Urban Zoning as a Method to Protection and Develop Historic Settlements (within the Volgograd Region)

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Abstract. The text of the article contains a brief overview of the development of the legislative and legal framework of urban planning zoning in the field of protection and development of cultural heritage objects. The article makes an attempt to systematize the main directions of development of the methodological basis of urban planning zoning in the last two decades, aimed not only at rational use of territories with cultural heritage objects, but also at their protection. Modern methodological developments in the context of continuous monitoring and adjustment of town-planning regulations for specific municipal entities and their territorial objects possessing cultural heritage objects are considered. The inconsistencies in the system of protection of territorial cultural objects in defining the boundaries of planning components within settlements, their protection status and its implementation in the system of Land Use and Development Regulations have prompted a scientific study of the development of protection potential by methods of urban planning zoning for local historical settlements with or without the status of a "historical settlement".

1. Introduction
Contemporary Russian legislation has a coherent law structure with regard to the preservation of cultural heritage objects. The most elaborated part of preservation is the function of protection and conservation. [1,2] Federal Law No. 73-FZ objects of cultural heritage introduced a classification of categories of historical and cultural significance, as well as types of physical preservation of objects of cultural heritage. [3] Objects of cultural heritage may be used for economic and other purposes as long as this does not damage the preservation of the objects of cultural heritage and does not violate their historical and artistic value. The hierarchy of cultural heritage objects is established and sufficiently clear. However, the domestic practice of preserving cultural heritage objects due to limited in contrast to the foreign practice of preserving national heritage objects does not have a universal framework of means and methods for the protection and development of territorial historical sites. [4,5] An example
is a settlement that does not have the status of a "historical settlement", but its planning structure contains cultural heritage objects with hierarchical levels of protection from federal to local.

2. Main part

To date in the Russian Federation, the process of improving legislation and creating new regulations in the areas of urban planning, land use and protection of cultural heritage is actively developing. The current practice of urban regulation through urban planning regulations is still under active development. Rather conditionally, the domestic legislative framework of urban planning can be seen as a mutual influence of two major blocks - urban planning legislation proper and legislation in the related branches of law (environmental, cultural heritage protection, etc.). This complex of laws and other normative legal acts is in the stage of formation which makes its study much more difficult. As a result of analyzing the experience of legal application of urban planning zoning tools in the domestic design practice, we can identify two models very conventionally. The first model of urban planning zoning implies a gradual establishment of regulations as part of urban planning documentation, developed in several stages (the model of Moscow Master Plan 1999). The second model of town planning zoning implies a simultaneous establishment of town planning regulations as part of a single document - rules of land use and development (standard rules of development). As a result, the main difference between the two models of zoning is a fundamentally different approach to the interpretation of urban planning zoning. It is logical to assume that the toolkit of urban planning zoning itself is also applied differently depending on the goal setting: in the first case the goal is urban planning, in the second case it is some kind of regulations established by normative legal acts. Based on this distinction, these models can be referred to as 'design' and 'regulation' models. The relevance of urban planning zoning as a working system is its constant monitoring in order to constantly update the established system of urban planning regulations of territories. Staged approach to town planning zoning is implementation of town planning regulation of territories in two stages: in the first stage it is always advisable to draw up town planning regulations for the entire territory of a settlement; in the second stage detailed elaboration of town planning regulations takes place for the most actively developing areas in order to ensure detailed regulation of land plots. It is declared that the leading architectural and planning principles of urban zoning are subordination of urban zoning to the general plan of the city, as well as the complexity of urban zoning. As a consequence, changes and additions to urban planning regulations are inevitable, interrelated with the territory planning projects. That is the level where the contradiction between the need to comply with the territorial development programs and the regulations concerning the protection of the cultural heritage objects was suggested. Regulatory documents on the protection of cultural heritage objects, areas adjacent to cultural heritage objects, regulating their use often exclude the possibility of any development of cultural heritage territories, much less the preservation of the complex historical environment. The lack of a systematic approach to the development of legislation regulating the use of the territories of cultural heritage objects in conjunction with the existing Town Planning Code of the Russian Federation leads to a lack of public awareness in the field of monument protection. The development of territorial planning documentation often does not pay due attention to the development of sections to ensure the preservation and use of regional and local cultural heritage sites. [6] The proposal to introduce the notion of a historical environmental fractal is quite realistic. It can have a mosaic structure formed by local environmental objects. This approach is due to the understanding of the real state of historical Cossack settlements, characterized not only by the loss of material carriers of culture (physical destruction of places of worship and other objects), but also by irrevocable loss of mentality - the spiritual component of Cossack society. When dealing with the existing legal framework of urban planning documentation related to the territorial objects of cultural heritage, one may propose the following principles: the principle of fractality and the principle of sustainability. [7] The first principle, fractality, sets a unified approach to the organization of the environment, and ensures the elaboration of inner and outer spaces on different levels. The second principle, sustainability, sets the attitude to the city as a part of the natural environment. [8] The city is no longer opposed to it but
becomes a logical continuation of it. It means reaching a new, much more efficient level of resource use and guarantees the integrity of the natural environment. The rule of environmental content and nomenclature correspondence can also be proposed to regulate the composition of the elements of the historic core. At the same time, the settlements under consideration are of value precisely in understanding the proportionality of its layout, both to human scale and the natural environment. The previously voiced principles of the development of urban zoning methodology, associated with the territorial objects of cultural heritage, suggested that the adjustment of the concept of territorial zones and their component composition is possible not only from the perspective of applied design methods, but also the development of the methodology of calculation and justification of urban planning regulations based on scientifically grounded criteria. Let us return from the development of the theory of protection methods to the real problem of the conservation and development of settlements in the Volga-Don interfluves that do not have the status of historical settlements but have a significant number of valuable heritage objects within them. Volgograd Oblast is home to numerous objects of cultural heritage, as well as historical settlements that are not included in the list of historical cities in Russia. On the administrative map of the Volgograd Oblast the authors have mapped the architectural monuments of the pre-war period. Having analyzed the selected objects included in the list of cultural heritage objects located on the territory of Volgograd Oblast and subject to state protection as monuments of history and culture of regional significance, it was revealed that 60% of cultural heritage objects are located in the Volga-Don interfluve. [9]

The analysis of the functional-spatial characteristics of more than 30 settlements of the Don Cossack army in the Volgograd region has allowed us to draw a conclusion about the typology based on the functional-spatial characteristics. The time period for the emergence of stanitsa mostly refers to the middle of the 19th century, the dependence of the planning structure on the character of the landscape is determined: the compactness of the settlements is determined by the main natural conditions for the area - ravines, flooding of the territory. Linear settlements are located along rivers and are not isolated by the character of the landscape. The analysis of the functional-spatial characteristics of the Cossack settlements of the Don Cossacks has shown that more than 30 Cossack settlements with characteristic planning units, namely a maidan and a religious building, have survived on the territory of Volgograd region.

By analyzing the stronghold settlements of the Don Army in the Volgograd Region, the main parameters of the planning structures of Cossack settlements have been identified:

- Maidan (a square located in the center of the stanitsa, which was a place for public assemblies, meetings). A typical example is the square in front of the Lenin Square in the town of Uryupinsk. Limits of the square in cross-section reach 45 meters, longitudinal dimension - up to 150 meters.
- a church (a religious building, usually adjacent to the maidan or located along the main street of the settlement). For example, the Church of the Resurrection located along Oktyabrskaya Street, Serafimovich. Limits of the cult object in height could reach thirty meters, the area of the middle part of the object is 18 meters; shape of the plan is cruciform or rectangular.
- a linear system of main streets (a street along which some of the richest stanitsa buildings, shops, benches, hotels, administrative buildings (ataman's offices) were situated. For example, Oktyabrskaya Street in the town of Serafimovich, with a maximum cross section of 10.5m; length of up to 1,000m.
- neighborhood size (the size of a rectangular block varied from 1.5 to 2 ha)
- Natural landscape within the planning unit (coastal bluffs, natural relief (ravines and gullies), riverbed, buffer area - steppe vegetation).

In order to preserve the historic settlements of the Don Cossacks in the Volgograd region, it is proposed to introduce the concept of an integrated spatial-planning structure of landmarks to identify a new territorial unit with protection status as a single area within the historic settlements of the Don Cossacks (historic center of Cossack settlement - HCCS). With the new spatial component, the author proposed an authorial solution to the issues of historical and cultural heritage preservation and development of the allocated territory, including architectural objects and the associated historical environment as a whole. The investigation identified an obligatory set of environmental components
as part of the HCCS. The analysis of the historic settlements on the territory of the Don Army within the borders of Volgograd region revealed the following composition of the HCCS: (maidan, streets, quarter, and their environmental fillings). At the same time the problems common for the territories of the historic center (future HCCS) were identified, namely a significant degree of mosaic development: the presence of non-capital accidental buildings, incomplete urban composition, partially reconstructed facades. The solution to this problem is the application of methods of protective urban regulation to all elements of the Cossack settlement. According to the degree of preservation and presence in the planning structure of the settlement of the elements of HCCS, their typology has been proposed. [10] According to the survey of Cossack settlements, we can distinguish three groups of preservation of historical objects within the territory of HCCS: point (Kalach-on-Don); complex (Serafimovich); zonal (territorial) (Uryupinsk, Serafimovich). The Point Group of Conservation of Historic Objects is a detached cultural heritage site with an adjoining area. This group has one or two elements of HCCS, most of the elements have been lost. The most characteristic example is the town of Kalach-on-Don. The settlement was almost completely destroyed during World War II. The only surviving historical building (an architectural monument of regional significance) is the building where the first meeting of the Communist Youth Union took place in 1919. The remaining elements of the HCCS are missing. A complex group is a set of three or four elements of the HCCS formed within the territory of one settlement. The most suitable for this category is the historical development area of the town of Serafimovich. The complex group includes: natural landscape within the boundaries of Pristiansky Lane, Naberezhnaya Street and the banks of the Don River, a linear system of the main streets - Oktyabrskaaya Street, the Church of the Ascension, as well as partially preserved Maydan - market square - within the boundaries of Pervomayskaya Street, Donskaya Street, Oktyabrskaaya Street, which is currently operated as a wide road junction with parking in front of the grocery shops. The area of the HCCS is bounded by:- From the north-west - the bypass road near the Don River; - From the north-east - Lozovsky Street; - From the south-west - Brick Lane; - From the south-east - Oktyabrskaaya Street. Serafimovich Market Square combines several functions. It includes shopping buildings, cafes, as well as a transport hub. Two-stores building clearly forms, an elongated parallelepiped of the square. Each functional zone has its own characteristics. The area of the maidan is 945 m². The Church of the Ascension was built in 1782. The church is located on a polygonal area, which is close to the circle. The building is the compositional dominant of Serafimovich, it forms the panorama of the settlement. The height of the building is 27 meters, and the area of the middle part of the building is 18 m². The grounds of the church are landscaped, and there is the Cossack Ataman's grave in the eastern part of the courtyard. Oktyabrskaaya Street is the main street of Serafimovich, located within the boundaries of Donetskaya Street (Market Square) and Minaevsky Lane. The original formation and development of historic buildings took place along Oktyabrskaaya Street. Today this street has preserved the largest number of architectural monuments. The total length is 1 km and the width of the carriageway is 7m. Pedestrian paths are located near Serafimovich Square (opposite the Registry Office), within the boundaries of Mironov Street and Mirovtorseva Street. The street space is formed by wooden and brick facades as well as fences in front of the buildings. The development is characterized by the uniform orientation of all buildings in the area. In terms of layout the houses are placed "in line", along the city streets. For the proposed area with the conditional designation HCCS, permissible regulations for economic activities, recommendations for the development of the environmental context of the historic center of the settlement have been proposed.

3. Conclusion
The purpose of the study was a kind of experiment in the development of design practices in the protection of cultural heritage objects by methods of urban zoning, but with new criteria, taking into account the characteristics of the historic settlement without protection status. The analysis of the structure of historical settlements of the Volga-Don interfluves showed that most of the preserved cultural heritage sites of the pre-war period are located on the territory of Voivska Donskoy and coincide with the territory of Uryupinsk, Serafimovich, Novoanninsk Kletsky, Alexeevsky,
Kumylzhensk, Surovikinsky districts of Volgograd Oblast. The analysis of historical settlements on the territory of the Don Army within the Volgograd region allowed to reveal the following composition of the HCCS: (maydan, streets, blocks, and their environment filling). As a result of the historical and urban analysis of three reference cities of the Don Army (Uryupinsk, Serafimovich, Kalach-on-Don) the main elements of the planning structure of Cossack settlements were identified, on the basis of which the concept of the historical center of the Cossack settlement - HCCS was formed. The main groups of preservation of HCCS have also been identified, namely point, complex, territorial. On the basis of the proposed by the authors conservation classification of the information and communication center, urban planning regulations for the complex group of information and communication center of the city of Serafimovich within the conservation area, as well as the zone of regulated development was developed. Restrictions on use and change of maximum parameters have been introduced for each element of the HCCS. The regulations establish within the boundaries of the corresponding territorial zone types of permitted use of land plots and everything that is on their surface and is used in the process of development of this zone with subsequent operation of the constructed facilities. Experimental design and implementation of the results of the work in practice confirmed the feasibility of the proposed developments [11].

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