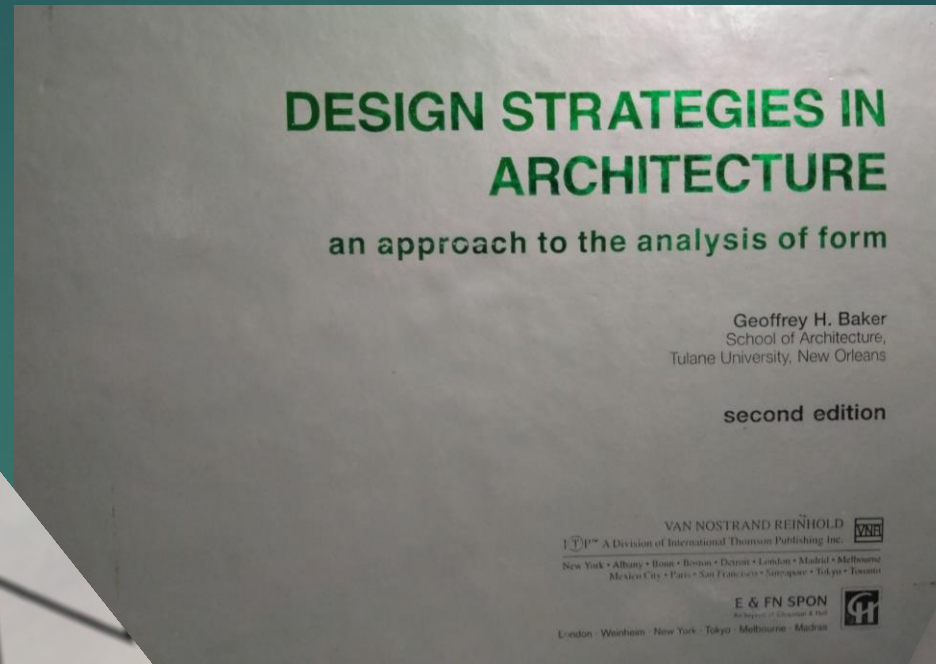


## PLOTING PEMATERI

MINGGU	MATERI POKOK	SUB MATERI POKOK	PEMATERI
I	Introduksi	Pengenalan STUPA 2 dan RPS	Dr. Yosafat Winarto, ST, MT
		Usulan Klien	
II	Pengantar dan Pendekatan dalam merencanakan dan merancang rumah tinggal	Pengumpulan Data Pengguna Bangunan	Dr. Yosafat Winarto, ST, MT
		Lokasi dan data Tapak	
III	Tahapan dan strategi menyusun pemrograman sederhana rumah tinggal ( analisis fungsi, aktivitas, kebutuhan peruangan, hubungan dan organisasi ruang ), volume ruang serta	Kebutuhan Ruang	Dr. Ir. M. Muqoffa, MT / Ofita Purwani, ST, MT, Ph.D
		Pola Hubungan Ruang	
		Organisasi Ruang	
		Zonasi Ruang	
IV	Analisis hubungan ruang dan bentuk arsitektur	Analisis volume dan bentuk ruang	Dr. Ars. Ir. Untung Joko cahyono, M. Arch
		Analisis bentuk arsitektur	
V	Perencanaan Tapak : Eksplorasi dan analisis site	Analisis Tapak	Tri Yuni Iswati, ST, MT

# referensi



# Bentuk, Ruang dan Volume

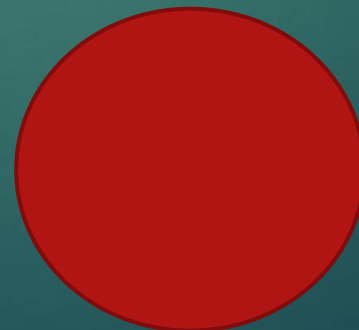
UNTUK RUMAH TINGGAL

# Bentuk dan 'Bentuk'

FORM AND SHAPE

# Bentuk dasar dan pengembangan

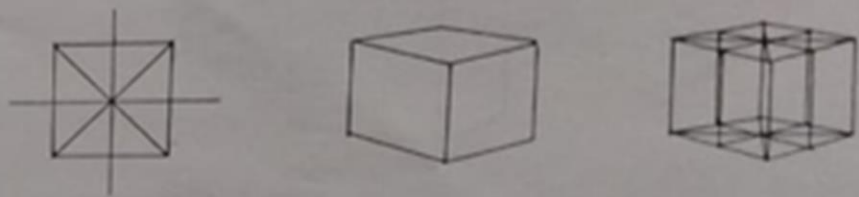
- ▶ Segi empat → kubus
- ▶ Segi tiga → prisma → piramid
- ▶ Lingkaran → bola → kubah/dome
- ▶ Bentuk genetic
- ▶ Bentuk generic
- ▶ Bentuk spesifik



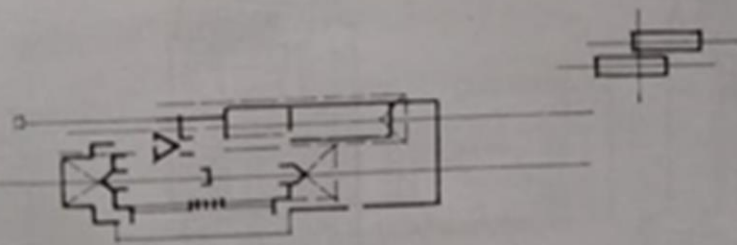
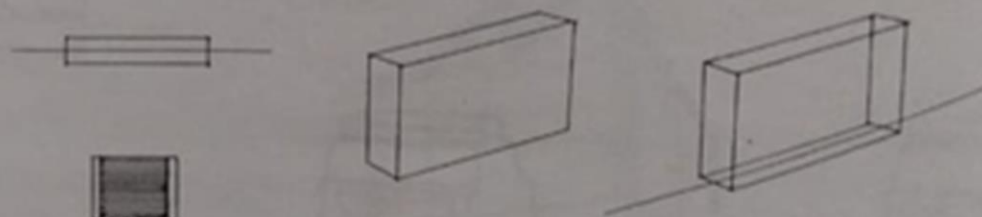


# CENTROIDAL AND LINEAR FORM

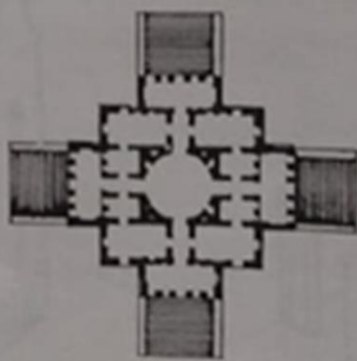
Centroidal configurations such as the sphere and the cube maintain a balance of forces as distinct from linear configurations in which the predominant force has a particular energy and direction.



Centroidal bodies suggest repose and stability whereas linear forms imply activity.



Frank Lloyd Wright's Robie house deploys two linear forms in a potentially shifting relationship.

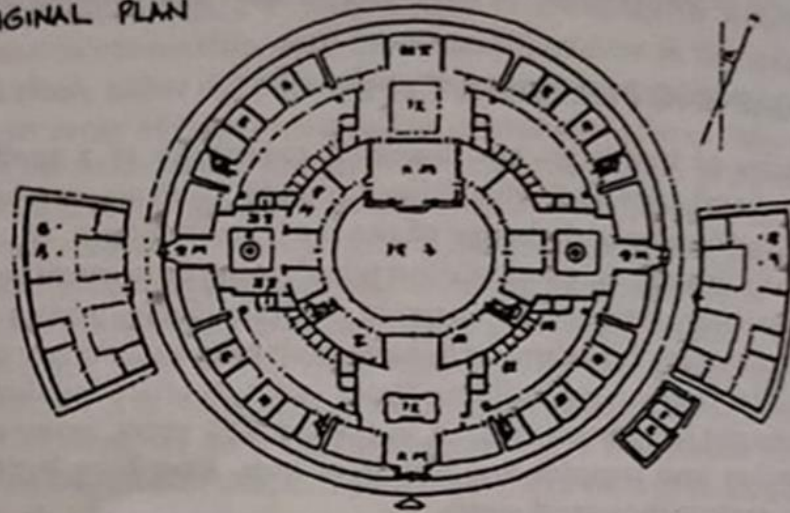


Andrea Palladio's Villa Capra is an almost symmetrical centroid.

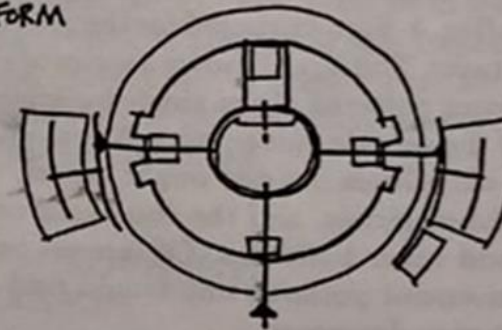
# Genetic-generik

7

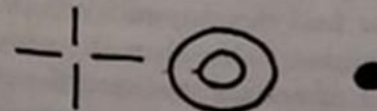
A. ORIGINAL PLAN



B. SIMPLIFIED FORM



C. GENERIC FORMS



D. GENETIC FORMS

# Generik-spesifik



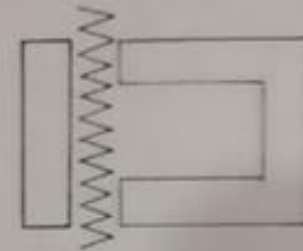
GENERIC  
SQUARE



SPECIFIC



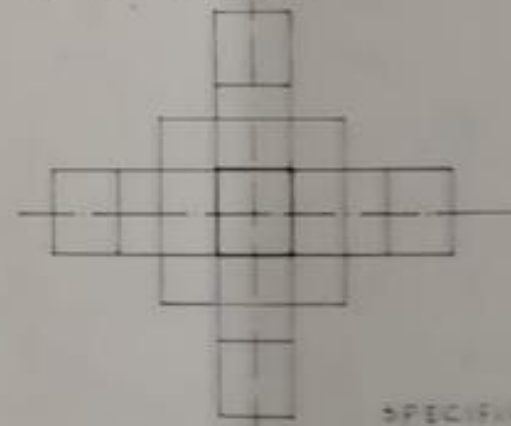
GENERIC  
LA TOURETTE



SPECIFIC  
LE CORBUSIER

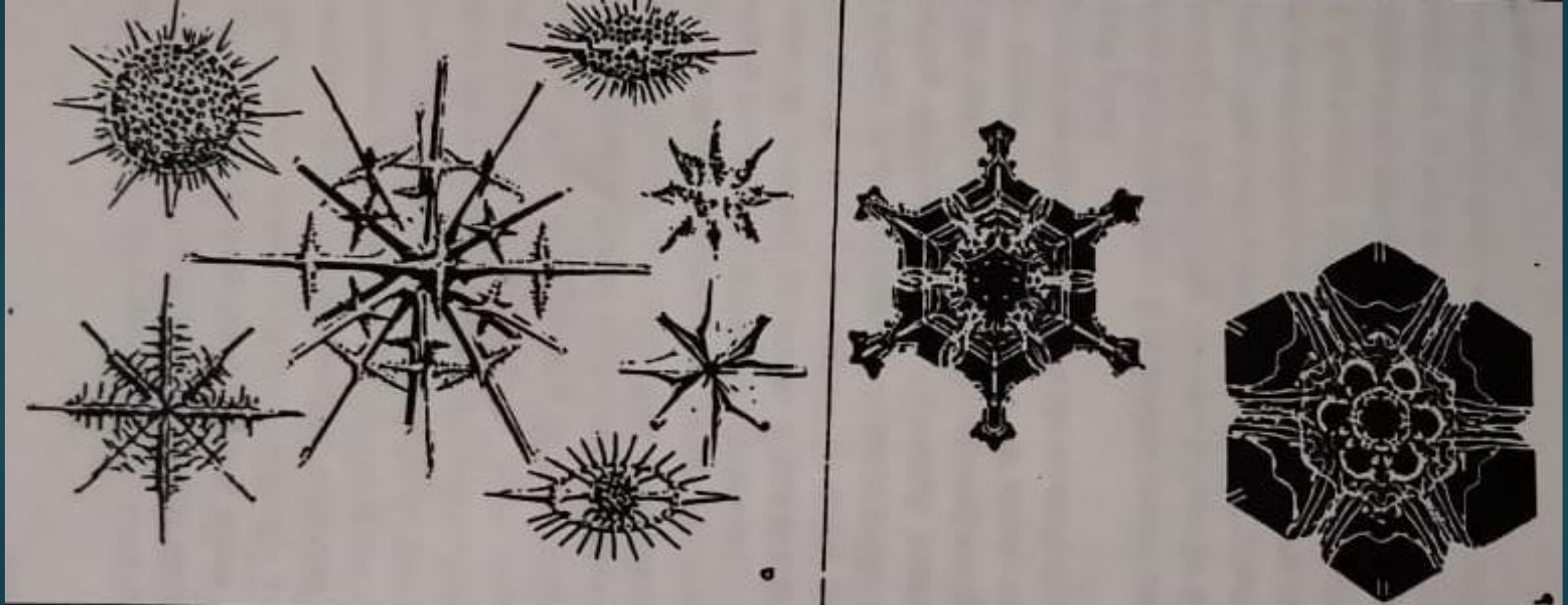


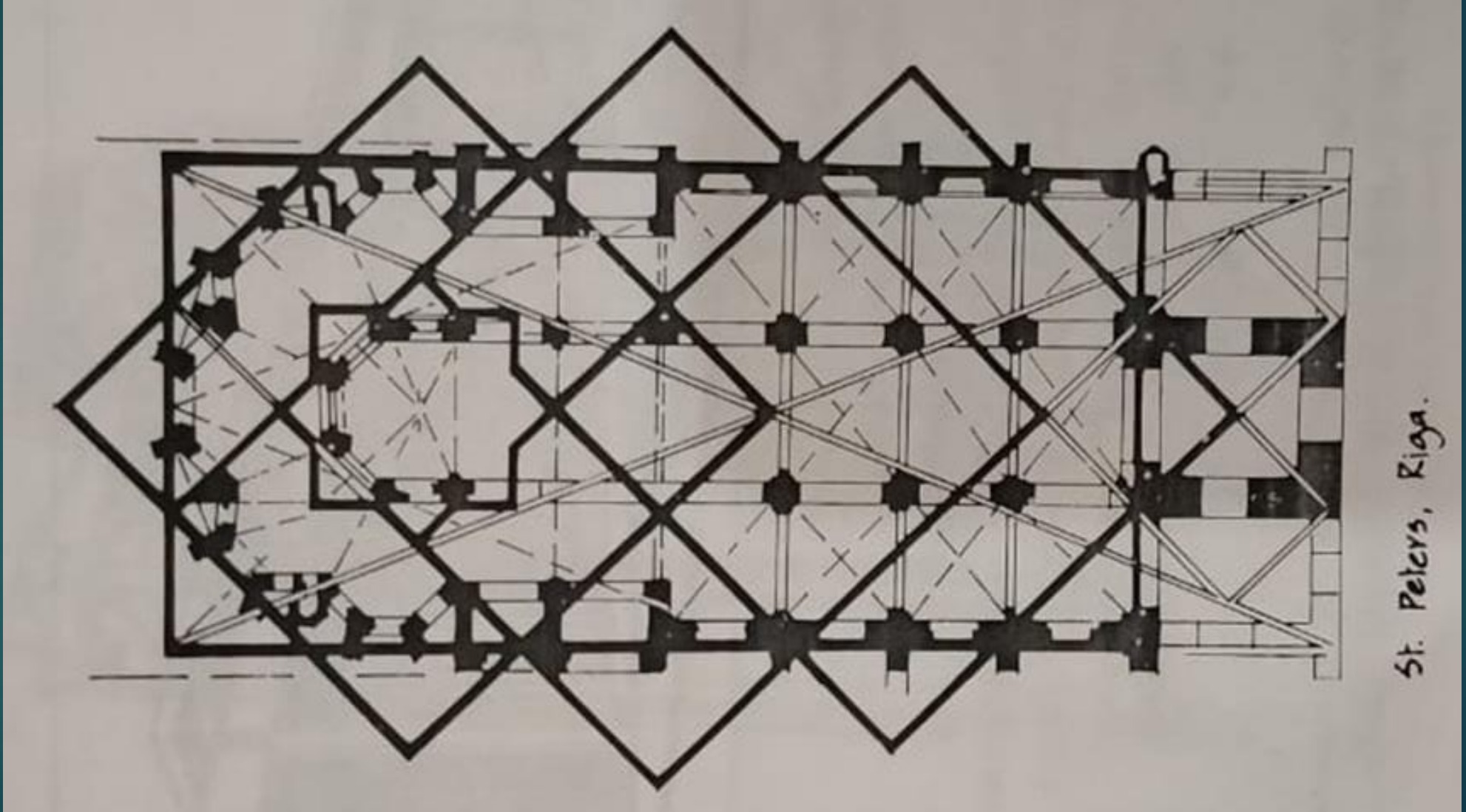
GENERIC  
VILLA CAPRA



SPECIFIC  
ANDREA PALLADIO







# Ruang, Volume, dan skala

SPACE, VOLUME, AND SCALE





# CARTESIAN GRID AND HORIZONTAL ABSOLUTE

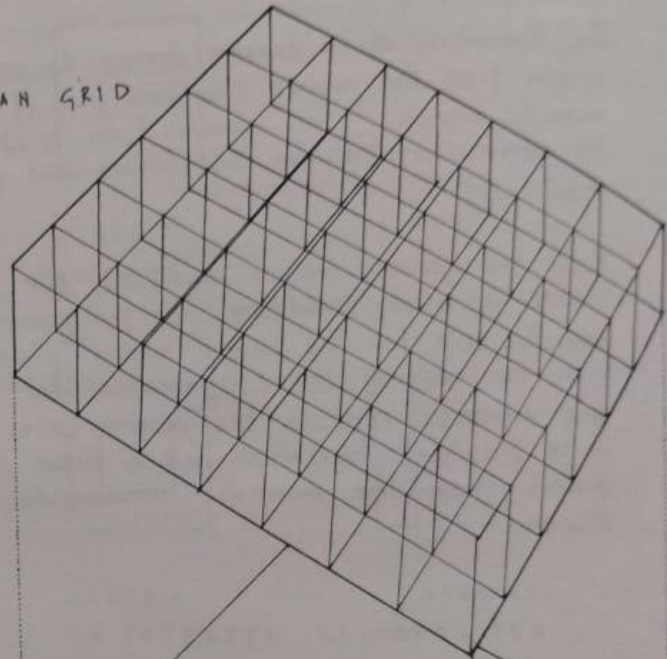
Star Eastman refers to the three dimensional cartesian grid as 'the absolute reference for architectural form whether generic or specific.'<sup>1</sup> To explain how this grid of horizontals and verticals refers to the force of gravity and that 'something is seen with reference to this grid whether man-made or natural.'<sup>2</sup>

In his study of the Greek temple *temenos* The idea of space in Greek architecture, Dr. Peter Martiemen refers to the horizontal absolute, as exemplified by the Greek temple platform, the flat plane on which the temple stands. The horizontal platform features strongly in the work of Jørn Utzon, particularly in his Sydney Opera House where the shells and auditorium rest on a horizontal platform.

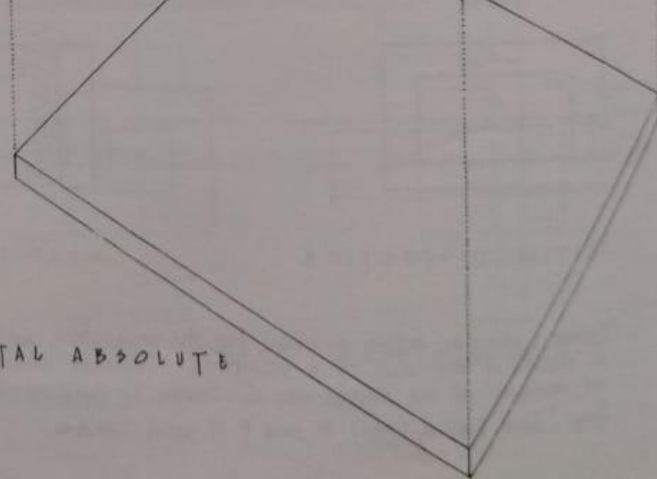
In Le Corbusier's work, curved walls are frequently arranged against an orthogonal grid, as in the case of Ronchamp. In the case of both Richard Meier and Le Corbusier's work, the orthogonal grid serves to discipline the organization of elements. (see analysis of Meier's Atrium, pp. 192-231)

<sup>1</sup> Star Eastman, *The force of nature in modern architecture*, Doctoral dissertation, University of Cambridge, 1988, p. 87

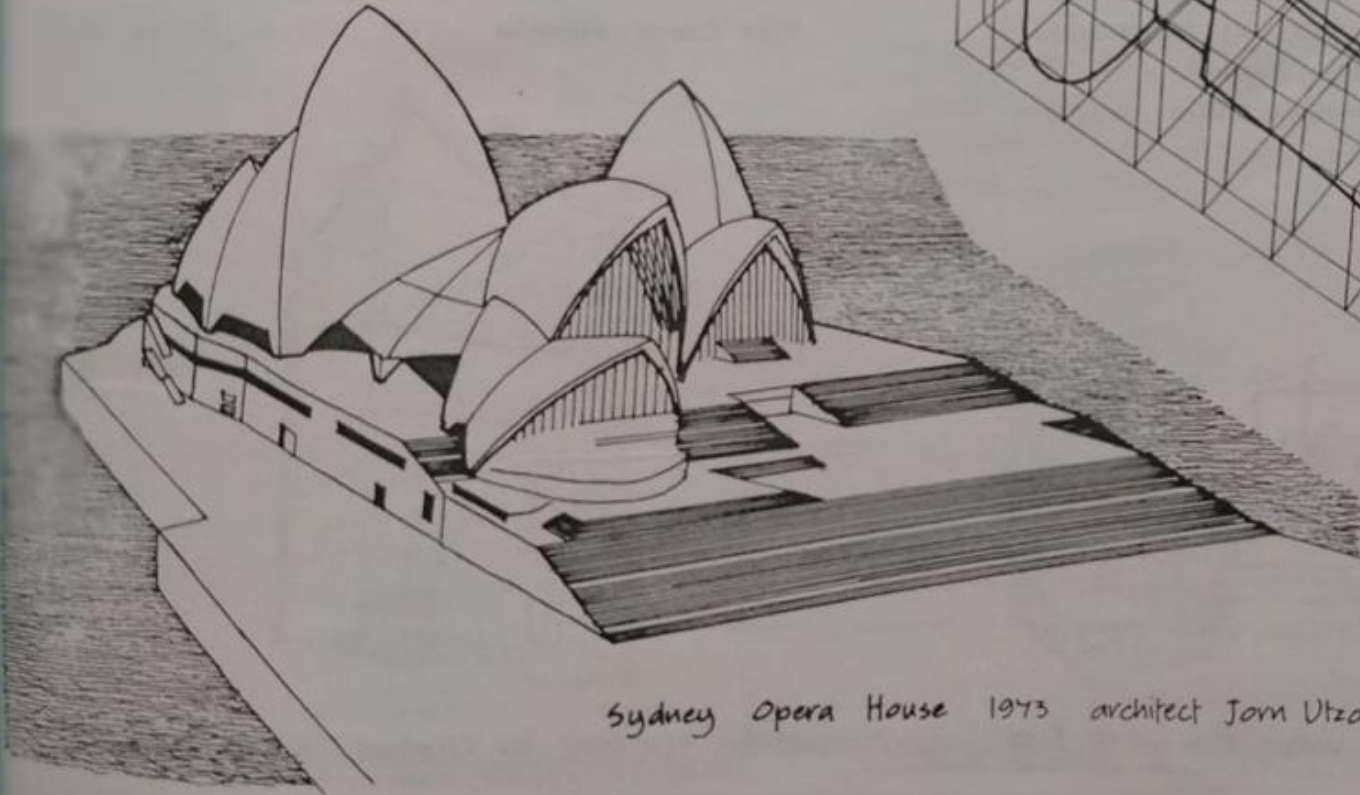
CARTESIAN GRID



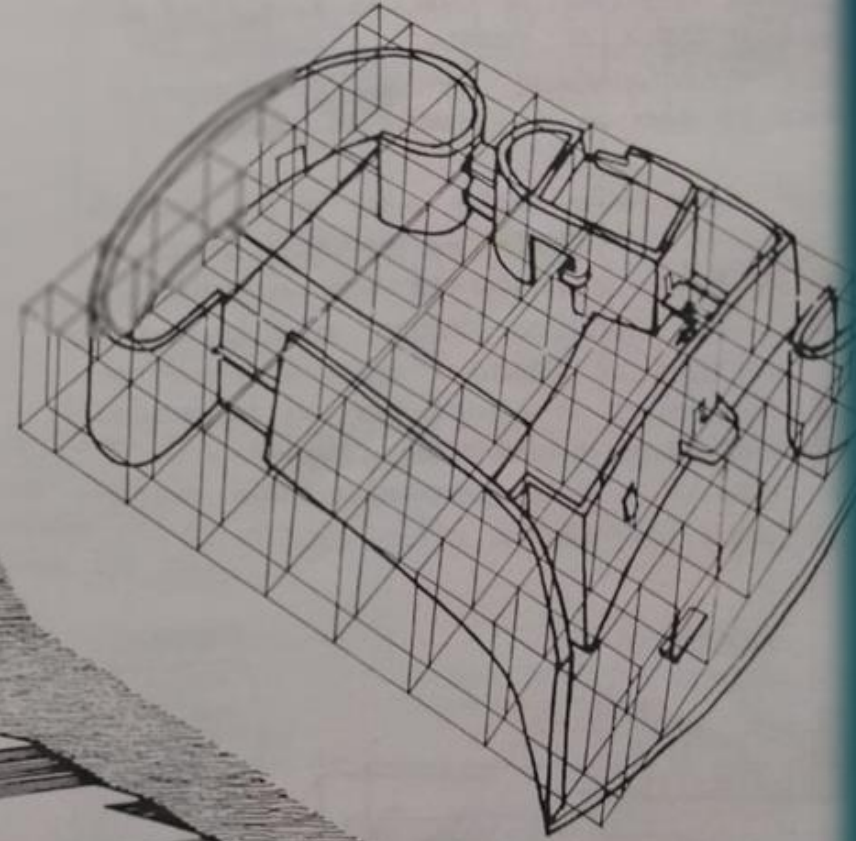
HORIZONTAL ABSOLUTE







Sydney Opera House 1973 architect Jørn Utzon



Chapel at Ronchamp 1950  
architect Le Corbusier

# Menata ruang

- ▶ Memusat dan linear
- ▶ Core system
- ▶ Linear system
- ▶ Axial system
- ▶ Radial system
- ▶ Interlocking system

# Susunan ruang dan pergerakan

## DYNAMICS OF FORM

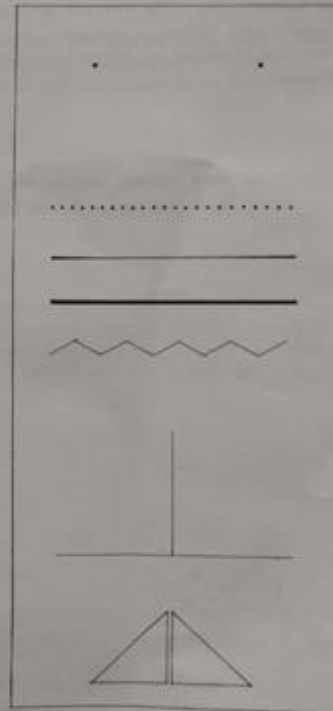
About the dynamics of form Maurice de Szaumarez has written:

The simplest unit, a spot, not only indicates location but is felt to have within itself potential energies of expansion and contraction which activate the surrounding area. When two spots occur there is a statement of measurement and implied direction and the 'inner' energies create a specific tension between them which directly affects the intervening space.

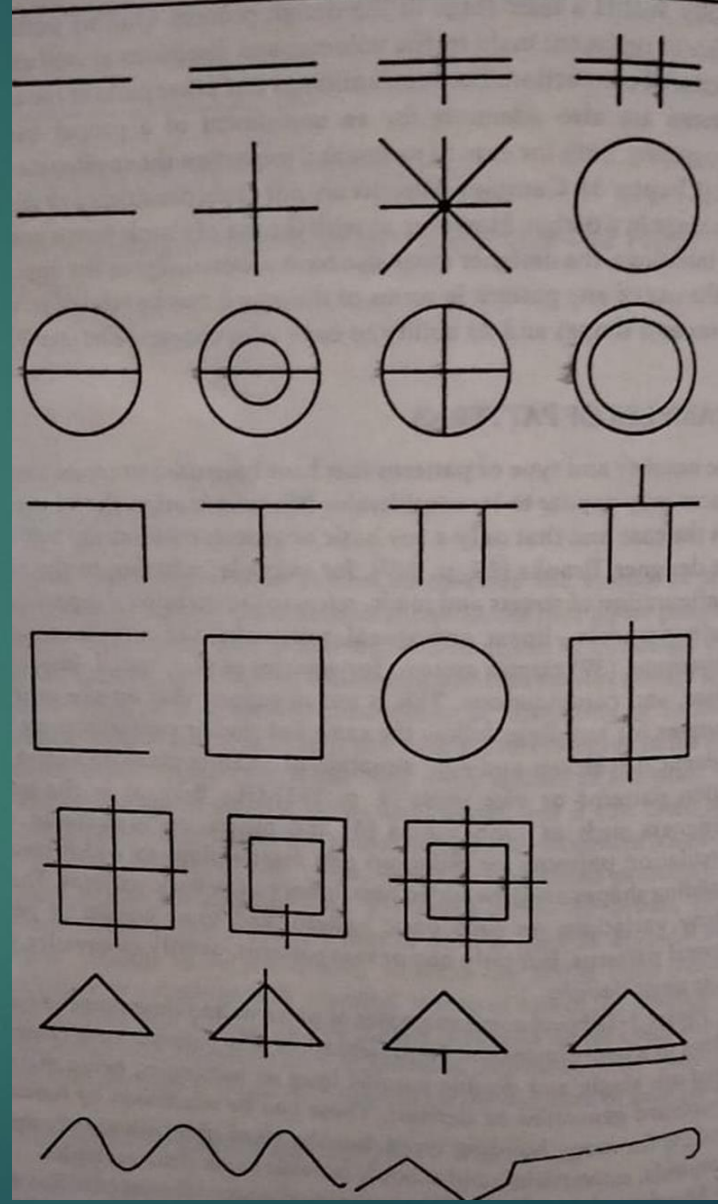
A line can be thought of as a chain of spots joined together. It indicates position and direction and has within itself a certain energy, the energy to travel along its length and to be intensified at either end, speed is implied and the space around it is activated. In a limited way it is capable of expressing emotions, eg. a thick line is associated with boldness, a straight line with strength and stability, a zig-zag with excitement.

Horizontals and verticals operating together introduce the principle of balanced oppositions of tensions. The vertical expresses a force which is of primary significance - gravitational pull, the horizontal again contributes a primary sensation - a supporting flatness; the two together produce a deeply satisfying resolved feeling, perhaps because they symbolise the human experience of absolute balance, of standing erect on level ground.

Diagonals introduce powerful directional impulses, a dynamism which is the outcome of unresolved tendencies towards vertical and horizontal which are held in balanced suspension.



Maurice de Szaumarez, *Basic Design: The Dynamics of Visual Form*, Studio Vista, London 1964 pp 20-22. by permission of The Herbert Press Ltd.



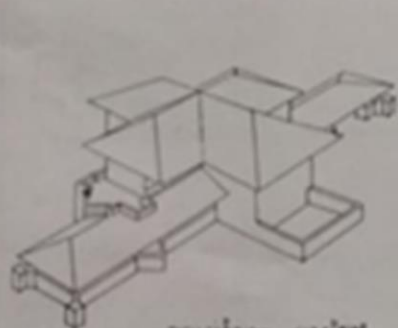
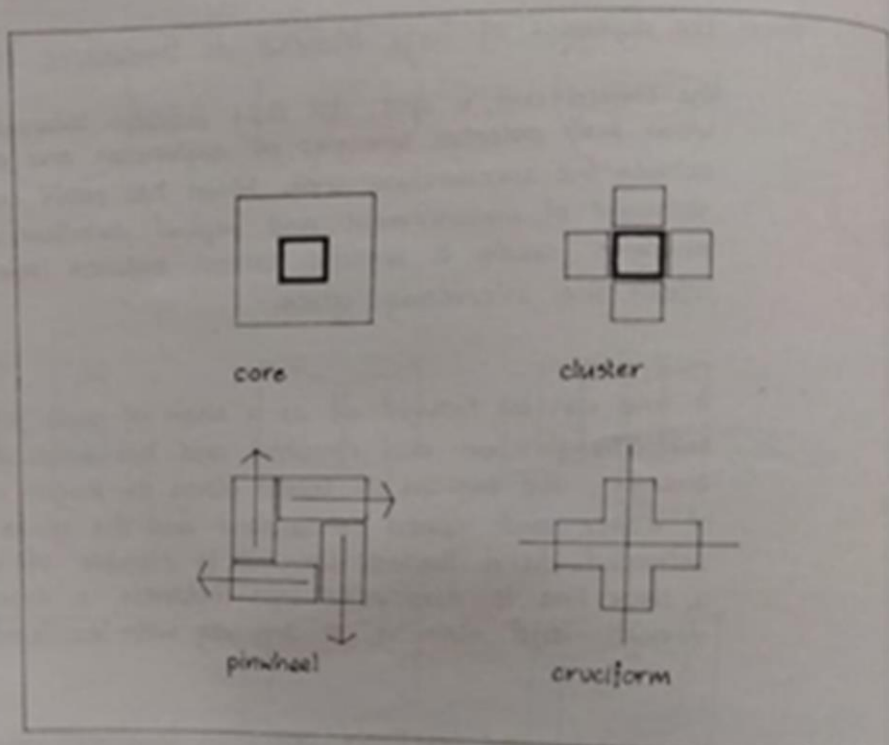
# CORE SYSTEMS

Architectonic arrangements may be described as systems in which the various parts are organized in relation to a thematic idea. The inherent structural nature of architecture implies a geometric organization and the systemic ordering of architectonic form is therefore geometrical.

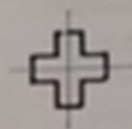
Centroidal core systems include the spiral—often expressed as a pinwheel—cluster and cruciform systems.

Systems provide a discipline rather than a limit. They allow for growth, they accommodate the scherzo: They can be elaborated to encompass infinite variations and complexities.

Peter Eisenman



cruciform system Ward Willits house : Frank Lloyd Wright.



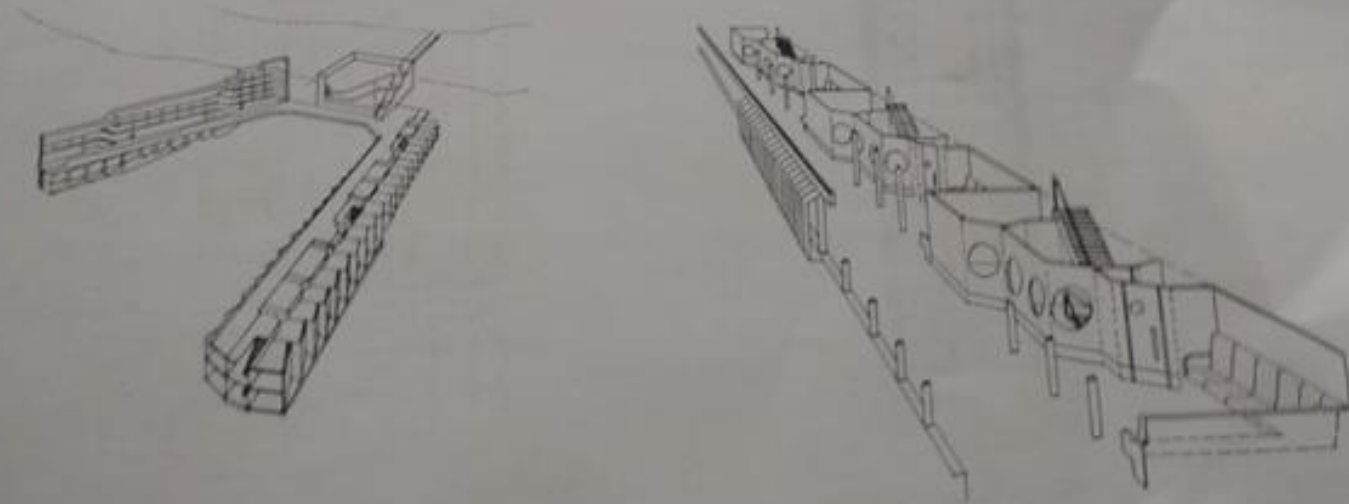
pinwheel system Arthur Hurlley house : Frank Lloyd Wright.





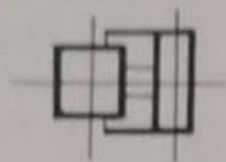
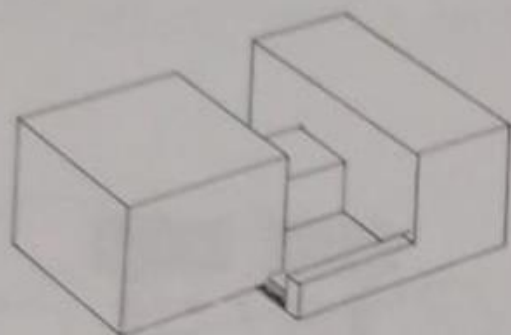
## LINEAR SYSTEMS

Linear systems afford infinite opportunities along axes.  
This allows for repetition and the development of rhythms.  
Movement becomes an important component of the form.



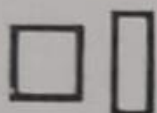


# INTERLOCKING SYSTEMS

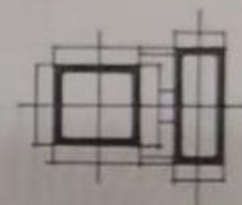
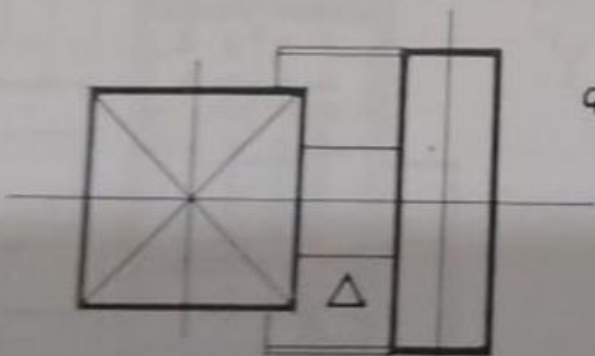


INTERLOCK

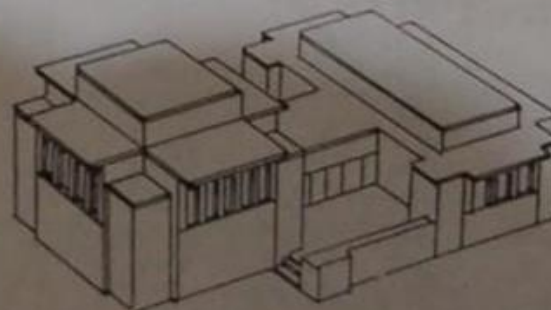
Unity Church posed a problem for Frank Lloyd Wright in the way to relate the square church to the rectilinear ancillary accommodation. The architect resolves this by locking the two forms together by extending the side walls to the terra. In his elemental organization Wright observes the geometric properties of the generic forms.



GENERIC



SPECIFIC



# Pengembangan bentuk rumah

CONTOH RUMAH JAWA MODERN

# primitif-tradisional-modern

## VERNACULAR ARCHITECTURE

In vernacular architecture, although the houses are built by tradesmen, models evolve which have shared meanings. These models respond to prevailing economic circumstances and also take account of regional climatic characteristics. Vernacular architecture is therefore an architecture of consensus, drawing together those issues of importance to society. In its twentieth century form, vernacular architecture takes account of the desire to conform, identification of social role, traditional associations and market forces.

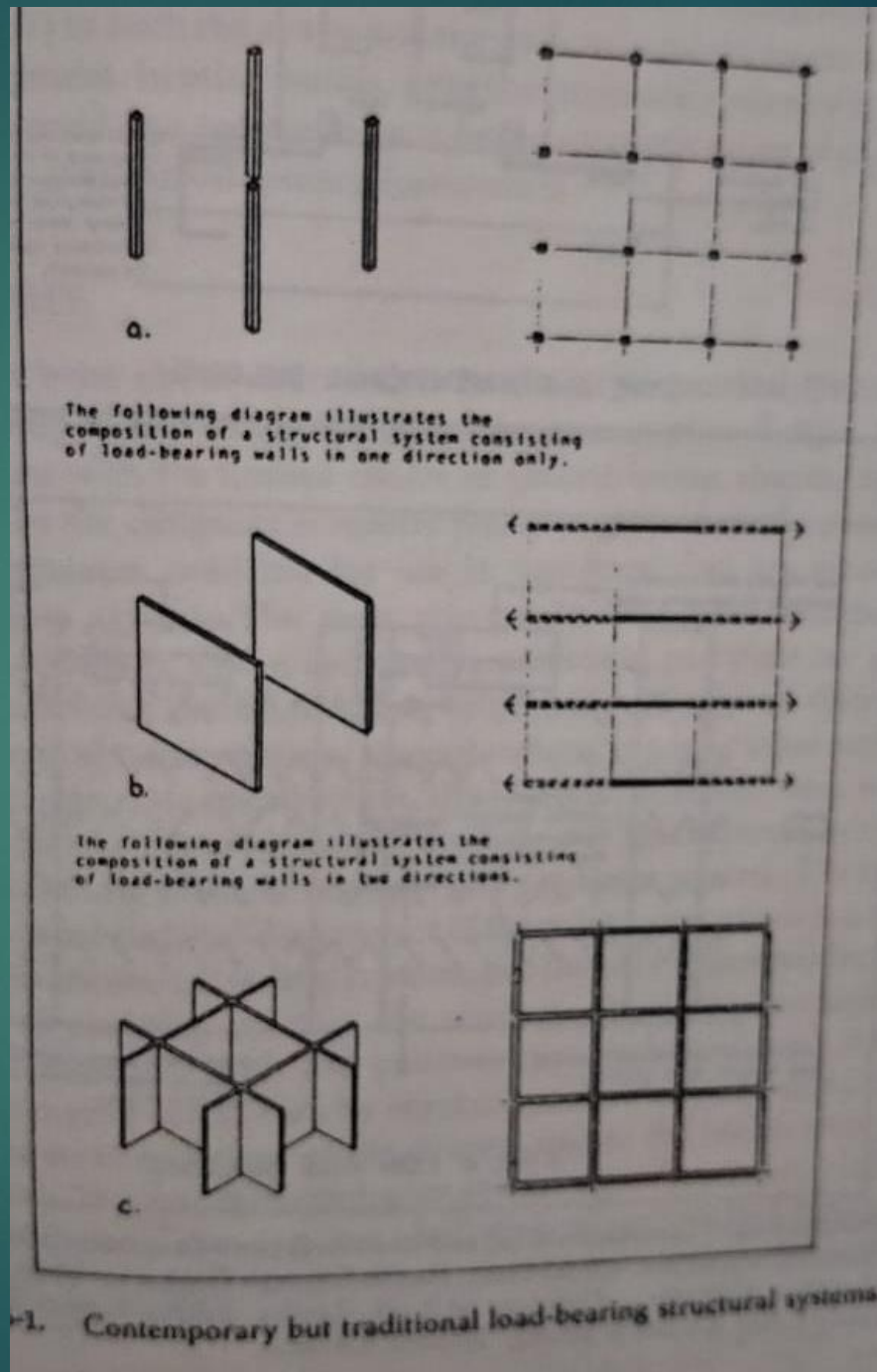


Timber framed house Egerton Kent c. 1500.

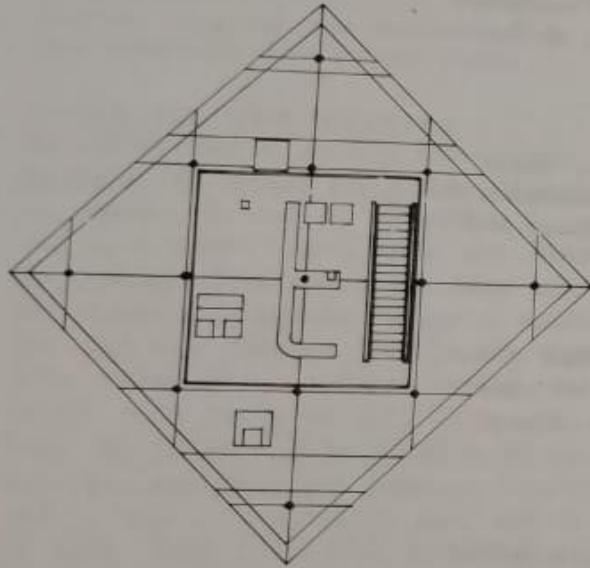


Semi-detached houses Brighton England 1930s.

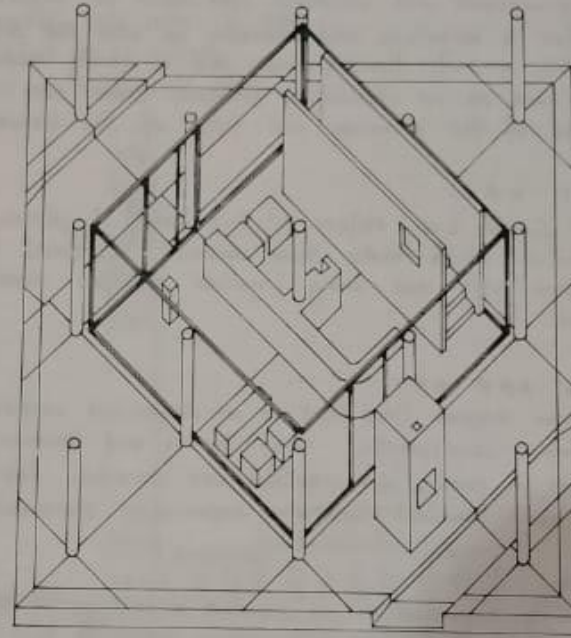
# Bentuk dan struktur



1. Contemporary but traditional load-bearing structural systems.



Diamond Series Project House B 1962-66  
 entry level plan and projection.  
 architect John Hejduk.

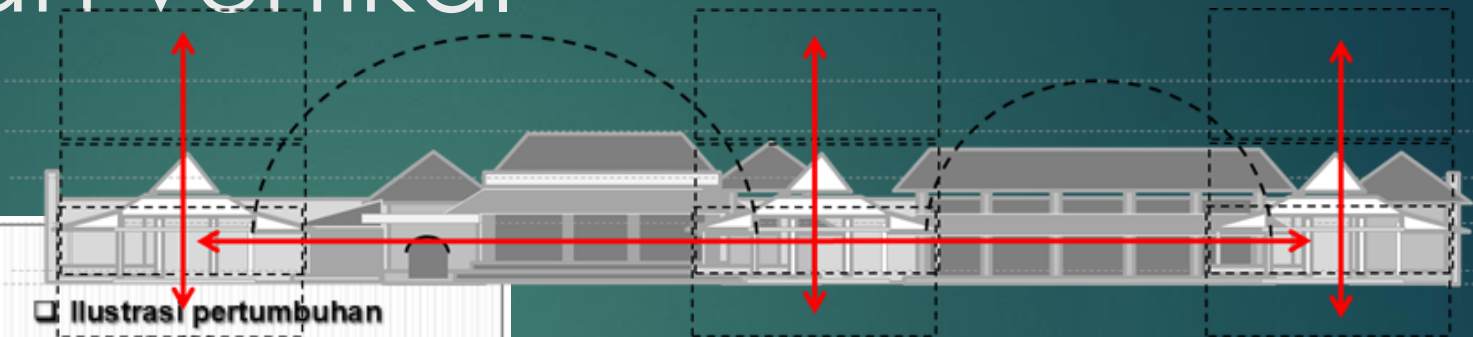


In the twentieth century Le Corbusier's geometric solutions of the twenties have been emulated and extended by a group of architects sometimes called The Five<sup>‡</sup>. Of their work Peter Eisenman's geometry is the most complex whilst John Hejduk uses primary forms in powerful juxtapositions.

<sup>‡</sup> Richard Meier, John Hejduk, Charles Gwathmey, Michael Graves and Peter Eisenman. (The Five published a book illustrating

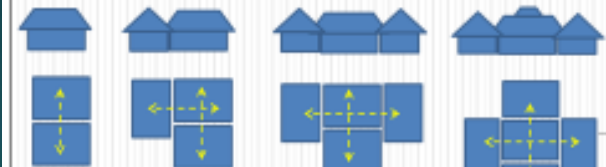


# Pengembangan bentuk Horizontal dan vertikal

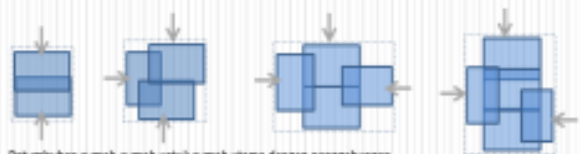


Ilustrasi pertumbuhan rumah di Laweyan

Pengembangan gandok sesuai kebutuhan dan perkembangan zaman; berkembang secara vertikal untuk efisiensi lahan; pemanfaatan space antara untuk kegiatan yang bersifat sementara.



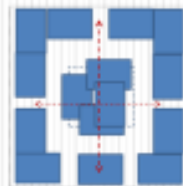
Pertumbuhan rumah secara horizontal dengan penggabungan (ginanda) dan pembuahan (binubuh)



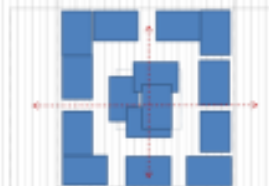
Pertumbuhan rumah-rumah untuk rumah utama dengan penggabungan (ginabung) dan berpotongan (pinotong)/overlapping/tumpang tindih



Pertumbuhan dengan perluasan dan perbesaran volume ruang secara vertikal dan horizontal

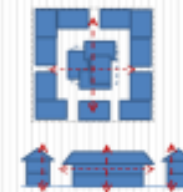


Pertumbuhan rumah pada lahan yang luas

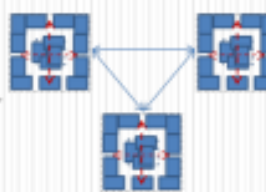


Pertumbuhan rumah dengan perluasan kaping tanah

Pertumbuhan rumah dengan luas kaping tetap → padatatan; pertumbuhan vertikal



Pertumbuhan rumah di luar kaping awal → perluasan jaringan teluanga dan tetangga



❑ Ragam Bentuk Rumah di Laweyan sebagai Hasil Transformasi



Sejak sebelum th 1900: rumah tradisional rangka kayu bentuk atap limasan, kemprung dan penggap-pa; proses bentuk gisanda dan binebaba; dinding dari anyaman bambu, lalang pendopo terbeba; satu ruang rumah utama: dalem, pendopo dan gadok.



Sekitar th 1900: penggunaan dinding luar dengan tembok; bentuk atap dan satu ruang relatif sama; orjeki sedika pengganti lantai dan pondasi untuk dinding tembok. Diutamakan bakor/raung bawah tanah di dalam.



Sekitar th 1900: rumah utama orjeki pengganti dinding luar hampir sama dengan tangga rumah/plafon satu-satu 4, 6m. Terdapat balkon dinding depan dengan balok kayu yang bertumpu pada pilar kayu/ongok dan pilar/dinding (bagian luar). Bentuk atap limasan modern dengan kaku-kaku kayu; penggabung rumah dengan atap gisanda, dengan nilai horizontal/mediasi.

Sekitar th 1900: rumah gadok bertingkat, bentuk atap limasan m-merajang; lantai atas dengan lantai papan dengan balok kayu yang bertumpu pada pilar-pilar pasangan bata dan dinding tembok; tangga ke atas dari kayu dengan kemiringan sekitar 70°. Atap sekunder dari seng; tangga dinding luar 3-6m, yang berfungsi sebagai pagar/batang.



Th 1900: bentuk bakana kemprung (maka) pada dinding lower dalem perbilan; lantai atas dari papan; dinding bawah dengan paku dan jendela kayu.

Th 1910: penggubangan rumah-rumah menjadi besar sebagai rumah utama (gisabang); atap limasan miring berporos-poros; talang miring; banyak balkon pada dinding tembok.

Th 1920: bentuk atap kemprung diperpanjang (mawera) dan menambahkan karuf "O" dengan lalang, orjeki dengan lantai papan dengan pilar pasangan bata dan kayu.



Th 1970: atap kemprung penggubangan (gisabang) pada rumah utama; terdapat bentuk kemprung pada dinding logan dalem sebagai pengganti ruang belahkayu dan ruang utama.

Th 2015: penggunaan atap kemprung mawera lantai atas dan bawah; rangka atap dari baja ringan; perunggu atap dan material kayu banyak menggunakan bahan-bahan pabrik.

