## Fact finding report about the rock fall in Hasankeyf on 13<sup>th</sup> July 2010 and possible risks

05th August 2010 by
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Situation one day after the rock fall

On 13th July 2010 a big rock mass broke out from the bedrock in approximately 100 m east of the small palace at the access region to the rock castle in the antique city Hasankeyf and one person died as a result. After the incident with the joint decision of Governorship of the province Batman, District and Police directorate, the two roads, which goes to the castle from the old bazaar/city and to riverside on the southern side of the Tigris River with many restaurants, have been closed to human and vehicle traffic. Through this decision the most parts of the historical Hasankeyf city can not be accessed any more by public and tourists.

Under the leadership of the Initiative to Keep Hasankeyf Alive, a technical committee including the representative of Civil Engineers Chamber in Batman Murat Ekinci, Geological Engineer and Geological Engineers Chamber Batman representative Nevaf Taş, Architect Engineer Abdulkahhar Onur, the archaeologist Ercan Alpay, Murat Tekin from the Hasankeyf Union, İpek Taşlı and Barış Eviz from The Initiative to Keep Hasankeyf Alive Hasankeyf undertook a fact finding mission to Hasankeyf and notes were taken.

This work aims to make an observational investigation on the settlement and ruins of ancient city of Hasankeyf in terms of engineering and archaeological aspects. The investigation is done to observe the precautions in the area in question, where these kind of natural disasters can happen.

The investigation was permitted with the condition of not touching anything, just observing, and taking photos. According to the notes, taken by engineers and an archeologist, based on observation, some kind of life-threatening risks are exist. However, with today's possibilities of engineering if the requirements are used in the correct format, solutions containing different measures can be found instead of unmanning the area.

Archaeologists Ercan Alpay notes in his report that as a result of his observation a mass rock has broken out of the bedrock and with this disaster a part of house caves also called Hasankeyf caves, that have been used as dwellings since BC 800 till the recent times, are damaged and some other caves placed on the broken mass rock have completely destroyed. This situation shows that unfortunately an irretrievable destruction has happened on a part of cultural and historical value in Hasankeyf.

In a CD given by the Hasankeyf residents to the committee members, some recordings and photographs show that the excavations has been done with heavy construction machines like hydraulic shovels in the affected area. Working with heavy construction machines in a place of unique historical importance, has no relation with a scientific excavation because such a work can cause a great damage on historical monuments. When this work is done in places like Hasankeyf where the rock structure is very sensitive, such disasters can happen. If it is analyzed from a legal perspective, making excavations with construction equipment in a location which has been declared conservation area of highest degree, is criminal.



In the days before the rock fall construction machines were used for the arhaeological excavations

In addition, during the visit in this area the necessary security measures for an archaeological excavation work have not been observed. Although there was already a split in the broken part of rock, no measure has been ensured and excavations in the archaeological sites continued until the last day before the incident. Fortunately the rock has broken out at around 04:00 in the morning and lowest level of fatalities has accrued. If the mentioned disaster has happened in the daytime hours, many more casualties would be in question. Taking no precaution for an obvious risk shows the weakness of the authorities. After the incident because of missing measures, some radical precautions have been taken and the most important areas of Hasankeyf, that is the rock castle, its access areas and the southern riverside, have completely been closed to visits. This situation victimizes the locals of Hasankeyf and tourists and history lovers who want to visit there.



After the rockfall the acces to the castle and the surrounding area has been forbidden

In the historical sites, which is visited by thousands of tourists and having historic and tourist attractions, the priority should be given to the safety of the monuments not to be damaged by the visitors and to the safety of themselves. Instead of banning the ancient city of Hasankeyf to visit, safe travel routes and resting points must be identified for visitors. The studies should immediately be done and as a historical-cultural and economic value Hasankeyf, must be opened to visitors again.

According to the findings of the civil engineer Murat Ekinci due of the splits formed in various parts of the bedrock in the region, the rocks will continue to fall. What to do against this reality follows this conditions: Primarily a technical mission with needed equipments urgently has to be sent to Hasankeyf, the most valuable cultural and historical heritage of our region and

their activities should be monitored. The rocks that are at risk of falling should come down safely by appropriate technical interventions. In the areas where the rocks are at risk of falling, but may damage the historical sites, improvement efforts should be made with technical intervention to minimize the risks. In the regions, where the intervention is technically difficult and expensive, should be identified and these areas should be given alternative transitions. Despite of realized improvements, if there are still some rocks at the risk of falling, in the affected locations of these endangered rocks should not be allowed to create resting places.



In his notes the geological engineer Nevaf Tas said, primarily the Ministry of Culture and Tourism has to make a scientific research in the registered immoveable cultural asset of Hasankeyf which is under the protection of 2863rd Cultural and Natural Heritage Protection Act. He notes that the work, which has been done by him and his friends, is based on observation and another study should be done with more participants deployed with the scientific possibilities. Taş underlined in his report that, the determined engineering and archaeological findings, and as a result of these findings the needed measures urgently should be carried out for the benefits of the public.

It is obvious that the event of rock fallings can happen in the area oftenly. The reality of such cases should be accepted. For sure supplying the security of people's life is very important and required. However Hasankeyf's most important source of income is tourism, without damaging the touristic activities, the world heritage residential area should be transmitted to the future and humanity and tourism activities should continue. It is not difficult to achieve this objective. As a result of our visit and observations in few locations in Hasankeyf more rockfalls are possible, but the joint idea was that identified risks in the area can be eliminated and those areas can be converted into safe places. Especially in few points with basic precautions, the current risks threating human's life can be taken away. In order to clarify the situation in all aspects, a team has requiring technical equipment has to make a detailed research. The area in question should be mapped, the risky points should be identified and the needed measures have to be taken. In the period of renewing and restorating these locations the security has to be carry

on carefully. However, due to security concerns, making the historical site completely unmanned without any measures and abandoning it to its fate, is not appropriate with a society in the 21st century. Such a situation is not a problem that can not be solved with engineering science.

First of all, it is essential to do the necessary work in a way that will not damage the historic structure in the area. So the technical committee should be formed by both engineers and other technical staff, archaeologists and scientists of art history.

The proposed field studies should be performed in the following steps:

- 1) A technical committee, which will work in the light of objective scientific facts, should immediately be established and this committee needs to make analysis, observations and mapping work in the investigation area. Clarifying the current situation, determination the first step measures, and other precautions should be taken in the midterm and long term has to be explained.
- 2) Without to lose time, the necessary permits have to be taken and high-priority measures have to be implemented immediately in the area in question.
- 3) The necessary scientific studies should be done in the ancient city without damaging its historical and cultural structure. In the medium and long term, in order to take the necessary measures and restorations, projects should be prepared, methods and measures to be implemented should be determined. The costs of these measures should be counted and they must be implemented without loosing time.

If these proposals are implemented, the problem will be solved in the frame of scientific work without damaging or at least minimizing the damage on the structure of the city. The area must not be isolated from the people and life and at the same time it should be present to the service of culture and humanity. In the fist investigations, it has been observed that in the current situation the number of the dangerous points without a tectonic movement is not large and with the basic measures those places can be safer in a short time. However, after these initial measures, for the areas where have the potential long-term risks that may create hazard with or without a tectonic activity, scientific and engineering work has to be done perfectly and the area should be converted into a safe locations. Nobody and no institution should have any doubt that, all the engineering chambers in Batman will take part in such a study and do their best for the public opinion.