

## The main factors determining the modern reconstruction works of buildings

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**Abstract:** The article discusses the main factors determining the modern reconstruction work of buildings, the idea is formed that modern reconstruction work requires a number of specialized skills, including historical research, architectural design, engineering and construction. Training and skill development programs conducted by a team of qualified professionals will help ensure that complex projects are completed in the future. Important historical landmarks, if done right, future generations will be proud of and appreciate the hard work of previous generations.

### 1. Introduction

Modern reconstruction works of buildings typically involve restoring or rebuilding a structure to its original design and appearance, or updating it with modern amenities while still maintaining its historical significance. This can involve a variety of different approaches and techniques, depending on the specific building and its condition.

Buildings are often reconstructed with their historical significance in mind, as they are cultural heritage landmarks and have played an important role in the country's national history.

Modern reconstruction works of buildings imply restoration of the original appearance of the constructions or its renewal, with modern improvement works and preservation of its historical significance. Reconstruction should be carried out to preserve the original appearance and materials used, all attention should be paid to preserving the historical appearance of the building.

An old mansion can be renovated with modern plumbing and electrical systems, increasing its energy efficiency and preserving the original architectural style and details.

Modern building reconstruction works are complex projects that involve a wide range of factors, including a building's historic significance, architectural style, structural integrity, materials, planning and design, modern amenities, community involvement, environmental impact, and financing.

Modern reconstruction efforts require collaboration and partnership with a wide range of stakeholders, including architects, civil engineers, government agencies, community groups, and funding organizations. In the spirit of joint cooperation and partnership, it is possible to ensure the successful completion of complex and responsible projects and preserve our cultural heritage for future generations.

By studying the works carried out on the reconstructed buildings, we will get important information about the challenges and opportunities of the projects with which the said reconstruction was carried out. For example, the reconstruction of the Berlin Palace, destroyed during the Second World War, required the preservation of the historical significance of the building, its use as a modern cultural center, and it was also necessary to solve difficult political and financial issues. Similarly, the reconstruction of the Glasgow School of Art, which was damaged by fire twice in four years, required the preservation of the original appearance and existing materials and the need to meet modern safety and environmental standards.

### 2. Main part

What are the main factors that are important in the process of carrying out modern reconstruction works of buildings?

**Architectural style:** The architectural style of a building can be an important factor in the reconstruction process. Some styles, such as Gothic or Art Deco, have distinctive features that must be replicated in order to achieve an accurate reconstruction. In other cases, the building may be reconstructed in a different style that is more appropriate for its modern use, while still preserving its historical significance.

The Chrysler Building was the tallest building in the world from 1930 to 1931. The design of the building belongs to William Van Allen, which was commissioned by William Reynolds. The project

was later acquired by Walter Chrysler for his company's headquarters.

During the construction of the building, New York builders competed with each other to create the largest skyscraper in the world. The construction of the Chrysler Building was carried out at an unprecedented speed - 4 floors in a week - and not a single construction worker died on it. Shortly before completion, the building was as tall as Craig Severance's Wall Street skyscraper; Angered by this fact, Severance immediately added 60 cm to his building to claim the title of tallest building in the world (a term that excludes structures such as the Eiffel Tower).

The Chrysler Building is a striking example of the American Art Deco style, and the oval ornamentation of the skyscraper tower is an imitation of the tire covers of Chrysler automobiles of the time. The building is considered the best example of New York's Art Deco period architecture, which itself is considered one of the most beautiful periods in the city's architectural development.

**Building materials:** For building reconstruction, another essential and traditional requirement is to use building materials and modern construction methods as close as possible to the original. Depending on the age of the building and the originality of the constructions, it may be necessary to find materials that are no longer used today, such as hand-hewn stone or old bricks. In addition, traditional building materials can be used, which are very similar to the original, but with different properties. It is important to **consider that the materials are of high quality and stand the test of time.**

**Construction Techniques:** Since the reconstruction process involves different approaches, it requires a wide range of techniques, all of which depend on the condition of the particular building and its location. In such a situation, the selection of construction equipment is an important issue. Depending on the look of the building and the materials used, it may be necessary to use traditional construction techniques and skilled craftsmen using hand tools and techniques to carry out precise reconstruction work, or modern technologies such as 3D printing to create detailed architectural features.



Chrysler Building

**Digital technologies:** One of the common approaches in modern reconstruction works is the use of digital modeling and 3D scanning technology, as well as virtual reality simulations, to create an exact replica of the building. This allows architects and builders to better understand the building's original appearance and construction methods, as well as to develop different reconstruction scenarios before work begins. Recreate every detail of the original construction, from the placement of each brick to the solution of decorative features such as columns and arches.

**Conservation - Adaptation - Restoration:** One of the main challenges of modern reconstruction works is the need to preserve the historical significance of the building and the desire to adapt it for modern use. When reconstructing a building, the choice is often made between preservation and restoration. Conservation involves preserving as much of the building's original features and materials as possible, while restoration involves repairing or replacing damaged elements to return the building to its original state. In some cases, it may be necessary to make certain compromises between the preservation of the original appearance of the building and modern

improvement works, such as the installation of elevators.

**Conservation Ethics:** The field of conservation ethics is also an important issue in contemporary reconstruction work. Conservation ethics includes the philosophical and ethical principles that guide the preservation and reconstruction of historic buildings and sites. These principles include the importance of maintaining a building's historical authenticity, respecting its cultural and social significance, and ensuring that reconstruction is sustainable and preserves the building's original design and materials.

**Research, planning and design:** Before starting any renovation work, it is important to thoroughly study the history of the building, its original constructions and materials. This may include reviewing historic documents and photographs, inspecting the building's structure and materials, and consulting with architectural, engineering, and historic preservation experts. After this study is completed, a detailed plan for the reconstruction work can be developed.

Modern renovations require careful planning and design to ensure that the finished building meets all required safety and regulatory standards while maintaining its historic significance. Architects and civil engineers must work together to jointly develop detailed plans and specifications that take into account all the necessary factors.

**Structural Integrity:** In some cases, modern retrofitting may be necessary to address structural problems in a building. For example: it may be necessary to strengthen the foundation of a building or strengthen the walls and roof to improve its safety and stability.

**Environmental Impact:** The environmental impact of modern retrofitting should be considered, particularly where building materials or construction methods may have a significant carbon footprint. The use of sustainable materials and construction techniques can help minimize the environmental impact of reconstruction.

**Community involvement:** In many cases, modern reconstruction works are important public projects involving a wide range of stakeholders, including local residents, businesses and government agencies. Communication and community involvement help to ensure that reconstruction meets the needs and expectations of all stakeholders.

Active community involvement is possible in modern reconstruction works, including consultations with local residents, public figures and other interested parties. This involvement can ensure that community values and priorities are taken into account during the reconstruction of buildings.

Modern renovation works should also take into account the accessibility of people with disabilities, such as wheelchair ramps, elevators and other facilities, ie. Ensure that the design and layout of the building meets modern standards.

**Legal and regulatory requirements:** Modern refurbishment works must comply with a range of legal and regulatory requirements, including building regulations, regulations and environmental standards. These requirements can add significant complexity to the redevelopment process, so careful management is required to ensure that the project meets all required standards and consistent approval processes.

**Risk Management:** Reconstruction work involves significant risks, including financial, technical and reputational risks. Risk management strategies, contingency planning and risk mitigation measures will help minimize these risks and ensure the successful completion of the project.

**Budget and timelines:** It is important to consider the budget and timelines of the reconstruction works. These projects can be expensive and time-consuming, especially if there are difficult structural or architectural challenges to overcome. It is important to set realistic expectations and work closely with architects and builders to develop a detailed project plan that takes into account all the necessary factors.

Funding for modern reconstruction efforts must come from a variety of sources, including

government grants, private donations, and corporate sponsorships. Careful budgeting and cost management are critical to project success.

**Building Improvement Works:** Modern renovation works include upgrading the building with modern improvement works such as elevators or the latest security features. These additional measures must be carefully and carefully integrated into the design of the building in order to preserve the historical significance of the building.

## 2. Conclusion

As the research revealed, modern reconstruction work requires a range of specialized skills, including historical research, architectural design, engineering and construction. Training and skill development programs conducted by a team of qualified professionals will help ensure that complex projects are completed in the future. Important historical landmarks, if done right, future generations will be proud of and appreciate the hard work of previous generations.

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