

Professional scientific sessions for art, architecture and urban planning Thursday evenings

Held in: Conference hall of Herampey Consulting Engineers

Date: 18.04.2019

Title: Water and Qanat.

Speakers and panel members: Mrs. Q. Karamati, Mr. S.O. Torabi and Mr.A. Maleki.

The first speaker was Mrs. Q. Karamati. She began her speech saying that she was interested in the matter of water in Iran since the years she was a university student. She presented a table showing the process of development regarding water sources and management during different eras of Iranian civilization. The most important factor that she focused on was that when the central government was solid and powerful, water management experienced in all its grades development in relation with urban and other human centers.

Talking about the history of the last century, Mrs. Karamati explained that during the Pahlavi first, foreign technologies are introduced in Iran in order to ease the life of the Iranians and this introduction has negative impacts on local technologies and knowledge that for thousands of years had provided and satisfied the needs of the local population. Meanwhile the people knew how to manage water provision and use, a radical change occurred regarding the historic sense and use of water in the Iranian society. This is the period of confrontation between the modern development and archaic measures that were in use in Iran.

Mrs. Karamati explained about Tehran comprehensive plan and why she was invited to work with this team. The idea was to pull out on the surface water sources and flow and pose the question what would happen then. In this project five rivers of Darabad, Darband, Darakeh, Farahzad and Can were considered, in order to see where and what could be permitted or not. The idea was to use the element of water to improve the relationship of man and nature in an urban environment. Showing the plan of Tehran water routes from east to west and north to south, she explained how natural routes and areas would be an integral part of the city, as it happened in various Iranian cities before the modern era.

Mrs. Karamati is an expert regarding the presence of water sources in the Iranian house, mosques and urban spaces, like schools or public baths. In this context she had excellent experiences regarding the problems that should be faced in relation with water sources and routes, because in many cases many structures were built in adjacent areas to the rivers or in the ex-rivers areas, that fortunately through legal actions their use of property have been limited and prohibited.

An important argument that Mrs. Karamati talked about was the lack of a cultural comprehension regarding water and water sources. Many foreign researchers of Iranian history and civilization, studying the Iranian geography and water sources conditions and distribution, concluded that Iran must have been an area impossible to live for human societies, but the

Iranians not only lived in this area from thousands years ago, but also created empires that dominated a large geographic area for many-many centuries, arriving to our days and continuing to live in this area despite the existing problems.

Mrs. Karamati talked also about the competition that had been organized for a theoretic program of sharing water sources as rivers, springs and qanats in Tehran, in order to see the potentials and possibilities of such possible use of water sources in Tehran.

Concluding her speech Mrs. Karamati informed the presents that they are preparing the edition of a book based on the collected documents, that how should we manage the water sources in the 21st century in the urban areas and especially in Tehran.

The second speaker was Mr. Torabi. After mentioning that water was presented in Shah-Nameh as a precious sources to be transferred through underground qanats, he explained that 85% of the Iranian territory is considered as arid area. In these areas the most important role for water is reserved to underground sources. The water that can be accumulated in the dams, can just satisfy 15% of the entire demand.

Mr. Torabi asserted that in Iran we should change our strategic approach regarding water sources maintenance and exploitation, because we have introduced manners that are appropriate for European countries that a humid climate.

Talking about the knowledge and technology that Iranians invented for the construction of qanats, in order to have access to water sources wherever they needed it, he explained that this technology has been exported to countries like Japan, Latin America and Spain and still is in use despite centuries.

Mr. Torabi compared water resources with other resources like gas and oil, that don't belong just to this generation but also to the future generations, so we should limit the use of this precious resource. He explained that despite the good precipitations of the last months, the problem persists, because we have consumed resources that were formed thousands years ago and it's not easy to replace them with rain flows.

Continuing his speech Mr. Torabi explained how in ancient eras the experts founded the qanats, using simple tools. Even though the tools were simple but the process was a complicated and knowledge based. In order to construct the 24 km long qanat of Gonabad, our ancestors used a complicated technology, that for us is difficult to imagine. He also talked about the phenomenon of qanat as a team work, because many persons were involved, having specific duties in a social framework of management. The qanats were really the symbol of a successful management. During the sixties of the 20th century, about 40000 qanats provided half of the necessary water for agricultural purposes.

An Arabic proverb says don't throw stones in the well that you drink water from. In Iran the authorities didn't pay attention to such a simple warning. In the same sixties and because of pressures from higher authorities and the possibility to use new technologies, like dam constructions and use of water pumps, the condemnation of the qanats, and consequently many small villages, have been declared. In this context the role of management of water sources in the central government has been increased, eliminating the traditional role that the local water managers had for centuries. Forgetting the past people thought that water is an infinite source and the smart use and distribution of water has been condemned to be forgotten.

Explaining what happened in the sixties, Mr. Torabi said the minister of water and electricity asserted that even though qanat has been the main source of water provision for agricultural purposes, but today their exploitation doesn't permit to extract more water, so in the future they won't play anymore their historic role and they are condemned. The consequence was the depopulation of 35000 small villages. In reality the qanats were tools that were under control and nobody was allowed to a indiscriminate use of water. Mr. Torabi believes that today the authorities make the same mistake in the indiscriminate use of water.

Mr. Torabi talked also about the history of Tehran during the last 400 years and how it was developed ignoring the principal rules of urban planning and environmental protection. Transferring the capital to Tehran was the biggest mistake of Qajar dynasty, because it was a capital without sufficient water sources. To provide water the authorities made large use of qanats, but today the construction of high rise buildings and the network of subway trains, created dangerous conditions for the natural flow of underground water sources. The natural consequence of this mismanagement is the actual situation of different areas in Tehran that are subject to soil sags.

The third speaker was Mr. Maleki. He explained that the use of qanats in Iran goes back to 100 thousand years ago. Each qanat has its own history, like the qanat of Gonabad that has a history of 2500 years and still it's operating. He explained that in base of official information during the last 60 years, the number of qanats experienced a decrease from 50 thousand to 40 thousand and the water flow decreased up to 90%.

Talking about Mehrgard qanat in Tehran, he explained that it was founded about 700 years ago. Before Qajar era it was administered by the people and local authorities, distributing the water in base of a regular schedule to different quarters of Tehran. During the last years, the construction of telecommunication building and the network of subway train, forced to change the route of the qanat to another direction, near the line 1 of Tehran subway.