

What is Modern Architecture?




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- ▶ The main storyline of architecture in the twentieth century is that of the development of Modernism, and various reactions to it. Most of us use the term “modern” to refer to something that is of its time, and perhaps even up-to-the-minute and fashionable. But from the 1920s or so in avant-garde circles, the term “Modern” came to refer to a particular approach by a group of architects who sought to cast off historical precedent and develop something entirely new and different for their own time.

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- ▶ As a reaction against the artificiality of the 19th century, modern architects declared that **form should result from function**.
 - ▶ Steel frames with reinforced concrete came to be used as materials. Huge warehouses were built to store raw materials and machinery.
 - ▶ Powerful bridges and docks were constructed to bear the weight of heavy transport.
 - ▶ Factories were designed so that all of the available space was put to good use.

What is Modern Architecture?



The carnage of World War I having convinced them that the ways of old Europe were a failure, Modernist architects saw historical styles—developed in response to earlier conditions—as anachronistic, irrelevant, and potentially decadent. They rejected ornament as frivolous and outdated, seeking instead to create an entirely new aesthetic based on the needs and opportunities of new materials and structural approaches such as reinforced concrete and steel frames.

Characteristics of Modern architecture

1. **Lack of ornament:** Decorative moldings and elaborate trim are eliminated or greatly simplified, giving way to a clean aesthetic where materials meet in simple, well-executed joints.
2. **Emphasis of rectangular forms and horizontal and vertical lines:** Shapes of houses are based boxes, or linked boxes. Materials are often used in well-defined planes and vertical forms juxtaposed against horizontal elements for dramatic effect.
3. **Low, horizontal massing, flat roofs, emphasis on horizontal planes and broad roof overhangs:** Modern homes tend to be on generous sites, and thus many, but not all, have to have meandering one-story plans. Many examples hug the ground and appear of the site, not in contrast to it.
4. **Use of modern materials and systems:** Steel columns are used in exposed applications, concrete block is used as a finished material, concrete floors are stained and exposed, long-span steel trusses permit open column-free spaces, and radiant heating systems enhance human comfort.
5. **Use of traditional materials in new ways:** Materials such as wood, brick and stone are used in simplified ways reflecting a modern aesthetic. Traditional clapboard siding are replaced with simple vertical board cladding used in large, smooth planes. Brick and stonework are simple, unornamented, and used in rectilinear masses and planes.

Characteristics of Modern architecture

6. **Emphasis on honesty of materials:** Wood is often stained rather than painted to express its natural character. In many cases exterior wood is also stained so that the texture and character of the wood can be expressed.
7. **Relationship between interior spaces and sites:** Use of large expanses of glass in effect brings the building's site into the building, taking advantage of dramatic views and natural landscaping.
8. **Emphasis on open, flowing interior spaces:** Living spaces are no longer defined by walls, doors and hallways. Living, dining and kitchen spaces tend to flow together as part of one contiguous interior space, reflecting a more casual and relaxed way of life.
9. **Generous use of glass and natural light:** Windows are no longer portholes to the outside, but large expanses of floor to ceiling glass providing dramatic views and introducing natural light deep into the interior of homes.
10. **Use of sun and shading to enhance human comfort:** The best modern homes are efficient. They are oriented to take advantage of nature's forces to provide passive solar heating in the winter, while long overhangs and recessed openings provide shading to keep homes cool in the summer.

Structural Innovations



- ▶ The development of the steel frame, which became a crucial aspect of Modern architecture, had its roots in the iron frames that began to make their appearance in the tall office buildings of Chicago in the 1880s. Until that time, almost all buildings of any size—including all masonry buildings—had depended on their walls to hold them up; the material of the walls both kept the weather out and formed the structure of the buildings. The taller the building was, the thicker the walls had to be at the base to support the vast weight above them (unless architectural devices such as domes and vaults were employed in combination with buttresses, as in ecclesiastical or large public buildings).



Structural Innovations

- ▶ The development of the steel frame, the walls were no longer required to bear any weight; instead, the building was held up by the interior frame, while the walls kept the weather out. Initially, such buildings were clad in brick, stone or terracotta. They continued to appear nearly as massive as their masonry predecessors, partly as a visual reassurance to the public that this radical new type of structure would not collapse. But as time went on, windows became larger and cladding thinner. The non-load-bearing walls came to be known as curtain walls because they hung on their frames. Steel frames also allowed for considerable flexibility of plan, with steel beams and girders allowing for the creation of wide interior spaces. Increasingly, architects began to think about the implications for a new aesthetic.

Structural Innovations



The Aesthetics of Function

- ▶ Louis Sullivan, an architect who was highly influential in the development of the Chicago School, and who had a profound effect on Modernist architects, coined the phrase “form ever follows function” in 1896.
- ▶ His idea was that the design of a building should be based on the **needs of its function**, not on historical ideas or precedent. By the 1930s, “**Form follows Function**” had become a rallying cry of Modernist architects who believed that they were approaching design from a functionalist approach that resulted in buildings perfectly suited for their intended use, without unnecessary detail or extraneous decoration.

International Modernism

They identified the new style, which they dubbed “International Modernism”, with three main characteristics:


1-Emphasis on architectural volume over mass. Thin outer walls, often with windows placed flush with or very near the outer surface, could create the impression of a shell stretched taut over the frame—very different from the massive appearance of a load-bearing wall pierced with openings.

2- The rejection of symmetry, which had particularly characterized architecture in the classical tradition. Hitchcock and Johnson argued that the Modernists replaced symmetry with a sense of regularity, created by a feeling for rhythm and balance.

3- Finally, the Modernists largely rejected applied decoration, with visual gratification instead being created through the use of intrinsically beautiful materials, elegant proportions, and the elements of structure itself.



A Catalogue of Modern Styles



► The following slides provide a brief guide to some of the more common developments from the International Modernism. These include:

- Popular Modernism
- Brutalism
- Corporate Modernism
- New Formalism
- Post Modernism

Popular Modernism

- ▶ The beginnings of Modernism came with a good deal of writing, theorizing and debate about the meaning of Modernist forms and the role architecture could and should play in society. But bit by bit, its forms also entered popular culture and small-scale commercial architecture. For such businesses as coffee shops, diners, motels, bowling alleys and a host of other building types—mostly small commercial or recreational buildings—up-to-date or particularly noticeable architecture can act as an advertisement.
- ▶ In the late 1920s and the 1930s, Art Deco had played this role, and as Modernism entered the mainstream, its forms began to spill over into these commercial building types as well. The 1950s and 60s, particularly, saw the development of a popular type sometimes called “space age” modernism, or named “googie” after a coffee shop of that name in Los Angeles. These buildings used dramatic architecture as a billboard to advertize themselves, and often featured such elements as folded plate or concrete shell barrel vault roofs, amoebic curves and jutting cantilevers, bright colours and striking graphics. Large neon signs were often an added identifying feature, and the signs themselves could be almost architectural in scale. One of the best examples of Popular Modernism in Manitoba is Perth’s Drycleaners on Main Street in Winnipeg.

Brutalism

- ▶ The British architects Peter and Alison Smithson coined the term “New Brutalism” in 1954, taking it from Le Corbusier’s term “béton brut,” or raw concrete, which referred to the look of cast-in-place concrete with the marks of the wooden forms visible on its surface. The style was intended as a critique of the refined surfaces, thin skin and increasing uniformity of high Modernism. It was used mostly for public buildings, and remained relatively popular until the mid-1970s. Typical Brutalist buildings feature blocky shapes, often with brises-soleils and deepset windows. The reinforced concrete walls are load bearing (rarely, one sees other facing materials such as brick or stone), and the overall massive impression of these buildings is very different from that of the Miesian curtain-wall construction that was by then nearly ubiquitous.



Boston City Hall, Boston, MA, 1968 Varied exterior forms delineate different functions (such as the council chamber and mayor's office), while deep-set window openings create a highly textured façade.

Corporate Modernism

By the late 1950s there was a demand for corporate buildings that included eye-catching features and forms that were less cerebral and more individual than those of International Modernism. Architects of early corporate modernist buildings sought to develop forms that would be unique and identifiable with a particular image. These buildings tend to be sleek and polished, often with a lot of reflective glass. Although many follow the basic forms of International Modernism, they are not restricted to oblong shapes and right angles, and often feature large glass atria, sometimes several storeys high. The firm perhaps best known for corporate modern buildings is Skidmore, Owings and Merrill (SOM), architects of the Sears Tower (now known as the Willis Tower). Extended into the speculative market, corporate modern buildings continued to dominate the urban skyline until the end of the twentieth century, with nods to various prevalent styles.

New Formalism

In contrast to the rough massiveness of Brutalism, some Late Modernists a decade later began adding historical references to their work, in a highly-polished style that has been dubbed New Formalist. These buildings, like International Modernist buildings, are usually light in feeling with many windows, but they include classical or sometimes gothic motifs such as the arcade (rounded or pointed) and cornice. New Formalism appears particularly in small office buildings, banks and civic buildings. It shares International Modernism's restrained elegance, but with a wider variety of forms. New Formalist buildings are often clad in white marble or—more modestly—in white-painted stucco or concrete.

New Formalism

