

# Overview of foreign modern architecture schools and their representative figures and their architectural works

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## Abstract

**The research and analysis of this paper is based on the socio-historical background of the two world wars, the technical background of the development of building science and technology in which new materials and technologies were perfected and promoted, and the architectural background of the continuous development of the architectural exploration movement.**

## Keywords

**Modern architecture; new architectural movement; architectural schools; representative figures; representative works.**

## 1. Quotes

The 1920s and 1930s were a period of social upheaval and rapid change during the two world wars. The characteristics of this socio-historical context are also fully demonstrated in the architectural activities of the countries of this era. During the First World War, civil construction in European countries came to an almost complete halt. Many houses were destroyed in the fighting. The destruction was more severe in France and Belgium. Other countries were affected by the war and construction activities were reduced. After the war, each country faced a serious housing shortage. Britain, France and Germany were in desperate need of at least one million new homes. Housing construction became a major concern for each country. Although people were more than happy to use traditional materials in building houses, the technological changes centered on assembly that emerged in the 1920s in housing prepared countries for technological innovation in housing. after 1924, the major European countries began to gradually recover economically, and construction activities flourished with relative social stability. The United States, which had accumulated wealth through the war, continued to develop after the war, and construction activities flourished, with the early rise of urban high-rise buildings like bamboo shoots.

After the First World War, and especially after the 19th century, the science and technology of architecture has developed tremendously, characterized by the improvement and spread of new materials and technologies. The creativity and inventions of engineers also played a great role. At the same time reinforced concrete structures became more commonly used, building construction techniques improved, the development of construction equipment accelerated, glass production increased, quality improved, variety increased and the growing number of buildings such as cinemas, indoor stadiums and aircraft hangars put new demands on the larger and faster reading of buildings, etc. contributed to the development of architecture.

In the early postwar period, retrogressivism was still popular, for example, in the classical aspect, both in ancient Greece and Rome, as well as in the classicalism of the 17th and 18th centuries, and even in the Renaissance character. Therefore, they are generally considered classical or neoclassical. For example, large banks and insurance companies still maintain a classical column arrangement like the London Life Insurance Company established in 1924, yet the interiors of such buildings are often steel or reinforced concrete structures, but the exterior

decoration is still classical in style. Moreover, the function of modern library buildings is inhibited by the ancient architectural style. There is a clear difference between content and form. As a result, by the 1920s, conservative architects began to diverge. Their architecture, which ranged from strictly retro to godlike,, had a range of differences and levels.

The post-war period injected new momentum into the construction industry based on the status and gradual development of various aspects. The introductory content provides a good basis for the analysis of modern architecture later on by analyzing the preliminary basis of its occurrence.

## 2. Background Analysis

After World War I, the economic and political conditions and social ideology in Europe provided a strong backing for the reformers. First, the economy of the early post-war period constrained and encouraged the pragmatic tendency of architecture, which dealt a heavy blow to the form-oriented retrogressivism and romanticism. Second, the rapid development of industry, science and technology and changes in social lifestyles in the late 1920s increased the need for architects to break with stereotypes. The rapid development of automobiles and air transportation, the popularity of radio and film, and advances in scientific research, education, sports, medicine, and the publishing industry all required new types of architecture. Advances in materials, construction and building are forcing more and more architects to leapfrog ancient building forms. These changes gave architects a strong incentive to reform their design methods and create new types of buildings. Third, the socio-political conditions in Europe after the First World War created a favorable atmosphere for the architectural innovation movement. The tragic defeat of the war and the victory of the October Revolution in Russia created in people's minds the idea that they did not want to live as before, and this idea was stronger in the defeated countries. After the war, many new ideas and concepts were generated in the field of social thought in Europe. This was also the case in architecture, where there was a growing number of architects who advocated innovation, proposing all kinds of ideas, plans, schemes, perspectives, visions, etc. Throughout the 1920s, the architectural scene in Western European countries, especially in Germany, France and the Netherlands, showed unprecedented activity. Architecture itself includes many aspects such as functional, technical, industrial, economic, cultural, and artistic. Different people, from different perspectives, mastered different emphases and tried different methods of exploration. After the early years of the war, there were many people and schools, and included various types of plastic artists, who developed a strong interest in new architectural forms and continued to explore them in many ways. Among them, Expressionism, Futurism, Stylism, and Constructivism were particularly prominent and had an important influence on their ideas and techniques.

## 3. Birth of the Modern School of Architecture

Expressionism, Futurism, Stylism, Constructivism, etc. were originally schools of thought in terms of fine art or art. It does not solve many fundamental problems related to the development of modern architecture. These are the real and theoretical problems faced by the development of architecture. For a long time, many architects, including La Brewster in France, the Chicago School in the United States, Wagner and Roth in Austria, Perret in France, Berlach in the Netherlands, Behrens in Germany, etc., have made many architectural ideas and innovative designs. But their efforts were scattered and their ideas did not form a system. Most importantly, they did not produce mature and influential buildings. Generally speaking, the period from the second half of the 19th century to the end of World War I was a period of gestation and preparation for the new architectural movement. By the 1920s, however, the trauma of the war had not only fully exposed the contradictions of society, but also profoundly

exposed the long-standing contradictions in architecture. In the past, attention was paid to the contradictions between the old and the new due to the progress of the times, but the contradictions exposed after the war included political, economic and philosophical issues. Therefore, a group of young architects who were sensitive to social issues and experiences faced the harsh reality and saw architectural reform as their responsibility, proposing a more systematic and thorough architectural reform called Zhu. It brought the new architectural movement to an unprecedented climax - the Modern Architecture Movement. After the academy school, the modern architecture school, which ruled the academic world for a decade of neglect, was formed.

The modern school of architecture includes two aspects: one is the European avant-garde school, represented by Grobius and Mies van der Rohe in Germany and Le Corbusier in France. In addition, it is also known as the Functionalist School, the Rationalist School, the Modernist School, the European School of Modern Architecture and the International School of Modern Architecture. They are the backbone of the modern movement. Another kind of organic architecture is represented by Wright in the United States.

#### **4. Representative figures of modern architecture and their representative works**

The design conceptions of these architects listed above are not the same, but they have some common characteristics, namely they are concerned with the lower middle class and the working class. For this reason, it is necessary to focus on the use function of buildings as the starting point of architectural design, improve the scientific nature of architectural design, focus on the convenience and efficiency of building utilization; secondly, pay attention to the performance characteristics of new building materials and building structures; at the same time, also use the minimum human, material and financial resources, and strive to maximize the important economic efficiency of construction, they also advocate the creation of new styles using modern architecture, They also advocate the creation of new styles using modern architecture and oppose the application of historical architectural styles. They emphasize the flexibility and freedom of architectural modeling treatment and break with traditional architectural forms; they believe that architectural space is the main character of architecture and that architectural space is more important than and architectural plan and façade; finally, they add architectural decoration to the abandoned surface. The basis of architectural beauty is considered to be the rationality and logic of architectural treatment.

These views and approaches to architecture have been called "functionalism" and "rationalism" in architecture, and in recent years, modernism, among others. In fact, Grobius and Le Corbusier, among others, opposed these names. However, these ideas have spread like wildfire and have given rise to many lawsuits. The introduction of functionalism only seemed to culminate the emphasis on the architectural theory of the elements of architecture - the function of the functional, technical and artistic elements. The introduction of Rationalism showed the inappropriate importance of this theory of composition in thinking.

Modernism in Europe began in the 1920s, due to a particularly keen post-war economic revival. Public buildings with new functions such as schools, gymnasiums, science laboratories, libraries, department stores, and cinemas were produced during this period, and at the same time were widely accepted, and many excellent and creative examples of architecture were produced.

Several representative architects and their representative works will be analyzed and illustrated below.

#### 4.1. Le Corbusier

Le Corbusier was the most famous architect, urban planner and writer of the 20th century, a radical and the main general of the modern architectural movement, the main advocate of modernist architecture, the key founder of mechanical aesthetics, the titan of functionalist architecture, also known as the "father of functionalism". From 1920 until his death, he continued to astonish the world with his innovative architectural practices and concepts.

In his book "Towards a New Architecture", Le Corbusier defined housing as "housing as a machine for living". In the era of the renewal of party history, the main task of building construction was to reduce the cost of construction and the components of the house, so that the components of the house could be produced on a large scale.

Regarding architectural design methods, Le Corbusier suggested: "Modern life demands and awaits a new plane for houses and cities"; in terms of architectural form, he appreciated pure geometric shapes. He said:- "The primitive form is the form of beauty, because it allows us to recognize it clearly." In this, he appreciated the engineer. Then he sneered: "The geometric surfaces of today's architects are very frightening." Le Corbusier also emphasizes the artistic nature of architecture, since the architect is not an engineer but an artist. These are the main architectural views expressed by Le Corbusier in the book. But at the same time, he sees architecture as a purely spiritual creation. Le Corbusier's views show that he had both rationalist and romantic aspects. This duality is also reflected in his architectural activities and works. Generally speaking, he behaved more rationally in his early years and more romantically in his later years. His major representative works are the Villa Savoy, the Swiss Student Residence in Paris and the headquarters of the League of Nations in Geneva.

#### 4.2. Mies van der Rohe

Mies van der Rohe was a German architect Mies van der Rohe was the principal of the Bauhaus School and one of the most famous modernist architecture He adhered to the architectural philosophy of "less is more" and advocated a new concept in the treatment of 流动空间 He was one of the most famous architects. During his career, he did not receive a formal education in architecture, but relied mainly on knowledge and skills acquired through architectural practice. In the early post-war period, many architects were not engaged in actual work, but architectural ideas were very active. Mies van der Rohe was also involved in the discussion of architectural ideas and the exploration of new building plans.

From 1919 to 1924, he made five architectural proposals. The most impressive are the schematics of two glass skyscrapers from 1919 to 1921. They used glass for all the exterior walls and resembled transparent crystals for the high-rise buildings, with the interior floor slabs clearly visible from the outside. He explained: "During the construction process, the skyscraper shows the majestic structural shape, only at this time, the huge steel frame looks very spectacular and moving. After the exterior walls were put up, that structural skeleton, which was the basis of all artistic design, was overwhelmed by a haphazard patchwork of meaningless and trivial forms." These plans were only on paper at the time and did not have a chance to be implemented until after the Second World War.

Up to this time, Mies van der Rohe had departed from traditional architecture and was actively exploring new architectural principles and approaches to architecture. In his statements during this period, he emphasized architectures that fit the character of the times, and that the architecture of the new era should create rather than imitate the past. All architecture is closely related to time and can only be expressed by biological or modern means. No period is an exception. He has stated that there is no method in our architecture that can attempt the forms of the past, and that the realist and functionalist imperatives of the times must be met. He evaluated the innovation of architectural structures and construction methods. The

industrialization of architecture is an important issue for architects and manufacturers. If it succeeds, social, economic, technical and artistic problems will be solved. We don't think about form, we only do architecture. Mies van der Rohe became one of the most progressive architects of the early 1920s. His main representative works include the German Pavilion at the Barcelona Fair, the Tugendhat House and the Illinois Institute of Technology's Kron Building.

### 4.3. Frank Lloyd Wright

Frank Lloyd Wright, who was born on June 8, 1867, and died on April 9, 1959, was the Arts and Crafts Movement the leading representative of the American School, the The American Academy of Arts and Letters member, one of America's greatest architects, and world-renowned. Wright's teacher was the father of the skyscraper and Chicago School (architecture) representative Louis Sullivan Wright's teacher was the father of the skyscraper and a representative of the (architectural) school, but later he established himself as a representative of the famous "Field School" of architecture. He created a unique path of architectural design.

He began practicing architecture in Chicago in the late 1880s. Wright began his work at a time of industrial prosperity and rapid urban population growth in the U.S. Chicago in the latter half of the 19th century was the birthplace of the modern skyscraper. But Wright was critical of modern big cities and he rarely designed high-rise buildings in them. Wright had no interest in the industrialization of architecture, and the types of buildings he designed most during his life were villas and small residences.

He started his own business in 1893. Beginning in the late 19th century and continuing through the first decade of the 20th century, he designed many small homes and cottages in Wisconsin, Illinois, and other parts of the Midwest. Most of these houses were situated in the suburbs for the middle class, surrounded by beautiful surroundings and large lots. The materials were traditional brick, wood and stone, with large eaves and pitched roofs. In this architecture, Wright gradually developed both a tradition of American folk architecture and a break with the closed residential treatment. It suited the climate and the sparse population of the Midwestern prairies of the United States. Although they were not necessarily built on the prairie, Wright called them "prairie homes. At the same time, Wright designed a large number of public buildings that were completely free of the retro tendencies of the time. The buildings were simple and generous, integrated into the interior space, with a good mix of brick proportions, structure and wall decoration. This was indeed a new form of architecture and stood out. His major representative works include the Villa Flowing Water, the Guggenheim Museum and the Johnson & Company headquarters.

## 5. Conclusion

From the above brief overview of the background of modern architectural development and representative architects, it is clear that the tendency of modern architectural thought is like a flourishing tree, divided into many active branches, moving forward in a vast exploration. Historical developments are constantly refined and renewed, while preserving the mnemonic symbols of past existence. These great architects have both commonalities and differences in their exploration of modernist architecture, and they have developed unique architectural concepts on their own innovative paths, while leaving behind many epoch-making architectural works that have laid a solid foundation for the development of architecture today.

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