

# Spaces and Technologies of the Circus Spectacle

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## ARTICLE INFO

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## ABSTRACT

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Contemporary circus is a complex, interdisciplinary form of performing arts. The new circus was built on the basis of the traditional one, but it is more complex than it and brings a combination of elements of acrobatics, dance and drama theater, shadow theater, puppet theater, as well as contemporary visual arts and digital technologies. The circus spectacle, its architectural concept and its content, have changed over the centuries, following social events and the cultural framework of the time. Although the spectacle is still adapting and changing, we ask the question, whether stationary circuses have managed to adapt and transform for the needs of modern society. In this paper, through a brief history of the circus spectacle and important typological characteristics of the objects, one of the most significant objects of this spectacle will be analysed.

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## KEYWORDS

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Circus, Spectacle, Architectural concept, Modern technologies, Transformation.

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## 1. INTRODUCTION

The circus is a space where miracles happen, where seemingly everything is impossible and unreal, and where emotions full of excitement and laughter are awakened. In addition to representing an artistic form of performance, circuses are also representatives of cultural objects. Stationary circuses have been built throughout history, and their future is uncertain. Architecture is often neglected in the numerous literature of the circus spectacle, but the buildings that were built in the past for the needs of this art stand firm today. This type of architecture is now being transformed and adapted to the modern age and new technologies in various ways. The circus facility should have a circular stage, for performing acrobatics, and a grandstand around it, arranged in a circle on all sides to accommodate the audience. This is the main difference in relation to other cultural objects, where the stage spaces are mostly rectangular and located at one end, and not in the central part of the hall. To perform circus disciplines, the space should have width, depth and appropriate height. [1] That is why, throughout history, unique facilities have been built in Europe for this type of artistic spectacle. In this paper, we will present the development trajectory of circus facilities and its transformation.

## 2. BRIEF HISTORICAL OVERVIEW OF CIRCUS DEVELOPMENT

Circus (lat. circus - circle) belongs to the type of performing arts, because as a rule it serves to present diverse content [2]. We also use the word "circus" for the name of the special facility in which such performances take place. The foundation of circus art is based on the demonstration of the unusual and funny. In the past, the circus was associated with traveling troops, often families who had and were able to show unusual things, but often also deformed people, bizarre skills and, unfortunately, various types of cruelty to animals. Characteristic points of the modern circus include: demonstration of tricks, representation of special abilities, pantomimes, jokes, performances with risk (physical strength, acrobatics, wire walking), as well as acts with trained animals.

The circus building is mostly cylindrical in shape with a high dome and inside there is a stage space with stands for spectators. In circuses, the space of the stage always has the same dimension - 13 m, and it is the same everywhere in the world (given by a request from the 19th century). The explanation for this dimension is the professional minimum for maintaining acrobatics, and acrobatics with horses and other animals are especially emphasized.

The beginnings of the circus date back to before the new era, but the traditional type of circus (as we know it today) appeared only at the end of the 18th century in London, when Philip Astley built a round hall. They began to hold performances that consisted of exercises on horses and some acrobatics. Several other spaces organized in this way were created in a short period of time, but the plays were copied as in Astley's. [3]

In the eighteenth century, only free surfaces were taken, which were gradually closed with grandstands and domes. The reason for that is simpler charging of tickets for the spectacle, but also prevention of natural disasters that affect their maintenance. The circus was something new, but the use of wood as a material was simple and similar to other buildings in this century.



Figure 1: Philip Astley's First Riding Space (Astley's Amphitheater) 1770

By the end of the 19th century, the idea of a circus had spread throughout Europe. The first circus made of solid material was built by Astley, in Paris, where he presented somewhat more diverse performances, but most of them were attractions on horses. Later Astley's inheritors, the Italians Franconi, built a new circus in which they had a more diverse program, with ideas of mimicry and wild animal fights with humans and dogs. [4]

Circus facilities in Russia were initially built of wood during the wars, and the fires themselves mostly killed everyone, but that was no reason for them to be forgotten. New and massive facilities were built in the same places in a short period of time, and over time there were more of them that were built in accordance with the new times and up-to-date technologies. [5]

In the nineteenth century, circus buildings required more attention. The splendor of the time influenced the objects of this purpose to switch to more durable materials and that their exteriors contribute to the beauty of the larger cities in which they were created. As circus performances were more popular on the European continent, the role of architecture was to attract more visitors. The buildings were massive but also more attractive, larger in size and richly decorated.

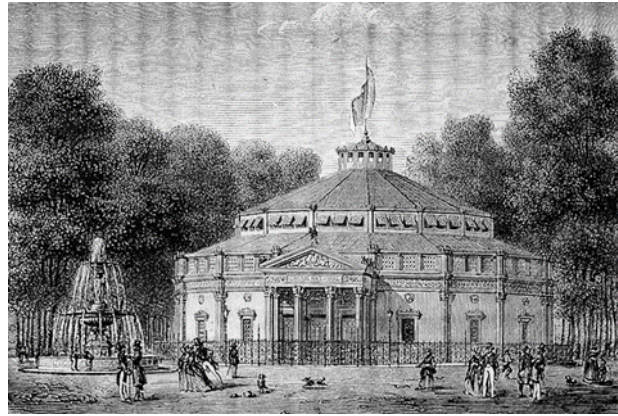


Figure 2: The National Circus des Champs-Élysées (Cirque National des Champs-Élysées) in 1841

In the twentieth century, there are great and sudden changes, caused by wars and political regimes. [6] Stationary circus facilities, after the Second World War, were increasingly built in countries with socialist regimes, and circuses became less popular in capitalist countries. The style of construction has changed. At the beginning of the century, massive circus objects were represented in the western part of Europe. Later, in socialist countries, transparent glass facades with quite complex geometries of roof constructions became popular.



Figure 3: Metropolitan Circus in Bucharest (Circul Metropolitan București) 1960.

In the twenty-first century, there is no construction of new circus facilities. For the circus performance, buildings mostly from the twentieth century are used. The reconstructions are aimed at preserving these giants and creating security due to various extraordinary circumstances.

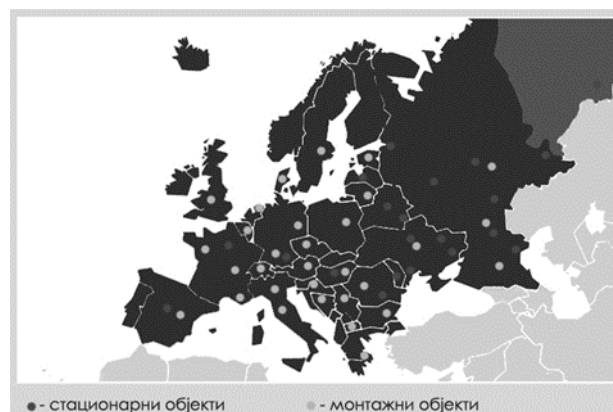


Diagram 1: Prevalence of circus facilities in Europe in the 21st century

### 3. TYPOLOGICAL CLASSIFICATION OF CIRCUS ARCHITECTURAL SPACE

The basic elements of a stationary circus determine its classification. What is typical for circus facilities is the main arena (with stage and stands) and auxiliary space where all the accompanying elements are located (wardrobe and all premises for artists, auxiliary stage space, animal cages, etc.). Therefore, it is primarily possible to make a simple division of plans of circus facilities:

- compact solutions, where all parts form one whole, primarily this refers to the ground floor of the building;
- two-part solutions with a clear division into the main stage part and auxiliary accompanying space. [7,8].

#### 3.1. Typological classification according to geometric shapes of objects

Circus buildings are characterized by different geometric shapes. Some projects are typical and thanks to them, several buildings were built on that principle. [9,10] The most common shape of the base is a circle or octagon, and the roof structures of the dome or rectilinear surface, mostly hyperbolic paraboloids and their sections.

#### 3.2. Typological classification of internal organization of space

The circus consists of a stage in the middle and around the stands, and further there are auxiliary rooms, halls and places for storing equipment and animals. The space of the podium can be variable, ie. there can be more platform for performances and the diameter is always 13m. [11,12]

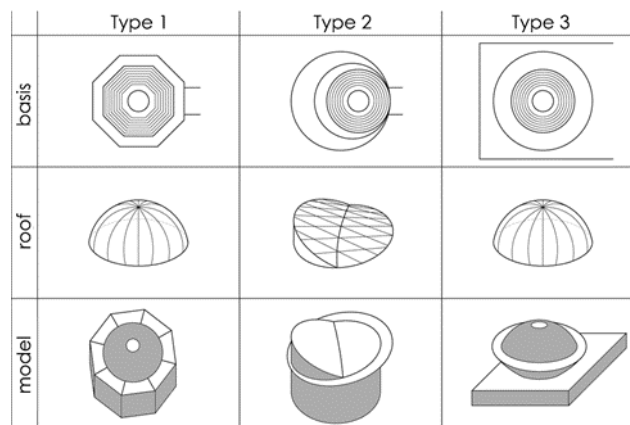


Diagram 2: Typological classification of circus objects represented in the eastern part of Europe

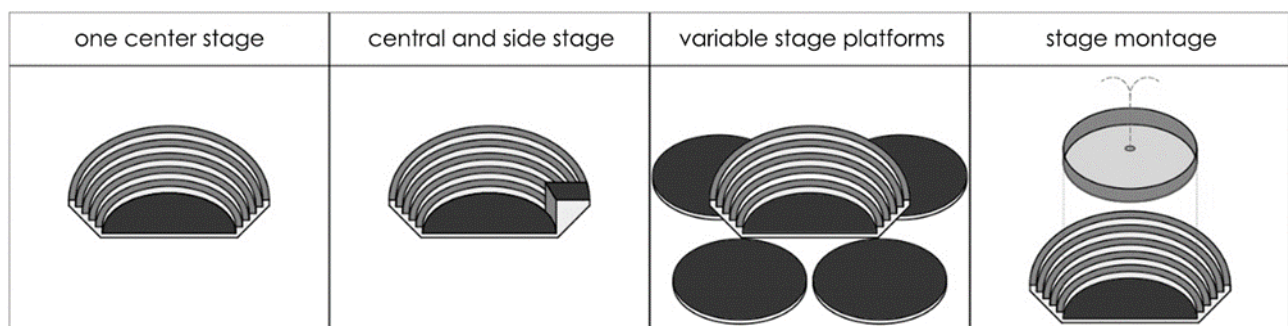


Diagram 3: Typological classification of stage spaces

### 4. CASE STUDY - GREAT MOSCOW CIRCUS ON VERNADSKY AVENUE

In the 1950s, Moscow became a center of international and domestic tourism, and the city needed new cultural facilities, including a circus. There was already a circus building on Tsvetnoy Boulevard [13] in Moscow, but there was a need for another one. The circus on Vernadsky Avenue was built under the direction of architect Jefim Petrovič Vulih, and was opened in 1971. This circus is considered one of the largest stationary circuses in the world (the third largest). The capacity of the stands is such that it can accommodate 3,400 spectators in 23 rows, and the height of the amphitheater is 36 meters.

The shape of the building consists of a cylindrical base and a roof structure formed by hyperbolic paraboloids. The dome attracts special attention, both during the day with its clown hat appearance and at night in differently lit colors. The space of the main hall, as with most circuses, has the shape of an inverted fringed cone, the lowest part begins with a stage of 13 meters and ends with the largest diameter of 25 meters, ie. with an area of almost 2000m<sup>2</sup>. [14]

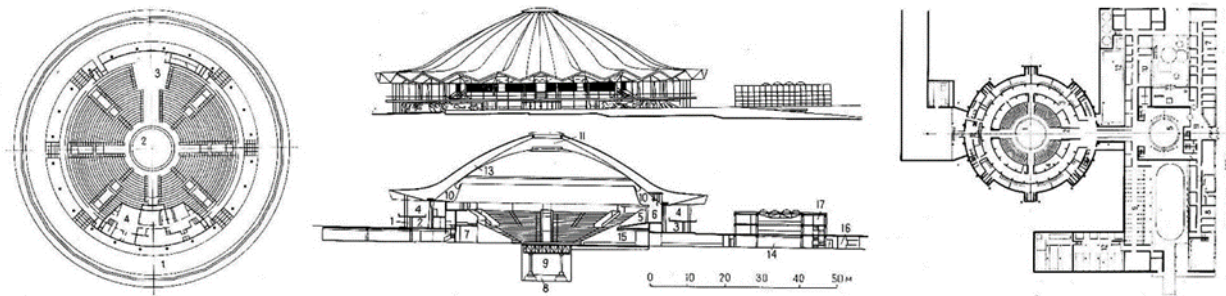


Figure 4: Circus layout

This giant has not had any major changes in its 45 years. As there are a large number of circuses in Russia, the Ministry of Culture manages to renew 2 to 3 circuses a year. For the circus on Vernadsky Avenue, only the emergency elements have been renovated, such as the leaking roof, offices, ballet halls and the space where the animals are kept. Only a few years ago, controversies began about how it is time for a major reconstruction of the entire circus and the area around it.

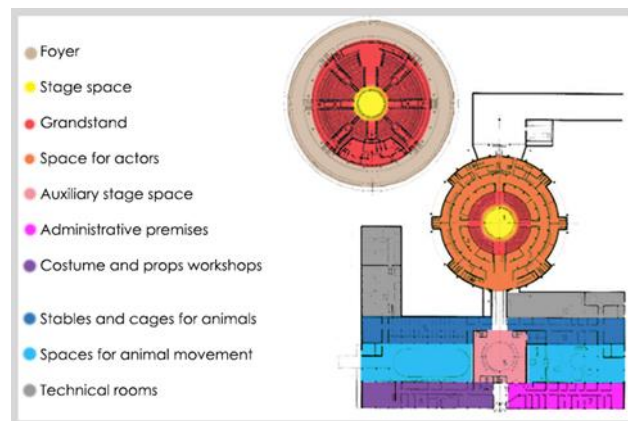


Figure 5: Room representation

Animal spaces, administration and technical rooms are located in the auxiliary building and connected by a warm connection with the stage. The basic division of the space for animals consists of accommodation and exercise rooms, and between them is a training stage of the same dimensions, 13 m in diameter, and this part of building is directly connected to the main stage. However, in the time of the development of technology, the Internet and visual, sound and other effects, he brought the circus into a period of adaptation and improvement. [15,16] For security reasons, about 200 cameras have been set up throughout the circus. A novelty in this circus is the appearance of a screen 34 m long in a circle inside the dome (it extends 360 °). His role is to accompany each performance with a visual representation and to distract attention when changing spectacular acts. It is located above the stands and its height is 3m. There are also independent, smaller screens showing circus events and news during breaks and before the show begins. In this way, the scene managed to modernize and adapt to the current time. One of the interesting facts about the Great Moscow Circus is that there is still room for a live orchestra that still works on that principle, as in the theater, creating music and the necessary effects for some performances.

#### 4.1. Variable stage platform

This unique engineering mechanism was designed by Andrej Vladimirovič Platov and does not exist in any other circus in the world. The idea was to build not only something big, but also unusual. This is how the idea of making the stage space transformable arose, which is achieved by using mobile platforms or "manege", as the Russians call them. The circus is unique in its arena, because it is possible to change five different platforms: ice, light, water, illusion and platform for horses. In the basement of the building there is a space where there are mechanical assemblies, which enable stage changes and allow the variable to take place in a very short time (5 minutes). During the shift, clowns remain on the stage to make the transition look even shorter. [17]

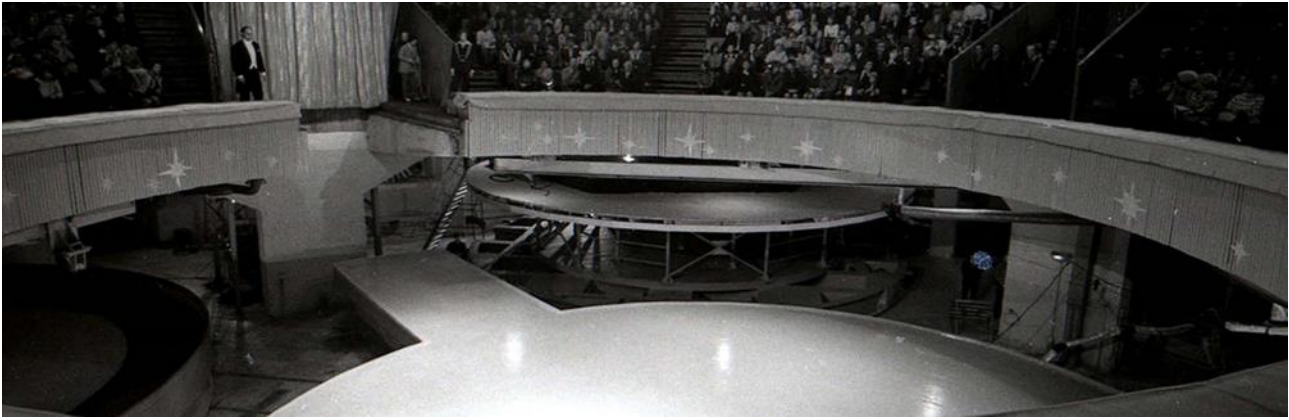


Figure 6: Platform change, 1972-1975, from the family archive of Dimitrij Vozdviženski (junior)

The most complex in its construction is the water platform. It is, in fact, a pool with windows, lighting and fountains. It is always raised empty and only when the installation is completed, the filling of 350 tons of water from a special tank begins. After the act is finished, all that water flows through the complex filter system back into the same tank, and only when all the water is collected can it be replaced with another platform. Maintenance of the water arena is the most expensive and takes the most time: it is necessary to regularly maintain and renew the filtration system, electronics, pipelines, and the water stage itself, ie the pool. The light podium consists of a transparent plastic circle on a pedestal with lighting, which is mounted on a fixed part of the stage.

The stage for performances with horses is a standard type of stage, which does not require special maintenance. The only thing you need to take care of is that the surface layer is in order, since it is expensive Vietnamese rubber. This coating must be completely flat so that people and animals are not injured. Freezing water on the ice platform is based on the principle of an ordinary refrigerator: at the bottom there is a system of tubes with coolant, which cools and freezes ordinary water. When the performance on ice is over, the playground returns to its place, and its surface is polished with certain machines. The play "Around the World in 130 Minutes" uses ice, water and a platform for horses. The final act in this play is considered the culmination of which the engineers are responsible: a twenty-meter fountain with a special design of light and sound. This state-of-the-art stage technology is less and less used in circus performances, in order to avoid possible damage. Like the whole circus, these machines and their systems require reconstruction, which is planned in the near future. The problem is that those factories that made parts, also for this mechanism, closed a long time ago, but specific modern workshops could certainly embark on this endeavor. [18]



Figure 7: Water podium

## 5. CONCLUSION

Considering the complex structure, specifics of architecture and applied technology, the Moscow circus, we revealed the spatial framework (at least one small part) needed for this type of artistic event. Going through the contents of this facility, many more questions and dilemmas arise - from the attitude towards animals, safety measures, self-sustainability of the facility, which require extensive research.

The circus spectacle was most interesting when it first appeared, in the 18th and 19th centuries. As a novelty and something never seen before, the plays attracted more attention than today. In modern times, we are surrounded by

a large number of different cultural and entertainment forms of programs, and therefore the popularity of all these events is present in all fields.

Visiting circus troupes on Belgrade stages shows us that less demanding (in terms of stage equipment) circus-theater pieces can take place in more modestly equipped spaces, and even street ones (when the street scene becomes scenic). New circuses have stopped being built, but the question is whether the circus could have achieved such popularity if the performances had not taken place in specially built facilities.

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