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We take everything for granted in terms of convenient living, especially those living in the cities. Our tap water is on hand as is our telephone lines and Internet access. Our electricity is available at the turn of a switch and our sewerage disposal is taken care of by our local authorities. All these services are provided by cables and pipes running through larger pipes laid underground. Thanks to the process of pipe jacking there is an infrastructure in place to provide pathways for all these utilitarian facilities – making life possible for city and rural dwellers alike. The image of some of the TBMs (Tunnel Boring Machines) is awesome. Their sizes can vary according to the diameter size of the tunnel being drilled. The boring machines are so large that they are transported in sections. Those TBMs provided by German companies such as Herrenknecht have to be transported to England by sea, then moved section by section to the launch site for the drilling and assembled at the face in a sunk shaft.

The pipe jacking process requires a simultaneous procedure of drilling, excavating and soil removal from the cutting face. These elements must all happen together for the TBM to progress along the pre ordained route for the tunnel. The cutting heads can measure up to 30 metres in diameter and are operated by one skilled operative who is fed general and directional information to enable the boring or drilling. This is a skilled occupation as are those specialist areas such as geological analysis and electronic sound analysis for gauging the presence of any obstructions along the path-line of the proposed tunnel. Once the TBM operative has all the necessary information he can plot the course of the drilling machine and begin cutting into the face. It is an intensive process as not only does the cutting head have to be positioned and continually monitored but the automated removal of the slurry (mixture of soil and pressurised water) has to be supervised as well.

The pipe jacking project also requires surface operatives to organise the flow of pipes to the shaft base for the pipe jacking process and operatives to monitor the movement of slurry to the surface and its removal to landfill sites. However, compared to traditional methods of tunnelling pipe jacking is economical due to the reduced man power required and the self contained operation that it is. Government authorities undertaking large scale pipe laying projects have found that pipe jacking is the most cost effective means available. There are of course other considerations that make it an attractive solution such as environmentally friendly, least disruptive to surface life and more manageable and transparent than alternative tunnelling methods. A characteristic that makes pipe jacking attractive is the precision with which it can be effected. The reception shaft usually receives the pipe within millimetres of the planned pathway which makes the whole pipe jacking project a secure choice.

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