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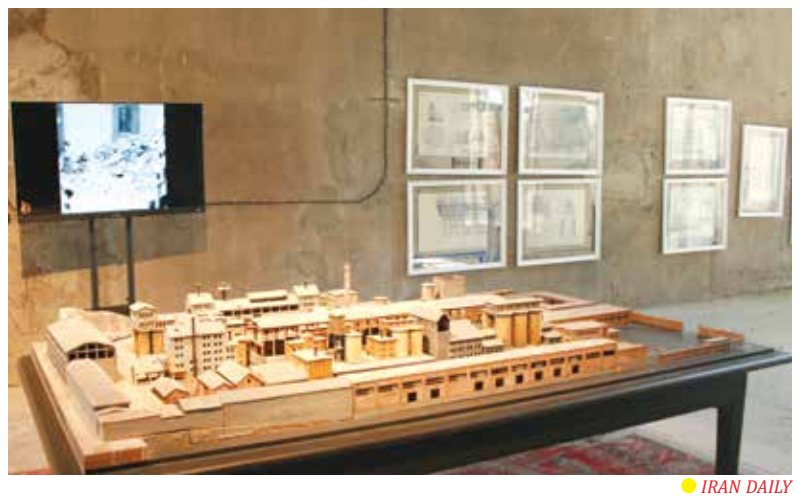
A report on historic Shahr-e Rey Cement Factory

A plant that narrates industrial, historical, and social transformations of contemporary Iran

By Sadeq Dehqan
Staff writer

The cement factory of Shahr-e Rey stands as a witness to the industrial, historical, and social transformations of contemporary Iran. It is true that old people and places holds numerous stories and adventures; the tales of an individual, a family, a group, or even a specific place or era. Shahr-e Rey Cement Factory, the oldest cement factory in Iran and the Middle East, and one of the pioneers of modern industries in contemporary Iran, is no exception to this rule.

Founded in the year 1894 around the Sorsoreh Mountain and Bibi ShahrBanu Shrine in the Shahr-e Rey region, south of the capital, by Reza Shah Pahlavi, it marked the inception of the Pahlavi as the country's first cement production line. After half a century of activity, the factory was closed in March 1984 due to reasons such as urban development and the emission of smoke and dust. Over the course of more than half a century of Shahr-e Rey Cement Factory's activity, many people's lives have become intertwined with its story.
Haj Hassan Farahani and his father worked together for 90 years at the Shahr-e Rey Cement Factory, covering its entire existence until its dissolution.
Even after the factory's closure, Haj Hassan did not cease working there, and for several years, he has been narrating the oral history of the factory as a guide for the Rey Cement Museum since its conversion.
Hassan Farahani, who is at his at 70 (born in 1953), commenced his activities in the Shahr-e Rey Cement Factory in 1971 and has experienced various departments of the factory to date. His father had also worked in the factory for over 50 years. The story of Haj Hassan and the cement factory intertwines in such a way that when reviewing their lives, it seems as if you are flipping through the history of the factory.



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Foundation story of Shahr-e Rey Cement Factory

Now, hear the story of the establishment and launch of the oldest cement factory in the Middle East from the perspective of Haj Hassan: "In the 18th century, especially in the latter half, when new industries were emerging, Ali Qoli Khan Sepahi, a Qajar descendant, returned to Iran in 1917 after graduating from a university in Zurich, Switzerland. From the beginning, he nurtured the idea of cement production in Iran because, at that time, Iran did not have any cement. Although in Iran, two to three thousand years ago, there was a lime mortar called "Sarooj" which had a function similar to cement, the term we recognize today as cement has Roman roots and means adhesive.

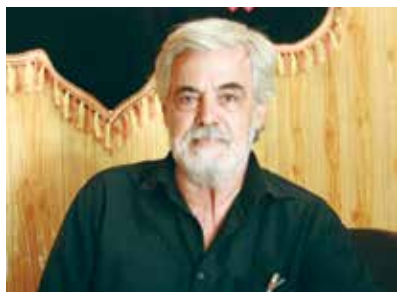
In 1917, Ali Qoli Khan Sepahi signed a contract with the then Ministry of Public Works for exclusive cement production rights in Iran for 30 years. However, due to coinciding with World War I, this matter was not brought up in the Parliament. Until 1925, when Reza Shah Pahlavi announced his intention to build a nationwide railway. At that time, it was concluded that if they intended to import cement for this project, it would impose a high cost on the project and the country. Therefore, it was decided to establish a cement factory. Consequently, Ali Qoli Khan, with the consultation of several engineers, corresponded with Denmark to import a 100-ton cement production line. With these preparations, the groundwork for the factory was laid, and in 1933, alongside the Sorsoreh and Safayyeh Mountains (seven kilometers south of Tehran and north of Shahr-e Rey), the factory was launched. The raw materials for cement production include limestone, clay, and a small percentage of raw gypsum. Through research, it was found that the limestone of the Sorsoreh and Safayyeh mountains was superior to other areas for building the factory. For the expansion of the factory, a 200-ton cement production line was purchased from Siemens Germany in 1937. Subsequently, in 1939, the request to purchase a 300-ton production line was submitted, but due to the outbreak of World War II, the ship carrying the equipment sank or was confiscated by the Allies in 1941. However, after four years, in 1955, through negotiations with Germany, the equipment reached Iran through the sea, and the third cement production line of Shahr-e Rey came into operation. In total, the factory's production capacity reached 600 tons per day."

Special cooling tower technology

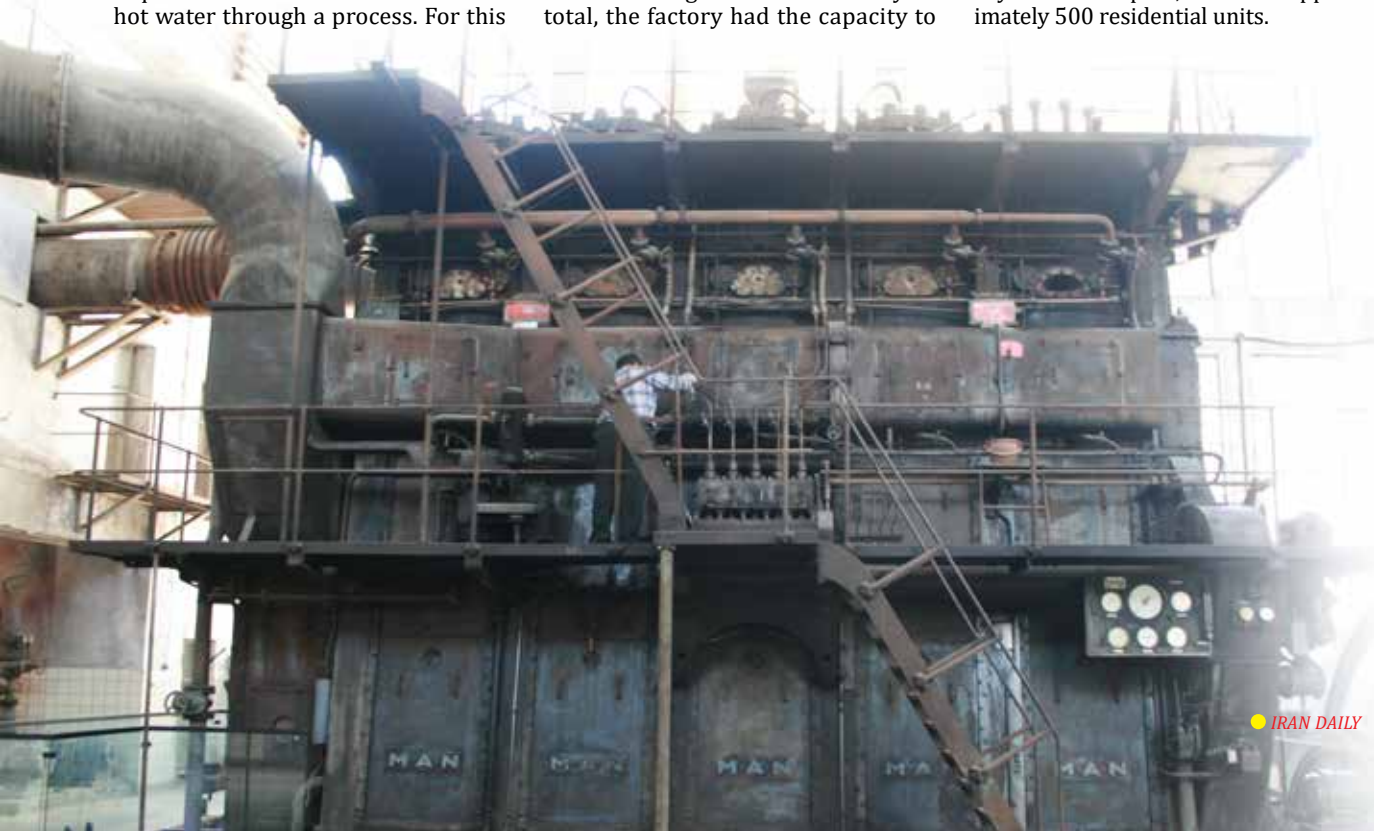
The establishment of heavy cement production lines requires dedicated power and energy, and meeting the power needs for the operation of these lines is achieved through various methods and technologies. Some of these methods are quite interesting and may not be seen elsewhere.

In 1933, when the first cement production line entered the country, the city's electricity supply for the factory was very weak. Consequently, along with the production line, steam turbines with a capacity of 1,200 kilowatts were purchased. Farahani explains the power generation process of the factory: "Usually, electricity is produced in thermal power plants and steam turbines by bringing water to a boiling point to generate steam, which causes the turbines to rotate and produce electricity. The continuous production of electricity requires the recirculation of steam and hot water through a process. For this purpose, steam and hot water are directed towards a cooling tower or a cooling source located behind the roof. The hot water enters the tower through bridges, and through the holes in the bridges, it pours into the pool at ground level from a great height like rain, then returns to the turbine path. This water processing, especially during cold seasons, gives a unique appearance to the cooling tower, as a plume of steam is constantly drawn from the tower into the sky.

However, the power generation technology of the Shahr-e Rey Cement Factory did not rely solely on turbines. To increase electricity production in 1956, two diesel generators were purchased from Germany. Initially, coal was used as fuel for these machines, and later, crude oil or mazut was used to meet their fuel needs. Each of these diesel machines produced approximately two and a half megawatts of electricity. In total, the factory had the capacity to



produce six and a half megawatts of electricity. At that time, the factory did not need more than five megawatts of electricity for its own needs. Thus, the surplus electricity production of the factory was sold to places such as the Reza Shah mausoleum, Hazrat Abdul Azim Hassani shrine, Firoozabadi Hospital, Imamzadeh Abdullah, Sheikh Saduq mausoleum, and the Aminabad Psychiatric Hospital, as well as approximately 500 residential units.



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Generators similar to those on Titanic

According to Farahani, after the dissolution of the factory, a few years ago, a group from Germany came to buy these diesel generators for themselves. In response, we said, "These machines, which are manufactured by you and were originally sold to Iran as obsolete, how come you are interested in buying them now?" The Germans said that in total, four generators were produced initially, one was sold to Turkey whose fate is unknown and probably lost. Another machine was on the Titanic ship, which sank, leaving only these two machines that we intend to take to Germany for use in the museum. They were willing to equip the entire cement factory as a museum in exchange for these generators, but in the end, the Germans' request was not accepted, and these two machines were preserved as part of the factory's heritage.

Establishment of museum

Shahr-e Rey Cement Factory, wholly owned by the government, was officially dissolved on March 1, 1985 due to public complaints about pollution and the production and emission of dust. After a few years of closure, it was decided that, due to its position, potential, and capacity as a heritage site, it would be transformed into the "Rey Cement Museum." According to him, the first phase of this museum, inaugurated in 2022, includes the cooling tower section, diesel power generators, and the clinker storage warehouse (the main material for cement production), and the factory's document center. The next phase of the museum includes the operation of the mining section, maintenance and parts section of cement machinery, which will be operational in the next two to three years. In this phase, the first cement kiln in the Middle East and the cement raw material mill will also be included. In the second phase of the museum, a section is also considered for the establishment of startups, creative businesses, and technology-based firms.

Document section of museum

The document section of the Shahr-e Rey Cement Factory is one of the interesting and fascinating sections of the Rey Cement Museum. In this section, documents related to the factory's personnel, spanning over a hundred and ten years, from the time the idea of establishing the factory was conceived by Ali Qoli Khan Sepahi until the dissolution of the factory, have been collected.

According to him, the documents and records in this section include files of the first-generation personnel (fathers) and second-generation personnel (sons) and some documents related to various company expenses such as salary payments, purchases of parts and machinery needed by the factory, as well as architectural drawings, machinery drawings, and memories of the workers, social, welfare, and cultural issues related to them.

The first-generation factory workers include individuals who were engaged in factory activities from the beginning of its establishment until 1980 and were all retired after that year. From 1980 onwards, 600 new employees were hired, and until the dissolution of the factory in 1984, they were all still working. After the dissolution, these individuals were rehired. In the document section, cloth folders contain files of the first-generation personnel, and metal files include files of the second-generation personnel.