



Sustainable Technology

## Stone Columns

Stone Columns provide an economical method of ground improvement and act as reinforcement to the ground into which they are installed; they can be installed using the top feed, dry method or the bottom feed, wet method. In either case the method involves inducing penetration of the ground with a vibrating poker, in order to facilitate the creation of the Stone Columns, in the top feed system the poker is leader mounted and in the bottom feed system it is generally freely suspended.



The construction of the Stone Columns is achieved by penetrating the soil with the poker to the design depth, then feeding stone into the void created by the poker. In the case of the dry method the stone is introduced internally through the poker and in the case of the wet method it is introduced into the annular space around the poker, created by vibration of the poker and the flushing of water at its toe. The construction of the Stone Column progresses upwards in short steps of raising the poker and reintroducing it into the stone cyclically, until the design diameter has been achieved.



The technique is used to improve the engineering characteristics of loose granular soils or soft cohesive soils and is installed in a grid pattern intended to improve the soil globally. In the loose granular soils the vibrations induce densification of the soil surrounding the poker, as well as displacing the soil laterally to allow the placement of the stone backfill for the column formation. In the soft cohesive soils the effect of the vibrations is negligible in terms of modifying the surrounding soil and is limited to achieving the lateral displacement of the soil, however, the action of column formation, forcing the stone laterally has a compounding effect with consequent improvement of the soil characteristics.



Sustainable Technology