

## GREEN FOUNDATIONS – ECO-FRIENDLY SOIL MECHANICS

Green Building, Environmental Design, Sustainable Development, Energy Efficient Construction, these and the many other eco-friendly terms of our time conjure up thoughts of thickened insulation, double-paned windows and computerized HVAC control systems. While the shell and interior of the building are obvious focus points to creating an environmentally sound project, they are not the only phases of development where good can be done.

Sand, Rock, Soils, Cement and Liquid Asphalt, the basic constituent materials of foundation and roadway construction, are all mined, naturally occurring raw materials. Given this fact, anytime that these materials can be recycled or used in an innovative way, it is a win-win proposition.

Below are a few examples of sustainable uses and reuses of traditional foundation and roadway materials.

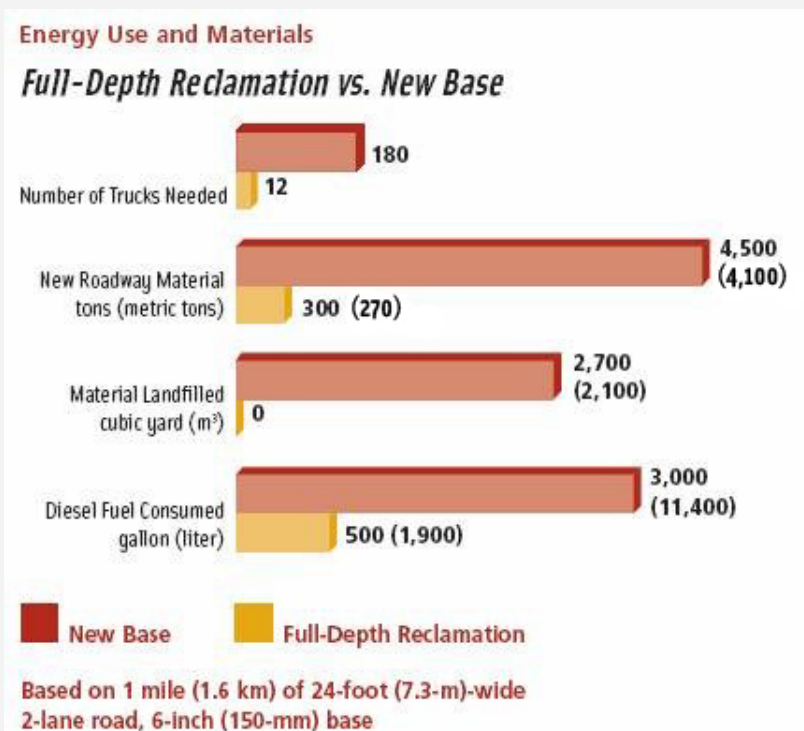
### Pervious Concrete



The high flow rate of water through a pervious concrete pavement allows rainfall to be captured and to percolate into the ground, reducing stormwater runoff, recharging groundwater, supporting sustainable construction, providing a solution for construction that is sensitive to environmental concerns, and helping owners comply with EPA stormwater regulations.

### Asphalt Reclamation

This process rebuilds worn out asphalt pavements by recycling the existing roadway. Full-depth reclamation uses the old asphalt and base material for the new road. There is no need to haul in aggregate or haul out old material for disposal. Truck traffic is reduced, and there is little or no waste.



### Recycled Concrete

The constituents of concrete can be recycled materials, and concrete itself can also be recycled; these materials are usually available locally. Most concrete in urban areas is recycled as fill or road base and not placed in landfills. Concrete pieces from demolished structures can also be reused to construct retaining walls and protect shorelines, for example in gabion walls or as riprap.

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### ***In-Situ Ground Improvement***

In an effort to reduce haul-off of poor natural soils and the haul-in of imported select fill, there are many new, innovative geotechnical construction methods available in today's marketplace. These applications can be advantageous when reclaiming Brownfield sites and to reduce the carbon footprint of civil construction efforts.

### ***Intermediate Foundations***

Intermediate Foundations are essentially large, mechanically inserted holes which are then backfilled with compacted aggregates. These aggregates can be either recycled concrete or locally mined granular materials.



### ***Dynamic Compaction***

Dynamic Compaction refers to increasing the density and stability of naturally occurring soils. This is achieved by means of freefall exertion of a several ton block of steel in a predetermined grid pattern.

### ***Vibro-Compaction***



Akin to dynamic compaction, vibro-compaction densifies and stabilizes in-situ soil conditions. In vibro-compaction applications, this is achieved by a vibrating head attached atop a large vertical steel ram.

## Bet You Didn't Know . . .

The origin of Santa Claus begins in the 4th century with Saint Nicholas, Bishop of Myra, an area in present day Turkey. By all accounts, St. Nicholas was a generous man, particularly devoted to children. After his death around 340 A.D., he was buried in Myra, but in 1087 Italian sailors purportedly stole his remains and removed them to Bari, Italy, greatly increasing Saint Nicholas' popularity throughout Europe.



### A Note from . . .

**David Dennis**

As we approach Christmas and celebrate the birth of the Savior, Jesus Christ, we are so thankful for the blessings we have received throughout the years at Burns Cooley Dennis. It is a joy to remember each of you at this time, and to pray that whatever your circumstances, you may know God's presence and abiding love. Have a Blessed Christmas.

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