



## Dynamic Replacement™



**Dynamic Replacement™ is an extremely economical method for improving the overall stiffness of clay, silt and organic soils. Dynamic Replacement uses granular backfill to form large diameter granular columns with high shear strength and great bearing ability through soft soils or waste fills. These columns remain stable under very low confining pressure.**

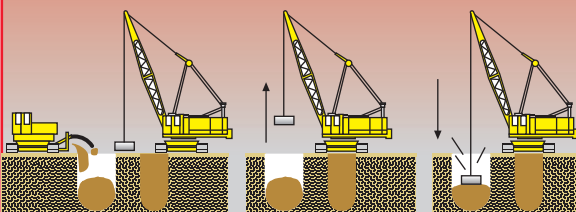
### Dynamic Replacement Applications

- Airport Runways
- Buildings
- Parking Lots
- Roads and Roadway Embankments
- Treatment Plants
- Marine Terminals
- Storage Tanks
- Port and Airport Platforms

### Menard Dynamic Replacement

Menard Dynamic Replacement is used to form granular columns with diameters of 6 to 8 feet to depths of up to 25 feet. A layer of coarse granular material is installed to provide a working platform and to confine soft surface soil. Dynamic Replacement columns are formed by driving the coarse material into the soil with 15 to 30 ton pounders, dropped from heights of 30 to 120 feet. The column is refilled with granular material, which is again compacted. The process repeats until the desired depth and column volume are achieved. These large diameter granular columns (also called inclusions) have a very high modulus of deformation therefore reducing post-construction settlements. They also help increase the factor of safety against global failure when used under embankments due to their very high shear strength and friction angle. Also acting as oversized vertical drains, Dynamic Replacement columns help reduce the consolidation time of compressible silts and clays.

The Dynamic Replacement technique was developed in 1975 by Menard Soltraitement, Menard's French affiliate. Dynamic Replacement has been used successfully worldwide on a variety of projects.



*Dynamic Replacement columns are driven into the soil with a 15 to 30 ton pounder dropped from a height of 30 to 120 feet. The column is filled and compacted in alternating phases until it is completed.*

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