **Traffic congestion**
  - **Human health problems**

- New form of developments considers the **three pillars of sustainability** for the **well being of the citizen**

PILLARS OF SUSTAINABILITY		
ENVIRONMENT	ECONOMY	SOCIAL
➢ **Conservation of natural environment** & resources ➢ Use of **renewable energy**	➢ **Economic vitality** ➢ Diversity of urban areas	➢ **Equity** ➢ **Community autonomy** ➢ **Citizen well being** ➢ Gratification of **fundamental human needs**

FOLLOWING ARE THE NEW FORMS OF DEVELOPMENT TO LIVE A SUSTAINABLE LIFE:

1. **SELF SUSTAINED COMMUNITIES**
2. **INTEGRATED TOWNSHIPS**
3. **SMART CITIES**
4. **SPECIAL ECONOMIC ZONE SEZ**
5. **TOD- TRANSIT ORIENTED DEVELOPMENT**

SELF SUSTAINED COMMUNITIES

- Self sustaining community is a **community** which is **able** to **produce/collect food and water for itself, thus** meeting the **basic criteria for self-sustainability**.
- **Employment and governance acts like a** significant factor in **strengthening the community**
- **small scale industries** in a community provides **employment to the people in their own locality and ensures their long term sustainability.**
- **Self sustaining communities** will follow **sustainable practices** like
  waste management,
  water supply,
  energy production & transport,
  sustainable construction techniques and materials etc

CASE STUDY – AUROVILLE

- **Auroville** is a community in Tamil Nadu, India, which follows **sustainability as a way of life** and believe that a **stable community system is essential for achieving spiritual sustainability.**
- The purpose of Auroville is to **create a society which lives in harmony with nature and with each other.**
- They are **spreading awareness** regarding various **sustainable practices like composting, lobbying against pesticide use etc.**
- People began to **join the community** and started finding their **own small scale solutions to these situations** like **planting saplings to prevent sand storms and heat of the barren land.**
- **Small scale, labor intensive construction along with food production, reforestation and small cottage industries began to form and seemed sustainable compared to the ornate vision of the Mother**.
- Auroville, even today, remains an **arena of experimentation and transformation** at all levels of **life and humanity**,
- The land is divided into **four regions**, the **residential, industrial, cultural and international.**
- Four **regions surround the center and heart of Auroville, which is the peace area.**
- The **peace area comprises** of the **Maitri mandir and gardenscapes.**
- **Pheriphery surrounded by a green belt** on the edge which is **used for growing orchards, forests and organic farming.**

CONSTRUCTION PRACTICES

- **Stabilized Earth Blocks** have been widely used for **construction** of houses.
- This is a sustainable practice because **the embodied energy of earth blocks is very less.**
- Use of **ferrocement** for **water tanks and roofs** also serve as an alternate practice towards **less energy consuming infrastructure.**

ROADS AND TRANSPORTATION

- The **inner areas are not accessible by cars**. They only have pedestrian and vehicular access.
- The **reduced use of cars decreases pollution** and the need to construct or maintain any vehicular roads.

WATER RESOURCES AND WASTE WATER TREATMENT

- The **water resources** are mainly **underground** which are **replenished by an intricate network of water management and recharge.**
- **Check dams and catchment ponds** are used to make sure a **continuous supply of water is available**.
- A **dam** has been constructed in utility canyon to **harvest the rain water that otherwise flows into the Bay of Bengal.**
- Auroville has more than **60 natural wastewater treatment systems**.
- Waste water treatment includes **three phases- pre-treatment, main treatment and post treatment.**
- One of the methods used in Auroville is the **Decentralized Wastewater System (DEWATS) also known as constructed wetlands and root zone treatment system.**

ENERGY REQUIREMENTS

- **Solar electricity and heaters** are used to meet energy requirements.

ENERGY FROM WASTE

- Auroville converts its **organic waste into energy using biogas plants.**
- Prefabricated **ferrocement biogas tanks** which can be used for small scale farms and **producing biogas of 2-4m^3 per day.**

LAND RECLAMATION

- Auroville has **transformed near barren land into lust green area,** gaining **international recognition for its wasteland reclamation**.
- **Ecosystem has been revived by plantation of over 2 million forest and hedge trees, fruit and fuel trees.**
- In addition, Aurovillians **promote the pesticides free agriculture and sustainable agricultural practices.**

WASTE TREATMENT

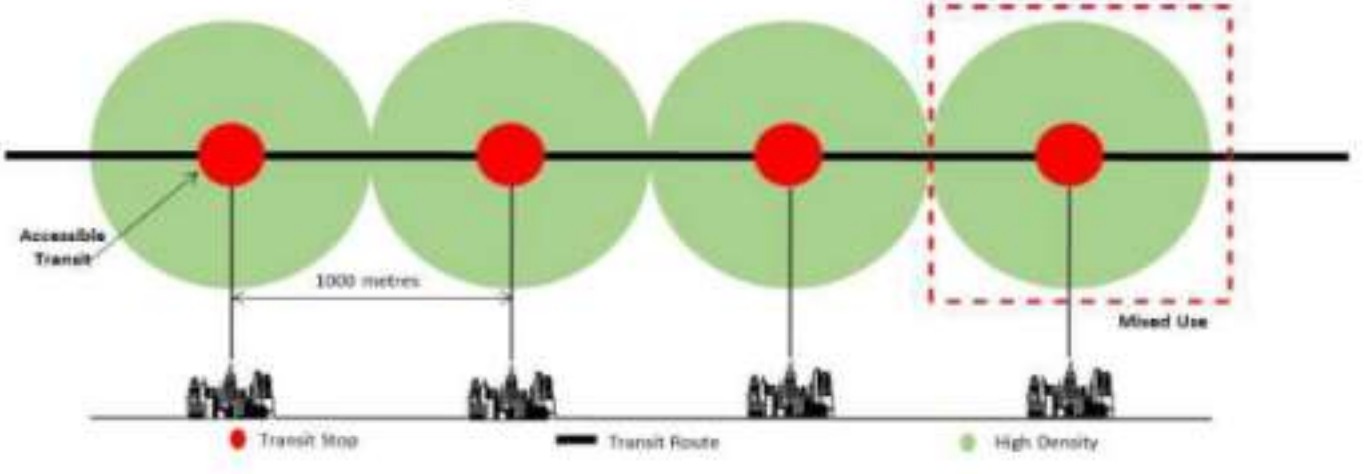
- **Auroville's EcoService** is responsible for managing **solid waste in the city.**
- They collect waste from approximately **2/3rd of Auroville** of which about **60% is recycled and 40% is landfilled.**
- Their objective is to reduce the impact of **waste on the environment and promote 'waste to energy' ideology.**

BACKGROUND OF TOD FORMATION:

- **India** is **urbanizing at a rapid pace** and its level of **urbanization has increased** from **17.29% in 1951 to 31.6 % in 2011**.
- The urban **population** in India, which is **nearly 377 million is poised to grow to 600 million by 2030**.
- The **urban population** of India contributes **65% of country's Gross Domestic Product (GDP),** which is **expected to grow to 75% in the next 15 years**.
- **Urbanization** has **led to horizontal growth of the cities thus creating problems of urban sprawl.**
- This has **resulted** in **increase of trip lengths and higher usage of private vehicles, problems of pollution and increased demand of infrastructure.**
- To **address these issues**, many **cities** have **strengthened their public transport** by **developing mass rapid transit systems (MRTS) such as metro rails and Bus Rapid Transit Systems (BRTS).**
- Its **important to efficiently use these systems by integrating the land use with the transport infrastructure to make the cities livable, healthy and smart.**

TOD - TRANSIT ORIENTED DEVELOPMENT

- **TOD integrates land use and transport planning** and **aims to develop planned sustainable urban growth centers, having walkable and livable communes with high density mixed land-use.**
- **Citizens have access to open green and public spaces** and at the same **time transit facilities are efficiently utilized**.
- **TOD focuses** on creation of **high density mixed land use development** in the influence zone of transit stations, **i.e. within the walking distance of (500-800 m)**
- **TOD increases the accessibility** of the transit stations by **creating pedestrian and Non-Motorised Transport (NMT) friendly infrastructure** that **benefits large number of people**, thereby increasing the ridership of the transit facility and improving the economic and financial viability of the system.
- Since **the transit corridor has mixed land-use**, where the transit stations are either origin (housing) or destination (work), the **corridor experiencing peak hour traffic in both directions would optimize the use of the transit system.**

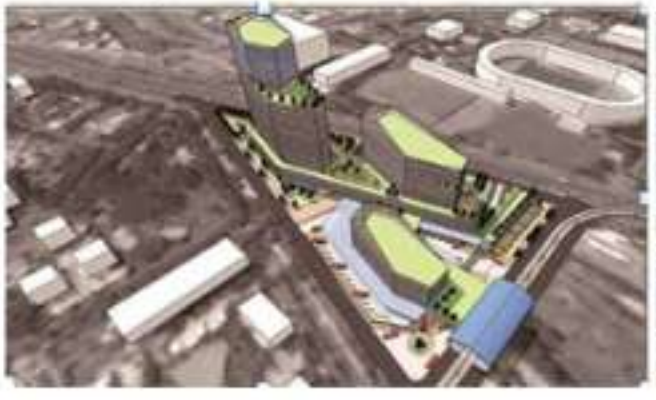


VISION OF TOD :

- **To assist in transformation of cities from private vehicle dependent city to public transport oriented development,**
- **To promote the usage of public transport** by making it **accessible,** encourage **green mobility** by encouraging **people to walk and cycle** and at the same time **curb pollution** and other **negative impacts of motorization.**
- **To create livable Compact Walk able and affordable Communities**

OBJECTIVE OF TOD :

1. **To promote the use of public transport** by **developing high density zones in the influence area,** which would increase the **share of transit and walk trips** made by the **residents/ workers to meet the daily needs** in the influence area.
2. **To provide all the basic needs of work/ job, shopping, public amenities, entertainment** in the influence zone with **mixed land-use development** which would **reduce the need for travel.**
3. **To develop** an area for **safe and easy movement** and **connectivity of NMT** and **pedestrians** between various uses as well as to transit stations.
4. **To achieve reduction in the private vehicle ownership, traffic and associated parking demand.**
5. **To develop inclusive habitat** in the influence area so that the people **dependent on public transport can live in the livable communities within the walk able distance of transit stations.**
6. **To integrate the Economically Weaker Sections (EWS) and affordable housing** in the influence zone by allocating a prescribed proportion of built-up area for them in the total housing supply.
7. **To provide** all kinds of **recreational/entertainment/ open spaces, required for a good quality of life** in the influence area.
8. To **develop a safe society** with **special attention** to **safety of women, children, senior citizen and differently abled** by making necessary amendments to the building bye laws.
9. **To prevent urban sprawl** by accommodating the **growing population in a compact area** with access to the transit corridor, which would also **consolidate investments and bring down the infrastructure cost for development.**
10. **To reduce carbon footprints** by **shifting towards environmentally friendly travel options** and also result in **reduction of pollution and congestion**



CASE STUDY - AHMEDABAD

- Ahmedabad Municipal Transport Service **(AMTS) was established in 1947** as one of the **first urban transport organisations in the country.**
- **By 2005**, the AMTS **bus fleet** had **reduced to 521 buses (from 650 in 1992)** and the **daily ridership declined to 390,000** (ATMS, **2006) (52% decrease from 1992)**

- overall mode share of **public transport in Ahmedabad stood at 15%.** With the declining public transport ridership, the **city witnessed rapid growth in private vehicle ownership,** especially **two wheelers**.
- Acknowledging the **growing dissatisfaction among the commuters due to poor level of service and lack of comfort of AMTS buses,** the authorities undertook the **implementation of a high quality public transportation system (in the form of Janmarg BRTS) under the JnNURM scheme in 2005.**
- **Aim of the BRTS** was to **create road space for pedestrians, cyclists and vendors, manage on-street parking,** and **most importantly to provide an efficient and reliable bus system**.
- This **city's aim is to curb sprawl by promoting a compact city structure** with **higher densities in zones** with **good access to public transit.**
- The city's **development plan emphasizes mixed land-use, high densities, public transportation, a grid based pedestrian circulation network** and **market driven approach to land utilisation** for developing its the city's **central business district (CBD).**
- Initially the **project was undertaken in 2 phases** and later execution of the **third phase was approved in 2013.**
- The first stretch of the **phase-1** was between **RTO-Pirana covering a distance of 12.5 km and open to public in 2009.**

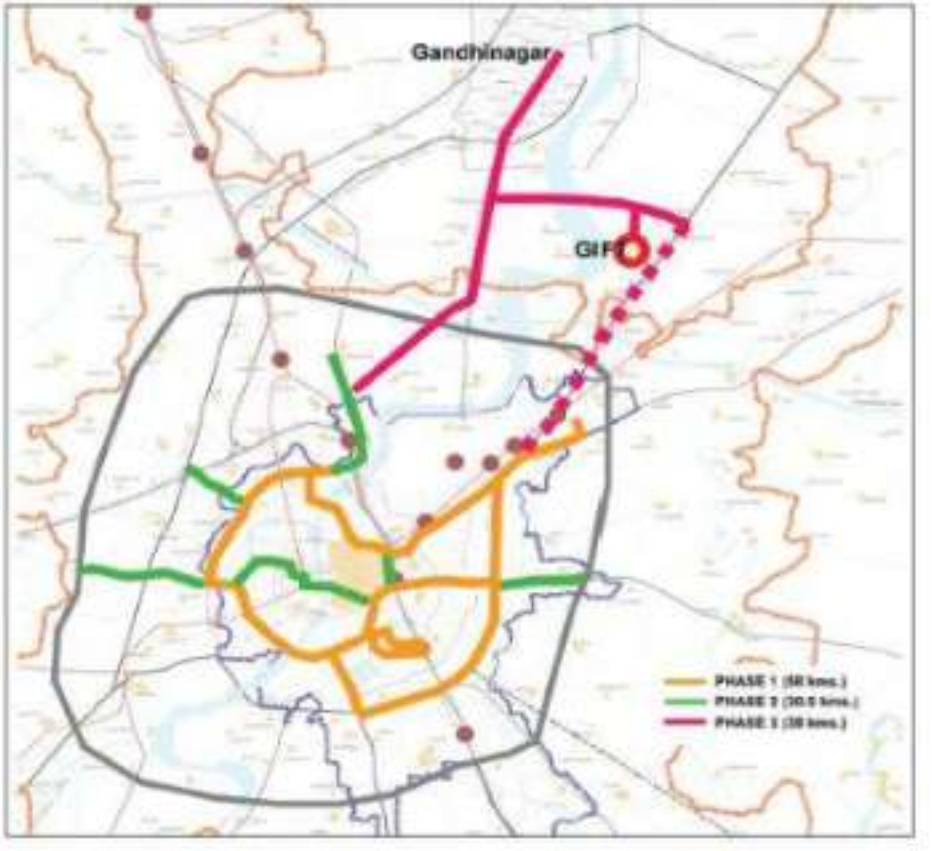


Figure 16: BRT corridors within AMC
(Source: Ahmedabad Municipal Corporation, 2008)

- The **phase-2** was proposed **to be completed by 2010,** covering **84 km with additional 4 Km elevated corridors**, but was **recently completed in 2014.**
- The **third phase is currently under progress.**
- **smart cards for ticketing and Intelligent Transport System (ITS) to improve customer convenience, speed, reliability and safety** of the bus system.
- **ITS** is extensively **applied** in areas of **operations control, electronic fare collection, real-time passenger information system and traffic management**

- **BRTS** was **designed to connect recreational zones, educational zones and other important areas along the corridors.**
- The **BRT network** has also **triggered redevelopment** of these areas at **higher built-up space ratios abutting the corridors.**
- The **BRTS corridor** has **impact on the land-use and housing policies of the city**, especially under the Development Plan.
- A **new housing zone focusing to affordable housing** has been **proposed** along the **Sardar Patel ring road (16.3 km) away from the city centre.**
- **To encourage higher densities along BRTS corridors** while maintaining the urban form of the city, the **governing authorities have defined intense development zones called Transit Oriented Zones about 200 m on both sides of the BRT corridor** in the Development Plan.
- The **current central business district (CBD)** of the city will be **shifted from from the east bank of the Sabarmati river to the west bank,** primarily **to converge the high density commercial land-use**, the recreational space provided by the waterfront and the upcoming Metro corridor (Metro-Link express between Ahmedabad and Gandhinagar).
- **Housing policy framed by the city corporation** focuses on the **integration of transportation facilities and commercial activities along the BRTS corridors.**

NEW CBD (central business district)

- About **13.5% of the total population of AMC lives in slums** in Ahmedabad.
- Number of **slums** have **come down by 40%** in **2014** as compared to 2011 approximately **0.16 million households still reside in 961 slum pockets in the city.**
- With an **aim to redress this situation** AMC & AUDA, have **proposed construction of affordable housing units with an average built up area of about 30 to 60 sq.m.**
- **Due to land constraints** AMC extended the city limits and the **proposed resettlement sites along the periphery of city (eg. Khodiyar, Nikol, Khatwada etc.)**, these sites were the **receiving zones for city's rehabilitation programs.**
- The **BRT has extended connectivity** to these **zones at the city's periphery**, thereby **providing affordable transportation modes to the residents.**
- **Integration of the transportation network** with these **housing clusters** is one of the key objectives addressed in 2021 Development plan.

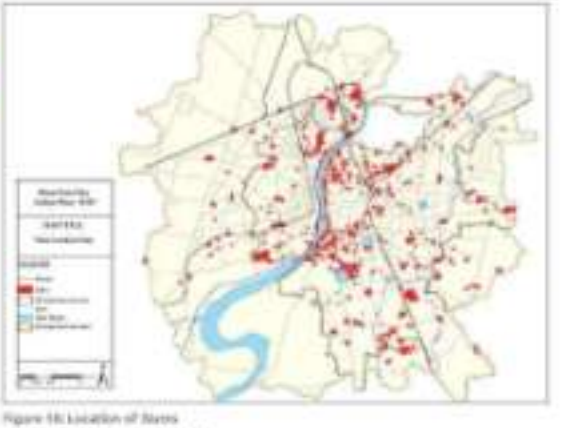
PROPOSALS IN AHMEDABAD DEVELOPMENT PLAN

1. **Density:**

- The **special zones, identified along the BRTS** and the **proposed Metro corridors** will have **higher permissible FSI**.
- Differential **FSI in the city range** from the **highest of 5.4 in CDB, 4.0** in the **transit corridors** and **1.8 (with chargeable FSI up to 2.25) in other parts of the city.**
- **FSI of 4.0** is proposed **to be implemented along a 41 km stretch** (marked with red and orange in the image) **within TOZ**.

Table 9: Increasing Density

Zones	Base FSI	Premium FSI	Total FSI
Non-Transit oriented Zones	1.8	0.9	2.7
Transit oriented Zones (metro & BRTS)	1.8	2.2	4
CBD-Central Business District	1.8	3.6	5.4
R-AH/Affordable Housing Zone (Non-TOD)	1.2-1.8	0.9-1.5	2.7



2. **Diversity:**

- The **land-use distribution** within the **impact zone has been kept flexible** and is broadly **marked for mixed use**
- it was **suggested** to let the market decide (BRT, 2014). It is but imperative that the **areas** marked **under influence zone would not have segregated land-uses and single use zoning.**

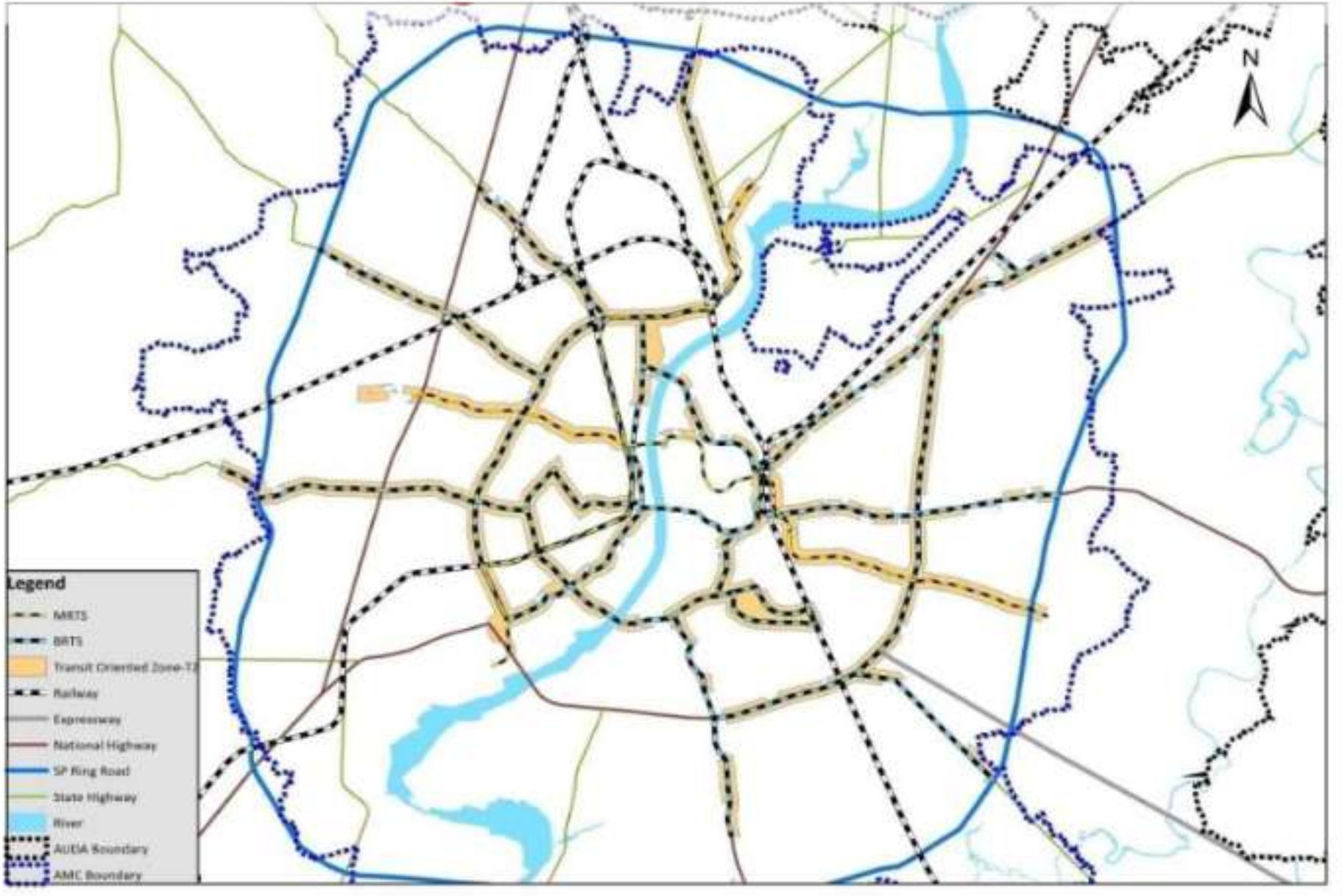
3. **Parking management and NMT:**

- The **TOD norm in Ahmedabad** is extended beyond the basic discussion of density and diversity, and
- A part of the **existing CBD area parallel to the river front development** is **proposed** to be a **pedestrian only zone**.
- **Parking norms are proposed to be changed** to include **"limited parking in pedestrian zones"** (parking maximums) in the revised Development Control Rules 2021 (DCR).
- The DP also **proposes to implement an increase in parking charges in the CBD area**.
- In **2014**, the AMC also launched a **bike share programme** called "**MYBYK" at four BRT stations (Shivranjani, Andhajan Mandal, Memnagar**) (Greenpedia Bike Share pvt.ltd., 2016).

4. **Housing:**

- **Low-income housing proposed along the Sardar Patel (SP) Ring Road** (Ahmedabad Mirror Correspondent, 2013) about **16.5 km away from the city centre,** will be used for **rehabilitating the city slum dwellers**.
- The development strategy **proposes to develop "nodes of intersection" between the SP Ring Road and the existing BRTS corridors to extend public transportation to the location**, which will lead to a **finger shaped development** along the **periphery of the city**, and **help maintain the compact nature of the development.**

200 M BUFFER ALONG BRTS AND MRTS CORRIDOR – FSI 4



IMPACT OF GLOBALIZATION ON CITIES

Meaning of globalization:

- **Globalization** is one of the most **dominating topics** around **the world** and **covers a lot of aspects** which range from **economics, politics, religion to social elements.**
- globalization can be **redefined** as the **increased movement of lifestyles, policies, principles, ideologies, commodities and people through a global space**
- It refers to the **process of the intensification of economic, political, social and cultural relations across international boundaries.** It is principally aimed at the transcendental homogenization of political and socio-economic theory across the globe.
- **Distances are decreasing, both locally and globally** at the same time as **everyday life** more and more is **depending on transports and communication** on different levels. **Motorized traffic and public transportation** means possibilities for **people to commute longer distances to work, activities, shops, leisure etc**.
- Improved **worldwide communications by aircraft and ships** have **opened up new markets** for **multinational and trans-national companies to provide products worldwide.**
- Globalization has been **caused** by **two important things** and these are **technological and media developments**
- A lot of **new and innovative technologies are now being introduced** almost on an annual basis and **they affect the way people communicate or share ideas**
- **Growth and development of social media channels** now play an **important role in people's lives** as they cause **huge changes in people's tastes and preferences.**
- Globalization has **huge effects on social aspects, values, norms and beliefs** as well as activities and processes that **help to identify characters of people.** With regards to this aspect, it can thus be noted that globalization **tends to affect the way people stay.**
- There is now a **huge shift in the way people are staying especially those in the cities as a result of globalization.** This idea shows that there is a
- **Changes in lifestyles, culture, tastes and preferences** resulting from **globalization tend to affect the way cities are designed and developed.** This idea can simply be expressed and extend
- there is an **increase in the number of entertainment centers, office parks, shopping centers** that are being **created as a result of globalization.**
- **Economic globalization** causes **cities to look more beautiful as capital funds are moved from one nation to the other** especially from **advanced cities to urban areas** that may **possibly be lacking in terms of development**
- **Cities** are always in **competition for international funds and efforts to lure more funds than other cities.**will be reflected on how they react and position developmental activities so as to gain a competitive advantage over other cities

Advantages of globalization :

- Globalisation helps in the development of underdeveloped countries.
- Globalisation encourages free trade among nations.
- Globalisation creates more employment opportunities
- Quality products
- Higher standard of living
- Supply of raw material
- Newer technology
- Foreign collaboration

Disadvantages of globalization:

- It may lead to outsourcing of jobs from a native country due to availability of cheap labour in another country.
- It will benefit the wealthy people more than the poor.
- It favors industrialization resulting in an increase in emission of greenhouse gases that will have a direct impact on the environment.
- Small producers are put to hardship
- Urbanization is one of the negative impacts of the globalization and integration of economies.
- Other detrimental consequences include poverty, housing shortage, inefficient and inequitable delivery of infrastructure services, economic inequality, social exclusion and poor quality local environments.

URBAN SPRAWL

- **Rapid expansion of the geographic extent of cities and towns**, often characterized by **low-density residential housing, single-use zoning, and increased reliance on the private automobile for transportation.**
- Urban sprawl has been correlated with **increased energy use, pollution, and traffic congestion and a decline in community distinctiveness and cohesiveness**
- increasing the **physical and environmental "footprints" of metropolitan areas,** the phenomenon leads to the **destruction of wildlife habitat** and to the **fragmentation of remaining natural areas.**

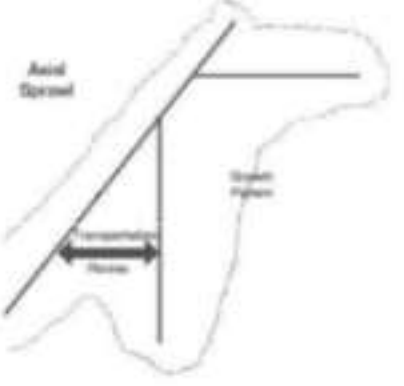
TYPES OF URBAN SPRAWL

CONCENTRIC SPRAWL

- **Transportation and infrastructure** plays a major role in the direction of **community growth**
- **development happens in the form of concentric rings**
- **land use developed in circular pattern around the business core of the city, CBD**

SECTORALURBAN SPRAWL

- **sectoral sprawl is similar to the concentric sprawl,** however the development **develops along the sectoral or radial pattern in concentric with the CBD**
- **Upper and middle income group** likely to have their **own transport** tend to be **located away on the opposite side of the CBD to gain advantage of the environmental factors , class, prestige and peace.**



AXIAL SPRAWL

- it **recognizes CBD as the most intensively used area,** travel time is the key for the development not the distance
- several towns and cities having geographical features such as **rivers, sea faces and mountains follow axial sprawl**

MULTI NUCLEI SPRAWL

- Real estate has developed several pockets of settlements in and around the city
- due to **scarcity of land** in and around in the CBD AND industries **not willing to relocate to new town,** they have **branch operations from suburb.**
- these suburbs in course of time **become mini satellite urban center's around CBD having their own mini business district**

PUBLIC REALM

- The public realm is defined as the **publicly owned places and spaces** that belong to and are **accessible by everyone.**
- These can include **municipal streets, lanes, squares, plazas, sidewalks, trails, parks, open spaces, waterfronts, public transit systems, conservation areas, and civic buildings and institutions.**
- It can be a **passive environment,** such as sitting at a cafe, or an **active environment**, such as cycling in a bike lane, or a combination of both.
- It can also be an **interior space** such as a **library or a recreation centre**, or an **exterior space such as a multipurpose trail or a public square.**
- public realm is **crucial in achieving healthy communities**

NEW TRENDS IN PROJECT FORMULATION - PPP

PUBLIC PRIVATE PARTNERSHIP (PPP)

➢PPP is a mode of **providing public infrastructure and services** by **Government in partnership with private sector**

➢It is a **long term arrangement between Government and private sector** entity for **provision of public utilities and services.**

➢Conventional form of finance – the **budgetary allocation** by the government is **not enough to meet this big investment size**

➢PPP Model is concentrate to development of
-**National Highways & State Highways,**
-**Operation of Container Trains,**
-**Re-development of Railway Stations,**
-**Transmission of Electricity and Urban Metro Rail. Etc.,**
-**Procurement-cum-Maintenance Agreement for Locomotives**
-**Non-metro Airports, Greenfield Airports**
-**Port Terminals**

PUBLIC GOVERNMENT	PRIVATE PARTNERSHIP / MNC
➢Unable to finance the project ➢Public private partnership (PPP) ➢Gets back the project after the contract period from PPP	➢Finance the project ➢Executes the project ➢Get the profit for the risk factor

DIFFERENT TYPES OF EXECUTION IN PROJECT FORMULATION

1. **BOT** (Built Operate Transfer)
2. **BOOT** (BUILT OWN OPERATE TRANSFER)
3. **BOLT** (Build Operate Lease Transfer)
4. **DBFO** (Design Built Finance Operate)
5. **DBOT** (Design Built Operate Transfer)
6. **DCMF** (Design Construct Manage Finance)

BOT (BUILT OPERATE TRANSFER)

The **private partner** is responsible **to design, build, operate** (during the contracted period) and **transfer back** the facility to the **public sector.**

- The **private sector** is expected **to bring the finance** for the project and take **the responsibility to construct and maintain it.**
- The **public sector** will either **pay a rent** for using the facility or **allow private sector** to **collect revenue** from the users.
- The **national highway projects** contracted out by **NHAI** under PPP (Private Public Partnership)mode is an example.

BOOT (BUILT OWN OPERATE TRANSFER) OR
BOO (BUILT OWN OPERATE)

- This is a variation of the BOT model
- **Ownership** of the newly built facility will rest **with the private party during the period of contract**
- Resulting in the **transfer** of most **of the risks** related to **planning, design, construction and operation** of the project to the **private partner**
- The **public sector** partner will however **contract to 'purchase' the goods and services produced by the project** on mutually **agreed terms and conditions.**
- **project built** under PPP (Private Public Partnership) will be **transferred back to the government** department or agency at the **end of the contract period,** generally at the residual value
- **Private partner recovers its investment** and reasonable return agreed to as per the contract
- This approach has been **used for the development of highways and ports.**

ROLE OF REAL ESTATE DEVELOPMENT

- Real estate developers play a **significant role** in this process of **designing and organizing the development of cities and urban areas to ensure their functionality, sustainability, and overall livability.**
- they are **instrumental in transforming land and properties** into functional and **vibrant spaces that meet the needs of the community.**

NAVIGATING REGULATORY PROCESSES

- **Real estate developers are experienced in handling these bureaucratic aspects, ensuring that their projects comply with local building codes and zoning regulations.**
- **Real estate developers play a pivotal role in urban planning, shaping the physical landscape of cities and contributing to their economic and social growth.**

ENGAGING WITH THE COMMUNITY

- **Effective urban planning requires collaboration and engagement with the community.**
- Real estate developers **engage with local residents, businesses, and community organizations to understand their needs, concerns, and aspirations.**
- This community involvement **fosters a sense of ownership and ensures that development projects align with the community's vision.**

EMBRACING SUSTAINABLE PRACTICES

- **Sustainable urban planning is becoming increasingly important in the face of environmental challenges.**
- Real estate developers are now **integrating eco-friendly and energy-efficient features into their projects,** such as **green building materials, solar energy systems, rainwater harvesting, and green spaces.**
- By adopting sustainable practices, **developers contribute to the overall resilience and sustainability of the city.**

ENHANCING INFRASTRUCTURE

- Real estate developers **often invest in and improve infrastructure to support their projects.**
- This includes **upgrading roads, utilities, and public spaces to accommodate increased traffic and footfall resulting from new developments.**
- These infrastructure enhancements **benefit the entire community, not just the specific development.**

IDENTIFYING DEVELOPMENT OPPORTUNITIES

- Real estate developers are **adept at recognizing development opportunities** within urban areas and **assess potential sites and properties** for their suitability for various projects, **considering factors such as location, accessibility, infrastructure, and zoning regulations.**
- Their ability contributes to the **efficient utilization of available land and resources in urban environments.**

CREATING LIVABLE SPACES

- **to enhance the quality of life for residents.**
- Real estate developers work closely with urban planners and architects to design projects that are **aesthetically pleasing, functional, and responsive to the needs of the community.**
- They aim to **strike a balance between residential, commercial, and recreational spaces, fostering vibrant and cohesive neighborhoods.**

ADDRESSING HOUSING NEEDS

- **Housing is a critical component** of urban planning, and real estate developers **play a vital role in addressing housing needs.**
- They are involved in **constructing a variety of housing types,** including affordable housing, luxury apartments, townhouses, and mixed-use developments, to accommodate the diverse needs of the urban population.

FOSTERING ECONOMIC GROWTH

- creating **new commercial spaces and mixed-use developments,** developers **attract businesses and job opportunities to the region.**
- This **economic growth, in turn, enhances the overall prosperity of the city and its residents.**

UNIT V
URBAN STUDIES

FOUR PHASES OF URBAN DESIGN

ANALYSIS

01

- **GATHERING OF BASIC INFO**

-Understanding the **structure, organization and pattern of the urban area**

-Basic info like **land use, population, transportation, natural system & topography** are gathered

-Examine the **varied character of the site, structure of neighborhood & business areas**

identify the problem and design goal

- **VISUAL SURVEY**

-Examination of the **form, appearance and composition of the urban area**

-To conduct the survey **kevin lynch five elements** of Imageability need to be considered

- **IDENTIFICATION OF HARD AND SOFT AREAS**

-Definition of hard and soft area helps to know which part of city **can accommodate growth and change and which part is fixed(historical landmark)** and helps in evaluating the **feasibility of implementation.**

- **FUNCTIONAL ANALYSIS**

-It examines the **relationship of activities among the various landuse** and the way that relate to circulation systems

SYNTHESIS

02

- **Data gathered and analysis** should be translated in to **proposal for action**
- first component of the synthesis phase is the **evolution of concepts that address the problem**
- concepts are followed by development of **schematic design proposal**
- schematics are followed by **preliminary plans**

EVALUATION

03

- it occurs at many levels ranging from meeting **technical demands** to the ability to **gain public acceptance**
- it is essential that **design proposal need to be evaluate** in the light of original problem they were intended to address
- employ the right criteria for evaluation like

-how well the solutions fit the problem?

-how readily the proposals can be implemented

IMPLEMENTATION

04

- strategy for **actual financing and construction is formulated**
- detailed **phasing studies & tools** are considered **to realize the project**

TOOLS/ SOFTWARES FOR URBAN DESIGN

01 GIS

02 CITYENGINE

- 3D modeling software for creating large urban environments.
- The environments you create can be based on real-world data or can be completely conceptual.
- You can import 3Dmodels you've created in other software to create context around them and export your entire environment into visualization tools, game engines and VR experiences

03 ARCGISURBAN

- 3D experience designed to improve urban planning and decision-making.
- Quickly visualize projects in your local context and leverage location intelligence to drive better decisions.
- Simplify project collaboration across internal agencies and public stakeholders.

04 BENTLEY OPENCITIESPLANNER

- cloud-based service that enables visualization of 2D, 3D, and GIS data in a3Dworld
- .You can design, visualize, and communicate projects from large-scale city developments to detailed architectural designs.

05 CITYCAD

- modelling solution for planning policy officers to explore, test and communicate development options for large scale mixed-use urban master-plans.
- easy to create 3Dmodels of cities using tried-and-tested street types and urban typologies.

MODELUR 06

- parametric urban design software tool, developed to create conceptual urban massing.
- It calculates key urban control parameters on the *fly* (e.g. FAR or required number of parking lots), delivering important information while design is still evolving.
- fosters well-informed decision making during the earliest stages, when design decisions have the highest impact.

SIMWALK / SIMWALK PRO 07

- pedestrian simulation software for transport, aviation, urban planning and architecture.
- integrates the CAD software

URBAN CANVAS MODELER 08

- to generate long-range, small area socioeconomic forecasts using Urban Sim to inform Regional Transportation Plans.
- It also supports **rapidly creating new policy and investment scenarios** and running Urban-sim simulations to explore their impacts on the real-estate market.

URBAN FOOTPRINT 09

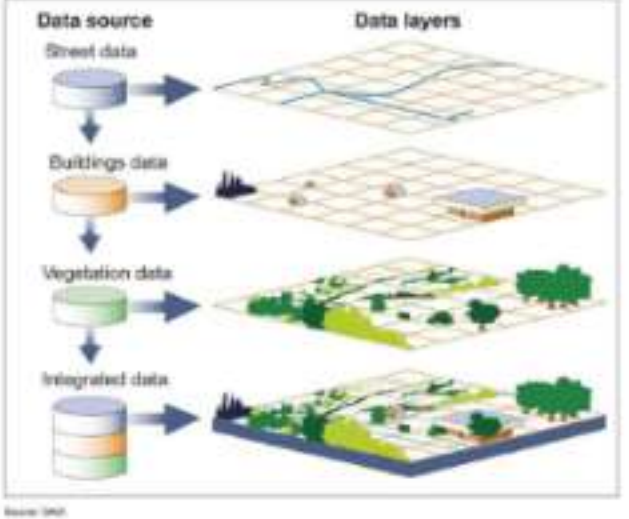
- Get quick answers to complex urban planning and mobility questions.

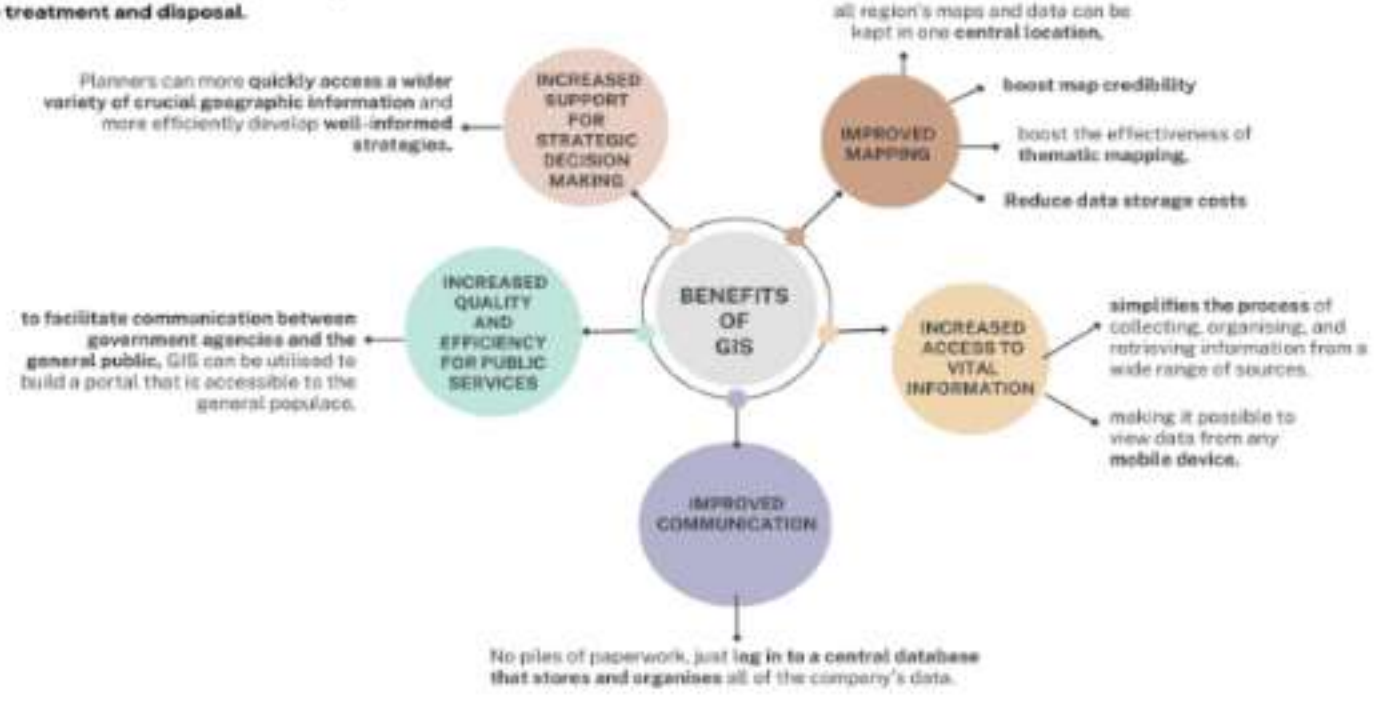
URBANSIM' 10

- **Data science, simulation and visualization to learn from the past, inform the present, and shape thefutureofcommunities everywhere.**

GIS - GEOGRAPHIC INFORMATION SYSTEM

- It **provides planners, surveyors, and engineers** with the **tools** they need **to design and map their neighborhoods and cities.**
- **Visualization, spatial analysis, and spatial modeling** are the **most frequently used GIS functions in plan making**.
- It help to **store, manipulate, and analyze the physical, social, and economic data of a city.**
- Planners can then use the **spatial query and mapping functions of GIS to analyze the existing situation in the city, through map overlay analysis.**
- GIS can **help to identify areas of conflict of land development with the environment** by overlaying existing land development on land suitability maps
- It aids in **recognizing shifts in a land's behavior or geographical characteristics over a given period of time.**
- Professionals may **plan effectively and make informed decisions** on the state of an area's growth with the use of this information.
- Planners make use of GIS to **smooth the progress of public participation and community input** as they develop a vision for the community that enhances the quality of life.
- MULTILAYERED MAPPING FEATURE OF GIS:
  - a municipal planning committee can **visualize a variety of things**, for instance, **prime agricultural land, surface water, high flood frequency, and highly erodible land.**
  -This information leads to **informed decisions such as avoiding developing areas with high flood frequency as those areas are not likely to attract dwellers.**
- FEASIBILITY ASSESSMENT OF A LOCATION FOR A PARTICULAR PURPOSE:
  -such as determining **if a site is suitable for the construction of a bridge or dam, GIS can be a great help**.
  - It can also be used **to determine if a location is suitable for garbage treatment and disposal.**





APPLICATION OF GIS IN URBAN PLANNING

1. Resource Inventory

- **Collection of land use and environmental information** is essential in urban planning and its **Time-consuming exercise.**
- Using **geographical information, together with remote sensing** helps in the timely collection of both the **environmental and land use information.**
- In urban areas, **remote sensing images** are becoming an essential source of getting **three-dimensional information for urban areas.**
- **changes in the use of land are detected** using the above techniques

2. Creating land-use maps & plans

- **Future land-use maps** act as a community's **guide to future infrastructure, build plans, and public spaces.**
- These maps help **ensure** that a city's urban planning accounts for **environmental conservation, pollution, mitigating transportation issues, and limiting urban sprawl**

3. Planning applications

- GIS can help the government and businesses process and **organize planning applications**.
- Many GIS portals can be made **public facing,** With vital information more widely available to all, government resources(which might have been spent fielding these requests and finding the data) can be put to use elsewhere.
- **applications stored in a central database, organization, processing, and status tracking becomes much simpler**

4. Analyzing socio economic & environmental data

- **Creating future land-use maps** must take into account **several environmental scenarios**, as well as project future demand for land resources.
- Modeling must include **population data, economic activities, and spatial distribution.**

5. Land suitability analysis/site selection

- Urban planners can perform **land suitability analysis, using gis tools like map overlay.**
- **Helps to identify environmentally sensitive areas** with the aid of remote sensing, spatial queries, and environmental data analysis.
- **They can spot any areas where potential development would conflict with the environment** by superimposing existing land development on maps of land suitability.

6 . Measuring connectivity

- **GIS geoprocessing functions like map overlay, buffering, and spatial analysis** help urban planners **to conduct connectivity measurement.**
- **Connectivity refers to how easy it is to walk or bike in a given city.** A highly-connected area will give its residents numerous options to get from A to B quickly

7. Impact assessments

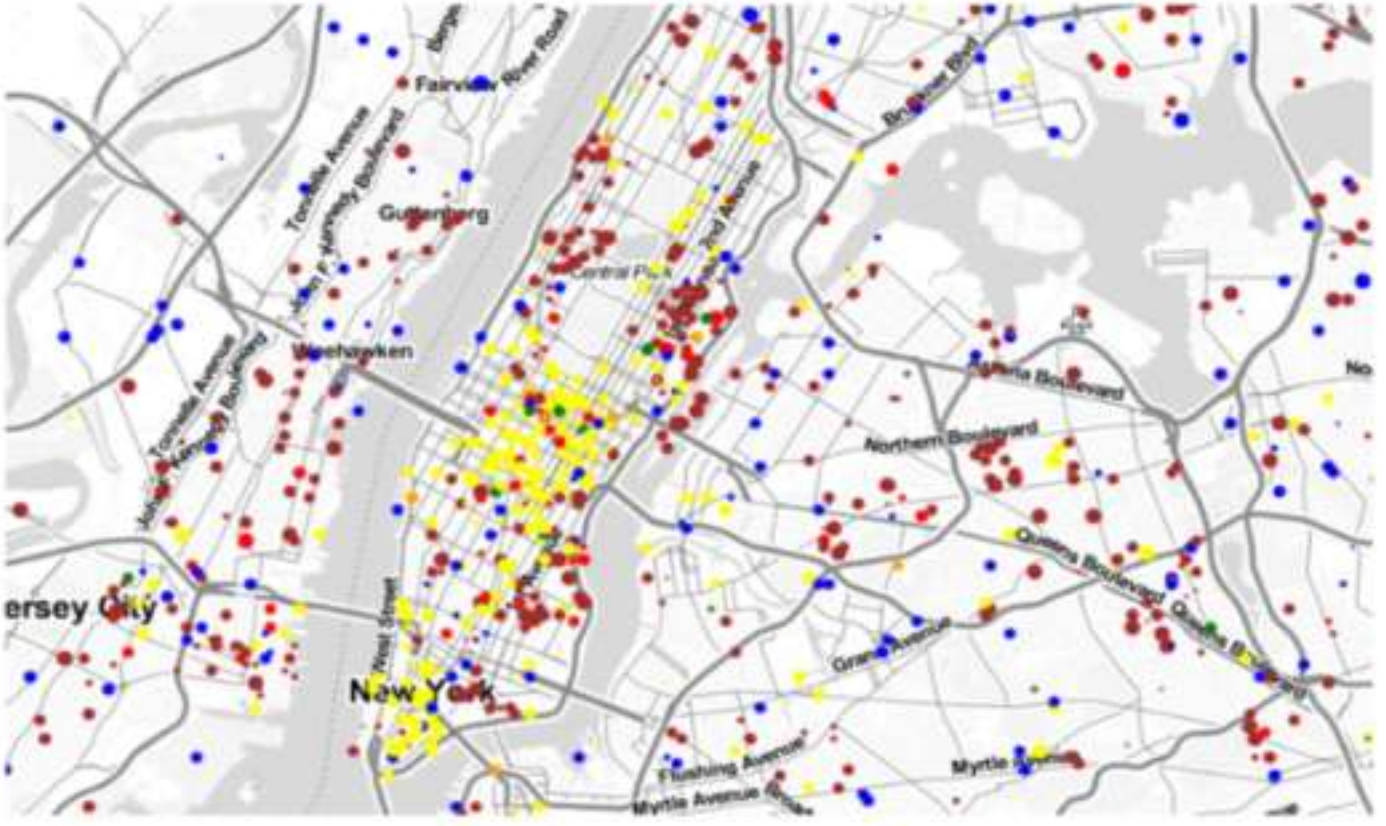
- **An environmental impact assessment can be conducted to evaluate the potential effects urban development will have on the environment.**
- If issues are found, the urban planner can then **recommend ways to alleviate or mitigate negative outcomes**.

8. Evaluation, monitoring, & feedback

- GIS tools can help **evaluate** a building plan, **monitor** the project after completion, and even gather **feedback to help make improvements.**
- Together with **remote sensing, GIS can help planners to track if development is following the area's land use plan.**
- GIS enables urban planners to create the towns and cities where we live, plan for the future, and **make adjustments as the local population shifts.**
- GIS is a significant and practical tool that has grown to be extremely valuable for many when it comes to **efficient urban planning.**

MAPPING

- Urban mapping is a **vital resource for city administrators, builders, and planners**
- Useful for **figuring out** what residents of a **city need**, making the city more pleasant to live in, and **connecting them to available services.**
- Better and more **efficient transportation planning** is made possible by accurate urban mapping, which in turn reduces traffic and enhances air quality.
- Urban mapping is a crucial process that provides a **visual representation of the city's infrastructure, landmarks, and other features**.



VARIOUS METHODS TO CONDUCT MAPPING

1.SURVEY (ONLINE OR PAPER SURVEY)

-Surveys are one of the most **common methods** used to collect information. This can include paper or online surveys, as well as in-person interviews. Surveys can be used to **collect information about land use, movement patterns, time-use patterns, social interactions, accessibility, and environmental conditions.**

2.GIS

-Geographic Information Systems (GIS) is a **powerful tool.** This technology allows for the **integration of spatial and non-spatial data to create maps** that visualize different types of information. GIS can be used **to create land use maps, movement maps, time-use maps, social maps, accessibility maps, and environmental maps.**

3.REMOTE SENSING

Its a method of **collecting information about a given area from a distance.** This can include **aerial photography or satellite imagery**, as well as other forms of remote sensing data. Remote sensing can be used to create maps that **visualize the physical and environmental conditions of different parts of the city, such as topography, vegetation, and climate.**

4.CROWD SOURCING

- method of **collecting information from a large number of people, typically through the internet.** This can include **online surveys or other forms of online engagement,** as well as mobile apps and other tools that allow people to collect and share information. Crowdsourcing can be used to **collect information about land use, movement patterns, time-use patterns, social interactions, accessibility, and environmental conditions.**

5.OBSERVATION

-direct method of collecting information about a given area. This can include **on-site observations** by urban designers, as well as more structured methods such as **pedestrian counts or vehicle counts.** Observation can be used to collect information **about land use, movement patterns, time-use patterns, social interactions, accessibility, and environmental conditions.**

DIFFERENT TYPES OF MAPPING

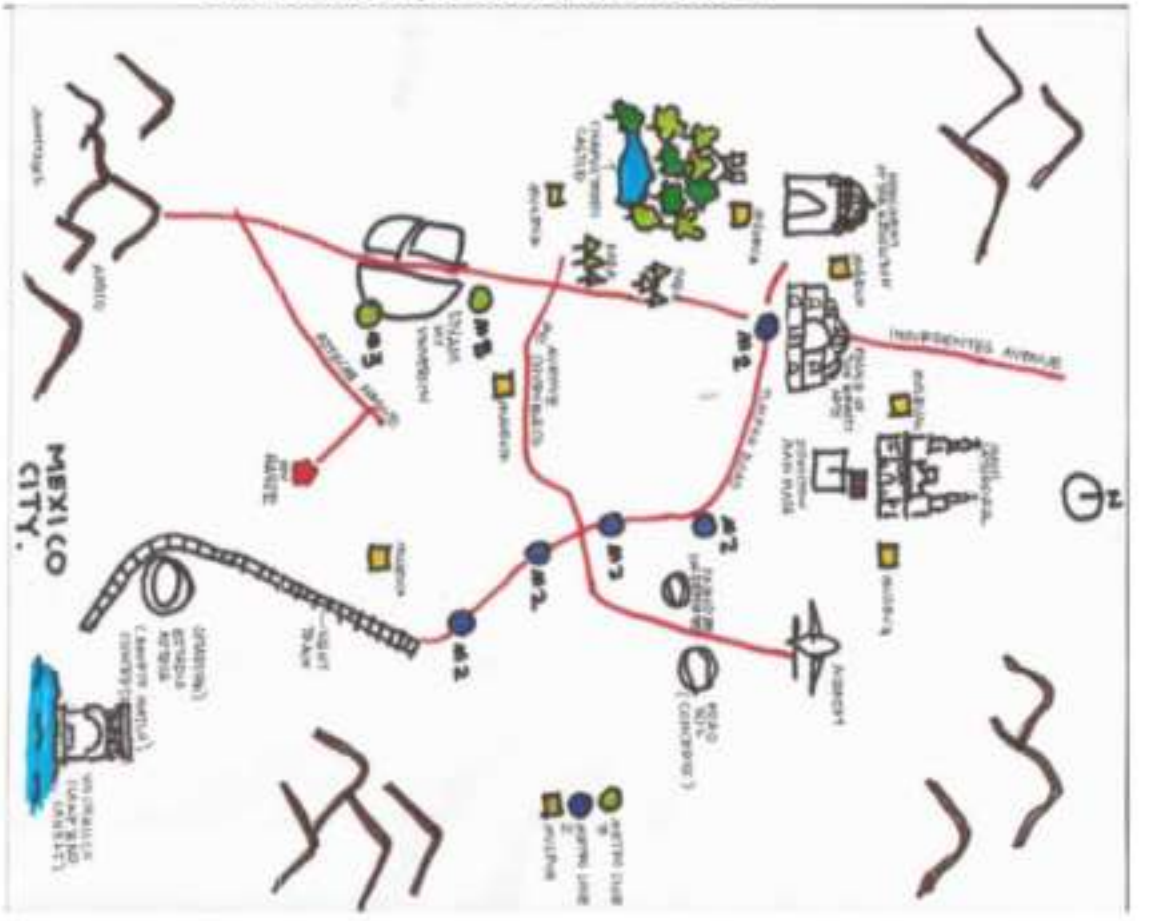
1. **MENTAL OR COGNITIVE MAPPING**
- Cognitive mapping helps designers understand **how people perceive their environment**
- Cognitive process of creating a **mental representation of a physical space**
- Mental maps help individuals form **mental images of their surroundings and provide a sense of orientation and familiarity with the environment.,**

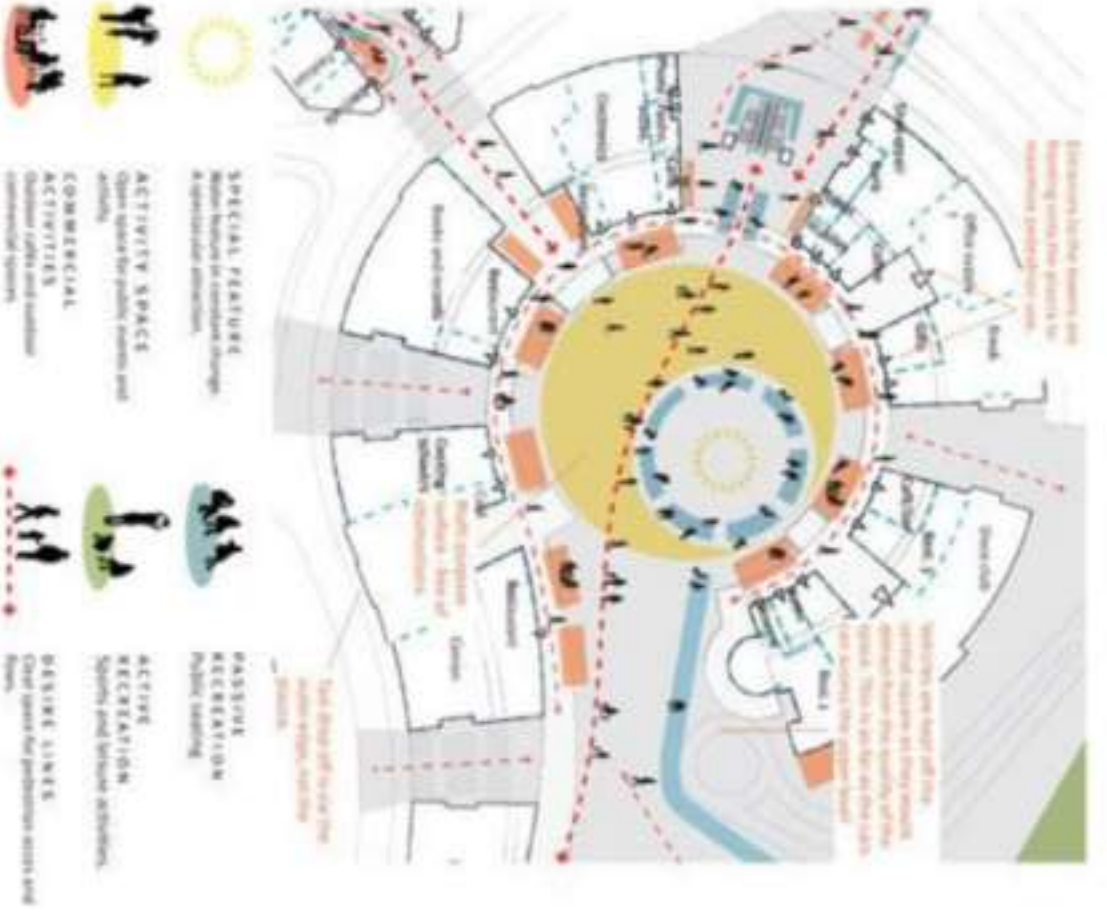
2. **ACTIVITY MAPPING**
- Activity mapping is a critical tool for analysing and comprehending the **patterns and interactions of human activities in a city or town**.
- The technique entails **mapping and visualising the various activities that take place in a given urban area**, such as shopping, eating, working, and recreational activities.
- Activity Mapping helps them **determine what activities people perform in a given area.**

3. **ENVIRONMENTAL MAPPING**
- This type of mapping focuses on the **physical and environmental conditions of different parts of the city, including topography, vegetation, and climate.**
- The information is typically visualized on a map and can provide **insight into the environmental conditions** of different parts of the city, as well as the **potential for improvement in this area.**

4. **ACCESSIBILITY MAPPING**
- This type of mapping focuses on the accessibility of different parts of the city, including the ease of access to **public transportation, pedestrian and bicycle routes, and public spaces.**
- The information is typically visualized on a map and can provide **insight into the accessibility of different parts of the city**, as well as the potential for improvement in this area.

COGNITIVE /MENTAL MAPPING





ACTIVITY MAPPING

ENVIRONMENTAL MAPPING

ACCESSIBILITY MAPPING

5.SOCIAL MAPPING:

- This type of mapping focuses on the **social patterns and interactions of people in a given area**.
- It can help to **identify areas where there are high levels of social interaction**, as well as areas where there are **low levels of interaction**.
- The information is typically visualized on a map and can provide **insight into the social dynamics of different parts of the city.**

6.TIME-USE MAPPING:

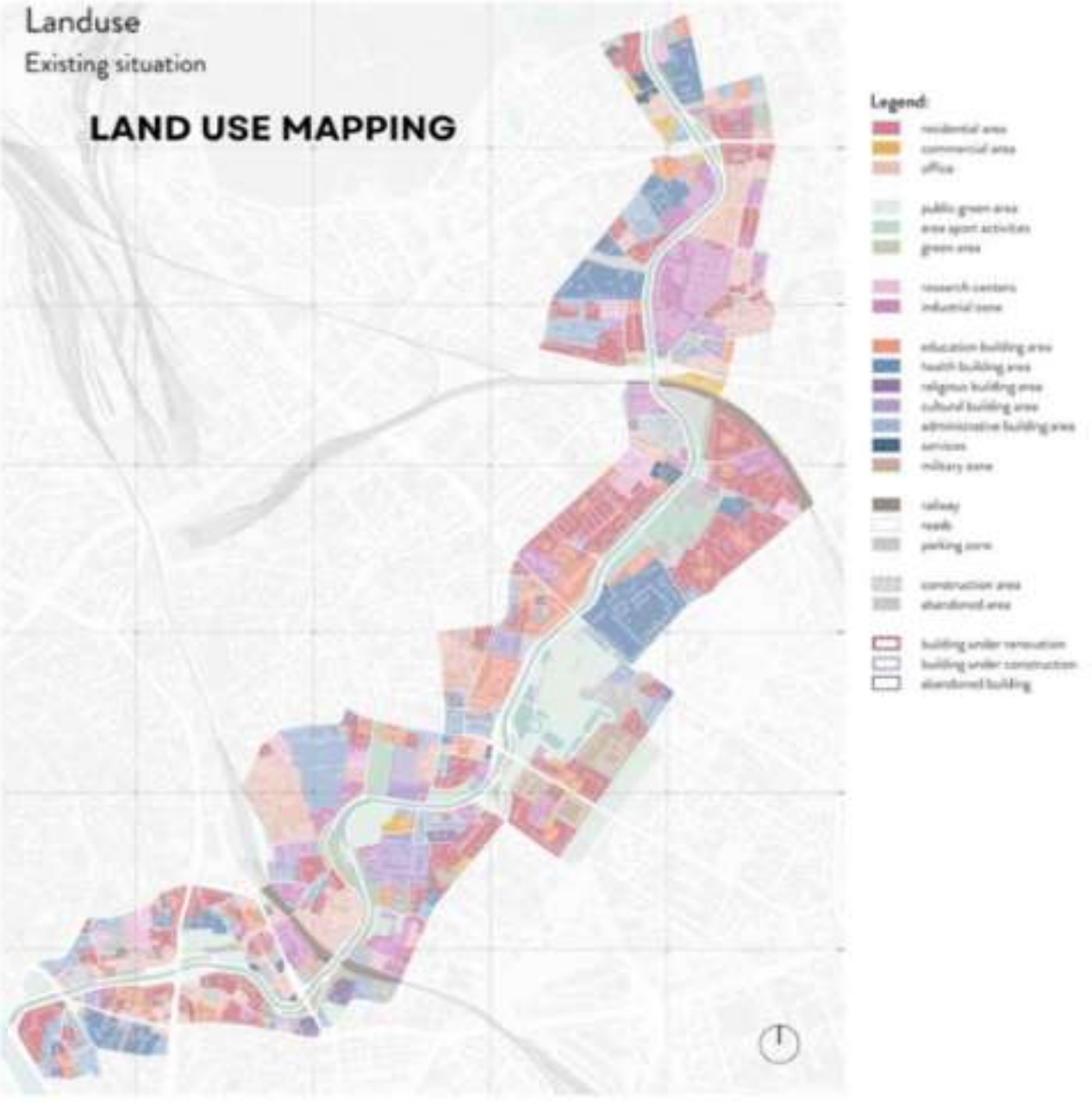
- This type of mapping focuses on the **different activities taking place in a given area at different times of the day and week.**
- It can help to identify areas where there is a **high concentration of specific types of activities**, such as shopping, eating, or working, as well as areas where there is **low levels of activity**.
- The information is typically visualized on a map and can provide **insight into the patterns of human behavior** in different parts of the city.

7.MOVEMENT MAPPING:

- This type of mapping focuses on the patterns of **movement of people and vehicles in a given area.**
- It can help to identify areas of **high pedestrian traffic**, as well as areas where there are **significant traffic congestion problems**.
- The information is typically visualized on a map and can provide **insight into the accessibility and efficiency of different parts of the city.**

8.LAND USE MAPPING:

- This type of mapping focuses on the different t**ypes of land use in a given area**, including residential, commercial, industrial, and public spaces.
- The information is typically visualized on a map and can **provide insight into the distribution and intensity of different types of land use**, as well as the relationships between different uses.


Landuse
Existing situation
LAND USE MAPPING
Legend:
residential area
commercial area
office
public green area
area sport activities
green area
research centers
industrial zone
education building area
health building area
religious building area
cultural building area
administrative building area
services
military zone
railway
roads
parking zone
construction area
abandoned area
building under renovation
building under construction
abandoned building

SOCIAL MAPPING

TIME USE MAPPING