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Measures for the Protection of the Historical and Cultural Heritage of Fergana and the Mode of Monitoring of Cultures with the Help of Geoinformation Systems

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Annotation: *This work represents the development of the project for the organization of the buffer zone of cultural monuments of the Fergana Valley, carried out jointly with the institutes. To clarify the areas of protected zones, the exact geolocation of an object, architectural monitoring and the location of a specific historical object, it is proposed to introduce geoinformation (GIS) system programs.*

Keywords: *protected areas, monitoring, assessment, geographic information systems (GIS), ArcGIS, data attributes, geolocation, architecture, city-building, cadastre.*

Introduction

To enter into this topic, first we give some laws on the example of the city of Bukhara. Since, givengeolocation area is a historical tourist site of the republic. And also, it is the development of a project to organize a buffer zone of cultural monuments in Bukhara, carried out jointly with the institutes "UzNIIP Urban Planning" and "UzNIPI Restoration" in the RAP of the center of Bukhara in 1977, it will be corrected taking into account additional data that appeared in the process of the institute's work over the RAP of the central part of the city and the results of the work on compiling the Code of Cultural Monuments of Bukhara. When adjusting, new views and provisions of modern urban planning science on this issue are also taken into account, which, in particular, are reflected in the prepared Urban Planning Code of the State Committee for Architecture and Construction of the Republic of Uzbekistan and the Ministry of Culture and Sports of the Republic of Uzbekistan [1-10].

This code states that in connection with the development of urban planning in historically developed populated areas, the tasks of preserving the planning structure, silhouettes and originality of the architectural appearance of ancient settlements, creating a harmonious unity of new construction with the historically developed planning and spatial structure and with the characteristic features of urban and natural environment [11-15].

These tasks fully apply to the city of Bukhara and other regions with historical objects of the republic (Fergana), which is an integral monument of domestic urban planning and is currently experiencing a period of industrial development of tourism [16-20].

This work is primarily characterized by the fact that its main task is to preserve the originality of the architectural appearance of the city as a single historically established ensemble and develop construction conditions, under which the harmonious unity of the new building of the historical urban and natural environment will be ensured [21-25].

Methodology

In order to reduce the volume of the project of protected zones, simplify the content and ease of use, analytical drawings of a preparatory, auxiliary nature are omitted in the graphic part of the project, and only a number of diagrams and tables (in photocopies) are introduced that are important for the results and generalizations [26,27]. Research - the analytical part of the project consists of the following main sections of work:

a) Studying the plan of the city structure in the historical process of its formation: the system of streets and squares, the location of the main town-planning nodes, the dependence of the planning system on local natural conditions, the nature of the urban landscape.

This study was carried out by studying archival materials, city plans of various periods, archaeological excavation data, literary sources, as well as a field survey of a modern city. A retrospective analysis of the urban structure was made in order to establish the sequence of its evolution.

b) Analysis of the architectural and spatial organization of the urban ensemble, taking into account its perception from external viewpoints and directions [28-32]:

- placement of dominant complexes, volumes, verticals in the structure of the city;
- the dependence of their position and plastic construction on local natural conditions and the conditions for their viewing;
- the presence of visual connections between the leading dominants;
- the state of the skyline and panoramas of the city in their evolution;
- placement of external viewpoints and directions and conditions for visual perception of urban ensembles from them;
- scale ratio of architectural structures and natural landscape [33].

For this purpose, a number of graphic analyzes were carried out (hypsometric analysis of urban areas, analysis of the placement of dominants in connection with the nature of the relief, visual relationships of dominants in their development, graphic analyzes of building a silhouette and panoramas, large-scale building constructions in relation to surrounding spaces, etc.) observations with photo fixation. The visual boundaries of the historical center were determined, that is, the territory of the best viewed central architectural ensemble. For example, let's take the area of the city of Kokand, where the most important sights [34] of Fergana, the khan's architectural object, are located Fig.1.

c) Analysis of the internal architectural and spatial organization of the urban ensemble: the construction of ensembles, squares and streets, their planning relationship and scale proportionality, their spatial organization, the development of internal perspectives and openings to neighboring ensembles [35-40] and monuments.

d) Study of the development of the city from the point of view of its historical artistic and urban value and the current state:

- determination of the city-forming significance of individual ensembles and monuments;
- identification of objects of historical and artistic value that must be preserved as cultural monuments;
- identification of objects that form the historical environment;
- identification of objects requiring restructuring, clearing, replacement or demolition;
- classification of development according to its role and significance in the formation of the historical ensemble of the city, its architectural appearance.



Fig.1. Palace of Khudayar Khan.

According to the picture in Fig.1. we can see the area of the palace on which there are some structures in the form of small object services. Which can, if necessary, be extracted from the protected zone of the area of interest [41-46].

e) Determining the boundaries of a valuable cultural layer-area requiring archaeological research-produce on the basis of consultations of the Institute of Archeology of the Academy of Sciences of the Republic of Uzbekistan.

f) The study of the history of the city and local history information in order to identify historical monuments.

Landscape protection and regulation zones are called upon to ensure the preservation of the natural relief and water bodies, the restoration of the historical appearance of the landscape and ties with the surrounding nature; on their territory the following regime is established:

- a) buildings and structures distorting the historical landscape are eliminated;
- b) vegetation is preserved and regulated, measures are taken to protect coastal areas from landslides, erosion, excavations, to strengthen the slopes of ravines and their landscaping;
- c) economic activity is allowed that is not accompanied by a distortion of the landscape, does not require the construction of buildings (field and garden work, haymaking, etc.). In the case of using the zones of protection and regulation of the landscape for the purposes of recreation of the population, mass

celebrations and festivals, etc., it is allowed to improve the territories, arrange pedestrian paths and sites, but without the construction of structures that litter the landscape and distort its appearance [1-11].

Based on the main task set - the preservation of the historical center of Kokand in its complex - this work introduces another type of regime zone - a protected area.

Protected area covers a part of the building area and landscape of the city, united by a common planning concept and architectural composition, which has a significant number of monuments and historical valuable buildings and has retained the historical flavor of its appearance.

Results

It is most expedient to use large urban civil complexes (such as administrative squares, shopping malls) with their former functions, if this does not contradict the zoning of the urban territory adopted in the general plan of the city. And to clarify the areas of protected zones, the exact geolocation of an object, architectural monitoring and the location of a specific historical object, it is proposed to introduce geoinformation (GIS) system programs such as ArcGIS. This will allow accurate images to be established by any cadastral-monitoring system to guide the protected zones of sights not only in Fergana or Bukhara, but throughout the republic.

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