

Investigation of Architectural of Aksaray Grand Mosque and Structural Deterioration Factors

Ahmet Gökdemir¹, Murat Sueri²

¹(Gazi University Faculty of Engineering, Department of Civil Engineering, Ankara)

²(Iller Bank General Directorate, Investment Coordination Department, Ankara)

Abstract: Our ancestors have built monuments to current zoning plan gives direction to the whole city after they seized the sovereignty opened the gates of Anatolia. In giving direction to Aksaray Ulu Mosque it was built by the Sultanate of Rum. This rare artifact, which can be passed on to future generations, should be taken into a permanent and permanent restoration program in accordance with the geographical location, climate structure and geological structure of the city, in accordance with the building material and construction technique.

Keywords: - Mosque, Architecture, Structural Distortion, Aksaray.

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I. INTRODUCTION

Aksaray is one of the oldest settlements in Anatolia. Aksaray has a strategic precaution with the grounds that its geographical position and surface shapes are predominantly flat. The Anatolian Seljuk Empire and the Ottoman Empire gave Aksaray direction by considering this strategic importance. Name of Arkhelais during the Seljuk period II. It was changed by Kılıçarslan to Aksaray and became the second capital city. During this period, the city was enriched with respect to zoning and building of charities and lore. During the reign of Alaaddin Keykubat, the city continued to be used as a military base and continued to develop in terms of development [1].

Selime cathedral, Ihlara valley, Monastery Valley consisting of 48 churches, High Church, Red Church, St. Gegerius Church. Ulu Mosque (1116-1155), which is one of the symbols of the city and the Seljuk monuments in Aksaray; Red (Curve) Minaret (1221-1236); Sultanhan Caravanserai (1229); Yunus Emre Tomb; Tapduk Emre Mausoleum and Mosque, the founder of the first Trade Registry of Turkey, founded in the early years of the Republic with the determination of the people, are the main artifacts that decorate the city. In addition to these works, the Sheikh Hamid-i Veli Tomb and the Somuncu Baba Tomb located in the Ervah Cemetery, which is known as Saint Cemetery at the foot of Kılıçarslan Tepesi in the north-east of Aksaray provincial center. The noble Father is the grandson of the Prophet Muhammad 24. There are very few books that arrive day-to-day, although it is not known that the Somuncu Baba is a profound knowledge of science.

These artifacts are the social and cultural memory of Aksaray. These artifacts are the architecture of our future as well as our future. The Grand Mosque, the first monument to be built in Aksaray during the Anatolian Seljuk State, was an important element of the city's character. It is important to remember that we have to protect our local historical architecture in order to be able to transfer our culture from generation to generation for generations; environmental values, local culture and sustainable architecture.

II. HISTORY OF AKSARAY

Prehistoric times, Aksaray's BC It is known to have been a settlement since BC 7000 years[2]. In Anatolia The Hittites, which were founded after BC 1800, ruled in Central Anatolia, namely Aksaray and around. The Kursaura, which is known to be one of the important settlements of the Hittites, is thought to be the present Aksaray. [3] BC From 713 onwards, the vision of Assyrian dominance of the Şehunti city is now Aksaray. After Assyria, the Phrygian became dominant. [4] [5] From the Phrygian rule to the Islamic, Aksaray; Lydians, Medlar, Persians, Macedonians, Cappadocians, Romans and Byzantines [6].

With the acquisition of Malazgirt Victory by Sultan Alparslan, Anatolia began to gain Turkish dominance in 1071. In 1076, the Anatolian Seljuk State, which was established under the Great Seljuk State, had seized the Aksaray dominion by destroying the Crusaders in 1077 [7].

The Grand Mosque, one of the most important works of Aksaray during the reign of Anatolian Seljuk Rükneddin Masud, was built between 1116-1155. In this period, Aksaray has developed much in terms of zoning. Son of Sultan Mesud II. Kılıçarslan also gave great importance to Aksaray and made great strides in terms of zoning. He enlarged the Ulu Cami built by his father, and his father's name printed his own name in

minber [7]. The existence of the Anatolian Seljuk State began with the end of Anatolia and the period of Anatolian Principalities. The most important of these is the Karamanoğulları. In the times of Anatolian Seljuk State, science, culture and art were developed very much in this respect, and also in various institutions and social facilities in Karamanoğulları period was given great support. The fortress, damaged due to the earthquake, such as Ulu Mosque constructions have been repaired [7]. İshak Pasha came to Aksaray with a crowded soldier in 1470 and took it to Ottoman rule [8]. "From the Sultan, he said:" Bring Aksaray home for Istanbul, "İshak Pasha fulfilled the command of the Sultan. At present there is Aksaraylı Neighborhood in Istanbul, the one that İshak Pasha has brought on " [9]. Almost all of the historical works in Aksaray are the works of Anatolian Seljuks. No artifacts were made during the Ottoman period, and even though it was done, it did not reach to the present day [2].

III. AKSARAY ULU MOSQUE

The Grand Mosque is located in the east of the city park in the neighborhood, which carries its name on the market street of the city. On the right is the Academy of Arts and the Library on the left. The mosque was built on a silky hill higher than the river level. The mosque Aksaray Castle was built right at the end of the ruins of the eastern bastion. It is evident that built on a small hill from the eastern front. The Seljuks, Danişmentlular and Karamanoğulları periods are located in a hill area where the Grand Mosque is located [14]. In the Ottoman books Karamanoğlu Mehmed Bey Mosque was named after the Ulu Mosque. There are different opinions about who owns the building and the history. The dominant view was built during the reign of Rukneddin Masud (1116-1155) in the time of Anatolian Seljuk State It was repaired and enlarged during the time of II.Kilicarslan (1155-1192) [10].

3.1. Architecture: The first architecture of the mosque was built by the architect Nustekin-i Jamali (12th century) during the reign of Anatolian Seljuk State Sultan Rukneddin Masud. In the time of Karamanoğulları, Mehmed Bey built the architect Firuz (15th century) [11]. The mosque, which is a rectangular area close to the square, has architecture in the form of a multi-legged structure [10]. The mosque dimensions of the glass are 8,90 x 10,20 x 7,50 meters from the outside [12].

The mosque mihrab consists of five sections vertically [13]. Twelve octagonal formations separate the sections of the pointed arches connected to each other and the walls. The cross is covered with vault over the sections. There are only two small domes in front of the mihrab and above the muezzin. It is stated that there are four windows in these domes, but they were closed during a repair. [14] There is a pendant dome and a small dome [13]. On the north side is a two-storey section with five arcs. In the present case, the lower part is used as the last community place and the upper part is used as the women's department. The mosque is covered with a barrel vault. This division can be exited from outside as well. The middle part of the mahfel is adorned with very elegant isotactics. The most recent arched section on the mahfel is located on the east side with a door space and stone steps [14]. It is entered from a monumental crown door protruding long and forward from the body walls in the west. [13] It can also be harvested from the north with a door and from the coffin. A door that opens to the north outside these doors, but to the left of the northern surface that was closed later, is present inside and is built with stone from the outside [14]. Because the mosque was built on a mound, it cracks and separates from the walls, so the vault of the glass is covered with soil. The leaks cause the slipping of the walls as the soil continues to be thrown away. In order to prevent these shifts, the southern part of the camel was built with stakes [14]. The original state of the mosque mihrab is made of plaster, and today the wooden mihrab stands out. Mimber came with the original state of the day. Made of ebony wood and decorated with floral motifs is a masterpiece of woodworking pulpit. [14] The first state of the minaret of the mosque was built in 1706 and the present state was built in 1925 and the mosque was placed separately [13]. In the general layout of the mosque, there is a rectangular planned lecture hall and a rectangular space which is used as a book selling place [10].



Fig 3.1 Aksaray Grand Mosque (Front and Side View) [15].



Fig 3.2 Aksaray Ulu Mosque (General view from the top) [15].

3.2. Construction Material: Properly cut stone and rubble stone combined with horosan mortar in the walls, feet, arches and vaults were used as building material in the construction of the mosque. The domes on the front of the altar and the muezzin are covered with bricks. The facades are built of rubble stone. Wood is used in doors, windows, upholstery and roof coverings. In the eastern, western and northern frontal windows, a snap-on iron rail, a north-facing left-hand iron rail and a north rail front rail are used. Make the current top cover is copper. In addition to these, tiles are used in the interior [12].

The most unique material of the mosque is striking the pulpit. Wooden pulpit made with kundakari technique, decorated with mother of pearl inlay and embossed [10].



Fig 3.3 Crown Door and Wood Minbar [15].

3.3 Construction and Construction Technique: The mosque, which was built as a stone structure, was supported by sherds. Five of them are located in the west direction, three in the north direction and three in the south direction [10]. They are the greatest shareholders in the eastern direction carrying the actual burden. The reason for this is that a sloping land composed of an artificial fill was built [13].

The original width of the mosque is 7 meters and shows the actual elevation changes. On some façades, repairs were made over time, with widths of 9 meters and height of 4.30 meters. There are deeper niches rising over five cut stones that are raised 1.5 meters above the ground. The surface is separated from the first. Each section consists of rectangles separated by borders at separate thicknesses. In the left section there is an entrance door and in the other two sections there are deaf niches [12].



Fig 3.4 Supporting Transporter [15].



Fig 3.5 Situation of Interior and Carrier Systems [15].

IV. STRUCTURAL DETERIORATION FACTORS

The factors of structural deterioration depend on the geographical location and surface form of the main city, climate and geological structure. These factors as well as human-induced factors should not be forgotten.



Fig 4.1. Outdoor Miscellaneous Distortions, Interior Various Distortions [15].

4.1 Geographical Position and Surface Shapes: Aksaray is on the historical Silk Road route. It is located in the Middle Kızılırmak section of Central Anatolia Region. There are three volcanic mountains in the city; Hasan Mountain, Melendiz Mountains and Ekecik Mountain. These mountains have platelets composed of lavas. Most of the Konya Plain is within the borders of the city. The city center was built on an alluvial plateau carved by a large river [16, 17].

4.2 Climate Structure: In Aksaray, there is a continental climate in which summers are hot and arid, and winters are cold. The rains are largely in the spring and winter months. Night-day and summer-winter temperature differences are quite high [18].

Other natural environmental factors are also affected by the climatic factors that affect human life. The main factors of these factors are culinary culture, agricultural product variety, industrialization type and construction style of buildings [18].

4.3 Geological Structure: Aksaray was built on the Salt Lake basin with the land consisting of calcareous volcanic tuffs that came to the foreground. The city is a volcanic area formed in the inversion of the eastern and southern regions. Hasan Mountain and Melendiz Mountain are the leading volcanic mountains. The center of the city was built to the south of the fault line where the Middle Red Cross Plate separated from the Salt Lake basin. Alluviums from Ulu River flowing in the Salt Lake from Melendiz Mountain and alluvions from the surrounding platelets are the order of this fault. The city was built on the plains in general [20].

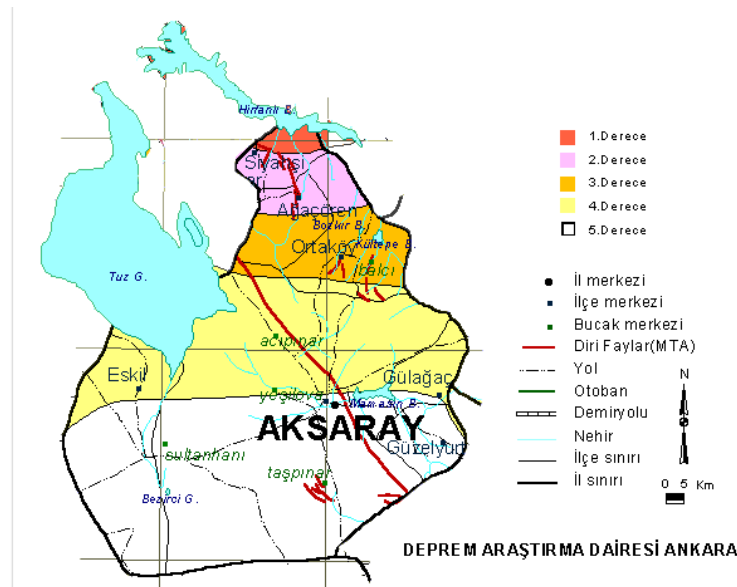


Fig 4.2. Fault Line and Earthquake Map [21].

The Aksaray region has been formed from metamorphic and sedimentary rocks. Stratigraphically, volcanosedimentary rocks and volcanic rocks on the lower metamorphic rocks are overlain by allogeneic olive deposits on all these rocks [20].

V. SUGGESTIONS

When Anatolian constructions are examined, they have similar and different functions, decoration and building elements. These similarities or distinctions can occur even among the structures of the same region, for reasons arising from different economic, cultural, political and religious fanatics [22, 23].

The Grand Mosque was the cornerstone for Aksaray's development plan and development. The Grand Mosque was built by Sultan Masud who ruled between 1116-1155. The biggest joints and repairs were made by The Seljuk Sultan II. Kılıçarslan and Karamanoğlu II. Mehmed Bey. After these repairs, it is seen in the mosque book where repairs were made in 1300 and 1883. In 1925, the most extensive repairs in the last century were made according to the project prepared by Aksaray Governor Ziya Bey (1924-1926) and Aksaray Mayor Mehmet SÜERİ (1917-1927) to Engineer Salih Bey. Following this repair, repairs were made in 1951, 1983, 1997, 2006 and 2012 [12].

Aksaray The Grand Mosque despite its numerous repairs, has been worn out against the burden of 900 years and needs to be examined by paying attention to its geographical position, climate and geological structure so that it can be transferred to generations.

As a result of the examinations made, it is seen that the isotacticities of the door portal have lost originality, the mosque has lost its original garden and threshold levels, the interior of the coffin has lost its vault stones and its tie, it has been observed that in many façades the joints are emptied at the joints to affect the bearing characteristics of the stones, the stones lose their qualities on some façades, there are intermittent blackouts on the interior surfaces, the gypsum mihrab is removed and the wooden alcoves are changed in different shapes.

The consequences of these examinations should be incorporated into a permanent and permanent restoration program, in accordance with the architecture, building materials and construction technique. The Aksaray region has attracted attention from domestic tourists as well as being a stop for foreign tourists for many years. With this restoration, our culture will be preserved and it will provide economic return in terms of

tourism. It is very important to investigate, protect and transfer the history, science, art, social and economic values of all cultural structures in Anatolia to future generations. If the necessary attention is not given, our past memories are doomed to disappear. The Aksaray Ulu Mosque should be kept in a standing, conscious manner and transferred to future generations by using all the techniques and facilities available from the elite.

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