

## Hassyan 180 MIGD SWRO IWP - Probing

Jebel Ali, Dubai, UAE

A challenging project due to its complex stratigraphy of intermittent hard and soft layers and presence of cavities in rock strata. Multiple GI Techniques like probing, cavity grouting and vibro replacement were required.



### The project

The 180 Million Imperial Gallon per Day Sea Water Reverse Osmosis Independent Water Plant is being developed at Hassyan, Jebel Ali by ACWA Power & DEWA as part of Dubai 2040 urban master plan. This project is the largest of its kind in the world for water production based on Sea Water Reverse Osmosis technology using solar energy. It is DEWA's first Independent water Producer (IWP) Model project. M/s Keller (Special Geotechnical Contractors) had been assigned by EPC Contractor M/s Powerchina International Group Ltd. Dubai branch to carry out Ground Improvement works by Vibro Replacement (stone columns) method and Probing & Cavity grouting required for this project.

## The challenge

The main challenge of the project was to complete such a large area within the given time frame and varying soil characteristics and the presence of Cavities and water loss zones.

## The solution

Keller adopted ground improvement method using vibro replacement, installing stone columns (SC) by wet method to improve the bearing capacity of the ground up to 11.0m from EGL. Keller also executed probing and cavity grouting in the soil/ rock strata up to 15.0m depth to treat the water loss zones, open fractures/ fissures/cavity zones as recommended in the Geotechnical Investigation report by a third-party agency. A total of 61 567 linear meters of Stone columns, 6 645 linear meters of probe drilling and an injection of 1 148m<sup>3</sup> of mortar grout were executed in this project.

Keller completed its scope within the time frame without any quality or safety issue and received “**BEST PERFORMER**” Award among the subcontractors.

## Project facts

### Owner(s)

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### Keller business unit(s)

Keller Foundations Contracting

### Main contractor(s)

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### Solutions

Ground improvement

### Markets

Infrastructure

### Techniques

Vibro stone columns

Cavity / bulk / mine fill grouting