

# DHT Terrapier®



Thomas Jefferson Elementary School, Falls Church, VA

## DID YOU KNOW?

TerraSystems utilizes various techniques for installing aggregate piers, including our DHT Terrapier® using down-hole tampers, our Vibro Terrapier® using powerful vibrators, and our IDP Terrapier® using high-energy deep impacts.

## The DHT Terrapier® Difference

DHT Terrapiers® are vertical columns of highly-compacted aggregate using vertical tamping with a down-hole hammer and a specially-designed circular foot for compaction of the aggregate. The technique is used primarily to increase the bearing capacity and reduce settlement of building foundations, support floor slabs, and increase the stability of retaining walls and slopes.

The DHT Terrapier® system is an ideal technique for installation of aggregate piers above the groundwater table and is particularly effective in allowing the use of high bearing pressures in old fill soils. It is applicable for light to heavy foundation loads, but is most economical for light to medium loads where the depth of treatment can be maintained below about 20 feet. This technique has been used for thousands of projects throughout the United States and abroad.

The DHT Terrapier® technique results in aggregate piers with very high modulus values in the compacted aggregate. Lateral prestraining of the surrounding soil matrix occurs due to the lateral bulging that occurs during the tamping process.



DHT Terrapier®

**TERRASYSTEMS**  
GROUND IMPROVEMENT



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## The DHT Terrapier® Technique

The DHT technique involves first augering a 30 to 36 inch-diameter hole to depths of 5 to over 25 feet. The augering process provides a direct observation of the subsurface layers, allowing rapid field modifications to the design, if required, to fit the actual subsurface conditions.

Aggregate is then added to the base of the hole and densified with a down-hole impact hammer with a specially-designed circular foot. This ramming action results in a very dense base bulb of aggregate surrounded by soil. Thin lifts of aggregate are then added and vertically compacted with the tamper until the design bearing elevation is reached. The ramming action densifies the aggregate as well as compacting and prestraining the surrounding soil matrix.

## The DHT Terrapier® Advantages

- Proven technology, with thousands of successful projects.
- Extremely strong piers, verified with modulus testing.
- Superior settlement control.
- Rapid installation rates with up to 50 piers per day being common.
- Visual observation of soil types through auger cuttings.
- Green technology, assisting in LEED certification.
- Low cost.
- High bearing pressures, with up to 6,000 psf being common.

## Typical Applications

- Foundations
- Floor Slabs
- Tank Structures
- MSE Walls
- Liquefaction Mitigation
- Landslide stabilization



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