

# PIPE JACKING CASE STUDY

## Farringdon Station Drainage Tunnel



[www.pipejacking.org](http://www.pipejacking.org)

PROJECT	Farringdon Station Drainage Tunnel
CLIENT	BFK
CONTRACTOR	Terra Solutions Limited
PIPE SUPPLIER	Naylor Denlock
TUNNELLING MACHINE	300mm Terminator TBM
VALUE	£180,000



### PROJECT OVERVIEW

Crossrail required a drainage tunnel at the south western corner of the Western Ticket Hall to the completed eastern running tunnel. The drive was through the hard flint laden Lower Lambeth Clay, Upnor formation with n-values greater than 100.

### DESCRIPTION OF WORKS

The 300mm drainage installation, 37 metres in length was installed from an independent standalone backwall constructed to withstand the required forces for the thrust-rig.

The beginning of the drive was through existing 1.2metre diameter secant piles, with a maximum allowable aperture of 500 x 600mm. Once each auger was installed another was added and the process continued until breakthrough. Steering throughout the drive was carried out by the controllable steering rams.

The casing line was displaced with Naylor Denlock 300mm pipe, and pressure tested to Crossrail specification. A special Denlock adapter was manufactured to reduce the 300mm to 200mm for connection to existing pipework.

In order to achieve a programme of 16 days, two 12 hour shifts were employed Monday–Saturday to allow 24hr working. A fatigue and risk index calculation to develop a fatigue/risk index for the shiftworkers as per HSE Research Report 446 (2006) was carried out. The management of the workers fatigue was satisfied with an acceptable value of 2.33.

FURTHER INFORMATION: [www.terrasolutions.co.uk](http://www.terrasolutions.co.uk)

