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Chapter One

Artistic Movements

Part :One

1. Definition of Architecture:

Definition of Architecture and the Architect:

- Architecture could be basically defined as 'the art and science of designing and constructing buildings'. As a word, 'architecture' can carry several other meanings, such as:
- The product or result of architectural work: buildings, urban areas and landscapes.
- A style or method of building characteristic of a people, place or time.
- The profession of designing buildings and other habitable environments by architects.
- The conscious act of forming things resulting in a unifying or coherent structure.' In its most simple form, architecture is the design and organization of spaces, and in its most common form, it is the design of buildings, their interiors and surrounding spaces. The architect acts a designer, who can work in a wide range of scales, from a scale as large as the planning of a city, up to a scale as small as the design of a chair.

➢ Etymology of the Word 'Architecture' Etymologically (in terms of the root of the word), the word 'architecture' comes from the Greek arkhitekton (àpyATÉKTOV), “chief" or "master", and tekton, meaning "mason" or "builder". In line with the etymology, architecture Ching. F., Visual Dictionary of Architecture, used to denote both the process and the product of designing and constructing buildings; and the architect used to be known as the "master mason" or "master builder" in the past..

Architecture also can mean:

- A general term to describe buildings and other physical structures. The art and science of designing buildings and (some) no building structures. The style of design and method of construction of buildings and other physical structures. Knowledge of art, science, technology, and humanity.
- Architecture is an art form that reflects how we present ourselves across the earth's landscape, and, like other expressive mediums, it changes with styles, technologies and cultural adaptations. Architecture not only provides worldly needs of shelter, workspace and storage but also represents human ideals in buildings like courthouses and government buildings and manifestations of the spirit in churches and temples. Traditional architecture has survived over thousands of years in one form or another, while contemporary design offers new approaches in how we use materials and technology to shape the look of our environment.

- ***Definition of Art :***

The visual arts are art forms such as painting, drawing, printmaking, sculpture, ceramics, ... Drawing is a means of making an image, illustration or graphic using any of a wide variety of tools and ... Because sculpture involves the use of materials that can be molded or modulated, it is considered one of the plastic arts. As figure (2-3) Shown.

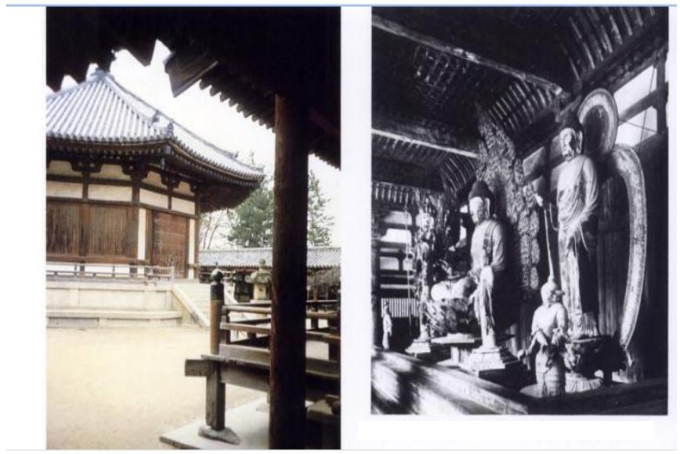


figure (2) Shown(left) Yomedono, Horyuji,Nara,AD 739 and later – (Right) Kondo at Toshodaifi, near Nara ,AD 759(intrior from the east)- Source : Hugh Honour, John Fleming- Laurence King Publishing, 2005

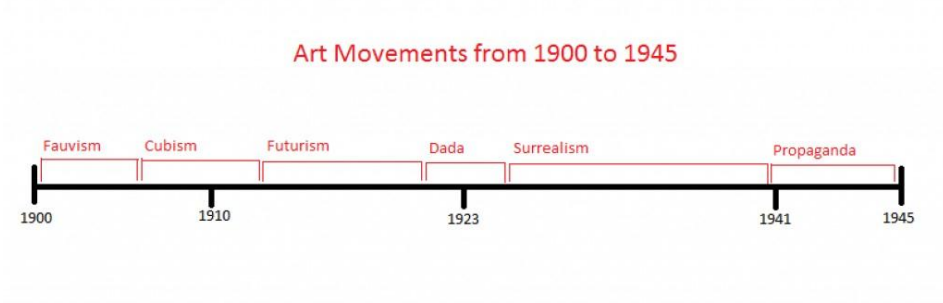
Art the expression of a particular idea using a material or a group of raw materials , formulated in a way that reflects the thought and philosophy of raw materials, formulated in a way that reflects the thought and philosophy of the artist so that they look beautiful appearance , inspiring comfort and pleasure.

Part :Two

Artistic Movements In The 20 th

The twentieth century was one of particular worldwide upheaval, ranging from wars to economic downturns to radical political movements. No one can disagree that the years between 1900 and 2000 were years of extreme change for artists all over the world. These changes were boldly reflected in the works of avante-garde artists throughout the century. Classical art was being challenged more and more as waves of nationalism and imperialism spread over the world in the early half of the twentieth century.

Artists explored extreme and varying themes in the years before and after World War I, and those same themes were revisited in the aftermath of World War II, creating an interesting parallel. This article is divided into two sections: 1900-1945 and 1945-2000 and focuses on art themes that captured the talents and ideas of some of the most well known artists around the world.



Art Movements Timeline from 1900-1945

Source : Article called :20th Century Art Movements with Timeline - Updated on June 13, 2016- Shanna

Bright vivid colors and somewhat abstract forms characterized Fauvism and Expressionism.

Fauvism and Expressionism

By the turn of the century, artists were rapidly making their departure from more classical works and were seeking to express themselves through different means. Fauvism was the short lived name for the longer-lasting art movement called Expressionism. From about 1905 to 1910 artists sought to explore emotions in new ways, employing the use of bright, vivid colors and emotional images and subjects.

This movement is most well known for capturing the creations of such famous artists as Henri Matisse. The Fauvism movement eventually faded into the calmer, more thoughtful expressionistic art as Fauvism- which came from the word Fauves meaning wild beasts- lost popularity. The short movement characterized the years between 1904 and 1908, but engaged much of the first decade of the 1900's.

Cubism and Primitivism

Pioneered by Pablo Picasso, Cubism sought to deepen the consideration that expressionist artists had created by rendering objects and ideas from different angles, seeking to break up and analyze things. Primitivism was similar by extension and was influenced by American colonization and exploration in the early 1900s.

Featuring collages and works made of many different mediums, Cubism and Primitivism explored the human relationship with the mundane and extraordinary and was characterized by it's analytic and synthetic qualities. This art movement was also rather short and reached its height in the years between 1907 and 1911, extending and intermingling with the Futurism movement, although art scholars agree it had reached the end of its lifetime by 1919.

Futurism Movement

One of the lesser known art movements, the Futurism art movement did not produce any works of art that are still widely known by the world today. However, futurism was an important political tool used by artists in the years leading up to World War I. In fact, some scholars believe the unrest associated with the futurism movement may have served as propaganda for World War I.

The movement advocated societal revolution and changes in the way art was made and produced. Largely an Italian movement, the Futurism movement featured growing unrest and unhappiness with the economic climate that was producing larger separations between the working and upper classes. The Futurism movement provided fuel for the later Dada movement, despite it's lack of fame and longevity; the Futurism movement was ended by the end of World War I.

Marcel Duchamp's famous 'Fountain' was a mockery of conventional art and characterized feelings during the Dada era.

Dada art

By the end of World War I, artists were realizing that the Futurism movement was not the answer to their problems. World War I left artists across the world disillusioned, angry and bitter. Their art was irrational and their ideas were a radical departure from centuries of art forms. The Dada movement espoused strange and radical ideals as they explained in one of their many art manifestos:

"Dada Knows everything. Dada spits on everything. Dada has no fixed ideas. Dada does not catch flies. Dada is bitterness laughing at everything that has been accomplished, sanctified....Dada is never right... No more painters, no more writers, no more religions, no more royalists, no more anarchists, no more socialists, no more politics, no more airplanes, no more urinals...Like everything in life, Dada is useless, everything happens in a completely idiotic way...We

are incapable of treating seriously any subject whatsoever, let alone this subject: ourselves.

The art produced during the Dada movement was fascinating in the abstract principles and ideas it sought to portray. Some call it 'anti-art' and some claim it is not art at all, because the creators did not consider it as such. Often the artists of the Dada era sought to mock more classical and conventional artists, as Marcel Duchamp did when he submitted an old urinal to an art museum as a piece of work. Dada was the final explosion of the Futurism movement and gave way to surrealism by 1924.

Surrealism

The anger after World War I gradually faded and was replaced by surrealism, a longer-lasting art movement that explored the human psyche. Pioneered by such artists as Salvador Dali, the surrealism movement followed in the footsteps of many leading psychologists of the day in discovering dreams and exploring what made reality real.

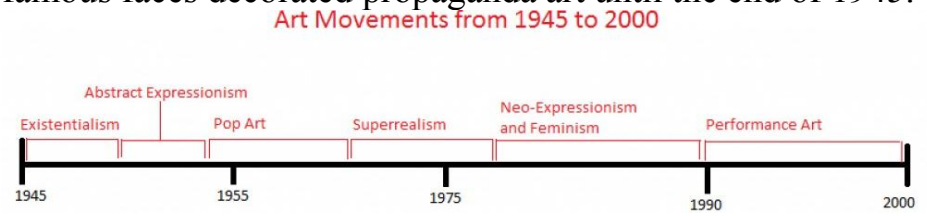
Characterized by strange paintings and dream-like qualities, art of the Surrealism movement is fascinating to look at and study today and is reminiscent of some of our strangest dreams and ideas. Surrealism was the return to a calmer art movement that sought to dig deeper into human consciousness, emotion and preference instead of overturning it.

This World War II American propaganda shows the use of art in garnering public support for the war effort.

Propaganda

Many art scholars argue that all art has its roots in propaganda or religious ideas. While this sweeping generalization is still debated today, it is obvious that some art is indeed used first and foremost as propaganda. The end of the surrealism movement was marked by the beginning of World War II in Europe and propaganda was the movement of the day, with artists requisitioned to contribute to the war efforts and produce works of art that would motivate their country into supporting the war effort.

The idea was to create a "righteous anger". Some of the most famous works of World War II propaganda came from the United States, which entered the war a bit late and had to garner support. Rosie the Riveter, Uncle Sam and other famous faces decorated propaganda art until the end of 1945.



Timeline of Art Movements from 1945 to 2000. Timeline made by shanna11

Source : Article called :20th Century Art Movements with Timeline - Updated on June 13, 2016- Shanna

Existentialism Art

Existentialism was a renewed social, cultural and artistic craze that followed World War II. It concerned a specific set of ideas related to human existence, thought and ideas that were abstract and were generally unique to each individual. Existentialism in art was similar to expressionism and renewed the same sort of cynical ideas about human existence.

Art focused on angst, despair, reason, failings and many complex, dark and difficult emotions. Many of the artists were atheists and centered around what one art history textbook calls the "absurdity of human existence" (Gardner). Francis Bacon is a noted artist from this time period with his work simply called "Painting" that portrayed a gruesome slaughterhouse scene and symbolic meaning in the life of man.

A splatter-paint image done in the style of Jackson Pollock

bstract Expressionism

In the late 1940s, Abstract Expressionism sprang up with the idea of expressing a state of mind. Considered the birth of "modern art", artists who painted during the Abstract Expressionism movement wanted viewers to really reach deeply for understanding of an image. They wanted the ideas about the painting to be free of conventional thinking and believed that their images would have a unique, instinctive meaning for each viewer.

Some of the famed artists during this time period were Jackson Pollock and Mark Rothko, using splatter-paint and other unusual methods to create abstract works of art. The Abstract Expressionism movement moved into the "Post-Painterly Abstraction" movement which attempted to create a brand of "purity in art", but the movement died out by the mid 1950's.

An image done in the style of Andy Warhol, who arguably extended and innovated the Pop Art movement.

An image done in the style of Andy Warhol, who arguably extended and innovated the Pop Art movement.

Pop Art

A new brand of art called Pop Art emerged in the 1950s as a surprising break-away from previous movements. Artists in the Pop Art movement felt that Abstract Expressionist art was alienating the audience and sought to use their art to communicate more effectively with the viewer.

Roy Lichtenstein was the famed pioneer of this movement and used his art in a commercial way, expressing emotion and ideas in a very vividly appealing way that his audience could easily understand and relate to. The Pop Art movement is one of the most recognized movements of the twentieth century and as it morphed and expanded, famed artists like Andy Warhol became well known for their own similar brands of work.

Superrealism

Superrealism is in reality a very small movement that further interpreted the Pop Art movement in the 1960s. However, superrealism produced works of art that were drastically different from pop art and past works. Artists during this movement brought a return to idealism and perfection in their art. Many artists during this time period created their works of art based off of photographs. This return to a more classical style of art was short lived and fell easily to the more political art of the 1970s and 1980's.

A symbol of the 1970s German Feminist movement and an example of art as propaganda.

Neo-Expressionism and Feminism

Superrealism crumbled beneath the powerful emotions that Neo-Expressionism and the Feminist movement sought to invoke with their works of art. Neo-expressionism was a return to the cynical artwork of the 1940s and the Futurism movement but lacked the same angry feel. Instead, artists of this era wanted to produce a more careful, serious examination of emotion and expression. They wanted the viewer to be curious and think deeply instead of being enraged.

However, this movement rapidly reverted to the anger and change that it's earlier predecessors had desired as the Feminist movement got its hands on the ideas. Communication via art became political again and portrayed the female body provocatively as the feminist movement made its brief resurgence, fighting for equality in all areas of women's rights. With legislation like Title IX passed and other victories for the feminists, the art movement gradually gave way to the 1990s and Performance Art.

Performance Art

The last decade of the twentieth century featured art that was largely labeled as Performance Art. This art characterized the growing use of personal computers and art was used liberally in new video games, movies, and other technological advances. Art was being used for performances sake and to catch the eye and appeal of the buyer. Art was largely commercial in this last decade before the dawn of the twenty first century.

Chapter Two
Artistic Groups

Part One

Artist SCHOOLS (Groups) :

1) Art Deco Style (1920-1940)

Art Deco, sometimes referred to as Deco, is a style of visual arts, architecture and designs that first appeared in France just before World War I .

A creative but short-lived movement, Art Deco not only influenced the architect of most American cities but had an impact on fashion, art, and furniture, too, From 1925 to 1940, Americans embraced Art Deco as a refreshing change from the eckectic and revivalist sensibilities that preceded it. The sty le takes its name from the Exposition International des Arts Decorative held in Paris in 1925 as a showcase for new inspiration. The style was essentially one of applied decoration. Buildings were richly embellished with hard-edged, low-relief designs: geometric shapes, including chevrons and ziggurats; and stylized floral and sunrise patterns. Although some buildings utilized expensive hand-crafted decoration, others made do with machine. made repetitive decorations. To keep costs down, ornamental treatment was often limited to the most visible parts of the building. Art Deco projects produced dynamic collaborations

between architects, painters, sculptors, and resulting environments like Old Miami Beach, designers-sometimes Art in complete Deco Florida.

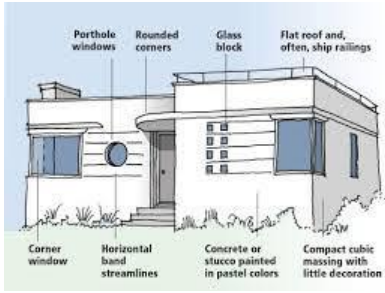
https://www.researchgate.net/publication/328138042_ArtDeco_1

In its day, some of what we now refer to as Art Deco was often called Modern, or Art Modern, a term used to describe the most advanced design ideas of the 1930sup to the end of the second World War. Being close cousins, Art Deco and Art Modern shared stripped-down forms. But Art Modern had a:

1) Horizontal rather than vertical emphasis,

2) Rounded rather than angular corners,

3) Minimum Surface ornamentation.



Art Deco was first applied to public and commercial buildings in t Although individual homes were rarely designed in the Art Deco style, and developers, especially in Greater Washington, DC, found that the sty quite well to apartment buildings. Most of these buildings are still in use, a to the city's richly varied architectural history.

For all its panache, Art Deco was immensely practical in execution. For a tight budget, the simple box could be decorated with motifs and embel appendages that made a conceptually rudimentary structure appear fashi up to date. Visual interest could be further enhanced by stretching li horizontally and vertically throughout the building. This was frequently bands of brick, canopies, or copings.

Architecture was first and foremost considered to be decorative - ornamental and beautifying. Buildings, cinemas, railway stations, etc. were all embellished with quintessential Deco patterns like zigzags, sunbursts, Egyptian motifs and similar geometric patterns all in the name of beauty. Post-war society very quickly fell in love with the style, as it was a representation of all that was modern, luxurious and beautiful. The twenties of the last century was a time of joy and hopefulness and the masses embraced this new look with open arms. It was symbolic of the strong economy and it inspired hope for a prosperous future.

Art Deco, also called Modern Style. It is a movement in the decorative arts and architecture that originated in the 1920s and developed into a major style in western Europe and the United States of America during the 1930s. Its name was

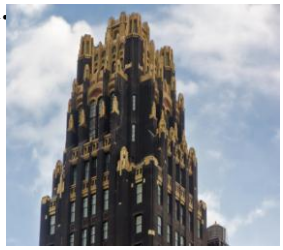
derived from the Exposition International des Arts Décoratifs et Industriels Modernes, held in Paris in 1925, where the style was first exhibited. Art Deco design represented modernism turned into fashion. Its products included both individually field luxury items and mass-produced wares, but, in cither case, the intention was to create a sleek and anti traditional elegance that symbolized wealth and sophistication. Though it draws heavily from antiquity, art deco was considered ultramodern at the height of its popularity, with some of the first deco designs coming from the edgy Bauhaus School in Germany. The style combines the circular. trapezoidal and rectangular motifs of the Machine Age with the high-gloss finishes and glamorous black-and-white color palette of the silver screen.

The distinguishing features of the style are simple, clean shapes, often with a "streamlined" look; ornament that is geometric or stylized from representational forms; and unusually varied, often expensive materials, which frequently include man-made substances (plastics, especially Bakelite; vita-glass; and ferroconcrete) in addition to natural ones (jade, silver, ivory, obsidian, chrome, and rock crystal). Though Art Deco objects were rarely mass-produced, the characteristic features of the style reflected admiration for the modernity of the machine and for the inherent design qualities of machine-made objects (e.g., simplicity, planarity, symmetry and unvaried repetition of elements).

Among the formative influences on Art Deco was Art Nouveau, Bauhaus, Cubism. Decorative ideas came from Egyptian and early classical sources as well as from nature.

Characteristic motifs included nude female figures, animals, foliage, and sun designed individually crafted or limited-edition items. They included the furniture designers Jacques Ruhlmann and Maurice Dufrène; the architect Eliel Saarinen glass and jewelry designer Rene Lalique, fashion designer Erte.

The Rockefeller Center in New York (especially its interiors supervised by Donald Deskey; built between 1929 and 1940), the Chrysler Building by William Van Alen, and the Empire State building by Shreve, Lamb & Harmon are the most monumental embodiments of Art Deco. Although the style went out of fashion in most places during World War II, but by the late sixties there was a renewed interest in Art Deco design. Into the 21st century Art Deco continued to be a source of inspiration in such areas as decorative art and jewelry design.



Overview

A creative but short-lived movement, Art Deco not only influenced the architecture of most American cities but had an impact on fashion, art, and furniture, too. From 1925 to 1940, Americans embraced Art Deco as a refreshing change from the eclectic and revivalist sensibilities that preceded it. The style takes its name from the Exposition Internationale des Arts Decoratifs held in Paris in 1925 as a showcase for new inspiration. The style was essentially one of applied

decoration. Buildings were richly embellished with hard-edged, low-relief designs: geometric shapes, including chevrons and ziggurats; and stylized floral and sunrise patterns. Shapes and decorations inspired by Native American artwork were among the archetypes of the Art Deco lexicon. Although some buildings utilized expensive hand-crafted decoration, others made do with machine-made repetitive decorations. To keep costs down, ornamental treatment was often limited to the most visible parts of the building. Art Deco projects produced dynamic collaborations between architects, painters, sculptors, and designers-sometimes resulting in complete Art Deco environments like Old Miami Beach, Florida. In its day, some of what we now refer to as Art Deco was often called Moderne, or Art Moderne, a term used to describe the most advanced design ideas of the 1930s through to the end of World War II. Being close cousins, Art Deco and Art Moderne shared stripped-down forms. But Art Modern had a horizontal rather than vertical emphasis, rounded rather than angular corners, and little surface ornamentation. Art Deco was first applied to public and commercial buildings in the 1920s. Although individual homes were rarely designed in the Art.

Deco style, architects and developers, especially in Greater Washington, DC, found that the sty le adapted quite well to apartment buildings. Most of these buildings are • At & tukitectame B1 tn use, a testament to the city's richly varied architectural history. For all its panache, Art Deco was immensely practical in execution. For projects on a tight budget, the simple box could be decorated with motifs and embellished with appendages that made a conceptually

rudimentary structure appear fashionable and o date. Visual interest could be further enhanced by stretching linear forms vorizontally and vertically throughout the building. This was Irequently done with bands of brick, canopies, or copings. A 1984 book, Washington Deco by Hans Wirz and Richard Striner, catalogs over 400 Art Deco buildings in the Washington area. Two examples are on Capitol Hill: the former Kresge Store at 666 Pennsylvania Avenue S.E., built in 1936 and recently expanded (the Art Deco-style frieze on the building's facade was part of the 1980s renovation of the building; the pattern for the frieze was taken from a 1930s fabric); and the Penn Theater at 650 Pennsylvania Avenue S.E., built in 1935. Although the Penn Theater itself was demolished, the marquee and a portion of the faccade have been incorporated into the new building. Additional examples of Washington Art Deco are the Kennedy-Warren Apartments at 3133 Connecticut Avenue N.W., the Hecht Company warehouse on New York Avenue N.E., and the sign of the former Greyhound Bus Terminal on New York Avenue N.W. In classic Art Deco, rectangular blocky forms were often arranged in geometric fashion, then broken up by curved ornamental elements. But always the aim was a monolithic appearance with applied decorative motifs.

Materials Art Deco materials included stucco, concrete, smooth-faced stone, and Terracotta. Steel and aluminum were often used along with glass blocks and decorative opaque plate glass.

Roof Art Deco designers adorned flat roofs with parapets, spires, or tower-like constructs to accentuate a corner or

entrance. Decorative curiosities such as chimneys were added to further enhance the design.

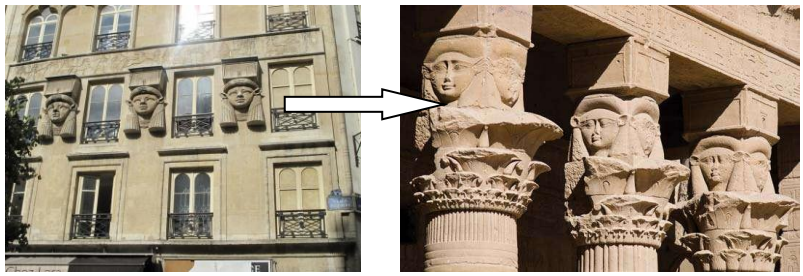
Windows Windows usually appear as punctured openings, either square or round. To maintain a streamlined appearance for the building, they were often horizontal bands of glass, Wall openings are sometimes filled with decorative glass or with glass blocks, creating a contrast of solid and void forms while admitting daylight. Many large apartment buildings found aesthetic success with decorative cmbossed spandrel panels placed below windows. The Kennedy-Warren Apartments is an example.

Entrance

Doorways are sometimes surrounded with elaborate pilasters and pediments, and door surrounds are often embellished with either a convex decoration or fluting (a concave decoration). The quality and extent of the decorative motifs vary by project and designer.

Egyptian Art Deco Motifs

The style was partially inspired by artifacts discovered in 1922 in King Tut's tomb, and many art deco buildings include the repeating designs and vivid color common in Egyptian artwork. arranged in continuous .



Key Elements of the Style:

Flat roofs.

- Smooth walls. The walls of art deco homes are often made of smooth stucco and have rounded corners.

Bold exterior decorations. Buildings in the sty le were often decorated with zigzags, swans, lilies and sunrise motifs.

-Experimentation with interior materials. Art deco designers used "new" materials such as glass block, neon, chrome, mirrors and opaque glass panels.

Famous Examples of the Style:

Chrysler Building. Perhaps the most famous example of art deco architecture is the Chrysler Building in New York City. Just a few blocks to the north, the Empire State building is another art deco gem.

In Chicago, the McGraw Hill Building and the Powhatan Apartments epitomize art deco style.

The hotels in Miami's South Beach -- and newer buildings throughout South Florida -- combine deco lines with pastel colors.

The Top Art Deco Buildings

The Carbon Tower

2) Art Nouveau (1890 -1910)

Art Nouveau, ornamental style of art that flourished between about 1890 sand 1910 throughout Europe and the United States. Art Nouveau is characterized by its use o "long, sinuous, organic line and was employed most often in architecture, interior 1990 -1910 design, jewelry and glassd esign, posters, and illustration. It was i deliberate attempt to create a new style, free of the imitative historicism that dominated much of 19th-century art and design. About this time the term Are Nouveau was coined, in Belgium by the periodical L'Art Moderne to describe the: work of the artist group Les Vingt and in Paris by S. Bing, who named his gallery L'Art Nouveau. The style was called Jugendstil in Germany, Sezessionsti in Australia, Stile Floreale (or Stile Liberty) in Italy, and Modernism (or Modernista in Spain) .

In England the style's immediate precursors were the Aestheticism of the illustrator Aubrey Beardsley, who depended heavily on the expressive quality of organic line, and the Arts and Crafts movement of William Morris, who established the importance of a vital style in the applied arts.

On the European continent, Art Nouveau was influenced by experiments with expressive line by the painters Paul Gauguin and Henri de Toulouse-Lautrec. The movement was also partly inspired by a vogue for the linear patterns of Japanese prints (ukiyo-e) .

Beardsley, Aubrey: illustration for Le Morte Darthur

Art Nouveau illustration by Aubrey Beardsley for an

1893 edition of Sir Thomas Malory's Le Morte Darthur.

The distinguishing ornamental characteristic of Art Nouveau is its undulating asymmetrical line, often taking the form of flower stalks and buds, vine tendrils, insect wings, and other delicate and sinuous natural objects; the line may be elegant and graceful or infused with a powerfully rhythmic and whiplike force In the graphic.

Art Nouveau Jewellery

Art Nouveau posterArt Nouveau meaning “new art” was a movement which started in Europe in 1890 and lasted until about 1915. Which coexisted with the Victorian era and the Edwardian era. The movement received its name from Siegfried Bing. Who opened an art gallery in 1895 called

Maison de lÀrt Nouveau, which translates to ” House of New Art”. Here he invited artists to display modern works. The movement’s roots can be traced back to the arts and crafts period in Britain. Art Nouveau took its inspiration from nature, with flowers, plants and organic flowing lines dominating. Designers were particularly interested in strong curves or vine-like patterns. These designs became known as “whiplash lines” and were very common during the earlier part of the period. Due in part to the influence of Japanese woodblock prints, which were very popular. This style was very influential on the mass-produced posters (an example of which can been seen here on the left) and glass art of the period. As a style, Art Nouveau is considered to be a “total” art style. Which influenced all art and design, from architecture to jewellery. This widespread influence reached its peak in the Paris World`s Fair of 1900. Which attracted nearly fifty million visitors from around the world. Where art was sold as a way of life, inspiring people to live art as opposed to admiring it.

Art Nouveau Jewellery Trends

During the Georgian and Victorian periods, precious stones were highly prized and diamonds in particular. Due to their value, these gemstones were very rarely if ever cut to suit a design. Rather it was the jeweller’s job to design the best setting possible to suit a given stone. Art Nouveau jewellery completely changed this approach. With much more emphasis now being placed on the design above the materials used. This had the effect of turning the jeweller into an artist. Whereas in earlier times the jeweller was seen more as a craftsman. Now the jewellers of Europe introduced new floral

designs in enamel, glass, ivory and semi-precious stones. Plique-a-jour enamelling meaning “glimpse of day” was revived during this period and proved to be very popular. This enamelling technique was normally used in winged or webbed structures. Where it will have no backing, allowing the light to shine through the translucent enamel. This technique produced a stained glass effect and was considered to be technically very challenging. Plique-a-jour was used in a myriad of ways and especially in insects. Art Nouveau jewellery was trying to transport the wearer to a magical place. A place of exotic animals with beautiful plants and flowers. All made with sensual flowing lines. The artists wanted to re-create a lost age of innocence. Where people were more in touch with nature. This longing for paradise was driven by the upheaval of the industrial revolution. Where millions of people left the countryside to find work in the towns and cities.

Source: https://carusjewellery.com/art-nouveau-jewellery-1890-to-1915/

arts the line subordinates all other pictorial elements-form, texture, space, and color- to its own decorative effect. In architecture and the other plastic arts, the Whole of the three-dimensional form becomes engulfed in the organic, linear rhythm, creating a fusion between structure and ornament.

Architecture particularly shows this synthesis of ornament and structure: a liberal combination of materials- ironwork, glass, ceramic, and brickwork-was employed, for example, in the creation of unified interiors in which columns and beams became thick vines with spreading tendrils and windows became both openings for light and air and membranous outgrowths of the organic whole. This approach was directly opposed to the traditional architectural values of reason and clarity of structure.

There were a great number of artists and designers who worked in the Art Nouveau style. Some of the more prominent were the Scottish architect and designer Charles Rennie Mackintosh, who specialized in a predominantly geometric line and particularly influenced the Austrian Sezessionstil; the Belgian architects Henry van de Velde and Victor Horta, whose extremely sinuous and delicate structures influenced the French architect Hector Guimard, another important figure; the American glassmaker Louis Comfort Tiffany; the French furniture and ironwork designer Louis Majorelle: the Czechoslovakian graphic designer-artist Alphonse Mucha: the French glass and jewelry designer René Lalique; the American architect Louis Henry Sullivan, who used plantlike Art Nouveau ironwork to decorate his traditionally structured buildings; and the Spanish architect and sculptor Antonio Gaudí, perhaps the most original artist of the movement, who went beyond dependence on line to transform buildings into curving, bulbous, brightly coloured, organic constructions.

After 1910 Art Nouveau appeared old-fashioned and limited and was generally abandoned as a distinct decorative style. In

the 1960s, however, the style was rehabilitated, in part, by major exhibitions organized at the Museum of Modern Art in New York (1959) and at the Musée National d'Art Moderne (1960), as well as by a large-scale retrospective on Beardsley held at the Victoria & Albert Museum in London in 1966. The exhibitions elevated the status of the movement, which had often been viewed by critics as a passing trend, to the level of other major Modern art movements of the late 19th century. Currents of the movement were then revitalized in Pop and Op art. In the popular domain, the flowery organic lines of Art Nouveau were revived as a new psychedelic style in fashion and in the typography used on rock and pop album covers and in commercial advertising.

Art Nouveau painted oak cabinet with coloured glass, designed by Charles Rennie Mackintosh, 1902.

1900-1913 Paris Metro, PARIS, FRANCE Pasadena, USA

1908, the David Gamble house,

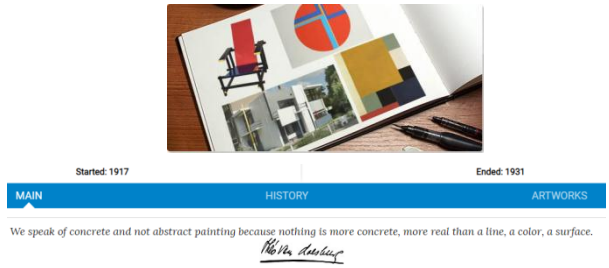
1893, Tassel House, Brussels, BELGIUM, Victor Horta

1902-1904, Hill House, Helensborough, SCOTLAND, Charles Mackintosh- Source :Article called : ART NOUVEAU – in 20th century Architecture web site – by :

http://architecture-history.org/schools/ART%20NOUVEAU.html

3) DE STIJL (1917 -1931)

he Netherlands-based De Stijl movement embraced an abstract, pared-down aesthetic centered in basic visual elements such as geometric forms and primary colors. Partly a reaction against the decorative excesses of Art Deco, the reduced quality of De Stijl art was envisioned by its creators as a universal visual language appropriate to the modern era, a time of a new, spiritualized world order. Led by the painters Theo van Doesburg and Piet Mondrian - its central and celebrated figures - De Stijl artists applied their style to a host of media in the fine and applied arts and beyond. Promoting their innovative ideas in their journal of the same name, the members envisioned nothing less than the ideal fusion of form and function, thereby making De Stijl in effect the ultimate style. To this end, De Stijl artists turned their attention not only to fine art media such as painting and sculpture, but virtually all other art forms as well, including industrial design, typography, even literature and music. De Stijl's influence was perhaps felt most noticeably in the realm of architecture, helping give rise to the International Style of the 1920s and 1930s.



The Art story - Article called : De Stijl Artworks- by:

Source :https://m.theartstory.org/movement/de-stijl/artworks/

The Netherlands-based De Stijl movement embraced an abstract, pared-down misthetic centered in basic visual elements such as geometric forms and primary colors. Partly a reaction against the decorative excesses of Art Deco, the reduced quality of De Stijl art was envisioned by its creators as a universal visual Language appropriate to the modern era, a time of a new, spiritualized world order. Led by the painters Theo van Doesburg and Piet Mondrian - its central and celebrated figures - De Stijl artists applied their sty le to a host of media in the fine and applied arts and beyond. Promoting their innovative ideas in their journal of the same name, the members envisioned nothing less than the ideal fusion of form and function, thereby making De Stijl in effect the ultimate style. To this end, De Stijl artists turned their attention not only to fine art media such as painting and sculpture, but virtually all other art forms as well, including industrial design, typography, even literature and music. De Stijl's influence was perhaps felt most noticeably in the realm of architecture, helping give rise to the International Style of the 1920s and 1930s.

BEGINNINGS OF DE STIJL

In 1917, Theo van Doesburg founded the contemporary THE STUL art journal De Stijl as a means of recruiting like-minded artists in the formation of a new artistic collective that embraced an expansive notion of art, infused by utopian ideals of spiritual harmony. The journal provided the basis of the De Stijl movement, a Dutch group of artists other leading members MAANUBLAUa voon DE MO- DERNE RNEO VAN DOES- NADAOTIE DEWERING VAN VOONAME

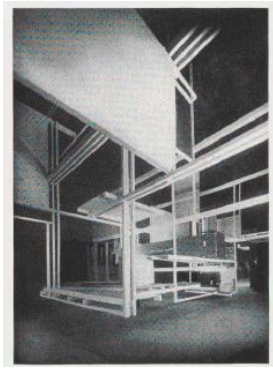
RINNENEN BUITENLANuac KUNTE NAANS UTGAVE X HARNG TIEYEN T OKLFY IN 17 and architects whose included Piet Mondrian, J. J. P. Oud and Vilmos Huszar.

Adopting the visual elements of Cubism and Suprematism, the anti-sentimentalism of Dada, and the Neo-Platonic mathematical theory of M. H. J Schoenmaekers, a mystical ideology that articulated the concept of "ideal" geometric forms, the exponents of De Stijl aspired to be far more than mere visual artists. At its core, De Stijl was designed to encompass a variety of artistic influences and media, its goal being the development of a new aesthetic that would be practiced not only in the fine and applied arts, but would also reverberate in a host of other art forms as well, among them architecture, urban planning, industrial design, typography, music, and poetry. The De Stijl aesthetic and vision was formulated in large response to the unprecedented devastation of World War I, with the movement's members seeking a means of expressing a sense of order and harmony in the new society that was to emerge in the wake of the war.

DE STIJL: CONCEPTS, STYLES, AND TRENDS

Pure Geometric Abstraction and De Stijl Visual Language

De Stijl was the first-ever journal devoted to abstraction in art, although the movement's artists were not the first to practice abstract art; other painters, Kandinsky, Kazimir Malevich and Hans Arp, had perhaps most notably Wassily earlier created nonobjective art, often incorporating geometric forms in their work. But the artists and architects associated with De Stijl - as Mondrian, van painters Doesburg and Ilya Bolotowsky, and architects such as Gerrit Rietveld and JJP Oud - adopted what they perceived to be a purer form of geometry, consisting of forms made up of straight lines and basic geometric shapes (largely rendered in the three primary colors); these motifs provided the fundamental elements of compositions that avoided symmetry and strove for a balanced relationship between surfaces and the distribution of colors. In Neo-Plasticism in Pictorial Art, Mondrian explained: "As a pure representation of the human mind, art will express itself in an aesthetically purified, that is to say, abstract form. The new plastic idea cannot, therefore, take the form of a natural or concrete representation."



Plate^M Frederick Kiesler: The City in Space, model in Austrian section, International Exposition, Paris, 1925

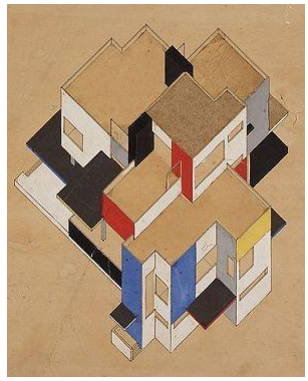
Source: moma_catalogue_1798_300159061.pdf – Article called : De Stijl, 1917-1928- by :

https://assets.moma.org/documents/moma_catalogue_1798_300159061.pdf

Part Two

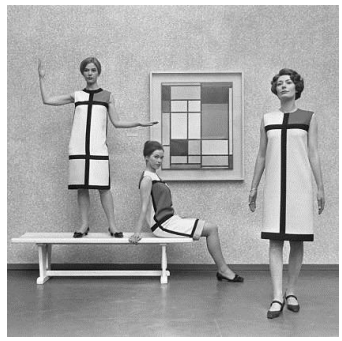
LATER DEVELOPMENTS -AFTER DE STIJL

De Stijl-inspired architecture, particularly by Rietveld and Oud, was built in the Netherlands throughout the 1920s, all of which, interestingly enough, seemed to defy van Doesburg's theory of Elementarism, instead utilizing clearly defined horizontal and vertical lines. De Stijl also had a major on Bauhaus architecture and design; several members of De Stijl taught at the Bauhaus, perhaps most importantly van Doesburg, who lectured there in 1921-22. De Stijl's geometric visual language, along with its architectural concepts such as form following function and the emphasis on structural components, would reverberate in Bauhaus architectural practice, as well as the global idiom known as the "International Style.“



With Theo van Doesburg's death in 1931, De Stijl lost leader, and soon after faded from existence. However, the movement's key ideas of pure geometric abstraction and the relationship of form and function were maintained by many following van Doesburg's death, and represent a fundamental contribution to

modern and contemporary art, design, and architecture. Many of Rietveld's buildings, for example, survive the longevity of the De Stijl movement, and inspired a great many 20h-century architects, among them Mies van der Rohe.



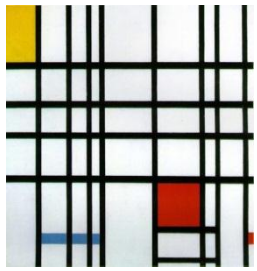
The Art story - Source: Article called : De Stijl History and Concepts

ARTWORKS AND ARTISTS OF DE STIJL

Reduce Form. Abstract Design! Depersonalize art! Re-conceive the environment! Explore new plasticity!

This is exactly what Dutch painter, designer, architect, and critic Theo van Doesburg did when he founded an art and design movement called De Stijl in 1917. De Stijl, meaning 'style', depersonalized art, the object and architecture. Doesburg published a journal called De Stijl, presenting the movement's new objective aesthetics and theories between 1917 and 1932. Composition in De Stijl was accomplished through proportional relationships between colour and uncoloured forms and closed and open forms. The painter Piet Mondrian created compositions of straight lines framing red,

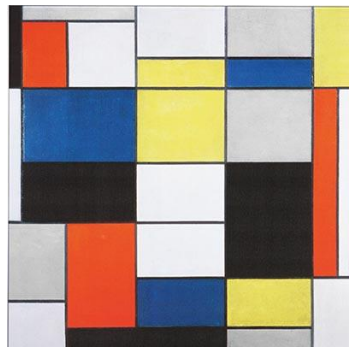
blue and yellow primary colours. Designer and architect Van Doesburg transferred abstract and anonymous principles of De Stijl paintings into interior spaces of houses and to entire city plans. De Stijl influenced teachings at the Bauhaus in Germany in the 1920's.



Composition A (1920)

Artist: *Piet Mondrian*

Artwork description & Analysis: Composition A - whose title announces its nonobjeetive nature by making no reference to anything beyond itself - is a good example of Mondrian's geometric abstraction before it fully matured within the framework of the De Stijl aesthetic. With its rectilinear forms made up of solid. outlined areas of colour, the work reflects the artist's experimentation with Schoenmaekers's mathematical theory and his search for a pared-down visual language appropriate to the modern era. While here Mondrian uses blacks and shades of grey, his paintings would later be further reduced, ultimately employing more basic compositions and only solid blocks of primary colours.



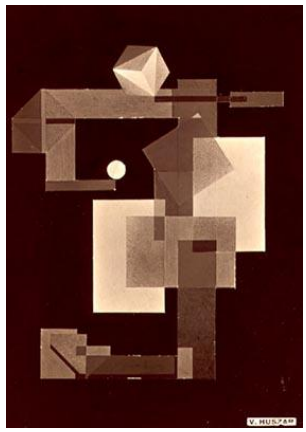
Composition A - 1920

Artist: Piet MonOil on canvas - The National Gallery of Modern and Contemporary Art, Romedrian

Mechano-Dancer (1922) 93

Artist: *Vilmos Huszar*

Artwork description & Analysis: This carly work employs the signature geometric shapes of the De Stijl aesthetic, yet its layering of shapes and forms, and combination of horizontal, vertical, and diagonal lines--along with the absence of color - reflect a different approach from that of the movement's leading artists, van Doesburg and Mondrian. The work's suggestion of a human figure - accomplished by the arrangement of geometric forms and placement of a cube at the top, possibly representing a head is also unique in De Stijl art. Mechano-Dancer's evocation of a hybrid man-machine, also implied by its title, suggests the influence of Dada and Italian Futurism.



Mechano-Dancer- 1922 -Artist: Vilmos Photomontage –

Private colleetion, New York Huszar

Red and Blue Chair (1923)

Artist: *Gerrit Rietveld*

Artwork description & Analysis: Originally designed in 1918 but not fully realized until 1923, when it incorporated the characteristic De Stijl scheme of primary colors, Red and Blue Chair is one of the canonical works of the movement. Rietveld Artist: Gerrit Rietveld envisioned a chair that played with and transformed the space around it, consisting of rectilinear volumes, planes, and lines that interact in unique ways, yet manage to avoid intersection. Every color, line, and plane is clearly defined, as if each comprised its own work that just happened to be used for a piece of furniture. The Simple assembly Rietveld deployed was quite intentional as well; he built the chair out of standard lumber sizes available at the time, reflecting his goal of realizing a piece of furniture that could be mass-produced as opposed to hand-crafted. Emphasizing its manmade quality, Red and Blue Chair also

notably avoids the use of natural form, which furniture designers tend to favour in order to emphasize the idea of physical comfort and convenience.

Painted wood - Auckland Museum, New Zealand

Counter Composition V (1924)

Artist: *Theo van Doesburg*

Artwork description & Analysis: First introduced in 1924, van Doesburg's Counter Compositions - his signature works embody the artist's wish to move beyond the confines of De Stijl with his introduction of Elementary . While van Doesburg continued to make use of horizontal and vertical lines, he now prioritized the diagonal line; he described Elementary as "based on the neutralization of positive and negative directions by the diagonal and, as far as color is concerned, by the dissonant. Equilibrated relations are not an ultimate result." The titles of his Counter Compositions refer to the fact that the lines of the compositions are at a 45-degree angle to the sides of the picture rather than parallel to them, resulting in a newly energized relationship between the composition and format of the canvas. As in the present example, he repeatedly ventured beyond the three primary colors, including a triangle of grey in

addition to the primary colors, white, and black. At the time he painted this composition, De Stijl was finding its own unique voice; paintings. furniture designs, and buildings produced by those associated with the movement communicated how lines and colors should interact, and how a work's appearance is just as essential as its function.

Rietveld Schröder House (924)

Artist: *Gerrit Rietveld*

Artwork description & Analysis: The Rietveld Schröder House is an important precursor to the Bauhaus-inspired International Style, as well as the only building designed in complete accordance with the De Stijl aesthetic. The house was commissioned in 1924 by Truus Schröder-Schrader, who intended for the new home to be grand and open ("without walls"), a veritable manifesto for how an independent modern woman should live her life. Featuring the typical De Stijl palette of primary colors, black, and white, the building emphasizes its architectural elements - slabs, posts, and beams reflecting the movement's emphasis on form, construction, and function in its architecture and design. In other ways, too, the design represents a major departure from architectural convention and precedent. Inside, the rooms are constructed as movable entities with portable walls. In addition, Rietveld's design makes no attempt to interact with any of the surrounding buildings or roadways, suggesting its presence as an isolated structure focusing inward instead of outward.

Counter Composition V - 1924

Artist: Theo van Doesburg

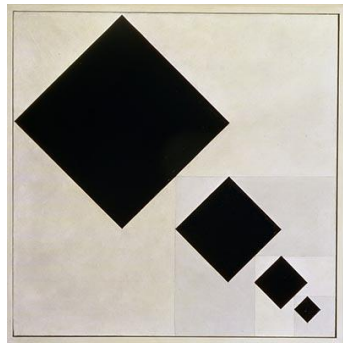
Plate 13 G. Rietveld and T. Schroder: Schroder House at Utrecht. 1924- Concrete, brick, and plaster, wood, steel girders –Utrecht, The Netherlands

Arithmetic Composition (1929-30)

Artist: *Theo van Doesburg*

Artwork description & Analysis: Made close to the end of van Doesburg's life, Arithmetic Composition reflects the artist's experimentation with abstract geometric shapes within a diagonal composition, resulting in a dimensional plane that would not have the same visual effect had the blocks been positioned vertically or horizontally. The work's diagonal

configuration, combination of pure positive and negative space (black forms against white background), and incorporation of a curious backward "L" in the upper left corner, which consumes one block, create a sense of movement, making the shapes appear as if they are alternately moving toward and away from the viewer. However, unlike Mondrian's characteristic vertical-and-horizontal paintings, which lend themselves to the suggestion of figuration, van Doesburg here creates an abstract artwork totally devoid of the possibility of representation.



Arithmetic Composition – 1929-30

Artist: Theo van Doesburg

4) The Bauhaus

Bauhaus founded by Walter Gropius in Weimar. The German The was term Bauhaus-literally "building house"-was understood as meaning "School of Building", but in spite of its name and the fact that its founder was an architect, the Bauhaus did not initially have an architecture department. Nonetheless, it was founded upon the idea of creating a Gesamtkunstwerk("total' work of art") in which all the arts, including architecture, would eventually be brought together. The Bauhaus style later became one of the most influential

currents in modern design, Modernist architecture and art, design, and architectural education. The Bauhaus movement had a profound influence upon subsequent developments in art, architecture, graphic design, interior design, industrial design, and typography. The school existed in three German cities-Weimar, from 1919 to 1925; Dessau, from 1925 to 1932; and Berlin, from 1932 to 1933-under three different architect-directors: Walter Gropius from 1919 to 1928; Hannes Meyer from 1928 to 1930; and Ludwig Mies van der Rohe from 1930 until 1933, when the school was closed by its own leadership under pressure from the Nazi regime, having been painted as a centre of communist intellectualism. AIthough the school was closed, the staff.

continued to spread its idealistic precepts as they left Germany and emigrated all over the world.

a changes of venue and leadership resulted in a constant shifting of focus, hnique, instructors, and politics. For example, the pottery shop was discontinued hen the school moved from Weimar to Dessau, even though it had been an important revenue source; when Mies van der Rohe took over the school in 1930, he transformed it into a private school and

would not allow any supporters of Hannes 97 Meyer to attend it.

Bauhaus Building by Walter Gropius (1925-26)

The building was designed by the founder of Bauhaus, Walter the commissioned by the city of Dessau. The plans were drafted in Gropius's private office - the Bauhaus did not have its own department of architecture until 1927. The interior fittings were made in the Bauhaus workshops. The city of Dessau financed the project and also Gropius, and provided the building plot.


au

by Walter Gropius (1925–26) in Bauhaus Dessau

Architecture behind glass

The design is a further development of an idea that Gropius had previously realised (pre-WWI) with the construction of the Fagus factory in Ahlfeld an der Leine. In both buildings a glass facade on the load-bearing framework allows a view of

the interior workings, In the workshop wing in Dessau this provides clear view of the constructive elements. The design does not visually amplify the corners of the building, which creates an impression of transparency. Gropius designed the various

sections of the building differently, separating them consistently according to function. He positioned the wings asymmetrically; the form of the complex can thus be grasped only by moving around the building. There is no central view.



- Bauhaus architecture

Date*: interbellum*: 1919 to 1933

Staatliches Bauhaus, commonly known simply as Bauhaus, was a school in Germany that combined crafts and the fine arts, and was famous for the approach to design that it publicized and taught. It operated from 1919 to 1933. At that time the German term Bauhaus, literally "house of construction" stood for "School of Building".

The Bauhaus Dessau The Bauhaus school was founded by Walter Gropius in Weimar. In spite of its name, and the fact that its founder was an architect, the Bauhaus did not have an

architecture department during the first years of its existence. Nonetheless it was founded with the idea of creating a 'total' work of art in which all arts, including architecture would eventually be brought together. The Bauhaus style became one of the most influential currents in Modernist architecture and modern design.

Typography by Herbert Bayer above the entrance to the workshop block of the Bauhaus, Dessau, 2005

History of the Bauhaus

Bauhaus and its Sites in Weimar

and Dessau*

UNESCO World Heritage Site.

Bauhaus building in Dessau

- Country Germany
- Type Cultural

- Criteria ii, iv, vi
- Reference 729
- Region** Europe and North America
- Inscription history
- Inscription 1996 (20th Session)

* Name as inscribed on World Heritage List.

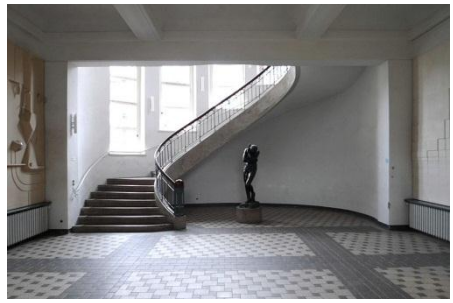
** Region as classified by UNESCO.

Weimar

The school was founded by Walter Gropius in Weimar in 1919 as a merger of the Grand Ducal School of Arts and

Crafts and the Weimar Academy of Fine Art. Its roots lay in the arts and crafts school founded by the Grand Duke of

Saxe-Weimar-Eisenach in 1906 and directed by Belgian Art Nouveau architect Henry van de Velde.



Foyer BAUHAUS University in Weimar

Dessau

Gropius's design for the Dessau facilities was a return to the futuristic Gropius of 1914 that had more in common with the International style lines of the Fagus Factory than the stripped down Neo-classical of the

Werkbund pavilion or the Völkisch Sommerfeld House.[18] The Dessau years saw a remarkable change in direction for the school. According to Elaine Hoffman, Gropius had approached the Dutch architect Mart Stam to run the newly-founded architecture program, and when Stam declined the position, Gropius turned to Stam's friend and colleague in the ABC group, Hannes Meyer.

The Bauhaus Dessau

Berlin

Although neither the Nazi Party nor Hitler himself had a cohesive architectural policy before they came to power in1933, Nazi writers like Wilhelm Frick and Alfred Rosenberg had already labeled the Bauhaus "un-German" and criticized its modernist styles, deliberately generating public controversy over issues like flat roofs. Increasingly

through the early 1930s, they characterized the Bauhaus as a front for communists and social liberals. Indeed, a

number of communist students loyal to Meyer moved to the Soviet Union when he was fired in 1930.

Part Three

1. Function in Architecture

As described by Vitruvius in 25 BC, architecture should reach to an optimum combination of firmitas, utilitas and venustas, meaning firmness, functionality and beauty. Functionality meant the arrangement of rooms and spaces so that there is no difficulty to the use of building and so that a building is perfectly suited to its site. Firmness meant that foundations were solid and that the materials of the building well selected. Beauty meant that the appearance of the work is pleasing and in good taste. This Vitruvian triad is still a valid summary of the elements of good architecture. Therefore, the ultimate test of architecture is made by asking these questions:

Does the building function well and is it suitable for its site? (functionality)

Is the building built well enough to stand up and are its materials durable? (firmness)

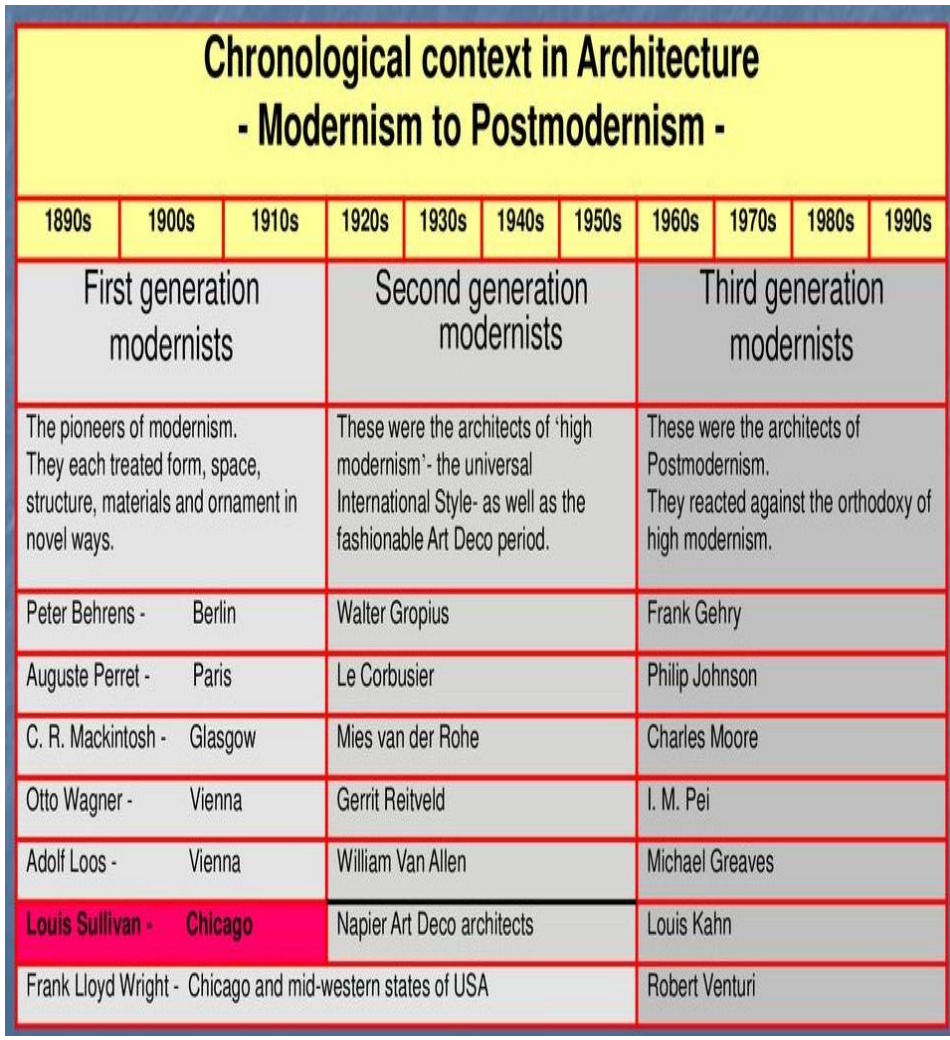
Does the building appeal to senses?

In this lecture, we shall look at the first condition of architecture, which is function. Function, or the pragmatic utility of an object/work of architecture, says that the object/work of architecture is fitted to a particular use.

2. Function and Form in Architecture

We had said before that architecture is the art of playing with forms (solids) and spaces (cavities). Some architects start their designs by playing with forms (solids) and some of them start

by playing with spaces (cavities). However, for the creation of a good architectural product, both of them are necessary. Great architects play with them at the same time. Likewise, and very relatedly, some architects start their designs by thinking about the formal appearance of the building and some of them start by thinking about the functional operation of the building. However, again, for the creation of a good architectural product, both of them are necessary. Great architects think about both of them (form and function) at the same time. The form in architecture differentiates according to the function and structure of the building; and structure and function is FORM determined by the form. The next table shows Modernism to post Modernism in Architecture.



Chronological context in Architecture
- Modernism to Postmodernism -

1890s	1900s	1910s	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s
First generation modernists			Second generation modernists				Third generation modernists			
The pioneers of modernism. They each treated form, space, structure, materials and ornament in novel ways.			These were the architects of 'high modernism'- the universal International Style- as well as the fashionable Art Deco period.				These were the architects of Postmodernism. They reacted against the orthodoxy of high modernism.			
Peter Behrens - Berlin			Walter Gropius				Frank Gehry			
Auguste Perret - Paris			Le Corbusier				Philip Johnson			
C. R. Mackintosh - Glasgow			Mies van der Rohe				Charles Moore			
Otto Wagner - Vienna			Gerrit Reitveld				I. M. Pei			
Adolf Loos - Vienna			William Van Allen				Michael Greaves			
Louis Sullivan - Chicago			Napier Art Deco architects				Louis Kahn			
Frank Lloyd Wright - Chicago and mid-western states of USA							Robert Venturi			

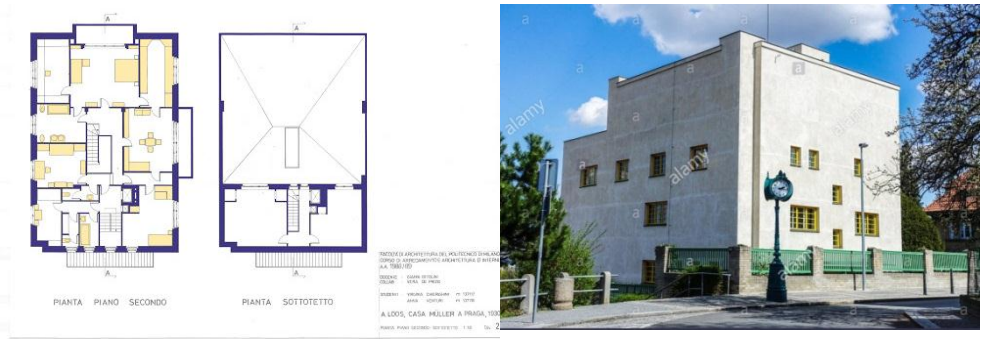
Source: **https://slideplayer.com/slide/13732193/**

2.a. Form Following Function

AS we have said some forms are created by thinking about the functional operation of the building. They are shaped according to the internal activities or purpose of the building. Such forms tend to be more practical. This category of design development is described as form following function.

Form follows function' was a phrase developed by American architect Louis Sullivan. It meant that the form of any building should be defined by the activities/functions that were to be carried out inside it, rather than any historical precedent (example) or aesthetic ideal. It implied that decorative elements, which are called as 'ornaments', were needless in buildings. The phrase became the motto of Modernist architects after the 1920s.

Sullivan designed the world's first skyscrapers using these functionalist design principles. His approach was concerned with form following function and the buildings he produced were driven by functional necessity. The concept of functionalism was further developed by Austrian architect Adolf Loos. He wrote as 'ornament is crime', and argued that any decoration on a building was both superfluous and unnecessary. The thinking of both architects created new and modern responses to architectural design.



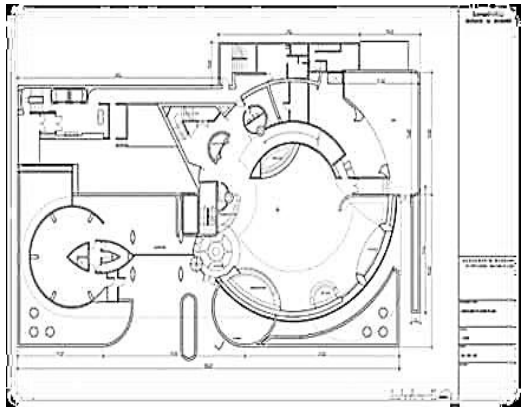
Adolf Loos: Muller House, Prague, Czech Republic

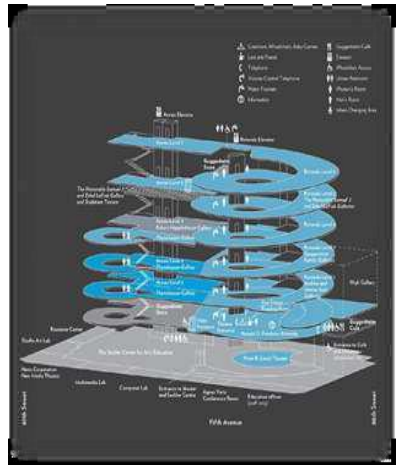
The Modernists adopted both of these phrases-"form follows function" and "omament is crime"-as moral principles., and they have seen industrial objects, machines and factories as brilliant and beautiful examples of plain, simple design

integrity. Modernist architecture first arose around 1900 and primarily sought for the primacy of function in architecture, the simplification of form and the elimination of ornament. It said that the forms should be shaped as a result of the functions of the buildings, instead of by traditional aesthetic concepts. Therefore modernist architecture adopted functionalism' in architecture, which is a principle saying that architects should design a building based on the purpose of that building The zeitgeist (spirit of the age or spirit of the time) of modernism influenced architecture, art, and fashion of the 20th century. Modernists were inspired by industrial objects, machines and factories, since they were designed by function in mind. They presumed that buildings should also work like good working machines and developed a concept called 'machine aesthetics" to describe the formal understanding of such buildings. They have attempted to have such a machine aesthetics in their own buildings.

He based the design of the Guggenheim

on one shape from nature : the spiral.





The floor plan is one single fluid ramp spiraling up six stories and resembling the inside of a seashell.

There is conventional approach to museum design, which led visitors through a series of interconnected rooms and forced them to retrace their steps when exiting.

In fact it is not divided into individual floors connected by staircases or elevators, but is instead one single fluid ramp spiraling up six stories .

A skylight illuminates the interior from above, and the white concrete walls reflect the light.

The first examples of this type of architecture were the AEG Turbine Factory, Berlin, 1908-09 by Peter Behrens and Fagus factory by Walter Gropius in Germany. In both of these, the form of the building was determined totally by the internal industrial processes that the building contained. In 1926, The

Bauhaus school built in Dessau also demonstrated this principle in its workshop wing.

AEG Turbine Factory, Germany, Industrial architecture

By the 1920s the most important figures of modern architecture had established their reputations. The three 'founders' are commonly recognized as Le Corbusier in France, and 7 Ludwig Mies van der Rohe and Walter Gropius in Germany. By the 1940s modernism became the dominant architectural style throughout the world.

Walter Gropius

Le Corbusier (one of the founders of Modern architecture) stated that the new age demanded a new house and he said that "the house is a machine for living in".

2.b. Function Following Form

We had said before that, some forms are created by the external appearance of the building in mind. Such forms tend to be more sculptural. This category of design development is described as ' function following form'. However, this kind of thinking in architecture (thinking about only form in architecture design) is missing, because as we have said, a good architect should think of both the form and the function at the same time.

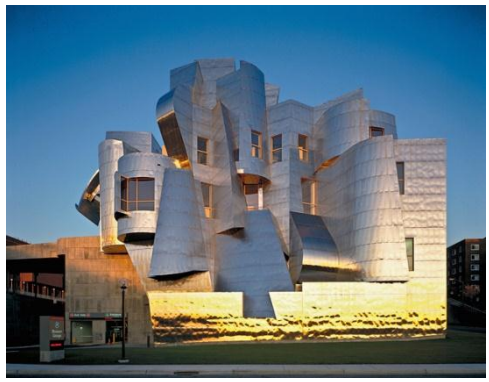
The modernist functionalism, which saw the function of a building affect its final shape and form, produced a reaction, which dictated that function follows form; that the shape of a building should be the architect's primary consideration, and any functions and activities that the building is to house should be accommodated into this form.

One of the earliest architects who embraced the ideals of this kind of an architecture was Antoni Gaudí: his most famous work, La Sagrada Familia, or the Parc Güell (both in

Barcelona, Spain) use forms in a sculptural way to great dynamic effect. La Sagrada Familia is extremely ornamental and decorative. It looks like it has been sculpted rather than built and its stones appear almost liquid-like and display a light, open quality.

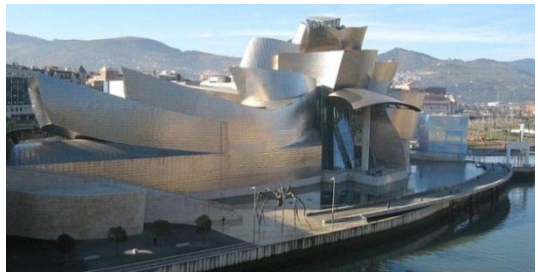
La Sagrada Familia, Barcelona, Spain Antoni Gaudí, still to be completed

Sculptural-formal architecture is also exemplified by the work of Frank Gehry. Gehry's architecture uses the form primarily to determine the building; its materiality and shape are the main considerations. This design approach requires all the activities of a building to be fitted into the dramatic shape or form.



Frederick R. Weisman Art Museum, Minneapolis, US Frank Gehry, 1993

This museum is a great example of function following form. Gehry's architecture uses the form primarily to determine the building; its materiality and shape are the main considerations.



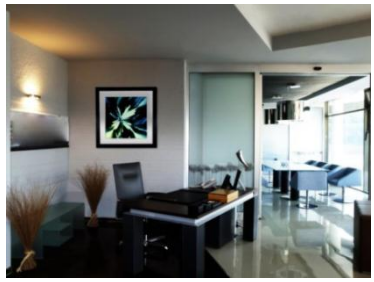
Frank Gehry and the Guggenheim Museum in Bilbao, Spain

Walt Disney Concert Hall, USA (left) and Dancing House in Prague

3. Types of Function in Architecture:

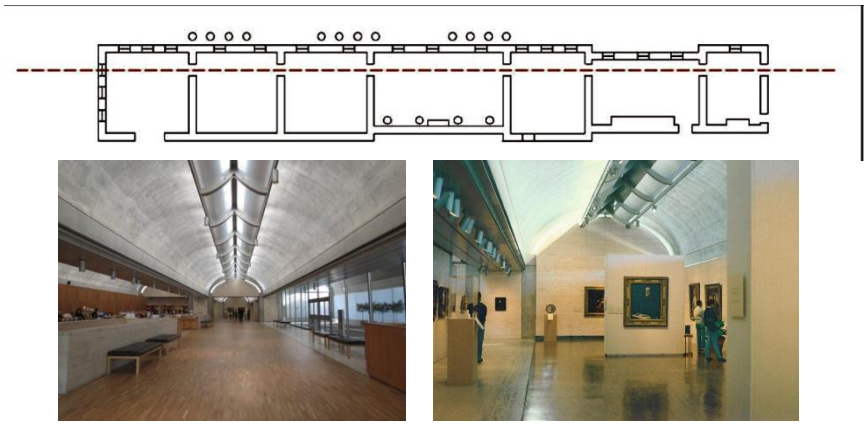
There are different types of function in architecture:

Pragmatic function: Accommodation of a specific use in a room or space. (for example, a room might be used to contain a single bed for sleeping or it might be an office cell containing a desk).



Circulatory function: The making of appropriate spaces to direct movement form area to area. Most buildings contain numerous rooms with interrelated functions. People, naturally, need to move from one space to another. Therefore, the circulatory function should also be satisfied well.

In some buildings, such as museums and galleries, this route may be designed as part of the architectural concept. The route through these buildings might allow, in this instance, the art or artifacts to be better understood and experienced.



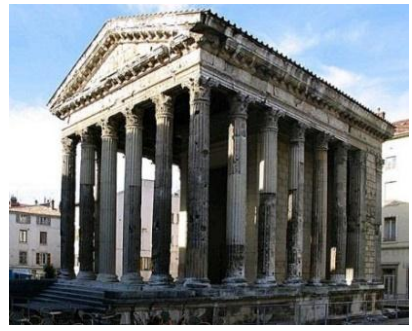
Kimbell Art Museum by Louis Kahn

An example to the thought of circulatory function is Charles Garnier's Paris Opera (1861-75). Garnier has analyzed people's thoughts about the Opera and found out that they are also going there to see other people and be seen by them, next to listening to the operas. So he has carefully designed the circulatory spaces (the foyer, the waiting room and stairs) to let people see other people and be sAn example to the thought of circulatory function is Charles Garnier's Paris Opera (1861-75). Garnier has analyzed people's thoughts about the Opera and found out that they are also going there to see other people and be seen by them, next to listening to the operas. So he has carefully designed the circulatory spaces (the foyer, the waiting room and stairs) to let people see other people and be seen.


Charles Garnier's Paris Opera (1861-75) and its grand foyer

4. Symbolic function:

A building has also a symbolic function and demonstrates its use by its exterior view. We usually expect a correspondence between buildings appearance and its use. In the past (among the Romans, Egyptians or Greeks) there were rules that describe the appearances of buildings for certain uses, but nowadays we don't have such rules.

Mies van der Rohe's Boiler Plant in Illinois Institute of Technology

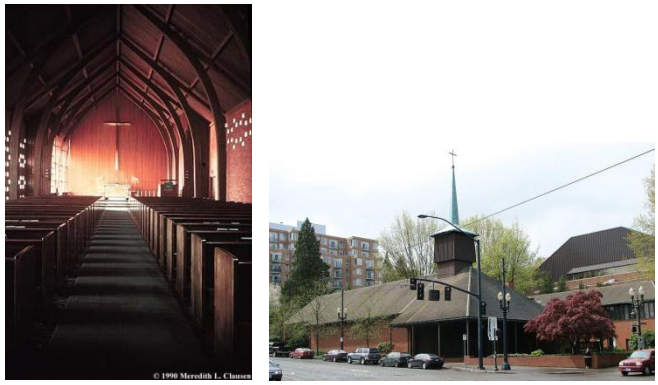
Starting with the Modern Movement in architecture roughly buildings started to tell us almost nothing about what goes on inside them. For example, Mies van der Rohe's two buildings in Illinois Institute of Technology campus, look similar in

terms of their architectural language and materials, but one of them is the Boiler House and the other is a church. They don't tell us how their function differs.

Mies van der Rohe's Carr Memorial Chapel, Illinois Institute of Technology, Chicago, Illinois (1949-52)

Mies van der Rohe's Carr Memorial Chapel, Illinois Institute of Technology. Chicago, Illinois (1949-52)

However, for example, Zion Lutheran Church in Portland, Oregon, 1950, by Pietro Belluschi, shows the functional character of a religious building without imitating or recreating the Gothic churches.



Zion Lutheran Church Portland, Oregon, Pietro Belluschi: The image of church is created by the simple use of colored glass and arches in wood; without imitating the traditional churches.

The United States National Capitol Building in Washington (1830) has established an image of government in United States. From then on the new government or 109 capitol buildings in other places were built using its Neoclassical image (one example is Minnesota State Capitol Building).

United States National Capitol Building in Washington (1830)

Another architectural example that gives the signs of its function is Eero Saarinen's TWA Airport Building in New York (1956). By its specific architectural language, the building conveys symbolically the sensation of flight. The

great concrete shells of the building look like giant wings. The form alone prepares us for the action of flight.


Minnesota State Capitol Building, 1905.

However, every building contains a mixture of functions: pragmatic, circulatory, symbolic or psychological. A garage may contain %10 symbolic function and % 90 pragmatic function, whereas a monument may contain %10 pragmatic function and 90 % symbolic function. There are also buildings that may contain them half and half, such as a library.

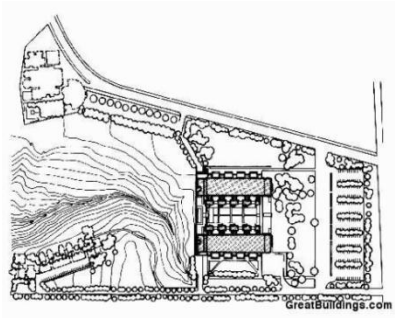

Eero Saarinen's TWA Airport Building in New York (1956).


Symbolic fnction: White House in Washington (left). Buckingham Palace in London (right)


Symbolic function: Sydney Opera House (left) and the Eiffel Tower (right)

5. Psychological function: Good architecture has also physiological and psychological functions to fulfill. For example, a waiting room in a doctor's office or a hospital emergency room are the places where people feel heightened levels of anxiety. An architect might determine that creating a domestic environment there or to give a view of garden would help to reduce the level of anxiety.

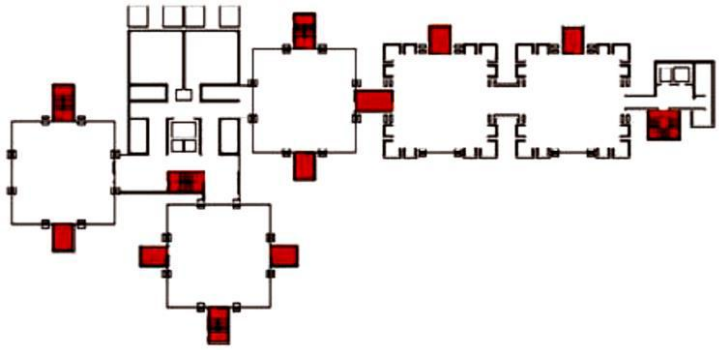
In Salk Institute for example by Louis Kahn, the architect have consulted the scientists and the owner of the land Jonas Salk, who himself was a scientist, and found out that the scientists needed big work areas and laboratories that have purely utilitarian functions and also small, quiet and private spaces for them to think alone. By holding these in mind. he designed large spaces for conducting experiments and small private offices for individual use, which look at the ocean.



Salk Institute by Louis Kahn

Another one of Louis Kahn's principal ideas about the function of the building was the distinction between 'served' and 'servant' spaces. Servant spaces have functional use, such as storage rooms, bathrooms or kitchens - the spaces that are essential for a building to function properly. Served spaces might be living or dining rooms or offices - spaces that the servant areas serve.

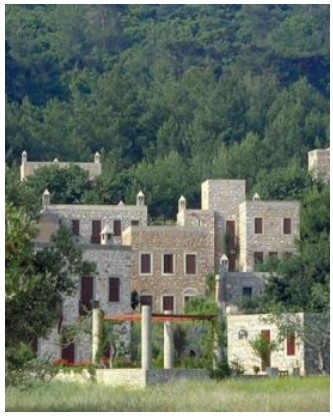
The Richards Medical Centre in Philadelphia, US, exemplifies this ideal. The glass- walled workrooms are served' by separate, freestanding brick chimneys. Each *served' space has an independent structural frame with a complete set of supports and its own source of natural illumination.



Plan of Richards Medical Centre Philadelphia by Louis Kahn

6. Cultural and contextual function:

Function is also socially and culturally influenced and a building's form is also a response to its physical setting and climate. Every building has the responsibility to respect and to be in harmony with its context/environment. The building has to answer to the genius loci (spirit of the place- a location's distinctive atmosphere) of that place.



Turgut Cansever - Demir Holiday Village in Bodrum

Chapter Three

Form and Space in Architecture

Part One

1.Solids and Cavities in Architecture

In this section we learned about solids (forms) and cavities (space). Also how are used by different architects in different ages.

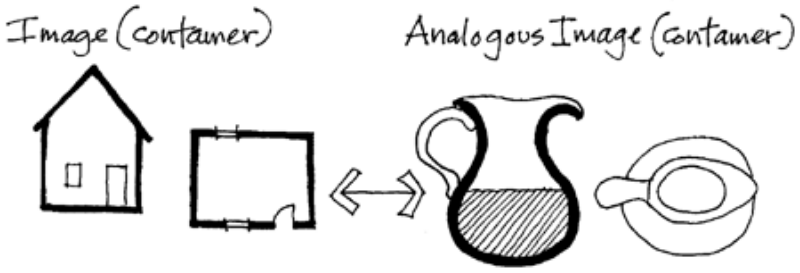
Architecture is the art of playing with:

- Solids (forms) enclose and form the cavities (spaces) that we live in or solids are the containers.
- Cavities (spaces) are the contained.

Different architects start from solids and others from cavities.

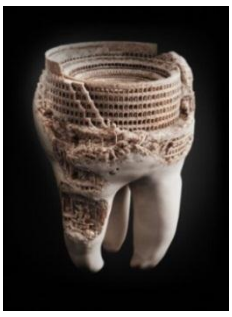
Starting from solids is like our latest workflow in Basic Design, we need a point to start and how to connect elements from this origin.

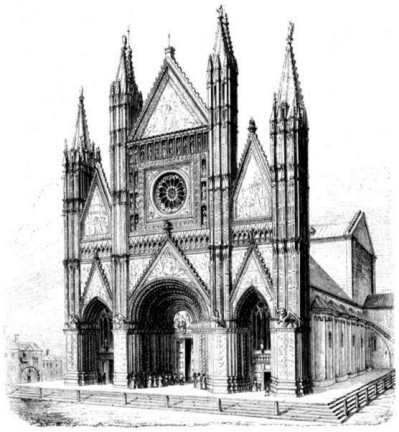
Starting from cavities, is like the opposite, because we need first to define spaces than play with elements. Is like sculpting and great examples are ancient temples inside a cliff. I saw these on many documentaries which talked about these types of building. Also a photo that I found on internet and is a great example of cavity:



Source : ARCH 121 – INTRODUCTION TO ARCHITECTURE I -*From: Ching, F.*

Rassmussen, S. E.





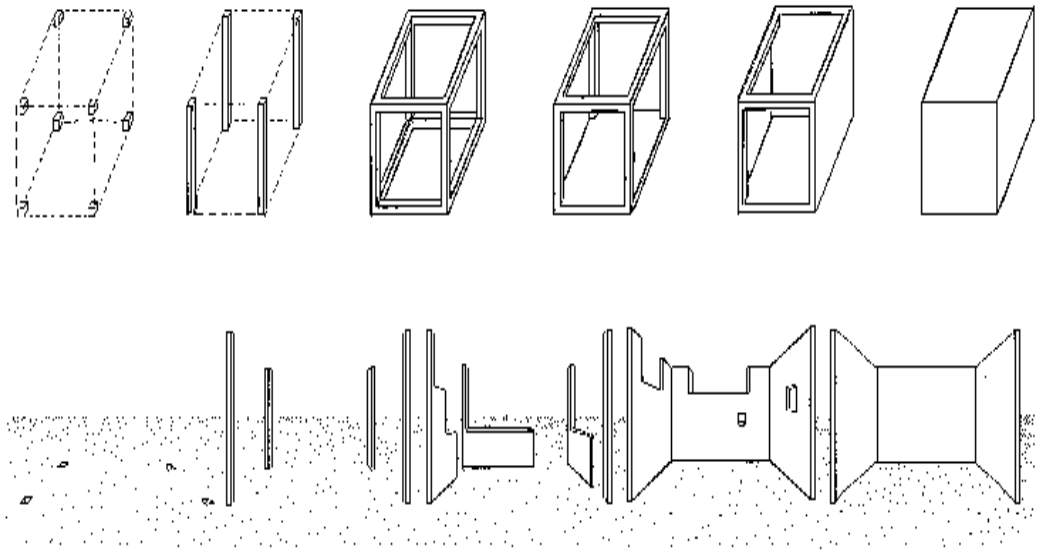
Love of forms, when you build mostly according to your "elements", these buildings have a great look. Most iconic Gothic architecture

Love of cavities, an example is when a building takes the terrain's shape. Most famous one flatiron building in New York

Personally I am a cavity-minded architect, because I love order (regularity, urbanistic one). I am really inspired from Barcelona's urbanistic where buildings and roads from a straight grid.

a. Elements that create solids (forms) and cavities (spaces) in architecture:

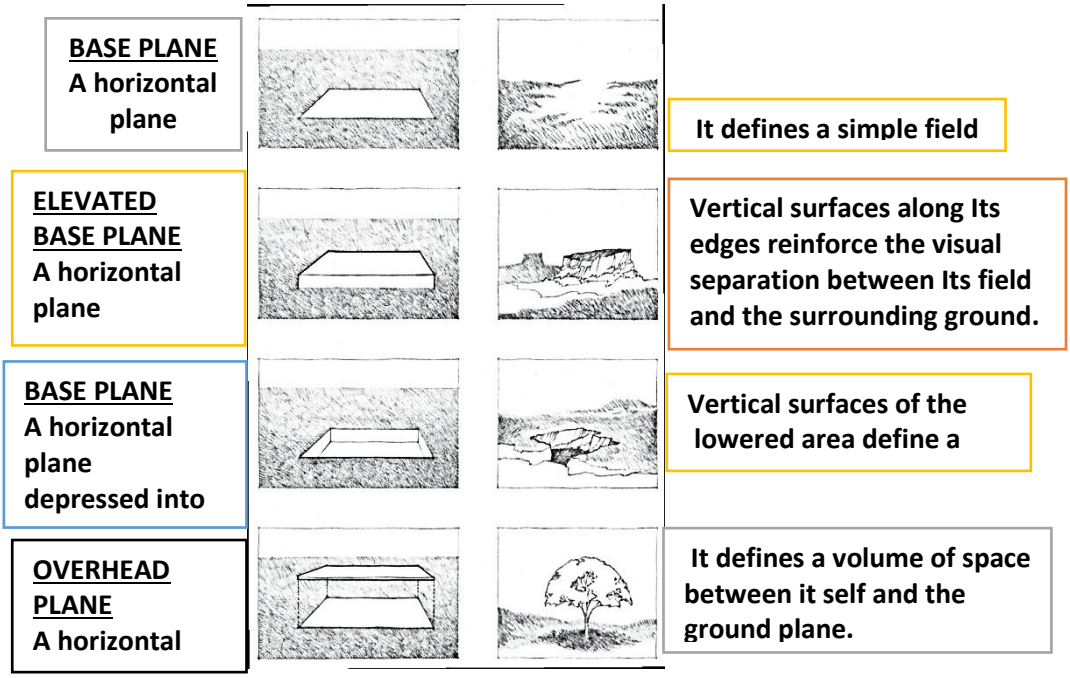
Architecture space is born from the relationship between objects or boundaries and planes which define limits. These limits may be more or less explicit, constitute continuous surfaces forming an uninterrupted boundary, or on the contrary, constitute only a few cues that the observer will use to perceive the space.



Spaces can be either explicit or implicit, and all the possibilities in between.

SOURCE: VON MEISS

> Horizontal Elements



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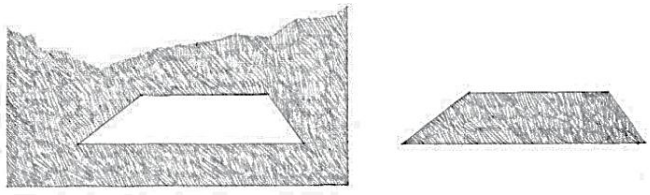
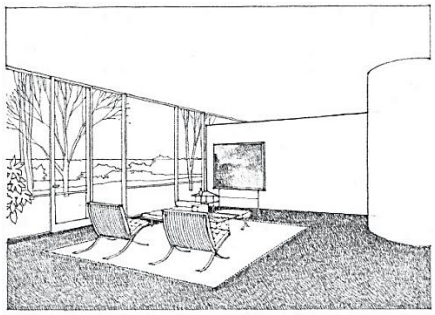


For a horizontal plane to be seen as a figure,

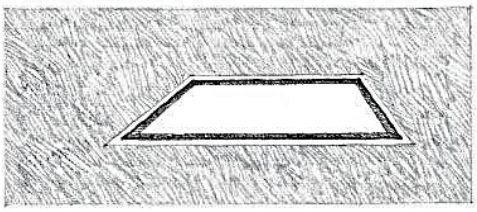
there must be a perceptible change in color, tone,

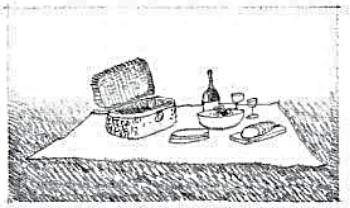
or texture between its surface and that of the

surrounding area.

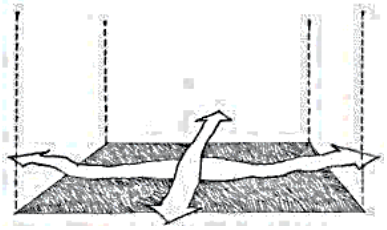


Interior of Glass House, New Canaan, Connecticut, 1949, Philip Johnson

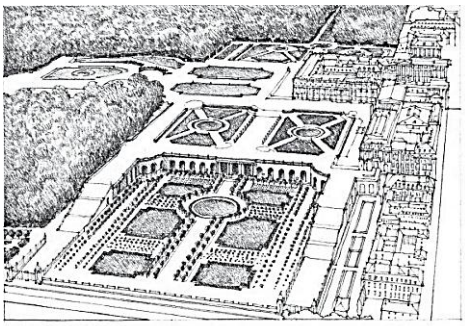




The stronger the edge definition of a horizontal plane is, the more distinct will be its field.



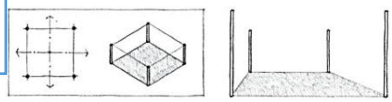
Although there is a continuous flow of space across it, the field nevertheless generates a spatial zone or realm within its boundaries.



Parterre de Broderie, **Palace of Versailles**, France, 17th century, André Le Nôtre

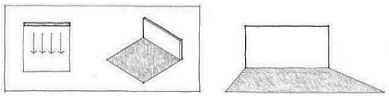
➢ Vertical Elements

Vertical Linear Elements
Vertical linear elements define



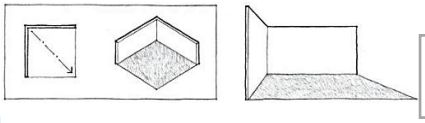
It defines the perpendicular edges

Single Vertical Plane
A single vertical plane articulates the space on which it fronts.



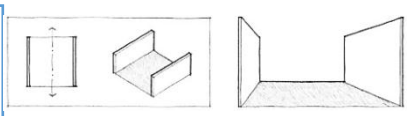
It articulates the space on which It fronts

L-shaped Plane An L-shaped configuration of vertical planes generates

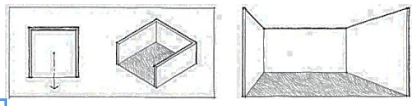


It generates a field of space from Its corner

Parallel Planes
Two parallel vertical planes define a volume of space between them that is oriented axially toward both open ends of the configuration.



It defines a volume of space that is oriented toward the open and of the configuration

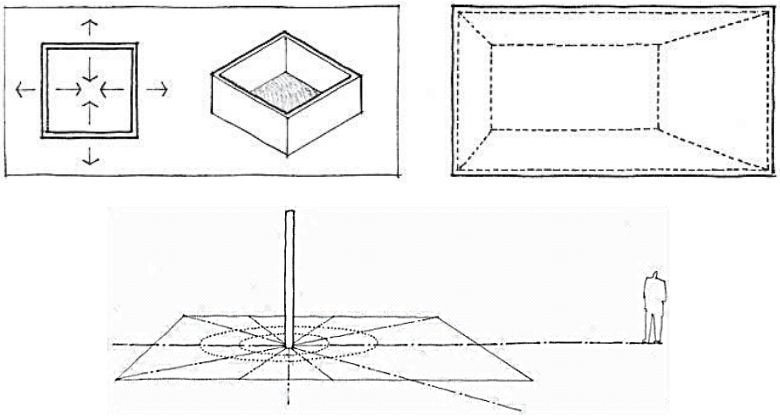


They establish the boundaries of an Introveorted space and influence the field of space around the enclosure

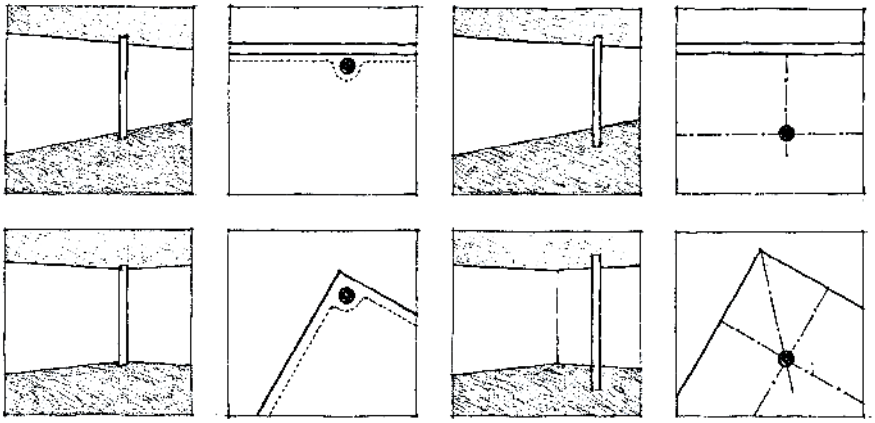
U-shaped Plane
A U-shaped configuration of vertical planes defines a volume of space that is oriented primarily toward the open end of the configuration.

Four Planes: Closure

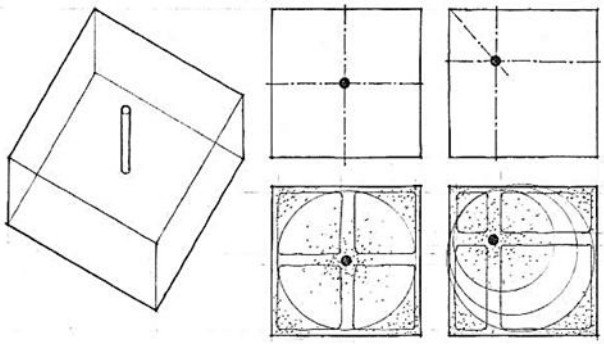
Four vertical planes establish the boundaries of an introverted space and influence the field of space around the enclosure.



A vertical linear element, such as a column, obelisk, or tower, establishes a point on the ground plane and makes it visible in space. Standing upright and alone, a slender linear element is no directional except for the path that would lead us to its position in space. Any number of horizontal axes can be made to pass through it.



When located within a defined volume of space, a column will generate a spatial field about itself and interact with the spatial enclosure. A column attached to a wall buttresses the plane and articulates its surface. At the corner of a space, a column punctuates the meeting of two wall planes. Standing free within a space, a column defines zones of space within the enclosure.

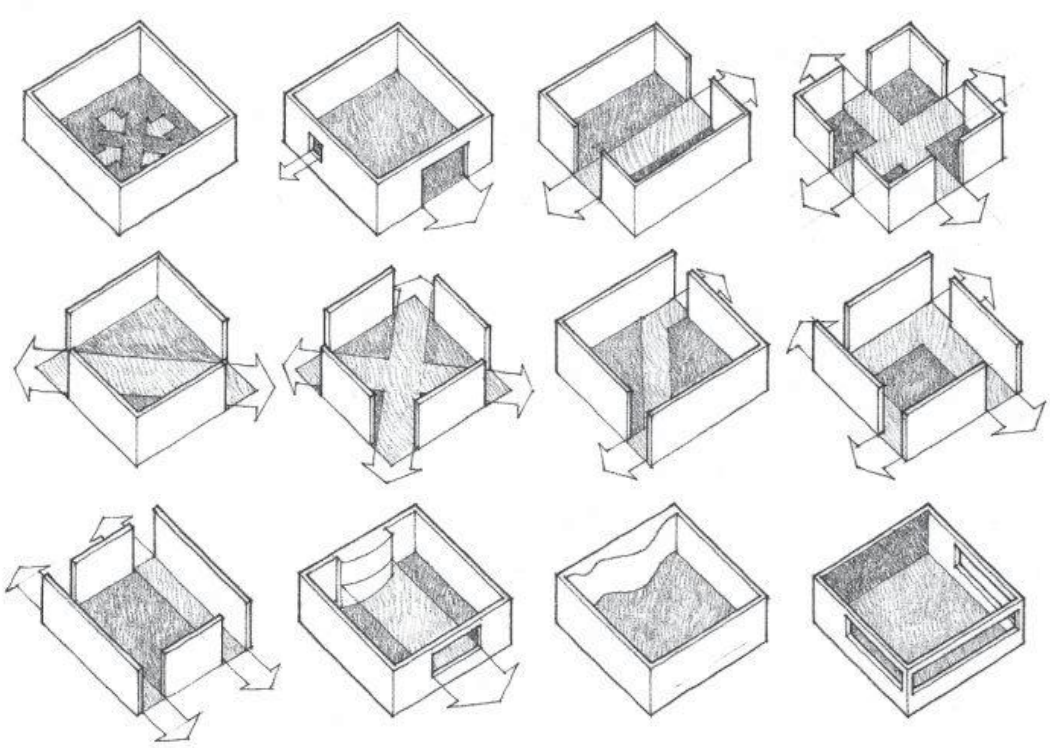


When centered in a space, a column will assert itself as the center of the field and define equivalent zones of space between itself and the surrounding wall planes. When offset, the column will define hierarchical zones of space differentiated by size, form, and location. VERTICAL LINEAR ELEMENTS

➢ Openings

Opening in the enclosing planes of the spatial field provide continuity with adjacent spaces .No spatial or visual continuity is possible with adjacent spaces without openings in the enclosing planes of a spatial field. Doors offer entry into a room and influence the patterns of movement and use within it. Windows allow light to penetrate the space and illuminate the surfaces of a room, offer views from the room to the exterior, establish visual relationships between the room and adjacent spaces, and provide for the natural ventilation of the space. While these openings provide continuity with adjacent spaces, they can, depending

on their size, number, and location, also begin to weaken the enclosure of the space. The following section of this chapter focuses on enclosed spaces at the scale of a room, where the nature of the openings within the room's enclosure is a major factor in determining the quality of its space.

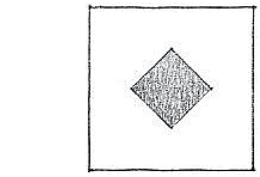


b. The relationship of formal and spatial elements

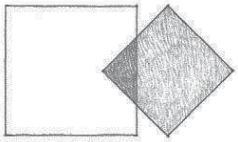
Spatial Relationships

How can spaces be related to one another?

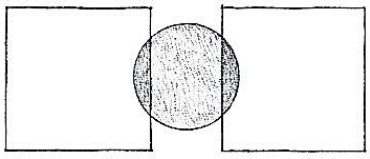
- Space within a space
- Interlocking spaces
- Spaces linked by a common space
- Adjacent spaces



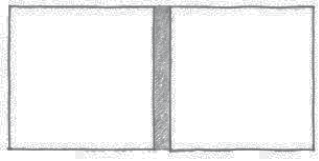
Spaces within a space



interlocking spaces



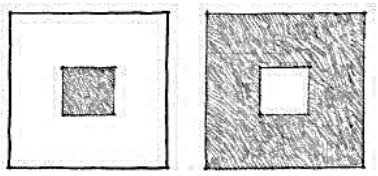
Space linked by a common space

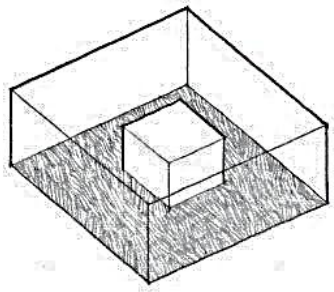


adjacent spaces

Spatial Relationships

A large space can envelop and contain a smaller space within its volume. Visual and spatial continuity between the two spaces can be easily accommodated, but the smaller, contained space depends on the larger, enveloping space for its relationship to the exterior environment.

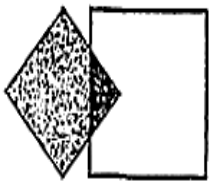




SPACE WITHIN A SPACE

A large space can envelope and contain a smaller space within its volume. Visual and spatial continuity between the two spaces can be easily accommodated.

INTERLOCKING SPACES

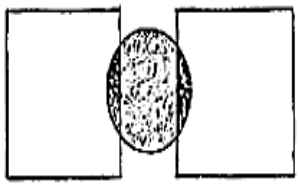


A interlocking spatial relationship results from the overlapping of two spatial fields and the emergence of a zone of shared space. Each space interlocking retains its identity. But the intersection of the two spaces is subject to a number of interpretations.

ADJASCENT SPACES

Adjacency is the most common type of spatial relationship. Each space is clearly defined.

SPACES LINKED BY A COMMON SPACE



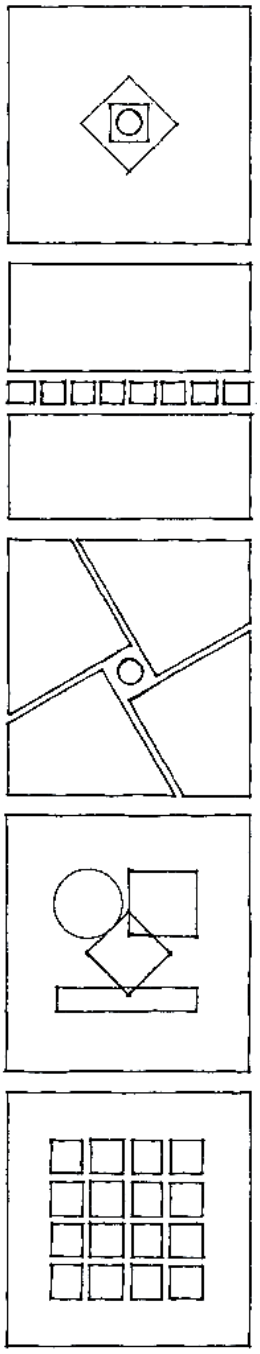
Two spaces which are separated by distance can be linked or related to each other by a third, intermediate space. The visual and spatial relationship between the two spaces depends on the nature of the third space.

SOURCE: FRANCIS CHING

c. some organizing principles of formal and spatial elements

Each type of spatial organization is introduced by a section that discusses the formal characteristics, spatial relationships, and contextual responses of the category.

A range of examples then illustrates the basic points made in the introduction.



CENTRALIZED
A central dominant space about which other secondary spaces are grouped

LINEAR
A linear sequence of repetitive spaces

RADIAL
A central space from which linear organizations of space extent in a radial manner

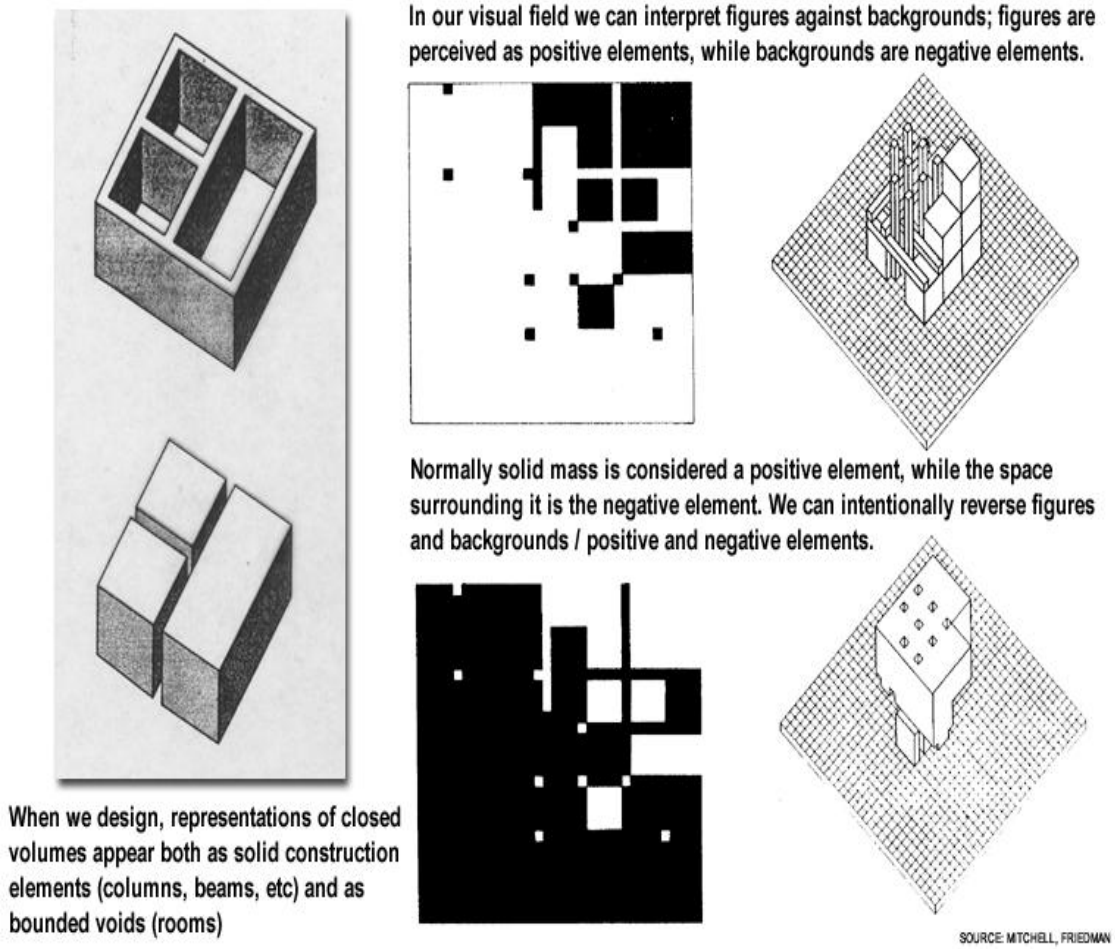
CLUSTERED
Spaces grouped by proximity or the sharing of a common visual trait or relationship

GRID
Spaces organized within the field of a structural grid Or another 3 dimensional framework

Source:
http://meydian_s.staff.gunadarma.ac.id/Downloads/files/14178/LECTURE3.ppt

d. Perception of Forms (Solids) and Spaces (Cavities) in Architecture:

Solid and cavity has the figure and ground relationship between themselves. Here are some examples:



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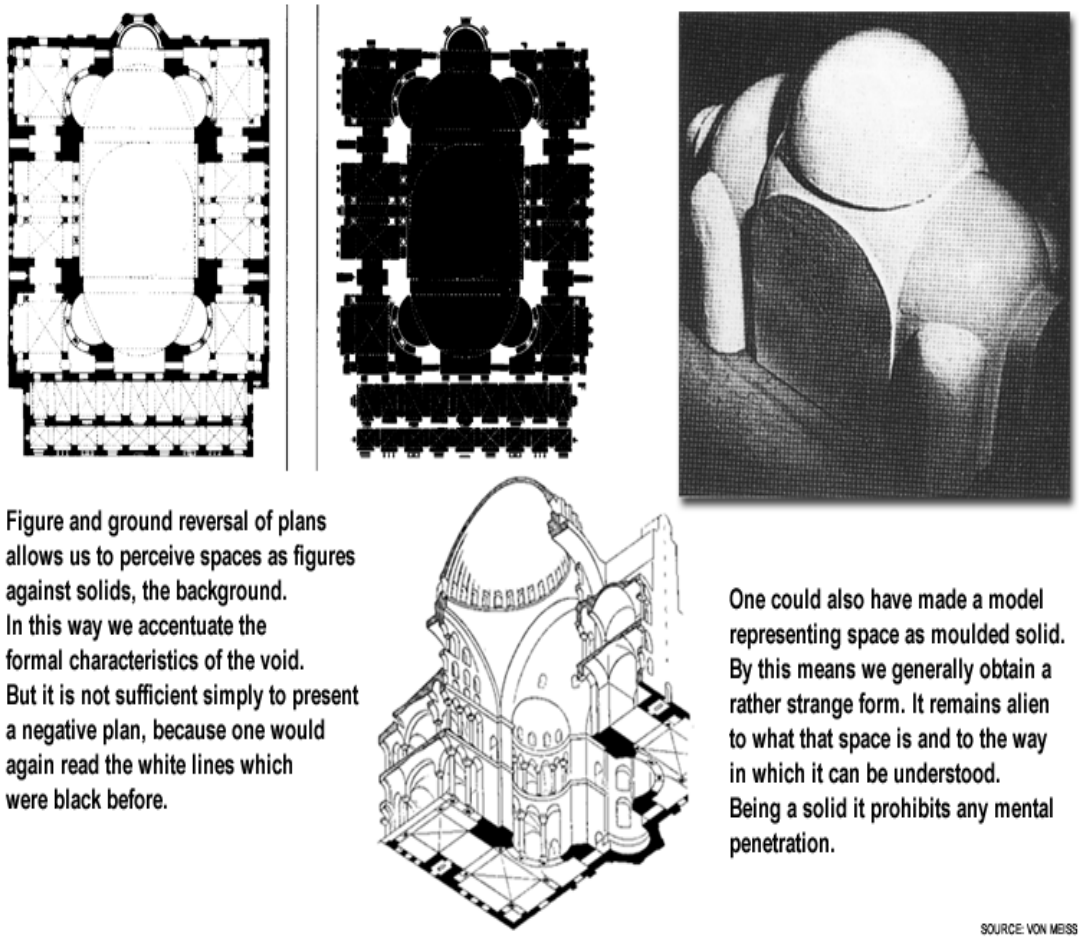

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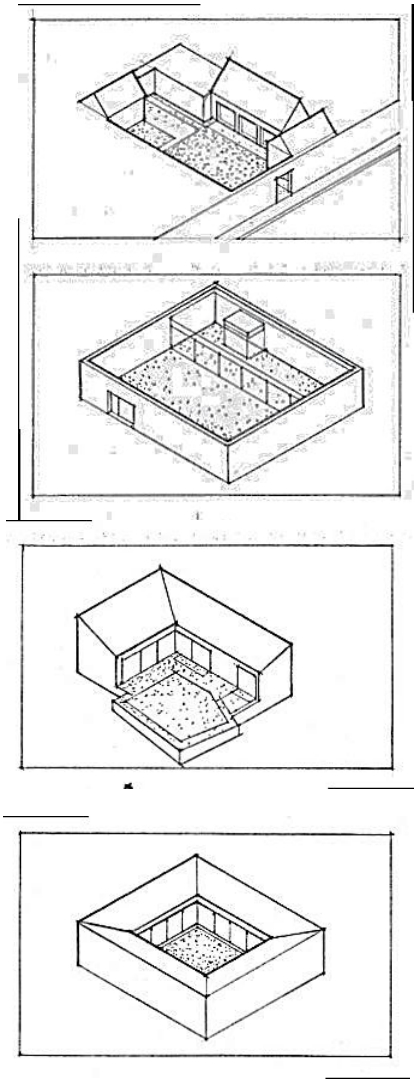
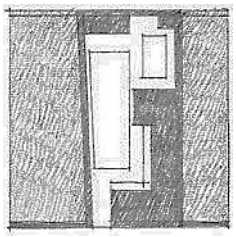
http://meydian_s.staff.gunadarma.ac.id/Downloads/files/14178/LECTURE3.ppt

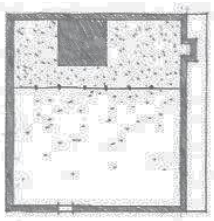
In our visual field we can interpret figures against backgrounds; figures are perceived as positive elements, while backgrounds are negative elements.

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.





A.



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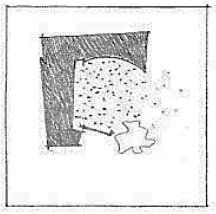

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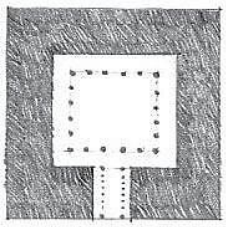


D.

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:

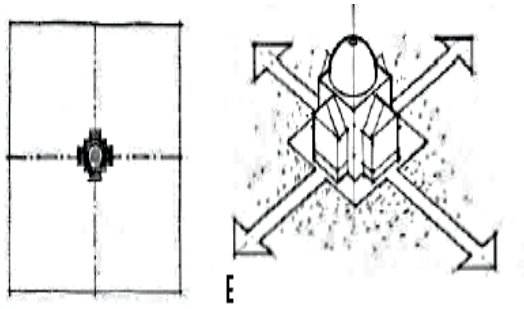
A. form a wall along an edge of its site and begin to define a positive outdoor space;

B. merge its interior space with the private outdoor space of a walled site;

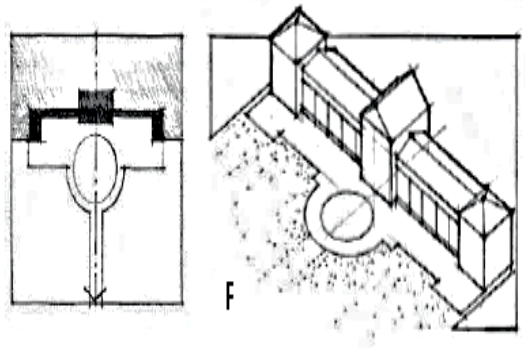
C. enclose a portion of its site as an outdoor room and shelter it from undesirable climatic conditions;

D. surround and enclose a courtyard or atrium space within its volume—an introverted scheme.

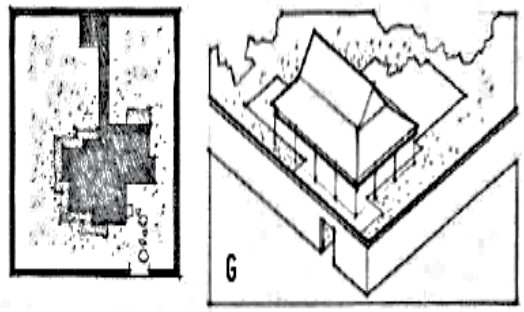
E. stand as a distinct object in space and dominate its site through its form and topographical positioning—an extroverted scheme;



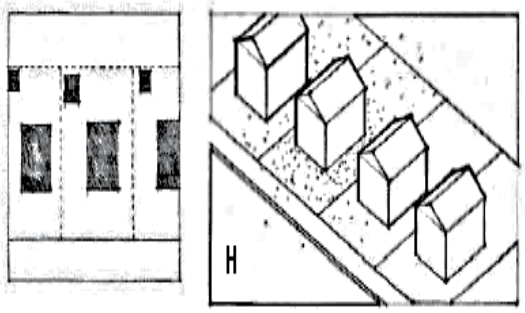
F. stretch out and present a broad face to address a view, terminate an axis, or define an edge of an urban space;

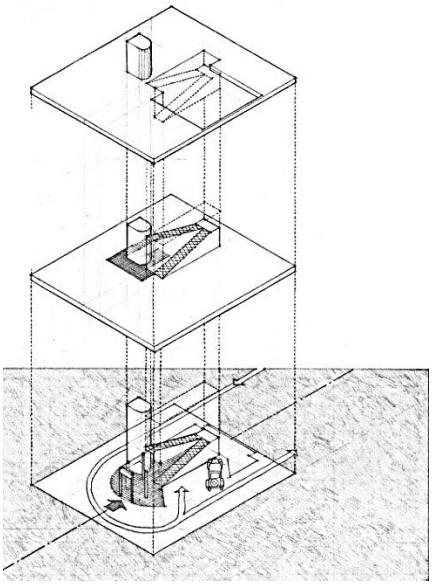


G. stand free within its site but extend its interior spaces to merge with private exterior spaces;



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



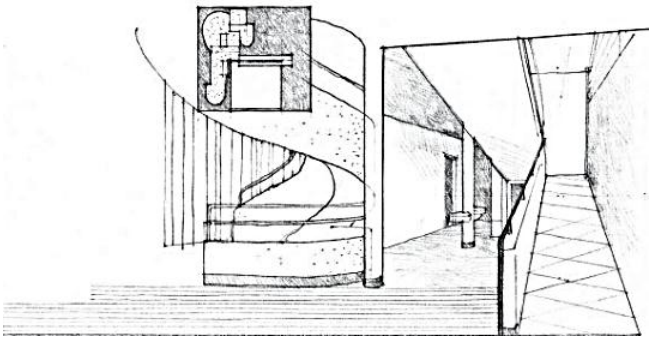


Circulation System

• The stair and ramp penetrate and link the three levels, and heighten the vlewer's perception of forms In space and light.

• The curved form of the entrance foyer reflects the movement of

the automobile.

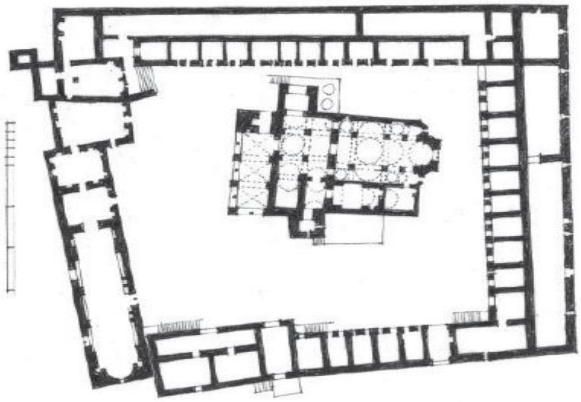


Context

• A simple exterior form wraps around a complex Interior organization of forms and spaces.

• Elevating the main floor provides a better view and avoids the humidity of the ground.

• A garden terrace distributes sunlight to the spaces gathered around It.



Buildings defining space

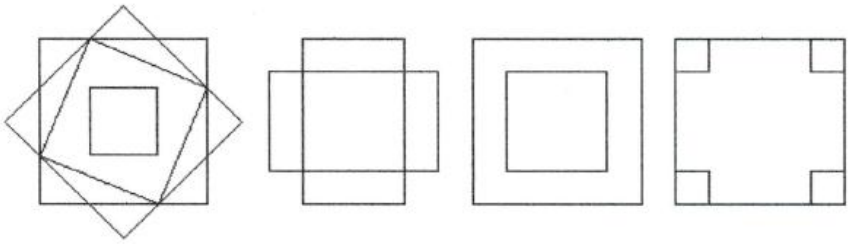
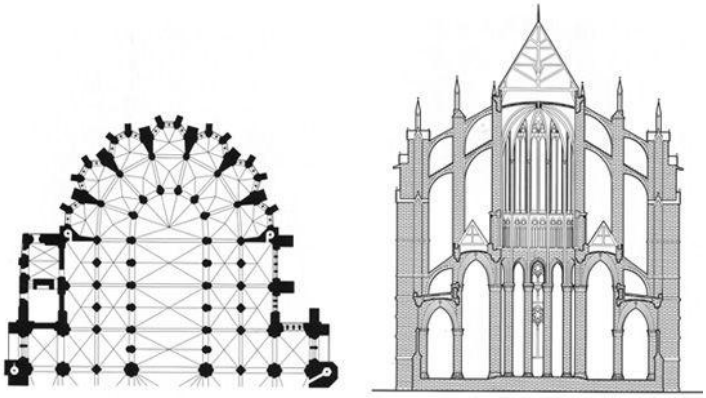


Fig Transformation of square in two dimension

2. Architecture as a play of forms (solids) and Architecture as a play of cavities (spaces):

The architect might choose to start designing firstly by the design of main forms. He/she might think about the space and other details later. (However this is not a preferred way to go, because, ideally the architect should think about the forms and as a play spaces altogether, at the same time).



Beauvais Cathedral

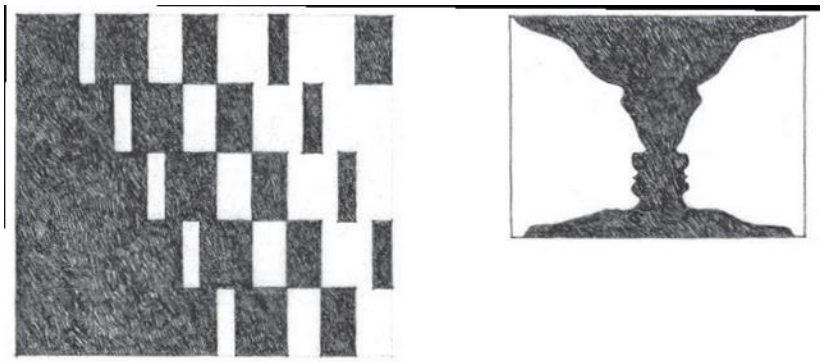
Beauvais Cathedral (a Gothic architectural example) is such an architect has focused on the design of the structural forms for the creation of the fantastically high nave. He treated the purely structural features aesthetically and gave each one almost sculptural form.

Our perception and understanding of a composition depends on how we interpret the visual interaction between the positive and negative elements within its field. On this page, for example, letters are seen as dark figures against the white background of the
paper surface. Consequently, we are able to perceive their organization into words, sentences, and paragraphs.

In the diagrams to the left, the letter “a” is seen as a figure not only because we recognize it as a letter in our alphabet but also because its profile is distinct, its value contrasts with that of
its background, and its placement isolates it from its context. As it grows in size relative to its field, however, other elements within and around it begin to compete for our attention as figures. At times, the relationship between figures and their background is
so ambiguous that we visually switch their identities
back and forth almost simultaneously.

This can also be illustrated by the two-dimensional vase example. You either consider all the black as "figure" and all the white as background and see a vase; or you consider the white as figure and the black as ground and see two faces in profile. We can shift our perception at will

from one to the other, alternately seeing vase and profiles. But we cannot see both vase and profiles at the same time. We see one of the colors as figure and the other as ground.



the two-dimensional vase example(right)

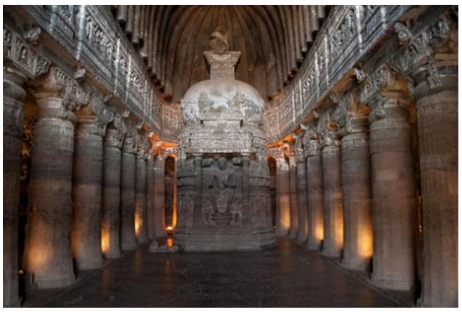
but you may ask, can there be any other? And the answer is yes; it is possible to bave quite a different conception. Instead of letting his/her imagination work with structural forms, with the solids of a building, the architect can work with the empty Space-the cavity-between the solids and consider the forming of that space as the real meaning of architecture.

Ordinarily a building is made by assembling the materials on the site and with them erecting a structure which encloses the space of the building. But let us suppose the site to be an enormous, solid rock and the problem was to hollow out rooms inside it.

Then the architect's job would be to form space by eliminating material-in this case by removing some of the rock. The material itself would not be given form, though some of it would be left standing after most had been taken away. In the first example (Cave temple at Ajanta) it is the stone mass of the cathedral which is the reality, in the second the cavities within the mass.

In Ajanta Caves Maharashtra, in India there are a number of cave temples. They were actually created by eliminating material-that is by forming cavities. Here the cavity is what we perceive while the solid rock surrounding it is the neutral background which was left unshaped. However, here the problem is a more complicated one than in two-dimensional figures. When you stand inside the temple you not only experience the cavity-the great three-aisled temple hollowed out öf the

rock-but also the columns separating the aisles which are parts of the rock that were not removed.



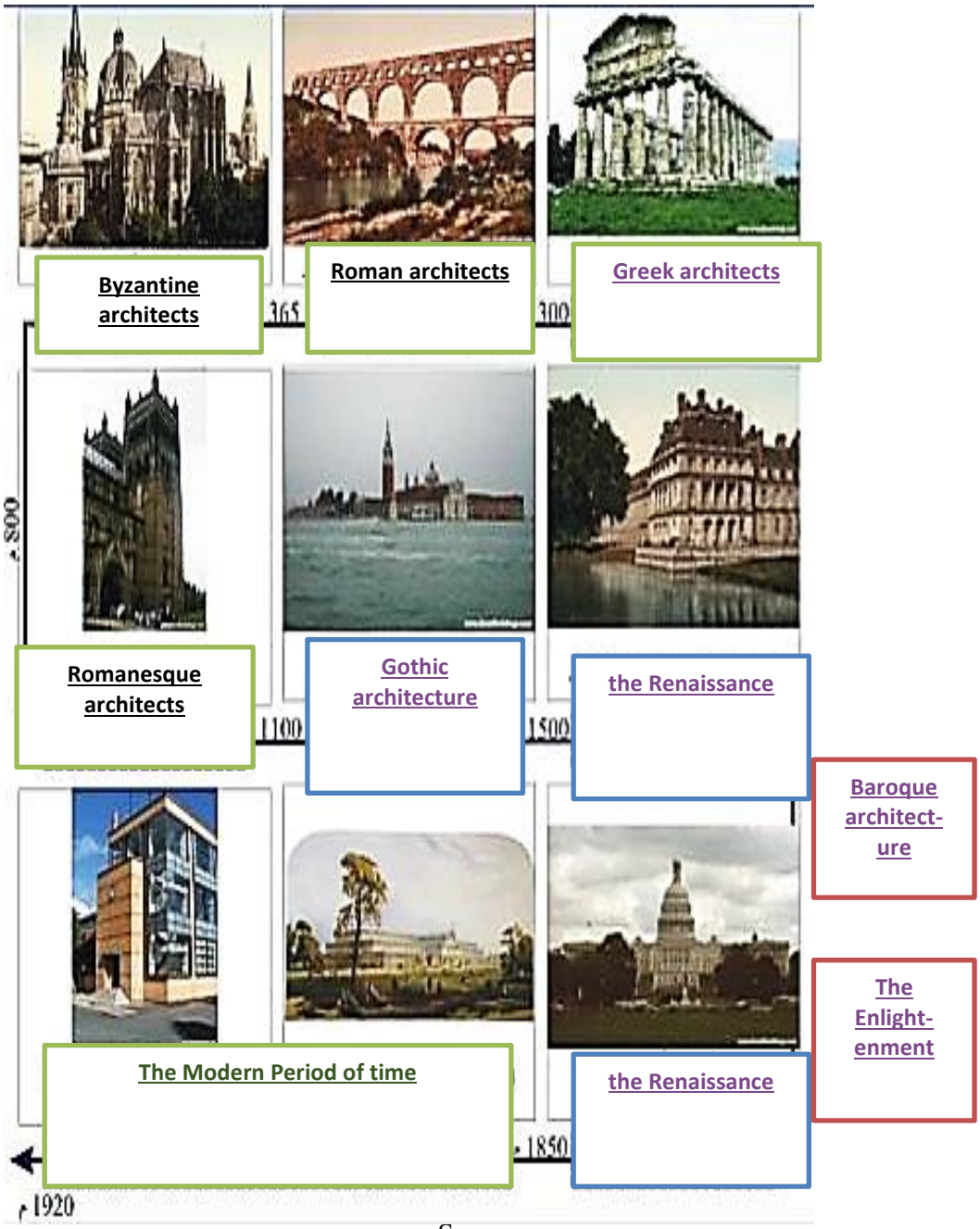
Cave temple at Ajanta Caves

Maharashtra, India. The temple was hollowed out of rock

Part Two

Examples from different architectural periods

We can give some examples from different architectural periods, which work preferably either with solids or cavities. As shown in figure.



Source:

https://www.slideshare.net/wwloyal/1-29423761

GEOMETRIC OPERATIONS ON ARCIDTECTURAL FORM THROUGHOUT THE HISTORY OF ARCIDTECTURE

Geometry has been part of architectural design since ancient period of times. The angle of inclination of the Great pyramid was determined by a geometric construction in that times. This geometric construction involved then fashionable problem of squaring the circle. (Fig)

During the Middle ages, the great churches and cathedrals were designed on intricate geometrical lines. The house of God must be designed according to the mathematical principles because mathematic was a link to the divinity.

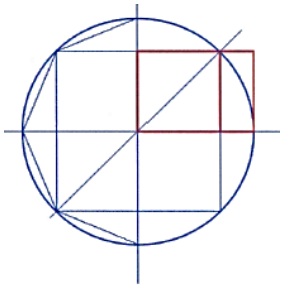


Fig Transformation of square in two dimension

Source : Serkan YILMAZ -Evolution of the Architectural Form Based on the Geometrical Concepts - izmir Institute of Technology izmir, Turkey- 1999.

During the Renaissance

this idea was developed in other ways. Beautiful buildings must be designed with geometrical vocabulary because mathematic was held everything behind all that was beautiful in the world. Mathematical concepts supplied the essence of our understanding of the world. During the Renaissance it provided a theory of proposition to design buildings. Apart from that it also supplied the theory which artists could build a perspective.

The aesthetic rules of the Greek, Roman and Renaissance architects were based on various geometric ratios. Geometric constructions, based on direct sightlines and reflections were the basis of Greek and Roman acoustic design.

Until the seventeenth century, geometry was used as a architectural mathematics in architectural design.

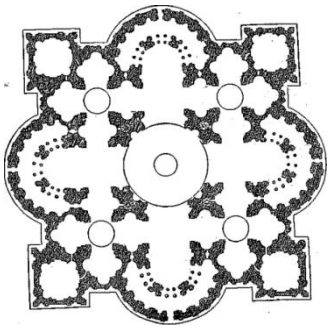
By the late nineteenth century, buildings became bigger, more numerous and more complex. Therefore, there was a science of structural design, using ever more geometric operations in this period of time.

To sum up Since Greek times, it has seemed that the fundamental principles of architectural form must be mathematical. Sometimes these principles have been numerical ones, sometimes geometrical. Order in architecture arises from the regularities in which numerical ratios can be combined. They lead to proportional and modular systems. These systems are synthetic in that they provide ways of generating forms. Architecture must emulate the underlying geometric order of nature. Apart from that architecture must tend to produce schemes for the analysis of finished forms.

In Renaissance period

(14th to 17th centuries), the emphasis was on cavities. The transition from Gothic to Renaissance was not only a change from dominating vertical horizontal ones, dominating but above all a complete.

Favorite Renaissance form is the circular, domed cavity. And just as the Gothic pillar was expanded on all sides into a cluster of shafts, the Renaissance cavity we enlarged by the addition of niches. For example, if you consider the black parts in the plan S. Peter's in Rome as "figure", you will find that they are the remainders, which are left after the cavity has been hollowed out of the great wall masses, It is like a regular cave temple dug out of the enormous building block.



Bramante's plan for St. Peter's, Rome (left) Round, domed cavities joined together and expanded on all sides by semicircular niches

This contrast between the love of forms and love of cavities, as the contrast between Gothic and Renaissance times, appears again and again. In late 1800's for example, in the City Hall designed by the Danish architect Martin Nyrop (1849-1921) in Copenhagen, we observe the love of structural forms (as in Gothic architecture). The building demonstrates how it was constructed by way of its irregular, pointed silhouette of gables and tower tops.

St. Peter's, Rome

However, in another building that is also built in Copenhagen around the same time, namely Police Headquarters, we observe the love of cavities. The building is formed as a huge block cut off flat at the top. What you experience here is a rich composition of regular cavities: circular and rectangular courts, cylindrical stairways, round and square rooms with absolutely smooth walls. The building is a composition of regular cavities joined together in dramatic sequence leading to the innermost rectangular court where the huge stone cylinders of columns are set up

in effective contrast. There is an effective contrast between the solids and the cavities because of the courts.



Copenhagen Police Headquarters. Here the architect has formed the cavities. The courtyards seem to be hollowed out of the enormous block


Copenhagen City Hall; the architect has particularly

stressed the solids terminating them in peaks and spires

Greek architects

searched for rules to generate definitely determined forms. They

found these rules in geometry and proportion. They started to design with a basic module found within the building itself This basic module could be the width of a tri glyph in a Doric temple or the lower diameter of a column. All of the other Dimensions in the building derived from this basic module. By this basic module, it is Specific the number of columns and their locations; the ratios of plan width to length and column diameter to height.

For many architects in ancient Greek and Egyptians, the rules which generate the form came from geometry. Perhaps based on the belief that orderly geometry reflected the order of the divine world, precise geometrical systems with which to generate forms.

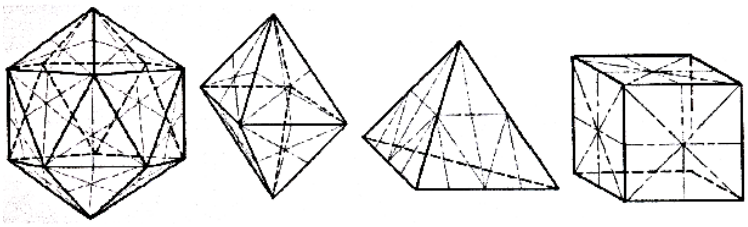
The ancient Egyptians took one major dimensions of an important room in the proposed design as the basic module, and then employed regular multiples and fractions of that Module to determine the dimensions of everything else in the scheme. In addition, they derived the relative proportions of elements in plan and elevation from simple

Geometrical figures, most notably the square and a few triangles with specified ratios of base to height. Along with the organizational concept of symmetry, this helped create Building with clear rational order. According to the ancient Egyptian mind geometry Represented a precious revealed truth about the divinity's timeless and universally valid

design requirements. Here is the beginning of several ideas that will later appear through out the history of western design theory. Some of these ideas are: good design is based on timeless principles of form; these principles originate in a divinity; and Geometrical systems can capture these principles.

The Parthenon, on the Acropolis, in Athens

The Greeks developed such theories for discovering ideal form. One of these theories is derived from Plato. Plato established two different proportioning systems. One is the numerical system derived from Pythagorean harmonic ratios; the other is a geometric system derived from the platonic solids.



The regular geometric solids of Plato (Water, Air, Fire, Earth particles)

In the Timaeus, Plato observes the geometric fact that only five regular geometric solids are possible. He goes on to allocate to four of these solids the ***four theoretical elements:***

- air: Plato proposed was made :from particles taking the shape of the octahedron,
- fire: from the tetrahedron,
- earth: particles of earth took the shape of the cube,
- water: he ascribed the icosahedron,
- the fifth regular solid: the dodecahedron, Plato allocates the structure of the cosmos.

These geometric solids later became known as the Platonic Solids. Curiously architects much later changed these into the sphere, the cylinder, the cone, the pyramid, and the cube, presumably because these are more suitable building blocks for architectural forms.

Gothic architecture:

Medieval architects started to design with simple geometrical figures, like circles, equilateral triangles, and squares. Through a series of prescribed steps, architects generated complex geometrical forms that organized the building both in section and in plan. This geometry assured the structural fitness of the building. Apart :from that this

geometry guaranted the building would necessarily embody the essential characteristic of divine.

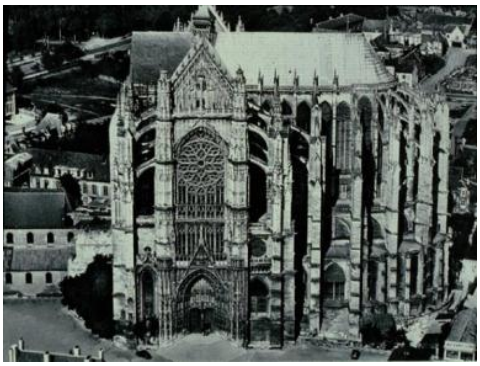
Medieval architects often determined the geometry in Gothic cathedrals quite independently of structure. The selection of

one geometry over another often had more to do with matters of internal consistency and geometrical elegance than with constructional exigency. For example, the foundations of cathedrals were laid well before

basic decisions had been made about the design of the piers or the height of the overall.

transformation from an architecture of sharp pointed structures to an architecture of well-shaped cavities.

In Gothic architecture for example (12th to 14th centuries), the emphasis was on structural forms. Forms were mostly vertical and designed as sharp pointed structures.



Gothic architecture: Beauvais Cathedral

Equilateral triangle was proposed as the ordering principle of the section, even though the exact height of such a triangle is incommensurate and physically difficult to built.

There were two design schemes which directed the designs of buildings in these period of time: Ad Quadratum and Ad Triangulum.

Medieval architects used Ad Quadrature for proportioning building plans and facades.

Apart from that this scheme was used for locating and proportioning some architectural elements throughout a building. Quadrature involved in 45-degree rotation of nesting squares to produce a series of like-proportioned figures. *These figures have some important roles:*

- to determine and position the relative sizes of building parts such as nave piers of a church.
- to regulate the composition of constituent elements such as a spire or Pinnacle
- to generate repetitive carved stone ornament.

These geometries were seen as the key to building design long before the systematic codification of such geometries by architects of the Renaissance.

Use of the Ad Triangular scheme was achieved the same objectives in a similar way.

The only difference was that the lattice was hexagonal and composed of closely packed equilateral triangles.

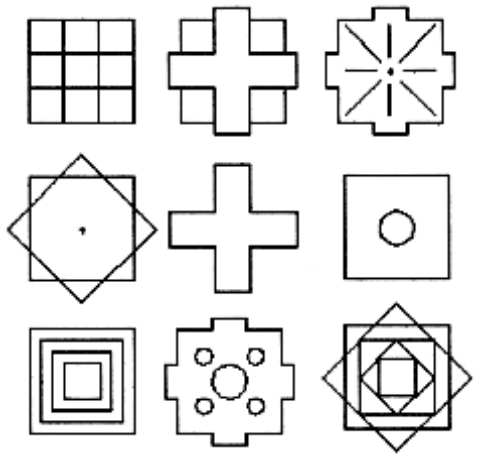


Fig Diagrams of St. Peter Church by Bramante

Baroque architecture

emphatically utilized geometrical operations to determine forms

and spaces. Geometry became a metaphysic transforming the world of man into a symbolic universe. The clear geometry of Renaissance forms and rational precision of Renaissance space was supplanted by an architecture suffused with dynamic play among masses. In this period, buildings were no longer conceived as isolated objects, but rather as part of an urban continuum. For that reason, in the Baroque architecture, space is rhythmic. Complex plans were generated from the

superimposition of clear, simple geometrical figures. The multiple geometries can be synthesized into a single, undulating line.

Accepting the essential symbolic dimension of geometrical operations in architecture within the epistemological framework of the seventeenth century, it is possible to discern the coherence of Baroque architectural intentions, containing both rational and sensuous dimensions.

Church of the Peterhof Palace; west façade of the Winter Palace; the Smolny Cathedral - 18th century-Russian Empire Duchy of Courland

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Accepting the essential symbolic dimension of geometrical operations in architecture within the epistemological framework of the seventeenth century, it is possible to discern the coherence of Baroque architectural intentions, containing both rational and sensuous dimensions.

In Guarini's work, geometry symbolized the highest values, but it was not opposed to nature. Geometrical form guaranteed the truth of theory,

while geometrical operations were used as a tool for the transformation of the world.

According to Guarini, architecture had to be governed by a rational geometry capable of providing stability to the building. Apart from that, geometry could had to generate symbolic form and space by combinations of figures and figural transformations. In this way, the ultimate meaning and beauty of architecture depended on the implementation of geometrical operations.

The Enlightenment

One of the symptoms characterize the Enlightenment is the arbitrary use of architectural forms borrowed from the styles of the past. In this period of time, architecture had depended upon the geometry in order to vouchsafe its role as an immediate form of reconciliation between man and world, between microcosm and macrocosm. Some theorists, like Laugier went back to the primitive hut to rediscover the true and natural

elements of architecture. On the other hand some theorists like de Foumay approached the same problem from another angle, demanding that architecture ought to regenerate through geometry. According to him, in contemporary projects cube, pyramid, cone,cylinder and sphere were legion.

Boullee believed that the emotional response in architecture depended on the effect of the composition of bodies in their totality. The general volumetric composition of architecture was to be determined by the regular bodies. These rational and perfect forms were necessarily found in nature. His geometrical bodies are Euclidean, that is, transcendental. The geometrical solids were postulated as symbol of a transcendent

order, representing ethical, aesthetic, and religious values, revealing the pre-established harmony between man and the world.

Ledoux maintained that there was a problem in the architectural design. The problem was the devaluation of architectural meaning. He believed the existence of primordial forms had been ill represented and distorted through history. He propounded that these original forms could be recovered by architects Ledoux believed that all forms derived from

nature. The elemental forms were inspired by the geometrical purity of natural phenomena. These elemental forms can be accessed through perception. These are also letters of the architectural alphabet: the sphere, pyramid, circle, square and so on. And for him, the geometrical elements used in architecture could become symbols of human values.

In order to create a symbolic order, Ledoux recommended that architects use simple geometrical solids and figures. He accepted the importance of proportion as a source of beauty and for convenience and economy. For him, the geometrical figures and bodies epitomized ideal beauty and they were the elemental notes of architectural composition.

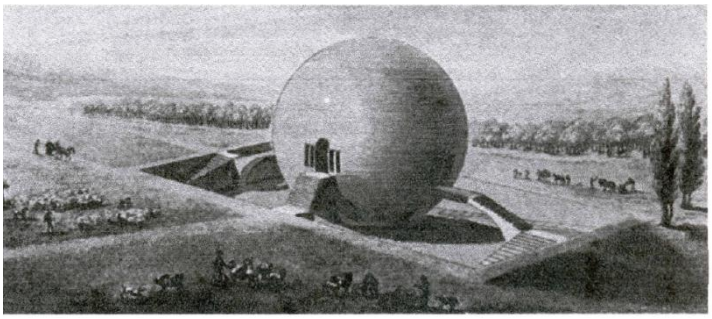


Fig Project for an agricultural lodge by C.N.Ledoux

The Modern Period of time

Many twentieth-century architects have used ideal geometry to lend rationality or integrity to their plans, sections and elevations. Some, seemingly bored with simple relationships, have experimented with complex arrangements in which one geometry is overlaid on another.

In this period of time, direct relations have been postulated between the pure geometrical solids in Ledoux projects and the work of Le Corbusier or the pieces of aches set produced in the Bauhous. Such characteristics as austere simplicity, the absence of the classical orders, and the use of platonic solids and simple geometrical figures in plans and elevations are seen as precedents of Twentieth Century architecture.

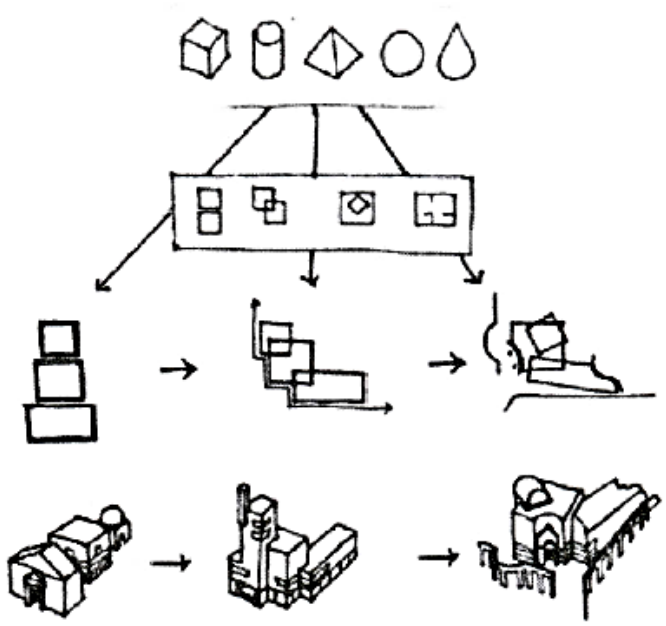


Fig The major periods comprising the modern tradition. (Neo-Classicism, Functionalism, and Postmodernism) Periods have a common vocabulary made up of geometric volumes (cylinders, pyramids, cubes, etc) but the interpretation of these volumes varies according to the dissimilar philosophies each period.

Louis Kahn even wrote a poem in which Boullee and Ledoux have the same importance for architecture as Bach for music or the sun for the universe.

The majority of architects of the Modem, as well as the Post modem Movements, generally ascribed to Euclidean geometry and geometric principles as a means of

creating and further articulating form. Le Corbusier, Mies Van der Rohe, and architects of the De Stijl, Russian Suprematist, and Russian Constructivist schools ascribed to abstractions as generators of building components, two dimensional abstractions, and abstract solid. A minority of artists and architects aspired to a conception of space that had the principles of experimental psychology as its fundamental generating framework.

F. L. Wright was also an architect who managed to create space by integrating the geometric conception with the experimental.

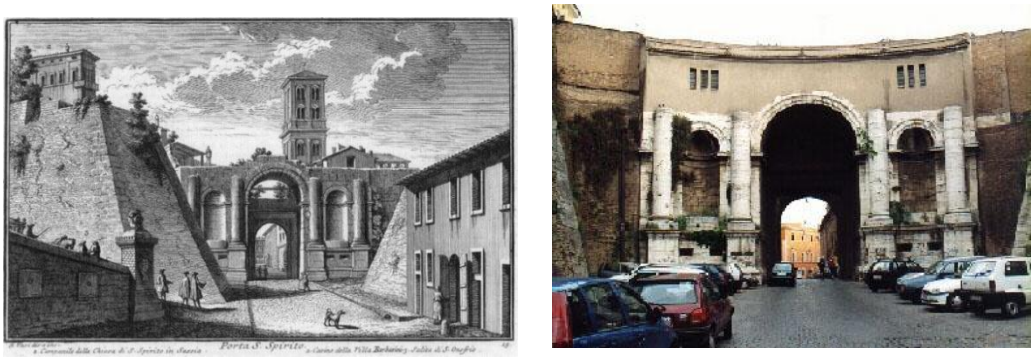
All the architects of the Modem Movement, from Mies to Corbusier and Wright, approached space as a logical condition in which geometry, generic volumes, and accommodated functions occurred through integral interrelationships, by complementing and respecting the integrity of each other. Solids were respecting solids, functional areas were respecting functional areas, and none were intruding into another without following the rules suggested by the geometric order that is the rules of the game

.Form and Space in Architecture (Continued) :

3. Contrasting Effects of Solids (forms) and Cavities (spaces) in Architecture:

The contrast between the solids and cavities (solids and voids) in architecture creates visual drama in architecture. The employment of masses and cavities together in effective contrasts leads to works that use grand architectural/visual effects. We observe that effective use of contrast in many edifices and buildings.

In the city gateway Porta di Santo Spirito, which is a Renaissance monument by Antonio da Sangallo, we observe an impressive example of this contrast. By way of columns and niches, a contrast is created between concave and convex forms, which produces an effect of order and harmony. The intervals between the contrasting shapes create a rhythmic movement that could be followed by the eye.



Porta di Santo Spirito, Italy

Therefore, an architect who wishes to create a dramatic visual effect can employ the contrast between solids and cavities. He/she can emphasize certain parts of the work by creating a deep cavity by its black shadow.

This contrast between solids and cavities (solids and voids) has been effectively used after Renaissance, in the period of Mannerism (late 1500's). Mannerist architects worked with the same forms with that of the Renaissance but tt experimented with them to create combinations that were rich-in contrasts of fo and color.

In Palazzo Massimo alle Colonne in Rome (designed by Baldassare Peruzzin d 1536) for example, we observe the contrast between the solid and cavity in a entrance, by way of the deep cavity cut into the solid block, which seems darken behind the pairs of columns. In additional to that, we also observe the solid-cavity contrast in the courts that are hollowed out of the great walls. The building exists as a composition of light and dark, open and closed.

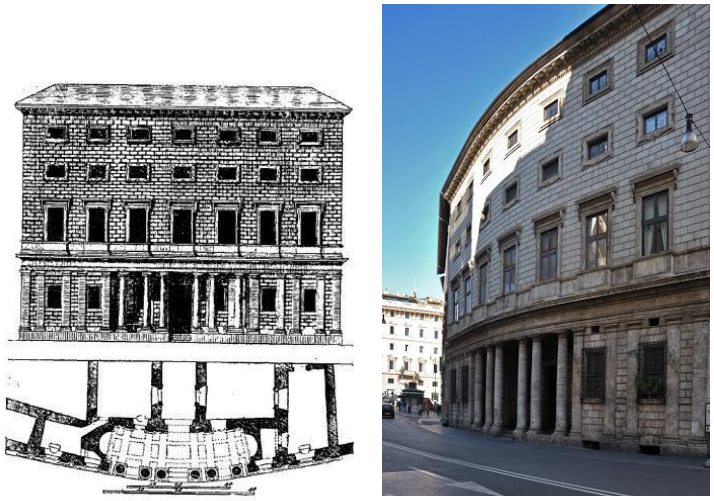


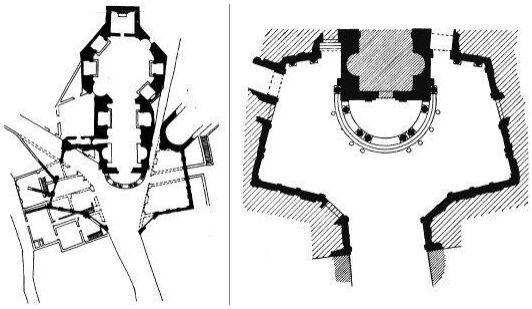
Fig. 11. — Palais Massimi, à Rome.

Palazzo Massimo alle Colonne in Rome (designed by Baldassare Peruzzin, u. 1536)

The contrast between solids and cavities could also be observed via narrow set. The architects might take advantage of the spatial effects that are created with very narrow streets. In Rome for example, the word "corridor" has often been used in connection with the narrow streets.

A street like a corridor: Via di Monte Vecchio in Rome

Very impressive solid-cavity (solid-void) contrasts are created by way of the narrow streets that open to piazzas or courtyards. One example is the dark, covered passageway, which leads to the forecourt of the church of S. Maria della Pace. The court is elosed in as it is by architectural structures on all sides. It is a breath-taking experience to come from the dark, narrow passage out to the sunlit courtyard.



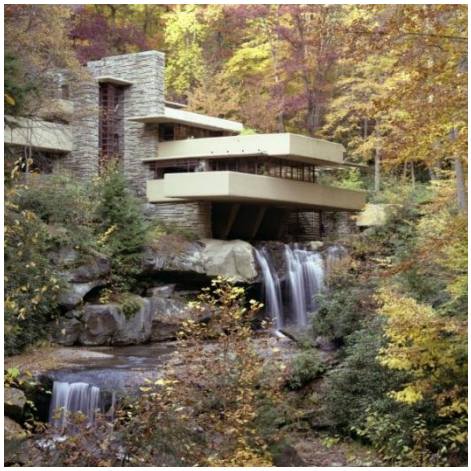
S. Maria della Pace, Rome

Fontana di Trevi is another example that uses the contrast between solids and cavities (voids), and rough and smooth elements. In it, a landscape of rugged rock clashes with the smooth stone of the basin. Water pours

in cascades over the rocks and in the foam smooth marble. Above it all, a Renaissance palace, with columns, statues and heavy cornices, presides serenely over the fantastic scene.


Fontana di Trevi, 1762, Rome

In modern times, Frank Lloyd Wright has created his fantasy over the use of contrasting materials and effects in Falling Water House, Pennsylvania. He used the contrast between the nature and the man-made form, and the rustic stone and smooth white concrete walls. The smooth forms of the house are placed in juxtaposition to the rusticated blocks of stone just as in Fontana di Trevi. The building appears as a composition of large concrete horizontal slabs cantilevered out over a waterfall. The visitor finds it as an organic part of its environment. Wright has continued Nature's composition of horizontal elements and massive rocks in the green hollow of the valley.

Frank Lloyd Wight's "Falling Wates", Bear Ram, Pennsylvania

In his desire to obtain unusual effects Frank Lloyd Wright uses in his architecture skillful contrasts between concave and convex forms, juxtaposition of raw and refined materials. He also works with contrasting forms, curves which change from concave to convex, as in interiors in the famous Johnson Wax building in Racine.

Johnson Wax building in Racine

Another architect who has worked with effective contrasts of solids and voids is Eric Mendelsohn. He emphasized the horizontal elements by way of the contrast of solids and voids in the publisher's, building, Mossehaus in Berlin.

Eric Mendelsohn, the publisher's building, Mossehaus, Berlin

In Denmark, the architect Carl Petersen, contrasts concave and convex forms. Faaborg museum there is a cavity-the deep-cut hole of the entrance, and in this the architect has placed the round bodies of columns.

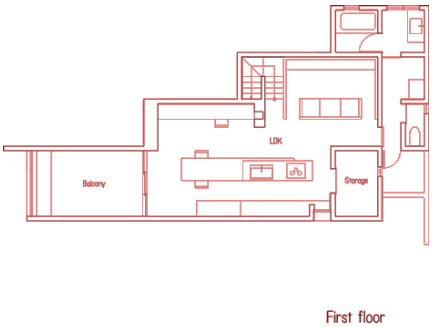
Faaborg museum, Denmark, by Carl Petersen (photo by Thomas Noble)

4.Examples of Solid And Cavity (Void)) Use In Architecture

The resultant form proposes an almost accidental arrangement of different and overlapped solids, dealing with mass and voids. Windows are opened in a free way trving to catch the most interesting spots in the surrounding landscape or the attached external spaces and volumes.

Beaumaris, Melbourne, by architect Jeremy Wolveridge

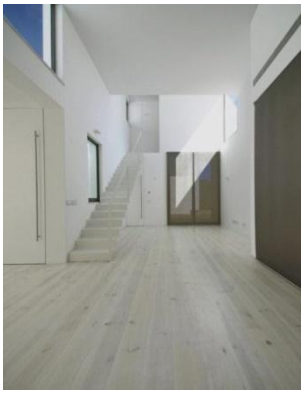
Contrast of textures, contrast of light and dark, and contrast of solids and voids



First floor

House IJburg by Marc Koehler Architects

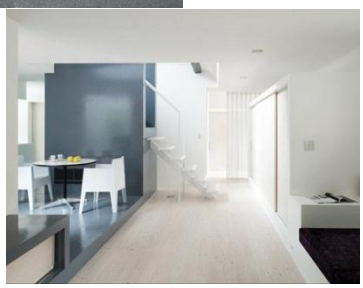
House of Reticence by FORM/Kouichi Kimura Architects- Dezeen



House in Meco by Jorge Mealha Architects

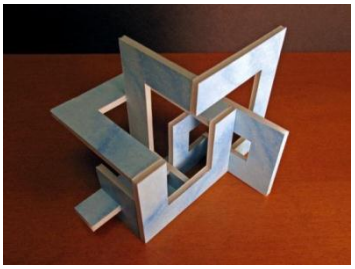
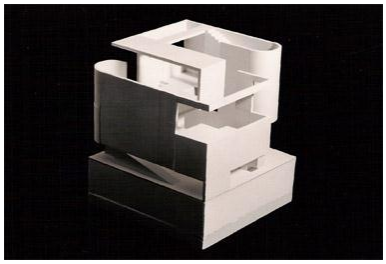
The house is located on a small plot in IJburg; a suburb of Amsterdam. Designed as a vertical garden giving space to flora and fauna to grow in a densely urbanized area. Closed private spaces contrast with open collective spaces, that seem to have been "carved out' from the solid volume as a continuous transparent void.





House of Reticence by FORM/Kouichi Kimura Architects – Dezeen

5.Examples of Solid And Cavity (Void)

Organic Cube by Danish Architect Søren Korsgaard

Chapter Four

Basic compositional principles

Some basic compositional principles :

are as follows:

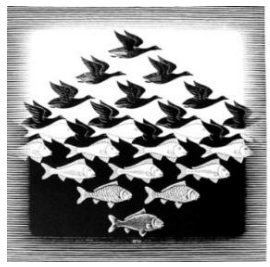
- Unity
- Balance
- Hierarchy
- Scale
- Dominance
- Contrast (and Similarity)
- Rhythm
- Repetition

Through learning these 7 components of design, the whole of your designs will become more than the sum of their elements and you'll be better able to communicate your ideas.

I've written in greater detail about a few of these components and in the coming weeks I'll write more detailed posts about the rest. Consider this post an introduction.

Also note that there are many ways one can break down and organize design principles. The 7 components described here are as organized by Alex White in The Elements of Graphic Design.

Unity :



Alex W. White from "The Elements of Graphic Design" by:

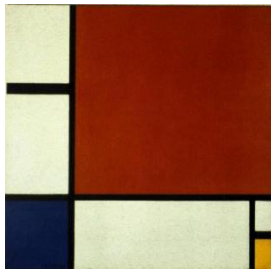
Source: https://vanseodesign.com/web-design/7-design-components/

Unity exists when your design elements are in agreement; when they belong together and aren't arbitrarily placed or added to the design. Agreement can be either visual, conceptual or both.

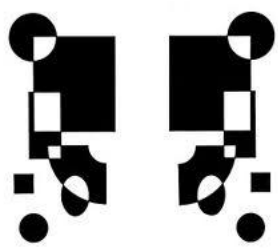
The 4 basic design principles of contrast, repetition, alignment, and proximity can be used to gain visual unity over your design. Elements that are aligned, repeat some basic characteristic like size, or are located in proximity to each other will appear to belong together. The last principle, contrast, is used to add variety.

Unity imparts order, but too much order can be dull and static. Variety adds interest, but too much can lead to a chaotic design. The key is to find a balance between unity and variety so as to have a well ordered design that is also visually interesting.

Elements can be conceptually unified by being about the same subject. An image of a steering wheel, a fuel pump, and a glove compartment are all unified around the concept of a car.



Piet Mondrian, embracing an art of pure abstraction, Composition II in Red, Blue, and Yellow, 1930 (left), Hammer and Sickle, Andy Warhol (American, 1928–1987) (right)



Architect - Allford Hall Monaghan Morris

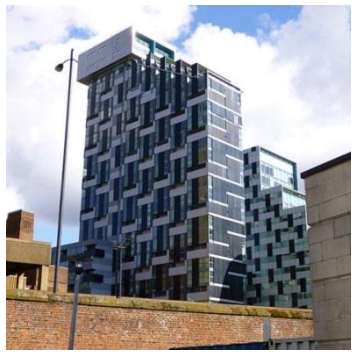
Date Built 2006

Location Chapel Street and Rumford Place

Description :The Unity Building's architects describe it as, " ... a pair of distinctive forms within a city skyline: one a slender stack of interlocking apartments crowned by a projecting penthouse, the other a compact block in a chequerboard wrapping. The two towers – connected by a shared eight-storey podium base of retail and parking – serve as powerful complements to the waterfront silhouette of Liverpool's Three Graces."

The 27-storey residential tower contains 161 apartments. Its 16-storey commercial companion tower provides 161,500 square feet of office space. Of their appearance the architect adds that, "The patterning of the façades explores ideas of scale and urban camouflage, and links back to the geometrically-painted 'Dazzle Ships' that once crowded the city's docks."

In 2007 the Unity Building was awarded the RIBA Award for Architecture and the National Award for Architecture.



Source:https://manchesterhistory.net/architecture/2000/unitybuilding.html

b.balance

balance is the state of equalized tension

— Alex W. White from "The Elements of Graphic Design"

Let's take a step back from design and think about physical balance. Picture a lever with a fulcrum at the midpoint; a see saw perhaps. If you place two equal weights the same distance away on opposite sides of the fulcrum, the lever will balance.

We can use a simple formula to express this.

F1 x D1 = F2 x D2 (where F is the force and D is the distance from the fulcrum)

When the force x distance on each side of the equation is equal, balance is achieved. In the example above the force (weight) of each object is the same as is their distance from the fulcrum so we have balance.

What if the fulcrum is off center.

In that case the force of one of the objects needs to be increased in order to achieve balances. An adult on a see saw must move toward the center if there's a child on the other side.

Nothing too difficult to understand even if I did lapse into physics momentarily. Balance in design works the same way as a lever or see saw. Your design will have a vertical (or horizontal) axis and the weight of the various elements on either side of the axis and their distance from the axis will determine if your design is balanced.

There are two kinds of balance that correspond to our lever images above, namely symmetrical and asymmetrical balance, but first what gives an element visual weight?

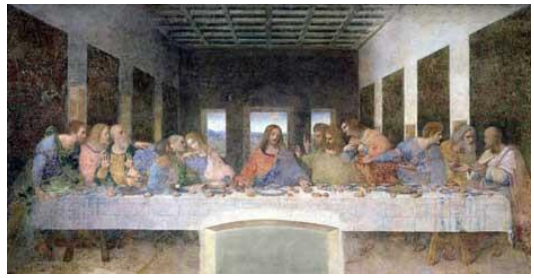
b.1 Symmetrical Balance

Symmetrical balance is like having our fulcrum in the center of the lever. To achieve balance we need to have elements of equal weight on both sides of a central axis.

Symmetrical balance tends to be more formal and more static. It evokes feelings of consistency, elegance and classicism.

Think of a wedding invitation. They tend to use centered text in part because this helps achieve symmetrical balance, which leads to feelings of formality and elegance. Exactly what a wedding is expected to be.

Symmetrical design balance is easy to see and relatively easy to achieve.



Leonardo's Last Supper is a great example of symmetrical balance in art. For everything on the left side of the painting there's something of equal weight on the right. The entire painting is balanced around the central figure of Jesus Christ, which makes perfect sense given what the painting is about.

the Taj Mahal. While there are numerous reasons the Taj Mahal is aesthetically-pleasing, one reason is its symmetrical balance, which evokes a sense of traditionalism and stability.

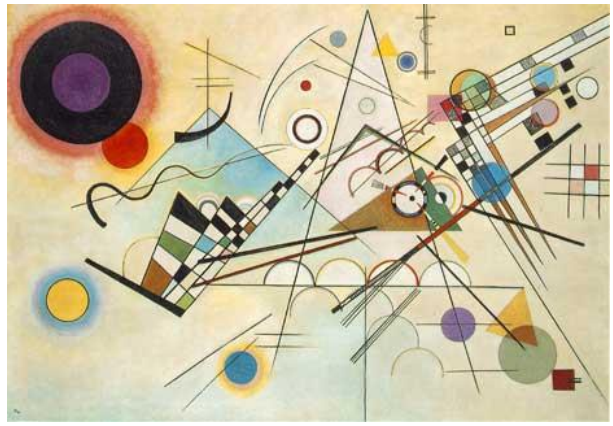
b.2 Asymmetrical Balance

Asymmetrical balance is like having our fulcrum off center. Unequal weights need to be placed on either side of the fulcrum in order for balance to be in equilibrium. Visual weight will not be evenly distributed around a central axis and often you'll find one dominant form on one side of the axis offset by several less dominant forms on the other.

Asymmetrical balance is more dynamic as there's more visual variety in design elements. It's more interesting because of that variety, but also more difficult to achieve.

Elements in asymmetrical design will have more complex relationships between them and the overall design will use more whitespace to equalize the balance.

Asymmetrical design evokes modernism and feelings of forcefulness, vitality, and movement.



n Kandinsky's Composition #8 the dominant element is the dark circle in the upper left. No single element on the right side of the painting carries the same weight as this circle, but the dense line work on the right side carries enough weight together to give a counterbalance to the painting.

Notice how the left side of the painting contains more whitespace, since the circle already carries enough weight for that side.

Radial and Mosaic Balance in Design

Most of the time you'll be dealing with either symmetrical or asymmetrical design, but two other types of balance are worth mentioning

Radial and Mosaic Balance in Design

- Radial balance – all elements radiate in or out from the center. Think beams of light coming from the sun. It's easy to maintain a focal point in radial balance as it will always be the center.
- Mosaic balance – many elements on the page create a sort of balanced chaos. Think of a Jackson Pollack painting. Mosaic balance lacks hierarchy and can look like noise. *b.3. Radial balance:*

Radial balance is arranged around a central element. The elements placed in a radial balance seem to 'radiate' out from a central point in a circular fashion.

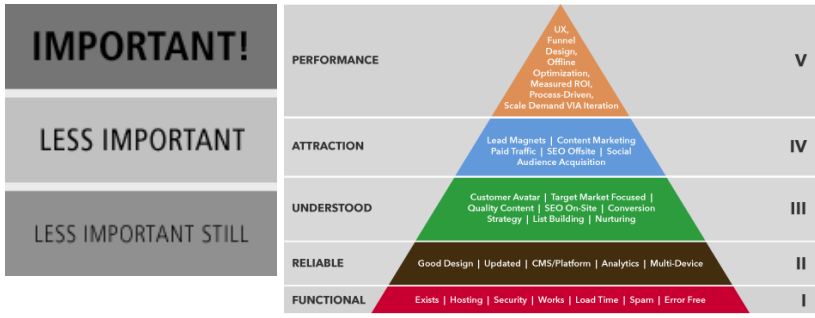
Radial Balance 2' Contest | Design

c. Hierarchy Visual hierarchy

Visual Hierarchy: How Well Does Your Design Communicate?

by Steven Bradley on December 15, 2009

The goal of visual design is to communicate. How you organize and prioritize your elements conveys valuable information about their relative importance. Visual hierarchy aids comprehension, reinforces your message, and guides your visitor through your story.



Hierarchy

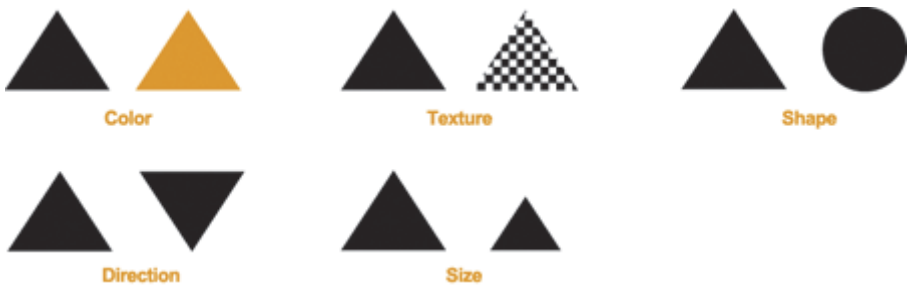
What is Visual Hierarchy?

A hierarchy is an organization of items into different levels of relative importance. Visual hierarchy is naturally enough creating this organization and prioritization visually.

Through basic design principles you emphasize one element over another so more important content looks more important. You design related elements to provide visual cues that those elements are on the same level in the hierarchy. You organize everything on the page to create a sense of order.

Visual hierarchies create centers of interest on your page, communicate additional meaning through convention and repetition, highlight actions you want your visitors to take, and establish patterns of movement and flow.

Ultimately the visual hierarchy you establish tells a story about your page and site.

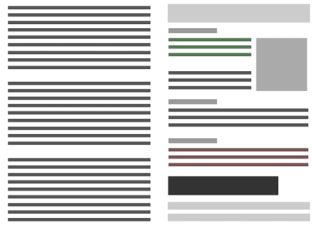


Visual differences between objects.

Source: https://www.lukew.com/ff/entry.asp?981

he image on the left has no hierarchy and as a result anyone visiting the page will need to do a lot of work to determine if this page is what they want. Assuming it is, the visitor has no choice, but to read every word on the page to find the bits of

information they're interested in or need to complete their task.



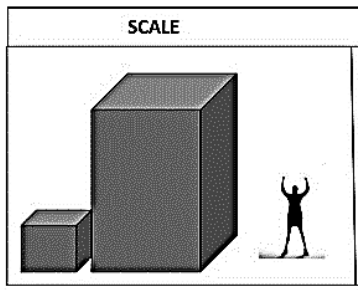
Compare the two images below, one with no hierarchy and one with a clear hierarchy.

The image on the right on the other hand makes the page easy to scan. It's easily scanable and won't require much effort for the visitor to determine if she's on the right page. Assuming she is, the page leads her quickly to the information she wants or needs.

The Taj Hotel at Mumbai, India – the dome in center of the building is a great example emphasising the hierarchy in architecture.

d. Scale

Making use of scale in a composition refers to using relative size of elements against each other. Playing with the scale of elements creates visual drama and can attract attention to a focal point.



Source:https://www.sophia.org/tutorials/design-in-art-scale-and-proportion

Definition of Scale in Construction

The architectural scale references inches and feet. If the scale is drawn in 1/4 inch scale, this means that for every 1/4 inch on the paper, one foot of actual construction product, component or building is drawn. The scale is a reduced measurement of the actual.

Space is defined by the concept of scale and proportion of things that surround us, which are observed through a lens of a man. This requires seeing an object as an urban element of the architectural identity which, with its scale and proportion, constitutes a part of an urban context. The way a particular object influences the said context, and vice versa, and relation of some elements of the object to the scale and proportion concept is also taken into consideration.

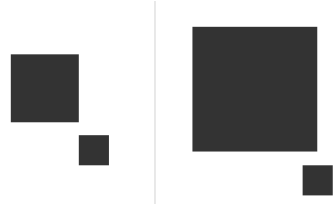
e. Dominance

Given the definitions above it shouldn't be too hard to understand dominance as a design component. When you create dominance in your work you are creating elements that command attention and prevail over other elements.

Every design should have a primary area of interest or focal point that serves as a way into the design. From the primary dominant element, design flow can be achieved by creating elements with secondary and tertiary dominance.

Dominance relies on contrast, since without contrast everything would be the same. You might even think of dominance as contrast in extreme, though it doesn't have to be.

Consider 2 squares of different sizes. The larger square will likely dominate (even if it's only slightly larger) and the greater the difference in size between the 2 squares the more the larger will dominate the smaller.

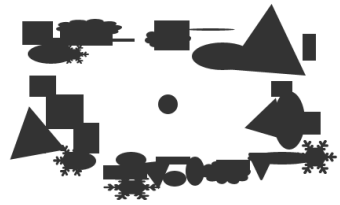


In the image on the left the larger square dominates the smaller square, though not to the extent that the larger square in the image to the right dominates its smaller sibling.

How to Create Dominance in Your Design

As a general rule the elements in your design with the most visual weight will be the most dominant. However that may not always be the case.

At times the dominant element may be the element that most dominates its immediate surroundings. An object surrounded by whitespace dominates its immediate environment.



the image above your eye probably falls first on the circle in the center. It's hardly the largest shape in the image and doesn't carry the most visual weight. However because it's completely surrounded by whitespace it dominates its local environment. The shapes with more visual weight tend to blend together here and none dominates its immediate space.

we can add more visual weight to elements through

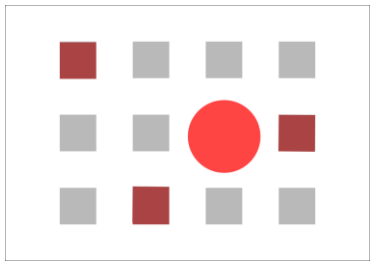
Size – As you would expect larger elements carry more weight

Color – It's not fully understood why, but some colors are perceived as weighing more than others. Red seems to be heaviest while yellow seems to be lightest.

Density – Packing more elements into a given space, gives more weight to that space.

Value – A darker object will have more weight than a lighter object.

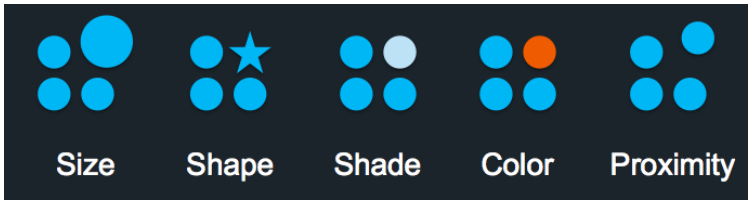
Whitespace – Positive space weighs more than negative space or whitespace.



Dominance by size and color

f. Contrast (and Similarity)

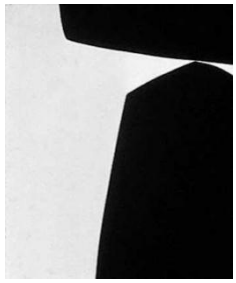
Contrast is the visual principle in which there is distinguishable difference between objects. The differences in sizes, textures, colors, positions, shapes, orientation etc. create contrast. The presence of contrast creates the illusion of depth within a 2 or 3 dimensional composition. If there is too much similarity between the elements of design, the design takes the risk of being boring and monotonous. Contrast adds variety and visual interest to the total design. However too much contrast can also create confusion. Therefore, the aim should be to find the balance between similarity and contrast.

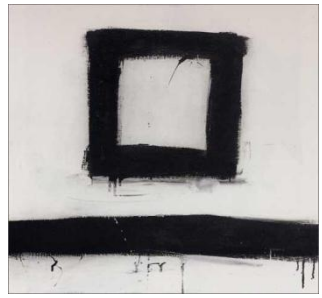


There are different types of contrast. There is contrast of size, shape, shade, color, proximity.

Source: https://www.duarte.com/using-contrast-in-presentations/

Contrast according to size, texture, position, color, shape, orientation

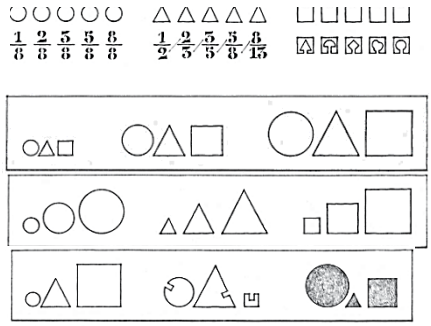




Lorser Feitelson, Untitled, 1962 (left), Franz Kline, Scudera (right)

g. Repetition

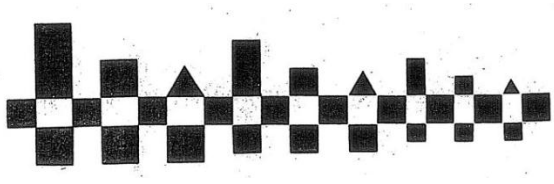
Repetition is a compositional principle where you basically repeat colors, objects, etc. throughout the design. Pattern is the repeating of an object or symbol all over the artwork.



Donald Judd

h. Rhythm

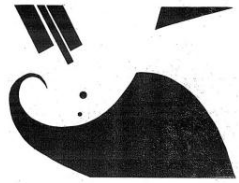
Rhythm is the compositional principle where one or more elements of design are used repeatedly to create a feeling of organized movement. What differentiates rhythm from repetition is the presence of variety in size, relationships etc.



Repetition is softened by variety in changing the proportional sizes of the elements while the same relationships are repeated,

Rhythm by repetition and perspective

As it has been mentioned before, these principles could be helpful in creating a composition however there may also be designs where none of these principles are applied.

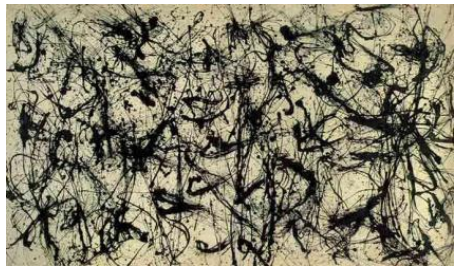


"Free: The shapes in the design are all different. Everything being different can also be a means of organization. What really holds this design together relates to the idea of hints and suggestions and some little subtleties like the triangular shape at the corner being on the same curvature as the big figure, the two little circles tending to direct the lines into the nook of the big figure. These kind of personalized designs in many ways are difficult to analyze and understand because of involvement with value judgments and not so obvious relationships.

." 2 -D composition and 3D composition

These principles could be used in two dimensional compositions, such as paintings. posters etc., in reliefs, which are between two and three dimensional compositions (high relief and low relief), and in three dimensional compositions, such as sculpture, architecture etc.

Relief, Jean (Hans) Arp (left), Painted Relief, Ben Nicholson (British, 1894–1982) (right)



Two dimensional compositions: paintings

Untitled - Richard Diebenkorn (American, 1922–1993) (left), Jackson Pollock (right)

Three dimensional composition - Architecture: Oscar Niemeyer, Brasilia National Congress Building, Brazil (left); Richard Meier, Jubilee Church, Rome, Italy.

Three dimensional composition - Architecture: Frank Lloyd Wright, Falling Water House

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