

MEASURING THE DYNAMIC CHARACTERISTICS OF BIBIKHONIM MOSQUE CONSTRUCTION IN NATURAL CONDITIONS

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Annotation: *Based on an analysis of published works, engineering surveys of detailed latching damage and deformation; as well as static calculations to assess the impact of the stress strain state; field observations and calculations of dynamic characteristics of seismic impact of Bibihanyim mosque in Samarkand.*

Keywords: *mosque, construction, natural, dynamic, seismic, deformation, structure, roof.*

To assess the technical condition of any historical monument, it is carried out as a result of a thorough study of archival materials related to this monument and engineering research. The archival materials of the General Directorate of Cultural Monuments Conservation and Scientific Production under the Ministry of Cultural Affairs of the Republic of Uzbekistan were used in the assessment of the technical plan of the Bibikhanim Public Mosque. The main reason why the Bibikhanim congregational mosque fell into disrepair is due to the strong earthquakes that occurred in Samarkand between 1818 and 1909. During the earthquake, the structures of the mosque were severely damaged. After that, the mosque was abandoned until it was restored. The courtyard of the mosque was so damaged that it was impossible to enter, and it was filled with the remains of the mosque. Now let's look at the appearance of the mosque at that time. The general appearance of the mosque after the earthquake is as follows. Only the south tower of the entrance porch has preserved a little mysterious tile decoration. The arch of the main entrance of the mosque complex collapsed and fell to the ground, and the minarets on both sides were also badly damaged.

In the interior of the mosque, four arches of the main prism are cracked from their locks. Especially the part of the southern arch lock has moved and is in a very bad condition. There are longitudinal and transverse cracks in the walls of the mosque.

The southern side of the main mosque was also badly damaged. Here you can see that the part of the facade is separated from the main mosque. The cells on the side are completely destroyed. The dome structure and its foundation, the drum, were also damaged. Almost the entire upper part of the dome has collapsed. Longitudinal cracks

appeared in the remaining parts and the drum. The northern and southern small mosques of the mosque complex were also heavily damaged by the earthquake and other factors. It is possible to see that the above deformations have occurred in them.

The dome porches that connect the four constituents of the mosque complex from Zizila are completely destroyed. Only some of their superior foundations have been preserved.

In 1967, the renovation project of the Bibikhanim mosque in Samarkand was developed by the Institute of Renovation Studies. But the mosque complex was not repaired. But restoration and restoration work was carried out in different years. An example of this is the restoration of the facade and dome of the Bibikhanim mosque.

After our country gained independence, special attention was paid to architectural monuments. Including the Bibikhanim complex, according to the repair and restoration project prepared by the Institute of Renovation, the buildings of the entire complex, except for the porches, were repaired and restored. The entrance gate of the complex has been brought back to its original appearance. The decorations on the bouquets of the main mosque's entrance porch were restored, and the flowers were glued to the metal frame, which was removed at a distance of 30-40 cm from the porch. The northern and southern sides were restored and renovated. The interior of the mosque is still in a state of disrepair. The southern part of the mosque may collapse if constructive measures are not taken immediately.

The outer parts of the southern and northern mosques are well maintained, but the inner parts are in need of repair.



Figure 1. North view of the main mosque (1950).

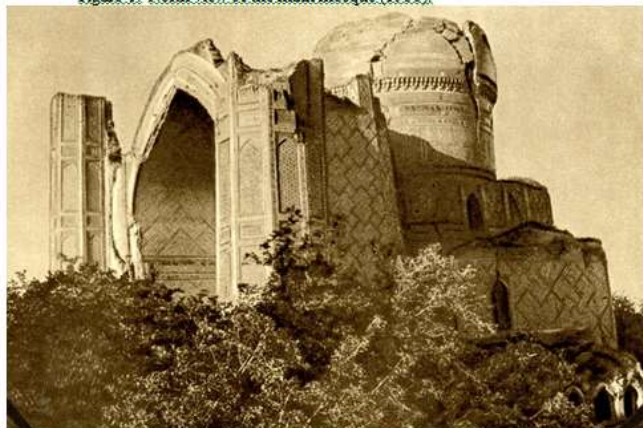


Figure 2. South view of the main mosque (1950).



Figure 3. General view of the mosque complex (1950)

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