



Vibro Concrete Columns (VCCs) are an innovative piling technique developed to provide enhanced load bearing capacity at shallow depths through use of enlarged bases. They are often used where weak organic soils overlie granular deposits.

// BASIC TECHNIQUE

The columns are constructed using a vibroflot connected to a concrete pump. The concrete is pumped into the ground via a tremie pipe attached to the vibroflot.

Through repeated lifts and re-penetration of the vibroflot into the concrete, an enlarged toe is formed at the base of the column, typically 600mm in diameter in granular soils.

For floor slab construction an enlarged head of up to 900mm can be formed to provide reduced punching shear or reduce spans. Concrete flow rates are monitored using our proprietary Data Logger system to ensure accurate column dimensions. Steel reinforcements are inserted as specified following the casting of each column.



// TECHNICAL CAPABILITIES

Dimension	From	To
Practical Depth	2.5m	12m
Diameter	0.4m (shaft)	1m (enlarged base)
Axial Capacity	Dependent on depth and ground conditions loads up to 900kN can be achieved	
Minimum Working Height	15m	Varies
Typical Rig Weight	32,000kg	58,000kg

// APPLICATIONS

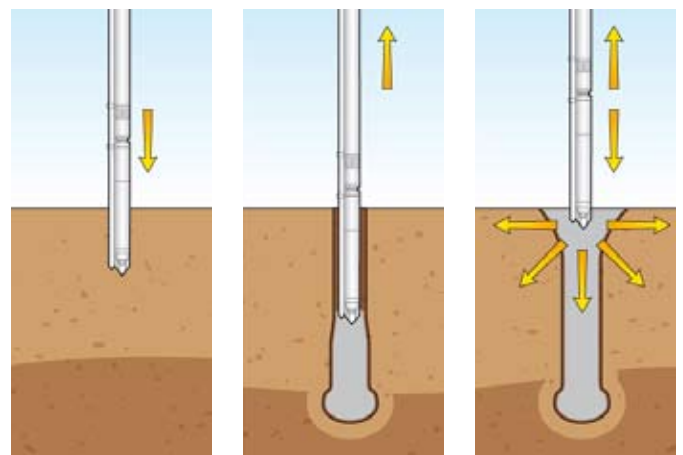
VCCs are a development made from adapting the bottom feed Vibro Stone Column method and can be used as a ground improvement or piling solution. As a ground improvement solution the VCCs are suitable for use in weak and organic soils or where environmental considerations and contaminants preclude the use of permeable stone columns.

As a piling solution they act as cast in-situ load bearing piles and they can be installed with enlarged bases and heads for tying to pile caps or ground beams. Column diameters vary according to the soil conditions, but generally the weaker the soils, the larger the column required.

// STRENGTHS

- Ideal on brownfield sites where spoil removal is to be avoided
- A good alternative to stone columns where peat and organic soils are prevalent
- Suitable where founding at a high level is required to avoid boring into aquifers
- Can be used to support foundations and floor slabs for all types of structures, including houses, offices, commercial and industrial units, tanks etc

- Ideal for short construction programmes requiring fast-track installation and high production levels
- Provides settlement control for embankments in conjunction with load transfer platforms



VIBRO CONCRETE COLUMN CONSTRUCTION SEQUENCE

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