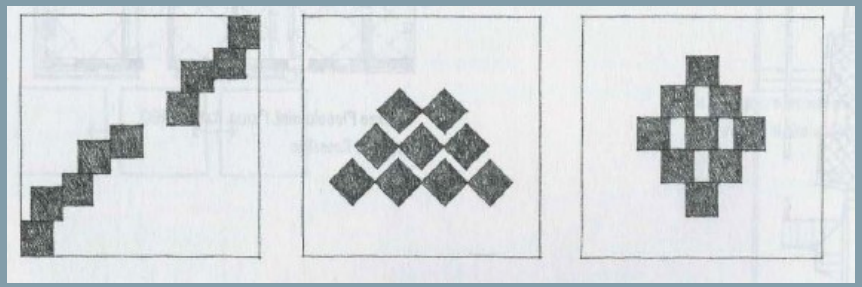
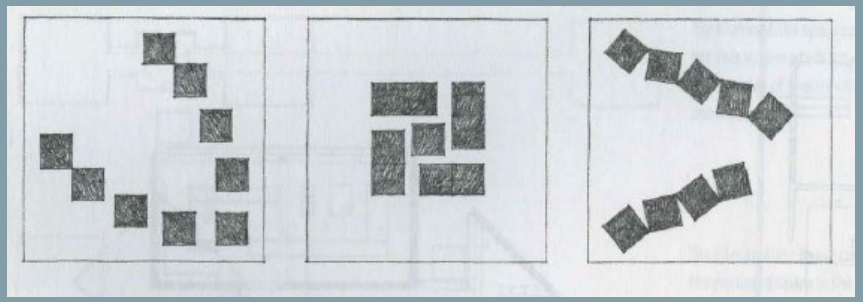
Introduction to Architectural Composition

There are certain properties that arise when two (or more) forms are combined, that is, in the manner in which one form is related to another. Unity, contrast, balance, etc., are properties of that kind and their aim is to suggest the static or dynamic, passive or active condition of forms linked together.
Herbert Read

- The ability to appreciate beauty is an **innate** predisposition,
- However, it can be developed and refined through **study**.
  - This appreciation remains personal and **subjective** as it relates to an aesthetic pleasure;
  - **differences** of opinion must necessarily exist. It is never possible to assert a dogma of beauty with which everyone will agree.





The beauty

- Beauty is an abstract notion linked to many aspects of human existence.
- ***Beauty is commonly defined as the characteristic of a thing which, through a sensory (perception) or intellectual experience, provides a sensation of pleasure or a feeling of satisfaction.***
- Beauty comes, for example, from manifestations such as form, visual appearance, movement, sound.

Beauty Suite

- beauty is associated with **truth** (Islam) :
- the sense of beauty of forms is inseparable from their **purity**
- One of the most essential attributes of beauty, even its essence is

proportion.

The Golden Section and the Fibonacci sequence

- Leonardo Fibonacci is an Italian mathematician
- Fibonacci introduces the Arabic notation system to Europe
- **His books :**
- Liber Abbaci (The Book of Calculation) written in 1202
- Practice geometriae (Geometry Practical) Written in 1220
- Liber quadratorum (The Book of Squares) Written in 1225

Fibonacci Sequence

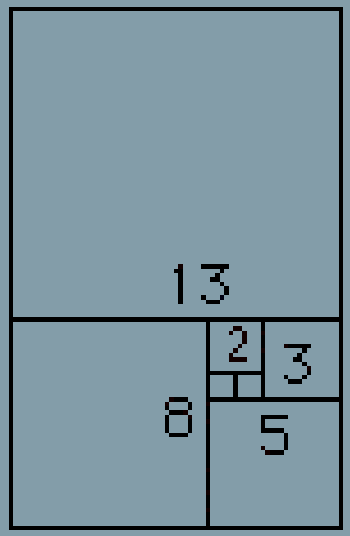
- Introduced in his book the ***Book of Calculation***
- The sequence starts with 0 and 1
- The number following is the sum of the two last numbers
- The number got is the number next in the series
- The schema East say again indefinitely

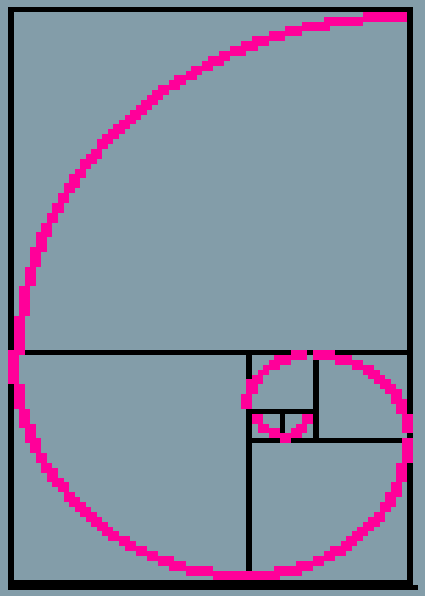
0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144,
233, 377, 610, 987, ...

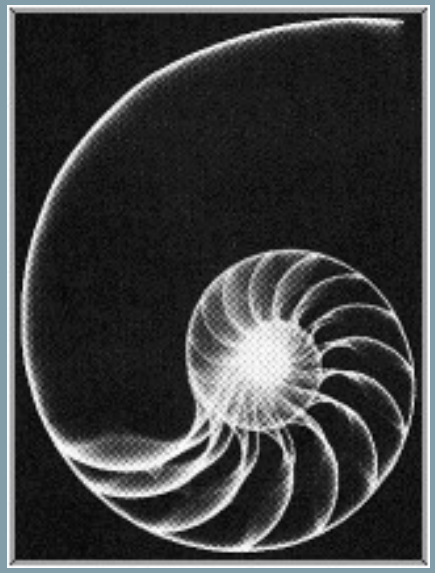
$$F(n+2) = F(n+1) + Fn$$

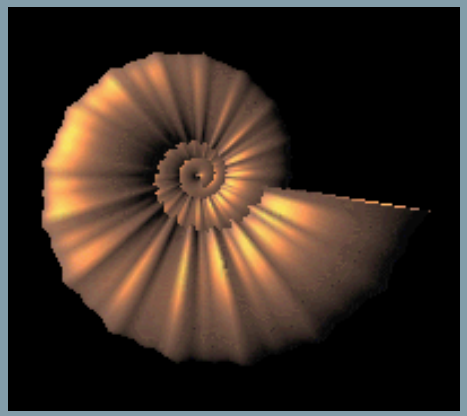
Fibonacci Numbers in Nature

Snail and shellfish



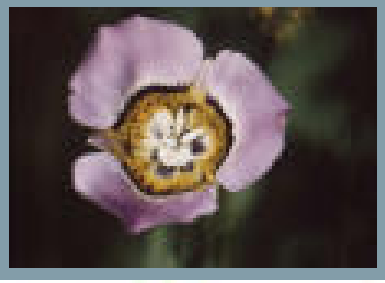


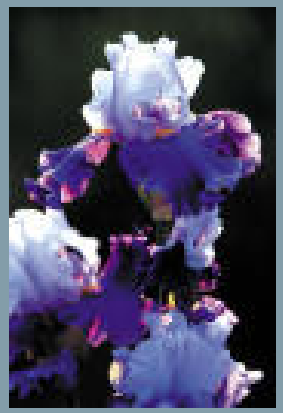


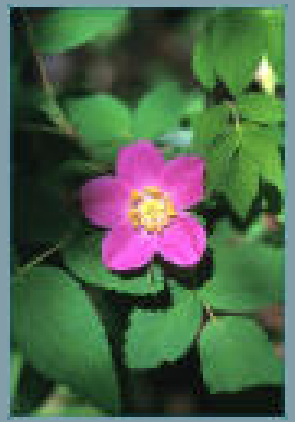


Fibonacci Numbers in Nature Cont .

- lilies have 3 petals, buttercups have 5, chicories have 21, daisies often have 34 or 55 petals , etc.





The Golden ratio

- The golden ratio (or golden section, golden proportion, or even divine proportion) is a proportion, initially defined in geometry as the unique ratio a/b between two lengths a and b such as the ratio of the sum a + b of the two lengths on the larger (a) is equal to that of the larger (a) on the smaller (b)

If you take two successive terms of the series, a, b, and $a+b$ then

$$\frac{b}{a} \cong \frac{a+b}{b}$$

$$\cong \frac{a}{b} + 1$$

We define the golden section, ϕ (*phi*), to be the limit of $\frac{b}{a}$, so:

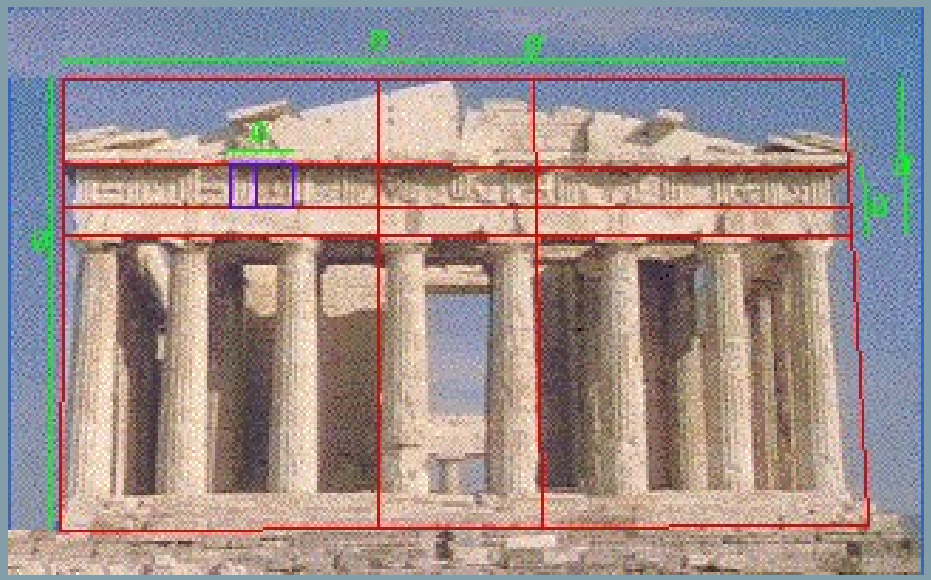
$$\phi = \frac{1}{\phi} + 1$$

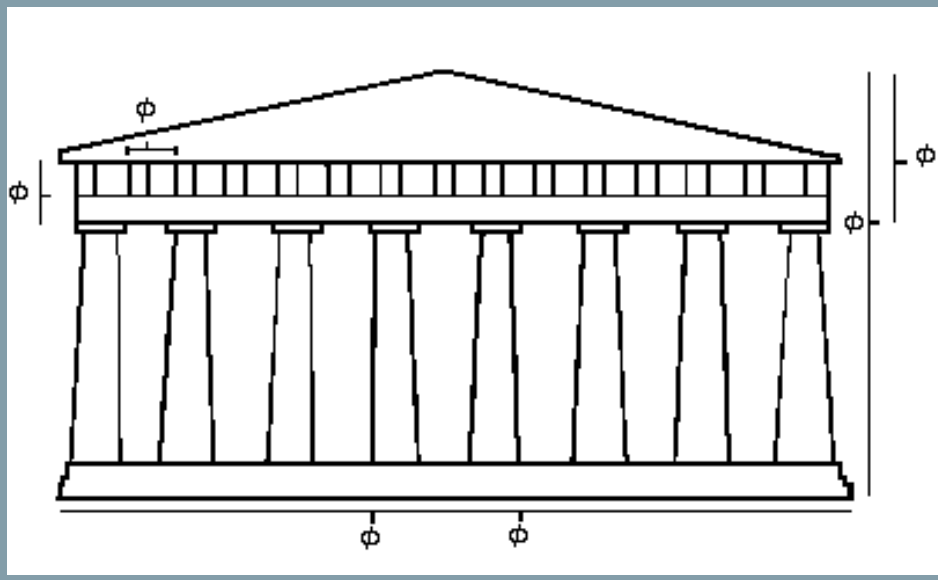
$$\phi^2 - \phi - 1 = 0$$

$$\phi = \frac{1+\sqrt{5}}{2} \approx 1.618$$

The golden section

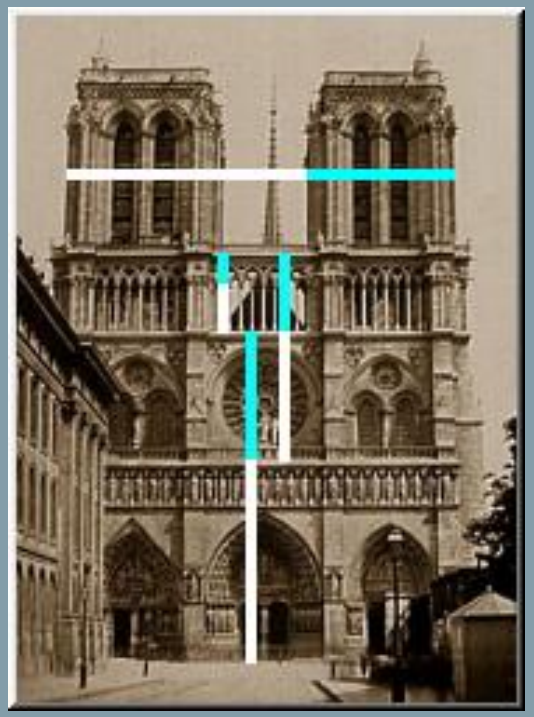
- The Golden number is the basis of the golden section including length and width dimensions are in golden proportion relative to each other .

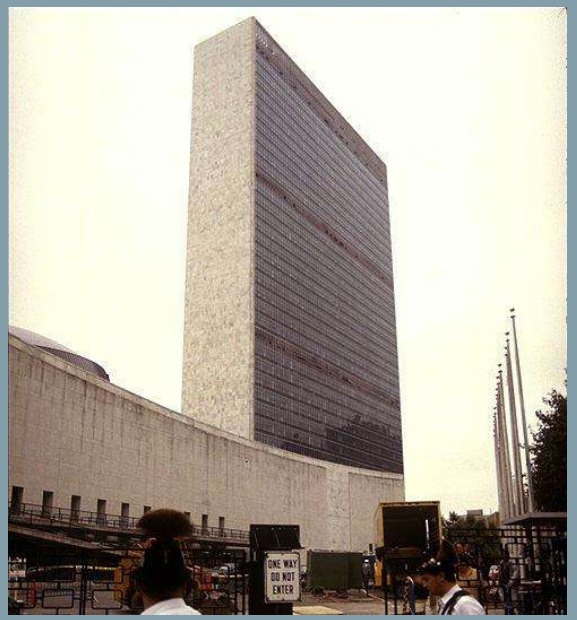


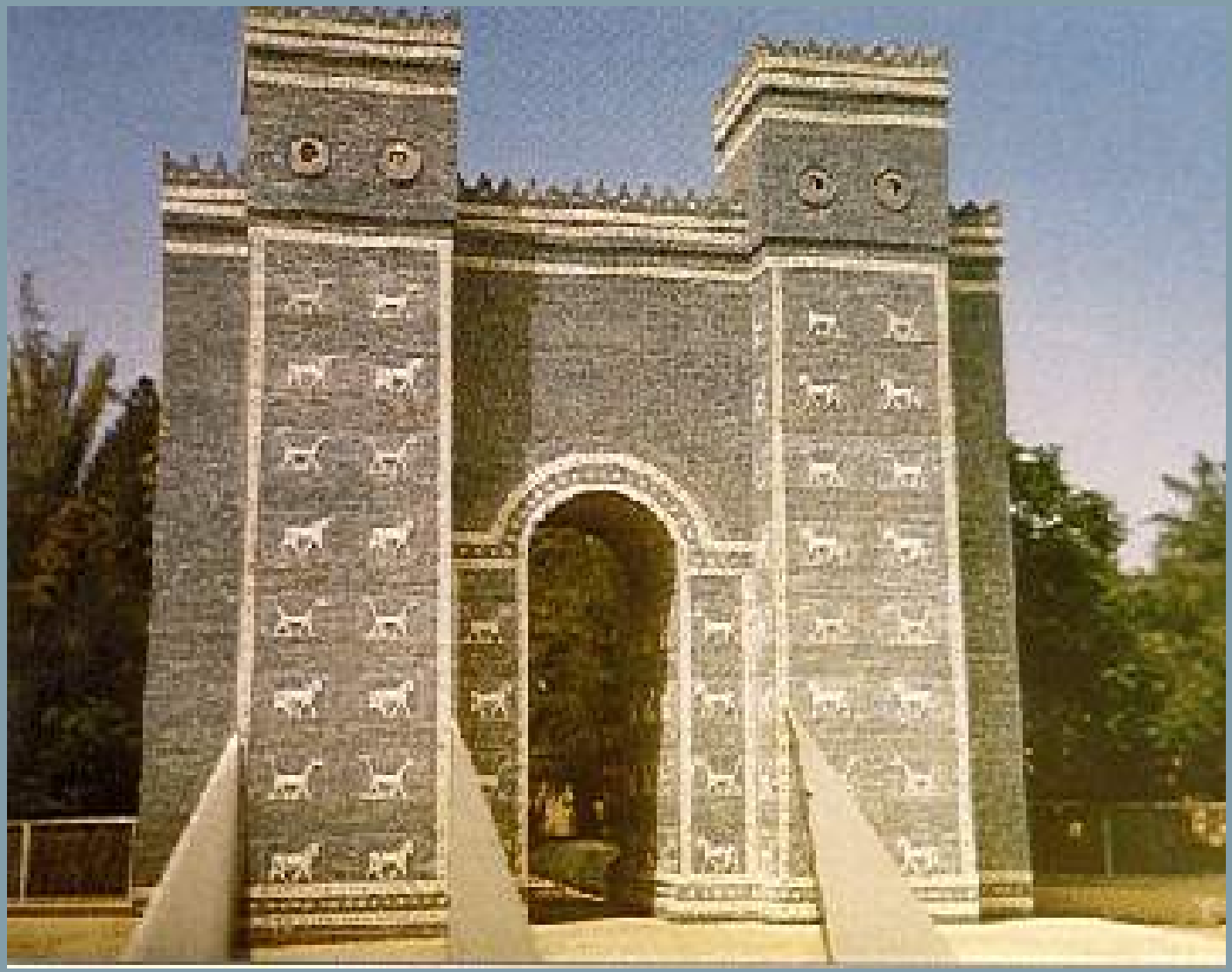


The Golden Section Cont .

- The number Golden is the basis of the golden section including length and width dimensions are in golden proportion relative to each other .







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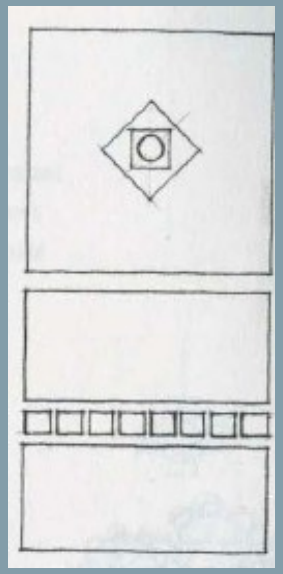
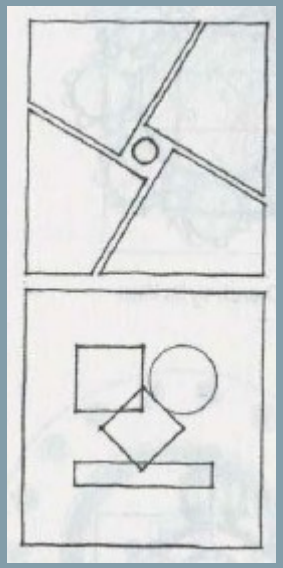
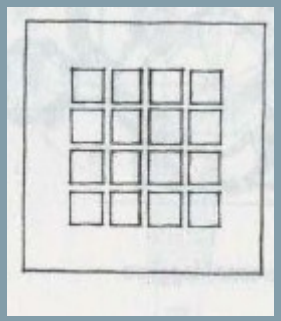
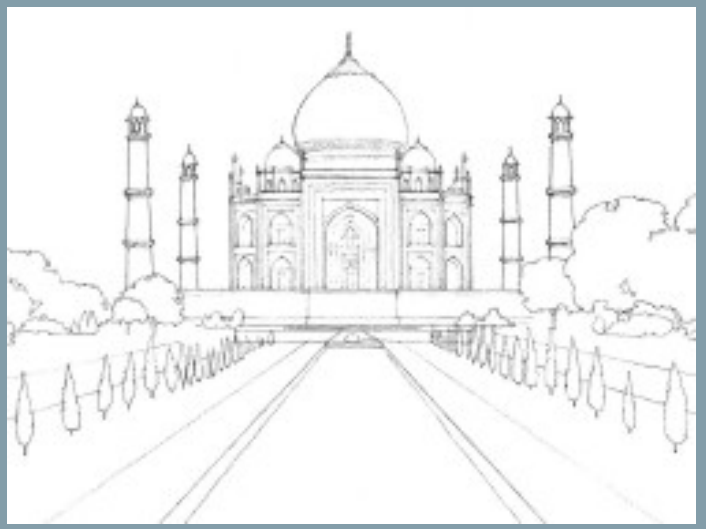
The laws of composition will never succeed in being transformed into prescriptions, into substitutes for art, or, worse still, into the modus operandi of an hypothetic ideal architecture.

They can be applied with great **freedom** or completely *ignored*.





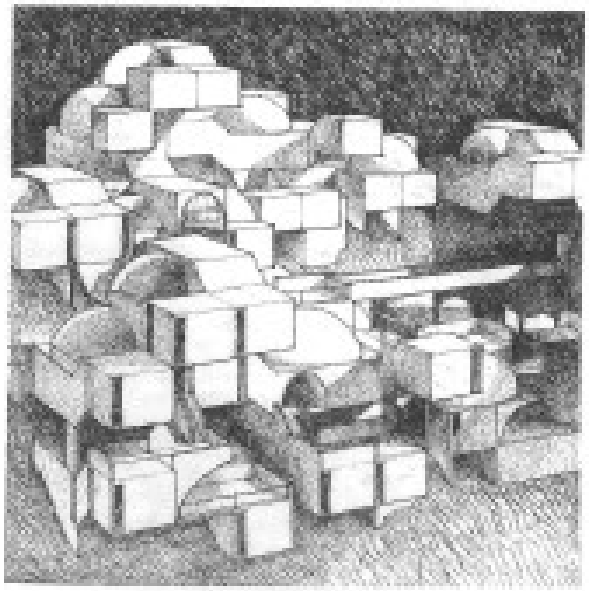




That said, a new visual **language** is emerging to replace terms of personal connotations, such as "*taste*", "*feeling*" or 'impression', with expressions of greater objectivity.

Based on **physical** and **psychological** facts, this new language attempts to represent accumulated impersonal experience.

Habitat Montreal, 1967, Moshe Safdie

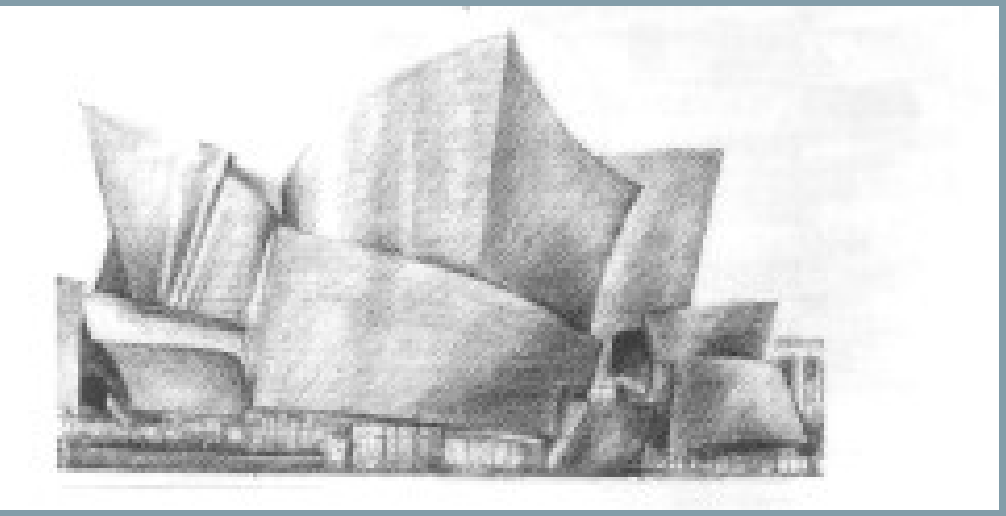


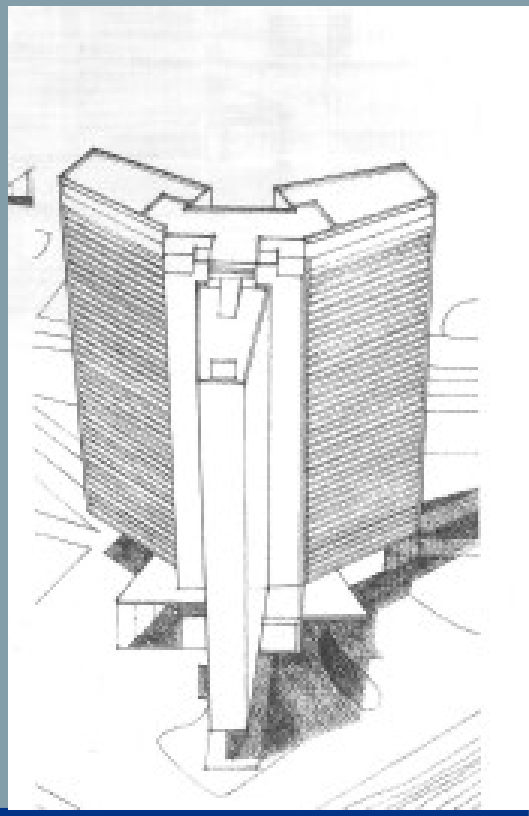
Habitat Israel, Jerusalem, 1969, Moshe Safdie

today we tend to talk about visual facts, such as :

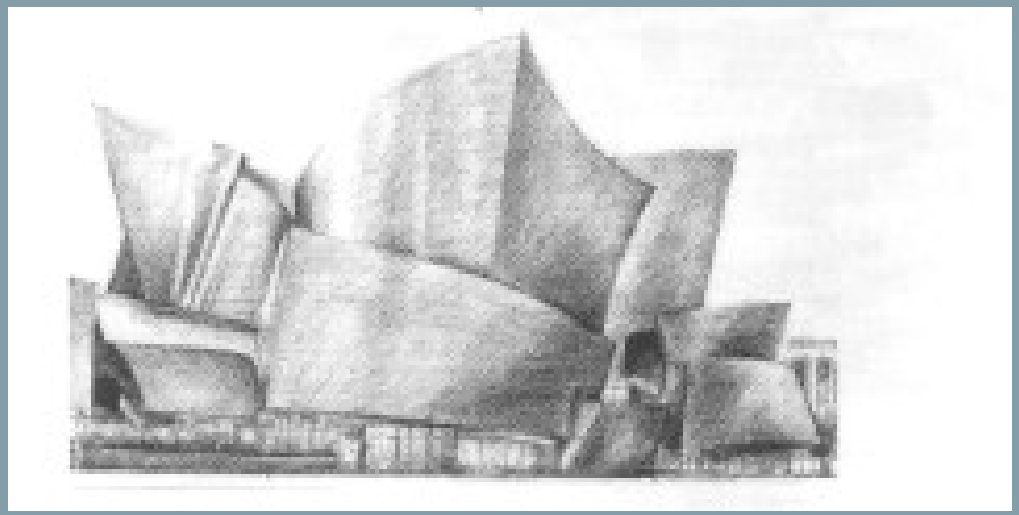
1. ***optical illusion phenomena;***
2. ***the relationship between full and empty spaces;***
3. ***light and color,***
4. ***scale, etc.***

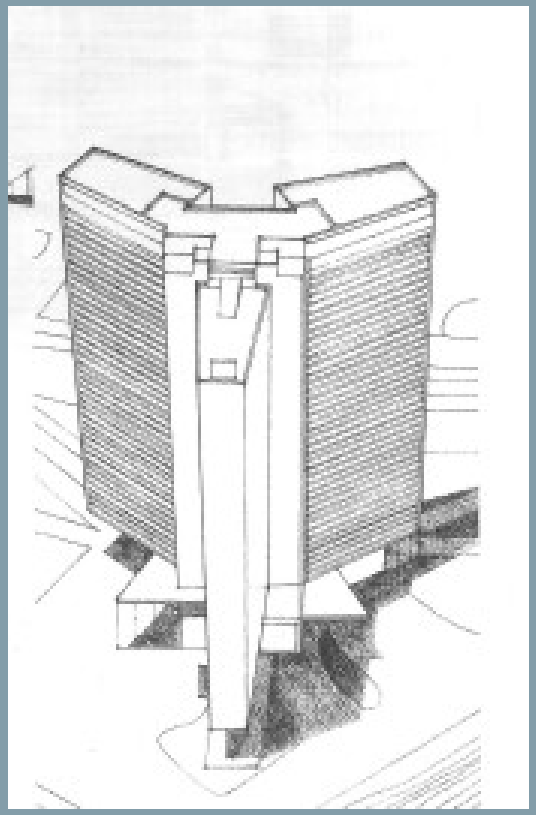
Objective facts and not subjective interpretations





"***Composition***" is the result of all these properties and the goal of composition is to organize all physical elements into a coherent structure, pleasing to the senses.

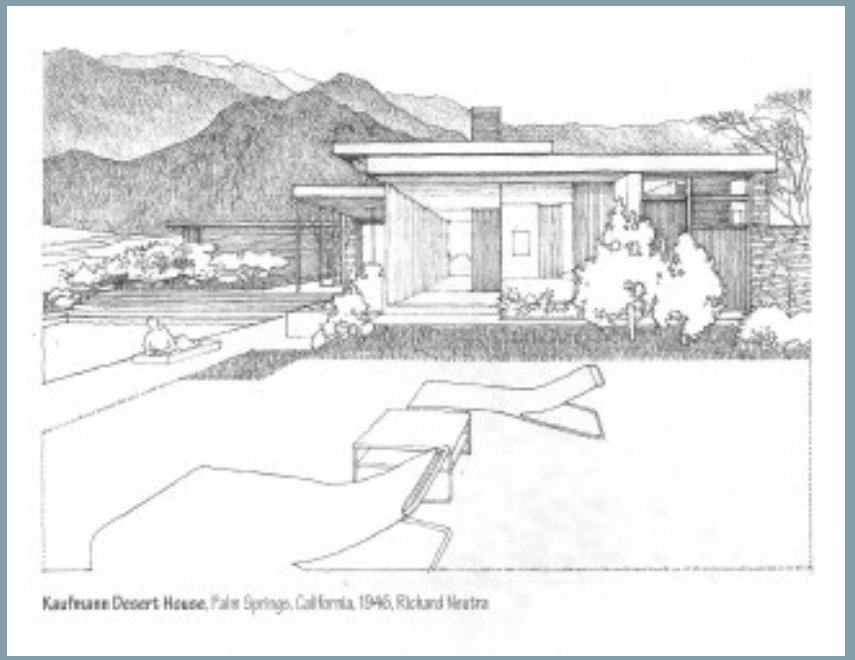




The word composition in Architecture means :

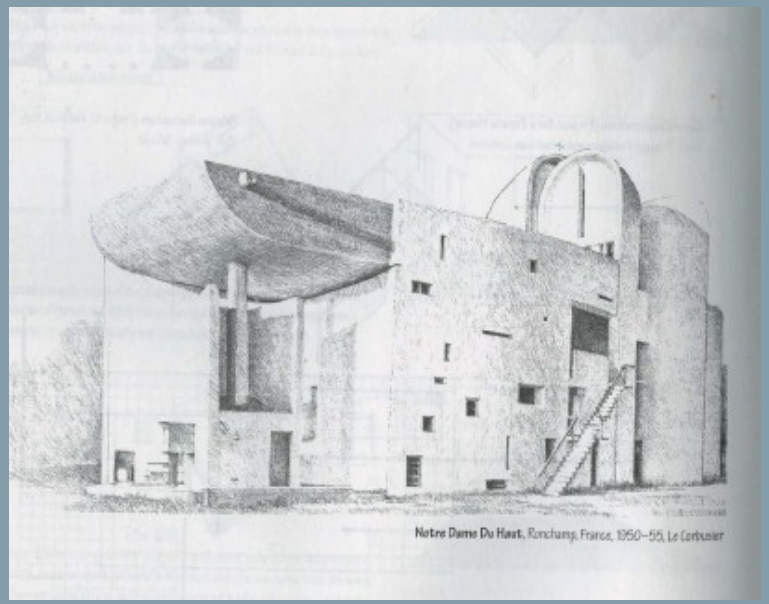
the overall organization of space, including individual forms, background and positioning of forms.

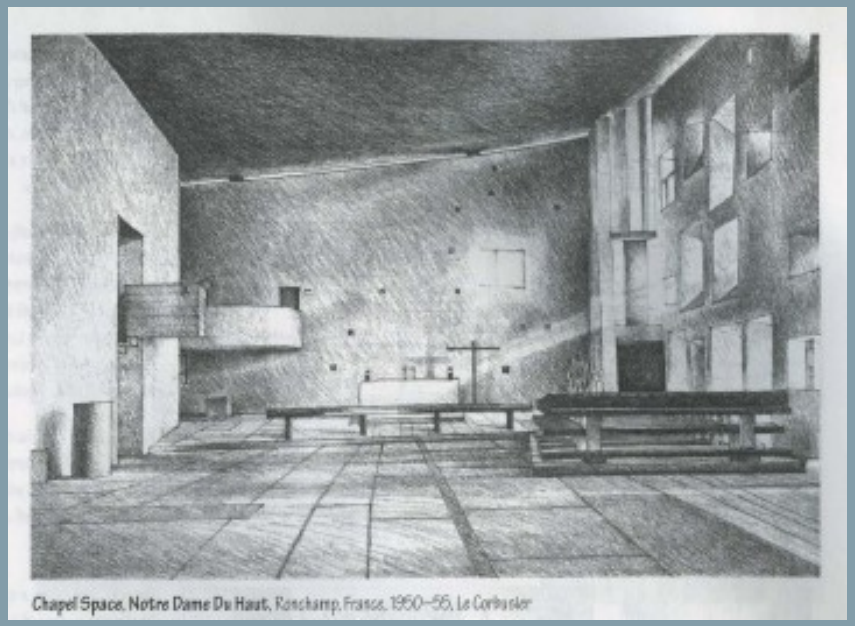
Einstein Tower, Potsdam, Germany, 1919, Eric Mendelsohn



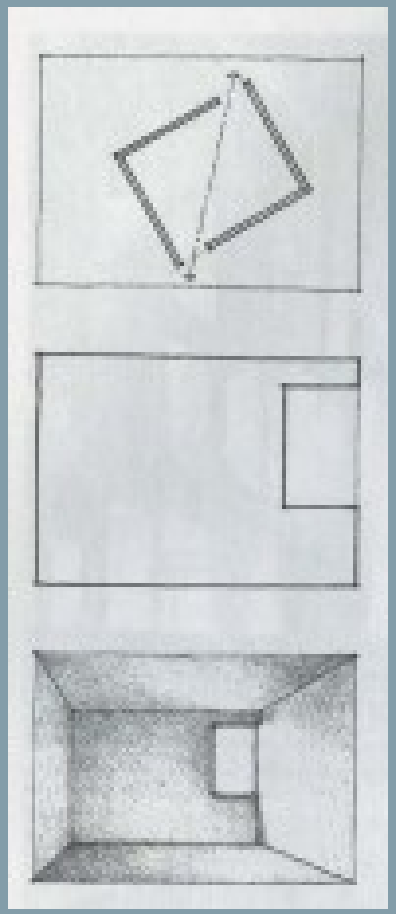
Kaufmann Desert House, Palm Springs, California, 1946, Richard Neutra

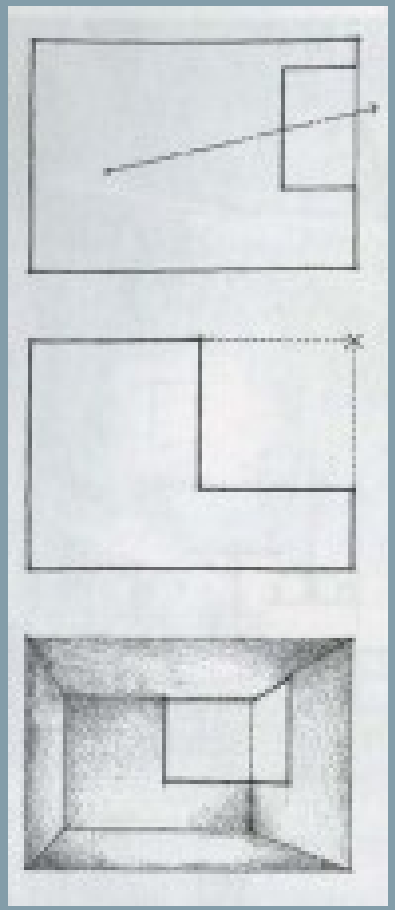
In two-dimensional representations, only the relationship with the observer is of interest. It is not the same when we project compositions into Euclidean space. In this case, to compose shapes, we must consider all points of view.

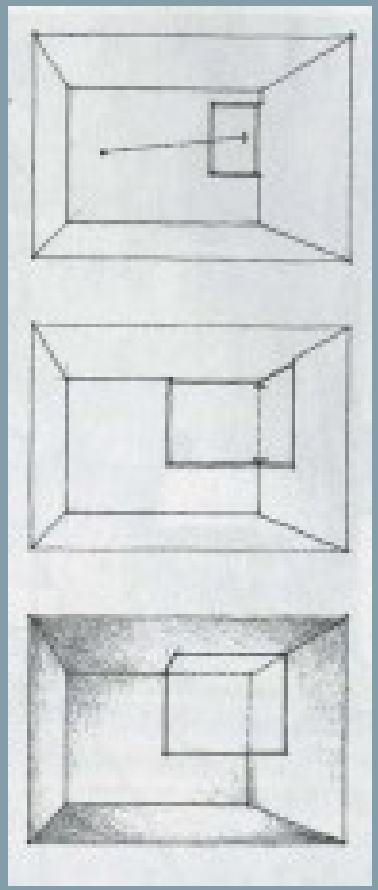

Notre Dame Du Haut, Ronchamp, France, 1950–55, Le Corbusier


Chapel Space, Notre Dame Du Haut, Ronchamp, France, 1950–55, Le Corbusier

It is not possible to appreciate shapes without perceiving them from several angles. This means that it is not a static system of relationships, but a whole series of systems of interrelations.

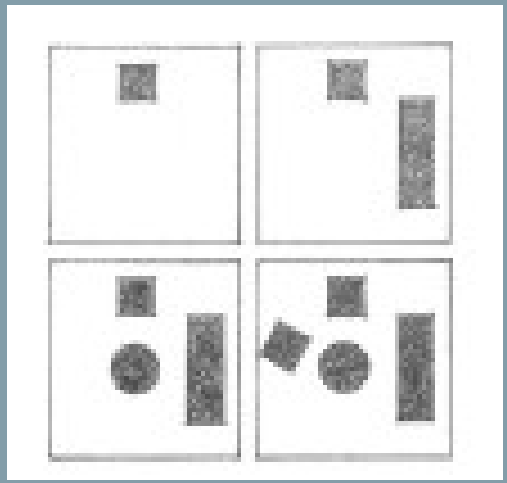


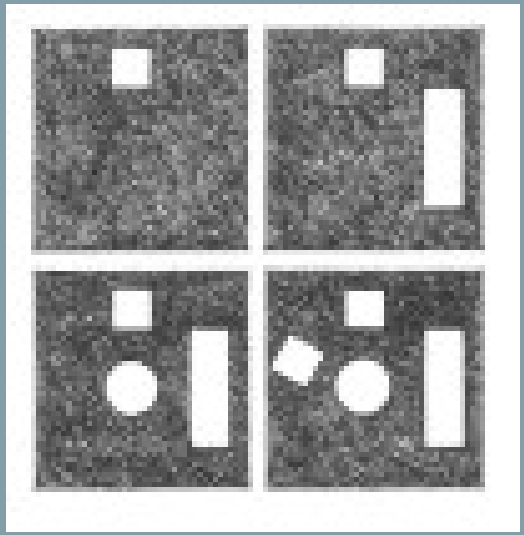




The unity

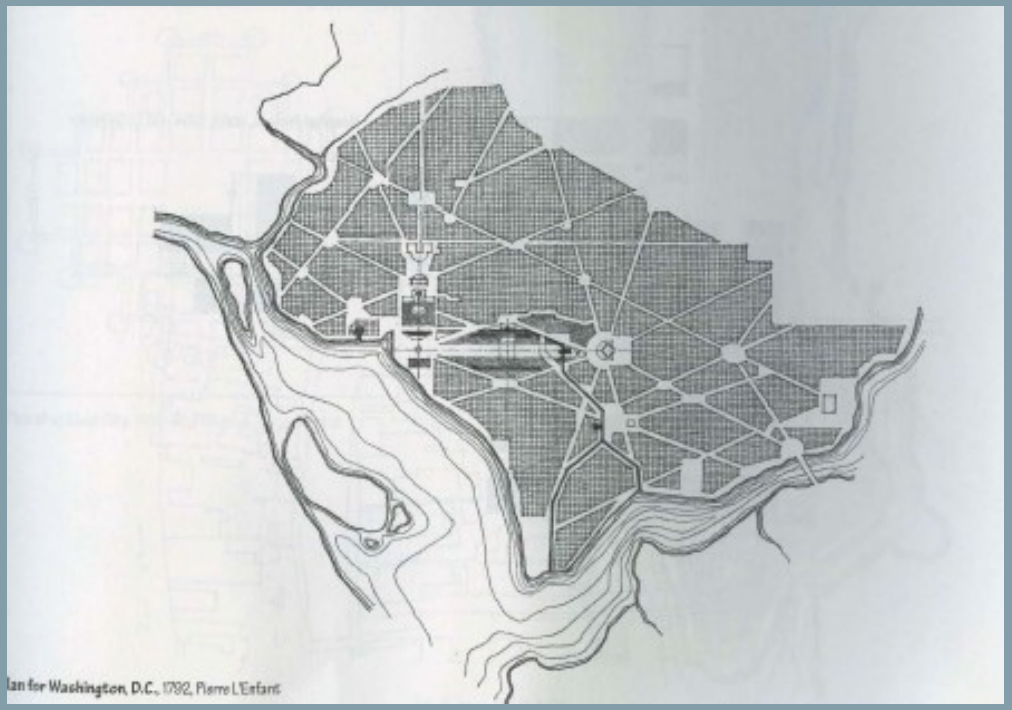
It is the quality obtained when all the elements have been designed and have been arranged in a logical and pleasant way, without them competing for a dominant position.





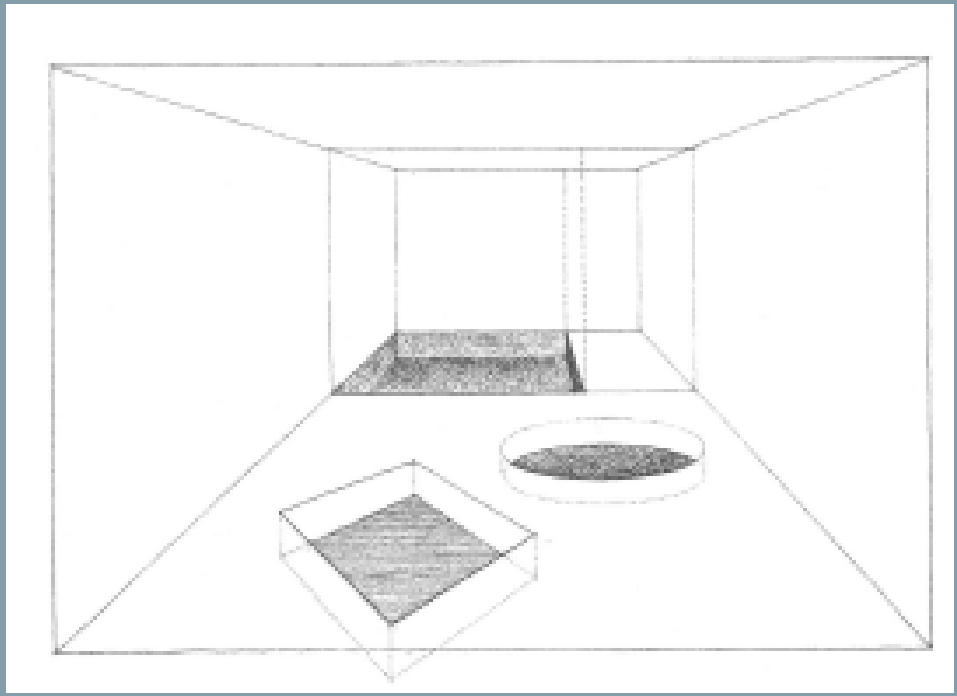
The unity

A space in which organic unity has been achieved is simpler than complex, and there reign within it ordered lines free from any confusion.



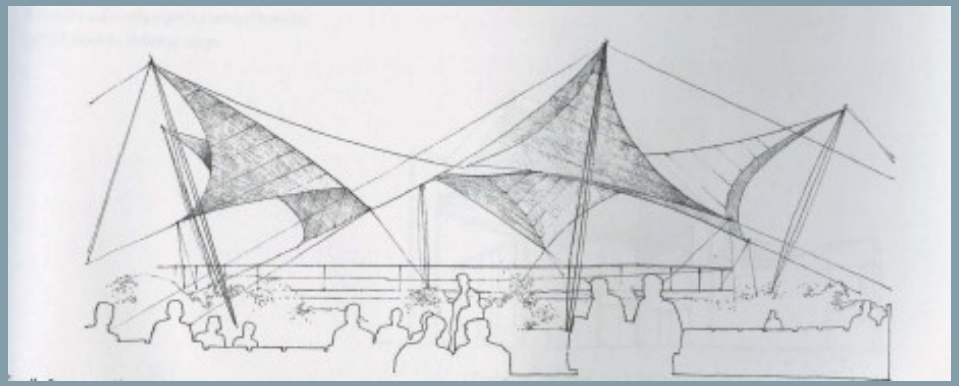
The variety

The variety must be introduced in the correct order. Excessive variety or inappropriate type can destroy unity.



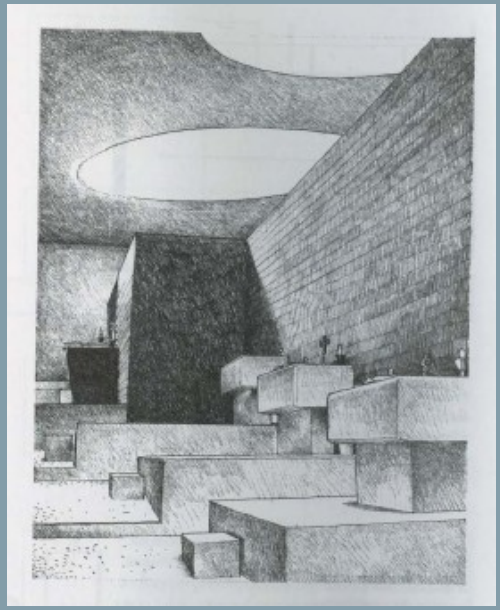
The contrast

Unity must be conceived as the synthesis of opposing elements, and not as a monotonous entity.



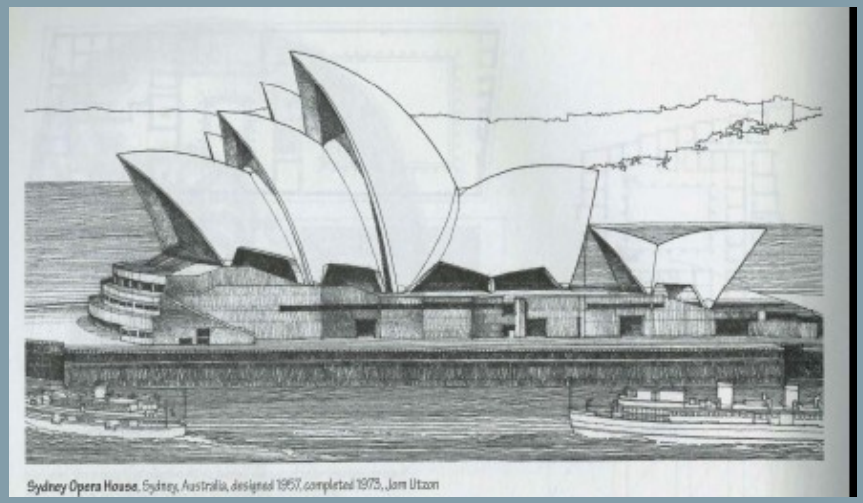
The Center of Interest

For a composition to have the required unity, it is necessary that there be a visual center, that is to say, a focal point which would attract the eye and which would clearly dominate the whole.



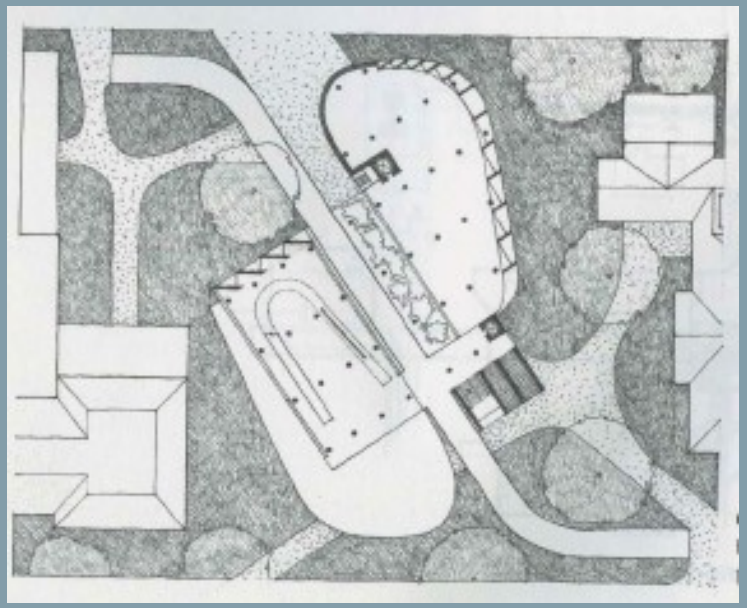
The Center of Interest

The center of interest must bring to sight, firstly, the most important and then, progressively, the other elements, according to their order of importance, and in such a way that these serve as a support for the others.


Sydney Opera House, Sydney, Australia, designed 1957, completed 1973, Jorn Utzon

Balance

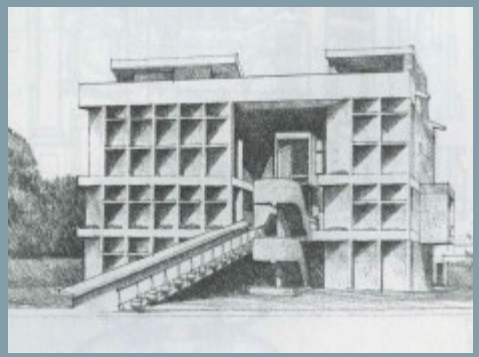
From the point of view of physics, equilibrium is the state of a body in which the forces acting on it neutralize each other.



Balance

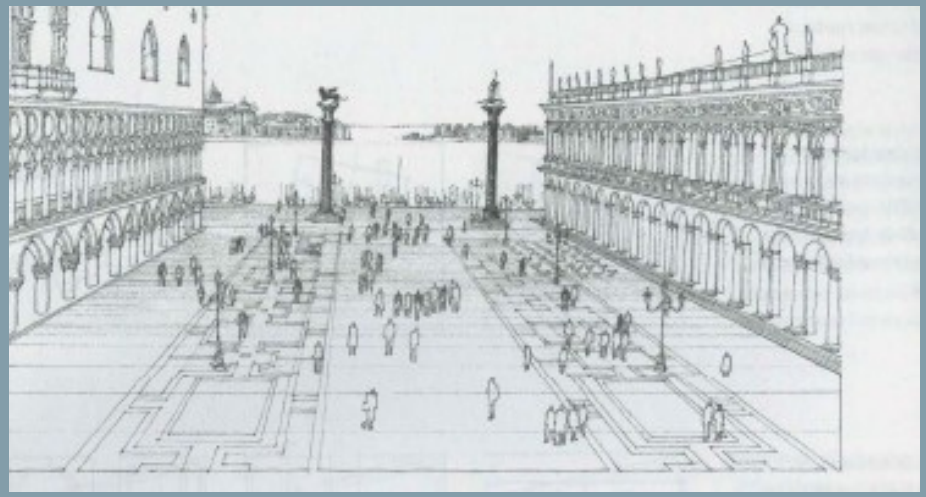
We can apply this definition to visual balance, except that here it is not a question of the balance of a body in space, but of all the parts of a given whole (figures) in a field well defined (background).

The Oriental Theater, Milwaukee, Wisconsin, 1927, Dick and Bauer



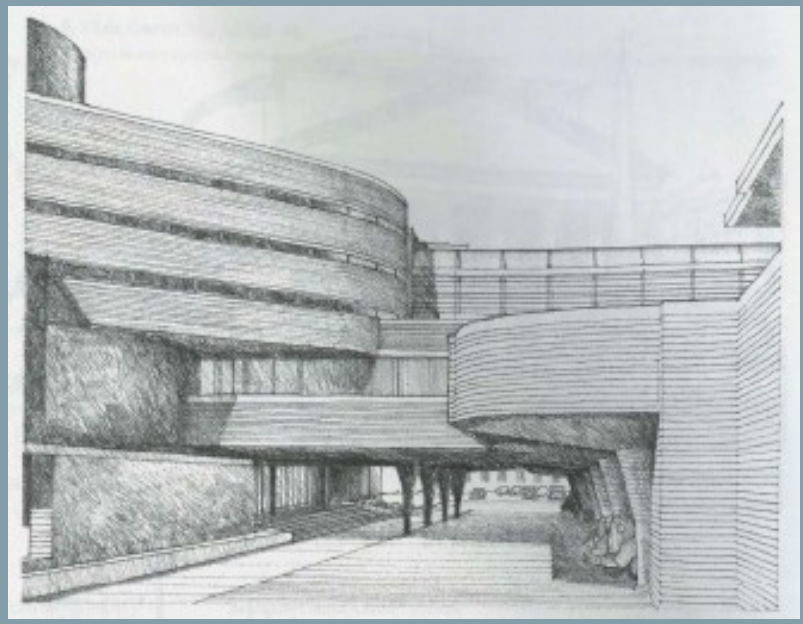
Axial or symmetrical balance

The points of attraction in this case oppose each other along an explicit central axis. In this type of balance there is a center of interest which is, at the same time, the center of the composition and which serves as an axis of symmetry for identical elements, equidistant from each of its sides.



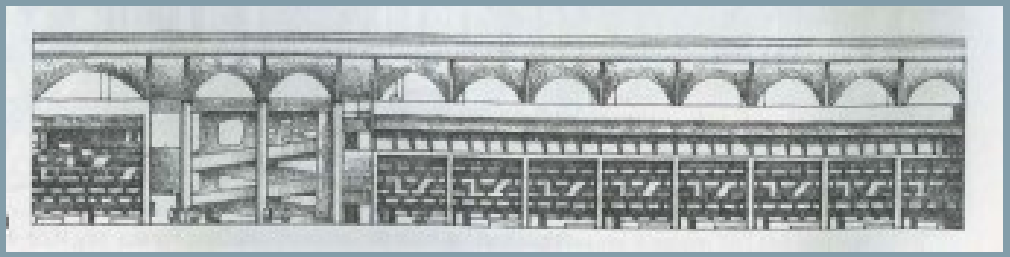
Occult or asymmetrical balance

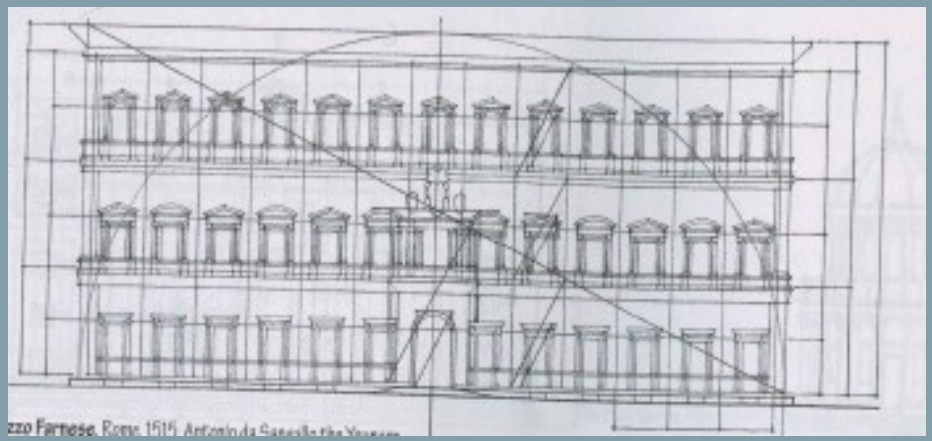
The points of attraction in this case are opposed according to an equality which is not assured in the first degree but "felt" between the parties. There are no explicit axes, but it is essential that there is an important center of interest.



Rhythm-Pace

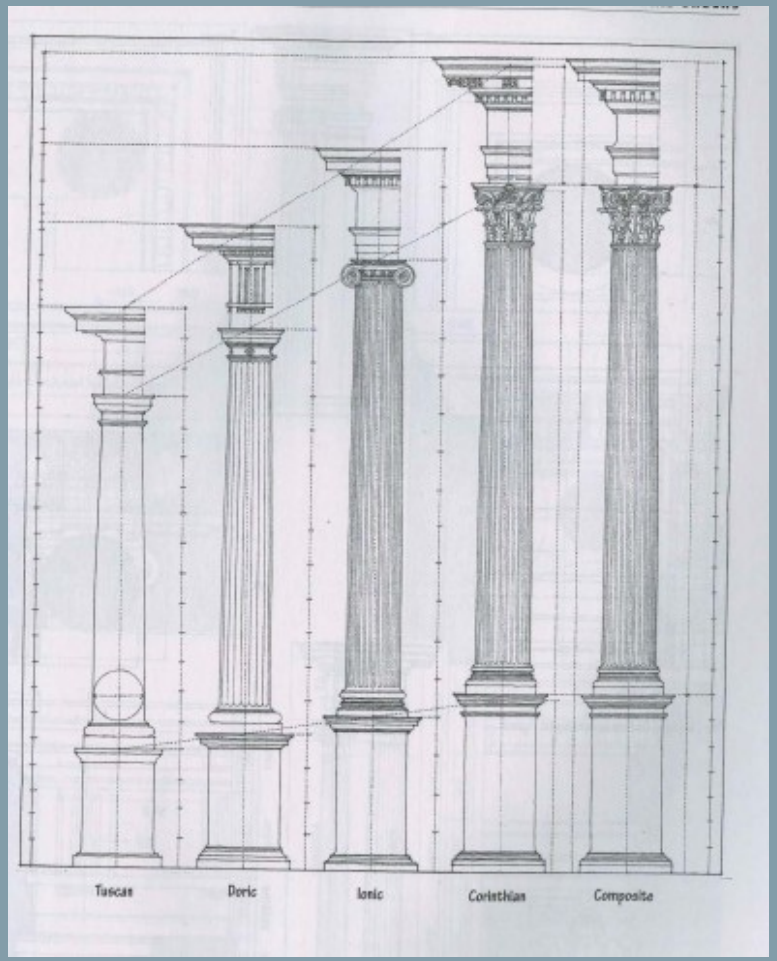
Rhythm is a repetition in which different elements alternate. Rhythm differs from simple repetition which is just a planned recurrence.





Proportion

In any composition an analysis of proportions is involved, based on the relationships of the dimensions of the parts to each other as well as between the different parts and the whole (the whole).



Scale

An interior composition only has value through the relationships that exist between the different parts that compose it, independently of the viewer. The character of each atmosphere or space is determined by a fundamental element: the human scale. That is to say, the relationship between the elements of space environment and those of man.