

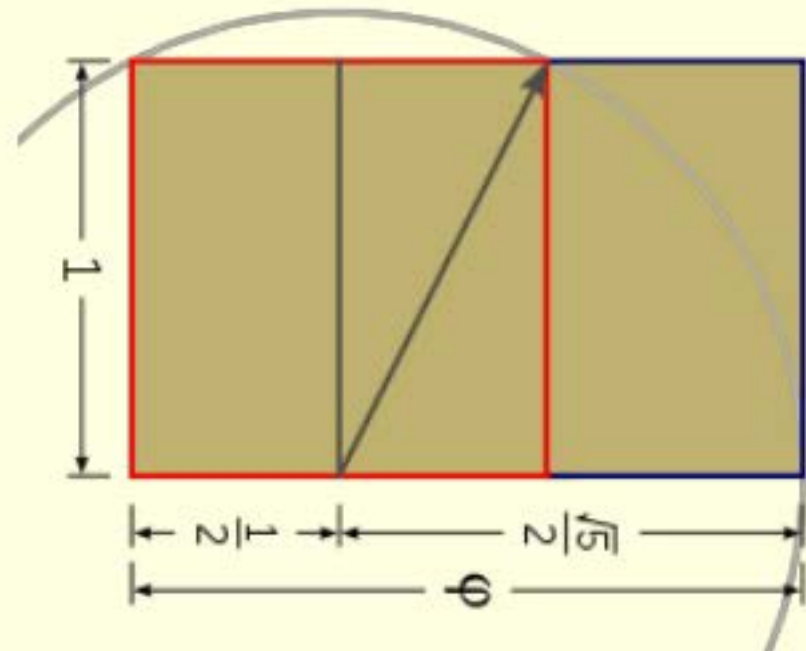
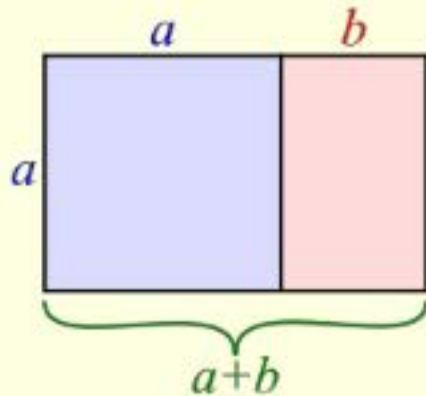
Complied by : Manish Jain
Gr. Floor , Ashoka apartment
Bhawani Singh Road
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P R I N C I P L E O F **A R C H I T E C T U R E**

THE GOLDEN RATIO

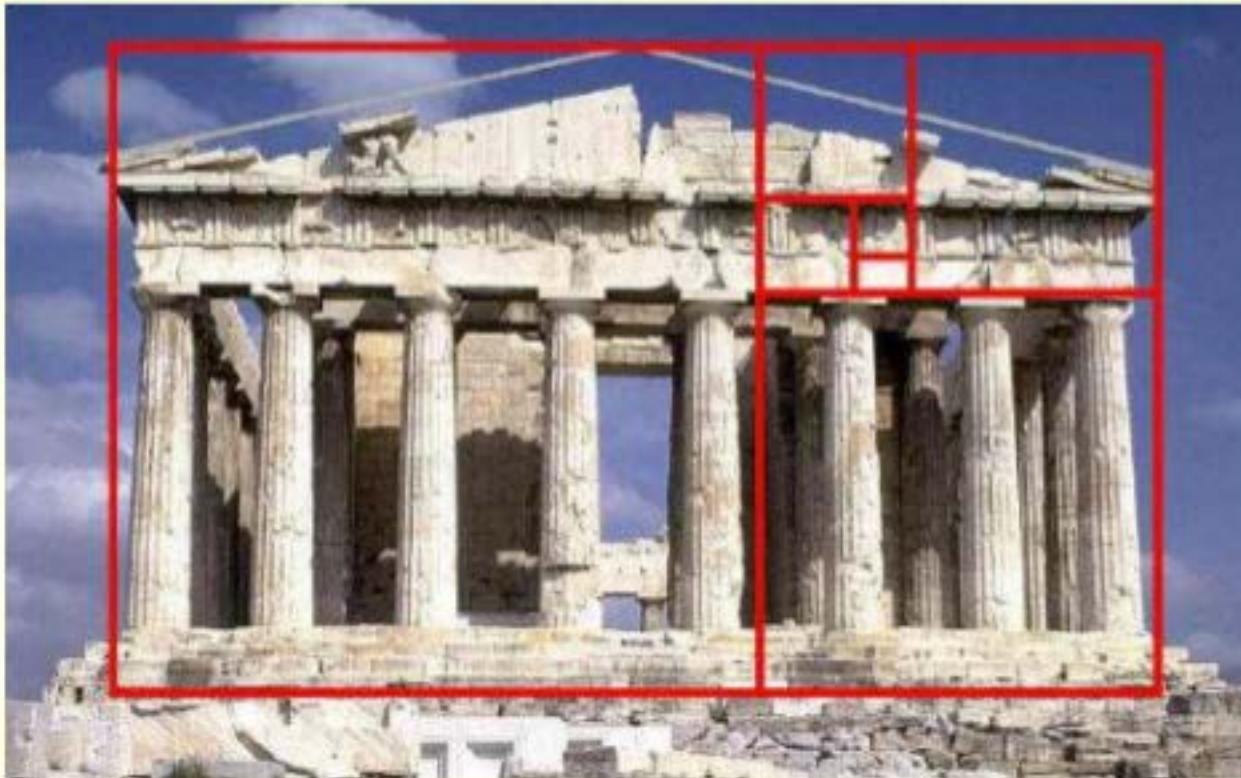
Two quantities are in the **golden ratio** if the ratio of the sum of the quantities to the larger quantity is equal to the ratio of the larger quantity to the smaller one.

$$\frac{a + b}{a} = \frac{a}{b} \equiv \varphi.$$



$$\varphi = \frac{1 + \sqrt{5}}{2} = 1.6180339887\dots$$

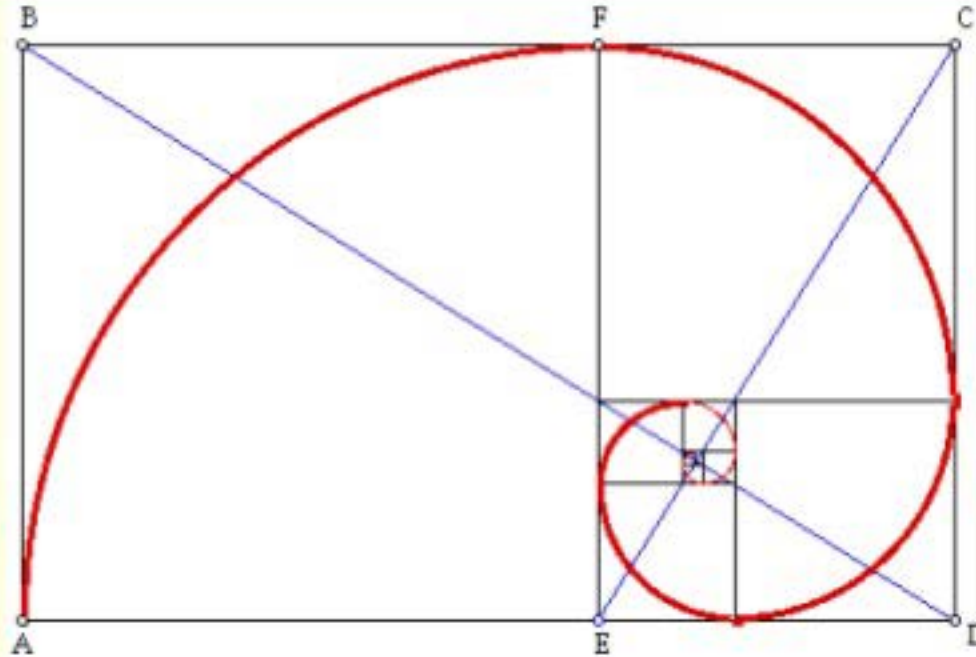
THE GOLDEN RATIO



Parthenon, Acropolis, Athens.

This ancient temple fits almost precisely into a golden rectangle.

THE GOLDEN SPIRAL



Assume that rectangle ABCD is a Golden Rectangle.

Hence, $AD/AB = AE/ED$.

But, $FE = AE$,

$FE/ED = \text{Phi}$.

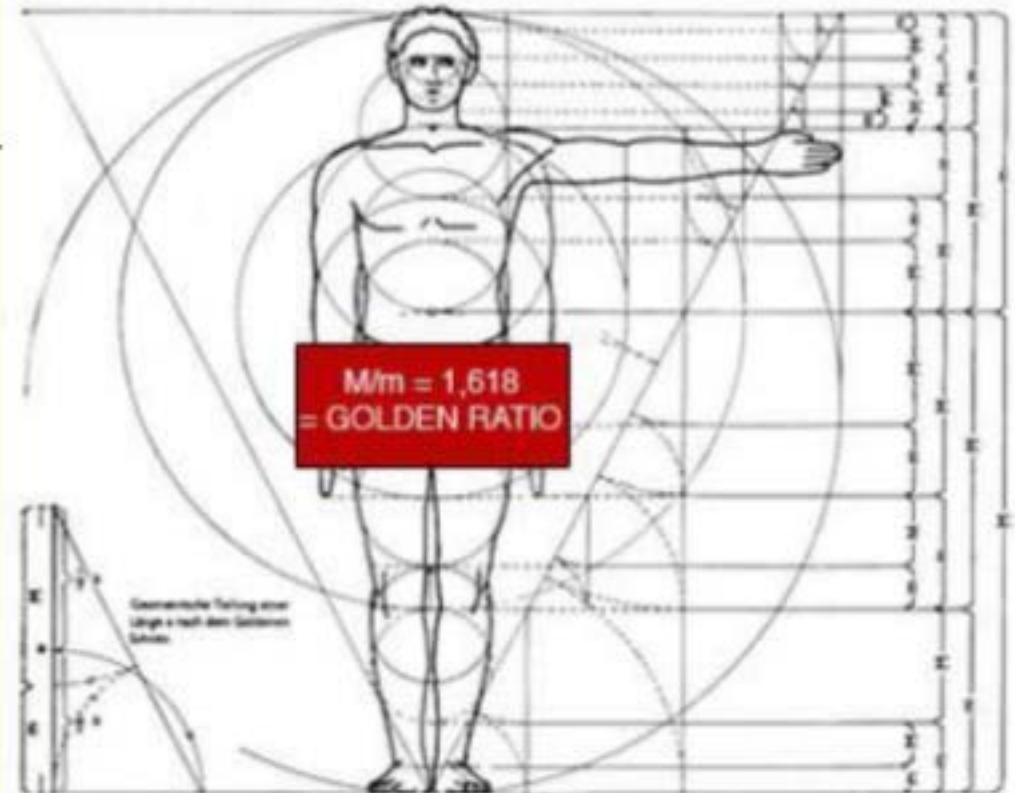
Hence, rectangle FCDE is a Golden Rectangle.

We have two similar rectangles and so since

$\text{Phi} = AD/EF$ then $BD/CE = \text{Phi}$.

THE GOLDEN RATIO IN HUMAN BODY

The first example of the golden ratio in the average human body is that when the distance between the navel and the foot is taken as 1 unit, the height of a human being is equivalent to 1.618.



Some other golden proportions in the average human body are:

The distance between the finger tip and the elbow / distance between the wrist and the elbow,

The distance between the shoulder line and the top of the head / head length,

The distance between the navel and the top of the head / the distance between the shoulder line and the top of the head,

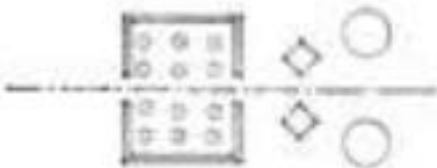
The distance between the navel and knee / distance between the knee and the end of the foot.

PRINCIPLE OF ARCHITECTURE



AXIS

A Line established by two point in space about which form and spaces can be **arranged in symmetrical and balanced manner**



SYMMETRY

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



HIEARCHY

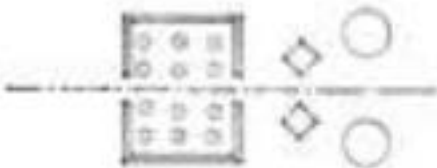
The **articulation of importance and significance of form or space by its size shape and placement** relative to **other forms and spaces of organization**

PRINCIPLE OF ARCHITECTURE



AXIS

A Line established by two point in space about which form and spaces can be **arranged in symmetrical and balanced manner**



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HIEARCHY

The **articulation of importance and significance of form or space by its size shape and placement** relative to **other forms and spaces of organization**

PRINCIPLE OF ARCHITECTURE



RHYTHM

Unifying movement characterized by **patterned repetition or alteration of formal elements** or motifs in same or modified forms



DATUM

A line plane or volume that, by its continuity and regularity, serves together, measure and organize a pattern of form and spaces



TRANSFORMATION

The principle that an architectural concept or organization can be retained, strengthened and built upon through a series of discrete **manipulation and transformations**

AXIS



INDUCE MOVEMENT

The axis is a linear condition , it has qualities of length and direction and induce movement and views along its path



TERMINATION AT BOTH ENDS



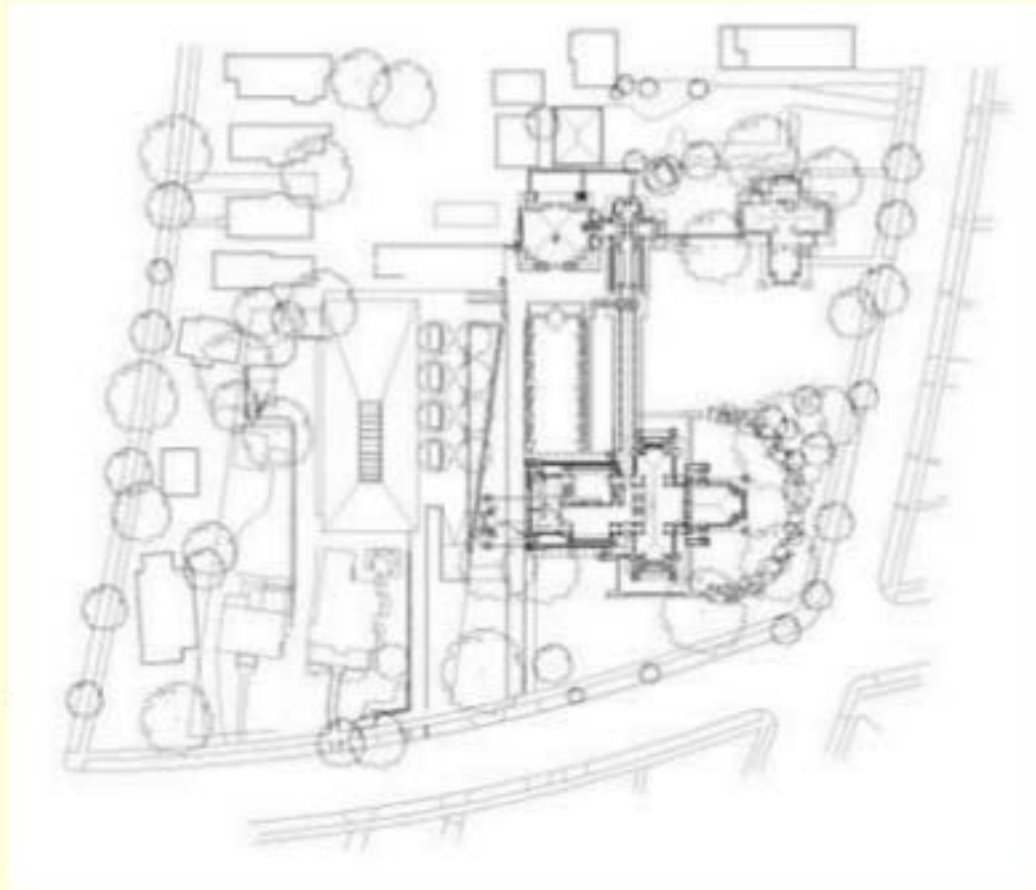
REINFORCED BY DEFINING EDGES



ESTABLISHED BY SYMMERTICAL ARRANGEMENT

by Ar. Manish Jain (www.frontdesk.co.in)

AXIS



DARWIN D. MARTIN HOUSE & ESTATE: buffalo New York
, 1904. Frank Lloyd Wright

AXIS



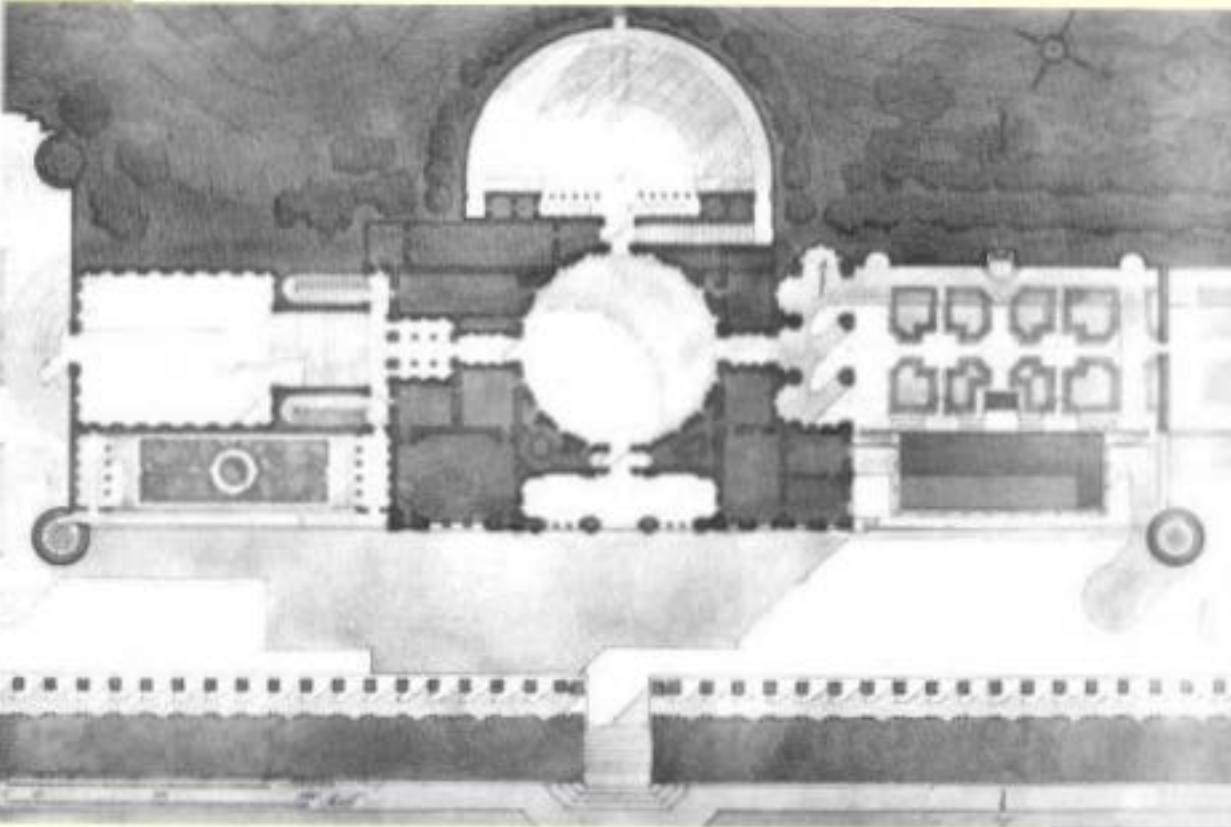
DARWIN D. MARTIN HOUSE & ESTATE : buffalo New York
, 1904. Frank Lloyd Wright

AXIS



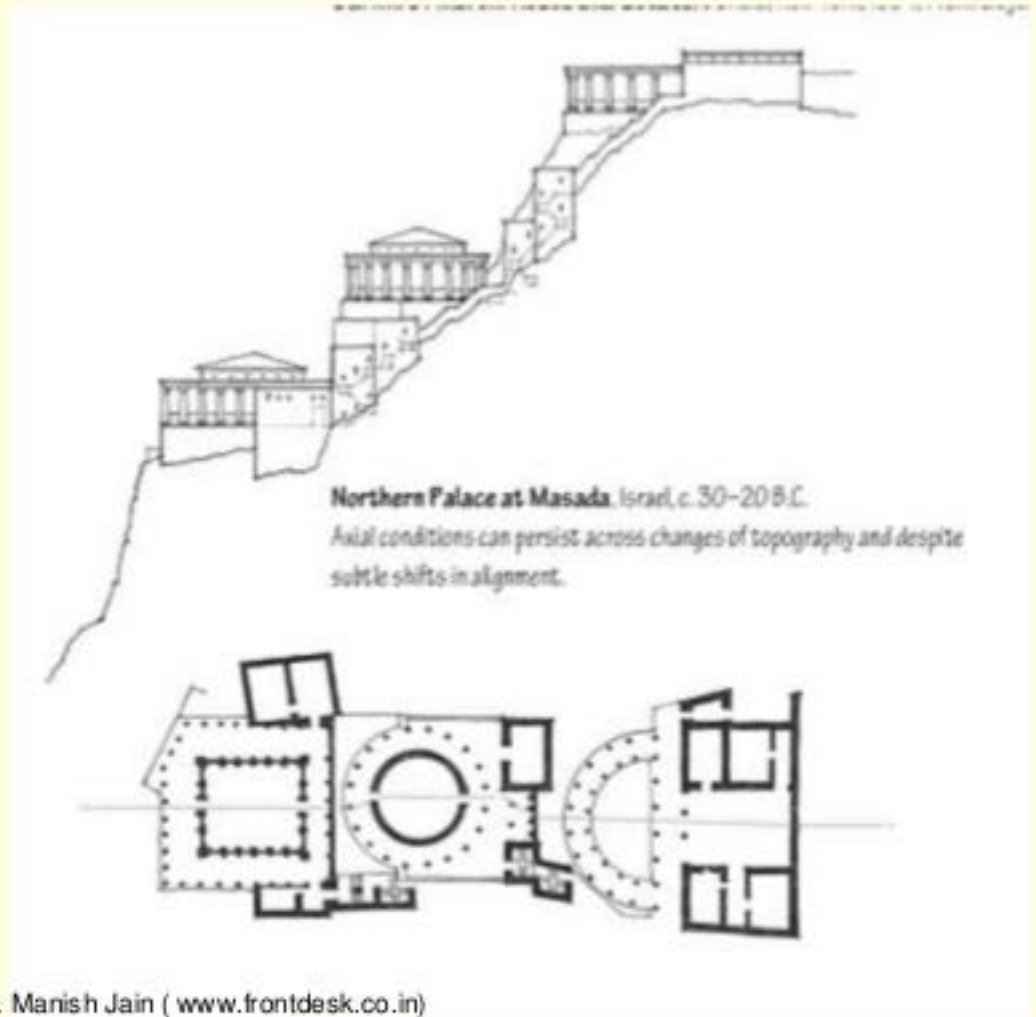
**DARWIN D. MARTIN HOUSE & ESTATE : buffalo New York
, 1904. Frank Lloyd Wright**

AXIS



**Villa Madama , Rome 1517
, Raphael Sanzio**

AXIS



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Northern Palace at Masada, Israel, c. 30-20 B.C.

SYMMETRY

Types of symmetry

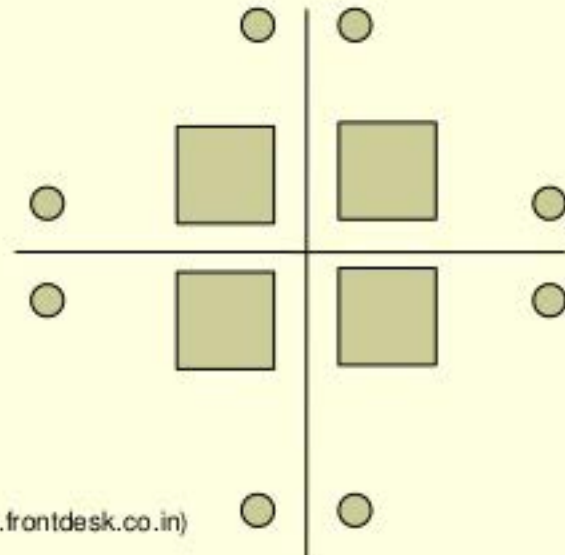
Bilateral Symmetry

Balanced arrangement of equivalent elements about a common axis

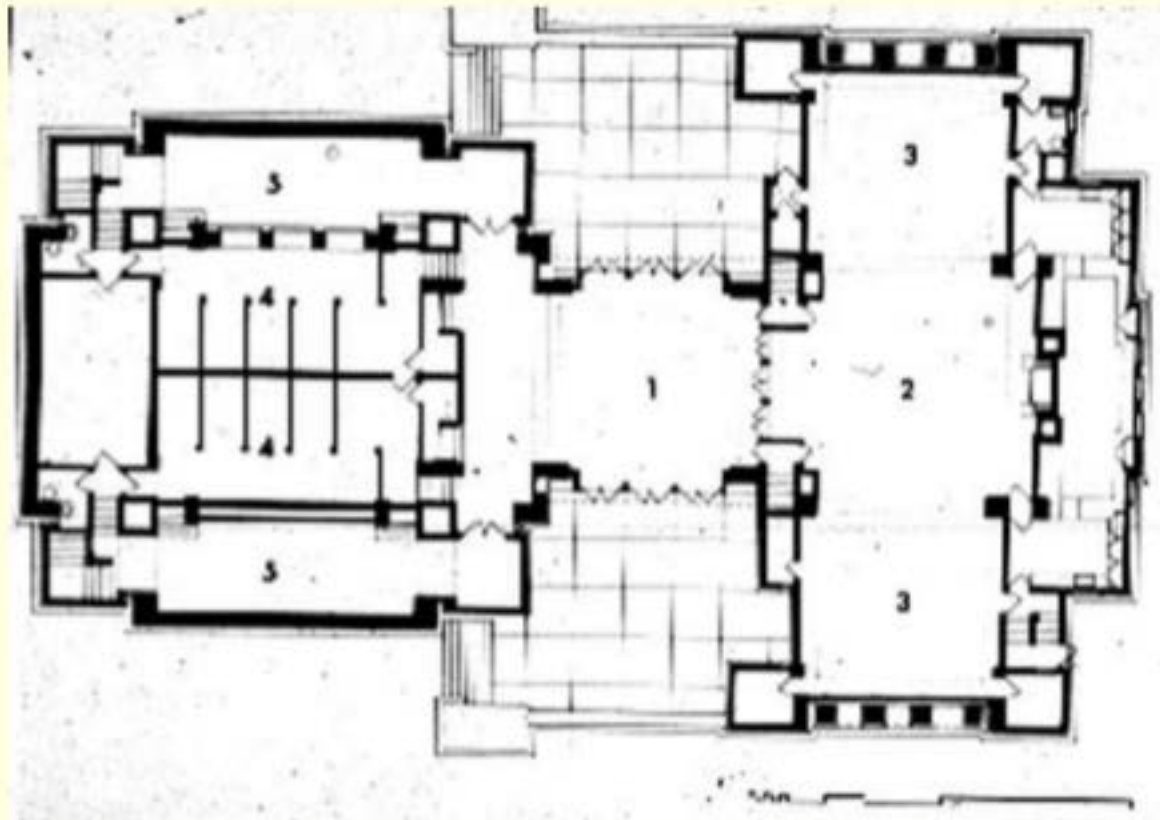


Radial Symmetry

Equivalent elements balanced about Two or more axes that intersect at center point

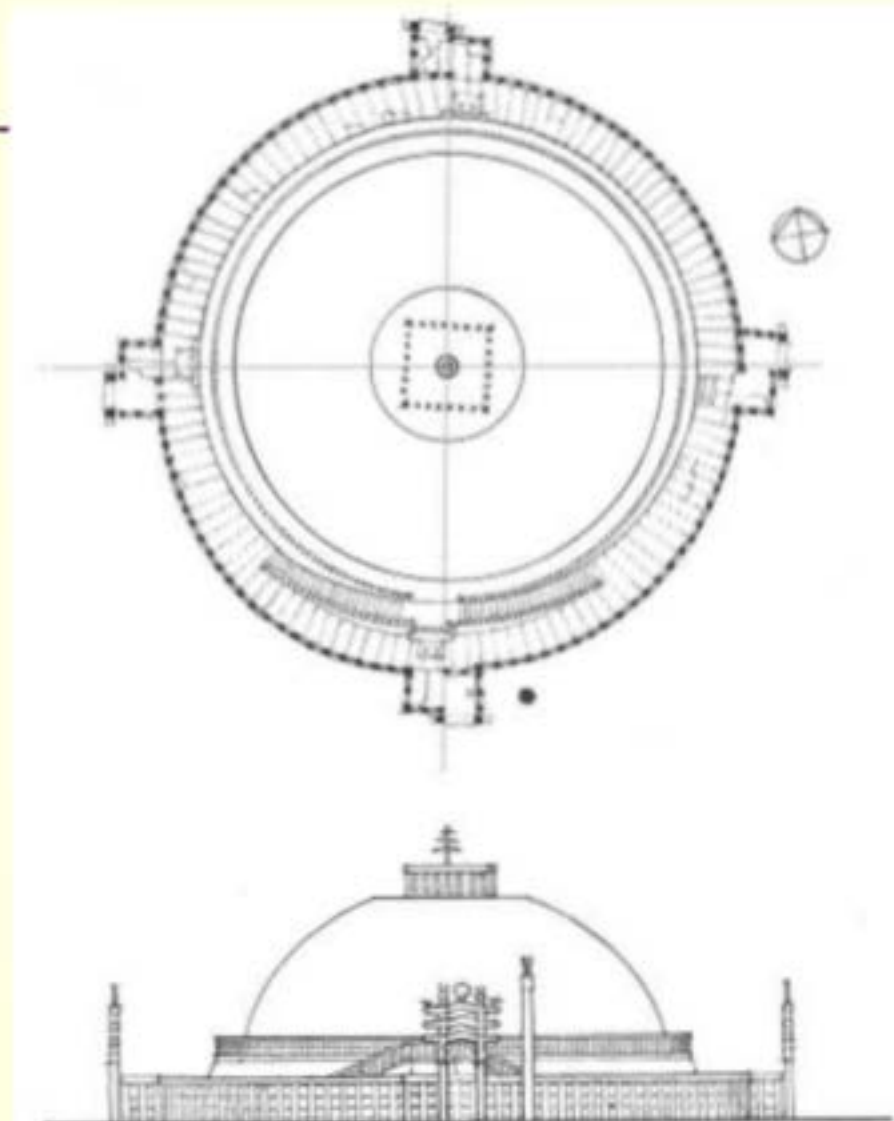


SYMMETRY



Unity Church : oak park Illinois, 1906: Frank Lloyd Wright

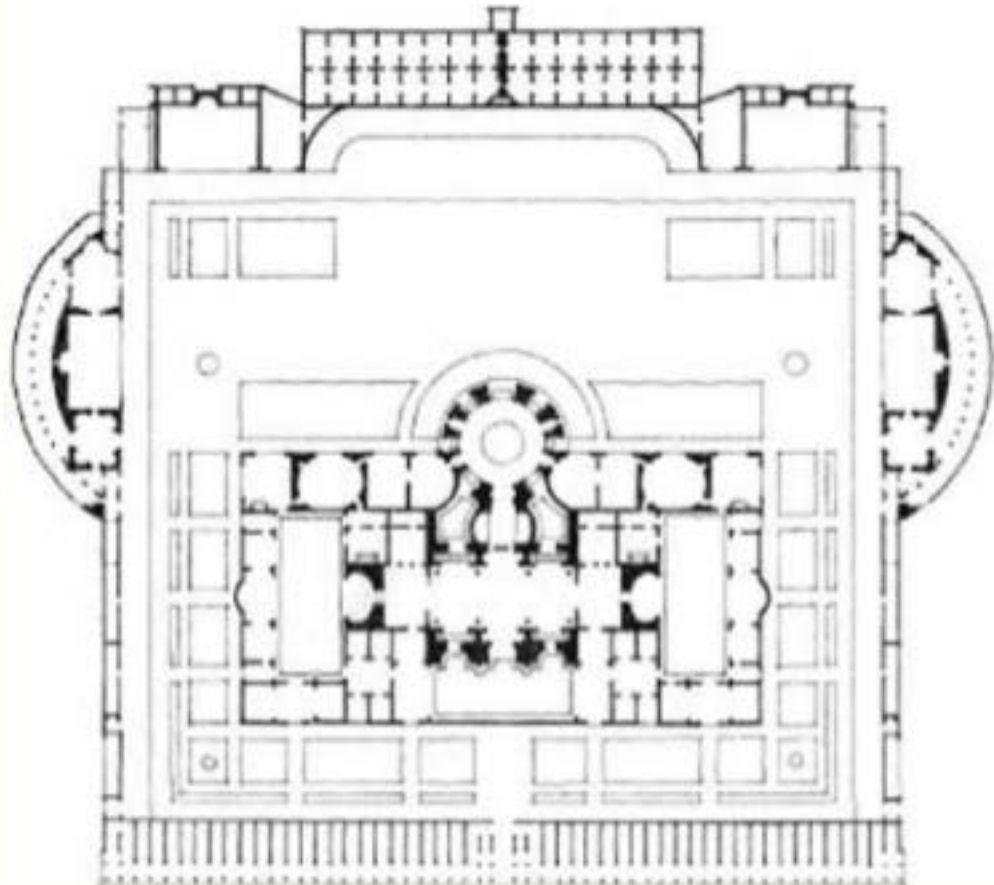
SYMMETRY



Great Stupa at Sanchi , india
c.100B.C.

by Ar. Manish Jain (www.frontdesk.co.in) Great Stupa at Sanchi, India, c. 100 B.C.

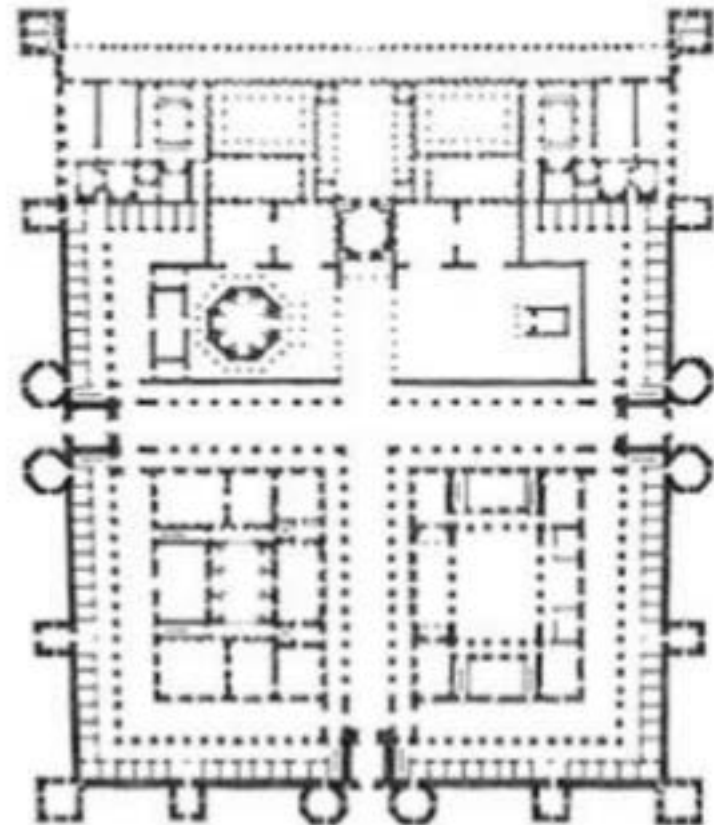
SYMMETRY



Baths (thermae) of Caracalla
, Rome 211-17 AD

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SYMMETRY



Palace of Diocletian , Spalato
,Yugoslavia, c. A.D. 300

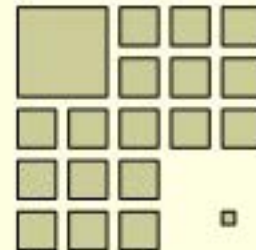
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HIERARCHY

Hierarchy Achieved by

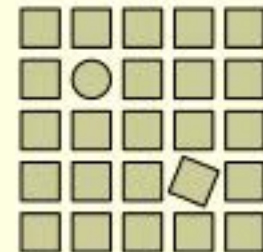
By SIZE

Dominate architectural composition by being significantly different in size



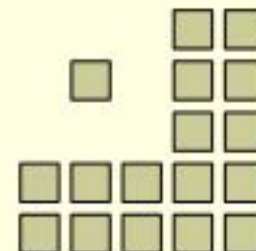
BY SHAPE

Can be made visually dominate by clearly differentiating their shape from other

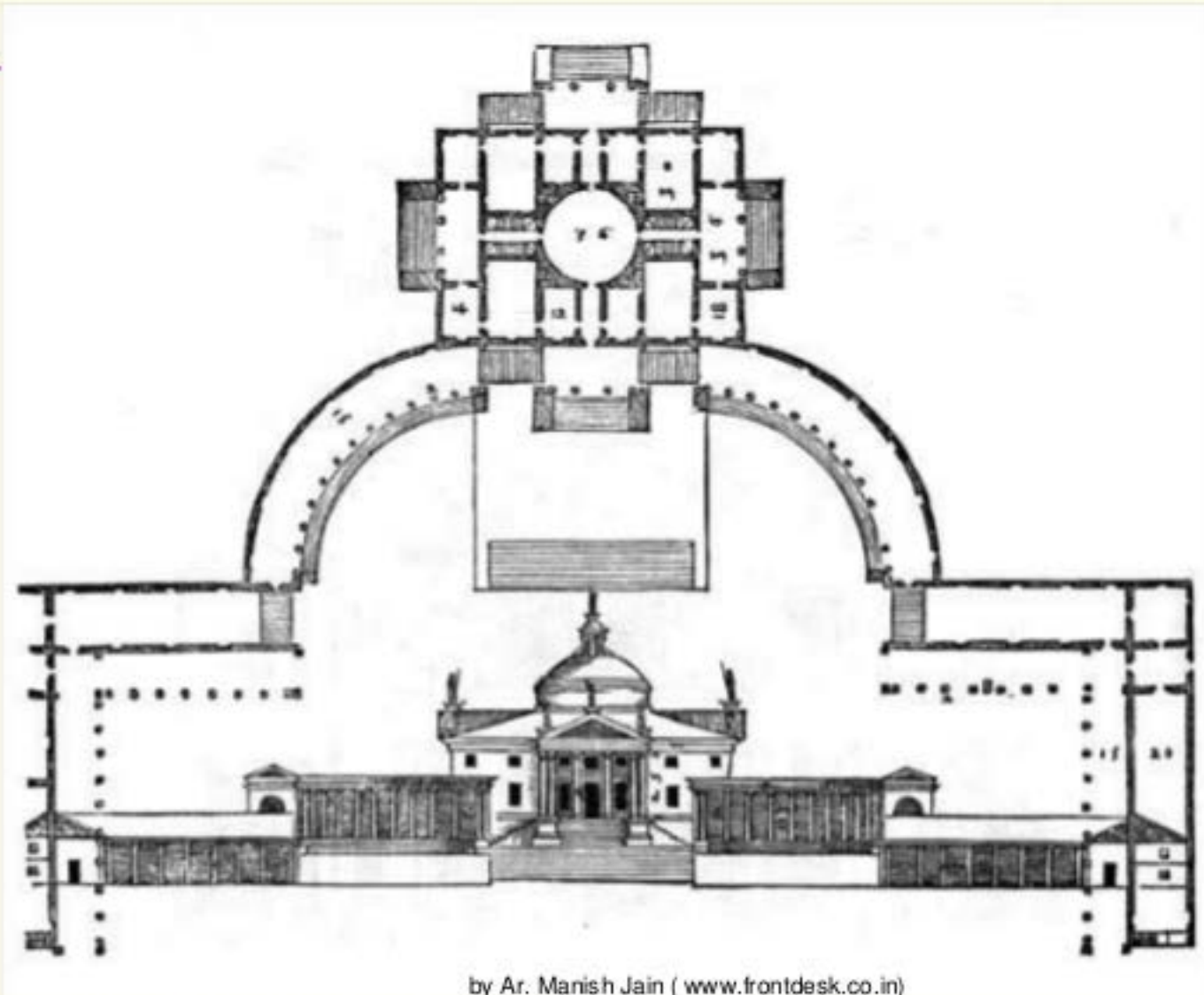


By PLACEMENT

Strategically placed to call attention to themselves as being the important elements in composition.



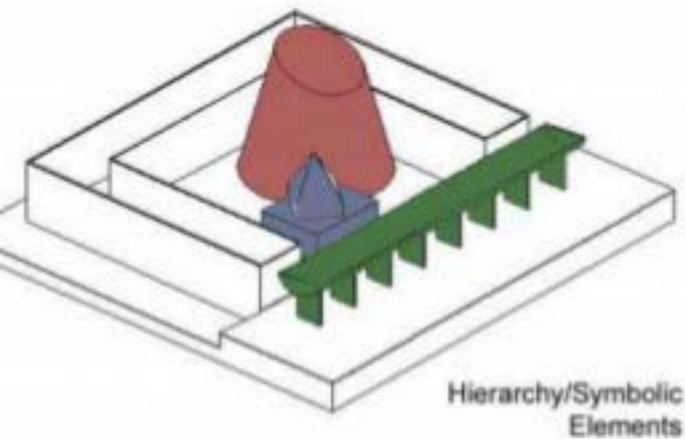
HIERARCHY



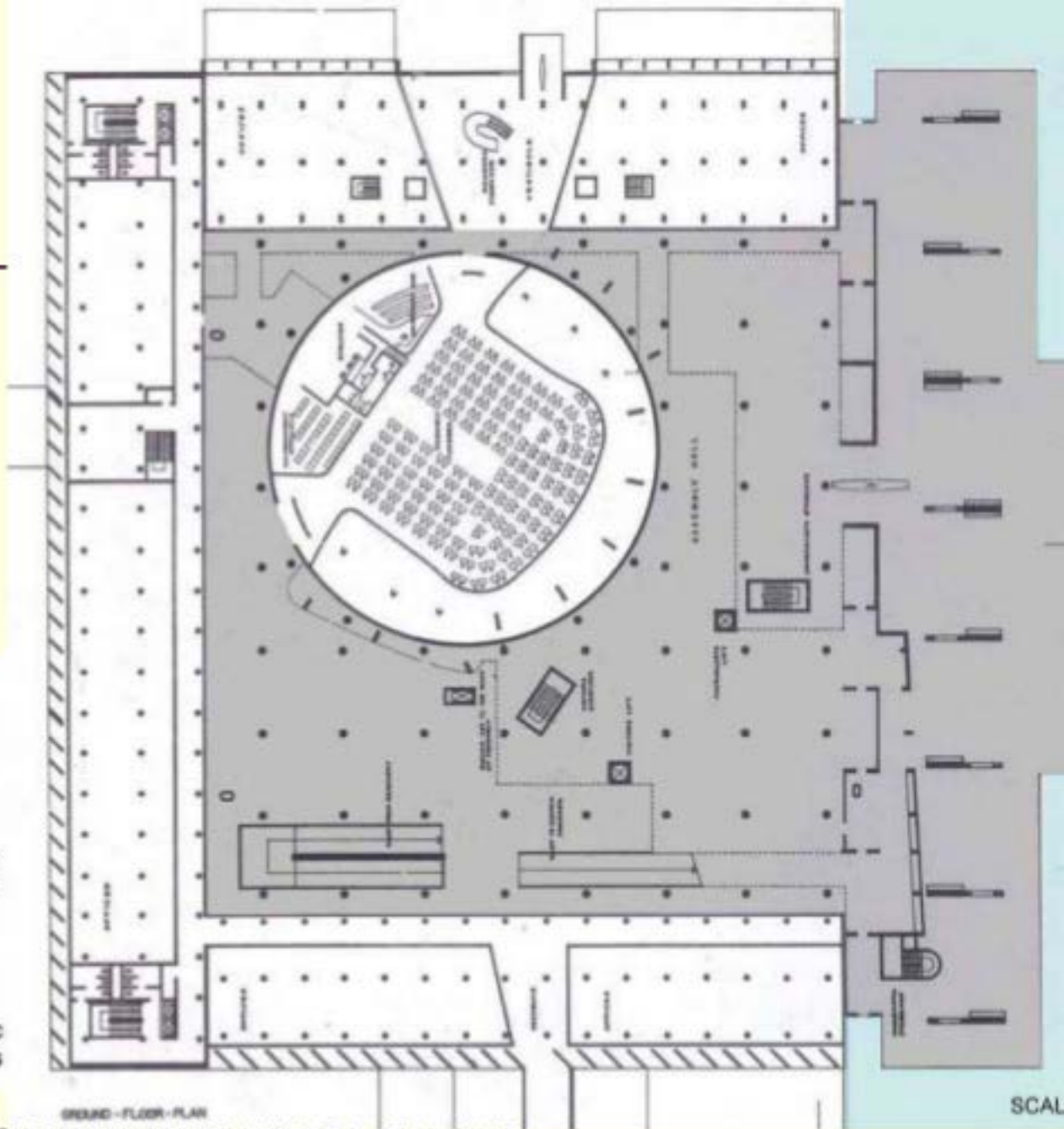
by Ar. Manish Jain (www.frontdesk.co.in)

Villa Trissino in Meledo : Andrea Palladio

HIERARCHY

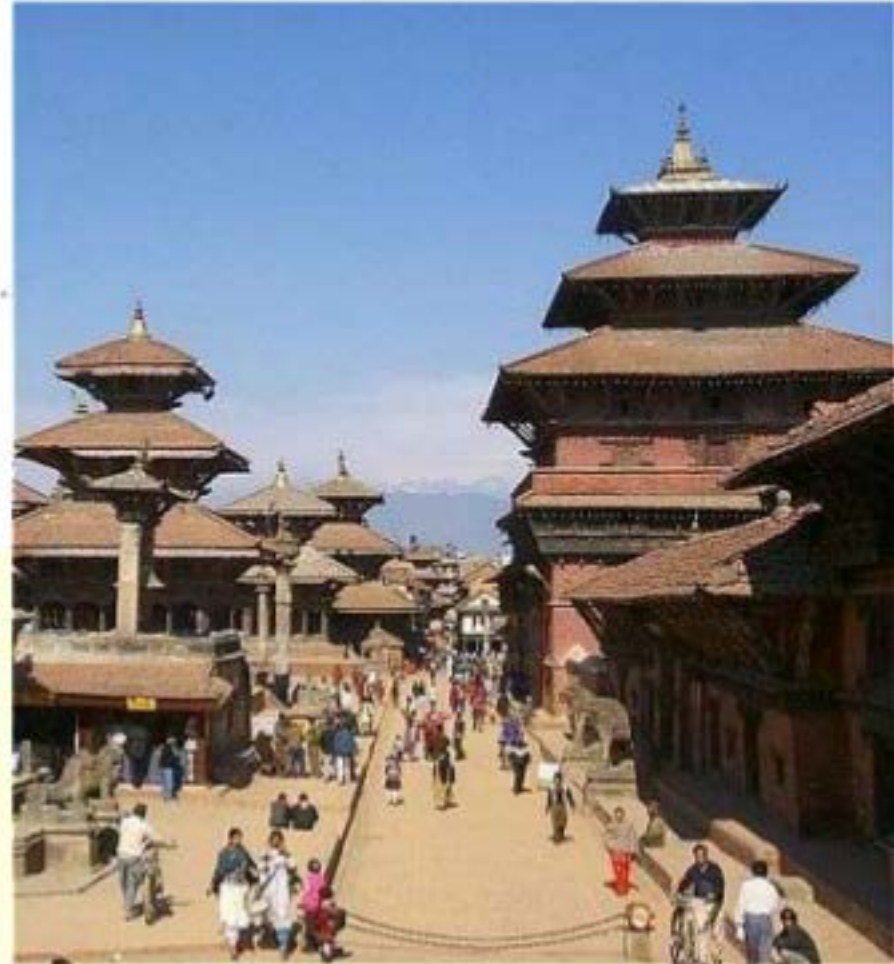
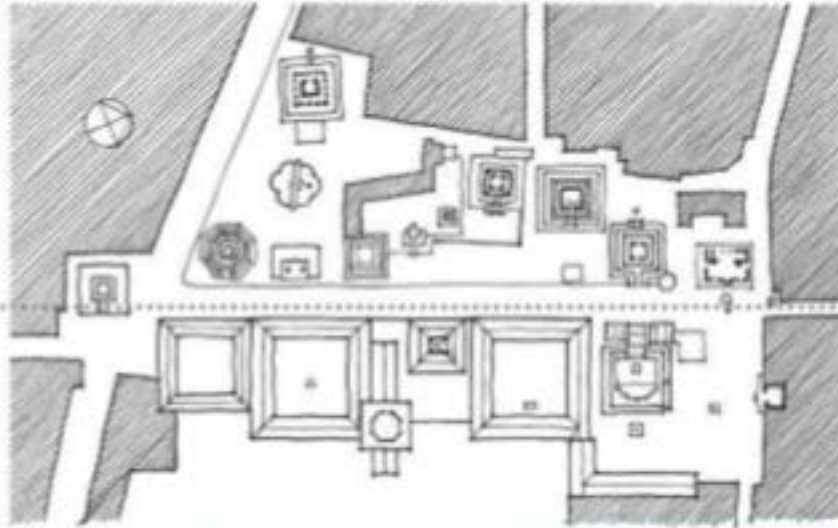


Hierarchy/Symbolic Elements



LEGISLATIVE ASSEMBLY BUILDING, Capitol complex, Chandigarh, india 1956, Le corbusier

DATUM



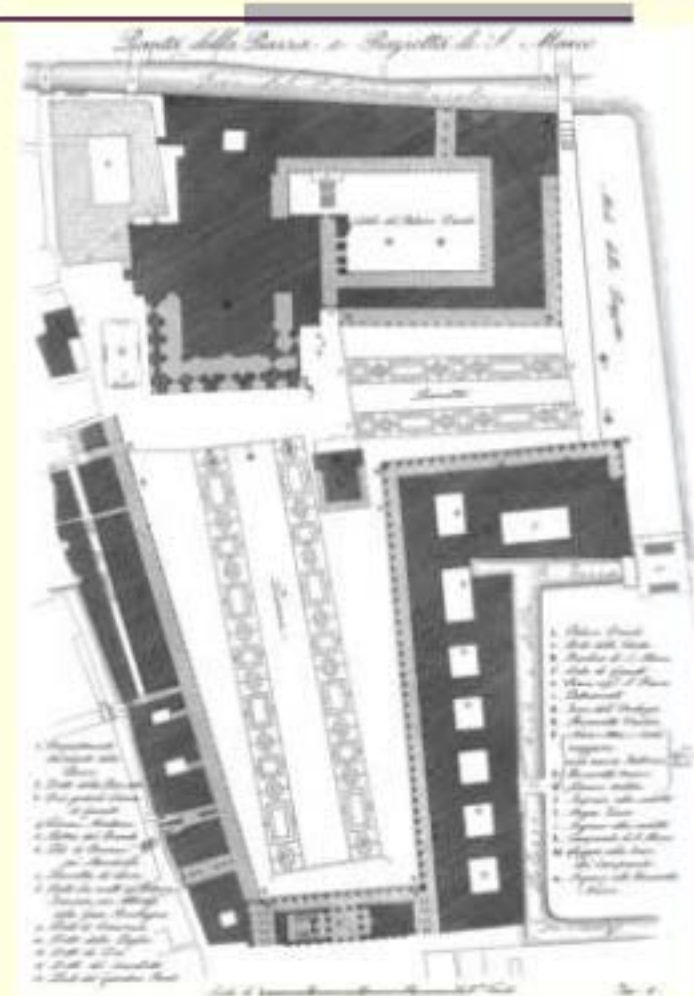
By Ar. Manish Jain (www.frontdesk.co.in)

DUBAR SQUARE, Patan , Nepal , Renovated 17th century

DATUM



Piazza san marco venice , italy,



DATUM



by Ar. Manish Jain (www.frontdesk.co.in)

Marin County Civic Center , San Rafael , California 1957 , Frank Lloyd Wright

DATUM

Salvation Army Hostel , Paris
, 1928-33 Le corbusier



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R.H.Y.T.H.M.

Rhythm refers to any movement by a patterned recurrence of elements or motifs at regular or irregular intervals . The movement may be of our eyes as we follow recurring elements in a composition.

Rhythm refers to any movement characterized by a patterned recurrence 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. In either case, rhythm incorporates the fundamental notion of repetition as a device to organize forms and spaces in architecture.

Almost all building types incorporate elements that are by their nature repetitive. Beams and columns repeat themselves to form repetitive structural bays and modules of space. Windows and doors repeatedly puncture the surfaces of a building to allow light, air, views, and people to enter the interior. Spaces often recur to accommodate similar or repetitive functional requirements in the building program. This section discusses the patterns of repetition that can be utilized to organize a series of recurring elements, and the resultant visual rhythms these patterns create.

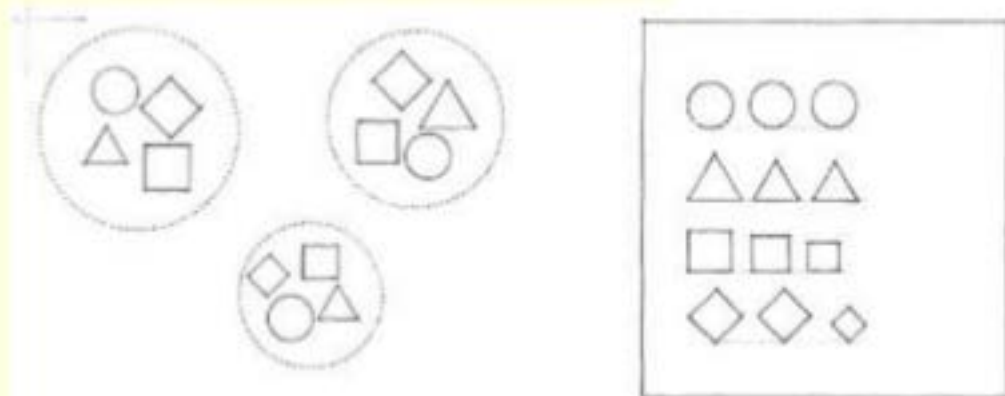


REPETITION

We tend to group elements in random composition according to:

- Their closeness or proximity to one another
- The visual characteristics they share in common

The principle of repetition utilizes both of these concepts of visual perception to order elements in a composition.



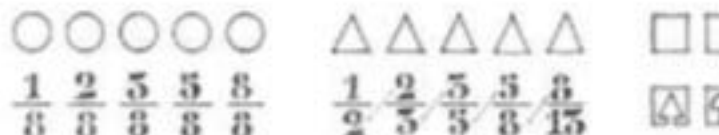
We tend to group elements in a random composition according to:

- Their closeness or proximity to one another
- The visual characteristics they share in common

The principle of repetition utilizes both of these concepts of visual perception to order elements in a composition.



The simplest form of repetition is a linear pattern of redundant elements. Elements need not, however, be grouped in a repetitive fashion. They may merely share a common trait or allow each element to be individually unique, yet belong to the same family.

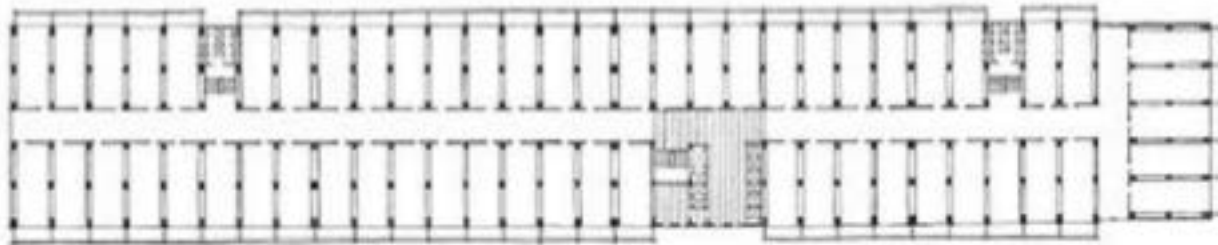


- Size

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REPETITION

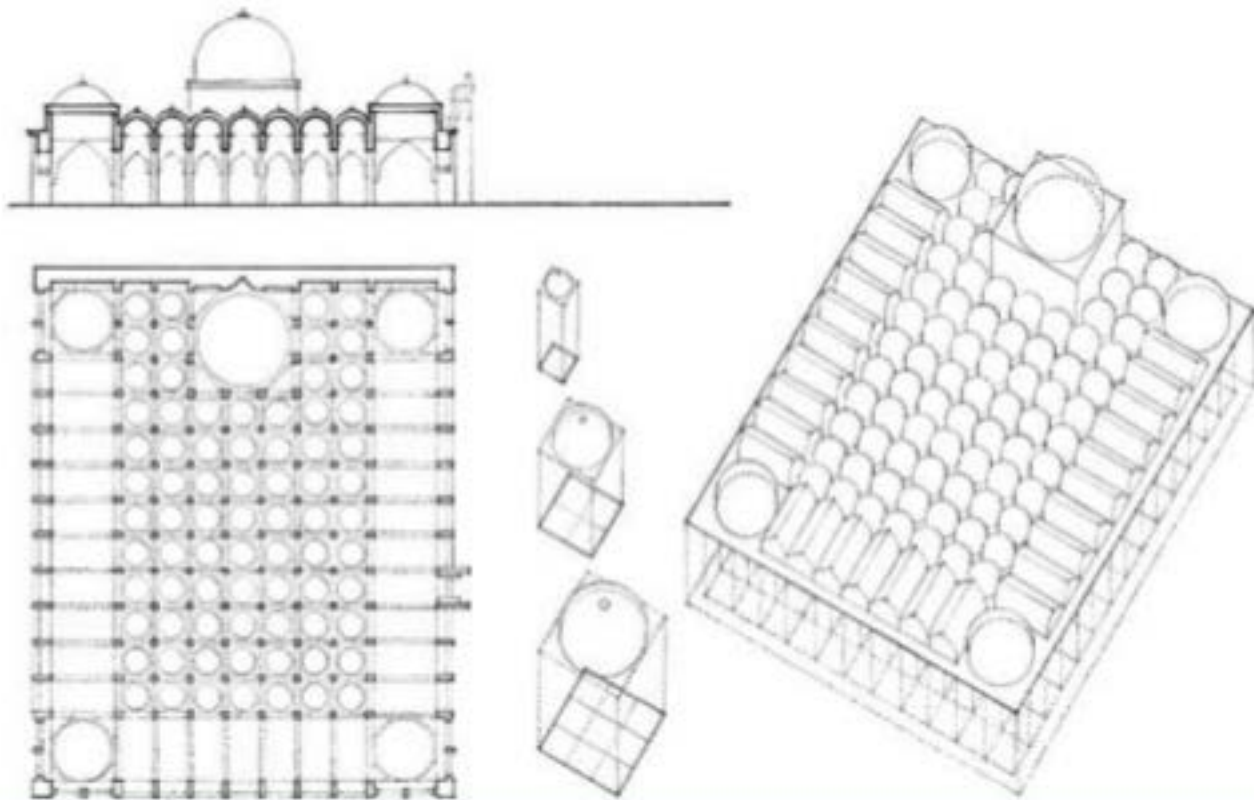


Typical Floor Plan, *Unité d'habitation*, Marseille, 1946-52, Le Corbusier

Unité d'habitation , Marseille 1946-52, Le corbusier

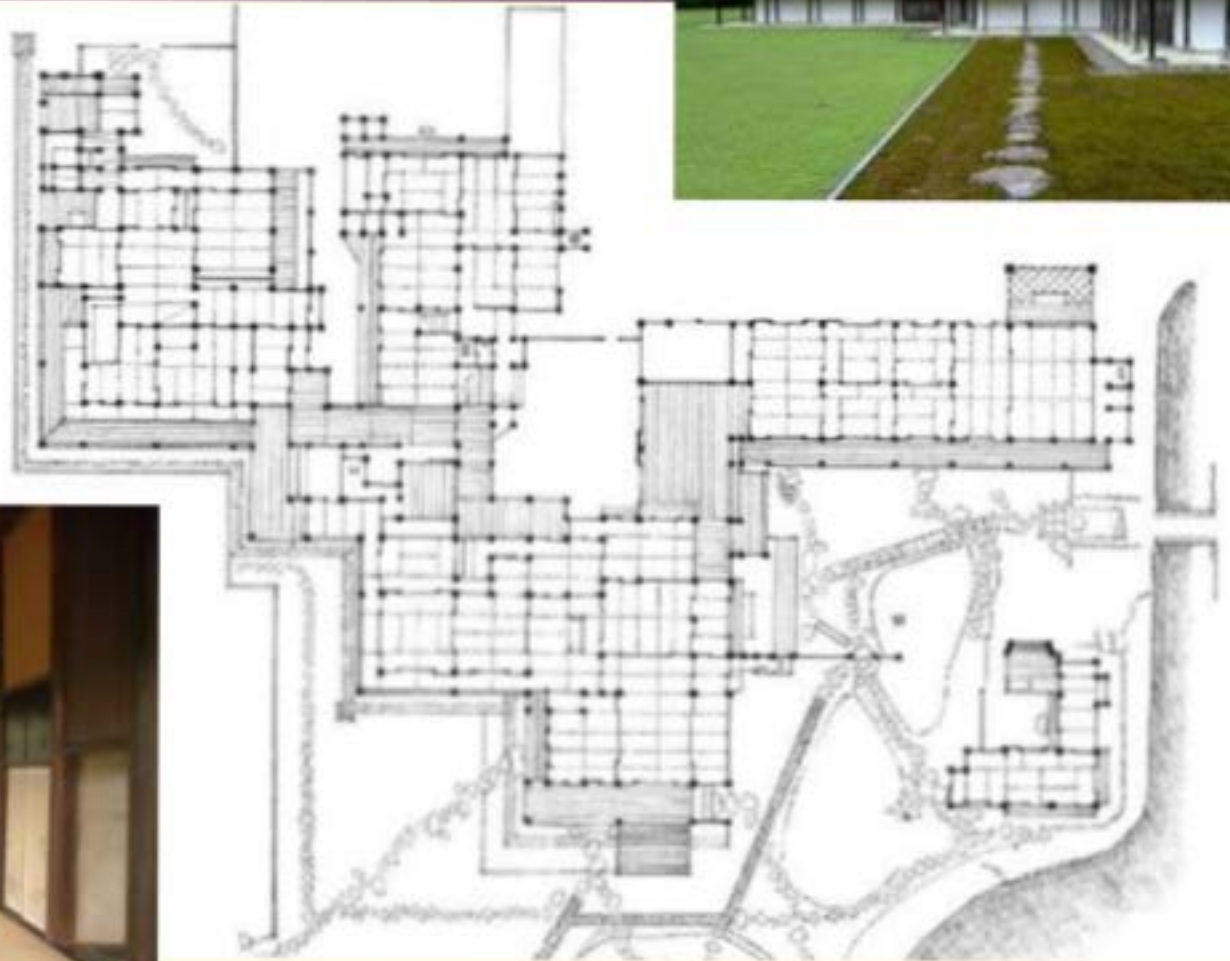
by Ar. Manish Jain (www.frontdesk.co.in)

REPETITION



Jama Masjid , Gulbarga , India 1367
by Ar. Manish Jain (www.frontdesk.co.in)

REPETITION



by Ar. Manish Jain (www.frontdesk.co.in)

Katsura imperial Villa , Kyoto , Japan , 17th century

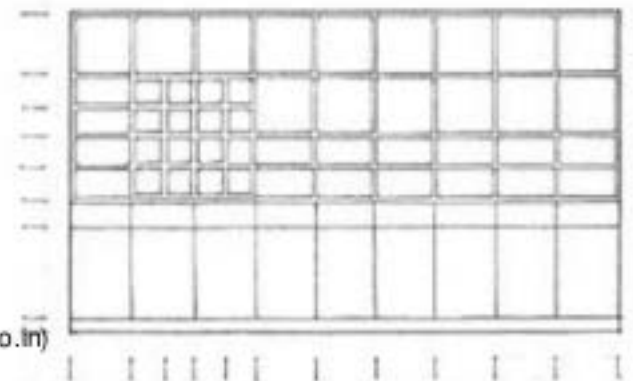
RHYTHM



Rhythm created by connecting points in space



Contrasting rhythms

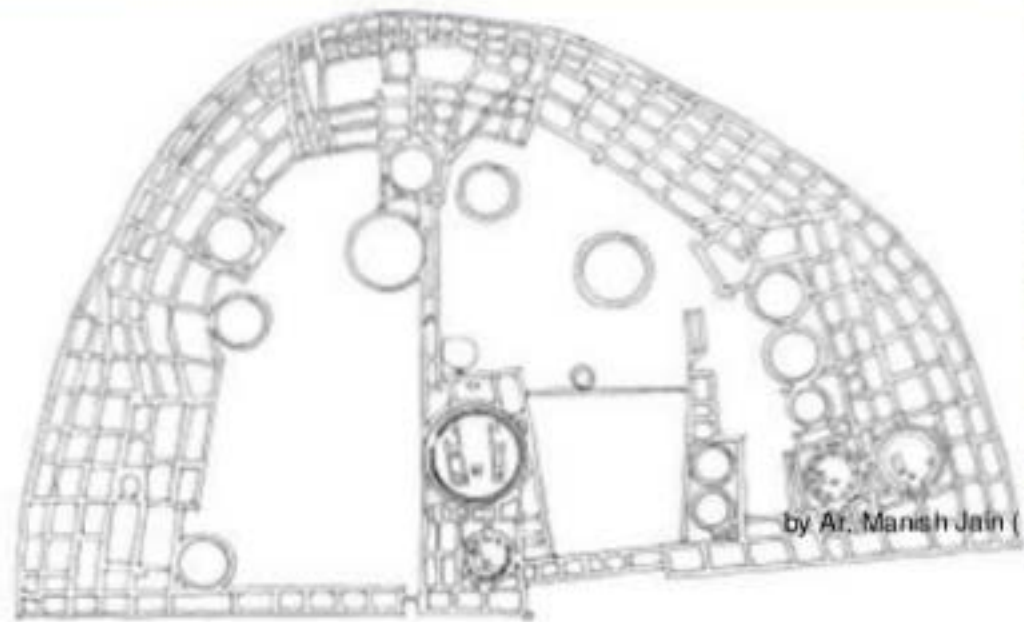


Horizontal and vertical rhythms

by Ar. Manish Jain (www.frontdesk.co.in)

RHYTHM

Pueblo Bonito , Chaco
canyon USA 10th -13th
Centuries



by Ar. Manish Jain (www.frontrise.com)

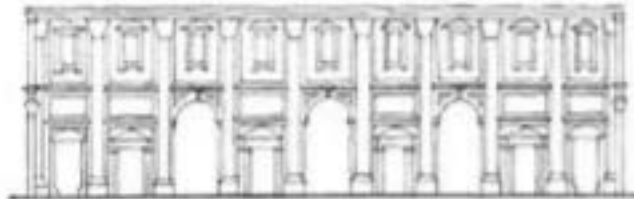
RHYTHM

Multiple Rhythm can be laid over one another in the façade of building

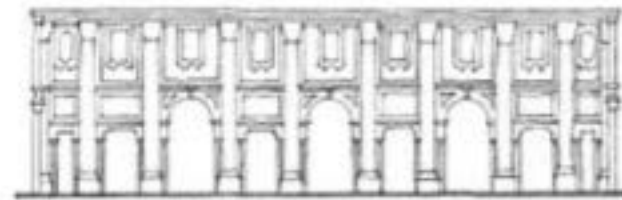


Victorian Facades, San Francisco street by A. Manish Jain (www.frontdesk.co.in)

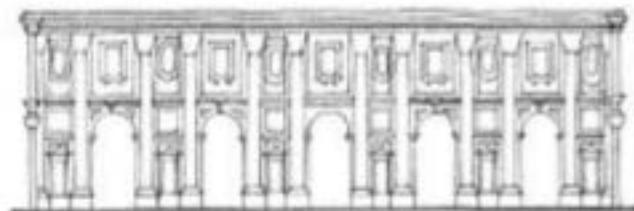
RHYTHM



a · b · a · b · a · b · a · b · a ·
a · a · b · a · b · a · b · a ·
A · B · C · B · C · B · C · B · A ·



a · b · b · b · b · b · b · a ·
c · a · b · a · b · a · b · a · c ·
A · B · C · B · C · B · C · B · A ·



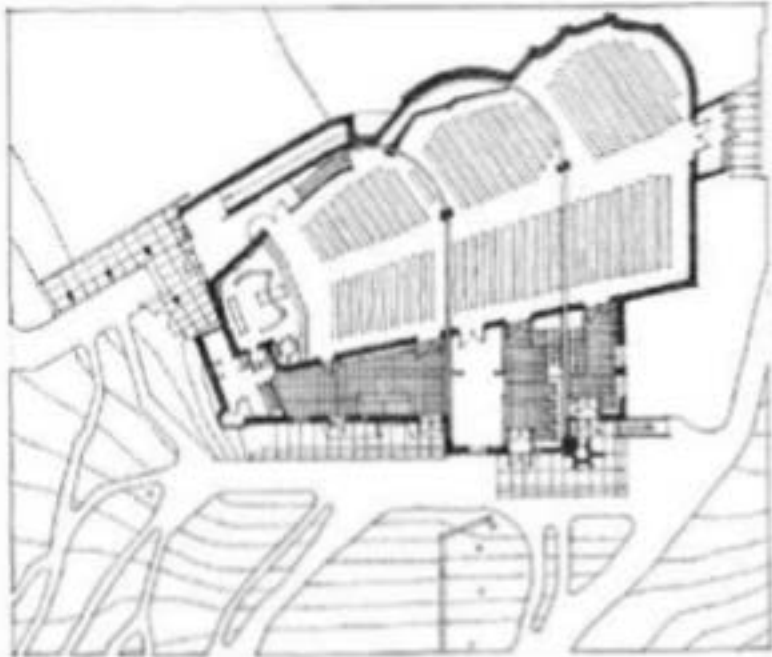
a · b · a · b · a · b · a · b · a ·
a · b · a · b · a · b · a · b · a ·
A · B · A · B · A · C · A · B · A · B · A ·

Studies of Internal Façade of a Basilica by Francesco Borromini

by Ar. Manish Jain (www.frontdesk.co.in)

Studies of internal Façade of a Basilica by Francesco Borromini

RHYTHM



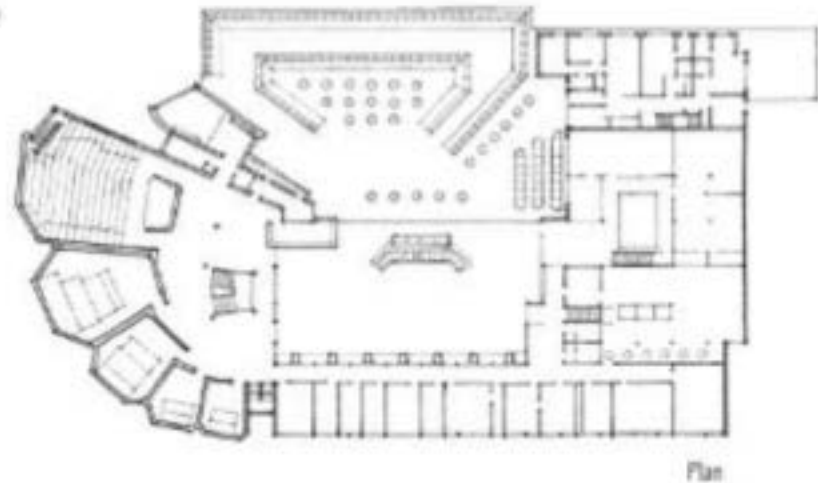
Church at Vuoksenniska , Finland
, 1956 , Alvar Aalto

by Ar. Mar



RHYTHM

Cultural Center, Wolfsburg, Germany, 1948–62, Alvar Aalto



by Ar. Manish Jain (www.frontdesk.co.in)

Culture Center , Wolfsburg Germany , 1948 -62 , Alvar Aalto

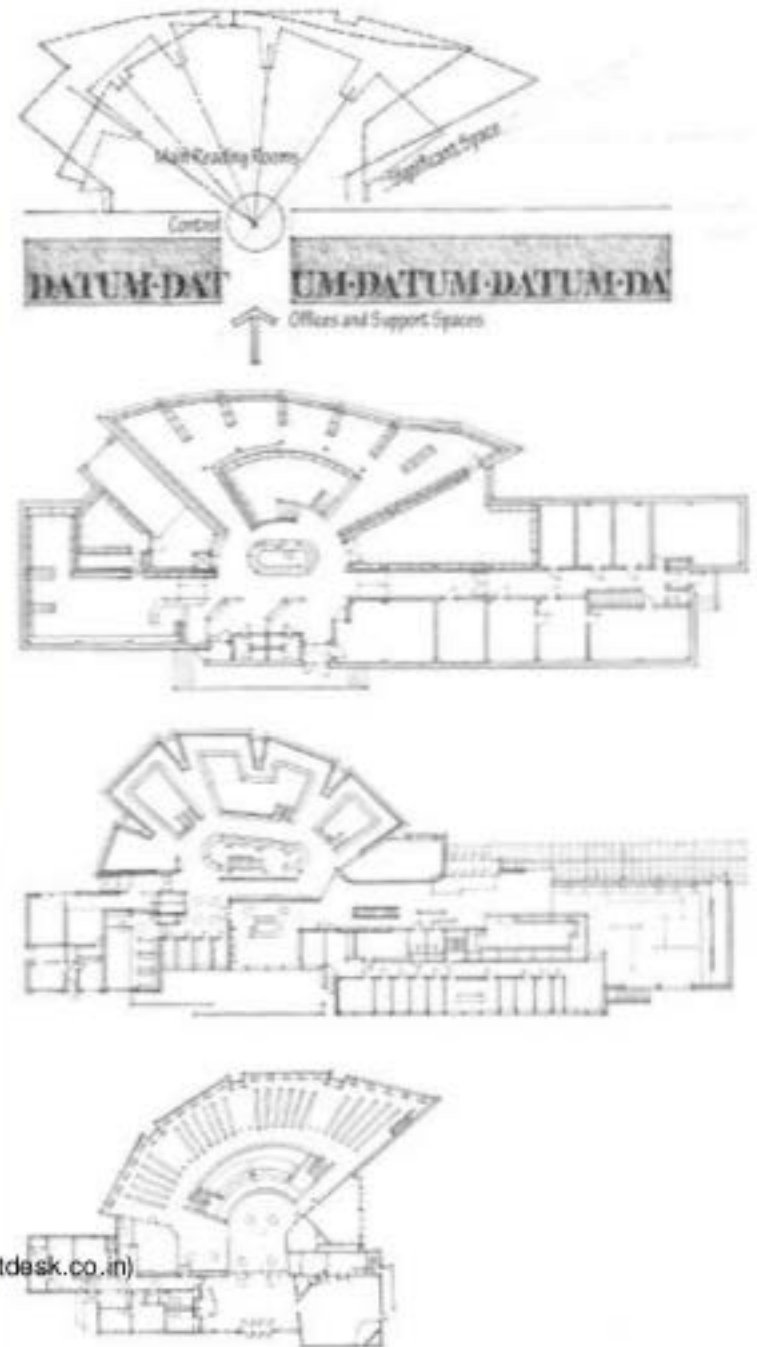
TRANSFORMATION

Scheme for 3 library By Alvar Aalto

Library of mount angel, Oregon 1965-70

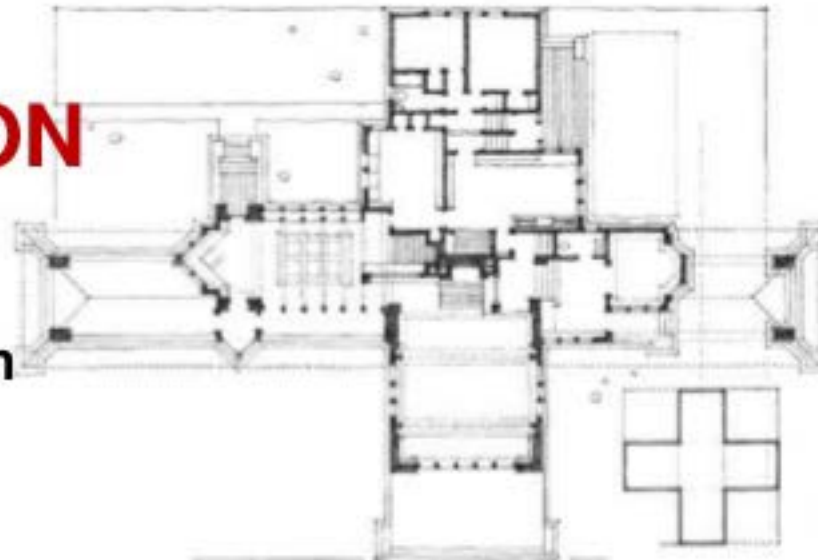
Library , Seinajoki , Finland 1963-65

Library , Rovaniemi, Finland 1963-68



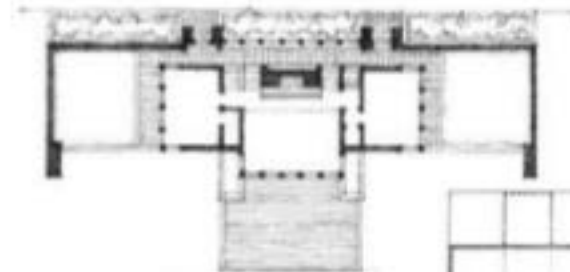
TRANSFORMATION

Cruciform Plan organization
by FL Wright

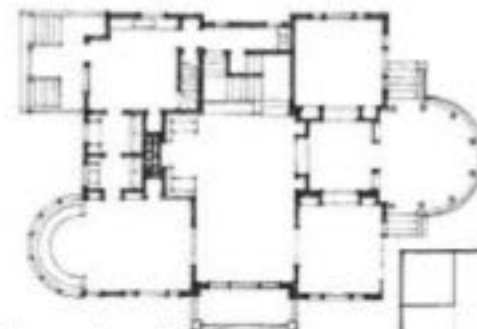
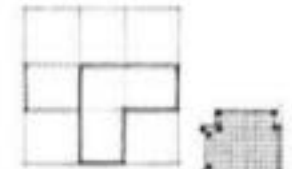


Ward Willits House, Highland Park, Illinois, 1902

Transformation of a Cruciform Plan
Organization by Frank Lloyd Wright

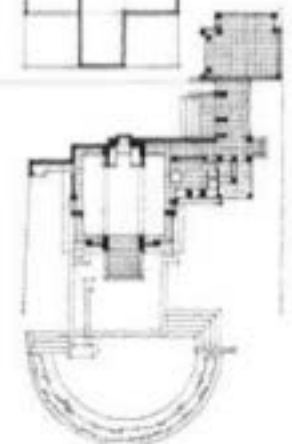


Thomas Hardy House, Racine, Wisconsin, 1905



by Ar. Manish Jain (www.frontdesk.co.in)

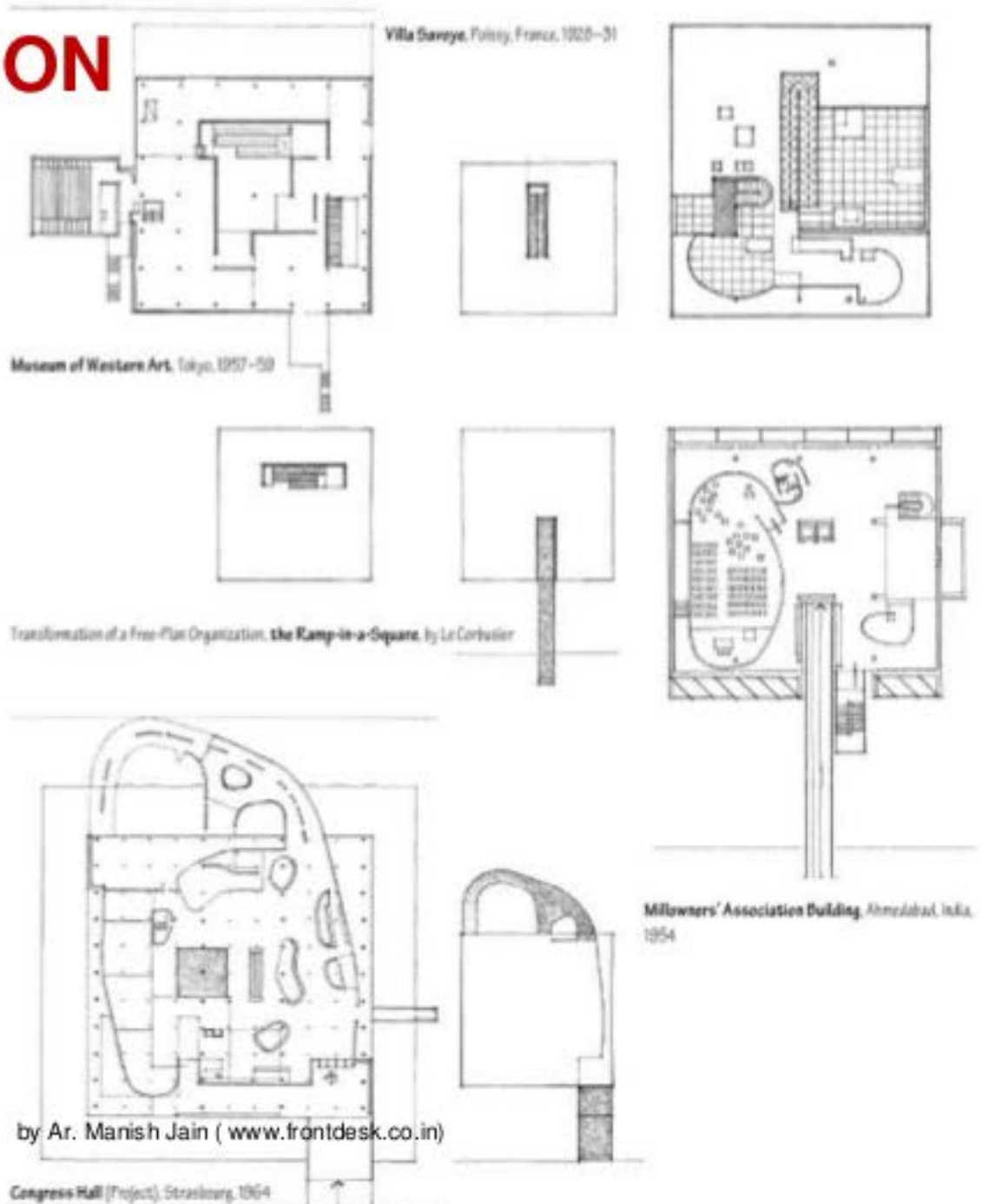
George Blossom House, Chicago, Illinois, 1902



Samuel Freeman House, Los Angeles, California, 1924

TRANSFORMATION

Free Plan Organization, The-Ramp-in-a-Square, By Le Corbusier



TRANSFORMATION

Free Plan Organization, The-Ramp-in-a-Square, By Le Corbusier

