What is Urban Design & how does it shape our City?

What is Urban Design?

"The practice of urban design focuses on the physical form of the City. It is the art and science of place-making, producing innovative solutions to complex design challenges and opportunities. It is concerned with the design of individual buildings, groups of buildings, the spaces between buildings and the design of open spaces, (public and private) including streets, parks and yards. The design of these key elements of the urban fabric largely determines how we view the City and judge its attractiveness as a place to live, work, and visit."

Urban design is the process that involves creating buildings, groups of buildings, spaces, and landscapes, as well as establishing frameworks and procedures that will ensure success for future generations. Town and city planning, street design, and public space design are all parts of urban design. In essence, it's about composing the physical setting for life by bringing together multiple disciplines – **the art of making places.**

Importance of Urban Design

- Planning and development of livable and workable surroundings.
- To improve public spaces such as homes and community centres.
- Potential to significantly improve the stature and value of space, so boosting the local economy, attracting tourists, and improving the quality of life for residents.
- Urban designers are significant because they encourage sustainability through ecologically sensitive building and technology.
- Impact on a community's sociological and cultural makeup by fostering participation and communication between people.

Urban design can significantly influence the economic, environmental, social and cultural outcomes of a place:

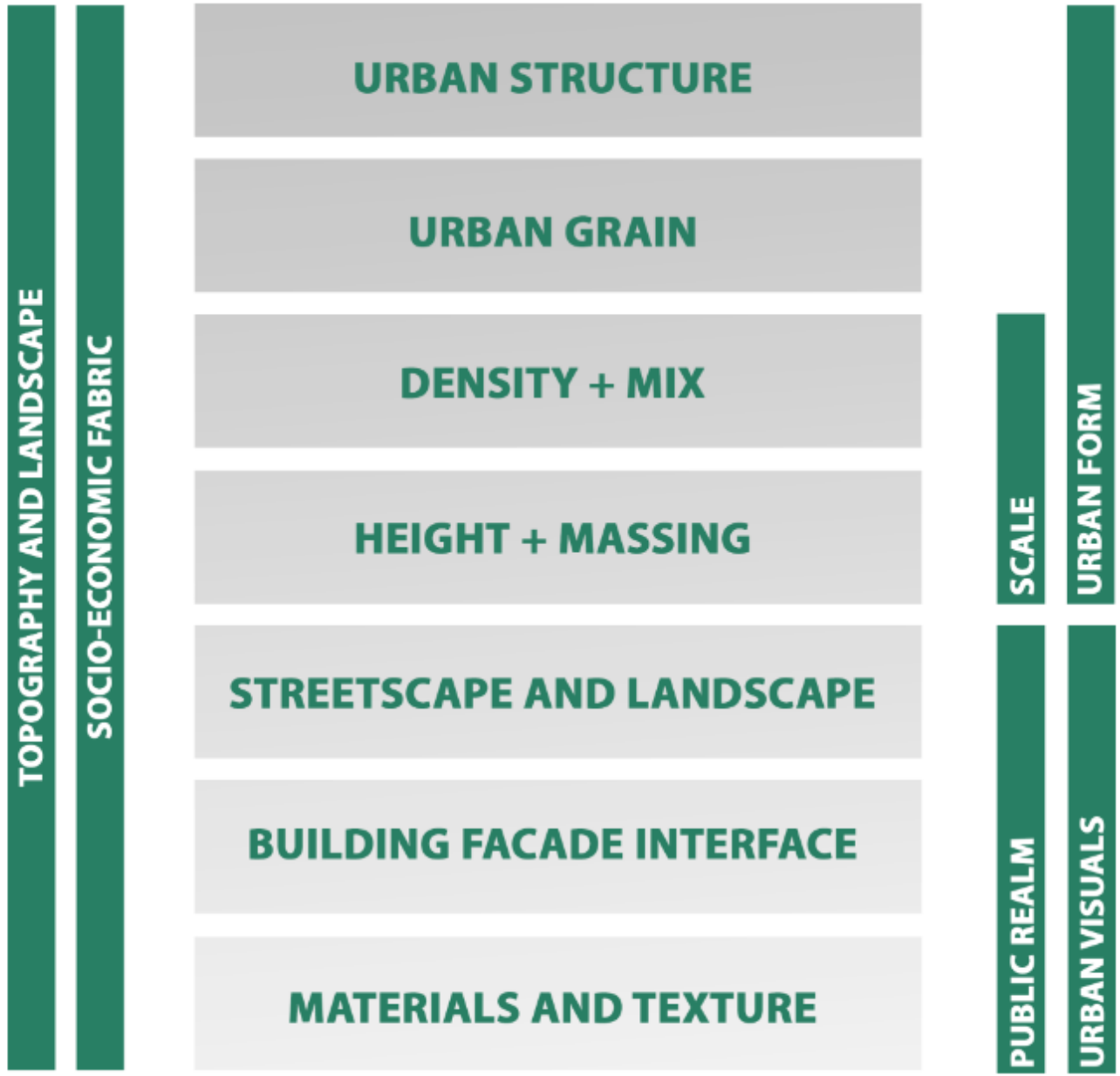
- Urban design can influence the economic success and socio-economic composition of a locality—whether it encourages local businesses and entrepreneurship; whether it attracts people to live there; whether the costs of housing and travel are affordable; and whether access to job opportunities, facilities and services are equitable.

- Urban design determines the physical scale, space and ambience of a place and establishes the built and natural forms within which individual buildings and infrastructure are sited. As such, it affects the balance between natural ecosystems and built environments,and their sustainability outcomes.

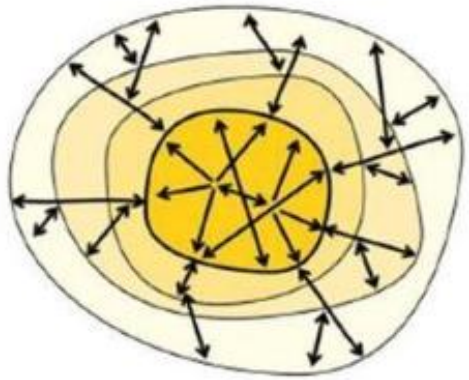
- Urban design can influence health and the social and cultural impacts of a locality: how people interact with each other, how they move around, and how they use a place.

- Although urban design is often delivered as a specific ‘project’, it is in fact a long-term process that continues to evolve over time. It is this layering of building and infrastructure types, natural ecosystems, communities and cultures that gives places their unique characteristics and identities.

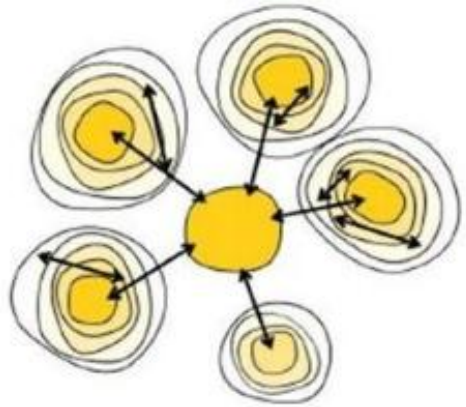
Elements of Urban Design


TOPOGRAPHY AND LANDSCAPE
SOCIO-ECONOMIC FABRIC
URBAN STRUCTURE
URBAN GRAIN
DENSITY + MIX
HEIGHT + MASSING
STREETSCAPE AND LANDSCAPE
BUILDING FACADE INTERFACE
MATERIALS AND TEXTURE
SCALE
URBAN FORM
PUBLIC REALM
URBAN VISUALS

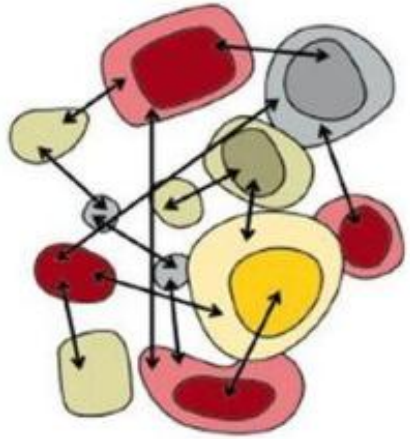
Urban Structure



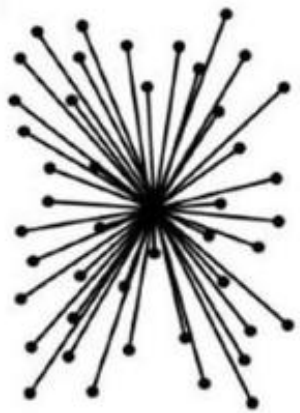
Monocentric city



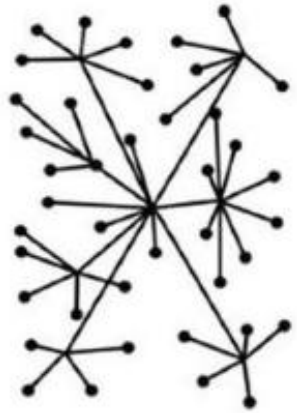
Polycentric city cluster
with “satellite centres”



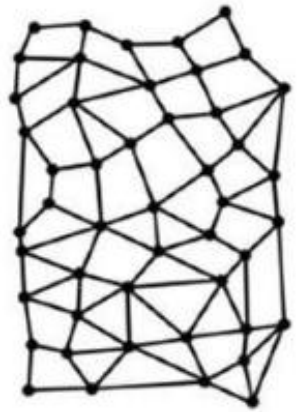
Network city



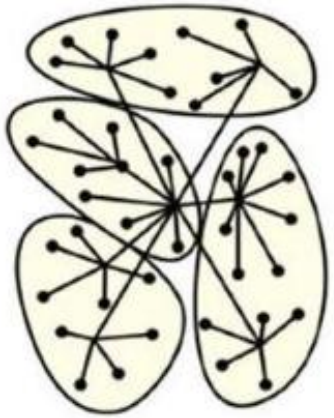
Centralized
structure



De-centralized
structure



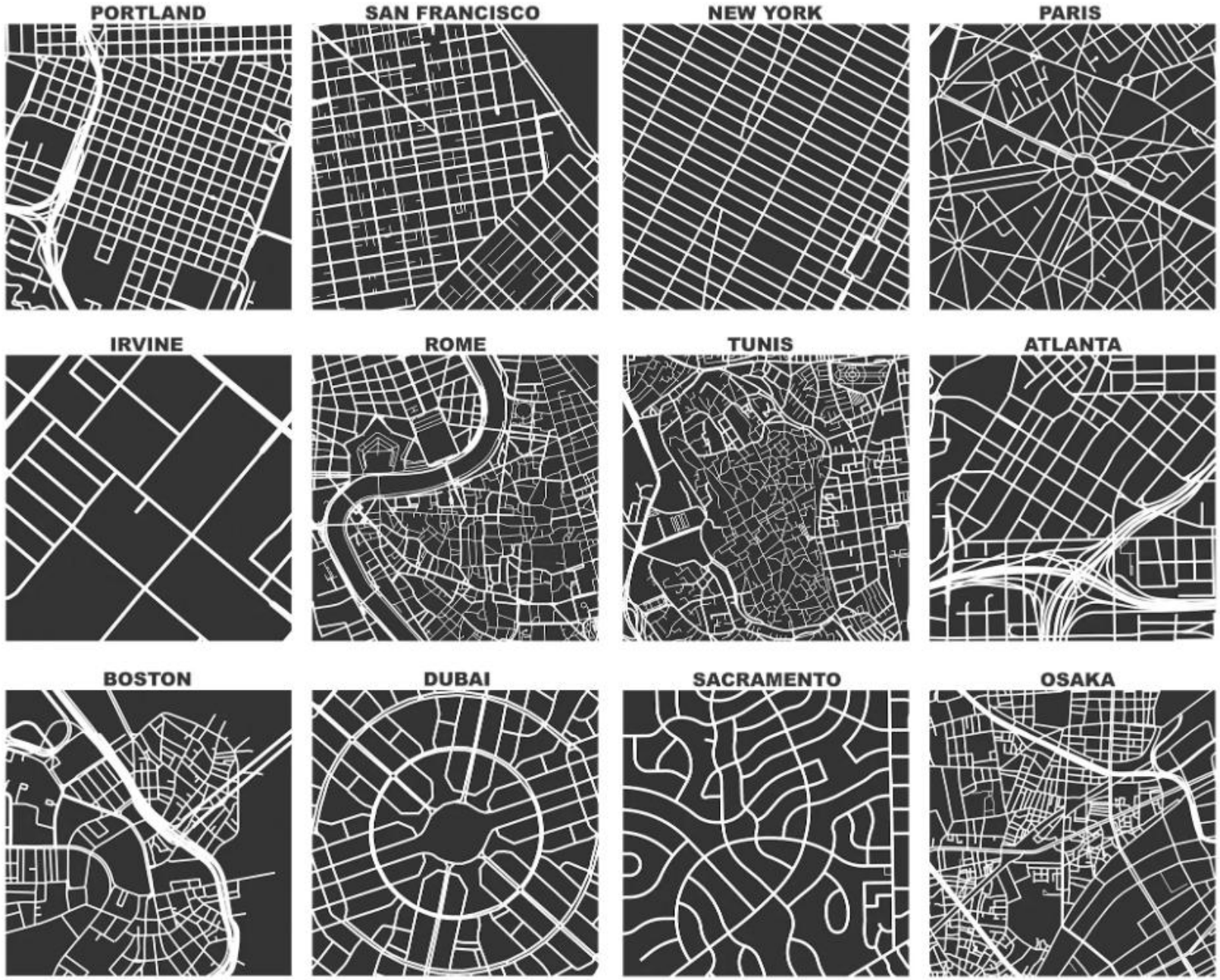
Distributed
structure



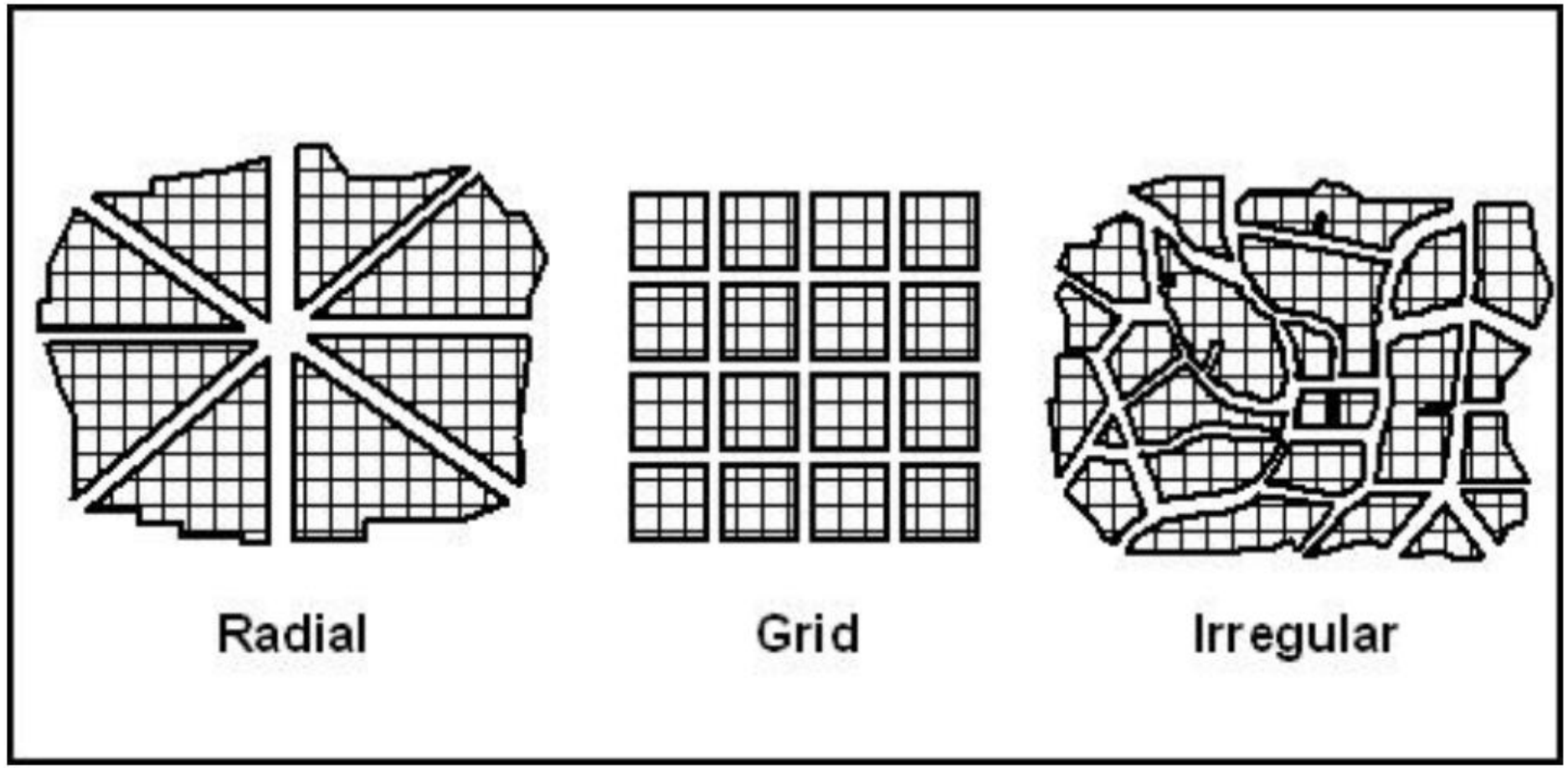
Hybrid
structure

Urban Grain

Urban grain is essentially a description of the pattern of plots in an urban block and when this pattern is dominated by small plots it is described as fine urban grain.


PORTLAND
SAN FRANCISCO
NEW YORK
PARIS
IRVINE
ROME
TUNIS
ATLANTA
BOSTON
DUBAI
SACRAMENTO
OSAKA

Urban Form


Radial
Grid
Irregular

Why does Urban Design matter?

- changes in how urban growth and development are managed
- emergence of a post-industrial economy, the rise of the environmental movement, and the critique of top-down government decision-making
- new approaches to the design and building of urban settings, both theoretically and methodologically
- Traditional master plans are being phased out in favour of more strategic plans and ‘urban initiatives’

- economic and political transformations accelerated the rise of Urban Design in the fields of Architecture, Planning, and Landscape Architecture
- growing prominence reflects a general recognition that human environments are inherently complex and diverse
- consequent need for design interventions to acknowledge local social, historical, and environmental contexts.

URBAN DESIGN – HISTORY AND ORIGIN

Origins and Development

Settlement design has existed since prehistorical times…what has changed is:

- Needs of the epoch
- Consciousness in approach
- Development of settlement design as a professional discipline with its own tools and concepts

Pre-Industrial vs Post-Industrial

(Unself-conscious) vs (self-conscious)

- The history of urban design can broadly be categorized into **pre-industrial** and **post industrial** …with the *Renaissance* period forming the interphase.

- ***Un-self-conscious approach:*** This is created by people who do not think of themselves as designers, but who do affect the form of the urban environment. Such a design is based upon intuitions that are not clearly stated …*e.g response to cosmic order or spontaneity*

- ***Self-conscious Approach:*** This is created by people who think of themselves as designers. Their interest is in using their design skills to create a pleasing urban setting. A self-conscious approach is usually based upon a set of clearly stated design ideas or principles.

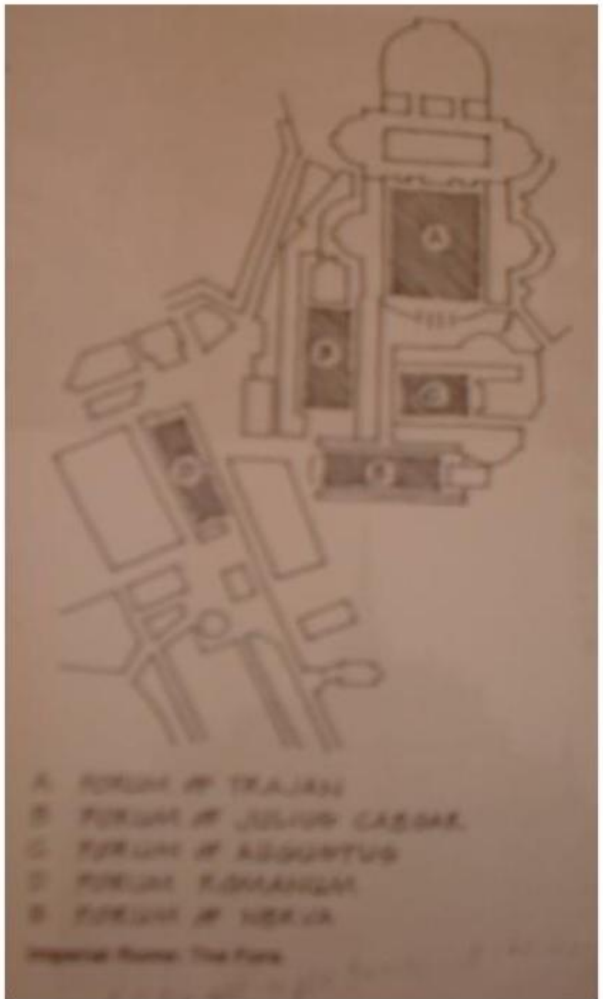
Pre-Industrial (Unconscious)

(Period prior to the 19th Century)

- Most of the urban development consequences were not considered in detail
- Cities were structured in a comprehensible and legible manner….reflecting the cultures that created them
- Layout of cities was mainly based on ritual and cosmological symbols….. ordered around ceremonial procession routes, or military, religious, and civic landmarks.

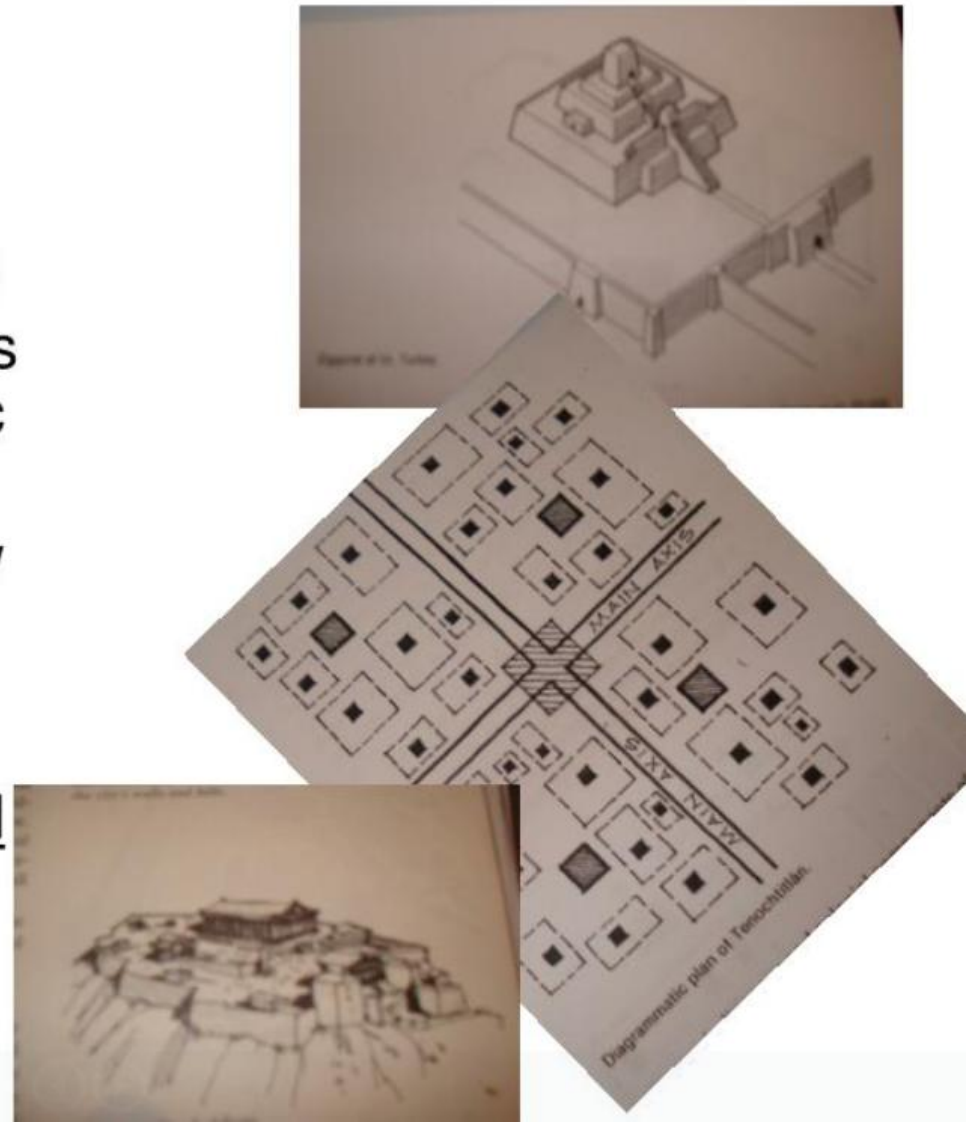
Pre-Industrial (Unconscious) – cont'd

- Inhabitants adapted to wider social, physical, and spiritual order
- Communication was face-to-face
- Public life took place in public places *(ref. classical Forum)*

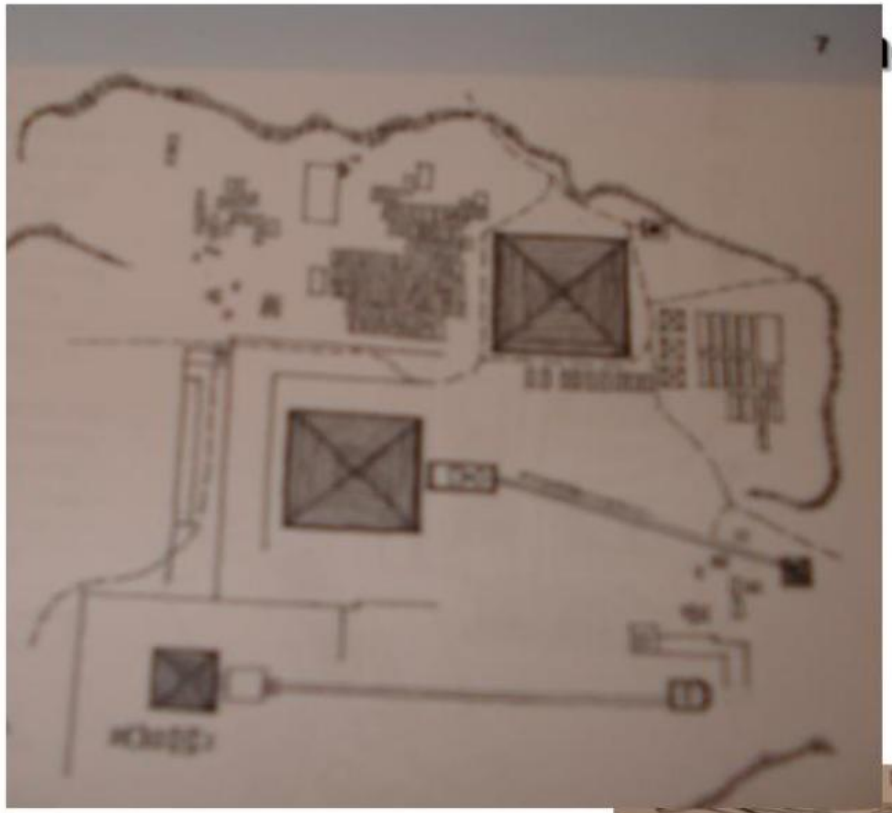


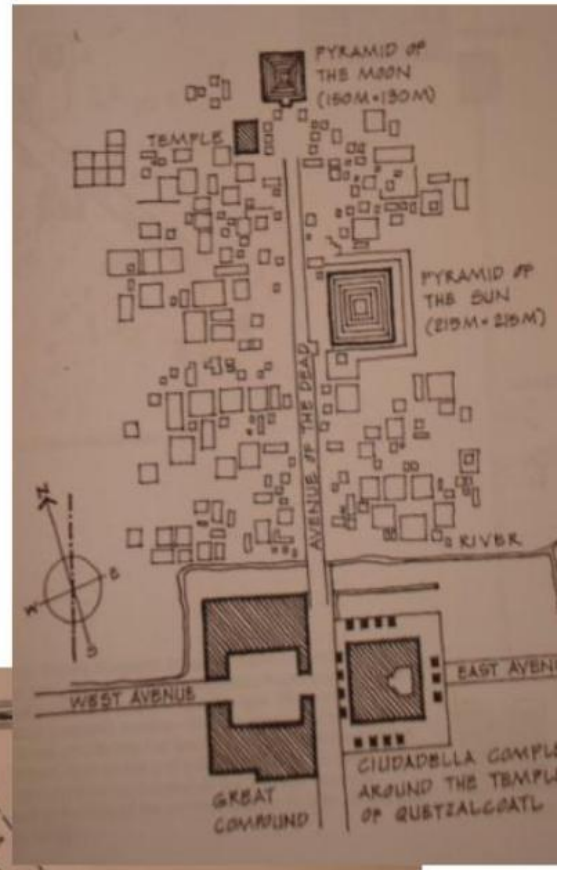
Pre-Industrial (Unconscious) – cont'd

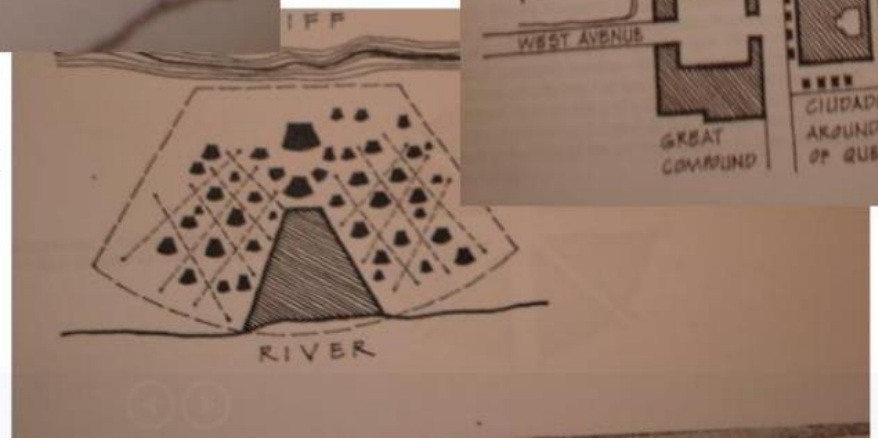
- Cities as centres of civilization were always complex and dynamic, of larger cultural dimensions and housing grand public ceremonies.
- Most towns did not follow predetermined plans but intuitively responded to ecological choice, land ownership structures and evolution of road and urban infrastructure.



nconscious) – cont'd

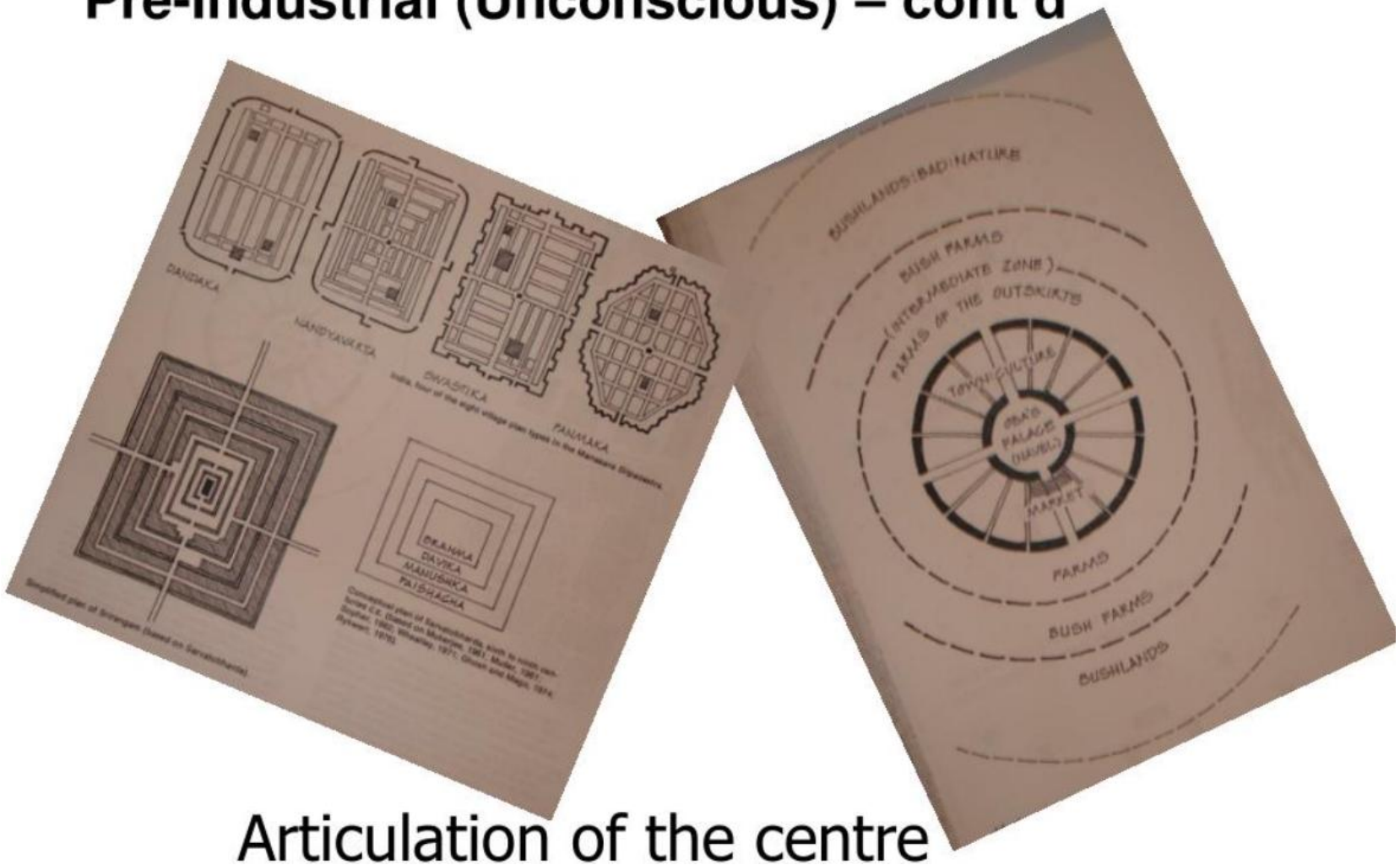






The axis and the point had <u>sacred connotations</u> in settlement design

Pre-Industrial (Unconscious) – cont'd



Articulation of the centre

Design features of different pre-industrial civilizations

- **Prehistorical (6000 BC):**

  the concept of the centre, the cardinal orientation, scale, the axis, and the wall

- **Classical (3500 BC):**

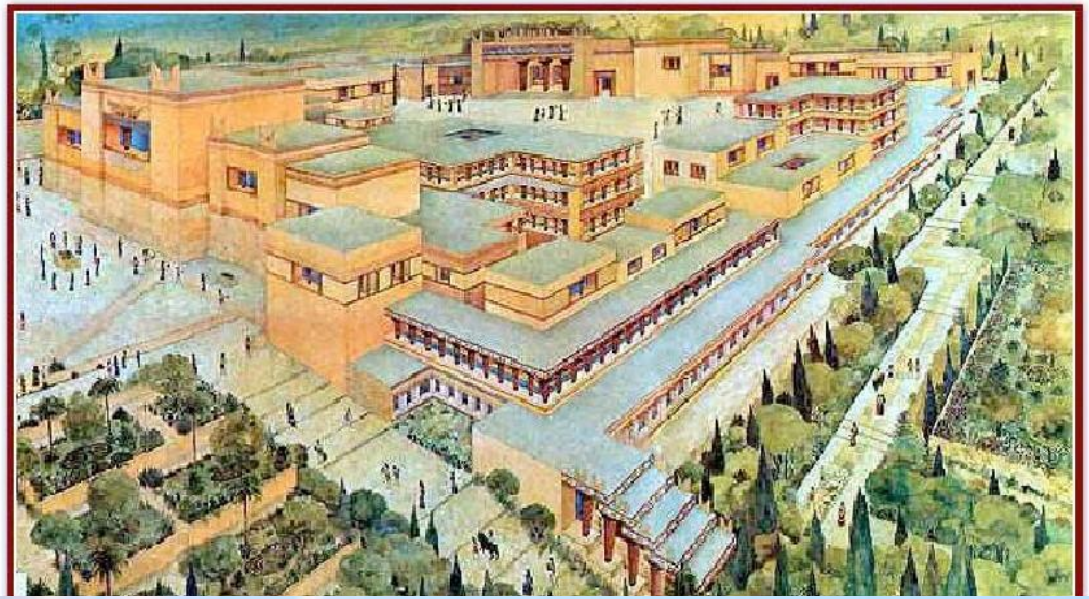
  scale, proportion, lines of movement, focal points, and visual linkage.

- **Islamic (400 AD):**

  clusters, cul-de-sacs, building heights, visual linkage, privacy, labyrinth street form (including the cul-de-sac), and focal points (nodes)

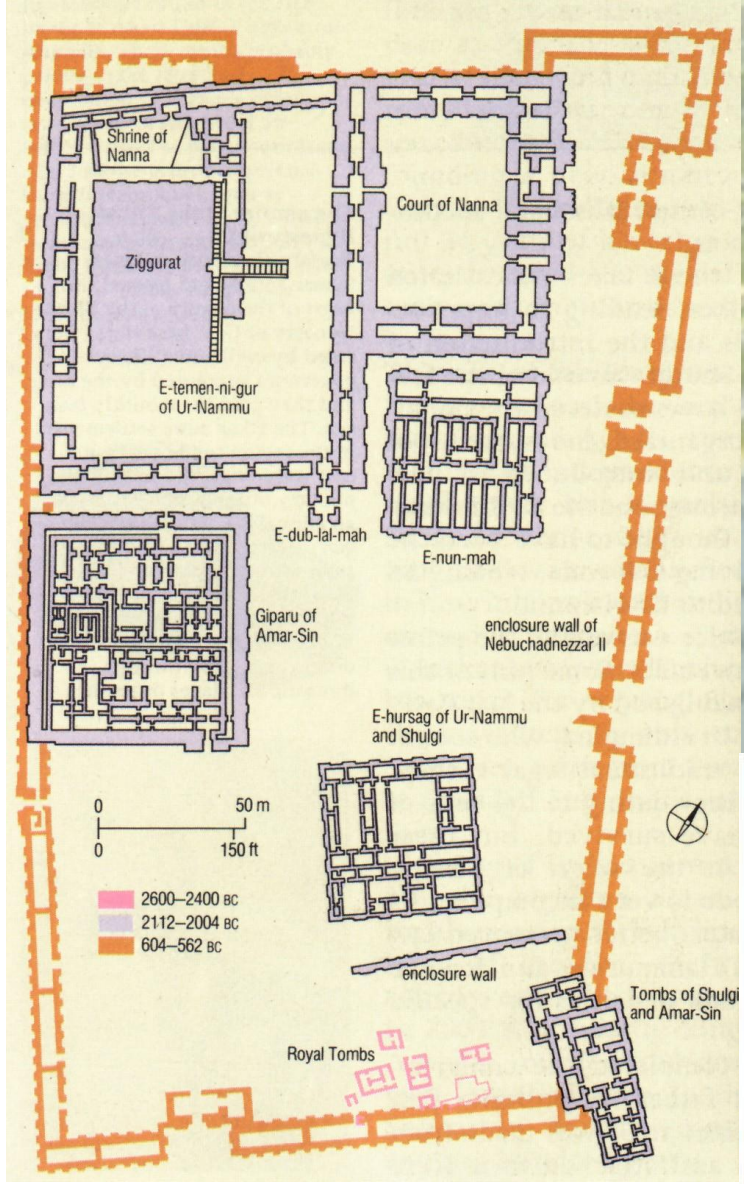
- **Medieval (900 AD):**

  Hierachy of buildings, visual link, perimeter wall design



Palace of Knossos
Isle of Crete
1700 BCE

* **planned complex, plazas, courts**
* **1,300 rooms**
* **extensive work rooms for artisans**
* **extensive store rooms**
* **ceremonial rooms**
* **theatre**
* **aqueducts**
* **sewers**



Ur, Iraq
2600 BCE

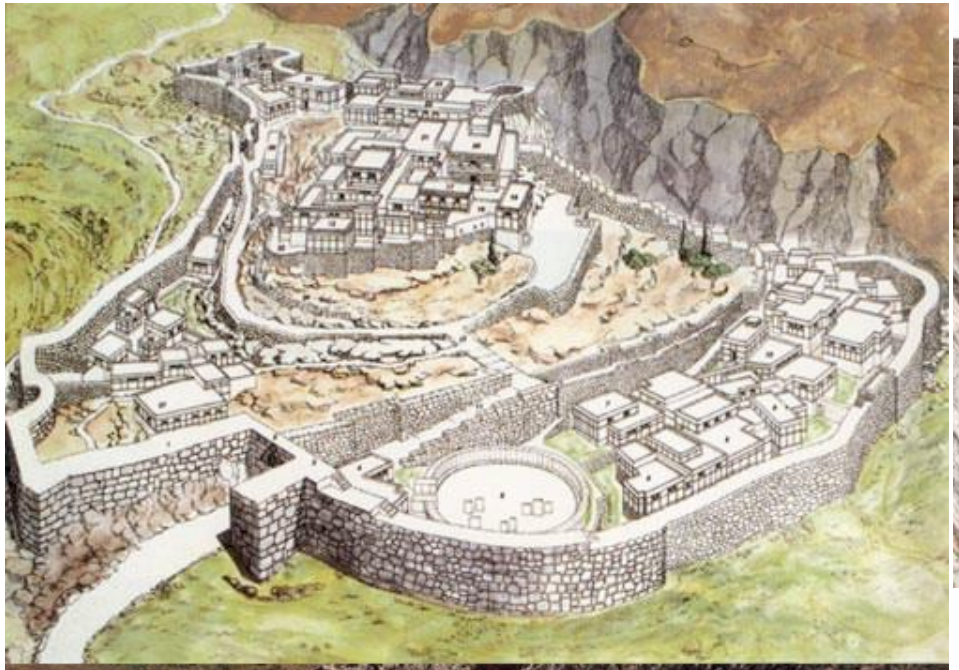
* **Planned palace area**
* **Organic city beyond palace**

Two types of Urban Form:
1. Organic
2. Planned

Determinants of Urban Form

Natural World:
1. Topography
2. Climate
3. Water supply
4. Building materials and technology

Human-made determinants of Urban Form:
1. Economic
2. Political
3. Religious
4. Defense
5. Aesthetics
6. Leisure



Mycenae
Greece
2000 BCE

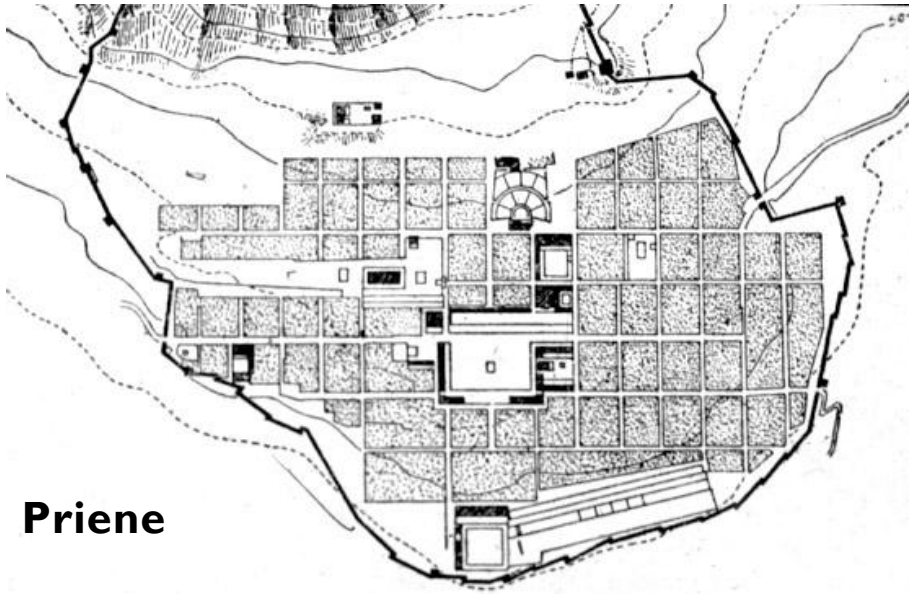
Cities of the Ancient World:
Classical Greece

Priene and Miletus, 500 BCE

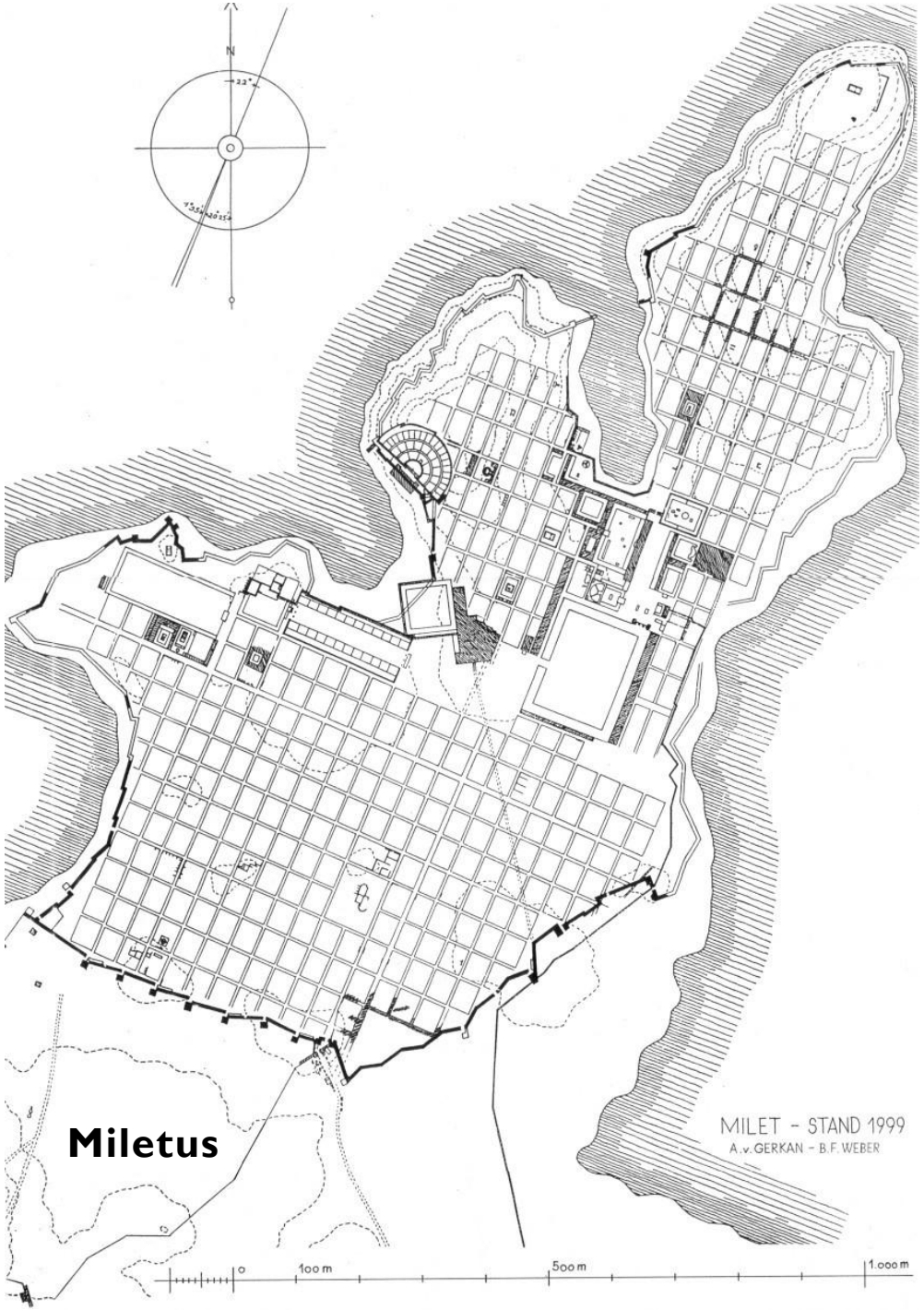
* planned around precincts and zones
* hierarchy in the city form
* public buildings
* religious buildings
* leisure activity buildings
* development of insulae, blocks of dwellings

Greek Contributions of Urban Form:

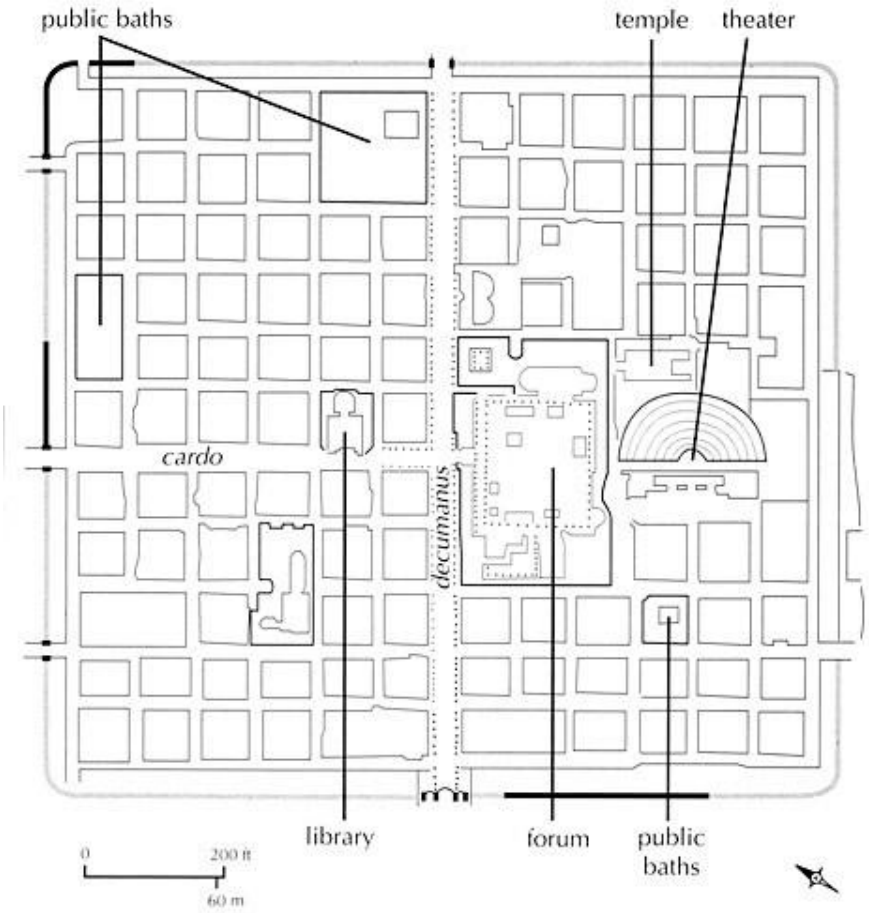
1. Colonization movement
2. Development of two foci in urban fabric:
   A. Acropolis as religious precinct
   B. Stoa as center of daily life, such as commerce
   C. Gridiron pattern as a means of organizing urban form



Priene



Miletus

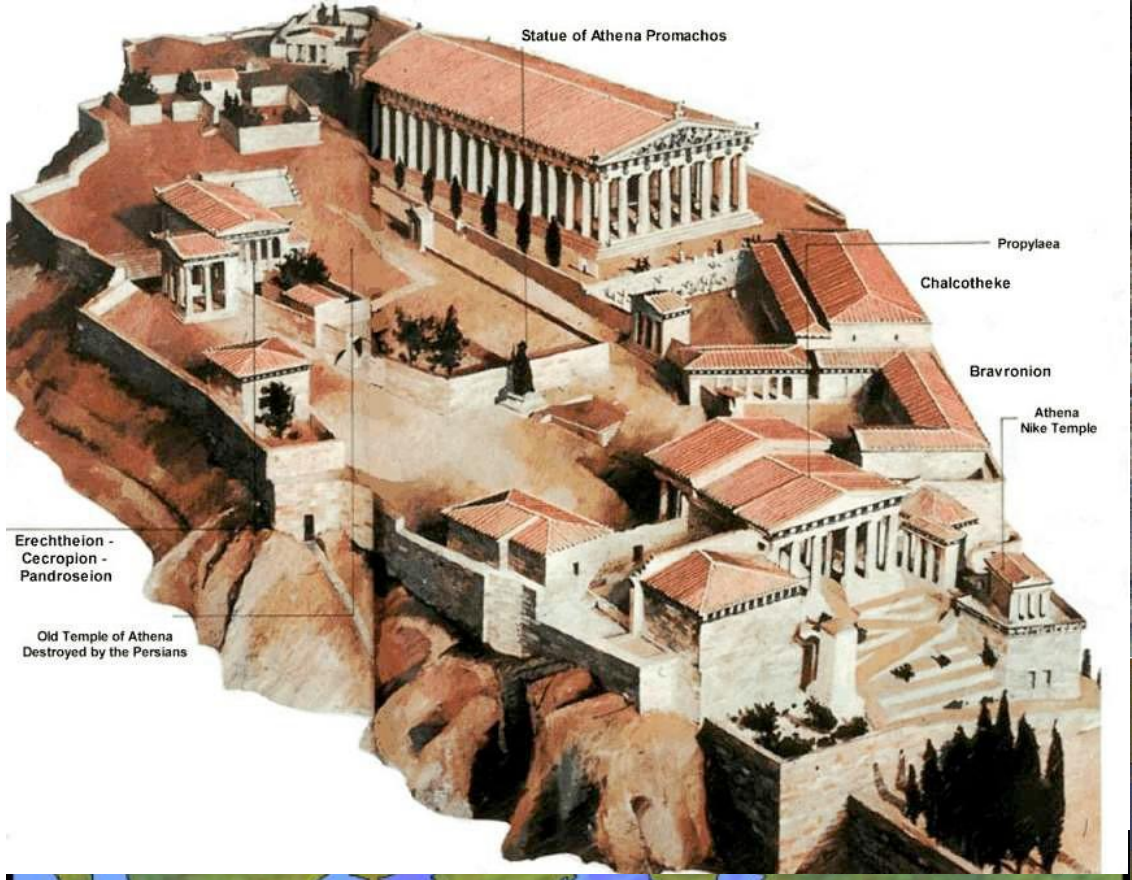


Roman Imperial Planning

Timgad, Algeria, 100 CE

Characteristics of Legionary Towns:

1. **Grid**
2. **Cardo - north/south commercial street**
3. **Decumanus - east/west commercial street**
4. **Forum, Theater, Baths, Library**
5. **Visual unity, note Decumanus, right**



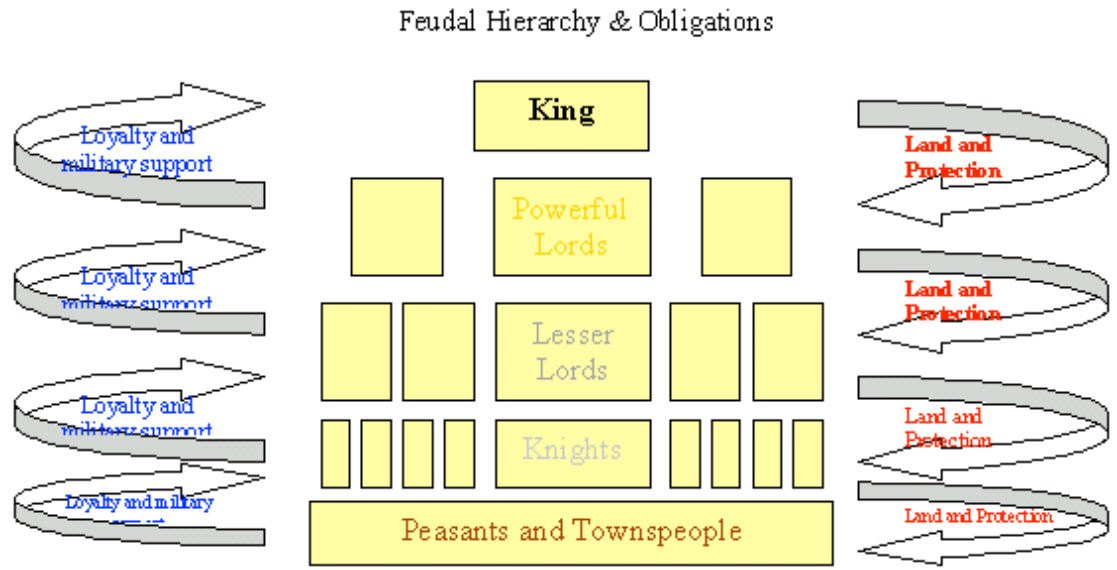
Athens and Rome still developed organically during their Imperial phases, responding to topographical restrictions and to ancient sacred traditions.

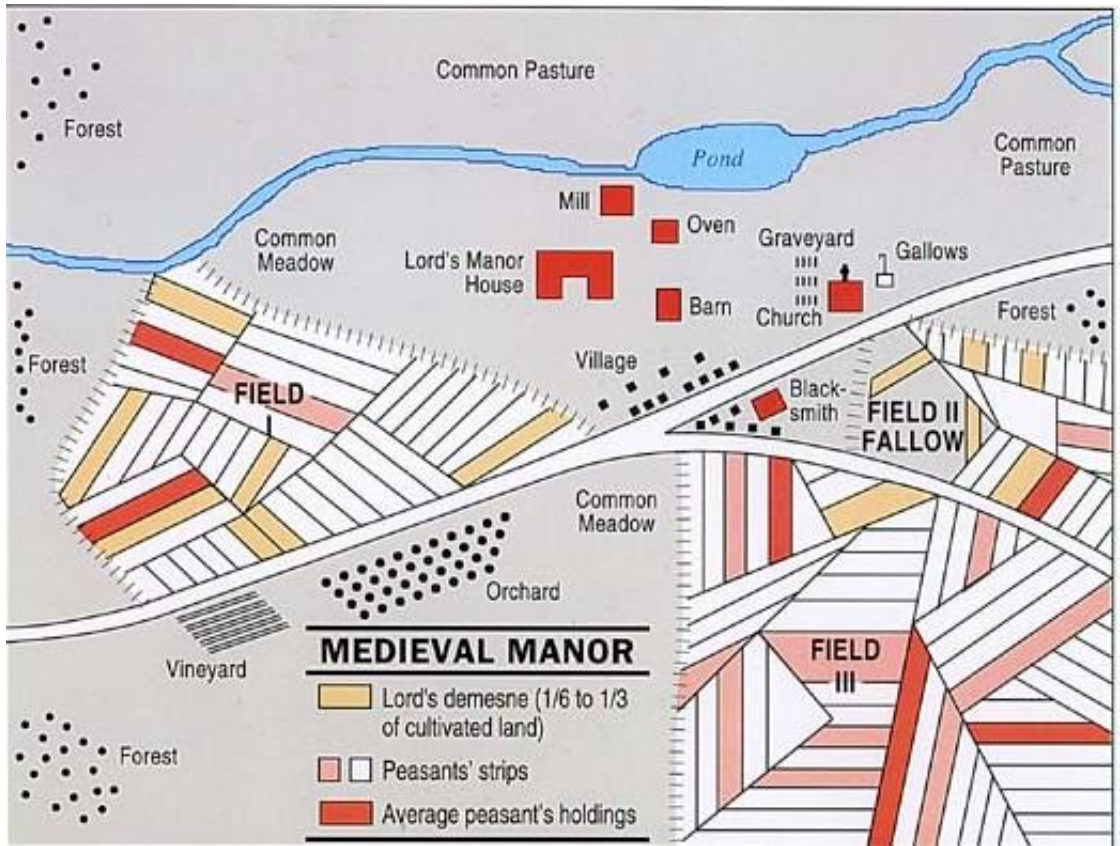
Political, Social, and Economic Organization of Society under Feudalism

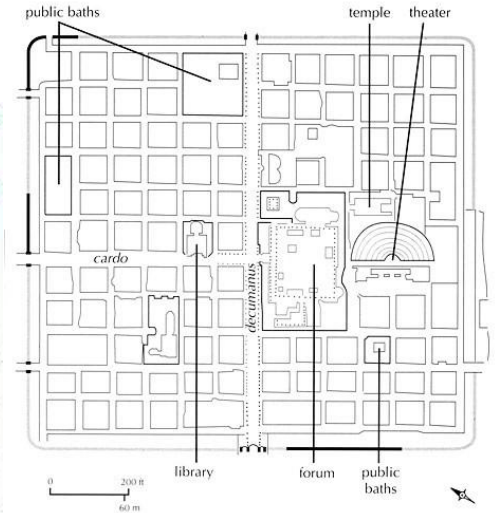
Unified Roman Empire produced an organized, planned landscape

Fragmenting of Roman Empire produces a fragmented, organic landscape

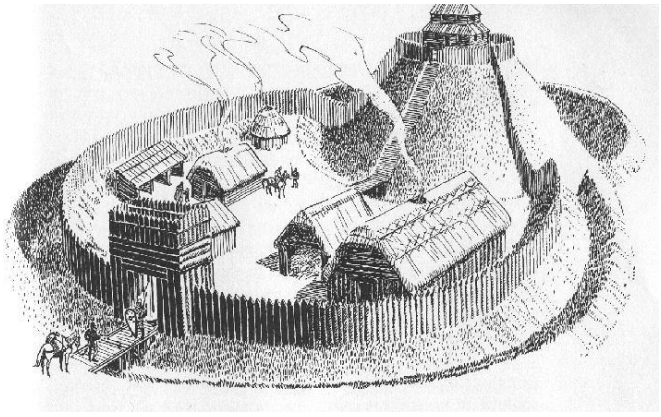
Society is largely rural, agricultural during Middle Ages





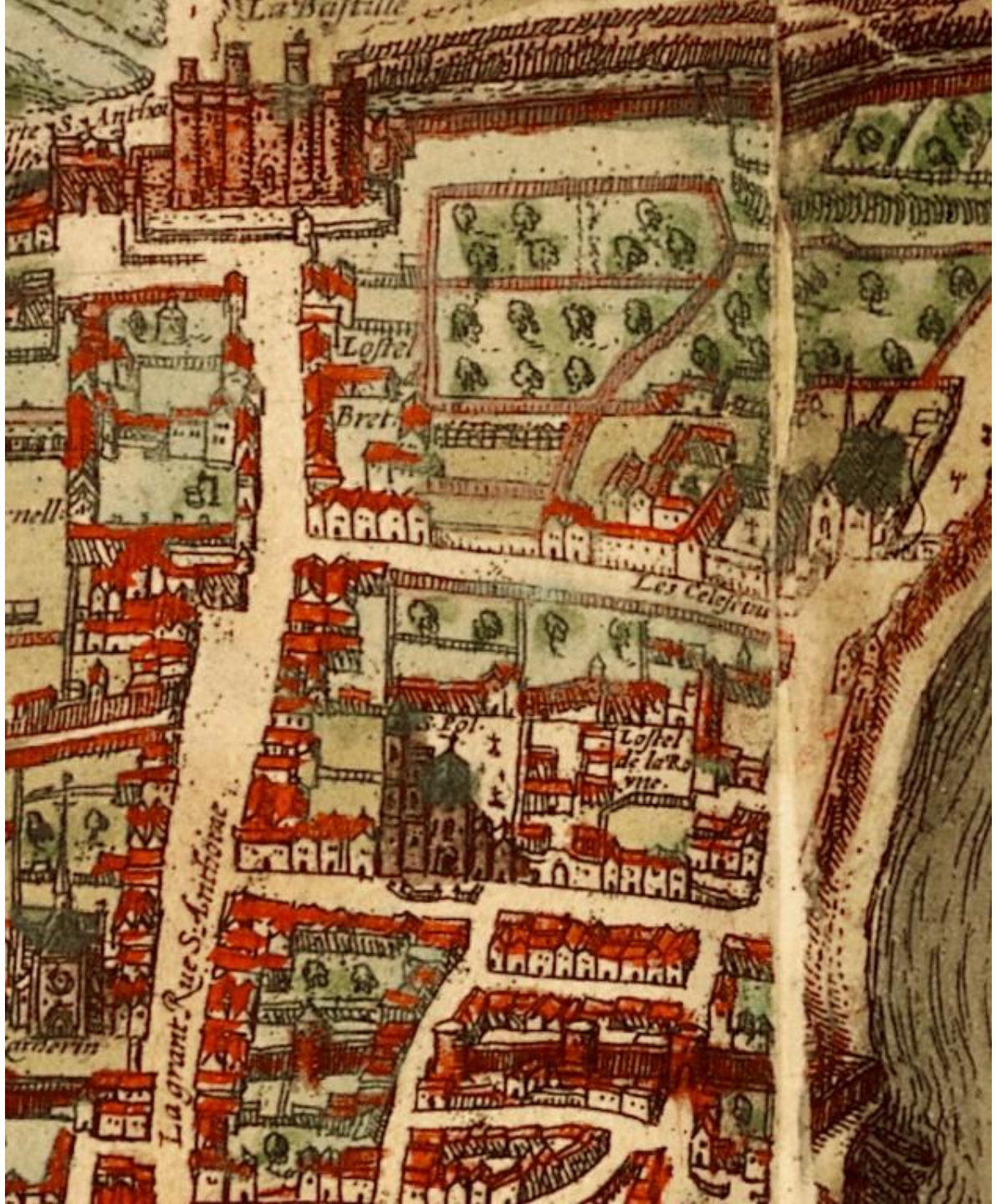


Imperial Timgad compared to a Medieval Mott, an early defensive enclosure pre-dating the castle



Form of the Medieval Town and City: The origins and basis of growth


Every street in a medieval town, even the bridges,
was a “market street”

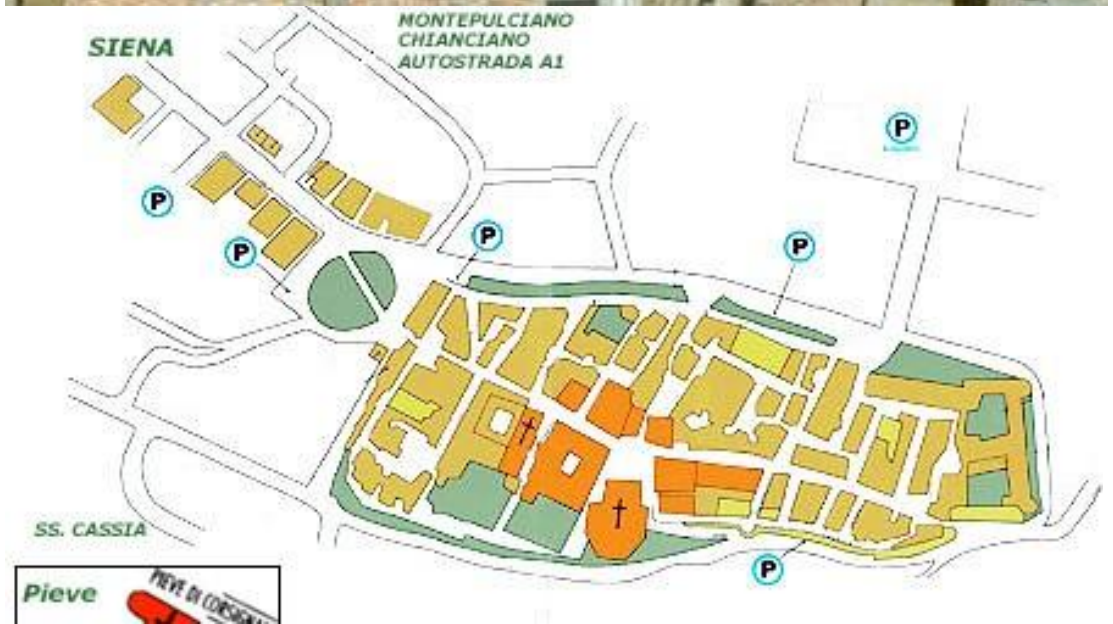


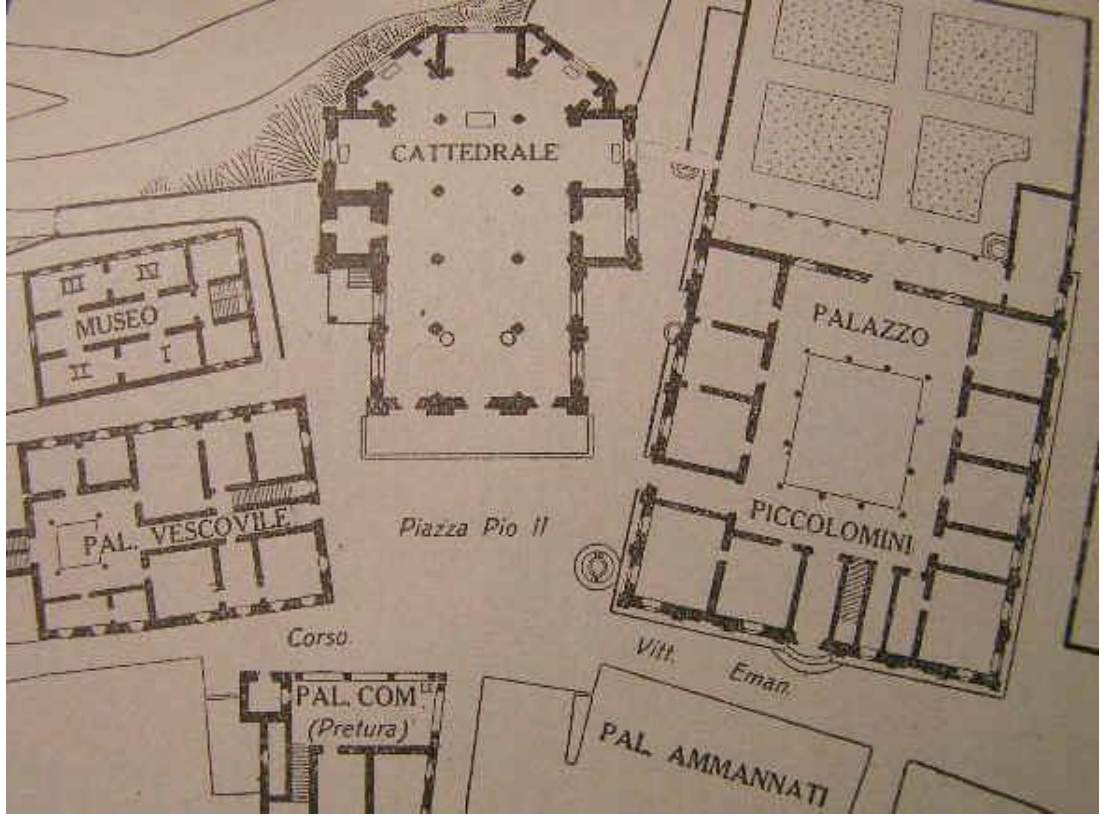
View of Paris toward the Bastille, c. 1500

Although the streets of medieval cities were very narrow - 8 to 12 feet wide - there was considerable green space in the deep lots behind the streetscape. Historians of urban history are now reconsidering what this condition might mean to life in the medieval city.

Pienza, Italy

Rebuilt by Pope Pius II beginning in 1459. Florentine architect Bernardo Gambarelli, who worked with Alberti, designed the new square, the church, and the Palazzo Piccolomini, the papal residence, and the Palazzo Borgia as a residence for the cardinals and bishops who would attend the Pope on his visits to his ancestral home.





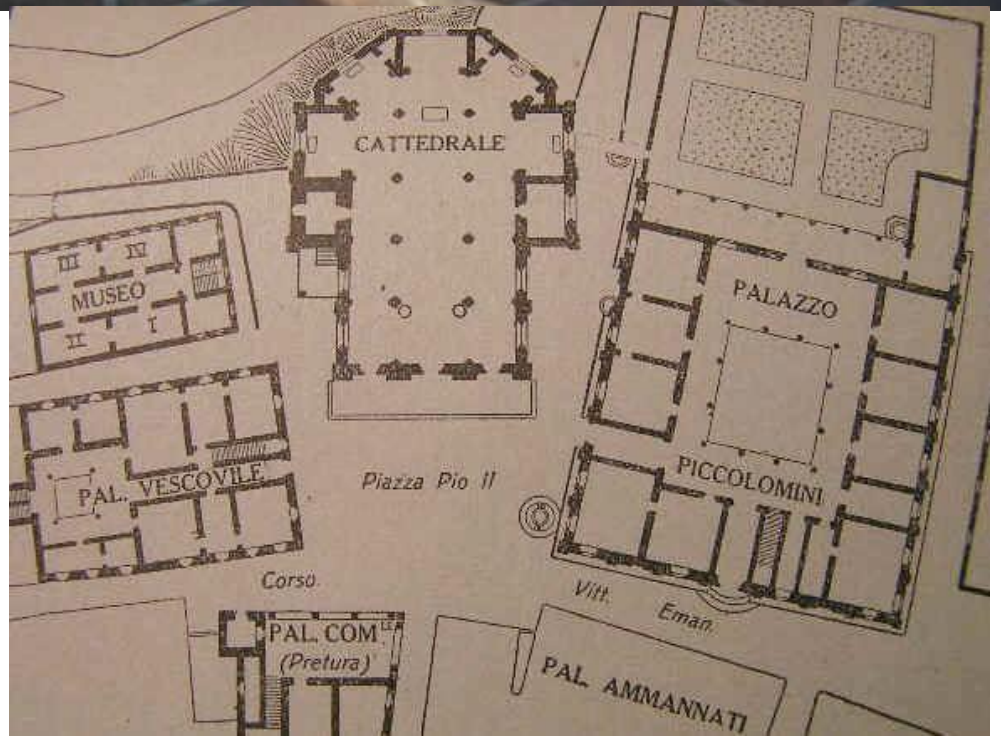
Note the medieval street pattern of the town, and how Pius II's new piazza and buildings (in orange) began to imbed an order within an organic pattern.

The organic pattern remains, and Gambarelli took advantage of existing site lines and streets that would achieve his goal of order.

Note the "sequential views" that Gambarelli created.

The piazza is defined by four buildings.

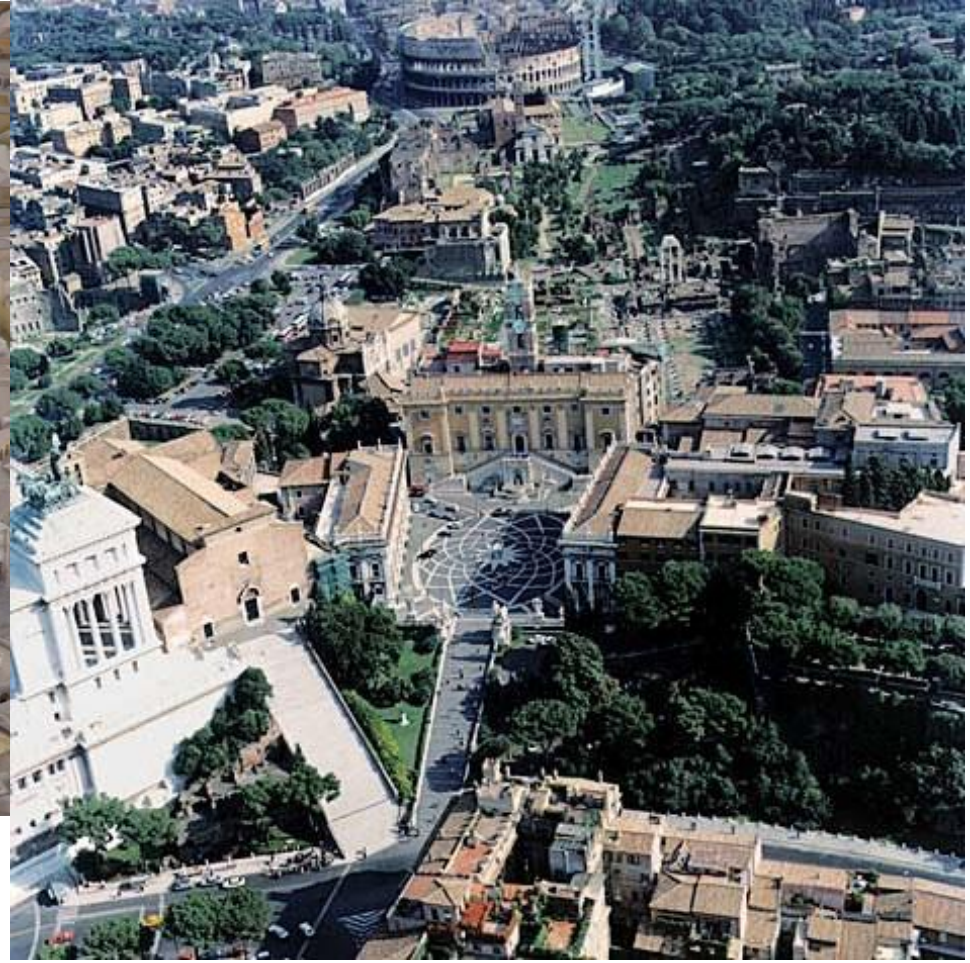
The trapezoidal shape of the piazza creates a forced perspective, focusing on the Church, the hierarchical element in the urban assemblage.



View to the Church (1459)

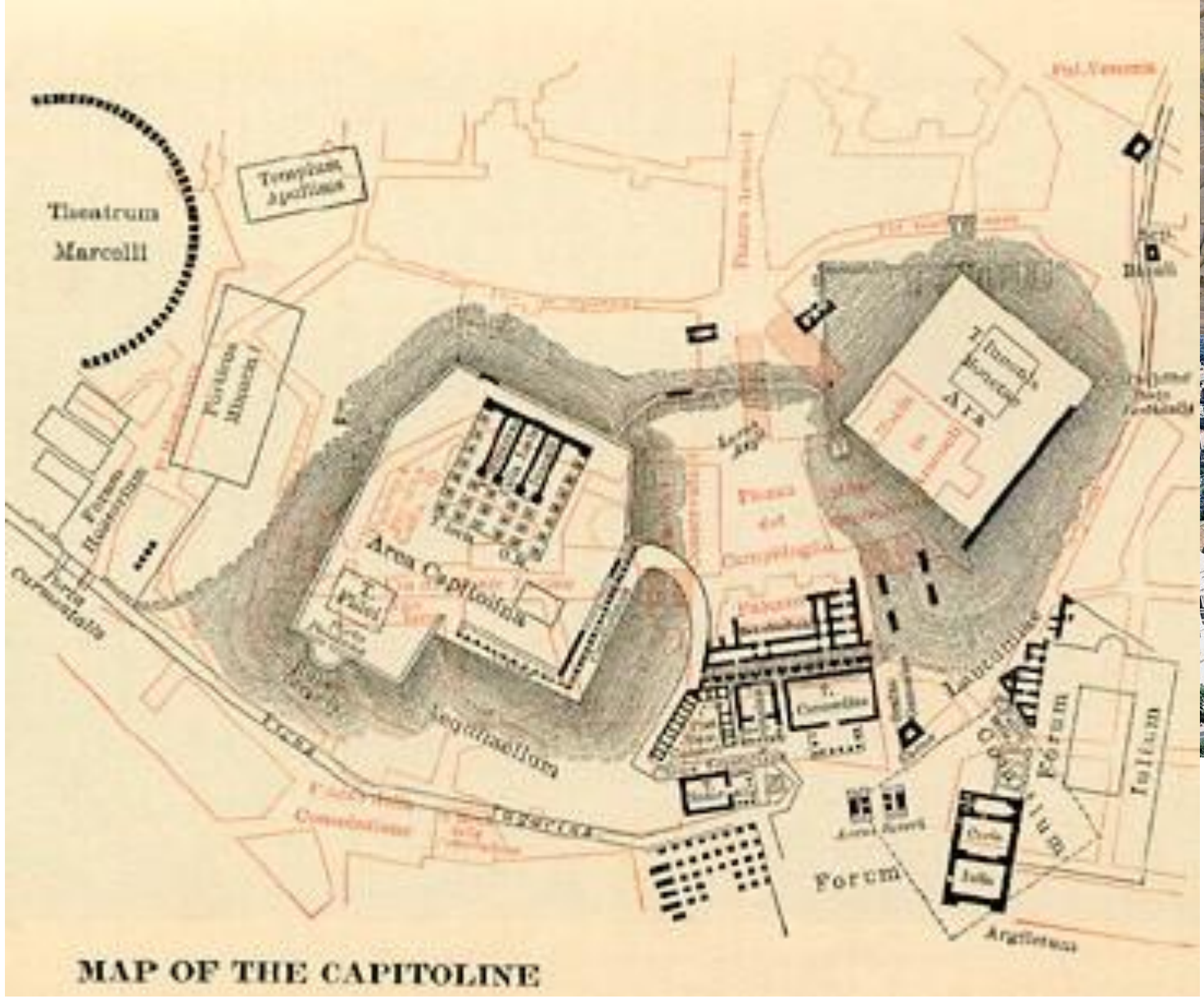
View to the Palazzo Comunale (town hall, 1462).

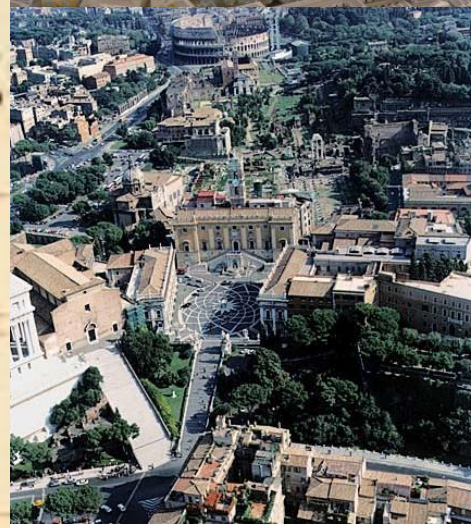
The bell tower of the Comunale is not as tall as that of the Church, thus maintaining the hierarchy of the urban assemblage.

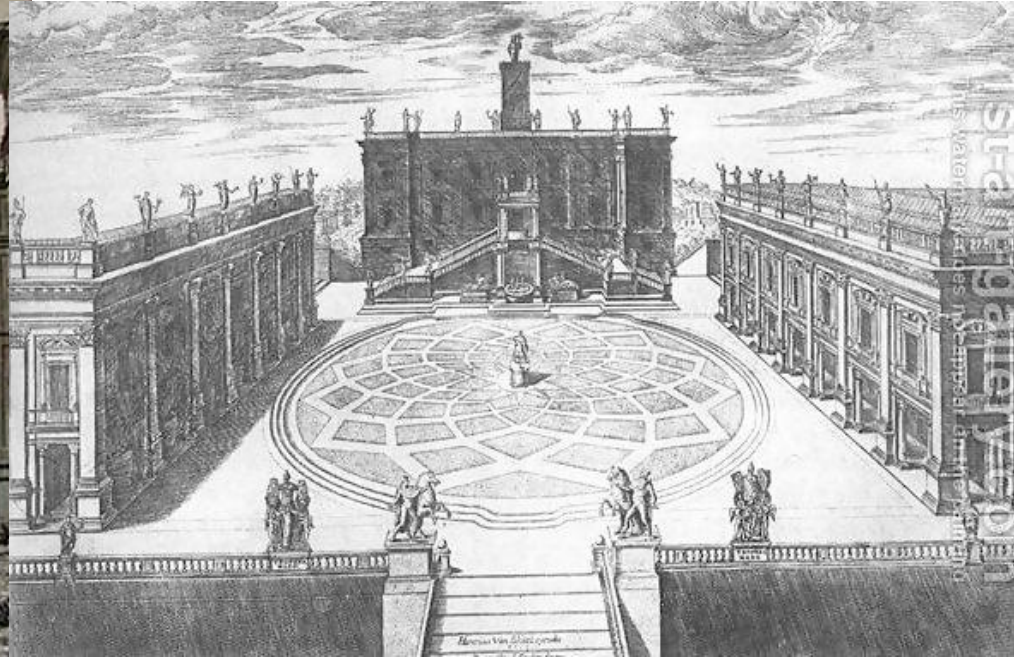


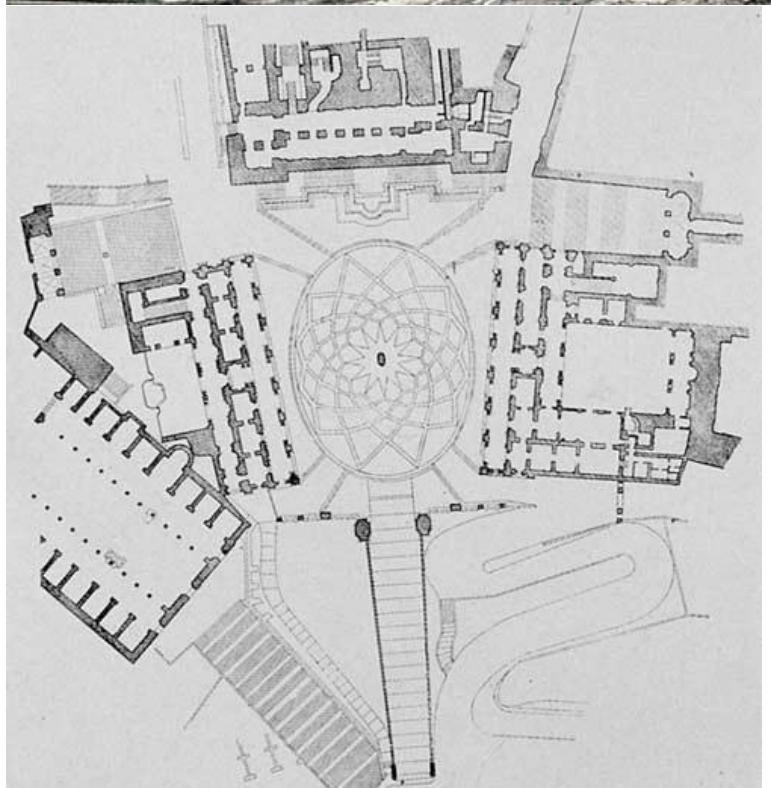
Campidoglio, Rome,
Michelangelo
1536 - 46

Capitoline Hill, site of ancient Rome's sacred temple to Jupiter.
Santa Maria Aracoeli, site of the medieval citadel occupies the higher ground.
During the middle ages, the Capitoline becomes the center of civic life, obscuring the role it once held as a sacred site in ancient Rome.


Theatrum
Marcelli
Area Capitolina
Forum
MAP OF THE CAPITOLINE







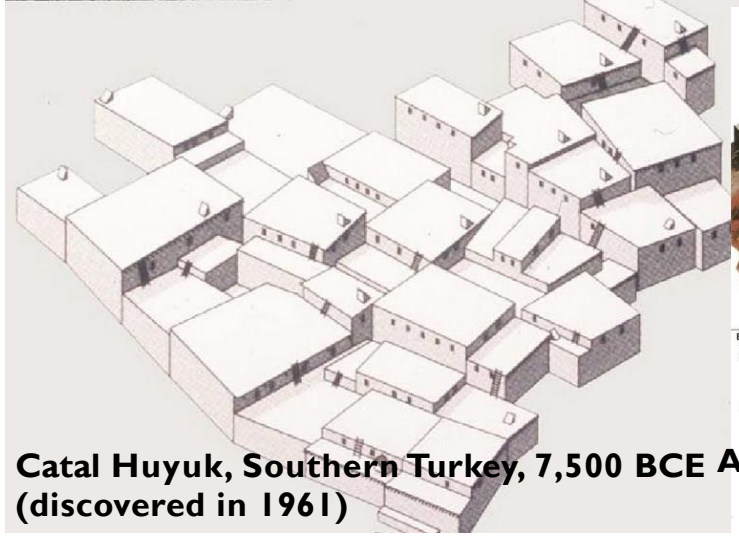
Ordering the Capitoline:

Michelangelo creates two axes, one to the Capitoline, one to Santa Maria Aracoeli.

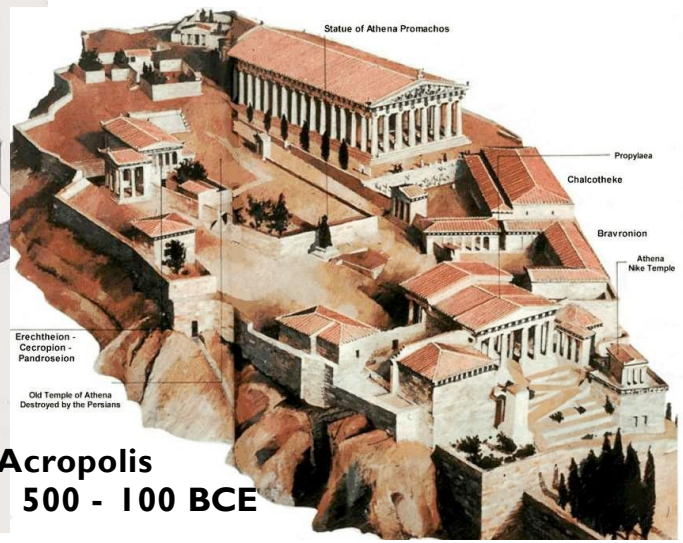
The geometries of the plan:

The trapezoid piazza creates a forced perspective to the hierarchical element of the composition. The oval, unlike the circle, is directional and axial, reinforcing and further defining the piazza. Cross axes open at either end of the piazza, allowing space to flow into and out of the piazza, opening it further to the civic life of the city.

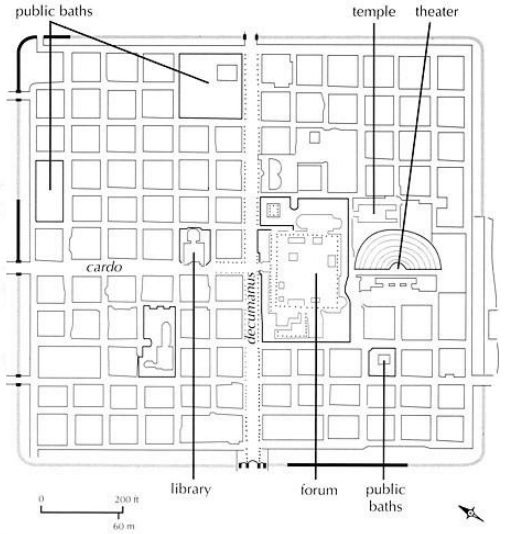
Reciprocal View: A device that reinforces the hierarchy within the composition.



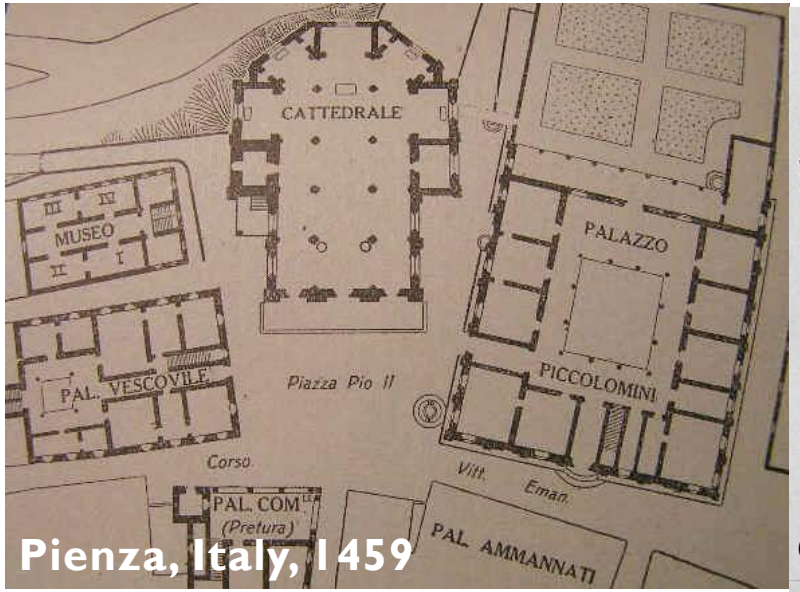
Catal Huyuk, Southern Turkey, 7,500 BCE
(discovered in 1961)



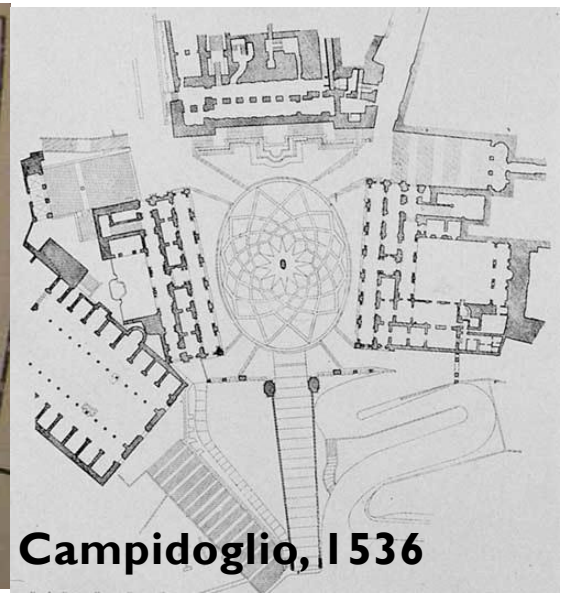
Acropolis
500 - 100 BCE



Timgad, Algeria, 100 CE



Pienza, Italy, 1459



Campidoglio, 1536

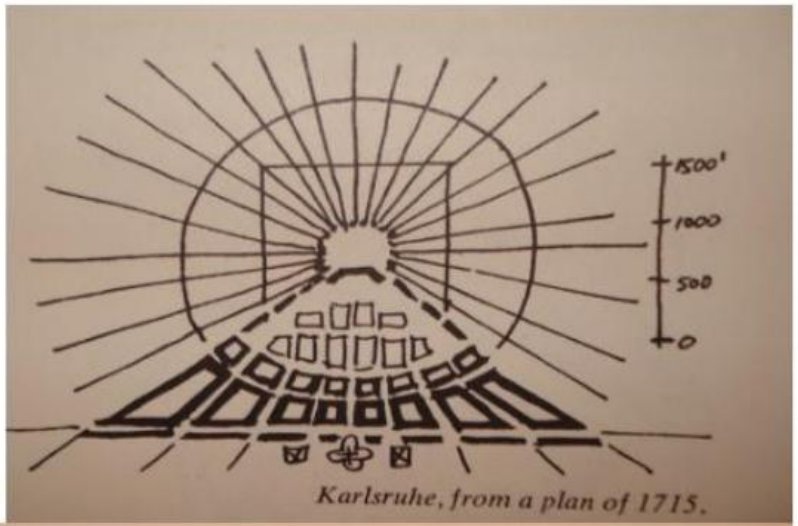
Catal Huyuk, non-hierarchical
Acropolis, organic hierarchy
Timgad, ancient central planning
Pienza and Campidoglio, ordering the medieval city

Renaissance Civilization (1500 AD)

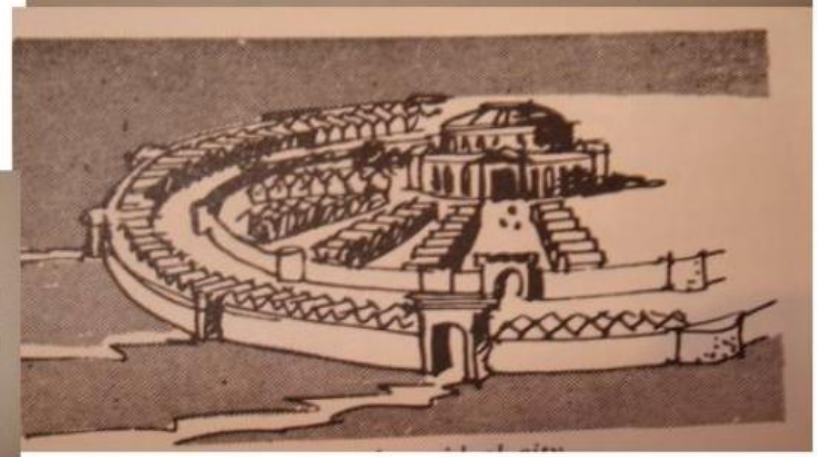
- Cosmic forces were displaced by scientific theories and observations
- urban design ceased to be a natural expression of community life and became a much more conscious artistic self-expression
- renaissance urban design was mainly on aesthetics as perceived by the user of public places
- Thus, it has been argued that mainstream urban design was born in the renaissance age

Design features of the Renaissance

- **regular geometric spaces** (entire cities or parts of)
- **the primary streets**
- **the public places / squares/piazzas with sculptures and fountains**
- **sequence and perspective.**

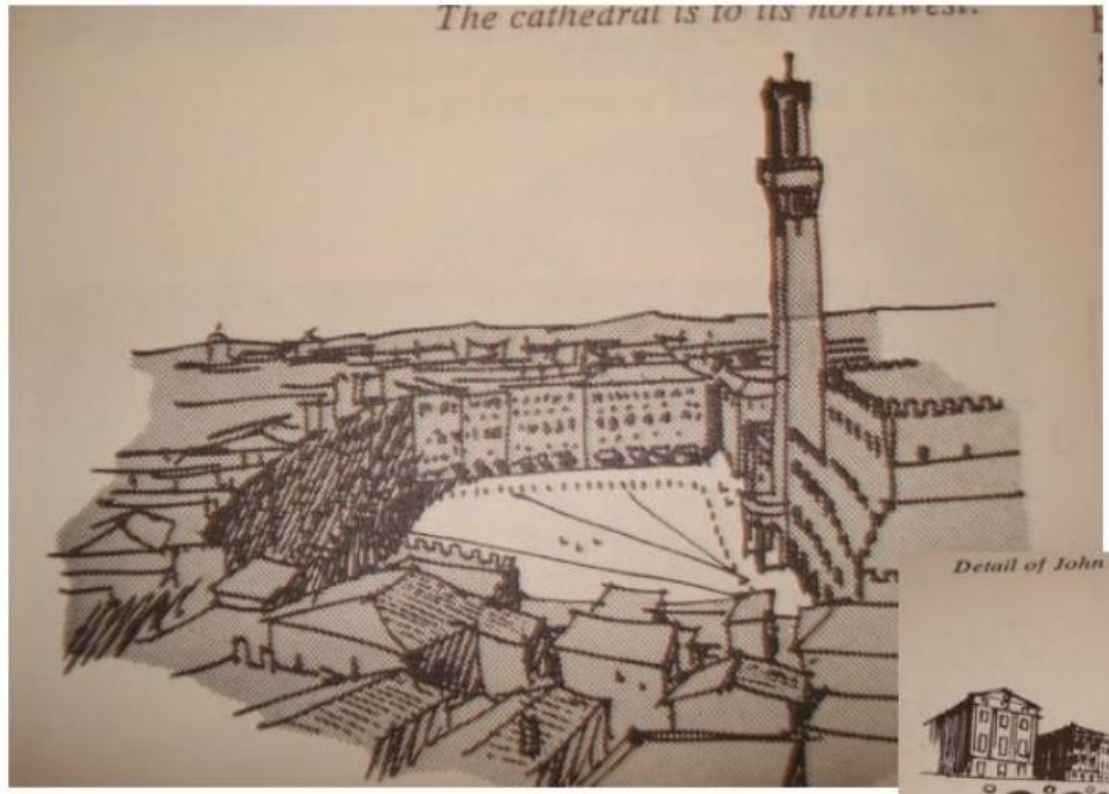


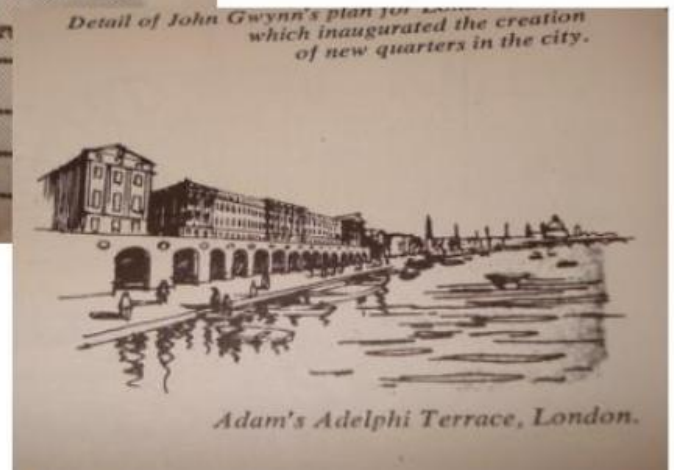
Karlsruhe, from a plan of 1715.




Plan for an ideal city by the younger Vasari.

Design features of the Renaissance (cont'd)





Public places and primary streets showing sequence and perspective

Industrial-Modern (Conscious) Age (1900 AD)

- Industrial Age was characterized by capitalism and rapid urbanization that broke down pre-industrial order

- With introduction of machinery and factory system, the great mass of workforce was separated from the land, nature, and social life

- As a living environment, the 19th century city was conspicuous in its **omissions**:

  ……its gross under-provision of public open space, educational facilities, community buildings, and all those aspects that did not attract economic profit, but which were central to good citizen life.

- Thus, it has been argued that *“urban design was murdered in the industrial age”.*

- However, the dark side of industrial cities was enough to trigger a whole system of reforms based on public responsibility and enterprises.

- Minimal standards of all kinds (roads, housing, gardens, building heights, e.t.c) were slowly evolved leading to improved living standards.

- **Mainstream Urban design** originated in the late 19th century at the heart of city planning, as civic or town design in a social context

- These were attempts (of planners and engineers, architects, and social reformers) to come to grips with the problems created by rapid industrialization and urbanization of the late 19th century

- when planning first became institutionalized in the west in the early 20th century, Urban design was largely seen as part of a wider structure of comprehensive planning

- Its existence became more relevant in the 1960s to fill the gap between town planning and architecture.

- Since the 1950s, planning has significantly broadened its scope to include many socio-economic facets of the city, Consequently, transforming (sometimes shrinking) the portfolio of urban design in the urban planning activities, many of which are no longer exclusively concerned with the physical environment.

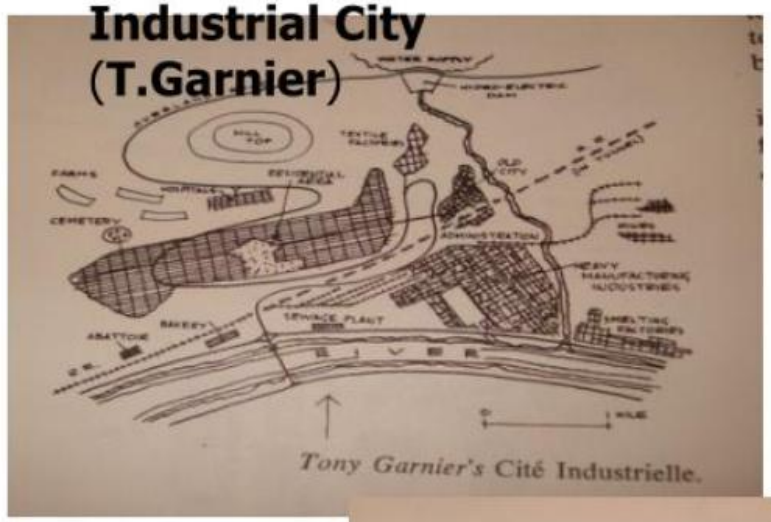
Design features of the Industrial Age

Some of the concepts tested included:

- *Suburban decentralization (William Morris);*
- *Garden city (Ebenezer Howard),*
- *Neighbourhood (Henrietta Barnett & Raymond Unwin),*
- *Conservation & the park movement (Fredrick Law Olmsted),*
- *Artistic City Planning (Camillo sitte)*
- *Linear city* (Soria Y Matta),
- *Ideal industrial city (Tony Garnier)*

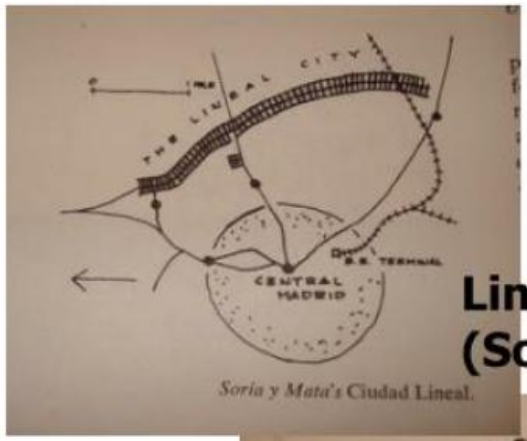
Design features of the Industrial Age (continued)

Industrial City (T.Garnier)

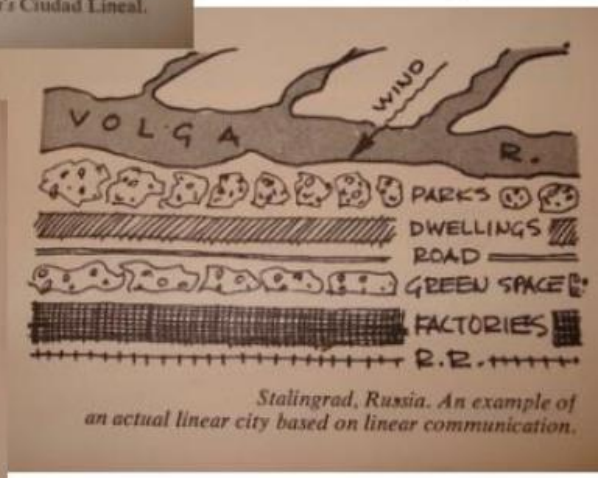


Tony Garnier's Cité Industrielle.

Linear City (Soria Y Mata)

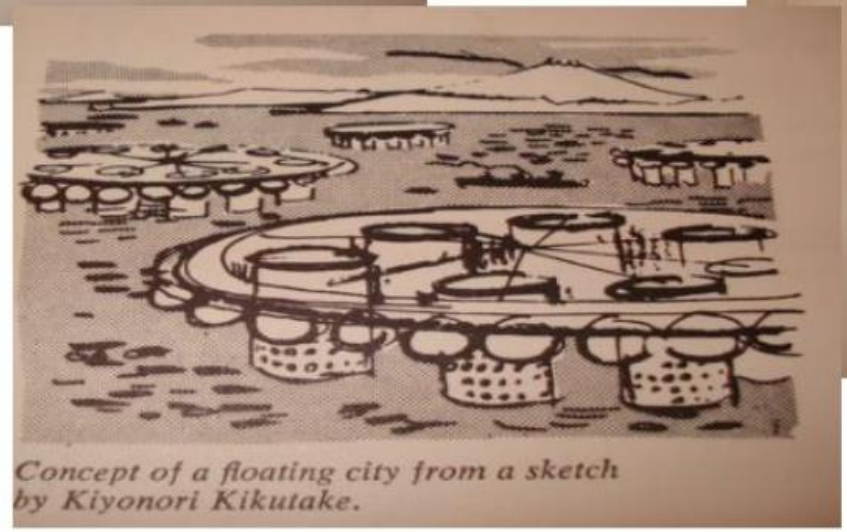


Soria y Mata's Ciudad Lineal.



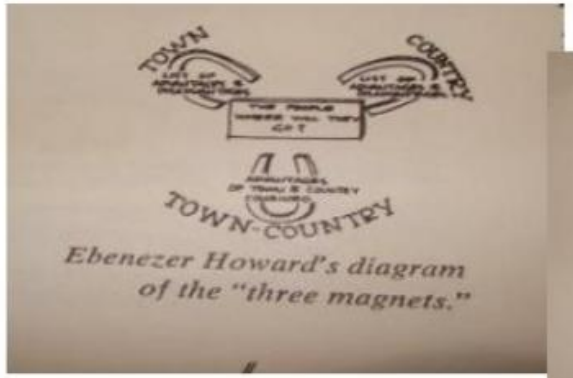
Stalingrad, Russia. An example of an actual linear city based on linear communication.

Floating City (K. Kikutake)

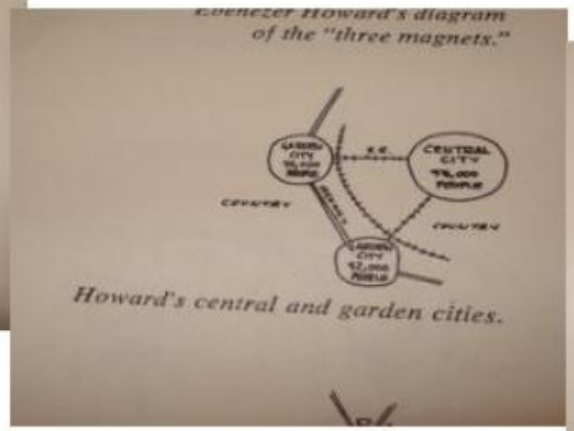


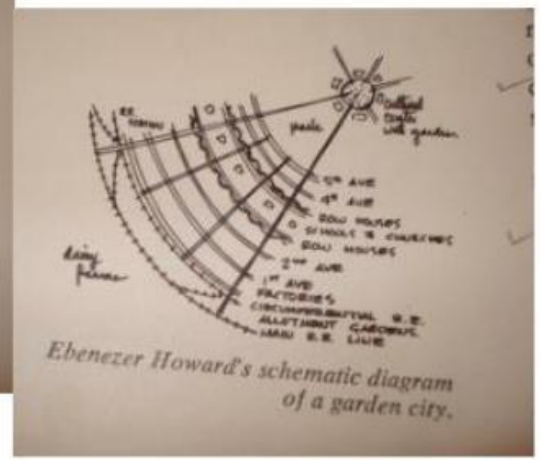
Concept of a floating city from a sketch by Kiyonori Kikutake.

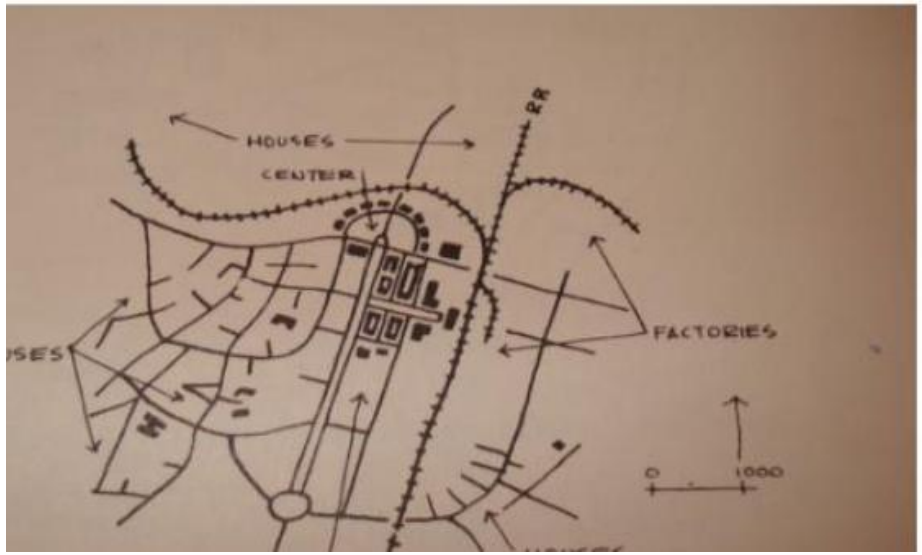
Design features of the Industrial Age (continued)



Ebenezer Howard's diagram of the "three magnets."


Howard's central and garden cities.


Ebenezer Howard's schematic diagram of a garden city.



Howard's garden City

Above: **concepts**

Left: **Model town of Welwyn**

Modern Age Urban Design

- **Modernist ("second generation") ideals began to take shape in the 1950s after the World War II.**
- **These built on the pre-war experiments such as Howard's Garden City.**
- **They expressed a romantic fusion of machine-age modernism with the picturesque aesthetics of traditional, high-density pre-industrial towns.**
- **As being part of the wider structure of comprehensive planning, urban design alluded to the process of "Survey-Analysis-Plan" which was the forerunner to the rational decision model articulated by the founding fathers such as Patrick Geddes (1914, 1949)**

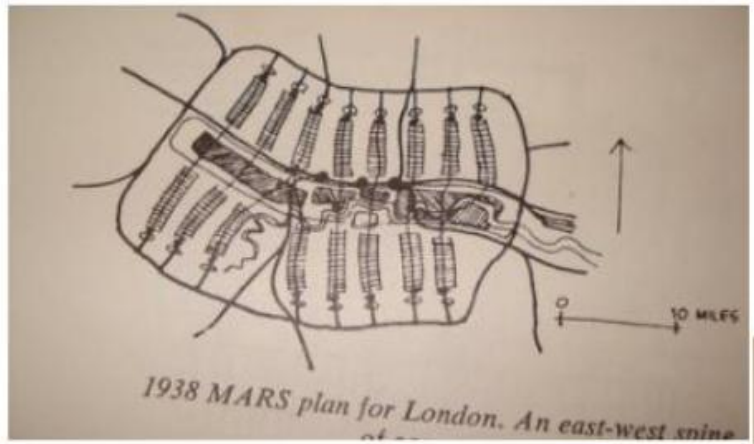
- Designs were to be served by a sophisticated public transport system
- Urban renewal, slum clearance, and new housing took centre stage
- Modern designers attempted to assimilate the massive technological and societal changes that so affected life at that time
- Thus, it can be said that *“mainstream urban design was resurrected in the modern age”*

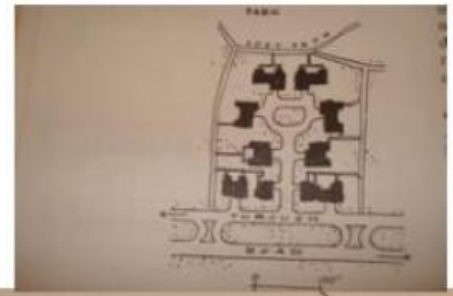
Modern Age Urban Design (cont'd)

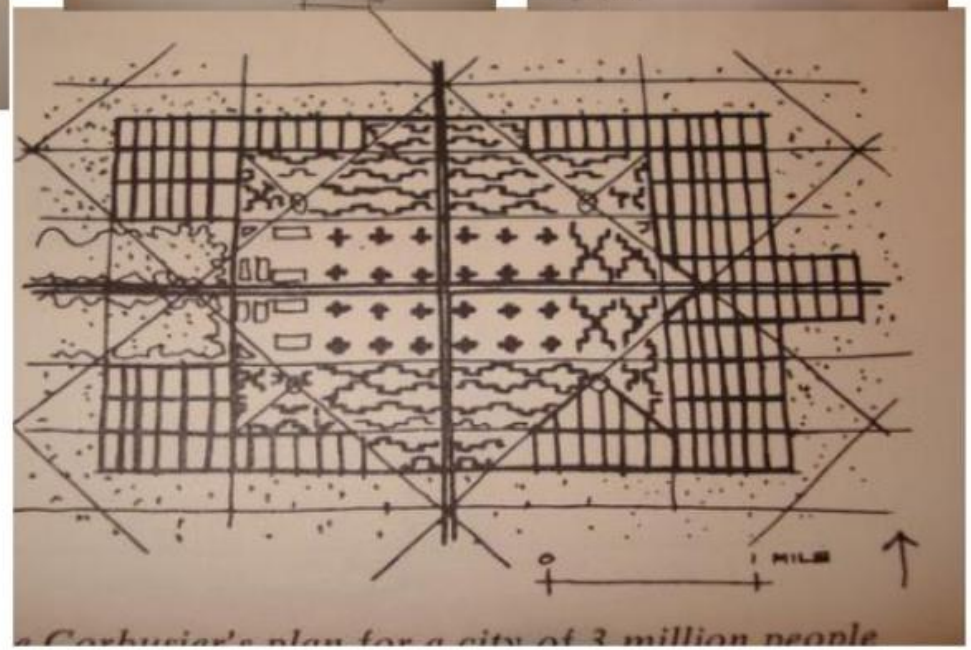
Some of the prominent works included:

- *The city beautiful movement (Camillo Sitte)*
- *New Communities Movement*
  (Clarence stein, Lewis Mumford)
- *City of 3 million and plan for rebuilding Paris (Le Corbusier)*
- *Broad acre city (frank Lloyd Wright)*
- *Circulation models*
  (Louis Khan's Philadelphia & Kenzo Tange's Tokyo).

Modern Age Urban Design (cont'd)







Clockwise: MARS plan of London (1938); Radburn (cul-de-sac); Chandigarh; City of 3 million people (central portion)

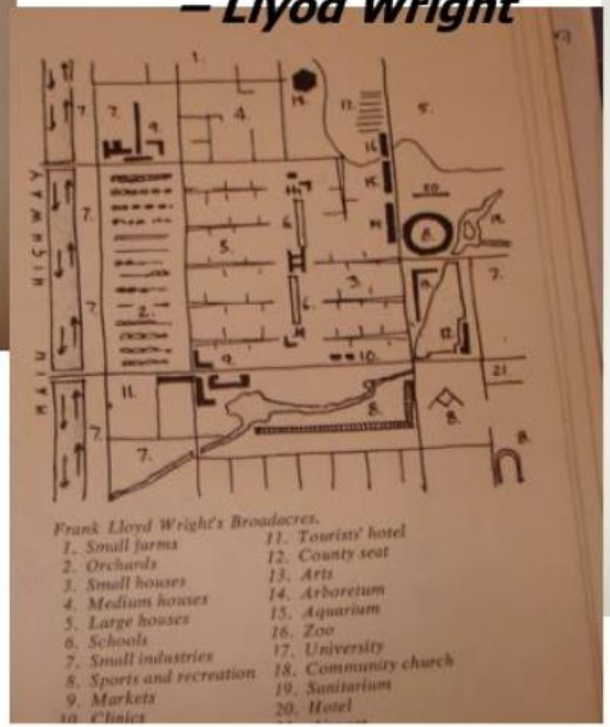
Modern Age Urban Design (cont'd)

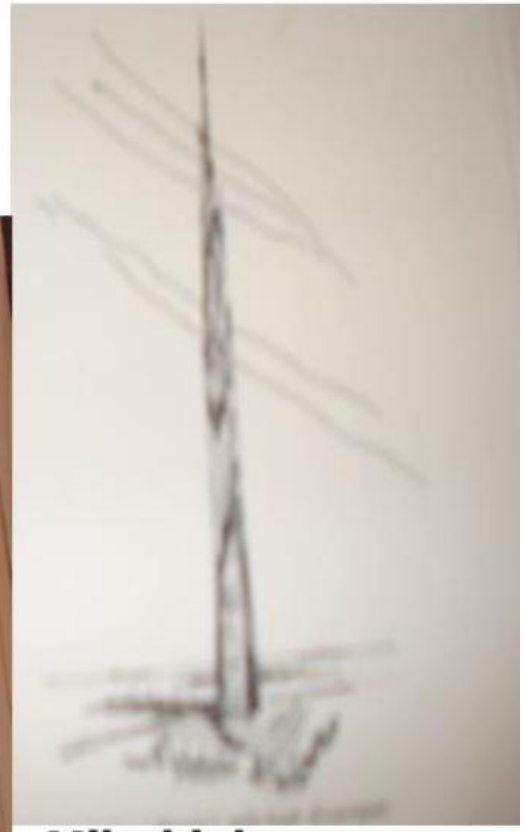
Plan for Tokyo

- Kenzo Tange

Broad Acre City

– Llyod Wright





Mile-high skyscraper

– Llyod Wright

Post-Modernism/Neomodernism

- Neomodernists propounded an influential view of the **late-twentieth century city** as requiring a response that recognises both its dynamic and indeterminate character in the face of global market forces and the continuing need to impose minimum ordering principles.

- It makes use of a series of unconventional formal techniques to create urban interventions that express the essential fragmentation or spatial and temporal complexity of our age

- A common theme in Neomodernist work is the attempt to **"deconstruct"** modernist architectural forms

- Postmodernism departs from modernism in its emphasis on complex, ambiguous and discordant urban forms as well as dynamic and anti-functional approaches to design

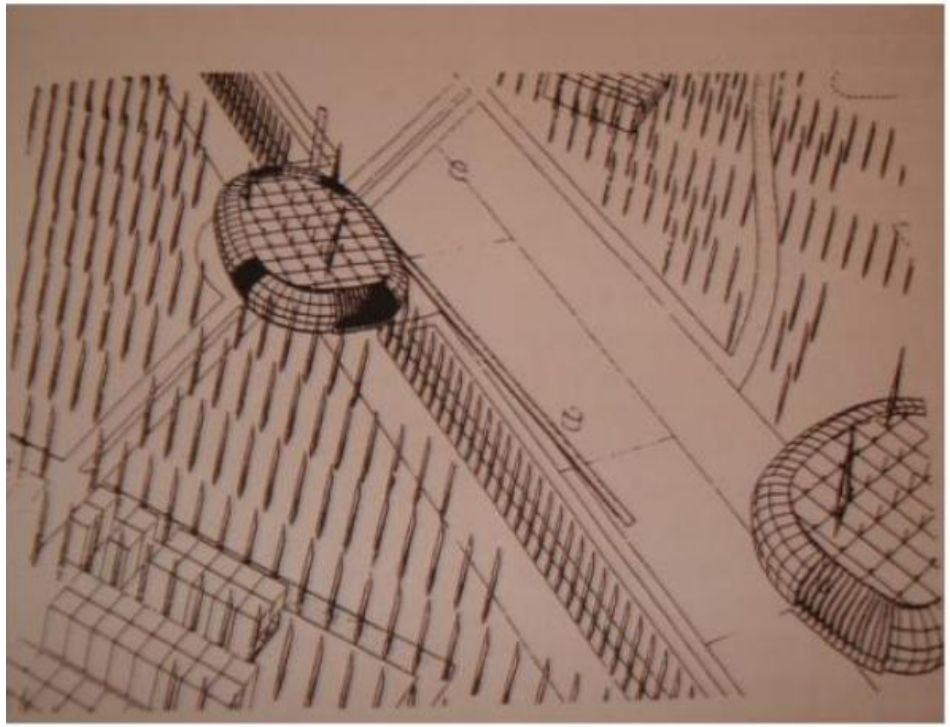
- The neo-modernist themes of technology, flexibility, and indeterminacy derive from the urban concepts of a previous generation of architectural visionaries.

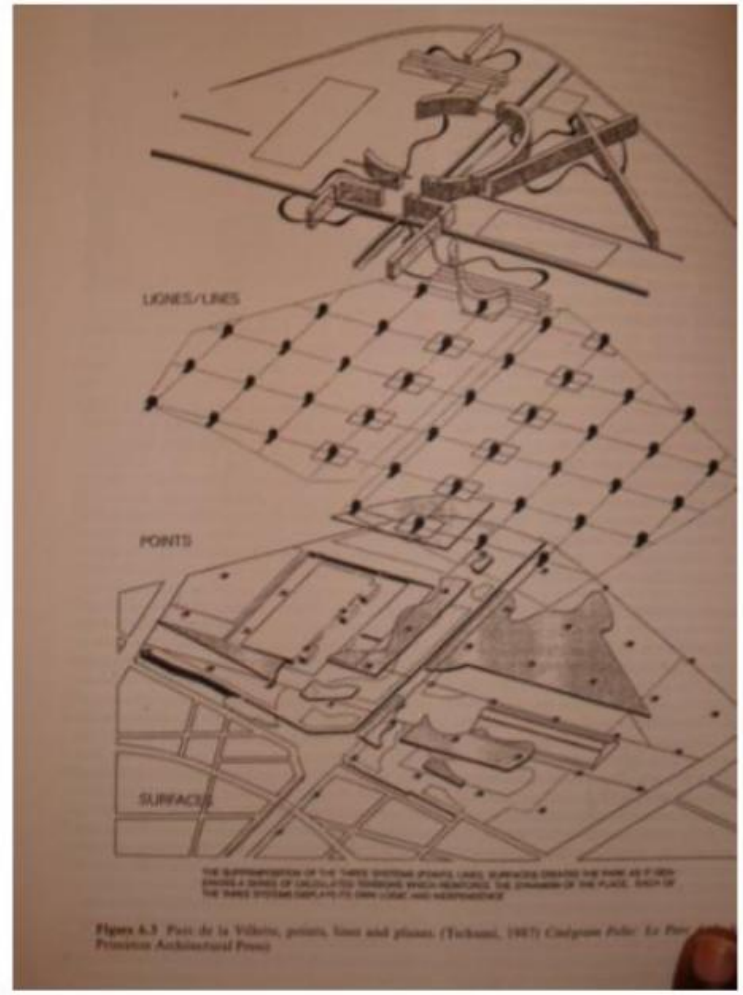
- Thus, it can be said that "*urban design is being questioned/interrogated in the postmodern period*"

Examples of Neomodernist work

- *Parc de la Villette* *(Bernard Tschumi)*
- Cardiff opera house *(Zaha Hadid)*
- Office for Metropolitan Architecture *(Rem Koolhaas)*
- Guggenheim Museum, Bilbao *(Frank Gherry)*

Tschumi's Neomodernist work





Above: Lausanne business park

Right: Parc de la Villette

New Urbanism
(21st Century???)

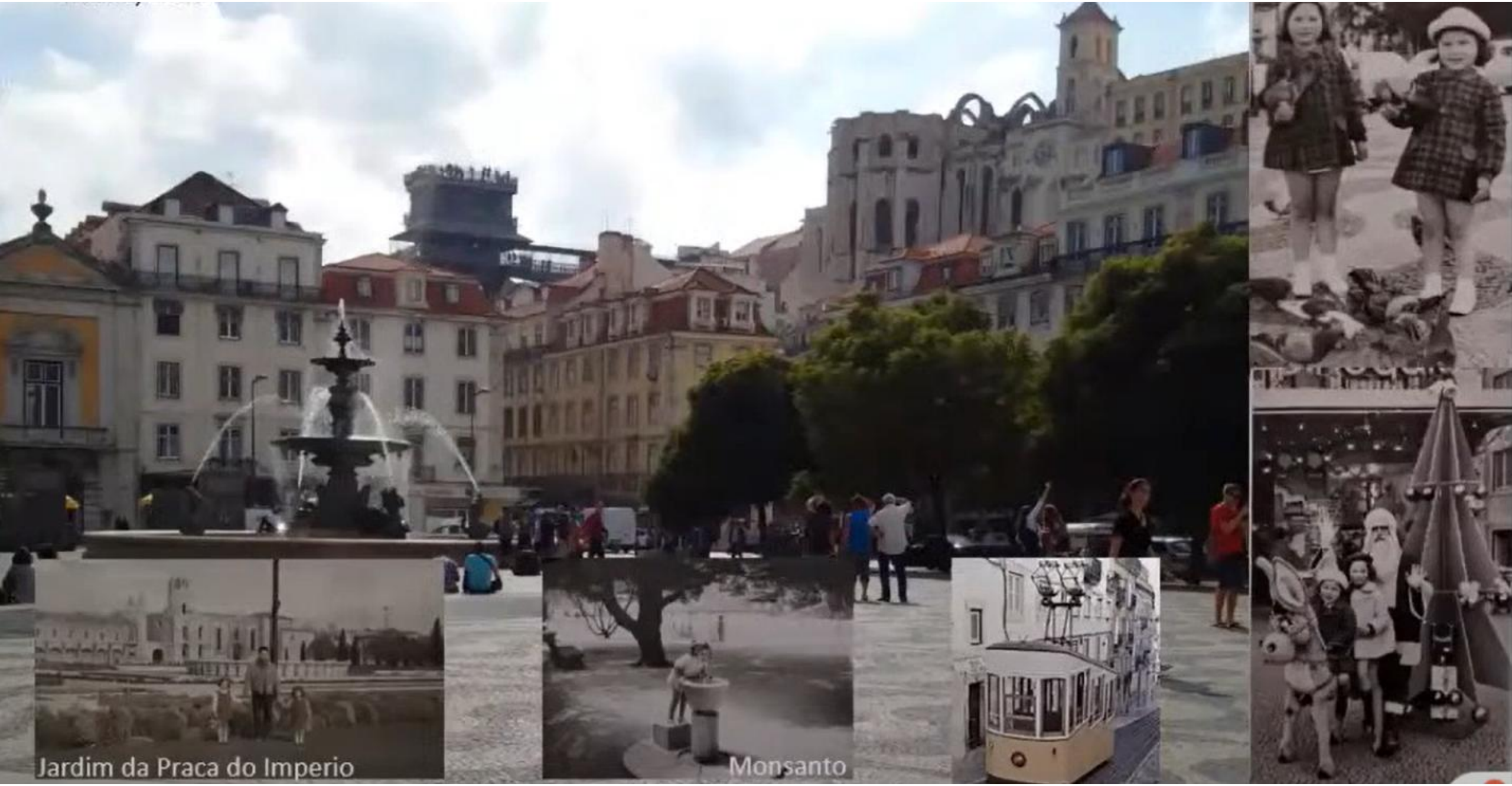
- Ushered in the 21st century; emphasizes urbanism by its diversity, pedestrian scale, public space, and structure.

- This is a re-interpretation of traditional thinking into new solutions while trying to embrace the opportunities offered by new technology.

- Alludes to land-efficient planning methods and sustainable neighbourhoods: adequate size; compact form; appropriate urban density; varied mix of uses and tenure; a range of employment, leisure and community facilities; ready access to public transport; and a pedestrian-friendly environment.

EXAMPLE OF URBAN DESIGN GUIDELINES AND PLANS

TORONTO, CANADA


Jardim da Praca do Imperio
Monsanto







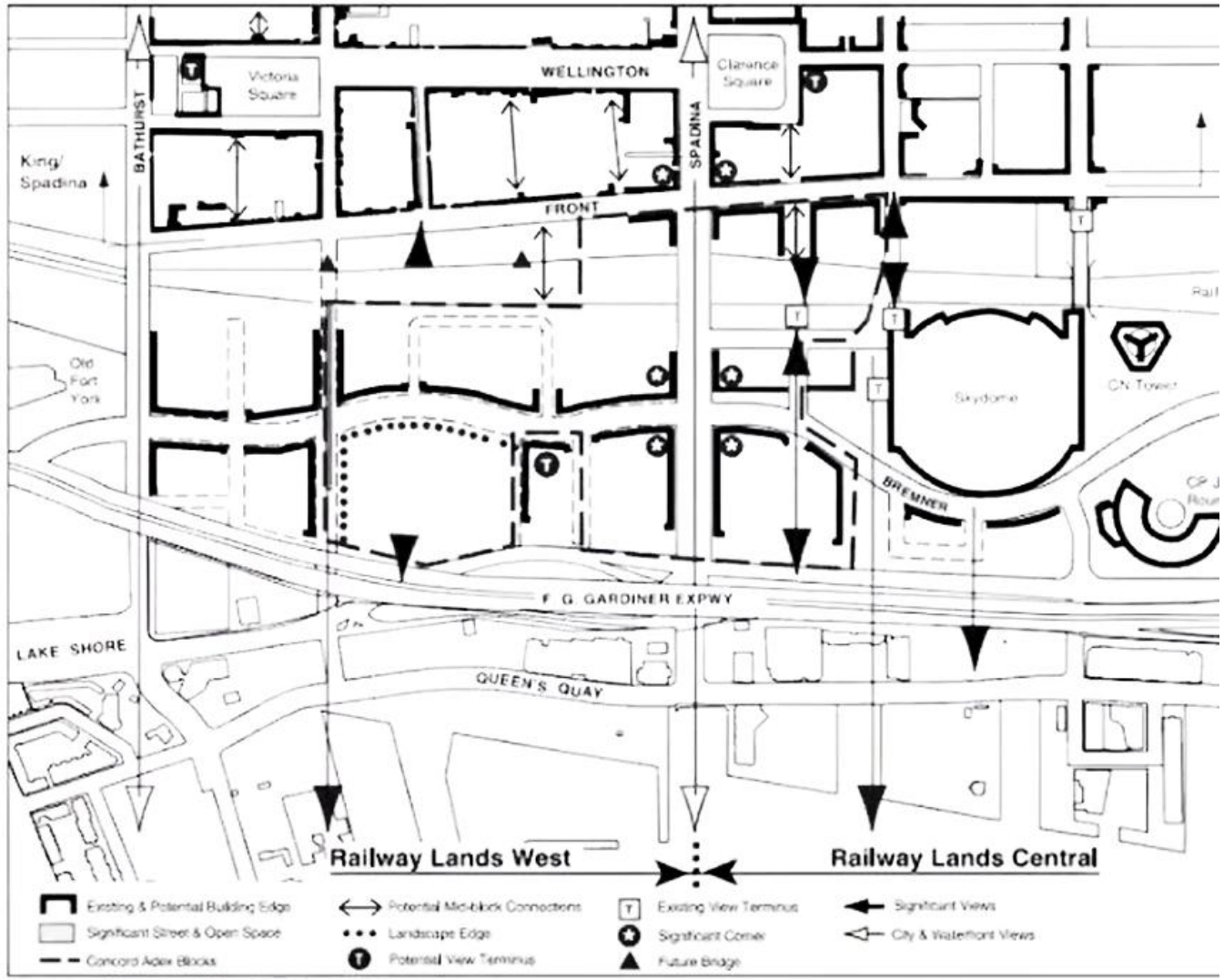




QUALITY & FRESHNESS
RABBA
24 HOURS

Railway Lands West Urban Design Guidelines 2004

Urban Design Vision



Structure Plan for Urban Design Guidelines

TORONTO

Railway Lands West

City Place

West Don Lands Block Plan & Design Guidelines 2004

Urban Design Vision

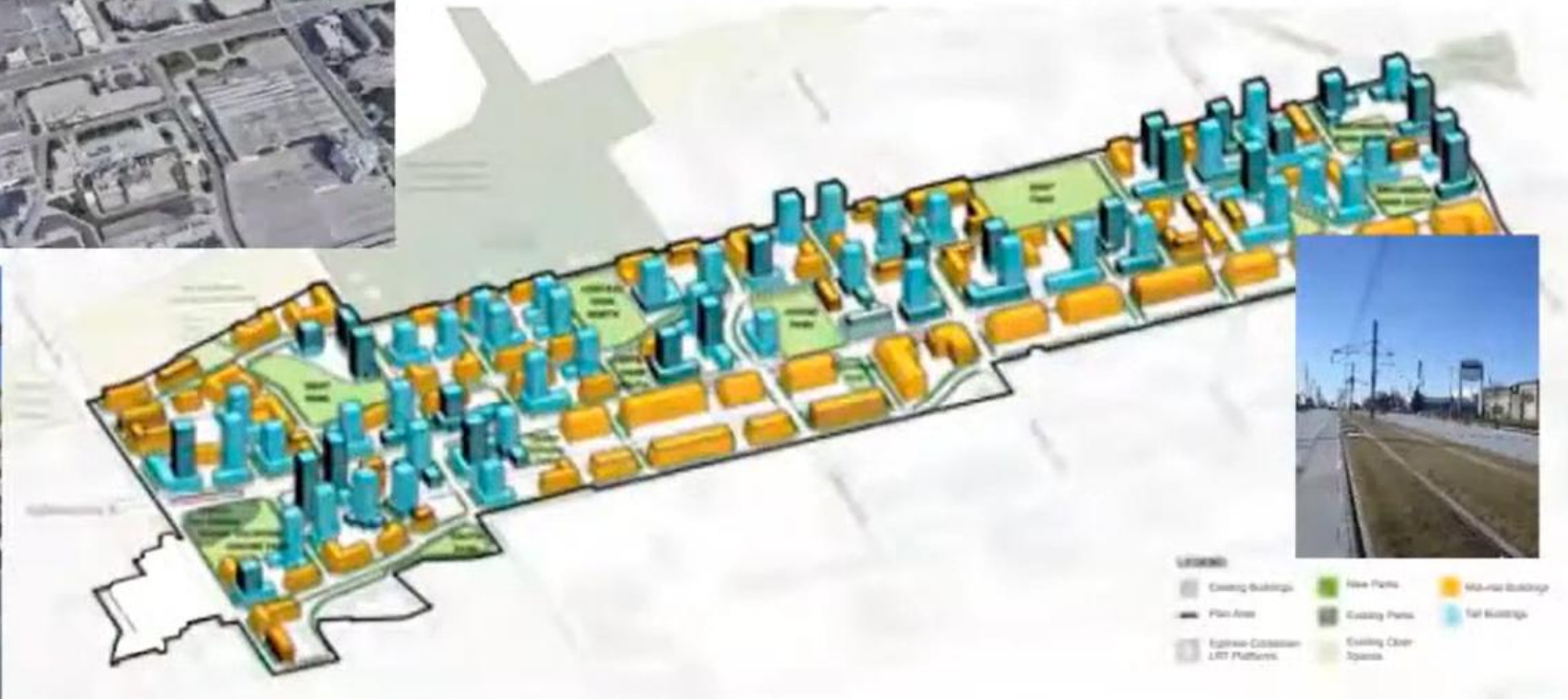
THE WEST DON LANDS PRECINCT PLAN The West Don Lands will become a district as varied as the neighbourhoods surrounding it. (Image from West Don Lands Precinct Plan, December 2004)

TORONTO

Motel Strip Urban Design Guidelines 2002 & Humber Bay Shores Urban Design Guidelines Update 2008

Urban Design Vision

Golden Mile
Urban Design Guidelines




WOOHOO