The Problem of the Vladivostok Fortress Fortifications’ Reorganization

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Abstract. There is a large number of fortifications built in Vladivostok and its suburbs. The constructions of Vladivostok Fortress are an outstanding example of fortifications and defensive architecture. The complex of Vladivostok Fortress is well-studied, but the problem is that these significant elements of the cultural landscape are gradually being destroyed. And there are several reasons for this. On the one hand, it is caused by the insufficient funding of measures to preserve the existing structures. On the other hand, there is no scientifically grounded strategy for preserving and reorganizing these constructions. There is also a demand for specific project proposals related to the reorganization and modern use of Vladivostok Fortress constructions. In the article, we consider this problem first in general theoretical terms, and then we suggest a specific proposal to reorganize fortifications on the Nazimov Peninsula in Vladivostok to turn it into the Park of Military Glory.

Keywords: Vladivostok city, Vladivostok Fortress, fortifications, cultural landscape, project proposal, reorganization of fortifications.

1. Introduction
The history of Vladivostok city establishment is closely connected with Russia’s access to the shores of the Pacific Ocean, and the need for a large defensive outpost to protect the country’s distant borders. Being the most important trade, financial, transport, and industrial center of the Far East, Vladivostok developed as the largest naval base in the Pacific Ocean in the first place. Many fortifications were built in and around the city. Their main purpose was not only to protect the borders in the event of an attack but also to create the image of an unattackable city. The complex of Vladivostok Fortress constructions is an outstanding example of fortifications and defensive architecture.

A number of studies performed by Far Eastern researchers investigate the architectural and urban development of the complex of Vladivostok Fortress constructions. The list includes Alekseev A, Anikeev V, Ayushin N, Ingemanson B, Kalinin V, Kasyanov N, Markov N, Matveev N, Miz N, Myalk A, Obertas V, Ryabov N, Khisamutdinov A and others [1-12]. They closely examine the history of the complex establishment, the features of its development at different historical stages,
characterize the structure and construction of individual forts, and provide drawings of the main fortifications.

However, there are practically no studies that examine the basic conditions and principles of adaptation and modern use of these unique constructions nowadays. Moreover, the existing proposals of conceptual design for the re-functionalization and reorganization of Vladivostok Fortress constructions are insignificant.

While there is no strategy for preservation and development, numerous Fortress fortifications continue to decay and deteriorate. Most certainly, this situation is mainly caused by the lack of funding for the conservation and modern use of Vladivostok Fortress constructions. However, it is impossible to develop a strategy for the focused and efficient use of the unique Vladivostok Fortress constructions without advanced research and conceptual projects. This study is a step in direction of comprehending the methodology and basic principles of adapting one of the fortifications on the Nazimov Peninsula in Vladivostok for the Park of Military Glory.

2. Methods
The project proposal for reorganizing a fragment of the urban environment in Vladivostok, including fortifications, is based on the methodology of an integrated approach to the pre-design and design stages of development, which we have described in several studies [13-14]. The first step in this process is a comprehensive pre-design analysis of the original environment. Based on this analysis, we identify the structural-functional, structural-morphological, and architectural-artistic characteristics of a particular area of the urban environment. The combination of structural-functional, structural-physiographical, compositional, and architectural-artistic characteristics allows a comprehensive study of the spatial pattern of an urbanized landscape. In turn, it makes it possible to develop the most efficient project proposal.

At the same time, it is important to consider this fragment of the urban environment as a part of the cultural landscape of Vladivostok city. The methodology, basic principles, and approaches to forming cultural landscapes of historical cities are considered in a number of studies and documents [15-18]. First, the cultural landscape of Vladivostok has an outstanding specificity associated with the unique natural physiography. The pronounced terrain of the area, the complex coastline resulted in numerous bays, predetermined the special character of the city perception. It is famous for its multiple views, and panoramic urban environment. Second, it is necessary to highlight the cultural and historical specifics of the city’s development and functioning, which are manifested in the peculiar architecture of the historical center, as well as in the presence of functioning ship-port facilities [19]. There is no doubt that the complex of Vladivostok Fortress constructions plays a critical part in the city’s cultural landscape, contributing to its uniqueness and identity.

We used the following approaches to conduct the complex analysis:
- structural and functional analysis – analysis of the specific land use, analysis of transport and pedestrian connections, identification of existing shortcomings and contradictions; this basis will allow determining the functional potential and prospects for the environment’s development;
- structural and physiographical analysis – analysis of the natural landscape physiography (spatial pattern, geometric shape, tiering, module, etc.), identification of the compositional structure of the urbanized landscape, determination of typological characteristics and parameters of similar objects;
- architectural and artistic analysis – analysis of imaginative characteristics, the semantic structure of the natural urbanized landscape, the identification of key semantic signs and metaphors ("the spirit of the place").

3. Results
The choice of the design site has been determined by the technical specification and the landscape and urban planning potential of the territory. Fortifications, located on the tops of the hills, play a large part in shaping the appearance of Vladivostok, they are a favorite vacation spot for citizens and the main historical attraction for tourists and city guests. The selected site can lay the foundation for
forming an integrated system of recreational Vladivostok Fortress spaces with well-developed infrastructure on the Muravyov-Amursky Peninsula and Russky Island (fig. 1).

![Image of original landscape on Nazimov Peninsula in Vladivostok](image)

**Figure 1.** Images of the original landscape on the Nazimov Peninsula in Vladivostok.

The main principles that form the basis of the urban planning and space-planning solutions in designing the fortification complex are as follows [12-14, 19, 20]:
- functional saturation of the reorganized complex, ensuring its modern efficient use;
- well-developed infrastructure of transport and pedestrian connections, ensuring convenient delivery and movement within the complex;
- structural coordination of new spatial pattern elements of the fortification complex with historically existing structures (inter-subordination);
- modular coordination of new elements of the spatial pattern of the fortification complex with historically existing constructions (co-scaling);
- preservation and development of visual-spatial connections of the reorganized structure of the complex with the surrounding urban environment, active inclusion into urban panoramas;
- preservation and development of the "spirit of place" concept through the semantic resonance of new elements with the existing cultural landscape;
- utilization of the landscape-environmental approach in the design, as the most adequate response to the historical part of the complex.

The plan of the urban development of the site with the area of 52.3 hectares has been carried out considering the natural features of the Nazimov Peninsula landscape. The project’s conceptual program was developed basing on the analysis of specific local climate conditions and factors, buffer zones of engineering networks, land and sea transport communications, as well as based on studying domestic and foreign experience in establishing memorial zones and complexes. The spatial pattern of the park is based on a scenario scheme of rotating visits to different functional zones and objects of memorial and cultural significance through a developed network of pedestrian, horse, bicycle, and transport (eco-buses for tourists) routes, both in horizontal and vertical directions of the terrain. Besides, the structure of the park includes such monuments of cultural heritage as Petropavlovskaya coast mortar battery, Nazimovskaya and Petropavlovskaya cannons, as well as Petropavlovskiy P-1 powder-magazine, which are all the main nodes and reference points of the route. The master plan of the complex includes all these objects and spaces (fig. 2).
The transport infrastructure in the project was completed without fundamental changes: the main focus was on arranging convenient driveways and parking, considering the existing local network of natural soil roads and passages. The entire park’s territory is conditionally divided into several functional zones, namely a zone for public events; a zone for cultural and educational events; a zone for physical and recreation activities; a recreational zone for children; a walking zone; an economic and administrative zone. Each zone is formed in accordance with the essence of the recreational environment suitable for its purpose, which corresponds to modern trends in the arrangement of multifunctional parks.

The main advantage of the project proposal is the ability to use the park on a year-round basis. The availability of a number of indoor, heated spaces in the complex will allow managing and maintaining the adjacent areas of the territory all year round. The park’s plan includes such indoor objects as an information center; Pantheon with Eternal Flame; a military and patriotic museum; a museum of car antiques; a church; covered parking; a small exhibition pavilion with a cafe; a hotel for 100 beds; Cossack Stan ethnographic complex; Fast Horse equestrian complex. The architectural and compositional solution is based on the principles mentioned earlier that allow ensuring harmony and artistic appearance of the complex (fig. 3).
4. Discussion

The problem of the preservation and modern use of Vladivostok Fortress constructions was the most acute for the residents and the city administration in the post-Soviet period. The fact is that during the Soviet period, those constructions were mostly under the auspices of the USSR Ministry of Defense. The access there was difficult or limited at all. The military organizations took care of the fortifications as best they could, trying to adapt them to their needs. At the same time, they often added modern extensions there, which did not match the historical part, violating the artistic and compositional unity and integrity of the ensembles. In the post-Soviet period, another problem arose. The military abandoned the fortifications, leaving them without any protection and supervision. Nowadays, a lot of efforts are being made to preserve this valuable historical heritage. For example, the Vladivostok Fortress state memorial was established. The new institution has such main areas of work as educational, research, and educative activities in relation to a unique Vladivostok Fortress monument of history and architecture.

The project described above was developed on the initiative and in close cooperation with the management of the Department of Urban Planning and Architecture of the Administration of Vladivostok. It is interesting as a possible option for the future development and improvement of this city area. In addition, the project’s materials can be useful for the Tourism Department of the Primorsky Territory Administration when developing a comprehensive program to include the objects of the Vladivostok Fortress in the system of tourist routes in Vladivostok and Primorsky Territory. It should also be noted that this project is one of the last in a series of final qualification works performed at the Department of Architecture and Urban Planning of the Far Eastern Federal University, aimed at improving and humanizing Vladivostok urban environment [21].
5. Conclusions

The complex of Vladivostok Fortress constructions is an outstanding example of fortifications and defensive architecture. These constructions are unique in their structure and physiography; they match well Vladivostok’s natural terrain. The complex of Vladivostok Fortress constructions plays an important role in the city’s cultural landscape, contributing to its uniqueness and identity. All these factors make scientific research and design developments for the reorganization and modern use of Vladivostok Fortress constructions extremely relevant.

The methodology for reorganizing Vladivostok Fortress constructions should be based on a comprehensive pre-design analysis of the territory and objects the complex will consist of. An integrated approach allows us to comprehensively study the spatial pattern of existing fortifications, and develop an effective strategy for their further reorganization. The methodology is based on the combination of structural-functional, structural-physiographical, compositional, and architectural-artistic characteristics. The basic principles of the spatial reorganization of Vladivostok Fortress complex include functional saturation, developed transport and pedestrian connections, structural coordination, modular coordination, visual highlights, semantic resonance, landscape-environmental approach.

The project proposal for reorganizing one of the fortifications on the Nazimov Peninsula in Vladivostok to turn it into the Park of Military Glory has shown the effectiveness of this strategy.

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