Groundbreaking technology

Ageing water and sanitation infrastructure is a growing problem faced by municipalities throughout the country. Trenchless technology offers a cost-effective way to rehabilitate and replace ageing infrastructure with minimal disruption. IMIESA talks to Hannes Coetzee, director, CS Construction, about the benefits of trenchless construction.

How do you harness the most up-to-date technology to deliver quality results for your clients? Our equipment partner, Herrenknecht, is currently the world leader in microtunneling machines. All our equipment is kept in the category of closed, fail-safe excavation tunneling machines with a hydraulic system. Through close collaboration with Herrenknecht, we are able to provide our clients with the right solution for the job. We also have a close relationship with a number of equipment suppliers in Japan, Singapore and Europe, to name a few, with whom we work closely on developing solutions.

What are some of the most notable municipal projects you have worked on? We have worked on a number of projects for the City of Cape Town and Nelson Mandela Bay, ranging from roadworks to the most complex microtunneling project we have, which is the Cape Town Tunnel project. We have also undertaken projects where a total of eight tunnels were completed, totalling 1.25 km. In a world-first application, 22 fixed, powerful jetting units were installed in microtunneling, resulting in the project being awarded the SANTAFI National Award.

What advice would you offer municipalities which have not yet embraced trenchless technology? With the rate of urbanisation of our cities, coupled with ageing infrastructures, there is an increasing need to install and upgrade bulk water and sanitation services. Trenchless technologies like microtunneling offer a safe, cost-effective and low-cost solution. We believe the innovative solutions offered by trenchless technology should be considered and implemented by municipalities at the bulk water and sanitation master planning stage, and we would like to encourage municipalities to reach out and consider our expertise in the groundbreaking technology to help them to create better planning for their future projects.

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The main advantages of using trenchless technology include:

- Avoiding dig and cover.
- Lowering costs compared to traditional methods.
- Reduced impact on environment and ecology.
- Improved public safety.
- Reduced noise pollution and traffic disruptions.

Trenchless technology is not restricted to new pipelines. It is also used to rehabilitate existing pipelines, whether for water or sewerage services. New technologies, such as microtunneling, have made it possible to install pipelines without the need for large-scale excavation.

What is the scope of work that can be carried out using trenchless technology?

- Rehabilitation of existing pipelines.
- Installation of new pipelines.
- Replacement of old infrastructure.
- Repair of damaged pipelines.

What is the process involved in trenchless technology?

1. Site assessment: The site is thoroughly examined to determine the most suitable trenchless technology for the project.
2. Design: A detailed design is prepared to guide the trenchless installation process.
3. Installation: The trenchless technology is used to install the pipeline, taking into account the surrounding environment.
4. Quality control: The pipeline is tested for leaks and defects to ensure it meets the required standards.