

Fresh Water Tank - Israel, Tel Aviv

Circular strengthening with CFRP-plates

Project

The water tank for fresh water is located in the region of Tel Aviv and was built in the 1940s. The water tank has a diameter of 8.4m, a height of 6.0m and a concrete wall thickness of 20cm. The water tank to be strengthened is located in a nature reserve. This was one of the reasons that a repair was preferred to a new construction.

Over the years, the concrete structure has developed cracks. After detailed investigations and static examination of the supporting structure, a complete renovation with renewal of the waterproofing from the inside and an external reinforcement was ordered.

Solution

The water was drained for the duration of the construction work in order to rehabilitate the tank from the inside and outside as well as to seal the existing cracks.

As static reinforcement, eight CarboStress systems were installed, each with 180kN tension force distributed over the height. In order to keep friction losses low during the tensioning process, the CarboStress systems were tensioned synchronously on both sides and the areas of the end anchorages were staggered around the tank.

Due to the low dead weight of the tendons, no cranes or lifting equipment were required for the entire installation process of the CarboStress system. A simple scaffold was sufficient.



The anchorage areas are protected against heat and external impact by means of a steel cover. In addition, the fresh water tank and the CarboStress tendons are painted white.



Facts

Object:	Fresh Water Tank
Location:	Tel Aviv, Israel
Construction year:	approx. 1940
Strengthening year:	December 2020
Strengthening system:	StressHead-CarboStress
Qty of Systems:	8