



DBAYEH MARINE 941

SHORING SYSTEMS

Secant Pile Wall, Anchors, Shotcrete, Grouting, Dewatering and Excavation

Execution of a 9.0 m excavation under high water table level using a water-tight shoring system composed of an anchored secant pile wall associated to a grouting program and dewatering system.

TOTAL CONTRACT AMOUNT: 1,073,926 USD

- Located on the Beirut-Tripoli Highway covering an area of about 1,500 m², this project was executed by MGM in a 12 months duration proving the effectiveness of the adapted secant pile shoring wall associated to a grout plug and deep well dewatering system in the local soil formation. This project was a major endeavor for its weak soil stratigraphy and high water infiltration knowing that the bottom excavation level was at 9.0 m below the road level with 6.0 m below water table level. The soil layers consisted of: Fill, Quaternary Sand and Gravel, Clayey Sand and finally a Marly Limestone substratum.



General View of Site Area

Client:	WE DO IT s.a.r.l
Architect:	3 AS, Designers. Consultants
Geotechnical Eng.:	GSC
Main Contractor:	TOHME Contracting



Piling Operations under way

Main Quantities
2,130 lm of 880 mm Secant pile Wall
1,290 lm of 620 mm Secant pile Wall
2,476 lm of Ground Anchors
142 lm of Capping Beam
852 m ² of Shotcrete
8 Deep Wells
1034 m ² of cement grout
174 m ² of chemical grout

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Shotcrete Operations under way



Grouting Operations under way

- Upon the completion of the 15 m deep secant pile wall, the grouting program was executed to reduce the water infiltrations to a controllable amount. 8 Dewatering wells were executed in the pile wall periphery with additional pits operating 24/7 to remove any water infiltration. Two rows of anchors supported the pile wall with shotcrete layer covering the piles for waterproofing purposes. The project ended in August 2014 over which a high-end commercial center is currently under construction.



Excavation and shotcrete works