

Assiut Barrage, to rehabilitate or to rebuild

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SYNOPSIS. Assiut barrage, 400 km upstream of Cairo, is the last barrage downstream of the High Aswan Dam (HAD) before the Nile reaches Cairo. It was built between 1898 and 1902 in order to divert Nile river flows to the Ibrahimia canal. The barrage was remodelled extensively between 1934 and 1938, increasing the annual discharge to the Ibrahimia canal which, in its present form, has a length of about 350 km and irrigates an area of 690,000 ha.

The barrage was designed as an arched viaduct founded on a mass concrete floor, with a 16 m wide lock positioned on the extreme left bank. The overall length of the structure is 820 m with a water-way capable of discharging 14,000 m³/s provided by 110 individual openings of 5 m width. Each opening contains a double leaf vertical lift roller gate designed for a maximum head difference of 4.2 m.

This paper describes the results and conclusions of a feasibility study carried out by Mott MacDonald in association with CES Salzgitter, Fichtner and Inros Lackner, all of Germany, and Hamza Associates of Egypt, to investigate the present structural and operational conditions at the barrage and to outline options for the future. The principal conclusion of this feasibility phase, completed in December 2005, was a recommendation to construct a new barrage downstream of the existing one rather than rehabilitating the existing barrage.