

Directional Drilling Techniques



To reduce impacts on both environmental and public issues no-dig systems have developed.

Trenchless pipeline technology is not a new concept. Tunnelling & mining construction have been practised for many hundreds of years. However over the last 30 years we have seen the development of new technology to meet the increasing demand for new utilities and replacement of ageing systems.

Parts of the construction industry has been slow to accept the advantages of new technology, however other countries have adopted no-dig as legislation such as the New Road & Street Works Act have been introduced. One such system employed by our company is Directional Drilling.

Pipes up to 1m in diameter can be installed using this system.

The principle of operation is by drilling a guided pilot bore which is then reamed back and the new pipeline pulled in.

The rig we employ consists of a control cabin, bentonite mixing unit and locator. In operation a bore is drilled by jetting bentonite at high pressures. The bentonite lubricates the drill string. Provided the new main is small enough the main can be pulled in directly. Alternatively the pilot hole can be back reamed to provide the required size and on the final backreaming operation the new pipe is pulled back.

The routing of the pilot bore is predetermined and may include vertical & horizontal curves at varying depths. The drill head position is relayed to the control cabin via an electrical cable through the centre of the drill string. Measurements of the earths magnetic field recorded at the drill head calculate the azimuth and inclination.



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