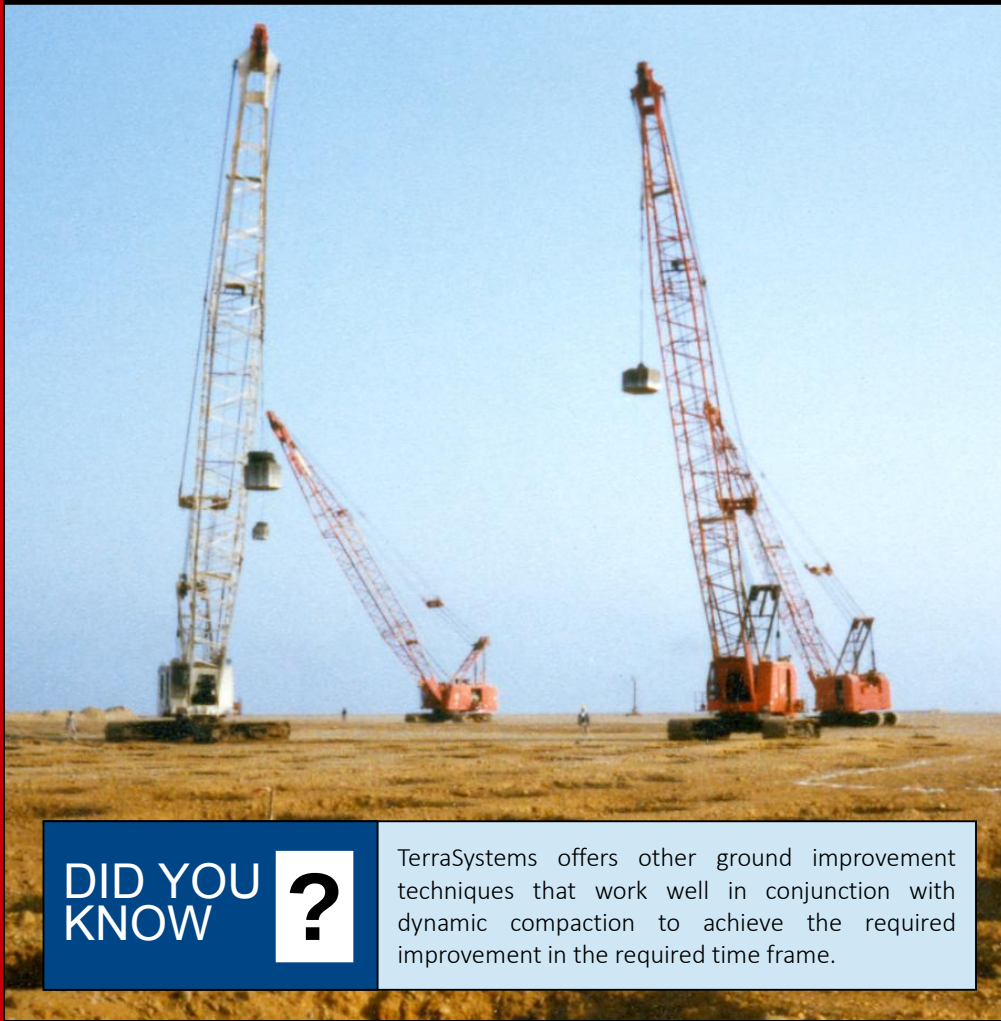


# Dynamic Compaction

Terra Technologies

Engineered Ground Improvement by TerraSystems



**DID YOU KNOW ?**

TerraSystems offers other ground improvement techniques that work well in conjunction with dynamic compaction to achieve the required improvement in the required time frame.

Yanbu, Saudi Arabia



Tacoma, WA

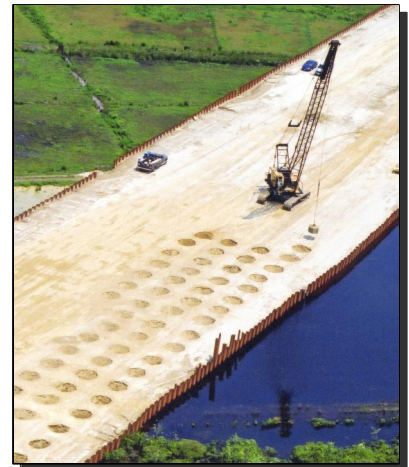


Newport News, VA

## What is Dynamic Compaction

Dynamic compaction is a ground improvement technique for compacting old fills as well as soft or loose natural soils. Dynamic compaction has proved to be an effective and economical alternative to preloading, deep foundations, deep vibratory compaction, and undercutting and replacement.

Dynamic compaction requires a controlled application of dynamic stresses to the ground surface. The dynamic stresses are generated by impacts of heavy steel weights or tampers dropped from heights of up to 70 feet on a predetermined grid pattern. A crater is formed at the impact point that may be up to 7 feet deep. The craters are backfilled by pushing or dumping on-site or imported fill material into the craters. Several phases or passes of high-energy tamping may be required, depending upon the level of improvement required. Following completion of the high-energy tamping, a closely-spaced low-energy or ironing pass is generally performed to compact the crater backfill material.



Plymouth, MA

**TERRASYSTEMS**  
GROUND IMPROVEMENT

# Dynamic Compaction

## What Soils Are Suitable?

Most soil types can be improved, including urban fills, landfills, collapsible deposits, mine spoils, granular soils and even silts and some clays. Soils below the groundwater table are routinely treated. However, careful control has to be used to allow dissipation of excess pore pressures created by the dynamic stresses.

## How Much Improvement Is Possible?

The degree of improvement is dependent on the total energy applied to the ground. Various correlations are used to select the appropriate applied energy to achieve the desired end product. The depth of improvement is proportional to the energy per drop and the configuration of the tamper.

Allowable foundation bearing pressures of up to 6,000 psf are achievable with dynamic compaction.

## Our Experience

We have been performing dynamic compaction for over **30 years**. Our experience includes over **800 projects**, ranging from less than 5,000 to over 7,000,000 square feet in area. We have completed dynamic compaction on buildings varying from **1 to 36 stories in height**. We have successfully used dynamic compaction for many diverse applications, including building foundations, floor slabs, pavements, airport runways, liquefaction mitigation, landfill closures, air space for landfills, and sinkhole mitigation.

## What Is The Cost?

The cost of dynamic compaction is primarily dependent on such factors as subsurface conditions, the depth and degree of improvement required, and the size of the project. Our dynamic compaction costs have ranged from less than **\$30,000 to over \$5,000,000**.



Hail Al Bathna, Saudi Arabia



Battle Creek, MI



Engineered Ground Improvement



**Call**

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