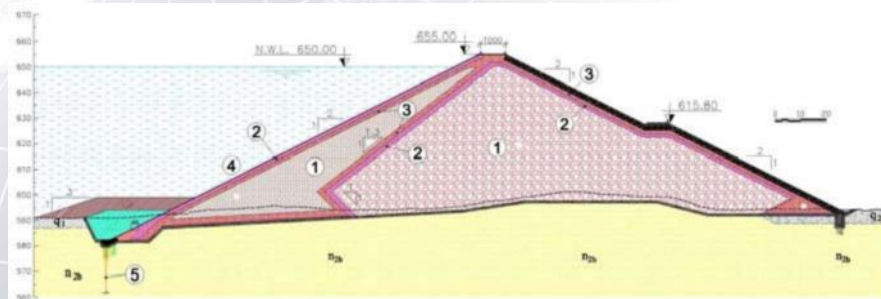


El Aassi Dam Project

Country	West Bekaa - Lebanon
Clients	Ministry of Energy and Water
Project Capital Cost	US\$150 Million
Services	Feasibility and Comparative Studies Field Investigations Detailed Design of all Geotechnical, Civil, Electrical and Mechanical Works Preparation of Tender Documents Construction Supervision
Main Trades	Civil, MEP, Hydraulic and Environmental Engineering
Project Time Frame	2004 - Ongoing

1. Rockfill
2. Filter
3. Drainage Fill
4. Bituminous Concrete Facing
5. Grouting Curtain



Typical Cross Section

Narrative Description

This project is on the Orontes River (Assi) in West Bekaa Valley, Lebanon. The project aims to distribute the water of the River between Lebanon and Syria and to irrigate an area of around 7,000 ha in Hermel and Qaa Areas, in addition to the hydroelectric power generation of 6 to 8 MW. The main project components are a diversion dam, a storage dam, pumping stations, water storage tanks, and irrigation networks.

In further detail:

- Mobile Diversion Dam.
- Rockfill asphalted concrete facing dam 65m, high and storing 37Mm³ of water.
- 2 Central Pumping Stations (4 pumps+1 Standby) with total power of 6,000 kW and a total maximum flow of 5.2m³/s.
- 2 Surface Pumping Stations with total power of 4,000kW.
- 7 Water tanks with capacity up to 10,500m³.
- 6km of Welded Steel and GRP pumping pipes of diameters up to 1,300mm.
- 20km long of Welded Steel and GRP transmission pipes of diameters of 1,400mm.
- 135km long of Irrigation pressurized GRP pipes diameters up to 1,000mm.
- Electrical Installation: MV Power Supply, MV/LV transformers (22kV), LV transformers, MV motor control system, Earthing System, Low Voltage Motor Control Centre, Circuit Breaker Closing and Tripping Supply, Pump Motor Cooling, Main Standby Generator, Incoming Switchboard.
- Surge Protection Systems.
- ICA and SCADA Systems: Electromagnetic flowmeters, valves, pumping station status, ultrasonic monitors, Flow switches / proximity switches, Pressure switches, Strain gauges, Level electrodes, Stability monitors, remote control center, communication data transfer, system Fiber optic, etc.
- Fire protection, lightening, earthing, etc.

El Aassi Dam Project



Pumping Station and Hydroelectric Power Plant



Installation of GRP and Carbon Steel Pipes



Provisional Derivation



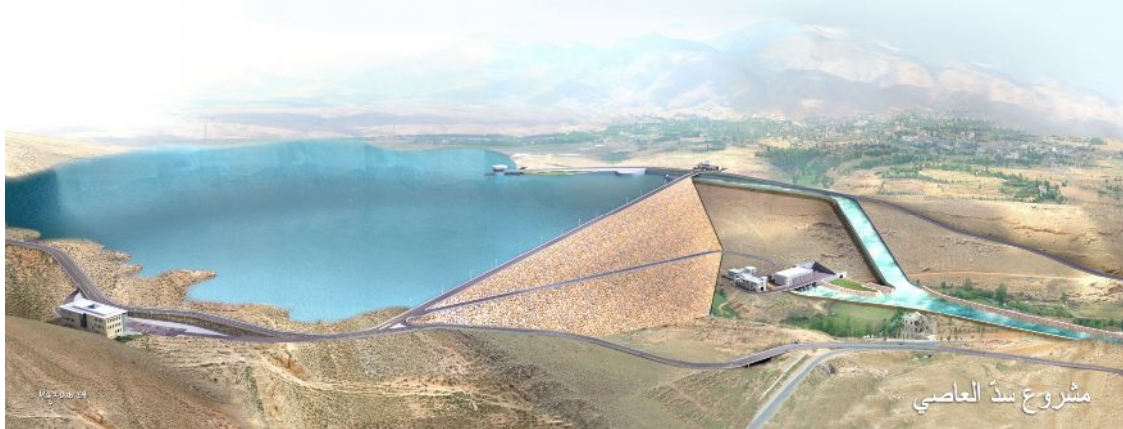
Construction Works - Package 1

El Aassi Dam Project

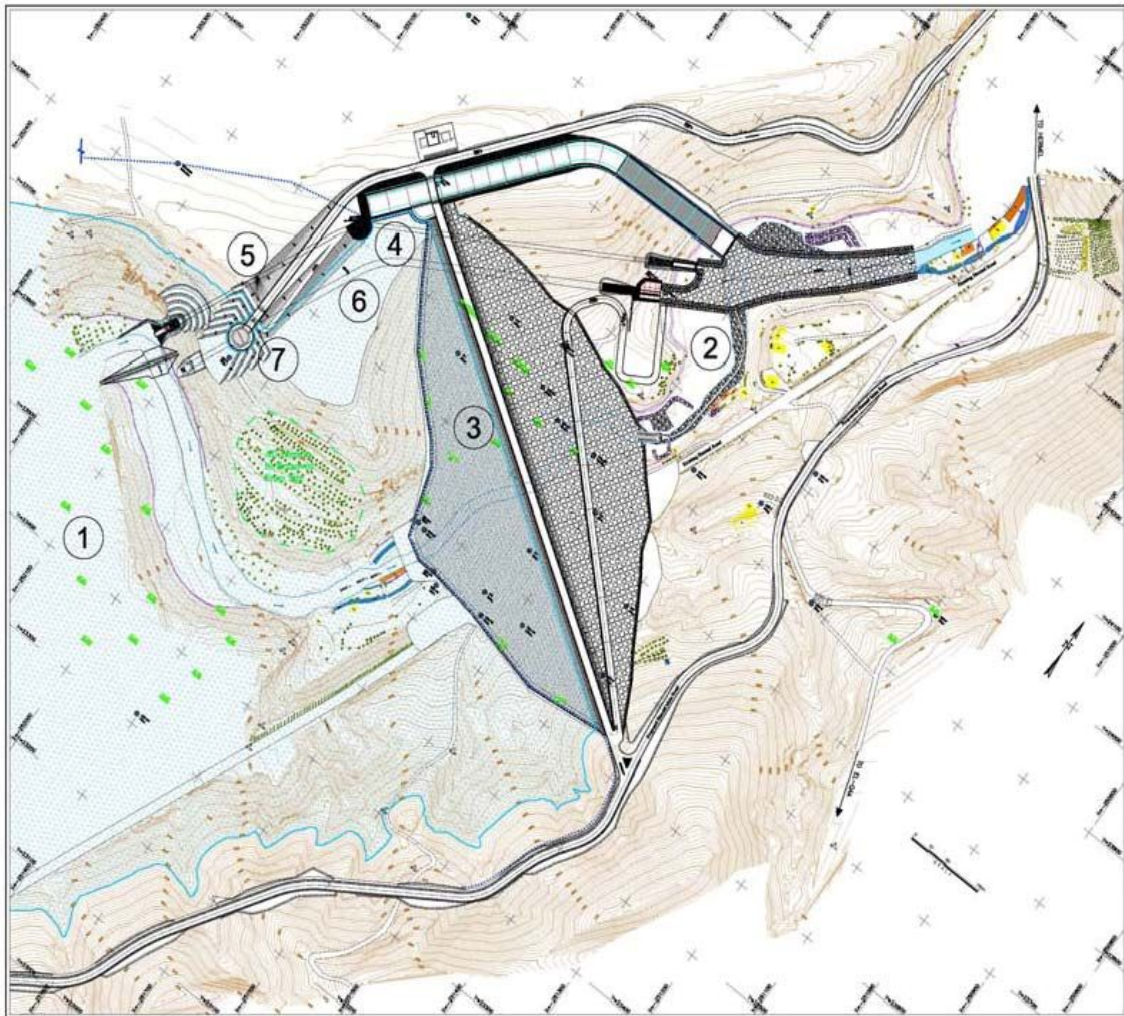


Geotechnical Investigation Works

El Aassi Dam Project



General View of the Storage Dam



Plan View of the Storage Dam

- 1- Upstream, 2- Downstream, 3- Dam Crest, 4- Spillway, 5- Outlet Tunnel
- 6- Diversion Tunnel & Bottom Outlet, 7- Draw-off Tower