

**Project Location:**

Muscat,  
Oman.

**Main Contractor:**

CCC-TAV JV.

**Client:**

Oman Muscat Airport  
Authority

**Project period**

October 2009 – August 2010

**Method Applied:**

143,000 Bottom Feed Stone Columns, average depth 6 m (20 ft), average diameter 85 cm (2 ft 10 inch), installed in triangular grids of 1.5 m, 1.8 m and 2.1 m. The grids were chosen as a function of the heights of the treated embankment.

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## Technical Requirements:

Provide instant stability, accelerate drainage and prevent liquefaction for an up to 12 m (40 ft) high road embankment on soft to very soft silt and clay with some peat layers. Below an only 0.5 m dry crust, in some locations the soil is so soft that equipment as shown in the photo below would sink in without the presence of a geotextile reinforced work platform.



Vibro Stitcher for 6.5 m maximum treatment depth. Gravel is fed with telescopic loader.

## Quality Control Testing:

Electronic Cone Penetration Tests (CPTs), supported by digital process data from Vibro rigs, supplemented by full-scale load embankment trials and evidence from dug out columns.



Dug out Stone Column, measuring approximately the required 85 cm.