Southern African Society for Trenchless Technology P O Box 13048 CLUBVIEW 0014

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SASTT's new year starts with a bang

The readers who have been keeping tabs on the newsletters of 2007 will be aware that SASTT spent the year 2007 preparing for a number of initiatives, for instance:

- the SASTT code of conduct
- the development of standards for trenchless technology
- another annual call (yawn) for nominations for the SASTT award of excellence – but this time the first award-winner will be announced
- and last but not least: new blood on the board of SASTT.

Barring Murphy's interventions such as *beurtkrag*, these activities will be coming to a head at the forthcoming annual general meeting of SASTT.

The annual general meeting of 2008

Please diarise this: the annual general meeting will be held on Thursday 21 February 2008 at 15:00 at the Midrand regional office of Johannesburg Water, south-west corner of New Road and 6th Road.

The members will be given reports on progress with the items listed above.

But what is more important, the board will be asking for the members' mandate to go ahead on these issues and to spend SASTT's money on them.

There will be time for members to ask questions and discuss these matters. This is a democratic opportunity not to be missed!

Utilities management - from a contractor's perspective

by Neil van Rooyen, TT Innovations (Pty) Ltd

Introduction

Even though local authorities are often blissfully unaware of it, their sewerage systems are often characterised by a collection of technical horrors such as:

- leaking sewers
- collapsed sewers
- fatigued and rapidly deteriorating pipes
- insufficient capacity of existing sewers.

When a problem crops up, the conventional solution is often to dig a hole and replace just the damaged section of pipeline. However, further investigation usually highlights a larger problem as most underground infrastructure in a particular area was installed at the same time and is just as old as the failed section.

Generally in South Africa, local authorities have no maintenance policy. Thus a defect is nursed along and periodically blockages will be cleared. Crisis repairs are done on an *ad hoc* basis. If the road has collapsed, a hole is dug and a point repair is attempted. If the sewer's capacity is no longer adequate, new pipes will be laid in open trenches, with resulting disruption of the urban environment.

This disruption is so unnecessary. There is a host of trenchless solutions which the local authority could utilise, such as CCTV inspections, followed by trenchless point-repairs, cured-in-place pipe-linings, and pipe-bursting. If still larger sewers are needed in the urban environment, this can be done by means of horizontal directional drilling, pipe jacking or pipe ramming.

The potential crisis

South Africa's cities and towns are growing apace and the demands on the underground infrastructure are increasing accordingly. If the neglect of the infrastructure is allowed to go on, wide-scale failure of the infrastructure is to be expected, with the following consequences:

- sewerage manholes will overflow into the streets, onto private properties and into the basements of buildings
- the reaction from ratepayers will be to condemn the town councillors for their neglect and to relegate South Africa to third-world status, now that the invisible underground infrastructure displays very visible effects
- sewage outcropping on the surface carries serious health risks: waterborne diseases such as hepatitis and HIV
- raw sewage pollutes watercourses and urban lakes, which soon turn green when algal growth erupts
- due to the infiltration of groundwater into leaking sewers, heavy rainfall can similarly lead to widespread flooding, also with the above health and environmental risks.

The obstacles to effective service delivery and maintenance strategies as regards trenchless technology

If they exist at all, the service delivery and maintenance strategies in many local authorities are characterised by the following features and shortcomings:

- just because there have not been any real disasters in recent times which might have highlighted an impending crisis, there is not enough emphasis on underground infrastructure and its importance – since it is out of sight and out of mind
- the local authority still does not have any long term planning initiatives, such as an integrated development plan incorporating a municipal spatial development framework
- the local authority does not have skilled technical personnel who could identify areas for rehabilitation and propose appropriate trenchless solutions
- even if the local authority has skilled staff, they often resist the introduction of new technologies.

In addition, the local authority may tend to fight shy of TT for the following reasons:

- innovative technology is often imported and considered too expensive
- due to widespread unemployment, labour-intensive operations are often favoured.

The local authority's policies and planning should be geared towards efficient and effective service delivery and maintenance. TT offers many appropriate solutions.

When the crisis erupts

In the event of the disastrous collapse of underground infrastructure, one can foresee that the hasty deployment of TT could bring about the following unintended outcomes:

- trenchless construction will be implemented *en masse*, resulting in the entry into the market of many unskilled contractors
- trenchless solutions will be perceived as the miracle cure for most municipal problems, resulting in incorrect diagnoses of defects and the implementation of wrong trenchless applications.

Where is the solution?

In order to prevent the play-out of the above scenario, the following steps must be taken by local authorities and their planners:

- develop a basic plan of action to assess the current state of affairs regarding the underground assets of the local authority
- allocate dedicated funds to the maintenance and repair of underground infrastructure, including funding for investigation and design by competent professionals
- be aware that in certain instances international expertise may be required in implementing the appropriate trenchless solutions.

Pro-active measures which can be undertaken by role players in the trenchless technology sector

The practitioners of TT can prepare the field by taking the following steps:

- deliver excellent and efficient service wherever TT solutions are implemented
- continuously educate municipal managers and decision makers with regard to the benefits of TT
- promote awareness of possible TT solutions and their implementation – let TT become a household term in the town council
- whenever the opportunity presents itself, highlight and document the current state of the underground infrastructure – this will ensure that the politicians and the decision makers accept accountability as these issues of impending failure of infrastructure become public knowledge
- subscribe to the publications of international trenchless societies and stay abreast of the latest TT developments
- actively support the development of standards and codes of practice for TT to ensure that no rogue operators discredit the TT industry.

Closing thoughts

The question must not be: why do we use TT, but rather why do we not use it. After all, we the practitioners need no convincing, we know that:

- TT is less intrusive
- in view of the indirect costs of digging trenches, such as traffic delays due to obstructions, the use of scarce resources such as mined fill-material for backfill of trenches, the

environmental impact caused by construction plant and the site footprint – TT actually costs less

- TT leads to short construction periods – it's the efficient and effective solution
- TT avoids the health and safety risks associated with open trenches and heavy construction plant
- the widespread use of TT will promote further enhancements, innovation and invention in the construction industry.