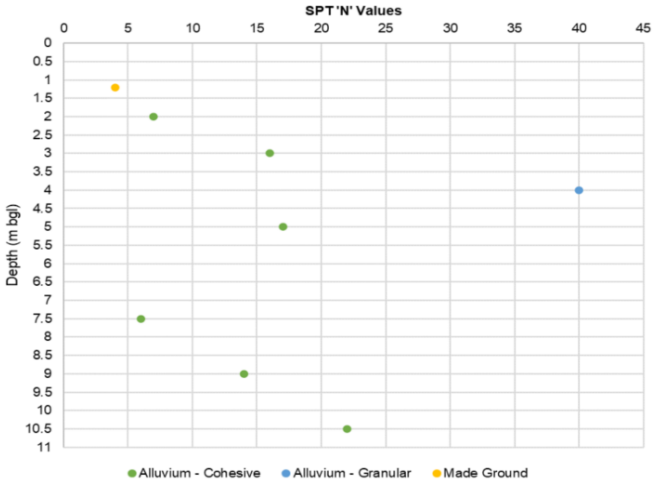
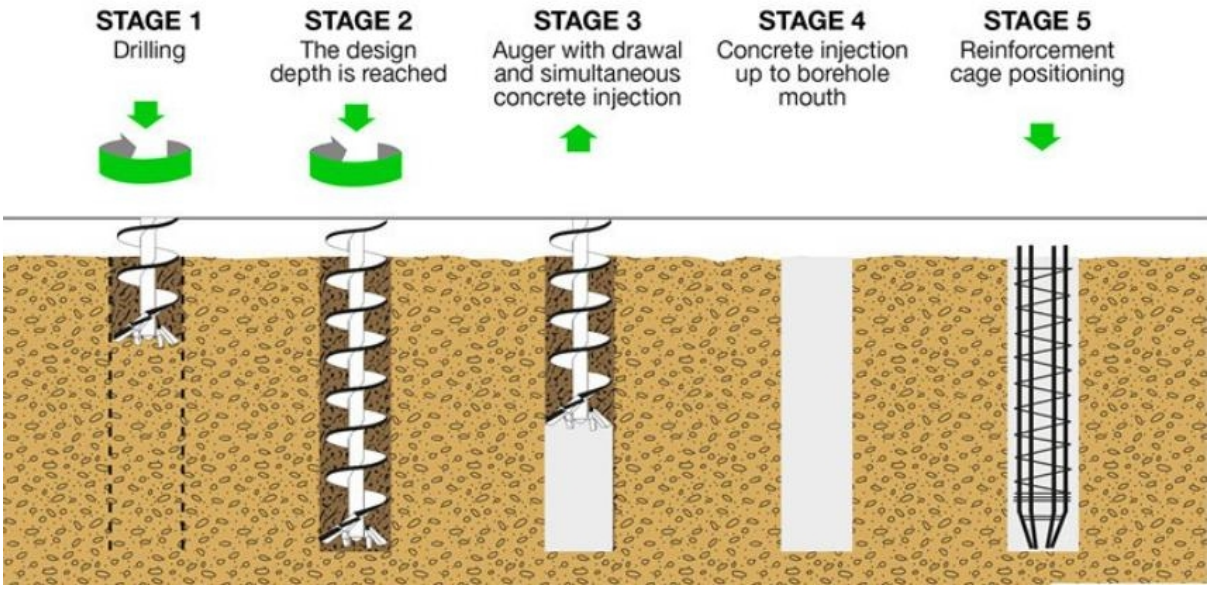
Continuous Flight Auger (CFA) vs Percussion Piling on Compact Sensitive Sites

When ground strata does not offer sufficient bearing pressure to resist a proposed structure with ring beam and pad foundations but is firm and stable at greater depths, pile foundations offer an alternative solution.



There are different ways to construct pile foundations, each offering varying benefits and applications. All piles are however either driven or bored into the ground. Key Points and benefits are detailed below;

- Driven piles are the mostly commonly used type of piles. They are driven or hammered into the ground, pushing an equal volume of soil sideways and compacting a zone of strata around the pile, increasing its bearing capacity.
- Percussion action is the usual form of driven piling. This is a drilling method in which a heavy hammer or cutting bit is attached to a cable and inserted into the borehole. The heavy bit or hammer is repeatedly lifted and dropped thus driving through the ground strata.
- Percussion drilling has the advantage of being a quick efficient installation, however it creates vibration and noise so is not suitable for compact sensitive sites.
- Bored piles also known as drilled piles are constructed when large holes are drilled in the ground and filled with concrete. They are very effective as they transfer the load above ground to the deep rock and soil strata below with minimal settlement or heave which is ideal for supporting structures.
- There are two methods or bored piling; Rotary and Continuous Flight Auger (CFA).
- CFA piling involves drilling to the final depth in one continuous process using a continuous flight auger. Once the hole has been bored, concrete is pumped in and a steel reinforcement cage is inserted.
- CFA piling is preferred over Percussion on compact sensitive sites as it provides minimal levels of vibration and produces much less noise.



Continuous Flight Auger Piling Process

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