Sinan constructed three outstanding water supply systems, each with a total length of about 50 km and fed from two distinct sources: (1) Taslimüselem to Edirne, still in partial operation; (2) Süleymaniye to Istanbul, now obsolete; and (3) Kırkçeşme to Istanbul, still in operation. The latter two systems are among the most noteworthy urban hydraulic works, and served the capital of the Ottoman Empire for almost four centuries.

Süleymaniye water supply system

The Süleymaniye water supply system was the largest of the fifteen distinct Ottoman water supply systems called the Halkali waters, from the north-western vicinity of Istanbul. It had the capacity to collect about 1000 cubic meters per day from two distinct sources, Aypah and Çinarlı; both branches met at the Cicoz junction chamber. After several distribution outlets, it ended in the courtyard fountain of the Süleymaniye, with jets issuing from the ceiling of the covered fountain.

The length of the Aypah branch was 15 km, that of the Çinarlı branch 18 km, the unified section between Cicoz and Süleymaniye 8 km, and with certain secondary additions, the total length of the system lies in the order of 50 km.

The system includes some tunnel sections, two of them being about 1.5 km in length. Beside several small single-span aqueducts, the clay pipes of the Süleymaniye water conveyance system passed over some larger aqueducts, dating from different times. The Aypah branch passes first over the Roman, two-storey, multi-span Mazul aqueduct; then over the Sinan's single-storey, multi-span Avasköy aqueduct, and the nearby two-storey, multi-span Alipasa aqueduct, which replaced in the 18th century the original small, single-span aqueduct, located upstream over that brook.

The pipes passed over the Roman, two-storey Bozdoğan aqueduct before reaching the Süleymaniye mosque. This aqueduct, dating from the reign of Valens in the fourth century, was originally almost 1 km long. It is said, that the latter third was transformed into an inverted syphon by Sinan, in order to open the view between the Süleymaniye and the previously built Selçuk mosque. The date of construction of the Süleymaniye water supply system is assumed to be the same as that of the mosque (1550-1557).
The Kıkçesme water supply system was the first of the two large systems fed from the sources in the so-called Belgrad-forest area north of Istanbul; the second is the Taksim water supply system, located westwards and constructed around 1730.

About 10,000 cubic meters per day is still collected by small lateral intakes feeding two principal branches, each almost 8 km in length; after joining the main collecting pond at Bashavuz, the system continues for 27 km; with several secondary additions the total length is about of 50 km.

The main conveyance work is a masonry gallery 0.55 m wide and 1.75 m high; there are also some short tunnel sections along the alignment. The gallery passes over four spectacular aqueducts, cited in the list of Sinan’s works, the Teziret’ül ebniye, and Tuhfetü’l mimarin. There are also several small aqueducts and, on one of the later secondary adductions, another large aqueduct.

The four noteworthy aqueducts are the 26 m high and 710 m long Uzun (or Petnahor), the 35 m high and 342 m long Egri (or Kovuk) with sharp direction deviation, the 35 m high and 258 m long Maglova (or Muglava), the 32 m high and 165 m long Gülce (or Gözlüce).

The part south of Čebeciköy, after the Gülce aqueduct, dates from the reign of Justinian in the sixth century, and was thoroughly repaired by Sinan. He also extended it almost doubling its length, by the construction of the above mentioned aqueducts, during 1554-60. Maglova and Gülce were severely damaged by extraordinary floods, and were rebuilt by Sinan in 1564, thus the system has been operating for over 400 years.

An inscription on Sinan’s tomb (turbe) in the Süleymaniye has verses on his water supply achievements, which can be translated as follows:

“By order of the Sultan, he took care of the waterworks
He readily helped the people by letting flow the heavenly waters”.

Built around 1557 and now obsolete, the Süleymaniye is the largest of the 15 distinct Ottoman water supply systems. The Halkali waters, was fed from the Çınarlı and Aypah
use of the Roman Ma'zul and Bozdogan (Valens) aqueducts; to it has been added the new Avasköy aqueduct and some smaller ones, and lengthy tunnels such as the 1.3 km-long Taslağım. The third, the Kırkçeşme system of Istanbul, was built around 1564, and is still in operation with four dams added between 1620 and 1818. It is one of the two major water supply systems carrying the waters of the so-called Belgrad forest area. It restored the Roman-Byzantine system half with several small aqueducts and extended the system — almost doubling its length with the construction of four spectacular aqueducts: Uzun, Eğri, Güzelce and Maglova.

Ünal Özis