Tishk International University
Engineering Faculty
Architecture Department

Theory of Architecture I

Lecture 6:

Ordering Principles in Architecture

1st Grade

Instructor: Dr. Salem Mokhtar

Introduction

This lecture is about Ordering Principles..There are six types of Ordering; Axis, Symmetry, Hierarchy, Datum (a fixed starting point of a scale or operation), Rhythm (Repetition) and Transformation.

At the end of this lecture, the students will have basic knowledge about Ordering Principles.

Ordering Principles

There are six types of Ordering Principles:

1 . Axis

2. Symmetry

3. Hierarchy

4. Datum (a fixed starting point of a scale or operation)

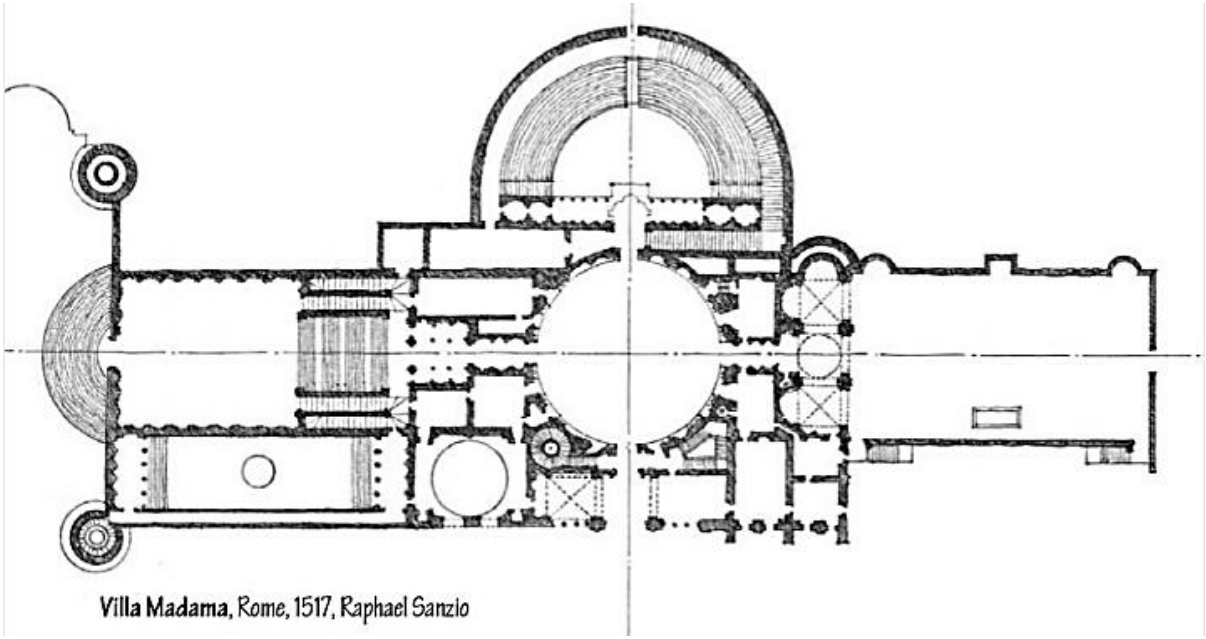
5. Rhythm Repetition

6. Transformation

1. Axis

A line established by (connecting) two points in space, about which forms (and spaces) can be arranged in an asymmetrical or a symmetrical, balanced manner.

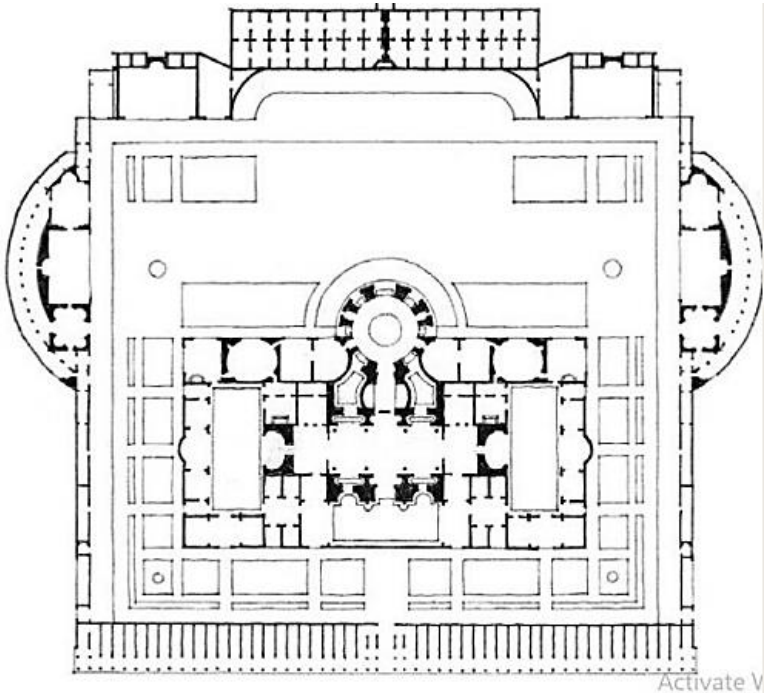
It is an imaginary line that can denote structure, procession, direction, views, line of rotation and so on. An axis is used to align elements in the design, and to arrange and plan spaces.



Villa Madama, Rome, 1517, Raphael Sanzio

2. Symmetry

The balanced distribution and arrangement of equivalent forms and spaces on opposite sides of a dividing line or plane, or about a center or axis.

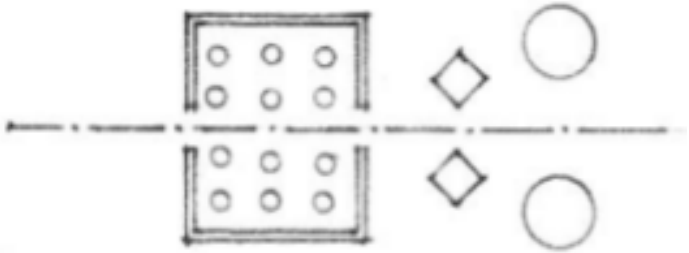


Baths (Thermae) of Caracalla, Rome, A.D. 211-17

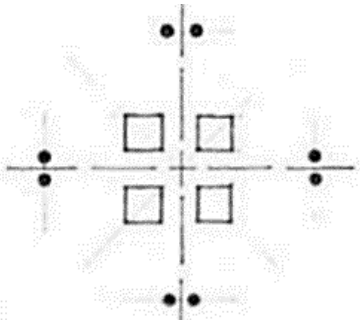
2. Symmetry

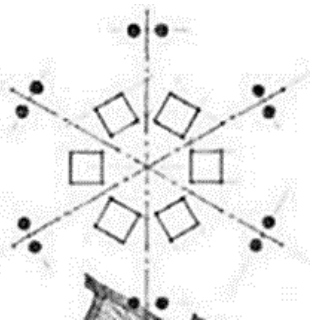
There are two fundamental types of symmetry:

1. **Bilateral (dual) symmetry** refers to the balanced arrangement of similar or equivalent elements on opposite sides of a median axis so that only one plane can divide the whole into essentially identical halves.



2. **Radial symmetry** refers to the balanced arrangement of similar, radiating elements such that the composition can be divided into similar halves by passing a plane at any angle around a center point or along a central axis.

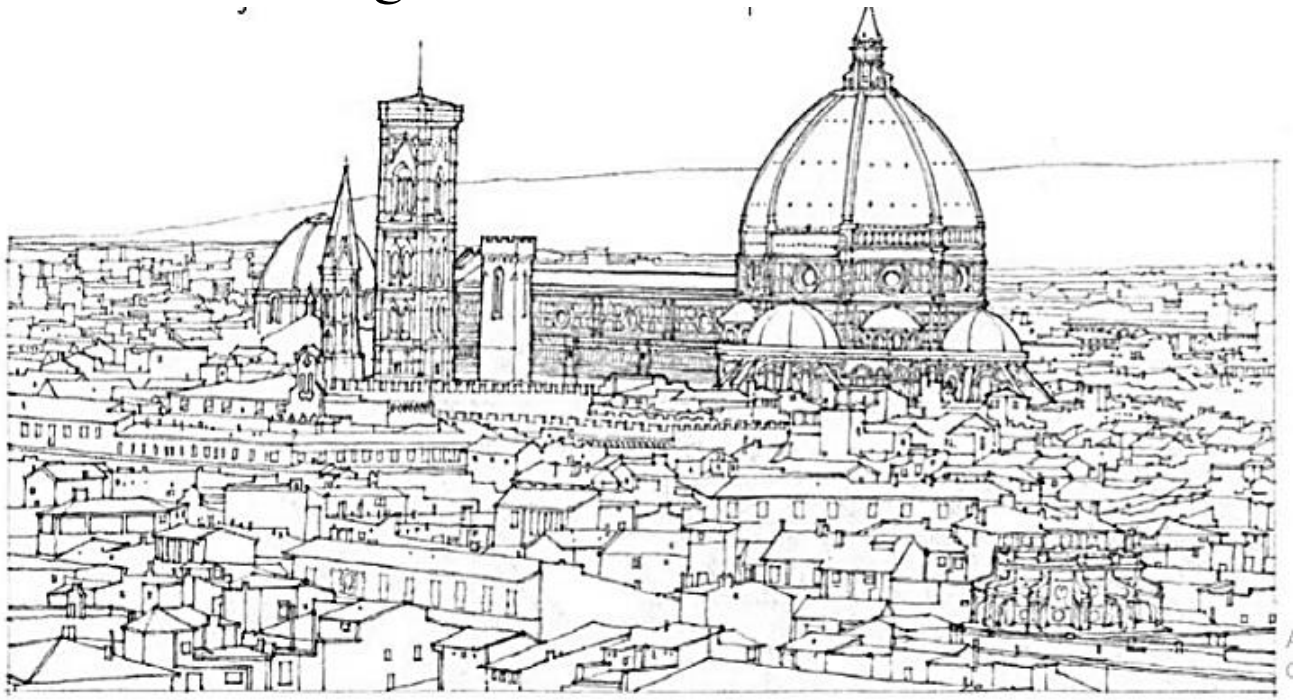




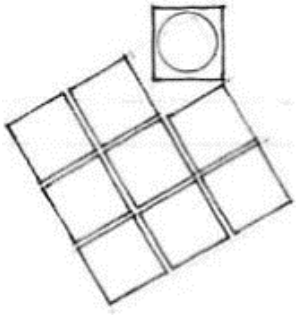
3. Hierarchy

التسلسل الهرمي

- A system or organization in which people or groups are ranked one above the other according to status or authority.
- The articulation of the importance or significance of a form or space by its size, shape, or placement relative to the other forms and spaces of the organization.

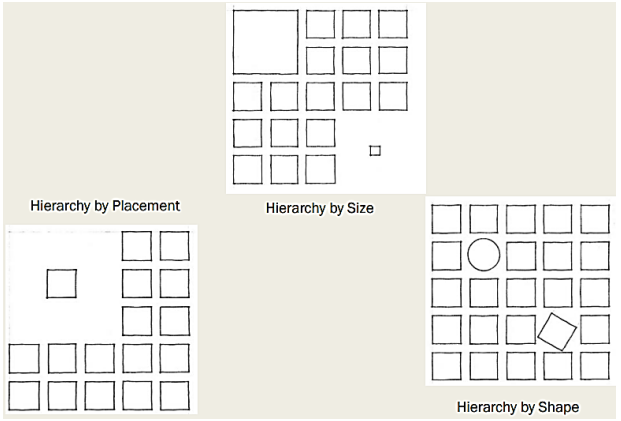


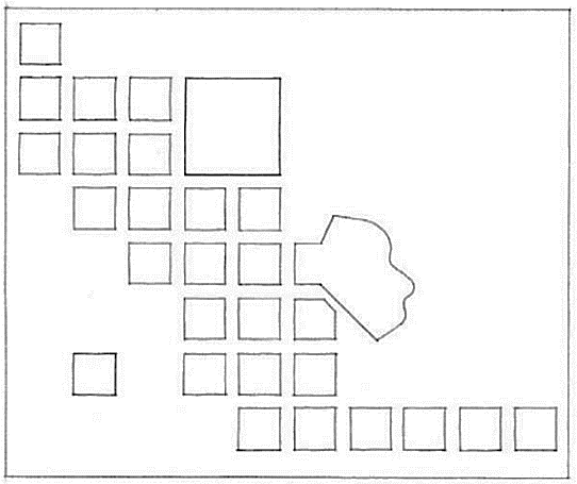
3. Hierarchy



For a form or space to be articulated as being important or significant to an organization, it must be made uniquely visible. This visual emphasis can be achieved by endowing a form or shape with:

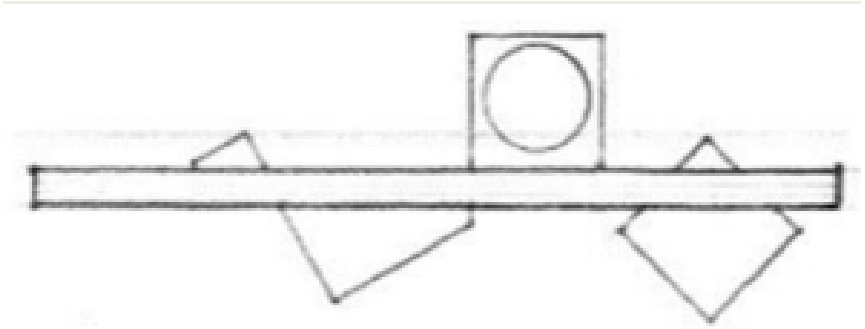
- Exceptional size
- A unique shape
- A strategic location

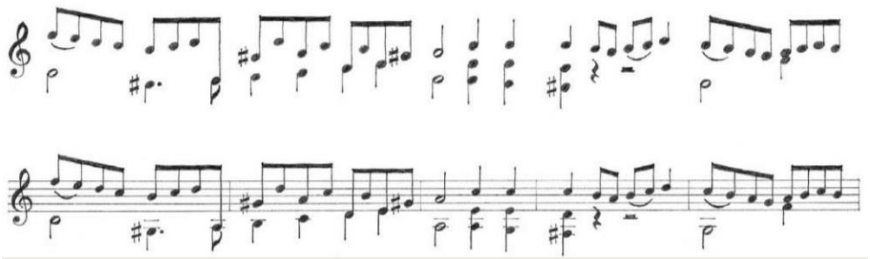




4. Datum

- A line, plane, or volume that, by its continuity and regularity, serves to gather, measure, and organize a pattern of forms and spaces.
- Datum binds together the design elements. It can be a line, road, flat plane and so on.

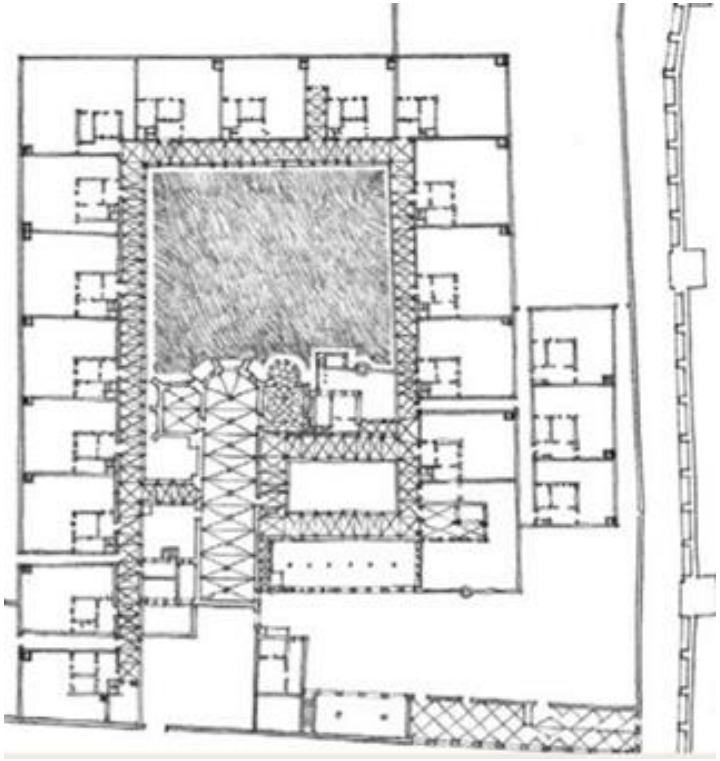




4. Datum

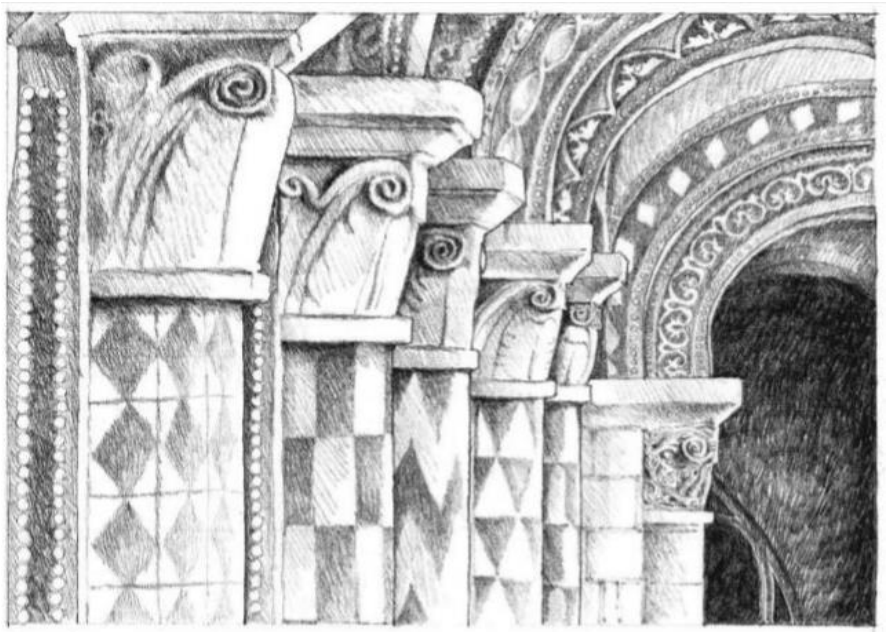
Datum (a fixed starting point of a scale or operation)

A datum refers to a line, plane, or volume of reference to which other elements in a composition can relate. It organizes a random pattern of elements through its regularity, continuity, and constant presence. For example, the lines of a musical staff serve as a datum in providing the visual basis for reading notes and the relative pitches of their tones.



5. Rhythm

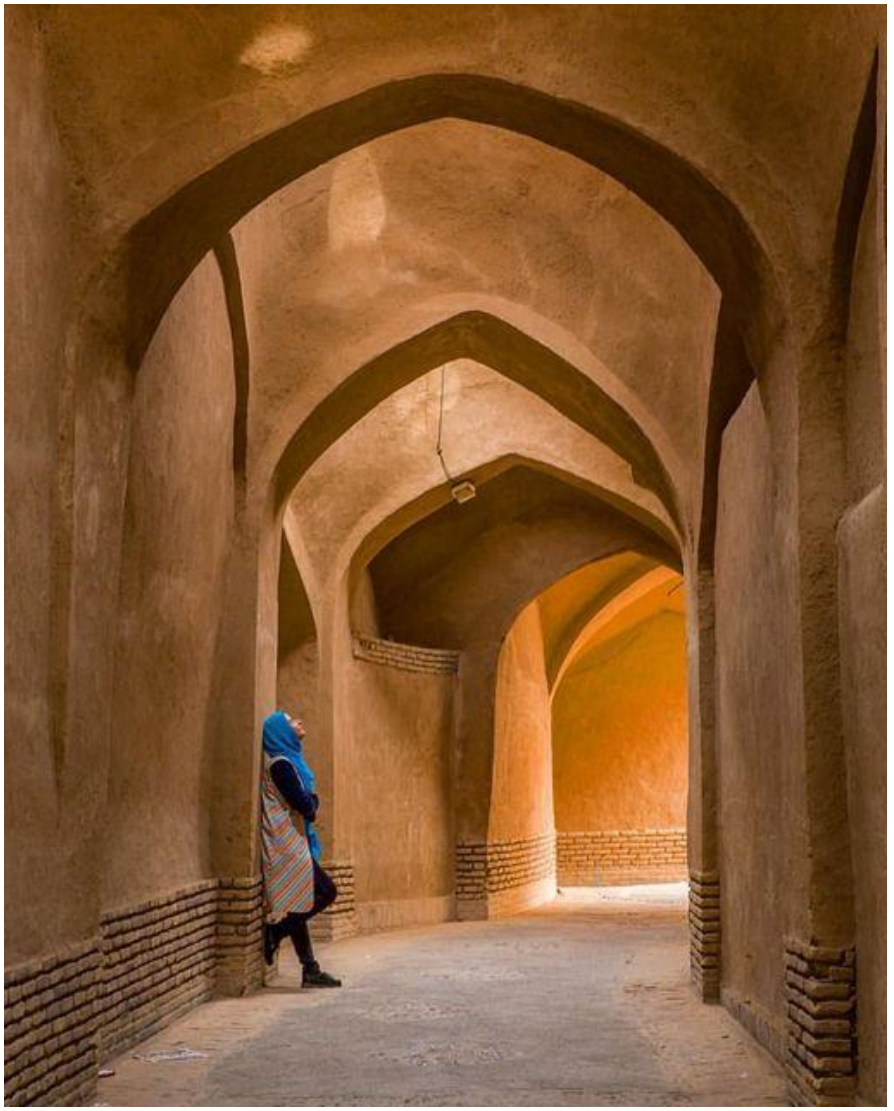
- A unifying movement characterized by a patterned repetition or alternation of formal elements or motifs (decoration) in the same or a modified form.
- Rhythm differs from repetition in that in the former the shape change but it is still recognizable, whereas in the later the shape remains constant.



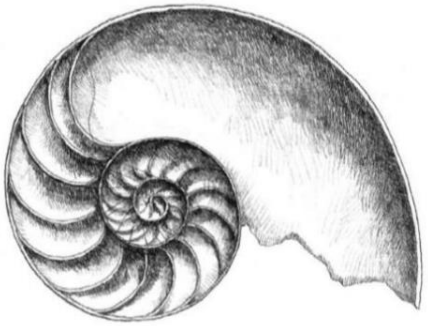
Column Details, **Notre Dame la Grande**, Poitiers, France, 1130–45

5. Rhythm

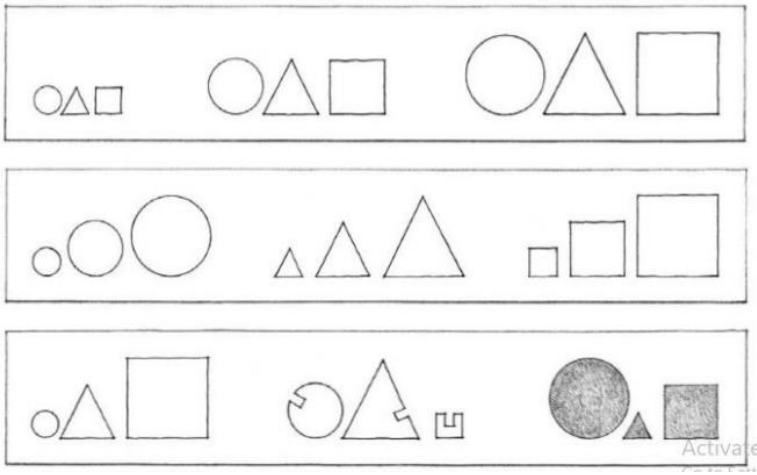
Rhythm refers to any movement characterized by a patterned reappearance of elements or motifs at regular or irregular intervals. The movement may be of our eyes as we follow recurring elements in a composition, or of our bodies as we advance through a sequence of spaces

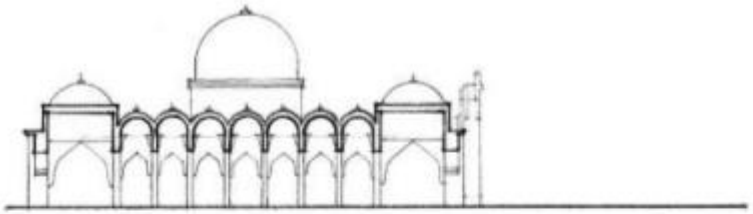


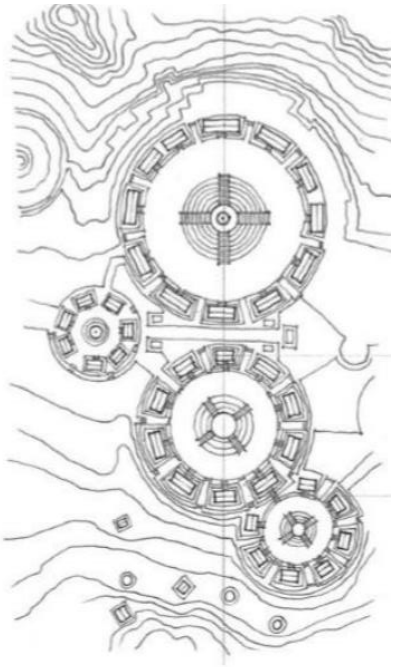
REPETITION

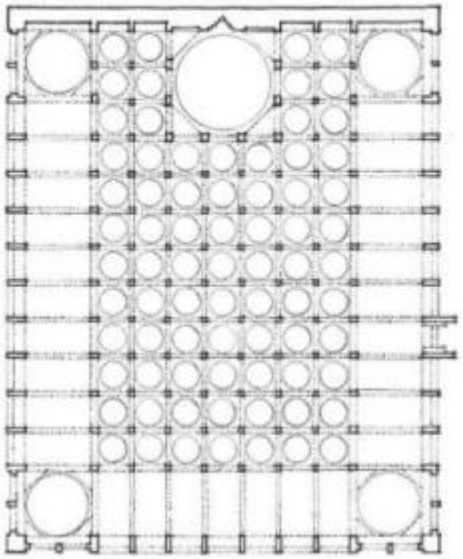


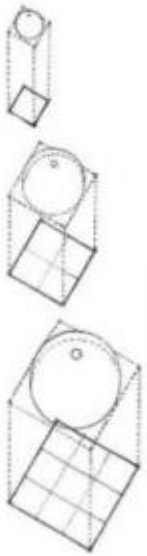
- Size
- Shape
- Detail Characteristics

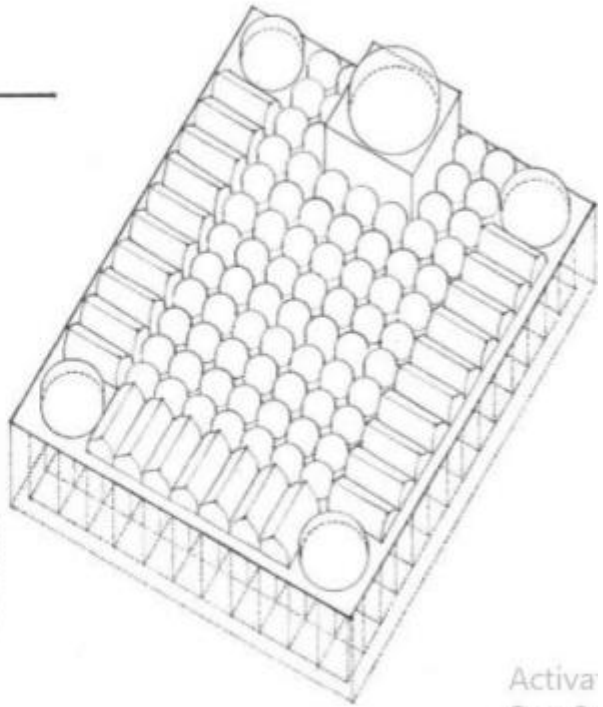








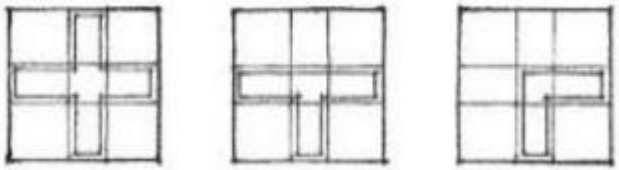


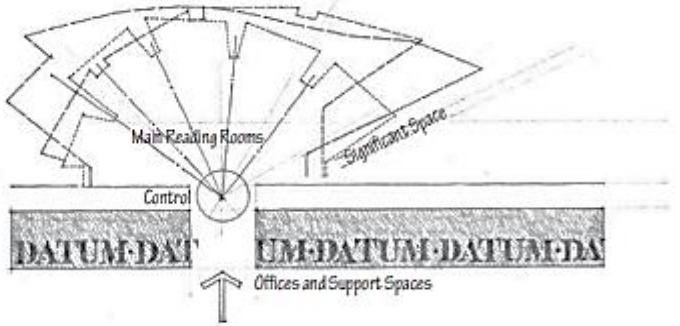


Jami Masjid, Gulbarga, India, 1367

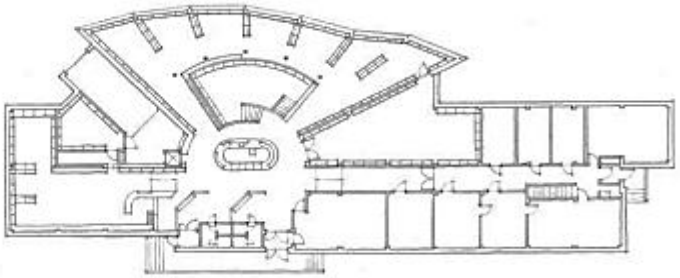
6. Transformation

The principle that an architectural concept, structure, or organization can be altered through a series of discrete manipulations and permutations in response to a specific context or set of conditions without a loss of identity or concept.

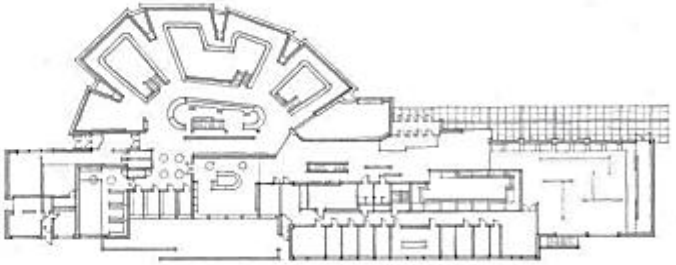




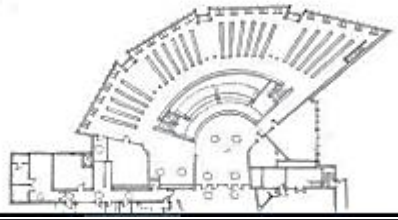
Scheme for 3 libraries by Alvar Aalto



Seinäjoki Public Library, Seinäjoki, Finland, 1963–1965



Rovaniemi City Library, Rovaniemi, Finland, 1963–1968



Library of Mount Angel, Benedictine College,

- Transformation of form is achieved by changing size, shape, rotating, st
morphing and so on.

In conclusion, this lecture presented the six types of Ordering Principles: Axis, Symmetry, Hierarchy, Datum, Rhythm, and Transformation.

At the end of this lecture, the students will have basic knowledge about types of Ordering Principles.

- Ching, Frank, (1943). Architecture form, space and order.

Thank you