Architectural planning and reconstruction of military campuses

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Abstract. The problem of the architectural planning of new and reconstruction of the existing military campuses on the example of the Military campus №19 in Irkutsk is considered in the article. The stages of the architectural space development and reorganization in connection with the development of an educational institution located on the territory of the specified military campus are examined. The peculiarities of the local infrastructure development are identified. It has been proved that as a construction site, a military campus has its own specifics. Its utilities and operational support should be aimed at maintaining the combat and mobilization readiness of military units as well as creating comfortable conditions for the stay of the personnel and civilians, training, leisure and other daily activities. The article focuses on the fact that the finding the best way to solve the issue of designing and improving modern military campuses cannot be carried out without taking into account the historical experience. It is concluded that the rational architectural planning for military campuses is no less important than the compliance with the building codes when erecting special-purpose buildings and structures.

1. Introduction
Since 2008 a military reform has been carried out in Russia, and the question of the specifics of planning and building up military campuses has become crucial. The reform includes a comprehensive range of activities to change the structure, composition and the size of the Russian Armed Forces. In this regard, the need for the construction of new and reconstruction of old military campuses has become very urgent. The search for the best ways to solve the issue of their design and improvement is not possible without taking into account historical experience.

It should be noted that the research in this direction should be devoted not only to the capital construction. The examples of the development and modernization of the existing campuses infrastructure, caused by the demands of the time, require particular attention.

A military campus is a complex of buildings and structures intended for the continuous presence of a military unit (or several units), civilian personnel and their families. In fact, this is a city within a city, which construction objects should take into account not only the specifics of serving by recruits, officers and cadets, but also the social and everyday needs of civilians, living on the territory of the campus, including children.
This study focuses on the architectural space of the military campus No. 19 in Irkutsk. Its development has stretched for almost 100 years, and the result is an arranged well territory that meets the needs of the officers and cadets as well as civilian personnel living on the territory of the campus.

In 2009 the military educational institution, that was served by the military campus No. 19, was disbanded. As the result the legacy was more than 70 construction objects. It is planned today to use the part of educational and residential complex, located in the eastern part of the campus, for the needs of the Suvorov Military School, which will be opened in 2021. It includes the so-called Main building (building No. 1), where the training area for cadets, former headquarters building and club were previously located. What to do with the rest of the territory (barracks, canteen, laundry, cadet hostels, etc.) has not yet been determined. However, this example clearly illustrates the fact that a properly organized architectural space can successfully adapt it to the requirements of the time.

2. Materials and methods

There are very few monumental studies in the field of architectural planning of military campuses.

The exception is the thesis for the degree of candidate of Historical Sciences by I.M. Litovskii “The construction of barracks and social infrastructure facilities for the Russian army (1882-1917). Historical experience”[1]. The subject of this study is the construction and operation of military and social infrastructure of the Russian army. The author was able to identify the specific mechanisms of the military buildings and structures design for the military educational institutions and formulate recommendations for improving approaches to the construction of barracks and social infrastructure facilities of the Armed Forces of the Russian Federation.

Practically significant for this research was the thesis by O.A. Maksimenko "Architectural and planning organization of the Service centers for military campuses". It reveals the peculiarities of the construction of leisure and sports complexes on the territory of military campuses [2]. In turn, the work by S.G. Klimanov. “The architectural and planning organization of the residential complex for cadets of higher educational institutions” made it possible to compare the planning solutions of the barracks zones of the Irkutsk and St. Petersburg military schools [3].

The works by R.S. Avilov and P.A. Novikov are devoted directly to the history of the development of the Irkutsk military district [4,5,6].

The work by V.M. Polyukh and V.G. Stakhanov "Not to interrupt the thread of the traditions: a brief historical outline of IVVAIU" [7], dedicated to the history of the educational institution located on the territory of the Irkutsk military campus №19, helped to identify the patterns and peculiarities of the development of its architectural space.

The analytical part was based on the "Guidelines for communal and operational support of the Russian Armed Forces ", approved by the order of the Minister of Defense in 2017 [8]

The normative and functional assessment “Proposals for the location of the Suvorov military school in Irkutsk. Irkutsk military campus №19”, compiled in 2010 by the Institute VOENPROEKT, was carried out for a more accurate analysis of the military campus No. 19 functional zoning.

To determine the compliance of the planning and development of the military campus No. 19 with the departmental building codes, the normative document BCH 34-94 of 1994 was analyzed. The basic terms of the "Strategy of the social development of the Russian Armed Forces ", approved by the decision of the Collegium of the Ministry of Defense of the Russian Federation in 2008, were also considered [9].

The author's personal conversations with the former head of the school, a retired major general A.G. Barsukov as well as with members of the IVVAIU Veterans Council and residents of the campus helped to form the most complete picture of the development of the architectural appearance of the Irkutsk military campus No.19.

3. Results

The initiative to open a military educational institution in Irkutsk belonged to the Governor-General of Eastern Siberia, the commander of the East Siberian Military District, General N.P. Sinelnikov. The
order on the establishment of the Irkutsk military cadet school was issued by the Military Department in 1872. However, no money was allocated and the Irkutsk military command was asked to find funds for the project themselves. The funds were found two years later and on September 29, 1874 the school was solemnly opened.

For almost three decades the Irkutsk cadets had to live in extremely unfavorable living conditions. Only at the end of July 1910, the Irkutsk City Council decided to transfer 16 acres in the outskirts of the city on the right bank of the Angara river not far from the Ushakovka river to the Military Department. That was the beginning of the history of the Military campus No. 19 architectural space development.

The education of military personnel, in particular, involved their living in conditions as close as possible to the army. That was the only way to “sieve” people unfit for military service. But this, in turn, required specialized educational buildings, barracks, parade grounds and sports facilities, and all those facilities had to be located on the territory of the city. Therefore, it was originally planned to build an entire military campus.

The construction itself began in 1914. Despite the difficult situation in the country and the world (World War I, the revolutionary events of 1917, the beginning of the Civil War), more than a dozen buildings had been erected by the fall of 1918.

The need to quarter the officers and their families resulted in not only a complex of barracks and educational buildings appearing in the city, but a whole quarter, planned in the same architectural style. It should be noted that the tradition of unification of the appearance of service premises and accommodation on the military campus territory in Russia dates back to the 19th century. The exterior of the buildings was very laconic. The only exception was the semi-columns denoting the main entrance and the massive window frames.

Residential complexes (houses for officers and their families) were built along modern Yadrintseva and Sovetskaya streets. Those were good two-storey brick buildings of the same type with basements, two entrances and landscaped courtyards. The height of the ceilings in the living quarters, as well as in the barracks, met the requirements of the "Provisions for the Guide when designing barracks" [10] and was at least 12 feet, that is, 3.5 meters or more. To this day, most of them are used as residential apartment buildings, and in one of them, at 119A Sovetskaya str, Kindergarten No. 12 is located.

In Soviet days, the military establishment on this territory changed its status and name several times: Irkutsk Military School of Aviation Technicians, Irkutsk Military Aviation Technical School, Irkutsk Military School of Aviation Mechanics, Irkutsk Higher Military Aviation Engineering School, Irkutsk Military Aviation Engineering Institute, Irkutsk Higher Military Aviation Engineering School. Not only the name was changed, but the requirements for educational and living premises and barracks. It was necessary to build new facilities. Thus, the architectural space of the campus has been developing for almost 100 years.

The boundaries of the military campus were not set at once. The city changed rapidly, new districts appeared. Only in 1954 the construction of the fence, which separated the territory of the military campus from the growing Irkutsk, was completed. The houses, built at the beginning of the century for officers and their families, ended up outside the campus. This decision was due to the fact that by that moment they had been separated from the main territory by a road, and the area of the campus allowed the construction of new residential buildings.

By the early 1960s, the number of different facilities had grown on the campus territory. For example, in 1958 a welding and forging shop, built of slag concrete, was erected. A concrete road led to the training airfield, and a technical maintenance unit and a battery-charging station appeared at the airfield itself. Vulcanizing shop, water-heating shop and auto repair shop were also built in the 1950s. Almost all buildings and structures were made of stone.

The school printing house played an important role in the educational process organization. Initially, it was located in the basement of the main educational building, however, over time, the volume of printing work had increased significantly, and in 1968 the one-story detached building, built in 1932, was allocated for the printing house. Today it houses a church of the Holy Blessed Prince Dmitry
Donskoy. From 2003 to 2017, small premises of the former club were equipped for the parish of the church.

In 1975, the Irkutsk Military Aviation Technical School changed its status. It was given the title of Higher Military Aviation Engineering School. Of course, this was the achievement of the command and teaching staff, who had done a tremendous job to improve the educational and methodological process. However, such changes inevitably affected the architecture of educational buildings. The number of personnel of the school had increased, and this resulted in changes to the policy of construction of residential buildings on the campus territory in order to create comfortable living conditions for officers and their families. To solve this problem, new objects were erected (five-story panel houses, a fire station, new educational buildings and checkpoints). Old premises were reconstructed. Thus, several two-storey buildings in the center of the campus were adapted for a kindergarten, a hotel and a family hostel for young officers.

By the beginning of the 1980s, the architectural appearance of the military campus No. 19 had practically taken shape. Zones were clearly defined on the territory:

- in the western part of the campus there was the barrack zone (including the barracks, hostels for senior cadets, a sanitary unit, canteen and bath and laundry complex);
- in the eastern part - the training zone (including educational buildings, headquarters, a club);
- in the northern part - the park zone (weapons and military equipment storage), a training airfield, warehouse, utility structures;
- between the barracks and training zones and in the southern part of the campus - a residential area (including houses, kindergarten, stadium, shops).

Particular attention was paid to landscaping: the entire territory was equipped with highways and pedestrian paths, along which curbs were laid, bushes and trees were planted, flower beds were made out and litter bins were installed. The park recreation area and several playgrounds appeared. The residents of the campus took an active part in its development.

The Soviet Union's collapse and the subsequent difficult 90s affected the appearance of the military campus No. 19. The order was maintained by the enthusiasm of the officers and residents of the campus. In 2009 the military educational institution that was served by the campus was disbanded. For a long time barracks, educational buildings, the park and utility structures were ownerless. Fires and robbery ruined most of the premises.

Today, the issue of preserving the architectural heritage of the campus has become especially crucial, taking into consideration the fact that several structures on its territory are recognized as architectural monuments. One of the options for solving this issue may be the reconstruction and adaptation of the buildings and structures of the former military school for the needs of the Suvorov Military School.

The author of this article had carried out its own study and on its bases the publication was prepared. Based on the Decree of the Government of the Russian Federation of April 30, 2008 N 328 "On approval of the Model Regulations on the Suvorov military schools, Nakhimov naval school, military music schools and cadet (naval cadet) corps" [11], it was concluded that the best area for the placement of the Suvorov Military School on the territory of the campus No. 19 is the eastern section with an area of 7.07 hectares (the former educational zone of the campus), where the main educational building was located. "The number of buildings in the designated area, their internal layout associated with the former use, can fully satisfy all the needs of the Suvorov Military School and allows adapting them to a new functional purpose without radical rebuilding and redevelopment" [12].

The rest part of the campus can become a modern residential complex with its own stadium, parks, kindergarten, clinic. The old reconstructed buildings can become the hallmark of the complex.

4. Conclusion

Based on the given research, the following conclusions can be drawn:

1. The need to study the experience of planning and reconstruction of the architectural space of military campuses is caused by changes in the structure of the armed forces in the course of their reform.
2. It is necessary to distinguish the concepts "military construction" and "garrison construction". Military construction refers to activities to create and reform the armed forces, while garrison construction is a part of military construction related to the planning and development of territories intended to meet the needs of military units and military educational institutions.

3. The need for a clear zoning of the military campus territory is dictated by its multifunctionality: the infrastructure of the campus aims to provide educational environments, comfortable living and leisure conditions for military personnel and civilians, carrying out activities to maintain combat readiness.

4. Rational architectural planning is no less important for military campuses than the compliance with the building codes when constructing the special-purpose buildings and structures.

5. Buildings and structures of the military campus should be built in the same architectural style and the entire territory should be a full-fledged volumetric-spatial composition.

6. When designing a military campus, an area for sports and cultural events must be provided.

7. The experience of planning and developing the Irkutsk military campus № 19 architectural space clearly illustrates that when forming modern military campuses, the military command and control bodies should provide for the creation of an accumulative system of educational and housing stock, including the possibility of modernization and reconstruction of the special-purpose buildings and structures.

8. The infrastructure of the Irkutsk military campus No. 19 was changing as the educational institution, around which it was settled, developed. It is distinguished by the exceptional convenience and meeting the needs of both the military and civilian residents. The experience of the campus architectural space reorganizing and zoning can become an example for the design of new military campuses.

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