

Lecture 3: Site Planning and Design

العلاقة
الجانب البيئية / بالمستوى

له تحليل شامل بيئي حلي

لهما أثر كبير على اجاز المشرعي أو غشله

قرارات متعلقة بالمبنى
سواء كان القرار بأن
الموقع جيد أو غير مناسب
وسي عليه قرار شكل المبنى
الارتفاعات، المداخل و
التشكل المماري للمبنى، النص
الرياح، الظل.



Introduction

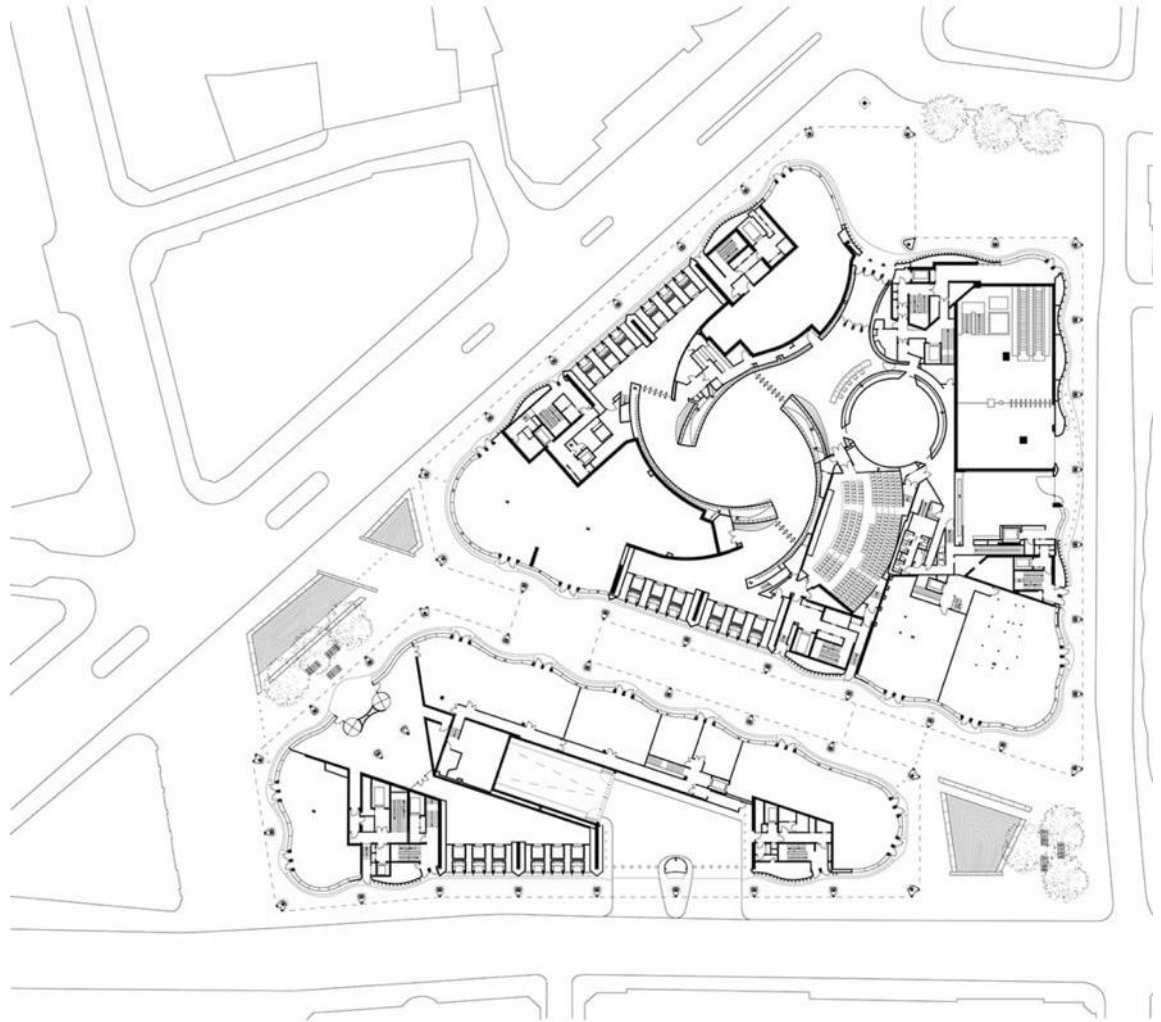
Buildings exist in **behavioral, spatial, and perceptual** context, that is part of the site.

Site design might be carried out by:

Architects for buildings
Landscape architects for open spaces
Urban designers for neighborhoods
Urban planners for communities

As part of the architect profession, he might be involved in site selection, evaluation, and design.

نظري كعماري نظرة شمولية تغطي
المجال وتضعه الانجام بين الفراغ الداخلي
والخارجي

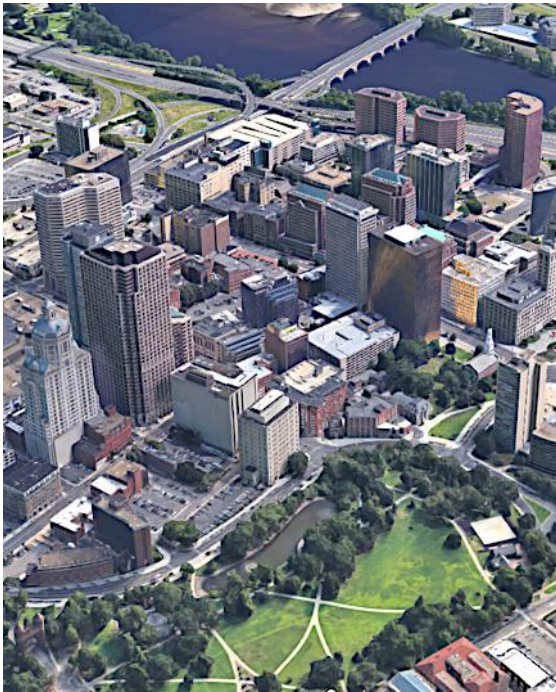


Bloomberg Headquarter Ground level.

Site Context Category

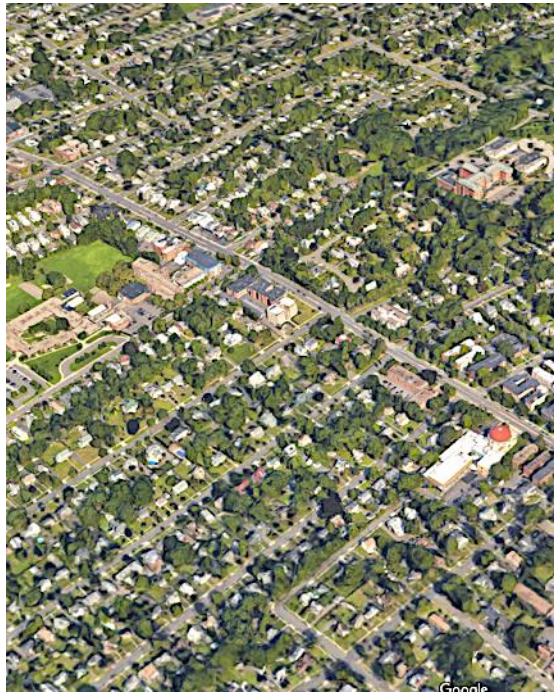
Site context is formed by either natural or man made elements. The intervention in the site may vary depending on the scale and density of buildings in the context. thus it needs to be categorized.

Urban



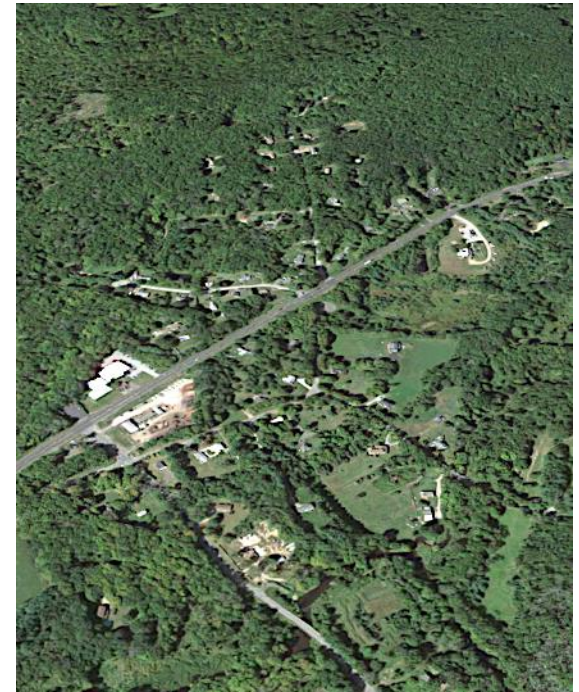
Downtown Hartford city

Suburban



West Hartford suburban area

Exurban



Greater Hartford Area

Site Planning Process

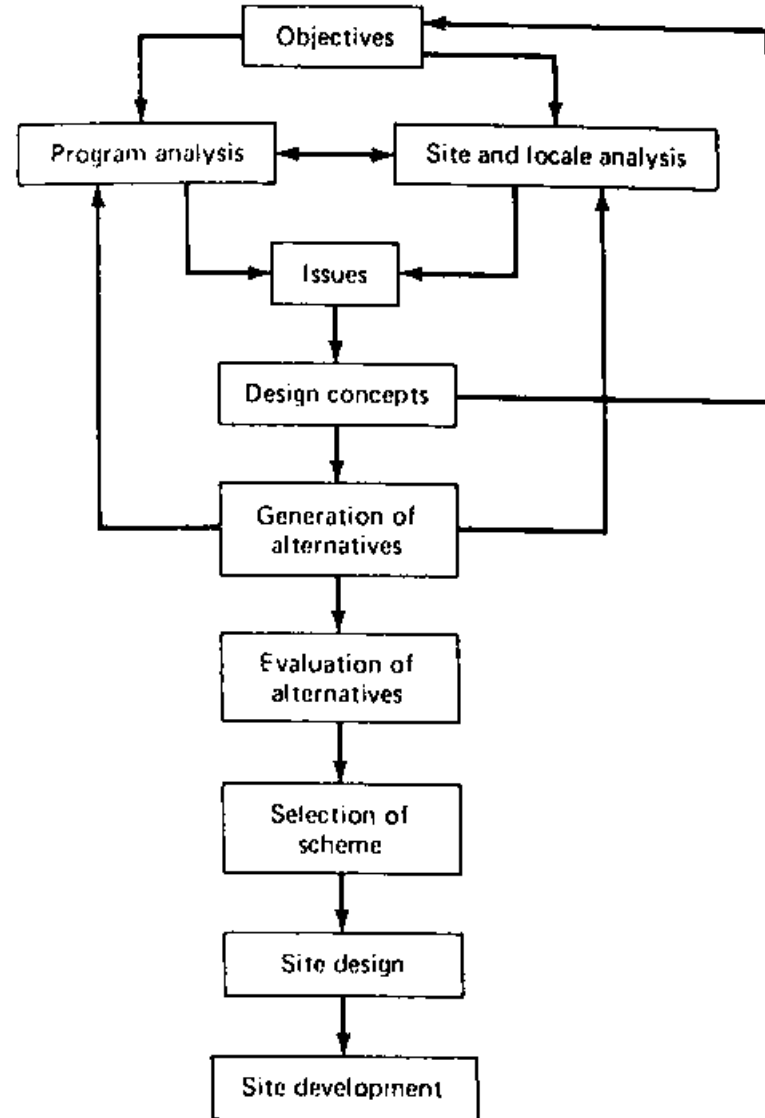
Site planning is an iterative process, depending on gathering information (from the client, the program, and the site) then feedback the proposed design solution.

Objectives: the client's general goals (owner, developer, user).

Program analysis: including the study of the activities, social and temporal relations between them, and physical connectors.

Site analysis: this includes studying the Behavioral, Spatial, and Perceptual Environments

Design Concepts: the synthesis of ideas in response the analysis.

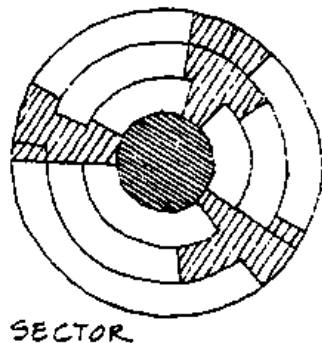
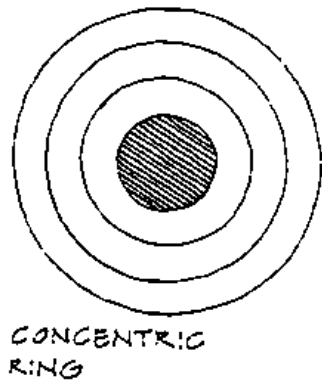


Behavioral Environment

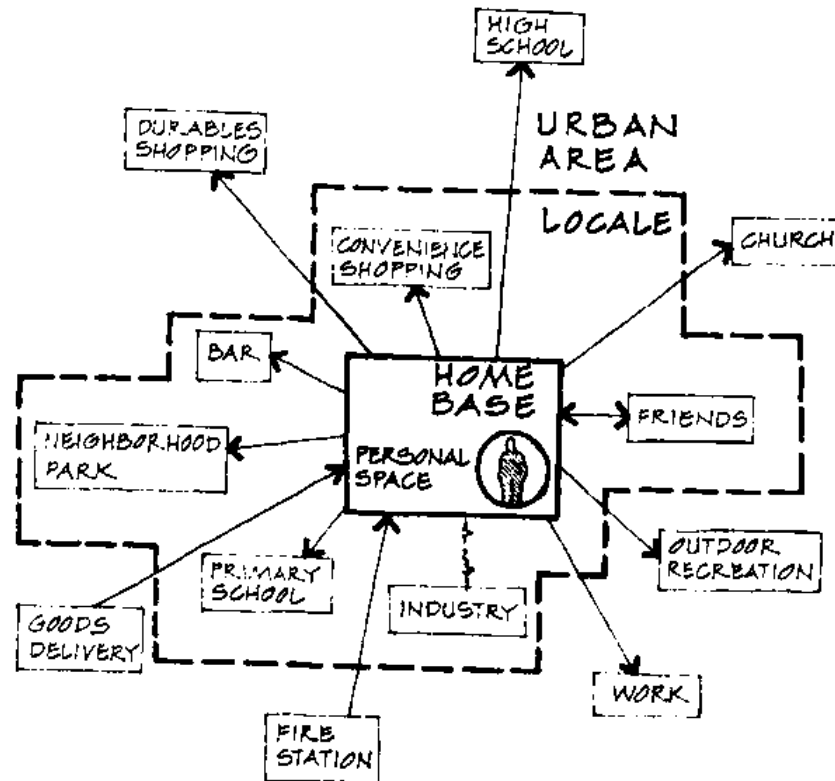
Focus on the relationship between the site and the larger community, and its immediate area.

Urban activity patterns: the city is centered to reduce the friction distance, (means of transportation) which was larger in the past.

Local activity patterns: Sectors of the city has a predominant use, with supporting uses. Some uses need to be placed between a variety of uses to succeed, like commercial centers.



Urban spatial patterns

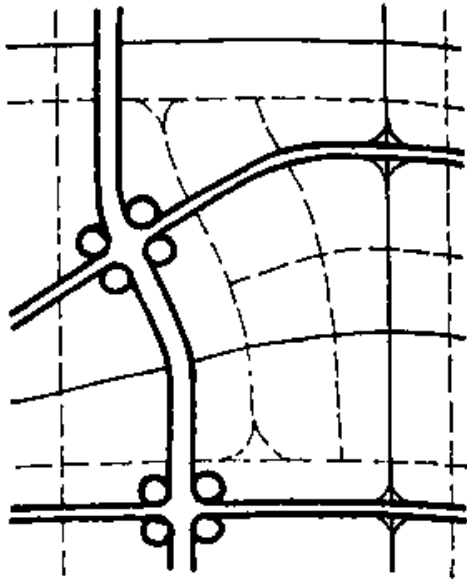


Perceptual and activities territories

Behavioral Environment

Transportation and circulation

Accessibility to the site has a major impact on its value. Projects include walkways, roads and parking. Access should have minimal visual impact, be sensitive to the natural environment, and easy to comprehend.



Streets Hierarchy, expressway, major arterial, collector, local streets.

Utilities

Water, sewer, electricity, telephone, and other services lines should be aligned with streets and pathways. Some regulations might control the expansion of utilities to certain areas.

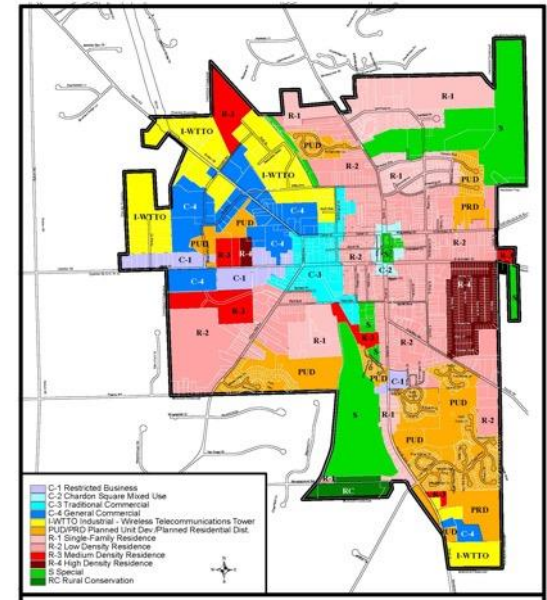


Radburn Development, New Jersey

Institutional controls

Zoning codes regulate where to build what and how to build it (city specific). Building codes are usually general.

Cities might have a master plan that smaller projects in the city should adhere to.



Zoning map, city of Chardon , Ohio

The Spatial Environment/ Natural Elements

Natural environments are complete ecosystems that might be affected by development.

Heat Islands: Areas where manufactured materials (with high reflectivity, low conductivity) are used, concrete, brick, asphalt; heat increase.

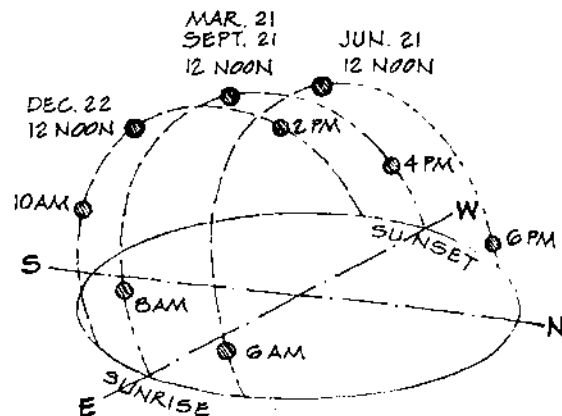
Climate:

Every region has different climate based on its **geographic location, amount of sunlight, precipitation; wind direction, force, and frequency; amount and orientation of built structures.**

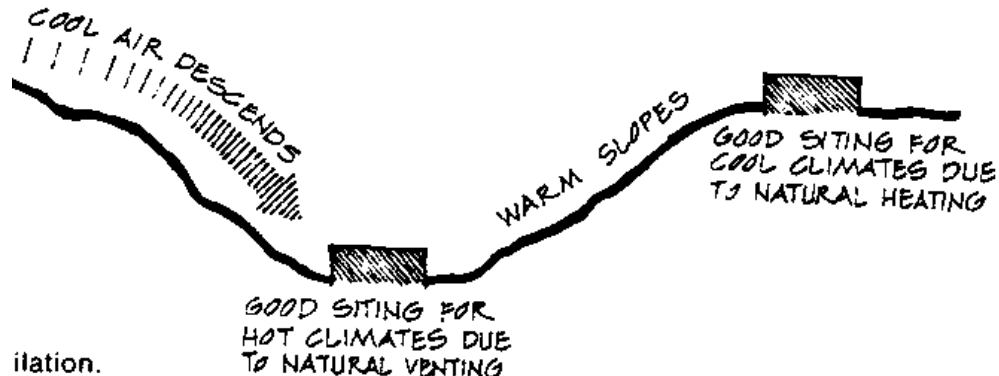
Microclimate is affected by:

Ground surface material which absorb, radiate, or reflect sun heat. Trees which provide shade, and emit pure water and oxygen.

Land form which affect the air movement, the exposure to the sunlight.



Sun path, equinox and solstice

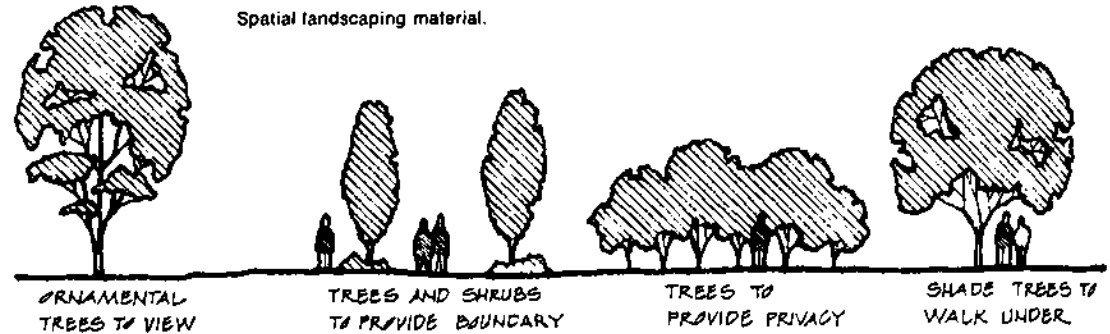


Sitting, topography and ventilation

The Spatial Environment/ Natural Elements

Vegetation and wildlife: Every plant community is associated with a climate, region, and soil type. It is also a host for a wildlife.

Wetland: are very important to replenish ground water. and very sensitive for change.



Deciduous trees



Color variation in shrubs

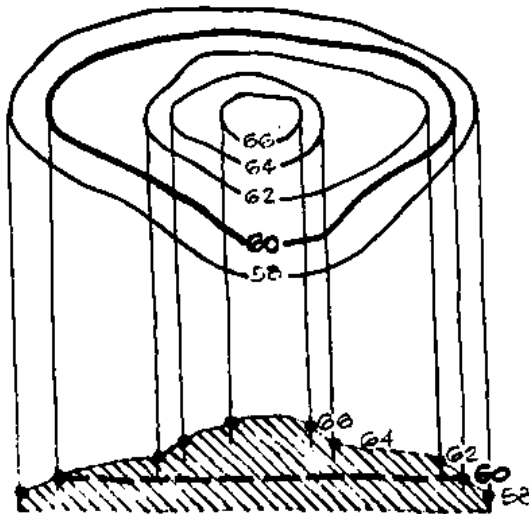


Grass cover

The Spatial Environment/ Natural Elements

Topography: focuses on three issues:

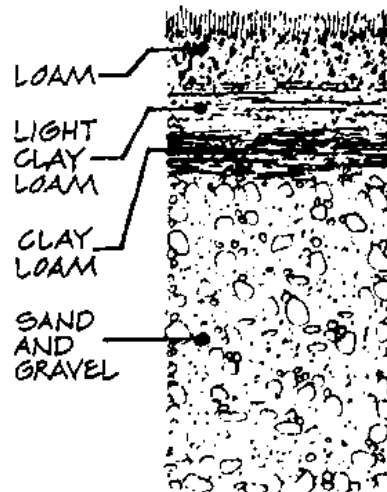
- The ongoing geomorphological process
- The slope of land 4% or more
- The site potential (views, overlooks, enclosures, sequence)



Topography and contours

Soil: can be categorized according to the **particle size**, and **organic contents**.

Soil has ecological (life support), structural (bearing capacity), and architectural (rocks and sand color and texture) values.



Typical soil profile

Boring: gives information on bearing capacity and presence of underground water.



Soil types

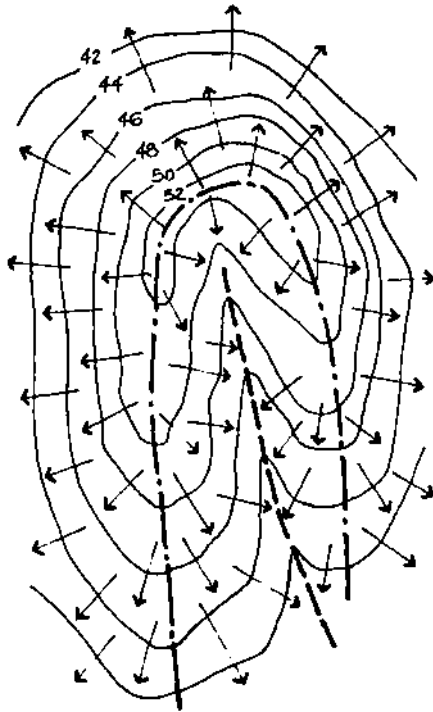
The Spatial Environment/ Natural Elements

Water: Supports life forms, affects the possibility of building (wetlands), has a design potential (repose, reflection from surface water).

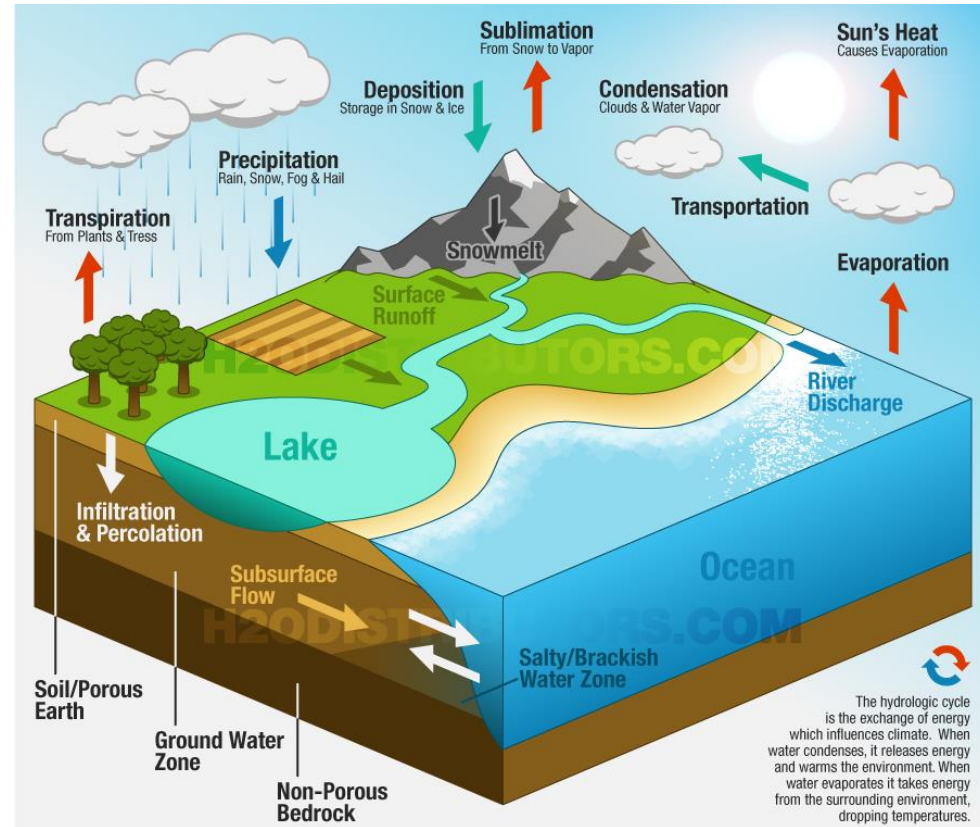
Natural drainage pattern include surface water run off in rates allow for infiltration.

Design consideration:

- Ground surface in development should not exceed natural rate.
- Run off water is away from buildings, roads, and are not collected in gullies.



Drainage diagram, run off direction, watershed, gullying



Hydrologic cycle

The Spatial Environment/ Architectural Elements

Elements defining spaces:

Ground planes: Piazzas, hills

Vertical planes: Buildings, trees.

Overhead plans: Sky, tall buildings.

Elements influence space quality:

Shape of space, volume, and proportions.

Light and shade

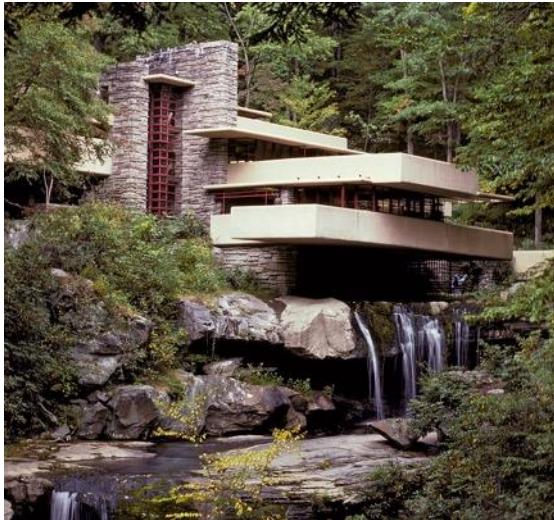
Color and texture.



Piazza del Campidoglio, Rome, Italy. 1538



Piazza del Campo, Siena, Italy 1466



Kaufmann House, Frank Lloyd Wright, 1936



Prada Foundation, Rem Koolhaas, 2015

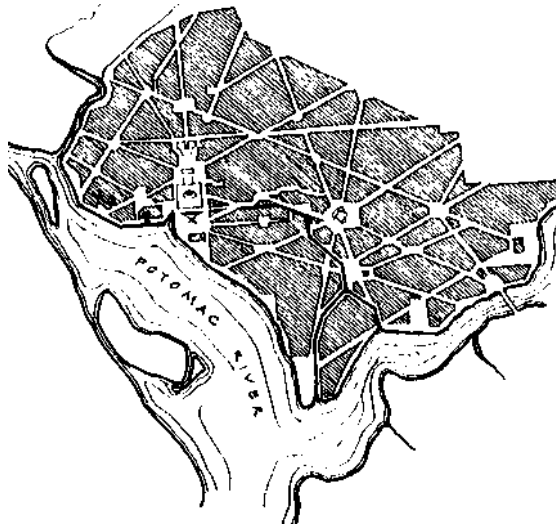
The Spatial Environment/ Architectural Elements

Elements ordering spaces:

Spaces are linked and are defined by the space before and after. Ordering spaces may focus on: **Hierarchy, Repetition, Rhythm, Transition.**

contained elements:

Elements like site furniture, sculptures, and light posts, give human scale to the space.



Series of spaces, Washington DC



Lingaraja Temple, India, 1100



Hierarchy of entry , Oxford, England



The bean, Chicago, Anish Kapoor

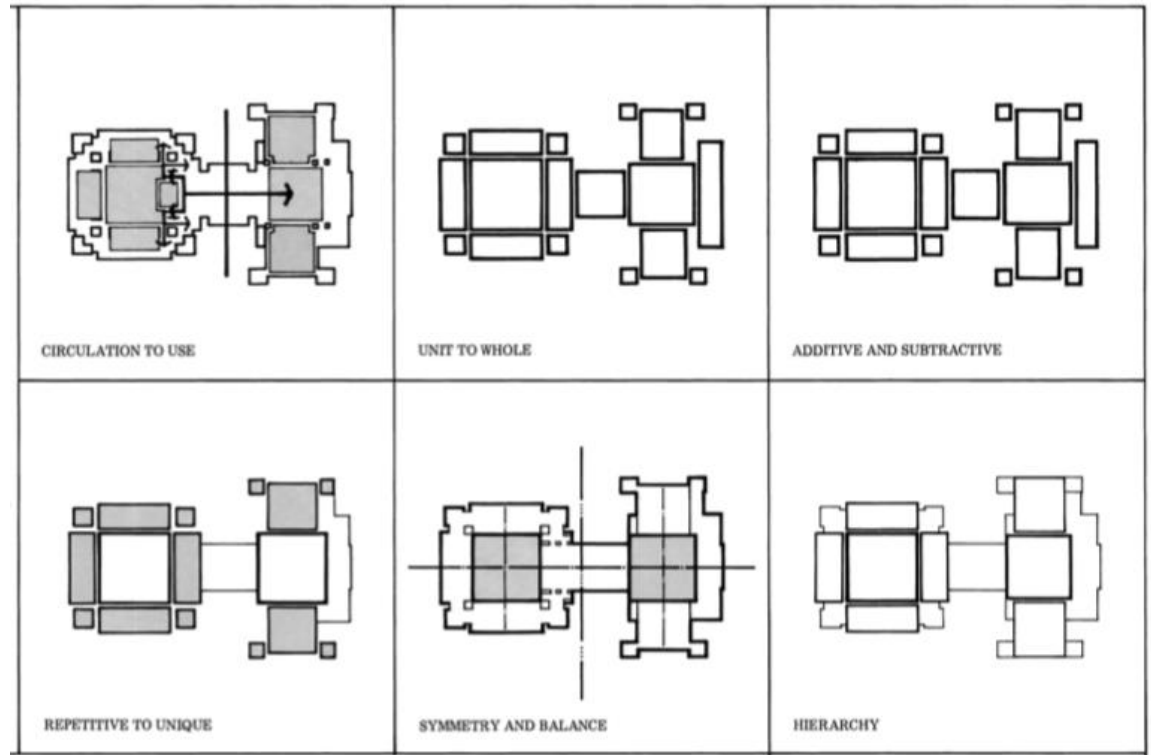
Perceptual Environment

Perceptual structure

Human form a mind map of paths, edges, districts, and landmarks. That's how we remember locations.

Meaning and legibility:

Spaces should be sequenced in logical, functional, and meaningful order. And they should be easily understood by all users.



Unity Temple, Illinois, Frank Lloyd Wright, 1906

References

Snyder & Catanese, Introduction to
Architecture, McGraw Hill, 1979

Websites:

All images are from the internet, and used for
demonstration purposes.