

Functional Structure of Modern Theater Buildings and their Characteristics

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Annotation

The article examines contemporary trends in the formation of theatre architecture. Using foreign experience, new architectural and planning approaches to the creation of theatrical spaces and the features of their technical solutions and energy efficiency are described and analyzed. In addition, the article details the latest methods and principles in the formation of spectacular spaces, such as: complex and curved constructions, integration into the local landscape, transformed spaces, the use of new technologies, energy efficiency, etc.

Keywords: architecture of modern theatres, experiments with shape generation, role of theatres in urban space.



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Introduction. The construction and design of theater buildings at the turn of the 20th-21st centuries are characterized by a fundamentally new composition and technology. Examples of major international competitions for the development of theater building projects clearly demonstrate that the architectural and artistic image of the modern theater has become more liberated and richer compared to previous eras. Architects freed themselves from traditional forms and transitioned to the methodology of form-building based on the stylization of the surrounding nature, the animal world, and even the technique with an unlimited set of geometric shapes. Analysis of the architecture of modern theaters in various countries of the world shows that a priority direction is the re-examination of established approaches to the organization of internal space and its interaction with the external, the desire of architects to boldly experiment with forms, space, technologies, and materials. Their main goal becomes the creation of an original architectural and artistic image. The radical changes in the architecture of theatrical buildings at the end of the 20th - beginning of the 21st century were dictated both by the need to meet global

requirements and the desire to form in each specific country its own national priorities for the development of such an important type of cultural object as theaters.

Main part. Analysis of the largest modern theaters of Europe and Asian countries gives all grounds to conclude that the main feature of theatrical art is spectacularness, which also manifests itself vividly in architecture, making theaters iconic objects of cities. New theater buildings are constructed considering their impact on the renewal, development, and status of the adjacent territories. Many new large theater buildings have been built in China over the past approximately 30 years (from the end of the 20th century to the present). No other country in the world can compare to such a pace of construction. A characteristic feature of modern theater buildings in the Celestial Empire is, first and foremost, such characteristics as the scale and vividness of the architectural and artistic image. This demonstrates their alignment with global trends. Theatrical buildings in China have become the largest and most popular type of cultural object in recent years, and they are always entrusted with the function of being the visual dominant of the surrounding structure. Characteristic (perhaps even national) a feature becomes the fact that in this case, the speech is not at all about conformity to the context and tactful integration into the surrounding structure. For the construction of modern theater buildings in China, mainly "star" foreign architects are invited. The largest theatrical buildings built in recent years in various cities of the country include the Shanghai Theater Center (arch. N. Foster and T. Heatherwick, 1990), the Center for Oriental Arts in Shanghai (arch. P. Andre, 2004), the State Opera House in Beijing (arch. P. Andre, 2007), the Jinan Grand Theater (arch. P. Andre, 2013), the Guangzhou Opera House (arch. Zaha Hadid, 2010), the Sanak Grand Theater in Guangzhou (arch. bureau Steven Chilton Architects, 2020), the Wuxi Grand Theater. The study of the architectural-spatial solution refers to the main landscape of the surroundings. The resulting curved facade, consisting of white aluminum panels, becomes the outline of the river's edge and surface. As Facade Chief Engineer Dr. Shao says, the building's facing was made of pure white aluminum, concrete and white marble were also used on the facades, creating a feeling of ice and snow purity. The theater's glazing consists of faceted glass walls and windows, which are made up of a special system capable of melting snow and directing it to integrated drains. At the same time, glass suspended walls are a light diagonal structure that provides a foundation for a complex structure.



Figure 1. Large theater in Harbin.



Figure 2. Busan Opera House.

The use of national Chinese motifs is also rightly considered one of the leading trends in the creation of new theater building projects. Examples include the famous State Opera House in Beijing (which embodies the image of yin and yang), the Sanak Theater in Guangzhou (3-picture, the image of silk fabric wrapped around the building and embroidered with traditional ornaments of this region), and the Shanghai Theater Center (based on the traditional Chinese theater). However, it should be emphasized once again that the reading of traditional images and motifs underlying the designs of modern theater buildings should be quick and easy, meaning the emphasis is again placed on the visual characteristics of the new architecture.

The general trend or approach to creating modern theater buildings is also evident in the United Arab Emirates. Here, too, one can observe the invitation of "star" foreign architects to develop the project everywhere. During construction modern theater buildings in the UAE play a leading role in their alignment with traditional cultural values. Moreover, the main emphasis is once again placed on clearly readable visual characteristics - national ornaments or recognizable artistic images embodying a bright and, most importantly, internationally recognized element of cultural heritage are used. For example, when developing the architectural and artistic image of the Dubai Opera House building (2013-2016, Fig.3), architect Janus Rostock took into account not only the features of the extremely narrow section allocated for construction, but also the landscape, climatic conditions of the desert, as well as local culture.

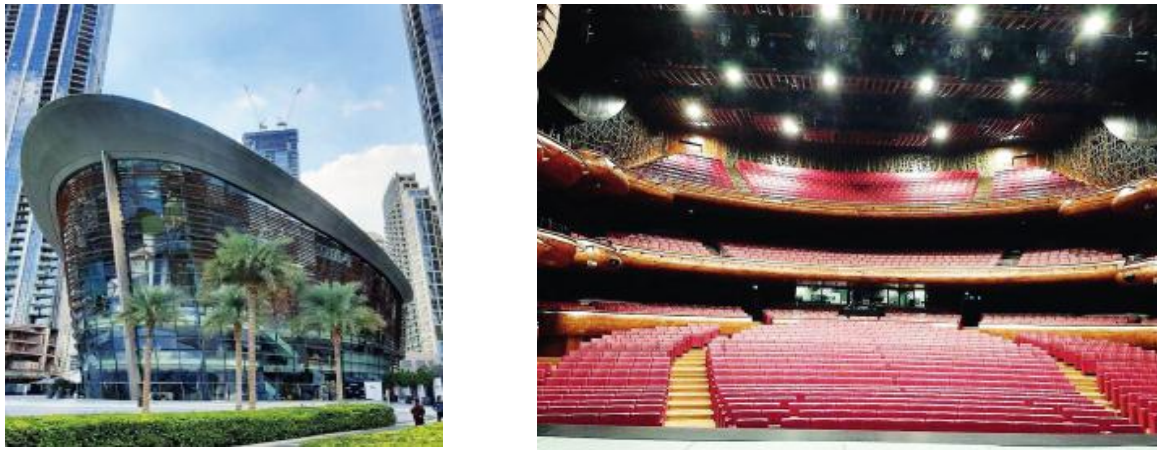


Figure 3 A - Opera House in Dubai; B - main theater hall. (Arch. Ya. Rostok), 2016

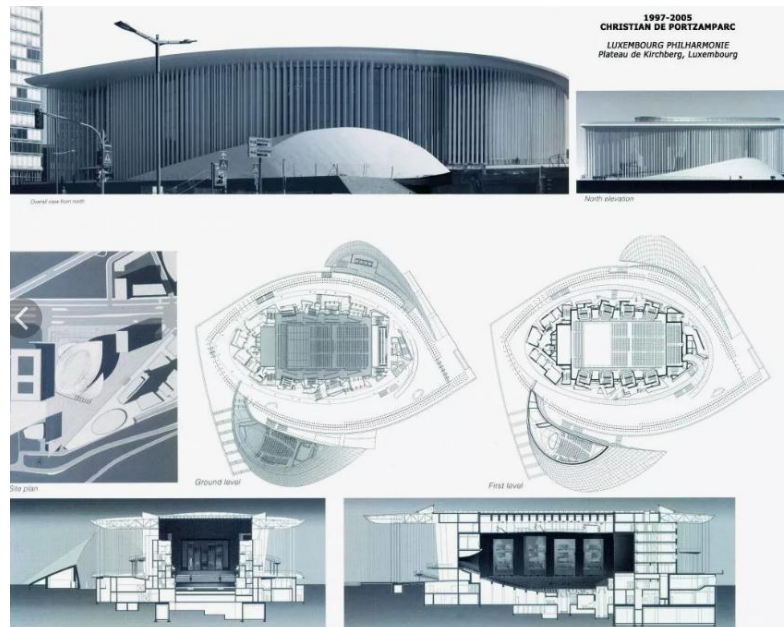


Figure 4. Projects of Modern theaters in Luxembourg

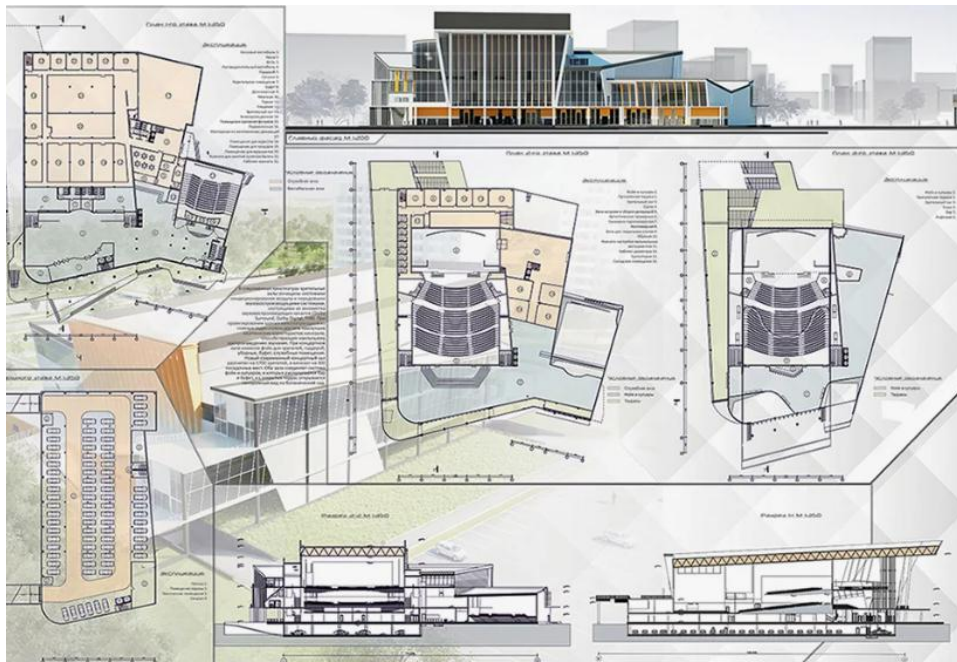


Figure 5. Modern Theatre Projects in England

Today, architects pay great attention to the environmental friendliness and energy efficiency of theater architecture. A well-designed theater building can be energy efficient, reduce energy consumption and associated costs, and provide a comfortable and safe environment for performers and spectators. The theater, designed by the architectural company "A+ Architecture" in the city of Montpellier (France), is maximally harmonious with the improvement of the territory and is a natural continuation of its plot, and also meets the highest standards of energy efficiency and environmental friendliness. The wooden rhombic structure on the building's facades gives the architectural form a unique appearance (Figure 6). Thanks to the innovative heating system, very effective thermal insulation, as well as the use of LEDs for lighting, this project can be called advanced. Thus, due to the wood used, the building provides exemplary carbon footprint and energy efficiency.

Conclusion. Modern trends in the formation of bank building architecture in the global arena have largely outpaced the times in such areas as the use of innovative materials in construction, energy efficiency, high technology, and environmental friendliness. The architecture of bank buildings demonstrates rapid development, demonstrating multifunctionality, aesthetic appearance, and the uniqueness of the architecture of modern bank buildings. Based on the research, it was established that at the present stage of designing bank buildings, it is necessary to be based on analogues of world experience, engineering and technical solutions, new building materials will allow expanding the typological range of bank buildings, forming modern trends that take into account all aspects, improving social comfort. Thus, the analysis conducted will help to adopt foreign experience in the formation of architecture and construction of bank buildings. The architecture of modern theater buildings at the turn of the 20th-21st centuries has been fundamentally reinterpreted. New tasks and functional requirements have emerged, which the architecture of theaters must now meet. Among them, universal, global ones are highlighted, pertaining primarily to the technical and functional aspects - the multi-channel nature of new theater buildings and the multifunctionality of these halls. The requirements for the vivid architectural and artistic image of a new theatre building are reinterpreted in each country from the perspective of the traditions of that culture. The need to embody local identity in the architecture of modern theater is becoming one of the most important priorities for every country in the context of modern globalization processes.

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