



Investigation of Architecture and Structural Defects of Historical Halfetih Minaret

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Abstract

Malatya is a city that has hosted many civilizations throughout history. Until 1840, Battalgazi district is another example of the city of old Malatya, where the first examples of Turkish-Islamic artifacts are found here. Castle, inn, madrasah, mosque, tomb etc. a large number of religious and civilian structures have been constructed. The Monuments reaching our time are ruined. The best way to transmit this cultural legacy, which sheds light on our history, to the future is to restore them safely and without restraining the old historical doctrine. In this study; The history, design, materials used and the causes of structural deterioration in this work were investigated in Halfetih Minaresi, located within the borders of the Battalgazi district of Malatya Province. Various suggestions were presented on the results of the examinations made.

1.INTRODUCTION

Cultural assets are historical artifacts which shed light on our history. Each historical monument, bears the traces of the period was made. The main purpose of the preservation of cultural legacy is to pass on the future generations without losing the characteristics of the historical monuments. In order to achieve this, it is necessary to know the construction system of the historical monuments, building materials and architectural features. In this frame, information about the work must be gathered on site and evaluated together. The end result of these evaluations is the transfer of written or visual information about cultural assets that are destroying future generations.

Architectural artifacts include social and cultural riches of that community. Architectural works bear witness to this trend. The two elements that influence the formation of architectural works are material and then construction technology. The type distribution of the architectural works gives information about the conditions of the day. For example, when Anatolia is an Islamic region, it is more likely to see mosques, madrasas, tombs, There are works.

2. PROGRESS OF THE OLD MALATYA (BATTALGAZİ) IN THE HISTORICAL

Malatya has been at the crossroads of Anatolia and the Middle East since ancient ages. This important position has been a region in which states have tried to dominate throughout history [1].

The second settlement of Malatya and the name of Old Malatya until 1988 until the name of the district is very old. "Aslantepe Höyüğü" is the first establishment of the city of Malatya. This area is a part of busy caravan routes especially during the XX and XIX centuries. In the Assyrian and Urartu sources at that time, this area was named in various forms as Maldia, Melit, Melide and Melitea [2].

Old Malatya, which had become a great city during the Romans and Byzantines, was surrounded by walls, it gained importance as a military base in the east. In the Byzantine command, the Sasanites have been inundated for years, From the VII. century to the X. century, the Arabs changed hands among the Byzantines. The city, which is called by the name of Malatiya by the Arabs, capture Danishmends in 1101, the Anatolian Seljuks in 1105 and the Ottomans in 1399 [2].

In 1401 it was be plundered by the army of Timur. Later, it became a subject of contention between the Ottomans and the Mamluks and entered into the captured of the “Dulkadiroğlları”. In 1515 I.Selim added the Ottoman lands to the city and later the center of Malatya connected to the State of Dulkadikiye [2].

After the Republican period province of Malatya, in 1928 in the Old Malatya municipality, It was declared a neighborhood in 1932 after this 1987 with a decision taken old Malatya name, the name changed of the Ancient Turkish commander, "BATTALGAZI" was named [2].

3. HALFETİH(HÖTÜM DEDE) MINARET

Halfetih Minaret located in the center of Malatya city, the position is as shown below.



Figure 1. Halfetih minaret located in the center of Malatya city

3.1. History of Halfetih Minaret

There are no inscriptions showing the history of Minaret. Michael Meinecke made comparison Minaret, Malatya Ulu, Sivas Ulu (1212-1213) and Kayseri Ulu (1205) minarets of the mosque he designate of minaret made a XIII century. Turkish History of Art expert's Ömür Bakırer has a same idea him [3,4].

Halfeti Minaret is the Ulu Mosque minaret, which is located in the same protected area, which is the closest to the shape of the brick knitting in the body. The material and workmanship characteristics seen in both minarets suggest the possibility that they could have been made by the same master group [5].

Apart from the Erzurum Tepsi minaret (1189-1197), except for the minarets of the Sivas and Kayseri Ulu Mosque the minarets and the Aksaray Red Minarets (1220-1230), similar to the special writing series under the roof [5]. The minaret is also located in the Malatya grand mosque, like the eight-pointed star ornament, located underneath the nude body and reaching partly daily.

We see similar examples of these ornaments, which we have not encountered much in Anatolian minaret constructions, in structures constructed in 13 centuries [6].

3.2. Current State of Build

Today, the structure belonging to the minaret was demolished, and square and rectangular spaces, which are believed to belong to the demolished structure of the research excavations around it, have been discovered.(Fig 2)



Figure 2. Current state of Halfetih Minaret [11]

The minaret is an octagonal structure on a square base. The base is made of rubble stones and the body is made of bricks. A large part of the foundation has been buried today.(Fig. 3 and 4)



Figure 3. Current state of Halfetih Minaret [11]



Figure 4. Current state of Halfetih Minaret [11]

There are many factors affecting the Halfeti Minaret to become its present state. These can be listed as follows: climate structure, type of material used, geological location, earthquakes from past to present. Besides all these, the human factor is the most damaging factor.

4. FACTORS OF STRUCTURAL DETERIORATION

Factors of structural deterioration; depending on the geographical location of the city, surface features, climate structure and geological structure.

4.1. Geographical Position and Surface Shapes

Malatya; It is located in the area which is located in the eastern Anatolian region, Adıyaman, Elazığ, Bingöl, Mus, Van, Diyarbakır and Sivas Neighboring Area. While the mountains of the Malatya are adjacent to the Southeast Taurus Mountains, these mountains extend to the Fırat valley [7].

4.2. Climate Structure

Malatya Province; It is possible to name it as a transition region because it is located between Southeastern Anatolia, Mediterranean Region, Eastern Anatolia and Central Anatolia region. For this reason, Malatya is located in the eastern Anatolian region, showing less cold and less terrestrial climate characteristics[8].

The Malatya Plain and its immediate surroundings have an arid climate for a period of six months longer than the year. The data of climatic parameters belonging to Malatya shown in Table 1.

Table 1. The data of climatic parameters belonging to Malatya (1929–2016)[9].

MALATYA	January	February	March	April	May	June	July	August	September	October	November	December	Yearly
Measurement Period (1929 - 2016)													
Average Temperature (°C)	-0.4	1.4	6.7	13.0	18.1	23.2	27.2	27.0	22.3	15.4	7.8	2.0	13.6
Average Highest Temperature (°C)	3.1	5.3	11.5	18.3	23.9	29.5	33.8	33.7	29.0	21.3	12.5	5.4	18.9
Average Lowest Temperature (°C)	-3.4	-2.2	2.1	7.5	11.9	16.1	19.8	19.8	15.4	9.8	3.9	-0.9	8.3
Average Sunshine Duration (h)	3.2	4.2	5.4	7.2	9.2	11.4	12.4	11.6	10.1	7.3	5.2	3.1	90.3
Average Number Of Rainy Days	10.9	10.7	11.0	10.7	10.0	4.7	1.0	0.8	2.1	6.7	8.6	10.8	88.0
Averages of Precipitation (mm)	42.1	40.7	48.9	54.7	44.5	17.1	2.2	1.8	6.6	35.9	42.0	39.9	376.4
Measurement Period (1929 - 2016)													
Highest Temperature (°C)	15.4	20.3	27.2	33.7	36.0	40.0	42.5	41.5	38.8	34.4	25.0	18.0	42.5
Lowest Temperature (°C)	-25.1	-21.2	-13.9	-6.6	0.1	4.9	10.0	9.3	3.2	-1.2	-12.0	-22.2	-25.1
Average Temperature (°C)	-0.4	1.4	6.7	13.0	18.1	23.2	27.2	27.0	22.3	15.4	7.8	2.0	13.6
Average Highest Temperature (°C)	3.1	5.3	11.5	18.3	23.9	29.5	33.8	33.7	29.0	21.3	12.5	5.4	18.9
Average Lowest Temperature (°C)	-3.4	-2.2	2.1	7.5	11.9	16.1	19.8	19.8	15.4	9.8	3.9	-0.9	8.3
Average Sunshine Duration (h)	3.2	4.2	5.4	7.2	9.2	11.4	12.4	11.6	10.1	7.3	5.2	3.1	90.3

4.3. Geological Structure

Malatya; It is formed as a result of Alp folding, and the city has elevated and depressed areas. The depressions that have been erupted in very severe erosion are filled with alluvium, and as a result of these developments, malatya rust and other plains are formed[7].

Natural limestones, conglomerates and volcanic ash are present in the region as a result of the natural structures formed as a result of the events that occurred in the third geological time [7].

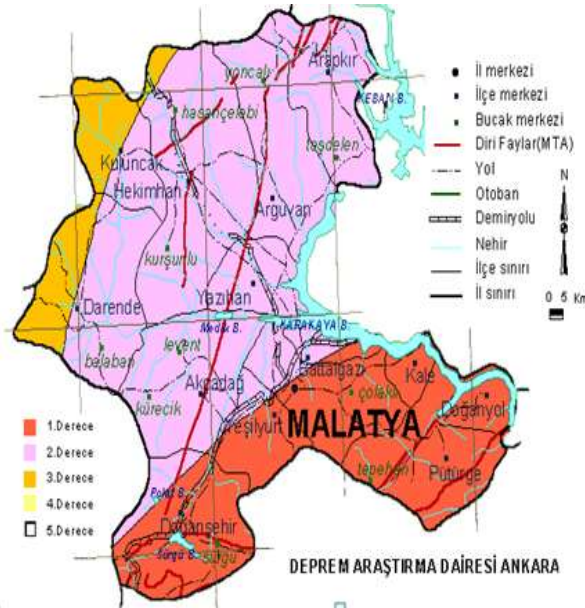


Figure 5. Fault Line And Earthquake Map Malatya Province [10].

5. RECOMMENDATIONS

Malatya City has a significant place in terms of known written and non-written history. Halfetih minaret is a very special structure which is based on 13 centuries and has its own distinctive features with its body. Especially the special writings you have on it are very important in history.

If this historical work is to be restored one day; The temperature changes in the region should be carefully examined and the building materials to be used should be selected accordingly. The damage from the main course should be corrected with natural stone and processed with horasan mortar. The gaps between the joints of the wall material of the building should be sanded and filled with horasan mortar. The spaces under the foundation should be filled with rubble stones and then be filled with horasan mortar. The ornaments and ceramics on the body are the aesthetic elements of the minaret and their restoration is important. The ornaments and ceramics on the body should be restored properly and should be reconsidered according to the work being done.

In terms of tourism and historical importance, it is important that the restoration is carried out as soon as possible and it is brought to the values of our country.

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