



We offer a wide range of piling and underpinning methods for foundations

Our modern piling rigs can be used in all ground conditions, providing you with an economic and appropriate piling solution for your projects whether they are large or small.

Underpinning is a method we use to strengthen the foundation of an existing building or structure. As underpinning contractors, we use this method for a variety of reasons depending on the circumstances.

We provide the following piling services

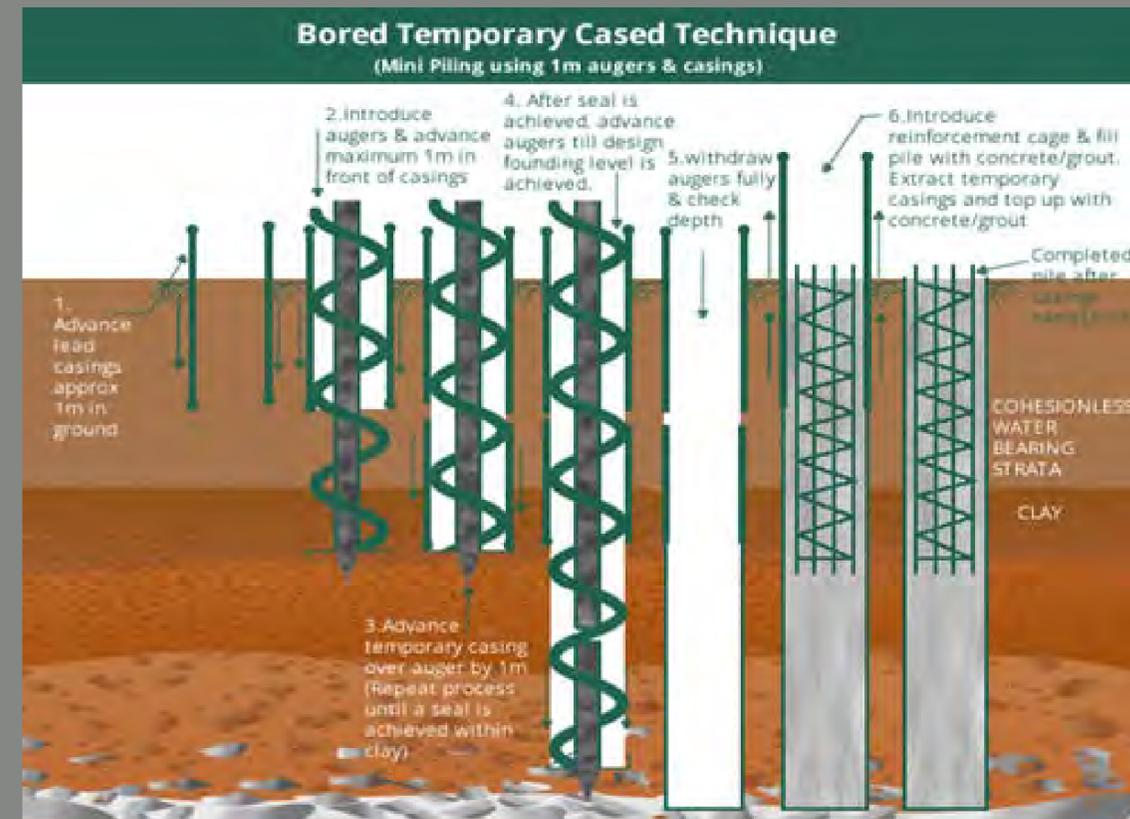
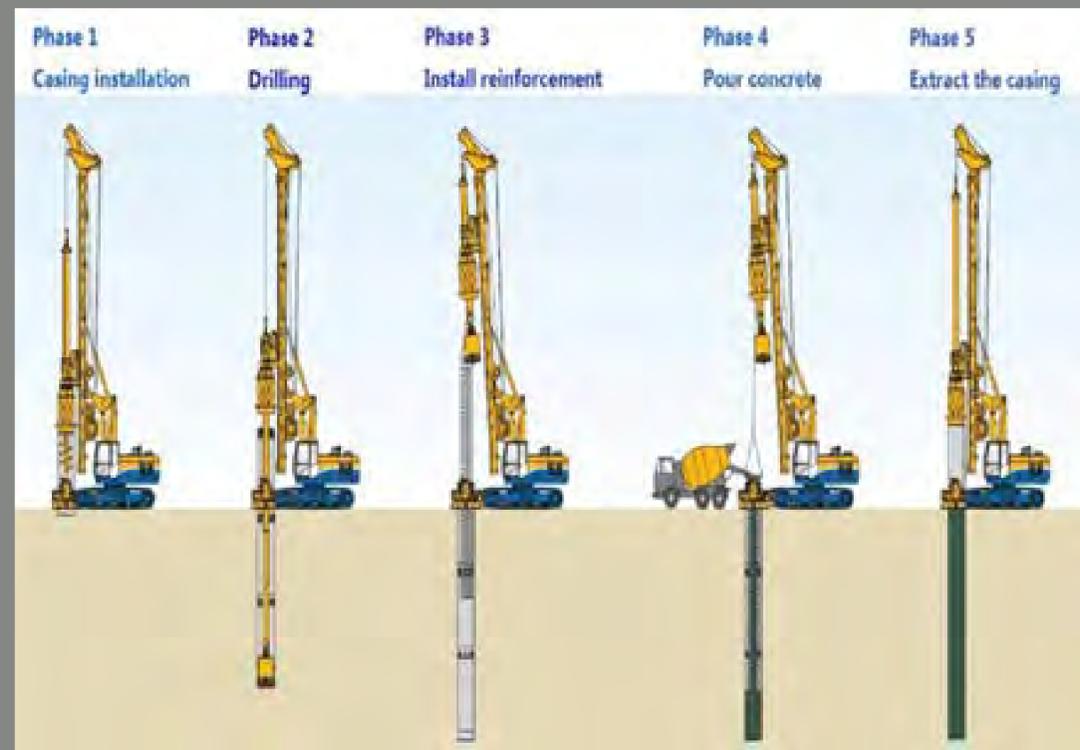
- Continuous Flight Auger Piling (CFA)
- Open bore standard flight augered piling
- Sectional Flight Augered Piling (SFA)
- Rotary Bored Piling (RBA)
- Driven piles/displacement piles
- Helical and Screw Piling
- Self Drilling Micro Piles
- Rotary Displacement Piling (RDP)



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Continuous Flight Auger Piling (CFA) is one of the most commonly used piling techniques, being economical and versatile, and suitable for most ground conditions and loading requirements. Uses a continuous hollow stem auger, drilled into the ground to the specified depth. Concrete is then poured through the hollow auger, as the auger is slowly extracted. Reinforced steel cages are then plunged in to the fresh concrete. We have a large range of CFA rigs, in a variety of sizes, making us well suited to provide CFA piles for a wide scope of projects and ground conditions; from large diameter to restricted access.

Open bore standard flight augered piling uses a solid auger. Most commonly used in cohesive ground conditions, such as clay, as this allows the pile bore to stay open once the auger has been retracted. Reinforced steel cages are installed and the open bore concreted to form a pile.



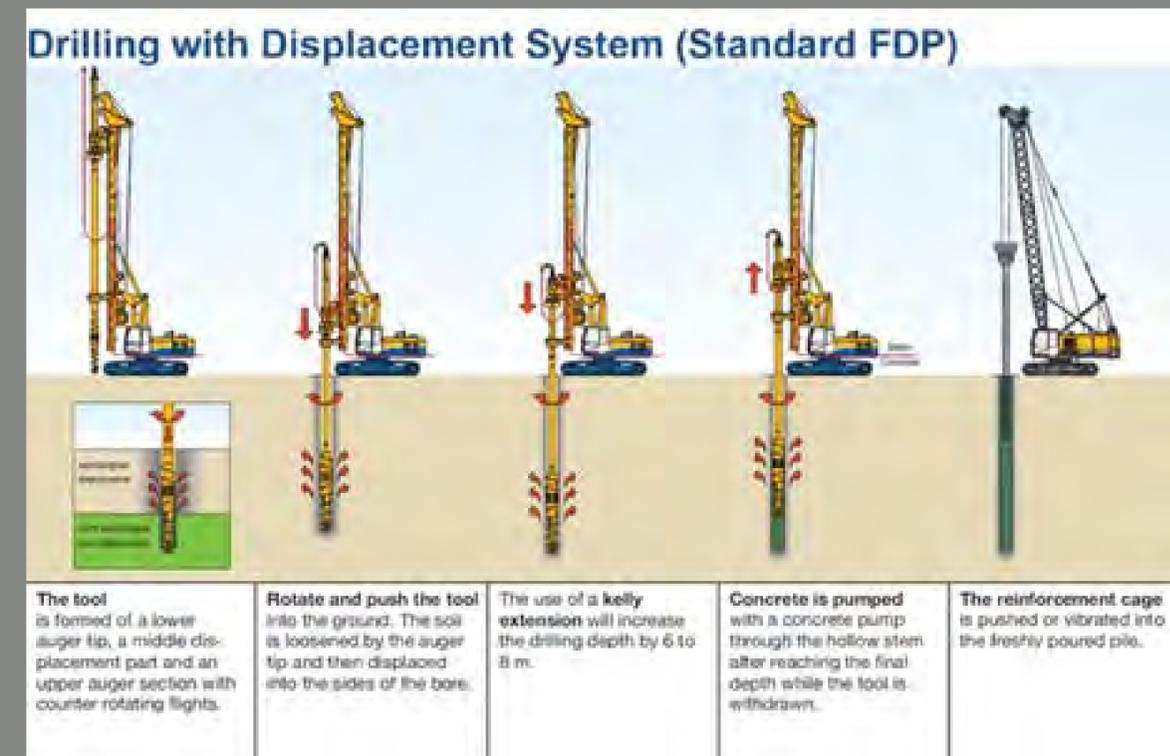
Sectional Flight Augered Piling (SFA) utilises open bore or hollow stem CFA techniques, however, the auger is constructed in sections to allow piles to be installed inside buildings or other low headroom environments.

Temporary casings are commonly utilised with SFA open bore piles where the ground requires support for the pile bore to remain open during the installation of the reinforcement and concreting of the pile.



Driven piles, also known as displacement piles, can be the most economical solution when noise and vibration is not an issue. These are used in non-cohesive soils to transfer loads to layers of soil or rock with sufficient bearing capacity. Driven piles are 'hammered' into the ground by either a top or bottom driven hammer. Driven piles are quick to install, and produce minimal spoil, which make them ideal for contaminated sites.

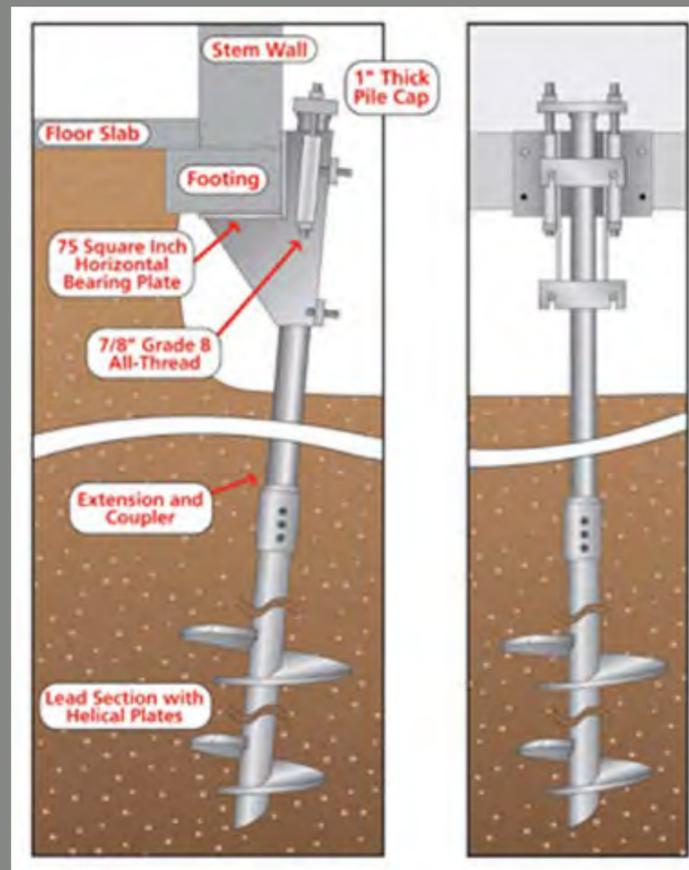
Driven piles can be made out of a variety of materials and are typically pre-fabricated off site, which allows for efficient installation, reducing time on site.



Helical/Screw Piles

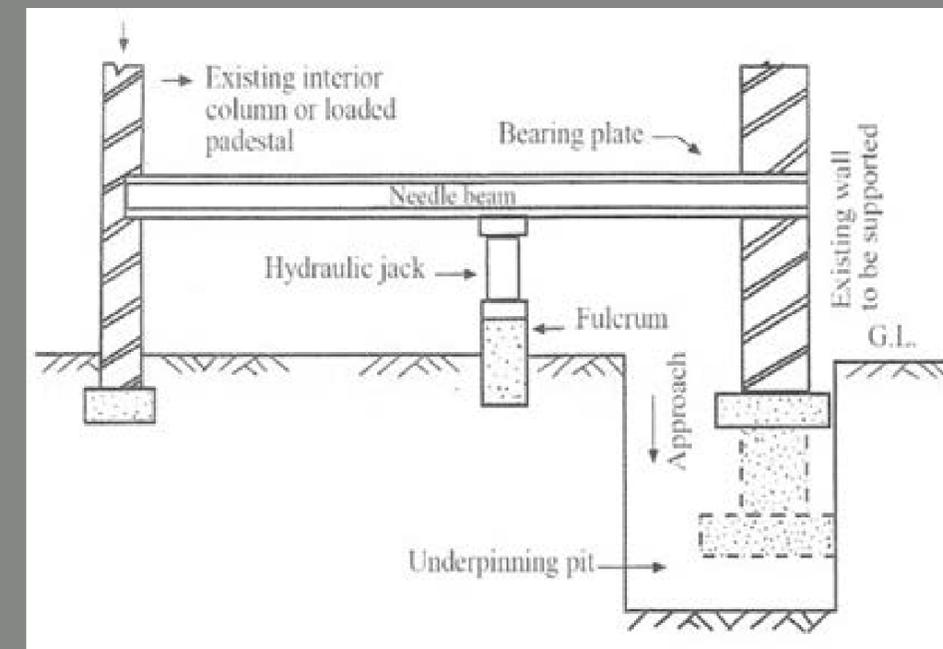
Helical and Screw Piling are prefabricated 'screwed in' steel piles, installed by rigs or excavators fitted with rotary hydraulic attachments.

Helical and screw piles are quick to install, and produce minimal spoil, which make them ideal for contaminated sites.. They can also be used for temporary structures as they can be removed and recycled, unlike poured piles.



Self Drilling Micro Piles

Self Drilling Micro Piling is a form of Mini Piling (also known as Pin Piling and Needle Piling). That utilises a sacrificial self-drilling hollow stem steel bar that densifies the ground through displacement during drilling. The hollow stem and aperture around the pile are grouted during installation. Suitable for most ground conditions, the piles are small and light, allowing for use in restricted access sites. Micro piles are also an efficient and economical method of foundation stabilisation. They cause minimal disruption to the building fabric or to the occupants who can remain in the residence while work is carried out.

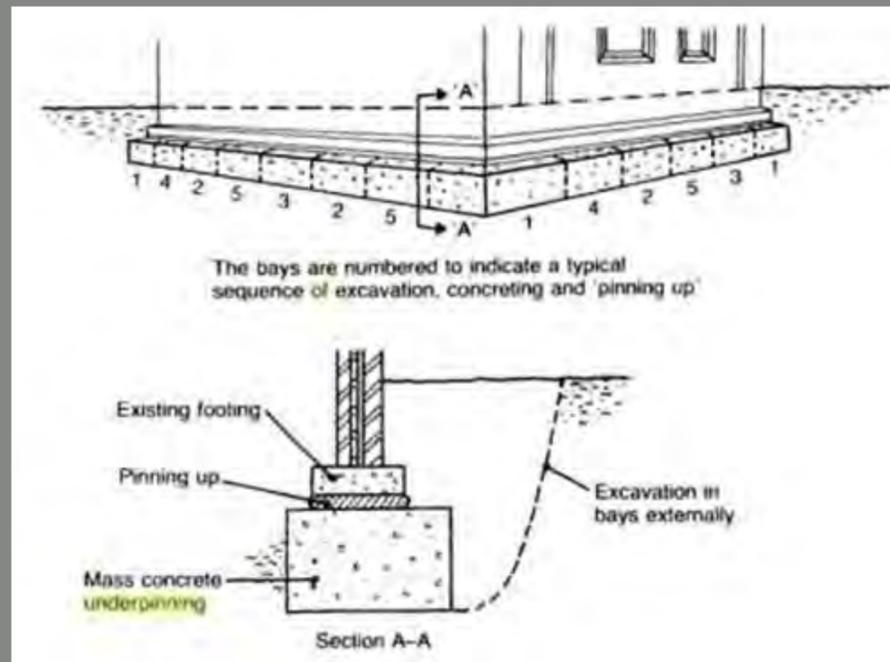


Mass Concrete Underpinning Method (Pit Method)

Mass concrete underpinning method is the traditional method of underpinning, as it has been followed by centuries. The method involves extending the old foundation till it reaches a stable stratum.

The soil below the existing foundation is excavated in a controlled manner through stages or pins. When strata suitable is reached, the excavation is filled with concrete and kept for curing, before next excavation starts.

In order to transfer the load from old foundation to new one, a new pin is provided by means of placing dry sand-cement pack. This is a low-cost method suitable for the shallow foundation.



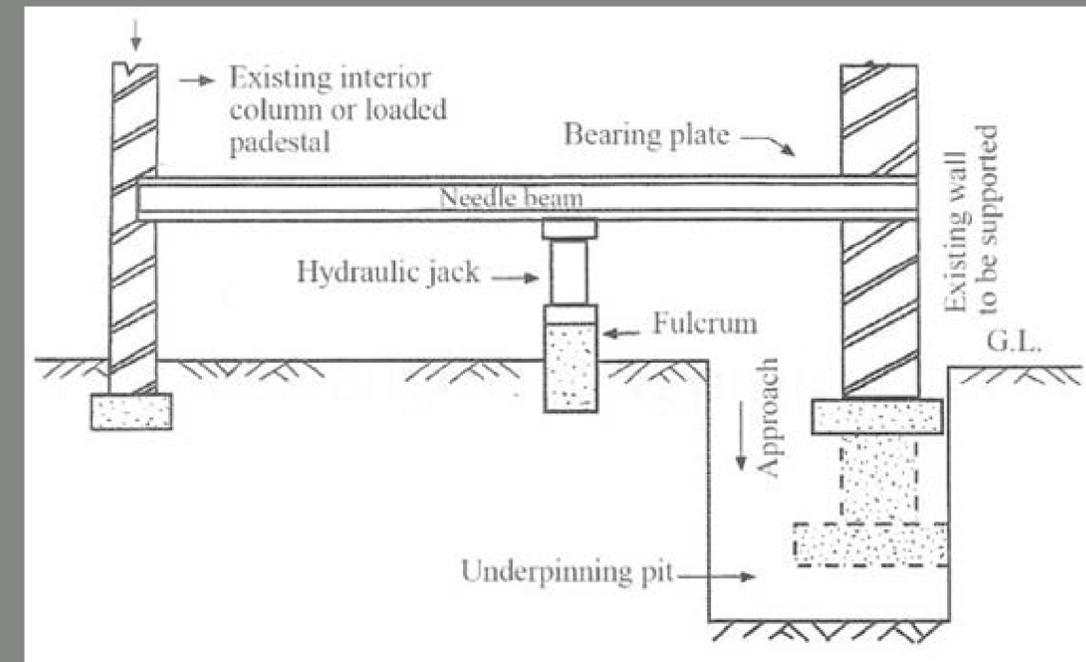
Underpinning By Cantilever Needle Beam Method

The figure below represents the arrangement of cantilever pit method of underpinning, which is an extension of pit method. If the foundation has to be extended only to one side and the plan possess a stronger interior column, this method can be used for underpinning.

Advantages of Cantilever Needle Beam Method: Faster than traditional method, One side access only, High load carrying capability.

Disadvantages:

Digging found uneconomical when existing foundation is deep
Constraint in access restricts the use of needle beams

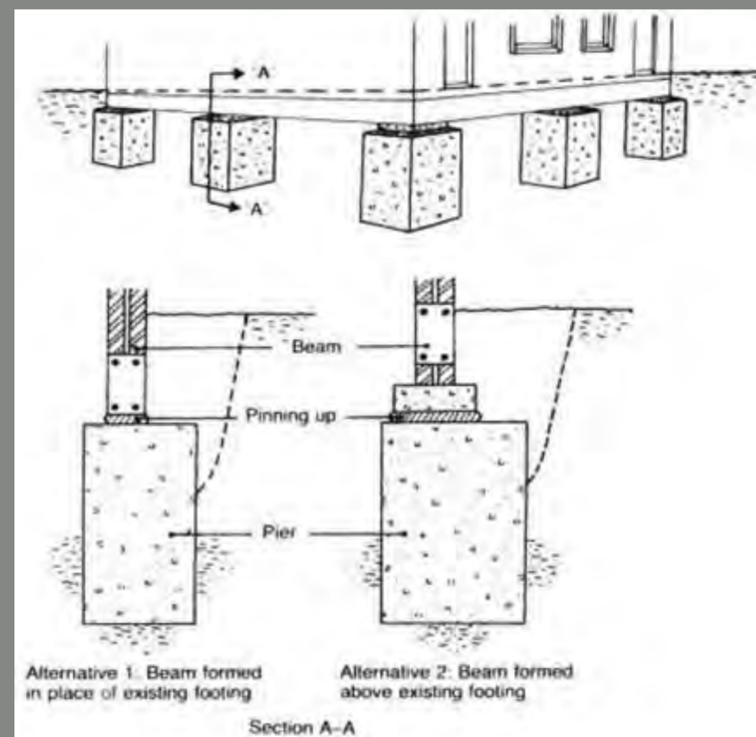


Pier and Beam Underpinning Method

It is also termed as base and beam method which was implemented after the second world war. This method progressed because the mass concrete method couldn't work well for a huge depth of foundation.

It is found feasible for most of the ground conditions. Here reinforced concrete beams are placed to transfer the load to mass concrete bases or piers as shown in figure 2.

The size and depth of the beams are based on the ground conditions and applied loads. It is found economical for depth shallower than 6m.



About us:

Construction Muzzy Ltd (CML) has been in operation since 2005 and offers a range of construction services, tailor made to fit the organisation we are working with. Groundworks and Civil engineering is our focus. In addition, we have now gone that step further and are able to offer a complete bespoke package allowing CML to take the building to water tightness. We employ trades and labour that can fulfil 70% of the needed requirement when constructing the super structure and building envelope. The remaining 30% is subcontracted through our supply chain. To give our clients, the very best value no further fee is applied to any subcontracted labour.



Piling



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