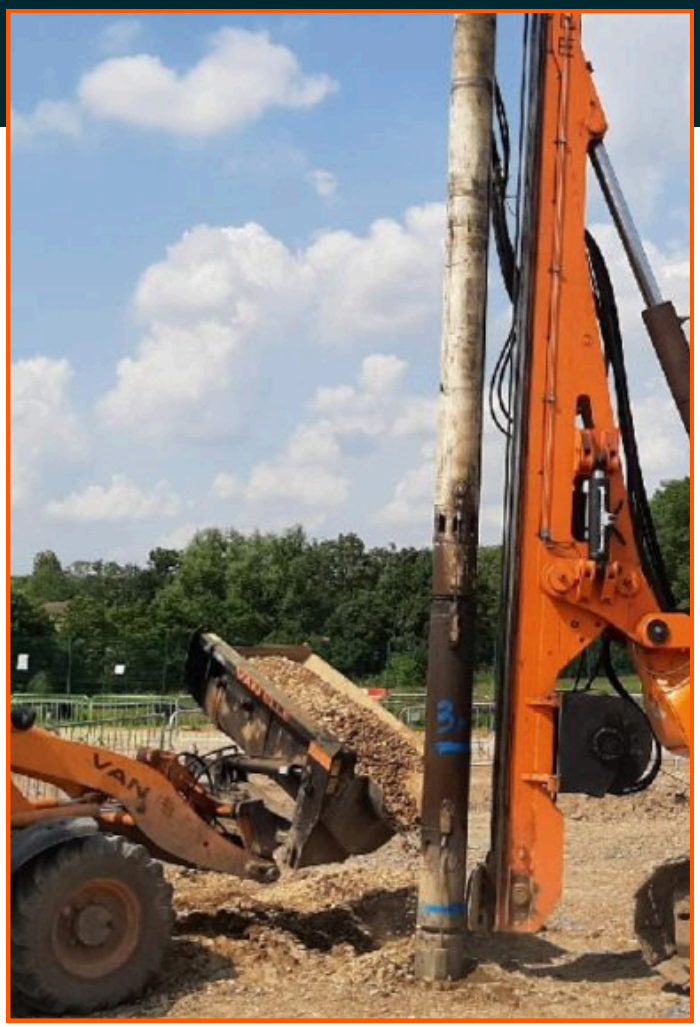
VIBRO STONE COLUMNS

GROUND IMPROVEMENT

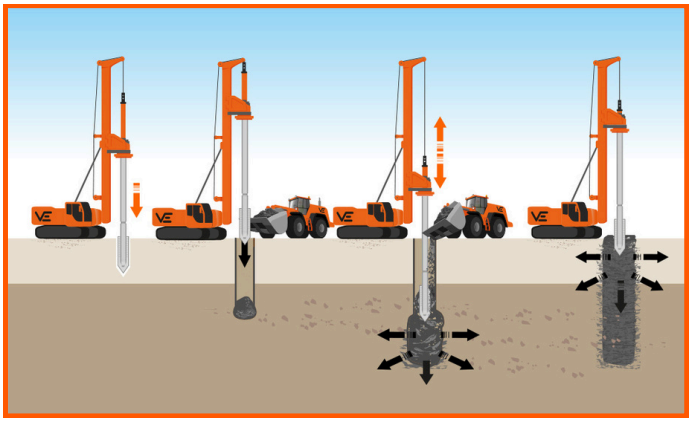


Vibro stone columns provide a quick, cost-effective foundation solution and a practical alternative to traditional piling or deep trench fill. As a displacement technique, they generate minimal spoil.

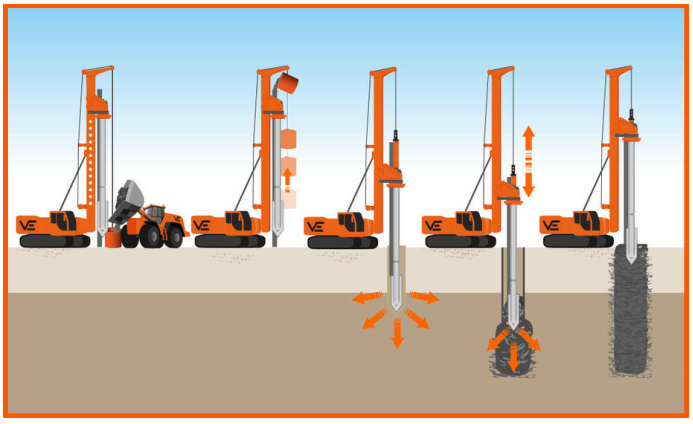
The process involves penetrating a vibroflot to the design depth, creating a bore that is backfilled with primary or recycled aggregate and compacted in stages to form a dense, interlocking column. In granular soils, the vibration increases ground density, while in cohesive soils the columns act as reinforcing elements, improving settlement performance.

UNDERSTANDING VIBRO STONE COLUMNS

Employing two methods for this technique, we utilise rigs that have been customised and engineered to deliver an effective solution. These methods are:



Top Feed
Typically used where an open bore can be formed by the vibroflot and remains stable, allowing it to be filled with stone aggregate from working platform level.



Bottom Feed
Used where an open bore becomes unstable due to very soft soils or a high water table. In this case, stone aggregate is fed into the column through a tube attached to the vibroflot, which supports the bore as the flot remains within the ground during construction of the stone column.

PROJECT ADVANTAGES

- Improved bearing capacity
- Reduction in total & differential settlement
- Significant savings over piling
- Displacement system generates no spoil
- Sustainable solution using recycled aggregates where possible
- Modern fleet of vibro rigs - fully instrumented and with tier 4 engines
- Fast installation process suitable for sites of any size requiring ground improvement
- Enhanced ground conditions allow the use of shallow foundations, providing further cost savings
- Fully validated by load testing for performance assurance

EXAMPLE APPLICATIONS

- Housing Projects
- Warehouses and Distribution Sheds
- Local Authority Schemes
- Education / Health
- Embankment Support