ROAD TESTING PIPETRACK FOR A LEADING UK WATER COMPANY

Following the introduction of the new and revolutionary PipeTrack gyroscopic pipeline tracking system at the No-Dig Live 2006 exhibition, Infotec was recently given the opportunity to trial it 'in anger' by Thames Water. The trial project required the accurate determination of the routes of numerous private lateral connections emanating from a major public trunk sewer. The test site provided a far from ideal opportunity of demonstrating the unique advantages the PipeTrack system, for reasons that will be explained later.

The accurate determination of the position of the laterals, in both the vertical and horizontal dimensions, was required to avoid the potential for damage to existing drainage services during the construction of a proposed new rail tunnel. Within the tunnel design route, its crown was destined to pass adjacent to the sewer, at some distance above its invert level.

DIFFICULT CONDITIONS

The difficulty with this particular mapping project was, in this instance, that the trunk sewer itself was a brick, egg shape of only 1,200 mm x 813 mm. The accessible bore was also further reduced by a 200 mm depth of silt in the invert. Several of the 20+ lateral service connections that were due to be mapped were also found to be silted. However, as this adequately determined their lack of use, ultimately this meant there was no requirement for a survey of these particular laterals.

The remaining laterals were tracked from their point of connection with the trunk sewer for sufficient distance determine their required route in relation to the proposed tunnel. This information was issued to Thames Water in a CAD format, along with a topographic survey, which included the cross-sectional profiling that was also required for the trunk sewer.

A total survey station in a main sewer.

Launching the PipeTrack unit from a manhole.

The accuracy achieved using the PipeTrack technique was less than 0.1% in the vertical alignment and 0.25% in the horizontal plane. No currently available alternative method would have been able to provide this level of information, as the accuracy achievable using sewer probing or similar techniques would not have been sufficient for the purpose in hand.

Also, given the depth of the system, which was approximately 10 metres, combined with the close proximity of many existing shallow services, including power and communications cables, gas and water pipes and traffic control sensors, the use of sewer probing systems would have also proven largely unsuccessful. Given the depth and the prevailing soil conditions and density of services, Ground Penetrating Radar scanning would also provide no acceptable alternative.

THE PIPETRACK CONCEPT

PipeTrack is the world's first, fully self-contained pipe and duct route mapping system. It is capable of mapping either between two known points, or from a single point of entry such as a lateral connection or rising main etc. The data, which determines the route taken, is recorded within the on-board data storage system and requires no surface tracking or personnel access over the pipe route, eliminating the need to provide expensive and potentially disruptive traffic management procedures, as well as risk to survey personnel. The system has no set limit on the length of survey (other than the data storage capacity of the system), and it is possible therefore to consider several kilometres of survey without a need for intermittent downloading of data.

Accurate data can be obtained at speeds of over 4.0 m/sec. This enables utility owners and/or their contractors to map entire catchment areas or pipeline networks at an extremely low cost per metre. The ability of the system to precisely determine the presence of backfalls or bellies in a pipe's route also, uniquely, provides engineers with the opportunity to determine the location of 'hotspots', or to identify specific areas requiring remedial repair. This is an advantage not currently provided using either CCTV or probing systems. In addition, neither of these commonly used systems would enable subsequent groundwork's or repairs to be clearly identified between a start and finish coordinate. This further enhances effective budgetary control on remedial repair costs.

Over the next 12 months, Infotec Consulting will be staging a series of Roadshows to demonstrate the system and its benefits.

For details of the event nearest to you or to discuss in depth how PipeTrack could provide a solution for any particular circumstance, Infotec Consulting's sales team is always available - contact 01702 421390 or visit the website: www.infotec1.net

Infotec Consulting is also acting as the UK distribution agent for PipeTrack, so any contractors or organisations considering purchasing the system should also contact Infotec directly. This service is offered to enable the unique advantages offered by PipeTrack to be made available across the UK as quickly as possible.

Prepared for Infotec by: NoDig Media Services. Email: ian@nodigmedia.co.uk