

## Reconstruction of the Urban Historical Centre: Contemporary Problems, Difficulties, and Perspectives

### Rekonstrukcja Miejskiego Centrum Historycznego: współczesne problemy, trudności i perspektywy

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#### Abstract

Adapting historical city buildings into modern facilities is a basic problem in architecture today. In many large cities, historical centers preserve cultural heritage, including spiritual, cultural, economic, and social capital of irreplaceable value. Because of their importance, these centers must consider the unique characteristics of their surroundings, including harmony of size, spatial composition, architectural environment, facades, and the facilities in general. Disharmony in the architectural design of these centers is evident in the non-compliance of new objects, particularly in historical areas of the city. The restoration, reconstruction, and repair of these historical sites require special knowledge. Experts with this special knowledge can implement modern methods, strategic and operational modes of architecture, and public programs to preserve the historical and cultural values of these sites, thus preserving them for the future, which follows the sustainable development concept. The main conclusion of the research is that unique modern buildings, including novel architectural and constructive elements, can coexist with historical ones by using right policies and methods.

**Key words:** architectural reconstruction, historical restoration, cultural values, urban heritage, city center

#### Streszczenie

Adaptacja historycznej zabudowy miejskiej do nowoczesnych obiektów to podstawowy problem współczesnej architektury. W wielu dużych miastach historyczne centra przechowują dziedzictwo kulturowe, w tym kapitał duchowy, kulturowy, gospodarczy i społeczny o niezastąpionej wartości. Ze względu na swoje znaczenie centra te muszą uwzględniać unikalne cechy swojego otoczenia, w tym harmonię wielkości, kompozycji przestrzennej, środowiska architektonicznego, elewacji i ogólnie obiektów. Dysharmonia w architekturze tych centrów przejawia się w niezgodności nowych obiektów, szczególnie w historycznych obszarach miasta. Renowacja, rekonstrukcja i naprawa tych historycznych miejsc wymaga specjalnej wiedzy. Specjaliści posiadający tę wiedzę mogą wdrażać nowoczesne metody, strategiczne i operacyjne tryby architektury oraz programy publiczne w celu zachowania historycznych i kulturowych wartości tych miejsc, a tym samym zachowania ich dla przyszłości, co jest zgodne z koncepcją zrównoważonego rozwoju. Głównym wnioskiem z badań jest to, że unikatowe nowoczesne budynki, w tym nowatorskie elementy architektoniczne i konstrukcyjne, mogą współistnieć z historycznymi przy zastosowaniu odpowiednich polityk i metod.

**Słowa kluczowe:** rekonstrukcja architektoniczna, historyczna odbudowa, walory kulturowe, dziedzictwo miejskie, centrum miasta

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## 1. Introduction

Today, there is much debate about the importance and necessity of preserving cultural heritage, including the restoration of lost or nearly lost monuments of architecture. There is also a tendency to favour modernity in both small and large cities. Since economic development requires the most efficient use of urban space, architecture is often seen as impeding urban development. Thus, conflict often arises between preservation of urban historical centers and modernization. Conservation, restoration, regeneration, and reconstruction of architectural heritage sites in developing cities are fundamental problems in the modern world. Yet, good architecture increases a city's competitive advantage when petitioning for investment and resources. It provides entertainment and expresses the personality of the city. It also provides the material basis for the development of international tourism and makes the city more attractive and more hospitable for residents and guests. Nevertheless, designing modern facilities in historical cities is a basic problem facing modern architects. Urban settlements create unique challenges in cities worldwide. These settlements are often historical centers in large cities with special rules, requirements, and procedures. On the one hand, urban settlements represent the cultural heritage and historical roots of the city. On the other hand, they represent the interests of a developing and changing modern market that is densely populated and full of contradictory interactions (Raninsky, 2012). The borders of large cities grow to include what are now called *historical centers*, which include government and economic business centers (Aidarov, 2003). The conservation, restoration, regeneration, and reconstruction of these sites are fundamental problems of the modern world. This problem is complicated by the fact that both the comprehensive architectural environment of the city and the individual objects, monuments, and fragments must be considered. Together, these components comprise a panorama of historical and cultural heritage. Reconstructing these buildings is often more delicate and complicated than constructing new buildings.

There is a substantial difference between modern architects and architects of the past. In the past, these problems were often solved with no consideration for the history or culture of the site, whereas contemporary modern architects attempt to preserve the purity of these sites. A wide range of various construction materials, computer programs, and technology greatly facilitate this process. At the same time, modern architects face the complex task of creating aesthetically beautiful and structurally sound objects that also fit in the existing cultural and historical environment. To correctly synthesise new and old buildings, it is necessary to study and preserve historical buildings, which add variety to the architectural landscape of the city and remind us about the art and culture of the past.

Over the past few decades, cultural heritage has been acknowledged as an essential part of the sustainable development concept. In 2002, the Johannesburg Earth summit first recognized the term *culture* as a fourth pillar to the original three pillars of sustainability: economic, environment, and social dimension. It adds a unique feature to the process of developing a sustainable city, and acts as both identity and creativity element (Appendino, 2017). It is of vital importance to treat the sustainability and urban conservation with a holistic approach, where one cannot be separated from the other. There is strong relationship between sustainability and urban & architectural conservation (Hmood & Disli, 2019), there is broad literature on sustainability and conservation, among them to Rodwell, holistic approach is required in heritage conservation in connection with the sustainability (Rodwell, 2003).

Cultural heritage is the spiritual, economic, and social capital of a place. It has irreplaceable value that feeds modern science, arts, and education. The loss of cultural values is irreparable and irreversible. Modern architecture, no matter how significant, cannot replace these sites. Any loss of heritage inevitably affects present and future generations, leading to spiritual and societal impoverishment, as well as a discontinuity of historical memory (Norenkov, 1991). Along with the natural resources of a geographical location, cultural heritage is the basis of national self-respect and recognition in the world community. Post-industrial societies realize the potential of cultural heritage and the need to protect and use it efficiently as an economic resource. Preserving these cultural values is the basis of civilization.

During the first half of the twentieth century, the main points of modern restoration of urban spaces were discussed at the 1948 De Angelis d'Ossat Fifth National Congress of Historians of Architecture in Perugia. The congress addressed the conservation of destroyed monuments only, though some believed that, based on the information available, the integral whole of the building could be restored with near-perfect precision. It also addressed the modernist view that truly representative recovery is not possible, and that the city and its buildings should be restored in modern form. In contrast to the 1948 congress, there has been emphasis on the protection of architectural and urban heritage during the second half of the twentieth century. This has resulted in the assessment of the historical city as a complex monument of human civilization, culture, and architectural and artistic creativity. For the first time in the history of many countries, monuments are viewed in the context of whole historical settlements (or large fragments), rather than as separate works. These individual architectural complexes and buildings are connected to the city.

## 2. Practical aspects of renovating historical centers

During the reconstruction of the buildings in urban historical centers, it is necessary to address any potential problems. These problems include replacing temporary structures with permanent structures; budgetary, estimating, and efficiency issues; and technological issues involving construction materials and components. Addressing these problems requires careful evaluation and documentation. This includes expert historical and cultural examination of buildings to identify and evaluate areas for preservation. First, the examination should include physical and moral depreciation estimates, including assessments of the site and the environment. It should also include any potential consequences of the reconstruction, including possible deformations or other effects. Conflicts of interest among the main participants of the project, including the potential use of the monument and future investments, should also be considered. Second, the examination should include privatization and state-ownership issues, which are the basis for the alienation of the building. Third, the examination should include the development, promotion, and evaluation of investments in the architectural reconstruction of historical city centers.

Addressing these problems involves many steps. The city historical center must be developed while also prioritizing the objects of cultural heritage. The processes for renewal and restoration of these areas must be well documented, including new guidelines and potential issues. Tourist and commerce zones of the city that include historical and cultural heritage as destinations must be considered. City planning must consider the purposes of these spaces and design walkways, pedestrian zones, streets, and parking accordingly. Finally, rehabilitation and reconstruction of the historical building itself must be part of the process.

## 3. Harmony between old and new architecture

The new structure must also fit well in the existing environment. Volume, harmony of spatial composition, architectural environment, and the facades of individual buildings and the facilities in general must be considered. To conserve architectural and historical elements in small and medium-sized cities, two approaches can be used: 1) place the new object in an existing historical facade, such as a street or square and 2) place new blocks or designated areas within the borders of the historical site. If improperly placed, these new objects can cause disharmony. For example, placing elements in the red line or inside farm buildings violates the type of building. Furthermore, the large areas required for the maintenance and demolition of existing historical buildings create operational and transportation problems for people who live near and use these areas (Krashennikov, 2005).

Architectural and artistic mismatch between the old and new buildings can also be reflected in the choice of construction materials. For example, using brick and panel constructions among wooden buildings or lean plastic facades can cause design conflict. Additionally, emphasis on inappropriate architectural elements, style, proportions, colour, and other features can create problems. This mismatch between new objects and historical features produces disharmony in both planning and spatial characteristics.

Restoration of historical architecture requires special knowledge and methods. The functional capabilities and elements must be maintained with minimal intervention in the design, conservation, or restoration of the historical appearance. Engineering changes, such as heating, ventilation, and communication, in ancient buildings and structures present many challenges to modern architects and designers. To accommodate these modern infrastructures, the construction of the building and its individual elements must be considered. Proper conservation requires more than erecting a similar building of approximately the same size, because placing new and modern buildings in historical centers often eclipses the existing historical buildings.

Nevertheless, the wooden and brick architectural monuments of the eighteenth and nineteenth centuries, even with reliable historical documentation, are rarely preserved in the twenty-first century. The value of these sites is measured by their square meters. Yet, the value of the destroyed object can be several times higher and cannot be compensated. Therefore, a diversity of approaches is required for the placement, style, scale, and size of new buildings.

There is also a danger when mixing new, or counterfeit, items with authentic elements (Tsarev, 2004). However, authenticity can be achieved by manually disassembling buildings and their structures (e.g., wooden frames, decorative details, finishing), either partially or completely (Goldsamt, 1985). Modern trends in architectural preservation are characterized by preserving the authenticity of important monuments and documents, including underground remains and building fragments. These displays enrich the urban space, the environment, and the culture of the country. Scientific, flexible, and practical approaches for reconstruction can protect the heritage of these historical sites while also allowing modern development. City planning programs can contain a variety of architectural and construction modes to preserve the historical environment. Consequently, new opportunities for the enrichment of the historical centers of cities can merge with the development of tourist industries, and they can increase public interest in the historical culture of the area (Sokolova, 2009).

Unique modern buildings, including novel architectural and constructive elements, can coexist with historical ones (Kudryavtsev, 2005). Several approaches can address the problems of heritage preservation, including scientifically proven ideologies, criteria, methodology, and practical techniques, as well as a rapid parallel transition to

practical actions. In many cases, reconstruction is more complicated and delicate than new construction, as the reconstructed building is already inscribed in the building.

#### 4. Global perspectives in the reconstruction and preservation of historical city centers

Experience around the world has shown that community, government, and architectural experts must be involved in addressing issues of historical preservation. A well-functioning system that includes the legislative framework, the theoretical basis, and the various methods of restoration and reconstruction must also be included. In Europe, the preservation of architectural heritage in various countries involves local economic opportunities and national political interests. The desire for unity in the architectural appearance of separate fragments and city centers has led to the implementation of restorations in the historical centers of Old Tallinn, Vilnius, and Lviv, reconstruction of Pushkinskaya Street in Odessa, Arbat in Moscow, and restoration of the historical buildings in Gorokhovets, Tbilisi, Moscow, Leningrad, and others (Shenkov, 2010).

This process has been successful in several places around the world. For example, after the Second World War destroyed Warsaw, the city center was rebuilt according to old photos and drawings. Warsaw citizens could not imagine its city center without the area of Miasto, or Old Town. Recovery methods that were recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and that included old photos and drawings were used to restore the site.

Upon completion, the replicated centre received international recognition and official status as a World Heritage Site. This experience created awareness around the world, and several other countries began similar heritage preservation programs. For example, in Germany, lost heritage objects are assigned the status of a monument of architecture so that they can be restored. Thus, Germany was able to reconstruct old residential quarters and medieval wooden buildings. In the city of Kvedlinburg, German architects were able to restore nearly all such buildings.

Many years ago in England, several English castles were in danger of demolition because the land was thought to be more profitable than the buildings on it. The laws at the time would have allowed new high-rise buildings and parking structures to be erected. The laws were revised, however, and the monuments were out of danger. In France, reconstruction of Paris and other historical cities have received attention. France has held 30 events to promote the preservation of their urban heritage sites and to protect and develop city centers. More recently, the United States has also addressed this issue. Because of high property costs, twentieth-century low-rise buildings were demolished in Manhattan, the heart of New York City, to make room for skyscrapers.

The Russian experience is more modest. There are doubtless achievements in the capital cities, but preservation in Moscow, St. Petersburg, and Kazan has been problematic. The architectural heritage of the eastern European cities, which have Muslim and Christian culture, presents unique challenges (Aidarova-Volkova, 2007). Kazan in particular contains a mix of Muslim and Christian architecture, each of which has long, historical traditions. For example, a characteristic feature of Kazan is wooden architecture. The form, structure, and technological processing of these wooden structures have varied over the years (Aidarov 2006). Accounting for these unique and diverse architectural elements is a challenge, but modern architecture has the tools and technology to address these problems in practical and artistic ways.

#### 5. Conclusions

The solution to adapting historical city buildings into modern facilities requires the development of new methods, models, and technology and management tools. It also requires public and government support to maximize the preservation, development, and usefulness of historical city centers, including optimal use of all available resources. Modern methods should also include programs and plans that strategically address preservation of historical and cultural locations. These innovative architectural approaches will preserve historical and cultural value for the future.

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