Vertical wick drains can be used for soil stabilization in areas with compressible and water saturated soils. When loads such as road embankments, hydraulic fills or dikes are placed on soft compressible soils, significant settlement may occur and this in turn could create serious problems. MebraDrain installed evenly spaced, into the depth of the compressible layer, will allow pore water to flow in a horizontal direction to the nearest drain and escape freely, thereby reducing the consolidation period significantly.

The project
In the Port of Mombasa the container terminal is extended with 350,000m². The sand used is reclaimed about 25km offshore from the Indian ocean and transported to shore with a “hopper” carrying 10,000m³ at the time. The sand is pumped thru a “spray pontoon” on top of the soft existing layer under the waterlevel. Above the waterlevel sand is pumped onto the sandfill and leveled by ground equipment. The vertical drains have been installed from the sand fill, till a depth of -34m1.

Equipment
For this project we used:
- O&K RH40
- CAT345
- CAT385
- CAT390

All hydraulic excavators are assembled with winch stitchers.

Special requirements
Part of our work scope is to install horizontal drains, connected to the vertical drains. These horizontal drains are placed in a trench and connected before backfilling.

Drain configuration
Vertical drainage was installed up to 35m below the working platform. The drains are installed in a rectangular drainspacing of 1,20m. In total 244,000 drains are installed with a total length of 5,871,569,17 m1. A total of 124,597 m1 Horizontal drains are installed.