

# Ruang, Bentuk dan Komposisi Geometri

20 September 2016

Aswin Indraprastha

Pendekatan  
Desain

Divergensi  
Informasi:  
-Standard  
-Program  
-Pola  
-dsb  
-Diagram  
Kedekatan  
Fungsi  
-Pendaerahan  
-Hirarki Ruang  
Sirkulasi  
dsb

Pernyataan  
Masalah  
Rancangan,  
terkait:  
- FUNGSI  
- BENTUK  
(Pena)

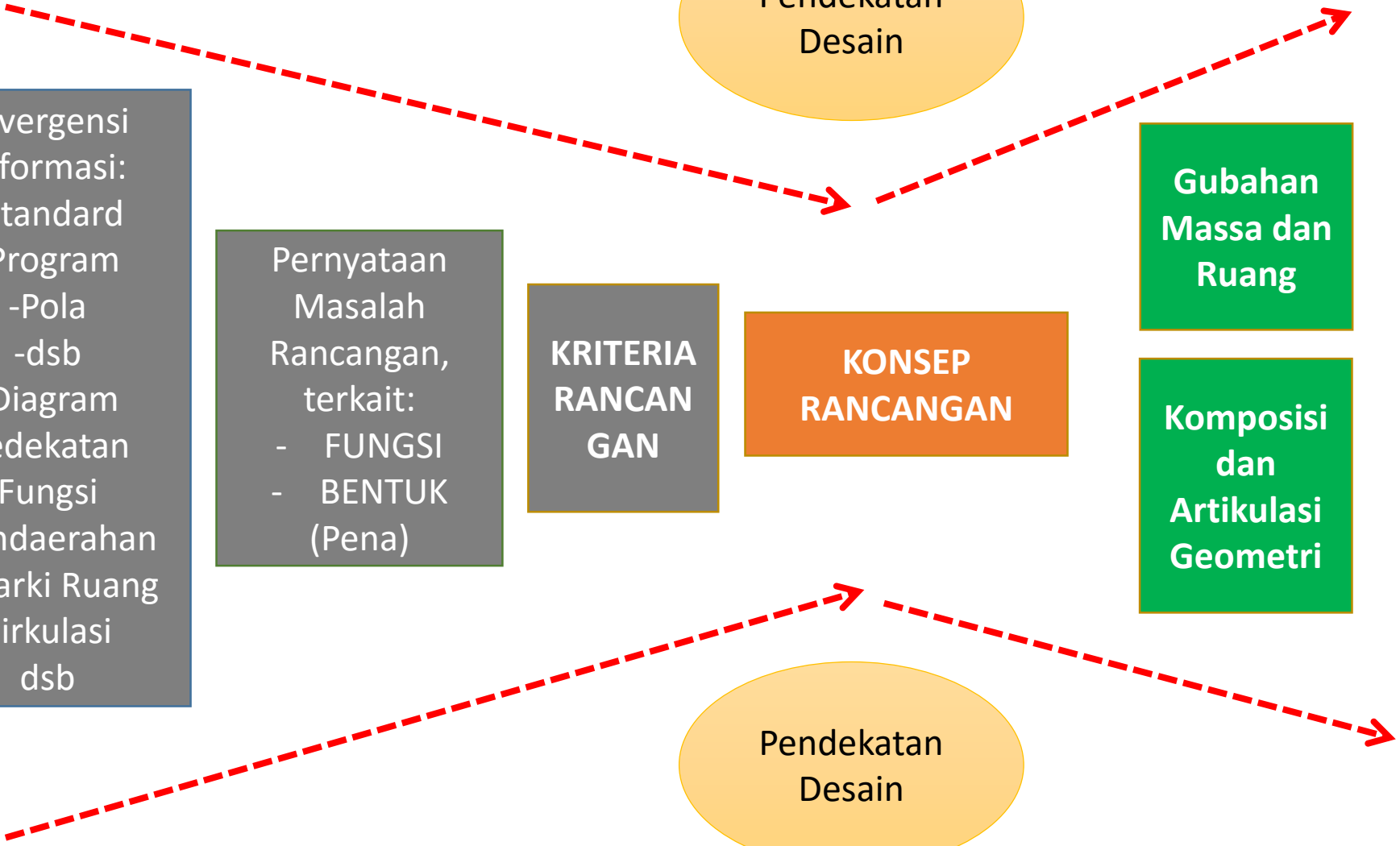
KRITERIA  
RANCAN  
GAN

KONSEP  
RANCANGAN

Gubahan  
Massa dan  
Ruang

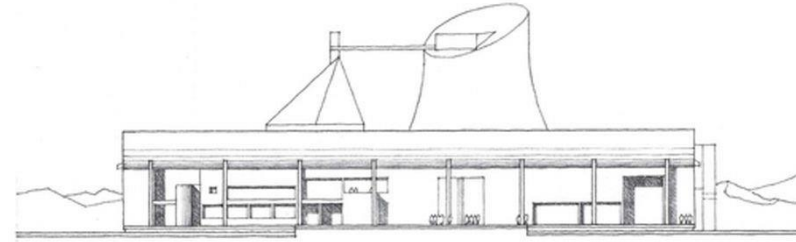
Komposisi  
dan  
Artikulasi  
Geometri

Pendekatan  
Desain





Buku Teks  
Wajib



FRANCIS D.K.  
**CHING**

ARCHITECTURE  
FORM, SPACE, & ORDER

FOURTH EDITION

INTERACTIVE  
RESOURCE  
CENTER

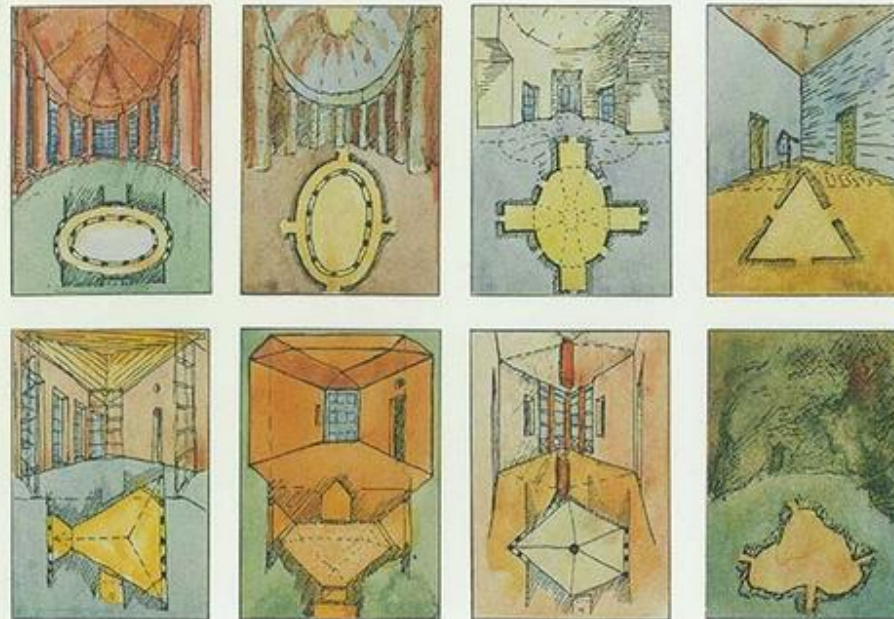


WILEY

Buku Teks  
Wajib

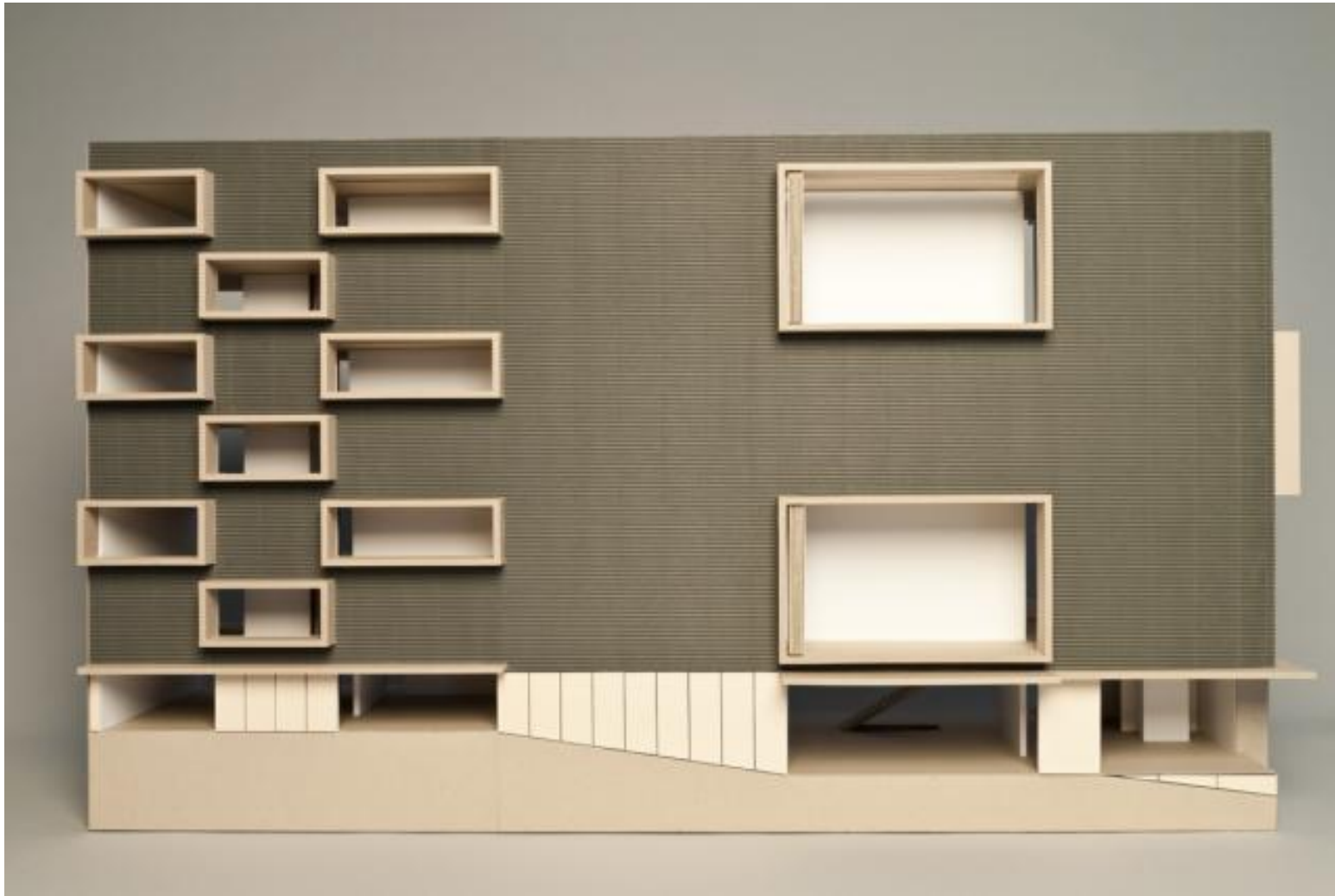
ROB KRIER

# ARCHITECTURAL COMPOSITION



ACADEMY EDITIONS

Bagaimana Arsitek 'menemukan' desain dan bentuk 'yang bagus'?

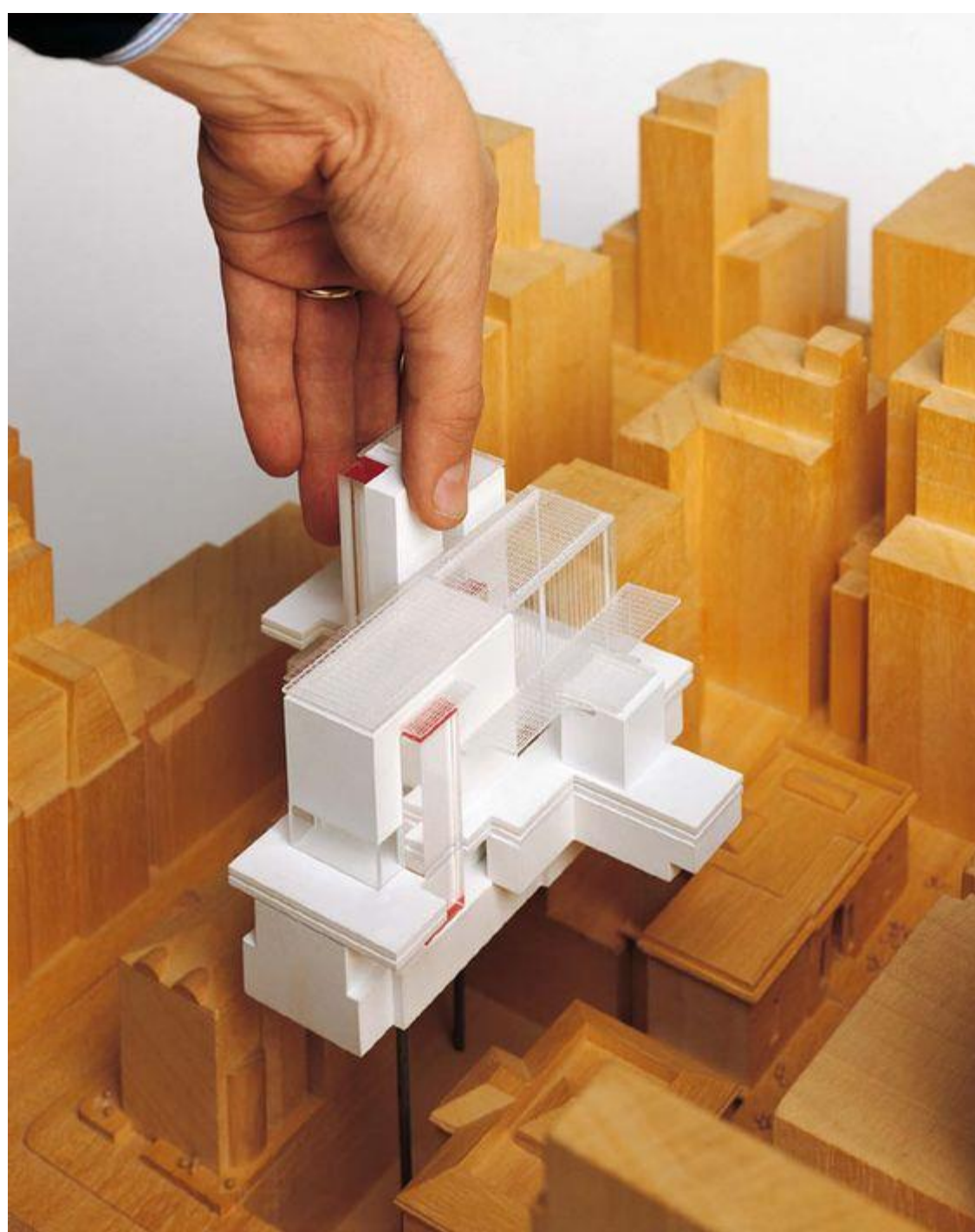


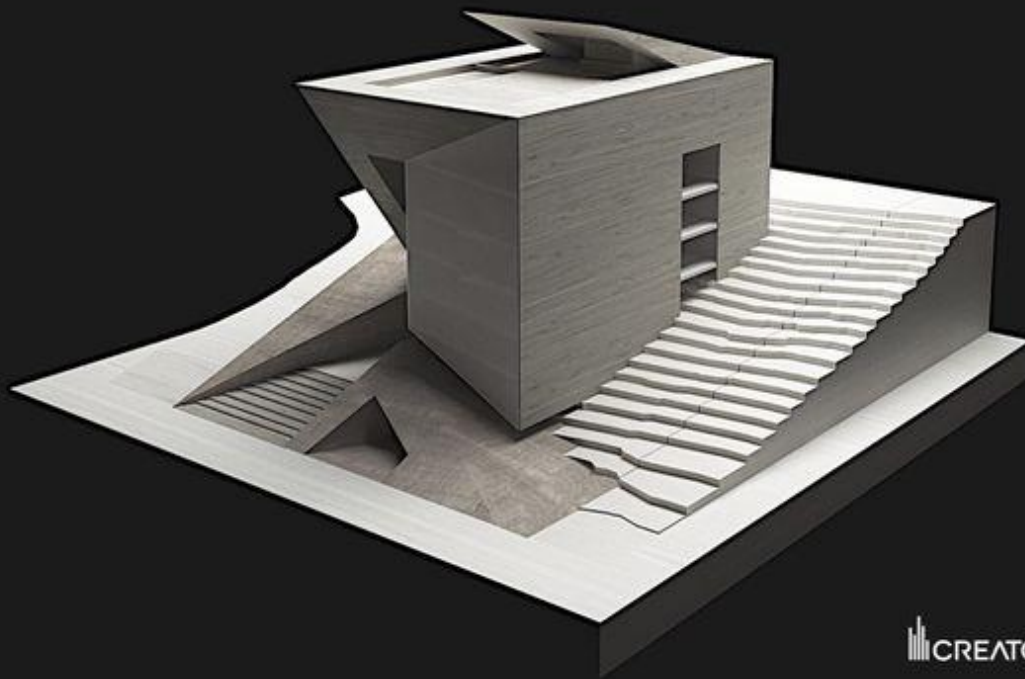
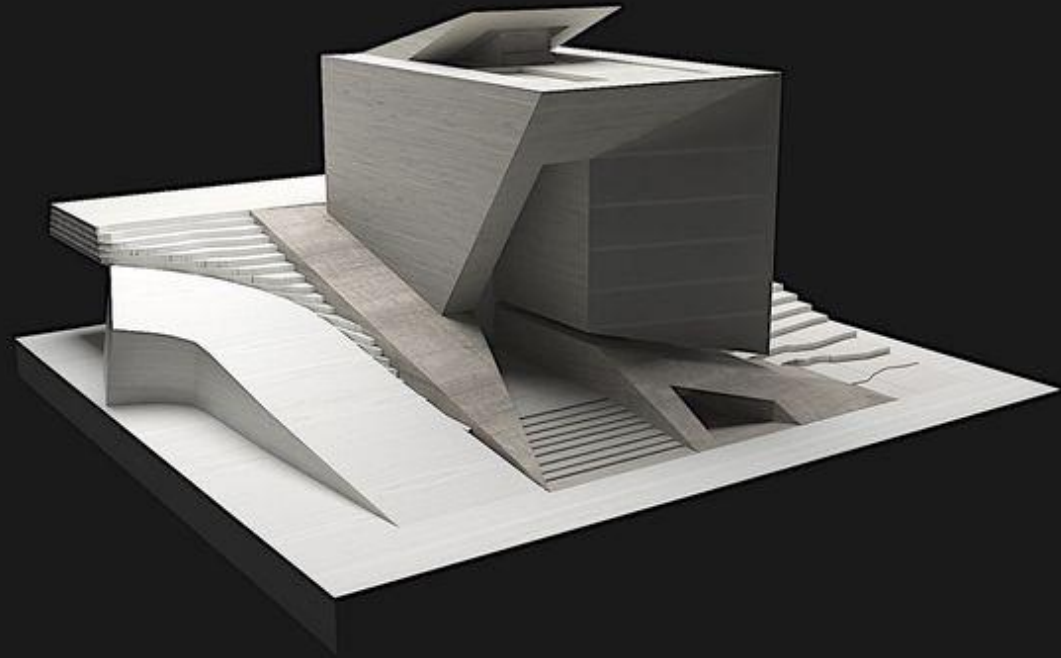
Eva Kratochwill

Johannes Pingitzer



Renzo Piano



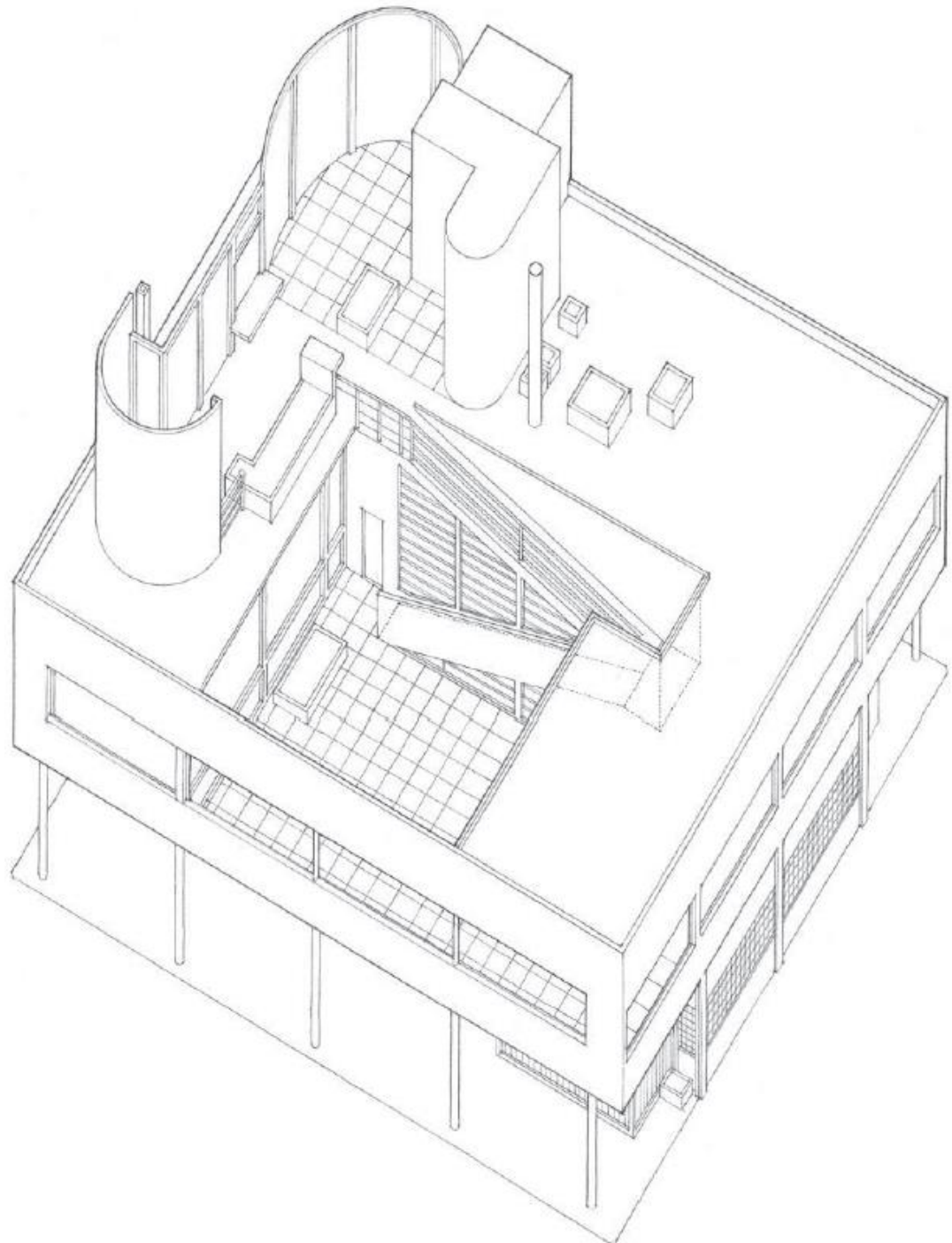


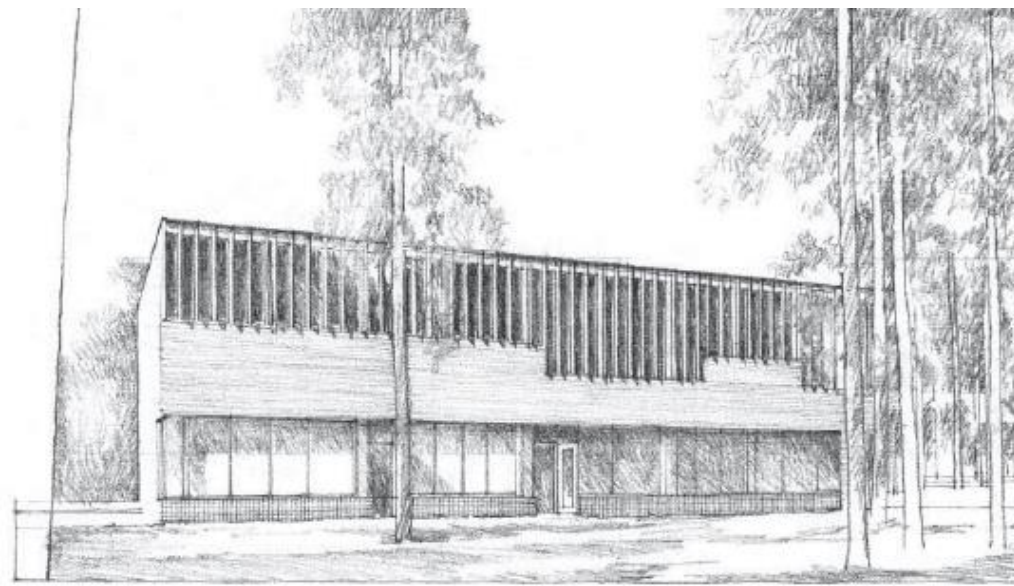
Creato Arquitectos

Bagaimana Arsitek 'menemukan' desain dan bentuk 'yang bagus'?

1. **Melihat** dan berjalan- jalan, perseden, diskusi
2. **Memahami** teori bentuk
3. Berlatih **mendesain**

1. Elemen primer
2. Bentuk/ Form
3. Bentuk dan Ruang (Form and Space)
4. Organisasi
5. Sirkulasi
6. Proporsi dan Skala
7. Prinsip





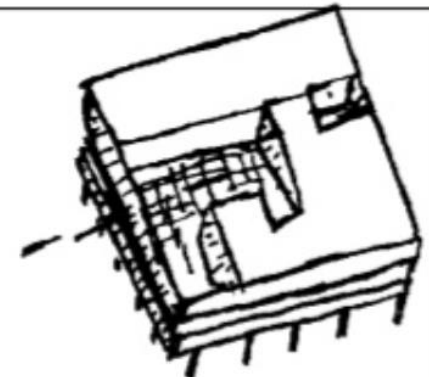
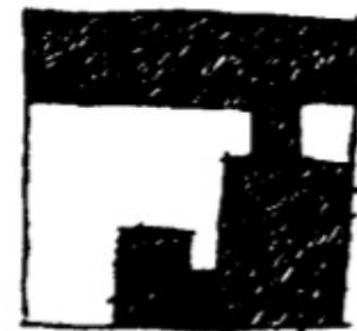
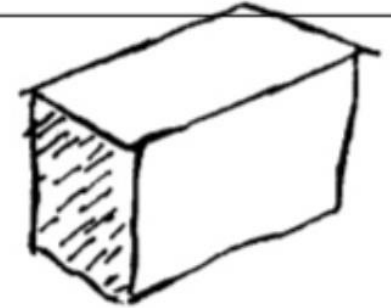
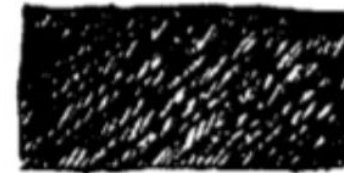
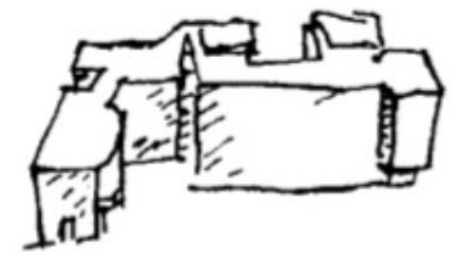
Town Hall, Säynätsalo, Finland, 1950–1952, Alvar Aalto



# Mentransformasikan Bentuk

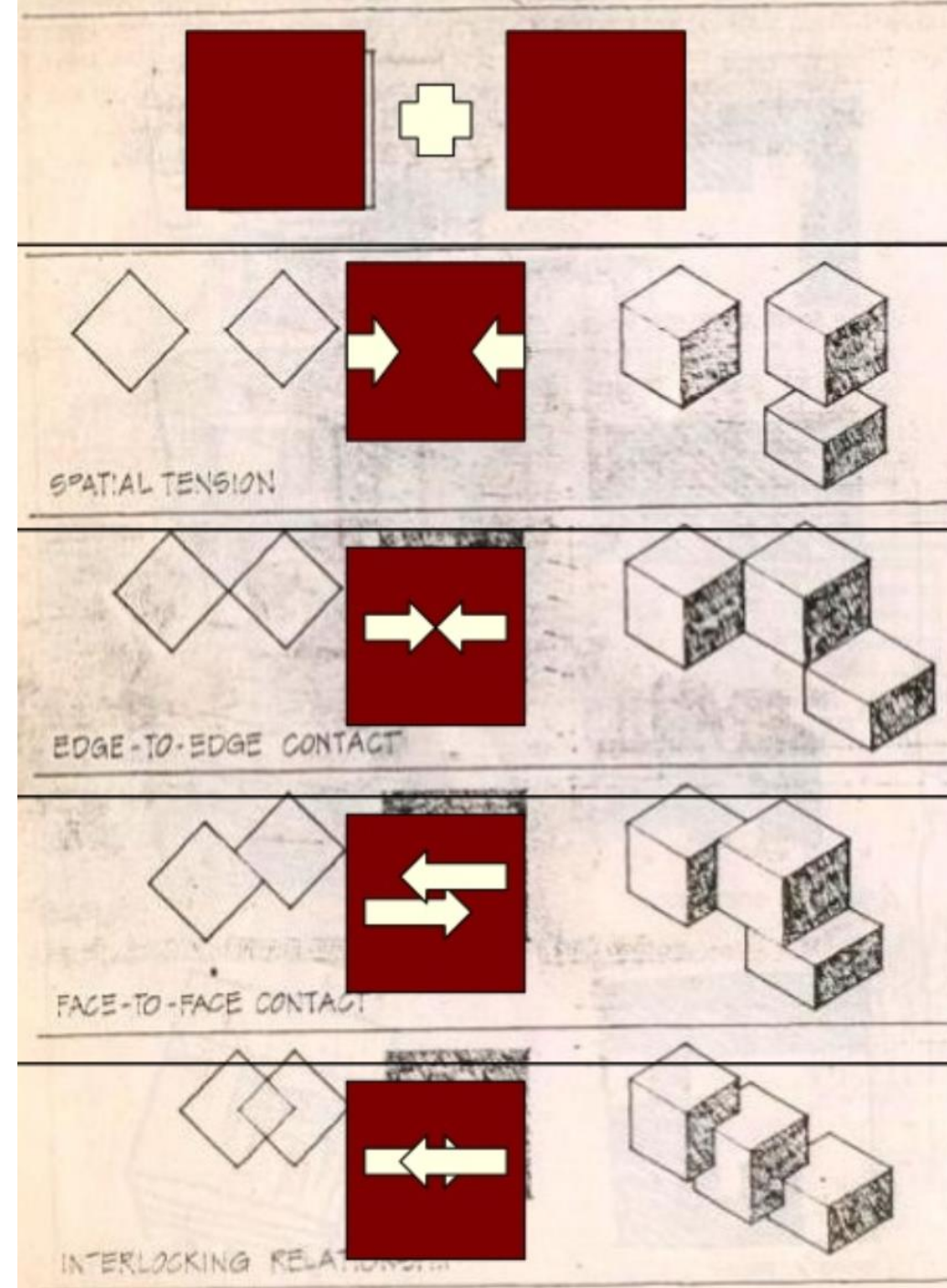
1. **Transformasi dimensional:** mengubah satu atau beberapa bagian dimensinya tetapi tetap mempertahankan bentuk asal yang utuh.
2. **Transformasi subtraktif:** mengambil/ mengurangi bagian dari bentuk keseluruhan
3. **Transformasi aditif:** menambah sebagian kepada bentuk keseluruhan.

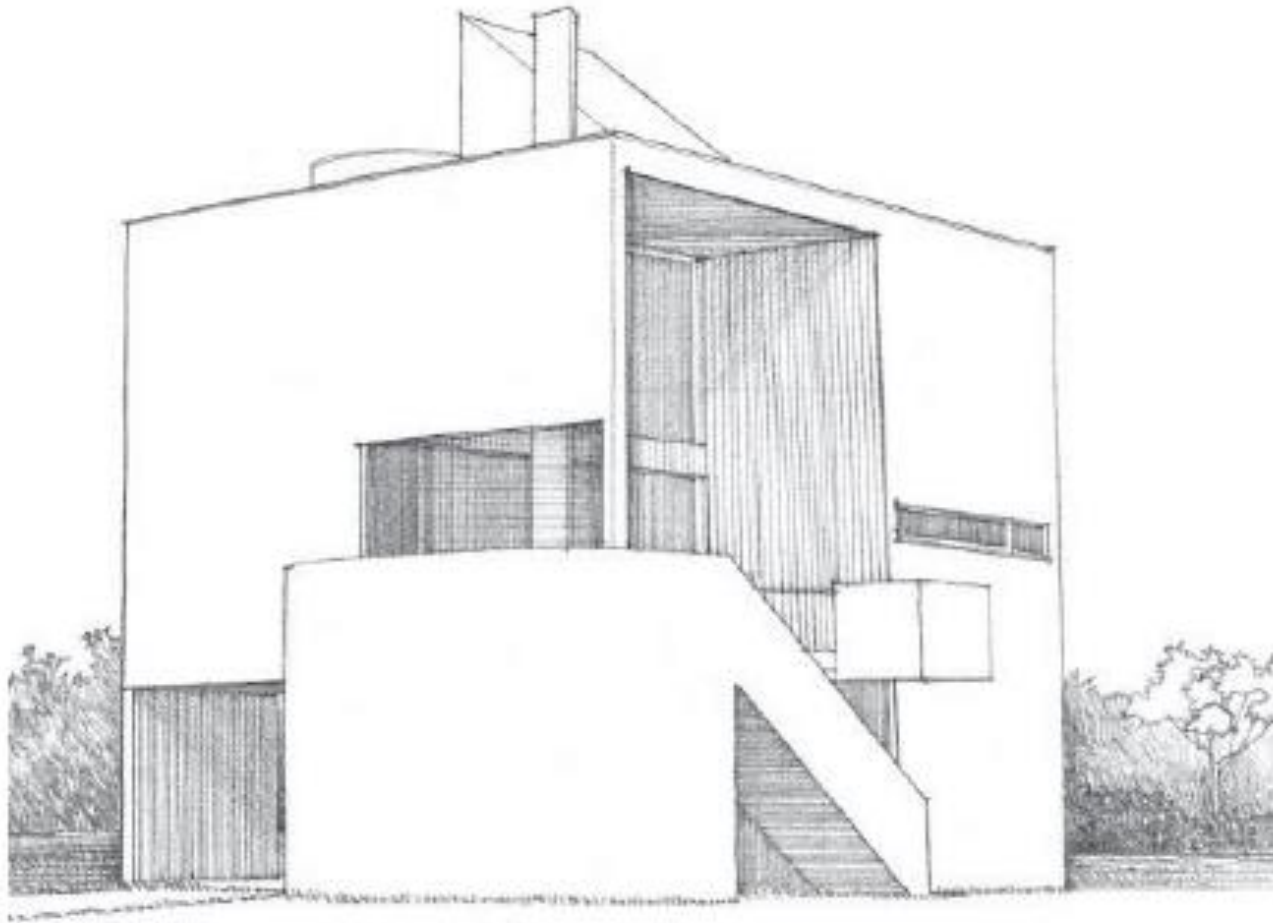
1. **Komposisi Kumulatif:** aditif, dinamis, dicapai dengan pemahaman pada pemrograman, hirarki ruang dan sirkulasi
2. **Komposisi Kubik:** *pure geometric*, cukup sulit untuk membuat ekspresi murni geometris
3. **Komposisi Pragmatis:** mudah, sesuai program dan sistem struktur utama
4. **Komposisi Subtraktif:** secara eksterior, bentuk mudah dikenali



# ADITIF

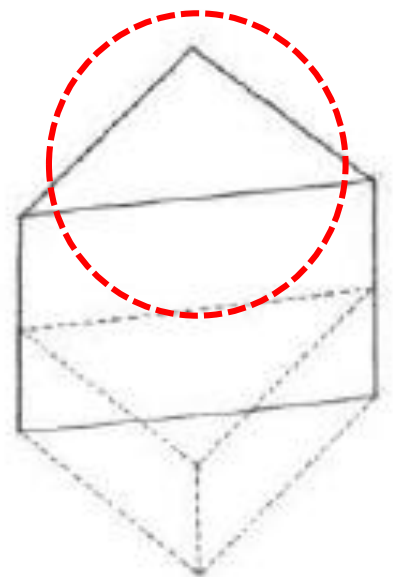
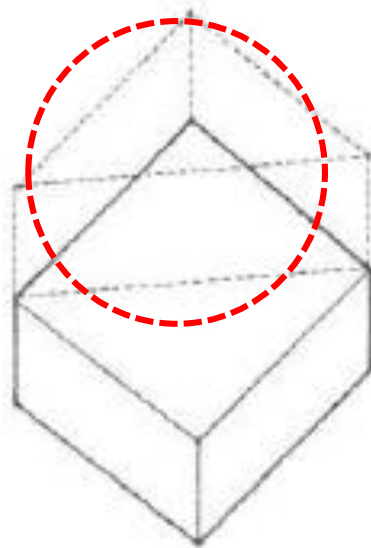
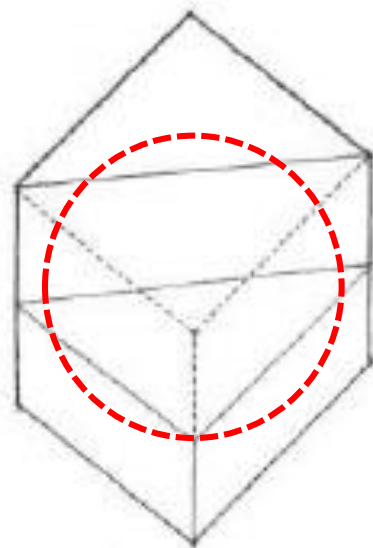
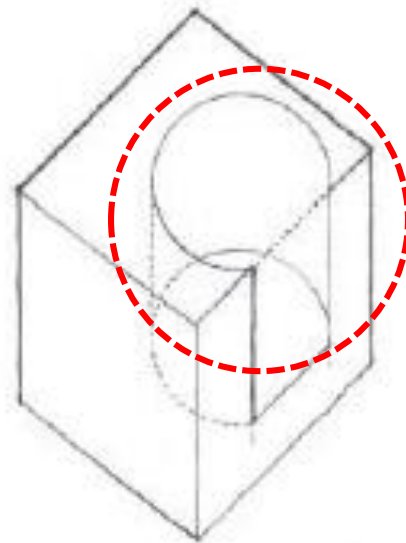
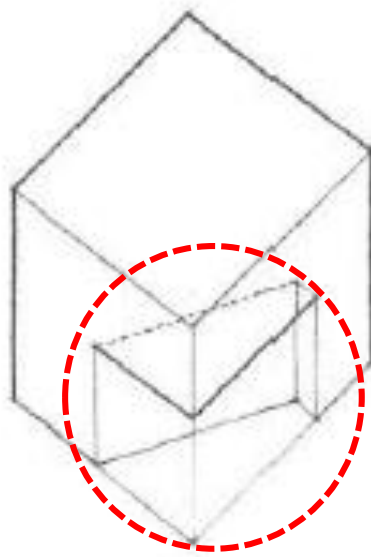
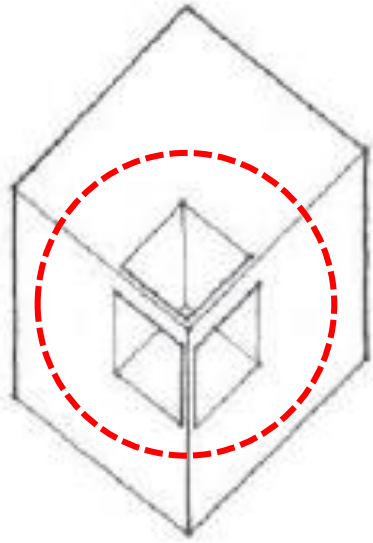
1. Spatial Tension
2. Edge to Edge Contact
3. Face to Face Contact
4. Interlocking Volumes
5. Centralized
6. Linear
7. Radial
8. Clustered
9. Grid

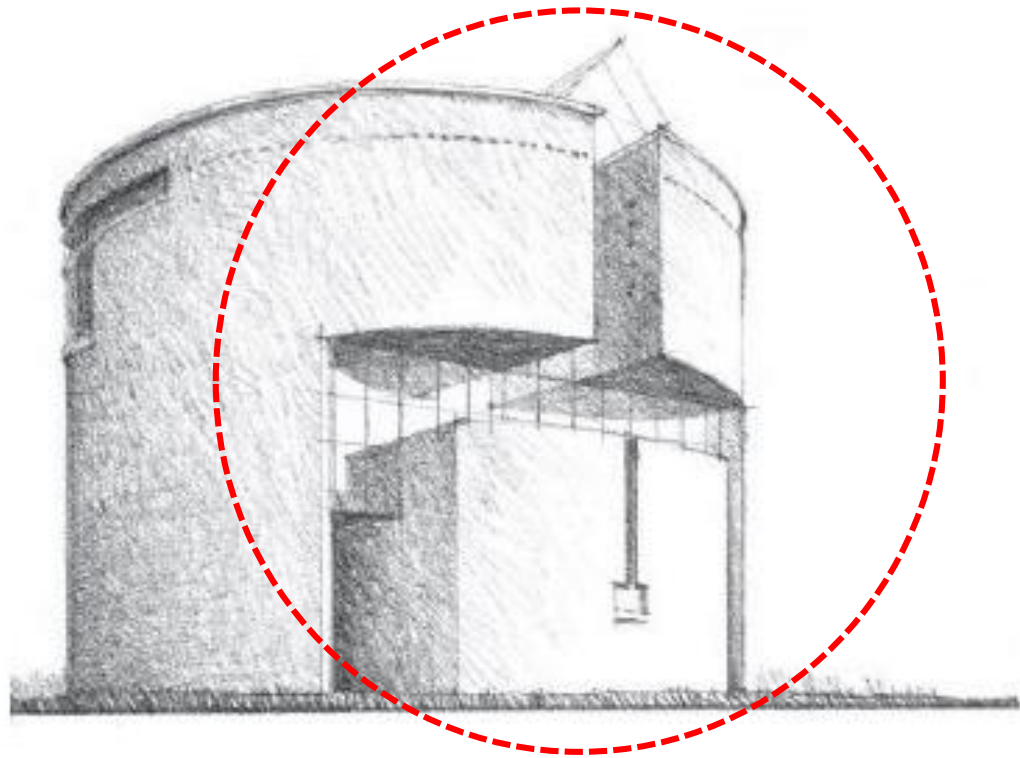




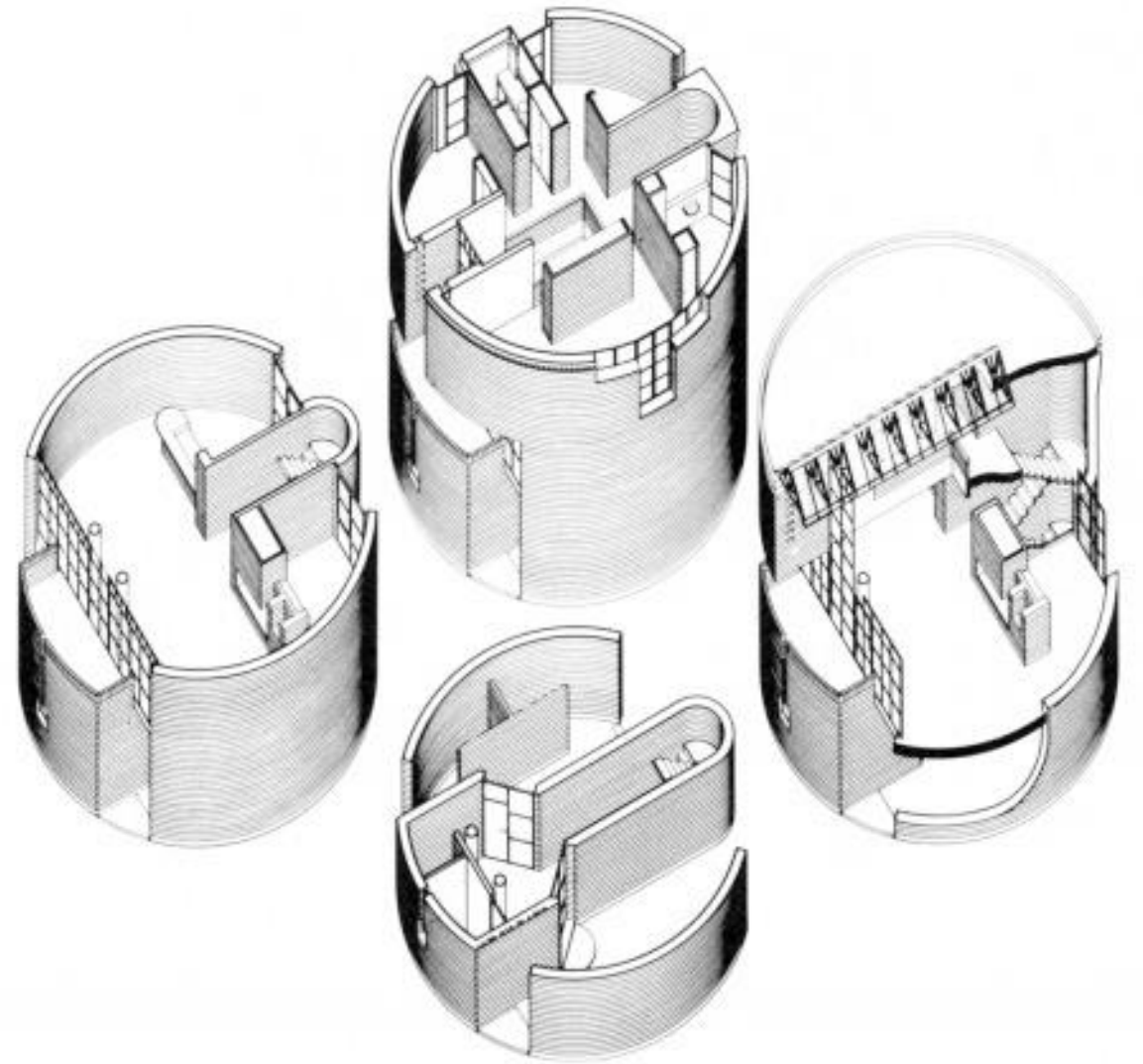
**Subtractive Transformation Creating Volumes of Space:**  
*Gwathmey Residence*, Amagansett, New York, 1967,  
Charles Gwathmey/Gwathmey Siegel



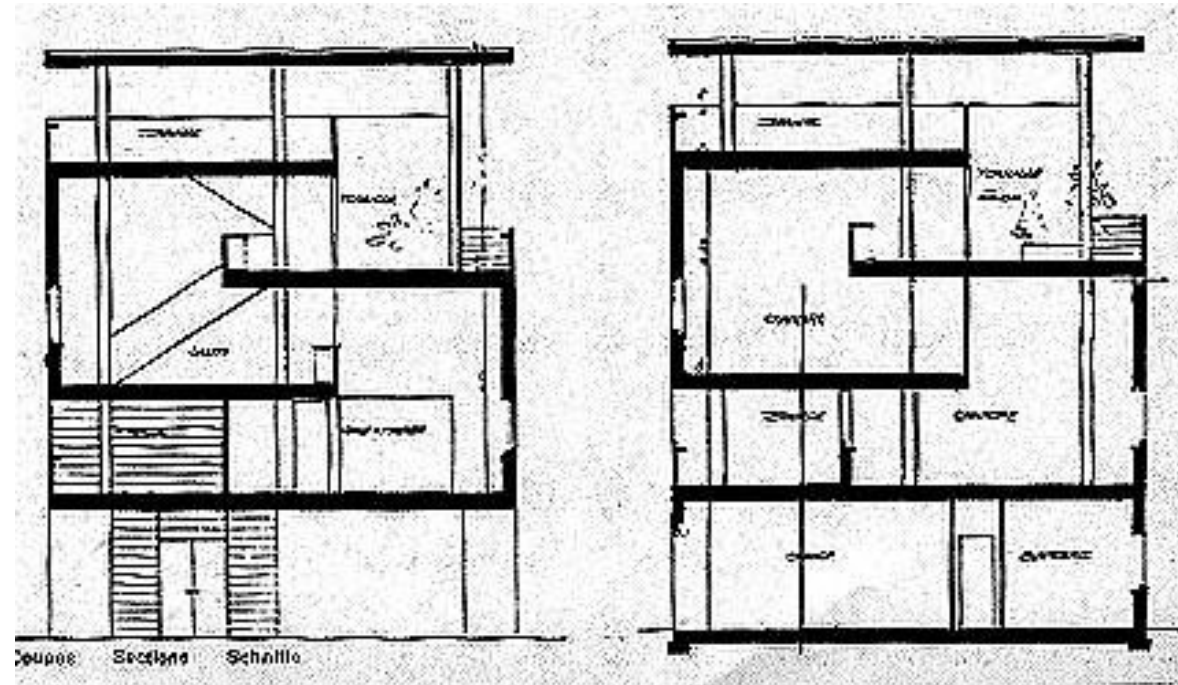
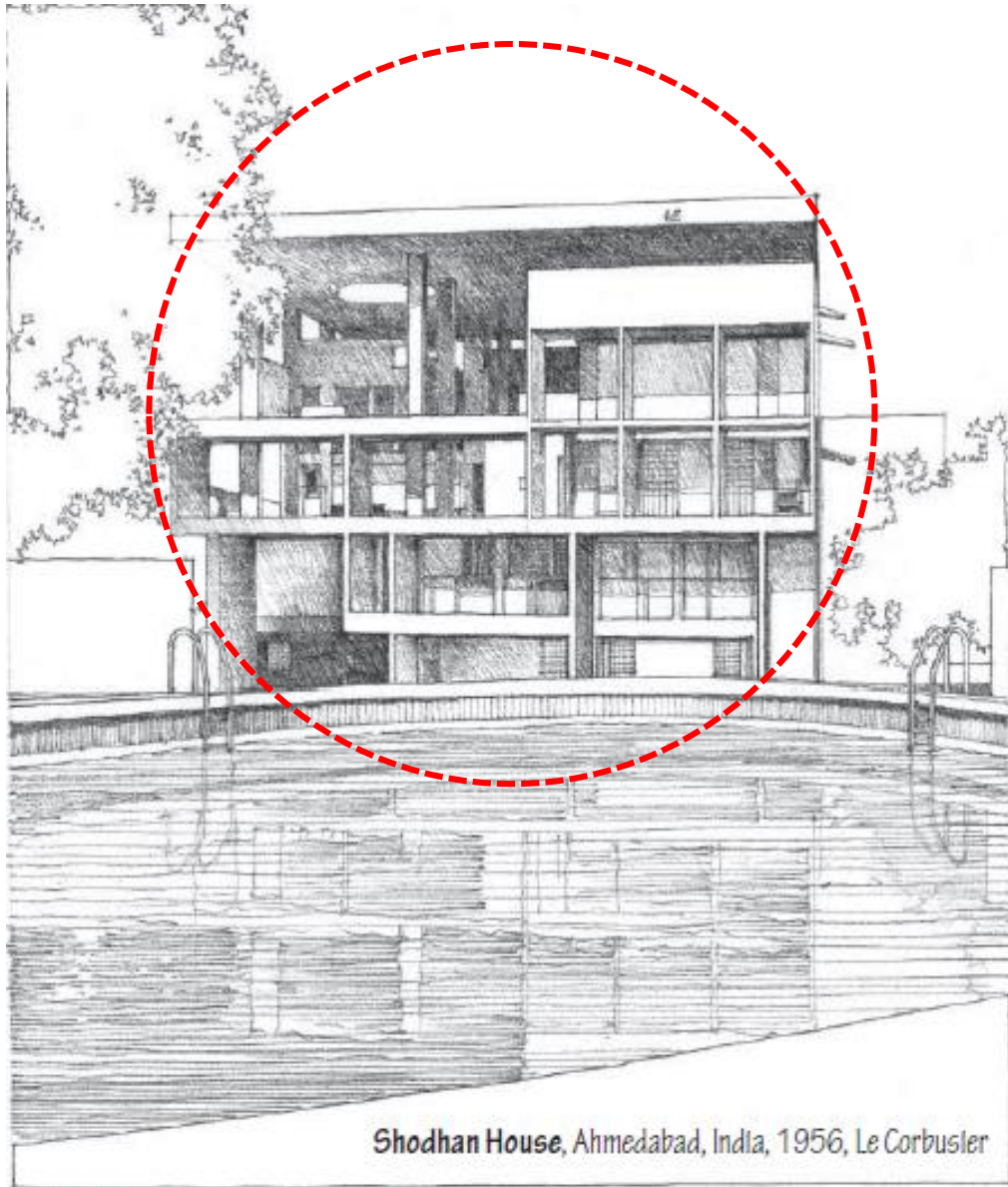




House at Stabio, Ticino, Switzerland, 1981, Mario Botta



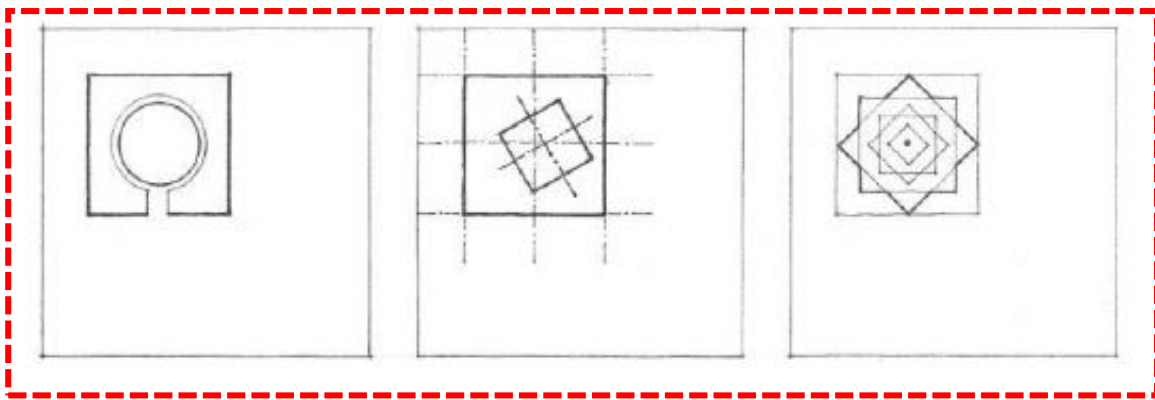




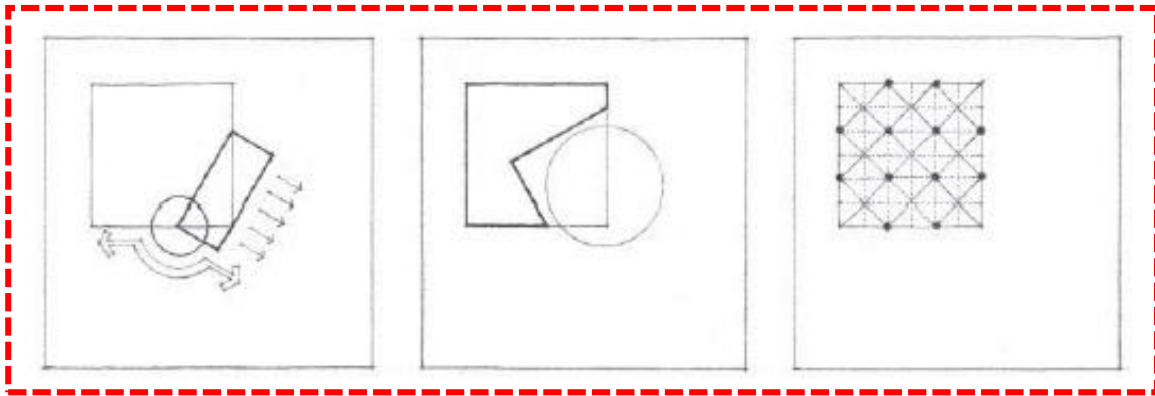


# Gabungan Geometri

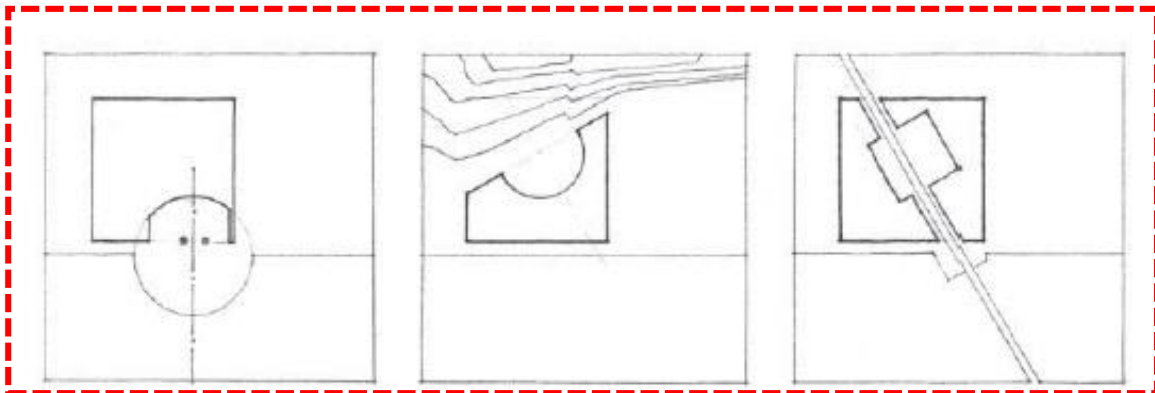
- 1. Transformasi dimensional**
- 2. Transformasi subtraktif**
- 3. Transformasi aditif**



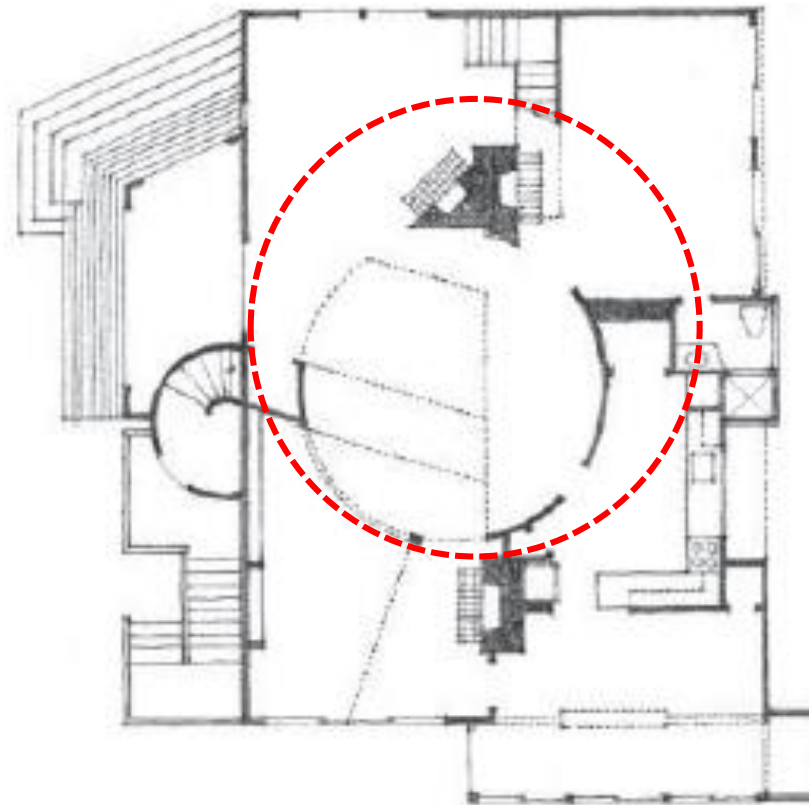
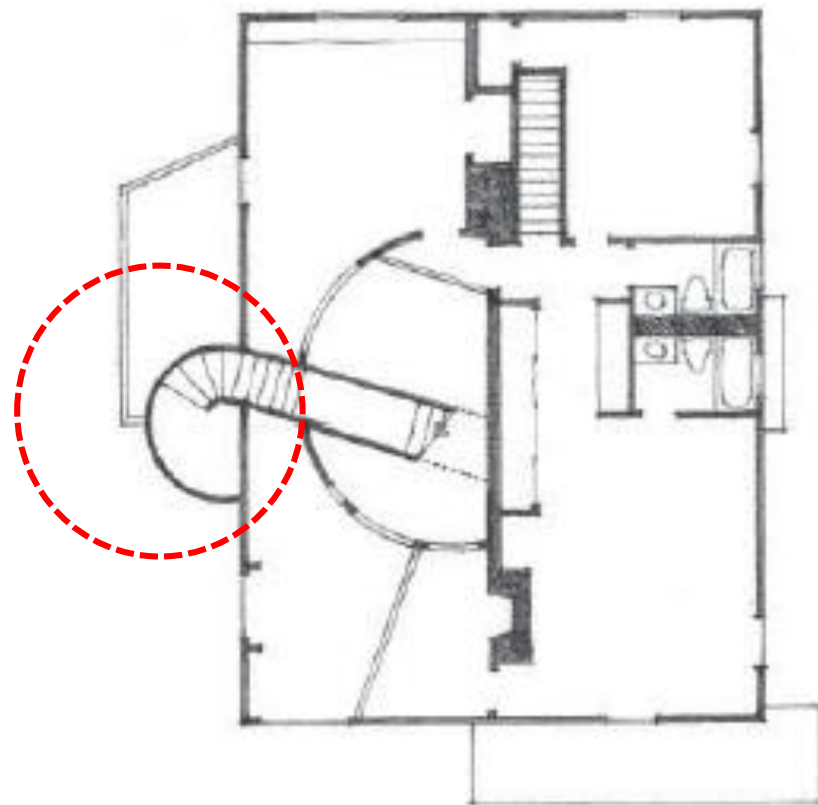
- To accommodate or accentuate the differing requirements of interior space and exterior form
- To express the functional or symbolic importance of a form or space within its context
- To generate a composite form that incorporates the contrasting geometries into its centralized organization



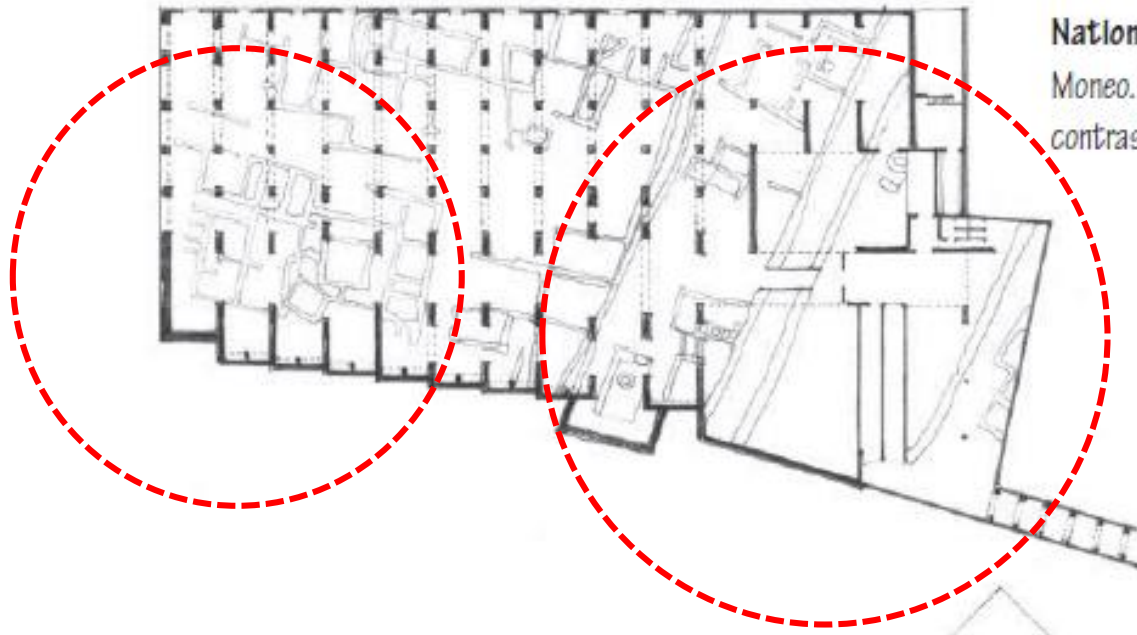
- To inflect a space toward a specific feature of a building site
- To carve a well-defined volume of space from a building form
- To express and articulate the various constructional or mechanical systems that exist within a building form



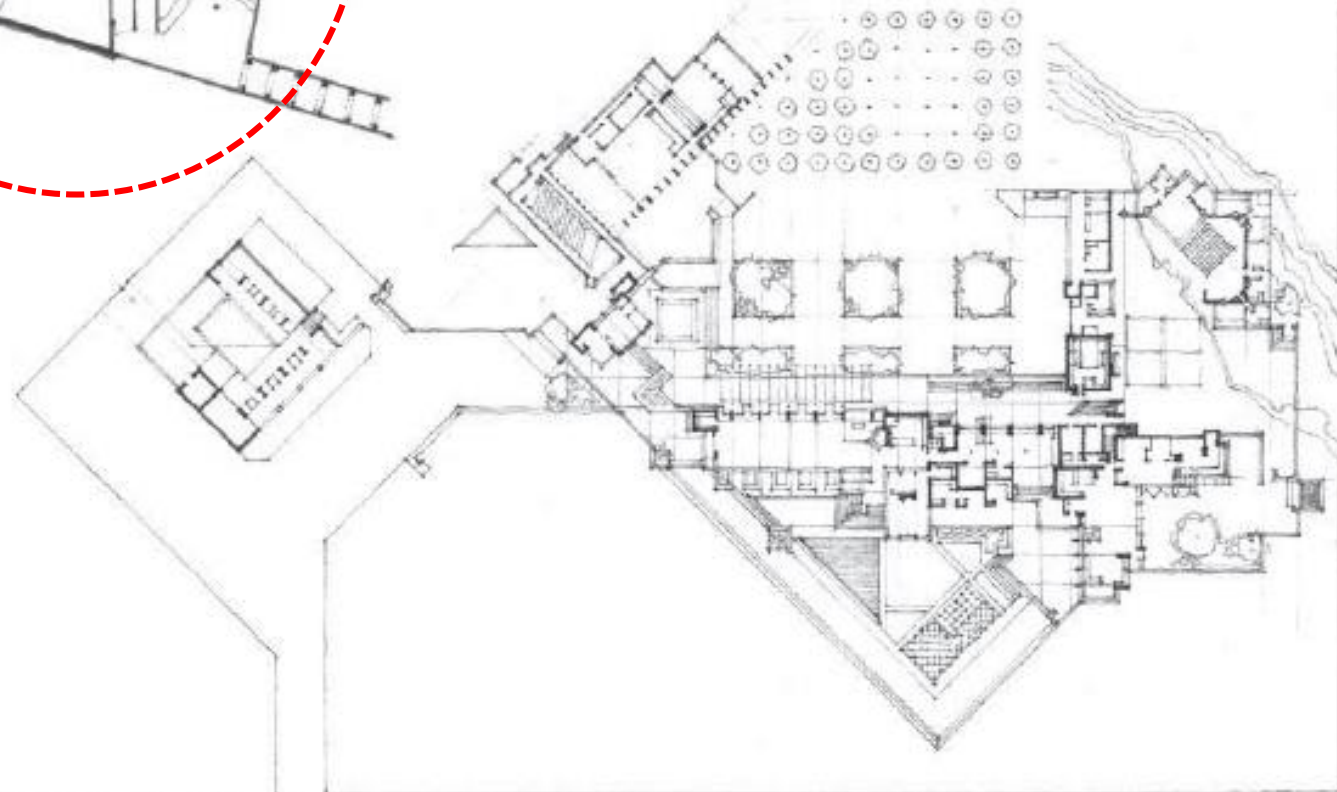
- To reinforce a local condition of symmetry in a building form
- To respond to contrasting geometries of the topography, vegetation, boundaries, or existing structures of a site
- To acknowledge an already existing path of movement through a building site



Murray House, Cambridge, Massachusetts, 1969, Charles Moore



**National Museum of Roman Art**, Mérida, Spain, 1980–1986, Rafael Moneo. The structural grid of the lower level of the museum floats over and contrasts with the geometry of the ancient Roman remains of Mérida.

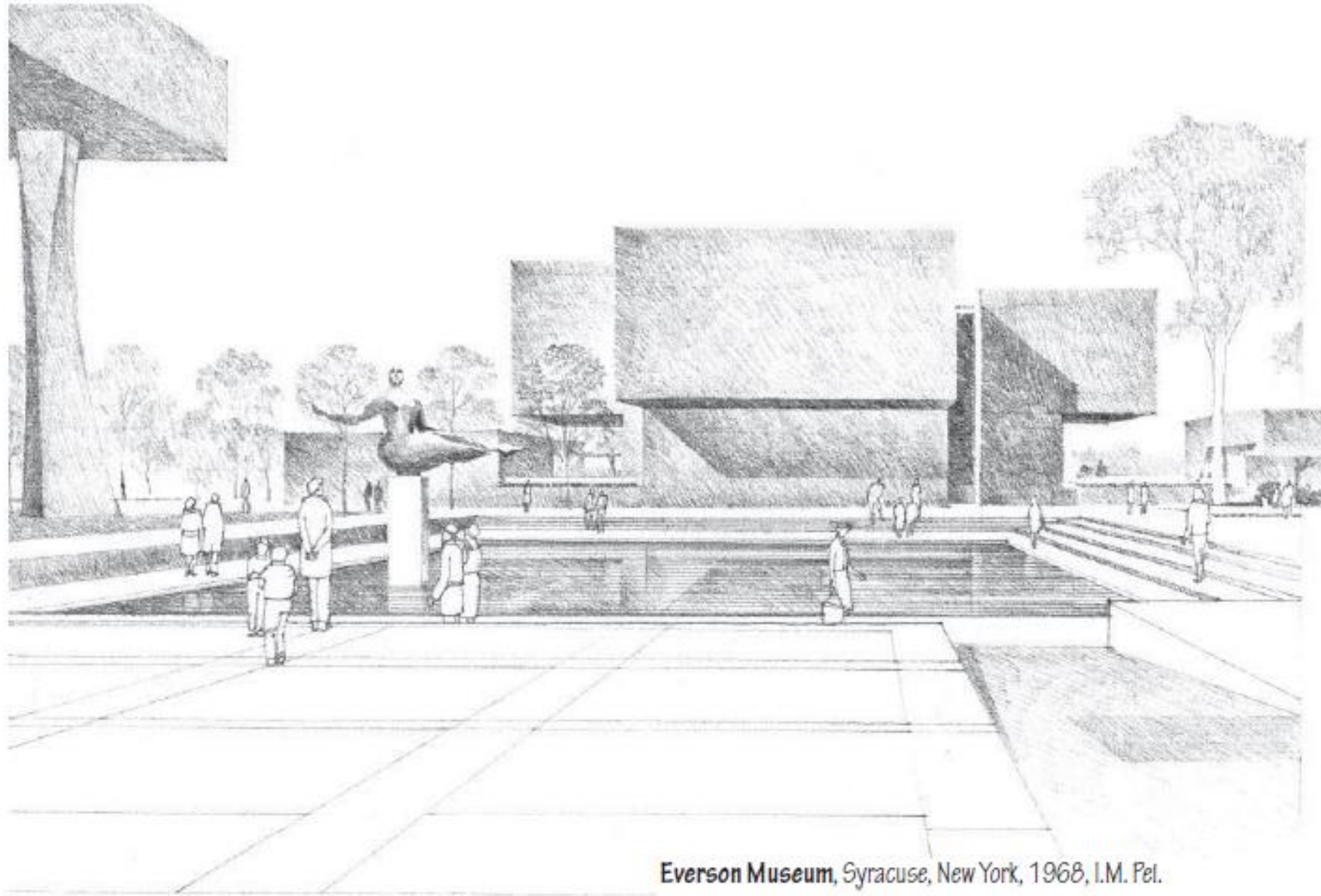


**A Diagram of Architecture:**  
**Taliesin West**, near Scottsdale, Arizona, 1938–1959, Frank Lloyd Wright

# Artikulasi Bentuk

Suatu bentuk dapat diartikulasi melalui:

1. **Membuat perbedaan** pada salah satu bidang dengan material, warna, tekstur atau pola
2. **Menggubah pojok** sebagai elemen yang berbeda
3. **Menghilangkan pojok** dan diganti dengan suatu massa terpisah

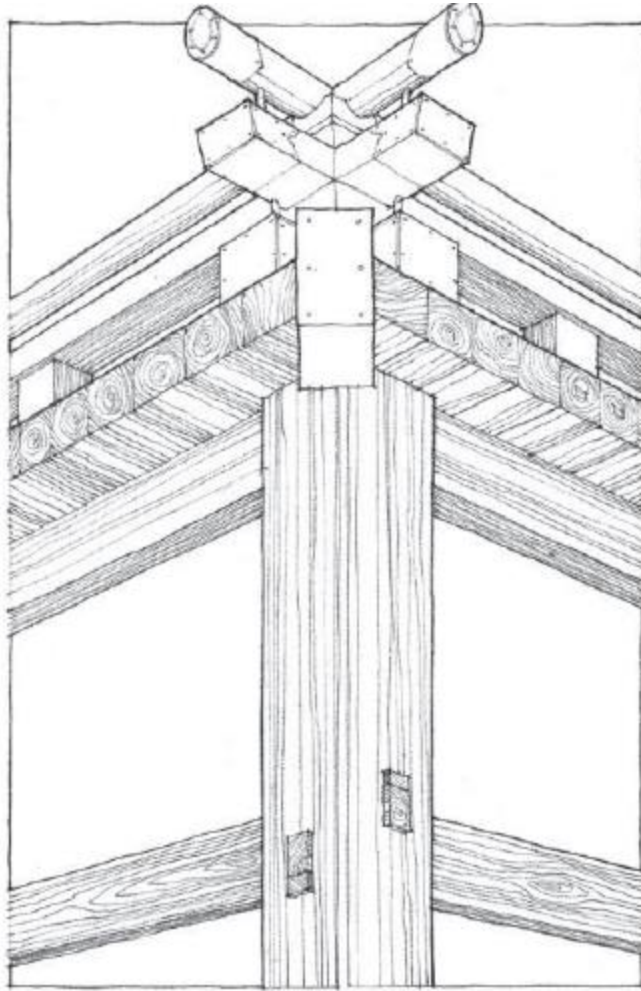


Everson Museum, Syracuse, New York, 1968, I.M. Pei.

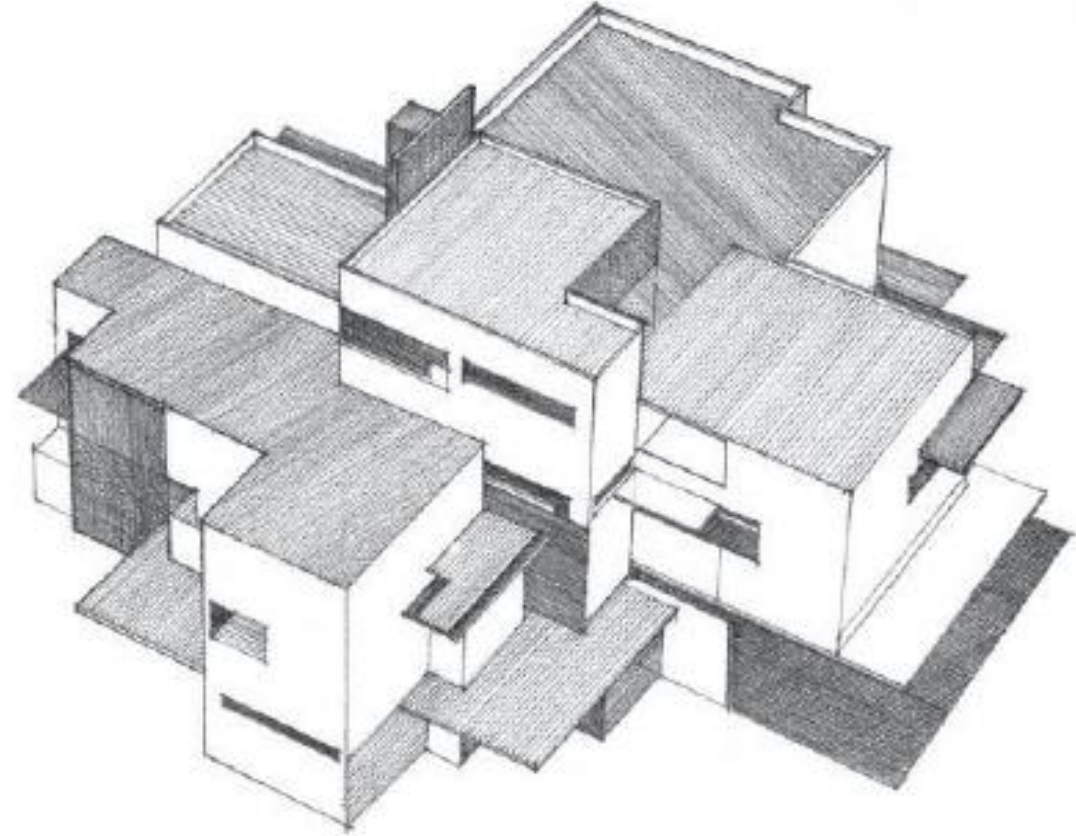
Plan, second floor



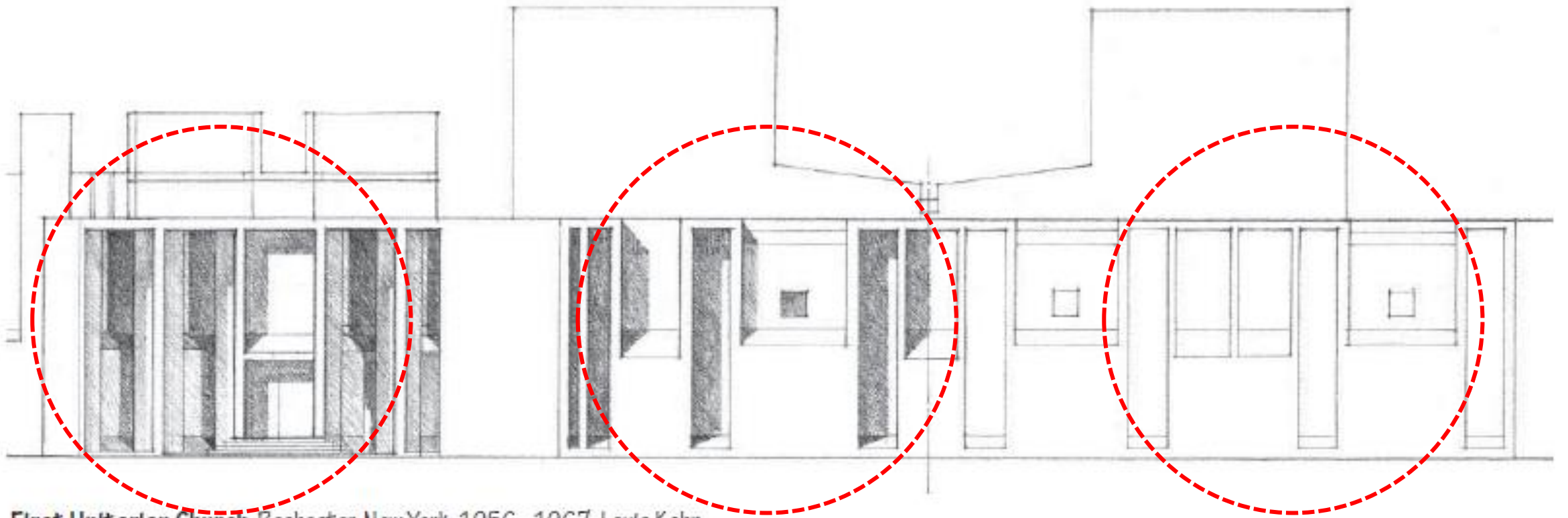




Corner Detail, **Izumo Shrine**, ShImane Prefecture, Japan, A.D. 717 (last rebuilt in 1744).  
The timber joinery articulates the individuality of the members meeting at the corner.

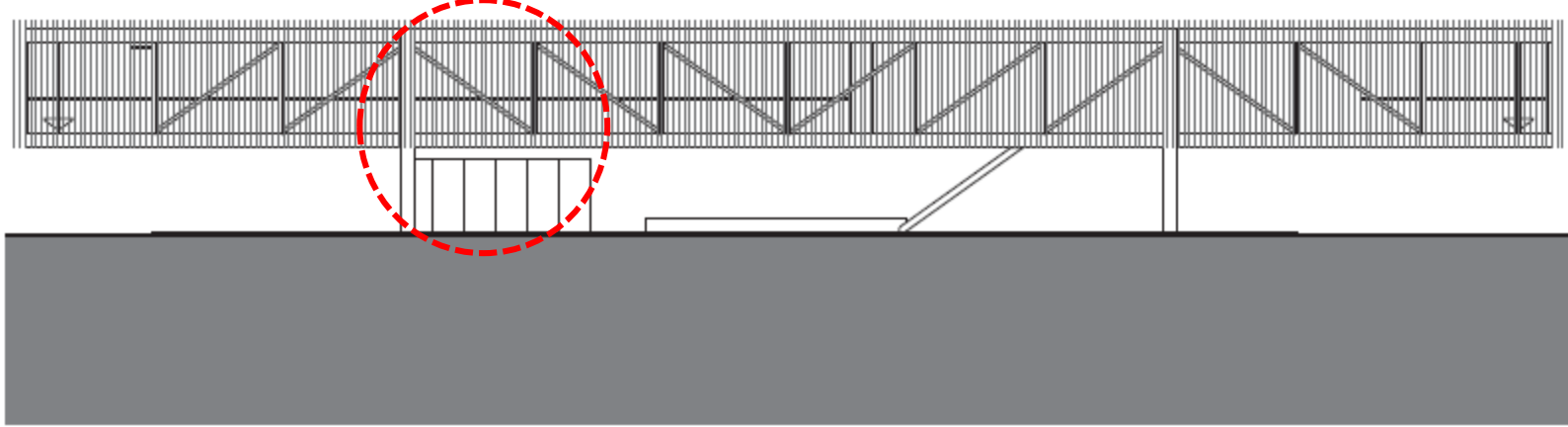


*Architectural Design Study, 1923, Van Doesburg and Van Esteren*



First Unitarian Church, Rochester, New York, 1956–1967, Louis Kahn.

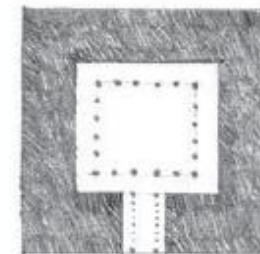
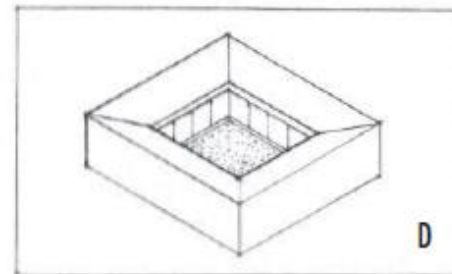
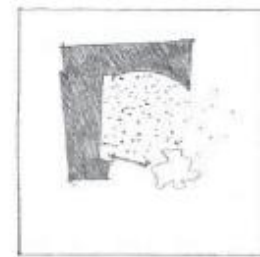
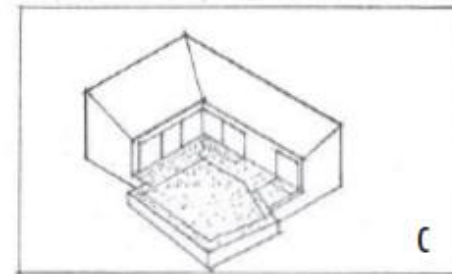
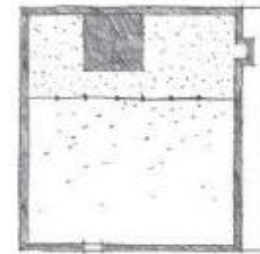
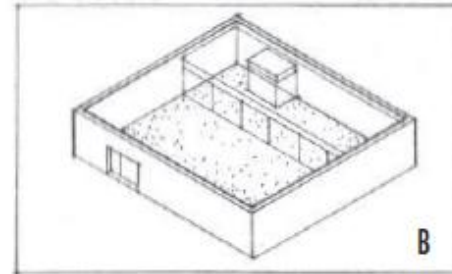
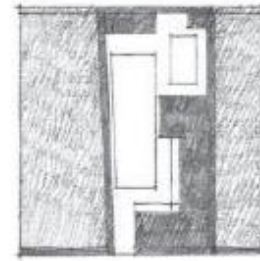
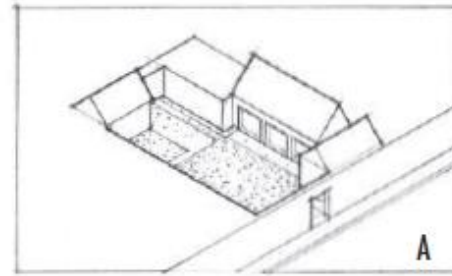




St. Andrew's Beach House, Victoria, Australia, 2006, Sean Godsell Architects



# Form and Space: The Unity of Opposites



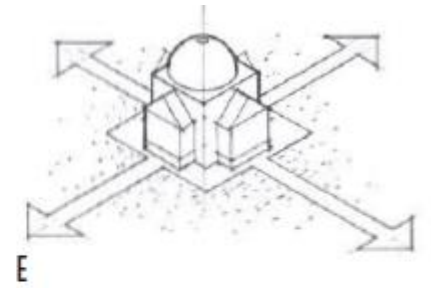
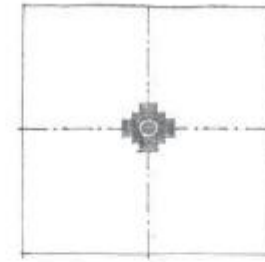
The symbiotic relationship of the forms of mass and space in architecture can be examined and found to exist at several different scales. At each level, we should be concerned not only with the form of a building but also its impact on the space around it. At an urban scale, we should carefully consider whether the role of a building is to continue the existing fabric of a place, form a backdrop for other buildings, or define a positive urban space, or whether it might be appropriate for it to stand free as a significant object in space.

At the scale of a building site, there are various strategies for relating the form of a building to the space around it. A building can:

- form a wall along an edge of its site and begin to define a positive outdoor space;
- merge its interior space with the private outdoor space of a walled site;
- enclose a portion of its site as an outdoor room and shelter it from undesirable climatic conditions;
- surround and enclose a courtyard or atrium space within its volume—an introverted scheme.

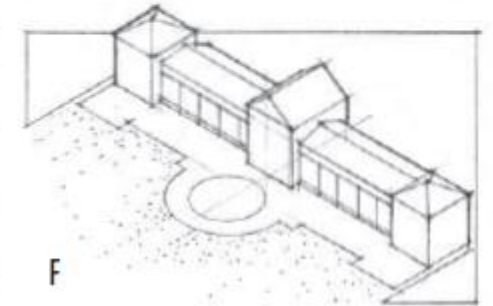
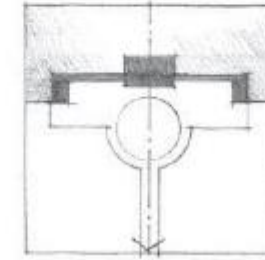
# Form and Space: The Unity of Opposites

E. stand as a distinct object in space and dominate its site through its form and topographical positioning—an extroverted scheme;



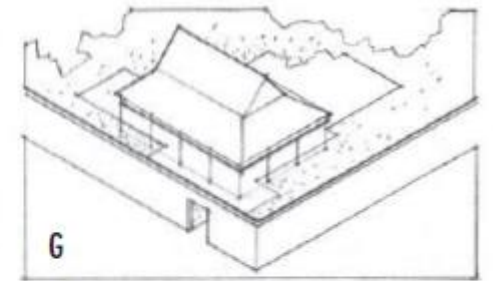
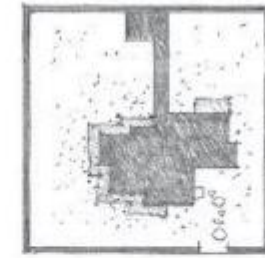
E

F. stretch out and present a broad face to address a view, terminate an axis, or define an edge of an urban space;



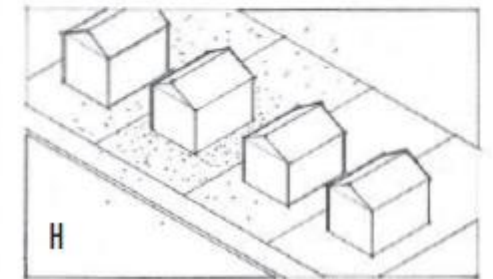
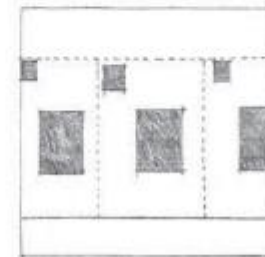
F

G. stand free within its site but extend its interior spaces to merge with private exterior spaces;

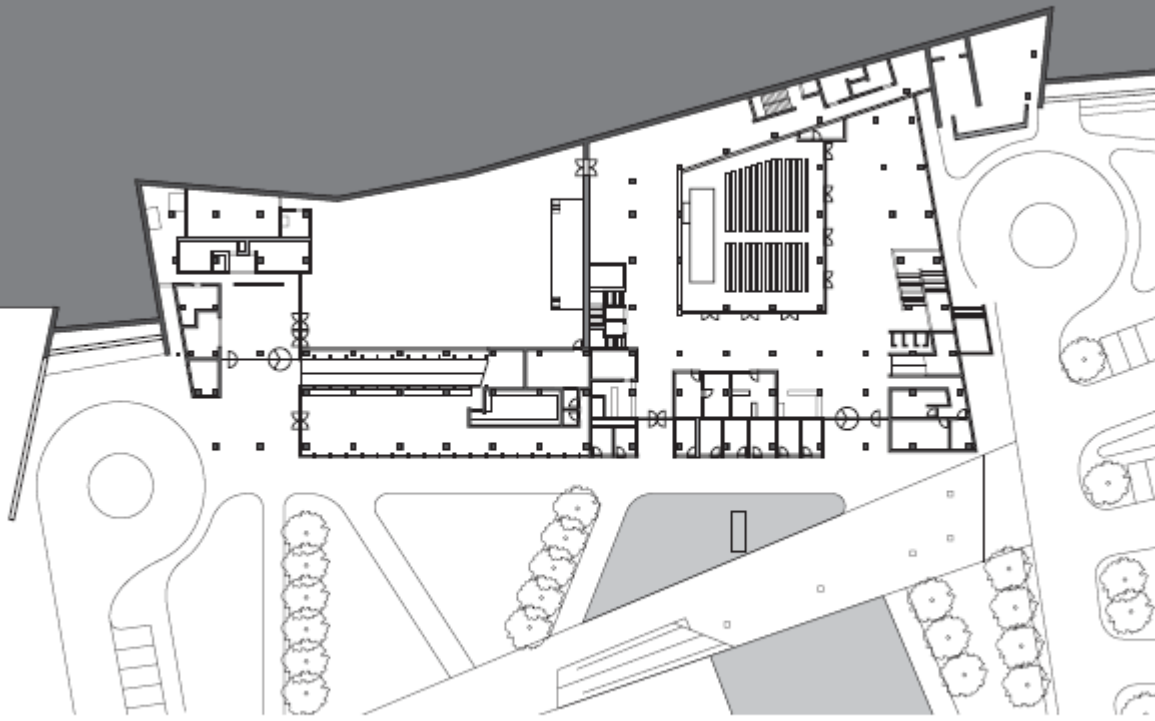


G

H. stand as a positive form in a negative space.



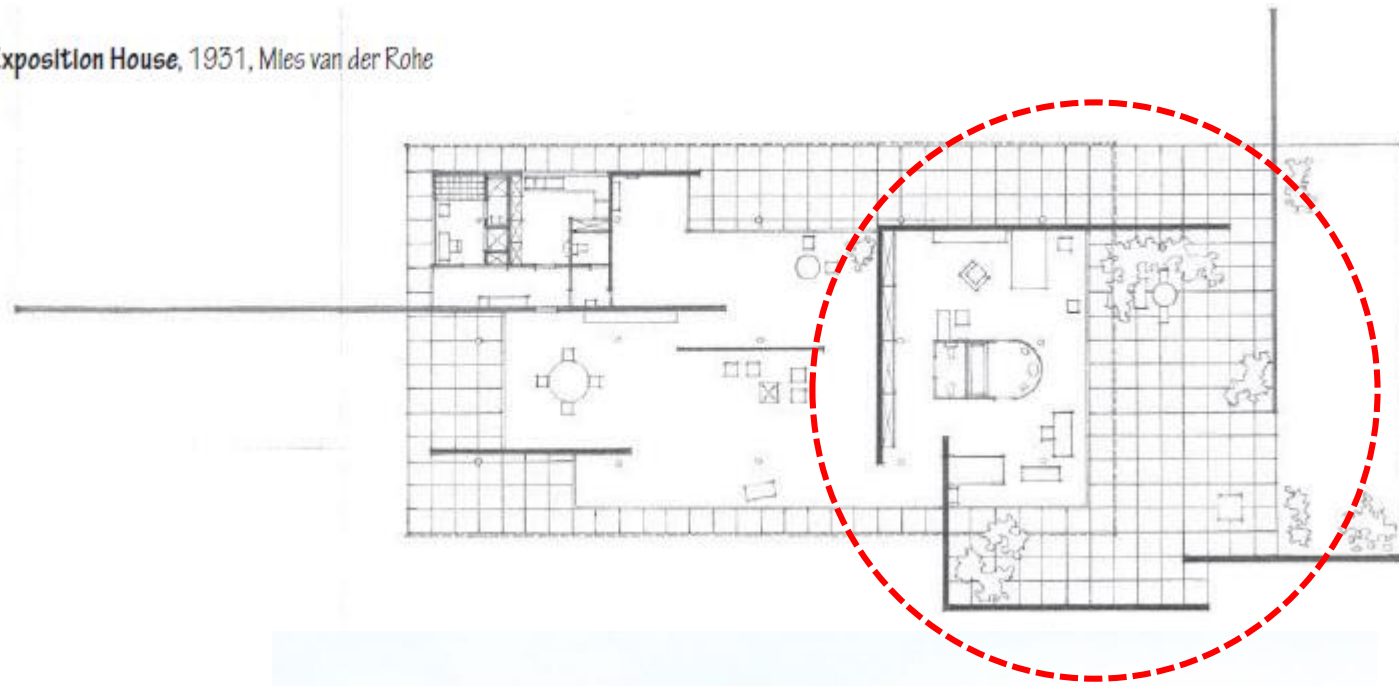
H



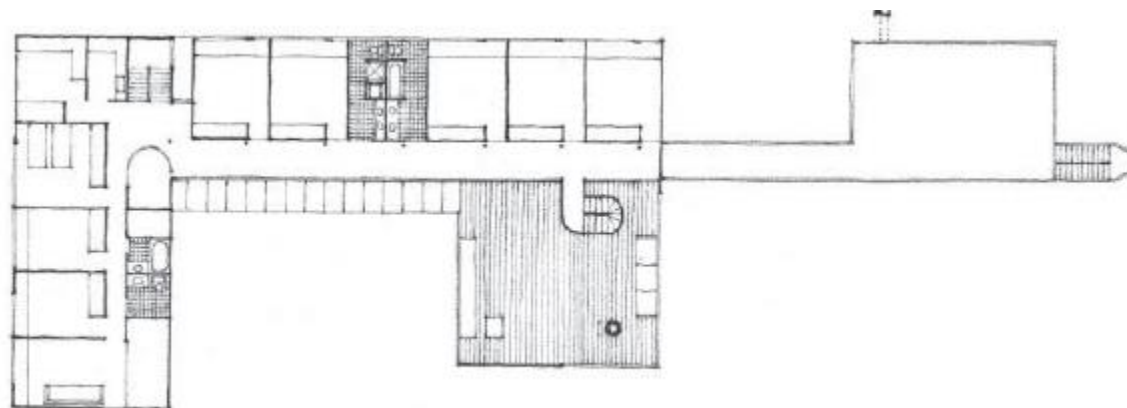
**Building Embedded in the Landscape:**  
*Eyüp Cultural Center, Istanbul, Turkey, 2013, EAA-Emre Arolat Architects*



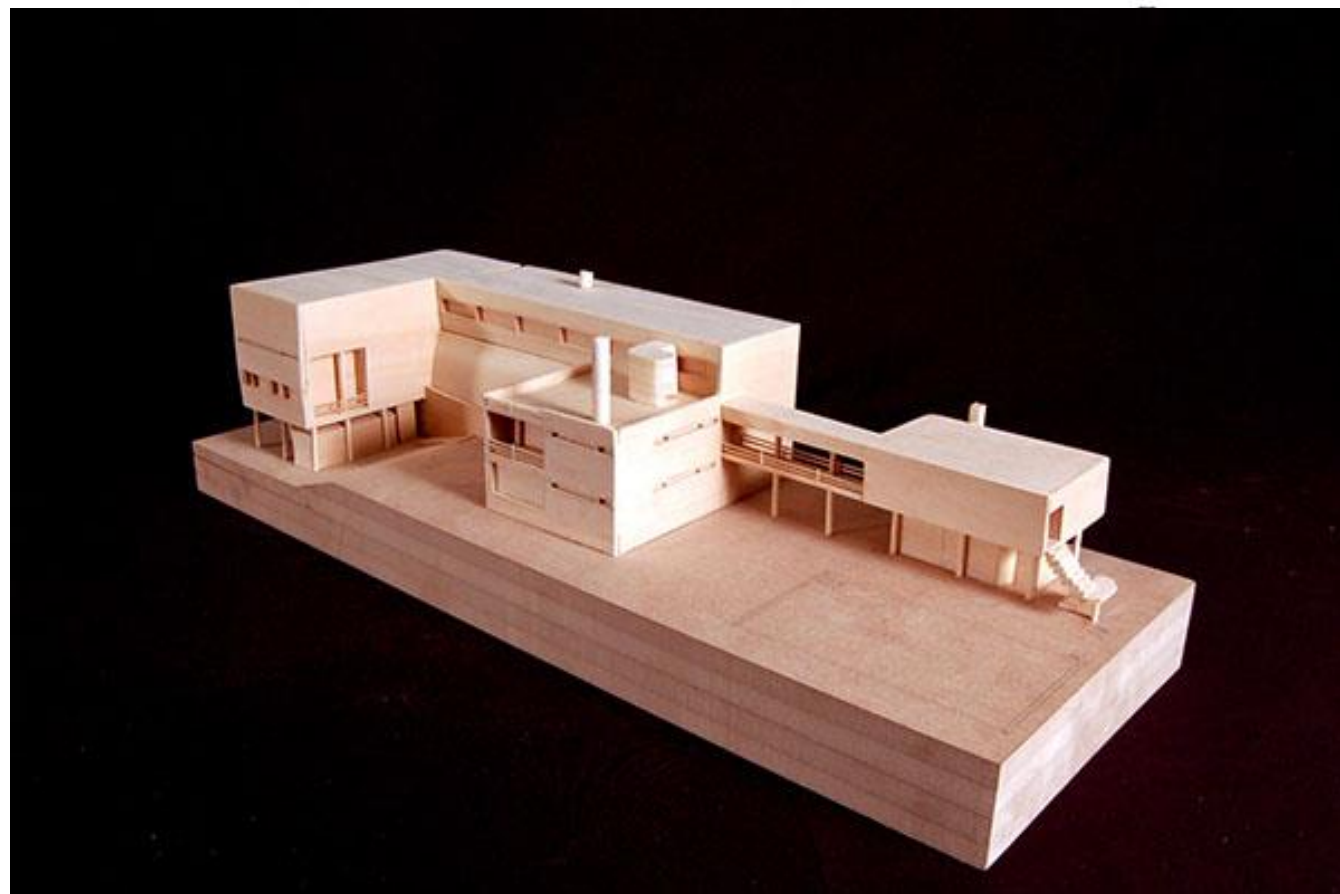
Berlin Building Exposition House, 1931, Mies van der Rohe



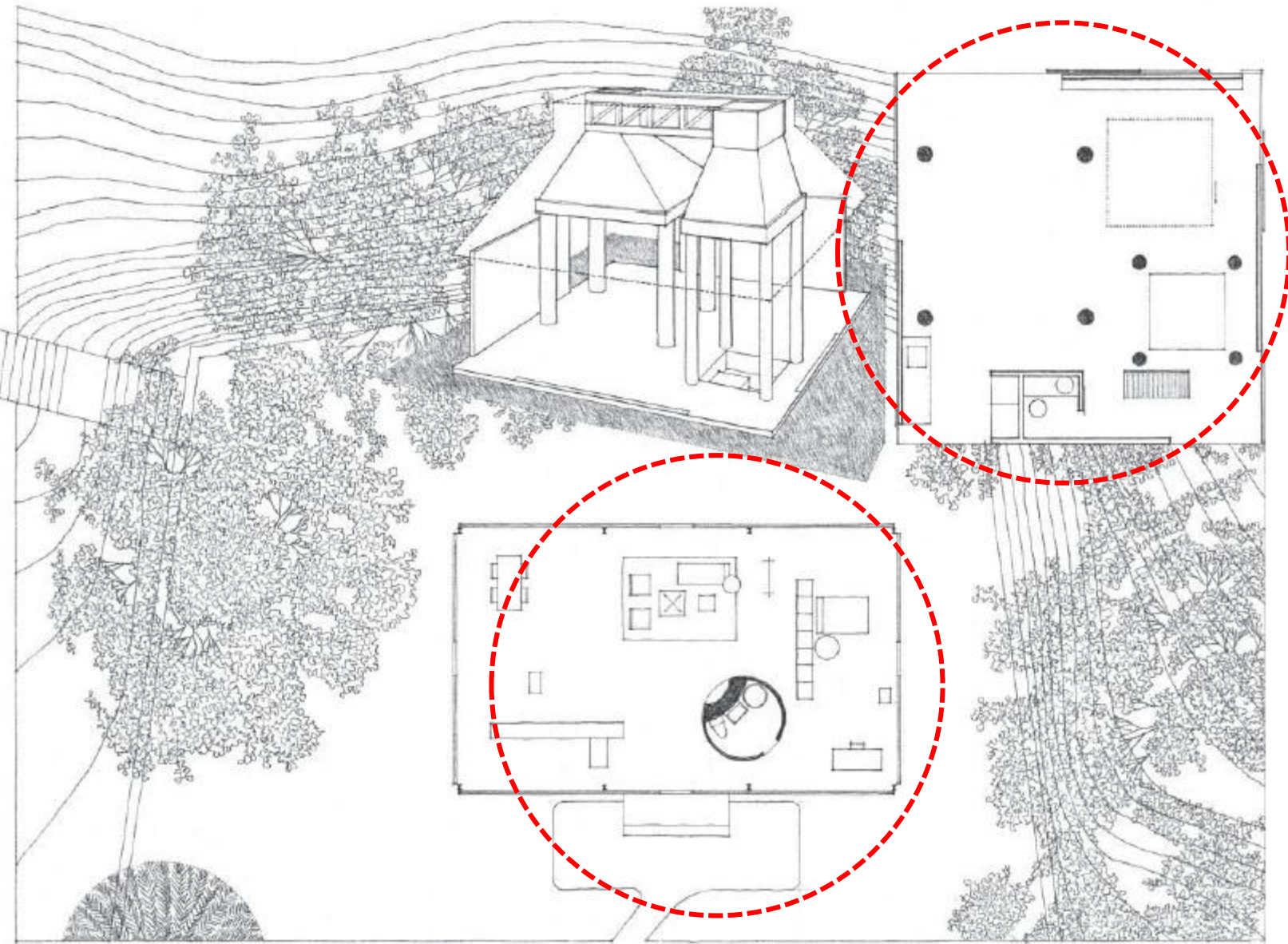
House in Old Westbury, New York,  
1969–1971, Richard Meier



Upper level



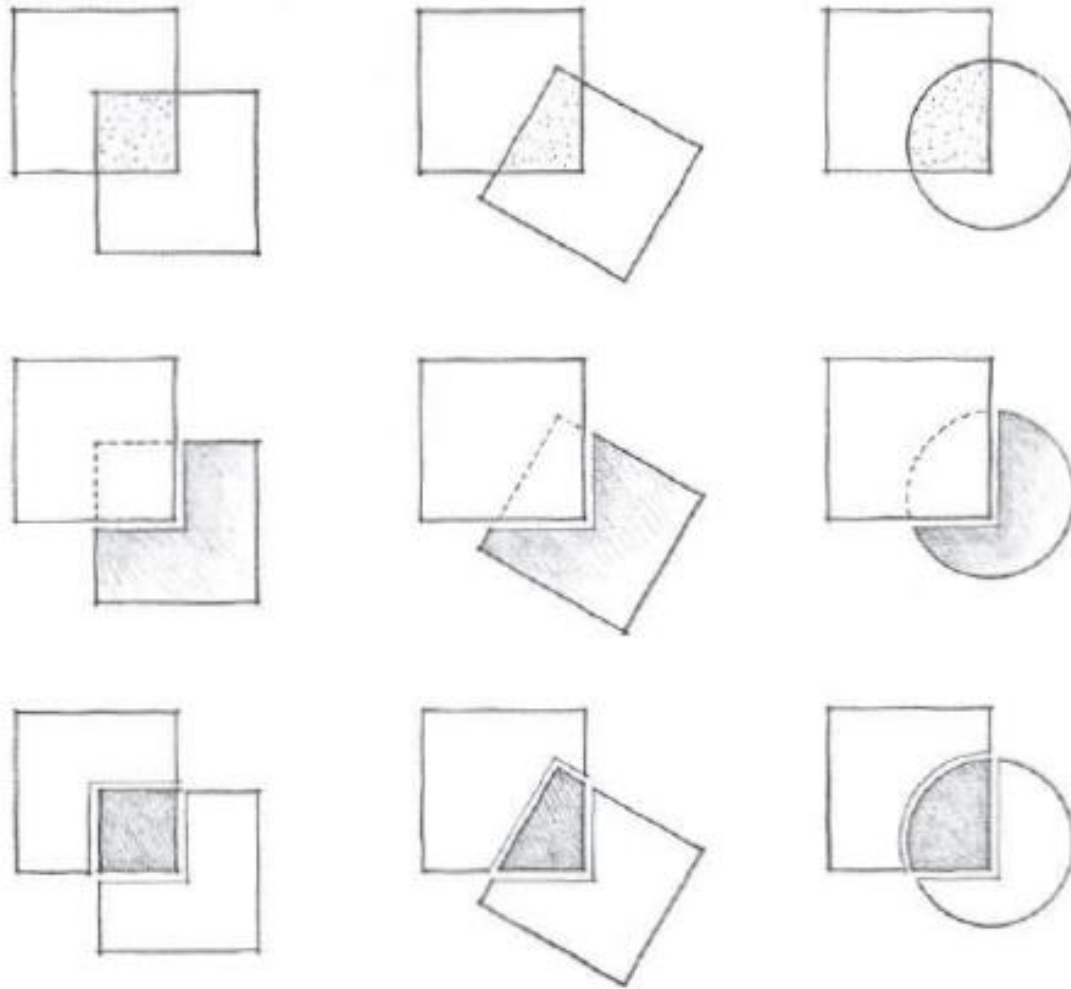
Moore House, Orinda, California, 1961, Charles Moore



Glass House, New Canaan, Connecticut, 1949, Philip Johnson



# Organisasi Massa- Ruang

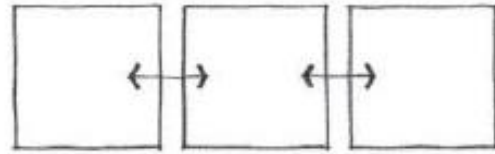


The Interlocking portion of the two volumes can be shared equally by each space.

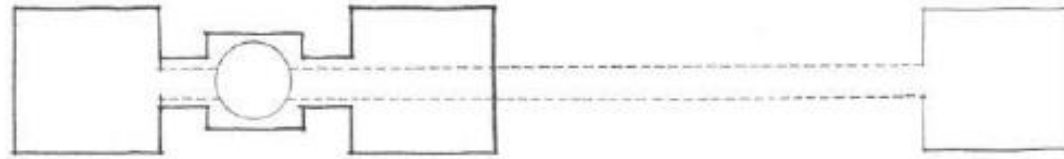
The Interlocking portion can merge with one of the spaces and become an integral part of its volume.

The Interlocking portion can develop its own integrity as a space that serves to link the two original spaces.

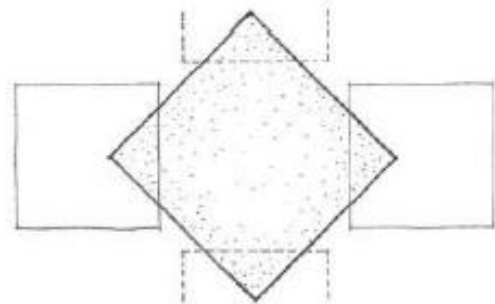
# Ruang Antar Massa



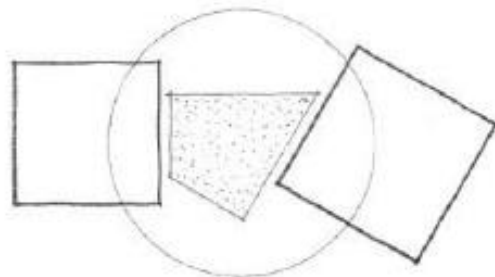
The two spaces, as well as the intermediate space, can be equivalent in size and shape and form a linear sequence of spaces.



The intermediate space can itself become linear in form to link two spaces that are distant from each other, or join a whole series of spaces that have no direct relationship to one another.

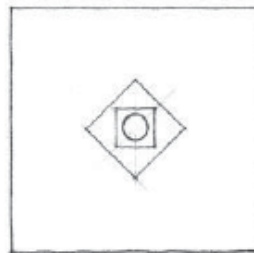


The intermediate space can, if large enough, become the dominant space in the relationship, and be capable of organizing a number of spaces about itself.



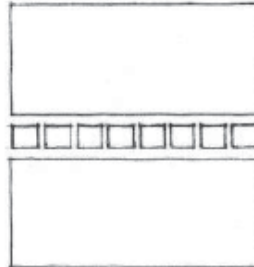
The form of the intermediate space can be residual in nature and be determined solely by the forms and orientations of the two spaces being linked.

# Organisasi Spasial



## Centralized Organization

*A central, dominant space about which a number of secondary spaces are grouped*



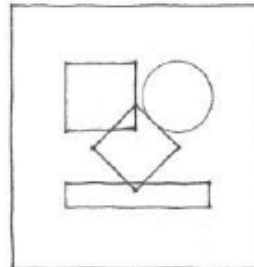
## Linear Organization

*A linear sequence of repetitive spaces*



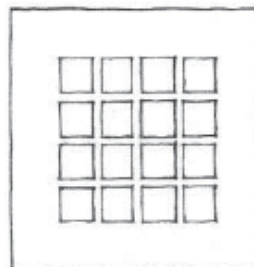
## Radial Organization

*A central space from which linear organizations of space extend in a radial manner*



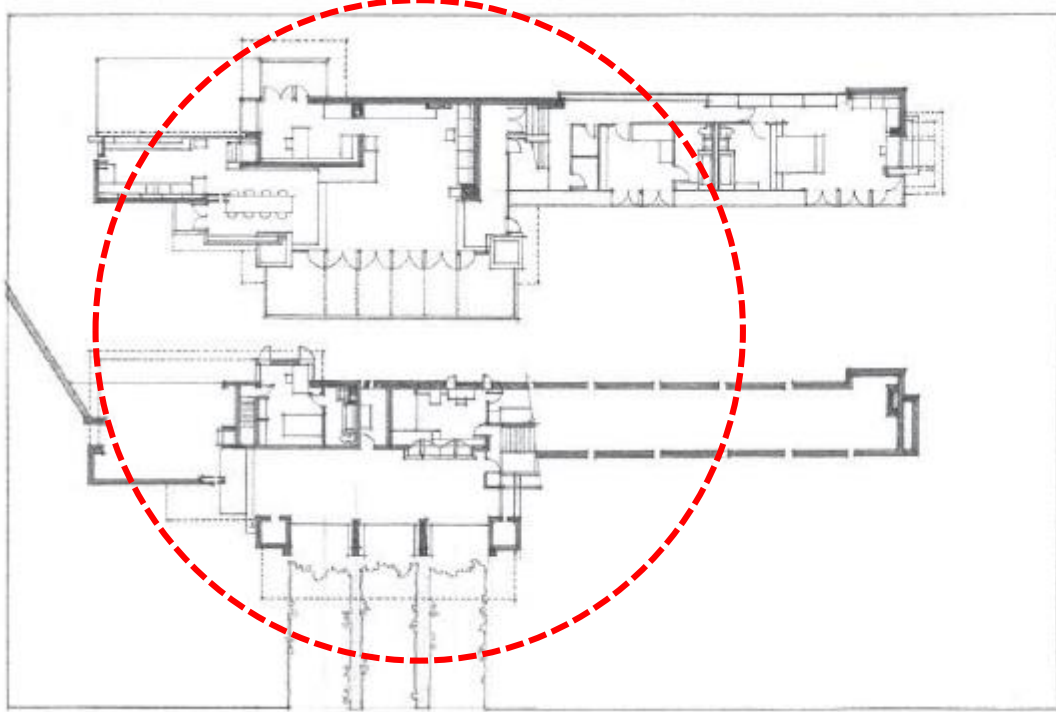
## Clustered Organization

*Spaces grouped by proximity or the sharing of a common visual trait or relationship*

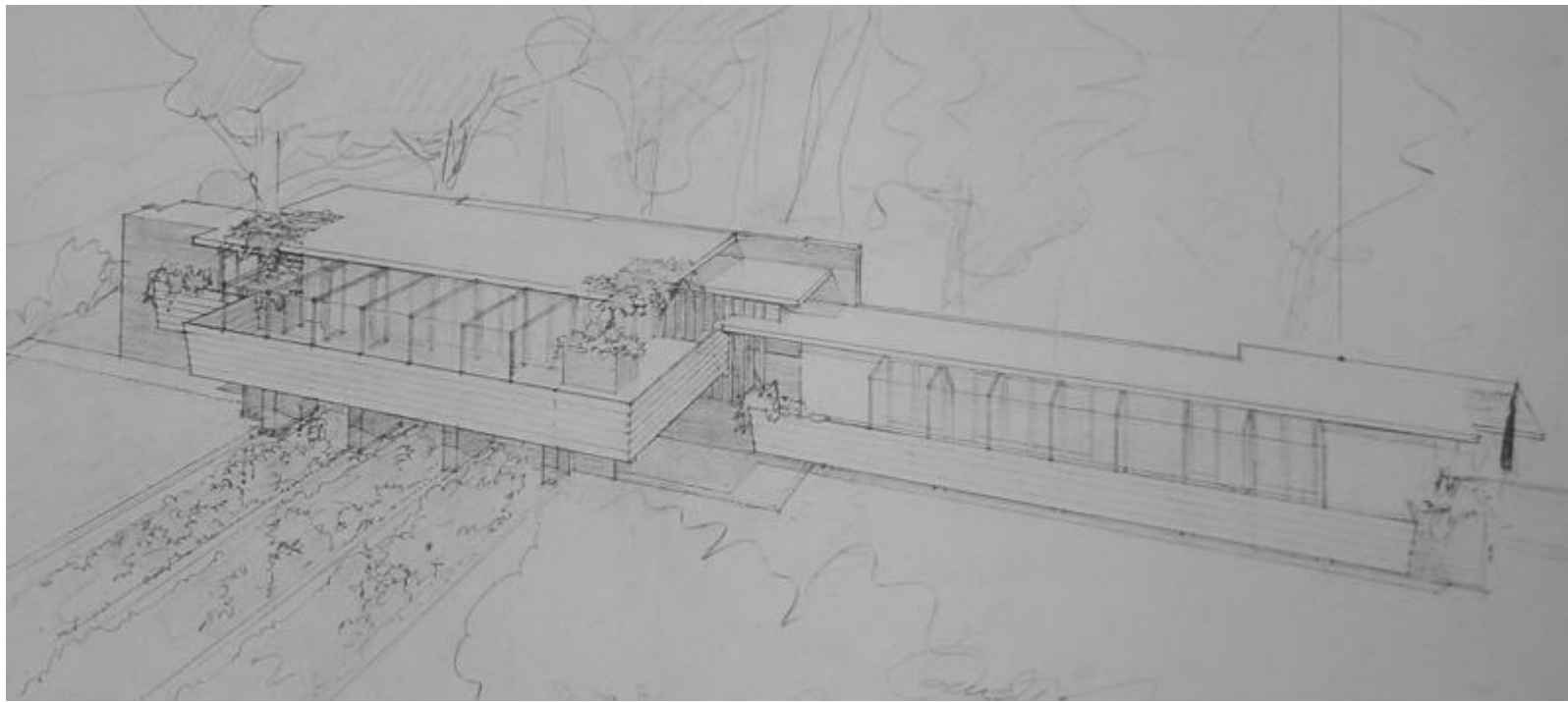


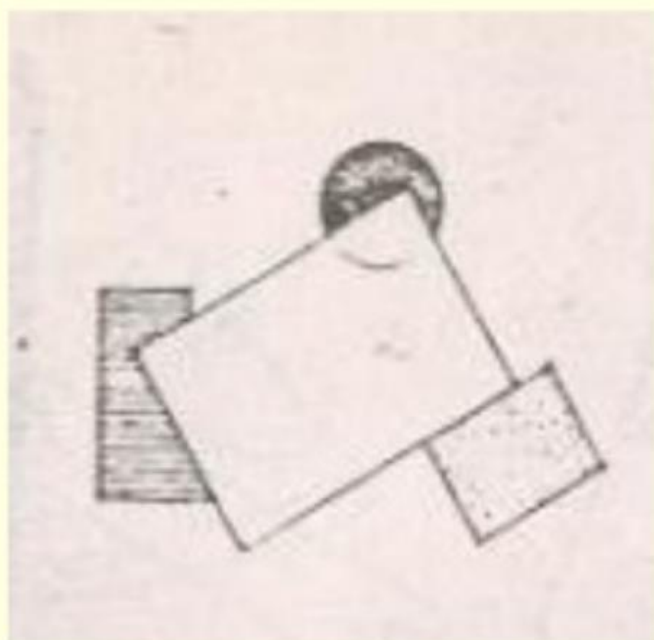
## Grid Organization

*Spaces organized within the field of a structural grid or other three-dimensional framework*

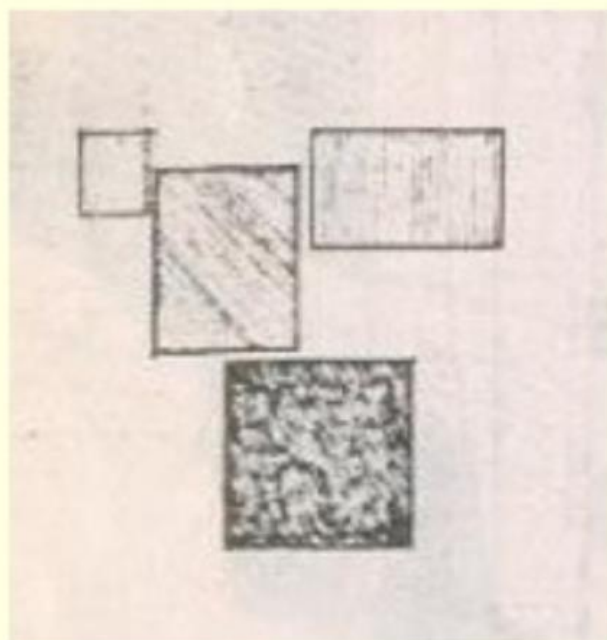


**Lloyd Lewis House**, Libertyville, Illinois,  
1940, Frank Lloyd Wright

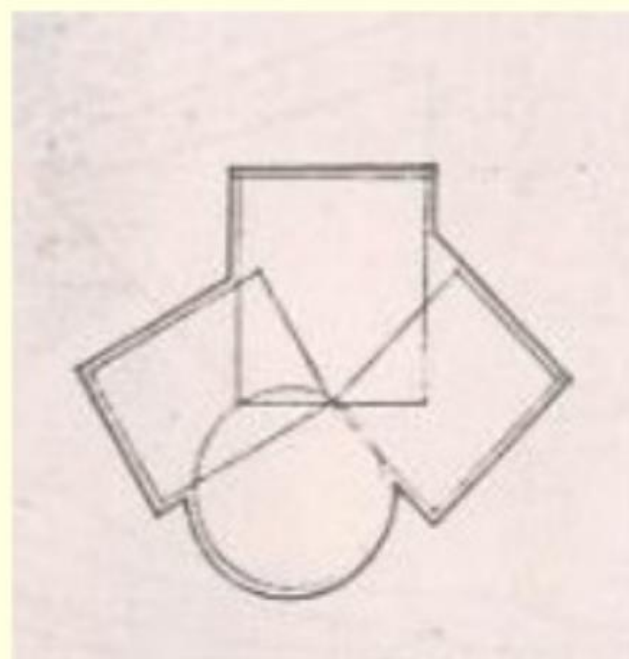




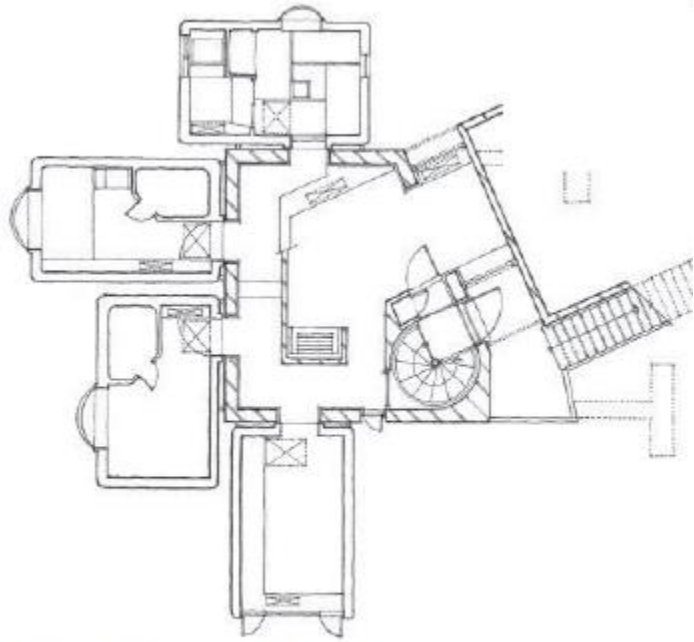
**Attached as appendages to larger parent form or space**



**Related by proximity alone to articulate and express their volume as individual**

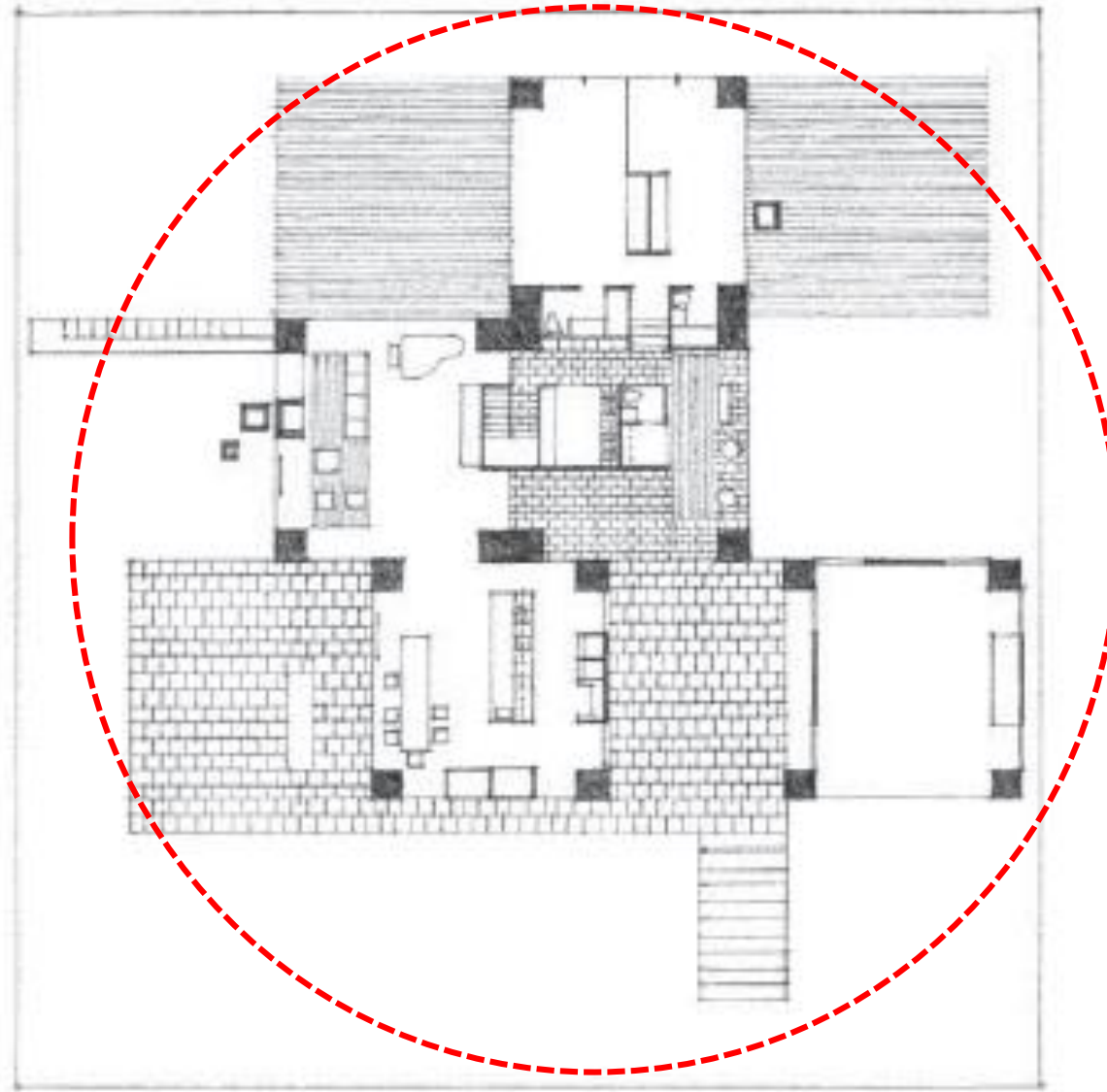


**Interlock their volume and merge into single form that have variety of faces**

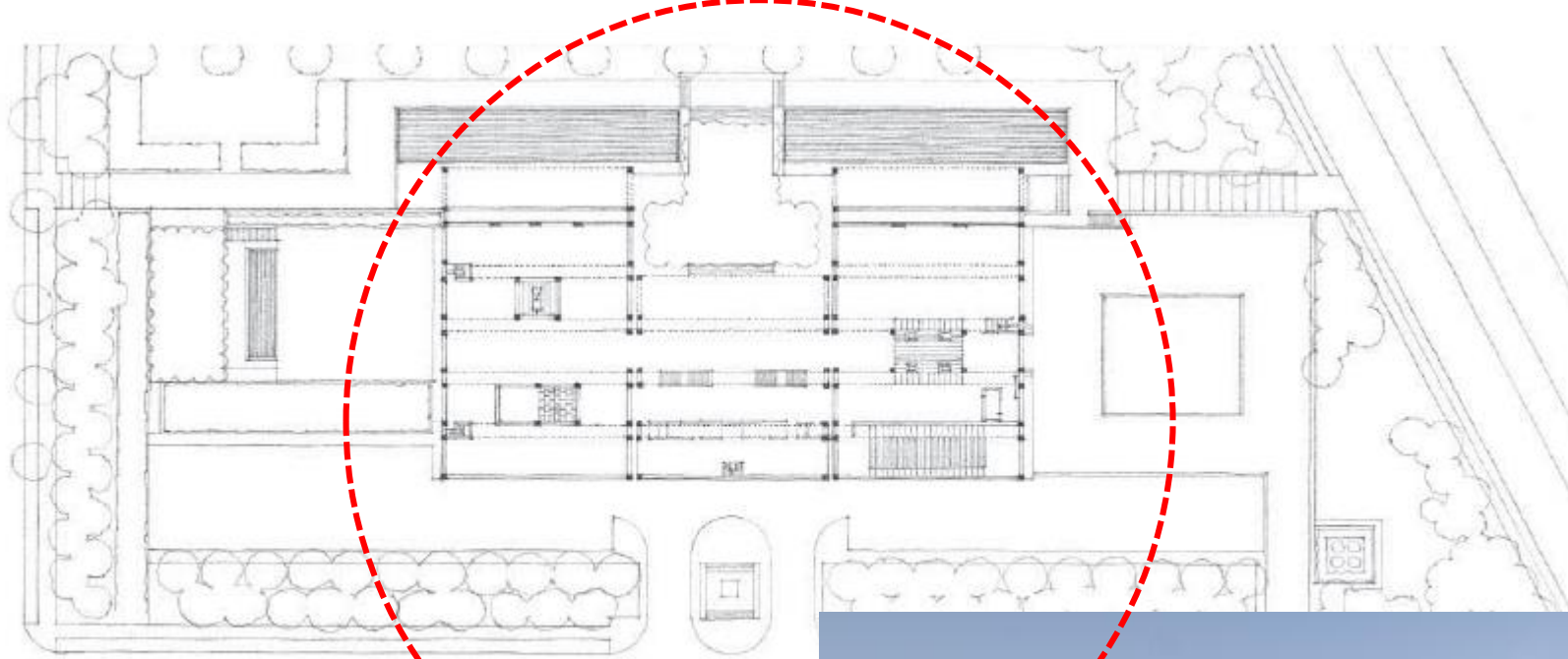


**Karuzawa House, Country Retreat,**  
1974, Kisho Kurokawa





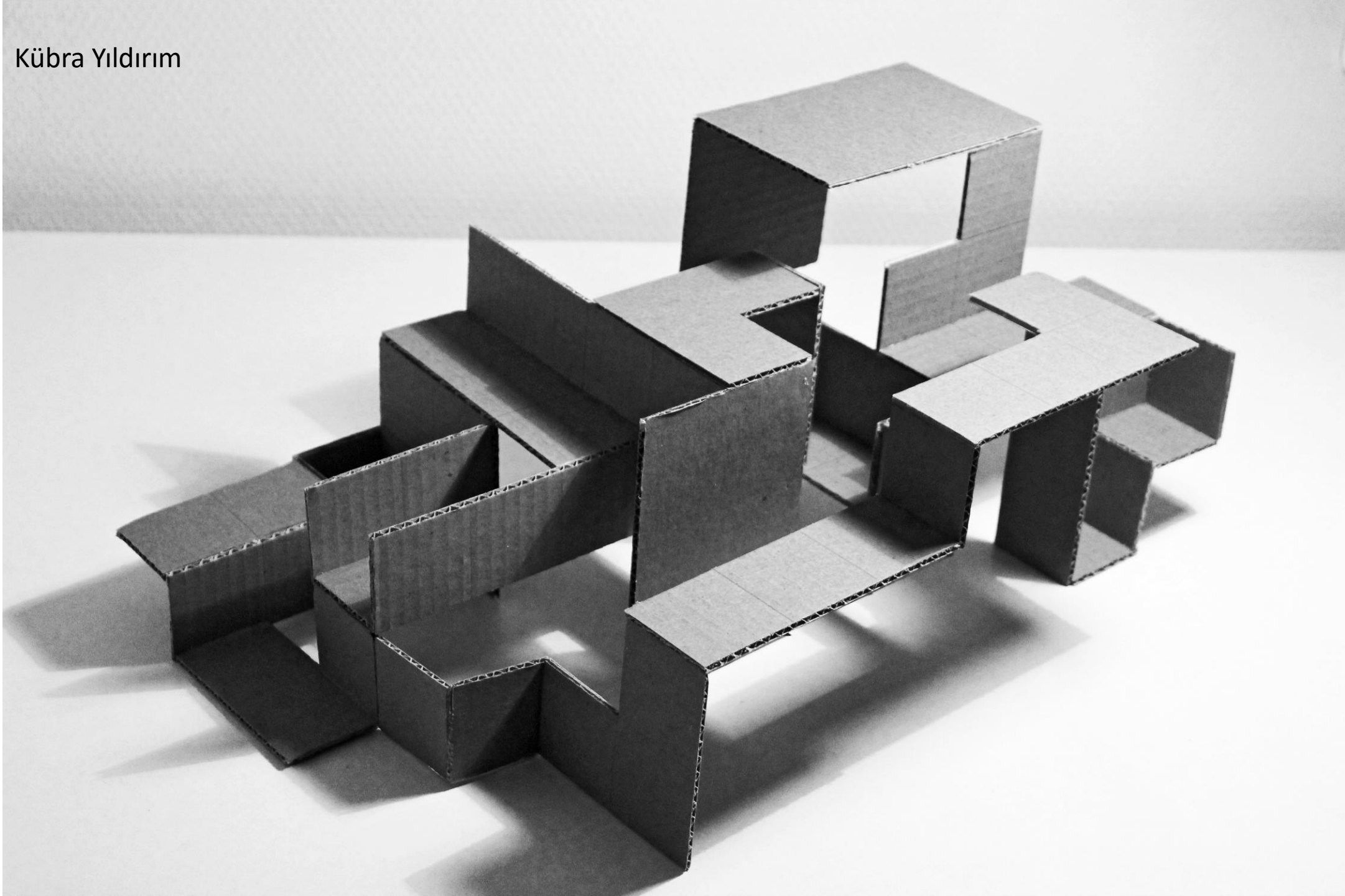
**Adler House (Project)**, Philadelphia, Pennsylvania, 1954, Louis Kahn

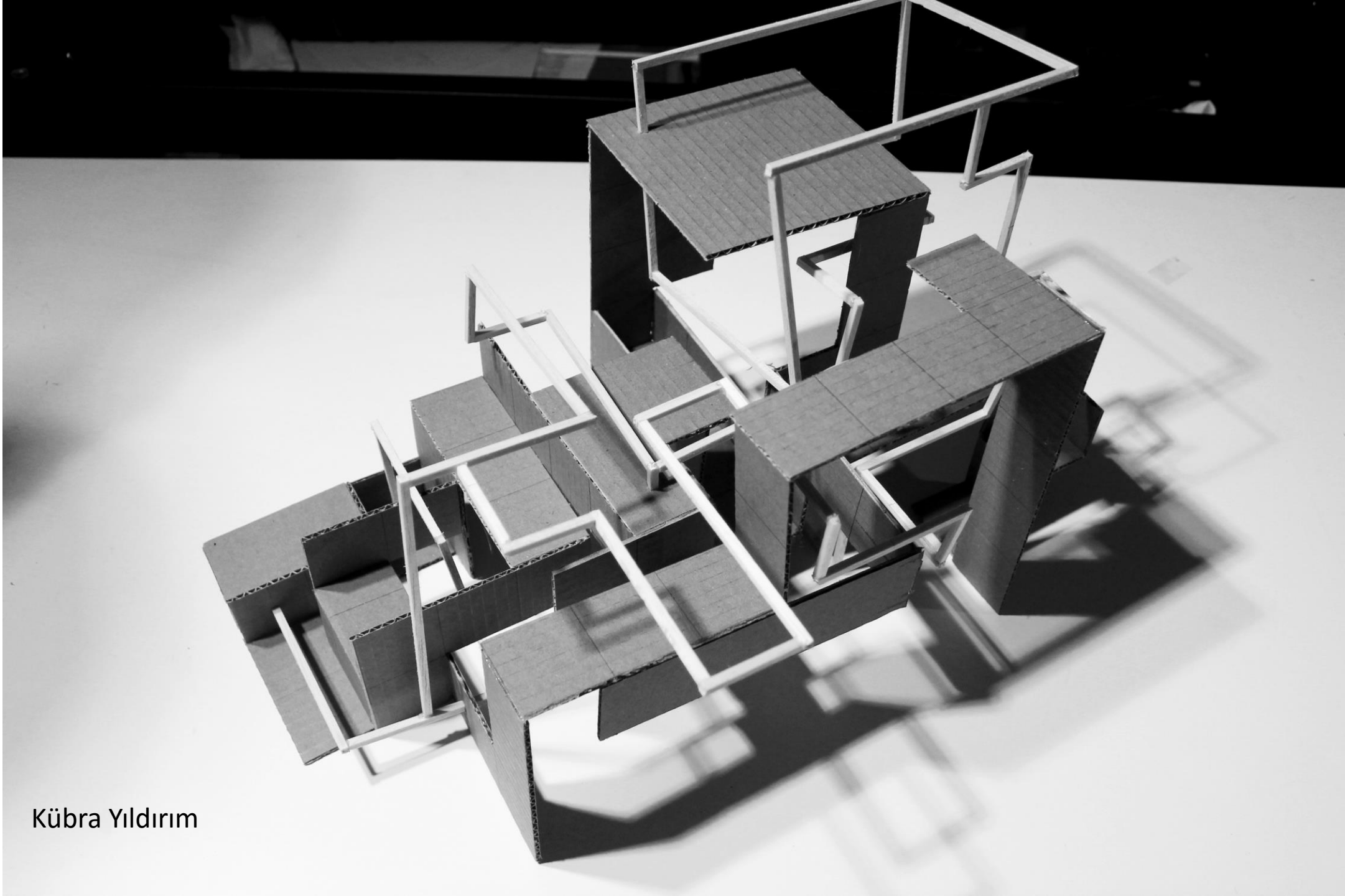


Kimball Art Museum, Forth Worth, Texas, 1967–1972, Louis Kahn



Kübra Yıldırım





Kübra Yıldırım

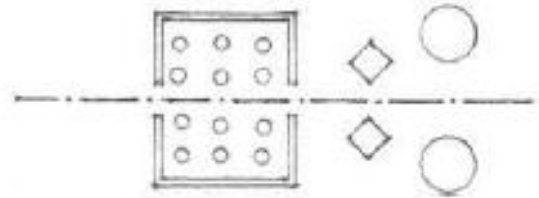
# Prinsip Order

Axis



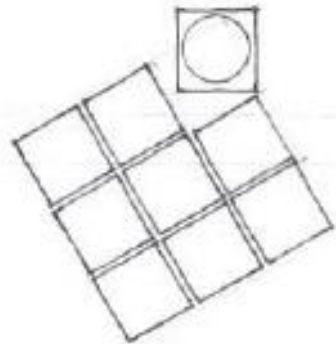
A line established by two points in space, about which forms and spaces can be arranged in a symmetrical or balanced manner.

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.

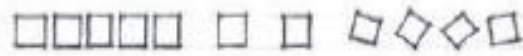
Hierarchy



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.

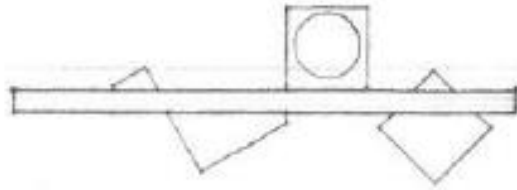
# Prinsip Order

## Rhythm



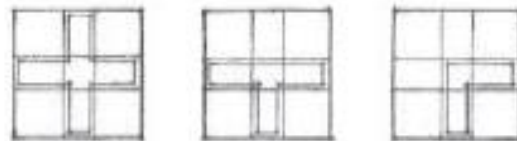
A unifying movement characterized by a patterned repetition or alternation of formal elements or motifs in the same or a modified form.

## Datum



A line, plane, or volume that, by its continuity and regularity, serves to gather, measure, and organize a pattern of forms and spaces.

## 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.



0

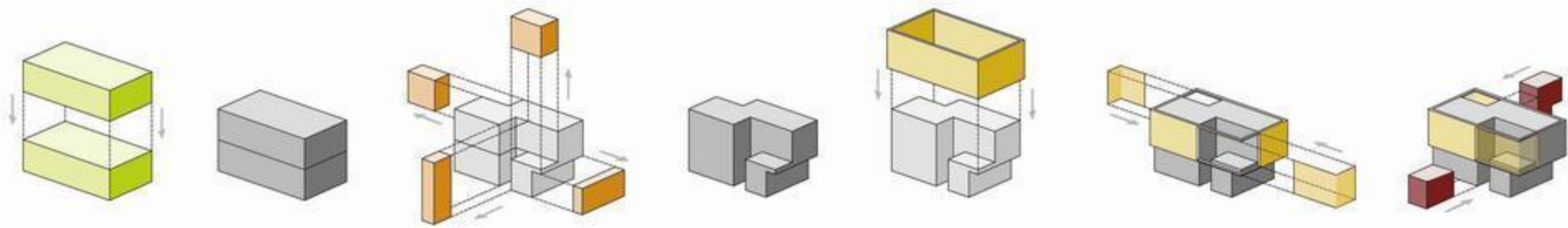


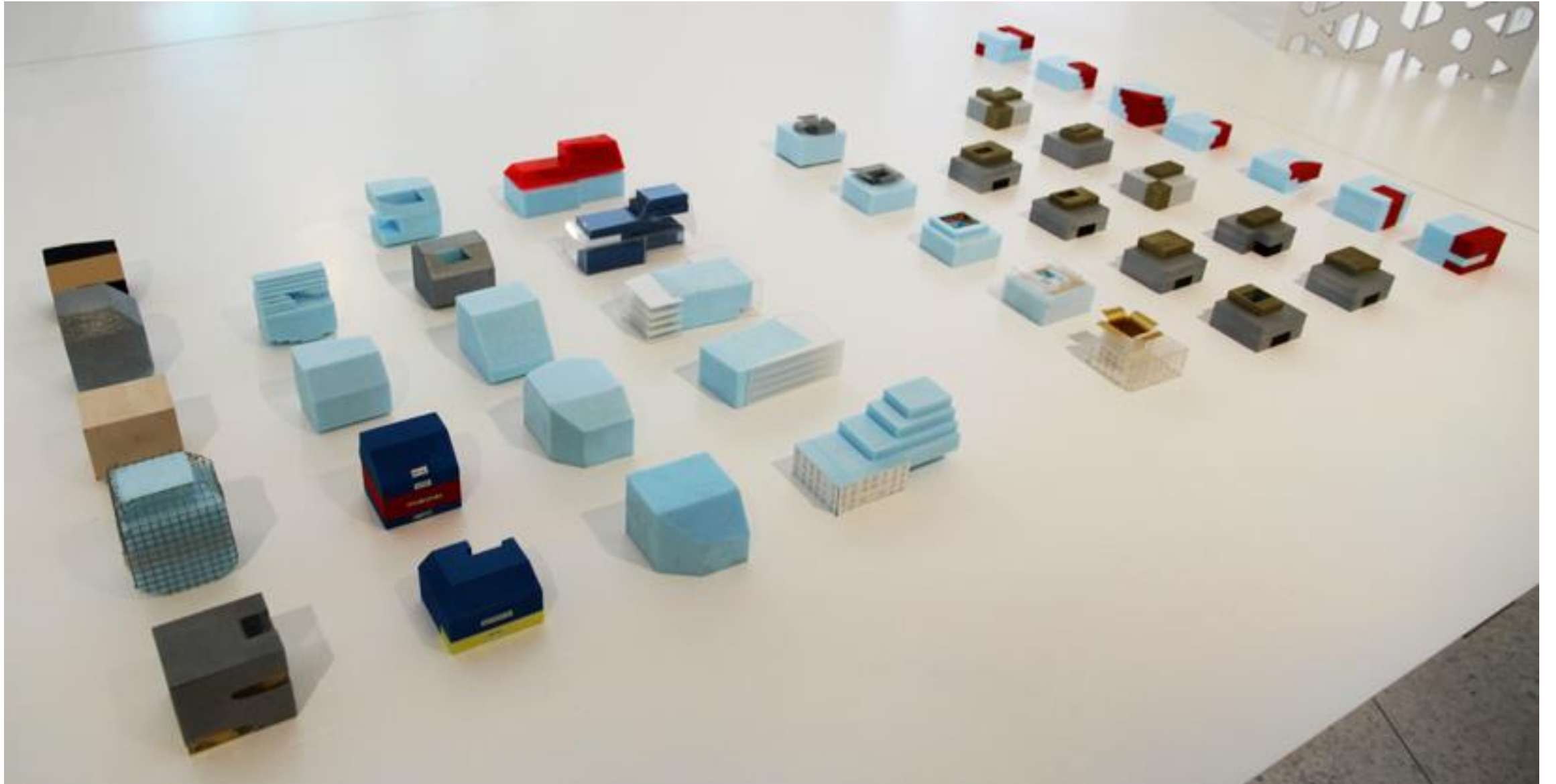
+1

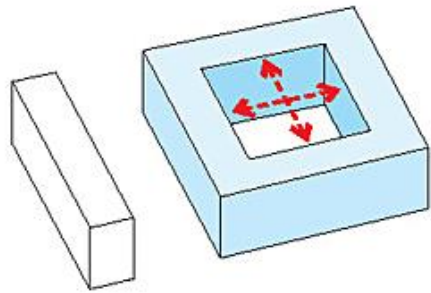


+2

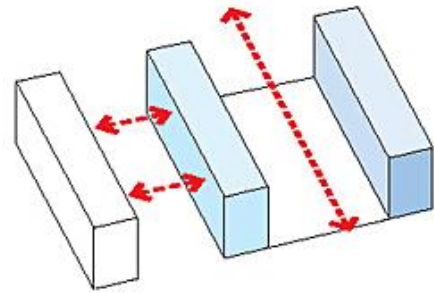
- 01 Entry
- 02 Kitchen
- 03 Living
- 04 Dining
- 05 Bath
- 06 Courtyard
- 07 Garage
- 08 Bedroom
- 09 Permeable Terrace
- 10 Observatory
- 11 PV Roof Laminates
- 12 Open to Below



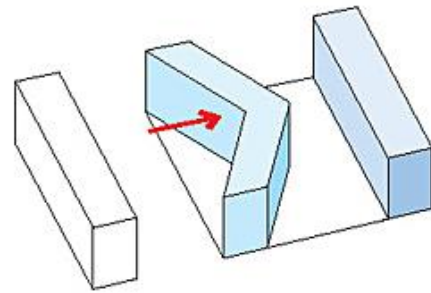




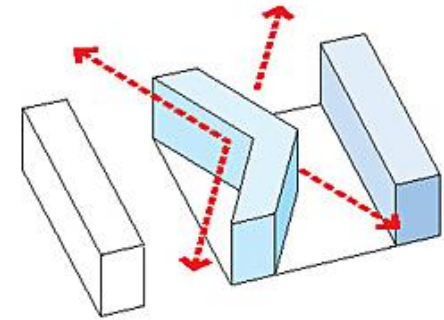
TRADITIONAL BLOCK



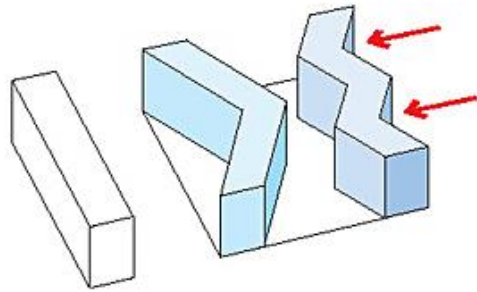
OPENING THE BLOCK



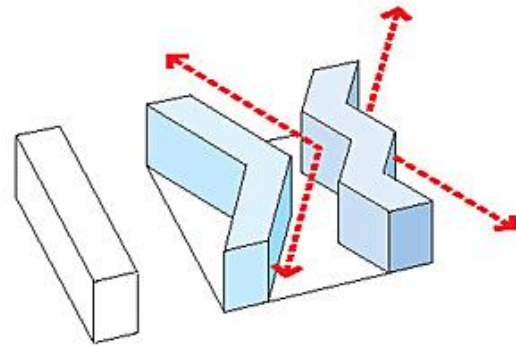
AVOIDING VIS-À-VIS



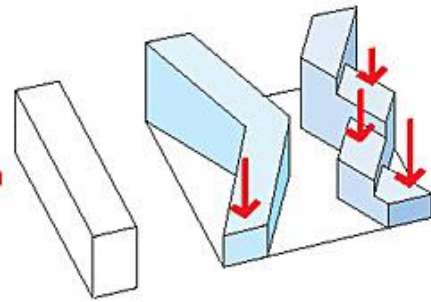
OPENING VIEWS OUTWARD



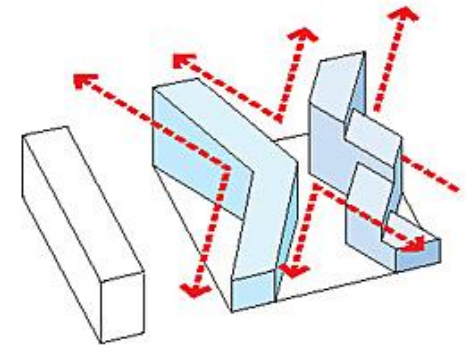
AVOIDING VIS-À-VIS



OPENING MORE VIEWS



SLOPING & STEPPING DOWN



OPTIMAL VIEWS

Pertanyaan?