Reconstruction of cultural and leisure buildings of the Soviet period

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Abstract. In Russia there is an impressive fund of Soviet heritage objects of cultural and leisure activities of population. The most massive construction of club establishments was in the 1960s-70s in the USSR. Today the cultural houses in Russia are undergoing dramatic changes. Not all existing buildings are of architectural value, while they are often structurally safe, proved their value in practical operation and continue to maintain a working condition, but they are outmoded and in need of reconstruction in different ways. It is found that when carrying out measures for the reconstruction of cultural houses, it is necessary to provide an expanded functional composition of premises for the organization of the leisure of population in accordance with modern requirements. Moreover the reconstruction of existing buildings requires taking into account many factors associated with the increase in loads on foundations, increase in the intensity of use of adjacent territories, work in the space-limited conditions of a construction site and need to modernize engineering communications. The most important are engineering and technical measures related to the examination of the technical condition of the supporting structures, identification of the actual design scheme of the inspected structural element, actual loads and effects to carry out measures to strengthen structures. However, the modernization of the audience halls as the main compositional and space-planning elements of cultural, leisure and entertainment buildings seems is especially important.

1. Introduction
Culture is an integral part of a civilized society. The functional implementation of culture in society can be performed out only with a developed material and technical base, ensuring and maintaining continuous interaction of the population with public buildings and structures serving them. A large place among them is occupied by structures, buildings and premises for cultural and leisure activities of population. This huge group includes entertainment, club and leisure facilities. These include concert halls - philharmonic halls for symphonic and gala concerts, organ concerts, pop, concert and theater, universal concert, entertainment and leisure, Houses and Palaces of Culture, clubs. The group of club and leisure and entertainment establishments is represented both as independent objects and integrated ones with cultural, entertainment and leisure establishments as an addition to the premises of the audience complex. It is also included in the main functional and planning element, cultural, leisure and social centers.

During the operation, the architectural and design environment of such buildings and their open areas must adapt to changing conditions, technologies and the way of life of society, based on the expansion of cultural, leisure, communication and recreational zones [11].
2. Problem statement
Today in Russia there is an impressive fund of Soviet heritage sites of cultural and leisure activities of population (Figure 1).

![Figure 1 a) cultural center in Shebekino, Belgorod region, 2020; b) the building of Belgorod state philharmonic hall (former Cultural center "Zheleznodorozhnik") in Belgorod, 2009; c) Palace of Culture "Yubileiny" in Belgorod, 2020. Source: Internet sources of free access](image)

The mass construction of club buildings dates back to 1960-1970 (Table 1).

| Year | Total clubs, thousand | Including in urban areas | Including in rural areas |
|------|-----------------------|-------------------------|-------------------------|
| 1913 | 0,2                   | 0,1                     | 0,1                     |
| 1922 | 12,2                  | 3,6                     | 8,6                     |
| 1940 | 118,0                 | 10,0                    | 108,0                   |
| 1945 | 94,4                  | 6,5                     | 87,9                    |
| 1950 | 125,4                 | 9,3                     | 116,1                   |
| 1960 | 128,6                 | 14,1                    | 114,5                   |
| 1975*| 135,1                 | 20,2                    | 114,9                   |

Source: [http://stroy-spravka.ru/article/ctanovlenie-sovetskogo-kluba](http://stroy-spravka.ru/article/ctanovlenie-sovetskogo-kluba)

One of the main directions of club activity is the development of folk art, the expansion of types and genres of amateur performances, increase in the number of its participants, increase in the ideological and artistic level of repertoires and performing skills [1]. However, after 1991, the role of club activity declined sharply. Many of the clubs or cultural houses, especially in rural areas, were closed due to lack of funding and / or began to be used not in accordance with their original purpose [2].

Nowadays, this type of institution, like a cultural center, is undergoing dramatic changes. According to the report of the Accounts Chamber of the Russian Federation, the number of cultural houses decreased by one thousand in 2014. This tendency is especially typical for rural settlements. For example, in the Belgorod and Kaliningrad regions, the number of rural clubs decreased by 75% and 31%, respectively. In addition, in a number of constituent entities of the Russian Federation, the number of clubs simultaneously decreased. The most significant reductions were in the Belgorod, Sakhalin and Amur regions. [3].

The city-planning science of the USSR assigned cultural, entertainment and leisure buildings the important place in the planning structure of cities and towns. They were placed in public centers of residential areas (neighborhoods, settlements). They were dominant in the architectural and spatial composition of residential formations. They were centers of attraction for the population. As a rule, these objects were placed on sites convenient for the free access of population. The area for cultural events was in front of the main facades.
Today, in the conditions of a shortage of free space for the construction of similar objects (which is especially important for the central regions), there is a need to include in the work of the obsolete, but working objects of the Soviet heritage from the point of view of constructive safety\(^1\).

During the reconstruction it is necessary to expand the functional content of objects including the introduction of an expanded training group of premises in order to solve the increasing problem of illiteracy (including computer) of the population of different age groups [10]. The development of social infrastructure in this direction will improve the urban environment in accordance with the needs of citizens [13] and contribute to the development of the regional settlement system as a whole within the framework of the implementation of regional programs and strategies for socio-economic development [14]. The most important element in the formation of a modern network of entertainment, club and leisure and entertainment establishments is the reconstruction of existing buildings of the Soviet period with the modernization of their main constituent elements. The number of facilities in the Russian Federation, the technical condition of which has been brought in compliance with modern regulatory requirements through reconstruction and modernization should be significantly increased [8, 9].

As an example of the modernization of an outmoded building and its inclusion in the work of a modern network of cultural and entertainment buildings, we can cite the reconstruction of the building of Belgorod State Philharmonic Hall.

Belgorod State Philharmonic Hall is the main concert venue of the city. It is located in the building 56A on the Belgorodsky Polk Street since 2004.

Until that time, the building was called Zheleznodorozhnik cultural center. It was used as a city club and was a 2-storey rectangular building with an audience hall for 600 people, a cafe for 50 people and a small number of rehearsal rooms (Figure 1b, Figure 2b) [8,9].

![Figure 2](image)

**Figure 2.** Belgorod State Philharmonic Hall, 2010.

a) the building after reconstruction, b) the building before reconstruction

Source: Internet sources of free access

After the reconstruction, the total area of the building was increased from 7777 to 15125 meters\(^2\). New extension on the main facade and a superstructure over a part of the existing building completely absorbed and modified the old building. The object was included in the Shortlist of the Best Building competition “House of the Year” of 12 best buildings built in the Russian Federation in 2010. According to the organizers “… the building of Belgorod State Philharmonic Hall, which the architect Irina Chechel designed on the site of the former Cultural House “Zheleznodorozhnik”, is perhaps one of the most unexpected buildings of 2010. During the reconstruction, the cultural center was transformed due to the original extension and additional upper floor. It is absolutely impossible to

\(^1\) Note: the monuments of architecture and cultural heritage are not included in this list.
recognize the Soviet Cultural Palace as it is in the deconstructivist volume, decorated with two inverted glass cones” (Figure 2a) [15].

Today the cultural building has three concert halls of various types and capacities. The large classical music hall can accommodate up to 580 people. It consists of a parterre, two boxes, an amphitheater and a balcony. It is located on the first floor of the building. It hosts concerts of classical music, plays, festivals, instrumental arrangements sound, plastic performances and New Year's musicals. A small, multifunctional hall occupies one of the parts of the extension and has 300 seats. It is used for dance evenings, concerts, round tables, buffets, and performances of ensembles of folk instruments.

The organ music hall for 180 listeners (Figure 3) is situated in the attached part.

![Image](https://archi.ru/russia/35290/dom-goda-finishnoi-pryamoi)

Figure 3. Organ Hall of the Belgorod State Philharmonic Hall, 2011 [1b]

The hall of classical music Belgorod State Philharmonic Hall was created by reconstruction of the existing hall of the former cultural center “Zheleznodorozhnik”. According to its space-planning solution, the original hall was created in the form of a traditional theater hall with an extensive stage, a pronounced portal opening and an orchestra pit. The dimensions of the stage box in plan are 18x10 m, with a height of 7.5 m up to the grate. The hall in the plan also close resembles rectangle with dimensions of 21x24 m, with an average height of the amphitheater of spectator seats of 7.5 m. The total air volume of the audience section of the hall is 3700 cubic m³.

The architecture of the hall was changed by the introduction of a second tier - a balcony, which accommodates 100 additional seats for audience and side VIP boxes. The proportions of the room unsuccessful for the music hall were corrected by a number of engineering and technical measures, the competent selection of finishing materials and the architectural solution of the interior details, justified by the calculations of architectural acoustics of the hall (Figure 4).

![Image](https://archi.ru/russia/35290/dom-goda-na-finishnoi-pryamoi)

Figure 4. Belgorod State Philharmonic Hall, 2010:

a) a hall before reconstruction, b) a hall of classical music after reconstruction, c) a balcony of a hall of classical music (https://archi.ru/russia/35290/dom-goda-na-finishnoi-pryamoi)

The main task of the reconstruction of cultural, entertainment and leisure facilities is the modernization of the largest element of this group of buildings – the audience hall, concert hall or
cinema. The purpose of the hall determines its architecture and, determining the volumetric-spatial structure, lay the basis for the architectural concept of the building.

The technological solution of the hall is especially important. High requirements are imposed on the technological filling of the halls, in search of the optimal correspondence to which there is a certain range of hall categories: stationary, semi-stationary and fully transformable, suitable for certain genres of performances.

A stationary concert hall is a completely immovable audience technological space: the seats, stage and floor of which can not be mechanically moved in space. Thus, a concert hall of this category is not capable of undergoing any global spatial changes during the operational period.

The examples of such systems are most concert halls of past centuries, as well as modern highly specialized performance spaces, the contents and functions of which meet the requirements of a specific, unchanging situation. These include a modern concert hall in Copenhagen, Denmark with a capacity of 1,800 people, with a specific musical purpose of the hall. The next example is the Second Stage of the Mariinsky Theater in St. Petersburg, Russia for 1,830 seats with a stage box device, which allows the use of various methods of show organization. In its turn, the stage box for such a hall is determined according to its direct purpose, capacity and other number of factors, the provision of which allows creating an ideal concert space that meets the specific criteria (Figure 5).

A transformable concert hall is a dynamic space for audience and artists, the technological mechanisms of which are designed to serve as a single multifunctional venue for different types of performances. With this design of the hall, the criteria for the reliability and mobility of the transformable elements and the multifunctionality of the audio-visual equipment are imposed on the equipment [5].

A similar transformable element can be presented by the partitions dividing a large space into smaller parts, both on the scale of a small conference hall and the whole cultural house. The example of such a hall is the Rusakov House of Culture, designed by architect K.S. Melnikov. Its 1500-seat concert hall is equipped with three 250-seat balconies. It is equipped with a partitioning system; the balconies can also serve as isolated spaces for other uses. The corresponding constructive solution of the hall determines its unique architectural appearance (Figure 6).
Figure 6. a) Facade of the Rusakov House of Culture. b) Plan and section of the Rusakov House of Culture. Source: Internet sources of free access

The system of double-sided turntables with rows of seats on one side of the platform and a covering similar to the floor covering on the other side can also transform a concert space. Each row is a part of a full-fledged mechanism, the platform of which, on one side, is equipped with seats, on the other - a covering similar to the floor (sometimes stage) of the hall. With automatic action, the entire hall, in whole or in part, is turned over with the help of special mechanisms with the right side of the platform up. However, due to their uniqueness and novelty, such technologies are not widely used in the design of concert halls. Nevertheless, with small volumes the platforms transform the hall on one level into a multi-level audience hall as in the River Rock Casino Resort, using the GALA hall rotation system (Figure 7).

Figure 7. Hall transformation process of River Rock Casino Resort [6].

The transformable floor is also a tool to change the space of the hall. It allows creating a flat surface or amphitheater. The common floor of the hall and the stage is equipped at the level of the stage table and at the floor level of the first row of the parterre [7]. The Dee and Charles Wyly Theater Auditorium in the USA is equipped with similar technology, which can be an exhibition space and a single or multi-level auditorium. Its hall can be both a space for exhibitions and a single-level or multi-level audience hall. In this particular case, the transformations are mostly not automatically: the seats must first be stored in a special area of the stage, which, using electrical mechanisms, will transfer them to the storage under the stage, and then separately manually fix all the differences in the floor of the hall (Fig. 8).
Another popular transformation tool is “bleachers” - movable stands with folding seats. Most often, such systems can be found in the design of sports facilities. However, the ease of their use allows using them in the design of concert halls. The disadvantage of this design may be the design of the stands, which can not be hidden from the viewer's eyes with a certain device in a folding form. However, today there are opportunities for solving this problem by moving the bleachers under the stage space. This technology in comparison with the others listed above, has a lower cost and is often installed locally in large crowded places (for example, shopping centers) in order to serve small concerts of modern performers. Such a system provides high mobility of audience space. However, such transformations allow using the hall for other purposes (by extending and sliding the required number of rows of stands).

A transformable type of a concert hall can also be equipped with other transformation tools. However, today the above mentioned types are the most popular. They can be found in one form or another in the semi-stationary category of halls. Such spaces are equipped with both absolutely static and transformable elements. Thus, the stalls of the Opera House (the space of the balconies remains static) in Vienna is often used for theatrical masquerade balls and the stalls of the Crocus City Hall concert hall in Moscow turns into a dance stall (Figure 9).

**Conclusion**

1. During the research it was found that in the middle of the XX century in the USSR (1960-1970) there was a massive construction of buildings for cultural and leisure activities of population – cultural houses. All conditions were created for the wide development of mass cultural, educational and leisure
institutions. As a rule, they were built according to standard designs for the organization of leisure and met the ideological, sanitary and hygienic, architectural and construction requirements of their time.

2. With the change of ideological attitudes in the country after 1991, the role of club activity sharply decreased. Many of the clubs or cultural houses were closed due to lack of funding and began to be used for other purposes. Today in Russia, the cultural houses as a type of institutions for cultural and leisure activities of population are undergoing dramatic changes. Their number is decreasing every year. They lost their cultural, educational and educational role. At the same time, the buildings themselves proved their value in practical operation and continue to maintain a working condition, although they are outdated and in need of reconstruction.

3. During the reconstruction of buildings of cultural centers, it is necessary to provide an expanded functional composition of premises for the organization of leisure of population in accordance with modern requirements.

4. It is especially important to modernize the audience halls as the main compositional and space-planning elements of buildings. This will expand the functional purpose, attract the attention of citizens and become an investment attractive object.

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