

Formation Of Architectural Ensembles And Complexes Of Historic Towns Of Uzbekistan

Manoiev Said Bahronovich

Abstract: Historical architectural monuments of Uzbekistan attracts attention with their geometrical and compositional harmony. This harmony is one of the fundamentals of Central Asian Islamic architecture, which based on decision of Middle Age architects to create ensemble in every case, from local ensembles up to whole city ensemble. We can observe this kind of solutions in Ensembles Registrant and Gur – Emir in Samarkand, in Ensembles Kosh – Madrasa and Labi – Khovuz in Bukhara, in Ensembles Dorus – Saodat and Dorut – Tilovat in Shakhrisabs, in the whole city ensemble of Khiva and many others.

Index Terms: architectural ensembles, complexes, complex of ensembles, central asia, historic town, harmonization, middle ages, town-building

1 INTRODUCTION

Researches of historic buildings and structures show that their architects paid great attention to the problems of harmonization from the philosophical, engineering and architectural points of view. Architects of Central Asia when forming town territory considered a town itself as a system of big and small ensembles. The evidence to it are the ensembles of Registan, Gur Emir and Shakh-i Zinde in Samarkand, the ensembles Lyabi Khauz, Poi - Minor and Kosh madrasa in Bukhara, the ensembles of Dorus-Saodat and Dorut-Tilovat in Shakhrisabz, the ensembles of Sulton-Saodat in Thermez and many others. Creation of architectural ensembles from the buildings and structures is based on the strengthening of visual influence and demand from an architect to solve the issues of harmonization which makes up the ensemble of buildings and structures. The term "architectural ensemble" is an artistic-aesthetic notion and it is used when forming and describing groups of buildings and structures, having definite properties. Sometimes when describing groups of buildings and structures the term "architectural complex" is also used. But between these two notions there are definite differences. The term ensemble comes from French word "ensemble" and it means "mutually harmonious composition". The term "complex" comes from a Latin word "complexus" and means "mutually connected group". So, an architectural ensemble means a group of mutually artistically harmonious buildings and structures, where as architectural complex means a group of buildings and structures mutually connected on the base of some kind of technical necessity.

A system of some ensembles may form complex of ensembles in a town structure. The example of such complex of ensembles is the necropolis of Shakh-i Zinde in Samarkand which in the upper part consists of ensembles in the style of "maidan"(square), in the middle part consists of ensembles in the style of "djuff"(couple) and "kosh"(opposite), and in the lower part it consists of an ensemble in a "free" style ¹. An ensemble in the style of "djuff" is formed of two and more quantities of buildings arranged parallelly on one side of the street and turned by their main street or a square. And if two buildings are placed on a single axis in opposite parts of a street or a square and turned to each other by mutually harmonious main façades, then such architectural ensemble called "kosh". The example of such ensemble is Kosh-madrasa in Bukhara (Fig. 1).

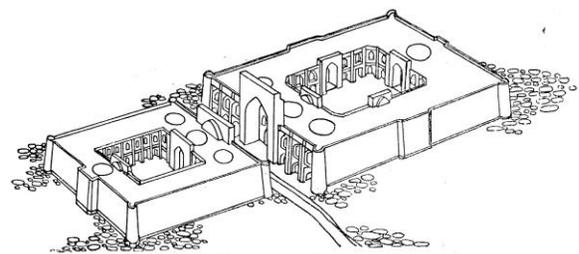


Fig. 1. Ensemble in the style "kosh". Ensemble Kosh-madrese in Bukhara.

The further development of that type is the ensemble "maidan" where buildings and structures arranged on the perimeter of the square. For example the Muhammad Sultan madrasa and khonaqo, situated opposite it in Samarkand originally were erected in the style of "kosh"

- *Post-doc Said Manoiev Samarkand state architectural and civil-engineering institute, Uzbekistan, E-mail: said.manoiev@mail.ru*

and in 1404 after construction of the mausoleum of Timur's beloved grandson Muhammad Sultan from the southern side of the square, the ensemble of the type of "maidan" is formed. The Registan ensemble in Samarkand is also regard to this type (Fig 4). Research of the history of the development of architecture shows that architecture and town-building of the IX-XII -th. centuries qualitatively differ from the architecture of the previous epochs. And ensemble building becomes one of the main principles in town-building in Central Asia². The analysis of ensemble composition of this period shows that formed in the early years of the Middle Ages the style "djuft" receives its further development and on this base the very first mausoleums of the necropolis Shakhi-i Zinde were built (Fig. 2). The mausoleum Kusam-ibn-Abbas and joined to it the mosque with a minaret were built on the parallel axes with the main façades, oriented to the side of shakhristan. This style was also used in the complex of mausoleums in Thermez and Uzgen. In the necropolis Sultan-Saodat, location of the buildings on the parallel axes has some varieties. The compositional base of the necropolis is the use of the method of "djuft" in placing mausoleums, khonaqo and other buildings of the necropolis.

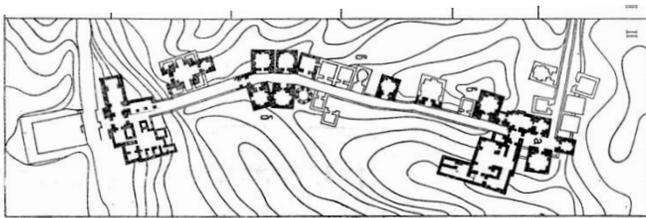


Figure 2. *Shakh-i Zinde complex of ensembles.*

In researchers' opinion formation of the necropolis began in the middle of the XI – th century³. At first, from the western side of the necropolis, the ensemble was made up consisting of two mausoleums and uniting them iwans, oriented to the east. Later on, three more pairs of mausoleums. were built on the base of an ensemble method "djuft". Formation of the necropolis was completed by construction of entrance saw cuttings – "darvozakhana" and premises for guest "khonaqo" to the east of the mausoleums. In a compositional plan when constructing "darvozakhana" and "khonaqo" the method "kosh" was used. This is one of the earliest examples of the use of "kosh" method in architecture of Central Asia. With the construction of the complex of entrance premises, the ensemble Sultan-Saodat acquired the completed shape. The whole complex consists of groups, simultaneously arranged ensembles to which later on praying halls, devoted to the descendants of prophet – seiids were built. These halls were placed in the space between mausoleums and fulfilled the function of "avanhall" (outhall) to enter the mausoleum. It may be supposed that at organization of the ensemble of Sultan-Saodat architects faced the problem not only construction of monumental mausoleums, but also the problem of formation a system of ensembles, consisting of buildings arranged on parallel axes. Proceeding from the last objective architects had to modify the ensemble originally consisted of three buildings. For that, two buildings as before were placed side by side on one line,

and entrance was solved not on the front side, but from two opposite lateral sides. Space between two buildings was covered in the type of "iwans" (Fig. 3).

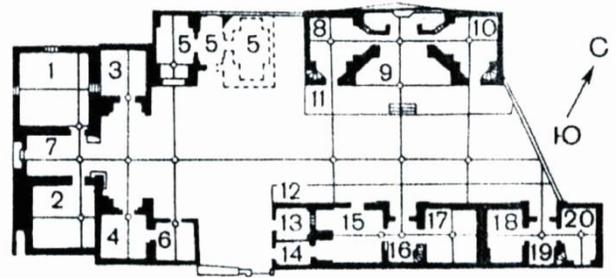


Figure 3. *The complex of Sultan-Saodat.*

In view of changing the structure of the ensemble there appear a new method of intercommunication of the ensemble composition and façades of buildings. Later on, this compositional method will receive the further development. At first the front wall of "iwan" was placed slightly deeper of the façade flatness, and later on both walls of "iwan" were moved to the middle. The examined example shows that formation of an ensemble approach in architecture of Central Asia was turned to increasing artistically – aesthetic influences of building and structures. For it they used available town-building and compositional decisions: construction of two significant religious structures together; stressing the entrance part; similarity of structural-planning concepts; use of common modulus and scale proportionality. The development of the ensemble approach in architecture of Central Asia is connected with the general development of science and art in the IX – XII -th. centuries and according to general recognition it is acknowledged as "the Renaissance of East" ⁵. The striking example of it is the mausoleum of the Samanids in Bukhara, the Arab-ota mausoleum in Tim, the complex of Sulton-Saodat mausoleums in Thermez, the Shakhi-Zinde complex of mausoleums in Samarkand, a caravan-serai and a sardoba of Rabati Malik and many others.

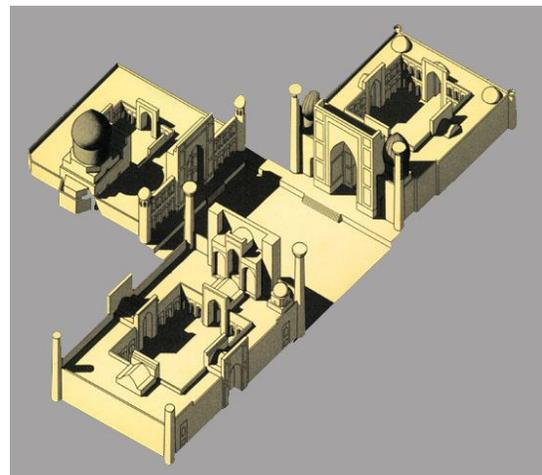


Figure 4. *The Registan ensemble*

In the XVI-XIX-th centuries ensembles of mahalla centers are formed in the towns, they are also formed in the centers of rural settlements and trade centers on caravan roads,

and in praying centers on the base of residence and in graves of holy religious persons. The most developed ensembles of mahalla centers can be seen on the examples of Samarkand, Bukhara, Tashkent, Shakhrisabz, Kokand and other cities.⁴ To the most famous rural and countryside ensembles are the ensemble of Khodja-Akhror, Ismoil Bukhari and Makhdumi A'zam not far from Samarkand, the ensembles of Khusam Ota and Kasbi in the valley of Kashkadarya, the ensembles of Kiz bibi, Khodja Ubon and Kasim Sheikh near Bukhara and many others. The main feature of these ensembles is that they were formed for a long period of time on the base of a spring, well or houz (pond) as a result of free combination of natural elements and complex of buildings, called to organize spare time and fulfillment of certain religious arrangements. With regard for these features these complexes in scientific literature received the name of "picturesque composition" and "free ensembles". The XIV-XV-th centuries are the period of the highest flight of ideas of Central Asian architects in the development of architectural ensembles. The ideas of architects of this epoch were based on the scales of carried out creative work by Amir Temur and the Timurid's dynasty. The epoch of Timurid's gave architects great opportunities in forming of architectural ensembles of the cities of Samarkand. Bukhara, Herat, Isfahan, Shiraz and many other cities even not completely preserved to our time fragments of architectural ensembles give an idea of the past splendour and grandiosity of medieval architectural ensembles.

3 Harmonization of architectural ensembles

The concept of harmony in architecture was related to such criteria as balancing, conformity, order, similarity alliance and proportionality. But for all this, architectural and artistic practice recognized as lawful disturbance the formal correctness of geometric figures, resorted to disharmony for the sake of contrast and freshness of artistic on the whole.⁶ Al-Farabi recognized disharmony as an essential element of the harmony on the whole and advocated for the observance of such correlations between the elements in order this harmony not to be disturbed.⁷ This position is reflected in the later town- planning and in architectural and artistic practice of the Medieval Central Asia, for architects in organization of the subject-spatial environment deliberately disturbed the mirror symmetry of architectural ensembles and in this case the harmony of the whole was not disturbed. Confirmation to it is the ensemble – Poi-Minor and Lyabi -Khauz in Bukhara and the Registan ensemble in Samarkand. The Registan ensemble and its ancient part the Ulugbek madrasah, finally formed in the XVII century, when the opposite Ulugbek madrasa, which reached to our time was finally formed in the XVII-th century, when opposite to it the Sherdor madrasa was built in 1618, and in 1630 on the northern part of the square the Tilla-Kari madrasa was built. The width of the square is 67 meters at the depth of 80 meters. The ratio of the square is 5: 6 (Fig. 5). It can be assumed that for the determination of the dimensions and proportions of the square, the parameters of of the Mirzo Ulugbek madrasa were used, as the length of its facade is relevant to the width of the area as 5: 6. The spatial organization of the ensemble of Registan Square, the proportions of its architectural volumes are from the best samples of architecture of the

XIV-XV-th centuries, the Bibi Khanum mosque and the Gur-Emir ensemble. It reflects the continuity of town-planning and aesthetic concepts of the flourishing period of the Samarkand School of architecture, which were taken and then developed by Central Asian architects of the XVII-th century.

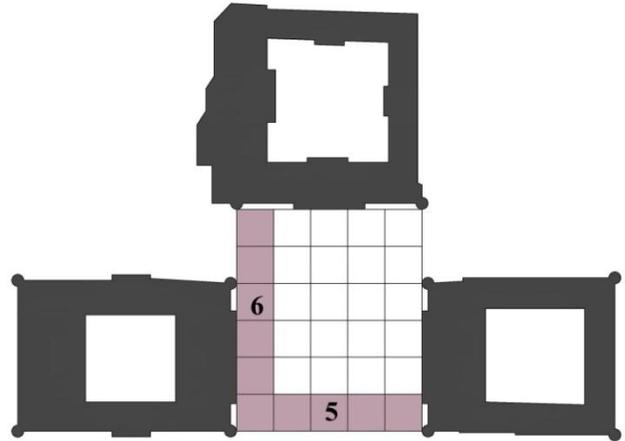


Figure 5. The plan of the Registan ensemble in Samarkand.

The composition of square building is strictly symmetric. The volumes of two madrasahs and their architectural interpretation are the same. The façade of the Tilla-Kari madrasa facing to the square is also symmetric. However, the hall premises of the mosque forming a part of the Tilla-Kari madrasa with a high drum dome, rising over it in the western part of the structure disturb the symmetry of both the mosque itself and the ensemble as a whole. Architects take such disturbance quite deliberately, they assume disharmony in the composition as the necessary one in the harmonic formation of the architectural ensemble of Registan Square (Figure 6).



Figure 6. General view of the Registan ensemble in Samarkand.

Let's consider the plan of the most famous ensemble of Bukhara – Poi-Minor. The Bukhara ensemble Poi-Minor includes a mosque, built in 1514, the minaret of the XII-th century and the madrasa Miri-Arab built in 1535 (Fig. 7).

The buildings are located on one axis and face each other by facades. As a rule under such scheme buildings were placed, flanking the bed of the street or road. The main portal of the mosque and madrassa are oriented to a small which differs from other areas of this type in Bukhara by the feature that the street is not along it, but on a short northern part of the square, forming a deep pocket.

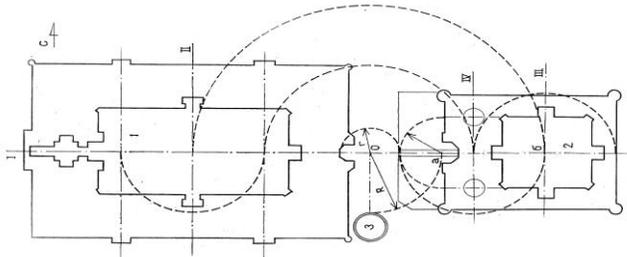


Figure 7. The plan and scheme of forming Poi Minor ensemble in Bukhara. (after Smolina N.I.)

Although the ensemble was historically formed, architects took into account regularities of the pre-existed buildings. This is evidenced by a system of proportional relations, connecting their sizes and also heights in the plan.⁸ V.E. Archangelsky, when analyzing the proportional relationship between the width and length of the Kalyan mosque and the Miri-Arab madrassa and the height of the minaret Kalyan found a number of regulations expressed in proportional relationship of rational and irrational numbers. He also revealed a certain regularity in proportional construction of the Samarkand Registan and its madrassa.⁹ M.S. Bulatov determined that the facades of the madrassa Miri-Arab and the mosque Kalyan constituting the ensemble are proportionate in relation 5: 8. M.K. Akhmedov when analyzing this ensemble took as a principle the height of the minaret Kalyan, where the total length of the ensemble is in proportion to the height of the minaret. (Fig. 8). The total length is $L = 2a + (2b-a)$.¹⁰

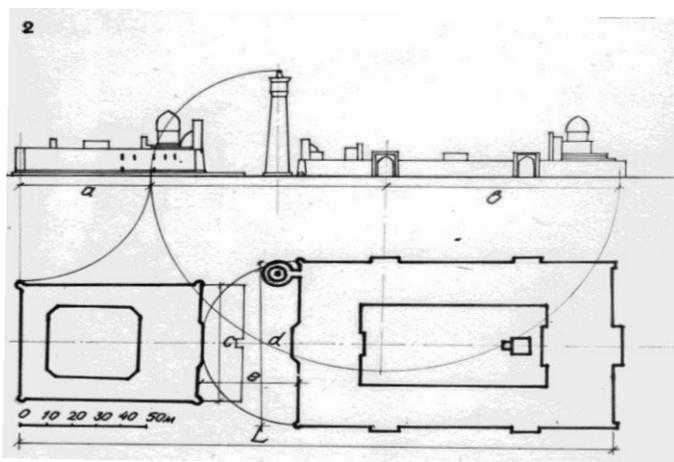


Figure 8. The scheme of proportioning of Poi-Minor ensemble (after Akhmedov M.K.)

The proportional structure of the ensembles are very many-sided. This relationships of the sides of the ensembles buildings between themselves, with the forming area, correlations of buildings heights between themselves and to the area, and etc. Thus, we can confirm with a high degree

of confidence that medieval architects at making up architectural ensembles used methods of geometric harmonization of parts, weight, shape and color of the structures.

REFERENCES

- [1] Akhmedov M. K. Ensemble buildings: traditions and succession. Architecture of Uzbekistan. (Tashkent: "Science" 1985)
- [2] Baikhaki A. F. History of Ma'sud. (1030-1041). (Moscow: "Science" 1966)
- [3] Pugachenkova G. A., Rempel L. I. Art history of Uzbekistan. (Moscow "Iskusstvo", 1965)
- [4] Uralov A. S. Harmonization of architectural forms and decoration. (Samarkand: 2003)
- [5] Mez A. Die renaissance des Islams. (Heidelberg: 1922)
- [6] Bulatov M.S. Geometric harmonization in the architecture of Central Asia of the IX – XV-th centuries. (Moscow 1978)
- [7] Al-Farabi. Socio-aesthetic treatises. (Alma-Ata, 1973)
- [8] Architecture of the Mediterranean countries, Africa and Asia of the VI-XIX-th centuries. General history of architecture, (Vol. 8. M., 1969)
- [9] Archangelsky V.E. Problems of architectural forming of city centres ensembles of Uzbekistan. Thesis for the scientific degree of Ph.D. in Architecture. (Moscow 1952)
- [10] Akhmedov M.K. Ways of formation of medieval architectural ensembles in Central Asia and some problems of their inclusion in modern buildings. The thesis for degree of candidate of architecture. (Samarkand, 1982)